

Foglight[®] Hybrid Cloud Manager for Azure 7.1.0 **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.
- i IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

Foglight Hybrid Cloud Manager for Azure User and Administration Guide Foglight Version - 7.1.0 Software Version - 7.1.0

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Using Foglight Hybrid Cloud Manager for Azure

Foglight[®] Hybrid Cloud Manager for Azure 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 (laaS) assets.

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

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

For more information, see the following topics:

- Installation requirements
- Azure Performance Agent Configuration
- Azure monitoring setup
- Dashboard location and UI elements

Installation requirements

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

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

- 1 vUsage-Feedback-7_1_0.car
- 2 DRP-7.1.0.car
- 3 OptimizerAutomation-7_1_0car
- 4 CommonAnalytics-7_1_0.car
- 5 Optimizer-7_1_0.car
- 6 Cloud-Manager-1.9.0.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 Azure, and for details about system requirements and version compatibility, see the *Foglight Hybrid Cloud Manager Release Notes*.

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Azure Performance Agent Configuration

Minimum application privileges

Each Azure Performance Agent monitors the subscriptions inside the same Azure Active Directory (AD). To collect the Azure data, you need register an application in Azure AD, and this application needs be granted the following privileges for all subscriptions to be monitored by Foglight Hybrid Cloud Manager for Azure:

- Reader
- Storage Account Key Operator Service Role

To use the **Optimizer Reclaim** action, the *Virtual Machine Contributor* privilege should be granted to the Azure agent.

API used to collect Cost metrics

Foglight Hybrid Cloud Manager for Azure offers the following two methods to collect Cost metrics, you need to select either of following based upon your environment:

- **TIP:** For the detailed information about how to get the subscription type, see To get the subscription information:.
 - Enterprise Agreement Billing API: This approach is used to collect metrics from Enterprise Agreement subscriptions.
 - Usage API and Rate Card API: This approach is used to collect metrics from Pay As You Go subscriptions and Azure In-Open subscriptions.

If you use Enterprise Agreement API to collect Cost Metrics, You need the Enrollment Number and API access key associated with your Azure Enterprise account. You can locate these credentials in your Azure Enterprise account. The Enrollment Number and API access key are available only to your account's enterprise administrator, the top-level administrator of your Azure Enterprise.:

- **NOTE:** Enterprise Agreement Billing API only applies to Enterprise Agreement subscriptions and collects cost metrics directly from the Azure Enterprise Portal. If not, Foglight Hybrid Cloud Manager will use Usage and Rate Card APIs to collect and populate the cost data for subscriptions.
 - Enrollment Number: Indicates the master account used for Enterprise billing.
 - Usage API Access Key: Allows access to the Azure Billing API.
 - Offer ID and Billing Cycle day for Subscriptions: Specifies the subscriptions type and information.

To get the Enrollment Number and Usage API Access Key:

- 1 Log in to your Azure Enterprise account at https://ea.azure.com.
- 2 Locate your Enrollment Number.
 - a Click the Enrollment tab, then click Manage.
 - b Locate the Enrollment Number in the list of enrollment details.
 - c Copy the Enrollment Number and save it for later use.
- 3 Generate an API access key.
 - a Under the Enrollment tab, click Reports.
 - b Click Download Usage.

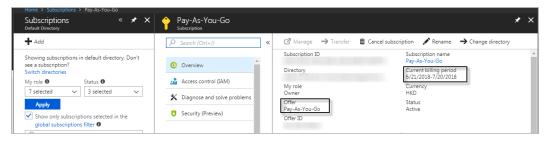
- c Click API Access Key.
- d Click the key icon in the Primary Key text box to generate the API access key.
- e Copy the entire API access key string into a text file, and save the file.

To get the subscription information:

- 1 Log in to your Azure Enterprise account at https://portal.azure.com/.
- 2 Click **All services**, and then input "*Subscriptions*" in the **All services** text box, and then click **Subscriptions**.

Microsoft Azure				ی کر
Create a resource	All services subscriptions			
i≘ All services	_			
— 🛧 FAVORITES ————————————————————————————————————	Event Grid Subscriptions	*	Y Subscriptions	☆

- 3 On the Subscriptions dashboard, select your subscription, and then record the following information:
 - Offer: This value indicates the subscription type, for example, Pay As You Go.
 - Current billing period: This value is used to set the Billing Cycle Day in Editing agent properties. For example, your Current billing period is "6/21/2018-7/20/2018", then the Billing Cycle Day will be "21".



Azure monitoring setup

To fully enable the monitoring of Azure environment, Foglight Hybrid Cloud Manager for Azure requires to create an Azure Performance Agent that is to be authenticated using Azure Active Directory ID (Tenant ID), Application ID, and Access Key.

A complete setup includes the following three steps:

- 1 Get the authentication information through the Azure portal. For more information, see Getting authentication information through Azure portal on page 9.
- 2 Create an Azure Performance Agent on the Foglight Management Server. For more information, see Creating Azure Performance Agent on page 11.
- 3 If your Azure Performance Agent is installed behind a firewall, configure firewall settings on the machine running the Foglight Agent Manager. For more information, see Configuring firewall settings on page 11.

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Getting authentication information through Azure portal

To get Tenant ID, Application ID, and Access Key through the Azure portal:

- 1 Log in to the Azure portal.
- 2 On the left navigation panel, select **Azure Active Directory.**

The Azure Active Directory view that belongs to your account opens.

- 3 In the Azure Active Directory view, select Manage > Properties, and then click () to copy the Directory ID, that is also known as Tenant ID.
- 4 In the Azure Active Directory view, select Manage > App registrations, and then click New registration. The Register an application view opens.
- 5 Type the following information, as needed, and then click **Register**.
 - Name: type the name of the application.
 - Supported account types: select who can use this application or access this API.
 - Redirect URL (optional): type the URL address where users can sign in and use the application.

The Register an application view closes and the App registrations list is refreshed automatically.

6 In the App registrations list, select the application created in Step 5.

Keep the Application ID displayed in the Application details view somewhere safe.

