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# Amazon EMR on EKS

## Amazon EMR on EKS API Reference

### API Version 2020-10-01



## **Amazon EMR on EKS: Amazon EMR on EKS API Reference**

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# Welcome

Amazon EMR on EKS provides a deployment option for Amazon EMR that allows you to run open-source big data frameworks on Amazon Elastic Kubernetes Service (Amazon EKS). With this deployment option, you can focus on running analytics workloads while Amazon EMR on EKS builds, configures, and manages containers for open-source applications. For more information about Amazon EMR on EKS concepts and tasks, see [What is Amazon EMR on EKS](#).

*Amazon EMR containers* is the API name for Amazon EMR on EKS. The `emr-containers` prefix is used in the following scenarios:

- It is the prefix in the CLI commands for Amazon EMR on EKS. For example, `aws emr-containers start-job-run`.
- It is the prefix before IAM policy actions for Amazon EMR on EKS. For example, "Action": [ "emr-containers:StartJobRun" ]. For more information, see [Policy actions for Amazon EMR on EKS](#).
- It is the prefix used in Amazon EMR on EKS service endpoints. For example, `emr-containers.us-east-2.amazonaws.com`. For more information, see [Amazon EMR on EKS Service Endpoints](#).

This document was last published on June 14, 2021.

# Actions

The following actions are supported:

- [CancelJobRun](#) (p. 3)
- [CreateManagedEndpoint](#) (p. 5)
- [CreateVirtualCluster](#) (p. 10)
- [DeleteManagedEndpoint](#) (p. 13)
- [DeleteVirtualCluster](#) (p. 15)
- [DescribeJobRun](#) (p. 17)
- [DescribeManagedEndpoint](#) (p. 20)
- [DescribeVirtualCluster](#) (p. 23)
- [ListJobRuns](#) (p. 25)
- [ListManagedEndpoints](#) (p. 28)
- [ListTagsForResource](#) (p. 31)
- [ListVirtualClusters](#) (p. 33)
- [StartJobRun](#) (p. 36)
- [TagResource](#) (p. 40)
- [UntagResource](#) (p. 42)

# CancelJobRun

Cancels a job run. A job run is a unit of work, such as a Spark jar, PySpark script, or SparkSQL query, that you submit to Amazon EMR on EKS.

## Request Syntax

```
DELETE /virtualclusters/virtualClusterId/jobruns/jobRunId HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **jobRunId** (p. 3)

The ID of the job run to cancel.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

### **virtualClusterId** (p. 3)

The ID of the virtual cluster for which the job run will be canceled.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "id": "string",
  "virtualClusterId": "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.



### **id (p. 3)**

The output contains the ID of the cancelled job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z ]+

### **virtualClusterId (p. 3)**

The output contains the virtual cluster ID for which the job run is cancelled.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z ]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateManagedEndpoint

Creates a managed endpoint. A managed endpoint is a gateway that connects EMR Studio to Amazon EMR on EKS so that EMR Studio can communicate with your virtual cluster.

## Request Syntax

```
POST /virtualclusters/virtualClusterId/endpoints HTTP/1.1  
Content-type: application/json
```

