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Welcome

AWS WAF

This is the AWS WAF API Reference for using AWS WAF with Amazon CloudFront. The AWS WAF actions and data types listed in the reference are available for protecting Amazon CloudFront distributions. You can use these actions and data types via the endpoint waf.amazonaws.com. This guide is for developers who need detailed information about the AWS WAF API actions, data types, and errors. For detailed information about AWS WAF features and an overview of how to use the AWS WAF API, see the AWS WAF Developer Guide.

AWS WAF Regional

This is the AWS WAF Regional API Reference for using AWS WAF with Elastic Load Balancing (ELB) Application Load Balancers. The AWS WAF actions and data types listed in the reference are available for protecting Application Load Balancers. You can use these actions and data types by means of the endpoints listed in AWS Regions and Endpoints. This guide is for developers who need detailed information about the AWS WAF API actions, data types, and errors. For detailed information about AWS WAF features and an overview of how to use the AWS WAF API, see the AWS WAF Developer Guide.
## Actions

The following actions are supported by AWS WAF:

- `CreateByteMatchSet` (p. 7)
- `CreateGeoMatchSet` (p. 10)
- `CreateIPSet` (p. 13)
- `CreateRateBasedRule` (p. 16)
- `CreateRegexMatchSet` (p. 21)
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• UpdateRegexPatternSet (p. 174)
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• UpdateSizeConstraintSet (p. 186)
• UpdateSqlInjectionMatchSet (p. 191)
• UpdateWebACL (p. 195)
• UpdateXssMatchSet (p. 200)

The following actions are supported by AWS WAF Regional:

• AssociateWebACL (p. 206)
• CreateByteMatchSet (p. 208)
• CreateGeoMatchSet (p. 211)
• CreateIPSet (p. 214)
• CreateRateBasedRule (p. 217)
• CreateRegexMatchSet (p. 222)
• CreateRegexPatternSet (p. 225)
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- UpdateSqlInjectionMatchSet (p. 399)
- UpdateWebACL (p. 403)
- UpdateXssMatchSet (p. 408)

AWS WAF

The following actions are supported by AWS WAF:

- CreateByteMatchSet (p. 7)
- CreateGeoMatchSet (p. 10)
- CreateIPSet (p. 13)
- CreateRateBasedRule (p. 16)
- CreateRegexMatchSet (p. 21)
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- UpdateWebACL (p. 195)
- UpdateXssMatchSet (p. 200)
**CreateByteMatchSet**

Service: AWS WAF

Creates a ByteMatchSet. You then use `UpdateByteMatchSet (p. 153)` to identify the part of a web request that you want AWS WAF to inspect, such as the values of the `User-Agent` header or the query string. For example, you can create a ByteMatchSet that matches any requests with `User-Agent` headers that contain the string `BadBot`. You can then configure AWS WAF to reject those requests.

To create and configure a ByteMatchSet, perform the following steps:

1. Use `GetChangeToken (p. 87)` to get the change token that you provide in the `ChangeToken` parameter of a `CreateByteMatchSet` request.
2. Submit a `CreateByteMatchSet` request.
3. Use `GetChangeToken` to get the change token that you provide in the `ChangeToken` parameter of an `UpdateByteMatchSet` request.
4. Submit an `UpdateByteMatchSet (p. 153)` request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
    "ChangeToken": "string",
    "Name": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 7)**

The value returned by the most recent call to `GetChangeToken (p. 87)`.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 7)**

A friendly name or description of the ByteMatchSet (p. 418). You can't change `Name` after you create a ByteMatchSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ByteMatchSet": {
    "ByteMatchSetId": "string",
    "ByteMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "PositionalConstraint": "string",
        "TargetString": "blob",
        "TextTransformation": "string"
      }
    ],
    "Name": "string"
  },
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ByteMatchSet (p. 8)**

A ByteMatchSet (p. 418) that contains no ByteMatchTuple objects.

Type: ByteMatchSet (p. 418) object

**ChangeToken (p. 8)**

The ChangeToken that you used to submit the CreateByteMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateGeoMatchSet

Service: AWS WAF

Creates an GeoMatchSet (p. 428), which you use to specify which web requests you want to allow or block based on the country that the requests originate from. For example, if you're receiving a lot of requests from one or more countries and you want to block the requests, you can create an GeoMatchSet that contains those countries and then configure AWS WAF to block the requests.

To create and configure a GeoMatchSet, perform the following steps:

1. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateGeoMatchSet request.
2. Submit a CreateGeoMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateGeoMatchSet (p. 157) request.
4. Submit an UpdateGeoMatchSet request to specify the countries that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 10)**

The value returned by the most recent call to GetChangeToken (p. 87).

- Type: String
- Length Constraints: Minimum length of 1.
- Required: Yes

**Name (p. 10)**

A friendly name or description of the GeoMatchSet (p. 428). You can't change Name after you create the GeoMatchSet.

- Type: String
- Required: Yes
Response Syntax

```
{
    "ChangeToken": "string",
    "GeoMatchSet": {
        "GeoMatchConstraints": [
            {
                "Type": "string",
                "Value": "string"
            }
        ],
        "GeoMatchSetId": "string",
        "Name": "string"
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 11)**

The `ChangeToken` that you used to submit the `CreateGeoMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

Type: String

Length Constraints: Minimum length of 1.

**GeoMatchSet (p. 11)**

The `GeoMatchSet (p. 428)` returned in the `CreateGeoMatchSet` response. The `GeoMatchSet` contains no `GeoMatchConstraints`.

Type: `GeoMatchSet (p. 428)` object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**CreateIPSet**

Service: AWS WAF

Creates an IPSet (p. 434), which you use to specify which web requests you want to allow or block based on the IP addresses that the requests originate from. For example, if you're receiving a lot of requests from one or more individual IP addresses or one or more ranges of IP addresses and you want to block the requests, you can create an IPSet that contains those IP addresses and then configure AWS WAF to block the requests.

To create and configure an IPSet, perform the following steps:

1. Use `GetChangeToken` (p. 87) to get the change token that you provide in the `ChangeToken` parameter of a `CreateIPSet` request.
2. Submit a `CreateIPSet` request.
3. Use `GetChangeToken` to get the change token that you provide in the `ChangeToken` parameter of an `UpdateIPSet` (p. 161) request.
4. Submit an `UpdateIPSet` request to specify the IP addresses that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
   "ChangeToken": "string",
   "Name": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 13)**

The value returned by the most recent call to `GetChangeToken` (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 13)**

A friendly name or description of the IPSet (p. 434). You can't change Name after you create the IPSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "IPSet": {
    "IPSetDescriptors": [
      {
        "Type": "string",
        "Value": "string"
      }
    ],
    "IPSetId": "string",
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 14)**

The `ChangeToken` that you used to submit the `CreateIPSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

Type: String

Length Constraints: Minimum length of 1.

**IPSet (p. 14)**

The `IPSet (p. 434)` returned in the `CreateIPSet` response.

Type: `IPSet (p. 434)` object

Errors

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400
WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRateBasedRule
Service: AWS WAF

Creates a RateBasedRule (p. 441). The RateBasedRule contains a RateLimit, which specifies the maximum number of requests that AWS WAF allows from a specified IP address in a five-minute period. The RateBasedRule also contains the IPSet objects, ByteMatchSet objects, and other predicates that identify the requests that you want to count or block if these requests exceed the RateLimit.

If you add more than one predicate to a RateBasedRule, a request not only must exceed the RateLimit, but it also must match all the specifications to be counted or blocked. For example, suppose you add the following to a RateBasedRule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

Further, you specify a RateLimit of 15,000.

You then add the RateBasedRule to a WebACL and specify that you want to block requests that meet the conditions in the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot. Further, requests that match these two conditions must be received at a rate of more than 15,000 requests every five minutes. If both conditions are met and the rate is exceeded, AWS WAF blocks the requests. If the rate drops below 15,000 for a five-minute period, AWS WAF no longer blocks the requests.

As a second example, suppose you want to limit requests to a particular page on your site. To do this, you could add the following to a RateBasedRule:

- A ByteMatchSet with FieldToMatch of URI
- A PositionalConstraint of STARTS_WITH
- A TargetString of login

Further, you specify a RateLimit of 15,000.

By adding this RateBasedRule to a WebACL, you could limit requests to your login page without affecting the rest of your site.

To create and configure a RateBasedRule, perform the following steps:

1. Create and update the predicates that you want to include in the rule. For more information, see CreateByteMatchSet (p. 7), CreateIPSet (p. 13), and CreateSqlInjectionMatchSet (p. 37).

2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateRule request.

3. Submit a CreateRateBasedRule request.

4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 178) request.

5. Submit an UpdateRateBasedRule request to specify the predicates that you want to include in the rule.

6. Create and update a WebACL that contains the RateBasedRule. For more information, see CreateWebACL (p. 40).

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.
Request Syntax

```json
{
  "ChangeToken": "string",
  "MetricName": "string",
  "Name": "string",
  "RateKey": "string",
  "RateLimit": number
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 17)**

The ChangeToken that you used to submit the CreateRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**MetricName (p. 17)**

A friendly name or description for the metrics for this RateBasedRule. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RateBasedRule.

Type: String

Required: Yes

**Name (p. 17)**

A friendly name or description of the RateBasedRule. You can't change the name of a RateBasedRule after you create it.

Type: String


Required: Yes

**RateKey (p. 17)**

The field that AWS WAF uses to determine if requests are likely arriving from a single source and thus subject to rate monitoring. The only valid value for RateKey is IP. IP indicates that requests that arrive from the same IP address are subject to the RateLimit that is specified in the RateBasedRule.

Type: String

Valid Values: IP

Required: Yes
**RateLimit (p. 17)**

The maximum number of requests, which have an identical value in the field that is specified by RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string",
   "Rule": {
      "MatchPredicates": [
         {
            "DataId": "string",
            "Negated": boolean,
            "Type": "string"
         }
      ],
      "MetricName": "string",
      "Name": "string",
      "RateKey": "string",
      "RateLimit": number,
      "RuleId": "string"
   }
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 18)**

The ChangeToken that you used to submit the CreateRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**Rule (p. 18)**

The RateBasedRule (p. 441) that is returned in the CreateRateBasedRule response.

Type: RateBasedRule (p. 441) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFNotAllowedNameException

The name specified is invalid.

HTTP Status Code: 400

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
CreateRegexMatchSet
Service: AWS WAF

Creates a RegexMatchSet (p. 443). You then use UpdateRegexMatchSet (p. 170) to identify the part of a web request that you want AWS WAF to inspect, such as the values of the User-Agent header or the query string. For example, you can create a RegexMatchSet that contains a RegexMatchTuple that looks for any requests with User-Agent headers that match a RegexPatternSet with pattern B[a@]dB[o0]t. You can then configure AWS WAF to reject those requests.

To create and configure a RegexMatchSet, perform the following steps:

1. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateRegexMatchSet request.
2. Submit a CreateRegexMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRegexMatchSet request.
4. Submit an UpdateRegexMatchSet (p. 170) request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value, using a RegexPatternSet, that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 21)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 21)**

A friendly name or description of the RegexMatchSet (p. 443). You can’t change Name after you create a RegexMatchSet.

Type: String

Required: Yes

Response Syntax

```
{
  "ChangeToken": "string",
  "RegexMatchSet": {
    "Name": "string",
    "RegexMatchSetId": "string",
    "RegexMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "RegexPatternSetId": "string",
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 22)**

The `ChangeToken` that you used to submit the `CreateRegexMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89).`

Type: String
Length Constraints: Minimum length of 1.

**RegexMatchSet (p. 22)**

A `RegexMatchSet (p. 443)` that contains no `RegexMatchTuple` objects.

Type: `RegexMatchSet (p. 443)` object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
**WAFLimitsExceededexception**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRegexPatternSet
Service: AWS WAF

Creates a RegexPatternSet. You then use UpdateRegexPatternSet (p. 174) to specify the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[o0]t. You can then configure AWS WAF to reject those requests.

To create and configure a RegexPatternSet, perform the following steps:

1. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateRegexPatternSet request.
2. Submit a CreateRegexPatternSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRegexPatternSet request.
4. Submit an UpdateRegexPatternSet (p. 174) request to specify the string that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 24)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 24)**

A friendly name or description of the RegexPatternSet (p. 450). You can't change Name after you create a RegexPatternSet.

Type: String


Required: Yes
Response Syntax

```
{
  "ChangeToken": "string",
  "RegexPatternSet": {
    "Name": "string",
    "RegexPatternSetId": "string",
    "RegexPatternStrings": [ "string" ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 25)**

The `ChangeToken` that you used to submit the `CreateRegexPatternSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

Type: String

Length Constraints: Minimum length of 1.

**RegexPatternSet (p. 25)**

A `RegexPatternSet (p. 450)` that contains no objects.

Type: `RegexPatternSet (p. 450)` object

Errors

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of `WebACL` objects that you can create for an AWS account. For more information, see `Limits` in the `AWS WAF Developer Guide`.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRule

Service: AWS WAF

Creates a rule, which contains the IPSet objects, ByteMatchSet objects, and other predicates that identify the requests that you want to block. If you add more than one predicate to a rule, a request must match all of the specifications to be allowed or blocked. For example, suppose you add the following to a rule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

You then add the rule to a WebACL and specify that you want to block requests that satisfy the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot.

To create and configure a rule, perform the following steps:

1. Create and update the predicates that you want to include in the rule. For more information, see CreateByteMatchSet (p. 7), CreateIPSet (p. 13), and CreateSqlInjectionMatchSet (p. 37).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateRule request.
3. Submit a CreateRule request.
4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 178) request.
5. Submit an UpdateRule request to specify the predicates that you want to include in the rule.
6. Create and update a WebACL that contains the rule. For more information, see CreateWebACL (p. 40).

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "MetricName": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 27)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.
Required: Yes

**MetricName (p. 27)**

A friendly name or description for the metrics for this Rule. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the Rule.

Type: String

Required: Yes

**Name (p. 27)**

A friendly name or description of the Rule (p. 453). You can't change the name of a Rule after you create it.

Type: String


Required: Yes

### Response Syntax

```json
{
  "ChangeToken": "string",
  "Rule": {
    "MetricName": "string",
    "Name": "string",
    "Predicates": [
      {
        "DataId": "string",
        "Negated": boolean,
        "Type": "string"
      }
    ],
    "RuleId": "string"
  }
}
```

### Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 28)**

The ChangeToken that you used to submit the CreateRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**Rule (p. 28)**

The Rule (p. 453) returned in the CreateRule response.

Type: Rule (p. 453) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFLInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFLInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFLLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFLStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
CreateRuleGroup

Service: AWS WAF

Creates a RuleGroup. A rule group is a collection of predefined rules that you add to a web ACL. You use UpdateRuleGroup (p. 182) to add rules to the rule group.

Rule groups are subject to the following limits:

- Three rule groups per account. You can request an increase to this limit by contacting customer support.
- One rule group per web ACL.
- Ten rules per rule group.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
   "ChangeToken": "string",
   "MetricName": "string",
   "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 31)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

MetricName (p. 31)

A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can’t contain whitespace. You can’t change the name of the metric after you create the RuleGroup.

Type: String

Required: Yes

Name (p. 31)

A friendly name or description of the RuleGroup (p. 455). You can’t change Name after you create a RuleGroup.

Type: String

Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string",
  "RuleGroup": {
    "MetricName": "string",
    "Name": "string",
    "RuleGroupId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 32)

The ChangeToken that you used to submit the CreateRuleGroup request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

RuleGroup (p. 32)

An empty RuleGroup (p. 455).

Type: RuleGroup (p. 455) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFDisallowedNameException

The name specified is invalid.

HTTP Status Code: 400

WAFLInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFLimitsExceeded Exception

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**CreateSizeConstraintSet**

**Service**: AWS WAF

Creates a SizeConstraintSet. You then use [UpdateSizeConstraintSet](p. 186) to identify the part of a web request that you want AWS WAF to check for length, such as the length of the User-Agent header or the length of the query string. For example, you can create a SizeConstraintSet that matches any requests that have a query string that is longer than 100 bytes. You can then configure AWS WAF to reject those requests.

To create and configure a SizeConstraintSet, perform the following steps:

1. Use [GetChangeToken](p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateSizeConstraintSet request.
2. Submit a CreateSizeConstraintSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateSizeConstraintSet request.
4. Submit an UpdateSizeConstraintSet (p. 186) request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
   "ChangeToken": "string",
   "Name": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see [Common Parameters](p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 34)**

- The value returned by the most recent call to GetChangeToken (p. 87).
  - Type: String
  - Length Constraints: Minimum length of 1.
  - Required: Yes

**Name (p. 34)**

- A friendly name or description of the SizeConstraintSet (p. 466). You can't change Name after you create a SizeConstraintSet.
  - Type: String
  - Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "SizeConstraintSet": {
    "Name": "string",
    "SizeConstraints": [
      {
        "ComparisonOperator": "string",
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "Size": number,
        "TextTransformation": "string"
      }
    ],
    "SizeConstraintSetId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 35)**

The ChangeToken that you used to submit the CreateSizeConstraintSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**SizeConstraintSet (p. 35)**

A SizeConstraintSet (p. 466) that contains no SizeConstraint objects.

Type: SizeConstraintSet (p. 466) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateSqlInjectionMatchSet

Service: AWS WAF

Create a SqlInjectionMatchSet (p. 469), which you use to allow, block, or count requests that contain snippets of SQL code in a specified part of web requests. AWS WAF searches for character sequences that are likely to be malicious strings.

To create and configure a SqlInjectionMatchSet, perform the following steps:

1. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateSqlInjectionMatchSet request.
2. Submit a CreateSqlInjectionMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateSqlInjectionMatchSet (p. 191) request.
4. Submit an UpdateSqlInjectionMatchSet (p. 191) request to specify the parts of web requests in which you want to allow, block, or count malicious SQL code.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 37)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 37)**

A friendly name or description for the SqlInjectionMatchSet (p. 469) that you're creating. You can't change Name after you create the SqlInjectionMatchSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "SqlInjectionMatchSet": {
    "Name": "string",
    "SqlInjectionMatchSetId": "string",
    "SqlInjectionMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 38)**

The ChangeToken that you used to submit the CreateSqlInjectionMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**SqlInjectionMatchSet (p. 38)**

A SqlInjectionMatchSet (p. 469).

Type: SqlInjectionMatchSet (p. 469) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateWebACL

Service: AWS WAF

Creates a WebACL, which contains the Rules that identify the CloudFront web requests that you want to allow, block, or count. AWS WAF evaluates Rules in order based on the value of Priority for each Rule.

You also specify a default action, either ALLOW or BLOCK. If a web request doesn't match any of the Rules in a WebACL, AWS WAF responds to the request with the default action.

To create and configure a WebACL, perform the following steps:

1. Create and update the ByteMatchSet objects and other predicates that you want to include in Rules. For more information, see CreateByteMatchSet (p. 7), UpdateByteMatchSet (p. 153), CreateIPSet (p. 13), UpdateIPSet (p. 161), CreateSqlInjectionMatchSet (p. 37), and UpdateSqlInjectionMatchSet (p. 191).

2. Create and update the Rules that you want to include in the WebACL. For more information, see CreateRule (p. 27) and UpdateRule (p. 178).

3. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateWebACL request.

4. Submit a CreateWebACL request.

5. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateWebACL (p. 195) request.

6. Submit an UpdateWebACL (p. 195) request to specify the Rules that you want to include in the WebACL, to specify the default action, and to associate the WebACL with a CloudFront distribution.

For more information about how to use the AWS WAF API, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "DefaultAction": {
    "Type": "string"
  },
  "MetricName": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 40)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes
**DefaultAction (p. 40)**

The action that you want AWS WAF to take when a request doesn't match the criteria specified in any of the `Rule` objects that are associated with the `WebACL`.

Type: `WafAction (p. 476)` object

Required: Yes

**MetricName (p. 40)**

A friendly name or description for the metrics for this `WebACL`. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change `MetricName` after you create the `WebACL`.

Type: String

Required: Yes

**Name (p. 40)**

A friendly name or description of the `WebACL (p. 478)`. You can't change `Name` after you create the `WebACL`.

Type: String


Required: Yes

**Response Syntax**

```json
{
  "ChangeToken": "string",
  "WebACL": {
    "DefaultAction": {
      "Type": "string"
    },
    "MetricName": "string",
    "Name": "string",
    "Rules": [
      {
        "Action": {
          "Type": "string"
        },
        "OverrideAction": {
          "Type": "string"
        },
        "Priority": number,
        "RuleId": "string",
        "Type": "string"
      }
    ],
    "WebACLId": "string"
  }
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 41)**

The `ChangeToken` that you used to submit the `CreateWebACL` request. You can also use this value to query the status of the request. For more information, see *GetChangeTokenStatus (p. 89).*

Type: String

Length Constraints: Minimum length of 1.

**WebACL (p. 41)**

The `WebACL` returned in the `CreateWebACL` response.

Type: `WebACL (p. 478)` object

### Errors

For information about the errors that are common to all actions, see *Common Errors (p. 561).*

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
**WAFLimitsExceeded Exception**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFStaleData Exception**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateXssMatchSet

Service: AWS WAF

Creates an XssMatchSet (p. 482), which you use to allow, block, or count requests that contain cross-site scripting attacks in the specified part of web requests. AWS WAF searches for character sequences that are likely to be malicious strings.

To create and configure an XssMatchSet, perform the following steps:

1. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a CreateXssMatchSet request.
2. Submit a CreateXssMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateXssMatchSet (p. 200) request.
4. Submit an UpdateXssMatchSet (p. 200) request to specify the parts of web requests in which you want to allow, block, or count cross-site scripting attacks.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 44)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 44)**

A friendly name or description for the XssMatchSet (p. 482) that you're creating. You can't change Name after you create the XssMatchSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "XssMatchSet": {
    "Name": "string",
    "XssMatchSetId": "string",
    "XssMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 45)**

The ChangeToken that you used to submit the CreateXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**XssMatchSet (p. 45)**

An XssMatchSet (p. 482).

Type: XssMatchSet (p. 482) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteByteMatchSet

Service: AWS WAF

Permanently deletes a ByteMatchSet (p. 418). You can't delete a ByteMatchSet if it's still used in any Rules or if it still includes any ByteMatchTuple (p. 422) objects (any filters).

If you just want to remove a ByteMatchSet from a Rule, use UpdateRule (p. 178).

To permanently delete a ByteMatchSet, perform the following steps:

1. Update the ByteMatchSet to remove filters, if any. For more information, see UpdateByteMatchSet (p. 153).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteByteMatchSet request.
3. Submit a DeleteByteMatchSet request.

Request Syntax

```
{
   "ByteMatchSetId": "string",
   "ChangeToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ByteMatchSetId (p. 47)

The ByteMatchSetId of the ByteMatchSet (p. 418) that you want to delete. ByteMatchSetId is returned by CreateByteMatchSet (p. 7) and by ListByteMatchSets (p. 124).

Type: String


Required: Yes

ChangeToken (p. 47)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Response Syntax

```
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 47)**

The ChangeToken that you used to submit the DeleteByteMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteGeoMatchSet

Service: AWS WAF

Permanently deletes a GeoMatchSet (p. 428). You can't delete a GeoMatchSet if it's still used in any Rules or if it still includes any countries.

If you just want to remove a GeoMatchSet from a Rule, use UpdateRule (p. 178).

To permanently delete a GeoMatchSet from AWS WAF, perform the following steps:

1. Update the GeoMatchSet to remove any countries. For more information, see UpdateGeoMatchSet (p. 157).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteGeoMatchSet request.
3. Submit a DeleteGeoMatchSet request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "GeoMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 50)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**GeoMatchSetId (p. 50)**

The GeoMatchSetId of the GeoMatchSet (p. 428) that you want to delete. GeoMatchSetId is returned by CreateGeoMatchSet (p. 10) and by ListGeoMatchSets (p. 126).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 50)**

The ChangeToken that you used to submit the `DeleteGeoMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus` (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see `Common Errors` (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFLnvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFLNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFLNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteIPSet
Service: AWS WAF

Permanently deletes an IPSet (p. 434). You can't delete an IPSet if it's still used in any Rules or if it still includes any IP addresses.

If you just want to remove an IPSet from a Rule, use UpdateRule (p. 178).

To permanently delete an IPSet from AWS WAF, perform the following steps:

1. Update the IPSet to remove IP address ranges, if any. For more information, see UpdateIPSet (p. 161).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteIPSet request.
3. Submit a DeleteIPSet request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "IPSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeEvent (p. 53)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**IPSetId (p. 53)**

The IPSetId of the IPSet (p. 434) that you want to delete. IPSetId is returned by CreateIPSet (p. 13) and by ListIPSets (p. 128).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

ChangeToken (p. 53)

The ChangeToken that you used to submit the DeleteIPSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeletePermissionPolicy

Service: AWS WAF

Permanently deletes an IAM policy from the specified RuleGroup.

The user making the request must be the owner of the RuleGroup.

Request Syntax

```json
{
   "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ResourceArn (p. 56)

The Amazon Resource Name (ARN) of the RuleGroup from which you want to delete the policy.

The user making the request must be the owner of the RuleGroup.

Type: String


Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRateBasedRule

DeleteRateBasedRule
Service: AWS WAF

Permanently deletes a RateBasedRule (p. 441). You can't delete a rule if it's still used in any WebACL objects or if it still includes any predicates, such as ByteMatchSet objects.

If you just want to remove a rule from a WebACL, use UpdateWebACL (p. 195).

To permanently delete a RateBasedRule from AWS WAF, perform the following steps:

1. Update the RateBasedRule to remove predicates, if any. For more information, see UpdateRateBasedRule (p. 165).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteRateBasedRule request.
3. Submit a DeleteRateBasedRule request.

Request Syntax

```
{
   "ChangeToken": "string",
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 58)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RuleId (p. 58)**

The RuleId of the RateBasedRule (p. 441) that you want to delete. RuleId is returned by CreateRateBasedRule (p. 16) and by ListRateBasedRules (p. 130).

Type: String


Required: Yes

Response Syntax

```
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 58)

The ChangeToken that you used to submit the DeleteRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRegexMatchSet

Service: AWS WAF

Permanently deletes a RegexMatchSet (p. 443). You can't delete a RegexMatchSet if it's still used in any Rules or if it still includes any RegexMatchTuples objects (any filters).

If you just want to remove a RegexMatchSet from a Rule, use UpdateRule (p. 178).

To permanently delete a RegexMatchSet, perform the following steps:

1. Update the RegexMatchSet to remove filters, if any. For more information, see UpdateRegexMatchSet (p. 170).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteRegexMatchSet request.
3. Submit a DeleteRegexMatchSet request.

Request Syntax

```json
{
   "ChangeToken": "string",
   "RegexMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 61)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RegexMatchSetId (p. 61)**

The RegexMatchSetId of the RegexMatchSet (p. 443) that you want to delete. RegexMatchSetId is returned by CreateRegexMatchSet (p. 21) and by ListRegexMatchSets (p. 132).

Type: String


Required: Yes

Response Syntax

```json
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 61)**

The `ChangeToken` that you used to submit the `DeleteRegexMatchSet` request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 89)](#).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn’t empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRegexPatternSet

Service: AWS WAF

Permanently deletes a RegexPatternSet (p. 450). You can't delete a RegexPatternSet if it's still used in any RegexMatchSet or if the RegexPatternSet is not empty.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RegexPatternSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 64)**

- The value returned by the most recent call to GetChangeToken (p. 87).
- Type: String
- Length Constraints: Minimum length of 1.
- Required: Yes

**RegexPatternSetId (p. 64)**

- The RegexPatternSetId of the RegexPatternSet (p. 450) that you want to delete. RegexPatternSetId is returned by CreateRegexPatternSet (p. 24) and by ListRegexPatternSets (p. 134).
- Type: String
- Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 64)**

- The ChangeToken that you used to submit the DeleteRegexPatternSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).
Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DeleteRule
Service: AWS WAF

Permanently deletes a Rule (p. 453). You can't delete a Rule if it's still used in any WebACL objects or if it still includes any predicates, such as ByteMatchSet objects.

If you just want to remove a Rule from a WebACL, use UpdateWebACL (p. 195).

To permanently delete a Rule from AWS WAF, perform the following steps:

1. Update the Rule to remove predicates, if any. For more information, see UpdateRule (p. 178).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteRule request.
3. Submit a DeleteRule request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 67)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

RuleId (p. 67)

The RuleId of the Rule (p. 453) that you want to delete. RuleId is returned by CreateRule (p. 27) and by ListRules (p. 138).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

ChangeToken (p. 67)

The ChangeToken that you used to submit the DeleteRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRuleGroup

Service: AWS WAF

Permanently deletes a RuleGroup (p. 455). You can't delete a RuleGroup if it's still used in any WebACL objects or if it still includes any rules.

If you just want to remove a RuleGroup from a WebACL, use UpdateWebACL (p. 195).

To permanently delete a RuleGroup from AWS WAF, perform the following steps:

1. Update the RuleGroup to remove rules, if any. For more information, see UpdateRuleGroup (p. 182).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteRuleGroup request.
3. Submit a DeleteRuleGroup request.

Request Syntax

```
{
   "ChangeToken": "string",
   "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 70)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RuleGroupId (p. 70)**

The RuleGroupId of the RuleGroup (p. 455) that you want to delete. RuleGroupId is returned by CreateRuleGroup (p. 31) and by ListRuleGroups (p. 136).

Type: String


Required: Yes

Response Syntax

```
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 70)**

The ChangeToken that you used to submit the DeleteRuleGroup request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteSizeConstraintSet
Service: AWS WAF

Permanently deletes a SizeConstraintSet (p. 466). You can't delete a SizeConstraintSet if it's still used in any Rules or if it still includes any SizeConstraint (p. 463) objects (any filters).

If you just want to remove a SizeConstraintSet from a Rule, use UpdateRule (p. 178).

To permanently delete a SizeConstraintSet, perform the following steps:

1. Update the SizeConstraintSet to remove filters, if any. For more information, see UpdateSizeConstraintSet (p. 186).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteSizeConstraintSet request.
3. Submit a DeleteSizeConstraintSet request.

Request Syntax

```
{
    "ChangeToken": "string",
    "SizeConstraintSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 73)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SizeConstraintSetId (p. 73)**

The SizeConstraintSetId of the SizeConstraintSet (p. 466) that you want to delete. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 34) and by ListSizeConstraintSets (p. 140).

Type: String


Required: Yes

Response Syntax

```
{
    "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 73)**

The `ChangeToken` that you used to submit the `DeleteSizeConstraintSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete a `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteSqlInjectionMatchSet

Service: AWS WAF

Permanently deletes a SqlInjectionMatchSet (p. 469). You can't delete a SqlInjectionMatchSet if it's still used in any Rules or if it still contains any SqlInjectionMatchTuple (p. 472) objects.

If you just want to remove a SqlInjectionMatchSet from a Rule, use UpdateRule (p. 178).

To permanently delete a SqlInjectionMatchSet from AWS WAF, perform the following steps:

1. Update the SqlInjectionMatchSet to remove filters, if any. For more information, see UpdateSqlInjectionMatchSet (p. 191).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteSqlInjectionMatchSet request.
3. Submit a DeleteSqlInjectionMatchSet request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "SqlInjectionMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 76)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SqlInjectionMatchSetId (p. 76)**

The SqlInjectionMatchSetId of the SqlInjectionMatchSet (p. 469) that you want to delete. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 37) and by ListSqlInjectionMatchSets (p. 142).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 76)**

The `ChangeToken` that you used to submit the `DeleteSqlInjectionMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

- Type: String
- Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see *Common Errors (p. 561)*.

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**DeleteWebACL**

*Service: AWS WAF*

Permanently deletes a WebACL (p. 478). You can't delete a WebACL if it still contains any Rules.

To delete a WebACL, perform the following steps:

1. Update the WebACL to remove Rules, if any. For more information, see UpdateWebACL (p. 195).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteWebACL request.
3. Submit a DeleteWebACL request.

**Request Syntax**

```json
{
    "ChangeToken": "string",
    "WebACLId": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 79)**

The value returned by the most recent call to GetChangeToken (p. 87).

- Type: String
- Length Constraints: Minimum length of 1.
- Required: Yes

**WebACLId (p. 79)**

The WebACLId of the WebACL (p. 478) that you want to delete. WebACLId is returned by CreateWebACL (p. 40) and by ListWebACLs (p. 146).

- Type: String
- Required: Yes

**Response Syntax**

```json
{
    "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 79)**

The ChangeToken that you used to submit the DeleteWebACL request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteXssMatchSet

Service: AWS WAF

Permanently deletes an XssMatchSet (p. 482). You can't delete an XssMatchSet if it's still used in any Rules or if it still contains any XssMatchTuple (p. 485) objects.

If you just want to remove an XssMatchSet from a Rule, use UpdateRule (p. 178).

To permanently delete an XssMatchSet from AWS WAF, perform the following steps:

1. Update the XssMatchSet to remove filters, if any. For more information, see UpdateXssMatchSet (p. 200).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of a DeleteXssMatchSet request.
3. Submit a DeleteXssMatchSet request.

Request Syntax

```
{
  "ChangeToken": "string",
  "XssMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 82)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**XssMatchSetId (p. 82)**

The XssMatchSetId of the XssMatchSet (p. 482) that you want to delete. XssMatchSetId is returned by CreateXssMatchSet (p. 44) and by ListXssMatchSets (p. 148).

Type: String


Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 82)

The ChangeToken that you used to submit the DeleteXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetByteMatchSet

Service: AWS WAF

Returns the ByteMatchSet (p. 418) specified by ByteMatchSetId.

Request Syntax

```
{
  "ByteMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ByteMatchSetId (p. 85)**

The ByteMatchSetId of the ByteMatchSet (p. 418) that you want to get. ByteMatchSetId is returned by CreateByteMatchSet (p. 7) and by ListByteMatchSets (p. 124).

Type: String


Required: Yes

Response Syntax

```
{
  "ByteMatchSet": {
    "ByteMatchSetId": "string",
    "ByteMatchTuples": [
    {
      "FieldToMatch": {
        "Data": "string",
        "Type": "string"
      },
      "PositionalConstraint": "string",
      "TargetString": blob,
      "TextTransformation": "string"
    },
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
ByteMatchSet (p. 85)

Information about the ByteMatchSet (p. 418) that you specified in the GetByteMatchSet request. For more information, see the following topics:

- ByteMatchSet (p. 418): Contains ByteMatchSetId, ByteMatchTuples, and Name
- ByteMatchTuples: Contains an array of ByteMatchTuple (p. 422) objects. Each ByteMatchTuple object contains FieldToMatch (p. 426), PositionalConstraint, TargetString, and TextTransformation
- FieldToMatch (p. 426): Contains Data and Type

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetChangeToken

Service: AWS WAF

When you want to create, update, or delete AWS WAF objects, get a change token and include the change token in the create, update, or delete request. Change tokens ensure that your application doesn't submit conflicting requests to AWS WAF.

Each create, update, or delete request must use a unique change token. If your application submits a GetChangeToken request and then submits a second GetChangeToken request before submitting a create, update, or delete request, the second GetChangeToken request returns the same value as the first GetChangeToken request.

When you use a change token in a create, update, or delete request, the status of the change token changes to PENDING, which indicates that AWS WAF is propagating the change to all AWS WAF servers. Use GetChangeTokenStatus to determine the status of your change token.

Response Syntax

```
{
   "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 87)**

The ChangeToken that you used in the request. Use this value in a GetChangeTokenStatus request to get the current status of the request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetChangeTokenStatus
Service: AWS WAF

Returns the status of a ChangeToken that you got by calling GetChangeToken (p. 87). ChangeTokenStatus is one of the following values:

- **PROVISIONED**: You requested the change token by calling GetChangeToken, but you haven't used it yet in a call to create, update, or delete an AWS WAF object.
- **PENDING**: AWS WAF is propagating the create, update, or delete request to all AWS WAF servers.
- **IN_SYNC**: Propagation is complete.

**Request Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 89)**

The change token for which you want to get the status. This change token was previously returned in the GetChangeToken response.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Response Syntax**

```json
{
   "ChangeTokenStatus": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeTokenStatus (p. 89)**

The status of the change token.

Type: String

Valid Values: PROVISIONED | PENDING | INSYNC
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetGeoMatchSet
Service: AWS WAF

Returns the GeoMatchSet (p. 428) that is specified by GeoMatchSetId.

Request Syntax

```
{
   "GeoMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

GeoMatchSetId (p. 91)

The GeoMatchSetId of the GeoMatchSet (p. 428) that you want to get. GeoMatchSetId is returned by CreateGeoMatchSet (p. 10) and by ListGeoMatchSets (p. 126).

Type: String
Required: Yes

Response Syntax

```
{
   "GeoMatchSet": {
      "GeoMatchConstraints": [
         {
            "Type": "string",
            "Value": "string"
         }
      ],
      "GeoMatchSetId": "string",
      "Name": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

GeoMatchSet (p. 91)

Information about the GeoMatchSet (p. 428) that you specified in the GetGeoMatchSet request. This includes the Type, which for a GeoMatchContraint is always Country, as well as the Value, which is the identifier for a specific country.

Type: GeoMatchSet (p. 428) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetIPSet
Service: AWS WAF

Returns the IPSet (p. 434) that is specified by IPSetId.

Request Syntax

```json
{
    "IPSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**IPSetId (p. 93)**

The IPSetId of the IPSet (p. 434) that you want to get. IPSetId is returned by CreateIPSet (p. 13) and by ListIPSets (p. 128).

Type: String


Required: Yes

Response Syntax

```json
{
    "IPSet": {
        "IPSetDescriptors": [
            {
                "Type": "string",
                "Value": "string"
            }
        ],
        "IPSetId": "string",
        "Name": "string"
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**IPSet (p. 93)**

Information about the IPSet (p. 434) that you specified in the GetIPSet request. For more information, see the following topics:

- IPSet (p. 434): Contains IPSetDescriptors, IPSetId, and Name
- **IPSetDescriptors**: Contains an array of [IPSetDescriptor](#) objects. Each IPSetDescriptor object contains Type and Value

  Type: [IPSet](#) object

### Errors

For information about the errors that are common to all actions, see [Common Errors](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)
GetPermissionPolicy

Service: AWS WAF

Returns the IAM policy attached to the RuleGroup.

Request Syntax

```json
{
   "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ResourceArn (p. 95)**

The Amazon Resource Name (ARN) of the RuleGroup for which you want to get the policy.

Type: String


Required: Yes

Response Syntax

```json
{
   "Policy": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**Policy (p. 95)**

The IAM policy attached to the specified RuleGroup.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRateBasedRule
Service: AWS WAF

Returns the RateBasedRule (p. 441) that is specified by the RuleId that you included in the GetRateBasedRule request.

Request Syntax

```json
{
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleId (p. 97)**

The RuleId of the RateBasedRule (p. 441) that you want to get. RuleId is returned by CreateRateBasedRule (p. 16) and by ListRateBasedRules (p. 130).

Type: String


Required: Yes

Response Syntax

```json
{
   "Rule": {
      "MatchPredicates": [
         {
            "DataId": "string",
            "Negated": boolean,
            "Type": "string"
         },
         {
            "MetricName": "string",
            "Name": "string",
            "RateKey": "string",
            "RateLimit": number,
            "RuleId": "string"
         }
      ],
      "RuleId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
Rule (p. 97)

Information about the RateBasedRule (p. 441) that you specified in the GetRateBasedRule request.

Type: RateBasedRule (p. 441) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRateBasedRuleManagedKeys
Service: AWS WAF

Returns an array of IP addresses currently being blocked by the RateBasedRule (p. 441) that is specified by the RuleId. The maximum number of managed keys that will be blocked is 10,000. If more than 10,000 addresses exceed the rate limit, the 10,000 addresses with the highest rates will be blocked.

Request Syntax

```json
{"NextMarker": "string",
"RuleId": "string"}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**NextMarker (p. 99)**

A null value and not currently used. Do not include this in your request.

