

# Foglight® Hybrid Cloud Manager for AWS 1.8.0

## **User and Administration Guide**



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## Legend



**WARNING:** A **WARNING** icon indicates a potential for property damage, personal injury, or death.



**CAUTION:** A **CAUTION** icon indicates potential damage to hardware or loss of data if instructions are not followed.



**IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

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# Using Foglight Hybrid Cloud Manager for AWS

Foglight® Hybrid Cloud Manager for AWS is provided to meet the demand for monitoring the hybrid strategy, protecting the business, reducing tasks for users who want to monitor Infrastructure as a Service (IaaS) assets.

Foglight Hybrid Cloud Manager for AWS offers the ability to enable IaaS monitoring across Foglight performance agents and to consolidate performance troubleshooting into a single platform, without the manual configuration and hazards of missing elastic or burst workload changes.

Foglight Hybrid Cloud Manager for AWS simplifies the cloud performance monitoring process, allowing users to see VMware, Hyper-V, and AWS inside of a single platform. By the means of unified workflows, pre-configured rules with notifications, and intelligent analytics, Foglight Hybrid Cloud Manager for AWS unscrambles complex troubleshooting and delivers the information that helps user cut down costs.

This section introduces you to the Foglight Hybrid Cloud Manager for AWS environment, and provides you with essential information.

For more information, see the following topics:

- [Installation requirements](#)
- [AWS Agent Configuration](#)
- [AWS monitoring setup](#)
- [Dashboard location and UI elements](#)

## Installation requirements

Foglight Hybrid Cloud Manager for AWS comes installed on Foglight Evolve and can be installed on a Foglight Management Server.

Foglight Hybrid Cloud Manager for AWS requires the following cartridges for data collection:

- 1 *vUsage-Feedback-5\_8\_2.car*
- 2 *DRP-5.8.2.car*
- 3 *Cloud-Manager-1.8.0.car*
- 4 *OptimizerAutomation-5\_8\_2.car*
- 5 *CommonAnalytics-5\_8\_2.car*
- 6 *Optimizer-5.8.2.car*

While Foglight Evolve comes with these cartridges pre-installed and enabled, a stand-alone Foglight release requires that these components be installed on the Foglight Management Server. The sequence of cartridge installation is important because of their dependencies. For more information about installing Foglight Hybrid Cloud Manager for AWS, and for details about system requirements and version compatibility, see the *Foglight Hybrid Cloud Manager Release Notes*.

# AWS Agent Configuration

## Minimum application privileges

Each AWS Agent monitors the assets inside the selected region. To monitor an AWS environment, AWS Identity and Access (IAM) users need to use an Access Keys to secure REST or HTTP query protocol requests. Create an IAM user with the following privileges to use the Foglight Hybrid Cloud Manager for AWS:

- *AmazonSSMFullAccess*
- *AmazonEC2ReadOnlyAccess*
- *AMReadOnlyAccess*
- *AWSHealthFullAccess*

To collect EC2 Memory metrics and Linux Volume metrics, make sure to assign the following privileges for an IAM user when creating the EC2 instance that will be launched and monitored:

- *AmazonEC2RoleforSSM*
- *CloudWatchFullAccess*

## API used to collect Cost metrics

Foglight Hybrid Cloud Manager for AWS uses the AWS Cost and Usage Report to tracks your AWS usage and provides the estimated charges associated with your AWS account. AWS delivers the AWS Cost & Usage Report (in CSV format) for the Amazon Simple Storage Service (S3) bucket you specified, and updates the reports at least once a day. AWS Agent retrieves the reports programmatically using the Amazon S3 APIs.

If you use the consolidated billing feature in AWS Organizations, this report is available only to the master account and includes activity for all the member accounts that are associated with the master account.

Please refer to the [AWS Cost and Usage Report](#) for more details.

### **To get Account ID (12-digit number)**

- 1 Log in to the AWS Management Console. <https://console.aws.amazon.com>.
- 2 Locate your Account ID
  - a Click **Support** on the navigation bar on the upper-right.
  - b Choose **Support Center**. Your currently signed-in account number (ID) appears in the **Support Center** title bar.

### **To create an AWS Cost and Usage Report**

- 1 Sign in to the AWS Management Console and open the Billing and Cost Management console at <https://console.aws.amazon.com/billing/>
- 2 On the navigation pane, choose **Reports**.
- 3 Choose **Create report**.
- 4 Type the following information, as needed, and then click **Next**.
  - a **Report name**: enter the name of report.
  - b **Additional report details**: select Include resource IDs.

[AWS Cost and Usage Reports](#) > Create report

Step 1  
**Report content**

Step 2  
Delivery options

Step 3  
Review

## Report content

**Report name - required**

**Report includes**

- Account identifiers
- Invoice and Bill Information
- Usage Amount and Unit
- Rates and Cost
- Product Attributes (e.g., instance type, operating system, and region)
- Pricing Attributes (e.g., offer types, and lease lengths)
- Reservation identifiers and related details (for reserved instances only)

**Additional report details**

☒ Include resource IDs ⓘ

**Data refresh settings ⓘ**

☒ Automatically refresh your Cost & Usage Report when charges are detected for previous months with closed bills.

[Cancel](#) [Next](#)

- 5 **S3 bucket:** Enter the name of the **Amazon S3 bucket** where you want the reports to be delivered and then select **Verify**. The bucket must have appropriate permissions.
  - a Click **Sample Policy** link and copy and paste the text in this sample policy into the permissions associated with your Amazon S3 bucket.

## Delivery options

In order to receive AWS Cost & Usage Reports, you must have an Amazon S3 bucket created and configured with the appropriate access permissions. To ensure that your Amazon S3 bucket has the appropriate permissions, you can copy and paste the text in this [sample policy](#) into the permissions associated with your Amazon S3 bucket or learn more about S3 permissions [here](#).

**S3 bucket - required**

 [Verify](#)

**Report path prefix**

 ⓘ

**Time granularity**

☐ Hourly

☒ Daily

The time granularity on which report data are measured and displayed.

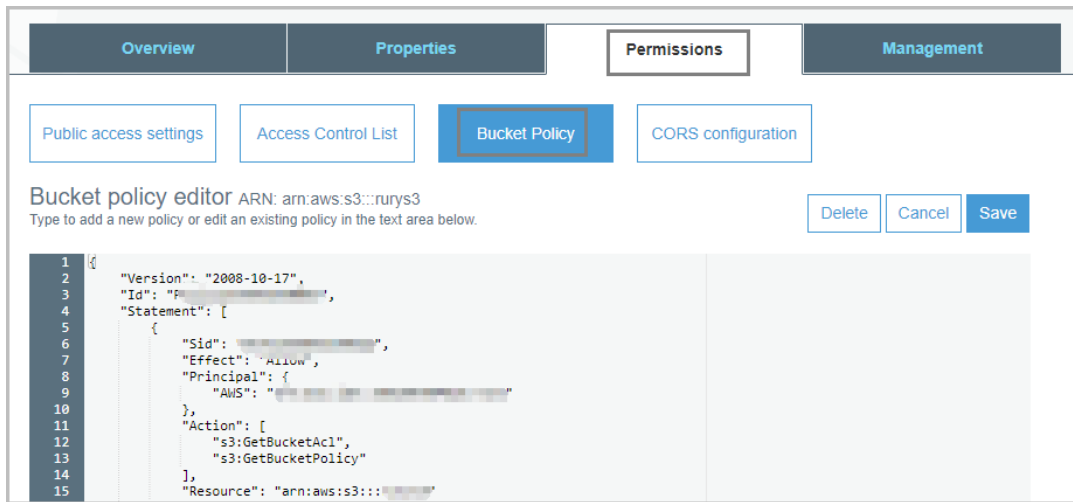
**Report versioning**

☐ Create new report version

☒ Overwrite existing report

- b Open a new Page to access your S3 bucket, click **Permissions** and then **Bucket policy**. Paste the text in this sample policy into the permissions associated with your Amazon S3 bucket.





- c Below is an example for the S3 bucket policy. Update the following descriptions in bold according to your AWS Account and S3 bucket.

- AWS monitoring user ARN (in line 32):  
`"arn:aws:iam::88888888:user/exampleAWSUserTest":`  
 Format: `"arn:aws:iam::your AWS Account ID:user/your monitoring AWS username"`  
 To get the AWS user ARN from AWS Console, select IAM, and then click the AWS user which is configured under the Foglight AWS Agent.
- S3 bucket ARN (in line 15, 26, and 35): `"arn:aws:s3:::exampleBucketNameTest":`  
 Format: `arn:aws:s3:::your bucket name`  
 Change the `exampleBucketNameTest` to your S3 bucket name.

```
{
  "Version": "2008-10-17",
  "Id": "PolicyForFoglightAWSCostReport",
  "Statement": [
    {
      "Sid": "StmtForAWSBillingReportGet",
      "Effect": "Allow",
      "Principal": {
        "Service": "billingreports.amazonaws.com"
      },
      "Action": [
        "s3:GetBucketAcl",
        "s3:GetBucketPolicy"
      ],
      "Resource": "arn:aws:s3:::exampleBucketNameTest"
    },
    {
      "Sid": "StmtForAWSBillingReportPut",
```

```

        "Effect": "Allow",
        "Principal": {
            "Service": "billingreports.amazonaws.com"
        },
        "Action": [
            "s3:PutObject"
        ],
        "Resource": "arn:aws:s3:::exampleBucketNameTest/*"
    },
    {
        "Sid": "StmtForAWSUserGet",
        "Effect": "Allow",
        "Principal": {
            "AWS": "arn:aws:iam::88888888:user/exampleAWSUserTest"
        },
        "Action": "s3:GetObject",
        "Resource": "arn:aws:s3:::exampleBucketNameTest/*"
    }
]
}

```

- 6 **Report path prefix** - *Optional*: Enter the report path prefix that you want to name of your report.
- 7 Time granularity: Choose **Daily**.
- 8 **Report versioning**: Choose "Overwrite existing report".
- 9 **Enable report data integration for**: Leave blank.
- 10 **Compression type**: Choose GZIP or ZIP
- 11 Click **Next**, after you have reviewed the settings for your report, choose **Review and Complete**.

## AWS monitoring setup

A complete setup includes the following two steps:

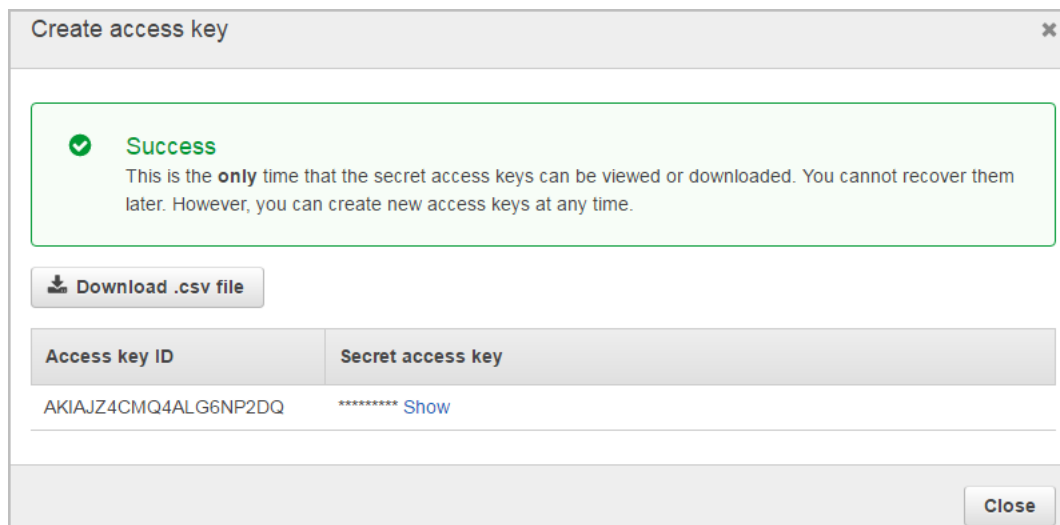
- 1 Get the authentication information through AWS Management Console. For more information, see [Getting authentication information through console](#) on page 11.
- 2 Create an AWS Agent on the Foglight Management Server. For more information, see [Creating an AWS Agent](#) on page 11.
- 3 (Optional) Configure the interval of data collection. For more information, see [Configuring data collection interval](#) on page 12.

# Getting authentication information through console

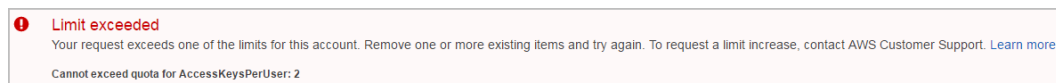
**To create and retrieve a user's Access Keys through the AWS IAM console:**

- 1 Log in to the AWS IAM console at: <https://console.aws.amazon.com/iam/>.
- 2 Click **IAM** under the *Security, Identity & Compliance* column.
- 3 On the left navigation panel, click **Users**.  
The *Resource Groups* view opens on the right.
- 4 In the *Resource Groups* view, click the user which Access Key is to be retrieved.  
The *User Summary* view opens.
- 5 In the *User Summary* view, click **Security credentials**, then the *Sign-in credentials* view opens.
- 6 In the *Access keys* area, click **Create access key**.

The **Create access key** dialog box appears and shows the access key and Secret access key.



- 7 Click **Download .csv file** to keep the access key and secret access key somewhere safe.
- 8 (Optional) If you see the *Limit exceeded* message, click the ✕ button next to the **Status** column to delete an access key that is not being used. Then repeat [Step 6](#) to create and retrieve a new access key.



## Creating an AWS Agent

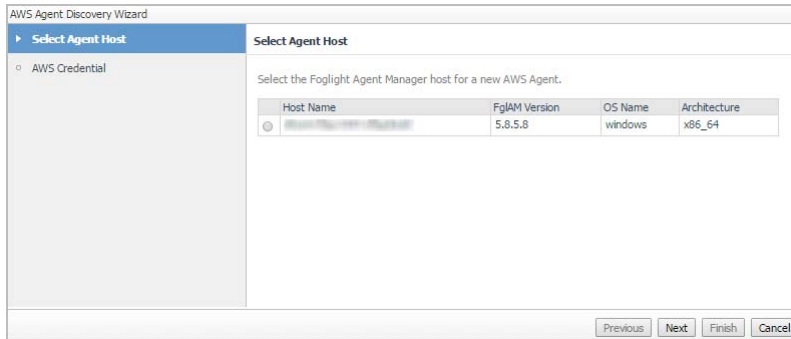
**To create an AWS agent:**

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 In the **Cloud Manager** dashboard, click **Administration**, and then click **Add** or **Create AWS Agent**.

The **Agent Setup Wizard** dialog box opens.