```
{  
  "certificateArn": "string",  
  "clientToken": "string",  
  "configurationOverrides": {  
    "applicationConfiguration": [  
      {  
        "classification": "string",  
        "configurations": [  
          "Configuration"  
        ],  
        "properties": {  
          "string" : "string"  
        }  
      }  
    ],  
    "monitoringConfiguration": {  
      "cloudWatchMonitoringConfiguration": {  
        "logGroupName": "string",  
        "logStreamNamePrefix": "string"  
      },  
      "persistentAppUI": "string",  
      "s3MonitoringConfiguration": {  
        "logUri": "string"  
      }  
    }  
  },  
  "executionRoleArn": "string",  
  "name": "string",  
  "releaseLabel": "string",  
  "tags": {  
    "string" : "string"  
  },  
  "type": "string"  
}
```

## URI Request Parameters

The request uses the following URI parameters.

### **virtualClusterId** (p. 5)

The ID of the virtual cluster for which a managed endpoint is created.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### **certificateArn** (p. 5)

The certificate ARN of the managed endpoint.

Type: String

Length Constraints: Minimum length of 44. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):acm:.*:(\d{12}):certificate/.+&`

Required: Yes

### **clientToken** (p. 5)

The client idempotency token for this create call.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `.*\S.*`

Required: Yes

### **configurationOverrides** (p. 5)

The configuration settings that will be used to override existing configurations.

Type: [ConfigurationOverrides](#) (p. 47) object

Required: No

### **executionRoleArn** (p. 5)

The ARN of the execution role.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):iam::(\d{12})?:(role((\u002F)|(\u002F[\u0021-\u007F]+\u002F))[\w+=,.\@-]+)$`

Required: Yes

### **name** (p. 5)

The name of the managed endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\.\_\-/#A-Za-z0-9]+`

Required: Yes

### **releaseLabel** (p. 5)

The Amazon EMR release version.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [ \. \\_ - / A - Z a - z 0 - 9 ] +

Required: Yes

#### tags (p. 5)

The tags of the managed endpoint.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: . \* \ S . \*

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: . \* \ S . \*

Required: No

#### type (p. 5)

The type of the managed endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: . \* \ S . \*

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "arn": "string",
  "id": "string",
  "name": "string",
  "virtualClusterId": "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.

#### arn (p. 7)

The output contains the ARN of the managed endpoint.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: `^arn:(aws[a-zA-Z0-9-]*) :emr-containers:.\+:(\d{12}):\/virtualclusters  
\/[0-9a-zA-Z]+\/endpoints\/[0-9a-zA-Z]+$`

#### **id (p. 7)**

The output contains the ID of the managed endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z]+`

#### **name (p. 7)**

The output contains the name of the managed endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\.\-_\#A-Za-z0-9]+`

#### **virtualClusterId (p. 7)**

The output contains the ID of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z]+`

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVirtualCluster

Creates a virtual cluster. Virtual cluster is a managed entity on Amazon EMR on EKS. You can create, describe, list and delete virtual clusters. They do not consume any additional resource in your system. A single virtual cluster maps to a single Kubernetes namespace. Given this relationship, you can model virtual clusters the same way you model Kubernetes namespaces to meet your requirements.

## Request Syntax

```
POST /virtualclusters HTTP/1.1
Content-type: application/json

{
  "clientToken": "string",
  "containerProvider": {
    "id": "string",
    "info": {
      "eksInfo": {
        "namespace": "string"
      }
    },
    "type": "string"
  },
  "name": "string",
  "tags": {
    "string" : "string"
  }
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### **clientToken** (p. 10)

The client token of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: .\*\S.\*

Required: Yes

### **containerProvider** (p. 10)

The container provider of the virtual cluster.

Type: [ContainerProvider](#) (p. 49) object

Required: Yes

### **name** (p. 10)

The specified name of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\. \- \_/#A-Za-z0-9 ]+

Required: Yes

#### tags (p. 10)

The tags assigned to the virtual cluster.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: .\*\S.\*

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: .\*\S.\*

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "arn": "string",
  "id": "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.

#### arn (p. 11)

This output contains the ARN of virtual cluster.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: ^arn:(aws[a-zA-Z0-9-]\*):emr-containers:.\*:(\d{12}):\/virtualclusters  
\/[0-9a-zA-Z]+\$

#### id (p. 11)

This output contains the virtual cluster ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.



Pattern: [0-9a-z]+

**name (p. 11)**

This output contains the name of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\.\-\_\#A-Za-z0-9]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteManagedEndpoint

Deletes a managed endpoint. A managed endpoint is a gateway that connects EMR Studio to Amazon EMR on EKS so that EMR Studio can communicate with your virtual cluster.

## Request Syntax

```
DELETE /virtualclusters/virtualClusterId/endpoints/endpointId HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **endpointId** (p. 13)

The ID of the managed endpoint.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

### **virtualClusterId** (p. 13)

The ID of the endpoint's virtual cluster.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "id": "string",
  "virtualClusterId": "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.

### **id (p. 13)**

The output displays the ID of the managed endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z ]+

### **virtualClusterId (p. 13)**

The output displays the ID of the endpoint's virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z ]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVirtualCluster

Deletes a virtual cluster. Virtual cluster is a managed entity on Amazon EMR on EKS. You can create, describe, list and delete virtual clusters. They do not consume any additional resource in your system. A single virtual cluster maps to a single Kubernetes namespace. Given this relationship, you can model virtual clusters the same way you model Kubernetes namespaces to meet your requirements.

## Request Syntax

```
DELETE /virtualclusters/virtualClusterId HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **virtualClusterId** (p. 15)

The ID of the virtual cluster that will be deleted.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200  
Content-type: application/json  
  
{  
  "id": "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.

### **id** (p. 15)

This output contains the ID of the virtual cluster that will be deleted.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribeJobRun

Displays detailed information about a job run. A job run is a unit of work, such as a Spark jar, PySpark script, or SparkSQL query, that you submit to Amazon EMR on EKS.

### Request Syntax

```
GET /virtualclusters/virtualClusterId/jobruns/jobRunId HTTP/1.1
```

### URI Request Parameters

The request uses the following URI parameters.