- Type: String
- Length Constraints: Minimum length of 1.
- Required: No

**RuleId (p. 99)**

The RuleId of the RateBasedRule (p. 441) for which you want to get a list of ManagedKeys. RuleId is returned by CreateRateBasedRule (p. 16) and by ListRateBasedRules (p. 130).

- Type: String
- Required: Yes

Response Syntax

```json
{"ManagedKeys": ["string"],
"NextMarker": "string"}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ManagedKeys (p. 99)**

An array of IP addresses that currently are blocked by the specified RateBasedRule (p. 441).
Type: Array of strings

**NextMarker (p. 99)**

A null value and not currently used.

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFAvailableAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFAvailableParameterException**

The operation failed because AWS WAF didn’t recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFAvailableNonexistentItemException**

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetRegexMatchSet

Service: AWS WAF

Returns the RegexMatchSet (p. 443) specified by RegexMatchSetId.

Request Syntax

```
{
  "RegexMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RegexMatchSetId (p. 102)**

The RegexMatchSetId of the RegexMatchSet (p. 443) that you want to get. RegexMatchSetId is returned by CreateRegexMatchSet (p. 21) and by ListRegexMatchSets (p. 132).

Type: String


Required: Yes

Response Syntax

```
{
  "RegexMatchSet": {
    "Name": "string",
    "RegexMatchSetId": "string",
    "RegexMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "RegexPatternSetId": "string",
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**RegexMatchSet (p. 102)**

Information about the RegexMatchSet (p. 443) that you specified in the GetRegexMatchSet request. For more information, see RegexMatchTuple (p. 447).
Type: RegexMatchSet (p. 443) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRegexPatternSet

Service: AWS WAF

Returns the RegexPatternSet (p. 450) specified by RegexPatternSetId.

Request Syntax

```
{
  "RegexPatternSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

RegexPatternSetId (p. 104)

The RegexPatternSetId of the RegexPatternSet (p. 450) that you want to get. RegexPatternSetId is returned by CreateRegexPatternSet (p. 24) and by ListRegexPatternSets (p. 134).

Type: String


Required: Yes

Response Syntax

```
{
  "RegexPatternSet": {
    "Name": "string",
    "RegexPatternSetId": "string",
    "RegexPatternStrings": [ "string" ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

RegexPatternSet (p. 104)

Information about the RegexPatternSet (p. 450) that you specified in the GetRegexPatternSet request, including the identifier of the pattern set and the regular expression patterns you want AWS WAF to search for.

Type: RegexPatternSet (p. 450) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRule
Service: AWS WAF

Returns the Rule (p. 453) that is specified by the RuleId that you included in the GetRule request.

Request Syntax

```json
{
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleId (p. 106)**

The RuleId of the Rule (p. 453) that you want to get. RuleId is returned by CreateRule (p. 27) and by ListRules (p. 138).

Type: String
Required: Yes

Response Syntax

```json
{
   "Rule": {
      "MetricName": "string",
      "Name": "string",
      "Predicates": [
      {
         "DataId": "string",
         "Negated": boolean,
         "Type": "string"
      }
      ],
      "RuleId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**Rule (p. 106)**

Information about the Rule (p. 453) that you specified in the GetRule request. For more information, see the following topics:
• **Rule (p. 453):** Contains MetricName, Name, an array of Predicate objects, and RuleId
• **Predicate (p. 439):** Each Predicate object contains DataId, Negated, and Type

Type: `Rule (p. 453)` object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetRuleGroup
Service: AWS WAF

Returns the RuleGroup (p. 455) that is specified by the RuleGroupId that you included in the GetRuleGroup request.

To view the rules in a rule group, use ListActivatedRulesInRuleGroup (p. 121).

Request Syntax

```
{
   "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleGroupId (p. 108)**

The RuleGroupId of the RuleGroup (p. 455) that you want to get. RuleGroupId is returned by CreateRuleGroup (p. 31) and by ListRuleGroups (p. 136).

Type: String


Required: Yes

Response Syntax

```
{
   "RuleGroup": {
      "MetricName": "string",
      "Name": "string",
      "RuleGroupId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**RuleGroup (p. 108)**

Information about the RuleGroup (p. 455) that you specified in the GetRuleGroup request.

Type: RuleGroup (p. 455) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSampledRequests

Service: AWS WAF

Gets detailed information about a specified number of requests—a sample—that AWS WAF randomly
selects from among the first 5,000 requests that your AWS resource received during a time range that
you choose. You can specify a sample size of up to 500 requests, and you can specify any time range in
the previous three hours.

GetSampledRequests returns a time range, which is usually the time range that you specified.
However, if your resource (such as a CloudFront distribution) received 5,000 requests before the specified
time range elapsed, GetSampledRequests returns an updated time range. This new time range
indicates the actual period during which AWS WAF selected the requests in the sample.

Request Syntax

```
{  
  "MaxItems": number,
  "RuleId": "string",
  "TimeWindow": {  
    "EndTime": number,
    "StartTime": number
  },
  "WebAclId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

MaxItems (p. 110)

The number of requests that you want AWS WAF to return from among the first 5,000 requests that
your AWS resource received during the time range. If your resource received fewer requests than the
value of MaxItems, GetSampledRequests returns information about all of them.

Type: Long


Required: Yes

RuleId (p. 110)

RuleId is one of three values:

- The RuleId of the Rule or the RuleGroupId of the RuleGroup for which you want
  GetSampledRequests to return a sample of requests.

- Default_Action, which causes GetSampledRequests to return a sample of the requests that
didn't match any of the rules in the specified WebACL.

Type: String


Required: Yes
TimeWindow (p. 110)

The start date and time and the end date and time of the range for which you want `GetSampledRequests` to return a sample of requests. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: `TimeWindow (p. 475)` object

Required: Yes

WebAclId (p. 110)

The `WebAclId` of the `WebACL` for which you want `GetSampledRequests` to return a sample of requests.

Type: String


Required: Yes

Response Syntax

```
{
    "PopulationSize": number,
    "SampledRequests": [
    {
        "Action": "string",
        "Request": {
            "ClientIP": "string",
            "Country": "string",
            "Headers": [
                {
                    "Name": "string",
                    "Value": "string"
                }
            ],
            "HTTPVersion": "string",
            "Method": "string",
            "URI": "string"
        },
        "RuleWithinRuleGroup": "string",
        "Timestamp": number,
        "Weight": number
    }
    ],
    "TimeWindow": {
        "EndTime": number,
        "StartTime": number
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
PopulationSize (p. 111)

The total number of requests from which GetSampledRequests got a sample of MaxItems requests. If PopulationSize is less than MaxItems, the sample includes every request that your AWS resource received during the specified time range.

Type: Long

SampledRequests (p. 111)

A complex type that contains detailed information about each of the requests in the sample.

Type: Array of SampledHTTPRequest (p. 461) objects

TimeWindow (p. 111)

Usually, TimeWindow is the time range that you specified in the GetSampledRequests request. However, if your AWS resource received more than 5,000 requests during the time range that you specified in the request, GetSampledRequests returns the time range for the first 5,000 requests.

Type: TimeWindow (p. 475) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSizeConstraintSet
Service: AWS WAF

Returns the SizeConstraintSet (p. 466) specified by SizeConstraintSetId.

Request Syntax

```
{
   "SizeConstraintSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

SizeConstraintSetId (p. 113)

The SizeConstraintSetId of the SizeConstraintSet (p. 466) that you want to get. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 34) and by ListSizeConstraintSets (p. 140).

Type: String


Required: Yes

Response Syntax

```
{
   "SizeConstraintSet": {
      "Name": "string",
      "SizeConstraints": [
         {
            "ComparisonOperator": "string",
            "FieldToMatch": {
               "Data": "string",
               "Type": "string"
            },
            "Size": number,
            "TextTransformation": "string"
         }
      ],
      "SizeConstraintSetId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
SizeConstraintSet (p. 113)

Information about the SizeConstraintSet (p. 466) that you specified in the GetSizeConstraintSet request. For more information, see the following topics:

- **SizeConstraintSet (p. 466):** Contains SizeConstraintSetId, SizeConstraints, and Name
- **SizeConstraints:** Contains an array of SizeConstraint (p. 463) objects. Each SizeConstraint object contains FieldToMatch (p. 426), TextTransformation, ComparisonOperator, and Size
- **FieldToMatch (p. 426):** Contains Data and Type

Type: SizeConstraintSet (p. 466) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSqlInjectionMatchSet

Service: AWS WAF

Returns the SqlInjectionMatchSet (p. 469) that is specified by SqlInjectionMatchSetId.

Request Syntax

```
{
  "SqlInjectionMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**SqlInjectionMatchSetId (p. 115)**

The SqlInjectionMatchSetId of the SqlInjectionMatchSet (p. 469) that you want to get. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 37) and by ListSqlInjectionMatchSets (p. 142).

Type: String


Required: Yes

Response Syntax

```
{
  "SqlInjectionMatchSet": {
    "Name": "string",
    "SqlInjectionMatchSetId": "string",
    "SqlInjectionMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**SqlInjectionMatchSet (p. 115)**

Information about the SqlInjectionMatchSet (p. 469) that you specified in the GetSqlInjectionMatchSet request. For more information, see the following topics:
• `SqlInjectionMatchSet (p. 469)`: Contains Name, SqlInjectionMatchSetId, and an array of SqlInjectionMatchTuple objects
• `SqlInjectionMatchTuple (p. 472)`: Each SqlInjectionMatchTuple object contains FieldToMatch and TextTransformation
• `FieldToMatch (p. 426)`: Contains Data and Type

Type: `SqlInjectionMatchSet (p. 469)` object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetWebACL
Service: AWS WAF

Returns the WebACL (p. 478) that is specified by WebACLId.

Request Syntax

```
{
  "WebACLId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**WebACLId** (p. 117)

- **Description**: The WebACLId of the WebACL (p. 478) that you want to get. `WebACLId` is returned by `CreateWebACL` (p. 40) and by `ListWebACLs` (p. 146).
- **Type**: String
- **Length Constraints**: Minimum length of 1. Maximum length of 128.
- **Required**: Yes

Response Syntax

```
{
  "WebACL": {
    "DefaultAction": {
      "Type": "string"
    },
    "MetricName": "string",
    "Name": "string",
    "Rules": [
      {
        "Action": {
          "Type": "string"
        },
        "OverrideAction": {
          "Type": "string"
        },
        "Priority": number,
        "RuleId": "string",
        "Type": "string"
      }
    ],
    "WebACLId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**WebACL (p. 117)**

Information about the WebACL (p. 478) that you specified in the GetWebACL request. For more information, see the following topics:

- **WebACL (p. 478):** Contains DefaultAction, MetricName, Name, an array of Rule objects, and WebACLId
- **DefaultAction (Data type is WafAction (p. 476)):** Contains Type
- **Rules: Contains an array of ActivatedRule objects, which contain Action, Priority, and RuleId
- **Action: Contains Type

Type: WebACL (p. 478) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetXssMatchSet
Service: AWS WAF

Returns the XssMatchSet (p. 482) that is specified by XssMatchSetId.

Request Syntax

```json
{
   "XssMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**XssMatchSetId (p. 119)**

The XssMatchSetId of the XssMatchSet (p. 482) that you want to get. XssMatchSetId is returned by CreateXssMatchSet (p. 44) and by ListXssMatchSets (p. 148).

Type: String


Required: Yes

Response Syntax

```json
{
   "XssMatchSet": {
      "Name": "string",
      "XssMatchSetId": "string",
      "XssMatchTuples": [
         {
            "FieldToMatch": {
               "Data": "string",
               "Type": "string"
            },
            "TextTransformation": "string"
         }
      ]
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**XssMatchSet (p. 119)**

Information about the XssMatchSet (p. 482) that you specified in the GetXssMatchSet request. For more information, see the following topics:
• **XssMatchSet (p. 482):** Contains Name, XssMatchSetId, and an array of XssMatchTuple objects

• **XssMatchTuple (p. 485):** Each XssMatchTuple object contains FieldToMatch and TextTransformation

• **FieldToMatch (p. 426):** Contains Data and Type

  Type: XssMatchSet (p. 482) object

### Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
ListActivatedRulesInRuleGroup
Service: AWS WAF
Returns an array of ActivatedRule (p. 416) objects.

Request Syntax

```json
{
   "Limit": number,
   "NextMarker": "string",
   "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 121)

Specifies the number of ActivatedRules that you want AWS WAF to return for this request. If you have more ActivatedRules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of ActivatedRules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 121)

If you specify a value for Limit and you have more ActivatedRules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ActivatedRules. For the second and subsequent ListActivatedRulesInRuleGroup requests, specify the value of NextMarker from the previous response to get information about another batch of ActivatedRules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

RuleGroupId (p. 121)

The RuleGroupId of the RuleGroup (p. 455) for which you want to get a list of ActivatedRule (p. 416) objects.

Type: String


Required: No

Response Syntax

```json
{
   
```
"ActivatedRules": [  
  
  "Action": {  
    "Type": "string"  
  },  
  "OverrideAction": {  
    "Type": "string"  
  },  
  "Priority": number,  
  "RuleId": "string",  
  "Type": "string" 
},  

"NextMarker": "string" 

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ActivatedRules (p. 121)

An array of ActivatedRules objects.

Type: Array of ActivatedRule (p. 416) objects

NextMarker (p. 121)

If you have more ActivatedRules than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more ActivatedRules, submit another ListActivatedRulesInRuleGroup request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
• You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
ListByteMatchSets
Service: AWS WAF

Returns an array of ByteMatchSetSummary (p. 420) objects.

Request Syntax

```json
{
    "Limit": number,
    "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 124)

Specifies the number of ByteMatchSet objects that you want AWS WAF to return for this request. If you have more ByteMatchSets objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of ByteMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 124)

If you specify a value for Limit and you have more ByteMatchSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ByteMatchSets. For the second and subsequent ListByteMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of ByteMatchSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
    "ByteMatchSets": [
        {
            "ByteMatchSetId": "string",
            "Name": "string"
        }
    ],
    "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

**ByteMatchSets (p. 124)**

An array of `ByteMatchSetSummary (p. 420)` objects.

Type: Array of `ByteMatchSetSummary (p. 420)` objects

**NextMarker (p. 124)**

If you have more `ByteMatchSet` objects than the number that you specified for `Limit` in the request, the response includes a `NextMarker` value. To list more `ByteMatchSet` objects, submit another `ListByteMatchSets` request, and specify the `NextMarker` value from the response in the `NextMarker` value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#). 

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListGeoMatchSets
Service: AWS WAF

Returns an array of GeoMatchSetSummary (p. 429) objects in the response.

Request Syntax

```json
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 126)**

Specifies the number of GeoMatchSet objects that you want AWS WAF to return for this request. If you have more GeoMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of GeoMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 126)**

If you specify a value for Limit and you have more GeoMatchSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of GeoMatchSet objects. For the second and subsequent ListGeoMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of GeoMatchSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
   "GeoMatchSets": [
      {
         "GeoMatchSetId": "string",
         "Name": "string"
      }
   ],
   "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

GeoMatchSets (p. 126)

An array of GeoMatchSetSummary (p. 429) objects.

Type: Array of GeoMatchSetSummary (p. 429) objects

NextMarker (p. 126)

If you have more GeoMatchSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more GeoMatchSet objects, submit another ListGeoMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListIPSets
Service: AWS WAF

Returns an array of IPSetSummary objects in the response.

Request Syntax

```
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

Limit (p. 128)

Specifies the number of IPSet objects that you want AWS WAF to return for this request. If you have more IPSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of IPSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 128)

If you specify a value for Limit and you have more IPSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of IPSets. For the second and subsequent ListIPSets requests, specify the value of NextMarker from the previous response to get information about another batch of IPSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
   "IPSets": [
      {
         "IPSetId": "string",
         "Name": "string"
      }
   ],
   "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**IPSets (p. 128)**

An array of IPSetSummary (p. 437) objects.

Type: Array of IPSetSummary (p. 437) objects

**NextMarker (p. 128)**

If you have more IPSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more IPSet objects, submit another ListIPSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRateBasedRules
Service: AWS WAF

Returns an array of RuleSummary (p. 459) objects.

Request Syntax

```
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 130)**

Specifies the number of Rules that you want AWS WAF to return for this request. If you have more Rules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 130)**

If you specify a value for Limit and you have more Rules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of Rules. For the second and subsequent ListRateBasedRules requests, specify the value of NextMarker from the previous response to get information about another batch of Rules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
   "NextMarker": "string",
   "Rules": [
      {
         "Name": "string",
         "RuleId": "string"
      }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 130)

If you have more Rules than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more Rules, submit another ListRateBasedRules request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Rules (p. 130)

An array of RuleSummary (p. 459) objects.

Type: Array of RuleSummary (p. 459) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRegexMatchSets

Service: AWS WAF

Returns an array of RegexMatchSetSummary (p. 445) objects.

Request Syntax

```
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 132)**

Specifies the number of RegexMatchSet objects that you want AWS WAF to return for this request. If you have more RegexMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RegexMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 132)**

If you specify a value for Limit and you have more RegexMatchSet objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ByteMatchSets. For the second and subsequent ListRegexMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of RegexMatchSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
   "NextMarker": "string",
   "RegexMatchSets": [
      {
         "Name": "string",
         "RegexMatchSetId": "string"
      }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 132)

If you have more RegexMatchSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RegexMatchSet objects, submit another ListRegexMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

RegexMatchSets (p. 132)

An array of RegexMatchSetSummary (p. 445) objects.

Type: Array of RegexMatchSetSummary (p. 445) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRegexPatternSets

Service: AWS WAF

Returns an array of RegexPatternSetSummary (p. 451) objects.

Request Syntax

```json
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 134)

Specifies the number of RegexPatternSet objects that you want AWS WAF to return for this request. If you have more RegexPatternSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RegexPatternSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 134)

If you specify a value for Limit and you have more RegexPatternSet objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of RegexPatternSet objects. For the second and subsequent ListRegexPatternSets requests, specify the value of NextMarker from the previous response to get information about another batch of RegexPatternSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
   "NextMarker": "string",
   "RegexPatternSets": [
   {
      "Name": "string",
      "RegexPatternSetId": "string"
   }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 134)**

If you have more RegexPatternSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RegexPatternSet objects, submit another ListRegexPatternSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**RegexPatternSets (p. 134)**

An array of RegexPatternSetSummary (p. 451) objects.

Type: Array of RegexPatternSetSummary (p. 451) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**ListRuleGroups**

Service: AWS WAF

Returns an array of RuleGroup (p. 455) objects.

**Request Syntax**

```json
{
   "Limit": number,
   "NextMarker": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 136)**

Specifies the number of RuleGroups that you want AWS WAF to return for this request. If you have more RuleGroups than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RuleGroups.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 136)**

If you specify a value for Limit and you have more RuleGroups than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of RuleGroups. For the second and subsequent ListRuleGroups requests, specify the value of NextMarker from the previous response to get information about another batch of RuleGroups.

Type: String

Length Constraints: Minimum length of 1.

Required: No

**Response Syntax**

```json
{
   "NextMarker": "string",
   "RuleGroups": [
      {
         "Name": "string",
         "RuleGroupId": "string"
      }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 136)

If you have more RuleGroups than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RuleGroups, submit another ListRuleGroups request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

RuleGroups (p. 136)

An array of RuleGroup (p. 455) objects.

Type: Array of RuleGroupSummary (p. 457) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRules
Service: AWS WAF

Returns an array of RuleSummary (p. 459) objects.

Request Syntax

```json
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 138)**

Specifies the number of Rules that you want AWS WAF to return for this request. If you have more Rules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 138)**

If you specify a value for Limit and you have more Rules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of Rules. For the second and subsequent ListRules requests, specify the value of NextMarker from the previous response to get information about another batch of Rules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
  "NextMarker": "string",
  "Rules": [
    {
      "Name": "string",
      "RuleId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 138)**

If you have more Rules than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more Rules, submit another ListRules request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**Rules (p. 138)**

An array of RuleSummary (p. 459) objects.

Type: Array of RuleSummary (p. 459) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSizeConstraintSets

Service: AWS WAF

Returns an array of SizeConstraintSetSummary (p. 467) objects.

Request Syntax

```json
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 140)**

Specifies the number of SizeConstraintSet objects that you want AWS WAF to return for this request. If you have more SizeConstraintSets objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of SizeConstraintSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 140)**

If you specify a value for Limit and you have more SizeConstraintSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of SizeConstraintSets. For the second and subsequent ListSizeConstraintSets requests, specify the value of NextMarker from the previous response to get information about another batch of SizeConstraintSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
  "NextMarker": "string",
  "SizeConstraintSets": [
    {
      "Name": "string",
      "SizeConstraintSetId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 140)**

If you have more `SizeConstraintSet` objects than the number that you specified for `Limit` in the request, the response includes a `NextMarker` value. To list more `SizeConstraintSet` objects, submit another ListSizeConstraintSets request, and specify the `NextMarker` value from the response in the `NextMarker` value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**SizeConstraintSets (p. 140)**

An array of `SizeConstraintSetSummary (p. 467)` objects.

Type: Array of `SizeConstraintSetSummary (p. 467)` objects

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 561)].

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSqlInjectionMatchSets

Service: AWS WAF

Returns an array of SqlInjectionMatchSet (p. 469) objects.

Request Syntax

```json
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 142)

Specifies the number of SqlInjectionMatchSet (p. 469) objects that you want AWS WAF to return for this request. If you have more SqlInjectionMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 142)

If you specify a value for Limit and you have more SqlInjectionMatchSet (p. 469) objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of SqlInjectionMatchSets. For the second and subsequent ListSqlInjectionMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of SqlInjectionMatchSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
  "NextMarker": "string",
  "SqlInjectionMatchSets": [
    {
      "Name": "string",
      "SqlInjectionMatchSetId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 142)

If you have more SqlInjectionMatchSet (p. 469) objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more SqlInjectionMatchSet objects, submit another ListSqlInjectionMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String
Length Constraints: Minimum length of 1.

SqlInjectionMatchSets (p. 142)

An array of SqlInjectionMatchSetSummary (p. 470) objects.

Type: Array of SqlInjectionMatchSetSummary (p. 470) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSubscribedRuleGroups

Service: AWS WAF

Returns an array of RuleGroup objects that you are subscribed to.

Request Syntax

```json
{
    "Limit": number,
    "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

Limit

Specifies the number of subscribed rule groups that you want AWS WAF to return for this request. If you have more objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker

If you specify a value for Limit and you have more ByteMatchSetssubscribed rule groups than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of subscribed rule groups. For the second and subsequent ListSubscribedRuleGroupsRequest requests, specify the value of NextMarker from the previous response to get information about another batch of subscribed rule groups.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
    "NextMarker": "string",
    "RuleGroups": [
        {
            "MetricName": "string",
            "Name": "string",
            "RuleGroupId": "string"
        }
    ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 144)**

If you have more objects than the number that you specified for `Limit` in the request, the response includes a `NextMarker` value. To list more objects, submit another `ListSubscribedRuleGroups` request, and specify the `NextMarker` value from the response in the `NextMarker` value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**RuleGroups (p. 144)**

An array of `RuleGroup` (p. 455) objects.

Type: Array of `SubscribedRuleGroupSummary` (p. 474) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListWebACLs
Service: AWS WAF

Returns an array of WebACLSummary (p. 480) objects in the response.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 146)**

Specifies the number of WebACL objects that you want AWS WAF to return for this request. If you have more WebACL objects than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of WebACL objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 146)**

If you specify a value for Limit and you have more WebACL objects than the number that you specify for Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of WebACL objects. For the second and subsequent ListWebACLs requests, specify the value of NextMarker from the previous response to get information about another batch of WebACL objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
  "NextMarker": "string",
  "WebACLs": [
    {
      "Name": "string",
      "WebACLId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 146)

If you have more WebACL objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more WebACL objects, submit another ListWebACLs request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

WebACLs (p. 146)

An array of WebACLSummary (p. 480) objects.

Type: Array of WebACLSummary (p. 480) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListXssMatchSets
Service: AWS WAF

Returns an array of XssMatchSet (p. 482) objects.

Request Syntax

```json
{
    "Limit": number,
    "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 148)**

Specifies the number of XssMatchSet (p. 482) objects that you want AWS WAF to return for this request. If you have more XssMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 148)**

If you specify a value for Limit and you have more XssMatchSet (p. 482) objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of XssMatchSets. For the second and subsequent ListXssMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of XssMatchSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
    "NextMarker": "string",
    "XssMatchSets": [
    {
        "Name": "string",
        "XssMatchSetId": "string"
    }
    ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

**NextMarker (p. 148)**

If you have more XssMatchSet (p. 482) objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more XssMatchSet objects, submit another ListXssMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**XssMatchSets (p. 148)**

An array of XssMatchSetSummary (p. 483) objects.

Type: Array of XssMatchSetSummary (p. 483) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
PutPermissionPolicy
Service: AWS WAF

Attaches a IAM policy to the specified resource. The only supported use for this action is to share a RuleGroup across accounts.

The PutPermissionPolicy is subject to the following restrictions:

- You can attach only one policy with each PutPermissionPolicy request.
- The policy must include an Effect, Action and Principal.
- Effect must specify Allow.
- The Action in the policy must be waf:UpdateWebACL, waf-regional:UpdateWebACL, waf:GetRuleGroup and waf-regional:GetRuleGroup. Any extra or wildcard actions in the policy will be rejected.
- The policy cannot include a Resource parameter.
- The ARN in the request must be a valid WAF RuleGroup ARN and the RuleGroup must exist in the same region.
- The user making the request must be the owner of the RuleGroup.
- Your policy must be composed using IAM Policy version 2012-10-17.

For more information, see IAM Policies.

An example of a valid policy parameter is shown in the Examples section below.

Request Syntax

```
{
    "Policy": "string",
    "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Policy (p. 150)

The policy to attach to the specified RuleGroup.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

ResourceArn (p. 150)

The Amazon Resource Name (ARN) of the RuleGroup to which you want to attach the policy.

Type: String

Required: Yes

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidPermissionPolicyException**

The operation failed because the specified policy is not in the proper format.

The policy is subject to the following restrictions:

- You can attach only one policy with each PutPermissionPolicy request.
- The policy must include an Effect, Action and Principal.
- Effect must specify Allow.
- The Action in the policy must be waf:UpdateWebACL, waf-regional:UpdateWebACL, waf:GetRuleGroup and waf-regional:GetRuleGroup. Any extra or wildcard actions in the policy will be rejected.
- The policy cannot include a Resource parameter.
- The ARN in the request must be a valid WAF RuleGroup ARN and the RuleGroup must exist in the same region.
- The user making the request must be the owner of the RuleGroup.
- Your policy must be composed using IAM Policy version 2012-10-17.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**Examples**

**Example policy parameter - No escape characters**

```json
{
   "Version": "2012-10-17",
   "Statement": [
```
PutPermissionPolicy

```json
{
  "Effect": "Allow",
  "Principal": {
    "AWS": "arn:aws:iam::111111111111:user/MyUserName"
  },
  "Action": [
    "waf:UpdateWebACL",
    "waf-regional:UpdateWebACL",
    "waf:GetRuleGroup",
    "waf-regional:GetRuleGroup"
  ]
}
```

Example policy parameter - AWS Command Line Interface (CLI)

```json
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateByteMatchSet

Service: AWS WAF

Inserts or deletes ByteMatchTuple (p. 422) objects (filters) in a ByteMatchSet (p. 418). For each ByteMatchTuple object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a ByteMatchSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to look for. For more information, including how you specify the values for the AWS WAF API and the AWS CLI or SDKs, see TargetString in the ByteMatchTuple (p. 422) data type.
- Where to look, such as at the beginning or the end of a query string.
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

For example, you can add a ByteMatchSetUpdate object that matches web requests in which User-Agent headers contain the string BadBot. You can then configure AWS WAF to block those requests.

To create and configure a ByteMatchSet, perform the following steps:

1. Create a ByteMatchSet. For more information, see CreateByteMatchSet (p. 7).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateByteMatchSet request.
3. Submit an UpdateByteMatchSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ByteMatchSetId": "string",
  "ChangeToken": "string",
  "Updates": [
    {
      "Action": "string",
      "ByteMatchTuple": {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "PositionalConstraint": "string",
        "TargetString": blob,
        "TextTransformation": "string"
      }
    }
  ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ByteMatchSetId (p. 153)**

The `ByteMatchSetId` of the `ByteMatchSet` (p. 418) that you want to update. `ByteMatchSetId` is returned by `CreateByteMatchSet (p. 7)` and by `ListByteMatchSets (p. 124).

Type: String


Required: Yes

**ChangeToken (p. 153)**

The value returned by the most recent call to `GetChangeToken (p. 87).`

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Updates (p. 153)**

An array of `ByteMatchSetUpdate` objects that you want to insert into or delete from a `ByteMatchSet` (p. 418). For more information, see the applicable data types:

- `ByteMatchSetUpdate (p. 421)`: Contains `Action` and `ByteMatchTuple`
- `ByteMatchTuple (p. 422)`: Contains `FieldToMatch`, `PositionalConstraint`, `TargetString`, and `TextTransformation`
- `FieldToMatch (p. 426)`: Contains `Data` and `Type`

Type: Array of `ByteMatchSetUpdate` (p. 421) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 154)**

The `ChangeToken` that you used to submit the `UpdateByteMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89).`
Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see [Common Errors](#).  

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**UpdateGeoMatchSet**

Service: AWS WAF

Inserts or deletes GeoMatchConstraint objects in an GeoMatchSet. For each GeoMatchConstraint object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change an GeoMatchConstraint object, you delete the existing object and add a new one.
- The **Type**. The only valid value for Type is **Country**.
- The **Value**, which is a two character code for the country to add to the GeoMatchConstraint object. Valid codes are listed in GeoMatchConstraint:Value (p. 427).

To create and configure an GeoMatchSet, perform the following steps:

1. Submit a CreateGeoMatchSet (p. 10) request.
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateGeoMatchSet (p. 157) request.
3. Submit an UpdateGeoMatchSet request to specify the country that you want AWS WAF to watch for.

When you update an GeoMatchSet, you specify the country that you want to add and/or the country that you want to delete. If you want to change a country, you delete the existing country and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
  "ChangeToken": "string",
  "GeoMatchSetId": "string",
  "Updates": [
    {
      "Action": "string",
      "GeoMatchConstraint": {
        "Type": "string",
        "Value": "string"
      }
    }
  ]
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 157)**

The value returned by the most recent call to GetChangeToken (p. 87).

- **Type**: String
- **Length Constraints**: Minimum length of 1.
Required: Yes

**GeoMatchSetId (p. 157)**

The GeoMatchSetId of the GeoMatchSet (p. 428) that you want to update. GeoMatchSetId is returned by CreateGeoMatchSet (p. 10) and by ListGeoMatchSets (p. 126).

Type: String


Required: Yes

**Updates (p. 157)**

An array of GeoMatchSetUpdate objects that you want to insert into or delete from an GeoMatchSet (p. 428). For more information, see the applicable data types:

- GeoMatchSetUpdate (p. 430): Contains Action and GeoMatchConstraint
- GeoMatchConstraint (p. 427): Contains Type and Value

You can have only one Type and Value per GeoMatchConstraint. To add multiple countries, include multiple GeoMatchSetUpdate objects in your request.

Type: Array of GeoMatchSetUpdate (p. 430) objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```
{
  "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 158)**

The ChangeToken that you used to submit the UpdateGeoMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400
WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400
WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
UpdateIPSet
Service: AWS WAF

Inserts or deletes IPSetDescriptor (p. 436) objects in an IPSet. For each IPSetDescriptor object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change an IPSetDescriptor object, you delete the existing object and add a new one.
- The IP address version, IPv4 or IPv6.
- The IP address in CIDR notation, for example, 192.0.2.0/24 (for the range of IP addresses from 192.0.2.0 to 192.0.2.255) or 192.0.2.44/32 (for the individual IP address 192.0.2.44).

AWS WAF supports /8, /16, /24, and /32 IP address ranges for IPv4, and /24, /32, /48, /56, /64 and /128 for IPv6. For more information about CIDR notation, see the Wikipedia entry Classless Inter-Domain Routing.

IPv6 addresses can be represented using any of the following formats:

- 1111:0000:0000:0000:0000:0000:0000:0111/128
- 1111:0::0:0:0:0:0:0111/128
- 1111::0111/128
- 1111::111/128
- 1111::111/128

You use an IPSet to specify which web requests you want to allow or block based on the IP addresses that the requests originated from. For example, if you’re receiving a lot of requests from one or a small number of IP addresses and you want to block the requests, you can create an IPSet that specifies those IP addresses, and then configure AWS WAF to block the requests.

To create and configure an IPSet, perform the following steps:

1. Submit a CreateIPSet (p. 13) request.
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 161) request.
3. Submit an UpdateIPSet request to specify the IP addresses that you want AWS WAF to watch for.

When you update an IPSet, you specify the IP addresses that you want to add and/or the IP addresses that you want to delete. If you want to change an IP address, you delete the existing IP address and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "IPSetId": "string",
  "Updates": [
    {
      "Action": "string",
      "IPSetDescriptor": {
        "Type": "string",
        "Value": "string"
      }
    }
  ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 161)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**IPSetId (p. 161)**

The IPSetId of the IPSet (p. 434) that you want to update. IPSetId is returned by CreateIPSet (p. 13) and by ListIPSets (p. 128).

Type: String


Required: Yes

**Updates (p. 161)**

An array of IPSetUpdate objects that you want to insert into or delete from an IPSet (p. 434). For more information, see the applicable data types:

- IPSetUpdate (p. 438): Contains Action and IPSetDescriptor
- IPSetDescriptor (p. 436): Contains Type and Value

Type: Array of IPSetUpdate (p. 438) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```
{
   "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
ChangeToken (p. 162)

The ChangeToken that you used to submit the UpdateIPSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.
HTTP Status Code: 400

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFNonexistentContainerException**

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

164
UpdateRateBasedRule

Service: AWS WAF

Inserts or deletes Predicate (p. 439) objects in a rule and updates the RateLimit in the rule.

Each Predicate object identifies a predicate, such as a ByteMatchSet (p. 418) or an IPSet (p. 434), that specifies the web requests that you want to block or count. The RateLimit specifies the number of requests every five minutes that triggers the rule.

If you add more than one predicate to a RateBasedRule, a request must match all the predicates and exceed the RateLimit to be counted or blocked. For example, suppose you add the following to a RateBasedRule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

Further, you specify a RateLimit of 15,000.

You then add the RateBasedRule to a WebACL and specify that you want to block requests that satisfy the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot. Further, requests that match these two conditions must be received at a rate of more than 15,000 every five minutes. If the rate drops below this limit, AWS WAF no longer blocks the requests.

As a second example, suppose you want to limit requests to a particular page on your site. To do this, you could add the following to a RateBasedRule:

- A ByteMatchSet with FieldToMatch of URI
- A PositionalConstraint of STARTS_WITH
- A TargetString of login

Further, you specify a RateLimit of 15,000.

By adding this RateBasedRule to a WebACL, you could limit requests to your login page without affecting the rest of your site.

Request Syntax

```json
{
    "ChangeToken": "string",
    "RateLimit": number,
    "RuleId": "string",
    "Updates": [
        {
            "Action": "string",
            "Predicate": {
                "DataId": "string",
                "Negated": boolean,
                "Type": "string"
            }
        }
    ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 165)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RateLimit (p. 165)**

The maximum number of requests, which have an identical value in the field specified by the RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

**RuleId (p. 165)**

The RuleId of the RateBasedRule that you want to update. RuleId is returned by CreateRateBasedRule and by ListRateBasedRules (p. 130).

Type: String


Required: Yes

**Updates (p. 165)**

An array of RuleUpdate objects that you want to insert into or delete from a RateBasedRule (p. 441).

