User Guide

# AWS DevOps Agent

# AWS DevOps Agent: User Guide

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# What is AWS DevOps Agent

AWS DevOps Agent is a frontier agent that resolves and proactively prevents incidents, continuously improving reliability and performance.

AWS DevOps Agent investigates incidents and identifies operational improvements as an experienced DevOps engineer.

The agent works by:

- Learning your resources and their relationships.
- Working with your observability tools, runbooks, code repositories, and CI/CD pipelines.
- Correlating telemetry, code, and deployment data to understand relationships between your application resources.
- Supporting applications in multicloud and hybrid environments.

## Key features

AWS DevOps Agent provides comprehensive incident response and prevention capabilities with these features.

### Always-on, autonomous incident response

AWS DevOps Agent autonomously investigates issues the moment they occur:

- **Automated incident investigation –** Automatically starts investigating when an alert or support ticket arrives.
- **Interactive investigation chat –** Start and guide investigations using natural language in the DevOps Agent Space web app.
- **Detailed mitigation plans –** Provides specific actions to resolve incidents, validate success, and revert changes if needed.
- **Automated incident coordination –** Routes observations, findings, and mitigation steps through your preferred communication channels like Slack and ServiceNow.
- **AWS Support integration –** Create AWS Support cases directly from an investigation with immediate context provided to AWS Support experts.

## Prevent future incidents

AWS DevOps Agent analyzes patterns across historical incidents to help you move from reactive firefighting to proactive operational improvement:

- **Targeted recommendations** – Delivers specific, actionable improvements that strengthen four key areas. These areas include observability (monitoring, alerting, logging), infrastructure optimization (autoscaling, capacity tuning), and deployment pipeline enhancement (testing, validation).
- **Continuous learning** – Refines recommendations based on your team's feedback.

## Get more from your DevOps tools

AWS DevOps Agent integrates with your existing tools without changing your workflows:

- **Application resource mapping** – Builds a topology graph of your application resources and their relationships.
- **Built-in integrations** – Works with popular observability tools including Amazon CloudWatch, Dynatrace, Datadog, New Relic, and Splunk. It also integrates with code repositories and CI/CD pipelines such as GitHub Actions, GitHub repositories, GitLab workflows, and GitLab repositories.
- **Custom tool integration** – Extend capabilities by connecting to your own Model Context Protocol (MCP) servers for additional tools.

# How AWS DevOps Agent works

AWS DevOps Agent operates through a dual-console architecture. **Administrators** use the AWS Management Console to create and manage Agent Spaces, configure integrations, and set up access controls. **Operations teams** use the AWS DevOps Agent web app for day-to-day incident response and investigation activities.

The web app allows operators to interact with agent investigations, browse cross-account application topology, and learn about preventative improvements to observability, code, pipelines, and infrastructure architectures. To learn more, see the section called “What is a DevOps Agent Web App?”

The service is organized around Agent Spaces. Agent Spaces are logical containers that define what AWS DevOps Agent can access and investigate. Each Agent Space contains your AWS account configurations, third-party tool integrations, and access permissions. To learn more, see the section called “What are DevOps Agent Spaces?”

AWS DevOps Agent automatically builds an application topology that maps your resources and their relationships. This topology helps the service understand your application architecture during investigations. To learn more, see the section called “What is a DevOps Agent topology?”

## Benefits

- **Reduce mean time to resolution (MTTR) –** Autonomous investigation starts immediately. This accelerates incident resolution from hours to minutes.
- **Prevent recurring incidents –** Targeted recommendations address root causes and strengthen system resilience.
- **Improve operational efficiency –** Free your team from repetitive investigation tasks to focus on innovation.
- **Work within existing workflows –** Integrates with your existing tools and processes without disruption.

## What is a DevOps Agent Web App?

AWS DevOps Agent uses a dual-console architecture that separates administrative functions from day-to-day operational activities. This design enables administrators to configure the service while operations teams focus on incident response and prevention.

### Consoles

AWS DevOps Agent provides two distinct interfaces:

- **AWS Management Console –** Administrators use the AWS Management Console to set up and manage AWS DevOps Agent. In this console, you create Agent Spaces, connect AWS services and third-party tools, and manage access permissions for your organization.
- **DevOps Agent web app –** Operations teams use DevOps Agent Space web apps for daily incident response activities. This standalone application provides an interface where on-call engineers can launch investigations, interact with the agent through natural language chat, view application topologies, and review incident prevention recommendations.

## Web app capabilities

The DevOps Agent web app provides the following primary capabilities:

- **Incident Response –** The page is where you create and track incident investigations as well as generate mitigation plans to resolve incidents.
- **Incident Prevention –** Found in the Prevention tab, this is where you will find recommendations to improve your observability posture, delivery processes, and infrastructure architecture to prevent future incidents.
- **DevOps Center –** The DevOps Center tab provides an interactive visual representation of the account resources and their relationships across all of the resources in the connected accounts. You can view the topology with different levels of detail.

## Authentication

AWS DevOps Agent supports flexible authentication methods to accommodate different organizational requirements:

- **IAM Identity Center integration (User access)** – Organizations can use IAM Identity Center to centrally manage user access to the DevOps Agent Space web apps. IAM Identity Center can federate with external identity providers through standard OIDC and SAML protocols, including providers like Okta, Ping Identity, and Microsoft Entra ID. This method supports multi-factor authentication from your identity provider.
- **IAM authentication link (Admin access)** – An alternative method provides direct access to the web app from the AWS Management Console using your existing console session. This option is useful before implementing full IAM Identity Center integration.

# What are DevOps Agent Spaces?

A DevOps Agent Space is a logical container that defines the tools and infrastructure that AWS DevOps Agent has access to. Each Agent Space operates independently with its own AWS account access, third-party integrations, and user permissions. An Agent Space represents the boundary of what AWS DevOps Agent can access and investigate during incident response.

When you create an Agent Space, you define which AWS accounts the agent can access, which external tools it can connect to, and which users in your organization can interact with the agent. Each Agent Space functions as an independent deployment of AWS DevOps Agent.

You configure the Agent Space through the AWS Management Console, while your operations teams use the Agent Space's web app to conduct investigations and review recommendations within that space.

## How Agent Spaces are isolated

Agent Spaces maintain isolation to ensure security and prevent unintended access across different environments or teams:

- **AWS account isolation** – Each Agent Space uses dedicated IAM roles that grant access only to specific AWS accounts and resources. The agent cannot access AWS resources outside of those explicitly configured for the Agent Space.
- **Integration isolation** – Connections to observability platforms, code repositories, and communication tools are scoped to each Agent Space. The exception is third-party connections, such as GitHub apps, OAuth tokens, API keys, and other credentials are stored at the account level and shared among Agent Spaces in the account. See *AWS DevOps Agent Security* to learn more.
- **User access isolation** – You control which users or groups can access each Agent Space. This allows you to align access permissions with your organizational structure, ensuring teams only interact with their designated Agent Spaces.
- **Data isolation** – Investigation data, incident history, and recommendations are maintained separately within each Agent Space. Information from one Agent Space is not visible or accessible from another Agent Space.

## Agent Space Web App

Each Agent Space has a dedicated web app that is accessible outside of the AWS Management Console. See What is a DevOps Agent Web App? to learn more about the web app.

## When to use multiple Agent Spaces

Consider creating multiple Agent Spaces to support different organizational needs:

- **Team separation** – Create dedicated Agent Spaces for different application teams or business units to maintain clear ownership boundaries in the Agent Space.
- **Environment isolation** – Separate production and non-production environments into different Agent Spaces to prevent accidental cross-environment access.

- **Service boundaries –** Align Agent Spaces with specific services or application boundaries to keep investigations focused and relevant.
- **Compliance requirements –** Configure separate Agent Spaces with different access controls or data residency settings to meet regulatory requirements.

**Note**

When connecting ticketing and alarm systems to an Agent Space, ensure that the resources the DevOps Agent will need to effectively investigate an incident or alarm are available to it.
For example, if an alarm you want your DevOps Agent to be able to respond to is connected to metrics and resources contained in a particular AWS account, make sure to add that account to your Agent Space as a secondary cloud account.

## What is a DevOps Agent topology?

AWS DevOps Agent automatically discovers and visualizes the resources and relationships within your applications and uses the resulting topology to understand your infrastructure during incident investigations and when making preventative recommendations.

### How topology graphs are created

AWS DevOps Agent builds topology graphs through several automated processes:

- **Resource discovery –** The agent automatically scans your AWS accounts to identify resources like compute instances, storage services, networking components, and databases that are part of your applications.
- **Relationship detection –** The agent analyzes configuration data, CloudFormation stacks and resource tags to determine how resources relate to one another.
- **Code and deployment mapping –** When connected to CI/CD pipelines, the agent links infrastructure resources back to their deployment processes and changed application and infrastructure code.
- **Observability behavior mapping –** Data from observability systems such as Amazon CloudWatch Application Signals and Dynatrace are used to identify observed behaviors that indicate relationships between resources.

## Key capabilities

Resource mapping provides several capabilities that enhance incident investigation and prevention:

- **Interactive visualization –** Explore your application topology through an interactive graph in the Operator Web App. You can zoom and navigate the topology to understand complex relationships between resources.
- **Contextual investigation –** During incident investigations, AWS DevOps Agent is assisted by the resource topology to identify affected components, understand blast radius, and trace the impact path through your systems.
- **Root cause analysis –** The detailed understanding of resource relationships helps pinpoint where issues originate, even in complex distributed systems with many interdependencies.
- **Impact assessment –** When analyzing incidents, the agent can better determine which downstream services might be affected by identifying dependency chains in the topology.
- **Preventative recommendations –** The agent uses topology insights to make targeted recommendations for resilience improvements, suggesting changes that will have the most significant impact on system stability.

## Topology views

The topology visualization in DevOps Center page in the Operator Web App offers multiple levels of detail:

- **System view –** Shows high-level account and region boundaries
- **Container view –** Displays deployment stacks like CloudFormation stacks that contain related resources
- **Resource view –** Shows the complete view with all resources and their relationships

## Resource discovery

Resources are discovered through two methods:

- **CloudFormation stacks –** The agent will list all of the CloudFormation stacks and their resources in the primary AWS account as well as an connected secondary accounts. This is supported for any infrastructure-as-code tooling that uses CloudFormation for deployment, including Cloud Development Kit (CDK).

- **Resource Tags** – For resources not deployed from CloudFormation, you can specify a list of AWS Tag keys and value pairs to include in the resource topology. This is useful to identify application boundaries for applications deployed through the AWS Management Console, the AWS service APIs, or other infrastructure-as-code frameworks.

> **Note**
>
> The target AWS account must have Resource Explorer enabled to discover tagged resources.

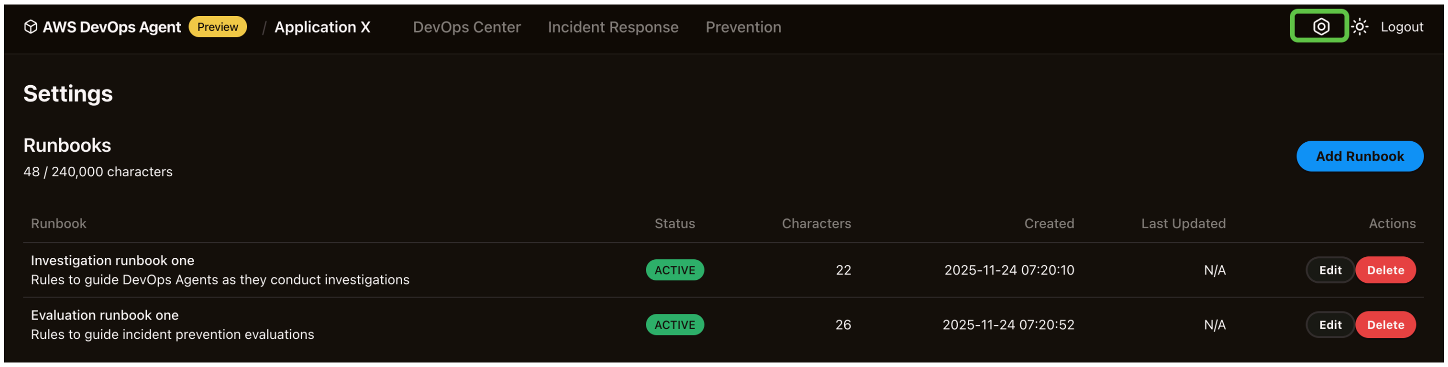
## Investigation scope beyond topology

While the application topology provides important context during investigations, AWS DevOps Agent is not limited to investigating only the resources shown in the topology. The agent may use additional data sources, such as AWS service APIs or connected observability tools, to investigate resources that are not in the application topology.

To limit the resources the agent has access to, restrict the policy for the role assigned to the agent to access cross-account resources. For more information, see the section called "Limiting Agent Access in an AWS Account".

## DevOps Agent runbooks

You can configure runbooks to guide the AWS DevOps Agent as it performs incident response investigations and incident prevention evaluations. Click on the settings icon in the top right of your DevOps Agent web app and enter one or more runbooks.



Settings

Runbooks

48 / 240,000 characters

| Runbook | Status | Characters | Created | Last Updated | Actions |
|---|---|---|---|---|---|
| Investigation runbook one<br>Rules to guide DevOps Agents as they conduct investigations | ACTIVE | 22 | 2025-11-24 07:20:10 | N/A | Edit Delete |
| Evaluation runbook one<br>Rules to guide incident prevention evaluations | ACTIVE | 26 | 2025-11-24 07:20:52 | N/A | Edit Delete |

Investigation and evaluation performance can be further enhanced by using AWS DevOps Agent Runbooks to provide investigation hints and guidance for non-standard configurations across all connection types. You can also use Investigation chat/steering to test runbook concepts by steering live investigations or restarting completed ones with additional hints.

### Example use case

If your environment uses Dynatrace for alarms and metrics, Splunk for logs, and CloudWatch for serverless logs, document this in your runbook to accelerate issue resolution.

## Public preview pricing and limits

### Pricing

During public preview you will not be charged for usage of AWS DevOps Agent. However, queries and API calls made to other AWS and non-AWS services may generate charges from those services. For example, if they charge for metric or log queries made by your DevOps Agent during an incident resolution investigation.

### Limits and quotas

During public preview, on a per account basis, your usage of AWS DevOps Agent will be limited to:

- 10 Agent Spaces
- 20 DevOps Agent incident resolution hours
- 10 DevOps Agent incident prevention hours
- 1,000 chat messages per month

The number of concurrent incident resolution investigation tasks allowed is **three**, and the number of concurrent incident prevention evaluation tasks allowed is **one**.

# Getting started with AWS DevOps Agent

Learn how to create a basic Agent Space, configure minimal permissions, and conduct your first AI-powered investigation.

**Topics**

- Creating an Agent Space
- CLI Onboarding Guide
- Creating a test environment

## Creating an Agent Space

An Agent Space defines the tools and infrastructure that AWS DevOps Agent has access to. This guide walks you through creating an Agent Space, configuring primary account access, and enabling the DevOps Agent Web App. See “What is an Agent Space” to learn more about the Agent Space concept.

### Create an Agent Space

#### Access the AWS DevOps Agent console

- Sign in to the AWS Management Console
- Navigate to the AWS DevOps Agent console

#### Name the Agent Space

- Click **Create Agent Space +**

In the **Agent Space details** section, provide:

- In the **Name** field, enter a name for your Agent Space
- (Optional) In the **Description** field, add details about the Agent Space's purpose

## Configure primary account access

In the **Give this Agent Space AWS resource access** section, you will set up an IAM role to grant the Agent Space access to the primary AWS account.The primary account is the AWS account where you create your Agent Space. AWS DevOps Agent requires an IAM role to discover and access AWS resources in this account during investigations.  Choose a role configuration method.Select one of the following options:

#### Option 1: Auto-create a new AWS DevOps Agent role (recommended)

This option automatically creates a role with appropriate permissions for AWS DevOps Agent to investigate resources in your account. **Note:**You must have IAM permissions to create new roles to use this option.

- Select **Auto-create a new AWS DevOps Agent role**
- (Optional) Update the Agent Space role name to be created

#### Option 2: Assign an existing role

Use this option when another administrator has previously created a role specifically for AWS DevOps Agent.

- Select **Assign an existing role**
- From the dropdown menu, select an existing role that has appropriate permissions

#### Option 3: Create a new AWS DevOps Agent role using a policytemplate

Use this option when you need to limit the services and resources the agent can access in the primary account.

- Select **Create a new AWS DevOps Agent role using a policy template**
- Follow the instructions to create the new role’s trust policy and inline policy.

## Use AWS tags for resource discovery

By default, all CloudFormation stacks and their resources will be discovered. If your resources were not deployed with CloudFormation, you can have AWS DevOps Agent discover resources with specific AWS tags. See Application Resource Mapping[link] to learn more.

### Enabling the Agent Space Web App

The Web App is where personnel interact with AWS DevOps Agent for incident investigations and reviewing recommendations. See AWS DevOps Agent Console Architecture[link] to learn more. When enabled, users can access the Agent Space Web App through an IAM authentication link from the AWS Management Console.  Select one of the following options:

#### Option1: Auto-create a new AWS DevOps Agent role (recommended)

This option automatically creates a role with appropriate permissions for accessing the DevOps Agent Web App. **Note:**You must have IAM permissions to create new roles to use this option.

- Select **Auto-create a new AWS DevOps Agent role**
- Review the permissions that will be granted to the role

#### Option 2: Assign an existing role

Use this option when another administrator has previously created an operator role.

- Select **Assign an existing role**
- From the dropdown menu, select an existing role that has appropriate permissions

#### Option 3: Create a new AWS DevOps Agent role using apolicytemplate

Use this option when you need to customize permissions for web app access.

- Select **Create a new AWS DevOps Agent role using a policy template**
- Follow the instructions to create the new role’s trust policy and inline policy.

Once all sections are filled out, click **Submit**

## Verify your Agent Space setup

Once configured, the “Configure Web App” button should become “Admin access”. Clicking should open the Web App and authenticate successfully.

## Next steps

After setting up your Agent Space, consider these next steps:

- Add secondary accounts if your applications span multiple AWS accounts
- Configure third-party integrations like observability tools or ticketing systems
- Set up IAM Identity Center authentication for production environments
- Explore your application resource mapping to help AWS DevOps Agent understand your infrastructure

# CLI Onboarding Guide

## Overview

AWS DevOps Agent helps you monitor and manage your AWS infrastructure. This guide walks you through setting up AWS DevOps Agent in the **us-east-1** region.

**Note:** AWS DevOps Agent is in preview. The instructions on this page may change before general availability (GA)

## Prerequisites

- AWS CLI installed and configured
- Authenticated to your AWS monitoring account
- AWS DevOps Agent is available in us-east-1

## Setup AWS CLI for DevOps Agent

### Download the Service Model

Download the AWS DevOps Agent model file:

```
# Download from: https://d1co8nkiwcta1g.cloudfront.net/devopsagent.json
# Save as: devopsagent.json
```

### Patch AWS CLI

Add the DevOps Agent service to your AWS CLI:

```
aws configure add-model --service-model "file://${PWD}/devopsagent.json" --service-name
 devopsagent
```

Test the installation:

```
aws devopsagent help
```

## IAM Roles Setup

### Create DevOps Agent Space Role

Create the IAM trust policy:

```
cat > devops-agentspace-trust-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service": "aidevops.amazonaws.com"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "aws:SourceAccount": "<ACCOUNT_ID>"
        },
        "ArnLike": {
          "aws:SourceArn": "arn:aws:aidevops:us-east-1:<ACCOUNT_ID>:agentspace/*"
        }
      }
    }
  ]
}
EOF
```

Create the IAM role:

```
aws iam create-role \
  --region us-east-1 \
  --role-name DevOpsAgentRole-AgentSpace \
  --assume-role-policy-document file://devops-agentspace-trust-policy.json

# Save the role ARN
```

```
aws iam get-role --role-name DevOpsAgentRole-AgentSpace --query 'Role.Arn' --output
 text
```

Attach the AWS managed policy:

```
aws iam attach-role-policy \
  --role-name DevOpsAgentRole-AgentSpace \
  --policy-arn arn:aws:iam::aws:policy/AIOpsAssistantPolicy
```

Create and attach additional inline policy:

```
cat > devops-agentspace-inline-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AllowAwsSupportActions",
      "Effect": "Allow",
      "Action": [
        "support:CreateCase",
        "support:DescribeCases"
      ],
      "Resource": [
        "*"
      ]
    },
    {
      "Sid": "AllowExpandedAIOpsAssistantPolicy",
      "Effect": "Allow",
      "Action": [
        "aidevops:GetKnowledgeItem",
        "aidevops:ListKnowledgeItems",
        "eks:AccessKubernetesApi",
        "synthetics:GetCanaryRuns",
        "route53:GetHealthCheckStatus",
        "resource-explorer-2:Search"
      ],
      "Resource": [
        "*"
      ]
    }
  ]
}
```

```
EOF

aws iam put-role-policy \
  --role-name DevOpsAgentRole-AgentSpace \
  --policy-name AllowExpandedAIOpsAssistantPolicy \
  --policy-document file://devops-agentspace-inline-policy.json
```

## Create Operator App IAM Role

Create the IAM trust policy:

```
cat > devops-operator-trust-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service": "aidevops.amazonaws.com"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "aws:SourceAccount": "<ACCOUNT_ID>"
        },
        "ArnLike": {
          "aws:SourceArn": "arn:aws:aidevops:us-east-1:<ACCOUNT_ID>:agentspace/*"
        }
      }
    }
  ]
}
EOF
```

Create the IAM role:

```
aws iam create-role \
  --role-name DevOpsAgentRole-WebappAdmin \
  --assume-role-policy-document file://devops-operator-trust-policy.json \
  --region us-east-1

# Save the role ARN
```

```
aws iam get-role --role-name DevOpsAgentRole-WebappAdmin --query 'Role.Arn' --output
 text
```

Create and attach the operator app inline policy:

```
cat > devops-operator-inline-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AllowBasicOperatorActions",
      "Effect": "Allow",
      "Action": [
        "aidevops:GetAgentSpace",
        "aidevops:GetAssociation",
        "aidevops:ListAssociations",
        "aidevops:CreateBacklogTask",
        "aidevops:GetBacklogTask",
        "aidevops:UpdateBacklogTask",
        "aidevops:ListBacklogTasks",
        "aidevops:ListChildExecutions",
        "aidevops:ListJournalRecords",
        "aidevops:DiscoverTopology",
        "aidevops:InvokeAgent",
        "aidevops:ListGoals",
        "aidevops:ListRecommendations",
        "aidevops:ListExecutions",
        "aidevops:GetRecommendation",
        "aidevops:UpdateRecommendation",
        "aidevops:CreateKnowledgeItem",
        "aidevops:ListKnowledgeItems",
        "aidevops:GetKnowledgeItem",
        "aidevops:UpdateKnowledgeItem",
        "aidevops:ListPendingMessages",
        "aidevops:InitiateChatForCase",
        "aidevops:EndChatForCase",
        "aidevops:DescribeSupportLevel",
        "aidevops:SendChatMessage"
      ],
      "Resource": "arn:aws:aidevops:us-east-1:<ACCOUNT_ID>:agentspace/*"
    },
    {
      "Sid": "AllowSupportOperatorActions",
      "Effect": "Allow",
      "Action": [
        "support:DescribeCases",
        "support:InitiateChatForCase",
        "support:DescribeSupportLevel"
      ],
      "Resource": "*"
    }
  ]
}
EOF

aws iam put-role-policy \
  --role-name DevOpsAgentRole-WebappAdmin \
  --policy-name AIDevOpsBasicOperatorActionsPolicy \
  --policy-document file://devops-operator-inline-policy.json
```

## Onboarding Steps

### Create an Agent Space

```
aws devopsagent create-agent-space \
  --name "MyAgentSpace" \
  --description "AgentSpace for monitoring my application" \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the `agentSpaceId` from the response.

To list your agent spaces later:

```
aws devopsagent list-agent-spaces \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

### Associate AWS Account

Associate your AWS account to enable topology discovery. This is the primary source or monitoring account, the account where the agentspace exists.