#### [jobRunId \(p. 17\)](#)

The ID of the job run request.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

#### [virtualClusterId \(p. 17\)](#)

The ID of the virtual cluster for which the job run is submitted.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

### Request Body

The request does not have a request body.

### Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "jobRun": {
    "arn": "string",
    "clientToken": "string",
    "configurationOverrides": {
      "applicationConfiguration": [
        {
          "classification": "string",
          "configurations": [
            "Configuration"
          ],
          "properties": {
            "string" : "string"
          }
        }
      ]
    }
  }
}
```

```

    }
  ],
  "monitoringConfiguration": {
    "cloudWatchMonitoringConfiguration": {
      "logGroupName": "string",
      "logStreamNamePrefix": "string"
    },
    "persistentAppUI": "string",
    "s3MonitoringConfiguration": {
      "logUri": "string"
    }
  }
},
"createdAt": number,
"createdBy": "string",
"executionRoleArn": "string",
"failureReason": "string",
"finishedAt": number,
"id": "string",
"jobDriver": {
  "sparkSubmitJobDriver": {
    "entryPoint": "string",
    "entryPointArguments": [ "string" ],
    "sparkSubmitParameters": "string"
  }
},
"name": "string",
"releaseLabel": "string",
"state": "string",
"stateDetails": "string",
"tags": {
  "string" : "string"
},
"virtualClusterId": "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.

### [jobRun \(p. 17\)](#)

The output displays information about a job run.

Type: [JobRun \(p. 56\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

**ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# DescribeManagedEndpoint

Displays detailed information about a managed endpoint. A managed endpoint is a gateway that connects EMR Studio to Amazon EMR on EKS so that EMR Studio can communicate with your virtual cluster.

## Request Syntax

```
GET /virtualclusters/virtualClusterId/endpoints/endpointId HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **endpointId** (p. 20)

This output displays ID of the managed endpoint.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

### **virtualClusterId** (p. 20)

The ID of the endpoint's virtual cluster.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "endpoint": {
    "arn": "string",
    "certificateArn": "string",
    "configurationOverrides": {
      "applicationConfiguration": [
        {
          "classification": "string",
          "configurations": [
            "Configuration"
          ],
          "properties": {
            "string": "string"
          }
        }
      ]
    }
  }
}
```

```

    }
  },
  "monitoringConfiguration": {
    "cloudWatchMonitoringConfiguration": {
      "logGroupName": "string",
      "logStreamNamePrefix": "string"
    },
    "persistentAppUI": "string",
    "s3MonitoringConfiguration": {
      "logUri": "string"
    }
  }
},
"createdAt": number,
"executionRoleArn": "string",
"id": "string",
"name": "string",
"releaseLabel": "string",
"securityGroup": "string",
"serverUrl": "string",
"state": "string",
"subnetIds": [ "string" ],
"tags": {
  "string" : "string"
},
"type": "string",
"virtualClusterId": "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.

### endpoint (p. 20)

This output displays information about a managed endpoint.

Type: [Endpoint \(p. 51\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### InternalServerErrorException

This is an internal server exception.

HTTP Status Code: 500

### ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 400

### ValidationException

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVirtualCluster

Displays detailed information about a specified virtual cluster. Virtual cluster is a managed entity on Amazon EMR on EKS. You can create, describe, list and delete virtual clusters. They do not consume any additional resource in your system. A single virtual cluster maps to a single Kubernetes namespace. Given this relationship, you can model virtual clusters the same way you model Kubernetes namespaces to meet your requirements.

## Request Syntax

```
GET /virtualclusters/virtualClusterId HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### [virtualClusterId \(p. 23\)](#)

The ID of the virtual cluster that will be described.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "virtualCluster": {
    "arn": "string",
    "containerProvider": {
      "id": "string",
      "info": {
        "eksInfo": {
          "namespace": "string"
        }
      },
      "type": "string"
    },
    "createdAt": number,
    "id": "string",
    "name": "string",
    "state": "string",
    "tags": {
      "string" : "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.

### **virtualCluster** (p. 23)

This output displays information about the specified virtual cluster.

Type: [VirtualCluster](#) (p. 63) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 67).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListJobRuns

Lists job runs based on a set of parameters. A job run is a unit of work, such as a Spark jar, PySpark script, or SparkSQL query, that you submit to Amazon EMR on EKS.