Type: Array of RuleUpdate (p. 460) objects

Required: Yes

Response Syntax

```json
{
   "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 166)**

The ChangeToken that you used to submit the UpdateRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRegexMatchSet

Service: AWS WAF

Inserts or deletes RegexMatchTuple objects (filters) in a RegexMatchSet. For each RegexMatchSetUpdate object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a RegexMatchSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see RegexPatternSet.
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

For example, you can create a RegexPatternSet that matches any requests with User-Agent headers that contain the string B[a@]dB[00]. You can then configure AWS WAF to reject those requests.

To create and configure a RegexMatchSet, perform the following steps:

1. Create a RegexMatchSet. For more information, see CreateRegexMatchSet.
2. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRegexMatchSet request.
3. Submit an UpdateRegexMatchSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the identifier of the RegexPatternSet that contains the regular expression patterns you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
   "ChangeToken": "string",
   "RegexMatchSetId": "string",
   "Updates": [
      {
         "Action": "string",
         "RegexMatchTuple": {
            "FieldToMatch": {
               "Data": "string",
               "Type": "string"
            },
            "RegexPatternSetId": "string",
            "TextTransformation": "string"
         }
      }
   ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.
The request accepts the following data in JSON format.

**ChangeToken (p. 170)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RegexMatchSetId (p. 170)**

The RegexMatchSetId of the RegexMatchSet (p. 443) that you want to update.

RegexMatchSetId is returned by CreateRegexMatchSet (p. 21) and by ListRegexMatchSets (p. 132).

Type: String


Required: Yes

**Updates (p. 170)**

An array of RegexMatchSetUpdate objects that you want to insert into or delete from a RegexMatchSet (p. 443). For more information, see RegexMatchTuple (p. 447).

Type: Array of RegexMatchSetUpdate (p. 446) objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 171)**

The ChangeToken that you used to submit the UpdateRegexMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFDisallowedNameException

   The name specified is invalid.

   HTTP Status Code: 400

WAFInternalErrorException

   The operation failed because of a system problem, even though the request was valid. Retry your request.

   HTTP Status Code: 500

WAFInvalidAccountException

   The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

   HTTP Status Code: 400

WAFInvalidOperationException

   The operation failed because there was nothing to do. For example:
   • You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
   • You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
   • You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
   • You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
   • You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
   • You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

   HTTP Status Code: 400

WAFLimitsExceededException

   The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

   HTTP Status Code: 400

WAFNonexistentContainerException

   The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
   • You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
   • You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
   • You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
   • You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

   HTTP Status Code: 400

WAFNonexistentItemException

   The operation failed because the referenced object doesn't exist.

   HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRegexPatternSet

Service: AWS WAF

Inserts or deletes RegexPatternString objects in a RegexPatternSet (p. 450). For each RegexPatternString object, you specify the following values:

- Whether to insert or delete the RegexPatternString.
- The regular expression pattern that you want to insert or delete. For more information, see RegexPatternSet (p. 450).

For example, you can create a RegexPatternString such as B[a@]dB[00]t. AWS WAF will match this RegexPatternString to:

- BadBot
- BadB0t
- B@dBot
- B@dB0t

To create and configure a RegexPatternSet, perform the following steps:

1. Create a RegexPatternSet. For more information, see CreateRegexPatternSet (p. 24).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateRegexPatternSet request.
3. Submit an UpdateRegexPatternSet request to specify the regular expression pattern that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "RegexPatternSetId": "string",
    "Updates": [
        {
            "Action": "string",
            "RegexPatternString": "string"
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 174)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String
Length Constraints: Minimum length of 1.
Required: Yes
**RegexPatternSetId (p. 174)**

The RegexPatternSetId of the RegexPatternSet (p. 450) that you want to update. RegexPatternSetId is returned by CreateRegexPatternSet (p. 24) and by ListRegexPatternSets (p. 134).

Type: String
Required: Yes

**Updates (p. 174)**

An array of RegexPatternSetUpdate objects that you want to insert into or delete from a RegexPatternSet (p. 450).

Type: Array of RegexPatternSetUpdate (p. 452) objects
Array Members: Minimum number of 1 item.
Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 175)**

The ChangeToken that you used to submit the UpdateRegexPatternSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidRegexPatternException

The regular expression (regex) you specified in RegexPatternString is invalid.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRule
Service: AWS WAF

Inserts or deletes Predicate (p. 439) objects in a Rule. Each Predicate object identifies a predicate, such as a ByteMatchSet (p. 418) or an IPSet (p. 434), that specifies the web requests that you want to allow, block, or count. If you add more than one predicate to a Rule, a request must match all of the specifications to be allowed, blocked, or counted. For example, suppose you add the following to a Rule:

- A ByteMatchSet that matches the value BadBot in the User-Agent header
- An IPSet that matches the IP address 192.0.2.44

You then add the Rule to a WebACL and specify that you want to block requests that satisfy the Rule. For a request to be blocked, the User-Agent header in the request must contain the value BadBot and the request must originate from the IP address 192.0.2.44.

To create and configure a Rule, perform the following steps:

1. Create and update the predicates that you want to include in the Rule.
2. Create the Rule. See CreateRule (p. 27).
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 178) request.
4. Submit an UpdateRule request to add predicates to the Rule.

If you want to replace one ByteMatchSet or IPSet with another, you delete the existing one and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
    "ChangeToken": "string",
    "RuleId": "string",
    "Updates": [
        {
            "Action": "string",
            "Predicate": {
                "DataId": "string",
                "Negated": boolean,
                "Type": "string"
            }
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.
UpdateRule

ChangeToken (p. 178)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String
Length Constraints: Minimum length of 1.
Required: Yes

RuleId (p. 178)

The RuleId of the Rule that you want to update. RuleId is returned by CreateRule and by ListRules (p. 138).

Type: String
Required: Yes

Updates (p. 178)

An array of RuleUpdate objects that you want to insert into or delete from a Rule (p. 453). For more information, see the applicable data types:
- RuleUpdate (p. 460): Contains Action and Predicate
- Predicate (p. 439): Contains DataId, Negated, and Type
- FieldToMatch (p. 426): Contains Data and Type

Type: Array of RuleUpdate (p. 460) objects
Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 179)

The ChangeToken that you used to submit the UpdateRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFNonexistentContainerException**

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
AWS WAF API Reference
UpdateRule

• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400
WAFNonexistentItemException
The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400
WAFReferencedItemException
The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException
The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
**UpdateRuleGroup**

Service: AWS WAF

Inserts or deletes ActivatedRule (p. 416) objects in a RuleGroup.

You can only insert REGULAR rules into a rule group.

You can have a maximum of ten rules per rule group.

To create and configure a RuleGroup, perform the following steps:

1. Create and update the Rules that you want to include in the RuleGroup. See CreateRule (p. 27).
2. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRuleGroup (p. 182) request.
3. Submit an UpdateRuleGroup request to add Rules to the RuleGroup.

If you want to replace one Rule with another, you delete the existing one and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```
{
    "ChangeToken": "string",
    "RuleGroupId": "string",
    "Updates": [
        {
            "Action": "string",
            "ActivatedRule": {
                "Action": {
                    "Type": "string"
                },
                "OverrideAction": {
                    "Type": "string"
                },
                "Priority": number,
                "RuleId": "string",
                "Type": "string"
            }
        }
    ]
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeEvent (p. 182)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.
Required: Yes

**RuleGroupId (p. 182)**

The `RuleGroupId` of the RuleGroup (p. 455) that you want to update. `RuleGroupId` is returned by `CreateRuleGroup (p. 31)` and by `ListRuleGroups (p. 136)`.

Type: String


Required: Yes

**Updates (p. 182)**

An array of `RuleGroupUpdate` objects that you want to insert into or delete from a RuleGroup (p. 455).

You can only insert REGULAR rules into a rule group.

`ActivatedRule|OverrideAction` applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use `ActivatedRule|Action`. For all other update requests, `ActivatedRule|Action` is used instead of `ActivatedRule|OverrideAction`.

Type: Array of `RuleGroupUpdate (p. 458)` objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 183)**

The `ChangeToken` that you used to submit the `UpdateRuleGroup` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 89)`.

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.
HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**UpdateSizeConstraintSet**

Service: AWS WAF

Inserts or deletes SizeConstraint (p. 463) objects (filters) in a SizeConstraintSet (p. 466). For each SizeConstraint object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a SizeConstraintSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to evaluate, such as the length of a query string or the length of the User-Agent header.
- Whether to perform any transformations on the request, such as converting it to lowercase, before checking its length. Note that transformations of the request body are not supported because the AWS resource forwards only the first 8192 bytes of your request to AWS WAF.

You can only specify a single type of TextTransformation.
- A ComparisonOperator used for evaluating the selected part of the request against the specified Size, such as equals, greater than, less than, and so on.
- The length, in bytes, that you want AWS WAF to watch for in selected part of the request. The length is computed after applying the transformation.

For example, you can add a SizeConstraintSetUpdate object that matches web requests in which the length of the User-Agent header is greater than 100 bytes. You can then configure AWS WAF to block those requests.

To create and configure a SizeConstraintSet, perform the following steps:

1. Create a SizeConstraintSet. For more information, see CreateSizeConstraintSet (p. 34).
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateSizeConstraintSet request.
3. Submit an UpdateSizeConstraintSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
"ChangeToken": "string",
"SizeConstraintSetId": "string",
"Updates": [
{
"Action": "string",
"SizeConstraint": {
"ComparisonOperator": "string",
"FieldToMatch": {
"Data": "string",
"Type": "string"
},
"Size": number,
"TextTransformation": "string"
}
}
]
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 186)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SizeConstraintSetId (p. 186)**

The SizeConstraintSetId of the SizeConstraintSet (p. 466) that you want to update. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 34) and by ListSizeConstraintSets (p. 140).

Type: String


Required: Yes

**Updates (p. 186)**

An array of SizeConstraintSetUpdate objects that you want to insert into or delete from a SizeConstraintSet (p. 466). For more information, see the applicable data types:

- **SizeConstraintSetUpdate (p. 468)**: Contains Action and SizeConstraint
- **SizeConstraint (p. 463)**: Contains FieldToMatch, TextTransformation, ComparisonOperator, and Size
- **FieldToMatch (p. 426)**: Contains Data and Type

Type: Array of SizeConstraintSetUpdate (p. 468) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
ChangeToken (p. 187)

The ChangeToken that you used to submit the UpdateSizeConstraintSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:
- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn’t exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn’t exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn’t exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn’t exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn’t exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
UpdateSqlInjectionMatchSet

Service: AWS WAF

Inserts or deletes SqlInjectionMatchTuple (p. 472) objects (filters) in a SqlInjectionMatchSet (p. 469). For each SqlInjectionMatchTuple object, you specify the following values:

- **Action**: Whether to insert the object into or delete the object from the array. To change a SqlInjectionMatchTuple, you delete the existing object and add a new one.
- **FieldToMatch**: The part of web requests that you want AWS WAF to inspect and, if you want AWS WAF to inspect a header, the name of the header.
- **TextTransformation**: Which text transformation, if any, to perform on the web request before inspecting the request for snippets of malicious SQL code.

You can only specify a single type of TextTransformation.

You use SqlInjectionMatchSet objects to specify which CloudFront requests you want to allow, block, or count. For example, if you're receiving requests that contain snippets of SQL code in the query string and you want to block the requests, you can create a SqlInjectionMatchSet with the applicable settings, and then configure AWS WAF to block the requests.

To create and configure a SqlInjectionMatchSet, perform the following steps:

1. Submit a CreateSqlInjectionMatchSet (p. 37) request.
2. Use GetChangeToken (p. 87) to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 161) request.
3. Submit an UpdateSqlInjectionMatchSet request to specify the parts of web requests that you want AWS WAF to inspect for snippets of SQL code.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
    "ChangeToken": "string",
    "SqlInjectionMatchSetId": "string",
    "Updates": [
        {
            "Action": "string",
            "SqlInjectionMatchTuple": {
                "FieldToMatch": {
                    "Data": "string",
                    "Type": "string"
                },
                "TextTransformation": "string"
            }
        }
    ]
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.
**ChangeToken (p. 191)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SqlInjectionMatchSetId (p. 191)**

The SqlInjectionMatchSetId of the SqlInjectionMatchSet that you want to update. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 37) and by ListSqlInjectionMatchSets (p. 142).

Type: String


Required: Yes

**Updates (p. 191)**

An array of SqlInjectionMatchSetUpdate objects that you want to insert into or delete from a SqlInjectionMatchSet (p. 469). For more information, see the applicable data types:

- SqlInjectionMatchSetUpdate (p. 471): Contains Action and SqlInjectionMatchTuple
- SqlInjectionMatchTuple (p. 472): Contains FieldToMatch and TextTransformation
- FieldToMatch (p. 426): Contains Data and Type

Type: Array of SqlInjectionMatchSetUpdate (p. 471) objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```json
{
  "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 192)**

The ChangeToken that you used to submit the UpdateSqlInjectionMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateWebACL
Service: AWS WAF

Inserts or deletes ActivatedRule (p. 416) objects in a WebACL. Each Rule identifies web requests that you want to allow, block, or count. When you update a WebACL, you specify the following values:

- A default action for the WebACL, either ALLOW or BLOCK. AWS WAF performs the default action if a request doesn't match the criteria in any of the Rules in a WebACL.
- The Rules that you want to add and/or delete. If you want to replace one Rule with another, you delete the existing Rule and add the new one.
- For each Rule, whether you want AWS WAF to allow requests, block requests, or count requests that match the conditions in the Rule.
- The order in which you want AWS WAF to evaluate the Rules in a WebACL. If you add more than one Rule to a WebACL, AWS WAF evaluates each request against the Rules in order based on the value of Priority. (The Rule that has the lowest value for Priority is evaluated first.) When a web request matches all of the predicates (such as ByteMatchSets and IPSets) in a Rule, AWS WAF immediately takes the corresponding action, allow or block, and doesn't evaluate the request against the remaining Rules in the WebACL, if any.

To create and configure a WebACL, perform the following steps:

1. Create and update the predicates that you want to include in Rules. For more information, see CreateByteMatchSet (p. 7), UpdateByteMatchSet (p. 153), CreateIPSet (p. 13), UpdateIPSet (p. 161), CreateSqlInjectionMatchSet (p. 37), and UpdateSqlInjectionMatchSet (p. 191).
2. Create and update the Rules that you want to include in the WebACL. For more information, see CreateRule (p. 27) and UpdateRule (p. 178).
3. Create a WebACL. See CreateWebACL (p. 40).
4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateWebACL (p. 195) request.
5. Submit an UpdateWebACL request to specify the Rules that you want to include in the WebACL, to specify the default action, and to associate the WebACL with a CloudFront distribution.

Be aware that if you try to add a RATE_BASED rule to a web ACL without setting the rule type when first creating the rule, the UpdateWebACL (p. 195) request will fail because the request tries to add a REGULAR rule (the default rule type) with the specified ID, which does not exist.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "DefaultAction": {
        "Type": "string"
    },
    "Updates": [
        {
            "Action": "string",
            "ActivatedRule": {
                "Action": {
                    "Type": "string"
                },
                "OverrideAction": {
                    "Type": "string"
                }
            }
        }
    ]
}
```


Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 195)**

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**DefaultAction (p. 195)**

A default action for the web ACL, either ALLOW or BLOCK. AWS WAF performs the default action if a request doesn’t match the criteria in any of the rules in a web ACL.

Type: WafAction (p. 476) object

Required: No

**Updates (p. 195)**

An array of updates to make to the WebACL (p. 478).

An array of WebACLUpdate objects that you want to insert into or delete from a WebACL (p. 478). For more information, see the applicable data types:

- WebACLUpdate (p. 481): Contains Action and ActivatedRule
- ActivatedRule (p. 416): Contains Action, OverrideAction, Priority, RuleId, and Type. ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.
- WafAction (p. 476): Contains Type

Type: Array of WebACLUpdate (p. 481) objects

Required: No

**WebACLId (p. 195)**

The WebACLId of the WebACL (p. 478) that you want to update. WebACLId is returned by CreateWebACL (p. 40) and by ListWebACLs (p. 146).

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 197)**

The `ChangeToken` that you used to submit the `UpdateWebACL` request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 89)](https://aws.amazon.com/documentation/waf/latest/APIReference/API_UpdateWebACL.html#WAF-Type-GetChangeTokenStatus).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](https://aws.amazon.com/documentation/waf/latest/APIReference/API_UpdateWebACL.html#WAF-Type-Common-Errors).

**WAFFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.

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• You specified an invalid value.
• You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
• You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to create a RateBasedRule with a RateKey value other than IP.
• You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400
WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400
WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
WAFSubscriptionNotFoundException

The specified subscription does not exist.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateXssMatchSet

Service: AWS WAF

Inserts or deletes XssMatchTuple objects (filters) in an XssMatchSet. For each XssMatchTuple object, you specify the following values:

- **Action**: Whether to insert the object into or delete the object from the array. To change a XssMatchTuple, you delete the existing object and add a new one.
- **FieldToMatch**: The part of web requests that you want AWS WAF to inspect and, if you want AWS WAF to inspect a header, the name of the header.
- **TextTransformation**: Which text transformation, if any, to perform on the web request before inspecting the request for cross-site scripting attacks.

You can only specify a single type of TextTransformation.

You use XssMatchSet objects to specify which CloudFront requests you want to allow, block, or count. For example, if you're receiving requests that contain cross-site scripting attacks in the request body and you want to block the requests, you can create an XssMatchSet with the applicable settings, and then configure AWS WAF to block the requests.

To create and configure an XssMatchSet, perform the following steps:

1. Submit a CreateXssMatchSet request.
2. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet request.
3. Submit an UpdateXssMatchSet request to specify the parts of web requests that you want AWS WAF to inspect for cross-site scripting attacks.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
  "ChangeToken": "string",
  "Updates": [
    {
      "Action": "string",
      "XssMatchTuple": {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    },
    "XssMatchSetId": "string"
  ]
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.
ChangeToken (p. 200)

The value returned by the most recent call to GetChangeToken (p. 87).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Updates (p. 200)

An array of XssMatchSetUpdate objects that you want to insert into or delete from a XssMatchSet (p. 482). For more information, see the applicable data types:

- XssMatchSetUpdate (p. 484): Contains Action and XssMatchTuple
- XssMatchTuple (p. 485): Contains FieldToMatch and TextTransformation
- FieldToMatch (p. 426): Contains Data and Type

Type: Array of XssMatchSetUpdate (p. 484) objects

Array Members: Minimum number of 1 item.

Required: Yes

XssMatchSetId (p. 200)

The XssMatchSetId of the XssMatchSet that you want to update. XssMatchSetId is returned by CreateXssMatchSet (p. 44) and by ListXssMatchSets (p. 148).

Type: String


Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 201)

The ChangeToken that you used to submit the UpdateXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 89).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

**AWS WAF Regional**

The following actions are supported by AWS WAF Regional:

- AssociateWebACL (p. 206)
- CreateByteMatchSet (p. 208)
- CreateGeoMatchSet (p. 211)
- CreateIPSet (p. 214)
- CreateRateBasedRule (p. 217)
- CreateRegexMatchSet (p. 222)
- CreateRegexPatternSet (p. 225)
- CreateRule (p. 228)
- CreateRuleGroup (p. 232)
- CreateSizeConstraintSet (p. 235)
- CreateSqlInjectionMatchSet (p. 238)
- CreateWebACL (p. 241)
• CreateXssMatchSet (p. 245)
• DeleteByteMatchSet (p. 248)
• DeleteGeoMatchSet (p. 251)
• DeleteIPSet (p. 254)
• DeletePermissionPolicy (p. 257)
• DeleteRateBasedRule (p. 259)
• DeleteRegexMatchSet (p. 262)
• DeleteRegexPatternSet (p. 265)
• DeleteRule (p. 268)
• DeleteRuleGroup (p. 271)
• DeleteSizeConstraintSet (p. 274)
• DeleteSqlInjectionMatchSet (p. 277)
• DeleteWebACL (p. 280)
• DeleteXssMatchSet (p. 283)
• DisassociateWebACL (p. 286)
• GetByteMatchSet (p. 288)
• GetChangeToken (p. 290)
• GetChangeTokenStatus (p. 292)
• GetGeoMatchSet (p. 294)
• GetIPSet (p. 296)
• GetPermissionPolicy (p. 298)
• GetRateBasedRule (p. 300)
• GetRateBasedRuleManagedKeys (p. 302)
• GetRegexMatchSet (p. 305)
• GetRegexPatternSet (p. 307)
• GetRule (p. 309)
• GetRuleGroup (p. 311)
• GetSampledRequests (p. 313)
• GetSizeConstraintSet (p. 316)
• GetSqlInjectionMatchSet (p. 318)
• GetWebACL (p. 320)
• GetWebACLForResource (p. 322)
• GetXssMatchSet (p. 325)
• ListActivatedRulesInRuleGroup (p. 327)
• ListByteMatchSets (p. 330)
• ListGeoMatchSets (p. 332)
• ListIPSets (p. 334)
• ListRateBasedRules (p. 336)
• ListRegexMatchSets (p. 338)
• ListRegexPatternSets (p. 340)
• ListResourcesForWebACL (p. 342)
• ListRuleGroups (p. 344)
• ListRules (p. 346)
• ListSizeConstraintSets (p. 348)
• ListSqlInjectionMatchSets (p. 350)
• ListSubscribedRuleGroups (p. 352)
• ListWebACLs (p. 354)
• ListXssMatchSets (p. 356)
• PutPermissionPolicy (p. 358)
• UpdateByteMatchSet (p. 361)
• UpdateGeoMatchSet (p. 365)
• UpdateIPSet (p. 369)
• UpdateRateBasedRule (p. 373)
• UpdateRegexMatchSet (p. 378)
• UpdateRegexPatternSet (p. 382)
• UpdateRule (p. 386)
• UpdateRuleGroup (p. 390)
• UpdateSizeConstraintSet (p. 394)
• UpdateSqlInjectionMatchSet (p. 399)
• UpdateWebACL (p. 403)
• UpdateXssMatchSet (p. 408)
AssociateWebACL

Service: AWS WAF Regional

Associates a web ACL with a resource.

Request Syntax

```json
{
   "ResourceArn": "string",
   "WebACLId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ResourceArn (p. 206)**

The ARN (Amazon Resource Name) of the resource to be protected.

Type: String


Required: Yes

**WebACLId (p. 206)**

A unique identifier (ID) for the web ACL.

Type: String


Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFUnavailableEntityException

The operation failed because the entity referenced is temporarily unavailable. Retry your request.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateByteMatchSet

Service: AWS WAF Regional

Creates a ByteMatchSet. You then use UpdateByteMatchSet (p. 361) to identify the part of a web request that you want AWS WAF to inspect, such as the values of the User-Agent header or the query string. For example, you can create a ByteMatchSet that matches any requests with User-Agent headers that contain the string BadBot. You can then configure AWS WAF to reject those requests.

To create and configure a ByteMatchSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateByteMatchSet request.
2. Submit a CreateByteMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateByteMatchSet request.
4. Submit an UpdateByteMatchSet request (p. 361) to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
   "ChangeToken": "string",
   "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 208)**

The value returned by the most recent call to GetChangeToken (p. 290).

*Type: String*

*Length Constraints: Minimum length of 1.*

*Required: Yes*

**Name (p. 208)**

A friendly name or description of the ByteMatchSet (p. 490). You can't change Name after you create a ByteMatchSet.

*Type: String*


*Required: Yes*
Response Syntax

```json
{
  "ByteMatchSet": {
    "ByteMatchSetId": "string",
    "ByteMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "PositionalConstraint": "string",
        "TargetString": blob,
        "TextTransformation": "string"
      }
    ],
    "Name": "string"
  },
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ByteMatchSet (p. 209)**

A ByteMatchSet (p. 490) that contains no ByteMatchTuple objects.

Type: ByteMatchSet (p. 490) object

**ChangeToken (p. 209)**

The ChangeToken that you used to submit the CreateByteMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

• You specified an invalid parameter name.
• You specified an invalid value.
• You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
• You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to create a RateBasedRule with a RateKey value other than IP.
• You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
CreateGeoMatchSet

Service: AWS WAF Regional

Creates an GeoMatchSet (p. 500), which you use to specify which web requests you want to allow or block based on the country that the requests originate from. For example, if you're receiving a lot of requests from one or more countries and you want to block the requests, you can create an GeoMatchSet that contains those countries and then configure AWS WAF to block the requests.

To create and configure a GeoMatchSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateGeoMatchSet request.
2. Submit a CreateGeoMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateGeoMatchSet (p. 365) request.
4. Submit an UpdateGeoMatchSet request to specify the countries that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 211)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 211)**

A friendly name or description of the GeoMatchSet (p. 500). You can't change Name after you create the GeoMatchSet.

Type: String


Required: Yes
Response Syntax

```
{
  "ChangeToken": "string",
  "GeoMatchSet": {
    "GeoMatchConstraints": [
      {
        "Type": "string",
        "Value": "string"
      }
    ],
    "GeoMatchSetId": "string",
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 212)**

The ChangeToken that you used to submit the CreateGeoMatchSet request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 292)](https://aws.amazon.com/documentation/waf/latest/APIReference/API_GetChangeTokenStatus.html).

Type: String

Length Constraints: Minimum length of 1.

**GeoMatchSet (p. 212)**

The GeoMatchSet returned in the CreateGeoMatchSet response. The GeoMatchSet contains no GeoMatchConstraints.

Type: GeoMatchSet (p. 500) object

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](https://aws.amazon.com/documentation/waf/latest/APIReference/API_Error.html).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFAccessDeniedException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateIPSet
Service: AWS WAF Regional

Creates an IPSet (p. 506), which you use to specify which web requests you want to allow or block based on the IP addresses that the requests originate from. For example, if you’re receiving a lot of requests from one or more individual IP addresses or one or more ranges of IP addresses and you want to block the requests, you can create an IPSet that contains those IP addresses and then configure AWS WAF to block the requests.

To create and configure an IPSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateIPSet request.
2. Submit a CreateIPSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 369) request.
4. Submit an UpdateIPSet request to specify the IP addresses that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
   "ChangeToken": "string",
   "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 214)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 214)**

A friendly name or description of the IPSet (p. 506). You can’t change Name after you create the IPSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "IPSet": {
    "IPSetDescriptors": [
      {
        "Type": "string",
        "Value": "string"
      }
    ],
    "IPSetId": "string",
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 215)**

The `ChangeToken` that you used to submit the `CreateIPSet` request. You can also use this value to query the status of the request. For more information, see GET `ChangeTokenStatus` (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**IPSet (p. 215)**

The IPSet (p. 506) returned in the CreateIPSet response.

Type: IPSet (p. 506) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFForbiddenNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400
WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRateBasedRule
Service: AWS WAF Regional

Creates a RateBasedRule (p. 513). The RateBasedRule contains a RateLimit, which specifies the maximum number of requests that AWS WAF allows from a specified IP address in a five-minute period. The RateBasedRule also contains the IPSet objects, ByteMatchSet objects, and other predicates that identify the requests that you want to count or block if these requests exceed the RateLimit.

If you add more than one predicate to a RateBasedRule, a request not only must exceed the RateLimit, but it also must match all the specifications to be counted or blocked. For example, suppose you add the following to a RateBasedRule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

Further, you specify a RateLimit of 15,000.

You then add the RateBasedRule to a WebACL and specify that you want to block requests that meet the conditions in the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot. Further, requests that match these two conditions must be received at a rate of more than 15,000 requests every five minutes. If both conditions are met and the rate is exceeded, AWS WAF blocks the requests. If the rate drops below 15,000 for a five-minute period, AWS WAF no longer blocks the requests.

As a second example, suppose you want to limit requests to a particular page on your site. To do this, you could add the following to a RateBasedRule:

- A ByteMatchSet with FieldToMatch of URI
- A PositionalConstraint of STARTS_WITH
- A TargetString of login

Further, you specify a RateLimit of 15,000.

By adding this RateBasedRule to a WebACL, you could limit requests to your login page without affecting the rest of your site.

To create and configure a RateBasedRule, perform the following steps:

1. Create and update the predicates that you want to include in the rule. For more information, see CreateByteMatchSet (p. 208), CreateIPSet (p. 214), and CreateSqlInjectionMatchSet (p. 238).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateRule request.
3. Submit a CreateRateBasedRule request.
4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 386) request.
5. Submit an UpdateRateBasedRule request to specify the predicates that you want to include in the rule.
6. Create and update a WebACL that contains the RateBasedRule. For more information, see CreateWebACL (p. 241).

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.
**CreateRateBasedRule**

**Request Syntax**

```json
{
  "ChangeToken": "string",
  "MetricName": "string",
  "Name": "string",
  "RateKey": "string",
  "RateLimit": number
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 218)**

The `ChangeToken` that you used to submit the `CreateRateBasedRule` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**MetricName (p. 218)**

A friendly name or description for the metrics for this `RateBasedRule`. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the `RateBasedRule`.

Type: String

Required: Yes

**Name (p. 218)**

A friendly name or description of the `RateBasedRule (p. 513)`. You can't change the name of a `RateBasedRule` after you create it.

Type: String


Required: Yes

**RateKey (p. 218)**

The field that AWS WAF uses to determine if requests are likely arriving from a single source and thus subject to rate monitoring. The only valid value for `RateKey` is `IP`. IP indicates that requests that arrive from the same IP address are subject to the `RateLimit` that is specified in the `RateBasedRule`.

Type: String

Valid Values: IP

Required: Yes
RateLimit (p. 218)

The maximum number of requests, which have an identical value in the field that is specified by RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string",
  "Rule": {
    "MatchPredicates": [
      {
        "DataId": "string",
        "Negated": boolean,
        "Type": "string"
      }
    ],
    "MetricName": "string",
    "Name": "string",
    "RateKey": "string",
    "RateLimit": number,
    "RuleId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 219)

The ChangeToken that you used to submit the CreateRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Rule (p. 219)

The RateBasedRule (p. 513) that is returned in the CreateRateBasedRule response.

Type: RateBasedRule (p. 513) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFDisallowedNameException

The name specified is invalid.

HTTP Status Code: 400

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFLimitExceededError

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
CreateRegexMatchSet
Service: AWS WAF Regional

Creates a RegexMatchSet (p. 515). You then use UpdateRegexMatchSet (p. 378) to identify the part of a web request that you want AWS WAF to inspect, such as the values of the User-Agent header or the query string. For example, you can create a RegexMatchSet that contains a RegexMatchTuple that looks for any requests with User-Agent headers that match a RegexPatternSet with pattern B[ae]dB[00]t. You can then configure AWS WAF to reject those requests.

To create and configure a RegexMatchSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateRegexMatchSet request.
2. Submit a CreateRegexMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRegexMatchSet request.
4. Submit an UpdateRegexMatchSet (p. 378) request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value, using a RegexPatternSet, that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
   "ChangeToken": "string",
   "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 222)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Name (p. 222)

A friendly name or description of the RegexMatchSet (p. 515). You can't change Name after you create a RegexMatchSet.

Type: String

Required: Yes

Response Syntax

```json
{
    "ChangeToken": "string",
    "RegexMatchSet": {
        "Name": "string",
        "RegexMatchSetId": "string",
        "RegexMatchTuples": [
            {
                "FieldToMatch": {
                    "Data": "string",
                    "Type": "string"
                },
                "RegexPatternSetId": "string",
                "TextTransformation": "string"
            }
        ]
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 223)**

The `ChangeToken` that you used to submit the `CreateRegexMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

**RegexMatchSet (p. 223)**

A `RegexMatchSet (p. 515)` that contains no `RegexMatchTuple` objects.

Type: `RegexMatchSet (p. 515)` object

Errors

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFLimitsExceeded Exception

The operation exceeds a resource limit, for example, the maximum number of `WebACL` objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRegexPatternSet
Service: AWS WAF Regional

Creates a RegexPatternSet. You then use UpdateRegexPatternSet (p. 382) to specify the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[oo].t. You can then configure AWS WAF to reject those requests.

To create and configure a RegexPatternSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateRegexPatternSet request.
2. Submit a CreateRegexPatternSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRegexPatternSet request.
4. Submit an UpdateRegexPatternSet (p. 382) request to specify the string that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 225)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 225)**

A friendly name or description of the RegexPatternSet (p. 522). You can't change Name after you create a RegexPatternSet.

Type: String


Required: Yes
Response Syntax

```json
{
    "ChangeToken": "string",
    "RegexPatternSet": {
        "Name": "string",
        "RegexPatternSetId": "string",
        "RegexPatternStrings": ["string"]
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 226)**

The `ChangeToken` that you used to submit the `CreateRegexPatternSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

**RegexPatternSet (p. 226)**

A `RegexPatternSet (p. 522)` that contains no objects.

Type: `RegexPatternSet (p. 522)` object

Errors

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of `WebACL` objects that you can create for an AWS account. For more information, see `Limits` in the `AWS WAF Developer Guide`.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRule
Service: AWS WAF Regional

Creates a rule, which contains the IPSet objects, ByteMatchSet objects, and other predicates that identify the requests that you want to block. If you add more than one predicate to a rule, a request must match all of the specifications to be allowed or blocked. For example, suppose you add the following to a rule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

You then add the rule to a WebACL and specify that you want to blocks requests that satisfy the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot.

To create and configure a rule, perform the following steps:

1. Create and update the predicates that you want to include in the rule. For more information, see CreateByteMatchSet (p. 208), CreateIPSet (p. 214), and CreateSqlInjectionMatchSet (p. 238).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateRule request.
3. Submit a CreateRule request.
4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 386) request.
5. Submit an UpdateRule request to specify the predicates that you want to include in the rule.
6. Create and update a WebACL that contains the rule. For more information, see CreateWebACL (p. 241).

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "MetricName": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 228)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.
Required: Yes

**MetricName (p. 228)**

A friendly name or description for the metrics for this Rule. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the Rule.

Type: String

Required: Yes

**Name (p. 228)**

A friendly name or description of the Rule (p. 525). You can't change the name of a Rule after you create it.

Type: String


Required: Yes

**Response Syntax**

```json
{
  "ChangeToken": "string",
  "Rule": {
    "MetricName": "string",
    "Name": "string",
    "Predicates": [
      {
        "DataId": "string",
        "Negated": boolean,
        "Type": "string"
      }
    ],
    "RuleId": "string"
  }
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 229)**

The ChangeToken that you used to submit the CreateRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**Rule (p. 229)**

The Rule (p. 525) returned in the CreateRule response.

Type: Rule (p. 525) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFNotAllowedNameException

The name specified is invalid.

HTTP Status Code: 400

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
AWS WAF API Reference
CreateRule

- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateRuleGroup

Service: AWS WAF Regional

Creates a RuleGroup. A rule group is a collection of predefined rules that you add to a web ACL. You use UpdateRuleGroup (p. 390) to add rules to the rule group.

Rule groups are subject to the following limits:

- Three rule groups per account. You can request an increase to this limit by contacting customer support.
- One rule group per web ACL.
- Ten rules per rule group.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "MetricName": "string",
    "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 232)**

The value returned by the most recent call to GetChangeToken (p. 290).

- Type: String
- Length Constraints: Minimum length of 1.
- Required: Yes

**MetricName (p. 232)**

A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RuleGroup.

- Type: String
- Required: Yes

**Name (p. 232)**

A friendly name or description of the RuleGroup (p. 527). You can't change Name after you create a RuleGroup.

- Type: String
Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string",
  "RuleGroup": {
    "MetricName": "string",
    "Name": "string",
    "RuleGroupId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 233)**

The ChangeToken that you used to submit the CreateRuleGroup request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**RuleGroup (p. 233)**

An empty RuleGroup (p. 527).

Type: RuleGroup (p. 527) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateSizeConstraintSet

Service: AWS WAF Regional

Creates a SizeConstraintSet. You then use UpdateSizeConstraintSet (p. 394) to identify the part of a web request that you want AWS WAF to check for length, such as the length of the User-Agent header or the length of the query string. For example, you can create a SizeConstraintSet that matches any requests that have a query string that is longer than 100 bytes. You can then configure AWS WAF to reject those requests.

To create and configure a SizeConstraintSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateSizeConstraintSet request.
2. Submit a CreateSizeConstraintSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateSizeConstraintSet request.
4. Submit an UpdateSizeConstraintSet (p. 394) request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
   "ChangeToken": "string",
   "Name": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 235)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 235)**

A friendly name or description of the SizeConstraintSet (p. 538). You can't change Name after you create a SizeConstraintSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "SizeConstraintSet": {
    "Name": "string",
    "SizeConstraints": [
      {
        "ComparisonOperator": "string",
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "Size": number,
        "TextTransformation": "string"
      }
    ],
    "SizeConstraintSetId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 236)**

The ChangeToken that you used to submit the CreateSizeConstraintSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**SizeConstraintSet (p. 236)**

A SizeConstraintSet (p. 538) that contains no SizeConstraint objects.

Type: SizeConstraintSet (p. 538) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateSqlInjectionMatchSet

Service: AWS WAF Regional

Creates a SqlInjectionMatchSet (p. 541), which you use to allow, block, or count requests that contain snippets of SQL code in a specified part of web requests. AWS WAF searches for character sequences that are likely to be malicious strings.

To create and configure a SqlInjectionMatchSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateSqlInjectionMatchSet request.
2. Submit a CreateSqlInjectionMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateSqlInjectionMatchSet (p. 399) request.
4. Submit an UpdateSqlInjectionMatchSet (p. 399) request to specify the parts of web requests in which you want to allow, block, or count malicious SQL code.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
   "ChangeToken": "string",
   "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 238)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 238)**

A friendly name or description for the SqlInjectionMatchSet (p. 541) that you're creating. You can't change Name after you create the SqlInjectionMatchSet.

Type: String


Required: Yes
Response Syntax

```json
{
  "ChangeToken": "string",
  "SqlInjectionMatchSet": {
    "Name": "string",
    "SqlInjectionMatchSetId": "string",
    "SqlInjectionMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 239)**

The ChangeToken that you used to submit the CreateSqlInjectionMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**SqlInjectionMatchSet (p. 239)**

A SqlInjectionMatchSet (p. 541).

Type: SqlInjectionMatchSet (p. 541) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateWebACL

Service: AWS WAF Regional

Creates a WebACL, which contains the Rules that identify the CloudFront web requests that you want to allow, block, or count. AWS WAF evaluates Rules in order based on the value of Priority for each Rule.

You also specify a default action, either ALLOW or BLOCK. If a web request doesn't match any of the Rules in a WebACL, AWS WAF responds to the request with the default action.

To create and configure a WebACL, perform the following steps:

1. Create and update the ByteMatchSet objects and other predicates that you want to include in Rules. For more information, see CreateByteMatchSet (p. 208), UpdateByteMatchSet (p. 361), CreateIPSet (p. 214), UpdateIPSet (p. 369), CreateSqlInjectionMatchSet (p. 238), and UpdateSqlInjectionMatchSet (p. 399).

2. Create and update the Rules that you want to include in the WebACL. For more information, see CreateRule (p. 228) and UpdateRule (p. 386).

3. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateWebACL request.

4. Submit a CreateWebACL request.

5. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateWebACL (p. 403) request.

6. Submit an UpdateWebACL (p. 403) request to specify the Rules that you want to include in the WebACL, to specify the default action, and to associate the WebACL with a CloudFront distribution.

For more information about how to use the AWS WAF API, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "DefaultAction": {
    "Type": "string"
  },
  "MetricName": "string",
  "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 241)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes
DefaultAction (p. 241)

The action that you want AWS WAF to take when a request doesn't match the criteria specified in any of the Rule objects that are associated with the WebACL.

Type: WafAction (p. 548) object

Required: Yes

MetricName (p. 241)

A friendly name or description for the metrics for this WebACL. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change MetricName after you create the WebACL.

Type: String

Required: Yes

Name (p. 241)

A friendly name or description of the WebACL (p. 550). You can't change Name after you create the WebACL.

Type: String


Required: Yes

Response Syntax

```
{  
  "ChangeToken": "string",
  "WebACL": { 
    "DefaultAction": {  
      "Type": "string"
    },
    "MetricName": "string",
    "Name": "string",
    "Rules": [ 
      {  
        "Action": {  
          "Type": "string"
        },
        "OverrideAction": { 
          "Type": "string"
        },
        "Priority": number,
        "RuleId": "string",
        "Type": "string"
      }
    ],
    "WebACLId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 242)**

The ChangeToken that you used to submit the CreateWebACL request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**WebACL (p. 242)**

The WebACL (p. 550) returned in the CreateWebACL response.

Type: WebACL (p. 550) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFDisallowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URL, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFLimitsExceeded Exception

The operation exceeds a resource limit, for example, the maximum number of webACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFStaleData Exception

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateXssMatchSet

Service: AWS WAF Regional

Creates an XssMatchSet (p. 554), which you use to allow, block, or count requests that contain cross-site scripting attacks in the specified part of web requests. AWS WAF searches for character sequences that are likely to be malicious strings.

To create and configure an XssMatchSet, perform the following steps:

1. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a CreateXssMatchSet request.
2. Submit a CreateXssMatchSet request.
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateXssMatchSet (p. 408) request.
4. Submit an UpdateXssMatchSet (p. 408) request to specify the parts of web requests in which you want to allow, block, or count cross-site scripting attacks.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "Name": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 245)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Name (p. 245)**

A friendly name or description for the XssMatchSet (p. 554) that you're creating. You can't change Name after you create the XssMatchSet.

Type: String


Required: Yes
Response Syntax

```json
{
    "ChangeToken": "string",
    "XssMatchSet": {
        "Name": "string",
        "XssMatchSetId": "string",
        "XssMatchTuples": [
            {
                "FieldToMatch": {
                    "Data": "string",
                    "Type": "string"
                },
                "TextTransformation": "string"
            }
        ]
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 246)**

The ChangeToken that you used to submit the CreateXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**XssMatchSet (p. 246)**

An XssMatchSet (p. 554).

Type: XssMatchSet (p. 554) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFNotAllowedNameException**

The name specified is invalid.

HTTP Status Code: 400

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteByteMatchSet

Service: AWS WAF Regional

Permanently deletes a ByteMatchSet (p. 490). You can't delete a ByteMatchSet if it's still used in any Rules or if it still includes any ByteMatchTuple (p. 494) objects (any filters).

If you just want to remove a ByteMatchSet from a Rule, use UpdateRule (p. 386).

To permanently delete a ByteMatchSet, perform the following steps:

1. Update the ByteMatchSet to remove filters, if any. For more information, see UpdateByteMatchSet (p. 361).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteByteMatchSet request.
3. Submit a DeleteByteMatchSet request.

Request Syntax

```json
{
    "ByteMatchSetId": "string",
    "ChangeToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ByteMatchSetId (p. 248)**

The ByteMatchSetId of the ByteMatchSet (p. 490) that you want to delete. ByteMatchSetId is returned by CreateByteMatchSet (p. 208) and by ListByteMatchSets (p. 330).

Type: String


Required: Yes

**ChangeToken (p. 248)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Response Syntax

```json
{
    "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken** *(p. 248)*

The `ChangeToken` that you used to submit the `DeleteByteMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus` *(p. 292).*

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors *(p. 561).*

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteGeoMatchSet
Service: AWS WAF Regional

Permanently deletes a GeoMatchSet (p. 500). You can't delete a GeoMatchSet if it's still used in any Rules or if it still includes any countries.

If you just want to remove a GeoMatchSet from a Rule, use UpdateRule (p. 386).

To permanently delete a GeoMatchSet from AWS WAF, perform the following steps:

1. Update the GeoMatchSet to remove any countries. For more information, see UpdateGeoMatchSet (p. 365).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteGeoMatchSet request.
3. Submit a DeleteGeoMatchSet request.