- 5 In the *Select Agent Host* view, select the agent manager on which the new agent is to be deployed, and then click **Next**.
- 6 In the *AWS Credential* view, specify the following values, as needed, then click **Finish**.
  - *Account Alias*: The display name of this account.
  - *Access Key ID*: The access key retrieved in [Getting authentication information through console](#).
  - *Secret Access Key*: The secret access key retrieved in [Getting authentication information through console](#).
  - *Collect Memory Metric*: Select this option to enable the collection of instance memory metrics. The default value is disabled.
  - *Collect Linux Volume Utilization*: Select this option to enable the collection of Linux volume utilization. The default value is disabled.
  - *Specify an agent name (Optional)*: Specify the name of agent.
  - *Configure regions to be monitored (Optional)*: Select AWS regions for monitoring. All regions will be monitored if this field is not configured.
  - *Configure Account Cost to Monitor*: Configure the Cost Metrics collection. Collections will start only after the AWS Cost and Usage Report are created on the AWS Console. See [To create an AWS Cost and Usage Report](#). For more details, see [Configure Account Cost to Monitor](#): on page 50.
  - *Configure Proxy (Optional)*: Configure the proxy setting when the Agent Host requires a proxy connection to the Internet. For more details, see [Configure Proxy \(Optional\)](#): on page 51.

The new AWS Agent is created, and its data is to be displayed on the **Monitoring** tab after a few minutes.

## Configuring data collection interval

Foglight Hybrid Cloud Manager enables you to configure the interval for data collection using the *Agent Status* dashboard.

### **To configure the data collection interval:**

- 1 On the navigation panel, under **Dashboards**, select **Administration > Agents > Agent Status**.
- 2 On the *Agent Status* dashboard, select the AWS agent that you want to monitor, and then click **Edit Properties**.

The *Edit Properties* view opens.

**Metric Collect Configuration**

Collect Memory Metric: ☒ True ☐ False

Collect Volume Metric: ☐ True ☒ False

---

**Additional Configurations**

Collection Interval Offset:

---

**Specific Collected Regions**

Region List:     ⓘ Changing Secondary Property lists have global implications

---

**EC2 Instance White List**

White Instance:     ⓘ Changing Secondary Property lists have global implications

---

**EC2 Instance Black List**

Black Instance:     ⓘ Changing Secondary Property lists have global implications

---

**Data Collection Scheduler**

Collector Config:     ⓘ Changing Secondary Property lists have global implications

- 3 Select *True* for *Collect Memory Metric* and *Collect Volume Metric*, and then specify a value for *Collection Interval Offset*.


Quest highly recommends setting the *Collector Config* (also knowns as *Collection interval*) to a value greater than 10 minutes. If the Collection interval is less than 10 minutes, AWS agent cannot collect metrics from AWS Cloud Watch as AWS Cloud Watch has a 10-minute delay. If you insist on setting this interval less than 10 minutes, ensure the following:

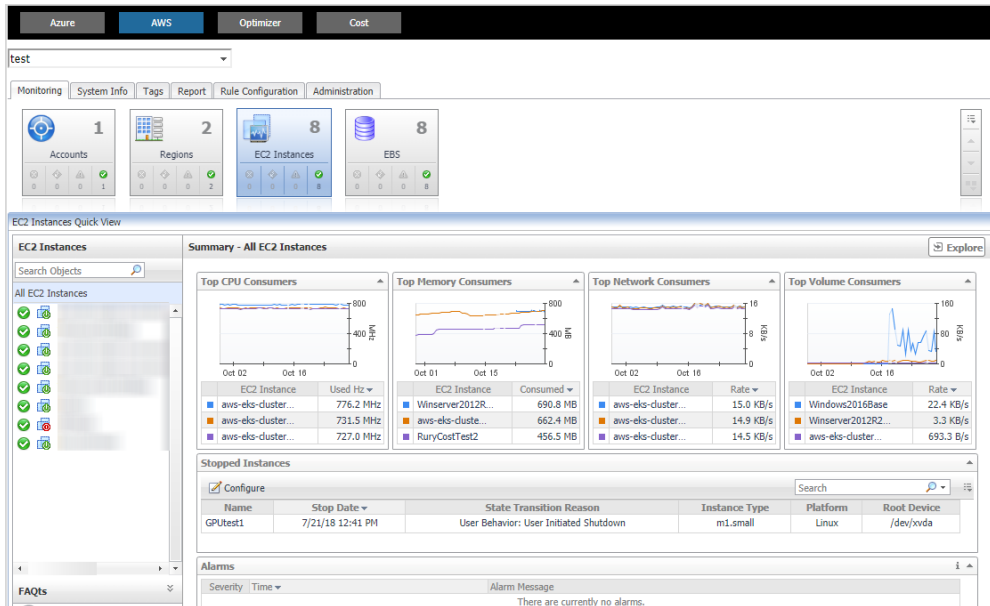
- *Collection Interval Offset* must be set to a non-negative integer.
- The configuration should follow comply with the formula:  $(n+1) \times l \geq 10$  minutes.
  - *n* represents the value of *Collection Interval Offset*.
  - *l* represents the value of *Collector Config* (in minutes).

## Dashboard location and UI elements

After installing Foglight Hybrid Cloud Manager for AWS, the **Cloud Manager** entry appears under *Homes*.

### To access the Cloud Manager dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**, and then click **AWS**.  
The **Cloud Manager** dashboard opens.



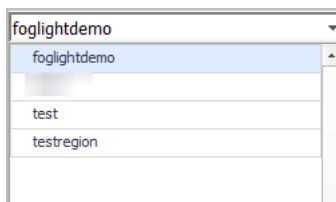
The **Cloud Manager** dashboard consists of the following UI elements:

- [Group selector](#)
- [Actions bar](#)
- [Menu bar](#)
- [Quick view](#)

## Group selector

The Group selector is located at the top of the dashboard and allows you to select the AWS environment that you want to monitor.

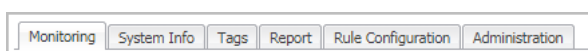
Figure 1. Group Selector



## Actions bar

The actions bar at the top of the Cloud Manager dashboard contains the [Monitoring Tab](#), the [System Info Tab](#), the [Tags Tab](#), the [Report Tab](#), the [Rule Configuration Tab](#), and the [Administration Tab](#).

Figure 2. Actions bar



# Menu bar

The Menu bar contains the following tiles: *Regions monitoring*, *Account monitoring*, *EC2 Instances Monitoring*, *EBS monitoring*, and .

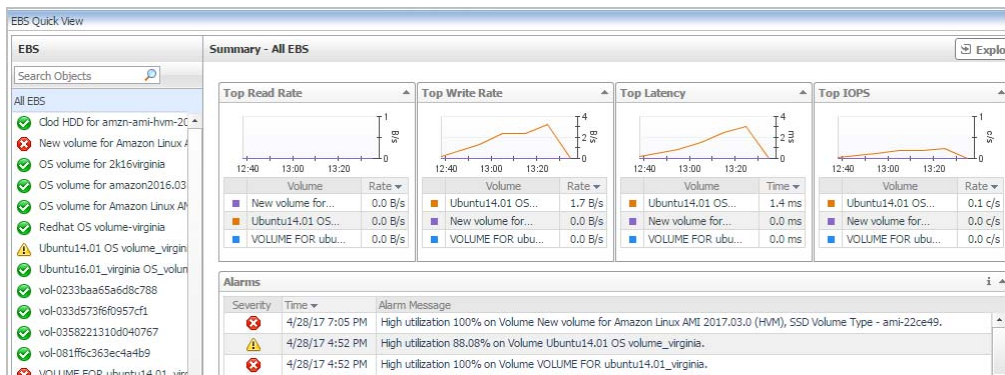
Figure 3. Menu bar



## Quick view

The quick view is located on the lower part of the **Cloud Manager** dashboard, which is updated based on the tab selected on the Menu bar or the Actions bar.

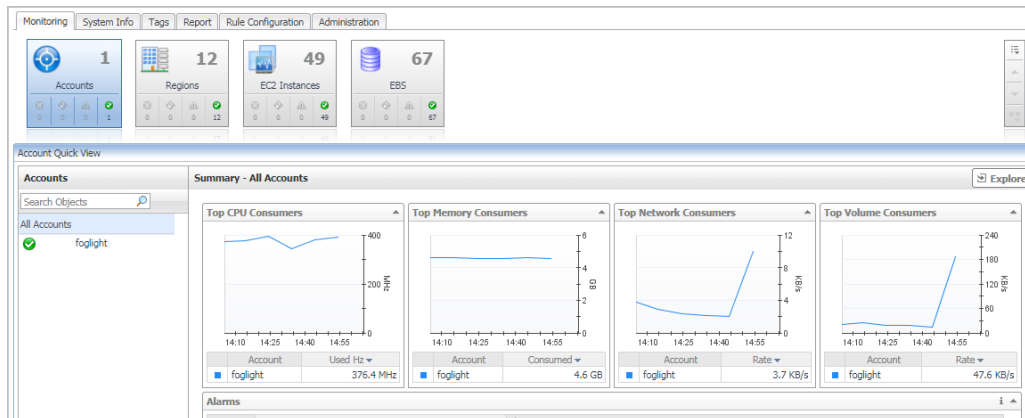
Figure 4. Quick view



# Monitoring Tab

When navigating to the **Cloud Manager** dashboard for the first time, the **Monitoring** tab appears. The **Monitoring** tab allows you to select a monitoring object or a group of objects, such as regions, accounts, EC2 instances, or EBS, and review the data associated with your selection.

**Figure 5. Monitoring dashboard**



## To access the Monitoring dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**, and then click **AWS**.  
The **Cloud Manager** dashboard opens
- 4 On the actions bar, click **Monitoring**.
- 5 Select the **Regions**, **Accounts**, **EC2 Instances**, or **EBS** tile from the top left.

For more information, see the following topics:

- [Regions monitoring](#)
- [Account monitoring](#)
- [EC2 Instances Monitoring](#)
- [EBS monitoring](#)

## Regions monitoring

The Regions view shows the data collected about a specific region or all AWS regions. For more information, see the following topics:

- [Regions view](#)

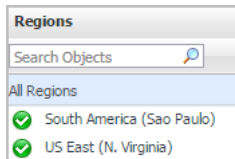


- [Summary - All Regions view](#)
- [Explore - All Regions view](#)
- [Region Summary view](#)
- [Region Explore view](#)

## Regions view

The **Regions** tree view lists the regions existing in your AWS environment and shows their state. This view appears on the left when you select the **Regions** tile in the Actions bar.

Figure 6. Regions view



Selecting the **All Regions** node displays the [Summary - All Regions view](#) on the right. Similarly, selecting a region node shows region-specific metrics in the [Region Summary view](#) on the right.

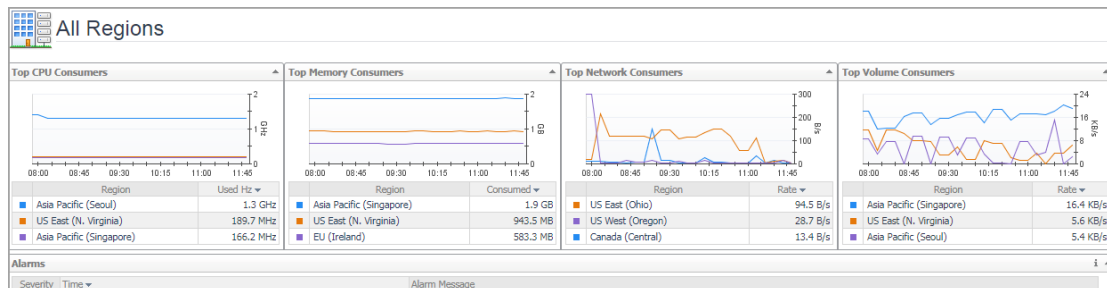
Table 1. Description of the View

<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm severity.</b> The state of the most recent alarm raised against the associated virtual machine.</li> <li>• <b>All Regions.</b> A parent node for the regions that appear in this view.</li> <li>• <b>Region.</b> The region name.</li> </ul>
<b>Where to go next</b>	<p>Drill down on:</p> <ul style="list-style-type: none"> <li>• <b>All Regions.</b> Shows the <a href="#">Summary - All Regions view</a> on the right.</li> <li>• <b>Region.</b> Shows the <a href="#">Region Summary view</a> on the right.</li> </ul>

## Explore - All Regions view

The Explore - All Regions view appears when you click **Explore** in the [Summary - All Regions view](#).

Figure 7. Explore - All Regions view



This view consists of the following embedded views:

- [Alarms](#)
- [Top 3 Consumers](#)

Table 2. Alarms

<b>Description</b>	Lists the alarms generated against the selected virtual machine.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time.</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

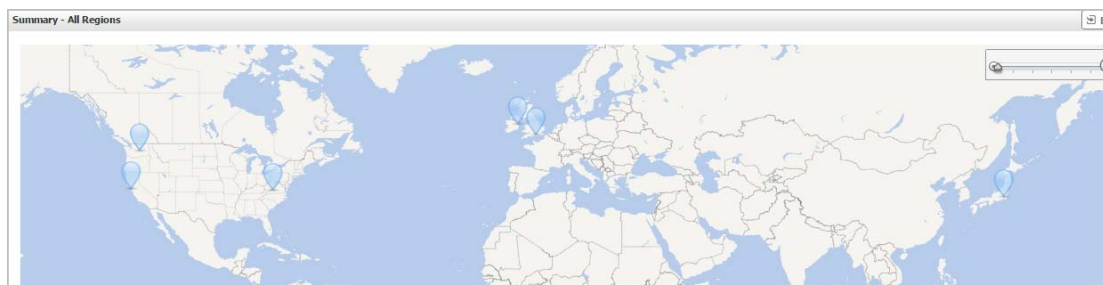
Table 3. Top 3 Consumers

<b>Description</b>	Shows the top three consumers in all regions.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>CPU Consumers.</b> Indicates top 3 CPU Utilization usage regions.</li> <li>• <b>Memory Consumers.</b> Indicates top 3 memory usage regions.</li> <li>• <b>Network Consumers.</b> Indicates top 3 network usage regions.</li> <li>• <b>Volume Consumers.</b> Indicates top 3 volume usage regions.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• Click the Region to drill down to region explore view.</li> </ul>

## Summary - All Regions view

The **Summary - All Regions** view appears on the right when you select **All Regions** in the [Regions view](#).

Figure 8. Summary - All Virtual Machines view



Hover over any bubble in this graph to display a dwell, showing *Accounts*, *EC2 Instances*, and *EBSs*.

Figure 9. Region dwell

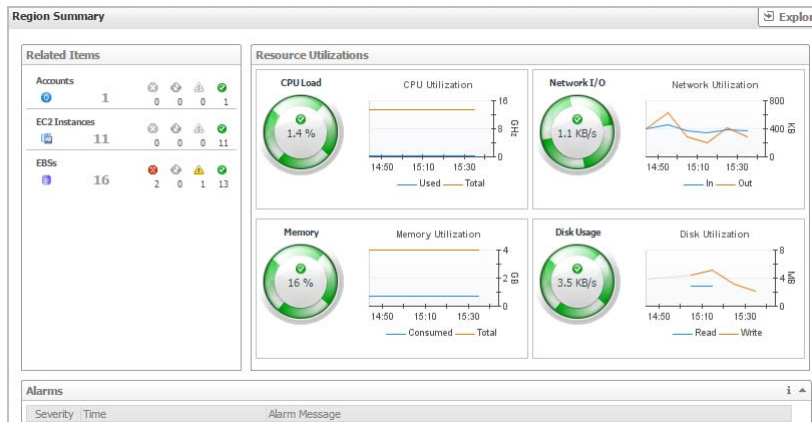
Related Items					
Accounts	1	0	0	0	1
EC2 Instances	11	0	0	0	11
EBSs	16	2	0	1	13

Click any bubble in this graph to open the [Region Summary view](#), showing *Related Items*, *Resource Utilization*, and *Alarms*.