## Request Syntax

```
GET /virtualclusters/virtualClusterId/jobruns?  
createdAfter=createdAfter&createdBefore=createdBefore&maxResults=maxResults&name=name&nextToken=nextToken  
HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **createdAfter** (p. 25)

The date and time after which the job runs were submitted.

### **createdBefore** (p. 25)

The date and time before which the job runs were submitted.

### **maxResults** (p. 25)

The maximum number of job runs that can be listed.

### **name** (p. 25)

The name of the job run.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [ \ . \ - \ \_ / # A - Z a - z 0 - 9 ] +

### **nextToken** (p. 25)

The token for the next set of job runs to return.

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: . \* \ S . \*

### **states** (p. 25)

The states of the job run.

Array Members: Maximum number of 10 items.

Valid Values: PENDING | SUBMITTED | RUNNING | FAILED | CANCELLED | CANCEL\_PENDING | COMPLETED

### **virtualClusterId** (p. 25)

The ID of the virtual cluster for which to list the job run.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [ 0 - 9 a - z ] +

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "jobRuns": [
    {
      "arn": "string",
      "clientToken": "string",
      "configurationOverrides": {
        "applicationConfiguration": [
          {
            "classification": "string",
            "configurations": [
              "Configuration"
            ],
            "properties": {
              "string" : "string"
            }
          }
        ],
        "monitoringConfiguration": {
          "cloudWatchMonitoringConfiguration": {
            "logGroupName": "string",
            "logStreamNamePrefix": "string"
          },
          "persistentAppUI": "string",
          "s3MonitoringConfiguration": {
            "logUri": "string"
          }
        }
      },
      "createdAt": number,
      "createdBy": "string",
      "executionRoleArn": "string",
      "failureReason": "string",
      "finishedAt": number,
      "id": "string",
      "jobDriver": {
        "sparkSubmitJobDriver": {
          "entryPoint": "string",
          "entryPointArguments": [ "string" ],
          "sparkSubmitParameters": "string"
        }
      },
      "name": "string",
      "releaseLabel": "string",
      "state": "string",
      "stateDetails": "string",
      "tags": {
        "string" : "string"
      },
      "virtualClusterId": "string"
    },
    {
      "nextToken": "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.

### **jobRuns** (p. 26)

This output lists information about the specified job runs.

Type: Array of [JobRun](#) (p. 56) objects

### **nextToken** (p. 26)

This output displays the token for the next set of job runs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 67).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# ListManagedEndpoints

Lists managed endpoints based on a set of parameters. A managed endpoint is a gateway that connects EMR Studio to Amazon EMR on EKS so that EMR Studio can communicate with your virtual cluster.

## Request Syntax

```
GET /virtualclusters/virtualClusterId/endpoints?  
createdAfter=createdAfter&createdBefore=createdBefore&maxResults=maxResults&nextToken=nextToken&states=  
HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **createdAfter** (p. 28)

The date and time after which the endpoints are created.

### **createdBefore** (p. 28)

The date and time before which the endpoints are created.

### **maxResults** (p. 28)

The maximum number of managed endpoints that can be listed.

### **nextToken** (p. 28)

The token for the next set of managed endpoints to return.

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

### **states** (p. 28)

The states of the managed endpoints.

Array Members: Maximum number of 10 items.

Valid Values: `CREATING` | `ACTIVE` | `TERMINATING` | `TERMINATED` | `TERMINATED_WITH_ERRORS`

### **types** (p. 28)

The types of the managed endpoints.

Array Members: Maximum number of 10 items.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `.*\S.*`

### **virtualClusterId** (p. 28)

The ID of the virtual cluster.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z ]+`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "endpoints": [
    {
      "arn": "string",
      "certificateArn": "string",
      "configurationOverrides": {
        "applicationConfiguration": [
          {
            "classification": "string",
            "configurations": [
              "Configuration"
            ],
            "properties": {
              "string": "string"
            }
          }
        ],
        "monitoringConfiguration": {
          "cloudWatchMonitoringConfiguration": {
            "logGroupName": "string",
            "logStreamNamePrefix": "string"
          },
          "persistentAppUI": "string",
          "s3MonitoringConfiguration": {
            "logUri": "string"
          }
        }
      },
      "createdAt": number,
      "executionRoleArn": "string",
      "id": "string",
      "name": "string",
      "releaseLabel": "string",
      "securityGroup": "string",
      "serverUrl": "string",
      "state": "string",
      "subnetIds": [ "string" ],
      "tags": {
        "string": "string"
      },
      "type": "string",
      "virtualClusterId": "string"
    }
  ],
  "nextToken": "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.

### **endpoints (p. 29)**

The managed endpoints to be listed.

Type: Array of [Endpoint \(p. 51\)](#) objects

### **nextToken (p. 29)**

The token for the next set of endpoints to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## ListTagsForResource

Lists the tags assigned to the resources.

### Request Syntax

```
GET /tags/resourceArn HTTP/1.1
```

### URI Request Parameters

The request uses the following URI parameters.

#### [resourceArn \(p. 31\)](#)

The ARN of tagged resources.