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id aws \
  --configuration '{
    "aws": {
      "assumableRoleArn": "arn:aws:iam::<ACCOUNT_ID>:role/DevOpsAgentRole-AgentSpace",
      "accountId": "<ACCOUNT_ID>",
      "accountType": "monitor",
      "resources": [
      ]
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

## Enable Operator App

Authentication flows can use IAM, IDC. Enable the Operator App for your AgentSpace:

```
aws devopsagent enable-operator-app \
  --agent-space-id <AGENT_SPACE_ID> \
  --auth-flow iam \
  --operator-app-role-arn "arn:aws:iam::<ACCOUNT_ID>:role/DevOpsAgentRole-WebappAdmin"
 \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

**Note**

If you have previously created an Operator App role for another AgentSpace in your account, you can reuse that role ARN.

## (Optional) Associate Additional Source Accounts

For additional accounts that AWS DevOps Agent should monitor, you need to create an IAM cross-account role.

### Create Cross-Account Role in External Account

Switch to the external account and create the trust policy, the `MONITORING_ACCOUNT_ID` is the main account hosting the agentspace setup in step 2. This allows the monitoring account to assume a role in the secondary source account(s).

```
cat > devops-cross-account-trust-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "AWS": "arn:aws:iam::<MONITORING_ACCOUNT_ID>:role/DevOpsAgentRole-AgentSpace"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "sts:ExternalId": "arn:aws:aidevops:us-
east-1:<MONITORING_ACCOUNT_ID>:agentspace/<AGENT_SPACE_ID>"
        }
      }
    }
  ]
}
EOF
```

Create the cross-account IAM role:

```
aws iam create-role \
  --role-name DevOpsAgentCrossAccountRole \
  --assume-role-policy-document file://devops-cross-account-trust-policy.json

# Save the role ARN
aws iam get-role --role-name DevOpsAgentCrossAccountRole --query 'Role.Arn' --output
 text
```

Attach the AWS managed policy:

```
aws iam attach-role-policy \
  --role-name DevOpsAgentCrossAccountRole \
  --policy-arn arn:aws:iam::aws:policy/AIOpsAssistantPolicy
```

Attach the additional inline policy (json created in step 2):

```
aws iam put-role-policy \
  --role-name DevOpsAgentCrossAccountRole \
  --policy-name AIDevOpsAdditionalPermissions \
  --policy-document file://devops-agentspace-inline-policy.json
```

### Update Monitoring Account Role

**Switch back to your monitoring account** and add cross-account permissions:

```
cat > devops-cross-account-policy.json << 'EOF'
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "sts:AssumeRole",
      "Resource": "arn:aws:iam::<EXTERNAL_ACCOUNT_ID>:role/DevOpsAgentCrossAccountRole"
    }
  ]
}
EOF

aws iam put-role-policy \
  --role-name DevOpsAgentRole-AgentSpace \
  --policy-name DevOpsAgentCrossAccountAccess \
  --policy-document file://devops-cross-account-policy.json
```

### Associate the External Account

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id aws \
  --configuration '{
    "sourceAws": {
      "accountId": "<EXTERNAL_ACCOUNT_ID>",
      "accountType": "source",
      "assumableRoleArn": "arn:aws:iam::<EXTERNAL_ACCOUNT_ID>:role/
DevOpsAgentCrossAccountRole",
      "resources": []
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

## (Optional) Associate GitHub

> **Note**
>
> GitHub must first be registered through the AWS DevOps Agent Console UI via OAuth flow before it can be associated via CLI.

List registered services:

```
aws devopsagent list-services \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the `serviceId` for serviceType:"github"

Search for accessible GitHub repositories:

```
aws devopsagent search-service-accessible-resource \
  --service-id <serviceId> \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the `name`, `id`, and extract the `owner` from the `fullName`. The `ownerType` will either be user or organization depending on the type of repo.

After registering GitHub in the UI, associate GitHub repositories:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id github \
  --configuration '{
    "github": {
      "repoName": "<GITHUB_REPO_NAME>",
      "repoId": "<GITHUB_REPO_ID>",
      "owner": "<GITHUB_OWNER>",
      "ownerType": "organization"
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

## (Optional) Register and Associate ServiceNow

First, register the ServiceNow service with OAuth credentials:

```
aws devopsagent register-service \
  --service servicenow \
  --service-details  '{
    "servicenow": {
      "instanceUrl": "<SERVICENOW_INSTANCE_URL>",
      "authorizationConfig": {
        "oAuthClientCredentials": {
            "clientName": "<SERVICENOW_CLIENT_NAME>",
            "clientId": "<SERVICENOW_CLIENT_ID>",
            "clientSecret": "<SERVICENOW_CLIENT_SECRET>"
        }
      }
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the returned `<SERVICE_ID>`, then associate ServiceNow:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id <SERVICE_ID> \
  --configuration '{
    "servicenow": {
      "instanceUrl": "<SERVICENOW_INSTANCE_URL>"
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

## (Optional) Register and Associate Dynatrace

First, register the Dynatrace service with OAuth credentials:

```
aws devopsagent register-service \
  --service dynatrace \
  --service-details '{
  "dynatrace": {
    "accountUrn": "<DYNATRACE_ACCOUNT_URN>",
    "authorizationConfig": {
        "oAuthClientCredentials": {
            "clientName": "<DYNATRACE_CLIENT_NAME>",
            "clientId": "<DYNATRACE_CLIENT_ID>",
            "clientSecret": "<DYNATRACE_CLIENT_SECRET>"
        }
      }
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the returned `<SERVICE_ID>`, then associate Dynatrace (resources are optional), the environment is which specific Dynatrace environment to associate with:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id <SERVICE_ID> \
  --configuration '{
    "dynatrace": {
      "envId": "<DYNATRACE_ENVIRONMENT_ID>",
      "resources": [
        "<DYNATRACE_RESOURCE_1>",
        "<DYNATRACE_RESOURCE_2>"
      ]
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

The response will include webhook information for integration, you can trigger an investigation from Dynatrace using this webhook.

## (Optional) Register and Associate Splunk

First, register the Splunk service with OAuth credentials:

The endpoint will look something like: `"endpoint": "https://<XXX>.api.scs.splunk.com/<XXX>/mcp/v1/"`

```
aws devopsagent register-service \
  --service mcpserversplunk \
  --service-details '{
  "mcpserversplunk": {
    "name": "<SPLUNK_NAME>",
    "endpoint": "<SPLUNK_ENDPOINT>",
    "authorizationConfig": {
        "bearerToken": {
            "tokenName": "<SPLUNK_TOKEN_NAME>",
            "tokenValue": "<SPLUNK_TOKEN_VALUE>"
        }
      }
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the returned `<SERVICE_ID>`, then associate Splunk:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id <SERVICE_ID> \
  --configuration '{
    "mcpserversplunk":  {
      "name": "<SPLUNK_NAME>",
      "endpoint": "<SPLUNK_ENDPOINT>"
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

The response will include webhook information for integration, you can trigger an investigation from Splunk using this webhook.

## (Optional) Register and Associate New Relic

First, register the New Relic service with apiKey credentials:

Region: Either "US" or "EU"

Optional fields: `applicationIds`, `entityGuids`, `alertPolicyIds`

```
aws devopsagent register-service \
  --service mcpservernewrelic \
  --service-details '{
    "mcpservernewrelic": {
      "authorizationConfig": {
        "apiKey": {
          "apiKey": "<YOUR_NEW_RELIC_API_KEY>",
          "accountId": "<YOUR_ACCOUNT_ID>",
          "region": "US",
          "applicationIds": ["<APP_ID_1>", "<APP_ID_2>"],
          "entityGuids": ["<ENTITY_GUID_1>"],
          "alertPolicyIds": ["<POLICY_ID_1>"]
        }
      }
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Save the returned `<SERVICE_ID>`, then associate New Relic:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id <SERVICE_ID> \
  --configuration '{
    "mcpservernewrelic":  {
      "accountId": "<YOUR_ACCOUNT_ID>",
      "endpoint": "https://mcp.newrelic.com/mcp/"
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

The response will include webhook information for integration, you can trigger an investigation from New Relic using this webhook.

## (Optional) Register and Associate Datadog

Datadog must first be registered through the AWS DevOps Agent Console UI via OAuth flow before it can be associated via CLI.

List registered services:

```
aws devopsagent list-services \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

Note the serviceId for serviceType:"mcpserverdatadog"

Save the returned `<SERVICE_ID>`, then associate Datadog:

```
aws devopsagent associate-service \
  --agent-space-id <AGENT_SPACE_ID> \
  --service-id <SERVICE_ID> \
  --configuration '{
    "mcpserverdatadog": {
      "name": "Datadog-MCP-Server",
      "endpoint": "<DATADOG_MCP_ENDPOINT>"
    }
  }' \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

The response will include webhook information for integration, you can trigger an investigation from Datadog using this webhook.

## Verification

Verify your setup:

```
# List your AgentSpaces
aws devopsagent list-agent-spaces \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1

# Get details of a specific AgentSpace
aws devopsagent get-agent-space \
  --agent-space-id <AGENT_SPACE_ID> \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1

# List associations for an AgentSpace
aws devopsagent list-associations \
  --agent-space-id <AGENT_SPACE_ID> \
  --endpoint-url "https://api.prod.cp.aidevops.us-east-1.api.aws" \
  --region us-east-1
```

## Notes

- Replace `<AGENT_SPACE_ID>`, `<ACCOUNT_ID>`, `<STACK_NAME>`, `<TEAM_ID>`, etc. with your actual values
- All commands must be run in us-east-1 region
- When onboarding accounts, we recommend providing CloudFormation stacks to expedite resource indexing
- Alternatively, you can use tag key:value pairs
- If you want to onboard all stacks in an account, leave the resources list empty

# Creating a test environment

This guide provides hands-on tests to validate AWS DevOps Agent's incident response functionality using sample architecture. Use this supplement if you want to test DevOps Agent before connecting your production systems.

## Prerequisites

- AWS account with administrative access
- AWS DevOps Agent Space created with and configured using the Auto create DevOps Agent role flow

## Cost and safety overview

### Cost protection

- **EC2 test**: FREE (AWS Free Tier) or ~$0.02 for 2 hours
- **Lambda test**: FREE (1M requests/month free tier)
- **CloudWatch**: FREE (10 alarms, basic metrics included)
- **Expected estimated total cost**: $0.00 - $0.05 for complete testing

### Safety features in these tests

- **Auto-termination**: Built-in automatic shutdown

- **Free Tier eligible**: Uses smallest instance types
- **Limited scope**: Minimal, isolated test resources
- **Easy cleanup**: Simple console steps to remove everything
- **No production impact**: Completely separate test environment

## Set up your AWS account for testing

**Important:** Infrastructure resources need to be deployed in the AWS account where your as your DevOps Agent Space's primary cloud account. The specific region does not matter.

1. Log into AWS Console: https://console.aws.amazon.com
2. Ensure you're working in the same AWS account where your DevOps Agent Space is located
3. You can use any region for your testing resources

Note: The 1:1 mapping between your DevOps Agent's primary account and the test environment resources you are creating simplifies the test setup. You can easily extend your DevOps Agent Space to include secondary accounts and enable cross-account investigations.

## Choose your test

You can run either test independently or both together:

### Test option A: EC2 CPU capacity test

**Purpose**: Validate AWS DevOps Agent's ability to detect and investigate EC2 performance issues

**Estimated time**: 5 minutes setup + 10 minutes automatic execution

**Difficulty**: Fully automated (no manual steps required)

### Test option B: Lambda error rate test

**Purpose**: Validate AWS DevOps Agents ability to detect and investigate Lambda function errors

**Estimated time**: 10 minutes setup + 2 minutes to trigger

**Difficulty**: Very easy

## Test option A: EC2 CPU capacity test

### Step 1: Deploy CloudFormation stack for EC2 test

We'll use CloudFormation to create our test resources, which allows AWS DevOps Agent to properly track and investigate them.

1. **Navigate to CloudFormation**:
   a. In AWS Console, search for "CloudFormation" and click **CloudFormation**
   b. Click **Create stack** → **With new resources (standard)**
2. **Upload template**:
   a. Create a new local file called `AWS-AIDevOps-ec2-test.yaml`
   b. Copy and paste this CloudFormation template into the file:

```
AWSTemplateFormatVersion: '2010-09-09'
Description: 'AWS AIDevOps EC2 CPU Test Stack'

Parameters:
  MyIP:
    Type: String
    Description: Your current IP address for SSH access (find at https://
whatismyipaddress.com)
    Default: '0.0.0.0/0'

Resources:
  # Security Group for SSH access
  TestSecurityGroup:
    Type: AWS::EC2::SecurityGroup
    Properties:
      GroupName: AWS-AIDevOps-test-sg
      GroupDescription: AWS AIDevOps beta testing security group
      SecurityGroupIngress:
        - IpProtocol: tcp
          FromPort: 22
          ToPort: 22
          CidrIp: !Ref MyIP
          Description: SSH access from your IP
      Tags:
        - Key: Name
          Value: AWS-AIDevOps-Test-SG
        - Key: Purpose
```

```
          Value: AWS-AIDevOps-Testing

  # Key Pair for SSH access
  TestKeyPair:
    Type: AWS::EC2::KeyPair
    Properties:
      KeyName: AWS-AIDevOps-test-key
      KeyType: rsa
      Tags:
        - Key: Name
          Value: AWS-AIDevOps-Test-Key
        - Key: Purpose
          Value: AWS-AIDevOps-Testing

  # EC2 Instance for CPU testing
  TestInstance:
    Type: AWS::EC2::Instance
    Properties:
      InstanceType: t3.micro
      ImageId: '{{resolve:ssm:/aws/service/ami-amazon-linux-latest/al2023-ami-
kernel-6.1-x86_64}}'
      KeyName: !Ref TestKeyPair
      SecurityGroupIds:
        - !Ref TestSecurityGroup
      UserData:
        Fn::Base64: !Sub |
          #!/bin/bash
          yum update -y
          yum install -y htop

          # Create the CPU stress test script
          cat > /home/ec2-user/cpu-stress-test.sh << 'EOF'
          #!/bin/bash
          echo "Starting AWS AIDevOps CPU Stress Test"
          echo "Time: $(date)"
          echo "Instance: $(curl -s http://169.254.169.254/latest/meta-data/
instance-id)"
          echo ""

          # Get number of CPU cores
          CORES=$(nproc)
          echo "CPU Cores: $CORES"
          echo ""
          echo "Starting stress test (5 minutes)..."
          echo "This will generate >70% CPU usage to trigger CloudWatch alarm"
          echo ""

          # Create CPU load using yes command
          echo "Starting CPU load processes..."
          for i in $(seq 1 $CORES); do
              (yes > /dev/null) &
              CPU_PID=$!
              echo "Started CPU load process $i (PID: $CPU_PID)"
              echo $CPU_PID >> /tmp/cpu_test_pids
          done

          # Auto-cleanup after 5 minutes
          (sleep 300 && echo "Stopping CPU load processes..." && kill $(cat /tmp/
cpu_test_pids 2>/dev/null) 2>/dev/null && rm -f /tmp/cpu_test_pids) &

          echo ""
          echo "CPU load processes started for 5 minutes"
          echo "Check CloudWatch for alarm trigger in 3-5 minutes"
          EOF

          chmod +x /home/ec2-user/cpu-stress-test.sh
          chown ec2-user:ec2-user /home/ec2-user/cpu-stress-test.sh

          # Create auto-shutdown script (safety mechanism)
          cat > /home/ec2-user/auto-shutdown.sh << 'SHUTDOWN_EOF'
          #!/bin/bash
          echo "Auto-shutdown scheduled for 2 hours from now: $(date)"
          sleep 7200
          echo "Auto-shutdown executing at: $(date)"
          sudo shutdown -h now
          SHUTDOWN_EOF

          chmod +x /home/ec2-user/auto-shutdown.sh
          nohup /home/ec2-user/auto-shutdown.sh > /home/ec2-user/auto-shutdown.log
 2>&1 &

          echo "AWS AIDevOps test setup completed at $(date)" > /home/ec2-user/
setup-complete.txt
      Tags:
        - Key: Name
          Value: AWS-AIDevOps-Test-Instance
        - Key: Purpose
```

```
          Value: AWS-AIDevOps-Testing

  # CloudWatch Alarm for CPU utilization
  CPUAlarm:
    Type: AWS::CloudWatch::Alarm
    Properties:
      AlarmName: AWS-AIDevOps-EC2-CPU-Test
      AlarmDescription: AWS-AIDevOps beta test - EC2 CPU utilization alarm
      MetricName: CPUUtilization
      Namespace: AWS/EC2
      Statistic: Average
      Period: 60
      EvaluationPeriods: 1
      Threshold: 70
      ComparisonOperator: GreaterThanThreshold
      Dimensions:
        - Name: InstanceId
          Value: !Ref TestInstance
      TreatMissingData: notBreaching

Outputs:
  InstanceId:
    Description: EC2 Instance ID for testing
    Value: !Ref TestInstance

  SecurityGroupId:
    Description: Security Group ID
    Value: !Ref TestSecurityGroup

  AlarmName:
    Description: CloudWatch Alarm Name
    Value: !Ref CPUAlarm

  SSHCommand:
    Description: SSH command to connect to instance
    Value: !Sub 'ssh -i "AWS-AIDevOps-test-key.pem" ec2-user@
${TestInstance.PublicDnsName}'
```

- In the CloudFormation console, select **Upload a template file**
- Click **Choose file**
- Select the `AWS-AIDevOps-ec2-test.yaml` file

- Click **Next**
- **Configure stack**:
  - **Stack name**: `AWS-AIDevOps-EC2-Test`
  - **Parameters**:
  - **MyIP**: Leave as default `0.0.0.0/0` (you can secure this later if needed)
  - Click **Next**
- **Configure stack options**:
  - Leave defaults, click **Next**
- **Review and create**:
  1. Check **I acknowledge that AWS CloudFormation might create IAM resources**
  2. Click **Submit**
- **Wait for completion**:
  - Stack creation takes 3-5 minutes
  - Status will change from `CREATE_IN_PROGRESS` to `CREATE_COMPLETE`
  - **Important**: Your EC2 instance is now part of a CloudFormation stack that AWS AIDevOps can track!

**Optional: Secure SSH access (only if you plan to connect to the instance)**

Skip this step if you just want to run the automated test

1. **Navigate to EC2 Security Groups**:
   a. In AWS Console, go to **EC2** → **Security Groups**
   b. Find `AWS-AIDevOps-test-sg`
2. **Update SSH rule**:
   a. Select the security group → **Inbound rules** tab → **Edit inbound rules**
   b. Find the SSH rule (port 22)
   c. Change source from `0.0.0.0/0` to your IP: `[YOUR_IP]/32`
   d. Get your IP from [https://whatismyipaddress.com](https://whatismyipaddress.com)
   e. Click **Save rules**

### Step 2: Wait for automatic test execution

1. **Automatic test execution**:
    - The CPU stress test will **automatically start 5 minutes** after instance launch
    - No manual intervention required - just wait, the test runs completely in the background
2. **Monitor the test**:
    - Instance boots and prepares the test automatically
    - The script will run for 5 minutes and generate >70% CPU usage
    - CloudWatch alarm should trigger within 8-10 minutes total (5 min delay + 3-5 min for alarm)
3. **Optional: Manual re-run** (for additional testing):
    - Connect to your instance: EC2 console → `AWS-AIDevOps-Test-Instance` → **Connect** → **Session Manager**
    - Run the stress test again: `./cpu-stress-test.sh`
    - Perfect for testing AWS AIDevOps's response multiple times

## Test option B: Lambda error rate test

### Step 1: Deploy CloudFormation stack for Lambda test

1. **Navigate to CloudFormation**:
    a. In AWS Console, go to **CloudFormation**
    b. Click **Create stack** → **With new resources (standard)**
2. **Upload template**:
    a. Create a new local file called `AWS-AIDevOps-lambda-test.yaml`
    b. Copy and paste this CloudFormation template into the file:

```
AWSTemplateFormatVersion: '2010-09-09'
Description: 'AWS AIDevOps Lambda Error Test Stack'

Resources:
  # IAM Role for Lambda function
  LambdaExecutionRole:
    Type: AWS::IAM::Role
    Properties:
      RoleName: AWS-AIDevOpsLambdaTestRole
      AssumeRolePolicyDocument:
        Version: '2012-10-17'
        Statement:
          - Effect: Allow
            Principal:
              Service: lambda.amazonaws.com
            Action: sts:AssumeRole
      ManagedPolicyArns:
        - arn:aws:iam::aws:policy/service-role/AWSLambdaBasicExecutionRole
      Tags:
        - Key: Name
          Value: AWS-AIDevOps-Lambda-Test-Role
        - Key: Purpose
          Value: AWS-AIDevOps-Testing

  # Lambda function that generates errors
  TestLambdaFunction:
    Type: AWS::Lambda::Function
    Properties:
      FunctionName: AWS-AIDevOps-test-lambda
      Runtime: python3.12
      Handler: index.lambda_handler
      Role: !GetAtt LambdaExecutionRole.Arn
      Code:
        ZipFile: |
          import json
          import random
          import time
          from datetime import datetime

          def lambda_handler(event, context):
              print(f"AWS AIDevOps Test Lambda - {datetime.now()}")
              print(f"Event: {json.dumps(event)}")

              # Intentionally generate errors for testing
              error_scenarios = [
                  "Simulated database connection timeout",
                  "Test API rate limit exceeded",
                  "Intentional validation error for AWS AIDevOps testing"
              ]

              # Always throw an error for testing purposes
              error_message = random.choice(error_scenarios)
              print(f"Generating test error: {error_message}")
              # This will create a Lambda error that CloudWatch will detect
              raise Exception(f"AWS AIDevOps Test Error: {error_message}")
      Description: AWS AIDevOps beta test function - intentionally generates errors
      Timeout: 30
      Tags:
        - Key: Name
          Value: AWS-AIDevOps-Test-Lambda
        - Key: Purpose
          Value: AWS-AIDevOps-Testing