Request Syntax

```json
{
    "ChangeToken": "string",
    "GeoMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 251)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**GeoMatchSetId (p. 251)**

The GeoMatchSetId of the GeoMatchSet (p. 500) that you want to delete. GeoMatchSetId is returned by CreateGeoMatchSet (p. 211) and by ListGeoMatchSets (p. 332).

Type: String


Required: Yes

Response Syntax

```json
{
    "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 251)**

The `ChangeToken` that you used to submit the `DeleteGeoMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteIPSet
Service: AWS WAF Regional

Permanently deletes an IPSet (p. 506). You can't delete an IPSet if it's still used in any Rules or if it still includes any IP addresses.

If you just want to remove an IPSet from a Rule, use UpdateRule (p. 386).

To permanently delete an IPSet from AWS WAF, perform the following steps:

1. Update the IPSet to remove IP address ranges, if any. For more information, see UpdateIPSet (p. 369).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteIPSet request.
3. Submit a DeleteIPSet request.

Request Syntax

```json
{
    "ChangeToken": "string",
    "IPSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 254)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**IPSetId (p. 254)**

The IPSetId of the IPSet (p. 506) that you want to delete. IPSetId is returned by CreateIPSet (p. 214) and by ListIPSets (p. 334).

Type: String


Required: Yes

Response Syntax

```json
{
    "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 254)**

The ChangeToken that you used to submit the DeleteIPSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String
Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**DeletePermissionPolicy**
Service: AWS WAF Regional

Permanently deletes an IAM policy from the specified RuleGroup.

The user making the request must be the owner of the RuleGroup.

**Request Syntax**

```
{
   "ResourceArn": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see [Common Parameters](p. 559).

The request accepts the following data in JSON format.

**ResourceArn (p. 257)**

The Amazon Resource Name (ARN) of the RuleGroup from which you want to delete the policy.

The user making the request must be the owner of the RuleGroup.

Type: String


Required: Yes

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

**Errors**

For information about the errors that are common to all actions, see [Common Errors](p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRateBasedRule
Service: AWS WAF Regional

Permanently deletes a RateBasedRule (p. 513). You can't delete a rule if it's still used in any WebACL objects or if it still includes any predicates, such as ByteMatchSet objects.

If you just want to remove a rule from a WebACL, use UpdateWebACL (p. 403).

To permanently delete a RateBasedRule from AWS WAF, perform the following steps:

1. Update the RateBasedRule to remove predicates, if any. For more information, see UpdateRateBasedRule (p. 373).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteRateBasedRule request.
3. Submit a DeleteRateBasedRule request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 259)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

RuleId (p. 259)

The RuleId of the RateBasedRule (p. 513) that you want to delete. RuleId is returned by CreateRateBasedRule (p. 217) and by ListRateBasedRules (p. 336).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 259)**

The `ChangeToken` that you used to submit the `DeleteRateBasedRule` request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 292)](/#).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](/#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRegexMatchSet
Service: AWS WAF Regional

Permanently deletes a RegexMatchSet (p. 515). You can't delete a RegexMatchSet if it's still used in any Rules or if it still includes any RegexMatchTuples objects (any filters).

If you just want to remove a RegexMatchSet from a Rule, use UpdateRule (p. 386).

To permanently delete a RegexMatchSet, perform the following steps:

1. Update the RegexMatchSet to remove filters, if any. For more information, see UpdateRegexMatchSet (p. 378).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteRegexMatchSet request.
3. Submit a DeleteRegexMatchSet request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RegexMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 262)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RegexMatchSetId (p. 262)**

The RegexMatchSetId of the RegexMatchSet (p. 515) that you want to delete. RegexMatchSetId is returned by CreateRegexMatchSet (p. 222) and by ListRegexMatchSets (p. 338).

Type: String


Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 262)

The ChangeToken that you used to submit the DeleteRegexMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRegexPatternSet
Service: AWS WAF Regional

Permanently deletes a RegexPatternSet (p. 522). You can't delete a RegexPatternSet if it's still used in any RegexMatchSet or if the RegexPatternSet is not empty.

Request Syntax

```
{
  "ChangeToken": "string",
  "RegexPatternSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 265)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RegexPatternSetId (p. 265)**

The RegexPatternSetId of the RegexPatternSet (p. 522) that you want to delete. RegexPatternSetId is returned by CreateRegexPatternSet (p. 225) and by ListRegexPatternSets (p. 340).

Type: String


Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 265)**

The ChangeToken that you used to submit the DeleteRegexPatternSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).
Type: String
Length Constraints: Minimum length of 1.

Errors
For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException
The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500
WAFInvalidAccountException
The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.
HTTP Status Code: 400
WAFNonEmptyEntityException
The operation failed because you tried to delete an object that isn't empty. For example:
• You tried to delete a WebACL that still contains one or more Rule objects.
• You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
• You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
• You tried to delete an IPSet that references one or more IP addresses.
HTTP Status Code: 400
WAFNonexistentItemException
The operation failed because the referenced object doesn't exist.
HTTP Status Code: 400
WAFReferencedItemException
The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.
HTTP Status Code: 400
WAFStaleDataException
The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DeleteRule

Service: AWS WAF Regional

Permanently deletes a Rule (p. 525). You can't delete a Rule if it's still used in any WebACL objects or if it still includes any predicates, such as ByteMatchSet objects.

If you just want to remove a Rule from a WebACL, use UpdateWebACL (p. 403).

To permanently delete a Rule from AWS WAF, perform the following steps:

1. Update the Rule to remove predicates, if any. For more information, see UpdateRule (p. 386).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteRule request.
3. Submit a DeleteRule request.

Request Syntax

```json
{
   "ChangeToken": "string",
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 268)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

RuleId (p. 268)

The RuleId of the Rule (p. 525) that you want to delete. RuleId is returned by CreateRule (p. 228) and by ListRules (p. 346).

Type: String


Required: Yes

Response Syntax

```json
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 268)**

The `ChangeToken` that you used to submit the `DeleteRule` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.
HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteRuleGroup
Service: AWS WAF Regional

Permanently deletes a RuleGroup (p. 527). You can't delete a RuleGroup if it's still used in any WebACL objects or if it still includes any rules.

If you just want to remove a RuleGroup from a WebACL, use UpdateWebACL (p. 403).

To permanently delete a RuleGroup from AWS WAF, perform the following steps:

1. Update the RuleGroup to remove rules, if any. For more information, see UpdateRuleGroup (p. 390).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteRuleGroup request.
3. Submit a DeleteRuleGroup request.

Request Syntax

```
{
  "ChangeToken": "string",
  "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ChangeToken (p. 271)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

RuleGroupId (p. 271)

The RuleGroupId of the RuleGroup (p. 527) that you want to delete. RuleGroupId is returned by CreateRuleGroup (p. 232) and by ListRuleGroups (p. 344).

Type: String


Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 271)**

The `ChangeToken` that you used to submit the `DeleteRuleGroup` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteSizeConstraintSet

Service: AWS WAF Regional

Permanently deletes a SizeConstraintSet (p. 538). You can't delete a SizeConstraintSet if it's still used in any Rules or if it still includes any SizeConstraint (p. 535) objects (any filters).

If you just want to remove a SizeConstraintSet from a Rule, use UpdateRule (p. 386).

To permanently delete a SizeConstraintSet, perform the following steps:

1. Update the SizeConstraintSet to remove filters, if any. For more information, see UpdateSizeConstraintSet (p. 394).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteSizeConstraintSet request.
3. Submit a DeleteSizeConstraintSet request.

Request Syntax

```
{
  "ChangeToken": "string",
  "SizeConstraintSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 274)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SizeConstraintSetId (p. 274)**

The SizeConstraintSetId of the SizeConstraintSet (p. 538) that you want to delete. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 235) and by ListSizeConstraintSets (p. 348).

Type: String


Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

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Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 274)**

The ChangeToken that you used to submit the DeleteSizeConstraintSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteSqlInjectionMatchSet
Service: AWS WAF Regional

Permanently deletes a SqlInjectionMatchSet (p. 541). You can't delete a SqlInjectionMatchSet if it's still used in any Rules or if it still contains any SqlInjectionMatchTuple (p. 544) objects.

If you just want to remove a SqlInjectionMatchSet from a Rule, use UpdateRule (p. 386).

To permanently delete a SqlInjectionMatchSet from AWS WAF, perform the following steps:

1. Update the SqlInjectionMatchSet to remove filters, if any. For more information, see UpdateSqlInjectionMatchSet (p. 399).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteSqlInjectionMatchSet request.
3. Submit a DeleteSqlInjectionMatchSet request.

Request Syntax

```json
{
  "ChangeToken": "string",
  "SqlInjectionMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 277)**

The value returned by the most recent call to GetChangeToken (p. 290).

- Type: String
- Length Constraints: Minimum length of 1.
- Required: Yes

**SqlInjectionMatchSetId (p. 277)**

The SqlInjectionMatchSetId of the SqlInjectionMatchSet (p. 541) that you want to delete. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 238) and by ListSqlInjectionMatchSets (p. 350).

- Type: String
- Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 277)

The ChangeToken that you used to submit the DeleteSqlInjectionMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonEmptyEntityException

The operation failed because you tried to delete an object that isn't empty. For example:
- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteWebACL
Service: AWS WAF Regional

Permanently deletes a WebACL (p. 550). You can't delete a WebACL if it still contains any Rules.

To delete a WebACL, perform the following steps:

1. Update the WebACL to remove Rules, if any. For more information, see UpdateWebACL (p. 403).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteWebACL request.
3. Submit a DeleteWebACL request.

Request Syntax

```
{
    "ChangeToken": "string",
    "WebACLId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 280)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**WebACLId (p. 280)**

The WebACLId of the WebACL (p. 550) that you want to delete. WebACLId is returned by CreateWebACL (p. 241) and by ListWebACLs (p. 354).

Type: String


Required: Yes

Response Syntax

```
{
    "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 280)**

The ChangeToken that you used to submit the `DeleteWebACL` request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 292)](https://docs.aws.amazon.com/waf/latest/APIReference/API_GetChangeTokenStatus.html).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 561)](https://docs.aws.amazon.com/waf/latest/APIReference/API_WebACL.html#AWS-WAF-Error-Code).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn’t empty. For example:

- You tried to delete a `WebACL` that still contains one or more `Rule` objects.
- You tried to delete a `Rule` that still contains one or more `ByteMatchSet` objects or other predicates.
- You tried to delete a `ByteMatchSet` that contains one or more `ByteMatchTuple` objects.
- You tried to delete an `IPSet` that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a `ByteMatchSet` that is still referenced by a `Rule`.
- You tried to delete a `Rule` that is still referenced by a `WebACL`.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteXssMatchSet

Service: AWS WAF Regional

Permanently deletes an XssMatchSet (p. 554). You can’t delete an XssMatchSet if it’s still used in any Rules or if it still contains any XssMatchTuple (p. 557) objects.

If you just want to remove an XssMatchSet from a Rule, use UpdateRule (p. 386).

To permanently delete an XssMatchSet from AWS WAF, perform the following steps:

1. Update the XssMatchSet to remove filters, if any. For more information, see UpdateXssMatchSet (p. 408).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of a DeleteXssMatchSet request.
3. Submit a DeleteXssMatchSet request.

Request Syntax

```json
{
   "ChangeToken": "string",
   "XssMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 283)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**XssMatchSetId (p. 283)**

The XssMatchSetId of the XssMatchSet (p. 554) that you want to delete. XssMatchSetId is returned by CreateXssMatchSet (p. 245) and by ListXssMatchSets (p. 356).

Type: String


Required: Yes

Response Syntax

```json
{
   "ChangeToken": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 283)**

The ChangeToken that you used to submit the DeleteXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonEmptyEntityException**

The operation failed because you tried to delete an object that isn't empty. For example:

- You tried to delete a WebACL that still contains one or more Rule objects.
- You tried to delete a Rule that still contains one or more ByteMatchSet objects or other predicates.
- You tried to delete a ByteMatchSet that contains one or more ByteMatchTuple objects.
- You tried to delete an IPSet that references one or more IP addresses.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFReferencedItemException**

The operation failed because you tried to delete an object that is still in use. For example:

- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DisassociateWebACL

Service: AWS WAF Regional

Removes a web ACL from the specified resource.

Request Syntax

```json
{
    "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ResourceArn (p. 286)**

The ARN (Amazon Resource Name) of the resource from which the web ACL is being removed.

Type: String


Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
• You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to create a RateBasedRule with a RateKey value other than IP.
• You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetByteMatchSet

Service: AWS WAF Regional

Returns the ByteMatchSet (p. 490) specified by ByteMatchSetId.

Request Syntax

```
{
  "ByteMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ByteMatchSetId** (p. 288)

The ByteMatchSetId of the ByteMatchSet (p. 490) that you want to get. ByteMatchSetId is returned by CreateByteMatchSet (p. 208) and by ListByteMatchSets (p. 330).

- **Type:** String
- **Length Constraints:** Minimum length of 1. Maximum length of 128.
- **Required:** Yes

Response Syntax

```
{
  "ByteMatchSet": {
    "ByteMatchSetId": "string",
    "ByteMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "PositionalConstraint": "string",
        "TargetString": blob,
        "TextTransformation": "string"
      }
    ],
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
ByteMatchSet (p. 288)

Information about the ByteMatchSet (p. 490) that you specified in the GetByteMatchSet request. For more information, see the following topics:
- ByteMatchSet (p. 490): Contains ByteMatchSetId, ByteMatchTuples, and Name
- ByteMatchTuples: Contains an array of ByteMatchTuple (p. 494) objects. Each ByteMatchTuple object contains FieldToMatch (p. 498), PositionalConstraint, TargetString, and TextTransformation
- FieldToMatch (p. 498): Contains Data and Type

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetChangeToken

Service: AWS WAF Regional

When you want to create, update, or delete AWS WAF objects, get a change token and include the change token in the create, update, or delete request. Change tokens ensure that your application doesn't submit conflicting requests to AWS WAF.

Each create, update, or delete request must use a unique change token. If your application submits a GetChangeToken request and then submits a second GetChangeToken request before submitting a create, update, or delete request, the second GetChangeToken request returns the same value as the first GetChangeToken request.

When you use a change token in a create, update, or delete request, the status of the change token changes to PENDING, which indicates that AWS WAF is propagating the change to all AWS WAF servers. Use GetChangeTokenStatus to determine the status of your change token.

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 290)**

The `ChangeToken` that you used in the request. Use this value in a GetChangeTokenStatus request to get the current status of the request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetChangeTokenStatus
Service: AWS WAF Regional

Returns the status of a ChangeToken that you got by calling GetChangeToken (p. 290). ChangeTokenStatus is one of the following values:

- PROVISIONED: You requested the change token by calling GetChangeToken, but you haven't used it yet in a call to create, update, or delete an AWS WAF object.
- PENDING: AWS WAF is propagating the create, update, or delete request to all AWS WAF servers.
- IN_SYNC: Propagation is complete.

Request Syntax

```json
{
    "ChangeToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 292)**

The change token for which you want to get the status. This change token was previously returned in the GetChangeToken response.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Response Syntax

```json
{
    "ChangeTokenStatus": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

**ChangeTokenStatus (p. 292)**

The status of the change token.

Type: String

Valid Values: PROVISIONED | PENDING | INSYNC
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetGeoMatchSet
Service: AWS WAF Regional

Returns the GeoMatchSet (p. 500) that is specified by GeoMatchSetId.

Request Syntax

```json
{
  "GeoMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**GeoMatchSetId** (p. 294)

The GeoMatchSetId of the GeoMatchSet (p. 500) that you want to get. GeoMatchSetId is returned by CreateGeoMatchSet (p. 211) and by ListGeoMatchSets (p. 332).

- **Type:** String
- **Length Constraints:** Minimum length of 1. Maximum length of 128.
- **Required:** Yes

Response Syntax

```json
{
  "GeoMatchSet": {
    "GeoMatchConstraints": [
      {
        "Type": "string",
        "Value": "string"
      }
    ],
    "GeoMatchSetId": "string",
    "Name": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**GeoMatchSet** (p. 294)

Information about the GeoMatchSet (p. 500) that you specified in the GetGeoMatchSet request. This includes the **Type**, which for a GeoMatchConstraint is always **Country**, as well as the **Value**, which is the identifier for a specific country.

- **Type:** GeoMatchSet (p. 500) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetIPSet

Service: AWS WAF Regional

Returns the IPSet (p. 506) that is specified by IPSetId.

Request Syntax

```json
{
    "IPSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**IPSetId (p. 296)**

The IPSetId of the IPSet (p. 506) that you want to get. IPSetId is returned by CreateIPSet (p. 214) and by ListIPSets (p. 334).

Type: String


Required: Yes

Response Syntax

```json
{
    "IPSet": {
        "IPSetDescriptors": [
            {
                "Type": "string",
                "Value": "string"
            }
        ],
        "IPSetId": "string",
        "Name": "string"
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**IPSet (p. 296)**

Information about the IPSet (p. 506) that you specified in the GetIPSet request. For more information, see the following topics:

- **IPSet (p. 506)**: Contains IPSetDescriptors, IPSetId, and Name
• IPSetDescriptors: Contains an array of IPSetDescriptor (p. 508) objects. Each IPSetDescriptor object contains Type and Value

Type: IPSet (p. 506) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetPermissionPolicy
Service: AWS WAF Regional

Returns the IAM policy attached to the RuleGroup.

Request Syntax

```json
{
   "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

ResourceArn (p. 298)

The Amazon Resource Name (ARN) of the RuleGroup for which you want to get the policy.

Type: String


Required: Yes

Response Syntax

```json
{
   "Policy": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Policy (p. 298)

The IAM policy attached to the specified RuleGroup.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRateBasedRule
Service: AWS WAF Regional

Returns the RateBasedRule (p. 513) that is specified by the RuleId that you included in the GetRateBasedRule request.

Request Syntax

```
{
  "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleId (p. 300)**

The RuleId of the RateBasedRule (p. 513) that you want to get. RuleId is returned by CreateRateBasedRule (p. 217) and by ListRateBasedRules (p. 336).

Type: String


Required: Yes

Response Syntax

```
{
  "Rule": {
    "MatchPredicates": [
      {
        "DataId": "string",
        "Negated": boolean,
        "Type": "string"
      }
    ],
    "MetricName": "string",
    "Name": "string",
    "RateKey": "string",
    "RateLimit": number,
    "RuleId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
Rule (p. 300)

Information about the RateBasedRule (p. 513) that you specified in the GetRateBasedRule request.

Type: RateBasedRule (p. 513) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRateBasedRuleManagedKeys

Service: AWS WAF Regional

Returns an array of IP addresses currently being blocked by the RateBasedRule (p. 513) that is specified by the RuleId. The maximum number of managed keys that will be blocked is 10,000. If more than 10,000 addresses exceed the rate limit, the 10,000 addresses with the highest rates will be blocked.

Request Syntax

```
{
   "NextMarker": "string",
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**NextMarker (p. 302)**

A null value and not currently used. Do not include this in your request.

Type: String

Length Constraints: Minimum length of 1.

Required: No

**RuleId (p. 302)**

The RuleId of the RateBasedRule (p. 513) for which you want to get a list of ManagedKeys.

RuleId is returned by CreateRateBasedRule (p. 217) and by ListRateBasedRules (p. 336).

Type: String


Required: Yes

Response Syntax

```
{
   "ManagedKeys": [ "string" ],
   "NextMarker": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ManagedKeys (p. 302)**

An array of IP addresses that currently are blocked by the specified RateBasedRule (p. 513).
Type: Array of strings

NextMarker (p. 302)

A null value and not currently used.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
- AWS Command Line Interface
- AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
GetRegexMatchSet

Service: AWS WAF Regional

Returns the RegexMatchSet (p. 515) specified by RegexMatchSetId.

Request Syntax

```
{
  "RegexMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RegexMatchSetId (p. 305)**

The RegexMatchSetId of the RegexMatchSet (p. 515) that you want to get. RegexMatchSetId is returned by CreateRegexMatchSet (p. 222) and by ListRegexMatchSets (p. 338).

Type: String


Required: Yes

Response Syntax

```
{
  "RegexMatchSet": {
    "Name": "string",
    "RegexMatchSetId": "string",
    "RegexMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "RegexPatternSetId": "string",
        "TextTransformation": "string"
      }
    ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**RegexMatchSet (p. 305)**

Information about the RegexMatchSet (p. 515) that you specified in the GetRegexMatchSet request. For more information, see RegexMatchTuple (p. 519).
Type: `RegexMatchSet (p. 515)` object

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRegexPatternSet

Service: AWS WAF Regional

Returns the RegexPatternSet (p. 522) specified by RegexPatternSetId.

Request Syntax

```json
{
  "RegexPatternSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

RegexPatternSetId (p. 307)

The RegexPatternSetId of the RegexPatternSet (p. 522) that you want to get. RegexPatternSetId is returned by CreateRegexPatternSet (p. 225) and by ListRegexPatternSets (p. 340).

Type: String


Required: Yes

Response Syntax

```json
{
  "RegexPatternSet": {
    "Name": "string",
    "RegexPatternSetId": "string",
    "RegexPatternStrings": [ "string" ]
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

RegexPatternSet (p. 307)

Information about the RegexPatternSet (p. 522) that you specified in the GetRegexPatternSet request, including the identifier of the pattern set and the regular expression patterns you want AWS WAF to search for.

Type: RegexPatternSet (p. 522) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetRule

Service: AWS WAF Regional

Returns the Rule (p. 525) that is specified by the RuleId that you included in the GetRule request.

Request Syntax

```json
{
   "RuleId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleId (p. 309)**

The RuleId of the Rule (p. 525) that you want to get. RuleId is returned by CreateRule (p. 228) and by ListRules (p. 346).

Type: String


Required: Yes

Response Syntax

```json
{
   "Rule": {
      "MetricName": "string",
      "Name": "string",
      "Predicates": [
         {
            "DataId": "string",
            "Negated": boolean,
            "Type": "string"
         }
      ],
      "RuleId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**Rule (p. 309)**

Information about the Rule (p. 525) that you specified in the GetRule request. For more information, see the following topics:
• **Rule (p. 525):** Contains MetricName, Name, an array of Predicate objects, and RuleId
• **Predicate (p. 511):** Each Predicate object contains DataId, Negated, and Type

Type: [Rule (p. 525) object](#)

### Errors

For information about the errors that are common to all actions, see [Common Errors (p. 561)](#).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)
GetRuleGroup
Service: AWS WAF Regional

Returns the RuleGroup (p. 527) that is specified by the RuleGroupId that you included in the GetRuleGroup request.

To view the rules in a rule group, use ListActivatedRulesInRuleGroup (p. 327).

Request Syntax

```
{
  "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**RuleGroupId (p. 311)**

The RuleGroupId of the RuleGroup (p. 527) that you want to get. RuleGroupId is returned by CreateRuleGroup (p. 232) and by ListRuleGroups (p. 344).

Type: String


Required: Yes

Response Syntax

```
{
  "RuleGroup": {
    "MetricName": "string",
    "Name": "string",
    "RuleGroupId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**RuleGroup (p. 311)**

Information about the RuleGroup (p. 527) that you specified in the GetRuleGroup request.

Type: RuleGroup (p. 527) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSampledRequests
Service: AWS WAF Regional

Gets detailed information about a specified number of requests--a sample--that AWS WAF randomly selects from among the first 5,000 requests that your AWS resource received during a time range that you choose. You can specify a sample size of up to 500 requests, and you can specify any time range in the previous three hours.

GetSampledRequests returns a time range, which is usually the time range that you specified. However, if your resource (such as a CloudFront distribution) received 5,000 requests before the specified time range elapsed, GetSampledRequests returns an updated time range. This new time range indicates the actual period during which AWS WAF selected the requests in the sample.

Request Syntax

```
{
  "MaxItems": number,
  "RuleId": "string",
  "TimeWindow": {
    "EndTime": number,
    "StartTime": number
  },
  "WebAclId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

MaxItems (p. 313)

The number of requests that you want AWS WAF to return from among the first 5,000 requests that your AWS resource received during the time range. If your resource received fewer requests than the value of MaxItems, GetSampledRequests returns information about all of them.

Type: Long


Required: Yes

RuleId (p. 313)

RuleId is one of three values:

- The RuleId of the Rule or the RuleGroupId of the RuleGroup for which you want GetSampledRequests to return a sample of requests.
- Default_Action, which causes GetSampledRequests to return a sample of the requests that didn't match any of the rules in the specified WebACL.

Type: String


Required: Yes
TimeWindow (p. 313)

The start date and time and the end date and time of the range for which you want GetSampledRequests to return a sample of requests. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: TimeWindow (p. 547) object

Required: Yes

WebAclId (p. 313)

The WebAclId of the WebACL for which you want GetSampledRequests to return a sample of requests.

Type: String


Required: Yes

Response Syntax

```json
{
   "PopulationSize": number,
   "SampledRequests": [
      {
         "Action": "string",
         "Request": {
            "ClientIP": "string",
            "Country": "string",
            "Headers": [
               {
                  "Name": "string",
                  "Value": "string"
               }
            ],
            "HTTPVersion": "string",
            "Method": "string",
            "URI": "string"
         },
         "RuleWithinRuleGroup": "string",
         "Timestamp": number,
         "Weight": number
      }
   ],
   "TimeWindow": {
      "EndTime": number,
      "StartTime": number
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
**PopulationSize (p. 314)**

The total number of requests from which `GetSampledRequests` got a sample of `MaxItems` requests. If `PopulationSize` is less than `MaxItems`, the sample includes every request that your AWS resource received during the specified time range.

Type: Long

**SampledRequests (p. 314)**

A complex type that contains detailed information about each of the requests in the sample.

Type: Array of `SampledHTTPRequest (p. 533)` objects

**TimeWindow (p. 314)**

Usually, `TimeWindow` is the time range that you specified in the `GetSampledRequests` request. However, if your AWS resource received more than 5,000 requests during the time range that you specified in the request, `GetSampledRequests` returns the time range for the first 5,000 requests.

Type: `TimeWindow (p. 547)` object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSizeConstraintSet
Service: AWS WAF Regional

Returns the SizeConstraintSet (p. 538) specified by SizeConstraintSetId.

Request Syntax

```json
{
    "SizeConstraintSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**SizeConstraintSetId (p. 316)**

The SizeConstraintSetId of the SizeConstraintSet (p. 538) that you want to get. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 235) and by ListSizeConstraintSets (p. 348).

Type: String


Required: Yes

Response Syntax

```json
{
    "SizeConstraintSet": {
        "Name": "string",
        "SizeConstraints": [
            {
                "ComparisonOperator": "string",
                "FieldToMatch": {
                    "Data": "string",
                    "Type": "string"
                },
                "Size": number,
                "TextTransformation": "string"
            }
        ],
        "SizeConstraintSetId": "string"
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
SizeConstraintSet (p. 316)

Information about the SizeConstraintSet (p. 538) that you specified in the GetSizeConstraintSet request. For more information, see the following topics:

- SizeConstraintSet (p. 538): Contains SizeConstraintSetId, SizeConstraints, and Name
- SizeConstraints: Contains an array of SizeConstraint (p. 535) objects. Each SizeConstraint object contains FieldToMatch (p. 498), TextTransformation, ComparisonOperator, and Size
- FieldToMatch (p. 498): Contains Data and Type

Type: SizeConstraintSet (p. 538) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetSqlInjectionMatchSet
Service: AWS WAF Regional

Returns the SqlInjectionMatchSet (p. 541) that is specified by SqlInjectionMatchSetId.

Request Syntax

```
{
  "SqlInjectionMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

SqlInjectionMatchSetId (p. 318)

The SqlInjectionMatchSetId of the SqlInjectionMatchSet (p. 541) that you want to get. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 238) and by ListSqlInjectionMatchSets (p. 350).

Type: String
Required: Yes

Response Syntax

```
{
  "SqlInjectionMatchSet": {
    "Name": "string",
    "SqlInjectionMatchSetId": "string",
    "SqlInjectionMatchTuples": [
      {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    }
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

SqlInjectionMatchSet (p. 318)

Information about the SqlInjectionMatchSet (p. 541) that you specified in the GetSqlInjectionMatchSet request. For more information, see the following topics:
- **SqlInjectionMatchSet (p. 541)**: Contains Name, SqlInjectionMatchSetId, and an array of SqlInjectionMatchTuple objects
- **SqlInjectionMatchTuple (p. 544)**: Each SqlInjectionMatchTuple object contains FieldToMatch and TextTransformation
- **FieldToMatch (p. 498)**: Contains Data and Type

Type: SqlInjectionMatchSet (p. 541) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

- **WAFInternalErrorException**
  
  The operation failed because of a system problem, even though the request was valid. Retry your request.

  HTTP Status Code: 500

- **WAFInvalidAccountException**
  
  The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

  HTTP Status Code: 400

- **WAFNonexistentItemException**
  
  The operation failed because the referenced object doesn't exist.

  HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetWebACL

Service: AWS WAF Regional

Returns the WebACL (p. 550) that is specified by WebACLId.

Request Syntax

```json
{
    "WebACLId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**WebACLId (p. 320)**

The WebACLId of the WebACL (p. 550) that you want to get. WebACLId is returned by CreateWebACL (p. 241) and by ListWebACLs (p. 354).

Type: String


Required: Yes

Response Syntax

```json
{
    "WebACL": {
        "DefaultAction": {
            "Type": "string"
        },
        "MetricName": "string",
        "Name": "string",
        "Rules": [
            {
                "Action": {
                    "Type": "string"
                },
                "OverrideAction": {
                    "Type": "string"
                },
                "Priority": number,
                "RuleId": "string",
                "Type": "string"
            }
        ],
        "WebACLId": "string"
    }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

WebACL (p. 320)

Information about the WebACL (p. 550) that you specified in the GetWebACL request. For more information, see the following topics:

- WebACL (p. 550): Contains DefaultAction, MetricName, Name, an array of Rule objects, and WebACLId
- DefaultAction (Data type is WafAction (p. 548)): Contains Type
- Rules: Contains an array of ActivatedRule objects, which contain Action, Priority, and RuleId
- Action: Contains Type

Type: WebACL (p. 550) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetWebACLForResource
Service: AWS WAF Regional

Returns the web ACL for the specified resource.

Request Syntax

```
{
   "ResourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

<ResourceArn (p. 322)>

The ARN (Amazon Resource Name) of the resource for which to get the web ACL.

Type: String


Required: Yes

Response Syntax

```
{
   "WebACLSummary": {
      "Name": "string",
      "WebACLId": "string"
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

<WebACLSummary (p. 322)>

Information about the web ACL that you specified in the GetWebACLForResource request. If there is no associated resource, a null WebACLSummary is returned.

Type: WebACLSummary (p. 552) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFUnavailableEntityException

The operation failed because the entity referenced is temporarily unavailable. Retry your request.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetXssMatchSet
Service: AWS WAF Regional

Returns the XssMatchSet (p. 554) that is specified by XssMatchSetId.

Request Syntax

```
{
   "XssMatchSetId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**XssMatchSetId (p. 325)**

The XssMatchSetId of the XssMatchSet (p. 554) that you want to get. XssMatchSetId is returned by CreateXssMatchSet (p. 245) and by ListXssMatchSets (p. 356).

Type: String


Required: Yes

Response Syntax

```
{
   "XssMatchSet": {
      "Name": "string",
      "XssMatchSetId": "string",
      "XssMatchTuples": [
         {
            "FieldToMatch": {
               "Data": "string",
               "Type": "string"
            },
            "TextTransformation": "string"
         }
      ]
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**XssMatchSet (p. 325)**

Information about the XssMatchSet (p. 554) that you specified in the GetXssMatchSet request. For more information, see the following topics:
• **XssMatchSet (p. 554):** Contains Name, XssMatchSetId, and an array of XssMatchTuple objects

• **XssMatchTuple (p. 557):** Each XssMatchTuple object contains FieldToMatch and TextTransformation

• **FieldToMatch (p. 498):** Contains Data and Type

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListActivatedRulesInRuleGroup

Service: AWS WAF Regional

Returns an array of ActivatedRule (p. 488) objects.

Request Syntax

```
{
   "Limit": number,
   "NextMarker": "string",
   "RuleGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 327)

Specifies the number of ActivatedRules that you want AWS WAF to return for this request. If you have more ActivatedRules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of ActivatedRules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 327)

If you specify a value for Limit and you have more ActivatedRules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ActivatedRules. For the second and subsequent ListActivatedRulesInRuleGroup requests, specify the value of NextMarker from the previous response to get information about another batch of ActivatedRules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

RuleGroupId (p. 327)

The RuleGroupId of the RuleGroup (p. 527) for which you want to get a list of ActivatedRule (p. 488) objects.

Type: String


Required: No

Response Syntax

```
{
}
```
"ActivatedRules": [
    {
        "Action": {
            "Type": "string"
        },
        "OverrideAction": {
            "Type": "string"
        },
        "Priority": number,
        "RuleId": "string",
        "Type": "string"
    }
],
"NextMarker": "string"}
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400  
WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListByteMatchSets
Service: AWS WAF Regional

Returns an array of ByteMatchSetSummary (p. 492) objects.

Request Syntax

```json
{
    "Limit": number,
    "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 330)

Specifies the number of ByteMatchSet objects that you want AWS WAF to return for this request. If you have more ByteMatchSets objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of ByteMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 330)

If you specify a value for Limit and you have more ByteMatchSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ByteMatchSets. For the second and subsequent ListByteMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of ByteMatchSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
    "ByteMatchSets": [
        {
            "ByteMatchSetId": "string",
            "Name": "string"
        }
    ],
    "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ByteMatchSets (p. 330)**

An array of ByteMatchSetSummary (p. 492) objects.

Type: Array of ByteMatchSetSummary (p. 492) objects

**NextMarker (p. 330)**

If you have more ByteMatchSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more ByteMatchSet objects, submit another ListByteMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListGeoMatchSets
Service: AWS WAF Regional

Returns an array of GeoMatchSetSummary objects in the response.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

Limit (p. 332)

Specifies the number of GeoMatchSet objects that you want AWS WAF to return for this request. If you have more GeoMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of GeoMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 332)

If you specify a value for Limit and you have more GeoMatchSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of GeoMatchSet objects. For the second and subsequent ListGeoMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of GeoMatchSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
  "GeoMatchSets": [
    {
      "GeoMatchSetId": "string",
      "Name": "string"
    }
  ],
  "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

GeoMatchSets (p. 332)

An array of GeoMatchSetSummary (p. 501) objects.

Type: Array of GeoMatchSetSummary (p. 501) objects

NextMarker (p. 332)

If you have more GeoMatchSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more GeoMatchSet objects, submit another ListGeoMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListIPSets

Service: AWS WAF Regional

Returns an array of IPSetSummary (p. 509) objects in the response.

Request Syntax

```json
{
    "Limit": number,
    "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 334)

Specifies the number of IPSet objects that you want AWS WAF to return for this request. If you have more IPSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of IPSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 334)

If you specify a value for Limit and you have more IPSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of IPSets. For the second and subsequent ListIPSets requests, specify the value of NextMarker from the previous response to get information about another batch of IPSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
    "IPSets": [
        {
            "IPSetId": "string",
            "Name": "string"
        }
    ],
    "NextMarker": "string"
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**IPSets (p. 334)**

An array of **IPSetSummary (p. 509) objects**.

Type: Array of **IPSetSummary (p. 509) objects**

**NextMarker (p. 334)**

If you have more IPSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more IPSet objects, submit another ListIPSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRateBasedRules
Service: AWS WAF Regional

Returns an array of RuleSummary (p. 531) objects.

Request Syntax

```json
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 336)**

Specifies the number of Rules that you want AWS WAF to return for this request. If you have more Rules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 336)**

If you specify a value for Limit and you have more Rules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of Rules. For the second and subsequent ListRateBasedRules requests, specify the value of NextMarker from the previous response to get information about another batch of Rules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
   "NextMarker": "string",
   "Rules": [
      {
         "Name": "string",
         "RuleId": "string"
      }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 336)

If you have more Rules than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more Rules, submit another ListRateBasedRules request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String
Length Constraints: Minimum length of 1.

Rules (p. 336)

An array of RuleSummary (p. 531) objects.
Type: Array of RuleSummary (p. 531) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRegexMatchSets
Service: AWS WAF Regional

Returns an array of RegexMatchSetSummary (p. 517) objects.

Request Syntax

```json
{
"Limit": number,
"NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 338)

Specifies the number of RegexMatchSet objects that you want AWS WAF to return for this request. If you have more RegexMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RegexMatchSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 338)

If you specify a value for Limit and you have more RegexMatchSet objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of ByteMatchSets. For the second and subsequent ListRegexMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of RegexMatchSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
"NextMarker": "string",
"RegexMatchSets": [
{
"Name": "string",
"RegexMatchSetId": "string"
}
]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker** *(p. 338)*

If you have more RegexMatchSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RegexMatchSet objects, submit another ListRegexMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**RegexMatchSets** *(p. 338)*

An array of RegexMatchSetSummary *(p. 517)* objects.

Type: Array of RegexMatchSetSummary *(p. 517)* objects

Errors

For information about the errors that are common to all actions, see Common Errors *(p. 561).*

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRegexPatternSets

Service: AWS WAF Regional

Returns an array of RegexPatternSetSummary (p. 523) objects.

Request Syntax

```
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 340)**

Specifies the number of RegexPatternSet objects that you want AWS WAF to return for this request. If you have more RegexPatternSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RegexPatternSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 340)**

If you specify a value for Limit and you have more RegexPatternSet objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of RegexPatternSet objects. For the second and subsequent ListRegexPatternSets requests, specify the value of NextMarker from the previous response to get information about another batch of RegexPatternSet objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
   "NextMarker": "string",
   "RegexPatternSets": [
   {
      "Name": "string",
      "RegexPatternSetId": "string"
   }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 340)

If you have more RegexPatternSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RegexPatternSet objects, submit another ListRegexPatternSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String
Length Constraints: Minimum length of 1.

RegexPatternSets (p. 340)

An array of RegexPatternSetSummary (p. 523) objects.
Type: Array of RegexPatternSetSummary (p. 523) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListResourcesForWebACL
Service: AWS WAF Regional

Returns an array of resources associated with the specified web ACL.

Request Syntax

```json
{
  "WebACLId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**WebACLId (p. 342)**

The unique identifier (ID) of the web ACL for which to list the associated resources.

Type: String


Required: Yes

Response Syntax

```json
{
  "ResourceArns": [ "string" ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ResourceArns (p. 342)**

An array of ARNs (Amazon Resource Names) of the resources associated with the specified web ACL.

An array with zero elements is returned if there are no resources associated with the web ACL.

Type: Array of strings


Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).
**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRuleGroups

Service: AWS WAF Regional

Returns an array of RuleGroup objects.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

**Limit**

Specifies the number of RuleGroups that you want AWS WAF to return for this request. If you have more RuleGroups than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of RuleGroups.

- Type: Integer
- Valid Range: Minimum value of 0. Maximum value of 100.
- Required: No

**NextMarker**

If you specify a value for Limit and you have more RuleGroups than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of RuleGroups. For the second and subsequent ListRuleGroups requests, specify the value of NextMarker from the previous response to get information about another batch of RuleGroups.

- Type: String
- Length Constraints: Minimum length of 1.
- Required: No

Response Syntax

```
{
  "NextMarker": "string",
  "RuleGroups": [
    {
      "Name": "string",
      "RuleGroupId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 344)**

If you have more RuleGroups than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more RuleGroups, submit another ListRuleGroups request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**RuleGroups (p. 344)**

An array of RuleGroup (p. 527) objects.

Type: Array of RuleGroupSummary (p. 529) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListRules
Service: AWS WAF Regional

Returns an array of RuleSummary (p. 531) objects.

Request Syntax

```json
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 346)

Specifies the number of Rules that you want AWS WAF to return for this request. If you have more Rules than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 346)

If you specify a value for Limit and you have more Rules than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of Rules. For the second and subsequent ListRules requests, specify the value of NextMarker from the previous response to get information about another batch of Rules.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
  "NextMarker": "string",
  "Rules": [
    {
      "Name": "string",
      "RuleId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service.