Length Constraints: Minimum length of 60. Maximum length of 500.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.*:(\d{12}):/virtualclusters/.+$`

Required: Yes

### Request Body

The request does not have a request body.

### Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "tags": {
    "string" : "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.

#### [tags \(p. 31\)](#)

The tags assigned to resources.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: `.*\S.*`

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## ListVirtualClusters

Lists information about the specified virtual cluster. Virtual cluster is a managed entity on Amazon EMR on EKS. You can create, describe, list and delete virtual clusters. They do not consume any additional resource in your system. A single virtual cluster maps to a single Kubernetes namespace. Given this relationship, you can model virtual clusters the same way you model Kubernetes namespaces to meet your requirements.

### Request Syntax

```
GET /virtualclusters?  
containerProviderId=containerProviderId&containerProviderType=containerProviderType&createdAfter=createdAfter  
HTTP/1.1
```

### URI Request Parameters

The request uses the following URI parameters.

#### **containerProviderId** (p. 33)

The container provider ID of the virtual cluster.

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

#### **containerProviderType** (p. 33)

The container provider type of the virtual cluster. EKS is the only supported type as of now.

Valid Values: `EKS`

#### **createdAfter** (p. 33)

The date and time after which the virtual clusters are created.

#### **createdBefore** (p. 33)

The date and time before which the virtual clusters are created.

#### **maxResults** (p. 33)

The maximum number of virtual clusters that can be listed.

#### **nextToken** (p. 33)

The token for the next set of virtual clusters to return.

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

#### **states** (p. 33)

The states of the requested virtual clusters.

Array Members: Maximum number of 10 items.

Valid Values: `RUNNING` | `TERMINATING` | `TERMINATED` | `ARRESTED`

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "nextToken": "string",
  "virtualClusters": [
    {
      "arn": "string",
      "containerProvider": {
        "id": "string",
        "info": {
          "eksInfo": {
            "namespace": "string"
          }
        }
      },
      "type": "string"
    },
    "createdAt": number,
    "id": "string",
    "name": "string",
    "state": "string",
    "tags": {
      "string" : "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.

### **nextToken** (p. 34)

This output displays the token for the next set of virtual clusters.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: .\*\\S.\*

### **virtualClusters** (p. 34)

This output lists the specified virtual clusters.

Type: Array of [VirtualCluster](#) (p. 63) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 67).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



## StartJobRun

Starts a job run. A job run is a unit of work, such as a Spark jar, PySpark script, or SparkSQL query, that you submit to Amazon EMR on EKS.

### Request Syntax

POST /virtualclusters/*virtualClusterId*/jobruns HTTP/1.1  
Content-type: application/json

```
{
  "clientToken": "string",
  "configurationOverrides": [
    {
      "applicationConfiguration": [
        {
          "classification": "string",
          "configurations": [
            "Configuration"
          ],
          "properties": {
            "string" : "string"
          }
        }
      ],
      "monitoringConfiguration": {
        "cloudWatchMonitoringConfiguration": {
          "logGroupName": "string",
          "logStreamNamePrefix": "string"
        },
        "persistentAppUI": "string",
        "s3MonitoringConfiguration": {
          "logUri": "string"
        }
      }
    }
  ],
  "executionRoleArn": "string",
  "jobDriver": {
    "sparkSubmitJobDriver": {
      "entryPoint": "string",
      "entryPointArguments": [ "string" ],
      "sparkSubmitParameters": "string"
    }
  },
  "name": "string",
  "releaseLabel": "string",
  "tags": {
    "string" : "string"
  }
}
```

### URI Request Parameters

The request uses the following URI parameters.

#### **virtualClusterId** (p. 36)

The virtual cluster ID for which the job run request is submitted.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### **clientToken** (p. 36)

The client idempotency token of the job run request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `.*\S.*`

Required: Yes

### **configurationOverrides** (p. 36)

The configuration overrides for the job run.

Type: [ConfigurationOverrides](#) (p. 47) object

Required: No

### **executionRoleArn** (p. 36)

The execution role ARN for the job run.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):iam::(\d{12})?:(role((\u002F)|(\u002F[\u0021-\u007F]+\u002F))[\w+=,.\@-]+)$`

Required: Yes

### **jobDriver** (p. 36)

The job driver for the job run.

Type: [JobDriver](#) (p. 55) object

Required: Yes

### **name** (p. 36)

The name of the job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\.\-_\#A-Za-z0-9]+`

Required: No

### **releaseLabel** (p. 36)

The Amazon EMR release version to use for the job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\.\_\-/A-Za-z0-9]+`

Required: Yes

#### [tags \(p. 36\)](#)

The tags assigned to job runs.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: `.*\S.*`

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "arn": "string",
  "id": "string",
  "name": "string",
  "virtualClusterId": "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.