📋 Delete 🕀 Endpoints	
Got a second? We would love your feedback on Micro	soft identity platform (previously Azure AD for developer). $ ightarrow$
Display name	Supported account types My organization only
Application (client) ID	Redirect URIs Add a Redirect URI
Directory (tenant) ID	Application ID URI Add an Application ID URI
Object ID	Managed application in local directory

- 7 In the Application details view, click **Manage > Certificates & secrets**. The *Certificates & secrets* view opens on the right.
- 8 In the Certificates & secrets view, click + New client secret.

The Add a client secret view opens.

9 In the Add a client secret view, specify the values of DESCRIPTION and EXPIRES, and then click Add.

9

	Add a client secret
OverviewQuickstart	Description
Manage	Expires
🖬 Branding	In 1 year
Authentication	O In 2 years
📍 Certificates & secrets	O Never
→ API permissions	
🙆 Expose an API	Add Cancel
R Owners	Client secrets
Roles and administrators (Previ	A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.
Manifest	+ New client secret
Support + Troubleshooting	Description Expires Value
 Troubleshooting New support request 	No client secrets have been created for this application.

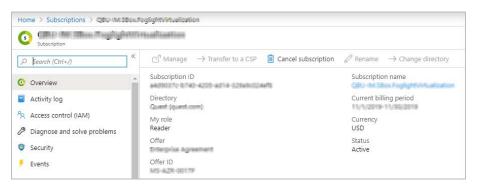
10 Click n to copy the key value.

Client secrets		
A secret string that the application password.	uses to prove its identity when	requesting a token. Also can be referred to as application
+ New client secret		
Description	Expires	Value
test_key	11/20/2020	s3H0/Aap3/hb63_uw=u)/2WOdindjn 🗋
4		•

- 11 Click **Microsoft Azure** on the top left corner, to return the default dashboard that appears once logged into the Azure portal.
- 12 On the left navigation panel, click Subscriptions.

The Subscriptions view opens.

13 In the *Subscriptions* view, click the subscription that you want to monitor, then the Subscriptions details view opens.



- 14 In the Subscription details view, click Access control (IAM), then Access control (IAM) view opens on the right.
- 15 Click Add and select Add role assignment. The Add role assignment view opens.
- 16 In the *Add role assignment* view, select *Reader* from the **Role** drop-down list, search for the application created in Step 5, and then click **Save**.
- 17 Repeat Step 11 to Step 16, to assign the *Storage Account Key Operator Service Role* to the application created in Step 5.

NOTE: Repeat this procedure if there are multiple applications to be monitored.

NOTE: Diagnostics settings must be enabled to collect metrics for both ARM-deployed virtual machines and standard Storage Account. For more information, see How to enable metrics using the Azure portal.

NOTE: For **Linux** instances only, please install Python 2. For more information, please see Linux Diagnostic extension to monitor metrics and logs article **https://docs.microsoft.com/en-us/azure/virtual-machines/extensions/diagnostics-linux-v3#prerequisites** that explains the Python requirement.

Configuring firewall settings

If your Azure Performance Agent is installed behind the firewall, ensure the following URL addresses and ports are open:

• URL addresses:

i

- https://login.microsoftonline.com
- *.azure.com
- *.azure.net
- *.windows.net
- TCP/UDP port: 443

Creating Azure Performance Agent

Each of virtual machine can be monitored only by one Azure Performance agent; otherwise the Management Server topology object changes and the performance issue occurs. Quest strongly recommends that each of the Azure Tenant is monitored by an agent. However in some production environments, you have to create two or more agents for monitoring the same Tenant. Under this condition, implement either of the following for those agents to ensure every agent in the same Tenant monitors different virtual machines:

i | NOTE: Each of the virtual machine must be monitored by an agent.

- If *Monitor All* is selected in the *Select laaS Virtual Machines to Monitor* dialog box: In the **Edit Properties** dialog box, select *Select Resource Groups to be monitored*, and then ensure every agent monitors various Resource Groups.
- If *Monitor All* and *Automatically Monitor New Virtual Machines* are not selected in the *Select IaaS Virtual Machines to Monitor* dialog box: In the **Edit Properties** dialog box, ensure every agent monitors various virtual machines.
- If Monitor All is not selected but Automatically Monitor New Virtual Machines is selected in the Select IaaS Virtual Machines to Monitor dialog box: In the Edit Properties dialog box, select Select Resource Groups to be monitored, and then ensure every agent monitors various Resource Groups.

If you still encounter problems, contact Quest Support.

To create an Azure Performance 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.

The Agent Setup Wizard dialog box opens.

Monitoring	Tags	Reports	Rule Config	uration	Usage+Quotas	Global Services	Administra	ation						
T				Ant	Setup Wizard									×
Tasks:			/	• A	gent Manager Ho	ıst	A	Agent Manag	er Host					
G Agents		reate Azur	re Agent Se Usage		zure Agent Propert gent Setup Summa				Foglig	ht Agen	t Manager Host			
/		dv	ate 🕕 Deact						t Name		FgIAM Version	OS	Architecture	
Add		Activ	ate 🕕 Deact					۲	11 million		5.9.5	windows	x86_64	
												Previ	ous Next Finish	Cancel

- 5 In the *Agent Manager Host* view, select the agent manager on which the new agent is to be deployed, and then click **Next**.
- 6 In the Azure Agent Properties view, specify the following values, as needed, then click Next.
 - Azure Environment*: The value of Azure Environment: Azure.com (default value) or Azure.cn(China).
 - Tenant Directory ID *: The value of Tenant ID retrieved in Getting authentication information through Azure portal.
 - Tenant Alias Name: The display name that identifies your Tenant.
 - Application ID *: The value of Application ID retrieved in Getting authentication information through Azure portal.
 - Access Key *: The value of Access Key retrieved in Getting authentication information through Azure portal.
 - Specify an agent name (Optional): Specify the name of agent.
 - 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.
- 7 In the Agent Setup Summary view, confirm the agent information, and then click Finish.