# Region Summary view

The **Region Summary** view appears on the right when you select a region in the [Regions view](#).

Figure 10. Region Summary view



This view consists of the following embedded views:

- [Alarms](#)
- [Related Items](#)
- [Resource Utilization](#)

Table 4. Alarms





<b>Description</b>	Lists the alarms generated against the selected virtual machine.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time.</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

Table 5. Related Items




<b>Description</b>	Shows the numbers and states of the selected regions.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>EC2 Instances.</b> The number of the ECS2 instances that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> <li>• <b>EBSs.</b> The number of the EBSs that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> <li>• <b>Accounts.</b> The number of the accounts that are that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> </ul>
<b>Where to go next</b>	Drill down on:

Table 5. Related Items

- **EC2 Instances.** Displays the **EC2 Instances Inventory** dwell, showing the name and state of the associated Resource Groups.

EC2 Instances Inventory	
Name ▲	State
 Amazon_linux_vi...	✓
 amzn-ami-hvm-20...	✓
 for test _virgi...	✓
 redhat_Virginia...	✓

- **EBSs.** Displays the **EBS Inventory** dwell, showing the name and state of the associated virtual machine.

EBS Inventory	
Name ▲	State
 Clod HDD for am...	✓
 New volume for ...	✗
 OS volume for 2...	✓

- **Accounts.** Displays the **Other Items Inventory** dwell, showing the name and state of the associated accounts.


Other Items Inventory	
Name ▲	State
 test	✓

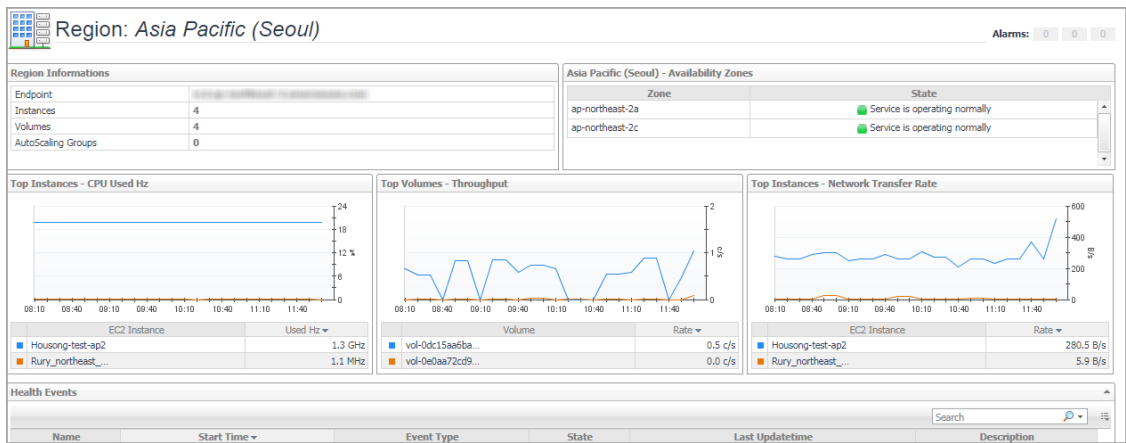
Table 6. Resource Utilization

<b>Description</b>	Shows a table, showing the information about the resource utilization associated with the selected region.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Disk Usage.</b> Indicates total Disk Usage throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>Network I/O.</b> Indicates total network throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>CPU Load.</b> Shows the average CPU Load on all EC2 Instances for the Region based on the total capacity.</li> <li>• <b>Memory.</b> Shows the Memory Utilization summary for the specified Region based on the total capacity.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>CPU Load.</b> Displays the <b>CPU Load</b> dialog box, including <i>CPU Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Memory.</b> Displays the <b>Memory Usage</b> dialog box, including <i>Memory Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Network I/O.</b> Displays the <b>Network I/O</b> view, showing the metrics of <i>network Usage (in bps)</i> and <i>Baseline</i>.</li> <li>• <b>Disk Usage.</b> Display the <b>Disk Usage</b> view, showing the metrics of <i>disk Usage</i> and <i>Baseline</i>.</li> </ul>

## Region Explore view

The *Region Explore* view opens when you click **Explore** in the [Region Summary view](#).

Figure 11. Region Explore view



This view consists of the following embedded views:

- [Region Information](#)
- [Region Availability Zones](#)
- [Top Consumers](#)
- [Health Events](#)

Table 7. Region Information

<b>Description</b>	Shows region basic information, include endpoints, instances, volumes, and auto scaling groups.
--------------------	---

Table 8. Region Availability Zones

<b>Description</b>	Shows the state of the availability zones.
--------------------	--

Table 9. Top Consumers

<b>Description</b>	Show the top 3 consumers at this region.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Top Instances - CPU Used Hz.</b> Indicates top 3 CPU Usage at this region.</li><li>• <b>Top Volumes - Throughput.</b> Indicates top 3 volume throughput at this region.</li><li>• <b>Top Instances - Network Transfer Rate.</b> Indicates top 3 network transfer rate at this region.</li></ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"><li>• Click the instance name to drill down to instance explore view.</li><li>• Click the volume name to drill down to volume explore view.</li></ul>

Table 10. Health Events

<b>Description</b>	Shows health events belong to this region, include the event name, start time, event type, and so on.
--------------------	---

# Account monitoring

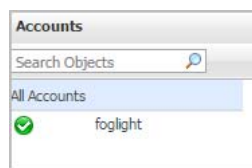
The Accounts view shows the data collected about a specific account created by IAM users. For more information, see the following topics:

- [Accounts view](#)
- [Summary - All Accounts view](#)
- [Account Summary view](#)

## Accounts view

The **Accounts** tree view lists the account existing in your AWS environment and shows their state. This view appears on the left when you select the **Accounts** tile in the Actions bar.

Figure 12. Accounts view



Selecting the **All Accounts** node displays overall resource utilization for all accounts in your AWS environment and the elements that consume the highest amount of system resources in the [Summary - All Accounts view](#) on the right. Similarly, selecting an account node shows account-specific metrics in the [Account Summary view](#) on the right.

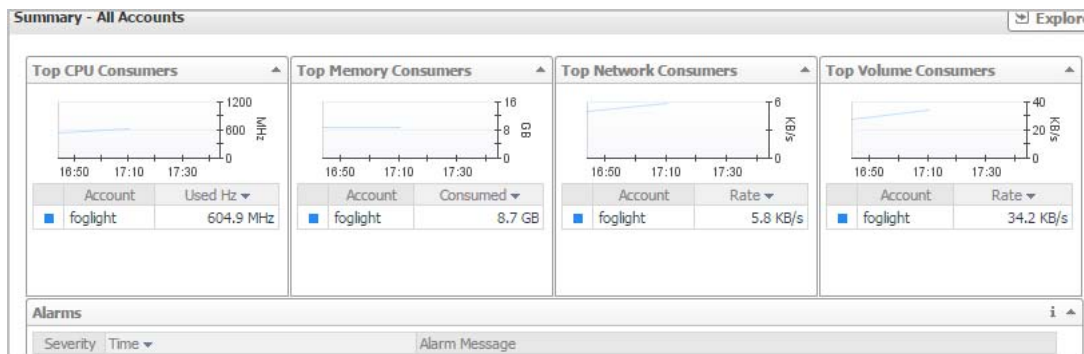
Table 11. Description of the View

<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Alarm severity.</b> The state of the most recent alarm raised against the associated account.</li><li>• <b>All Accounts.</b> A parent node for the account object instances that appear in this view.</li><li>• <b>Account.</b> The account name.</li></ul>
<b>Where to go next</b>	<p>Drill down on:</p> <ul style="list-style-type: none"><li>• <b>All Accounts.</b> Shows the <a href="#">Summary - All Accounts view</a> on the right.</li><li>• <b>Account.</b> Shows the <a href="#">Account Summary view</a> on the right.</li></ul>

## Summary - All Accounts view

The **Summary - All Accounts** view displays overall resource utilization information for a group of accounts and shows the elements that consume the highest amount of system resources. This view appears on the right when you select **All Accounts** in the [Accounts view](#).

Figure 13. Summary - All Accounts view



This view consists of the following embedded views:

- [Alarms](#)
- [Top CPU Consumers](#)
- [Top Network Consumers](#)
- [Top Memory Consumers](#)
- [Top Volume Consumers](#)

Table 12. Alarms

<b>Description</b>	Lists the alarms generated against the monitored account.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time:</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

Table 13. Top CPU Consumers

<b>Description</b>	Shows the top three accounts with the highest average CPU utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Utilization.</b> The amount of CPU processing speed each of the top three CPU consumers spend on executing system code and user programs, during the selected time range.</li> <li>• <b>Account.</b> The name of the account.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Account.</b> Displays the fundamental account information, including <i>Resource Information, CPU, Memory, Network, and Storage</i>.</li> </ul>

Table 14. Top Network Consumers

<b>Description</b>	Shows the top three accounts that are consuming most network bandwidth.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Rate.</b> The rate at which the top three network consumers transfer data to or from the network during the selected time range.</li> <li>• <b>Account.</b> The name of the account that is one of the top three network consumers.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Account.</b> Displays the fundamental account information, including <i>Resource Information, CPU, Memory, Network, and Storage</i>.</li> </ul>

**Table 15. Top Memory Consumers**

<b>Description</b>	Shows the top three accounts with the highest average memory utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Account.</b> The name of the virtual machine that is one of the top three memory consumers.</li> <li>• <b>Rate.</b> The amount of memory the top three memory consumers use during the selected time range.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Account or Rate.</b> Displays the fundamental account information, including <i>Resource Information</i>, <i>CPU</i>, <i>Memory</i>, <i>Network</i>, and <i>Storage</i>.</li> </ul>

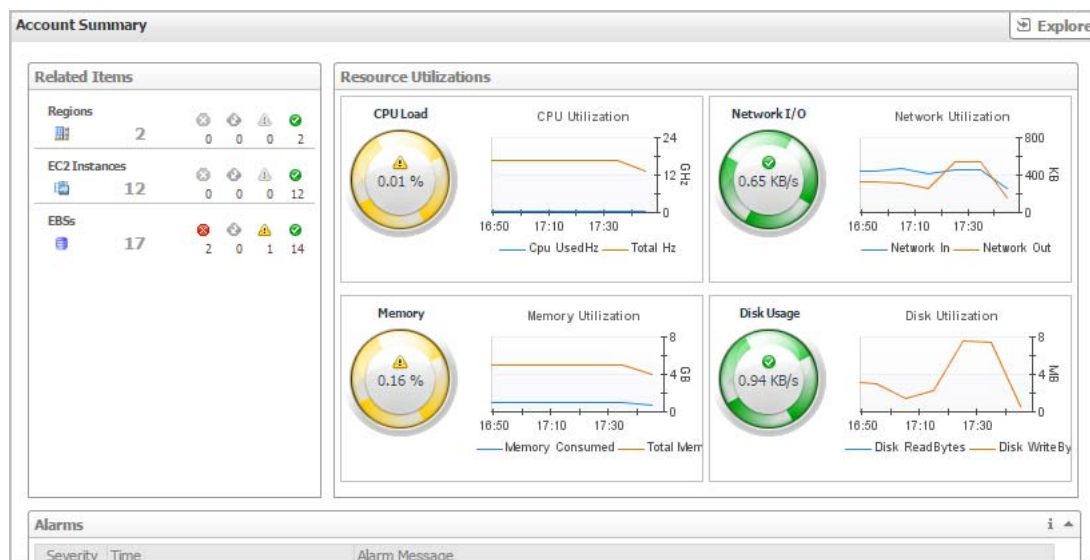
**Table 16. Top Volume Consumers**

<b>Description</b>	Shows the top three accounts with the highest available disk space.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Account.</b> The name of the account that is one of the top three disk consumers.</li> <li>• <b>Rate.</b> The rate at which the top three disk consumers read or write data to the storage during the selected time range.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Account or Rate.</b> Displays the fundamental VM information, including <i>Resource Information</i>, <i>CPU</i>, <i>Memory</i>, <i>Network</i>, and <i>Storage</i>.</li> </ul>

## Account Summary view

The **Account Summary** view shows the overall resource utilization and the amounts of system resource consumption for an account. This view appears on the right when you select a virtual machine in the [Accounts](#) view.

**Figure 14. Account Summary view**



This view consists of the following embedded views:

- [Alarms](#)
- [Resource Utilization](#)
- [Related Items](#)



**Table 17. Alarms**

<b>Description</b>	Lists the alarms generated against the selected account.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time.</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

**Table 18. Resource Utilization**





<b>Description</b>	Shows the numbers and states of the selected account running on the monitored AWS environment.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Disk Usage.</b> Indicates total Disk Usage throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>Network I/O.</b> Indicates total network throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>CPU Load.</b> Shows the average CPU Load on all EC2 Instances for the Region based on the total capacity.</li> <li>• <b>Memory.</b> Shows the Memory Utilization summary for the specified Region based on the total capacity.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>CPU Load.</b> Displays the <b>CPU Load</b> dialog box, including <i>CPU Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Memory.</b> Displays the <b>Memory Usage</b> dialog box, including <i>Memory Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Network I/O.</b> Displays the <b>Network I/O</b> view, showing the metrics of <i>network Usage (in bps)</i> and <i>Baseline</i>.</li> <li>• <b>Disk Usage.</b> Display the <b>Disk Usage</b> view, showing the metrics of <i>disk Usage</i> and <i>Baseline</i>.</li> </ul>

**Table 19. Related Items**




<b>Description</b>	Shows the resource consumption for the selected account, broken down into three simple views.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>EC2 Instances.</b> The number of the ECS2 instances that are associated with the selected account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> <li>• <b>EBSs.</b> The number of the EBSs that are associated with the selected account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> <li>• <b>Regions.</b> The number of the regions that are that are associated with the selected account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).</li> </ul>
<b>Where to go next</b>	Drill down on:

Table 19. Related Items


- **EC2 Instances.** Displays the **EC2 Instances Inventory** dwell, showing the name and state of the associated Resource Groups.

EC2 Instances Inventory	
Name ▲	State
 Amazon_linux_vi...	✓
 amzn-ami-hvm-20...	✓
 for test _virgi...	✓
 redhat_Virginia...	✓

- **EBSs.** Displays the **EBS Inventory** dwell, showing the name and state of the associated virtual machine.