#### [arn \(p. 38\)](#)

This output lists the ARN of job run.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.*:(\d{12}):\/virtualclusters\/[0-9a-zA-Z]+\/jobruns\/[0-9a-zA-Z]+$`

#### [id \(p. 38\)](#)

This output displays the started job run ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

**name (p. 38)**

This output displays the name of the started job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\.\-\_\#A-Za-z0-9]+

**virtualClusterId (p. 38)**

This output displays the virtual cluster ID for which the job run was submitted.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## TagResource

Assigns tags to resources. A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value, both of which you define. Tags enable you to categorize your AWS resources by attributes such as purpose, owner, or environment. When you have many resources of the same type, you can quickly identify a specific resource based on the tags you've assigned to it. For example, you can define a set of tags for your Amazon EMR on EKS clusters to help you track each cluster's owner and stack level. We recommend that you devise a consistent set of tag keys for each resource type. You can then search and filter the resources based on the tags that you add.

### Request Syntax

```
POST /tags/resourceArn HTTP/1.1
Content-type: application/json

{
  "tags": {
    "string" : "string"
  }
}
```

### URI Request Parameters

The request uses the following URI parameters.

#### **resourceArn** (p. 40)

The ARN of resources.

Length Constraints: Minimum length of 60. Maximum length of 500.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.*:(\d{12}):/virtualclusters/.*$`

Required: Yes

### Request Body

The request accepts the following data in JSON format.

#### **tags** (p. 40)

The tags assigned to resources.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: `.*\S.*`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

## 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 \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

### **ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UntagResource

Removes tags from resources.