NextMarker (p. 346)

If you have more Rules than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more Rules, submit another ListRules request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String
Length Constraints: Minimum length of 1.

Rules (p. 346)

An array of RuleSummary (p. 531) objects.

Type: Array of RuleSummary (p. 531) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSizeConstraintSets

Service: AWS WAF Regional

Returns an array of SizeConstraintSetSummary (p. 539) objects.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 348)**

Specifies the number of SizeConstraintSet objects that you want AWS WAF to return for this request. If you have more SizeConstraintSets objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of SizeConstraintSet objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 348)**

If you specify a value for Limit and you have more SizeConstraintSets than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of SizeConstraintSets. For the second and subsequent ListSizeConstraintSets requests, specify the value of NextMarker from the previous response to get information about another batch of SizeConstraintSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
  "NextMarker": "string",
  "SizeConstraintSets": [
    {
      "Name": "string",
      "SizeConstraintSetId": "string"
    }
  ]
}
```

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Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 348)**

If you have more SizeConstraintSet objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more SizeConstraintSet objects, submit another ListSizeConstraintSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**SizeConstraintSets (p. 348)**

An array of SizeConstraintSetSummary (p. 539) objects.

Type: Array of SizeConstraintSetSummary (p. 539) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSqlInjectionMatchSets

Service: AWS WAF Regional

Returns an array of SqlInjectionMatchSet (p. 541) objects.

Request Syntax

```json
{
   "Limit": number,
   "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 350)

Specifies the number of SqlInjectionMatchSet (p. 541) objects that you want AWS WAF to return for this request. If you have more SqlInjectionMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of rules.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 350)

If you specify a value for Limit and you have more SqlInjectionMatchSet (p. 541) objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of SqlInjectionMatchSets. For the second and subsequent ListSqlInjectionMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of SqlInjectionMatchSets.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
   "NextMarker": "string",
   "SqlInjectionMatchSets": [
   {
      "Name": "string",
      "SqlInjectionMatchSetId": "string"
   }
   ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 350)**

If you have more SqlInjectionMatchSet (p. 541) objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more SqlInjectionMatchSet objects, submit another ListSqlInjectionMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**SqlInjectionMatchSets (p. 350)**

An array of SqlInjectionMatchSetSummary (p. 542) objects.

Type: Array of SqlInjectionMatchSetSummary (p. 542) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListSubscribedRuleGroups

Service: AWS WAF Regional

Returns an array of RuleGroup (p. 527) objects that you are subscribed to.

Request Syntax

```json
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

Limit (p. 352)

Specifies the number of subscribed rule groups that you want AWS WAF to return for this request. If you have more objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

NextMarker (p. 352)

If you specify a value for Limit and you have more ByteMatchSetssubscribed rule groups than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of subscribed rule groups. For the second and subsequent ListSubscribedRuleGroupsRequest requests, specify the value of NextMarker from the previous response to get information about another batch of subscribed rule groups.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```json
{
  "NextMarker": "string",
  "RuleGroups": [
    {
      "MetricName": "string",
      "Name": "string",
      "RuleGroupId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 352)

If you have more objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more objects, submit another ListSubscribedRuleGroups request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

RuleGroups (p. 352)

An array of RuleGroup (p. 527) objects.

Type: Array of SubscribedRuleGroupSummary (p. 546) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListWebACLs
Service: AWS WAF Regional

Returns an array of WebACLSummary (p. 552) objects in the response.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 354)**

Specifies the number of WebACL objects that you want AWS WAF to return for this request. If you have more WebACL objects than the number that you specify for Limit, the response includes a NextMarker value that you can use to get another batch of WebACL objects.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextMarker (p. 354)**

If you specify a value for Limit and you have more WebACL objects than the number that you specify for Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of WebACL objects. For the second and subsequent ListWebACLs requests, specify the value of NextMarker from the previous response to get information about another batch of WebACL objects.

Type: String

Length Constraints: Minimum length of 1.

Required: No

Response Syntax

```
{
  "NextMarker": "string",
  "WebACLs": [
    {
      "Name": "string",
      "WebACLId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**NextMarker (p. 354)**

If you have more WebACL objects than the number that you specified for `Limit` in the request, the response includes a `NextMarker` value. To list more WebACL objects, submit another `ListWebACLs` request, and specify the `NextMarker` value from the response in the `NextMarker` value in the next request.

Type: String

Length Constraints: Minimum length of 1.

**WebACLs (p. 354)**

An array of `WebACLSummary (p. 552)` objects.

Type: Array of `WebACLSummary (p. 552)` objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ListXssMatchSets
Service: AWS WAF Regional

Returns an array of XssMatchSet (p. 554) objects.

Request Syntax

```
{
  "Limit": number,
  "NextMarker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Limit (p. 356)**

Specifies the number of XssMatchSet (p. 554) objects that you want AWS WAF to return for this request. If you have more XssMatchSet objects than the number you specify for Limit, the response includes a NextMarker value that you can use to get another batch of Rules.

*Type: Integer*

*Valid Range: Minimum value of 0. Maximum value of 100.*

*Required: No*

**NextMarker (p. 356)**

If you specify a value for Limit and you have more XssMatchSet (p. 554) objects than the value of Limit, AWS WAF returns a NextMarker value in the response that allows you to list another group of XssMatchSets. For the second and subsequent ListXssMatchSets requests, specify the value of NextMarker from the previous response to get information about another batch of XssMatchSets.

*Type: String*

*Length Constraints: Minimum length of 1.*

*Required: No*

Response Syntax

```
{
  "NextMarker": "string",
  "XssMatchSets": [
    {
      "Name": "string",
      "XssMatchSetId": "string"
    }
  ]
}
```
Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextMarker (p. 356)

If you have more XssMatchSet (p. 554) objects than the number that you specified for Limit in the request, the response includes a NextMarker value. To list more XssMatchSet objects, submit another ListXssMatchSets request, and specify the NextMarker value from the response in the NextMarker value in the next request.

Type: String

Length Constraints: Minimum length of 1.

XssMatchSets (p. 356)

An array of XssMatchSetSummary (p. 555) objects.

Type: Array of XssMatchSetSummary (p. 555) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**PutPermissionPolicy**
Service: AWS WAF Regional

Attaches a IAM policy to the specified resource. The only supported use for this action is to share a RuleGroup across accounts.

The PutPermissionPolicy is subject to the following restrictions:

- You can attach only one policy with each PutPermissionPolicy request.
- The policy must include an Effect, Action and Principal.
- Effect must specify Allow.
- The Action in the policy must be `waf:UpdateWebACL`, `waf-regional:UpdateWebACL`, `waf:GetRuleGroup` and `waf-regional:GetRuleGroup`. Any extra or wildcard actions in the policy will be rejected.
- The policy cannot include a Resource parameter.
- The ARN in the request must be a valid WAF RuleGroup ARN and the RuleGroup must exist in the same region.
- The user making the request must be the owner of the RuleGroup.
- Your policy must be composed using IAM Policy version 2012-10-17.

For more information, see IAM Policies.

An example of a valid policy parameter is shown in the Examples section below.

### Request Syntax

```json
{
    "Policy": "string",
    "ResourceArn": "string"
}
```

### Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**Policy (p. 358)**

The policy to attach to the specified RuleGroup.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**ResourceArn (p. 358)**

The Amazon Resource Name (ARN) of the RuleGroup to which you want to attach the policy.

Type: String

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidPermissionPolicyException

The operation failed because the specified policy is not in the proper format.

The policy is subject to the following restrictions:

- You can attach only one policy with each PutPermissionPolicy request.
- The policy must include an Effect, Action and Principal.
- Effect must specify Allow.
- The Action in the policy must be waf:UpdateWebACL, waf-regional:UpdateWebACL, waf:GetRuleGroup and waf-regional:GetRuleGroup. Any extra or wildcard actions in the policy will be rejected.
- The policy cannot include a Resource parameter.
- The ARN in the request must be a valid WAF RuleGroup ARN and the RuleGroup must exist in the same region.
- The user making the request must be the owner of the RuleGroup.
- Your policy must be composed using IAM Policy version 2012-10-17.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

Examples

Example policy parameter - No escape characters

```json
{
    "Version": "2012-10-17",
    "Statement": [
```
{  
"Effect": "Allow",
"Principal": {
  "AWS": "arn:aws:iam::111111111111:user/MyUserName"
},
"Action": [
  "waf:UpdateWebACL",
  "waf-regional:UpdateWebACL",
  "waf:GetRuleGroup",
  "waf-regional:GetRuleGroup"
]
}

Example policy parameter - AWS Command Line Interface (CLI)


See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateByteMatchSet
Service: AWS WAF Regional

Inserts or deletes ByteMatchTuple (p. 494) objects (filters) in a ByteMatchSet (p. 490). For each ByteMatchTuple object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a ByteMatchSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to look for. For more information, including how you specify the values for the AWS WAF API and the AWS CLI or SDKs, see TargetString in the ByteMatchTuple (p. 494) data type.
- Where to look, such as at the beginning or the end of a query string.
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

For example, you can add a ByteMatchSetUpdate object that matches web requests in which User-Agent headers contain the string BadBot. You can then configure AWS WAF to block those requests.

To create and configure a ByteMatchSet, perform the following steps:

1. Create a ByteMatchSet. For more information, see CreateByteMatchSet (p. 208).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateByteMatchSet request.
3. Submit an UpdateByteMatchSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ByteMatchSetId": "string",
  "ChangeToken": "string",
  "Updates": [
    {
      "Action": "string",
      "ByteMatchTuple": {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "PositionalConstraint": "string",
        "TargetString": "blob",
        "TextTransformation": "string"
      }
    }
  ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ByteMatchSetId (p. 361)**

The `ByteMatchSetId` of the ByteMatchSet (p. 490) that you want to update. `ByteMatchSetId` is returned by `CreateByteMatchSet` (p. 208) and by `ListByteMatchSets` (p. 330).

Type: String


Required: Yes

**ChangeToken (p. 361)**

The value returned by the most recent call to `GetChangeToken` (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Updates (p. 361)**

An array of `ByteMatchSetUpdate` objects that you want to insert into or delete from a ByteMatchSet (p. 490). For more information, see the applicable data types:

- `ByteMatchSetUpdate` (p. 493): Contains `Action` and `ByteMatchTuple`
- `ByteMatchTuple` (p. 494): Contains `FieldToMatch`, `PositionalConstraint`, `TargetString`, and `TextTransformation`
- `FieldToMatch` (p. 498): Contains `Data` and `Type`

Type: Array of `ByteMatchSetUpdate` (p. 493) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 362)**

The `ChangeToken` that you used to submit the `UpdateByteMatchSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus` (p. 292).
Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateGeoMatchSet

Service: AWS WAF Regional

Inserts or deletes GeoMatchConstraint (p. 499) objects in a GeoMatchSet. For each GeoMatchConstraint object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a GeoMatchConstraint object, you delete the existing object and add a new one.
- The Type. The only valid value for Type is Country.
- The Value, which is a two character code for the country to add to the GeoMatchConstraint object. Valid codes are listed in GeoMatchConstraint:Value (p. 499).

To create and configure a GeoMatchSet, perform the following steps:

1. Submit a CreateGeoMatchSet (p. 211) request.
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateGeoMatchSet (p. 365) request.
3. Submit an UpdateGeoMatchSet request to specify the country that you want AWS WAF to watch for.

When you update a GeoMatchSet, you specify the country that you want to add and/or the country that you want to delete. If you want to change a country, you delete the existing country and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "GeoMatchSetId": "string",
  "Updates": [
    {
      "Action": "string",
      "GeoMatchConstraint": {
        "Type": "string",
        "Value": "string"
      }
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 365)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.
Required: Yes

**GeoMatchSetId (p. 365)**

The GeoMatchSetId of the GeoMatchSet (p. 500) that you want to update. GeoMatchSetId is returned by CreateGeoMatchSet (p. 211) and by ListGeoMatchSets (p. 332).

**Type:** String

**Length Constraints:** Minimum length of 1. Maximum length of 128.

Required: Yes

**Updates (p. 365)**

An array of GeoMatchSetUpdate objects that you want to insert into or delete from an GeoMatchSet (p. 500). For more information, see the applicable data types:

- **GeoMatchSetUpdate (p. 502):** Contains Action and GeoMatchConstraint
- **GeoMatchConstraint (p. 499):** Contains Type and Value

You can have only one Type and Value per GeoMatchConstraint. To add multiple countries, include multiple GeoMatchSetUpdate objects in your request.

**Type:** Array of GeoMatchSetUpdate (p. 502) objects

**Array Members:** Minimum number of 1 item.

Required: Yes

### Response Syntax

```json
{
  "ChangeToken": "string"
}
```

### Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 366)**

The ChangeToken that you used to submit the UpdateGeoMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

**Type:** String

**Length Constraints:** Minimum length of 1.

### Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
UpdateIPSet
Service: AWS WAF Regional

Inserts or deletes IPSetDescriptor (p. 508) objects in an IPSet. For each IPSetDescriptor object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change an IPSetDescriptor object, you delete the existing object and add a new one.
- The IP address version, IPv4 or IPv6.
- The IP address in CIDR notation, for example, 192.0.2.0/24 (for the range of IP addresses from 192.0.2.0 to 192.0.2.255) or 192.0.2.44/32 (for the individual IP address 192.0.2.44).

AWS WAF supports /8, /16, /24, and /32 IP address ranges for IPv4, and /24, /32, /48, /56, /64 and /128 for IPv6. For more information about CIDR notation, see the Wikipedia entry Classless Inter-Domain Routing.

IPv6 addresses can be represented using any of the following formats:

- 1111:0000:0000:0000:0000:0000:0000:0111/128
- 1111:0:0:0:0:0:0:0111/128
- 1111::0111/128
- 1111::111/128
- 1111::111

You use an IPSet to specify which web requests you want to allow or block based on the IP addresses that the requests originated from. For example, if you're receiving a lot of requests from one or a small number of IP addresses and you want to block the requests, you can create an IPSet that specifies those IP addresses, and then configure AWS WAF to block the requests.

To create and configure an IPSet, perform the following steps:

1. Submit a CreateIPSet (p. 214) request.
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 369) request.
3. Submit an UpdateIPSet request to specify the IP addresses that you want AWS WAF to watch for.

When you update an IPSet, you specify the IP addresses that you want to add and/or the IP addresses that you want to delete. If you want to change an IP address, you delete the existing IP address and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```
{
  "ChangeToken": "string",
  "IPSetId": "string",
  "Updates": [
    {
      "Action": "string",
      "IPSetDescriptor": {
        "Type": "string",
        "Value": "string"
      }
    }
  ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 369)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**IPSetId (p. 369)**

The IPSetId of the IPSet (p. 506) that you want to update. IPSetId is returned by CreateIPSet (p. 214) and by ListIPSets (p. 334).

Type: String


Required: Yes

**Updates (p. 369)**

An array of IPSetUpdate objects that you want to insert into or delete from an IPSet (p. 506). For more information, see the applicable data types:

- IPSetUpdate (p. 510): Contains Action and IPSetDescriptor
- IPSetDescriptor (p. 508): Contains Type and Value

Type: Array of IPSetUpdate (p. 510) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```json
{
    "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
**ChangeToken (p. 370)**

The ChangeToken that you used to submit the UpdateIPSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String
Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.
HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
- You tried to delete a ByteMatchSet that is still referenced by a Rule.
- You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRateBasedRule

Service: AWS WAF Regional

Inserts or deletes Predicate (p. 511) objects in a rule and updates the RateLimit in the rule.

Each Predicate object identifies a predicate, such as a ByteMatchSet (p. 490) or an IPSet (p. 506), that specifies the web requests that you want to block or count. The RateLimit specifies the number of requests every five minutes that triggers the rule.

If you add more than one predicate to a RateBasedRule, a request must match all the predicates and exceed the RateLimit to be counted or blocked. For example, suppose you add the following to a RateBasedRule:

- An IPSet that matches the IP address 192.0.2.44/32
- A ByteMatchSet that matches BadBot in the User-Agent header

Further, you specify a RateLimit of 15,000.

You then add the RateBasedRule to a WebACL and specify that you want to block requests that satisfy the rule. For a request to be blocked, it must come from the IP address 192.0.2.44 and the User-Agent header in the request must contain the value BadBot. Further, requests that match these two conditions much be received at a rate of more than 15,000 every five minutes. If the rate drops below this limit, AWS WAF no longer blocks the requests.

As a second example, suppose you want to limit requests to a particular page on your site. To do this, you could add the following to a RateBasedRule:

- A ByteMatchSet with FieldToMatch of URI
- A PositionalConstraint of STARTS_WITH
- A TargetString of login

Further, you specify a RateLimit of 15,000.

By adding this RateBasedRule to a WebACL, you could limit requests to your login page without affecting the rest of your site.

Request Syntax

```json
{
   "ChangeToken": "string",
   "RateLimit": number,
   "RuleId": "string",
   "Updates": [
      {
         "Action": "string",
         "Predicate": {
            "DataId": "string",
            "Negated": boolean,
            "Type": "string"
         }
      }
   ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 373)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RateLimit (p. 373)**

The maximum number of requests, which have an identical value in the field specified by the RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

**RuleId (p. 373)**

The RuleId of the RateBasedRule that you want to update. RuleId is returned by CreateRateBasedRule and by ListRateBasedRules (p. 336).

Type: String


Required: Yes

**Updates (p. 373)**

An array of RuleUpdate objects that you want to insert into or delete from a RateBasedRule (p. 513).

Type: Array of RuleUpdate (p. 532) objects

Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**ChangeToken (p. 374)**

The ChangeToken that you used to submit the UpdateRateBasedRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRegexMatchSet
Service: AWS WAF Regional

Inserts or deletes RegexMatchTuple (p. 519) objects (filters) in a RegexMatchSet (p. 515). For each RegexMatchSetUpdate object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a RegexMatchSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see RegexPatternSet (p. 522).
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

For example, you can create a RegexPatternSet that matches any requests with User-Agent headers that contain the string B[a@]dB[00]. You can then configure AWS WAF to reject those requests.

To create and configure a RegexMatchSet, perform the following steps:
1. Create a RegexMatchSet. For more information, see CreateRegexMatchSet (p. 222).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateRegexMatchSet request.
3. Submit an UpdateRegexMatchSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the identifier of the RegexPatternSet that contain the regular expression patterns you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RegexMatchSetId": "string",
  "Updates": [
    {
      "Action": "string",
      "RegexMatchTuple": {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "RegexPatternSetId": "string",
        "TextTransformation": "string"
      }
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).
The request accepts the following data in JSON format.

**ChangeToken (p. 378)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RegexMatchSetId (p. 378)**

The RegexMatchSetId of the RegexMatchSet (p. 515) that you want to update. RegexMatchSetId is returned by CreateRegexMatchSet (p. 222) and by ListRegexMatchSets (p. 338).

Type: String


Required: Yes

**Updates (p. 378)**

An array of RegexMatchSetUpdate objects that you want to insert into or delete from a RegexMatchSet (p. 515). For more information, see RegexMatchTuple (p. 519).

Type: Array of RegexMatchSetUpdate (p. 518) objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```
{
  "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 379)**

The ChangeToken that you used to submit the UpdateRegexMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).
WAFDisallowedNameException

The name specified is invalid.

HTTP Status Code: 400

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRegexPatternSet

Service: AWS WAF Regional

Inserts or deletes RegexPatternString objects in a RegexPatternSet (p. 522). For each RegexPatternString object, you specify the following values:

- Whether to insert or delete the RegexPatternString.
- The regular expression pattern that you want to insert or delete. For more information, see RegexPatternSet (p. 522).

For example, you can create a RegexPatternString such as B[a@]d[b0]ot. AWS WAF will match this RegexPatternString to:

- BadBot
- BadB0t
- B@dBot
- B@dB0t

To create and configure a RegexPatternSet, perform the following steps:

1. Create a RegexPatternSet. For more information, see CreateRegexPatternSet (p. 225).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateRegexPatternSet request.
3. Submit an UpdateRegexPatternSet request to specify the regular expression pattern that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "RegexPatternSetId": "string",
    "Updates": [
        {
            "Action": "string",
            "RegexPatternString": "string"
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 382)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String
Length Constraints: Minimum length of 1.

Required: Yes

**RegexPatternSetId (p. 382)**

The `RegexPatternSetId` of the `RegexPatternSet (p. 522)` that you want to update. `RegexPatternSetId` is returned by `CreateRegexPatternSet (p. 225)` and by `ListRegexPatternSets (p. 340)`.

Type: String


Required: Yes

**Updates (p. 382)**

An array of `RegexPatternSetUpdate` objects that you want to insert into or delete from a `RegexPatternSet (p. 522)`.

Type: Array of `RegexPatternSetUpdate (p. 524)` objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```
{
  "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 383)**

The `ChangeToken` that you used to submit the `UpdateRegexPatternSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500
WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a `Rule` from a `WebACL`, but the `Rule` isn't in the specified `WebACL`.
- You tried to remove an IP address from an `IPSet`, but the IP address isn't in the specified `IPSet`.
- You tried to remove a `ByteMatchTuple` from a `ByteMatchSet`, but the `ByteMatchTuple` isn't in the specified `WebACL`.
- You tried to add a `Rule` to a `WebACL`, but the `Rule` already exists in the specified `WebACL`.
- You tried to add an IP address to an `IPSet`, but the IP address already exists in the specified `IPSet`.
- You tried to add a `ByteMatchTuple` to a `ByteMatchSet`, but the `ByteMatchTuple` already exists in the specified `WebACL`.

HTTP Status Code: 400

WAFInvalidRegexPatternException

The regular expression (regex) you specified in `RegexPatternString` is invalid.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of `WebACL` objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a `Rule` to or delete a `Rule` from a `WebACL` that doesn't exist.
- You tried to add a `ByteMatchSet` to or delete a `ByteMatchSet` from a `Rule` that doesn't exist.
- You tried to add an IP address to or delete an IP address from an `IPSet` that doesn't exist.
- You tried to add a `ByteMatchTuple` to or delete a `ByteMatchTuple` from a `ByteMatchSet` that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateRule
Service: AWS WAF Regional

Inserts or deletes Predicate (p. 511) objects in a Rule. Each Predicate object identifies a predicate, such as a ByteMatchSet (p. 490) or an IPSet (p. 506), that specifies the web requests that you want to allow, block, or count. If you add more than one predicate to a Rule, a request must match all of the specifications to be allowed, blocked, or counted. For example, suppose you add the following to a Rule:

- A ByteMatchSet that matches the value BadBot in the User-Agent header
- An IPSet that matches the IP address 192.0.2.44

You then add the Rule to a WebACL and specify that you want to block requests that satisfy the Rule. For a request to be blocked, the User-Agent header in the request must contain the value BadBot and the request must originate from the IP address 192.0.2.44.

To create and configure a Rule, perform the following steps:

1. Create and update the predicates that you want to include in the Rule.
2. Create the Rule. See CreateRule (p. 228).
3. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRule (p. 386) request.
4. Submit an UpdateRule request to add predicates to the Rule.

If you want to replace one ByteMatchSet or IPSet with another, you delete the existing one and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "RuleId": "string",
  "Updates": [
    {
      "Action": "string",
      "Predicate": {
        "DataId": "string",
        "Negated": boolean,
        "Type": "string"
      }
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.
**ChangeToken (p. 386)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**RuleId (p. 386)**

The RuleId of the Rule that you want to update. RuleId is returned by CreateRule and by ListRules (p. 346).

Type: String


Required: Yes

**Updates (p. 386)**

An array of RuleUpdate objects that you want to insert into or delete from a Rule (p. 525). For more information, see the applicable data types:

- RuleUpdate (p. 532): Contains Action and Predicate
- Predicate (p. 511): Contains DataId, Negated, and Type
- FieldToMatch (p. 498): Contains Data and Type

Type: Array of RuleUpdate (p. 532) objects

Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 387)**

The ChangeToken that you used to submit the UpdateRule request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).
**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFNonexistentContainerException**

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
UpdateRuleGroup
Service: AWS WAF Regional

Inserts or deletes ActivatedRule (p. 488) objects in a RuleGroup.

You can only insert REGULAR rules into a rule group.

You can have a maximum of ten rules per rule group.

To create and configure a RuleGroup, perform the following steps:

1. Create and update the Rules that you want to include in the RuleGroup. See CreateRule (p. 228).
2. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateRuleGroup (p. 390) request.
3. Submit an UpdateRuleGroup request to add Rules to the RuleGroup.

If you want to replace one Rule with another, you delete the existing one and add the new one.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
    "ChangeToken": "string",
    "RuleGroupId": "string",
    "Updates": [
        {
            "Action": "string",
            "ActivatedRule": {
                "Action": {
                    "Type": "string"
                },
                "OverrideAction": {
                    "Type": "string"
                },
                "Priority": number,
                "RuleId": "string",
                "Type": "string"
            }
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 390)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.
Required: Yes

**RuleGroupId (p. 390)**


Type: String


Required: Yes

**Updates (p. 390)**


You can only insert `REGULAR` rules into a rule group.

`ActivatedRule|OverrideAction` applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use `ActivatedRule|Action`. For all other update requests, `ActivatedRule|Action` is used instead of `ActivatedRule|OverrideAction`.

Type: Array of [RuleGroupUpdate (p. 530)](https://aws.amazon.com) objects

Array Members: Minimum number of 1 item.

Required: Yes

**Response Syntax**

```json
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 391)**

The `ChangeToken` that you used to submit the `UpdateRuleGroup` request. You can also use this value to query the status of the request. For more information, see [GetChangeTokenStatus (p. 292)](https://aws.amazon.com).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 561)](https://aws.amazon.com).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.
HTTP Status Code: 500

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:
- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.
HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
**UpdateSizeConstraintSet**

Service: AWS WAF Regional

Inserts or deletes SizeConstraint (p. 535) objects (filters) in a SizeConstraintSet (p. 538). For each SizeConstraint object, you specify the following values:

- Whether to insert or delete the object from the array. If you want to change a SizeConstraintSetUpdate object, you delete the existing object and add a new one.
- The part of a web request that you want AWS WAF to evaluate, such as the length of a query string or the length of the User-Agent header.
- Whether to perform any transformations on the request, such as converting it to lowercase, before checking its length. Note that transformations of the request body are not supported because the AWS resource forwards only the first 8192 bytes of your request to AWS WAF.

You can only specify a single type of TextTransformation.

- A ComparisonOperator used for evaluating the selected part of the request against the specified Size, such as equals, greater than, less than, and so on.
- The length, in bytes, that you want AWS WAF to watch for in selected part of the request. The length is computed after applying the transformation.

For example, you can add a SizeConstraintSetUpdate object that matches web requests in which the length of the User-Agent header is greater than 100 bytes. You can then configure AWS WAF to block those requests.

To create and configure a SizeConstraintSet, perform the following steps:

1. Create a SizeConstraintSet. For more information, see CreateSizeConstraintSet (p. 235).
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateSizeConstraintSet request.
3. Submit an UpdateSizeConstraintSet request to specify the part of the request that you want AWS WAF to inspect (for example, the header or the URI) and the value that you want AWS WAF to watch for.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{
    "ChangeToken": "string",
    "SizeConstraintSetId": "string",
    "Updates": [
        {
            "Action": "string",
            "SizeConstraint": {
                "ComparisonOperator": "string",
                "FieldToMatch": {
                    "Data": "string",
                    "Type": "string"
                }
            },
            "Size": number,
            "TextTransformation": "string"
        }
    ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 394)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**SizeConstraintSetId (p. 394)**

The SizeConstraintSetId of the SizeConstraintSet (p. 538) that you want to update. SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 235) and by ListSizeConstraintSets (p. 348).

Type: String


Required: Yes

**Updates (p. 394)**

An array of SizeConstraintSetUpdate objects that you want to insert into or delete from a SizeConstraintSet (p. 538). For more information, see the applicable data types:

- **SizeConstraintSetUpdate (p. 540)**: Contains Action and SizeConstraint
- **SizeConstraint (p. 535)**: Contains FieldToMatch, TextTransformation, ComparisonOperator, and Size
- **FieldToMatch (p. 498)**: Contains Data and Type

Type: Array of SizeConstraintSetUpdate (p. 540) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```json
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.
**ChangeToken (p. 395)**

The `ChangeToken` that you used to submit the `UpdateSizeConstraintSet` request. You can also use this value to query the status of the request. For more information, see `GetChangeTokenStatus (p. 292)`.

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see `Common Errors (p. 561)`.

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn’t exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn’t exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn’t exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn’t exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn’t exist.

HTTP Status Code: 400

WAFNonexistentItemException

The operation failed because the referenced object doesn’t exist.

HTTP Status Code: 400

WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400

WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
UpdateSqlInjectionMatchSet
Service: AWS WAF Regional

Inserts or deletes SqlInjectionMatchTuple (p. 544) objects (filters) in a SqlInjectionMatchSet (p. 541). For each SqlInjectionMatchTuple object, you specify the following values:

- **Action**: Whether to insert the object into or delete the object from the array. To change a SqlInjectionMatchTuple, you delete the existing object and add a new one.
- **FieldToMatch**: The part of web requests that you want AWS WAF to inspect and, if you want AWS WAF to inspect a header, the name of the header.
- **TextTransformation**: Which text transformation, if any, to perform on the web request before inspecting the request for snippets of malicious SQL code.

You can only specify a single type of TextTransformation.

You use SqlInjectionMatchSet objects to specify which CloudFront requests you want to allow, block, or count. For example, if you're receiving requests that contain snippets of SQL code in the query string and you want to block the requests, you can create a SqlInjectionMatchSet with the applicable settings, and then configure AWS WAF to block the requests.

To create and configure a SqlInjectionMatchSet, perform the following steps:

1. Submit a CreateSqlInjectionMatchSet (p. 238) request.
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 369) request.
3. Submit an UpdateSqlInjectionMatchSet request to specify the parts of web requests that you want AWS WAF to inspect for snippets of SQL code.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

**Request Syntax**

```json
{"ChangeToken": "string",
"SqlInjectionMatchSetId": "string",
"Updates": [
  {
    "Action": "string",
    "SqlInjectionMatchTuple": {
      "FieldToMatch": {
        "Data": "string",
        "Type": "string"
      },
      "TextTransformation": "string"
    }
  }
]}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.
ChangeToken (p. 399)

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

SqlInjectionMatchSetId (p. 399)

The SqlInjectionMatchSetId of the SqlInjectionMatchSet that you want to update. SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 238) and by ListSqlInjectionMatchSets (p. 350).

Type: String


Required: Yes

Updates (p. 399)

An array of SqlInjectionMatchSetUpdate objects that you want to insert into or delete from a SqlInjectionMatchSet (p. 541). For more information, see the applicable data types:

- SqlInjectionMatchSetUpdate (p. 543): Contains Action and SqlInjectionMatchTuple
- SqlInjectionMatchTuple (p. 544): Contains FieldToMatch and TextTransformation
- FieldToMatch (p. 498): Contains Data and Type

Type: Array of SqlInjectionMatchSetUpdate (p. 543) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeToken (p. 400)

The ChangeToken that you used to submit the UpdateSqlInjectionMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

WAFInternalErrorException

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

WAFInvalidAccountException

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

WAFInvalidOperationException

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

WAFInvalidParameterException

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
**WAFNonexistentContainerException**

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:

- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateWebACL
Service: AWS WAF Regional

Inserts or deletes ActivatedRule (p. 488) objects in a WebACL. Each Rule identifies web requests that you want to allow, block, or count. When you update a WebACL, you specify the following values:

- A default action for the WebACL, either ALLOW or BLOCK. AWS WAF performs the default action if a request doesn't match the criteria in any of the Rules in a WebACL.
- The Rules that you want to add and/or delete. If you want to replace one Rule with another, you delete the existing Rule and add the new one.
- For each Rule, whether you want AWS WAF to allow requests, block requests, or count requests that match the conditions in the Rule.
- The order in which you want AWS WAF to evaluate the Rules in a WebACL. If you add more than one Rule to a WebACL, AWS WAF evaluates each request against the Rules in order based on the value of Priority. (The Rule that has the lowest value for Priority is evaluated first.) When a web request matches all of the predicates (such as ByteMatchSets and IPSets) in a Rule, AWS WAF immediately takes the corresponding action, allow or block, and doesn't evaluate the request against the remaining Rules in the WebACL, if any.

To create and configure a WebACL, perform the following steps:

1. Create and update the predicates that you want to include in Rules. For more information, see CreateByteMatchSet (p. 208), UpdateByteMatchSet (p. 361), CreateIPSet (p. 214), UpdateIPSet (p. 369), CreateSqlInjectionMatchSet (p. 238), and UpdateSqlInjectionMatchSet (p. 399).
2. Create and update the Rules that you want to include in the WebACL. For more information, see CreateRule (p. 228) and UpdateRule (p. 386).
4. Use GetChangeToken to get the change token that you provide in the ChangeToken parameter of an UpdateWebACL (p. 403) request.
5. Submit an UpdateWebACL request to specify the Rules that you want to include in the WebACL, to specify the default action, and to associate the WebACL with a CloudFront distribution.

Be aware that if you try to add a RATE_BASED rule to a web ACL without setting the rule type when first creating the rule, the UpdateWebACL (p. 403) request will fail because the request tries to add a REGULAR rule (the default rule type) with the specified ID, which does not exist.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "DefaultAction": {
    "Type": "string"
  },
  "Updates": [
    {
      "Action": "string",
      "ActivatedRule": {
        "Action": {
          "Type": "string"
        },
        "OverrideAction": {
          "Type": "string"
        }
      }
    }
  ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.

**ChangeToken (p. 403)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**DefaultAction (p. 403)**

A default action for the web ACL, either ALLOW or BLOCK. AWS WAF performs the default action if a request doesn't match the criteria in any of the rules in a web ACL.

Type: WafAction (p. 548) object

Required: No

**Updates (p. 403)**

An array of updates to make to the WebACL (p. 550).

An array of WebACLUpdate objects that you want to insert into or delete from a WebACL (p. 550). For more information, see the applicable data types:

- **WebACLUpdate (p. 553)**: Contains Action and ActivatedRule
- **ActivatedRule (p. 488)**: Contains Action, OverrideAction, Priority, RuleId, and Type. ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.
- **WafAction (p. 548)**: Contains Type

Type: Array of WebACLUpdate (p. 553) objects

Required: No

**WebACLId (p. 403)**

The WebACLId of the WebACL (p. 550) that you want to update. WebACLId is returned by CreateWebACL (p. 241) and by ListWebACLs (p. 354).

Type: String


Required: Yes
Response Syntax

```
{
  "ChangeToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 405)**

The ChangeToken that you used to submit the UpdateWebACL request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

- Type: String
- Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 561).

**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

- HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

- HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:

- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

- HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:

- You specified an invalid parameter name.
• You specified an invalid value.
• You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
• You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to create a RateBasedRule with a RateKey value other than IP.
• You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
• You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
• You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
• Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400
WAFLimitsExceededException

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400
WAFNonexistentContainerException

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
• You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
• You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
• You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
• You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400
WAFNonexistentItemException

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400
WAFReferencedItemException

The operation failed because you tried to delete an object that is still in use. For example:
• You tried to delete a ByteMatchSet that is still referenced by a Rule.
• You tried to delete a Rule that is still referenced by a WebACL.

HTTP Status Code: 400
WAFStaleDataException

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400
WAFSubscriptionNotFoundException

The specified subscription does not exist.

HTTP Status Code: 400
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
UpdateXssMatchSet

Service: AWS WAF Regional

Inserts or deletes XssMatchTuple (p. 557) objects (filters) in an XssMatchSet (p. 554). For each XssMatchTuple object, you specify the following values:

- **Action**: Whether to insert the object into or delete the object from the array. To change a XssMatchTuple, you delete the existing object and add a new one.
- **FieldToMatch**: The part of web requests that you want AWS WAF to inspect and, if you want AWS WAF to inspect a header, the name of the header.
- **TextTransformation**: Which text transformation, if any, to perform on the web request before inspecting the request for cross-site scripting attacks.

You can only specify a single type of TextTransformation.

You use XssMatchSet objects to specify which CloudFront requests you want to allow, block, or count. For example, if you’re receiving requests that contain cross-site scripting attacks in the request body and you want to block the requests, you can create an XssMatchSet with the applicable settings, and then configure AWS WAF to block the requests.

To create and configure an XssMatchSet, perform the following steps:

1. Submit a CreateXssMatchSet (p. 245) request.
2. Use GetChangeToken (p. 290) to get the change token that you provide in the ChangeToken parameter of an UpdateIPSet (p. 369) request.
3. Submit an UpdateXssMatchSet request to specify the parts of web requests that you want AWS WAF to inspect for cross-site scripting attacks.

For more information about how to use the AWS WAF API to allow or block HTTP requests, see the AWS WAF Developer Guide.

Request Syntax

```json
{
  "ChangeToken": "string",
  "Updates": [
    {
      "Action": "string",
      "XssMatchTuple": {
        "FieldToMatch": {
          "Data": "string",
          "Type": "string"
        },
        "TextTransformation": "string"
      }
    },
    "XssMatchSetId": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 559).

The request accepts the following data in JSON format.
**ChangeToken (p. 408)**

The value returned by the most recent call to GetChangeToken (p. 290).

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

**Updates (p. 408)**

An array of XssMatchSetUpdate objects that you want to insert into or delete from a XssMatchSet (p. 554). For more information, see the applicable data types:

- XssMatchSetUpdate (p. 556): Contains Action and XssMatchTuple
- XssMatchTuple (p. 557): Contains FieldToMatch and TextTransformation
- FieldToMatch (p. 498): Contains Data and Type

Type: Array of XssMatchSetUpdate (p. 556) objects

Array Members: Minimum number of 1 item.

Required: Yes

**XssMatchSetId (p. 408)**

The XssMatchSetId of the XssMatchSet that you want to update. XssMatchSetId is returned by CreateXssMatchSet (p. 245) and by ListXssMatchSets (p. 356).

Type: String


Required: Yes

**Response Syntax**

```
{
   "ChangeToken": "string"
}
```

**Response Elements**

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

**ChangeToken (p. 409)**

The ChangeToken that you used to submit the UpdateXssMatchSet request. You can also use this value to query the status of the request. For more information, see GetChangeTokenStatus (p. 292).

Type: String

Length Constraints: Minimum length of 1.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 561).
**WAFInternalErrorException**

The operation failed because of a system problem, even though the request was valid. Retry your request.

HTTP Status Code: 500

**WAFInvalidAccountException**

The operation failed because you tried to create, update, or delete an object by using an invalid account identifier.

HTTP Status Code: 400

**WAFInvalidOperationException**

The operation failed because there was nothing to do. For example:
- You tried to remove a Rule from a WebACL, but the Rule isn't in the specified WebACL.
- You tried to remove an IP address from an IPSet, but the IP address isn't in the specified IPSet.
- You tried to remove a ByteMatchTuple from a ByteMatchSet, but the ByteMatchTuple isn't in the specified WebACL.
- You tried to add a Rule to a WebACL, but the Rule already exists in the specified WebACL.
- You tried to add an IP address to an IPSet, but the IP address already exists in the specified IPSet.
- You tried to add a ByteMatchTuple to a ByteMatchSet, but the ByteMatchTuple already exists in the specified WebACL.

HTTP Status Code: 400

**WAFInvalidParameterException**

The operation failed because AWS WAF didn't recognize a parameter in the request. For example:
- You specified an invalid parameter name.
- You specified an invalid value.
- You tried to update an object (ByteMatchSet, IPSet, Rule, or WebACL) using an action other than INSERT or DELETE.
- You tried to create a WebACL with a DefaultAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to create a RateBasedRule with a RateKey value other than IP.
- You tried to update a WebACL with a WafAction Type other than ALLOW, BLOCK, or COUNT.
- You tried to update a ByteMatchSet with a FieldToMatch Type other than HEADER, METHOD, QUERY_STRING, URI, or BODY.
- You tried to update a ByteMatchSet with a Field of HEADER but no value for Data.
- Your request references an ARN that is malformed, or corresponds to a resource with which a web ACL cannot be associated.