  # CloudWatch Alarm for Lambda errors
  LambdaErrorAlarm:
    Type: AWS::CloudWatch::Alarm
    Properties:
      AlarmName: AWS-AIDevOps-Lambda-Error-Test
      AlarmDescription: AWS-AIDevOps beta test - Lambda error rate alarm
      MetricName: Errors
      Namespace: AWS/Lambda
      Statistic: Sum
      Period: 60
      EvaluationPeriods: 1
      Threshold: 0
      ComparisonOperator: GreaterThanThreshold
      Dimensions:
        - Name: FunctionName
          Value: !Ref TestLambdaFunction
      TreatMissingData: notBreaching

Outputs:
  LambdaFunctionName:
    Description: Lambda Function Name for testing
    Value: !Ref TestLambdaFunction

  LambdaFunctionArn:
    Description: Lambda Function ARN
    Value: !GetAtt TestLambdaFunction.Arn

  AlarmName:
    Description: CloudWatch Alarm Name
    Value: !Ref LambdaErrorAlarm

  TestCommand:
    Description: AWS CLI command to test the function
    Value: !Sub 'aws lambda invoke --function-name ${TestLambdaFunction} --payload
  "{\"test\":\"AWS AIDevOps validation\"}" response.json'
```

- In the CloudFormation console, select **Upload a template file**
- Click **Choose file**
- Select the `AWS-AIDevOps-lambda-test.yaml` file
- Click **Next**

3. **Configure stack**:
   - **Stack name**: `AWS-AIDevOps-Lambda-Test`
   - Click **Next**
4. **Configure stack options**:
   - Leave defaults, click **Next**
5. **Review and create**:
   - Check **I acknowledge that AWS CloudFormation might create IAM resources**
   - Click **Submit**
6. **Wait for completion**:
   - Stack creation takes 2-3 minutes
   - Status will change to `CREATE_COMPLETE`

## Step 2: Trigger Lambda errors

1. **Navigate to Lambda console**:
   a. Go to **AWS Lambda** console
   b. Find your function `AWS-AIDevOps-test-lambda`
2. **Test the function**:
   a. Click **Test** tab
   b. Click **Create new event**
   c. **Event name**: `AWS-AIDevOps-test-event`
   d. Use this JSON payload:

```
{
"test": "AWS AIDevOps validation",
"timestamp": "2024-01-01T00:00:00Z"
}
```

   e. Click **Save**

3. **Generate errors**:

   a. Click **Test** button 3 times (wait 10 seconds between each)

   b. Each test generates an intentional error

   c. **CloudWatch alarm** triggers within 2-3 minutes

   d. **AWS AIDevOps** should now be able to detect the alarm with an **Investigation** in the **Operator app** which you set up next.

## Validate AWS DevOps Agent detection

### Step 1: Sanity check CloudWatch alarms (optional)

This step is for ensuring that the previous tests are now in an alarm state. **For EC2 Test:**

1. In CloudWatch console, go to **Alarms**
2. **Wait 3-5 minutes** after starting the stress test
3. Your alarm should show **In alarm** state
4. **If still "OK"**: Wait another 2-3 minutes (CloudWatch metrics can be delayed)

**For Lambda Test:**

- Check `AWS-AIDevOps-Lambda-Error-Test` alarm
- Should show **In alarm** within 2-3 minutes of running tests

### Step 2: Start a AWS DevOps Agent Investigation

1. Open your **AWS DevOps Agent AgentSpace**
2. Click **Admin access**. This will open the DevOps Agent Space web app in a new window
3. Click the **Start Investigation** button on the right side of the screen
4. Complete the following form:
   - **Investigation details:** Describe the investigation you'd like to run. Include any details you can about the investigation goals, areas to explore, or relevant information.

- **Investigation starting point**: Describe the information you'd like to start the investigation from. You can mention an alarm, metric, log snippet, or anything else to give DevOps Agent a starting point to work from. In this case, provide a summary of the alarms you just created.
- **Date and time of incident** (ISO 8601 preferred): YYYY-MM-DDTHH:MMZ
- **Name your investigation:** example: `Oncall_investigation_1:2025-10-27`
- **AWS Account ID** for the incident
- **Region** where the incident occurred
- **Priority** - AWS AIDevOps allows for two concurrent investigations. The Priority allows for you to define the order of execution of your investigations.

5. Click Investigate to launch the investigation.
6. Click on your Investigation listed in the dashboard. You will be taken to the Investigation details screen where you can view the granular steps that DevOps Agent is taking.gation Summary.

## Expected results

**EC2 test results:**

- Detects EC2 CPU alarm
- Identifies root cause: "CPU stress testing workload"
- Shows timeline: Stress test → CPU spike → Alarm
- Provides recommendations for monitoring and scaling

**Lambda test results:**

- Detects Lambda error rate spike
- Identifies root cause: "Intentional test exceptions"
- Shows timeline: Function invocations → Errors → Alarm
- Provides recommendations for error handling and monitoring

## Cleanup instructions

### Cleanup test A (EC2 test)

#### Automatic cleanup

- Instance will auto-terminate after 2 hours (built into CloudFormation template)

#### Manual cleanup (immediate)

**Delete CloudFormation Stack**:

1. Go to CloudFormation console
2. Select `AWS-AIDevOps-EC2-Test` stack
3. Click **Delete**
4. Confirm deletion
5. **This will automatically delete all resources**: EC2 instance, security group, key pair, and CloudWatch alarm

### Cleanup test B (Lambda test)

**Delete CloudFormation Stack**:

1. Go to CloudFormation console
2. Select `AWS-AIDevOps-Lambda-Test` stack
3. Click **Delete**
4. Confirm deletion
5. **This will automatically delete all resources**: Lambda function, IAM role, and CloudWatch alarm

## Troubleshooting common issues

### "Can't connect to EC2 instance"

1. **Check Security Group**: Ensure SSH (port 22) is open to your IP
2. **Check Key Permissions**: Run `chmod 400 AWS-AIDevOps-test-key.pem`
3. **Verify Public IP**: Instance must have public IP assigned

4. **Wait for Instance**: Ensure instance is in "Running" state

### "Alarm not triggering"

- **Wait for Metrics**: CloudWatch metrics can take 2-5 minutes to appear
- **Check CPU Load**: SSH to instance and run `top` to verify CPU >70%
- **Verify Stress Test**: Run `ps aux | grep yes` to see if load processes are running
- **Extended Wait**: Sometimes takes up to 7-8 minutes for first alarm trigger

## Test validation

Your AWS DevOps Agent testing is successful when:

- **Investigation accuracy**: The results of the EC2 test should correctly indicate that the alarm was triggered due to CPU load. The result of the Lambda test should indicate that this was an intentional failure.
- **Timeline accuracy**: Correct sequence of events shown
- **Recommendation quality**: Actionable suggestions provided

# DevOps Agent incident response

AWS DevOps Agent is your always-on, autonomous on-call engineer. It begins investigating the moment an alert comes in, whether at 2 AM or during peak hours, to quickly restore your application to optimal performance. AWS DevOps Agent autonomously triages incidents 24/7, providing root cause analysis and actions for resolution. It uses its understanding of your application resources and relationships to quickly understand dependencies and interactions.

AWS DevOps Agent streamlines incident response by automatically routing observations, findings, and mitigation steps through your preferred communication channels such as Slack, ServiceNow, and PagerDuty.

## Automated investigations

AWS DevOps Agent integrates with ticketing and alarming systems like ServiceNow to automatically launch investigations from incident tickets, accelerating incident response within your existing workflows to reduce meant time to recover (MTTR).

## Incident coordination

You can also initiate and guide investigations using interactive chat. AWS DevOps Agent acts as a member of your operations team, working directly within your collaboration tools like ServiceNow and Slack to share findings and coordinate response. When needed, create an AWS Support case directly from an investigation, giving AWS Support experts immediate context for faster resolution.

## Root cause analysis

AWS DevOps Agent integrates with observability tools, code repositories, and CI/CD pipelines to correlate and analyze telemetry, code, and deployment data sharing its explored hypotheses, observations, findings, and root cause findings. Through systematic investigations, AWS DevOps Agent identifies root cause of issues stemming from system changes, input anomalies, resource limits, component failures, and dependency issues across your entire environment.

## Detailed mitigation plans

Once AWS DevOps Agent has identified the root cause, it provides detailed mitigations plans, which include actions to resolve the incident, validate success, and revert a change if needed. AWS

DevOps Agent also provides agent-ready instructions that can be implemented by another frontier agent, for example, code improvements that can be implemented by Kiro autonomous agent.

## Example use cases

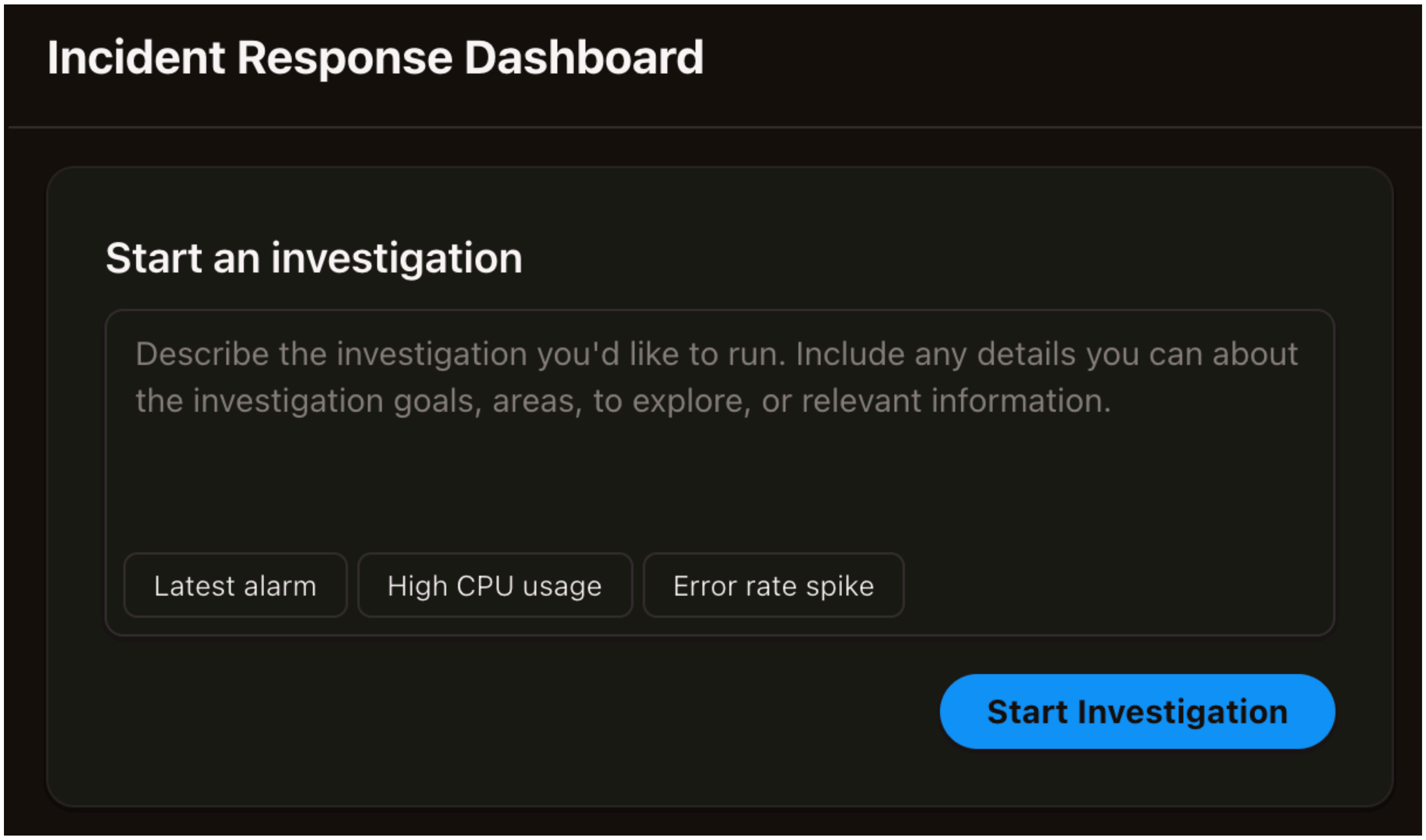
Through systematic investigation of alarms stemming from **system changes, input anomalies, resource limits, component failures**, and **dependency issues** across your entire stack, AWS DevOps Agent guides DevOps teams with targeted mitigation steps, reducing mean time to recovery (MTTR) from hours to minutes.

- **System changes:** If an incident is caused by Amazon DynamoDB getting throttled due to high latency from inefficient use, AWS DevOps Agent may recommend rolling back the change as an immediate mitigation.
- **System changes:** If an incident is caused by Amazon SNS subscription errors due to filter policy mismatch, AWS DevOps Agent may recommend changing the filter policy as an immediate mitigation.
- **Input anomalies:** If an incident is caused by AWS Lambda throttling on notifications due to high traffic exceeding limits, AWS DevOps Agent may recommend increasing concurrency limits as an immediate mitigation.
- **Input anomalies:** If an incident is caused by Amazon SNS message publish failures due to message size issues, AWS DevOps Agent may recommend adding validation to Amazon SNS message publishing as an immediate mitigation.
- **Resource limits**: If an incident is caused by API throttling due to exceeded rate limits, AWS DevOps Agent may recommend raising rate/burst limits as an immediate mitigation.
- **Resource limits:** If an incident is caused by Amazon DynamoDB throttling due to exceeded write capacity, AWS DevOps Agent may recommend increasing write capacity as an immediate mitigation.
- **Component failures:** If an incident is caused by cold start latency due to performance degradation, AWS DevOps Agent may recommend increasing provisioned concurrency as an immediate mitigation.
- **Dependency issues:** If an incident is caused by Amazon S3 access denied due to restrictive bucket policy, AWS DevOps Agent may recommend updating the bucket policy as an immediate mitigation.
- **Dependency issues:** If an incident is caused by AWS SQS permission failure due to policy denies, AWS DevOps Agent may recommend restoring AWS SQS permissions as an immediate mitigation.

## Starting investigations

Incident response investigations can be started in one of three ways:

1. **Built-in integrations –** You can connect a DevOps Agent Space to ticketing systems like ServiceNow using built-in integrations. Once connected, DevOps Agent incident response investigations will be automatically triggered from support tickets, and your DevOps Agent will provide updates of its key findings, root cause analyses, and mitigation plans into the originating ticket.
2. **WebSockets –** You can send events using AWS DevOps Agent WebSockets that you configure. For example you can leverage trigger incident response investigations from PagerDuty tickets or Grafana alarms.
3. **Manually –** You can manually start incident response investigations from the Incident Response tab of the any DevOps Agent Space web app. You can either enter free form text that describes the incident you want your DevOps Agent to investigation, and it will create an investigation plan, collect finds, determine a root cause, and offer to generate a mitigation plan. You can also choose from several pre-configured starting points to quickly begin your Investigation: Latest alarm to investigate your most recent triggered alarm and analyze the underlying metrics and logs to determine the root cause, High CPU usage to investigate high CPU utilization metrics across your compute resources and identify which processes or services are consuming excessive resources, or Error rate spike to investigate the recent increase in application error rates by analyzing metrics, application logs, and identifying the source of failures.


Incident Response Dashboard
Start an investigation
Describe the investigation you'd like to run. Include any details you can about the investigation goals, areas, to explore, or relevant information.
Latest alarm
High CPU usage
Error rate spike
Start Investigation

Once you click “Start Investigation” you’ll be asked to provide some additional (optional) details to help the agent focus its work. Provide any additional details you may have, and click Start Investigation. You will then be taken to the investigation details page where you can see your DevOps Agent in action.

## Ask for human support

AWS DevOps Agent can connect directly with AWS Support to streamline your incident response process. When you need additional help from AWS Support, from your DevOps Agent Space web app you can create support cases that automatically share investigation context with AWS Support engineers, reducing the time needed to explain your issue.

### How it works

When investigating an incident, AWS DevOps Agent builds a comprehensive log of its analysis, including:

- Root cause investigation findings
- Metrics, logs, and traces analyzed

- Code changes and deployment history reviewed
- Remediation actions recommended
- Timeline of events and system behavior

You can escalate your investigation to AWS Support directly from the AWS DevOps Agent Space web app. When you do, AWS DevOps Agent automatically passes its investigation log to AWS Support, providing the support engineer with full context about your investigation without requiring you to manually gather and explain the details.

## Chatting with AWS Support

Once you create a support case, you can communicate with AWS Support in a separate chat window within your AWS DevOps Agent Space web app. This allows you to:

- Discuss your issue with AWS Support engineers alongside your AWS DevOps Agent's investigation timeline
- View both AWS DevOps Agent's automated analysis and AWS Support's expert guidance in the same interface
- Seamlessly share additional information or clarification as needed

The chat experience keeps your AWS DevOps Agent investigation and AWS Support conversation readily accessible, enabling faster collaboration and resolution.

## Support plan requirements

Your ability to create and interact with support cases through AWS DevOps Agent depends on your AWS Support plan. Please refer to the Support Plans user guide to learn more about your entitlements.

**Note**

- Basic Support customers cannot create technical support cases and therefore cannot escalate AWS DevOps Agent investigations to AWS Support
- Developer Support customers can create cases through AWS DevOps Agent, but must visit the AWS Support Center to correspond with Support engineers, as Developer Support does not include chat-based support

- All other plans can use the integrated chat experience within AWS DevOps Agent.
  For complete details about support plan entitlements, including response times and available case severities, see the AWS Support Plans User Guide.

## What information is shared with AWS Support

When you create a support case from AWS DevOps Agent Space web app, the following information is automatically shared with AWS Support:

- **Investigation timeline:** Chronological record of AWS DevOps Agent's analysis
- **Resource information:** Affected AWS resources
- **Observability data:** Relevant metrics, logs, and traces from your integrated monitoring tools
- **Recent changes:** Code deployments, infrastructure changes, and configuration updates
- **Remediation attempts:** Actions AWS DevOps Agent recommended
- **Impact assessment:** Scope and severity of the incident

All data shared with AWS Support follows your existing AWS data residency and security configurations. AWS DevOps Agent shares only information related to your specific investigation and respects your organization's data governance policies.

## Getting started

To use AWS DevOps Agent's AWS Support integration:

1. Ensure you have an active AWS Support plan.
2. Verify your AWS DevOps Agent's IAM permissions include support case creation (`support:CreateCase`, `support:DescribeCases`).
3. When AWS DevOps Agent is investigating an issue and you need AWS Support assistance, choose **Ask for human support** from your DevOps Agent Space web app.
4. Review the investigation summary that will be shared with AWS Support.
5. Select the appropriate case severity based on your support plan entitlements.
6. Submit the case - AWS DevOps Agent automatically includes your investigation log.

The chat window opens automatically, allowing you to begin collaborating with AWS Support immediately.

## Preventing future Incidents

AWS DevOps Agent analyzes patterns across your incident investigations to deliver targeted recommendations that continuously improve your operational posture and prevent future incidents. Access the Prevention feature through the Prevention page in the Operator Web App.

### How Prevention works

AWS DevOps Agent evaluates recent incident investigations to identify lasting improvements to prevent future incidents and quicken the mean time to detection (MTTD).The agent analyzes multiple incidents to identify recommendations that may prevent whole classes of incidents in the future, focusing on the most impactful recommendations to ensure they are actionable.  The agent automatically runs evaluations weekly. You can also manually trigger an evaluation at any time, which is useful when a recent investigation warrants a quick turnaround on recommended improvements.  The agent identifies improvements acrossfour areas:

- **Observability posture** – Recommendations to enhance monitoring, alerting, and logging capabilities to detect issues quicker and more accurately.
- **Testing gaps** – Recommendations to strengthen testing and validation processes in your deployment pipelines.
- **Code changes** – Recommendations to better improve resilience and performance.
- **Infrastructure architecture** – Recommendations to optimize resource configurations, implement autoscaling, and improve system resilience.

### Benefits

- **Prevent recurring incidents** – Address root causes systematically rather than repeatedly responding to the same types of issues
- **Reduce operational toil** – Free your team from repetitive firefighting to focus on innovation and strategic improvements
- **Improve system resilience** – Strengthen your infrastructure, observability, and deployment processes based on real incident data

- **Learn from historical patterns –** Leverage insights from past incidents to make targeted improvements that have the greatest impact

## Agent summary

The Agent Summary in the Prevention page of the Web App provides a description of the outcomes from the last evaluation of recent incidents. The summary explains the number of incident investigations analyzed, which incidents are similar to past ones, and which recommendations were created or updated with new information.  The summary helps you quickly understand what the agent discovered during its most recent evaluation and highlights the most notable recommendations that could have the greatest impact on your operational posture.

## Recommendation categorization

The Recommendation Categorization chart shows the distribution of recommendations across four key categories:

- **Code optimization –** Recommendations to improve application code quality, performance, and error handling.
- **Observability –** Recommendations to enhance monitoring, alerting, logging, and system visibility.
- **Infrastructure –** Recommendations to optimize resource configurations, capacity tuning, and architectural resilience.
- **Governance –** Recommendations to strengthen deployment processes, testing practices, and operational controls.

This categorization helps you understand where your operational improvements are most needed and allows you to prioritize recommendations based on your team's focus areas.

## Controlling evaluations

You can control when AWS DevOps Agent evaluates incidents and generates recommendations:

- **Running evaluations manually –** Click the **Run Now** button in the Prevention page to start an evaluation immediately. This is useful when a recent investigation warrants a quick turnaround on recommended improvements.

- **Stopping active evaluations –** Click the **Stop Evaluation** button in the Prevention page to halt an evaluation that is currently in progress.

## Managing recommendations

AWS DevOps Agent provides recommendations in the Prevention page where you can review and manage them:

- **Viewing recommendation details –** Click on a recommendation to open the recommendation details page, where you can see more information about the suggested improvement including the incidents that informed the recommendation, the expected impacts, and next steps.
- **Accepting recommendations –** To accept a recommendation, click ‘Accept’ in the recommendation table. When you accept a recommendation, it remains in the recommendation table for tracking. This allows you to monitor which improvements you plan to implement and track their progress.
- **Rejecting recommendations –** To reject a recommendation, click ‘Reject’ in the recommendation table. When you reject a recommendation, you can provide a natural language explanation of why it doesn't meet your needs. The agent learns from this feedback and uses it to inform future recommendations, ensuring they become more aligned with your operational priorities and requirements over time.
- **Automatic removal –** Recommendations that are not accepted may be removed after approximately 6 weeks if no new incidents would have been prevented by implementing the recommendation. This ensures the Prevention page focuses on the most relevant improvements for your operational challenges.
- **Recommendation updates –** Existing recommendations are updated when newer incidents are found that would have been prevented by the recommendation. Updates may change the recommendation's priority or refine the recommendation based on new insights.

## Implementing recommendations

To maximize the value of Prevention recommendations, consider the following practices for acting on them:

- **Adding recommendations to your ticket backlog –** Copy accepted recommendations to your team's ticketing system or project management tool to ensure they are prioritized alongside other engineering work.

- **Prioritizing recommendations based on impact –** Focus first on recommendations that address the most frequent or severe incident types, or those that affect critical systems.
- **Tracking implementation progress –** Monitor which recommendations have been implemented and measure their effectiveness by observing whether similar incidents decrease over time.
- **Coordinating with development teams –** Share recommendations with the appropriate teams who own the affected systems, ensuring they have the context and resources needed to implement improvements.

# Configuring capabilities for AWS DevOps Agent

AWS DevOps Agent capabilities extend your agent's functionality by connecting it to your existing tools and infrastructure. Configure these capabilities to enable comprehensive incident investigation, automated response workflows, and seamless integration with your DevOps ecosystem.

The following capabilities help you maximize your DevOps Agent's effectiveness:

- **AWS EKS Access Setup** - Enable introspection of Kubernetes clusters, pod logs, and cluster events for both public and private EKS environments
- **CI/CD Pipeline Integration** - Connect GitHub and GitLab pipelines to correlate deployments with incidents and track code changes during investigations
- **MCP Server Connections** - Extend investigation capabilities by connecting external observability tools and custom monitoring systems through Model Context Protocol
- **Multi-Account AWS Access** - Configure secondary AWS accounts to investigate resources across your entire organization during incident response
- **Telemetry Source Integration** - Connect monitoring platforms like Datadog, New Relic, and Splunk for comprehensive observability data access
- **Ticketing and Chat Integration** - Connect ServiceNow, PagerDuty, and Slack to automate incident response workflows and enable team collaboration
- **Webhook Configuration** - Allow external systems to automatically trigger DevOps Agent investigations through HTTP requests

You can configure each capability independently based on your team's specific needs and existing tool stack. Start with the integrations most critical to your incident response workflow, then expand to additional capabilities as needed.

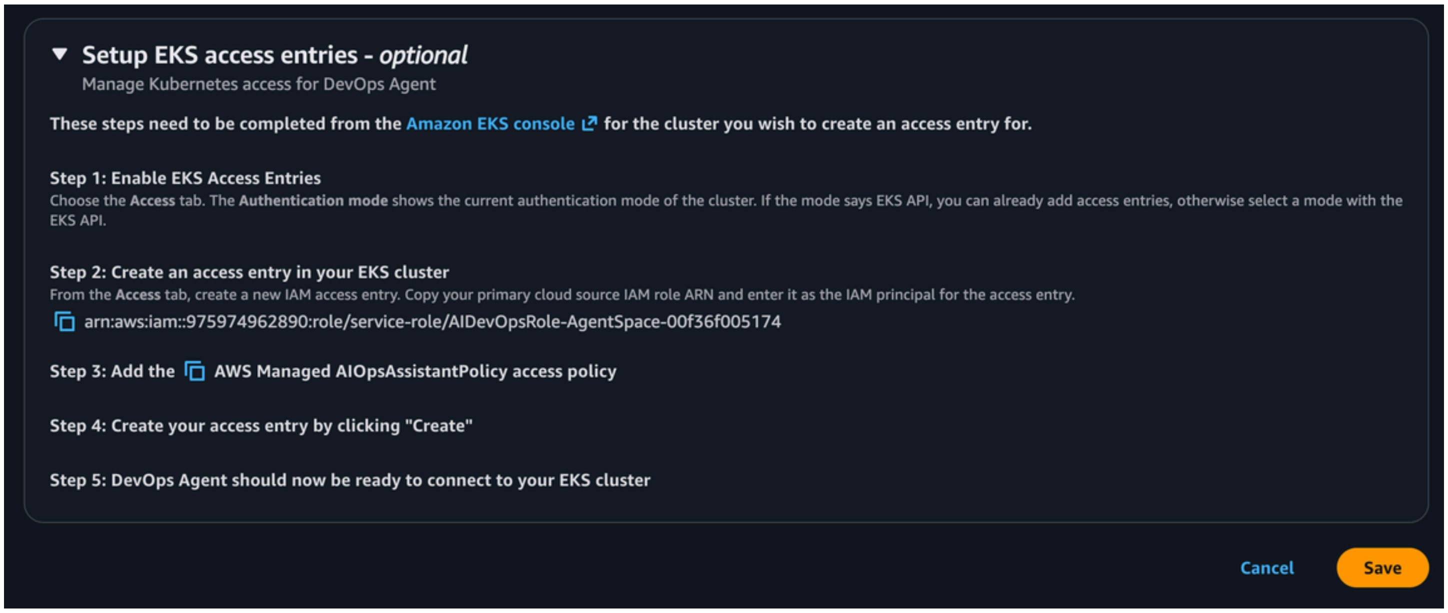
**Topics**

- AWS EKS access setup
- Connecting to CI/CD pipelines
- Connecting MCP Servers
- Connecting multiple AWS Accounts
- Connecting telemetry sources

- Connecting to ticketing and chat
- Invoking DevOps Agent through Webhook

## AWS EKS access setup

You can enable AWS DevOps Agent to describe your Kubernetes cluster objects, retrieve pod logs and cluster events, for either public or private AWS EKS clusters (only accessible with a VPC). Within a DevOps Agent Space navigate to Capabilities → Cloud → Primary Source → Edit and follow the setup instructions.



▼ Setup EKS access entries - *optional*

Manage Kubernetes access for DevOps Agent

**These steps need to be completed from the Amazon EKS console for the cluster you wish to create an access entry for.**

**Step 1: Enable EKS Access Entries**
Choose the **Access** tab. The **Authentication mode** shows the current authentication mode of the cluster. If the mode says EKS API, you can already add access entries, otherwise select a mode with the EKS API.

**Step 2: Create an access entry in your EKS cluster**
From the **Access** tab, create a new IAM access entry. Copy your primary cloud source IAM role ARN and enter it as the IAM principal for the access entry.
arn:aws:iam::975974962890:role/service-role/AIDevOpsRole-AgentSpace-00f36f005174

**Step 3: Add the AWS Managed AIOpsAssistantPolicy access policy**

**Step 4: Create your access entry by clicking "Create"**

**Step 5: DevOps Agent should now be ready to connect to your EKS cluster**

## Connecting to CI/CD pipelines

CI/CD pipeline integration enables AWS DevOps Agent to monitor deployments and correlate code changes with operational incidents during investigations. By connecting your CI/CD providers, the agent can track deployment events and associate them with AWS resources to help identify potential root causes during incident response.

AWS DevOps Agent supports integration with popular CI/CD platforms through a two-step process:

1. **Account-level registration** – Register your CI/CD provider once at the AWS account level
2. **Agent Space connection** – Connect specific projects or repositories to individual Agent Spaces based on your organizational needs

This approach allows you to share CI/CD provider registrations across multiple Agent Spaces while maintaining granular control over which projects are monitored by each space.

## Supported CI/CD providers

AWS DevOps Agent supports the following CI/CD platforms:

- **GitHub** – Connect repositories from GitHub.com using the AWS DevOps Agent GitHub app.
- **GitLab** – Connect projects from GitLab.com, managed GitLab instances, or publicly accessible self-hosted GitLab deployments.

**Topics**

- Connecting GitHub
- Connecting GitLab
- Associating AWS resources with project deployments

## Connecting GitHub

GitHub integration enables AWS DevOps Agent to access code repositories and receive deployment events during incident investigations. This integration follows a two-step process: account-level registration of GitHub, followed by connecting specific repositories to individual Agent Spaces.

### Prerequisites

Before connecting GitHub, ensure you have:

- Access to the AWS DevOps Agent admin console
- A GitHub user account or organization with admin permissions
- Authorization to install GitHub apps in your account or organization

### Registering GitHub (account-level)

GitHub is registered at the AWS account level and shared among all Agent Spaces in that account. You only need to register GitHub once per AWS account.

#### Step 1: Navigate to pipeline providers

1. Sign in to the AWS Management Console

2. Navigate to the AWS DevOps Agent console
3. Go to the **Capabilities** tab
4. In the **Pipeline** section, click **Add**
5. Select **GitHub** from the list of available providers

If GitHub hasn't been registered yet, you'll be prompted to register it first.

**Step 2: Choose connection type**

On the "Register GitHub Account / Organization" screen, select whether you're connecting as a user or organization:

- **User –** Your personal GitHub account with a username and profile
- **Organization –** A shared GitHub account where multiple people can collaborate across many projects at once

**Step 3: Complete GitHub OAuth flow**

1. Click **Submit** to initiate the GitHub authentication flow
2. You'll be redirected to GitHub to install the AWS DevOps Agent GitHub app
3. Select which account or organization to install the app in
4. The app allows AWS DevOps Agent to receive events from connected repositories, including deployment events

**Step 4: Select repositories**

Choose which repositories to allow the app to access:

- **All repositories –** Grant access to all current and future repositories
- **Select repositories –** Choose specific repositories from your account or organization

**Step 5: Complete installation**

After selecting repositories, complete the GitHub app installation. You'll be redirected back to the AWS DevOps Agent console, where GitHub will appear as registered at the account level.

## Connecting repositories to an Agent Space

After registering GitHub at the account level, you can connect specific repositories to individual Agent Spaces:

1. In the AWS DevOps Agent console, select your Agent Space
2. Go to the **Capabilities** tab
3. In the **Pipeline** section, click **Add**
4. Select **GitHub** from the list of available providers
5. Select the subset of repositories relevant to this Agent Space
6. Click **Add** to complete the connection

You can connect different sets of repositories to different Agent Spaces based on your organizational needs.

### Associating AWS resources with project deployments

See See the CI/CD pipeline documentation for associating AWS resources with deployments to associate deployments with AWS resources. This helps incident investigations correlate recent deployments with possible root causes.

## Understanding the GitHub app

The AWS DevOps Agent GitHub app:

- Requests read-only access to your repositories
- Receives deployment events and other repository events
- Allows AWS DevOps Agent to correlate code changes with operational incidents
- Can be uninstalled at any time through your GitHub settings

## Managing GitHub connections

- **Updating repository access** – To change which repositories the GitHub app can access, go to your GitHub account or organization settings, navigate to installed GitHub apps, and modify the AWS DevOps Agent app configuration.
- **Viewing connected repositories** – In the AWS DevOps Agent console, select your Agent Space and go to the Capabilities tab to view connected repositories in the Pipeline section.

- **Removing GitHub connection –** To disconnect GitHub from an Agent Space, select the connection in the Pipeline section and click **Remove**. To uninstall the GitHub app completely, uninstall it from your GitHub account or organization settings.

## Connecting GitLab

GitLab integration enables AWS DevOps Agent to monitor deployments from GitLab Pipelines to inform causal investigations during incident response. This integration follows a two-step process: account-level registration of GitLab, followed by connecting specific projects to individual Agent Spaces.

### Registering GitLab (account-level)

GitLab is registered at the AWS account level and shared among all Agent Spaces in that account. Individual Agent Spaces can then choose which specific projects apply to their Agent Space.

**Step 1: Navigate to pipeline providers**

1. Sign in to the AWS Management Console
2. Navigate to the AWS DevOps Agent console
3. Go to the **Capabilities** tab
4. In the **Pipeline** section, click **Add**
5. Select **GitLab** from the list of available providers

If GitLab hasn't been registered yet, you'll be prompted to register it first.

**Step 2: Choose connection type**

On the "Register GitLab Account / Group" screen, select whether you're connecting as a person or a group:

- **Personal –** Your individual GitLab user account with a username and profile
- **Group –** In GitLab, you use groups to manage one or more related projects at the same time

**Step 3: Select GitLab instance type**

Choose which type of GitLab instance you're connecting to:

- GitLab.com (default) – The public GitLab service
- **Publicly accessible Managed GitLab instance** – A managed GitLab deployment accessible from the public internet
- **Publicly accessible self-hosted GitLab** – Your own GitLab deployment accessible from the public internet

If you're using a self-hosted or managed GitLab instance, check the box "Use GitLab self hosted endpoint" and provide the URL to your GitLab instance.

**Note**

Currently, only publicly accessible GitLab instances are supported.

### Step 4: Create and provide an access token

1. In a separate browser tab, log in to your GitLab account
2. Navigate to your user settings and select **Access Tokens**
3. Create a new personal access token with the following permissions:
   - `read_repository` – Required to access repository content
   - `read_virtual_registry` – Required to access virtual registry information
   - `read_registry` – Required to access registry information
   - `api` – Required for read and write API access
   - `self_rotate` - Required for rotating tokens. This feature is currently unsupported by AWS DevOps Agent but will be supported at a later date. Adding now prevents the need to create a new token in the future.
4. Set the token expiration to a maximum of 365 days from the current date
5. Copy the generated token
6. Return to the AWS DevOps Agent console
7. Paste the token into the "Access Token" field

### Step 5: Complete registration

Click **Submit** to complete the GitLab registration process. The system will validate your access token and establish the connection.

## Connecting projects to an Agent Space

After registering GitLab at the account level, you can connect specific projects to individual Agent Spaces:

1. In the AWS DevOps Agent console, select your Agent Space
2. Go to the **Capabilities** tab
3. In the **Pipeline** section, click **Add**
4. Select **GitLab** from the list of available providers
5. Select the GitLab projects relevant to your Agent Space
6. Click **Save**

AWS DevOps Agent will monitor these projects for deployments from GitLab Pipelines to inform causal investigations.

#### Associating AWS resources with project deployments

See See the CI/CD pipeline documentation for associating AWS resources with deployments to associate deployments with AWS resources. This helps incident investigations correlate recent deployments with possible root causes.

## Managing GitLab connections

- **Updating access token –** If your access token expires or needs to be updated, you can update it in the AWS DevOps Agent console by modifying the GitLab registration at the account level.
- **Viewing connected projects –** In the AWS DevOps Agent console, select your Agent Space and go to the Capabilities tab to view connected projects in the Pipeline section.
- **Removing GitLab connection –** To disconnect GitLab projects from an Agent Space, select the connection in the Pipeline section and click **Remove**. To remove the GitLab registration completely, remove it from all Agent Spaces first, then delete the registration at the account level.

## Associating AWS resources with project deployments

### Associate AWS resources with your project

1. **Edit project settings**

   a. In the **Pipeline** section of your Agent Space, locate your connected GitLab or GitHub project in the sources list

   b. Click the **Edit** button

2. **Associate AWS resources from primary account**

   a. Under **Associate AWS resources**, provide the corresponding resource ARNs for resources that your project deploys to:

   - **CloudFormation stacks** – Enter the CloudFormation stack ARN
   - **Amazon ECR repositories –** Enter the ECR repository ARN
   - **AWS CDK deployments –** Enter the relevant CloudFormation stack ARNs created by CDK
   - **Terraform –** Enter the S3 object ARN where your Terraform state file is stored

   b. Click **Add new resource** to associate additional resources if needed

   > **Important**
   >
   > Do not include sensitive data in Terraform state files.

3. **Associate resources from secondary AWS accounts**

   a. If your project deploys resources to secondary AWS accounts, provide those resource ARNs under **Associate resources from secondary AWS accounts**

   b. Click **Add new resource** to add additional resources if needed

4. **Save your changes**

   a. Click **Update Association** to save your AWS resource associations

   b. Following successful configuration, AWS DevOps Agent will automatically monitor your projects and workflows, tracking deployments to your AWS environment and correlating code changes with deployed resources

## Associating AWS resources with project deployments

After connecting projects to your Agent Space, you must configure the association between projects and AWS resources to enable AWS DevOps Agent to track deployments of CloudFormation templates, CDK, Elastic Container Repository images, and Terraform.

### Step 1: Edit project settings

- In the **Pipeline** section of your Agent Space, locate your connected GitLab or GitHub project in the sources list
- Click the **Edit** button

### Step 2: Associate AWS resources from primary account

Under **Associate AWS resources**, provide the corresponding resource ARNs for resources that your project deploys to:

- **CloudFormation stacks –** Enter the CloudFormation stack ARN
- **Amazon ECR repositories –** Enter the ECR repository ARN
- **AWS CDK deployments –** Enter the relevant CloudFormation stack ARNs created by CDK
- **Terraform –** Enter the S3 object ARN where your Terraform state file is stored. Currently only one Terraform state file is supported.

**Important**

Do not include sensitive data in Terraform state files.

Click **Add new resource** to associate additional resources if needed.

### Step 3: Associate resources from secondary AWS accounts

If your project deploys resources to secondary AWS accounts, provide those resource ARNs under **Associate resources from secondary AWS accounts**. Click **Add new resource** to add additional resources if needed.

### Step 4: Save your changes

Click **Update Association** to save your AWS resource associations. Following successful configuration, AWS DevOps Agent will automatically tracking deployment artifacts in GitLab Pipelines and GitHub Actions. Note that deployment artifacts that are deployed by external systems such as Jenkins or ArgoCD will not be tracked.

## Connecting MCP Servers

Model Context Protocol (MCP) servers extend AWS DevOps Agent's investigation capabilities by providing access to data from your external observability tools, custom monitoring systems, and operational data sources. This guide explains how to connect an MCP server to AWS DevOps Agent.

### Requirements

Before connecting an MCP server, ensure your server meets these requirements:

- **Publicly accessible endpoint**– MCP servers must be accessible from the public internet over HTTPS. AWS DevOps Agent does not support connecting to servers hosted in VPCs.
- **Streamable HTTP transport protocol**– Only MCP servers that implement the Streamable HTTP transport protocol are supported.
- **Authentication support**– Your MCP server must support OAuth 2.0 authentication flows or API key/token-based authentication.

### Security considerations

When connecting MCP servers to AWS DevOps Agent, consider these security aspects:

- **Tool allowlisting –**Allowlist only the specific tools your Agent Space needs, rather than exposing all tools from your MCP server. See the section called "Connecting MCP Servers" for how to allow list tools per Agent Space.
- **Prompt injection risks**– Custom MCP servers can introduce additional risk of prompt injection attacks. See *AWS DevOps Agent Security* for more information.
- **Read-only tools and access –**Only allowlist read-only MCP tools and ensure that authentication credentials are only permitted read-only access.

See *AWS DevOps Agent Security* for more information on prompt injection and the shared responsibility model.

## Registering an MCP server (account-level)

MCP servers are registered at the AWS account level and shared among all Agent Spaces in that account. Individual Agent Spaces can then choose which specific tools they need from each MCP server.

### Step 1: MCP server details

- Sign in to the AWS Management Console
- Navigate to the AWS DevOps Agent console
- Go to the **Capabilities** tab
- In the **MCP Servers** section, click **Add**
- On the **MCP server details** page, enter the following information:
- **Name**– Enter a descriptive name for your MCP server
- **Endpoint URL**– Enter the full HTTPS URL of your MCP server endpoint
- **Description**(optional) – Add a description to help identify the server's purpose
- **Enable Dynamic Client Registration**– Select this checkbox if you want to allow AWS DevOps Agent to automatically register with your MCP server's authorization server
- Click **Next**

**Note:**The MCP server endpoint URL will be displayed in AWS CloudTrail logs in your account.

### Step 2: Authorization flow

Select the authentication method for your MCP server: **OAuth Client Credentials**– If your MCP server uses OAuth Client Credentials flow:

- Select **OAuth Client Credentials**
- Click **Next**

**OAuth 3LO (Three-Legged OAuth)**– If your MCP server uses OAuth 3LO for authentication:

- Select **OAuth 3LO**

- Click **Next**
- **API Key**– If your MCP server uses API key authentication:
- Select **API Key**
- Click **Next**

## Step 3: Authorization configuration

Configure additional authorization parameters based on the selected authentication method: **For OAuth Client Credentials:**

- **Client ID**– Enter the client ID for your MCP server
- **Client Secret**– Enter the client secret for your MCP server
- **Exchange URL**– Enter the OAuth token exchange URL
- **Exchange Parameters**– Enter OAuth token exchange parameters for authenticating with the service
- **Add Scope**– Add OAuth scopes for authentication (the service will always request scope`offline_access`)
- Click **Next**

**For OAuth 3LO:**

- Configure the OAuth 3LO parameters as required by your MCP server
- The service will always request scope`offline_access`
- Click **Next**

**For API Key:**

- Enter your API key
- Configure header name (default: "Authorization")
- Configure token prefix (if needed)
- Click **Next**

### Step 4: Authorization configuration

Configure additional authorization parameters based on the selected authentication method: **For OAuth 2.0:**

- Enter Client ID and Client Secret (if not using Dynamic Client Registration)
- Configure scopes required for accessing your MCP server
- Add any additional OAuth parameters required by your server
- Click **Next**

**For API Key or Bearer Token:**

- Enter your API key or bearer token
- Configure header name (default: "Authorization")
- Configure token prefix (if needed)
- Click **Next**

### Step 5: Review and submit

- Review all the MCP server configuration details
- Click **Submit** to complete the registration
- AWS DevOps Agent will validate the connection to your MCP server
- Upon successful validation, your MCP server will be registered at the account level

## Configuring MCP tools in an Agent Space

After registering an MCP server at the account level, you can configure which tools from that server are available to specific Agent Spaces:

- In the AWS DevOps Agent console, select your Agent Space
- Go to the **Capabilities** tab
- In the **MCP Servers** section, click **Add**
- Select the registered MCP server you want to connect to this Agent Space
- Configure which tools from this MCP server should be available to the Agent Space:

- **Allow all tools**– Makes all tools from the MCP server available
- **Select specific tools**– Allows you to choose which tools to allowlist
- Click **Add** to connect the MCP server to your Agent Space

AWS DevOps Agent will now be able to use the allowlisted tools from your MCP server during investigations in this Agent Space.

### Managing MCP server connections

- **Updating authentication credentials –** If your authentication credentials need to be updated, navigate to the **Capabilities** tab in the AWS DevOps Agent console, select your MCP server, click **Edit**, update the authentication configuration, and click **Save**.
- **Viewing connected MCP servers –** To see all MCP servers connected to your Agent Space, select your Agent Space, go to the **Capabilities** tab, and check the **MCP Servers** section.
- **Removing MCP server connections –** To disconnect an MCP server from an Agent Space, select the server in the **MCP Servers** section and click **Remove**. To completely delete an MCP server registration, remove it from all Agent Spaces first, then delete the account-level registration.

## Connecting multiple AWS Accounts

Secondary AWS accounts allow AWS DevOps Agent to investigate resources across multiple AWS accounts in your organization. When your applications span multiple accounts, adding secondary accountsensures the agent has visibilityinto all relevant resources during incident investigations.

### Prerequisites

Before adding a secondary AWS account, ensure you have:

- Access to the AWS DevOps Agent console in the primary account
- Administrative access to the secondary AWS account
- IAM permissions to create roles in the secondary account

## Addinga secondary AWS account

### Step 1: Start the secondary account configuration

- Sign in to the AWS Management Console and navigate to the AWS DevOps Agent console
- Select your Agent Space
- Go to the **Capabilities** tab
- In the **Cloud** section, locate the **Secondary sources** subsection
- Click **Add**

### Step 2: Specify the role name

- In the **Name your role** field, enter a name for the role you'll create in the secondary account
- Note this name—you'll use it again when creating the role in the secondary account
- Copy the trust policy provided in the console and save it in a scratch space

### Step 3: Create the role in the secondary account

- Open a new browser tab and sign in to the IAM console in the secondary AWS account
- Navigate to **IAM >Roles**>**Create role**
- Select **Custom trust policy**
- Paste the trust policy you copied from Step 2
- Click **Next**

### Step 4: Attach the AWS managed policy

- In the **Permissions policies** section, search for **AIOpsAssistantPolicy**
- Select the checkbox next to the **AIOpsAssistantPolicy** managed policy
- Click **Next**

### Step 5: Name and create the role

- In the **Role name** field, enter the same role name you provided in Step 2
- (Optional) Add a description to help identify the role's purpose

- Review the trust policy and attached permissions
- Click **Create role**

### Step 6: Attach the inline policy

- In the IAM console, locate and select the role you just created
- Go to the **Permissions** tab
- Click **Add permissions**>**Create inline policy**
- Switch to the **JSON** tab
- Paste the policy you saved in Step 2
- Paste the policy into the JSON editor in the IAM console
- Click **Next**
- Provide a name for the inline policy (for example, "DevOpsAgentInlinePolicy")
- Click **Create policy**

### Step 7: Complete the configuration

- Return to the AWS DevOps Agent console in the primary account
- Click **Next** to complete the secondary account configuration
- Verify the connection status shows as **Active**

## Understanding the required policies

AWS DevOps Agent requires three policy components to access resources in a secondary account:

- **Trust policy–** Allows AWS DevOps Agent in the primary account to assume the role in the secondary account. This establishes the trust relationship between accounts.
- **AIOpsAssistantPolicy (AWS managed policy)–** Provides the core read-only permissions AWS DevOps Agent needs to investigate resources in the secondary account. This policy is maintained by AWS and updated as new capabilities are added.
- **Inline policy–** Provides additional permissions specific to your Agent Space configuration. This policy is generated based on your Agent Space settings and may include permissions for specific integrations or features.

In the primary account, the AWS DevOps Agent IAM Role must be able to assume the role created in the secondary account.

### Managing secondary accounts

- **Viewing connected accounts**– In the **Capabilities** tab, the **Secondary sources** subsection lists all connected secondary accounts with their connection status.
- **Updating the IAM role**– If you need to modify permissions, update the inline policy attached to the role in the secondary account. Changes take effect immediately.
- **Removing a secondary account**– To disconnect a secondary account, select it in the **Secondary sources** list and click **Remove**. This does not delete the IAM role in the secondary account.

## Connecting telemetry sources

AWS DevOps Agent provides three ways to connect to your telemetry sources.

### Built-in, 2-way integration

Currently, AWS DevOps Agent supports Dynatrace users with a built-in, 2-way integration enabling the following:

- **Topology resource mapping** - AWS DevOps Agent will augment your DevOps Agent Space Topology with entities and relationships available to it via a AWS DevOps Agent-hosted Dynatrace MCP server.
- **Automated Investigation triggering** - Dynatrace Workflows can be configured to trigger incident resolution Investigations from Dynatrace Problems.
- **Telemetry introspection** - AWS DevOps Agent can introspect Dynatrace telemetry as it investigates an issue via the AWS DevOps Agent-hosted Dynatrace MCP server.
- **Status updates** - AWS DevOps Agent will publish key investigation findings, root cause analyses, and generated mitigation plans to the Dynatrace user interface.

Next steps: Setup your Dynatrace connection See Dynatrace documentation (coming soon)]

## Built-in, 1 way integration

Currently, AWS DevOps Agent supports AWS CloudWatch, Datadog, New Relic, and Splunk users with built-in, 1 way integrations. The AWS CloudWatch built-in, 1-way integration requires no additional setup and enables the following:

- **Topology resource mapping** - AWS DevOps Agent will augment your DevOps Agent Space Topology with entities and relationships available to it via your configured primary and secondary AWS cloud accounts.
- **Telemetry introspection** - AWS DevOps Agent can introspect AWS CloudWatch telemetry as it investigates an issue via the IAM role(s) provided during primary and secondary AWS cloud account configuration.

The Datadog, New Relic, and Splunk built-in, 1 way integrations require setup and enable the following:

- **Automated Investigation triggering -** Datadog, New Relic, and Splunk events can be configured to trigger AWS DevOps Agent incident resolution Investigations via AWS DevOps Agent webhooks.
- **Telemetry introspection** - AWS DevOps Agent can introspect Datadog, New Relic, and Splunk telemetry as it investigates an issue via the each providers remote MCP server.

Next steps: Setup your Datadog connection the section called “Connecting Datadog”] Next steps: Setup your New Relic connection the section called “Connecting New Relic”] Next steps: Setup your Splunk connection the section called “Connecting Splunk”]

## Bring-your-own telemetry sources

For any other telemetry source, including Grafana dashboards/alarms and Prometheus metrics, you can leverage AWS DevOps Agent’s support for both webhook and MCP server integration.

## Onboarding Process

Onboarding your observability system involves three stages:

1. **Connect** - Establish connection to your telemetry provider by configuring account access credentials

2. **Enable** - Activate your connected telemetry provider in specific Agent spaces
3. **Configure webhooks** - Capture webhook details to trigger investigations in designated Agent spaces

## Connections

- Dynatrace
- DataDog
- New Relic
- Splunk

## Connecting Dynatrace

### Dynatrace setup

#### Built-in, 2-way integration

Currently, AWS DevOps Agent supports Dynatrace users with a built-in, 2-way integration enabling the following:

- **Topology resource mapping** - AWS DevOps Agent will augment your DevOps Agent Space Topology with entities and relationships available to it from your Dynatrace environment.
- **Automated Investigation triggering** - Dynatrace Workflows can be configured to trigger incident resolution Investigations from Dynatrace Problems.
- **Telemetry introspection** - AWS DevOps Agent can introspect Dynatrace telemetry as it investigates an issue via the AWS DevOps Agent-hosted Dynatrace MCP server.
- **Status updates** - AWS DevOps Agent will publish key investigation findings, root cause analyses, and generated mitigation plans to the Dynatrace user interface.

#### Onboarding

#### Onboarding Process

Onboarding your Dynatrace observability system involves three stages:

- **Connect** - Establish connection to Dynatrace by configuring account access credentials, with all the environments you may need

- **Enable** - Activate Dynatrace in specific Agent spaces with specific Dynatrace environments
- **Configure your Dynatrace environment** - download the workflows and dashboard and import into Dynatrace, making a note of the webhooks details to trigger investigations in designated Agent spaces

### Step 1: Connect

Establish connection to your Dynatrace environment

#### Configuration

1. Open the hamburger menu and select Settings
2. Scroll to the Available - Telemetry section. Press Register next to Dynatrace
3. **Create OAuth client in Dynatrace, with the detailed permissions.**
   - See Dynatrace documentation https://docs.dynatrace.com/docs/shortlink/aws-devops-agent
   - When ready press next
   - You can connect multiple dynatrace environments and later scope to specific ones for each DevOps Agent Space you may have.
4. Enter your Dynatrace details from the OAuth client setup:
   - **Client Name**
   - **Client ID**
   - **Client Secret**
   - **Account URN**
5. Click Next
6. Review and add

### Step 2: Enable

Activate Dynatrace in a specific Agent space and configure appropriate scoping

#### Configuration

1. From the agent spaces page, select an agent space and press view details
2. Select the Capabilities tab
3. Locate the Telemetry section, Press Add

4. You will notice Dynatrace with 'Registered' status. Click on add to add this to your agent space
5. Dynatrace Environment ID - Provide the Dynatrace environment ID you would like to associate with this DevOps agent space.
6. Enter one or more Dynatrace Entity IDs - these help DevOps agent discover your most important resources, examples might be services or applications. **If you are unsure you can press remove.**
7. Review and press Save
8. Copy the Webhook URL and Webhook Secret and follow the instructions https://docs.dynatrace.com/docs/shortlink/aws-devops-agent to add this credentials to Dynatrace.

#### Step 3: Configure your Dynatrace environment

To complete your Dynatrace set up you will need to perform certain setup steps in your Dynatrace environment. Follow the instructions here: https://docs.dynatrace.com/docs/shortlink/aws-devops-agent

## Connecting Datadog

### Datadog Setup

Onboarding your Datadog observability system involves three stages: Connect, Enable, and Configure webhooks.

### Step 1: Connect

Establish connection to your Datadog remote MCP endpoint with account access credentials

1. Open the hamburger menu and select Settings
2. Scroll to the Available - Telemetry section. Press Register next to Datadog
3. Enter your Datadog MCP server details:
   - **Server Name** - Unique identifier (e.g., my-datadog-server)
   - **Endpoint URL** - Your Datadog MCP server endpoint (typically https://mcp.datadoghq.com/api/unstable/mcp-server/mcp)
   - **Description** - Optional server description
4. Click Next
5. Review and submit

### Authorization

Complete OAuth authorization by:

- Authorizing as your user on the Datadog OAuth page
- If not logged in, click Allow, login, then authorize

Once configured, Datadog becomes available across all Agent spaces.

## Step 2: Enable

Activate DataDog in a specific Agent space and configure appropriate scoping

1. From the agent spaces page, select an agent space and press view details (if you have not yet created an agent space see [REF])
2. Select the Capabilities tab
3. Scroll down to the Telemetry section
4. Press Add
5. Press radio button Available Sources
6. Select Radio button Datadog
7. Next
8. Review and press Save
9. Copy the Webhook URL and Webhook Secret

## Step 3: Configure webhooks

Using the Webhook URL and Webhook Secret you can configure Data Dog to send events to trigger an investigation, for example from an alarm. To ensure that events sent can be used by the DevOps Agent, make sure that the data transmitted to the web hook matches the data schema specified below. Events that do not match this schema may be ignored by DevOps Agent. Set the method and the headers