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

Dashboard location and UI elements

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

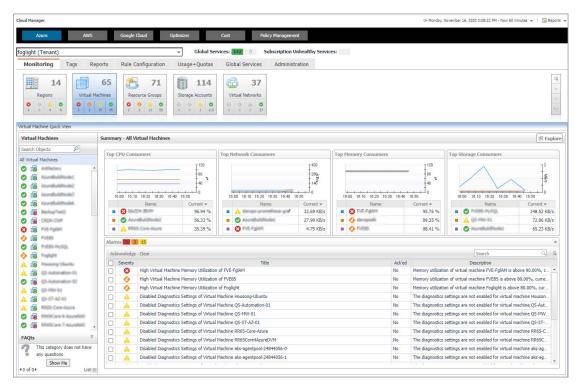
To access the Cloud Manager dashboard:

- 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**.

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 Azure 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 Tags Tab, the Reports Tab, the Rule Configuration Tab, the Global Services Tab, and the Administration Tab.

Figure 2. Actions bar

Monitoring Tags Reports Rule Configuration Usage+Quotas Global Services Administration

Menu bar

The Menu bar contains the following tiles: *Regions monitoring, Virtual Machines monitoring, Resource Groups Monitoring, Storage Accounts monitoring, and Virtual Networks monitoring.*

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.

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, virtual machines, resource groups, storage accounts, or virtual networks, and review the data associated with your selection.

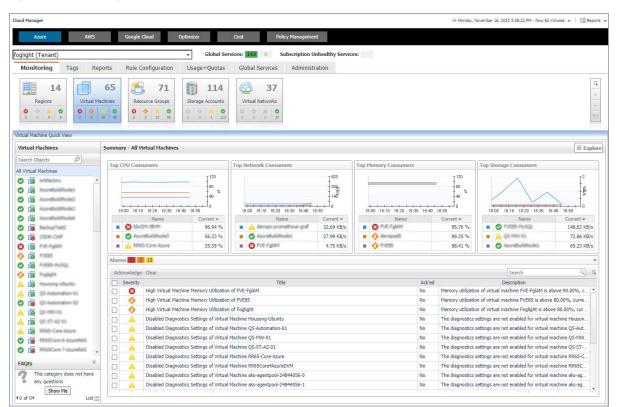


Figure 4. Monitoring dashboard

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**.

The Cloud Manager dashboard opens

- Click Monitoring in the actions bar. 4
- The Monitoring tab includes the following tiles: Regions, Virtual Machines, Resource Groups, Storage 5 Accounts, or Virtual Networks.

For more information, see the following topics:

Regions monitoring

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- Virtual Machines monitoring
- Resource Groups Monitoring
- Storage Accounts monitoring
- Virtual Networks monitoring

Regions monitoring

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

- Regions view
- Summary All Regions view
- Region Summary view

Regions view

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

Figure 5. Regions view

Reg	ions
Sear	rch Objects 🔎
All Re	gions
	Australia Southeast
	Brazil South
	East US
\bigcirc	Japan East
0	North Europe
0	UK South
0	West US
	West US 2

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

Data displayed	٠	Alarm severity. The state of the most recent alarm raised against the associated
Data displayed		virtual machine.

- All Regions. A parent node for the regions that appear in this view.
- Region. The region name.

Where to go next Drill down on:

- All Regions. Shows the Summary All Regions view on the right.
- Region. Shows the Region Summary view on the right.

Summary - All Regions view

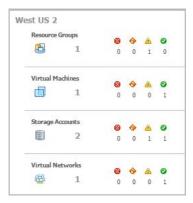
The Summary - All Regions view appears on the right when you select All Regions in the Regions view.

Figure 6. Summary - All Virtual Machines view



Hover over any bubble in this graph to display a dwell, showing *Resource Groups, Virtual Machines, Storage Accounts,* and *Virtual Networks.*

Figure 7. Region dwell



Click any bubble in this graph to open the **Region Explorer** dialog box, showing *Virtual Machines, Storage Accounts, Resource Groups,* and *Virtual Networks.*

Region Summary view

The Region Summary view appears on the right when you select a region in the Regions view.

Figure 8. Region Summary view

jion: East US										. ≝ Ext
Related Items					Virtual Ma	achines				
Resource Groups				0					Search	,
🔁 3	0	0	0	3	Severity	Name		CPI	J Utilization 🗸	Memory Utilization
					0	Externalfglam			n/a	n/a
Virtual Machines	_				0	Win-2008R2-DC			n/a	n/a
3	8	•	<u> </u>	3	0	vm4premstorage			n/a	n/a
Virtual Networks										
	8	٩	۵	0						
2	0	0	0	2						
larms 0 0 <mark>2</mark>										
Acknowledge Clear										
Severity						Title	Ack'ed		Description	
🗌 🔔 Failed	to Get I	Diagn	ostic	s Settin	ngs of Storage	e Service foglightforad8785-QUEUE	No	Errors happen when Azu	re agent is trying to	get diagnostics setting

This view consists of the following embedded views:

- Alarms
- Related Items

• Virtual Machines

Table 2. Alarms

 Description
 Lists the alarms generated against the selected region.

 Data displayed
 • Description. An explanation about why the alarm occurred.

 • Severity. Indicates the alarm severity: Warning, Critical, or Fatal.

 • Title. Indicates the alarm title.

 • Ack'ed. Indicates whether the alarm has been acknowledged.

 Where to go next

 Drill down on:

• **Description**, **Severity**, **Title**, or **Ack'ed**. Displays the **Alarm Created** dialog box, showing additional information about the alarm. For more information about alarms, see the *Foglight User Help*.

Table 3. Related Items

Description

Data displayed

- Shows the numbers and states of the selected regions.
 - Resource Groups. The number of the resource groups that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
 - Virtual Machines. The number of the virtual machines that are associated with the selected region, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
 - **Storage Accounts**. The number of the storage 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).
 - **Virtual Networks**. The number of the virtual networks 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:

Resource Groups. Displays the **Resource Groups** dwell, showing the name and state of the associated Resource Groups.

Resource Gr	oups
Name 🔺	State
demoFoglight	8

• Virtual Machines. Displays the Virtual Machines dwell, showing the name and state of the associated virtual machine.