HTTP Status Code: 400

**WAFLimitsExceededException**

The operation exceeds a resource limit, for example, the maximum number of WebACL objects that you can create for an AWS account. For more information, see Limits in the AWS WAF Developer Guide.

HTTP Status Code: 400

**WAFNonexistentContainerException**

The operation failed because you tried to add an object to or delete an object from another object that doesn't exist. For example:
- You tried to add a Rule to or delete a Rule from a WebACL that doesn't exist.
- You tried to add a ByteMatchSet to or delete a ByteMatchSet from a Rule that doesn't exist.
- You tried to add an IP address to or delete an IP address from an IPSet that doesn't exist.
- You tried to add a ByteMatchTuple to or delete a ByteMatchTuple from a ByteMatchSet that doesn't exist.

HTTP Status Code: 400

**WAFNonexistentItemException**

The operation failed because the referenced object doesn't exist.

HTTP Status Code: 400

**WAFStaleDataException**

The operation failed because you tried to create, update, or delete an object by using a change token that has already been used.

HTTP Status Code: 400

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
Data Types

The following data types are supported by AWS WAF:

- ActivatedRule (p. 416)
- ByteMatchSet (p. 418)
- ByteMatchSetSummary (p. 420)
- ByteMatchSetUpdate (p. 421)
- ByteMatchTuple (p. 422)
- FieldToMatch (p. 426)
- GeoMatchConstraint (p. 427)
- GeoMatchSet (p. 428)
- GeoMatchSetSummary (p. 429)
- GeoMatchSetUpdate (p. 430)
- HTTPHeader (p. 431)
- HTTPRequest (p. 432)
- IPSet (p. 434)
- IPSetDescriptor (p. 436)
- IPSetSummary (p. 437)
- IPSetUpdate (p. 438)
- Predicate (p. 439)
- RateBasedRule (p. 441)
- RegexMatchSet (p. 443)
- RegexMatchSetSummary (p. 445)
- RegexMatchSetUpdate (p. 446)
- RegexMatchTuple (p. 447)
- RegexPatternSet (p. 450)
- RegexPatternSetSummary (p. 451)
- RegexPatternSetUpdate (p. 452)
- Rule (p. 453)
- RuleGroup (p. 455)
- RuleGroupSummary (p. 457)
- RuleGroupUpdate (p. 458)
- RuleSummary (p. 459)
- RuleUpdate (p. 460)
- SampledHTTPRequest (p. 461)
- SizeConstraint (p. 463)
- SizeConstraintSet (p. 466)
- SizeConstraintSetSummary (p. 467)
- SizeConstraintSetUpdate (p. 468)
- SqlInjectionMatchSet (p. 469)
- SqlInjectionMatchSetSummary (p. 470)
- SqlInjectionMatchSetUpdate (p. 471)
- SqlInjectionMatchTuple (p. 472)
The following data types are supported by AWS WAF Regional:

- ActivatedRule (p. 488)
- ByteMatchSet (p. 490)
- ByteMatchSetSummary (p. 492)
- ByteMatchSetUpdate (p. 493)
- ByteMatchTuple (p. 494)
- FieldToMatch (p. 498)
- GeoMatchConstraint (p. 499)
- GeoMatchSet (p. 500)
- GeoMatchSetSummary (p. 501)
- GeoMatchSetUpdate (p. 502)
- HTTPHeader (p. 503)
- HTTPRequest (p. 504)
- IPSet (p. 506)
- IPAddressDescriptor (p. 508)
- IPSetSummary (p. 509)
- IPSetUpdate (p. 510)
- Predicate (p. 511)
- RateBasedRule (p. 513)
- RegexMatchSet (p. 515)
- RegexMatchSetSummary (p. 517)
- RegexMatchSetUpdate (p. 518)
- RegexMatchTuple (p. 519)
- RegexPatternSet (p. 522)
- RegexPatternSetSummary (p. 523)
- RegexPatternSetUpdate (p. 524)
- Rule (p. 525)
- RuleGroup (p. 527)
- RuleGroupSummary (p. 529)
- RuleGroupUpdate (p. 530)
- RuleSummary (p. 531)
- RuleUpdate (p. 532)
- SampledHTTPRequest (p. 533)
The following data types are supported by AWS WAF:

- ActivatedRule (p. 416)
- ByteMatchSet (p. 418)
- ByteMatchSetSummary (p. 420)
- ByteMatchSetUpdate (p. 421)
- ByteMatchTuple (p. 422)
- FieldToMatch (p. 426)
- GeoMatchConstraint (p. 427)
- GeoMatchSet (p. 428)
- GeoMatchSetSummary (p. 429)
- GeoMatchSetUpdate (p. 430)
- HTTPHeader (p. 431)
- HTTPRequest (p. 432)
- IPSet (p. 434)
- IPSetDescriptor (p. 436)
- IPSetSummary (p. 437)
- IPSetUpdate (p. 438)
- Predicate (p. 439)
- RateBasedRule (p. 441)
- RegexMatchSet (p. 443)
- RegexMatchSetSummary (p. 445)
- RegexMatchSetUpdate (p. 446)
• RegexMatchTuple (p. 447)
• RegexPatternSet (p. 450)
• RegexPatternSetSummary (p. 451)
• RegexPatternSetUpdate (p. 452)
• Rule (p. 453)
• RuleGroup (p. 455)
• RuleGroupSummary (p. 457)
• RuleGroupUpdate (p. 458)
• RuleSummary (p. 459)
• RuleUpdate (p. 460)
• SampledHTTPRequest (p. 461)
• SizeConstraint (p. 463)
• SizeConstraintSet (p. 466)
• SizeConstraintSetSummary (p. 467)
• SizeConstraintSetUpdate (p. 468)
• SqlInjectionMatchSet (p. 469)
• SqlInjectionMatchSetSummary (p. 470)
• SqlInjectionMatchSetUpdate (p. 471)
• SqlInjectionMatchTuple (p. 472)
• SubscribedRuleGroupSummary (p. 474)
• TimeWindow (p. 475)
• WafAction (p. 476)
• WafOverrideAction (p. 477)
• WebACL (p. 478)
• WebACLSummary (p. 480)
• WebACLUpdate (p. 481)
• XssMatchSet (p. 482)
• XssMatchSetSummary (p. 483)
• XssMatchSetUpdate (p. 484)
• XssMatchTuple (p. 485)
ActivatedRule
Service: AWS WAF

The ActivatedRule object in an UpdateWebACL (p. 195) request specifies a Rule that you want to insert or delete, the priority of the Rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the Rule (ALLOW, BLOCK, or COUNT).

To specify whether to insert or delete a Rule, use the Action parameter in the WebACLUpdate (p. 481) data type.

Contents

Action

Specifies the action that CloudFront or AWS WAF takes when a web request matches the conditions in the Rule. Valid values for Action include the following:

- ALLOW: CloudFront responds with the requested object.
- BLOCK: CloudFront responds with an HTTP 403 (Forbidden) status code.
- COUNT: AWS WAF increments a counter of requests that match the conditions in the rule and then continues to inspect the web request based on the remaining rules in the web ACL.

ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.

Type: WafAction (p. 476) object

Required: No

OverrideAction

Use the OverrideAction to test your RuleGroup.

Any rule in a RuleGroup can potentially block a request. If you set the OverrideAction to None, the RuleGroup will block a request if any individual rule in the RuleGroup matches the request and is configured to block that request. However if you first want to test the RuleGroup, set the OverrideAction to Count. The RuleGroup will then override any block action specified by individual rules contained within the group. Instead of blocking matching requests, those requests will be counted. You can view a record of counted requests using GetSampledRequests (p. 110).

ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.

Type: WafOverrideAction (p. 477) object

Required: No

Priority

Specifies the order in which the Rules in a WebACL are evaluated. Rules with a lower value for Priority are evaluated before Rules with a higher value. The value must be a unique integer. If you add multiple Rules to a WebACL, the values don't need to be consecutive.

Type: Integer

Required: Yes
RuleId

The RuleId for a Rule. You use RuleId to get more information about a Rule (see GetRule (p. 106)), update a Rule (see UpdateRule (p. 178)), insert a Rule into a WebACL or delete a one from a WebACL (see UpdateWebACL (p. 195)), or delete a Rule from AWS WAF (see DeleteRule (p. 67)).

RuleId is returned by CreateRule (p. 27) and by ListRules (p. 138).

Type: String


Required: Yes

Type

The rule type, either REGULAR, as defined by Rule (p. 453), RATE_BASED, as defined by RateBasedRule (p. 441), or GROUP, as defined by RuleGroup (p. 455). The default is REGULAR. Although this field is optional, be aware that if you try to add a RATE_BASED rule to a web ACL without setting the type, the UpdateWebACL (p. 195) request will fail because the request tries to add a REGULAR rule with the specified ID, which does not exist.

Type: String

Valid Values: REGULAR | RATE_BASED | GROUP

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchSet

Service: AWS WAF

In a GetByteMatchSet (p. 85) request, ByteMatchSet is a complex type that contains the ByteMatchSetId and Name of a ByteMatchSet, and the values that you specified when you updated the ByteMatchSet.

A complex type that contains ByteMatchTuple objects, which specify the parts of web requests that you want AWS WAF to inspect and the values that you want AWS WAF to search for. If a ByteMatchSet contains more than one ByteMatchTuple object, a request needs to match the settings in only one ByteMatchTuple to be considered a match.

Contents

ByteMatchSetId

The ByteMatchSetId for a ByteMatchSet. You use ByteMatchSetId to get information about a ByteMatchSet (see GetByteMatchSet (p. 85)), update a ByteMatchSet (see UpdateByteMatchSet (p. 153)), insert a ByteMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a ByteMatchSet from AWS WAF (see DeleteByteMatchSet (p. 47)).

ByteMatchSetId is returned by CreateByteMatchSet (p. 7) and by ListByteMatchSets (p. 124).

Type: String


Required: Yes

ByteMatchTuples

Specifies the bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings.

Type: Array of ByteMatchTuple (p. 422) objects

Required: Yes

Name

A friendly name or description of the ByteMatchSet (p. 418). You can’t change Name after you create a ByteMatchSet.

Type: String


Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchSetSummary

Service: AWS WAF

Returned by ListByteMatchSets (p. 124). Each ByteMatchSetSummary object includes the Name and ByteMatchSetId for one ByteMatchSet (p. 418).

Contents

ByteMatchSetId

The ByteMatchSetId for a ByteMatchSet. You use ByteMatchSetId to get information about a ByteMatchSet, update a ByteMatchSet, remove a ByteMatchSet from a Rule, and delete a ByteMatchSet from AWS WAF.

ByteMatchSetId is returned by CreateByteMatchSet (p. 7) and by ListByteMatchSets (p. 124).

Type: String


Required: Yes

Name

A friendly name or description of the ByteMatchSet (p. 418). You can't change Name after you create a ByteMatchSet.

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchSetUpdate

Service: AWS WAF

In an UpdateByteMatchSet (p. 153) request, ByteMatchSetUpdate specifies whether to insert or delete a ByteMatchTuple (p. 422) and includes the settings for the ByteMatchTuple.

Contents

Action

Specifies whether to insert or delete a ByteMatchTuple (p. 422).

Type: String

Valid Values: INSERT | DELETE

Required: Yes

ByteMatchTuple

Information about the part of a web request that you want AWS WAF to inspect and the value that you want AWS WAF to search for. If you specify DELETE for the value of Action, the ByteMatchTuple values must exactly match the values in the ByteMatchTuple that you want to delete from the ByteMatchSet.

Type: ByteMatchTuple (p. 422) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchTuple

Service: AWS WAF

The bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings.

Contents

FieldToMatch

The part of a web request that you want AWS WAF to search, such as a specified header or a query string. For more information, see FieldToMatch (p. 426).

Type: FieldToMatch (p. 426) object

Required: Yes

PositionalConstraint

Within the portion of a web request that you want to search (for example, in the query string, if any), specify where you want AWS WAF to search. Valid values include the following:

**CONTAINS**

The specified part of the web request must include the value of TargetString, but the location doesn't matter.

**CONTAINS_WORD**

The specified part of the web request must include the value of TargetString, and TargetString must contain only alphanumeric characters or underscore (A-Z, a-z, 0-9, or _). In addition, TargetString must be a word, which means one of the following:

- TargetString exactly matches the value of the specified part of the web request, such as the value of a header.
- TargetString is at the beginning of the specified part of the web request and is followed by a character other than an alphanumeric character or underscore (_), for example, BadBot;
- TargetString is at the end of the specified part of the web request and is preceded by a character other than an alphanumeric character or underscore (_), for example, ;BadBot.
- TargetString is in the middle of the specified part of the web request and is preceded and followed by characters other than alphanumeric characters or underscore (_), for example, –BadBot.

**EXACTLY**

The value of the specified part of the web request must exactly match the value of TargetString.

**STARTS_WITH**

The value of TargetString must appear at the beginning of the specified part of the web request.

**ENDS_WITH**

The value of TargetString must appear at the end of the specified part of the web request.

Type: String

Valid Values: EXACTLY | STARTS_WITH | ENDS_WITH | CONTAINS | CONTAINS_WORD

Required: Yes
**TargetString**

The value that you want AWS WAF to search for. AWS WAF searches for the specified string in the part of web requests that you specified in `FieldToMatch`. The maximum length of the value is 50 bytes.

Valid values depend on the values that you specified for `FieldToMatch`:

- **HEADER**: The value that you want AWS WAF to search for in the request header that you specified in `FieldToMatch` (p. 426), for example, the value of the `User-Agent` or `Referer` header.
- **METHOD**: The HTTP method, which indicates the type of operation specified in the request. CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.
- **QUERY_STRING**: The value that you want AWS WAF to search for in the query string, which is the part of a URL that appears after a `?` character.
- **URI**: The value that you want AWS WAF to search for in the part of a URL that identifies a resource, for example, `/images/daily-ad.jpg`.
- **BODY**: The part of a request that contains any additional data that you want to send to your web server as the HTTP request body, such as data from a form. The request body immediately follows the request headers. Note that only the first 8192 bytes of the request body are forwarded to AWS WAF for inspection. To allow or block requests based on the length of the body, you can create a size constraint set. For more information, see `CreateSizeConstraintSet` (p. 34).

If `TargetString` includes alphabetic characters A-Z and a-z, note that the value is case sensitive.

**If you're using the AWS WAF API**

Specify a base64-encoded version of the value. The maximum length of the value before you base64-encode it is 50 bytes.

For example, suppose the value of `Type` is `HEADER` and the value of `Data` is `User-Agent`. If you want to search the `User-Agent` header for the value `BadBot`, you base64-encode `BadBot` using MIME base64 encoding and include the resulting value, `QmFkQm90`, in the value of `TargetString`.

**If you're using the AWS CLI or one of the AWS SDKs**

The value that you want AWS WAF to search for. The SDK automatically base64 encodes the value.

Type: Base64-encoded binary data object

Required: Yes

**TextTransformation**

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on `TargetString` before inspecting a request for a match.

You can only specify a single type of `TextTransformation`.

**CMD_LINE**

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: `\"^`
- Delete spaces before the following characters: `/(`
- Replace the following characters with a space: `;`
- Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

**COMPRESS_WHITE_SPACE**

Use this option to replace the following characters with a space character (decimal 32):

- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

**COMPRESS_WHITE_SPACE** also replaces multiple spaces with one space.

**HTML_ENTITY_DECODE**

Use this option to replace HTML-encoded characters with unencoded characters.

**HTML_ENTITY_DECODE** performs the following operations:

- Replaces \&quot; with "
- Replaces \nbsp; with a non-breaking space, decimal 160
- Replaces \lt; with a "less than" symbol
- Replaces \gt; with >
- Replaces characters that are represented in hexadecimal format, \&#xhhhh;, with the corresponding characters
- Replaces characters that are represented in decimal format, \&#nnnn;, with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL_DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify **NONE** if you don’t want to perform any text transformations.

Type: String

Valid Values: None | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
FieldToMatch

Service: AWS WAF

Specifies where in a web request to look for TargetString.

Contents

Data

When the value of Type is HEADER, enter the name of the header that you want AWS WAF to search, for example, User-Agent or Referer. If the value of Type is any other value, omit Data.

The name of the header is not case sensitive.

Type: String

Required: No

Type

The part of the web request that you want AWS WAF to search for a specified string. Parts of a request that you can search include the following:

- **HEADER**: A specified request header, for example, the value of the User-Agent or Referer header. If you choose HEADER for the type, specify the name of the header in Data.
- **METHOD**: The HTTP method, which indicated the type of operation that the request is asking the origin to perform. Amazon CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.
- **QUERY_STRING**: A query string, which is the part of a URL that appears after a ? character, if any.
- **URI**: The part of a web request that identifies a resource, for example, /images/daily-ad.jpg.
- **BODY**: The part of a request that contains any additional data that you want to send to your web server as the HTTP request body, such as data from a form. The request body immediately follows the request headers. Note that only the first 8192 bytes of the request body are forwarded to AWS WAF for inspection. To allow or block requests based on the length of the body, you can create a size constraint set. For more information, see CreateSizeConstraintSet (p. 34).

Type: String

Valid Values: URI | QUERY_STRING | HEADER | METHOD | BODY

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
GeoMatchConstraint
Service: AWS WAF

The country from which web requests originate that you want AWS WAF to search for.

Contents

Type

The type of geographical area you want AWS WAF to search for. Currently Country is the only valid value.

Type: String

Valid Values: Country

Required: Yes

Value

The country that you want AWS WAF to search for.

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**GeoMatchSet**

Service: AWS WAF

Contains one or more countries that AWS WAF will search for.

**Contents**

**GeoMatchConstraints**

An array of GeoMatchConstraint (p. 427) objects, which contain the country that you want AWS WAF to search for.

Type: Array of GeoMatchConstraint (p. 427) objects

Required: Yes

**GeoMatchSetId**

The GeoMatchSetId for a GeoMatchSet. You use GeoMatchSetId to get information about a GeoMatchSet (see GeoMatchSet (p. 428)), update a GeoMatchSet (see UpdateGeoMatchSet (p. 157)), insert a GeoMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a GeoMatchSet from AWS WAF (see DeleteGeoMatchSet (p. 50)). GeoMatchSetId is returned by CreateGeoMatchSet (p. 10) and by ListGeoMatchSets (p. 126).

Type: String


Required: Yes

**Name**

A friendly name or description of the GeoMatchSet (p. 428). You can’t change the name of a GeoMatchSet after you create it.

Type: String


Required: No

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**GeoMatchSetSummary**

Service: AWS WAF

Contains the identifier and the name of the GeoMatchSet.

**Contents**

**GeoMatchSetId**

The GeoMatchSetId for a GeoMatchSet (p. 428). You can use GeoMatchSetId in a GetGeoMatchSet (p. 91) request to get detailed information about a GeoMatchSet (p. 428).

Type: String


Required: Yes

**Name**

A friendly name or description of the GeoMatchSet (p. 428). You can't change the name of a GeoMatchSet after you create it.

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
GeoMatchSetUpdate
Service: AWS WAF

Specifies the type of update to perform to a GeoMatchSet (p. 428) with UpdateGeoMatchSet (p. 157).

Contents

Action

Specifies whether to insert or delete a country with UpdateGeoMatchSet (p. 157).

Type: String

Valid Values: INSERT | DELETE

Required: Yes

GeoMatchConstraint

The country from which web requests originate that you want AWS WAF to search for.

Type: GeoMatchConstraint (p. 427) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HTTPHeader

Service: AWS WAF

The response from a `GetSampledRequests` request includes an HTTPHeader complex type that appears as Headers in the response syntax. HTTPHeader contains the names and values of all of the headers that appear in one of the web requests that were returned by `GetSampledRequests`.

Contents

Name

The name of one of the headers in the sampled web request.

Type: String
Required: No

Value

The value of one of the headers in the sampled web request.

Type: String
Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HTTPRequest

Service: AWS WAF

The response from a GetSampledRequests (p. 110) request includes an HTTPRequest complex type that appears as Request in the response syntax. HTTPRequest contains information about one of the web requests that were returned by GetSampledRequests.

Contents

ClientIP

The IP address that the request originated from. If the WebACL is associated with a CloudFront distribution, this is the value of one of the following fields in CloudFront access logs:
- c-ip, if the viewer did not use an HTTP proxy or a load balancer to send the request
- x-forwarded-for, if the viewer did use an HTTP proxy or a load balancer to send the request

Type: String

Required: No

Country

The two-letter country code for the country that the request originated from. For a current list of country codes, see the Wikipedia entry ISO 3166-1 alpha-2.

Type: String

Required: No

Headers

A complex type that contains two values for each header in the sampled web request: the name of the header and the value of the header.

Type: Array of HTTPHeader (p. 431) objects

Required: No

HTTPVersion

The HTTP version specified in the sampled web request, for example, HTTP/1.1.

Type: String

Required: No

Method

The HTTP method specified in the sampled web request. CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.

Type: String

Required: No

URI

The part of a web request that identifies the resource, for example, /images/daily-ad.jpg.

Type: String

Required: No
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**IPSet**

Service: AWS WAF

Contains one or more IP addresses or blocks of IP addresses specified in Classless Inter-Domain Routing (CIDR) notation. AWS WAF supports /8, /16, /24, and /32 IP address ranges for IPv4, and /24, /32, /48, /56, /64 and /128 for IPv6.

To specify an individual IP address, you specify the four-part IP address followed by a /32, for example, 192.0.2.0/31. To block a range of IP addresses, you can specify a /128, /64, /48, /32, /24, /16, or /8 CIDR. For more information about CIDR notation, see the Wikipedia entry [Classless Inter-Domain Routing](https://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing).

### Contents

**IPSetDescriptors**

The IP address type (IPv4 or IPv6) and the IP address range (in CIDR notation) that web requests originate from. If the WebACL is associated with a CloudFront distribution and the viewer did not use an HTTP proxy or a load balancer to send the request, this is the value of the c-ip field in the CloudFront access logs.

Type: Array of **IPSetDescriptor** (p. 436) objects

Required: Yes

**IPSetId**

The IPSetId for an IPSet. You use IPSetId to get information about an IPSet (see **GetIPSet** (p. 93)), update an IPSet (see **UpdateIPSet** (p. 161)), insert an IPSet into a Rule or delete one from a Rule (see **UpdateRule** (p. 178)), and delete an IPSet from AWS WAF (see **DeleteIPSet** (p. 53)).

IPSetId is returned by **CreateIPSet** (p. 13) and by **ListIPSets** (p. 128).

Type: String


Required: Yes

**Name**

A friendly name or description of the IPSet (p. 434). You can't change the name of an IPSet after you create it.

Type: String


Required: No

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
• AWS SDK for Ruby V2
IPSetDescriptor

Service: AWS WAF

Specifies the IP address type (IPv4 or IPv6) and the IP address range (in CIDR format) that web requests originate from.

Contents

Type

Specify IPv4 or IPv6.

Type: String

Valid Values: IPv4 | IPv6

Required: Yes

Value

Specify an IPv4 address by using CIDR notation. For example:

- To configure AWS WAF to allow, block, or count requests that originated from the IP address 192.0.2.44, specify 192.0.2.44/32.
- To configure AWS WAF to allow, block, or count requests that originated from IP addresses from 192.0.2.0 to 192.0.2.255, specify 192.0.2.0/24.

For more information about CIDR notation, see the Wikipedia entry Classless Inter-Domain Routing.

Specify an IPv6 address by using CIDR notation. For example:

- To configure AWS WAF to allow, block, or count requests that originated from the IP address 1111:0000:0000:0000:0000:0000:0000:0111, specify 1111:0000:0000:0000:0000:0000:0000:0111/128.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**IPSetSummary**  
Service: AWS WAF

Contains the identifier and the name of the IPSet.

**Contents**

**IPSetId**

The IPSetId for an IPSet (p. 434). You can use IPSetId in a GetIPSet (p. 93) request to get detailed information about an IPSet (p. 434).

Type: String


Required: Yes

**Name**

A friendly name or description of the IPSet (p. 434). You can't change the name of an IPSet after you create it.

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
IPSetUpdate

Service: AWS WAF

Specifies the type of update to perform to an IPSet (p. 434) with UpdateIPSet (p. 161).

Contents

Action

 Specifies whether to insert or delete an IP address with UpdateIPSet (p. 161).

 Type: String

 Valid Values: INSERT | DELETE

 Required: Yes

IPSetDescriptor

 The IP address type (IPV4 or IPV6) and the IP address range (in CIDR notation) that web requests originate from.

 Type: IPSetDescriptor (p. 436) object

 Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Predicate
Service: AWS WAF

Specifies the ByteMatchSet (p. 418), IPSet (p. 434), SqlInjectionMatchSet (p. 469), XssMatchSet (p. 482), RegexMatchSet (p. 443), GeoMatchSet (p. 428), and SizeConstraintSet (p. 466) objects that you want to add to a Rule and, for each object, indicates whether you want to negate the settings, for example, requests that do NOT originate from the IP address 192.0.2.44.

Contents

DataId

A unique identifier for a predicate in a Rule, such as ByteMatchSetId or IPSetId. The ID is returned by the corresponding Create or List command.

Type: String
Required: Yes

Negated

Set Negated to False if you want AWS WAF to allow, block, or count requests based on the settings in the specified ByteMatchSet (p. 418), IPSet (p. 434), SqlInjectionMatchSet (p. 469), XssMatchSet (p. 482), RegexMatchSet (p. 443), GeoMatchSet (p. 428), or SizeConstraintSet (p. 466). For example, if an IPSet includes the IP address 192.0.2.44, AWS WAF will allow or block requests based on that IP address.

Set Negated to True if you want AWS WAF to allow or block a request based on the negation of the settings in the ByteMatchSet (p. 418), IPSet (p. 434), SqlInjectionMatchSet (p. 469), XssMatchSet (p. 482), RegexMatchSet (p. 443), GeoMatchSet (p. 428), or SizeConstraintSet (p. 466). For example, if an IPSet includes the IP address 192.0.2.44, AWS WAF will allow, block, or count requests based on all IP addresses except 192.0.2.44.

Type: Boolean
Required: Yes

Type

The type of predicate in a Rule, such as ByteMatchSet or IPSet.

Type: String
Valid Values: IPMatch | ByteMatch | SqlInjectionMatch | GeoMatch |
SizeConstraint | XssMatch | RegexMatch

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
• AWS SDK for Ruby V2
RateBasedRule

Service: AWS WAF

A RateBasedRule is identical to a regular Rule (p. 453), with one addition: a RateBasedRule counts the number of requests that arrive from a specified IP address every five minutes. For example, based on recent requests that you’ve seen from an attacker, you might create a RateBasedRule that includes the following conditions:

- The requests come from 192.0.2.44.
- They contain the value BadBot in the User-Agent header.

In the rule, you also define the rate limit as 15,000.

Requests that meet both of these conditions and exceed 15,000 requests every five minutes trigger the rule's action (block or count), which is defined in the web ACL.

Contents

MatchPredicates

The Predicates object contains one Predicate element for each ByteMatchSet (p. 418), IPSet (p. 434), or SqlInjectionMatchSet (p. 469) object that you want to include in a RateBasedRule.

Type: Array of Predicate (p. 439) objects

Required: Yes

MetricName

A friendly name or description for the metrics for a RateBasedRule. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RateBasedRule.

Type: String

Required: No

Name

A friendly name or description for a RateBasedRule. You can't change the name of a RateBasedRule after you create it.

Type: String


Required: No

RateKey

The field that AWS WAF uses to determine if requests are likely arriving from single source and thus subject to rate monitoring. The only valid value for RateKey is IP. IP indicates that requests arriving from the same IP address are subject to the RateLimit that is specified in the RateBasedRule.

Type: String

Valid Values: IP

Required: Yes
**RateLimit**

The maximum number of requests, which have an identical value in the field specified by the RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

**RuleId**

A unique identifier for a RateBasedRule. You use RuleId to get more information about a RateBasedRule (see GetRateBasedRule (p. 97)), update a RateBasedRule (see UpdateRateBasedRule (p. 165)), insert a RateBasedRule into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 195)), or delete a RateBasedRule from AWS WAF (see DeleteRateBasedRule (p. 58)).

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RegexMatchSet
Service: AWS WAF

In a GetRegexMatchSet (p. 102) request, RegexMatchSet is a complex type that contains the RegexMatchSetId and Name of a RegexMatchSet, and the values that you specified when you updated the RegexMatchSet.

The values are contained in a RegexMatchTuple object, which specify the parts of web requests that you want AWS WAF to inspect and the values that you want AWS WAF to search for. If a RegexMatchSet contains more than one RegexMatchTuple object, a request needs to match the settings in only one ByteMatchTuple to be considered a match.

Contents

Name

A friendly name or description of the RegexMatchSet (p. 443). You can't change Name after you create a RegexMatchSet.

Type: String


Required: No

RegexMatchSetId

The RegexMatchSetId for a RegexMatchSet. You use RegexMatchSetId to get information about a RegexMatchSet (see GetRegexMatchSet (p. 102)), update a RegexMatchSet (see UpdateRegexMatchSet (p. 170)), insert a RegexMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a RegexMatchSet from AWS WAF (see DeleteRegexMatchSet (p. 61)).

RegexMatchSetId is returned by CreateRegexMatchSet (p. 21) and by ListRegexMatchSets (p. 132).

Type: String


Required: No

RegexMatchTuples

Contains an array of RegexMatchTuple (p. 447) objects. Each RegexMatchTuple object contains:

- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see RegexPatternSet (p. 450).
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

Type: Array of RegexMatchTuple (p. 447) objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
RegexMatchSetSummary

Service: AWS WAF

Returned by ListRegexMatchSets (p. 132). Each RegexMatchSetSummary object includes the Name and RegexMatchSetId for one RegexMatchSet (p. 443).

Contents

Name

A friendly name or description of the RegexMatchSet (p. 443). You can’t change Name after you create a RegexMatchSet.

Type: String


Required: Yes

RegexMatchSetId

The RegexMatchSetId for a RegexMatchSet. You use RegexMatchSetId to get information about a RegexMatchSet, update a RegexMatchSet, remove a RegexMatchSet from a Rule, and delete a RegexMatchSet from AWS WAF.

RegexMatchSetId is returned by CreateRegexMatchSet (p. 21) and by ListRegexMatchSets (p. 132).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexMatchSetUpdate**  
Service: AWS WAF

In an UpdateRegexMatchSet (p. 170) request, RegexMatchSetUpdate specifies whether to insert or delete a RegexMatchTuple (p. 447) and includes the settings for the RegexMatchTuple.

**Contents**

**Action**

Specifies whether to insert or delete a RegexMatchTuple (p. 447).

Type: String

Valid Values: INSERT | DELETE

Required: Yes

**RegexMatchTuple**

Information about the part of a web request that you want AWS WAF to inspect and the identifier of the regular expression (regex) pattern that you want AWS WAF to search for. If you specify DELETE for the value of Action, the RegexMatchTuple values must exactly match the values in the RegexMatchTuple that you want to delete from the RegexMatchSet.

Type: RegexMatchTuple (p. 447) object

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexMatchTuple**

Service: AWS WAF

The regular expression pattern that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings. Each `RegexMatchTuple` object contains:

- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the `User-Agent` header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see `RegexPatternSet` (p. 450).
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

**Contents**

**FieldToMatch**

Specifies where in a web request to look for the `RegexPatternSet`.

Type: `FieldToMatch` (p. 426) object

Required: Yes

**RegexPatternSetId**

The `RegexPatternSetId` for a `RegexPatternSet`. You use `RegexPatternSetId` to get information about a `RegexPatternSet` (see `GetRegexPatternSet` (p. 104)), update a `RegexPatternSet` (see `UpdateRegexPatternSet` (p. 174)), insert a `RegexPatternSet` into a `RegexMatchSet` or delete one from a `RegexMatchSet` (see `UpdateRegexMatchSet` (p. 170)), and delete an `RegexPatternSet` from AWS WAF (see `DeleteRegexPatternSet` (p. 64)).

`RegexPatternSetId` is returned by `CreateRegexPatternSet` (p. 24) and by `ListRegexPatternSets` (p. 134).

Type: String


Required: Yes

**TextTransformation**

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on `RegexPatternSet` before inspecting a request for a match.

You can only specify a single type of `TextTransformation`.

**CMD_LINE**

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: `\ " ' ^`
- Delete spaces before the following characters: `/ (`
- Replace the following characters with a space: `;`
- Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

**COMPRESS_WHITE_SPACE**

Use this option to replace the following characters with a space character (decimal 32):
• \f, formfeed, decimal 12
• \t, tab, decimal 9
• \n, newline, decimal 10
• \r, carriage return, decimal 13
• \v, vertical tab, decimal 11
• non-breaking space, decimal 160

**COMPRESS_WHITE_SPACE** also replaces multiple spaces with one space.

**HTML_ENTITY_DECODE**

Use this option to replace HTML-encoded characters with unencoded characters.
**HTML_ENTITY_DECODE** performs the following operations:
• Replaces (ampersand)quot; with "
• Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
• Replaces (ampersand)lt; with a "less than" symbol
• Replaces (ampersand)gt; with >
• Replaces characters that are represented in hexadecimal format, (ampersand)#xhhhh;, with the corresponding characters
• Replaces characters that are represented in decimal format, (ampersand)#nnnn;, with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL_DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify NONE if you don’t want to perform any text transformations.

Type: String

Valid Values: NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
**RegexPatternSet**  
*Service: AWS WAF*

The `RegexPatternSet` specifies the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[o0]t. You can then configure AWS WAF to reject those requests.

**Contents**

**Name**

A friendly name or description of the `RegexPatternSet` (p. 450). You can’t change Name after you create a `RegexPatternSet`.

Type: String


Required: No

**RegexPatternSetId**

The identifier for the `RegexPatternSet`. You use `RegexPatternSetId` to get information about a `RegexPatternSet`, update a `RegexPatternSet`, remove a `RegexPatternSet` from a `RegexMatchSet`, and delete a `RegexPatternSet` from AWS WAF.

`RegexMatchSetId` is returned by `CreateRegexPatternSet` (p. 24) and by `ListRegexPatternSets` (p. 134).

Type: String


Required: Yes

**RegexPatternStrings**

Specifies the regular expression (regex) patterns that you want AWS WAF to search for, such as B[a@]dB[o0]t.

Type: Array of strings

Array Members: Maximum number of 10 items.

Length Constraints: Minimum length of 1.

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexPatternSetSummary**

Service: AWS WAF

Returned by ListRegexPatternSets (p. 134). Each RegexPatternSetSummary object includes the Name and RegexPatternSetId for one RegexPatternSet (p. 450).

**Contents**

**Name**

A friendly name or description of the RegexPatternSet (p. 450). You can't change Name after you create a RegexPatternSet.

Type: String


Required: Yes

**RegexPatternSetId**

The RegexPatternSetId for a RegexPatternSet. You use RegexPatternSetId to get information about a RegexPatternSet, update a RegexPatternSet, remove a RegexPatternSet from a RegexMatchSet, and delete a RegexPatternSet from AWS WAF.

RegexPatternSetId is returned by CreateRegexPatternSet (p. 24) and by ListRegexPatternSets (p. 134).

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RegexPatternSetUpdate

Service: AWS WAF

In an UpdateRegexPatternSet request, RegexPatternSetUpdate specifies whether to insert or delete a RegexPatternString and includes the settings for the RegexPatternString.

Contents

Action

Specifies whether to insert or delete a RegexPatternString.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

RegexPatternString

Specifies the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[o0]t.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**Rule**

*Service: AWS WAF*

A combination of *ByteMatchSet* (p. 418), *IPSet* (p. 434), and/or *SqlInjectionMatchSet* (p. 469) objects that identify the web requests that you want to allow, block, or count. For example, you might create a *Rule* that includes the following predicates:

- An *IPSet* that causes AWS WAF to search for web requests that originate from the IP address `192.0.2.44`
- A *ByteMatchSet* that causes AWS WAF to search for web requests for which the value of the *User-Agent* header is *BadBot*.

To match the settings in this *Rule*, a request must originate from `192.0.2.44` AND include a *User-Agent* header for which the value is *BadBot*.

**Contents**

**MetricName**

A friendly name or description for the metrics for this *Rule*. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can’t contain whitespace. You can’t change *MetricName* after you create the *Rule*.

Type: String

Required: No

**Name**

The friendly name or description for the *Rule*. You can’t change the name of a *Rule* after you create it.

Type: String

Required: No

**Predicates**

The *Predicates* object contains one *Predicate* element for each *ByteMatchSet* (p. 418), *IPSet* (p. 434), or *SqlInjectionMatchSet* (p. 469) object that you want to include in a *Rule*.

Type: Array of *Predicate* (p. 439) objects

Required: Yes

**RuleId**

A unique identifier for a *Rule*. You use *RuleId* to get more information about a *Rule* (see *GetRule* (p. 106)), update a *Rule* (see *UpdateRule* (p. 178)), insert a *Rule* into a *WebACL* or delete a one from a *WebACL* (see *UpdateWebACL* (p. 195)), or delete a *Rule* from AWS WAF (see *DeleteRule* (p. 67)).

*RuleId* is returned by *CreateRule* (p. 27) and by *ListRules* (p. 138).

Type: String

Required: Minimum length of 1. Maximum length of 128.
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleGroup
Service: AWS WAF

A collection of predefined rules that you can add to a web ACL.

Rule groups are subject to the following limits:

- Three rule groups per account. You can request an increase to this limit by contacting customer support.
- One rule group per web ACL.
- Ten rules per rule group.

Contents

MetricName

A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RuleGroup.

Type: String
Required: No

Name

The friendly name or description for the RuleGroup. You can't change the name of a RuleGroup after you create it.

Type: String
Required: No

RuleGroupId

A unique identifier for a RuleGroup. You use RuleGroupId to get more information about a RuleGroup (see GetRuleGroup (p. 108)), update a RuleGroup (see UpdateRuleGroup (p. 182)), insert a RuleGroup into a WebACL or delete a one from a WebACL (see UpdateWebACL (p. 195)), or delete a RuleGroup from AWS WAF (see DeleteRuleGroup (p. 70)).

RuleGroupId is returned by CreateRuleGroup (p. 31) and by ListRuleGroups (p. 136).

Type: String
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleGroupSummary

Service: AWS WAF

Contains the identifier and the friendly name or description of the RuleGroup.

Contents

Name

A friendly name or description of the RuleGroup (p. 455). You can't change the name of a RuleGroup after you create it.

Type: String


Required: Yes

RuleGroupId

A unique identifier for a RuleGroup. You use RuleGroupId to get more information about a RuleGroup (see GetRuleGroup (p. 108)), update a RuleGroup (see UpdateRuleGroup (p. 182)), insert a RuleGroup into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 195)), or delete a RuleGroup from AWS WAF (see DeleteRuleGroup (p. 70)).

RuleGroupId is returned by CreateRuleGroup (p. 31) and by ListRuleGroups (p. 136).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleGroupUpdate
Service: AWS WAF

Specifies an ActivatedRule and indicates whether you want to add it to a RuleGroup or delete it from a RuleGroup.

Contents

Action

Specify INSERT to add an ActivatedRule to a RuleGroup. Use DELETE to remove an ActivatedRule from a RuleGroup.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

ActivatedRule

The ActivatedRule object specifies a Rule that you want to insert or delete, the priority of the Rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the Rule (ALLOW, BLOCK, or COUNT).

Type: ActivatedRule (p. 416) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RuleSummary**

Service: AWS WAF

Contains the identifier and the friendly name or description of the Rule.

**Contents**

**Name**

A friendly name or description of the Rule (p. 453). You can't change the name of a Rule after you create it.

Type: String


Required: Yes

**RuleId**

A unique identifier for a Rule. You use RuleId to get more information about a Rule (see GetRule (p. 106)), update a Rule (see UpdateRule (p. 178)), insert a Rule into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 195)), or delete a Rule from AWS WAF (see DeleteRule (p. 67)).