```
    method: "POST",
    headers: {
      "Content-Type": "application/json",
      "Authorization": "Bearer <Token>",
    },
```

Send the body as a JSON string.

```
{
    eventType: 'incident';
    incidentId: string;
    action: 'created' | 'updated' | 'closed' | 'resolved';
    priority: "CRITICAL" | "HIGH" | "MEDIUM" | "LOW" | "MINIMAL";
    title: string;
    description?: string;
    timestamp?: string;
    service?: string;
    // The original event generated by service is attached here.
    data?: object;
}
```

Send webhooks with Datadog (note select no authorization and instead use the custom header option). Learn more: Datadog Remote MCP Server

## Connecting New Relic

### New Relic setup

Onboarding your New Relic observability system involves three stages: Connect, Enable, and Configure webhooks.

### Step 1: Connect

Establish connection to your New Relic remote MCP endpoint with account access credentials

1. Open the hamburger menu and select Settings
2. Scroll to the Available - Telemetry section. Press Register next to New Relic
3. Follow the instructions to obtain your new relic API Key
4. Enter your New Relic MCP server API Key details:
   - **Account ID:** - Enter your New Relic account ID obtained above
   - **API Key:** Enter the API Key obtained above
   - **Select US or EU region** based on where your new relic account is.
5. Click Add

## Step 2: Enable

Activate New Relic in a specific Agent space and configure appropriate scoping

1. From the agent spaces page, select an agent space and press view details (if you have not yet created an agent space see [REF])
2. Select the Capabilities tab
3. Scroll down to the Telemetry section
4. Press Add
5. Press radio button Available Sources
6. Select Radio button New Relic
7. Next
8. Review and press Save
9. Copy the Webhook URL and Webhook Secret

## Step 3: Configure webhooks

Using the Webhook URL and Webhook Secret you can configure New Relic to send events to trigger an investigation, for example from an alarm. To ensure that events sent can be used by the DevOps Agent, make sure that the data transmitted to the web hook matches the data schema specified below. Events that do not match this schema may be ignored by DevOps Agent. Set the method and the headers

```
    method: "POST",
    headers: {
      "Content-Type": "application/json",
      "Authorization": "Bearer <Token>",
    },
```

Send the body as a JSON string.

```
{
    eventType: 'incident';
    incidentId: string;
    action: 'created' | 'updated' | 'closed' | 'resolved';
    priority: "CRITICAL" | "HIGH" | "MEDIUM" | "LOW" | "MINIMAL";
    title: string;
    description?: string;
    timestamp?: string;
    service?: string;
    // The original event generated by service is attached here.
    data?: object;
}
```

Send webhooks with new relic (note select no authorization and instead use the custom header option). Learn more: https://docs.newrelic.com/docs/agentic-ai/mcp/overview/

## Connecting Splunk

### Splunk Setup

Onboarding your Splunk observability system involves three stages: Connect, Enable, and Configure webhooks.

### Prerequisite - Getting a Splunk API token

You will need an MCP URL and token to connect Splunk. **Splunk Administrator** needs to perform the following steps on their deployment

- Enable REST API access
- Enable token authentication on the deployment.
- Create a new role 'mcp_user', the new role does not need to have any capabilities.
- Assign the role 'mcp_user' to any users on the deployment who are authorized to use the MCP server.
- Create the token for the authorized users with audience as 'mcp' and set the appropriate expiration, if the user does not have the permission to create tokens themselves.

**Splunk User** needs to perform the following steps

- Get an appropriate token from the Splunk Administrator or create one themselves, if they have the permission. The audience for the token must be 'mcp'.

### Step 1: Connect

Establish connection to your Splunk remote MCP endpoint with account access credentials

1. Open the hamburger menu and select Settings
2. Scroll to the Available - Telemetry section. Press Register next to Splunk
3. Enter your Splunk MCP server details:
   - **Server Name** - Unique identifier (e.g., my-splunk-server)
   - **Endpoint URL** - Your Splunk MCP server endpoint:

     ```
     https://YOUR_SPLUNK_DEPLOYMENT_NAME.api.scs.splunk.com/YOUR_SPLUNK_DEPLOYMEN
     mcp/v1/
     ```
   - **Description** - Optional server description
   - **Token Name** - The name of the bearer token for authentication: `my-splunk-token`
   - **Token Value** - The bearer token value for authentication
4. Click Next
5. Review and Add

## Step 2: Enable

Activate Splunk in a specific Agent space and configure appropriate scoping

1. From the agent spaces page, select an agent space and press view details (if you have not yet created an agent space see [REF])
2. Select the Capabilities tab
3. Scroll down to the Telemetry section
4. Press Add
5. Press radio button Available Sources
6. Select Radio button Splunk
7. Next
8. Review and press Save
9. Copy the Webhook URL and Webhook Secret

## Step 3: Configure webhooks

Using the Webhook URL and Webhook Secret you can configure Splunk to send events to trigger an investigation, for example from an alarm. To ensure that events sent can be used by the DevOps Agent, make sure that the data transmitted to the web hook matches the data schema specified below. Events that do not match this schema may be ignored by DevOps Agent. Set the method and the headers

```
    method: "POST",
    headers: {
      "Content-Type": "application/json",
      "Authorization": "Bearer <Token>",
    },
```

Send the body as a JSON string.