## Request Syntax

```
DELETE /tags/resourceArn?tagKeys=tagKeys HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### **resourceArn** (p. 42)

The ARN of resources.

Length Constraints: Minimum length of 60. Maximum length of 500.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.\+:(\d{12}):/virtualclusters/.\+$`

Required: Yes

### **tagKeys** (p. 42)

The tag keys of the resources.

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Pattern: `.*\S.*`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## 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 \(p. 67\)](#).

### **InternalServerErrorException**

This is an internal server exception.

HTTP Status Code: 500

**ResourceNotFoundException**

The specified resource was not found.

HTTP Status Code: 400

**ValidationException**

There are invalid parameters in the client 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# Data Types

The Amazon EMR Containers API contains several data types that various actions use. This section describes each data type in detail.

**Note**

The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [CloudWatchMonitoringConfiguration](#) (p. 45)
- [Configuration](#) (p. 46)
- [ConfigurationOverrides](#) (p. 47)
- [ContainerInfo](#) (p. 48)
- [ContainerProvider](#) (p. 49)
- [EksInfo](#) (p. 50)
- [Endpoint](#) (p. 51)
- [JobDriver](#) (p. 55)
- [JobRun](#) (p. 56)
- [MonitoringConfiguration](#) (p. 60)
- [S3MonitoringConfiguration](#) (p. 61)
- [SparkSubmitJobDriver](#) (p. 62)
- [VirtualCluster](#) (p. 63)

# CloudWatchMonitoringConfiguration

A configuration for CloudWatch monitoring. You can configure your jobs to send log information to CloudWatch Logs.

## Contents

### **logGroupName**

The name of the log group for log publishing.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: [ \ . \ - \ \_ / # A - Z a - z 0 - 9 ] +

Required: Yes

### **logStreamNamePrefix**

The specified name prefix for log streams.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: . \* \ S . \*

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 V2](#)
- [AWS SDK for Ruby V3](#)

# Configuration

A configuration specification to be used when provisioning virtual clusters, which can include configurations for applications and software bundled with Amazon EMR on EKS. A configuration consists of a classification, properties, and optional nested configurations. A classification refers to an application-specific configuration file. Properties are the settings you want to change in that file.

## Contents

### **classification**

The classification within a configuration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

Required: Yes

### **configurations**

A list of additional configurations to apply within a configuration object.

Type: Array of [Configuration \(p. 46\)](#) objects

Array Members: Maximum number of 100 items.

Required: No

### **properties**

A set of properties specified within a configuration classification.

Type: String to string map

Map Entries: Maximum number of 100 items.

Key Length Constraints: Minimum length of 1. Maximum length of 1024.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `.*\S.*`

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 V2](#)
- [AWS SDK for Ruby V3](#)

# ConfigurationOverrides

A configuration specification to be used to override existing configurations.

## Contents

### **applicationConfiguration**

The configurations for the application running by the job run.

Type: Array of [Configuration \(p. 46\)](#) objects

Array Members: Maximum number of 100 items.

Required: No

### **monitoringConfiguration**

The configurations for monitoring.

Type: [MonitoringConfiguration \(p. 60\)](#) object

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 V2](#)
- [AWS SDK for Ruby V3](#)

# ContainerInfo

The information about the container used for a job run or a managed endpoint.

## Contents

### **eksInfo**

The information about the EKS cluster.

Type: [EksInfo](#) (p. 50) object

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 V2](#)
- [AWS SDK for Ruby V3](#)

# ContainerProvider

The information about the container provider.

## Contents

### id

The ID of the container cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[0-9A-Za-z][A-Za-z0-9\-\_]*`

Required: Yes

### info

The information about the container cluster.

Type: [ContainerInfo \(p. 48\)](#) object

Required: No

### type

The type of the container provider. EKS is the only supported type as of now.

Type: String

Valid Values: `EKS`

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 V2](#)
- [AWS SDK for Ruby V3](#)

## EksInfo

The information about the EKS cluster.

### Contents

#### **namespace**

The namespaces of the EKS cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-z0-9]([-a-z0-9]*[a-z0-9])?`

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 V2](#)
- [AWS SDK for Ruby V3](#)

## Endpoint

This entity represents the endpoint that is managed by Amazon EMR on EKS.

### Contents

#### **arn**

The ARN of the endpoint.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.+:(\d{12}):\/virtualclusters\/[0-9a-zA-Z]+\/endpoints\/[0-9a-zA-Z]+$`

Required: No

#### **certificateArn**

The certificate ARN of the endpoint.

Type: String

Length Constraints: Minimum length of 44. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):acm:.+:(\d{12}):certificate/.+$`

Required: No

#### **configurationOverrides**

The configuration settings that are used to override existing configurations for endpoints.

Type: [ConfigurationOverrides \(p. 47\)](#) object

Required: No

#### **createdAt**

The date and time when the endpoint was created.

Type: Timestamp

Required: No

#### **executionRoleArn**

The execution role ARN of the endpoint.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):iam:?.+:(\d{12})?:(role((\u002F)|(\u002F\u0021-\u007F)+\u002F))[\w+=,.\@-]+$`

Required: No

#### **id**

The ID of the endpoint.



Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z]+

Required: No

**name**

The name of the endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\.\-\_\#A-Za-z0-9]+

Required: No

**releaseLabel**

The EMR release version to be used for the endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\.\-\_/A-Za-z0-9]+

Required: No

**securityGroup**

The security group configuration of the endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: .\*\S.\*

Required: No

**serverUrl**

The server URL of the endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDBFF-\uDC00\uDFFF\r\n\t]\*

Required: No

**state**

The state of the endpoint.

Type: String

Valid Values: CREATING | ACTIVE | TERMINATING | TERMINATED |  
TERMINATED\_WITH\_ERRORS

Required: No

**subnetIds**

The subnet IDs of the endpoint.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `.*\S.*`

Required: No

**tags**

The tags of the endpoint.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: `.*\S.*`

Required: No