EBS Inventory	
Name ▲	State
 Clod HDD for am...	✓
 New volume for ...	✗
 OS volume for 2...	✓

- **Regions.** Displays the **Regions Inventory** dwell, showing the name and state of the associated accounts.

Regions Inventory	
Name ▲	State
 South America (...)	✓
 US East (N. Vir...	✓

## EC2 Instances Monitoring

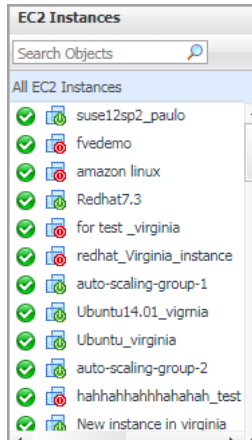
The EC2 Instances view shows the data collected about a specific EC2 instance or all EC2 instances. For more information, see the following topics:

- [EC2 Instances view](#)
- [Summary - All Accounts view](#)
- [Account Summary view](#)

### EC2 Instances view

The **EC2 Instances** tree view lists the EC2 instances existing in your AWS environment and shows their state. This view appears on the left when you select the **EC2 Instances** tile in the Actions bar.

Figure 15. EC2 Instances view



Selecting the **All EC2 Instances** node displays all EC2 instances in the [Summary - All EC2 Instances view](#) on the right. Similarly, selecting an EC2 instance shows EC2 instance-specific metrics in the [EC2 Instance Summary view](#) on the right.

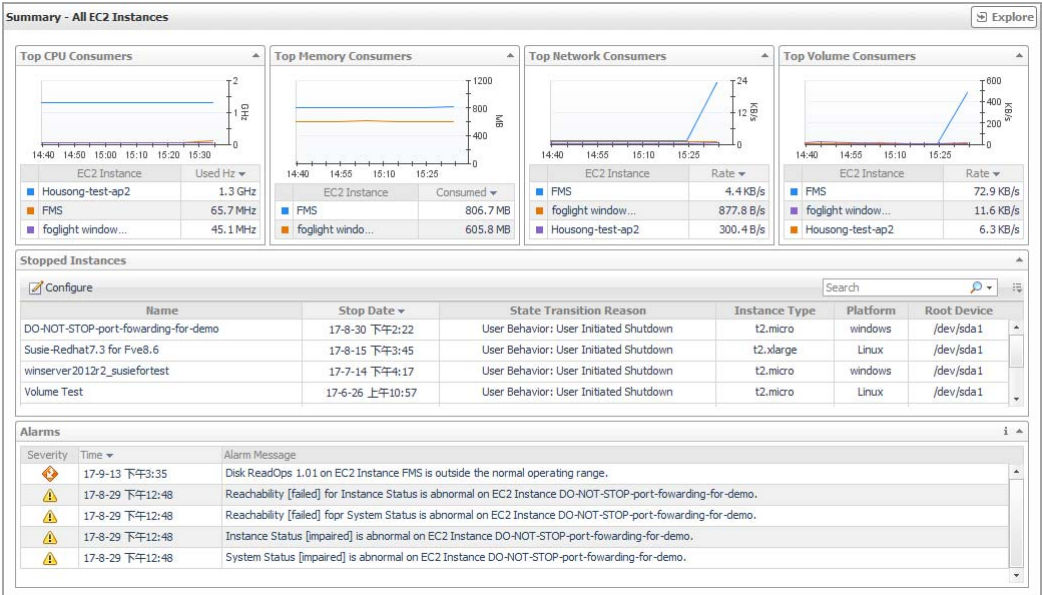
Table 20. Description of the View

<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Alarm severity.</b> The state of the most recent alarm raised against the associated EC2 instance.</li><li>• <b>All EC2 Instances.</b> A parent node for the EC2 instances that appear in this view.</li><li>• <b>EC2 Instance.</b> The EC2 instance name.</li><li>• <b>EC2 Instance Power state.</b> The EC2 instance power state.</li></ul>
<b>Where to go next</b>	<p>Drill down on:</p> <ul style="list-style-type: none"><li>• <b>All EC2 Instances.</b> Shows the <a href="#">Summary - All EC2 Instances view</a> on the right.</li><li>• <b>EC2 Instance.</b> Shows the <a href="#">EC2 Instance Summary view</a> on the right.</li></ul>

## Summary - All EC2 Instances view

The **Summary - All EC2 Instances** view displays overall EC2 instance information. This view appears on the right when you select **All EC2 Instances** in the [EC2 Instances view](#).

Figure 16. Summary - All EC2 Instances view



This view consists of the following embedded views:

- [Alarms](#)
- [Top CPU Consumers](#)
- [Top Network Consumers](#)
- [Top Memory Consumers](#)
- [Top Volume Consumers](#)
- [Stopped Instances](#)

Table 21. Alarms

<b>Description</b>	Lists the alarms generated against the monitored virtual machine.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Description.</b> An explanation about why the alarm occurred.</li><li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li><li>• <b>Title:</b> Indicates the alarm title.</li><li>• <b>Ack'ed.</b> Indicates whether the alarm was acknowledged.</li></ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"><li>• <b>Description, Severity, Title, or Ack'ed.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li></ul>

Table 22. Top CPU Consumers

<b>Description</b>	Shows the top three EC2 instances with the highest average CPU utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Utilization.</b> The amount of CPU processing speed each of the top three CPU consumers spend on executing system code and user programs, during the selected time range.</li><li>• <b>EC2 Instance.</b> The name of the EC2 instance.</li></ul>

**Table 23. Top Network Consumers**

<b>Description</b>	Shows the top three EC2 instances that are consuming most network bandwidth.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Rate.</b> The rate at which the top three network consumers transfer data to or from the network during the selected time range.</li> <li>• <b>EC2 Instance.</b> The name of the EC2 instance that is one of the top three network consumers.</li> </ul>

**Table 24. Top Memory Consumers**

<b>Description</b>	Shows the top three EC2 instances with the highest average memory utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>EC2 Instance.</b> The name of the EC2 instance that is one of the top three memory consumers.</li> <li>• <b>Rate.</b> The amount of memory the top three memory consumers use during the selected time range.</li> </ul>

**Table 25. Top Volume Consumers**

<b>Description</b>	Shows the top three EC2 instances with the highest average volume utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Rate.</b> The rate at which the top three volume consumers transfer data to or from the network during the selected time range.</li> <li>• <b>EC2 instance.</b> The name of the EC2 instance that is one of the top three volume consumers.</li> </ul>

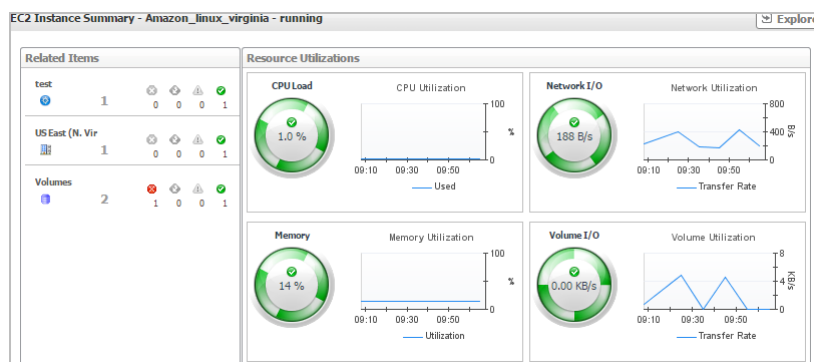
**Table 26. Stopped Instances**

<b>Description</b>	Shows stopped instances based on the configurations.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Table.</b> Shows the instance name, stop date, reason and so on.</li> <li>• <b>Configure.</b> Configures the days to judge which instances are stopped instances.</li> </ul>

## EC2 Instance Summary view

The **EC2 Instance Summary** view shows the overall information of the selected EC2 instance. This view appears on the right when you select an EC2 instance in the [EC2 Instances view](#).

**Figure 17. EC2 Instance Summary view**



This view consists of the following embedded views:

- [Alarms](#)

- [Related Items](#)

**Table 27. Alarms**

<b>Description</b>	Lists the alarms generated against the selected EC2 instance.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time.</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

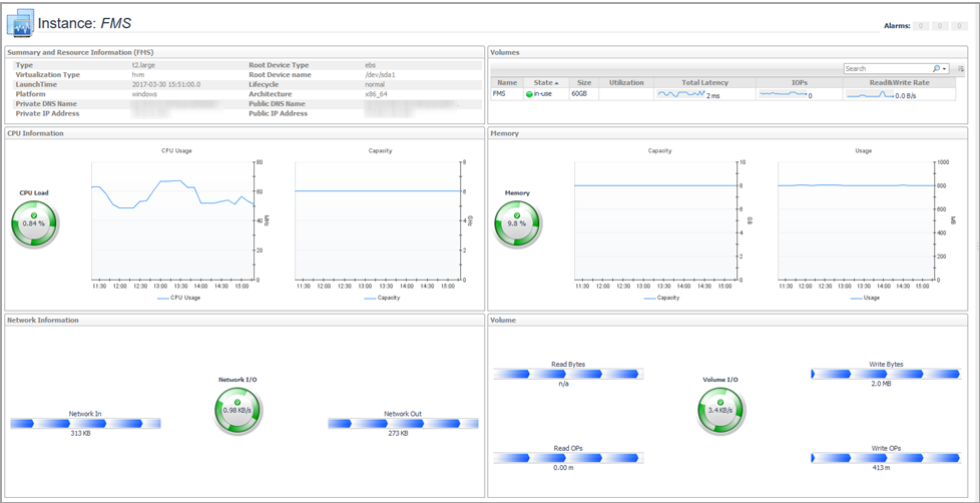
**Table 28. Related Items**

<b>Description</b>	Shows the numbers and states of the selected resource group on the monitored AWS environment.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Disk Usage.</b> Indicates total Disk Usage throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>Network I/O.</b> Indicates total network throughput across all EC2 Instances monitored by the Region.</li> <li>• <b>CPU Load.</b> Shows the average CPU Load on all EC2 Instances for the Region based on the total capacity.</li> <li>• <b>Memory.</b> Shows the Memory Utilization summary for the specified Region based on the total capacity.</li> </ul>
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"> <li>• <b>CPU Load.</b> Displays the <b>CPU Load</b> dialog box, including <i>CPU Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Memory.</b> Displays the <b>Memory Usage</b> dialog box, including <i>Memory Utilization</i> and <i>Baseline</i>.</li> <li>• <b>Network I/O.</b> Displays the <b>Network I/O</b> view, showing the metrics of <i>network Usage (in bps)</i> and <i>Baseline</i>.</li> </ul> <p><b>Disk Usage.</b> Display the <b>Disk Usage</b> view, showing the metrics of <i>disk Usage</i> and <i>Baseline</i>.</p>

## Explore - Instance view

The **Explore - Instance** view appears when you click **Explore** in the [EC2 Instance Summary view](#).

Figure 18. Explore - Instances view



This view consists of the following embedded views:

- [Summary and Resource Information](#)
- [Volumes](#)
- [CPU Information](#)
- [Memory](#)
- [Network Information](#)

Table 29. Volumes

<b>Description</b>	Shows the volumes that used by this instance. Table will show the name, state, size, utilization and so on.
<b>Where to go next</b>	Drill down on: <ul style="list-style-type: none"><li>• <b>Description, Severity, Title, or Ack'ed.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li></ul>

Table 30. CPU Information

<b>Description</b>	.Shows CPU capacity, usage, and utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Utilization.</b> Jumps to the <b>Utilization</b> dialog box.</li><li>• <b>Usage.</b> Jumps to the <b>Usage</b> dialog box.</li><li>• <b>Capacity.</b> Jumps to the <b>Capacity</b> dialog box.</li></ul>

Table 31. Memory

<b>Description</b>	Shows Memory capacity, usage and utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Utilization.</b> Jumps to the <b>Utilization</b> dialog box.</li><li>• <b>Usage.</b> Jumps to the <b>Usage</b> dialog box.</li><li>• <b>Capacity.</b> Jumps to the <b>Capacity</b> dialog box.</li></ul>

Table 32. Network Information

<b>Description</b>	Shows Network in, Network out, and transfer rate.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Network in:</b> Jumps to the <b>Network in</b> dialog box.</li><li>• <b>Network out.</b> Jumps to the <b>Network out</b> dialog box.</li><li>• <b>Transfer rate.</b> Jumps to the <b>Transfer rate</b> dialog box.</li></ul>

Table 33. Summary and Resource Information

<b>Description</b>	Shows the basic information about the selected EC2 instance, including EC2 instance type, name and type of the root device, DNS name, IP address and so on.
--------------------	---

Table 34. Volume

<b>Description</b>	Shows Total volume read bytes, write bytes, and utilization.
<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Read bytes:</b> Jumps to the <b>Read bytes</b> dialog box.</li><li>• <b>Write bytes.</b> Jumps to the <b>Write bytes</b> dialog box.</li><li>• <b>Utilization.</b> Jumps to the <b>Utilization</b> dialog box.</li></ul>

# EBS monitoring

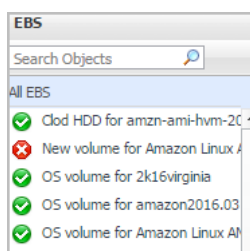
The EBS view shows the data collected about a specific EBS or all EBSs. For more information, see the following topics:

- [EBS view](#)
- [Summary - All EBS view](#)
- [EBS Summary view](#)

## EBS view

The **EBS** view is a tree view. It lists the EBS instances existing in your environment, and shows their severity state. This view appears on the left when you select the **EBS** tile in the Actions bar.

Figure 19. EBS view



Selecting the **All EBS** node displays the overall resource utilization for all EBS instances in your integrated system and identifies the ones that consume the highest amount of system resources in the [Summary - All EBS view](#) on the right. Similarly, selecting a storage node shows storage-specific metrics in the [EBS Summary view](#).

Table 35. Description of the View

<b>Data displayed</b>	<ul style="list-style-type: none"><li>• <b>Alarm severity.</b> The state of the most recent alarm raised against the EBS instance.</li><li>• <b>All EBS.</b> A parent node for all EBS instances that appear in this view.</li></ul>
-----------------------	--



Table 35. Description of the View

- **EBS.** The EBS instance.

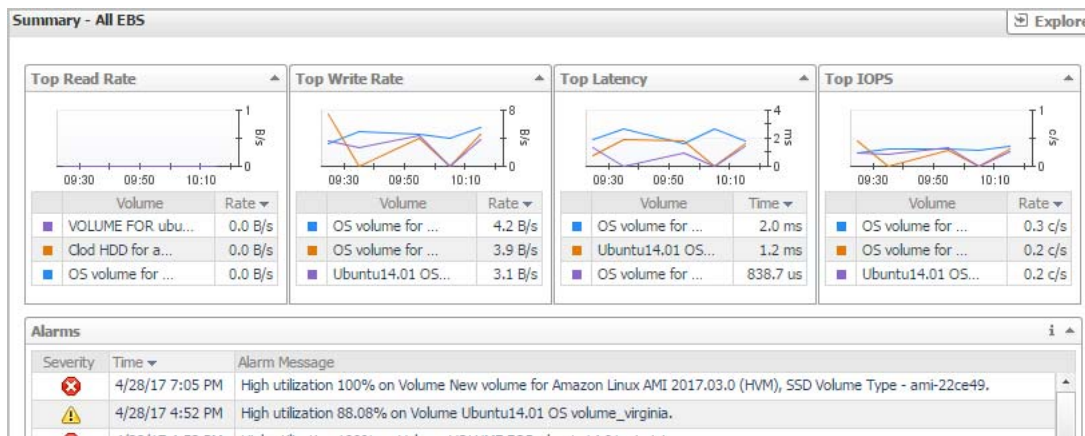
**Where to go next** Drill down on:

- **All EBS.** Shows the [Summary - All EBS view](#) on the right.
- **EBS.** Shows the [EBS Summary view](#) on the right.