```
{
    eventType: 'incident';
    incidentId: string;
    action: 'created' | 'updated' | 'closed' | 'resolved';
    priority: "CRITICAL" | "HIGH" | "MEDIUM" | "LOW" | "MINIMAL";
    title: string;
    description?: string;
    timestamp?: string;
    service?: string;
    // The original event generated by service is attached here.
    data?: object;
}
```

Send webhooks with Splunk (note select no authorization and instead use the custom header option).

### Learn more:

- Splunk's MCP Server Documentation
- Access requirements and limitations for the Splunk Cloud Platform REST API
- Manage authentication tokens in Splunk Cloud Platform
- Create and manage roles with Splunk Web

# Connecting to ticketing and chat

AWS DevOps Agent is designed to act as a member of your team by participating in your team's existing communication channels. You can connect DevOps Agent to your ticketing and alarming systems, like ServiceNow and PagerDuty, to automatically launch investigations from incident tickets, accelerating incident response within your existing workflows to reduce meant time to recover (MTTR). You can also connect your DevOps Agent to your team collaboration systems like Slack to receive activity summaries from your DevOps Agent in a chat channel.

**Topics**

- ServiceNow setup
- Slack setup

## ServiceNow setup

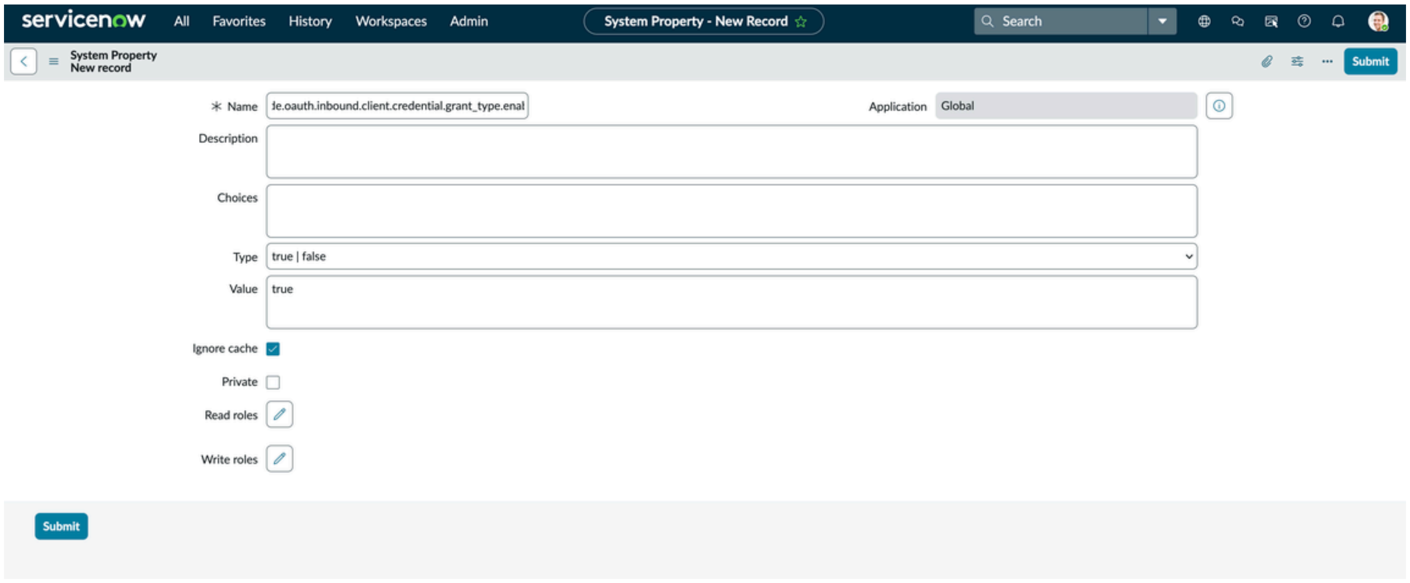
This tutorial walks you through connecting a ServiceNow instance to AWS DevOps Agent to enable it to automatically initiate incident response Investigations when a ticket is created and post its key findings into the originating ticket. It also contains examples for how to configure your ServiceNow instance to send only specific tickets to a DevOps Agent Space and how to orchestrate ticket routing across multiple DevOps Agent Spaces.

### Initial setup

The first step is to create in ServiceNow an OAuth application client that AWS DevOps can use to access your ServiceNow instance.

#### Create a ServiceNow OAuth application client

1. Enable your instance's client credential system property
2. Search `sys_properties.list` in the filter search box and then hit enter (it will not show the option but hitting enter works)
3. Then click on New
4. Add the name as `glide.oauth.inbound.client.credential.grant_type.enabled` and the value to true with type as true | false



Name: ŀe.oauth.inbound.client.credential.grant_type.enal

Application: Global

Description:

Choices:

Type: true | false

Value: true

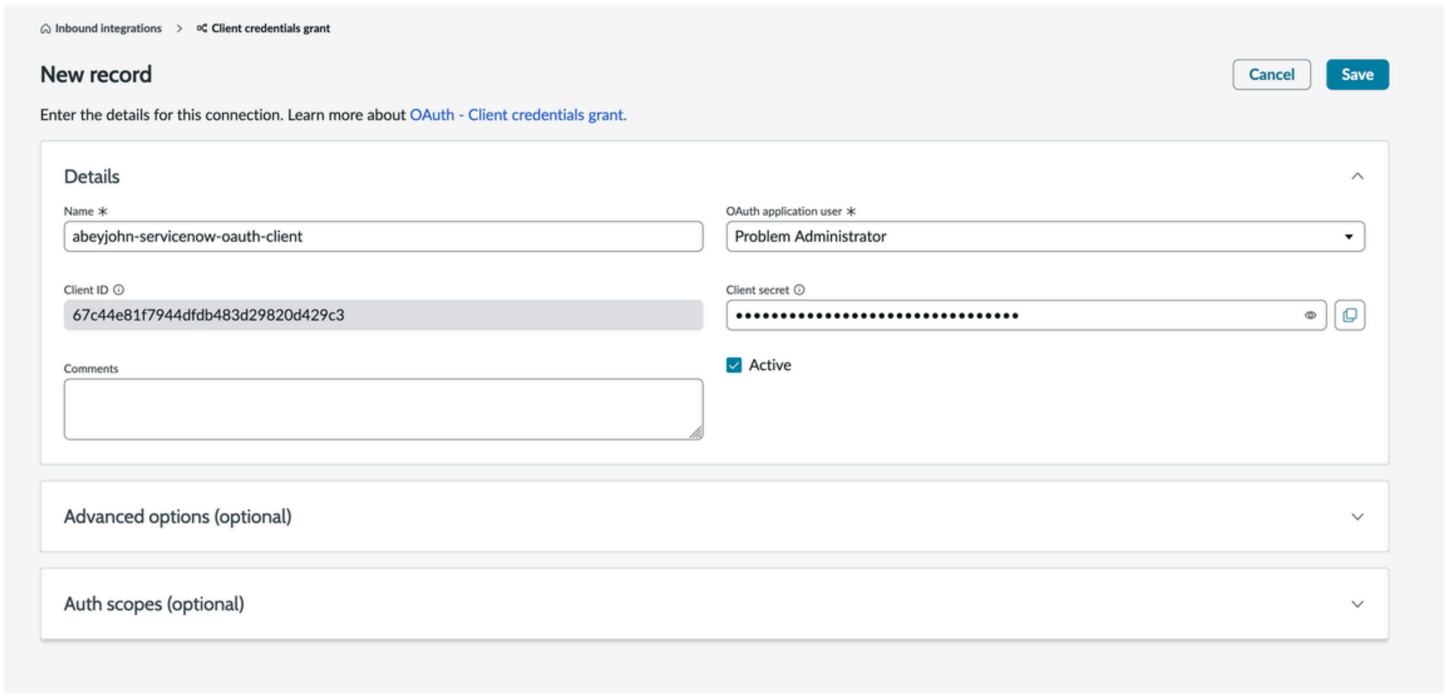
Ignore cache: ✓

Private:

Read roles

Write roles

5. Navigate to System OAuth > Application Registry from the filter search box
6. Click "New" > "New Inbound Integration Experience" → "New Integration" → "OAuth - Client Credentials Grant"
7. Pick a name and set the OAuth application user to "Problem Administrator", click "Save"


Inbound integrations > Client credentials grant
Cancel
Save
Advanced options (optional)
Auth scopes (optional)

New record

Enter the details for this connection. Learn more about OAuth - Client credentials grant.

Details

Name: abeyjohn-servicenow-oauth-client

OAuth application user: Problem Administrator

Client ID: 67c44e81f7944dfdb483d29820d429c3

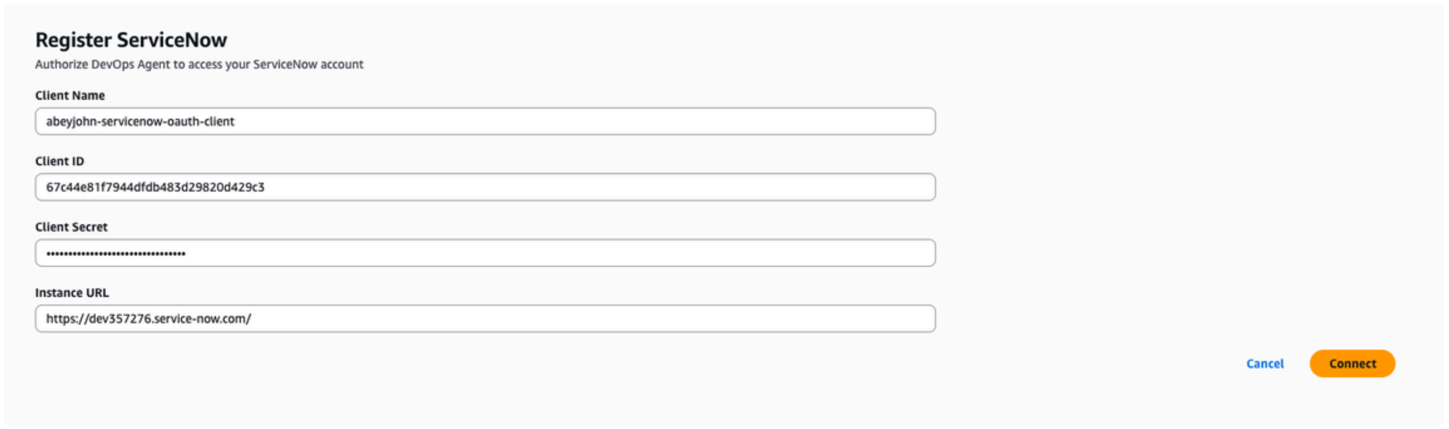
Client secret: ••••••••••••••••••••••••••••••••

Comments:

Active: ✓

## Connect your ServiceNow OAuth client to AWS DevOps Agent

1. You can start this process in two places. First, by navigating to AWS DevOps Agent → Settings → Communications, selecting ServiceNow from the list, and clicking register. Alternatively you can select any DevOps Agent Space you may have created and navigate to Capabilities → Communications → Add → ServiceNow and click Register.
2. Next, authorize DevOps Agent to access your ServiceNow instance using the OAuth application client you just created.



Register ServiceNow

Authorize DevOps Agent to access your ServiceNow account

Client Name: abeyjohn-servicenow-oauth-client

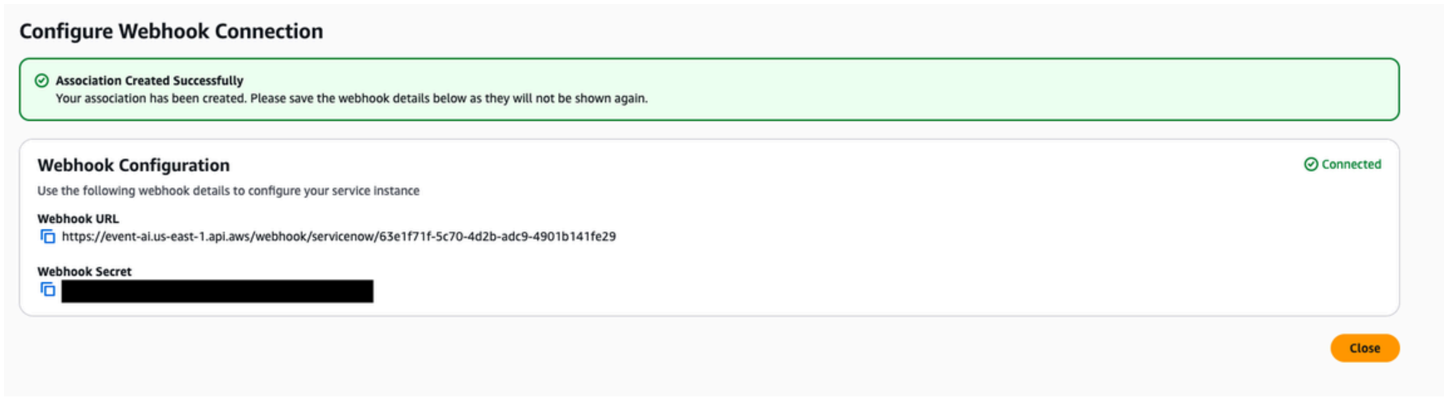
Client ID: 67c44e81f7944dfdb483d29820d429c3

Client Secret: ••••••••••••••••••••••••••••••••

Instance URL: https://dev357276.service-now.com/

- Follow the next steps, and save the resulting information about the webhook

> **Important**
>
> You will not see this information again.



Configure Webhook Connection

Association Created Successfully
Your association has been created. Please save the webhook details below as they will not be shown again.

Webhook Configuration

Connected

Use the following webhook details to configure your service instance

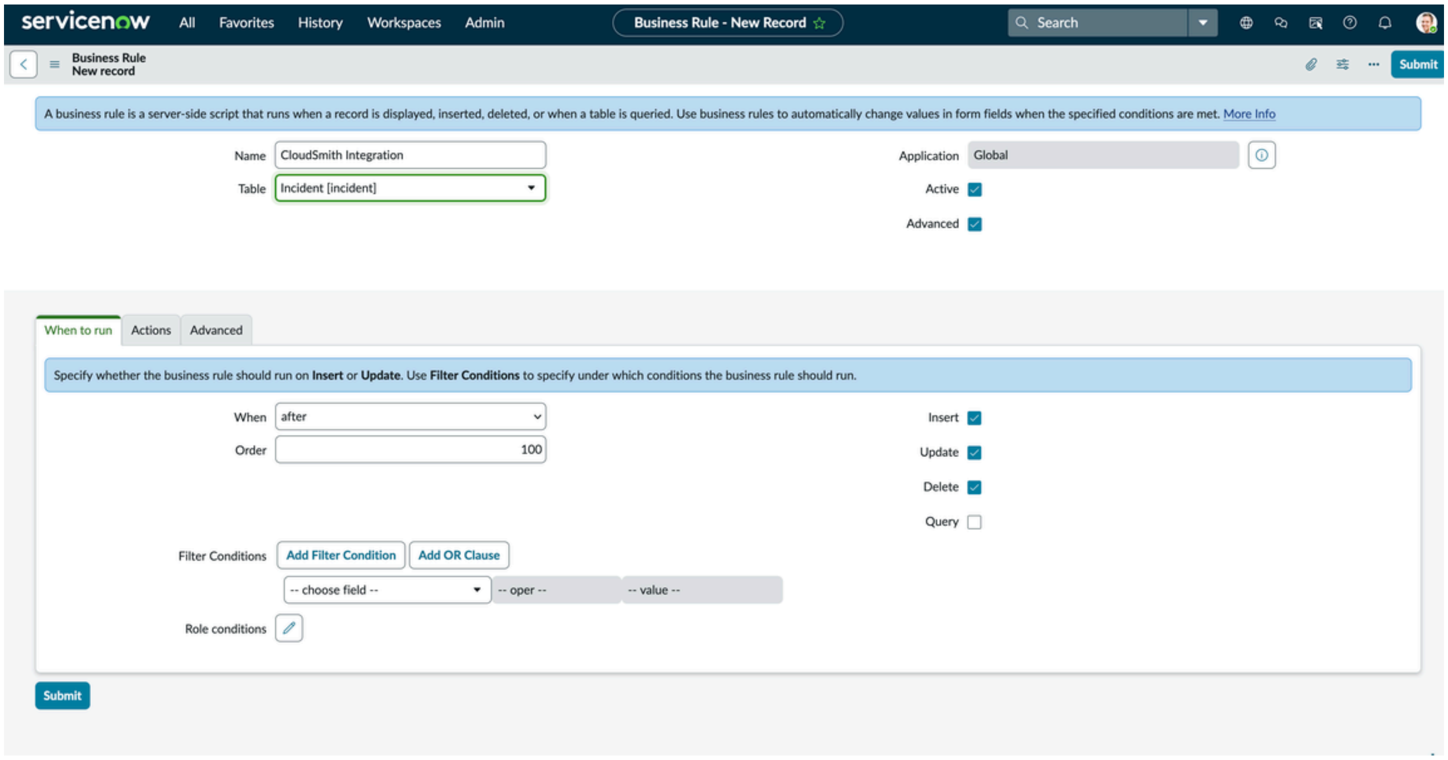
Webhook URL: https://event-ai.us-east-1.api.aws/webhook/servicenow/63e1f71f-5c70-4d2b-adc9-4901b141fe29

Webhook Secret: [redacted]

## Configure your ServiceNow Business Rule

Once you have established connectivity, you'll need to configure a business rule in ServiceNow to send tickets to your DevOps Agent Space(s).

1. Navigate to Activity Subscriptions → Administration → Business Rules, and click New.
2. Set the "Table" field to "Incident [incident]", check the "Advanced" box, and set the rule to run after Insert, Update, and Delete.



A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. More Info

| | | | |
|---|---|---|---|
| Name | CloudSmith Integration | Application | Global |
| Table | Incident [incident] | Active | ✓ |
| | | Advanced | ✓ |

Specify whether the business rule should run on **Insert** or **Update**. Use **Filter Conditions** to specify under which conditions the business rule should run.

| | | | |
|---|---|---|---|
| When | after | Insert | ✓ |
| Order | 100 | Update | ✓ |
| | | Delete | ✓ |
| | | Query | ☐ |

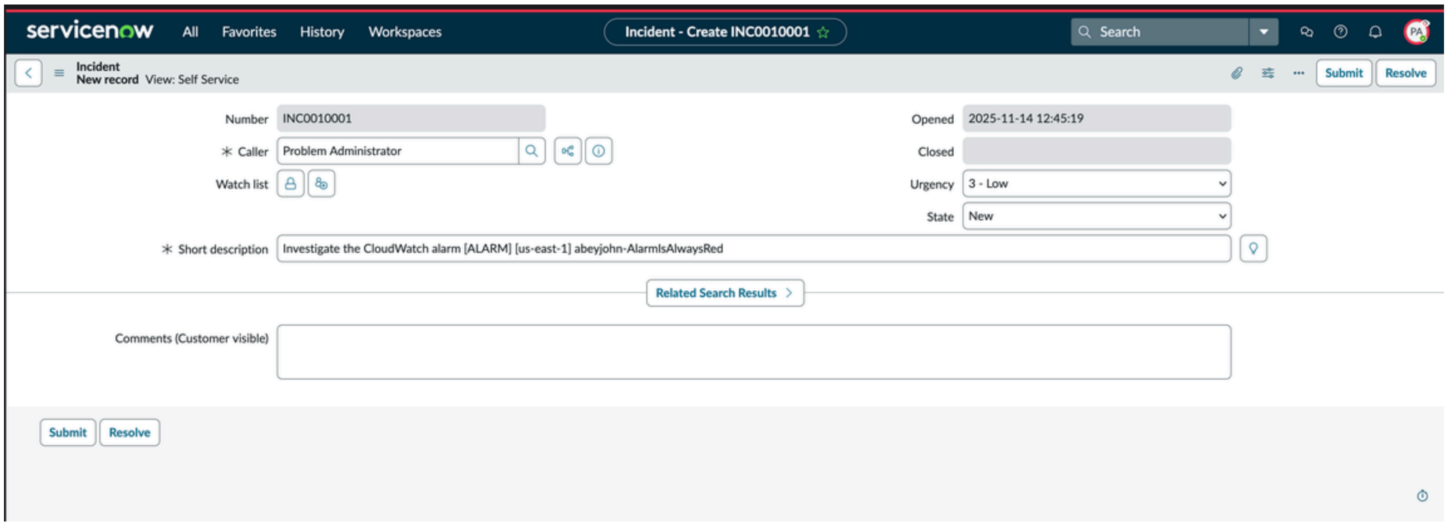
Filter Conditions

Role conditions

3. Navigate to the "Advanced" tab and add the following webhook script, inserting your webhook secret and URL where indicated, and click Submit.

```
(function executeRule(current, previous /*null when async*/ ) {

    var WEBHOOK_CONFIG = {
        webhookSecret: GlideStringUtil.base64Encode('<<< INSERT WEBHOOK SECRET HERE
>>>'),
        webhookUrl: '<<< INSERT WEBHOOK URL HERE >>>'
    };

    function generateHMACSignature(payloadString, secret) {
        try {
            var mac = new GlideCertificateEncryption();
            var signature = mac.generateMac(secret, "HmacSHA256", payloadString);
            return signature;
        } catch (e) {
            gs.error('HMAC generation failed: ' + e);
            return null;
        }
    }

    function callWebhook(payload, config) {
        try {
            var payloadString = JSON.stringify(payload);


            var signature = generateHMACSignature(payloadString, config.webhookSecret);

            if (!signature) {
                gs.error('Failed to generate signature');
                return false;
            }

            gs.info('Generated signature: ' + signature);

            var request = new sn_ws.RESTMessageV2();
            request.setEndpoint(config.webhookUrl);
            request.setHttpMethod('POST');

            request.setRequestHeader('Content-Type', 'application/json');
            request.setRequestHeader('x-amzn-event-signature', signature);

            request.setRequestBody(payloadString);

            var response = request.execute();
            var httpStatus = response.getStatusCode();
            var responseBody = response.getBody();

            if (httpStatus >= 200 && httpStatus < 300) {
                gs.info('Webhook sent successfully. Status: ' + httpStatus);
                return true;
            } else {
                gs.error('Webhook failed. Status: ' + httpStatus + ', Response: ' +
 responseBody);
                return false;
            }

        } catch (ex) {
            gs.error('Error sending webhook: ' + ex.getMessage());
            return false;
        }
    }

    function createReference(field) {
        if (!field || field.nil()) {
            return null;
        }

        return {
            link: field.getLink(true),
            value: field.toString()
        };
    }

    function getStringValue(field) {
        if (!field || field.nil()) {
            return null;
        }
        return field.toString();
    }

    function getIntValue(field) {
        if (!field || field.nil()) {
            return null;
        }
        var val = parseInt(field.toString());
        return isNaN(val) ? null : val;
    }

    var eventType = (current.operation() == 'insert') ? "create" : "update";

    var incidentEvent = {
        eventType: eventType.toString(),
        sysId: current.sys_id.toString(),
        priority: getStringValue(current.priority),
        impact: getStringValue(current.impact),
        active: getStringValue(current.active),
        urgency: getStringValue(current.urgency),
        description: getStringValue(current.description),
        shortDescription: getStringValue(current.short_description),
        parent: getStringValue(current.parent),
        incidentState: getStringValue(current.incident_state),
        severity: getStringValue(current.severity),
        problem: createReference(current.problem),
        additionalContext: {}
    };

    incidentEvent.additionalContext = {
        number: current.number.toString(),
        opened_at: getStringValue(current.opened_at),
        opened_by: current.opened_by.nil() ? null :
 current.opened_by.getDisplayValue(),
        assigned_to: current.assigned_to.nil() ? null :
 current.assigned_to.getDisplayValue(),
        category: getStringValue(current.category),
        subcategory: getStringValue(current.subcategory),
        knowledge: getStringValue(current.knowledge),
        made_sla: getStringValue(current.made_sla),
        major_incident: getStringValue(current.major_incident)
    };

    for (var key in incidentEvent.additionalContext) {
        if (incidentEvent.additionalContext[key] === null) {
            delete incidentEvent.additionalContext[key];
        }
    }

    gs.info(JSON.stringify(incidentEvent, null, 2)); // Pretty print for logging only

    if (WEBHOOK_CONFIG.webhookUrl && WEBHOOK_CONFIG.webhookSecret) {
        callWebhook(incidentEvent, WEBHOOK_CONFIG);
    } else {
        gs.info('Webhook not configured.');
    }