Virtual Mach	nines
Name 🔺	State
2k16dantacenter	8

Table 3. Related Items

• Storage Accounts. Displays the Servers dwell, showing the name and state of the associated storage accounts.



• Virtual Networks. Displays the Virtual Networks dwell, showing the name and state of the associated virtual networks.

Virtual Netv	vorks
Name 🔺	State
demoFoglight-vnet	0

Table 4. Virtual Machines

Description	Shows a table, showing the information about the virtual machines associated with the selected region.			
Data displayed	• Severity. Indicates the alarm severity: Warning, Critical, or Fatal.			
	Name. The name of the virtual machine.			
	CPU Utilization. The amount of CPU processing speed.			
	Memory Utilization. The amount of memory utilization.			
Where to go next	Drill down on:			
	CPU Utilization. Displays the CPU Utilization dialog box, including CPU Utilization, % Privileged Time, and % User Time.			
	 Memory Utilization. Displays the Memory Usage dialog box, including Memory Utilization and % Available Paging Space. 			
	 Name. Displays the Virtual Machine view, showing the metrics of Resource Information, CPU, Memory, Network, and Storage. 			

Virtual Machines monitoring

The Virtual Machines (VM) view shows the data collected about a specific Azure virtual machine or all Azure virtual machines. For more information, see the following topics:

- Virtual Machines view
- Summary All Virtual Machines view
- Virtual Machine Summary view

Virtual Machines view

The **Virtual Machines** tree view lists the virtual machines existing in your Azure environment and shows their state. This view appears on the left when you select the **Virtual Machines** tile in the Actions bar.

Figure 9. Virtual Machines view

Sea	ch Ob	jects 🔎	
All Vi	rtual N	1achines	
\odot	6	FreeBSD2	-
0	0	Redhat73	
	0	Ubuntu	
0	6	Ubuntu1604LTS	
0	0	VROOM	

Selecting the **All Virtual Machines** node displays overall resource utilization for all virtual machines in your Azure environment and the elements that consume the highest amount of system resources in the Summary - All Virtual Machines view on the right. Similarly, selecting a virtual machine node shows virtual machine-specific metrics in the Virtual Machine Summary view on the right.

Table 5. Description of the View

Data displayed • Alarm severity. The state of the most recent alarm raised against the associated virtual machine.

- All Virtual Machines. A parent node for the virtual machine object instances that appear in this view.
- Virtual machine Power State. The power state of the virtual machine.
- Virtual machine. The virtual machine name.

Where to go next Drill down on:

- All Virtual Machines. Shows the Summary All Virtual Machines view on the right.
- Virtual machine. Shows the Virtual Machine Summary view on the right.

Summary - All Virtual Machines view

The **Summary - All Virtual Machines** view displays overall resource utilization information for a group of virtual machines and shows the elements that consume the highest amount of system resources. This view appears on the right when you select **All Virtual Machines** in the Virtual Machines view.

Figure 10. Summary - All Virtual Machines view

Name Current ▼ Win-2008R2-DC 97.75 % Subsc12sp2 0.55 % Centrol S 0.45 % Subsc12sp2 6.60 KB/s Subsc12sp2 5.50 % Subsc12sp2 6.60 KB/s Subsc12sp2 6.60 KB/s Subsc12sp2 6.60 KB/s Subsc12sp2 6.60 KB/s
Suse12sp2 0.55 % ■ C HPC2012/2 10.23 KB/s ■ O centsO5 8.00 % ■ Suse12sp2 0.60 KB/s ■ O centsO5 8.00 % ■ Suse12sp2 0.60 KB/s ■ O centsO5 8.00 % ■ O winserver16nano 7.60 KB/s O winserver16nano 0.00 % ■ O winserver16nano 0.60 KB/s 0 winserver16nano 0.60 KB/s 0 winserver16nano 0.60 KB/s 0 winserver16nano 0.60 KB/s 0 winserver16nano 0 wins
⊘ centsOS 0.45 % ■ ⊗ Suse12sp2 6.60 KB/s ■ ⊗ Suse12sp2 6.00 % ■ ⊗ winserver16nano 7.60 KB/s
nowledge Clear
Sevenity Title Ack'ed Description

This view consists of the following embedded views:

- Alarms
- Top CPU Consumers
- Top Network Consumers

- Top Memory Consumers
- Top Storage Consumers

Table 6. Alarms

Description Data displayed	 Lists the alarms generated against the monitored virtual machine. Description. An explanation about why the alarm occurred. Severity. Indicates the alarm severity: Warning, Critical, or Fatal. Title: Indicates the alarm title. Ack'ed. Indicates whether the alarm has been acknowledged.
Where to go next Table 7. Top CPU C	 Drill down on: Description, Severity, Title, or Ack'ed. Displays the Alarm Created dialog box, showing additional information about the alarm. For more information about alarms, see the Foglight User Help. onsumers
Description	Shows the top three virtual machines with the highest average CPU utilization.
Data displayed	• Utilization . 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.
	Virtual Machine. The name of the virtual machine.
Where to go next	Drill down on:
	• Virtual Machine. Displays the fundamental VM information, including <i>Resource Information</i> , <i>CPU</i> , <i>Memory</i> , <i>Network</i> , and <i>Storage</i> .
Table 8. Top Netwo	rk Consumers

Description	Shows the top three virtual machines that are consuming most network bandwidth.			
Data displayed	• Rate . The rate at which the top three network consumers transfer data to or from the network during the selected time range.			
	 Virtual Machine. The name of the virtual machine that is one of the top three network consumers. 			
Where to go next	Drill down on:			
	• Virtual Machine. Displays the fundamental VM information, including Resource Information, CPU, Memory, Network, and Storage.			

Table 9. Top Memory Consumers

Description	Shows the top three virtual machines with the highest average memory utilization.			
Data displayed	 Virtual Machine. The name of the virtual machine that is one of the top three memory consumers. 			
	• Rate . The amount of memory the top three memory consumers use during the selected time range.			
Where to go next	Drill down on:			
	• Virtual Machine or Rate. Displays the fundamental VM information, including Resource Information, CPU, Memory, Network, and Storage.			