RuleId is returned by CreateRule (p. 27) and by ListRules (p. 138).

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleUpdate
Service: AWS WAF

Specifies a Predicate (such as an IPSet) and indicates whether you want to add it to a Rule or delete it from a Rule.

Contents

Action
Specify INSERT to add a Predicate to a Rule. Use DELETE to remove a Predicate from a Rule.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

Predicate
The ID of the Predicate (such as an IPSet) that you want to add to a Rule.

Type: Predicate (p. 439) object

Required: Yes

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SampledHTTPRequest

Service: AWS WAF

The response from a GetSampledRequests (p. 110) request includes a SampledHTTPRequests complex type that appears as SampledRequests in the response syntax. SampledHTTPRequests contains one SampledHTTPRequest object for each web request that is returned by GetSampledRequests.

Contents

Action

The action for the Rule that the request matched: ALLOW, BLOCK, or COUNT.
Type: String
Required: No

Request

A complex type that contains detailed information about the request.
Type: HTTPRequest (p. 432) object
Required: Yes

RuleWithinRuleGroup

This value is returned if the GetSampledRequests request specifies the ID of a RuleGroup rather than the ID of an individual rule. RuleWithinRuleGroup is the rule within the specified RuleGroup that matched the request listed in the response.
Type: String
Required: No

Timestamp

The time at which AWS WAF received the request from your AWS resource, in Unix time format (in seconds).
Type: Timestamp
Required: No

Weight

A value that indicates how one result in the response relates proportionally to other results in the response. A result that has a weight of 2 represents roughly twice as many CloudFront web requests as a result that has a weight of 1.
Type: Long
Valid Range: Minimum value of 0.
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraint

Service: AWS WAF

Specifies a constraint on the size of a part of the web request. AWS WAF uses the `Size`, `ComparisonOperator`, and `FieldToMatch` to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Contents

ComparisonOperator

The type of comparison you want AWS WAF to perform. AWS WAF uses this in combination with the provided `Size` and `FieldToMatch` to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

- **EQ**: Used to test if the `Size` is equal to the size of the `FieldToMatch`
- **NE**: Used to test if the `Size` is not equal to the size of the `FieldToMatch`
- **LE**: Used to test if the `Size` is less than or equal to the size of the `FieldToMatch`
- **LT**: Used to test if the `Size` is strictly less than the size of the `FieldToMatch`
- **GE**: Used to test if the `Size` is greater than or equal to the size of the `FieldToMatch`
- **GT**: Used to test if the `Size` is strictly greater than the size of the `FieldToMatch`

Type: String

Valid Values: **EQ | NE | LE | LT | GE | GT**

Required: Yes

FieldToMatch

Specifies where in a web request to look for the size constraint.

Type: `FieldToMatch` (p. 426) object

Required: Yes

Size

The size in bytes that you want AWS WAF to compare against the size of the specified `FieldToMatch`. AWS WAF uses this in combination with `ComparisonOperator` and `FieldToMatch` to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Valid values for size are 0 - 21474836480 bytes (0 - 20 GB).

If you specify `URI` for the value of `Type`, the `/` in the URI counts as one character. For example, the URI `/logo.jpg` is nine characters long.

Type: Long

Valid Range: Minimum value of 0. Maximum value of 21474836480.

Required: Yes
TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

Note that if you choose BODY for the value of Type, you must choose NONE for TextTransformation because CloudFront forwards only the first 8192 bytes for inspection.

NONE

Specify NONE if you don't want to perform any text transformations.

CMD_LINE

When you're concerned that attackers are injecting an operating system command line command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: \ " ' ^
- Delete spaces before the following characters: / (  
- Replace the following characters with a space: , ;
- Replace multiple spaces with one space
- Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):

- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:

- Replaces (ampersand)quot; with "
- Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
- Replaces (ampersand)lt; with a "less than" symbol
- Replaces (ampersand)gt; with >
- Replaces characters that are represented in hexadecimal format, (ampersand)#xhhhh;, with the corresponding characters
- Replaces characters that are represented in decimal format, (ampersand)#nnnn;, with the corresponding characters

LOWERCASE

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

URL_DECODE
Use this option to decode a URL-encoded value.

Type: String

Valid Values: NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraintSet

Service: AWS WAF

A complex type that contains SizeConstraint objects, which specify the parts of web requests that you want AWS WAF to inspect the size of. If a SizeConstraintSet contains more than one SizeConstraint object, a request only needs to match one constraint to be considered a match.

Contents

Name

The name, if any, of the SizeConstraintSet.

Type: String


Required: No

SizeConstraints

Specifies the parts of web requests that you want to inspect the size of.

Type: Array of SizeConstraint (p. 463) objects

Required: Yes

SizeConstraintSetId

A unique identifier for a SizeConstraintSet. You use SizeConstraintSetId to get information about a SizeConstraintSet (seeGetSizeConstraintSet (p. 113)), update a SizeConstraintSet (see UpdateSizeConstraintSet (p. 186)), insert a SizeConstraintSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a SizeConstraintSet from AWS WAF (see DeleteSizeConstraintSet (p. 73)).

SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 34) and by ListSizeConstraintSets (p. 140).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraintSetSummary

Service: AWS WAF

The Id and Name of a SizeConstraintSet.

Contents

Name

The name of the SizeConstraintSet, if any.

Type: String


Required: Yes

SizeConstraintSetId

A unique identifier for a SizeConstraintSet. You use SizeConstraintSetId to get information about a SizeConstraintSet (seeGetSizeConstraintSet (p. 113)), update a SizeConstraintSet (see UpdateSizeConstraintSet (p. 186)), insert a SizeConstraintSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a SizeConstraintSet from AWS WAF (see DeleteSizeConstraintSet (p. 73)).

SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 34) and by ListSizeConstraintSets (p. 140).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraintSetUpdate

Service: AWS WAF

Specifies the part of a web request that you want to inspect the size of and indicates whether you want to add the specification to a SizeConstraintSet (p. 466) or delete it from a SizeConstraintSet.

Contents

Action

Specify INSERT to add a SizeConstraintSetUpdate (p. 468) to a SizeConstraintSet (p. 466). Use DELETE to remove a SizeConstraintSetUpdate from a SizeConstraintSet.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

SizeConstraint

Specifies a constraint on the size of a part of the web request. AWS WAF uses the Size, ComparisonOperator, and FieldToMatch to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Type: SizeConstraint (p. 463) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SQLInjectionMatchSet

Service: AWS WAF

A complex type that contains SQLInjectionMatchTuple objects, which specify the parts of web requests that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header. If a SQLInjectionMatchSet contains more than one SQLInjectionMatchTuple object, a request needs to include snippets of SQL code in only one of the specified parts of the request to be considered a match.

Contents

Name

The name, if any, of the SQLInjectionMatchSet.

Type: String


Required: No

SQLInjectionMatchSetId

A unique identifier for a SQLInjectionMatchSet. You use SQLInjectionMatchSetId to get information about a SQLInjectionMatchSet (see GetSQLInjectionMatchSet (p. 115)), update a SQLInjectionMatchSet (see UpdateSQLInjectionMatchSet (p. 191)), insert a SQLInjectionMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a SQLInjectionMatchSet from AWS WAF (see DeleteSQLInjectionMatchSet (p. 76)).

SQLInjectionMatchSetId is returned by CreateSQLInjectionMatchSet (p. 37) and by ListSQLInjectionMatchSets (p. 142).

Type: String


Required: Yes

SQLInjectionMatchTuples

Specifies the parts of web requests that you want to inspect for snippets of malicious SQL code.

Type: Array of SQLInjectionMatchTuple (p. 472) objects

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchSetSummary

Service: AWS WAF

The Id and Name of a SqlInjectionMatchSet.

Contents

Name
The name of the SqlInjectionMatchSet, if any, specified by Id.
Type: String
Required: Yes

SqlInjectionMatchSetId
A unique identifier for a SqlInjectionMatchSet. You use SqlInjectionMatchSetId to get information about a SqlInjectionMatchSet (see GetSqlInjectionMatchSet (p. 115)), update a SqlInjectionMatchSet (see UpdateSqlInjectionMatchSet (p. 191)), insert a SqlInjectionMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete a SqlInjectionMatchSet from AWS WAF (see DeleteSqlInjectionMatchSet (p. 76)).

SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 37) and by ListSqlInjectionMatchSets (p. 142).
Type: String
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchSetUpdate  
Service: AWS WAF

Specifies the part of a web request that you want to inspect for snippets of malicious SQL code and indicates whether you want to add the specification to a SqlInjectionMatchSet (p. 469) or delete it from a SqlInjectionMatchSet.

Contents

Action

Specify INSERT to add a SqlInjectionMatchSetUpdate (p. 471) to a SqlInjectionMatchSet (p. 469). Use DELETE to remove a SqlInjectionMatchSetUpdate from a SqlInjectionMatchSet.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

SqlInjectionMatchTuple

Specifies the part of a web request that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header.

Type: SqlInjectionMatchTuple (p. 472) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchTuple

Service: AWS WAF

Specifies the part of a web request that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header.

Contents

FieldToMatch

Specifies where in a web request to look for snippets of malicious SQL code.

Type: FieldToMatch (p. 426) object

Required: Yes

TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

CMD_LINE

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:
- Delete the following characters: \\ " ' ^
- Delete spaces before the following characters: / ( 
- Replace the following characters with a space: , ;
- Replace multiple spaces with one space
- Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):
- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:
- Replaces (ampersand)quot; with "
- Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
- Replaces (ampersand)lt; with a "less than" symbol
- Replaces (ampersand)gt; with >
• Replaces characters that are represented in hexadecimal format, \( &xhhhh; \), with the corresponding characters
• Replaces characters that are represented in decimal format, \( &nnnn; \), with the corresponding characters

LOWERCASE

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

URL_DECODE

Use this option to decode a URL-encoded value.

NONE

Specify NONE if you don't want to perform any text transformations.

Type: String

Valid Values: NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
SubscribedRuleGroupSummary

Service: AWS WAF

A summary of the rule groups you are subscribed to.

Contents

MetricName

A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can’t contain whitespace. You can’t change the name of the metric after you create the RuleGroup.

Type: String

Required: Yes

Name

A friendly name or description of the RuleGroup. You can’t change the name of a RuleGroup after you create it.

Type: String


Required: Yes

RuleGroupId

A unique identifier for a RuleGroup.

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
TimeWindow
Service: AWS WAF

In a GetSampledRequests (p. 110) request, the StartTime and EndTime objects specify the time range for which you want AWS WAF to return a sample of web requests.

In a GetSampledRequests (p. 110) response, the StartTime and EndTime objects specify the time range for which AWS WAF actually returned a sample of web requests. AWS WAF gets the specified number of requests from among the first 5,000 requests that your AWS resource receives during the specified time period. If your resource receives more than 5,000 requests during that period, AWS WAF stops sampling after the 5,000th request. In that case, EndTime is the time that AWS WAF received the 5,000th request.

Contents

EndTime

The end of the time range from which you want GetSampledRequests to return a sample of the requests that your AWS resource received. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: Timestamp

Required: Yes

StartTime

The beginning of the time range from which you want GetSampledRequests to return a sample of the requests that your AWS resource received. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WafAction

Service: AWS WAF

For the action that is associated with a rule in a WebACL, specifies the action that you want AWS WAF to perform when a web request matches all of the conditions in a rule. For the default action in a WebACL, specifies the action that you want AWS WAF to take when a web request doesn't match all of the conditions in any of the rules in a WebACL.

Contents

Type

Specifies how you want AWS WAF to respond to requests that match the settings in a Rule. Valid settings include the following:
- ALLOW: AWS WAF allows requests
- BLOCK: AWS WAF blocks requests
- COUNT: AWS WAF increments a counter of the requests that match all of the conditions in the rule. AWS WAF then continues to inspect the web request based on the remaining rules in the web ACL. You can't specify COUNT for the default action for a WebACL.

Type: String

Valid Values: BLOCK | ALLOW | COUNT

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WafOverrideAction
Service: AWS WAF

The action to take if any rule within the RuleGroup matches a request.

Contents

Type

COUNT overrides the action specified by the individual rule within a RuleGroup. If set to NONE, the rule's action will take place.

Type: String

Valid Values: NONE | COUNT

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WebACL

Contains the Rules that identify the requests that you want to allow, block, or count. In a WebACL, you also specify a default action (ALLOW or BLOCK), and the action for each Rule that you add to a WebACL, for example, block requests from specified IP addresses or block requests from specified referrers. You also associate the WebACL with a CloudFront distribution to identify the requests that you want AWS WAF to filter. If you add more than one Rule to a WebACL, a request needs to match only one of the specifications to be allowed, blocked, or counted. For more information, see UpdateWebACL (p. 195).

Contents

DefaultAction

The action to perform if none of the Rules contained in the WebACL match. The action is specified by the WafAction (p. 476) object.

Type: WafAction (p. 476) object

Required: Yes

MetricName

A friendly name or description for the metrics for this WebACL. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change MetricName after you create the WebACL.

Type: String

Required: No

Name

A friendly name or description of the WebACL. You can't change the name of a WebACL after you create it.

Type: String


Required: No

Rules

An array that contains the action for each Rule in a WebACL, the priority of the Rule, and the ID of the Rule.

Type: Array of ActivatedRule (p. 416) objects

Required: Yes

WebACLId

A unique identifier for a WebACL. You use WebACLId to get information about a WebACL (see GetWebACL (p. 117)), update a WebACL (see UpdateWebACL (p. 195)), and delete a WebACL from AWS WAF (see DeleteWebACL (p. 79)).

WebACLId is returned by CreateWebACL (p. 40) and by ListWebACLs (p. 146).

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WebACLSummary

Service: AWS WAF

Contains the identifier and the name or description of the WebACL (p. 478).

Contents

Name

A friendly name or description of the WebACL (p. 478). You can’t change the name of a WebACL after you create it.

Type: String


Required: Yes

WebACLId

A unique identifier for a WebACL. You use WebACLId to get information about a WebACL (see GetWebACL (p. 117)), update a WebACL (see UpdateWebACL (p. 195)), and delete a WebACL from AWS WAF (see DeleteWebACL (p. 79)).

WebACLId is returned by CreateWebACL (p. 40) and by ListWebACLs (p. 146).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WebACLUpdate

Service: AWS WAF

Specifies whether to insert a Rule into or delete a Rule from a WebACL.

Contents

Action

Specifies whether to insert a Rule into or delete a Rule from a WebACL.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

ActivatedRule

The ActivatedRule object in an UpdateWebACL (p. 195) request specifies a Rule that you want to insert or delete, the priority of the Rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the Rule (ALLOW, BLOCK, or COUNT).

Type: ActivatedRule (p. 416) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchSet
Service: AWS WAF

A complex type that contains XssMatchTuple objects, which specify the parts of web requests that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header. If a XssMatchSet contains more than one XssMatchTuple object, a request needs to include cross-site scripting attacks in only one of the specified parts of the request to be considered a match.

Contents

Name

The name, if any, of the XssMatchSet.
Type: String
Required: No

XssMatchSetId

A unique identifier for an XssMatchSet. You use XssMatchSetId to get information about an XssMatchSet (see GetXssMatchSet (p. 119)), update an XssMatchSet (see UpdateXssMatchSet (p. 200)), insert an XssMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete an XssMatchSet from AWS WAF (see DeleteXssMatchSet (p. 82)).

XssMatchSetId is returned by CreateXssMatchSet (p. 44) and by ListXssMatchSets (p. 148).
Type: String
Required: Yes

XssMatchTuples

Specifies the parts of web requests that you want to inspect for cross-site scripting attacks.
Type: Array of XssMatchTuple (p. 485) objects
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchSetSummary

Service: AWS WAF

The Id and Name of an XssMatchSet.

Contents

Name

The name of the XssMatchSet, if any, specified by Id.

Type: String


Required: Yes

XssMatchSetId

A unique identifier for an XssMatchSet. You use XssMatchSetId to get information about a XssMatchSet (see GetXssMatchSet (p. 119)), update an XssMatchSet (see UpdateXssMatchSet (p. 200)), insert an XssMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 178)), and delete an XssMatchSet from AWS WAF (see DeleteXssMatchSet (p. 82)).

XssMatchSetId is returned by CreateXssMatchSet (p. 44) and by ListXssMatchSets (p. 148).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchSetUpdate
Service: AWS WAF

Specifies the part of a web request that you want to inspect for cross-site scripting attacks and indicates whether you want to add the specification to an XssMatchSet (p. 482) or delete it from an XssMatchSet.

Contents

Action

Specify INSERT to add a XssMatchSetUpdate (p. 484) to an XssMatchSet (p. 482). Use DELETE to remove a XssMatchSetUpdate from an XssMatchSet.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

XssMatchTuple

Specifies the part of a web request that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header.

Type: XssMatchTuple (p. 485) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchTuple

Service: AWS WAF

Specifies the part of a web request that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header.

Contents

FieldToMatch

Specifies where in a web request to look for cross-site scripting attacks.

Type: FieldToMatch (p. 426) object

Required: Yes

TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

CMD_LINE

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

• Delete the following characters: \ " ', ^
• Delete spaces before the following characters: / ( 
• Replace the following characters with a space: , ;
• Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):

• \f, formfeed, decimal 12
• \t, tab, decimal 9
• \n, newline, decimal 10
• \r, carriage return, decimal 13
• \v, vertical tab, decimal 11
• non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:

• Replaces \quot; with "
• Replaces \nbsp; with a non-breaking space, decimal 160
• Replaces \lt; with a "less than" symbol
• Replaces \gt; with >
• Replaces characters that are represented in hexadecimal format, \( \text{ampersand}\#xhhhh; \), with the corresponding characters
• Replaces characters that are represented in decimal format, \( \text{ampersand}\#nnnn; \), with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL_DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify **NONE** if you don't want to perform any text transformations.

Type: String

Valid Values: **NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE**

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

**AWS WAF Regional**

The following data types are supported by AWS WAF Regional:

- **ActivatedRule (p. 488)**
- **ByteMatchSet (p. 490)**
- **ByteMatchSetSummary (p. 492)**
- **ByteMatchSetUpdate (p. 493)**
- **ByteMatchTuple (p. 494)**
- **FieldToMatch (p. 498)**
- **GeoMatchConstraint (p. 499)**
- **GeoMatchSet (p. 500)**
- **GeoMatchSetSummary (p. 501)**
- **GeoMatchSetUpdate (p. 502)**
- **HTTPHeader (p. 503)**
- **HTTPRequest (p. 504)**
- **IPSet (p. 506)**
- **IPSetDescriptor (p. 508)**
• IPSetSummary (p. 509)
• IPSetUpdate (p. 510)
• Predicate (p. 511)
• RateBasedRule (p. 513)
• RegexMatchSet (p. 515)
• RegexMatchSetSummary (p. 517)
• RegexMatchSetUpdate (p. 518)
• RegexMatchTuple (p. 519)
• RegexPatternSet (p. 522)
• RegexPatternSetSummary (p. 523)
• RegexPatternSetUpdate (p. 524)
• Rule (p. 525)
• RuleGroup (p. 527)
• RuleGroupSummary (p. 529)
• RuleGroupUpdate (p. 530)
• RuleSummary (p. 531)
• RuleUpdate (p. 532)
• SampledHTTPRequest (p. 533)
• SizeConstraint (p. 535)
• SizeConstraintSet (p. 538)
• SizeConstraintSetSummary (p. 539)
• SizeConstraintSetUpdate (p. 540)
• SqlInjectionMatchSet (p. 541)
• SqlInjectionMatchSetSummary (p. 542)
• SqlInjectionMatchSetUpdate (p. 543)
• SqlInjectionMatchTuple (p. 544)
• SubscribedRuleGroupSummary (p. 546)
• TimeWindow (p. 547)
• WafAction (p. 548)
• WafOverrideAction (p. 549)
• WebACL (p. 550)
• WebACLSummary (p. 552)
• WebACLUpdate (p. 553)
• XssMatchSet (p. 554)
• XssMatchSetSummary (p. 555)
• XssMatchSetUpdate (p. 556)
• XssMatchTuple (p. 557)
ActivatedRule

Service: AWS WAF Regional

The ActivatedRule object in an UpdateWebACL (p. 403) request specifies a Rule that you want to insert or delete, the priority of the Rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the Rule (ALLOW, BLOCK, or COUNT).

To specify whether to insert or delete a Rule, use the Action parameter in the WebACLUpdate (p. 553) data type.

Contents

Action

Specifies the action that CloudFront or AWS WAF takes when a web request matches the conditions in the Rule. Valid values for Action include the following:

- ALLOW: CloudFront responds with the requested object.
- BLOCK: CloudFront responds with an HTTP 403 (Forbidden) status code.
- COUNT: AWS WAF increments a counter of requests that match the conditions in the rule and then continues to inspect the web request based on the remaining rules in the web ACL.

ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.

Type: WafAction (p. 548) object

Required: No

OverrideAction

Use the OverrideAction to test your RuleGroup.

Any rule in a RuleGroup can potentially block a request. If you set the OverrideAction to None, the RuleGroup will block a request if any individual rule in the RuleGroup matches the request and is configured to block that request. However if you first want to test the RuleGroup, set the OverrideAction to Count. The RuleGroup will then override any block action specified by individual rules contained within the group. Instead of blocking matching requests, those requests will be counted. You can view a record of counted requests using GetSampledRequests (p. 313).

ActivatedRule|OverrideAction applies only when updating or adding a RuleGroup to a WebACL. In this case you do not use ActivatedRule|Action. For all other update requests, ActivatedRule|Action is used instead of ActivatedRule|OverrideAction.

Type: WafOverrideAction (p. 549) object

Required: No

Priority

Specifies the order in which the Rules in a WebACL are evaluated. Rules with a lower value for Priority are evaluated before Rules with a higher value. The value must be a unique integer. If you add multiple Rules to a WebACL, the values don't need to be consecutive.

Type: Integer

Required: Yes
**RuleId**

The `RuleId` for a `Rule`. You use `RuleId` to get more information about a `Rule` (see `GetRule (p. 309)`), update a `Rule` (see `UpdateRule (p. 386)`), insert a `Rule` into a `WebACL` or delete a one from a `WebACL` (see `UpdateWebACL (p. 403)`), or delete a `Rule` from AWS WAF (see `DeleteRule (p. 268)`).

`RuleId` is returned by `CreateRule (p. 228)` and by `ListRules (p. 346)`.

**Type:** String

**Length Constraints:** Minimum length of 1. Maximum length of 128.

**Required:** Yes

**Type**

The rule type, either `REGULAR`, as defined by `Rule (p. 525)`, `RATE_BASED`, as defined by `RateBasedRule (p. 513)`, or `GROUP`, as defined by `RuleGroup (p. 527)`. The default is `REGULAR`. Although this field is optional, be aware that if you try to add a `RATE_BASED` rule to a `webACL` without setting the type, the `UpdateWebACL (p. 403)` request will fail because the request tries to add a `REGULAR` rule with the specified ID, which does not exist.

**Type:** String

**Valid Values:** `REGULAR` | `RATE_BASED` | `GROUP`

**Required:** No

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**ByteMatchSet**

**Service: AWS WAF Regional**

In a GetByteMatchSet (p. 288) request, ByteMatchSet is a complex type that contains the ByteMatchSetId and Name of a ByteMatchSet, and the values that you specified when you updated the ByteMatchSet.

A complex type that contains ByteMatchTuple objects, which specify the parts of web requests that you want AWS WAF to inspect and the values that you want AWS WAF to search for. If a ByteMatchSet contains more than one ByteMatchTuple object, a request needs to match the settings in only one ByteMatchTuple to be considered a match.

**Contents**

**ByteMatchSetId**

The ByteMatchSetId for a ByteMatchSet. You use ByteMatchSetId to get information about a ByteMatchSet (see GetByteMatchSet (p. 288)), update a ByteMatchSet (see UpdateByteMatchSet (p. 361)), insert a ByteMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a ByteMatchSet from AWS WAF (see DeleteByteMatchSet (p. 248)).

ByteMatchSetId is returned by CreateByteMatchSet (p. 208) and by ListByteMatchSets (p. 330).

Type: String


Required: Yes

**ByteMatchTuples**

Specifies the bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings.

Type: Array of ByteMatchTuple (p. 494) objects

Required: Yes

**Name**

A friendly name or description of the ByteMatchSet (p. 490). You can't change Name after you create a ByteMatchSet.

Type: String


Required: No

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
• AWS SDK for Ruby V2
ByteMatchSetSummary
Service: AWS WAF Regional

Returned by ListByteMatchSets (p. 330). Each ByteMatchSetSummary object includes the Name and ByteMatchSetId for one ByteMatchSet (p. 490).

Contents
ByteMatchSetId

The ByteMatchSetId for a ByteMatchSet. You use ByteMatchSetId to get information about a ByteMatchSet, update a ByteMatchSet, remove a ByteMatchSet from a Rule, and delete a ByteMatchSet from AWS WAF.

ByteMatchSetId is returned by CreateByteMatchSet (p. 208) and by ListByteMatchSets (p. 330).

Type: String
Required: Yes

Name

A friendly name or description of the ByteMatchSet (p. 490). You can’t change Name after you create a ByteMatchSet.

Type: String
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchSetUpdate
Service: AWS WAF Regional

In an UpdateByteMatchSet (p. 361) request, ByteMatchSetUpdate specifies whether to insert or delete a ByteMatchTuple (p. 494) and includes the settings for the ByteMatchTuple.

Contents

Action

Specifies whether to insert or delete a ByteMatchTuple (p. 494).

Type: String

Valid Values: INSERT | DELETE

Required: Yes

ByteMatchTuple

Information about the part of a web request that you want AWS WAF to inspect and the value that you want AWS WAF to search for. If you specify DELETE for the value of Action, the ByteMatchTuple values must exactly match the values in the ByteMatchTuple that you want to delete from the ByteMatchSet.

Type: ByteMatchTuple (p. 494) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ByteMatchTuple

Service: AWS WAF Regional

The bytes (typically a string that corresponds with ASCII characters) that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings.

Contents

FieldToMatch

The part of a web request that you want AWS WAF to search, such as a specified header or a query string. For more information, see FieldToMatch (p. 498).

Type: FieldToMatch (p. 498) object

Required: Yes

PositionalConstraint

Within the portion of a web request that you want to search (for example, in the query string, if any), specify where you want AWS WAF to search. Valid values include the following:

CONTAINS

The specified part of the web request must include the value of TargetString, but the location doesn't matter.

CONTAINS_WORD

The specified part of the web request must include the value of TargetString, and TargetString must contain only alphanumeric characters or underscore (A-Z, a-z, 0-9, or _). In addition, TargetString must be a word, which means one of the following:

• TargetString exactly matches the value of the specified part of the web request, such as the value of a header.
• TargetString is at the beginning of the specified part of the web request and is followed by a character other than an alphanumeric character or underscore (_), for example, BadBot;
• TargetString is at the end of the specified part of the web request and is preceded by a character other than an alphanumeric character or underscore (_), for example, ;BadBot.
• TargetString is in the middle of the specified part of the web request and is preceded and followed by characters other than alphanumeric characters or underscore (_), for example, –BadBot.

EXACTLY

The value of the specified part of the web request must exactly match the value of TargetString.

STARTS_WITH

The value of TargetString must appear at the beginning of the specified part of the web request.

ENDS_WITH

The value of TargetString must appear at the end of the specified part of the web request.

Type: String

Valid Values: EXACTLY | STARTS_WITH | ENDS_WITH | CONTAINS | CONTAINS_WORD

Required: Yes
TargetString

The value that you want AWS WAF to search for. AWS WAF searches for the specified string in the part of web requests that you specified in FieldToMatch. The maximum length of the value is 50 bytes.

Valid values depend on the values that you specified for FieldToMatch:

- **HEADER**: The value that you want AWS WAF to search for in the request header that you specified in FieldToMatch (p. 498), for example, the value of the User-Agent or Referer header.
- **METHOD**: The HTTP method, which indicates the type of operation specified in the request. CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.
- **QUERY_STRING**: The value that you want AWS WAF to search for in the query string, which is the part of a URL that appears after a ? character.
- **URI**: The value that you want AWS WAF to search for in the part of a URL that identifies a resource, for example, /images/daily-ad.jpg.
- **BODY**: The part of a request that contains any additional data that you want to send to your web server as the HTTP request body, such as data from a form. The request body immediately follows the request headers. Note that only the first 8192 bytes of the request body are forwarded to AWS WAF for inspection. To allow or block requests based on the length of the body, you can create a size constraint set. For more information, see CreateSizeConstraintSet (p. 235).

If TargetString includes alphabetic characters A-Z and a-z, note that the value is case sensitive.

If you're using the AWS WAF API

Specify a base64-encoded version of the value. The maximum length of the value before you base64-encode it is 50 bytes.

For example, suppose the value of Type is HEADER and the value of Data is User-Agent. If you want to search the User-Agent header for the value BadBot, you base64-encode BadBot using MIME base64 encoding and include the resulting value, QmFkQm90, in the value of TargetString.

If you're using the AWS CLI or one of the AWS SDKs

The value that you want AWS WAF to search for. The SDK automatically base64 encodes the value.

Type: Base64-encoded binary data object

Required: Yes

TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on TargetString before inspecting a request for a match.

You can only specify a single type of TextTransformation.

CMD_LINE

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: \ " ' ^
- Delete spaces before the following characters: / ( 
- Replace the following characters with a space: ;
- Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

**COMPRESS_WHITE_SPACE**

Use this option to replace the following characters with a space character (decimal 32):
• \f, formfeed, decimal 12
• \t, tab, decimal 9
• \n, newline, decimal 10
• \r, carriage return, decimal 13
• \v, vertical tab, decimal 11
• non-breaking space, decimal 160

**COMPRESS_WHITE_SPACE** also replaces multiple spaces with one space.

**HTML_ENTITY_DECODE**

Use this option to replace HTML-encoded characters with unencoded characters.  
**HTML_ENTITY_DECODE** performs the following operations:
• Replaces (ampersand)|quot; with "
• Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
• Replaces (ampersand)lt; with a "less than" symbol
• Replaces (ampersand)gt; with >
• Replaces characters that are represented in hexadecimal format, (ampersand)#xhhhh;, with the corresponding characters
• Replaces characters that are represented in decimal format, (ampersand)#nnnn;, with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL_DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify **NONE** if you don’t want to perform any text transformations.

Type: String

Valid Values: **NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE**

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

• **AWS SDK for C++**
• **AWS SDK for Go**
• **AWS SDK for Java**
• **AWS SDK for Ruby V2**
FieldToMatch

Specifies where in a web request to look for TargetString.

Contents

Data

When the value of Type is HEADER, enter the name of the header that you want AWS WAF to search, for example, User-Agent or Referer. If the value of Type is any other value, omit Data.

The name of the header is not case sensitive.

Type: String

Required: No

Type

The part of the web request that you want AWS WAF to search for a specified string. Parts of a request that you can search include the following:

- **HEADER**: A specified request header, for example, the value of the User-Agent or Referer header. If you choose HEADER for the type, specify the name of the header in Data.
- **METHOD**: The HTTP method, which indicated the type of operation that the request is asking the origin to perform. Amazon CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.
- **QUERY_STRING**: A query string, which is the part of a URL that appears after a ? character, if any.
- **URI**: The part of a web request that identifies a resource, for example, /images/daily-ad.jpg.
- **BODY**: The part of a request that contains any additional data that you want to send to your web server as the HTTP request body, such as data from a form. The request body immediately follows the request headers. Note that only the first 8192 bytes of the request body are forwarded to AWS WAF for inspection. To allow or block requests based on the length of the body, you can create a size constraint set. For more information, see CreateSizeConstraintSet (p. 235).

Type: String

Valid Values: URI | QUERY_STRING | HEADER | METHOD | BODY

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
GeoMatchConstraint

Service: AWS WAF Regional

The country from which web requests originate that you want AWS WAF to search for.

Contents

Type

The type of geographical area you want AWS WAF to search for. Currently Country is the only valid value.

Type: String

Valid Values: Country

Required: Yes

Value

The country that you want AWS WAF to search for.

Type: String

Valid Values: AF | AX | AL | DZ | AS | AD | AO | AI | AQ | AG | AR | AM | AW |
BA | BV | BR | IO | BN | BG | BF | BI | KH | CM | CA | CV | KY | CF |
TD | CL | CN | CX | CC | CO | KM | CG | CD | CK | CR | CI | HR | CU | CW |
CY | CZ | DK | DJ | DM | DO | EC | EG | SV | GQ | ER | EE | ET | FK | FO |
FJ | FI | FR | GF | PF | TP | GA | GM | GE | DE | GH | GI | GR | CL | GD |
GP | GU | GT | GG | GN | GW | CY | HT | HM | VA | HN | HK | IU | IS | IN |
ID | IR | IQ | IE | IM | IL | IT | JM | JP | JE | JO | KZ | KE | KI | KP |
KR | KW | KG | LA | LV | LB | LS | LR | LY | LI | LT | LU | MO | MK | MG |
MW | MY | MV | ML | MT | MH | MQ | MR | MU | YT | MX | FM | MD | MC | MN |
ME | MS | MA | MZ | MM | NA | NR | NP | NL | NC | NZ | NI | NE | NG | NU |
NF | MF | NO | OM | PK | PW | PS | PA | PG | FY | PE | PH | PN | PL | PT |
PR | QA | RE | RO | RU | RW | BL | SH | KN | LC | MF | PM | VC | WS | SM |
ST | SA | SN | RS | SL | SG | SX | SK | SI | SB | SO | ZA | GS | SS |
ES | SR | SD | SR | SJ | SZ | SE | CH | SY | TW | TJ | T2 | TH | TL | TG |
TK | TO | TT | TN | TR | TM | TC | TV | UG | UA | AE | GB | US | UM | UY |
UZ | VU | VE | VN | VG | VI | WF | EH | YE | ZM | ZW

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
GeoMatchSet
Service: AWS WAF Regional

Contains one or more countries that AWS WAF will search for.

Contents

GeoMatchConstraints

An array of GeoMatchConstraint (p. 499) objects, which contain the country that you want AWS WAF to search for.

Type: Array of GeoMatchConstraint (p. 499) objects

Required: Yes

GeoMatchSetId

The GeoMatchSetId for a GeoMatchSet. You use GeoMatchSetId to get information about a GeoMatchSet (see GeoMatchSet (p. 500)), update a GeoMatchSet (see UpdateGeoMatchSet (p. 365)), insert a GeoMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a GeoMatchSet from AWS WAF (see DeleteGeoMatchSet (p. 251)). GeoMatchSetId is returned by CreateGeoMatchSet (p. 211) and by ListGeoMatchSets (p. 332).

Type: String


Required: Yes

Name

A friendly name or description of the GeoMatchSet (p. 500). You can't change the name of an GeoMatchSet after you create it.

Type: String


Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**GeoMatchSetSummary**

Service: AWS WAF Regional

Contains the identifier and the name of the GeoMatchSet.

### Contents

**GeoMatchSetId**

The `GeoMatchSetId` for a GeoMatchSet (p. 500). You can use `GeoMatchSetId` in a `GetGeoMatchSet` (p. 294) request to get detailed information about a GeoMatchSet (p. 500).

Type: String


Required: Yes

**Name**

A friendly name or description of the GeoMatchSet (p. 500). You can't change the name of a GeoMatchSet after you create it.

Type: String


Required: Yes

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
GeoMatchSetUpdate

Service: AWS WAF Regional

Specifies the type of update to perform to a GeoMatchSet (p. 500) with UpdateGeoMatchSet (p. 365).

Contents

Action

- Specifies whether to insert or delete a country with UpdateGeoMatchSet (p. 365).
- Type: String
- Valid Values: INSERT | DELETE
- Required: Yes

GeoMatchConstraint

- The country from which web requests originate that you want AWS WAF to search for.
- Type: GeoMatchConstraint (p. 499) object
- Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HTTPHeader

Service: AWS WAF Regional

The response from a GetSampledRequests (p. 313) request includes an HttpHeaders complex type that appears as Headers in the response syntax. HttpHeaders contains the names and values of all of the headers that appear in one of the web requests that were returned by GetSampledRequests.

Contents

Name

The name of one of the headers in the sampled web request.

  Type: String
  Required: No

Value

The value of one of the headers in the sampled web request.

  Type: String
  Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HTTPRequest
Service: AWS WAF Regional

The response from a GetSampledRequests (p. 313) request includes an HTTPRequest complex type that appears as Request in the response syntax. HTTPRequest contains information about one of the web requests that were returned by GetSampledRequests.

Contents

ClientIP
The IP address that the request originated from. If the WebACL is associated with a CloudFront distribution, this is the value of one of the following fields in CloudFront access logs:
- `c-ip`, if the viewer did not use an HTTP proxy or a load balancer to send the request
- `x-forwarded-for`, if the viewer did use an HTTP proxy or a load balancer to send the request

Type: String
Required: No

Country
The two-letter country code for the country that the request originated from. For a current list of country codes, see the Wikipedia entry ISO 3166-1 alpha-2.

Type: String
Required: No

Headers
A complex type that contains two values for each header in the sampled web request: the name of the header and the value of the header.

Type: Array of HTTPHeader (p. 503) objects
Required: No

HTTPVersion
The HTTP version specified in the sampled web request, for example, HTTP/1.1.

Type: String
Required: No

Method
The HTTP method specified in the sampled web request. CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.

Type: String
Required: No

URI
The part of a web request that identifies the resource, for example, /images/daily-ad.jpg.

Type: String
Required: No
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
IPSet
Service: AWS WAF Regional

Contains one or more IP addresses or blocks of IP addresses specified in Classless Inter-Domain Routing (CIDR) notation. AWS WAF supports /8, /16, /24, and /32 IP address ranges for IPv4, and /24, /32, /48, /56, /64 and /128 for IPv6.

To specify an individual IP address, you specify the four-part IP address followed by a /32, for example, 192.0.2.0/31. To block a range of IP addresses, you can specify a /128, /64, /56, /48, /32, /24, /16, or /8 CIDR. For more information about CIDR notation, see the Wikipedia entry Classless Inter-Domain Routing.

Contents

IPSetDescriptors

The IP address type (IPv4 or IPv6) and the IP address range (in CIDR notation) that web requests originate from. If the WebACL is associated with a CloudFront distribution and the viewer did not use an HTTP proxy or a load balancer to send the request, this is the value of the c-ip field in the CloudFront access logs.

Type: Array of IPSetDescriptor (p. 508) objects

Required: Yes

IPSetId

The IPSetId for an IPSet. You use IPSetId to get information about an IPSet (see GetIPSet (p. 296)), update an IPSet (see UpdateIPSet (p. 369)), insert an IPSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete an IPSet from AWS WAF (see DeleteIPSet (p. 254)).

IPSetId is returned by CreateIPSet (p. 214) and by ListIPSets (p. 334).

Type: String


Required: Yes

Name

A friendly name or description of the IPSet (p. 506). You can't change the name of an IPSet after you create it.

Type: String


Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
IPSetDescriptor

Service: AWS WAF Regional

Specifies the IP address type (IPv4 or IPv6) and the IP address range (in CIDR format) that web requests originate from.

Contents

Type

Specify IPv4 or IPv6.

Type: String

Valid Values: IPv4 | IPv6

Required: Yes

Value

Specify an IPv4 address by using CIDR notation. For example:

- To configure AWS WAF to allow, block, or count requests that originated from the IP address 192.0.2.44, specify 192.0.2.44/32.
- To configure AWS WAF to allow, block, or count requests that originated from IP addresses from 192.0.2.0 to 192.0.2.255, specify 192.0.2.0/24.

For more information about CIDR notation, see the Wikipedia entry [Classless Inter-Domain Routing](https://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing).

Specify an IPv6 address by using CIDR notation. For example:

- To configure AWS WAF to allow, block, or count requests that originated from the IP address 1111:0000:0000:0000:0000:0000:0000:0111, specify 1111:0000:0000:0000:0000:0000:0000:0111/128.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**IPSetSummary**

Service: AWS WAF Regional

Contains the identifier and the name of the IPSet.