})(current, previous);
```

If you chose to register your ServiceNow connection from the AWS DevOps Agent Setting tab, you now need to navigate to the DevOps Agent Space you want to investigate ServiceNow incident tickets, select Capabilities → Communications and then register the ServiceNow instance you connected to in the Settings tab. Now, everything should be set up, and all incidents where the caller is set to "Problem Administrator" (to mimic the permissions you gave the AWS DevOps OAuth client) will trigger a incident response investigation in the configured DevOps Agent Space. You can test this by creating a new incident in ServiceNow and setting the Caller field of the incident as "Problem Administrator."



Number: INC0010001
Caller: Problem Administrator
Watch list
Opened: 2025-11-14 12:45:19
Closed:
Urgency: 3 - Low
State: New
Short description: Investigate the CloudWatch alarm [ALARM] [us-east-1] abeyjohn-AlarmIsAlwaysRed
Comments (Customer visible)

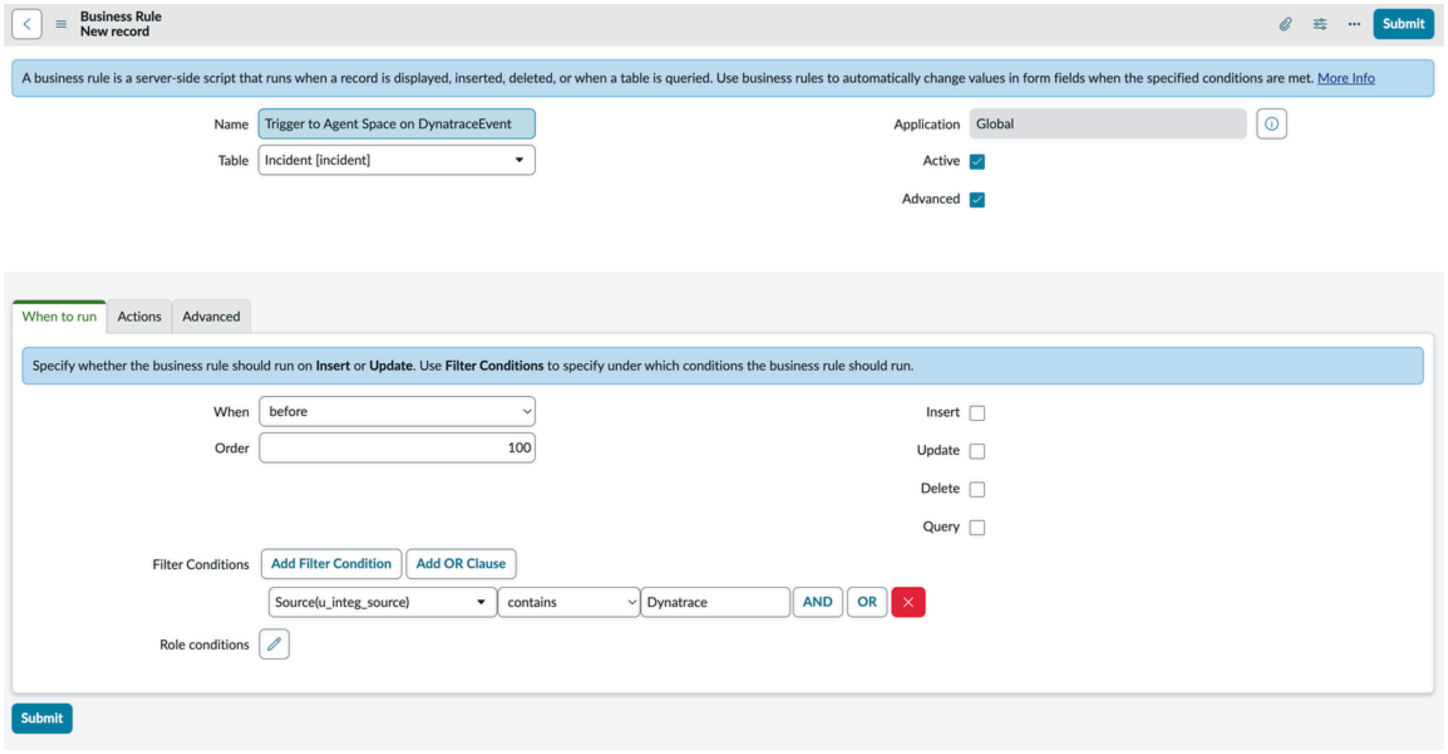
### ServiceNow ticket updates

During all triggered incident response Investigations, your DevOps Agent will provide updates of its key findings, root cause analyses, and mitigation plans into the originating ticket. The agent findings are posted to the comments of an incident, and we'll currently only post agent records of type `finding`, `cause`, `investigation_summary`, `mitigation_summary` , and investigation status updates (e.g `AWS DevOps Agent started/finished its investigation`).

## Ticket routing and orchestration examples

### Scenario: Filtering which incidents are sent to a DevOps Agent Space

This is a simple scenario but needs some configuration in ServiceNow to create a field in ServiceNow to track incident source. For the purpose of this example, create a new Source (u_source) field using the SNOW form builder. This will enable tracking the incident source and use it to route requests from a particular source to a DevOps Agent Space. Routing is accomplished by creating a Service Now Business Rule and in the When to run tab setting "When" triggers and "Filter Conditions." In this example the filter conditions are set as follows:



A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. More Info

| | | | |
|---|---|---|---|
| Name | Trigger to Agent Space on DynatraceEvent | Application | Global |
| Table | Incident [incident] | Active | ✓ |
| | | Advanced | ✓ |

Specify whether the business rule should run on **Insert** or **Update**. Use **Filter Conditions** to specify under which conditions the business rule should run.

| | | | |
|---|---|---|---|
| When | before | Insert | ☐ |
| Order | 100 | Update | ☐ |
| | | Delete | ☐ |
| | | Query | ☐ |

Filter Conditions: Add Filter Condition | Add OR Clause

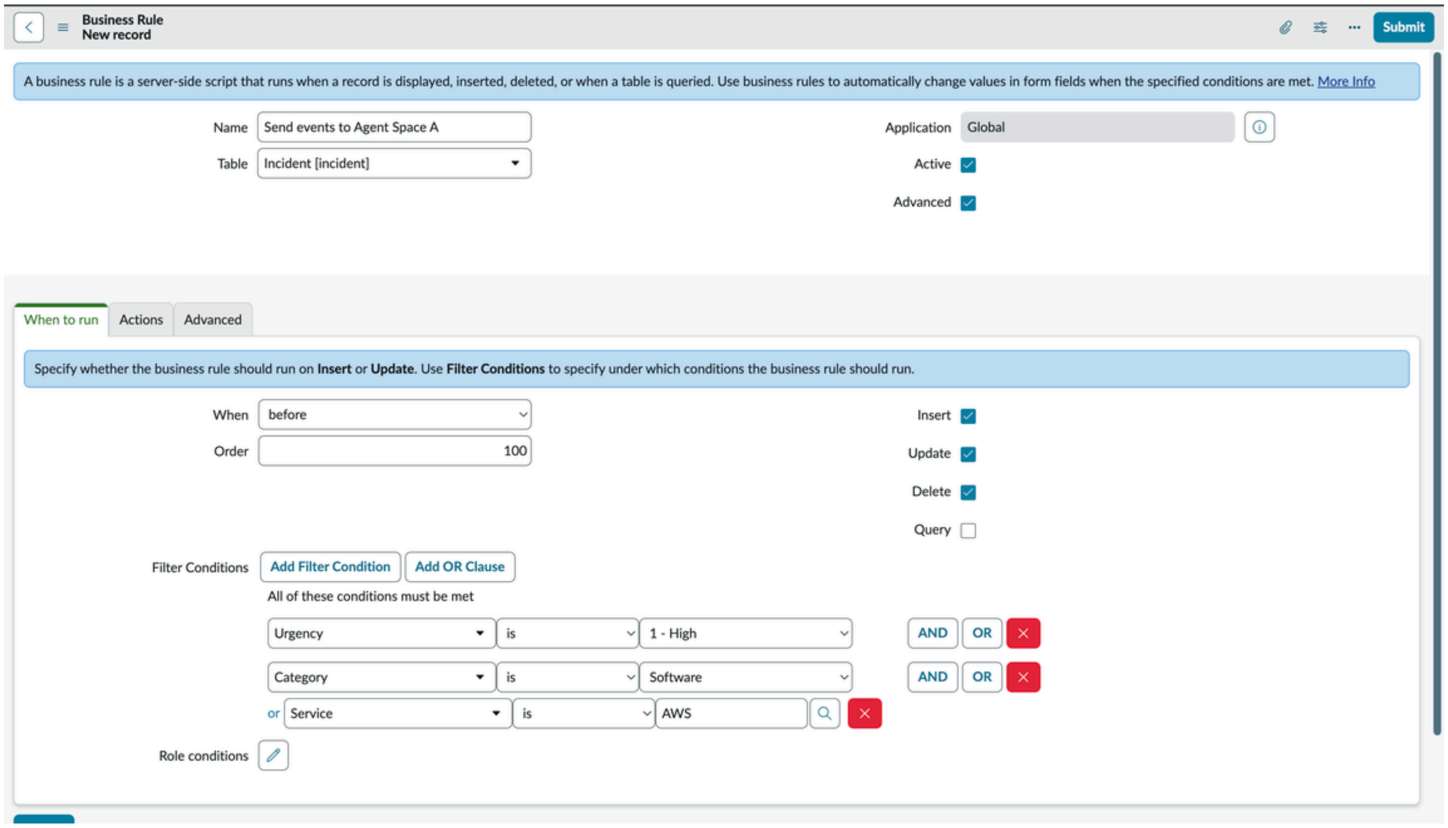
Source(u_integ_source) | contains | Dynatrace | AND | OR

Role conditions

## Scenario: Routing incidents across multiple DevOps Agent Spaces

This example shows how to trigger an Investigation in DevOps Agent Space B when the urgency is 1, category is `Software` , or Service is `AWS`, and trigger an Investigation in DevOps Agent Space A when the service is `AWS`, and source is `Dynatrace`. This scenario can be accomplished in two ways. The webhook script itself can be updated to include this business logic. In this scenario we will show how to accomplish it with a ServiceNow Business Rule, for transparency and simplify debugging. Routing is accomplished by creating two Service Now Business Rules.

- Create a Business Rule in ServiceNow for DevOps Agent Space A and create a condition using the condition builder to only send the events based on our specified condition.



A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. More Info

| | |
|---|---|
| Name | Send events to Agent Space A |
| Table | Incident [incident] |
| Application | Global |
| Active | ✓ |
| Advanced | ✓ |

Specify whether the business rule should run on **Insert** or **Update**. Use **Filter Conditions** to specify under which conditions the business rule should run.

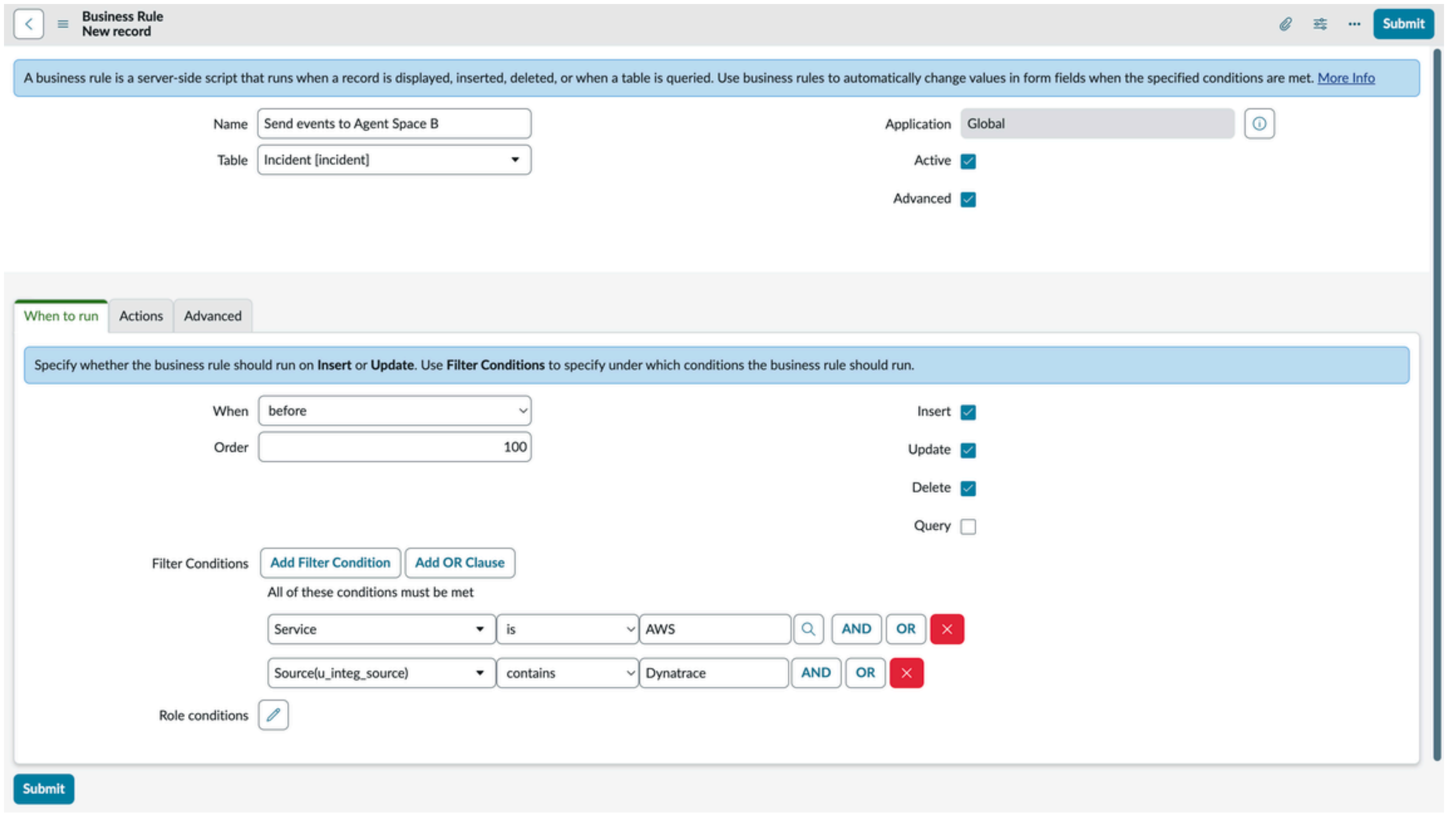
| | |
|---|---|
| When | before |
| Order | 100 |
| Insert | ✓ |
| Update | ✓ |
| Delete | ✓ |
| Query | |

Filter Conditions

All of these conditions must be met

| | | | |
|---|---|---|---|
| | Urgency | is | 1 - High |
| | Category | is | Software |
| or | Service | is | AWS |

- Next, create another Business Rule in ServiceNow for AgentSpace B for which the business rule will only trigger when Service is AWS and source is Dynatrace.


Business Rule
New record

A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. More Info

| | |
|---|---|
| Name | Send events to Agent Space B |
| Table | Incident [incident] |
| Application | Global |
| Active | ✓ |
| Advanced | ✓ |

When to run | Actions | Advanced

Specify whether the business rule should run on **Insert** or **Update**. Use **Filter Conditions** to specify under which conditions the business rule should run.

| | |
|---|---|
| When | before |
| Order | 100 |
| Insert | ✓ |
| Update | ✓ |
| Delete | ✓ |
| Query | ☐ |

Filter Conditions: Add Filter Condition | Add OR Clause

All of these conditions must be met

| | | |
|---|---|---|
| Service | is | AWS |
| Source(u_integ_source) | contains | Dynatrace |

Role conditions

Now, when you create a new Incident that matches the condition specified, it will either trigger an investigation on DevOps Agent Space A or DevOps Agent Space B, providing you with fine grained control over incident routing.

## Slack setup

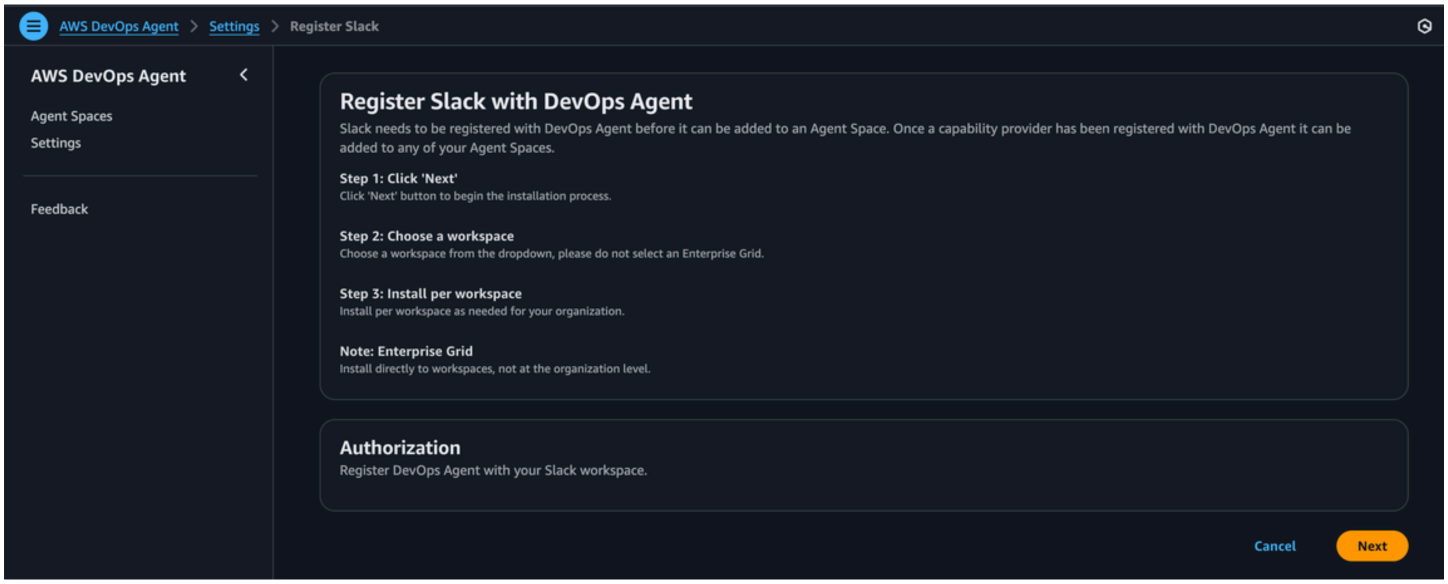
You can configure AWS DevOps Agent to update a Slack channel you select with incident response investigation key findings, root cause analyses, and generated mitigation plans.

### Before you begin

Slack needs to be registered with DevOps Agent before it can be added to an Agent Space. To integrate AWS DevOps Agent with Slack you must meet these requirements:

- Have a Slack workspace with administrative permissions to install and authorize third-party applications
- Have identified the Slack channels where you want AWS DevOps Agent to send notifications

## Register Slack integration with AWS DevOps Agent



Register Slack with DevOps Agent

Slack needs to be registered with DevOps Agent before it can be added to an Agent Space. Once a capability provider has been registered with DevOps Agent it can be added to any of your Agent Spaces.

**Step 1: Click 'Next'**
Click 'Next' button to begin the installation process.

**Step 2: Choose a workspace**
Choose a workspace from the dropdown, please do not select an Enterprise Grid.

**Step 3: Install per workspace**
Install per workspace as needed for your organization.

**Note: Enterprise Grid**
Install directly to workspaces, not at the organization level.

Authorization

Register DevOps Agent with your Slack workspace.

1. From the **Settings** tab in the AWS DevOps Agent console, navigate to **Communications** → **Slack.**
2. Click the **Register** button.
3. You will be redirected to Slack to authorize the AWS AIDevOps application for your workspace.
4. Install directly to workspaces, not at the organization level.
5. Choose a workspace from the dropdown. Do not select an Enterprise Grid.
6. Install per workspace as needed for your organization.
7. Review the requested permissions and click **Allow** to authorize the integration.
8. After authorization, you'll return to the AWS DevOps Agent console.

## Associate Slack with your DevOps Agent Space(s)

After registering Slack in your DevOps Agent Space, you can associate it with your DevOps Agent Space(s):

1. From the **Capabilities** tab within your configured AgentSpace, navigate to **Communications** → **Slack**.
2. Select **Add Slack**
3. Enter the Channel ID
4. Click **Create** to complete the Slack configuration.

# Invoking DevOps Agent through Webhook

Webhooks allow external systems to automatically trigger AWS DevOps Agent investigations. This enables integration with ticketing systems, monitoring tools, and other platforms that can send HTTP requests when incidents occur.

## Prerequisites

Before configuring webhook access, ensure you have:

- An Agent Space configured in AWS DevOps Agent
- Access to the AWS DevOps Agent console
- The external system that will send webhook requests

## Webhook types

AWS DevOps Agent supports two types of webhooks:

- **Integration-specific webhooks** – Automatically generated when you configure third-party integrations like Dynatrace, Splunk, Datadog, New Relic, ServiceNow, or Slack. These webhooks are associated with the specific integration and use authentication methods determined by the integration type.
- **Generic webhooks** – Can be manually created for triggering investigations from any source not covered by a specific integration. Generic webhooks currently use HMAC authentication.

## Webhook authentication methods

The authentication method for your webhook depends on which integration it's associated with:
**HMAC authentication** – Used by:

- Dynatrace integration webhooks
- Generic webhooks (not linked to a specific third-party integration)

**Bearer token authentication** – Used by:

- Splunk integration webhooks

- Datadog integration webhooks
- New Relic integration webhooks
- ServiceNow integration webhooks
- Slack integration webhooks

## Configuring webhook access

### Step 1: Navigate to the webhook configuration

1. Sign in to the AWS Management Console and navigate to the AWS DevOps Agent console
2. Select your Agent Space
3. Go to the **Capabilities** tab
4. In the **Webhook** section, click **Configure**

### Step 2: Generate webhook credentials

**For integration-specific webhooks:** Webhooks are automatically generated when you complete the configuration of a third-party integration. The webhook endpoint URL and credentials are provided at the end of the integration setup process.

**For generic webhooks:**

1. Click **Generate webhook**
2. The system will generate an HMAC key pair
3. Securely store the generated key and secret—you won't be able to retrieve them again
4. Copy the webhook endpoint URL provided

### Step 3: Configure your external system

Use the webhook endpoint URL and credentials to configure your external system to send requests to AWS DevOps Agent. The specific configuration steps depend on your external system.

## Managing webhook credentials

**Removing credentials** – To delete webhook credentials, go to the webhook configuration section and click **Remove**. After removing credentials, the webhook endpoint will no longer accept requests until you generate new credentials. **Regenerating credentials** – To generate new credentials, remove the existing credentials first, then generate a new key pair or token.

## Using the webhook

### Webhook request format

To trigger an investigation, your external system should send an HTTP POST request to the webhook endpoint URL. **For Version 1 (HMAC authentication):** Headers:

- `Content-Type: application/json`
- `x-amzn-event-signature: <HMAC signature>`
- `x-amzn-event-timestamp: <+%Y-%m-%dT%H:%M:%S.000Z>`

The HMAC signature is generated by signing the request body with your secret key using SHA-256. **For Version 2 (Bearer token authentication):** Headers:

- `Content-Type: application/json`
- `Authorization: Bearer <your-token>`

**Request body:** The request body should include information about the incident:

```
json

{
  "title": "Incident title",
  "severity": "high",
  "affectedResources": ["resource-id-1", "resource-id-2"],
  "timestamp": "2025-11-23T18:00:00Z",
  "description": "Detailed incident description",
  "metadata": {
    "region": "us-east-1",
    "environment": "production"
  }
}
```

### Example code

**Version 1 (HMAC authentication) - JavaScript:**

```
const crypto = require('crypto');

// Webhook configuration
const webhookUrl = 'https://your-webhook-endpoint.amazonaws.com/invoke';
const webhookSecret = 'your-webhook-secret-key';

// Incident data
const incidentData = {
    eventType: 'incident',
    incidentId: 'incident-123',
    action: 'created',
    priority: "HIGH",
    title: 'High CPU usage on production server',
    description: 'High CPU usage on production server host ABC in AWS account 1234
 region us-east-1',
    timestamp: new Date().toISOString(),
    service: 'MyTestService',
    data: {
      metadata: {
        region: 'us-east-1',
        environment: 'production'
      }
    }
};

// Convert data to JSON string
const payload = JSON.stringify(incidentData);
const timestamp = new Date().toISOString();
const hmac = crypto.createHmac("sha256", webhookSecret);
hmac.update(`${timestamp}:${payload}`, "utf8");
const signature = hmac.digest("base64");

// Send the request
fetch(webhookUrl, {
  method: 'POST',
  headers: {
    'Content-Type': 'application/json',
    'x-amzn-event-timestamp': timestamp,
    'x-amzn-event-signature': signature
  },
  body: payload
})
.then(res => {
  console.log(`Status Code: ${res.status}`);
  return res.text();
})
.then(data => {
  console.log('Response:', data);
})
.catch(error => {
  console.error('Error:', error);
});
```

### Version 1 (HMAC authentication) - JavaScript:

```
#!/bin/bash

# Configuration
WEBHOOK_URL="https://event-ai.us-east-1.api.aws/webhook/generic/YOUR_WEBHOOK_ID"
SECRET="YOUR_WEBHOOK_SECRET"

# Create payload
TIMESTAMP=$(date -u +%Y-%m-%dT%H:%M:%S.000Z)
INCIDENT_ID="test-alert-$(date +%s)"

PAYLOAD=$(cat <<EOF
{
  "eventType": "incident",
  "incidentId": "$INCIDENT_ID",
  "action": "created",
  "priority": "HIGH",
  "title": "Test Alert",
  "description": "Test alert description",
  "service": "TestService",
  "timestamp": "$TIMESTAMP"
}
EOF
)

# Generate HMAC signature
SIGNATURE=$(echo -n "${TIMESTAMP}:${PAYLOAD}" | openssl dgst -sha256 -hmac "$SECRET" -
binary | base64)

# Send webhook
curl -X POST "$WEBHOOK_URL" \
  -H "Content-Type: application/json" \
  -H "x-amzn-event-timestamp: $TIMESTAMP" \
  -H "x-amzn-event-signature: $SIGNATURE" \
  -d "$PAYLOAD"
```

**Version 2 (Bearer token authentication) - JavaScript:**

```
function sendEventToWebhook(webhookUrl, secret) {
  const timestamp = new Date().toISOString();

  const payload = {
    eventType: 'incident',
    incidentId: 'incident-123',
    action: 'created',
    priority: "HIGH",
    title: 'Test Alert',
    description: 'Test description',
    timestamp: timestamp,
    service: 'TestService',
    data: {}
  };

  fetch(webhookUrl, {
    method: "POST",
    headers: {
      "Content-Type": "application/json",
      "x-amzn-event-timestamp": timestamp,
      "Authorization": `Bearer ${secret}`,  // Fixed: template literal
    },
    body: JSON.stringify(payload),
  });
}
```

**Version 2 (Bearer token authentication) - cURL:**

```
#!/bin/bash

# Configuration
WEBHOOK_URL="https://event-ai.us-east-1.api.aws/webhook/generic/YOUR_WEBHOOK_ID"
SECRET="YOUR_WEBHOOK_SECRET"

# Create payload
TIMESTAMP=$(date -u +%Y-%m-%dT%H:%M:%S.000Z)
INCIDENT_ID="test-alert-$(date +%s)"
```

```
PAYLOAD=$(cat <<EOF
{
  "eventType": "incident",
  "incidentId": "$INCIDENT_ID",
  "action": "created",
  "priority": "HIGH",
  "title": "Test Alert",
  "description": "Test alert description",
  "service": "TestService",
  "timestamp": "$TIMESTAMP"
}
EOF
)