Table 10. Top Storage Consumers

Description	Shows the top three virtual machines with the highest available disk space.
Data displayed	• Virtual Machine . The name of the virtual machine that is one of the top three disk consumers.
	• Rate. The rate at which the top three disk consumers read or write data to the storage during the selected time range.

Where to go next Drill down on:

• Virtual Machine or Rate.Displays the fundamental VM information, including Resource Information, CPU, Memory, Network, and Storage.

Virtual Machine Summary view

The **Virtual Machine Summary** view shows the overall resource utilization and the amounts of system resource consumption for a virtual machine. This view appears on the right when you select a virtual machine in the Virtual Machines view.

Figure 11. Virtual Machine Summary view



This view consists of the following embedded views:

- Alarms
- Related Items
- Resource Utilizations
- Resource Information

Table 11. Alarms

Lists the alarms generated against the selected virtual machine.

Data displayed

Description

- Description. An explanation about why the alarm occurred.
 - Severity. Indicates the alarm severity: Warning, Critical, or Fatal.
 - Title. Indicates the alarm title.
 - Ack'ed. Indicates whether the alarm has been acknowledged.

Where to go next Drill down on:

• **Description, Severity**, **Title**, or **Ack'ed**. Displays the **Alarm Created** dialog box, showing additional information about the alarm. For more information about alarms, see the *Foglight User Help*.

Table 12. Related Items

Data displayed

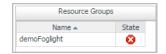
Description Shows the numbers and states of the selected virtual machine running on the monitored Azure environment.

 Resource Groups. The number of the resource groups that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).

- **Regions**. The number of the region that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- Storage Accounts. The number of the storage accounts that are that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Virtual Networks**. The number of the virtual networks that are that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).

Where to go next Drill down on:

Resource Groups. Displays the **Resource Groups** dwell, showing the name and the state of the resource group in which the selected virtual machine is running.



• **Regions**. Displays the **Regions** dwell, showing the name and state of the region in which the selected virtual machine is running.

Name 🔺	State
Japan East	6

• **Storage Accounts**. Displays the **Servers** dwell, showing the name and state of the storage on which the selected virtual machine is running.

Name 🔺	State	
demofoglightdiag804	0	-
demofoglightdisks255		

• Virtual Networks. Displays the Virtual Networks dwell, showing the name and state of the selected virtual machine.

Virtual Netw	orks
Name 🔺	State
demoFoglight-vnet	0

Table 13. Resource Utilizations

Data displayed

Description Shows the resource consumption for the selected virtual machine, broken down into four simple views.

- CPU Load. The current percentage of the selected virtual machine's CPU load, used to execute system code and user programs, based on the total CPU capacity allocated to that virtual machine.
 - Storage I/O. The current storage I/O rate for the selected virtual machine.
 - **Network I/O**. The current rate at which the selected virtual machine transfers data from and to the network.

Table 13. Resource Utilizations

• **Memory**. The total amount of memory that is available to the selected virtual machine.

Where to go next Drill down on:

- CPU Load spinner. Displays the CPU Load dialog box.
- **CPU Utilization** graph. Displays the **CPU Utilization** dialog box, including *CPU Utilization*, *% Privileged Time*, and *% User Time*.
- Network I/O spinner. Displays the Network I/O dialog box.
- Network Utilization graph. Displays the Network Utilization dialog box, including Network Transfer Rate, Network In, and Network Out.
- Memory spinner. Displays the Memory dialog box.
- **Memory Utilization** graph. Displays the **Memory Utilization** dialog box, including *Memory Utilization* and *% Available Paging Space*.
- Storage I/O spinner. Displays the Storage I/O dialog box.
- Storage Utilization graph. Displays the Storage Utilization dialog box, including Storage Utilization, Read Operations / Second, and Write Operations / Second.

Table 14. Resource Information

Description

Shows the name of the selected virtual machine, its status, the basic configuration, and cost information, including the name of the resource group associated with this virtual machine, the region on which this virtual machine is running, its IP address, the Operating System (OS), current month billing, and last month billing.

Resource Groups Monitoring

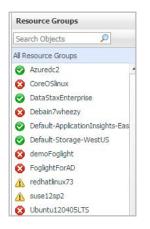
The Resource Groups view shows the data collected about a specific resource group or all resource groups. For more information, see the following topics:

- Resource Groups view
- Summary All Resource Groups view
- Resource Group Summary view

Resource Groups view

The **Resource Groups** tree view lists the resource groups existing in your Azure environment and shows their state. This view appears on the left when you select the **Resource Groups** tile in the Actions bar.

Figure 12. Resource group view



Selecting the **All Resource Groups** node displays all resource groups in the Summary - All Resource Groups view on the right. Similarly, selecting a resource group shows resource group-specific metrics in the Resource Group Summary view on the right.

Table 15. Description of the View

Data displayed

- Alarm severity. The state of the most recent alarm raised against the associated virtual machine.
- All Resource Groups. A parent node for the resource groups that appear in this view.
- Resource Group. The resource group name.

Where to go next Drill down on:

- All Resource Groups. Shows the Summary All Resource Groups view on the right.
- Resource Groups. Shows the Resource Group Summary view on the right.

Summary - All Resource Groups view

The **Summary - All Resource Groups** view displays overall resource group information. This view appears on the right when you select **All Virtual Machines** in the Resource Groups view.