## Summary - All EBS view

The **Summary - All EBS** view displays overall information for all EBS instances in the selected service and identifies the elements that consume the highest amount of resources. This view appears on the right when you select **All EBS** in the [EBS view](#).

Figure 20. Summary - All EBS view



This view consists of the following embedded views:

- [Alarms](#)
- [Top Read Rate](#)
- [Top Write Rate](#)
- [Top Latency](#)
- [Top Latency](#)

Table 36. Alarms

<b>Description</b>	Lists the alarms generated against the monitored EBS.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time:</b> Indicates when the alarm occurred.</li> </ul>
<b>Where to go next</b>	<p>Drill down on:</p> <ul style="list-style-type: none"> <li>• <b>Alarm Message, Severity, or Time.</b> Displays the <b>Alarm Created</b> dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.</li> </ul>

Table 37. Top Read Rate

<b>Description</b>	Shows the top three EBS instances with the highest read rate.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Rate.</b> The value of read rate (in B/s).</li> <li>• <b>Volume.</b> The name of the EBS instance.</li> </ul>

**Table 38. Top Write Rate**

<b>Description</b>	Shows the top three EBS instances with the highest write rate.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Rate.</b> The value of write rate (in B/s).</li> <li>• <b>Volume.</b> The name of the EBS instance.</li> </ul>

**Table 39. Top Latency**

<b>Description</b>	Shows the top three EBS instances with the highest latency.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Time.</b> The value of latency (in milliseconds).</li> <li>• <b>Volume.</b> The name of the EBS instance.</li> </ul>

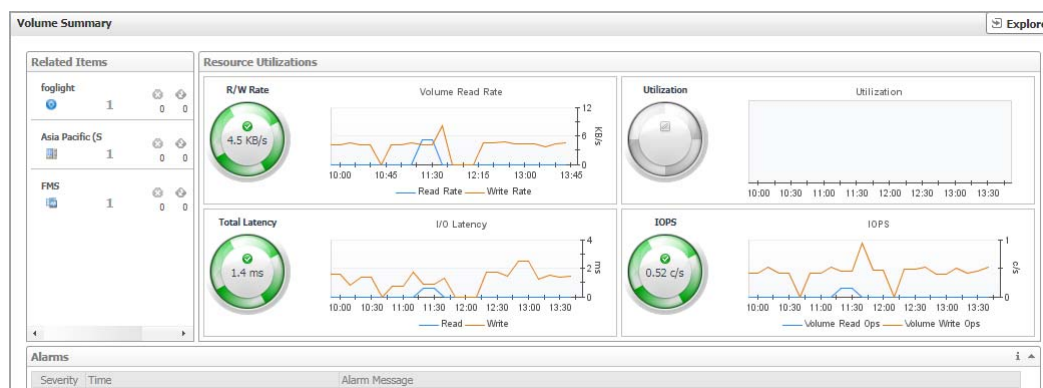
**Table 40. Top IOPS**

<b>Description</b>	Shows the top three EBS instances with the highest IOPS.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Current.</b> The value of IOPS (in c/s).</li> <li>• <b>Volume.</b> The name of the EBS instance.</li> </ul>

## EBS Summary view

The **EBS Summary** view displays complete details for an EBS instance. This view appears on the right when you select an EBS instance in the [EBS view](#).

**Figure 21. EBS Summary view**



This view consists of the following embedded views:

- [Alarms](#)
- [Related Items](#)
- [Resource Utilization](#)

**Table 41. Alarms**

<b>Description</b>	Lists the alarms generated against the selected EBS instance.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>Alarm Message.</b> An explanation about why the alarm occurred.</li> <li>• <b>Severity.</b> Indicates the alarm severity: Warning, Critical, or Fatal.</li> <li>• <b>Time.</b> Indicates when the alarm occurred.</li> </ul>

**Table 41. Alarms**

**Where to go next** Drill down on:

- **Alarm Message, Severity, or Time.** Displays the **Alarm Created** dialog box, showing additional information about the alarm. For more information about alarms, see the *Foglight User Help*.

**Table 42. Related Items**





**Description** Shows the numbers and states of the selected EBS instance running on the monitored AWS environment.

**Data displayed**



- **EC2 Instances.** The number of the ECS2 instances that are associated with the selected account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Regions.** The number of the regions that are that are associated with the selected account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Accounts.** The number of the accounts that are that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).

**Where to go next** Drill down on:


- **EC2 Instances.** Displays the **EC2 Instances Inventory** dwell, showing the name and state of the associated Resource Groups.

EC2 Instances Inventory		
Name ▲	State	
 Amazon_linux_vi...	✓	▲
 amzn-ami-hvm-20...	✓	
 for test _virgi...	✓	
 redhat Virginia...	✓	

- **Regions.** Displays the **Regions Inventory** dwell, showing the name and state of the associated accounts.

Regions Inventory		
Name ▲	State	
 South America (...)	✓	▲
 US East (N. Vir...	✓	

- **Accounts.** Displays the **Other Items Inventory** dwell, showing the name and state of the associated accounts.

Other Items Inventory		
Name ▲	State	
 test	✓	

**Table 43. Resource Utilization**

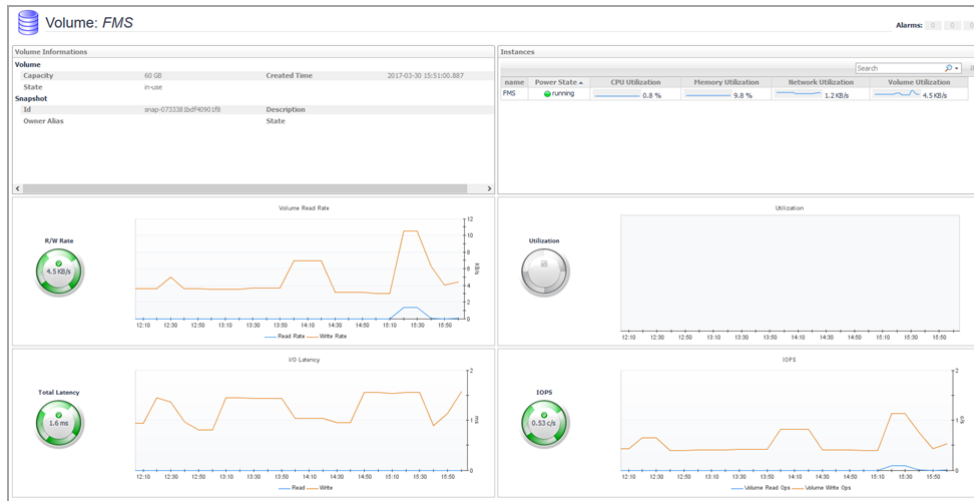
**Description** Shows the resource utilization of the selected EBS instance, broken down into four simple views.

**Data displayed**

- **R/W Rate.** Shows the total read/write bytes per second of the selected EBS instance.
- **Utilization.** Shows the disk space utilization of the selected EBS instance.
- **Total Latency.** Shows the total latency the selected EBS instance.
- **IOPS.** Shows the IOPS of the selected EBS instance.

# Explore - Volume view

The *Explore - Volume* view appears when you click **Explore** in the [EBS Summary view](#).



This view includes the following embedded views.

- [Volume Information](#)
- [Resource Utilization](#)
- [Instance](#)

**Table 44. Resource Utilization**

<b>Description</b>	Shows the resource utilization of the selected EBS instance, broken down into four simple views.
<b>Data displayed</b>	<ul style="list-style-type: none"> <li>• <b>R/W Rate.</b> Shows the total read/write bytes per second of the selected EBS instance.</li> <li>• <b>Utilization.</b> Shows the disk space utilization of the selected EBS instance.</li> <li>• <b>Total Latency.</b> Shows the total latency the selected EBS instance.</li> <li>• <b>IOPS.</b> Shows the IOPS of the selected EBS instance.</li> </ul>

**Table 45. Volume Information**

<b>Description</b>	Shows the volume, attachment, instance, and snapshot of the selected EBS instance.
--------------------	--

**Table 46. Instance**

<b>Description</b>	Shows the instance that use this volume, will show instance name, power state, CPU utilization, and so on.
--------------------	--

# System Info Tab


The **System Info** tab of the **Cloud Manager** dashboard contains the Images and AWS Health Event tables to help you understand the monitored AWS environment.

**Figure 22. System Info dashboard**

The screenshot shows the Foglight Cloud Manager interface. The top navigation bar includes tabs for Azure, AWS, Optimizer, and Cost. The AWS tab is selected. Below the navigation bar, there's a search bar and a set of tabs: Monitoring, System Info, Tags, Report, Rule Configuration, and Administration. The System Info tab is active. Under System Info, there are two sub-tabs: Images and AWS Health Event. The Images sub-tab is selected, displaying a table of Amazon Machine Images (AMIs).

Name	AMI ID	Visibility	Status	Instances Count	Creation Date	Description
Amazon Linux AMI 2015.03.0 x86_64 HVM GP2	ami-0c558f06	Public	Available	1	3/19/15 12:30 AM	Amazon Linux AMI 2015.03.0 x86_64 HVM GP2
Amazon Linux AMI 2016.09.0.20160923 x86_64 HVM EBS	ami-0c558f06	Public	Available	1	9/23/16 6:18 PM	Amazon Linux AMI 2016.09.0.20160923 x86_64 HVM EBS
Amazon Linux AMI 2017.03.0.20170417 x86_64 HVM GP2	ami-0c558f06	Public	Available	3	4/17/17 4:12 PM	Amazon Linux AMI 2017.03.0.20170417 x86_64 HVM GP2
Amazon Linux AMI 2017.03.1.20170617 x86_64 HVM GP2	ami-0c558f06	Public	Available	2	6/18/17 5:56 AM	Amazon Linux AMI 2017.03.1.20170617 x86_64 HVM GP2
Amazon Linux AMI 2017.03.1.20170812 x86_64 HVM GP2	ami-0c558f06	Public	Available	1	8/13/17 10:35 AM	Amazon Linux AMI 2017.03.1.20170812 x86_64 HVM GP2
Amazon Linux AMI 2017.03.0.20170401 x86_64 PV EBS	ami-0c558f06	Public	Available	1	4/2/17 1:56 PM	Amazon Linux AMI 2017.03.0.20170401 x86_64 PV EBS

## To access the System Info dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **System Info** in the actions bar.

The **System Info** view opens on the bottom of **Cloud Manager** dashboard.

For more information, see the following topics:

- [Images table](#)
- [AWS Health Event table](#)

**Table 47. Images table**

### Data displayed

- **Name.** Shows the image name.
- **AMI ID.** Shows the image ID.
- **Visibility.** Indicates whether the image is public or private.
- **Status.** Indicates whether the image is available or pending.
- **Instances Count.** Shows the total number of EC2 instances that are created by this Amazon Machine Image (AMI).
- **Creation Date.** Indicates when this image is created.
- **Description.** Shows the description of this image.

Table 48. AWS Health Event table

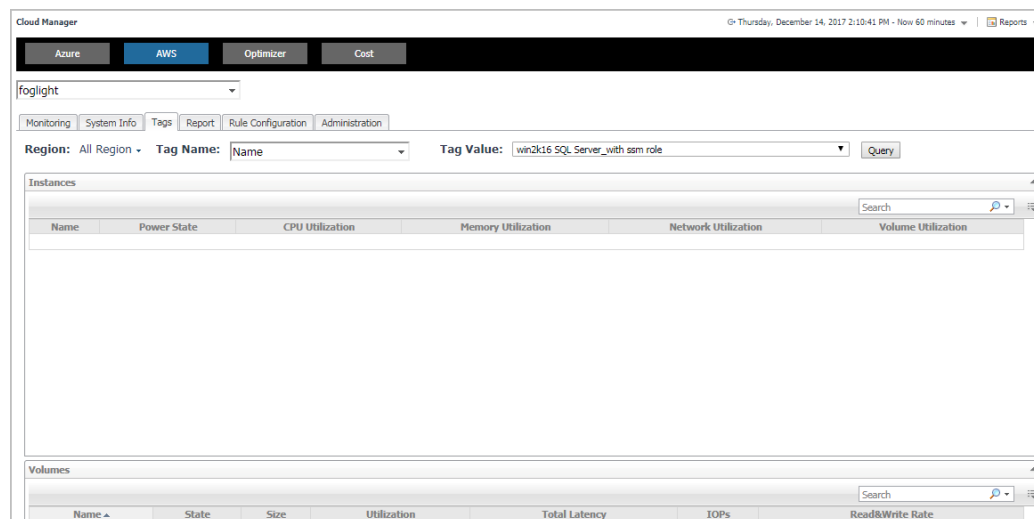
**Data displayed**

- **Name.** Shows the event name.
- **Region.** Indicates the region in which the event occurred.
- **Event Type.** Indicates the event type.
- **Status.** Indicates the event status.
- **Last Update.** Shows the date when the event was last updated.
- **Description.** Shows the event descriptions.

# Tags Tab

The **Tags** tab of the **Cloud Manager** dashboard helps you quickly search for instances or volumes using tag name and tag values.

Figure 23. Tags dashboard



## To access the Tags dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Tags** in the actions bar.  
The **Tags** view opens on the bottom of **Cloud Manager** dashboard.

The Hybrid Cloud Manager for AWS provides the following query options:

- **Region:** Lists all regions or available regions, for example, Singapore.
- **Tag Name.** Sort out all tags that belong to the selected Region.
- **Tag Value.** Sort out all tags that belong to the selected Tag Name.