**type**

The type of the endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `.*\S.*`

Required: No

**virtualClusterId**

The ID of the endpoint's virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z ]+`

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 V2](#)

- [AWS SDK for Ruby V3](#)

# JobDriver

Specify the driver that the job runs on.

## Contents

### **sparkSubmitJobDriver**

The job driver parameters specified for spark submit.

Type: [SparkSubmitJobDriver \(p. 62\)](#) object

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 V2](#)
- [AWS SDK for Ruby V3](#)

# JobRun

This entity describes a job run. A job run is a unit of work, such as a Spark jar, PySpark script, or SparkSQL query, that you submit to Amazon EMR on EKS.

## Contents

### **arn**

The ARN of job run.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):emr-containers:.+:(\d{12}):\/virtualclusters  
\/[0-9a-zA-Z]+\/jobruns\/[0-9a-zA-Z]+$`

Required: No

### **clientToken**

The client token used to start a job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `.*\S.*`

Required: No

### **configurationOverrides**

The configuration settings that are used to override default configuration.

Type: [ConfigurationOverrides \(p. 47\)](#) object

Required: No

### **createdAt**

The date and time when the job run was created.

Type: Timestamp

Required: No

### **createdBy**

The user who created the job run.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):(iam|sts):(\d{12})?:[\w/+=, .@-]+$`

Required: No

### **executionRoleArn**

The execution role ARN of the job run.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `^arn:(aws[a-zA-Z0-9-]*):iam::(\d{12})?:(role((\u002F)|(\u002F[\u0021-\u007F]+\u002F))[\w+=,.\@-]+)$`

Required: No

**failureReason**

The reasons why the job run has failed.

Type: String

Valid Values: `INTERNAL_ERROR | USER_ERROR | VALIDATION_ERROR | CLUSTER_UNAVAILABLE`

Required: No

**finishedAt**

The date and time when the job run has finished.

Type: Timestamp

Required: No

**id**

The ID of the job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z]+`

Required: No

**jobDriver**

Parameters of job driver for the job run.

Type: [JobDriver \(p. 55\)](#) object

Required: No

**name**

The name of the job run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\.\_\/#\A-Za-z0-9]+`

Required: No

**releaseLabel**

The release version of Amazon EMR.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [\. \\_ /A-Za-z0-9 ]+

Required: No

#### **state**

The state of the job run.

Type: String

Valid Values: PENDING | SUBMITTED | RUNNING | FAILED | CANCELLED | CANCEL\_PENDING | COMPLETED

Required: No

#### **stateDetails**

Additional details of the job run state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: .\*\S.\*

Required: No

#### **tags**

The assigned tags of the job run.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: .\*\S.\*

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: .\*\S.\*

Required: No

#### **virtualClusterId**

The ID of the job run's virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: [0-9a-z ]+

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 V2](#)
- [AWS SDK for Ruby V3](#)



# MonitoringConfiguration

Configuration setting for monitoring.

## Contents

### **cloudWatchMonitoringConfiguration**

Monitoring configurations for CloudWatch.

Type: [CloudWatchMonitoringConfiguration \(p. 45\)](#) object

Required: No

### **persistentAppUI**

Monitoring configurations for the persistent application UI.

Type: String

Valid Values: `ENABLED` | `DISABLED`

Required: No

### **s3MonitoringConfiguration**

Amazon S3 configuration for monitoring log publishing.

Type: [S3MonitoringConfiguration \(p. 61\)](#) object

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 V2](#)
- [AWS SDK for Ruby V3](#)

# S3MonitoringConfiguration

Amazon S3 configuration for monitoring log publishing. You can configure your jobs to send log information to Amazon S3.

## Contents

### logUri

Amazon S3 destination URI for log publishing.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 10280.

Pattern: [ \u0020-\uD7FF\uE000-\uFFFD\uD800\uDBFF-\uDC00\uDFFF\x\n\t ]\*

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 V2](#)
- [AWS SDK for Ruby V3](#)

# SparkSubmitJobDriver

The information about job driver for Spark submit.

## Contents

### **entryPoint**

The entry point of job application.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `(?!\\s*$)(^[^';|\\u0026\\u003C\\u003E*?`$(){}\\[\\]!#\\]*$)`

Required: Yes

### **entryPointArguments**

The arguments for job application.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 10280.

Pattern: `(?!\\s*$)(^[^';|\\u0026\\u003C\\u003E*?`$(){}\\[\\]!#\\]*$)`

Required: No

### **sparkSubmitParameters**

The Spark submit parameters that are used for job runs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 102400.

Pattern: `(?!\\s*$)(^[^';|\\u0026\\u003C\\u003E*?`$(){}\\[\\]!#\\]*$)`

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 V2](#)
- [AWS SDK for Ruby V3](#)

# VirtualCluster

This entity describes a virtual cluster. A virtual cluster is a Kubernetes namespace that Amazon EMR is registered with. Amazon EMR uses virtual clusters to run jobs and host endpoints. Multiple virtual clusters can be backed by the same physical cluster. However, each virtual cluster maps to one namespace on an EKS cluster. Virtual clusters do not create any active resources that contribute to your bill or that require lifecycle management outside the service.

## Contents

### **arn**

The ARN of the virtual cluster.

Type: String

Length Constraints: Minimum length of 60. Maximum length of 1024.

Pattern: `^arn:(aws[a-zA-Z0-9-]*) :emr-containers:.\+:(\d{12}):\/virtualclusters  
\/[0-9a-zA-Z]+\$`

Required: No

### **containerProvider**

The container provider of the virtual cluster.

Type: [ContainerProvider \(p. 49\)](#) object

Required: No

### **createdAt**

The date and time when the virtual cluster is created.

Type: Timestamp

Required: No

### **id**

The ID of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9a-z]+\$`

Required: No

### **name**

The name of the virtual cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[\. \- _ / # A-Z a-z 0-9]+\$`

Required: No

### **state**

The state of the virtual cluster.

Type: String

Valid Values: `RUNNING` | `TERMINATING` | `TERMINATED` | `ARRESTED`

Required: No

### **tags**

The assigned tags of the virtual cluster.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 50 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `.*\S.*`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Value Pattern: `.*\S.*`

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 V2](#)
- [AWS SDK for Ruby V3](#)

# 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'THHMMSS'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

**NotAuthorized**

You do not have permission to perform this action.

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