Figure 13.	Summary	- All	Resource	Groups	view
------------	---------	-------	----------	--------	------

	ource Groups										
								Sea	arch	۶	•
Sev	Name	Region	Virtual Machi	nes	Storage Ac	counts	Networks	5	Network Interfaces		
🕄 I	FoglightForAD	Brazil South		- 5	_	6	_	- 4		7	۲
3	demoFoglight	East US	-	1	_	2	-	1	-	1	۲
(Default-ApplicationInsights-EastUS	East US		0		0		0		0	Ð
(3)	Debain7wheezy	North Europe	-	1	_	2	-	1	-	1	Ð
(3)	winserveressentials	West US 2	-	1	_	2	-	1	-	1	Ð
(Default-Storage-WestUS	West US		0		0		0		0	Ð
0	CoreOSlinux	North Europe	-	1	_	2	-	1	-	1	Ð
\[\] \[\[\] \[\] \[\] \[\[\] \[\[\] \[\[\] \[\[\[\[win12datacenter	Brazil South		0		0		0		0	Ð

This view consists of the following embedded views:

- Alarms
- All Resource Groups

Table 16. Alarms	
Description Data displayed	 Lists the alarms generated against the monitored virtual machine. Description. An explanation about why the alarm occurred. Severity. Indicates the alarm severity: Warning, Critical, or Fatal. Title: Indicates the alarm title. Ack'ed. Indicates whether the alarm has been acknowledged.
Where to go next	 Drill down on: Description, Severity, Title, or Ack'ed. Displays the Alarm Created dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i>.
Table 17. All Resou	rce Groups
Description Data displayed	 Shows the overall information about all resource groups. Severity. Indicates the alarm severity: Warning, Critical, or Fatal. Name. The name of the resource group. Region. The region where the resource group locates. Virtual Machines. The number of VMs available in the resource group. Storage Accounts. The number of storage accounts available in the resource group. Networks. The number of networks available in the resource group. Network Interfaces. The number of network interfaces accounts available in the resource group.
Where to go next	 Drill down on: Name. Shows the Resource Group view, showing the metrics of <i>Virtual Machines</i>, <i>Storage Accounts, and Virtual Networks</i>. Region. Shows the Region view, showing the metrics of <i>Virtual Machines, Storage Accounts, and Resource Groups</i>.

• Virtual Machine, Storage Account, Network, or Network Interfaces. Shows a dwell, showing its name and state.

Resource Group Summary view

The **Resource Group Summary** view shows the overall information of the selected resource group. This view appears on the right when you select a resource group in the Resource Groups view.

Figure 14. Resource Group Summary view

Resource Groups	Resource Gro	up: dem	oFogligh	ıt								1 E	Explo
Search Objects													
I Resource Groups	Related Ite	ms					Virtual Mad	chines					
Azuredc2	Virtual Ma	hines				_					Search	+ 🔍	
CoreOSlinux		1	8		<u>A</u>	0	Severity	Name	F	Region	CPU Utilization 👻	Memory Utilization	
DataStaxEnterprise							0	2k16dantacenter	Japan East		n/a	n/	/a
Debain7wheezy	Storage Ac	ounts	8	٩									
						v							
Default-ApplicationInsights-Eas		2	1	0	0	1							
Default-ApplicationInsights-Eas Default-Storage-WestUS		2	1	0	0	1							
Default-Storage-WestUS	Virtual Ne			_		1							
Default-Storage-WestUS demoFoglight			1	•		1							
Default-Storage-WestUS demoFoglight FoglightForAD	Virtual Ne			•	٨	-							
Default-Storage-WestUS demoFoglight FoglightForAD redhatlinux73	Virtual Ne		8 0		<u>A</u> 0	1							
Default-Storage-WestUS demoFoglight FoglightForAD redhatlinux73 suse12sp2	Virtual Ne			◆ 0	<u>∧</u> 0	-							
Default-Storage-WestUS demoFoglight FoglightForAD redhatlinux73 suse12sp2 Ubuntu12040SLTS	Virtual Ne	works 1	0 0	◆ 0	<u>۸</u> 0	1							
Default-Storage-WestUS demoFoglight FoglightForAD redhatinux73 suse12sp2 Ubuntu2404SLTS Ubuntu1401	Virtual Ne Regions	works 1 2	0 0	◆ 0	<u>۸</u> 0	1							
 Default-Storage-WestUS demoFoglight FoglightForAD redhatinux73 suse12sp2 Ubuntu20405LTS Ubuntu1401 virtualnetwork 	Virtual Ne Co Regions Regions Alarms	works 1 2	0 0 2	◆ 0	<u>۸</u> 0	1							
	Virtual Ne Regions	works 1 2	0 0 2	◆ 0	<u>۸</u> 0	1		TRIA	Ackled				

This view consists of the following embedded views:

- Alarms
- Related Items
- Virtual Machines

Table 18. Alarms

Data displayed

Description Lists the alarms generated against the selected virtual machine.

- Description. An explanation about why the alarm occurred.
 - Severity. Indicates the alarm severity: Warning, Critical, or Fatal.
 - Title. Indicates the alarm title.
 - Ack'ed. Indicates whether the alarm has been acknowledged.

Where to go next Drill down on:

• **Description, Severity, Title**, or **Ack'ed**. Displays the **Alarm Created** dialog box, showing additional information about the alarm. For more information about alarms, see the *Foglight User Help*.

Table 19. Related Items

Description Shows the numbers and states of the selected resource group on the monitored Azure environment.

Data displayed re

- **Virtual Machines**. The number of the VMs that are associated with the selected resource group, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Regions**. The number of the region that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Storage Accounts**. The number of the storage accounts that are that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
- **Virtual Networks**. The number of the virtual networks that are that are associated with the selected virtual machine, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).

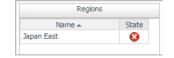
Where to go next Drill down on:

Table 19. Related Items

• Virtual Machines. Displays the Virtual Machines dwell, showing the name of VM and its state.



• **Regions**. Displays the **Regions** dwell, showing the name and state of the region in which the selected virtual machine is running.



• **Storage Accounts**. Displays the **Servers** dwell, showing the name and state of the storage on which the selected virtual machine is running.



• Virtual Networks. Displays the Virtual Networks dwell, showing the name and state of the selected virtual machine.