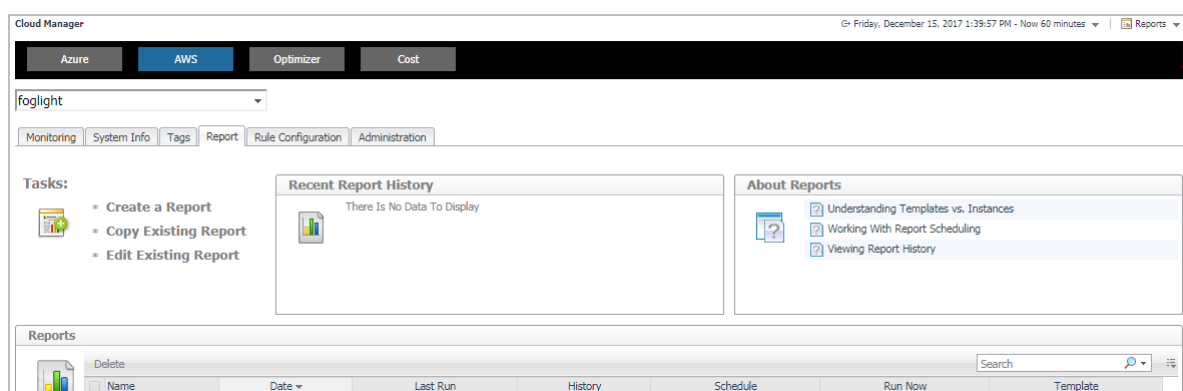
The *Instances* table shows *Name*, *Power State*, *CPU Utilization*, *Memory Utilization*, *Network Utilization*, and *Volume Utilization* of the instances that include the specified tag name or value. The *Volumes* table shows *Name*, *State*, *Size*, *Utilization*, *Total Latency*, *IOPS*, and *Read&Write Rate* of the instances that include the specified tag name or value.

# Report Tab

Foglight Hybrid Cloud Manager for AWS includes a report generation ability. This allows you to create reports using a set of predefined templates to report on the various aspects of your cloud environment. Foglight Hybrid Cloud Manager for AWS includes a collection of predefined report templates.

You can generate, copy, and edit reports using the Reports tab on the *Report* dashboard, or alternatively the *Reports* dashboard included with the Management Server.

**Figure 24. Report dashboard**



## To access the Report dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Report** in the actions bar.

For complete information about this tab, see the *Managing Capacity in Virtual Environments User Guide*. For more information about the *Reports* dashboard, see the *Foglight User Help*.

# Available report templates

The following templates are available with Foglight Hybrid Cloud Manager for AWS.

**Table 49. Report templates**

Report Template Name	This template can be used to generate a report that...
<b>Account Information - Summary</b>	Summarizes your Account infrastructure, so that you could know your account's performance.
<b>All Regions - Summary</b>	Summarizes all regions at under your account, so that you could know all regions' performance.



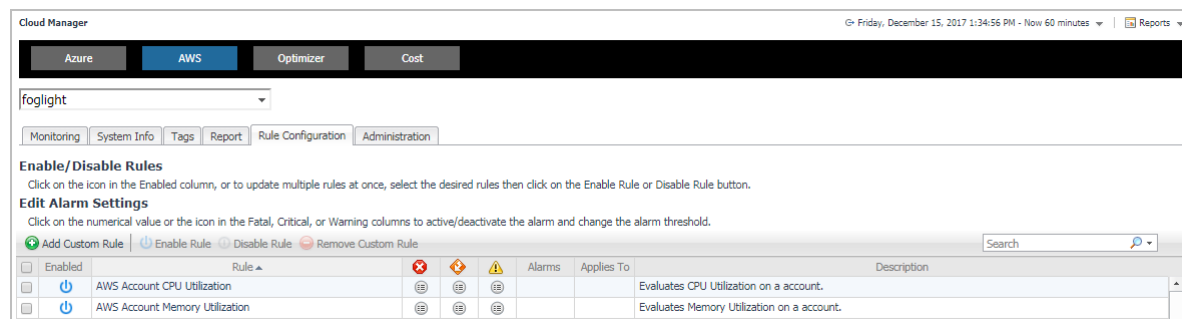
Table 49. Report templates

Report Template Name	This template can be used to generate a report that...
<b>AWS Optimizer - All Reports</b>	Summarizes the AWS Optimizer resources.
<b>AWS Optimizer - Potential Zombie VMs Reports</b>	Summarizes the potential zombie VM resources.
<b>AWS Optimizer - VM Resizing Reports</b>	Summarizes the VM resizing resources.
<b>Instance Performance - Detail</b>	Summarizes the capacity and performance details of all instances.
<b>Region Performance - Detail</b>	Summarizes the capacity and performance details of the selected region.
<b>Single Instance Performance - Detail</b>	Summarizes the capacity and performance details of the selected instance.

# Rule Configuration Tab

The **Rule Configuration** tab of the **Cloud Manager** dashboard contains links to rules and alarms tasks that you can use to manage AWS rules and alarms.

Figure 25. Rule Configuration dashboard



## To access the Rule Configuration dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Rule Configuration** in the actions bar.



For more information, see the following topics:

- [Rules view](#)
- [Enabling/Disabling rule\(s\)](#)
- [Adding a custom rule](#)
- [Removing custom rule\(s\)](#)

## Rules view

By default, the following columns are displayed in the *Rules* view:


- **Enabled:** Indicates if the rule is enabled 🔴 or disabled ⚪. You can sort the list of rules by state, by clicking the Enabled column.
- **Rule:** Contains the rule name. Click the rule name to start the workflow for viewing and editing rule details.
- Fatal 🛑, Critical ⚠️, and Warning ⚠️ thresholds (multiple-severity rules only):
  - For expressions that include one registry variable, these columns contain the current value of that variable. Click the value to edit it.

- For expressions that include multiple registry variables, the column contains an icon . Clicking that icon shows the list of referenced registry variables and their values. Click a value to edit it.
- For expressions that do not include any registry variables, this column contains an icon . Clicking that icon navigates to the **Edit Rule** dashboard.
- For rule states that do not have a conditional expression defined, this column is empty.
- **Alarms:** Contains the number of alarms (multiple-severity rules only) generated by the rule. Clicking that column shows a list of alarms indicating for each alarm its severity, when the alarm was generated, and the alarm message.
- **Applies to:** Shows the object name that is applied to this custom rule.
- **Description:** Contains the rule description.


## Enabling/Disabling rule(s)

The *Rule Configuration* dashboard shows a list of existing rules and a set of rule management commands at the top of the list. Use the **Enable Rule** and **Disable Rule** buttons to activate or deactivate one or multiple rules at once.

### To enable a rule:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
  
The **Cloud Manager** dashboard opens.
- 4 Click **Rule Configuration**.  
  
The **Rule Configuration** dashboard opens.
- 5 On the *Rules* list, select one or more check boxes in the left-most column, and then click **Enable Rule**.  
  
The *Enable Rules* dialog box opens.
- 6 In the *Enable Rules* dialog box, click **Yes**.  
  
The *Rules* list refreshes with the rules' status updated automatically.


### To disable a rule:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
  
The **Cloud Manager** dashboard opens.
- 4 Click **Rule Configuration**.  
  
The **Rule Configuration** dashboard opens.
- 5 On the *Rules* list, select one or more check boxes in the left-most column, and then click **Disable Rule**.  
  
The *Disable Rules* dialog box opens.
- 6 In the *Disable Rules* dialog box, click **Yes**.  
  
The *Rules* list refreshes with the rules' status updated automatically.

# Adding a custom rule

The *Rule Configuration* dashboard shows a list of existing rules and a set of rule management commands at the top of the list. Use the **Add Custom Rule** button to create a new rule as needed.


## To customize a rule:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
  
The **Cloud Manager** dashboard opens.
- 4 Click **Rule Configuration**.  
  
The **Rule Configuration** dashboard opens.
- 5 Click **Add Custom Rule** on the *Rules* table.  
  
The *Create Custom Rule* dialog box opens.
- 6 In the *Create Custom Rule* dialog box, specify the following:
  - a Alarm Type:
    - a Type the name of custom rule in the *Name* field.
    - b Select an *Object Type*, and then select a metric from the *Metric* drop-down list. The value of *Metric* varies from the *Object Type*.
    - c Select either *Threshold* or *% Change*, and then specify the following values as needed.
      - *Threshold*: Specify *Condition*, *Time Period*, *Severity*, and then specify whether or not fire actions if the specified data attempts are reached. The value of *Condition* cannot be negative.
      - *% Change*: Specify *Condition*, *Time Period*, and *Severity Label*. The value of *Condition* cannot be negative.
  - b (Optional) Scope: Choose the objects to which you want to apply this rule. If no objects are selected in this step, the custom rule will apply to all objects which type is the *Object Type* specified in [Step 6](#).
  - c (Optional) Notifications: Click **Add New**, then the *Edit Notification Config - Dialog* box appears. In this dialog box, type the *E-mail Address* and *Description* as needed, and then click **Add**.
- 7 Click **Save**.  
  
The *Rules* table refreshes automatically to show the newly added rule.

# Removing custom rule(s)

The *Rule Configuration* dashboard shows a list of existing rules and a set of rule management commands at the top of the list. Use the **Remove Custom Rule** button to delete existing custom rule(s) as needed.

## To remove a custom rule:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 Click **Rule Configuration**.

The **Rule Configuration** dashboard opens.

- 5 Click **Remove Custom Rule** on the *Rules* table.

The *Remove* dialog box opens.

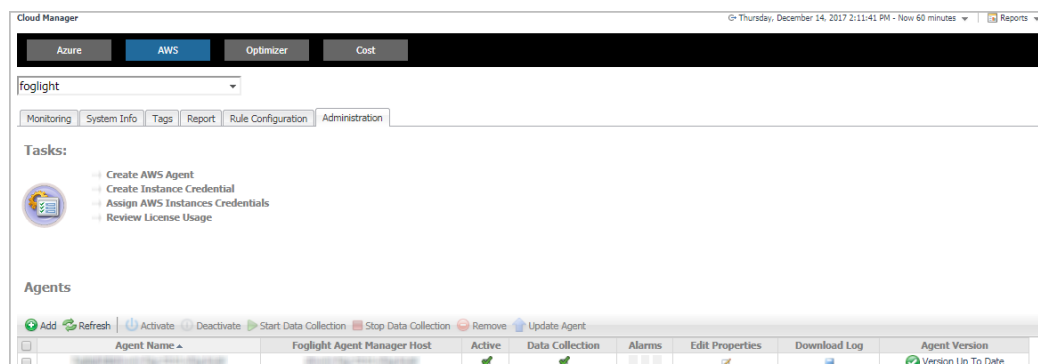
- 6 Click **Yes**.

The *Rules* table refreshes automatically and removes the selected rule.


# Administration Tab

The **Administration** tab of the **Cloud Manager** dashboard contains links to agent administration tasks that you can use to manage AWS performance agents.

Figure 26. Administration dashboard



## To access the Administration dashboard:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Administration** in the actions bar.

For more information, see the following topics:


- [Tasks view](#)
- [Agents related commands](#)
- [Creating an AWS Agent](#)
- [Editing agent properties](#)

## Tasks view

The Tasks view allows you to create an AWS agent, to create instance credentials, to assign AWS instances credentials, and to review license usage. For more information about how to create an AWS agent, refer to [Creating an AWS Agent](#) on page 11.

## To create user name and password for an instance:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.

To open the navigation panel, click the right-facing arrow  on the left.

- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 Click **Administration**.

The **Administration** dashboard opens.

- 5 On the *Tasks* view, click **Create Instance Credential**, and then click **User Name and Password** from the prompted dialog box.

The **Add a New “User Name and Password” Credential** dialog box opens.

- 6 In the *Credential Properties* view, type *User Name* and *Password*, confirm the password, and then click **Next**.


- 7 In the *Credential Name and Lockbox* view, select a lockbox, and then click **Next**.

- 8 In the *Resource Mapping* view, confirm the source mapping, and then click **Next** or **Finish**.

### **To create a RSA key for an instance:**

- 1 Log in to the Foglight browser interface.

- 2 Ensure that the navigation panel is open.

To open the navigation panel, click the right-facing arrow  on the left.

- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 Click **Administration**.

The **Administration** dashboard opens.

- 5 On the *Tasks* view, click **Create Instance Credential**, and then click **RSA Key** from the prompted dialog box.

The **Add a New “RSA Key” Credential** dialog box opens.

- 6 In the *Credential Properties* view, type *Private Key*, *Pass Phase*, and *User Name*, then click **Next**.


- 7 In the *Credential Name and Lockbox* view, select a lockbox, and then click **Next**.

- 8 In the *Resource Mapping* view, confirm the source mapping, and then click **Next** or **Finish**.

### **To assign credentials for AWS instances:**

- 1 Log in to the Foglight browser interface.

- 2 Ensure that the navigation panel is open.

To open the navigation panel, click the right-facing arrow  on the left.

- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 Click **Administration**.

The **Administration** dashboard opens.

- 5 On the *Tasks* view, click **Assign AWS Instances Credentials**.

The **Credentials** dialog box opens.

- 6 In the **Credentials** dialog box, select a lockbox or credential, and then click the  button.

The **Assign Credential** dialog box opens.

- 7 In the **Assign Credential** dialog box, click **Add**.


The **Choose Instance Dialog** box opens, select an instance, and then click **Select**.

- 8 The **Choose Instance Dialog** box closes, and the selected instance appears on the *EC2 Instances* table. Click **save**.

#### **To review license usage:**

- 1 Log in to the Foglight browser interface.

- 2 Ensure that the navigation panel is open.

To open the navigation panel, click the right-facing arrow  on the left.

- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.

The **Cloud Manager** dashboard opens.

- 4 Click **Administration**.

The **Administration** dashboard opens.

- 5 On the *Tasks* view, click **Review License Usage**.

The **Review License Usage** dialog box opens.

- 6 Click **AWS** in the **Review License Usage** dialog box to review the current AWS license information.

The *AWS license* table shows the *Account*, *Monitoring Agent*, and *Monitored Instance Count* of your license.

- 7 Click the number in the *Monitored Instance Count* column.

The **Instances** dialog box opens and shows the detailed information about all monitored instances.

If the number of monitored instance goes beyond your valid license, the following message will shows on the **Cloud Manager** dashboard: *"Caution: Foglight Hybrid Cloud Manager is over-deployed by <number> monitored virtual machines. Please contact Quest to purchase additional licenses."*

## Agents related commands

The **Administration** dashboard shows a list of existing agent instances and a set of agent management commands at the top of the list. Use it to verify that your agents are collecting data from the monitored environment.

The following commands are available:

- **Add:** Starts a workflow for creating new agent instances. For more information, see [Creating an AWS Agent](#) on page 11.
- **Refresh:** Refreshes the list of agent instances and their states.
- **Activate:** Activates one or more selected agent instances. Activating an agent instance starts the agent process on the machine on which the agent is installed.
- **Deactivate:** Deactivates one or more selected agent instances. Deactivating an agent stops the agent process on the machine on which the agent is installed.
- **Start Data Collection:** Starts the data collection for one or more selected agent instances. Starting an agent's data collection causes the agent to begin monitoring the Hyper-V server and to send the collected metrics back to the Management Server.
- **Stop Data Collection:** Stops the data collection for one or more selected agent instances. Stopping an agent's data collection causes the agent to stop monitoring the Hyper-V server.
- **Edit Properties:** Starts a workflow for editing the properties of one or more selected agent instances. Each agent comes with a set of properties that it uses to configure its correct running state. [Editing agent properties](#) on page 49.



- **Remove:** Deletes the selected agent instance.
- **Update Agent:** Updates the agent package to the latest version.