**Contents**

**IPSetId**

The IPSetId for an IPSet (p. 506). You can use IPSetId in a GetIPSet (p. 296) request to get detailed information about an IPSet (p. 506).

Type: String


Required: Yes

**Name**

A friendly name or description of the IPSet (p. 506). You can't change the name of an IPSet after you create it.

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
IPSetUpdate
Service: AWS WAF Regional

Specifies the type of update to perform to an IPSet (p. 506) with UpdateIPSet (p. 369).

Contents

Action

Specifies whether to insert or delete an IP address with UpdateIPSet (p. 369).

Type: String

Valid Values: INSERT | DELETE

Required: Yes

IPSetDescriptor

The IP address type (IPV4 or IPV6) and the IP address range (in CIDR notation) that web requests originate from.

Type: IPSetDescriptor (p. 508) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Predicate

Service: AWS WAF Regional

Specifies the ByteMatchSet (p. 490), IPSet (p. 506), SqlInjectionMatchSet (p. 541), XssMatchSet (p. 554), RegexMatchSet (p. 515), GeoMatchSet (p. 500), and SizeConstraintSet (p. 538) objects that you want to add to a Rule and, for each object, indicates whether you want to negate the settings, for example, requests that do NOT originate from the IP address 192.0.2.44.

Contents

DataId

A unique identifier for a predicate in a Rule, such as ByteMatchSetId or IPSetId. The ID is returned by the corresponding Create or List command.

Type: String


Required: Yes

Negated

Set Negated to False if you want AWS WAF to allow, block, or count requests based on the settings in the specified ByteMatchSet (p. 490), IPSet (p. 506), SqlInjectionMatchSet (p. 541), XssMatchSet (p. 554), RegexMatchSet (p. 515), GeoMatchSet (p. 500), or SizeConstraintSet (p. 538). For example, if an IPSet includes the IP address 192.0.2.44, AWS WAF will allow or block requests based on that IP address.

Set Negated to True if you want AWS WAF to allow or block a request based on the negation of the settings in the ByteMatchSet (p. 490), IPSet (p. 506), SqlInjectionMatchSet (p. 541), XssMatchSet (p. 554), RegexMatchSet (p. 515), GeoMatchSet (p. 500), or SizeConstraintSet (p. 538). For example, if an IPSet includes the IP address 192.0.2.44, AWS WAF will allow, block, or count requests based on all IP addresses except 192.0.2.44.

Type: Boolean

Required: Yes

Type

The type of predicate in a Rule, such as ByteMatchSet or IPSet.

Type: String

Valid Values: IPMatch | ByteMatch | SqlInjectionMatch | GeoMatch | SizeConstraint | XssMatch | RegexMatch

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RateBasedRule

Service: AWS WAF Regional

A RateBasedRule is identical to a regular Rule (p. 525), with one addition: a RateBasedRule counts the number of requests that arrive from a specified IP address every five minutes. For example, based on recent requests that you've seen from an attacker, you might create a RateBasedRule that includes the following conditions:

- The requests come from 192.0.2.44.
- They contain the value BadBot in the User-Agent header.

In the rule, you also define the rate limit as 15,000.

Requests that meet both of these conditions and exceed 15,000 requests every five minutes trigger the rule's action (block or count), which is defined in the web ACL.

Contents

MatchPredicates

The Predicates object contains one Predicate element for each ByteMatchSet (p. 490), IPSet (p. 506), or SqlInjectionMatchSet (p. 541) object that you want to include in a RateBasedRule.

Type: Array of Predicate (p. 511) objects

Required: Yes

MetricName

A friendly name or description for the metrics for a RateBasedRule. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RateBasedRule.

Type: String

Required: No

Name

A friendly name or description for a RateBasedRule. You can't change the name of a RateBasedRule after you create it.

Type: String


Required: No

RateKey

The field that AWS WAF uses to determine if requests are likely arriving from single source and thus subject to rate monitoring. The only valid value for RateKey is IP. IP indicates that requests arriving from the same IP address are subject to the RateLimit that is specified in the RateBasedRule.

Type: String

Valid Values: IP

Required: Yes
RateLimit

The maximum number of requests, which have an identical value in the field specified by the RateKey, allowed in a five-minute period. If the number of requests exceeds the RateLimit and the other predicates specified in the rule are also met, AWS WAF triggers the action that is specified for this rule.

Type: Long


Required: Yes

RuleId

A unique identifier for a RateBasedRule. You use RuleId to get more information about a RateBasedRule (see GetRateBasedRule (p. 300)), update a RateBasedRule (see UpdateRateBasedRule (p. 373)), insert a RateBasedRule into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 403)), or delete a RateBasedRule from AWS WAF (see DeleteRateBasedRule (p. 259)).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexMatchSet**

Service: AWS WAF Regional

In a GetRegexMatchSet (p. 305) request, RegexMatchSet is a complex type that contains the RegexMatchSetId and Name of a RegexMatchSet, and the values that you specified when you updated the RegexMatchSet.

The values are contained in a RegexMatchTuple object, which specify the parts of web requests that you want AWS WAF to inspect and the values that you want AWS WAF to search for. If a RegexMatchSet contains more than one RegexMatchTuple object, a request needs to match the settings in only one ByteMatchTuple to be considered a match.

**Contents**

**Name**

A friendly name or description of the RegexMatchSet (p. 515). You can't change Name after you create a RegexMatchSet.

Type: String


Required: No

**RegexMatchSetId**

The RegexMatchSetId for a RegexMatchSet. You use RegexMatchSetId to get information about a RegexMatchSet (see GetRegexMatchSet (p. 305)), update a RegexMatchSet (see UpdateRegexMatchSet (p. 378)), insert a RegexMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a RegexMatchSet from AWS WAF (see DeleteRegexMatchSet (p. 262)).

RegexMatchSetId is returned by CreateRegexMatchSet (p. 222) and by ListRegexMatchSets (p. 338).

Type: String


Required: No

**RegexMatchTuples**

Contains an array of RegexMatchTuple (p. 519) objects. Each RegexMatchTuple object contains:

- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the User-Agent header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see RegexPatternSet (p. 522).
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

Type: Array of RegexMatchTuple (p. 519) objects

Required: No

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
RegexMatchSetSummary
Service: AWS WAF Regional

Returned by ListRegexMatchSets (p. 338). Each RegexMatchSetSummary object includes the Name and RegexMatchSetId for one RegexMatchSet (p. 515).

Contents

Name
A friendly name or description of the RegexMatchSet (p. 515). You can't change Name after you create a RegexMatchSet.

Type: String

Required: Yes

RegexMatchSetId
The RegexMatchSetId for a RegexMatchSet. You use RegexMatchSetId to get information about a RegexMatchSet, update a RegexMatchSet, remove a RegexMatchSet from a Rule, and delete a RegexMatchSet from AWS WAF.

RegexMatchSetId is returned by CreateRegexMatchSet (p. 222) and by ListRegexMatchSets (p. 338).

Type: String

Required: Yes

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexMatchSetUpdate**

Service: AWS WAF Regional

In an `UpdateRegexMatchSet (p. 378)` request, `RegexMatchSetUpdate` specifies whether to insert or delete a `RegexMatchTuple (p. 519)` and includes the settings for the `RegexMatchTuple`.

**Contents**

**Action**

Specifies whether to insert or delete a `RegexMatchTuple (p. 519)`.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

**RegexMatchTuple**

Information about the part of a web request that you want AWS WAF to inspect and the identifier of the regular expression (regex) pattern that you want AWS WAF to search for. If you specify DELETE for the value of `Action`, the `RegexMatchTuple` values must exactly match the values in the `RegexMatchTuple` that you want to delete from the `RegexMatchSet`.

Type: `RegexMatchTuple (p. 519)` object

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexMatchTuple**

Service: AWS WAF Regional

The regular expression pattern that you want AWS WAF to search for in web requests, the location in requests that you want AWS WAF to search, and other settings. Each `RegexMatchTuple` object contains:

- The part of a web request that you want AWS WAF to inspect, such as a query string or the value of the `User-Agent` header.
- The identifier of the pattern (a regular expression) that you want AWS WAF to look for. For more information, see `RegexPatternSet` (p. 522).
- Whether to perform any conversions on the request, such as converting it to lowercase, before inspecting it for the specified string.

**Contents**

FieldToMatch

Specifies where in a web request to look for the `RegexPatternSet`.

Type: `FieldToMatch` (p. 498) object

Required: Yes

**RegexPatternSetId**

The `RegexPatternSetId` for a `RegexPatternSet`. You use `RegexPatternSetId` to get information about a `RegexPatternSet` (see `GetRegexPatternSet` (p. 307)), update a `RegexPatternSet` (see `UpdateRegexPatternSet` (p. 382)), insert a `RegexPatternSet` into a `RegexMatchSet` or delete one from a `RegexMatchSet` (see `UpdateRegexMatchSet` (p. 378)), and delete an `RegexPatternSet` from AWS WAF (see `DeleteRegexPatternSet` (p. 265)).

`RegexPatternSetId` is returned by `CreateRegexPatternSet` (p. 225) and by `ListRegexPatternSets` (p. 340).

Type: String


Required: Yes

**TextTransformation**

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on `RegexPatternSet` before inspecting a request for a match.

You can only specify a single type of `TextTransformation`.

**CMD_LINE**

When you’re concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: `\ "'`^ 
- Delete spaces before the following characters: `/ (` 
- Replace the following characters with a space: `;`, `;` 
- Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

**COMPRESS_WHITE_SPACE**

Use this option to replace the following characters with a space character (decimal 32):

- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

**COMPRESS_WHITE_SPACE** also replaces multiple spaces with one space.

**HTML_ENTITY_DECODE**

Use this option to replace HTML-encoded characters with unencoded characters. **HTML_ENTITY_DECODE** performs the following operations:

- Replaces (ampersand)quot; with "
- Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
- Replaces (ampersand)lt; with a "less than" symbol
- Replaces (ampersand)gt; with >
- Replaces characters that are represented in hexadecimal format, (ampersand)#xhhhh;, with the corresponding characters
- Replaces characters that are represented in decimal format, (ampersand)#nnnn;, with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify **NONE** if you don’t want to perform any text transformations.

Type: String

Valid Values: **NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE**

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RegexPatternSet**

Service: AWS WAF Regional

The `RegexPatternSet` specifies the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[00]t. You can then configure AWS WAF to reject those requests.

**Contents**

**Name**

A friendly name or description of the `RegexPatternSet` *(p. 522)*. You can’t change Name after you create a `RegexPatternSet`.

- **Type:** String
- **Length Constraints:** Minimum length of 1. Maximum length of 128.
- **Required:** No

**RegexPatternSetId**

The identifier for the `RegexPatternSet`. You use `RegexPatternSetId` to get information about a `RegexPatternSet`, update a `RegexPatternSet`, remove a `RegexPatternSet` from a `RegexMatchSet`, and delete a `RegexPatternSet` from AWS WAF.

`RegexMatchSetId` is returned by `CreateRegexPatternSet` *(p. 225)* and by `ListRegexPatternSets` *(p. 340)*.

- **Type:** String
- **Length Constraints:** Minimum length of 1. Maximum length of 128.
- **Required:** Yes

**RegexPatternStrings**

Specifies the regular expression (regex) patterns that you want AWS WAF to search for, such as B[a@]dB[00]t.

- **Type:** Array of strings
- **Array Members:** Maximum number of 10 items.
- **Length Constraints:** Minimum length of 1.
- **Required:** Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RegexPatternSetSummary

Service: AWS WAF Regional

Returned by ListRegexPatternSets (p. 340). Each RegexPatternSetSummary object includes the Name and RegexPatternSetId for one RegexPatternSet (p. 522).

Contents

Name

A friendly name or description of the RegexPatternSet (p. 522). You can't change Name after you create a RegexPatternSet.

Type: String


Required: Yes

RegexPatternSetId

The RegexPatternSetId for a RegexPatternSet. You use RegexPatternSetId to get information about a RegexPatternSet, update a RegexPatternSet, remove a RegexPatternSet from a RegexMatchSet, and delete a RegexPatternSet from AWS WAF.

RegexPatternSetId is returned by CreateRegexPatternSet (p. 225) and by ListRegexPatternSets (p. 340).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RegexPatternSetUpdate

Service: AWS WAF Regional

In an UpdateRegexPatternSet request, RegexPatternSetUpdate specifies whether to insert or delete a RegexPatternString and includes the settings for the RegexPatternString.

Contents

Action

- Specifies whether to insert or delete a RegexPatternString.
  
  Type: String
  
  Valid Values: INSERT | DELETE
  
  Required: Yes

RegexPatternString

- Specifies the regular expression (regex) pattern that you want AWS WAF to search for, such as B[a@]dB[o0]t.
  
  Type: String
  
  Length Constraints: Minimum length of 1.
  
  Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**Rule**

Service: AWS WAF Regional

A combination of **ByteMatchSet** (p. 490), **IPSet** (p. 506), and/or **SqlInjectionMatchSet** (p. 541) objects that identify the web requests that you want to allow, block, or count. For example, you might create a **Rule** that includes the following predicates:

- An **IPSet** that causes AWS WAF to search for web requests that originate from the IP address 192.0.2.44
- A **ByteMatchSet** that causes AWS WAF to search for web requests for which the value of the **User-Agent** header is BadBot.

To match the settings in this **Rule**, a request must originate from 192.0.2.44 AND include a **User-Agent** header for which the value is BadBot.

**Contents**

**MetricName**

A friendly name or description for the metrics for this **Rule**. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change **MetricName** after you create the **Rule**.

Type: String

Required: No

**Name**

The friendly name or description for the **Rule**. You can't change the name of a **Rule** after you create it.

Type: String


Required: No

**Predicates**

The **Predicates** object contains one **Predicate** element for each **ByteMatchSet** (p. 490), **IPSet** (p. 506), or **SqlInjectionMatchSet** (p. 541) object that you want to include in a **Rule**.

Type: Array of **Predicate** (p. 511) objects

Required: Yes

**RuleId**

A unique identifier for a **Rule**. You use **RuleId** to get more information about a **Rule** (see **GetRule** (p. 309)), update a **Rule** (see **UpdateRule** (p. 386)), insert a **Rule** into a **WebACL** or delete a one from a **WebACL** (see **UpdateWebACL** (p. 403)), or delete a **Rule** from AWS WAF (see **DeleteRule** (p. 268)).

**RuleId** is returned by **CreateRule** (p. 228) and by **ListRules** (p. 346).

Type: String


Required: Yes
See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleGroup
Service: AWS WAF Regional

A collection of predefined rules that you can add to a web ACL.

Rule groups are subject to the following limits:

- Three rule groups per account. You can request an increase to this limit by contacting customer support.
- One rule group per web ACL.
- Ten rules per rule group.

Contents

MetricName
A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RuleGroup.

Type: String
Required: No

Name
The friendly name or description for the RuleGroup. You can't change the name of a RuleGroup after you create it.

Type: String
Required: No

RuleGroupId
A unique identifier for a RuleGroup. You use RuleGroupId to get more information about a RuleGroup (see GetRuleGroup (p. 311)), update a RuleGroup (see UpdateRuleGroup (p. 390)), insert a RuleGroup into a WebACL or delete a one from a WebACL (see UpdateWebACL (p. 403)), or delete a RuleGroup from AWS WAF (see DeleteRuleGroup (p. 271)).

RuleGroupId is returned by CreateRuleGroup (p. 232) and by ListRuleGroups (p. 344).

Type: String
Required: Yes

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
• AWS SDK for Ruby V2
RuleGroupSummary

Service: AWS WAF Regional

Contains the identifier and the friendly name or description of the RuleGroup.

Contents

Name

A friendly name or description of the RuleGroup (p. 527). You can't change the name of a RuleGroup after you create it.

Type: String


Required: Yes

RuleGroupId

A unique identifier for a RuleGroup. You use RuleGroupId to get more information about a RuleGroup (see GetRuleGroup (p. 311)), update a RuleGroup (see UpdateRuleGroup (p. 390)), insert a RuleGroup into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 403)), or delete a RuleGroup from AWS WAF (see DeleteRuleGroup (p. 271)).

RuleGroupId is returned by CreateRuleGroup (p. 232) and by ListRuleGroups (p. 344).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RuleGroupUpdate**

Service: AWS WAF Regional

Specifies an ActivatedRule and indicates whether you want to add it to a RuleGroup or delete it from a RuleGroup.

**Contents**

**Action**

Specify INSERT to add an ActivatedRule to a RuleGroup. Use DELETE to remove an ActivatedRule from a RuleGroup.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

**AvoidedRule**

The ActivatedRule object specifies a Rule that you want to insert or delete, the priority of the Rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the Rule (ALLOW, BLOCK, or COUNT).

Type: ActivatedRule (p. 488) object

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleSummary
Service: AWS WAF Regional

Contains the identifier and the friendly name or description of the Rule.

Contents

Name

A friendly name or description of the Rule (p. 525). You can't change the name of a Rule after you create it.

Type: String


Required: Yes

RuleId

A unique identifier for a Rule. You use RuleId to get more information about a Rule (see GetRule (p. 309)), update a Rule (see UpdateRule (p. 386)), insert a Rule into a WebACL or delete one from a WebACL (see UpdateWebACL (p. 403)), or delete a Rule from AWS WAF (see DeleteRule (p. 268)).

RuleId is returned by CreateRule (p. 228) and by ListRules (p. 346).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RuleUpdate
Service: AWS WAF Regional

Specifies a Predicate (such as an IPSet) and indicates whether you want to add it to a Rule or delete it from a Rule.

Contents

Action

Specify INSERT to add a Predicate to a Rule. Use DELETE to remove a Predicate from a Rule.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

Predicate

The ID of the Predicate (such as an IPSet) that you want to add to a Rule.

Type: Predicate (p. 511) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SampledHTTPRequest

Service: AWS WAF Regional

The response from a GetSampledRequests (p. 313) request includes a SampledHTTPRequests complex type that appears as SampledRequests in the response syntax. SampledHTTPRequests contains one SampledHTTPRequest object for each web request that is returned by GetSampledRequests.

Contents

Action

The action for the Rule that the request matched: ALLOW, BLOCK, or COUNT.

Type: String

Required: No

Request

A complex type that contains detailed information about the request.

Type: HTTPRequest (p. 504) object

Required: Yes

RuleWithinRuleGroup

This value is returned if the GetSampledRequests request specifies the ID of a RuleGroup rather than the ID of an individual rule. RuleWithinRuleGroup is the rule within the specified RuleGroup that matched the request listed in the response.

Type: String


Required: No

Timestamp

The time at which AWS WAF received the request from your AWS resource, in Unix time format (in seconds).

Type: Timestamp

Required: No

Weight

A value that indicates how one result in the response relates proportionally to other results in the response. A result that has a weight of 2 represents roughly twice as many CloudFront web requests as a result that has a weight of 1.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
SizeConstraint
Service: AWS WAF Regional

Specifies a constraint on the size of a part of the web request. AWS WAF uses the Size, ComparisonOperator, and FieldToMatch to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Contents

ComparisonOperator

The type of comparison you want AWS WAF to perform. AWS WAF uses this in combination with the provided Size and FieldToMatch to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

- **EQ**: Used to test if the Size is equal to the size of the FieldToMatch
- **NE**: Used to test if the Size is not equal to the size of the FieldToMatch
- **LE**: Used to test if the Size is less than or equal to the size of the FieldToMatch
- **LT**: Used to test if the Size is strictly less than the size of the FieldToMatch
- **GE**: Used to test if the Size is greater than or equal to the size of the FieldToMatch
- **GT**: Used to test if the Size is strictly greater than the size of the FieldToMatch

Type: String

Valid Values: **EQ | NE | LE | LT | GE | GT**

Required: Yes

FieldToMatch

Specifies where in a web request to look for the size constraint.

Type: **FieldToMatch (p. 498) object**

Required: Yes

Size

The size in bytes that you want AWS WAF to compare against the size of the specified FieldToMatch. AWS WAF uses this in combination with ComparisonOperator and FieldToMatch to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Valid values for size are 0 - 21474836480 bytes (0 - 20 GB).

If you specify URI for the value of Type, the / in the URI counts as one character. For example, the URI /logo.jpg is nine characters long.

Type: Long

Valid Range: Minimum value of 0. Maximum value of 21474836480.

Required: Yes
TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

Note that if you choose BODY for the value of Type, you must choose NONE for TextTransformation because CloudFront forwards only the first 8192 bytes for inspection.

NONE

Specify NONE if you don't want to perform any text transformations.

CMD_LINE

When you're concerned that attackers are injecting an operating system command line command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

• Delete the following characters: \ " ' ^
• Delete spaces before the following characters: / ( 
• Replace the following characters with a space: ;
• Replace multiple spaces with one space
• Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):

• \f, formfeed, decimal 12
• \t, tab, decimal 9
• \n, newline, decimal 10
• \r, carriage return, decimal 13
• \v, vertical tab, decimal 11
• non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:

• Replaces (ampersand)quot; with "
• Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
• Replaces (ampersand)lt; with a "less than" symbol
• Replaces (ampersand)gt; with >
• Replaces characters that are represented in hexadecimal format, (ampersand)#xhhhh;, with the corresponding characters
• Replaces characters that are represented in decimal format, (ampersand)#nnnn;, with the corresponding characters

LOWERCASE

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

URL_DECODE
Use this option to decode a URL-encoded value.

Type: String

Valid Values: NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**SizeConstraintSet**  
Service: AWS WAF Regional

A complex type that contains `SizeConstraint` objects, which specify the parts of web requests that you want AWS WAF to inspect the size of. If a `SizeConstraintSet` contains more than one `SizeConstraint` object, a request only needs to match one constraint to be considered a match.

**Contents**

**Name**

The name, if any, of the `SizeConstraintSet`.

Type: String


Required: No

**SizeConstraints**

Specifies the parts of web requests that you want to inspect the size of.

Type: Array of `SizeConstraint` (p. 535) objects

Required: Yes

**SizeConstraintSetId**

A unique identifier for a `SizeConstraintSet`. You use `SizeConstraintSetId` to get information about a `SizeConstraintSet` (see `GetSizeConstraintSet` (p. 316)), update a `SizeConstraintSet` (see `UpdateSizeConstraintSet` (p. 394)), insert a `SizeConstraintSet` into a Rule or delete one from a Rule (see `UpdateRule` (p. 386)), and delete a `SizeConstraintSet` from AWS WAF (see `DeleteSizeConstraintSet` (p. 274)).

`SizeConstraintSetId` is returned by `CreateSizeConstraintSet` (p. 235) and by `ListSizeConstraintSets` (p. 348).

Type: String


Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraintSetSummary

Service: AWS WAF Regional

The Id and Name of a SizeConstraintSet.

Contents

Name

The name of the SizeConstraintSet, if any.

Type: String


Required: Yes

SizeConstraintSetId

A unique identifier for a SizeConstraintSet. You use SizeConstraintSetId to get information about a SizeConstraintSet (seeGetSizeConstraintSet (p. 316)), update a SizeConstraintSet (see UpdateSizeConstraintSet (p. 394)), insert a SizeConstraintSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a SizeConstraintSet from AWS WAF (see DeleteSizeConstraintSet (p. 274)).

SizeConstraintSetId is returned by CreateSizeConstraintSet (p. 235) and by ListSizeConstraintSets (p. 348).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SizeConstraintSetUpdate
Service: AWS WAF Regional

Specifies the part of a web request that you want to inspect the size of and indicates whether you want to add the specification to a SizeConstraintSet (p. 538) or delete it from a SizeConstraintSet.

Contents

Action

Specify INSERT to add a SizeConstraintSetUpdate (p. 540) to a SizeConstraintSet (p. 538). Use DELETE to remove a SizeConstraintSetUpdate from a SizeConstraintSet.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

SizeConstraint

Specifies a constraint on the size of a part of the web request. AWS WAF uses the Size, ComparisonOperator, and FieldToMatch to build an expression in the form of "Size ComparisonOperator size in bytes of FieldToMatch". If that expression is true, the SizeConstraint is considered to match.

Type: SizeConstraint (p. 535) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchSet
Service: AWS WAF Regional

A complex type that contains SqlInjectionMatchTuple objects, which specify the parts of web requests that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header. If a SqlInjectionMatchSet contains more than one SqlInjectionMatchTuple object, a request needs to include snippets of SQL code in only one of the specified parts of the request to be considered a match.

Contents

Name

The name, if any, of the SqlInjectionMatchSet.

Type: String


Required: No

SqlInjectionMatchSetId

A unique identifier for a SqlInjectionMatchSet. You use SqlInjectionMatchSetId to get information about a SqlInjectionMatchSet (see GetSqlInjectionMatchSet (p. 318)), update a SqlInjectionMatchSet (see UpdateSqlInjectionMatchSet (p. 399)), insert a SqlInjectionMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a SqlInjectionMatchSet from AWS WAF (see DeleteSqlInjectionMatchSet (p. 277)).

SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 238) and by ListSqlInjectionMatchSets (p. 350).

Type: String


Required: Yes

SqlInjectionMatchTuples

Specifies the parts of web requests that you want to inspect for snippets of malicious SQL code.

Type: Array of SqlInjectionMatchTuple (p. 544) objects

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchSetSummary

Service: AWS WAF Regional

The Id and Name of a SqlInjectionMatchSet.

Contents

Name

The name of the SqlInjectionMatchSet, if any, specified by Id.

Type: String


Required: Yes

SqlInjectionMatchSetId

A unique identifier for a SqlInjectionMatchSet. You use SqlInjectionMatchSetId to get information about a SqlInjectionMatchSet (see GetSqlInjectionMatchSet (p. 318)), update a SqlInjectionMatchSet (see UpdateSqlInjectionMatchSet (p. 399)), insert a SqlInjectionMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete a SqlInjectionMatchSet from AWS WAF (see DeleteSqlInjectionMatchSet (p. 277)).

SqlInjectionMatchSetId is returned by CreateSqlInjectionMatchSet (p. 238) and by ListSqlInjectionMatchSets (p. 350).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchSetUpdate
Service: AWS WAF Regional

Specifies the part of a web request that you want to inspect for snippets of malicious SQL code and indicates whether you want to add the specification to a SqlInjectionMatchSet (p. 541) or delete it from a SqlInjectionMatchSet.

Contents

Action

Specify INSERT to add a SqlInjectionMatchSetUpdate (p. 543) to a SqlInjectionMatchSet (p. 541). Use DELETE to remove a SqlInjectionMatchSetUpdate from a SqlInjectionMatchSet.

Type: String

Valid Values: INSERT | DELETE

Required: Yes

SqlInjectionMatchTuple

Specifies the part of a web request that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header.

Type: SqlInjectionMatchTuple (p. 544) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SqlInjectionMatchTuple

Service: AWS WAF Regional

Specifies the part of a web request that you want AWS WAF to inspect for snippets of malicious SQL code and, if you want AWS WAF to inspect a header, the name of the header.

Contents

FieldToMatch

Specifies where in a web request to look for snippets of malicious SQL code.

Type: FieldToMatch (p. 498) object

Required: Yes

TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

CMD_LINE

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: \ /* ^
- Delete spaces before the following characters: / ( 
- Replace the following characters with a space: , ;
- Replace multiple spaces with one space
- Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):

- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:

- Replaces (ampersand)quot; with "
- Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
- Replaces (ampersand)lt; with a "less than" symbol
- Replaces (ampersand)gt; with >
- Replaces characters that are represented in hexadecimal format, \(\texttt{(ampersand)}\#x\text{hhhh};\), with the corresponding characters
- Replaces characters that are represented in decimal format, \(\texttt{(ampersand)}\#\text{nnnn};\), with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URLDecode**

Use this option to decode a URL-encoded value.

**NONE**

Specify **NONE** if you don't want to perform any text transformations.

Type: String

Valid Values: **NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE**

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SubscribedRuleGroupSummary
Service: AWS WAF Regional

A summary of the rule groups you are subscribed to.

Contents

**MetricName**

A friendly name or description for the metrics for this RuleGroup. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change the name of the metric after you create the RuleGroup.

Type: String
Required: Yes

**Name**

A friendly name or description of the RuleGroup. You can't change the name of a RuleGroup after you create it.

Type: String
Required: Yes

**RuleGroupId**

A unique identifier for a RuleGroup.

Type: String
Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
TimeWindow
Service: AWS WAF Regional

In a GetSampledRequests (p. 313) request, the StartTime and EndTime objects specify the time range for which you want AWS WAF to return a sample of web requests.

In a GetSampledRequests (p. 313) response, the StartTime and EndTime objects specify the time range for which AWS WAF actually returned a sample of web requests. AWS WAF gets the specified number of requests from among the first 5,000 requests that your AWS resource receives during the specified time period. If your resource receives more than 5,000 requests during that period, AWS WAF stops sampling after the 5,000th request. In that case, EndTime is the time that AWS WAF received the 5,000th request.

Contents

EndTime

The end of the time range from which you want GetSampledRequests to return a sample of the requests that your AWS resource received. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: Timestamp

Required: Yes

StartTime

The beginning of the time range from which you want GetSampledRequests to return a sample of the requests that your AWS resource received. Specify the date and time in the following format: "2016-09-27T14:50Z". You can specify any time range in the previous three hours.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WafAction
Service: AWS WAF Regional

For the action that is associated with a rule in a WebACL, specifies the action that you want AWS WAF to perform when a web request matches all of the conditions in a rule. For the default action in a WebACL, specifies the action that you want AWS WAF to take when a web request doesn't match all of the conditions in any of the rules in a WebACL.

Contents

Type

Specifies how you want AWS WAF to respond to requests that match the settings in a Rule. Valid settings include the following:

- **ALLOW**: AWS WAF allows requests
- **BLOCK**: AWS WAF blocks requests
- **COUNT**: AWS WAF increments a counter of the requests that match all of the conditions in the rule. AWS WAF then continues to inspect the web request based on the remaining rules in the web ACL. You can't specify COUNT for the default action for a WebACL.

Type: String

Valid Values: BLOCK | ALLOW | COUNT

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WafOverrideAction

Service: AWS WAF Regional

The action to take if any rule within the RuleGroup matches a request.

Contents

Type

COUNT overrides the action specified by the individual rule within a RuleGroup. If set to NONE, the rule's action will take place.

Type: String

Valid Values: NONE | COUNT

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WebACL

Service: AWS WAF Regional

Contains the Rules that identify the requests that you want to allow, block, or count. In a WebACL, you also specify a default action (ALLOW or BLOCK), and the action for each Rule that you add to a WebACL, for example, block requests from specified IP addresses or block requests from specified referrers. You also associate the WebACL with a CloudFront distribution to identify the requests that you want AWS WAF to filter. If you add more than one Rule to a WebACL, a request needs to match only one of the specifications to be allowed, blocked, or counted. For more information, see UpdateWebACL (p. 403).

Contents

DefaultAction

  The action to perform if none of the Rules contained in the WebACL match. The action is specified by the WafAction (p. 548) object.

  Type: WafAction (p. 548) object

  Required: Yes

MetricName

  A friendly name or description for the metrics for this WebACL. The name can contain only alphanumeric characters (A-Z, a-z, 0-9); the name can't contain whitespace. You can't change MetricName after you create the WebACL.

  Type: String

  Required: No

Name

  A friendly name or description of the WebACL. You can't change the name of a WebACL after you create it.

  Type: String


  Required: No

Rules

  An array that contains the action for each Rule in a WebACL, the priority of the Rule, and the ID of the Rule.

  Type: Array of ActivatedRule (p. 488) objects

  Required: Yes

WebACLId

  A unique identifier for a WebACL. You use WebACLId to get information about a WebACL (see GetWebACL (p. 320)), update a WebACL (see UpdateWebACL (p. 403)), and delete a WebACL from AWS WAF (see DeleteWebACL (p. 280)).

  WebACLId is returned by CreateWebACL (p. 241) and by ListWebACLs (p. 354).

  Type: String

Required: Yes

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
WebACLSummary

Service: AWS WAF Regional

Contains the identifier and the name or description of the WebACL (p. 550).

Contents

Name

A friendly name or description of the WebACL (p. 550). You can’t change the name of a WebACL after you create it.

Type: String


Required: Yes

WebACLId

A unique identifier for a WebACL. You use WebACLId to get information about a WebACL (see GetWebACL (p. 320)), update a WebACL (see UpdateWebACL (p. 403)), and delete a WebACL from AWS WAF (see DeleteWebACL (p. 280)).

WebACLId is returned by CreateWebACL (p. 241) and by ListWebACLs (p. 354).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
### WebACLUpdate

**Service:** AWS WAF Regional

Specifies whether to insert a rule into or delete a rule from a WebACL.

#### Contents

**Action**

Specifies whether to insert a rule into or delete a rule from a WebACL.

- **Type:** String
- **Valid Values:** INSERT | DELETE
- **Required:** Yes

**ActivatedRule**

The ActivatedRule object in an UpdateWebACL (p. 403) request specifies a rule that you want to insert or delete, the priority of the rule in the WebACL, and the action that you want AWS WAF to take when a web request matches the rule (ALLOW, BLOCK, or COUNT).

- **Type:** ActivatedRule (p. 488) object
- **Required:** Yes

#### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**XssMatchSet**

Service: AWS WAF Regional

A complex type that contains `XssMatchTuple` objects, which specify the parts of web requests that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header. If a `XssMatchSet` contains more than one `XssMatchTuple` object, a request needs to include cross-site scripting attacks in only one of the specified parts of the request to be considered a match.

**Contents**

**Name**

The name, if any, of the `XssMatchSet`.

Type: String


Required: No

**XssMatchSetId**

A unique identifier for an `XssMatchSet`. You use `XssMatchSetId` to get information about an `XssMatchSet` (see `GetXssMatchSet` (p. 325)), update an `XssMatchSet` (see `UpdateXssMatchSet` (p. 408)), insert an `XssMatchSet` into a `Rule` or delete one from a `Rule` (see `UpdateRule` (p. 386)), and delete an `XssMatchSet` from AWS WAF (see `DeleteXssMatchSet` (p. 283)).

`XssMatchSetId` is returned by `CreateXssMatchSet` (p. 245) and by `ListXssMatchSets` (p. 356).

Type: String


Required: Yes

**XssMatchTuples**

Specifies the parts of web requests that you want to inspect for cross-site scripting attacks.

Type: Array of `XssMatchTuple` (p. 557) objects

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchSetSummary

Service: AWS WAF Regional

The Id and Name of an XssMatchSet.

Contents

Name

The name of the XssMatchSet, if any, specified by Id.

Type: String


Required: Yes

XssMatchSetId

A unique identifier for an XssMatchSet. You use XssMatchSetId to get information about a XssMatchSet (see GetXssMatchSet (p. 325)), update an XssMatchSet (see UpdateXssMatchSet (p. 408)), insert an XssMatchSet into a Rule or delete one from a Rule (see UpdateRule (p. 386)), and delete an XssMatchSet from AWS WAF (see DeleteXssMatchSet (p. 283)).

XssMatchSetId is returned by CreateXssMatchSet (p. 245) and by ListXssMatchSets (p. 356).

Type: String


Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchSetUpdate
Service: AWS WAF Regional

Specifies the part of a web request that you want to inspect for cross-site scripting attacks and indicates whether you want to add the specification to an *XssMatchSet* (p. 554) or delete it from an *XssMatchSet*.

**Contents**

**Action**

Specify `INSERT` to add a *XssMatchSetUpdate* (p. 556) to an *XssMatchSet* (p. 554). Use `DELETE` to remove a *XssMatchSetUpdate* from an *XssMatchSet*.

Type: String

Valid Values: `INSERT` | `DELETE`

Required: Yes

**XssMatchTuple**

Specifies the part of a web request that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header.

Type: *XssMatchTuple* (p. 557) object

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
XssMatchTuple

Service: AWS WAF Regional

Specifies the part of a web request that you want AWS WAF to inspect for cross-site scripting attacks and, if you want AWS WAF to inspect a header, the name of the header.

Contents

FieldToMatch

Specifies where in a web request to look for cross-site scripting attacks.

Type: FieldToMatch (p. 498) object

Required: Yes

TextTransformation

Text transformations eliminate some of the unusual formatting that attackers use in web requests in an effort to bypass AWS WAF. If you specify a transformation, AWS WAF performs the transformation on FieldToMatch before inspecting a request for a match.

You can only specify a single type of TextTransformation.

CMD_LINE

When you're concerned that attackers are injecting an operating system commandline command and using unusual formatting to disguise some or all of the command, use this option to perform the following transformations:

- Delete the following characters: \ " ' ^
- Delete spaces before the following characters: / ( 
- Replace the following characters with a space: , ;
- Replace multiple spaces with one space
- Convert uppercase letters (A-Z) to lowercase (a-z)

COMPRESS_WHITE_SPACE

Use this option to replace the following characters with a space character (decimal 32):

- \f, formfeed, decimal 12
- \t, tab, decimal 9
- \n, newline, decimal 10
- \r, carriage return, decimal 13
- \v, vertical tab, decimal 11
- non-breaking space, decimal 160

COMPRESS_WHITE_SPACE also replaces multiple spaces with one space.

HTML_ENTITY_DECODE

Use this option to replace HTML-encoded characters with unencoded characters. HTML_ENTITY_DECODE performs the following operations:

- Replaces (ampersand)quot; with "
- Replaces (ampersand)nbsp; with a non-breaking space, decimal 160
- Replaces (ampersand)lt; with a "less than" symbol
- Replaces (ampersand)gt; with >
- Replaces characters that are represented in hexadecimal format, `(ampersand)#xhhhh;`, with the corresponding characters
- Replaces characters that are represented in decimal format, `(ampersand)#nnnn;`, with the corresponding characters

**LOWERCASE**

Use this option to convert uppercase letters (A-Z) to lowercase (a-z).

**URL_DECODE**

Use this option to decode a URL-encoded value.

**NONE**

Specify NONE if you don't want to perform any text transformations.

Type: String

Valid Values: NONE | COMPRESS_WHITE_SPACE | HTML_ENTITY_DECODE | LOWERCASE | CMD_LINE | URL_DECODE

Required: Yes

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the Amazon Web Services General Reference.

**Action**

The action to be performed.

Type: string

Required: Yes

**Version**

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

**X-Amz-Algorithm**

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

**X-Amz-Credential**

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: access_key/YYYYMMDD/region/service/aws4_request.

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the Amazon Web Services General Reference.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-Date**

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value:

```
20120325T120000Z
```

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is
not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see **Handling Dates in Signature Version 4** in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

**X-Amz-Security-Token**

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to *AWS Services That Work with IAM* in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

**X-Amz-Signature**

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-SignedHeaders**

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see *Task 1: Create a Canonical Request For Signature Version 4* in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional
Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

**AccessDeniedException**
You do not have sufficient access to perform this action.
HTTP Status Code: 400

**IncompleteSignature**
The request signature does not conform to AWS standards.
HTTP Status Code: 400

**InternalFailure**
The request processing has failed because of an unknown error, exception or failure.
HTTP Status Code: 500

**InvalidAction**
The action or operation requested is invalid. Verify that the action is typed correctly.
HTTP Status Code: 400

**InvalidClientTokenId**
The X.509 certificate or AWS access key ID provided does not exist in our records.
HTTP Status Code: 403

**InvalidParameterCombination**
Parameters that must not be used together were used together.
HTTP Status Code: 400

**InvalidParameterValue**
An invalid or out-of-range value was supplied for the input parameter.
HTTP Status Code: 400

**InvalidQueryParameter**
The AWS query string is malformed or does not adhere to AWS standards.
HTTP Status Code: 400

**MalformedQueryString**
The query string contains a syntax error.
HTTP Status Code: 404

**MissingAction**
The request is missing an action or a required parameter.
HTTP Status Code: 400
**MissingAuthenticationToken**

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

**MissingParameter**

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

**OptInRequired**

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

**RequestExpired**

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

**ServiceUnavailable**

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

**ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

**ValidationError**

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400