Virtual Netv	vorks
Name 🔺	State
demoFoglight-vnet	0

Table 20. Virtual Machines

Description	Shows a table, showing the information about the selected resource group.
Data displayed	• Severity. Indicates the alarm severity: Warning, Critical, or Fatal.
	• Name. The name of the virtual machine.
	• Region . The region on which the virtual machine is running.
	CPU Utilization. The amount of CPU processing speed.
	Memory Utilization. The amount of memory utilization.
Where to go next	Drill down on:
	CPU Utilization. Displays the CPU Utilization dialog box, including CPU Utilization, % Privileged Time, and % User Time.
	 Memory Utilization. Displays the Memory Usage dialog box, including Memory Utilization and % Available Paging Space.
	 Name. Displays the Virtual Machine view, showing the metrics of Resource Information, CPU, Memory, Network, and Storage.
	• Region . Displays the Virtual Machine view, showing the metrics of <i>Virtual Machines, Storage Accounts,</i> and <i>Resource Groups</i> .

Storage Accounts monitoring

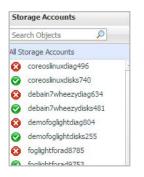
The Storage Accounts view shows the data collected about a specific storage account or all storage accounts. For more information, see the following topics:

- Storage Accounts view
- Summary All Storage Accounts view
- Storage Account Summary view

Storage Accounts view

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

Figure 15. Storage Accounts view



Selecting the **All Storage Accounts** node displays the overall resource utilization for all storage accounts in your integrated system and identifies the ones that consume the highest amount of system resources in the Summary - All Storage Accounts view on the right. Similarly, selecting a storage node shows storage-specific metrics in the Storage Account Summary view.

Table 21. Description of the View

Data displayed	• Alarm severity. The state of the most recent alarm raised against the volume.
	• All Storage Accounts. A parent node for the instances of all volumes that appear in this view.
	Storage Account. The instance of storage account.
Where to go next	Drill down on:
	All Storage Accounts, Shows the Summery, All Storage Accounts view on the

- All Storage Accounts. Shows the Summary All Storage Accounts view on the right.
- Storage Account. Shows the Storage Account Summary view on the right.

Summary - All Storage Accounts view

The **Summary - All Storage Accounts** view displays overall information for all volumes 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 Storage Accounts** in the Storage Accounts view.

Figure 16. Summary - All Storage Accounts view

op E2E Latency		То	p Serve	er Latency		Тор	Total Egress			Top	Fotal Ingress	
18:35 18:50 19:	05 19:20	5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	18:35	18:50 19:05 19:20	140 140 40	18	:35 18:50 11	9:05 19:20	400 2000	18	35 18:50 19:05 19:20	
Nam	e Curre	ent		Name	Current		Na	ime	Current •		Name	Current -
💼 😢 foglightfora	ddisks618 5.96	sec	• 📀	foglightforad8785	204.20 n		😢 foglightfo	rad8785	318.40 K		😢 coreoslinuxdiag496	612.82 K
💼 🔞 foglightfora	ddiag253 4.48	sec	• 🕄	coreoslinuxdiag496	79.58 n	-	😢 winserve	ressentials204	162.75 K		😢 foglightforaddiag408	605.24 K
 Winserveres 	sentials204 1.22	sec	0	debain7wheezydiag634	46.00 n		😢 ubuntu14	101diag478	120.30 K		😵 foglightforad8785	572.76 K
Marms 60 0 22												
Severity				Title			Ack'ed			Des	cription	
	Average Server Late			JAL- 400 TADLE			No	Augusta Car			ntforaddiag408-TABLE servi	de si es

This view consists of the following embedded views:

- Alarms
- Top E2E Latency
- Top Server Latency
- Top Total Egress
- Top Total Egress

Table 22. Alarms

Description	Lists the alarms generated against the monitored virtual machine.
Data displayed	• Description . An explanation about why the alarm occurred.
	• Severity. Indicates the alarm severity: Warning, Critical, or Fatal.
	• Title: Indicates the alarm title.
	Ack'ed. Indicates whether the alarm has been acknowledged.
Where to go next	Drill down on:
	• Description, Severity , Title , or Ack'ed . Displays the Alarm Created dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i> .
Table 23. Top E2E L	atency

Description	Shows the top three storage accounts with the highest end-to-end (E2E) latency.
Data displayed	• Current . The value of E2E latency (in seconds).
	Storage Account. The name of the storage account.
Where to go next	Drill down on:
	 Current, Storage Account. Shows the Storage Account view, including Resource Information, and Average E2E Latency, Average Server Latency, Total Egress, Total Ingress, Total Requests, and Total Billable Requests.

Table 24. Top Server Latency

Data displayed

Description	Shows the top three storage accounts v	vith the highest server latency.
-------------	--	----------------------------------

- **Current**. The value of E2E latency (in milliseconds).
 - Storage Account. The name of the storage account.

Table 24. Top Server Latency

Where to go next Drill down on:

• **Current, Storage Account**. Shows the Storage Account view, including *Resource Information, and Average E2E Latency, Average Server Latency, Total Egress, Total Ingress, Total Requests, and Total Billable Requests.*

Table 25. Top Total Egress

 Description
 Shows the top three storage accounts with the highest Egress.

 Data displayed
 • Current. The value of Egress (in KB).

 • Storage Account. The name of the storage account.

Where to go next Drill down on:

• Current, Storage Account. Shows the Storage Account view, including Resource Information, and Average E2E Latency, Average Server Latency, Total Egress, Total Ingress, Total Requests, and Total Billable Requests.

Table 26. Top Total Ingress

Description Shows the top three storage accounts with the highest Egress.

- Current. The value of Ingress (in KB).
 - **Rate.** The rate at which the top three disk consumers read or write data to the storage during the selected time range.

Where to go next Drill down on:

• **Current, Storage Account**. Shows the Storage Account view, including *Resource Information, and Average E2E Latency, Average Server Latency, Total Egress, Total Ingress, Total Requests, and Total Billable Requests.*

Storage Account Summary view

The **Storage Account Summary** view displays complete details for a storage account. This view appears on the right when you select a storage account in the Storage Accounts view.