**i | IMPORTANT:** Updating the agent package using this command generates the previously existing credentials. However, if you update the agent package by re-deploying its .gar file through the Agent Status page, the credentials need to be re-created. To do that, select an agent instance, click **Edit Properties**, and configure the required credentials on the **Credentials** tab of the **Edit Tab Manager** dialog box.


To perform any of the available commands, select one or more check boxes in the left-most column and click the appropriate button. For example, to start an agent's data collection, select the check box in the agent row and click **Start Data Collection**.

## Editing agent properties

AWS Agents collect data from your AWS infrastructure and send it to the Management Server. The agents keep track of resource utilization metrics and alerts you when certain pre-defined thresholds are reached.

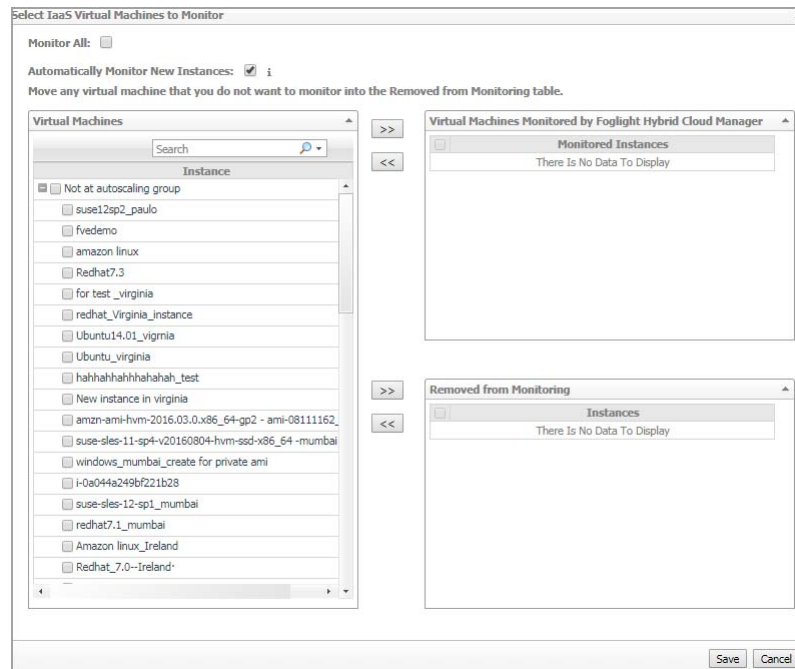
Default versions of these properties are installed with Foglight. However, you can edit the default agent properties, configure the agent properties that apply only to a specific agent instance, and create edited clones of shareable properties that are used by a subset of certain agent type.

### **To edit the AWS Performance Agent properties:**

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
**Cloud Manager** dashboard opens.
- 4 Click **Administration**.  
The **Administration** dashboard opens.
- 5 Select the instance of the AWS Agent properties that you want to modify, and then click **Edit Properties**.
- 6 In the **Edit Properties** dialog box, edit the following properties, as needed.
  - *Account Alias:* The display name of this account.
  - *Access Key ID:* The access key retrieved in [Getting authentication information through console](#).
  - *Secret Access Key:* The secret access key retrieved in [Getting authentication information through console](#).
  - *Collect Memory Metric:* Select this option to enable the collection of instance memory metrics. The default value is disabled.
  - *Collect Linux Volume Utilization:* Select this option to enable the collection of Linux volume utilization. The default value is disabled.
  - *Specify an agent name (Optional):* Specify the name of agent.
  - *Configure regions to be monitored (Optional):* Select AWS regions for monitoring. All regions will be monitored if this field is not configured.
  - *Select Virtual Machines to Monitor:* Specify to monitor all virtual machines or only monitor specified instance.
    - *If Monitor All is selected:* By monitoring all virtual machines any virtual machine that is running in the monitored cloud will be monitored 24x7 consuming a monitored virtual machine license. Every virtual machine that is monitored will count against the purchased

license pool. Any Monitored Virtual Machine that is above the purchased license limit will require an additional Foglight Hybrid Cloud Manager per Monitored Virtual Machine license.

- **If Monitor All is not selected:** The following view appears on the bottom of the **Selected IaaS Virtual Machines to Monitor** dialog box.



- If *Automatically Monitor New Instances* is selected, select instances that you do not want to monitor, and then click >> to move selected instances to the *Removed from Monitoring* table.
- If *Automatically Monitor New Instances* is not selected, select instances that you want to monitor, and then click >> to move selected instances to the *Virtual Machines Monitored by Foglight Hybrid Cloud Manager* table.
- If the *Removed from Monitoring* and *Virtual Machines Monitored by Foglight Hybrid Cloud Manager* tables are empty, and *Automatically Monitor New Instances* is not selected, the AWS agent will not collect any instance data.

- **Configure Account Cost to Monitor:**

Configure the Cost Metrics collection. Collections will start only after the AWS Cost and Usage Report are created on the AWS Console. See [To create an AWS Cost and Usage Report](#).

- **Collect Cost Metrics:** Select the check box to enable and configure the cost metrics collection. Collections will start only after the AWS Cost and Usage Report are created on the AWS Console. See [To create an AWS Cost and Usage Report](#).
- **Account Id (12-digit number):** See [To get Account ID \(12-digit number\)](#) to get this value.
- **S3 Bucket for Cost and Usage Report:** Enter the name of your S3 bucket according to the AWS Cost and Usage Report setting. See [To create an AWS Cost and Usage Report](#) to get this value.
- **S3 Bucket Region for Cost and Usage Report:** Select the region of your S3 bucket according to the AWS Cost and Usage Report setting. See [To create an AWS Cost and Usage Report](#) to get this value.
- **Cost and Usage Report Name:** Enter the name of your AWS Cost and Usage report. See [To create an AWS Cost and Usage Report](#) to get this value.
- **Cost and Usage Report Path:** Enter the Report path prefix according to your Report setting. The value of Cost and Usage Report Path will be blank, if you don't set the Report path prefix in AWS. See [To create an AWS Cost and Usage Report](#) to get this value.

- *Configure Proxy (Optional):*

Configure the proxy setting when the Agent Host requires a proxy connection to the Internet.

- Select the *Enable Proxy* check box to enable the proxy settings.
- Input the host name or IP address for the *Proxy Server* and input the Proxy Port number.
- If the proxy requires an authorization, select the *Authorization* check box, and input the Username and Password.

**NOTE:** In FIPS-compliant mode, if proxy settings are configured, you need to import the proxy server application root certificate into FMS KeyStore and FgLAM. For more information, see [Managing certificates](#).

- 7 Click **Save**. The **Edit Properties** dialog box closes and the list of agent instances automatically refreshes in the display area.

# Managing certificates

## Syntax Conventions

In order to successfully make use of the Foglight commands in your monitoring environment, review the syntax conventions before getting started. The syntax conventions are as follows:

- Generic examples follow the UNIX path structure that uses forward slashes '/' to separate directories.
- Platform-specific examples follow standard platform conventions. For example, UNIX-specific examples use forward slashes '/' as directory delimiters, while Windows examples use backslashes '\'.
- `<foglight_home>` is a placeholder that represents the path to the Foglight Management Server installation.
- `<foglight_agent_mgr_home>` is a placeholder that represents the path to the Foglight Agent Manager installation. This can be the location of the Foglight Agent Manager installation on a monitored host, or the home directory of the Foglight Agent Manager that comes embedded with the Foglight Management Server. For example:

**Path to the Foglight Agent Manager installation on a monitored host (Windows):**

`C:\Quest\Foglight_Agent_Manager`

**Path to the embedded Foglight Agent Manager installation (Windows):**

`C:\Quest\Foglight\fglam`

- Unless otherwise specified, Foglight commands are case-sensitive.

## Managing certificates for FglAM

Foglight Evolve agents use Foglight Agent Manager (FglAM) to manage certificates for SSL encryption connection.

### Prerequisite

All the certificate-related command line options require that FglAM be **up and running**.

### Add a certificate

```
bin/fglam --add-certificate "user alias 1"=/path/to/certificate/file
```

- Validate the certificate and ensure the following:
  - It is not expired.
  - It is an X.509 format.
  - FglAM requires the Base64 format. To verify if the certificate file is encoded with Base64, open the certificate with a notepad and the certificate should be similar to the following example:

```
-----BEGIN CERTIFICATE-----
XXXXXXXXXX=
-----END CERTIFICATE-----
```

**i** **NOTE:** If the certificate is not Base64 format, use openssl command to convert the certificate file into a Base64 file. Use either of the following commands depending on the source form:

```
openssl x509 -inform DER -in xxx.cer -out xxx.crt
or
openssl x509 -inform PEM -in xxx.cer -out xxx.crt
```

- The `alias` is required and is used in the list and delete operations to refer to the certificate. It can be anything.

### List installed certificates

```
bin/fglam --list-certificates
```

Print out a list of certificates and the aliases that refer to them.

Refer to the example output below:

```
List of installed certificates:

Alias                Certificate Info
-----
user alias 1        XXXX
```

### Delete a certificate

Remove a certificate referred to by an alias.

```
bin/fglam --delete-certificate "user alias 1"
```

## A full example for managing certificate for FglAM

- Add an example certificate into FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --add-certificate "Evolve-test"="D:/Evolve-test.crt"
```

...

```
2020-02-27 16:31:01.000 INFO [native] Certificate added: Certificate from
D:\Evolve-test.crt added as Evolve-test
```

- List the example certificate in the FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --list-certificate
```

...

Alias	Certificate
-----	-----
Evolve-test	Issuer:
	CN: XXX

- Delete the example certificate from the FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --delete-certificate "Evolve-test"
```

...

```
2020-02-27 16:28:21.000 INFO [native] Certificate deleted: Certificate
Evolve-test deleted
```

## Managing certificates for FMS in FIPS-compliant mode

Use the keytool utility shipped with Foglight to create, import, or export certificates. This utility can be found at: `<foglight_home>\jre\bin\keytool`.

The KeyStore Foglight used in FIPS-compliant mode is located at: `<foglight_home>/config/security/trust.fips.keystore` (default password: `nitrogen`)

### Add a certificate in FIPS-compliant mode

Use the keytool command in FMS JRE located in `<foglight>/jre/bin`.

```
keytool -import -trustcacerts -alias "<alias>" -file "<certificate path>" -keystore
"<Foglight_home>/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

- Validate the certificate and ensure the following:
  - It is not expired.
  - It is an X.509 format.
- Change the following before executing the command
  - `<alias>`: The alias is required and is used in the list and delete operations to refer to the certificate. It can be anything.
  - `<Foglight_home>`: The folder path where Foglight is installed.

- <certificate path>: Your custom certificate path.

## List installed certificates

```
keytool -list -keystore "<Foglight_home>/config/security/trust.fips.keystore" -
deststoretype BCFKS -provider
org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

Prints out a list of certificates and the aliases that refer to them.

Refer to the example output below:

```
Keystore type: BCFKS
Keystore provider: BCFIPS
Your keystore contains 151 entries
camerfirmachambersignca [jdk], Dec 18, 2019, trustedCertEntry,
Certificate fingerprint (SHA1):
4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C
entrust2048ca [jdk], Dec 18, 2019, trustedCertEntry
...
```

## Delete a certificate

Remove a certificate referred to by an alias.

```
keytool -delete -alias <alias> -keystore
"<Foglight_home>/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

## A full example for managing certificate for FMS in FIPS-compliant mode

### **Add example certificate into FMS certificate store in FIPS-compliant mode**

```
C:\Quest\Foglight\jre\bin>keytool -import -trustcacerts -alias "Evolve-Test" -file
"D:/Evolve-test.crt" -keystore
"C:/Quest/Foglight/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"C:/Quest/Foglight/server/core/bc-fips.jar" -storepass nitrogen

Owner: CN=CA, DC=ca, DC=local
Issuer: CN=CA, DC=ca, DC=local
Serial number: xxxx
Valid from: Sun Jan 06 23:07:06 CST 2019 until: Wed Apr 06 23:07:06 CST 2022
Certificate fingerprints:
...

Extensions:
```

Trust this certificate? [no]: yes

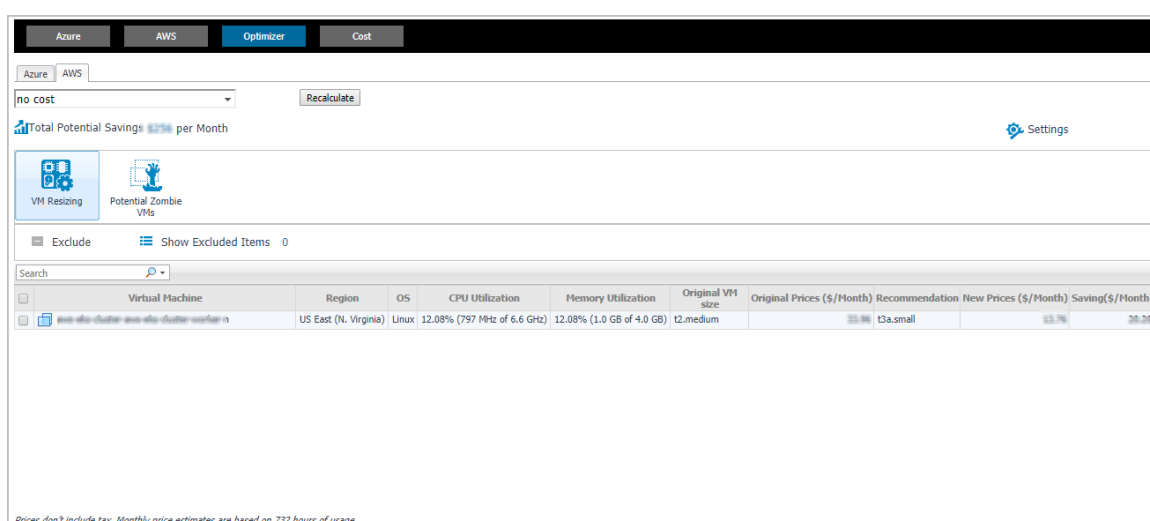
Certificate was added to keystore

# Optimizer Tab


**NOTE:** If your FMS host doesn't have Internet connection, VM Resizing recommendations will not work properly. Ensure that the proxy is enabled and the settings are configured under **Administration > Proxy Configuration**.

Click **Optimizer** on the top of the **Cloud Manager** dashboard to navigate to the **Optimizer** tab.

Figure 27. Optimizer tab

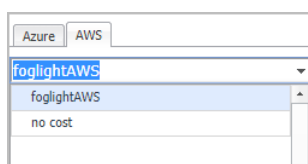


## To access the Optimizer tab:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow  on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Optimizer**. The **Optimizer** tab opens on the bottom of **Cloud Manager** dashboard.
- 5 Click **AWS**. The *Optimizer - AWS* view opens.