# Send webhook
curl -X POST "$WEBHOOK_URL" \
  -H "Content-Type: application/json" \
  -H "x-amzn-event-timestamp: $TIMESTAMP" \
  -H "Authorization: Bearer $SECRET" \
  -d "$PAYLOAD"
```

# AWS DevOps Agent Security

This document provides information about security considerations, data protection, access controls, and compliance capabilities for AWS DevOps Agent. Use this information to understand how AWS DevOps Agent is designed to meet your security and compliance requirements.

## Agent Spaces

Agent Spaces serve as the primary security boundary in AWS DevOps Agent. Each Agent Space:

- Operates independently with its own configurations and permissions
- Defines which AWS accounts and resources the agent can access
- Establishes connections to third-party platforms

Agent Spaces maintain strict isolation to ensure security and prevent unintended access across different environments or teams.

## Regional processing and data flow

AWS DevOps Agent operates from the US East (N. Virginia) region (us-east-1) as its primary processing hub. The agent retrieves operational data from AWS regions across all AWS accounts granted access within the configured Agent Space. This multi-region cross-account data collection ensures comprehensive incident analysis.

### Amazon Bedrock usage and cross-region inference

AWS DevOps Agent will automatically select the optimal region within the US to process your inference requests. This maximizes available compute resources, model availability, and delivers the best customer experience. Your data will remain stored in the US East (N. Virginia) region, but inputs, requests, and output may be processed in other US regions. All data will be transmitted encrypted across Amazon's secure network.

- DevOps Agent and Bedrock are not impacted by customer policies in Service Control Policies (SCPs) or Control Tower that restrict customer content to specific regions
- Bedrock may use U.S. regions other than US East (N. Virginia) to perform stateless inference to optimize performance and availability

# Identity and access management

## Authentication methods

AWS DevOps Agent provides two authentication methods to log into the AWS DevOps Agent Space web app:

- **IAM Identity Center integration** – The primary authentication method uses OAuth 2.0 with session-based authentication using HTTP-only cookies. IAM Identity Center can federate with external identity providers through standard OIDC and SAML protocols, including providers like Okta, Ping Identity, and Microsoft Entra ID. This method supports multi-factor authentication through your identity provider. IAM Identity Center defaults to session durations of up to 12 hours and can be configured to a desired duration.
- **IAM authentication link** – An alternative method provides direct access to the web app from the AWS Management Console using JWT-based tokens derived from an existing AWS Management Console session. This option is useful for evaluating AWS DevOps Agent before implementing full IAM Identity Center integration as well as gaining administrative access if the AWS DevOps Agent web app becomes inaccessible through IAM Identity Center based authentication. Sessions are limited to 30 minutes.

## IAM roles

AWS DevOps Agent uses IAM roles to define access permissions:

- **Primary account role** – Grants the agent access to resources in the AWS account where you create the Agent Spaceas well as access to secondary account roles.
- **Secondary account roles** – Grants the agent access to resources in additional AWS accounts connected to the Agent Space.
- **Web app role** – Grants users access to AWS DevOps Agent investigation data and findings in the web app.

These roles should be configured following the principle of least privilege, granting only the necessary read-only permissions required for investigations.

# Data protection

## Data encryption

AWS DevOps Agent encrypts all customer data:

- **Encryption at rest** – All data is encrypted with AWS-managed keys.
- **Encryption in transit** – All retrieved logs, metrics, knowledge items, ticket metadata, and other data are encrypted in transit inside the agent's private network and to outside networks.

## Data storage and retention

Data is stored in the US East (N. Virginia) region

## Personal identifiable information (PII)

AWS DevOps Agent does not filter PII information when summarizing data gathered during investigations, recommendation evaluations, or chat responses. It is recommended that PII data be redacted before storing in observability logs.

# Agent journal and audit logging

## Agent journal

Both the Incident Investigation and Preventioncapabilities maintain detailed journals that:

- Log every reasoning step and action taken
- Create complete transparency into agent decision-making processes
- Cannot be modified by the agents once recorded, minimizing attacks such as prompt injection from hiding important actions
- Include all chat messages from the Investigation page

## AWS CloudTrail integration

All AWS DevOps Agent API calls are automatically captured by AWS CloudTrail within the hosting AWS account. Using the information collected by CloudTrail, you can determine:

- The request that was made to the agent
- The IP address from which the request was made
- Who made the request
- When it was made

## Prompt injection protection

A prompt injection attack occurs when an attacker embeds malicious instructions into external data, such as a webpage or document, that a generative AI system will later process. AWS DevOps Agent natively consumes many data sources as part of its normal operations, including logs, resource tags, and other operational data. AWS DevOps Agent protects against prompt injection attacks through the safeguards below, but it is important to ensure all connected data sources and user access to those data sources are trusted. See *AWS DevOps Agent Security* section for more. Prompt injection safeguards:

- **Limited write capabilities** – The tools available to the agent are not able to mutate resources, with the exception of opening tickets and support cases. This prevents malicious instructions from modifying your infrastructure or applications.
- **Account boundary enforcement** – AWS DevOps Agent only operates within the boundary permitted by the roles assigned to the agent in the primary and connected secondary AWS accounts. The agent cannot access or modify resources outside of its configured scope.
- **AI safety protections** – AWS DevOps Agent uses Claude Sonnet 4.5, which includes AI Safety Level 3 (ASL-3) protections. These protections include classifiers that detect and prevent prompt injection attacks before they can affect agent behavior.
- **Immutable audit trail** – The agent journal logs every reasoning step and action taken. Journal entries cannot be modified by the agent once recorded, preventing prompt injection attacks from hiding malicious actions.

While AWS DevOps Agent provides multiple layers of protection against prompt injection attacks, certain configurations can increase risk:

- **Custom MCP server tools** – The bring-your-own MCP feature allows you to introduce custom tools to the agent, which can present additional opportunities for prompt injection. Custom tools may not have the same security controls as native AWS DevOps Agent tools, and malicious instructions could potentially leverage these tools in unintended ways. See *AWS DevOps Agent Security* section for more.

- **Authorized user attacks –** Users who are authorized to operate within the AWS account boundary or connected tools have a higher chance of attempting an attack against the agent. These users may have the ability to modify data sources that the agent consumes, such as logs or resource tags, making it easier to embed malicious instructions that the agent will process.

To mitigate these risks:

- Carefully review and test custom MCP servers before deploying them in Agent Spaces.
- Ensure they are only permitted to perform read-only actions
- Verify that users of external tools accessed by MCP servers are trusted entities, as AWS DevOps Agents interfacing with MCP rely on the implicit trust relationship established between these tool users and the AWS DevOps Agent
- Apply the principle of least privilege when granting users access to systems that provide data to the agent
- Regularly audit which MCP servers are connected to your Agent Spaces
- Since any content retrieved from allowlisted URLs could attempt to manipulate the agent's behavior, only include trusted sources in your allowlist.

## Integration security

AWS DevOps Agent supports several integration types, each with its own security model:

- **Native bidirectional integrations –** Built-in integrations that can send data to the agent and receive updates from the agent. This uses the vendor's authentication methods
- **MCP servers –** Remote Model Context Protocol servers that utilize OAuth 2.0 authentication flows and API keys to securely communicate with external systems.
- **Webhook triggers –** Investigation triggers from remote services such as tickets or observability systems. Webhooks use Hash-based Message Authentication Code (HMAC) for security.
- **Outbound communication –** Integrations like Slack and ticketing systems receive updates from the agent but do not yet support bidirectional communication.

## Registration providers

Some external tools are authenticated at the account level and shared among all Agent Spaces in the account. When you register these tools, you authenticate once at the account level, and then each Agent Space can connect to specific resources within that registered connection.  The following tools use account-level registration:

- **GitHub –** Uses OAuth flow for authentication. After registering GitHub at the account level, each Agent Space can connect to specific repositories within your GitHub organization.
- **Dynatrace –** Uses OAuth token authentication. After registering Dynatrace at the account level, each Agent Space can connect to specific Dynatrace environments or monitoring configurations.
- **Slack –** Uses OAuth token authentication. After registering Slack at the account level, each Agent Space can connect to specific Slack channels.
- **Datadog –** Uses MCP with OAuth flow for authentication. After registering Datadog at the account level, each Agent Space can connect to specific Datadog monitoring resources.
- **New Relic –** Uses API key authentication. After registering New Relic at the account level, each Agent Space can connect to specific New Relic monitoring configurations.
- **Splunk –** Uses bearer token authentication. After registering Splunk at the account level, each Agent Space can connect to specific Splunk data sources.
- **GitLab –** Uses access token authentication. After registering GitLab at the account level, each Agent Space can connect to specific GitLab repositories.
- **ServiceNow –** Uses OAuth client key/token authentication. After registering ServiceNow at the account level, each Agent Space can connect to specific ServiceNow instances or ticket queues.
- **General public accessible remote MCP servers –** Use OAuth flow for authentication. After registering a remote MCP server at the account level, each Agent Space can connect to specific resources exposed by that server.

# Network connectivity

AWS DevOps Agent connects to third-party systems, including remote MCP servers, from the following public IP addresses:

- 34.228.181.128
- 44.219.176.187
- 54.226.244.221

If your third-party systems or remote MCP servers use IP allowlisting or firewall rules, you must allow inbound connections from these IP addresses to enable AWS DevOps Agent to access your integrations.

## Shared responsibility model

### AWS responsibilities

AWS is responsible for:

- Maintaining the security of data retrieved by the agent
- Securing native tools available for use by the agent
- Protecting the infrastructure that runs AWS DevOps Agent

### Customer responsibilities

Customers areresponsiblefor:

- Managing user access to theagent space
- Limiting access to trusted users of external systems that provide inputs to the agent, such as services and resources that produce logs, CloudTrail events, tickets, and more – that may be used to attempt malicious prompt injection.
- Ensure all connected data sources have trusted data that is unlikely to be used to attempt prompt injection attacks
- Ensuring bring-your-own MCP server integrations operate securely
- Ensuring IAM roles assigned to the agent are properly scoped
- Redacting PII data before storing in observability logs and other agent data sources
- Following the recommended practice of granting only read-only permissions to connected data sources, including bring-your-own MCP servers

## Data usage

AWS does not use agent data, chat messages, or data from integrated data sources to train models or improve the product. The AWS DevOps Agent Space uses customer in-product feedback to improve the agent's responses and investigations, but AWS does not use it to improve the service itself.

## Compliance

At preview, AWS DevOps Agent is not compliant with standards including SOC 2, PCI-DSS, ISO 27001, or FedRAMP. AWS will announce which compliance certifications will be available at a later time.

## DevOps Agent IAM permissions

AWS DevOps Agent uses service-specific IAM actions to control access to its features and capabilities. These actions determine what users can do within the AWS DevOps Agent console and Operator Web App. This is separate from the AWS service API permissions that the agent itself uses to investigate your resources. See the section called "Limiting Agent Access in an AWS Account" to learn more about managing the services and resources the agent itself has access to.

### Agent Space management actions

These actions control access to Agent Space configuration and management:

- **aidevops:GetAgentSpace** – Allows users to view details about an Agent Space, including its configuration, status, and associated accounts. Users need this permission to access an Agent Space in the AWS Management Console.
- **aidevops:GetAssociation** – Allows users to view details about a specific account association, including the IAM role configuration and connection status.
- **aidevops:ListAssociations** – Allows users to list all AWS account associations configured for an Agent Space, including both primary and secondary accounts.

### Investigation and execution actions

These actions control access to incident investigation features:

- **aidevops:SendChatMessage** – Allows users to ask questions and provide instructions to the agent, including starting new investigations and improvement evaluations.
- **aidevops:ListExecutions** – Allows users to view the investigation executions, including completed, in-progress, and failed investigations.

- **aidevops:ListJournalRecords –** Allows users to access detailed investigation logs that show the agent's reasoning steps, actions taken, and data sources consulted during an investigation. This is useful for understanding how the agent reached its conclusions.

## Topology and discovery actions

These actions control access to application resource mapping features:

- **aidevops:DiscoverTopology –** Allows users to trigger topology discovery and mapping for an Agent Space. This action initiates the process of scanning AWS accounts and building the application resource topology.

## Prevention and recommendation actions

These actions control access to the Prevention feature:

- **aidevops:ListGoals –** Allows users to view prevention goals and objectives that the agent is working toward based on recent incident patterns.
- **aidevops:ListRecommendations –** Allows users to view all recommendations generated by the Prevention feature, including their priority and category.
- **aidevops:GetRecommendation –** Allows users to view detailed information about a specific recommendation, including the incidents it would have prevented and implementation guidance.

## Backlog task management actions

These actions control the ability to manage recommendations as backlog tasks:

- **aidevops:CreateBacklogTask –** Allows users to create a backlog task from a recommendation, marking it for implementation tracking.
- **aidevops:UpdateBacklogTask –** Allows users to update the status or details of a backlog task, such as marking it as in progress or completed.
- **aidevops:GetBacklogTask –** Allows users to retrieve details about a specific backlog task.
- **aidevops:ListBacklogTasks –** Allows users to list all backlog tasks for an Agent Space.

## Knowledge management actions

These actions control the ability to add and manage custom knowledge that the agent can use during investigations:

- **aidevops:CreateKnowledgeItem** – Allows users to add custom knowledge items, such as runbooks, troubleshooting guides, or application-specific information that the agent should reference.
- **aidevops:ListKnowledgeItems** – Allows users to view all knowledge items configured for an Agent Space.
- **aidevops:GetKnowledgeItem** – Allows users to retrieve the details of a specific knowledge item.
- **aidevops:UpdateKnowledgeItem** – Allows users to modify existing knowledge items to keep information current.
- **aidevops:DeleteKnowledgeItem** – Allows users to remove knowledge items that are no longer relevant.

## AWS Support integration actions

These actions control integration with AWS Support cases:

- **aidevops:InitiateChatForCase** – Allows users to start a chat session with AWS Support directly from an investigation, automatically providing context about the incident.
- **aidevops:EndChatForCase** – Allows users to end an active AWS Support case chat session.
- **aidevops:SendChatMessage** – Allows users to send messages within an AWS Support case chat session.
- **aidevops:DescribeSupportLevel** – Allows users to check the AWS Support plan level for the account to determine available support options.

## Usage and monitoring actions

These actions control access to usage information:

- **aidevops:GetAccountUsage** – Allows users to view AWS DevOps Agent monthly quota for investigation, prevention evaluation hours, and chat requests, as well as the current month's usage.

## Common IAM policy examples

### Administrator policy

This policy grants full access to all AWS DevOps Agent features:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "aidevops:*",
      "Resource": "*"
    }
  ]
}
```

### Operator policy

This policy grants access to investigation and prevention features without administrative capabilities:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "aidevops:GetAgentSpace",
        "aidevops:InvokeAgent",
        "aidevops:ListExecutions",
        "aidevops:ListJournalRecords",
        "aidevops:ListAssociations",
        "aidevops:GetAssociation",
        "aidevops:DiscoverTopology",
        "aidevops:ListRecommendations",
        "aidevops:GetRecommendation",
        "aidevops:CreateBacklogTask",
        "aidevops:UpdateBacklogTask",
        "aidevops:GetBacklogTask",
        "aidevops:ListBacklogTasks",
        "aidevops:ListKnowledgeItems",
        "aidevops:GetKnowledgeItem",
        "aidevops:InitiateChatForCase",
        "aidevops:EndChatForCase",
        "aidevops:SendChatMessage"
      ],
      "Resource": "*"
    }
  ]
}
```

## Read-only policy

This policy grants view-only access to investigations and recommendations:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "aidevops:GetAgentSpace",
        "aidevops:ListAssociations",
        "aidevops:GetAssociation",
        "aidevops:ListExecutions",
        "aidevops:ListJournalRecords",
        "aidevops:ListRecommendations",
        "aidevops:GetRecommendation",
        "aidevops:ListBacklogTasks",
        "aidevops:GetBacklogTask",
        "aidevops:ListKnowledgeItems",
        "aidevops:GetKnowledgeItem",
        "aidevops:GetAccountUsage"
      ],
      "Resource": "*"
    }
  ]
}
```

# Limiting Agent Access in an AWS Account

AWS DevOps Agent uses IAM roles to discover and describe AWS resources during incident investigations and preventative evaluations. You can control the level of access the agent has by configuring IAM policies attached to these roles. The application topology doesn't show everything the agent has access to—IAM policies are the only way to truly limit what AWS service APIs and resources the agent can access.

## Understanding IAM roles for AWS DevOps Agent

AWS DevOps Agent uses IAM roles to access resources in two types of accounts:

- **Primary account role** – Grants the agent access to resources in the AWS account where you create the Agent Space.
- **Secondary account roles** – Grants the agent access to resources in additional AWS accounts that you connect to the Agent Space.

For either type of account, you can restrict which AWS services the agent can access, limit access to specific resources within those services, and control which regions the agent can operate in.

## Choosing your resource boundaries

When limiting resource access, you need to include enough permissions for the agent to successfully investigate application incidents. This includes:

- All resources for in-scope applications that the agent should monitor and investigate
- All supporting infrastructure that those applications depend on

Supporting infrastructure may include:

- Networking components (VPCs, subnets, load balancers, API gateways)
- Data stores (databases, caches, object storage)
- Compute resources (EC2 instances, Lambda functions, containers)
- Monitoring and logging services (CloudWatch, CloudTrail)
- Identity and access management resources needed to understand permissions

If you restrict access too narrowly, the agent may not be able to identify root causes that originate in supporting infrastructure outside your defined boundaries.

## Understanding topology and access limitations

The application topology may display resources that the agent cannot fully access during investigations. This can occur when the Agent Space is configured to discover tagged resources from AWS Resource Explorer, and Resource Explorer has permission to discover resources that the role assigned to the agent does not have permission to access. In these cases, the resources will appear in the topology visualization, but the agent will not be able to retrieve detailed information about them during investigations. To ensure the agent can investigate all resources shown in the topology, verify that the IAM role assigned to the Agent Space has appropriate permissions for all discovered resources.

## Restricting service access

You can limit which AWS services the agent can access by modifying the IAM policies attached to the agent's roles. When creating custom policies, follow these best practices:

- **Grant only read-only permissions –** The agent needs to read resource configurations, metrics, and logs during investigations. Avoid granting permissions that allow the agent to modify or delete resources.
- **Limit to necessary services –** Include only the AWS services that contain resources relevant to your applications. For example, if your application doesn't use Amazon RDS, don't include RDS permissions in the policy.
- **Use specific actions instead of wildcards –** Instead of granting `service:*` permissions, specify individual actions like `cloudwatch:GetMetricData` or `ec2:DescribeInstances`.

Example policy restricting to specific services:

```
json

{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "cloudwatch:GetMetricData",
        "cloudwatch:GetMetricStatistics",
        "cloudwatch:DescribeAlarms",
        "logs:GetLogEvents",
        "logs:FilterLogEvents",
        "ec2:DescribeInstances",
        "lambda:GetFunction",
        "lambda:GetFunctionConfiguration"
      ],
      "Resource": "*"
    }
  ]
}
```

## Restricting resource access

To limit the agent to specific resources within a service, use resource-level permissions in your IAM policies. This allows you to grant access only to resources that match specific patterns. **Using resource ARN patterns:**

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "lambda:GetFunction",
        "lambda:GetFunctionConfiguration"
      ],
      "Resource": "arn:aws:lambda:*:*:function:production-*"
    }
  ]
}
```

This example limits the agent to accessing only Lambda functions with names that begin with "production-". **Using tag-based restrictions:**

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeInstances",
        "ec2:DescribeInstanceStatus"
      ],
      "Resource": "*",
      "Condition": {
        "StringEquals": {
          "aws:ResourceTag/Environment": "production"
        }
      }
    }
  ]
}
```

This example limits the agent to accessing only EC2 instances tagged with `Environment=production`.

## Restricting regional access

To limit which AWS regions the agent can access, use the `aws:RequestedRegion` condition key in your IAM policies:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "ec2:Describe*",
        "lambda:Get*",
        "cloudwatch:Get*"
      ],
      "Resource": "*",
      "Condition": {
        "StringEquals": {
          "aws:RequestedRegion": [
            "us-east-1",
            "us-west-2"
          ]
        }
      }
    }
  ]
}
```

This example limits the agent to accessing resources only in the us-east-1 and us-west-2 regions.

## Creating custom IAM policies

When you create an Agent Space or add secondary accounts, you have the option to create a custom IAM role using a policy template. This allows you to implement the principle of least privilege. **When creating an Agent Space** From the DevOps Agent console in the AWS Management Console...

- Choose **Create a new DevOps Agent role using a policy document** and follow the instructions

**When editing an Agent Space** From the DevOps Agent console in the AWS Management Console...

- Select the **Capabilities** tab
- Select the secondary account you want to edit from the **Cloud** section and click Edit
- Chose **Create a new DevOps Agent policy using a template** and follow the instructions

## Custom policy best practices

- **Grant only read-only permissions –** Avoid permissions that allow resource modification or deletion
- **Use resource-level permissions when possible –** Restrict access to specific resources using ARN patterns or tags
- **Regularly review and audit permissions –** Periodically review the agent's IAM policies to ensure they still align with your security requirements

# Setting Up IAM Identity Center Authentication

IAM Identity Center authentication provides a centralized way to manage user access to the AWS DevOps Agent Space web app. This guide explains how to configure IAM Identity Center authentication and manage users.

## Prerequisites

Before setting up IAM Identity Center authentication, ensure you have:

- IAM Identity Center enabled in your organization
- Administrator permissions in AWS DevOps Agent

- An Agent Space configured or ready to create

## Authentication options

AWS DevOps Agent offers two authentication methods for accessing the Agent Space web app:

- **IAM Identity Center authentication –** Recommended for production environments. Provides centralized user management, integration with external identity providers, and sessions up to 12 hours.
- **Admin access (IAM authentication) –** Provides quick access for administrators during initial setup and configuration. Sessions are limited to 30 minutes.

## Configuring IAM Identity Center during Agent Space creation

When you create an Agent Space, you can configure IAM Identity Center authentication on the **Web app** tab:

### Step 1: Navigate to the Web app configuration

1. After configuring your Agent Space details and AWS account access, proceed to the **Web app** tab
2. You'll see two sections: "Connect to IAM Identity Center" and "Admin access"

### Step 2: Configure IAM Identity Center integration

In the **Connect [Agent Space] to IAM Identity Center** section:

1. **Verify the IAM Identity Center instance –** The console displays which IAM Identity Center instance will manage Web App user access (for example, `ssoins-7223a9580931edbe`)
2. **Select the IAM Identity Center Application Role Name option –** Choose one of three options:
   - **Auto-create a new DevOps Agent role** (recommended):
     - The system automatically creates a new service role with appropriate permissions
     - This is the simplest option and works for most use cases
   - **Assign an existing role**:
     - Use an existing IAM role that you've already created
     - The system will verify the role has the required permissions

    - Choose this option if your organization has pre-created roles for AWS DevOps Agent
  - **Create a new DevOps Agent role using a policy template**:
    - Use the provided policy details to create your own custom role in the IAM Console
    - Choose this option if you need to customize the role permissions
3. **Review the web app role name –** The system displays the role name that will be created (for example, `DevOpsAgentRole-WebappIDC-xydu4qhn`)
4. **Click Connect –** This completes the IAM Identity Center configuration

After clicking Connect, the system automatically:

- Creates or configures the specified IAM role
- Sets up an IAM Identity Center application for your Agent Space
- Establishes trust relationships between IAM Identity Center and the Agent Space web app
- Configures OAuth 2.0 authentication flows for secure user access

### Alternative: Using Admin access

If you want to access the Agent Space web app immediately without setting up IAM Identity Center:

1. In the **Admin access** section, note the IAM Role ARN that provides administrator access (for example, `arn:aws:iam::440491339484:role/service-role/DevOpsAgentRole-WebappAdmin-15ppoc42`)
2. Click the blue **Admin access** button to launch the Agent Space web app with IAM authentication
3. Sessions using this method are limited to 30 minutes

**Note:** Admin access is intended for initial setup and configuration. For production use and ongoing operations, configure IAM Identity Center authentication.

## Adding users and groups

After configuring IAM Identity Center authentication, you need to grant specific users and groups access to the Agent Space web app:

### Step 1: Access user management

1. In the AWS DevOps Agent console, select your Agent Space
2. Go to the **Web app** tab
3. Under **User Access**, click **Manage Users and Groups**

### Step 2: Add users or groups

1. Click **Add Users or Groups**
2. Search for users or groups in your IAM Identity Center directory
3. Select the checkboxes next to the users or groups you want to add
4. Click **Add** to grant them access

The selected users can now access the Agent Space web app using their IAM Identity Center credentials.

### Working with external identity providers

If you're using an external identity provider (such as Okta, Microsoft Entra ID, or Ping Identity) with IAM Identity Center:

- Users and groups are synchronized from your external identity provider to IAM Identity Center
- When you add users and groups to the Agent Space web app, you're selecting from the synchronized directory
- User attributes and group memberships are maintained by your external identity provider
- Changes in your identity provider are automatically reflected in IAM Identity Center after synchronization

## How users access the Agent Space web app

After you've added users to your Agent Space:

1. Share the Agent Space web app URL with authorized users
2. When users navigate to the URL, they're redirected to the IAM Identity Center login page

3. After entering their credentials (and completing MFA if configured), they're redirected back to the Agent Space web app
4. Their session is valid for 12 hours by default (configurable by the IAM Identity Center administrator)

## Managing user access

You can update user access at any time:

**Adding more users or groups:**

- Follow the same steps described above to add additional users or groups

**Removing access:**

1. In the **User Access** section, find the user or group to remove
2. Click the **Remove** button next to their name
3. Confirm the removal

Removed users will lose access immediately, but active sessions may continue until they expire.

## Session management

IAM Identity Center sessions for the Agent Space web app have the following characteristics:

- **Default session duration** – 12 hours
- **Session security** – HTTP-only cookies for enhanced protection
- **Multi-factor authentication –** Supported when configured in IAM Identity Center
- **API credentials –** Short-duration (15-minute) SigV4 credentials are issued for API calls

To configure session duration:

1. Navigate to the IAM Identity Center console
2. Go to **Settings** > **Authentication**
3. Under **Session duration**, configure your preferred duration (from 1 hour to 12 hours)
4. Choose **Save changes**

## Disconnecting IAM Identity Center

1. In your Agent Space's console, click **Actions** in the top-right and select **Disconnect from IAM Identity Center**
2. Confirm in confirmation dialog