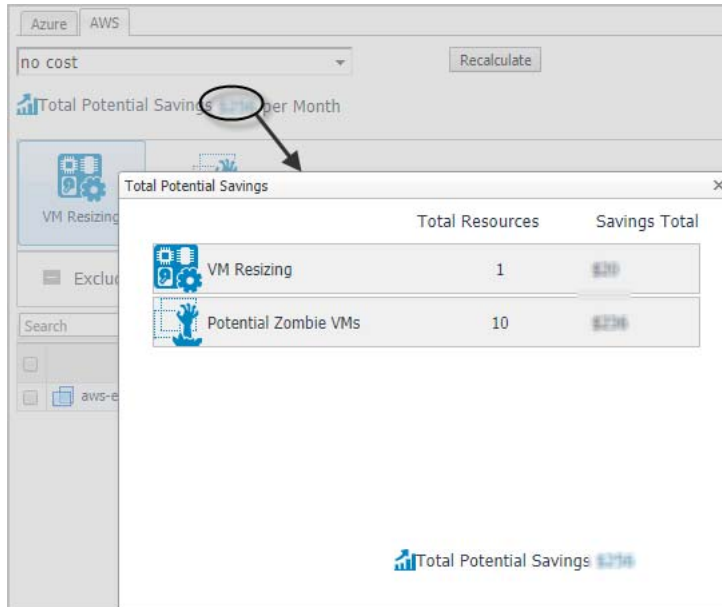
The *Optimizer - AWS* view includes the following elements:

- **Group selector:** The group selector is located at the top of the *Optimizer - AWS* view and allows you to select the AWS environment that you want to optimize.

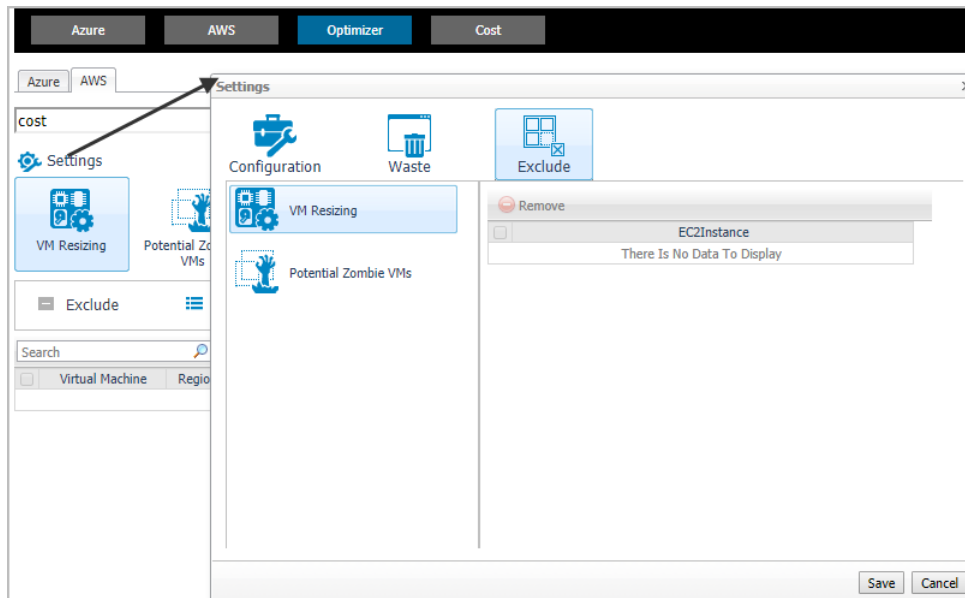




- **Settings.** The **Settings** dialog box is used to change the time period and properties that are used for calculation. For more information, see [Settings](#) on page 58.
- **Recalculate:** Click the button to recalculate the data. Click **Recalculate** on the *Recalculate Confirmation* dialog box to start recalculating.
- **Total Potential Savings.** Shows the potential savings per month. Click the savings and a *Total Potential Savings* dialog box opens. It displays the total resources and total savings for VM resizing and potential zombie VMs.



- **VM Resizing.** Shows instance name, utilization and recommendations for both CPU & memory resources.
- **Potential Zombie VMs.** Shows instance name, regions, CPU, memory, disk throughput, and network of the zombie virtual machines based on calculation settings.
- **Exclude.** After selecting an instances either in the VM resource, CPU, Memory or Potential Zombie VMs instance table, click **Exclude** to remove the selected instances from calculation.
- **Show Excluded Items.** Click this button to show the instances that have been excluded from calculation.



# Settings

Use the **Settings** menu to define the default optimization settings for your environment. The **Settings** Dialog box provides information about the following components:

- [Configuration tab](#)
- [Waste tab](#)
- [Excluded tab](#)

## Configuration tab

Settings

Configuration Waste Exclude

These settings are for CPU and Memory Optimization.

**Threshold**

CPU	Memory	Storage
Warning: 75% Critical: 83%	Warning: 85% Critical: 90%	Warning: 0% Critical: 0%

**Recommendation Calculation**

Resource	CPU	Memory	Storage
Reserve Margin	5 %	5 %	0 %
Acceptable Variation	0 % 0 MHz	0 % 0 MB	0 % 0 MB
Recommended Basis	Average Utilization ▼	Average Utilization ▼	Average Utilization ▼

Evaluate calculation over this period of time 30 Day(s) History Period 30 Day(s)

Save Cancel

The **Configuration** tab provides the recommended settings for CPU, memory, and storage optimization.

- **Thresholds.** Provides the values of a resource metric that define the Warning and Critical levels (for CPU, memory, and storage).
- **Recommendation Calculation** area. Allows you to define the following parameters for optimizing the CPU, memory resources in your environment, Storage resources not supported at current version:
  - **Reserve Margin [x]%**. This parameter is used for calculating the Evaluation Result, which is needed for making recommendations. The Recommendation Reserve Margin percentage is the percentage above the recommended basis, reserved for unexpected increases in utilization.
  - **Acceptable Variation.** Don't use at AWS resource calculation now.
  - **Recommended Basis.** Use this list to select the "Recommended Basis" to be used for calculating the Evaluation Result. Currently just support Average Utilization.
  - **Evaluate calculation over this period of time [x] Day(s).** Defines the time interval during which the right-sizing calculation is performed.
  - **History Period [x] Day(s).** The Change History view displays the changes for the time interval defined here.

To save any changes made to the **Configuration** settings, click **Save** at the bottom of the tab.

# Waste tab

Settings

Configuration Waste Exclude

These settings are for Potential Zombie VMs.  
**Determine as a potential zombie if:**

Time period used for average calculation is		30	Days
Average Resource Utilization		Deviation	
250	MHz for CPU	30	%
1024	MB for Memory	15	%
1	MB/s for Disk Throughput	200	%
5	KB/s for Network	200	%

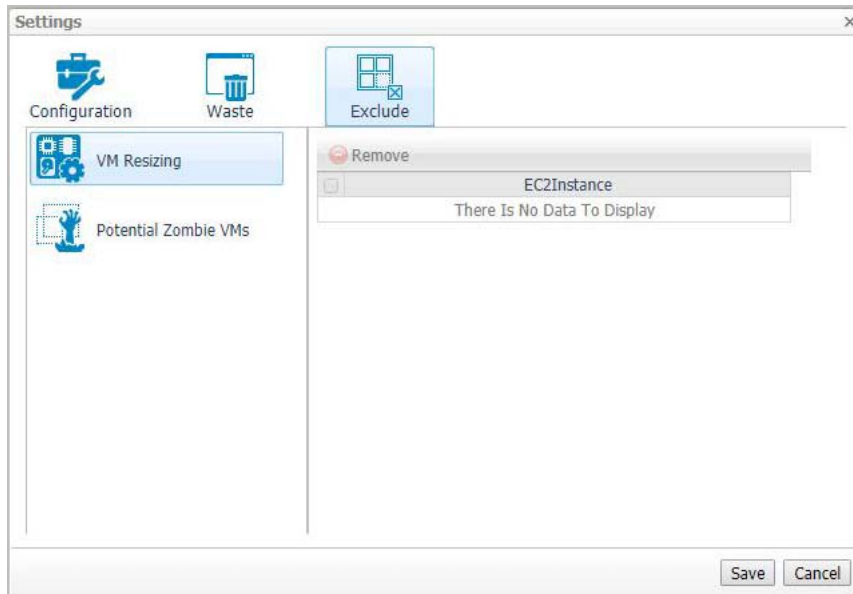
Save Cancel

The **Waste** tab allows you to configure the settings for determining resources wasted in your environment. These include powered-off instances, and potential zombie VMs:

- **Determine as a potential zombie if area:** A VM is considered a zombie VM if the following five settings are met:
  - **Time period used for average calculation is [x] Days.** Defines when a resource is considered a zombie VM, by looking at the period used for average calculations.
  - **Average Resource Utilization-Deviation.** Defines when a resource is considered a zombie VM, by looking at the CPU, memory, disk throughput, and network utilization values.
    - **TIP:** Deviation is the maximum deviation from the average resource utilization that is allowed for a VM considered to be a zombie.

To save any changes made to the **Waste** settings, click **Save** at the bottom of the tab.

# Excluded tab



The **Excluded** tab allows you to remove a VM from the list of excluded objects. The Excluded tab includes the following information:

- On the left side, a navigation tree, that allows you to select the VM component category.
- On the right side, the list of VMs excluded from the selected VM category.

To remove VMs from the list of **Excluded** objects, select the check boxes for these VMs and click **Remove**. To save any changes made to the **Excluded** settings, click **Save** at the bottom of the tab.

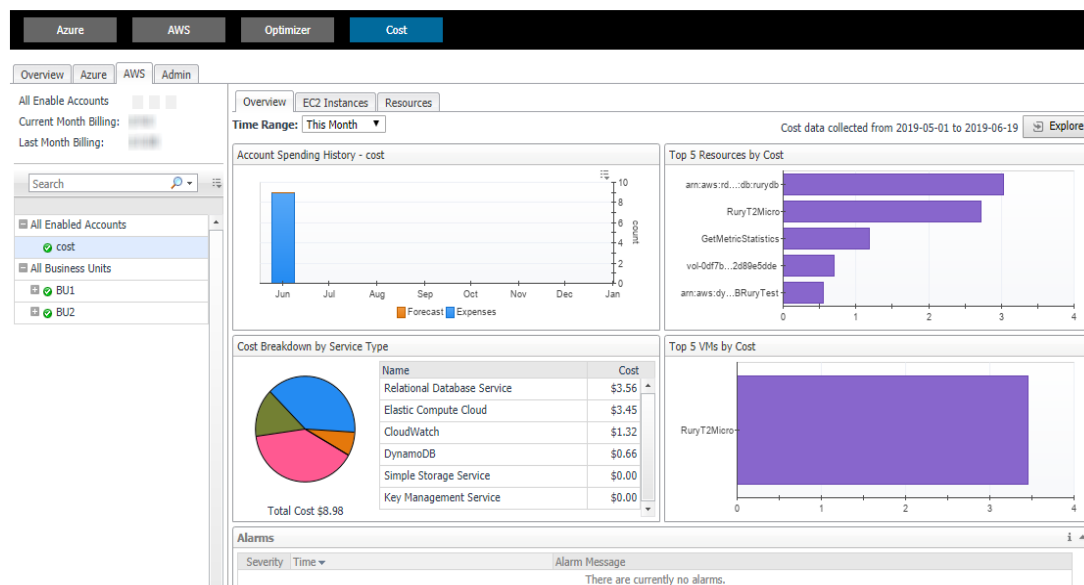
The **Excluded** tab can also be accessed by clicking **Show Excluded Items** on the **Optimizer** tab.

# Cost Tab

Click **Cost** on the top of the **Cloud Manager** dashboard to navigate to the **Cost** tab.

**NOTE:** Ensure that you have configured the cost metrics for account through the **Agent Properties** dialog box; otherwise there will have no data displayed on this tab. For more information about how to configure cost metrics, refer to the “[Configure Account Cost to Monitor](#)” step on page 49.

Figure 28. Cost tab



## To access the Cost tab:

- 1 Log in to the Foglight browser interface.
- 2 Ensure that the navigation panel is open.  
To open the navigation panel, click the right-facing arrow ► on the left.
- 3 On the navigation panel, under *Homes*, click **Cloud Manager**.  
The **Cloud Manager** dashboard opens.
- 4 Click **Cost**. The **Cost** tab opens on the bottom of **Cloud Manager** dashboard.
- 5 Click **AWS**.

# Cost - Overview

The *Cost-Overview* includes the following elements:

- **Cost Summary:** Displays the Total Month-to-date cost, and cost by Azure and AWS platforms.

- **Cost Overview:** A stacked bar chart to display the Month-to-date Expenses and Forecast by Azure and AWS platforms.
- **NOTE:** The Month-to-date (MTD) indicates a period starting from the beginning of the current month till the end of the current date.
- **Infrastructure:** Displays an Infrastructure resource table across clouds.
  - Accounts Configured: The number of Azure subscription or AWS Accounts.
  - Total VMs: The total number of VMs running in the Cloud platform.
- **Top 5 Business Units by Cost:** Aggregates the total cost for Business Units after users assign the AWS accounts or Azure Subscriptions to a BU under **Cost > Admin**.
- **Cost Breakdown by Platforms:** Displays the Month-to-date cost by Azure and AWS platforms.

## Cost - AWS view

The Cost - AWS view includes the following elements:

- Overview of all enabled Accounts cost: Lists the enabled accounts, billing of the current month, and billing of the last month.
- Object tree view: Lists the enabled Accounts and business units.
- Time Range Selector: Lists the time range for billing. The time bar of the Management Server does not take effects on the Cost dashboard.
- All Enabled Accounts Spending History/Top 5 Accounts by cost/Spending Breakdown: These three views will display the relevant cost information if you select *All Enabled Accounts* or *All Business Units* from the object tree view.
- Account Spending History/Top 5 Resources by Cost/Cost Breakdown By Service Type/Top 5 VMs by Cost: These four views will display the cost information of the selected account or business unit.
- Alarms: Lists all alarms against the selected account or business unit.
- Select Account displays the cost overview, EC2 Instances in account, and Resource cost overview.

## Cost - Admin view

The Cost - Admin view includes the following:

- AWS Accounts tab: Displays the overview of all accounts, including the account name, business unit, spending, monthly budget, last month billing, current month billing, and next month projection.
  - Set Monthly Budget: Updates monthly budget for selected account.
  - Assign Business Unit: Assigns the select accounts to a Business Unit.
  - Remove from Business Units: Exits the selected business units.
- Business Units tab: Lists business units name, location, organization, and accounts.
  - Add Business Units: Creates a business unit, specifies Business Unit name, description, location, longitude, latitude, and assigns to a new organization or existing organization.
  - Delete Business Units: Deletes selected business units.
  - Assign Organization: Select the organization from the list for selected business units.

## We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

## Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece—you—to the community, to the new Quest.

## Contacting Quest

For sales or other inquiries, visit [www.quest.com/contact](http://www.quest.com/contact).

## Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request.
- View Knowledge Base articles.
- Sign up for product notifications.
- Download software and technical documentation.
- View how-to-videos.
- Engage in community discussions.
- Chat with support engineers online.
- View services to assist you with your product.