Figure 17. Storage Account Summary view

This view consists of the following embedded views:

Alarms

- Related Items
- Metrics
- Resource Information

Table 27. Alarms

Description	Lists the alarms generated against the selected virtual machine.
Data displayed	• Description . An explanation about why the alarm occurred.
	Severity. Indicates the alarm severity: Warning, Critical, or Fatal.
	• Title. Indicates the alarm title.
	Ack'ed. Indicates whether the alarm has been acknowledged.
Where to go next	Drill down on:
	• Description, Severity , Title , or Ack'ed . Displays the Alarm Created dialog box, showing additional information about the alarm. For more information about alarms, see the <i>Foglight User Help</i> .

Table 28. Related Items

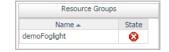
Data displayed

Description Shows the numbers and states of the selected virtual machine running on the monitored Azure environment.

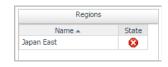
- Resource Groups. The number of the resource groups that are associated with the selected storage account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
 - **Regions**. The number of the region that are associated with the selected storage account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).
 - Virtual Machines. The number of the virtual machines that are that are associated with the selected storage account, followed by related alarm counts, broken down by the alarm state (Normal, Warning, Critical, Fatal).

Where to go next Drill down on:

• **Resource Groups**. Displays the **Resource Groups** dwell, showing the name of Resource Groups and its state.



• **Regions**. Displays the **Regions** dwell, showing the name and state of the region in which the selected storage account is running.



• Virtual Machines. Displays the Virtual Machines dwell, showing the name and state of the selected storage account.

Virtual Mac	hines:
Name 🔺	State
2k16dantacenter	8

Table 29. Metrics

 Description
 Shows the metrics of the selected storage account, broken down into four simple views.

 Data displayed
 • Average E2E Latency. Shows the average E2E latency in seconds.

 • Average Server Latency. Shows the average server latency in milliseconds.

 • Total Egress. Shows the total Egress in KB.

• Total Ingress. Shows the Total Ingress in KB.

Table 30. Resource Information

Description

Shows the name of the selected storage account, its status, and the basic configuration, including the name of the resource group associated with this storage account, the location where this storage account locates, its created time, and its replication.

Virtual Networks monitoring

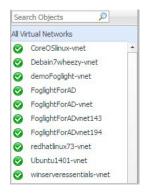
The Virtual Networks view shows the data collected about a specific virtual network or all virtual networks. For more information, see the following topics:

- Virtual Networks view
- Summary All Virtual Networks view
- Virtual Network Summary view

Virtual Networks view

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

Figure 18. Virtual Networks view



Selecting the **All Virtual Networks** node displays the overall information all virtual networks in the Summary - All Virtual Networks view on the right. Similarly, selecting a virtual network node shows virtual network-specific metrics in the Virtual Network Summary view.

Table 31. Description of the View

Data displayed • Alarm severity. The state of the most recent alarm raised against the virtual network.

- All Virtual Networks. A parent node for the instances of all virtual networks.
- Virtual Network. The instance of virtual network.

Where to go next Drill down on:

Table 31. Description of the View

- All Virtual Networks. Shows the Summary All Virtual Networks view on the right.
- Virtual Network. Shows the Virtual Network Summary view on the right.

Summary - All Virtual Networks view

The **Summary - All Virtual Networks** view appears on the right when you select **All Virtual Networks** in the Virtual Networks view.

Figure 19. Summary - All Virtual Networks view

						Search
Sev	Name 🔺	Resource Group	Region	Connected Virtual Machines	Address Spaces	DNS Server
0	CoreOSlinux-vnet	CoreOSlinux	North Europe	- 1		(m)
0	Debain7wheezy-vnet	Debain7wheezy	North Europe	- 1		<i>5</i> 0
0	demoFoglight-vnet	demoFoglight	Japan East	- 1		-11
0	FoglightForAD	FoglightForAD	East US	2		÷
0	FoglightForAD-vnet	FoglightForAD	East US	- 1		28
0	FoglightForADvnet143	FoglightForAD	North Europe	- 1		-
0	FoglightForADvnet194	FoglightForAD	Brazil South	- 1		(T)
0	redhatlinux73-vnet	redhatlinux73	Australia Southeast	1		20
0	Ubuntu1401-vnet	Ubuntu1401	UK South	1		-
0	winserveressentials-vnet	winserveressentials	West US 2	1		-

Table 32. All Virtual Networks

Table 32. All Virtual Networks				
Description	Lists the overall information of all virtual networks.			
Data displayed	• Severity. Indicates the alarm severity: Warning, Critical, or Fatal.			
	• Name. The name of the virtual network.			
	• Resource Group : Indicates the resource group that is associated with the selected virtual network.			
	• Region. Indicates the region where the selected virtual network locates.			
	 Connected Virtual Machines. Indicates the VMs that are connected with the selected virtual network. 			
	Address Spaces. Indicates the IP address and the range of the virtual network.			
	DNS Servers. Indicates the DNS server.			
Where to go next	Drill down on:			
	 Name. Displays the Virtual Network dialog box, showing additional information about the selected virtual network, including Resource Information and Virtual Network Subnets. 			
	• Resource Group. Displays the Resource Group dialog box, showing additional information about the resource group, including <i>Virtual Machines, Storage Accounts, and Virtual Networks.</i>			

• **Regions.** Displays the **Region** dialog box, showing additional information about the region, including *Virtual Machines, Storage Accounts, Resource Groups, and Virtual Networks.*

Virtual Network Summary view

The **Virtual Network Summary** view displays complete details for a virtual network. This view appears on the right when you select a virtual network in the Virtual Networks view.

Figure 20. Virtual Network Summary view

Virtual Network Details								∃ ⊞
Resource Information	n (winserveressentials-vn	et)						
A	Resource Group	winserveressentials		Address Sp	aces 10.1.0.0/16,172.16.0.0/1	6		
Virtual Network	Location	West US 2		DNS Server	rs -			
Subnets								
Subnet Name 🔺	-		Network In	15		Network Out		Ę
⊘ defauk	10.1.3.0/24		e is No Data To Display	5 20:20 20:25		ere Is No Data To Displa	1y 105 20:10 20:15 20:	20 20:25
						S	earch	<i>p</i> •
		Severity Name WinserverEssen	Resource Group winserveressentials	Region West US 2	Network Transfer Rate 👻 n/a	Network In n/a	Network Out n/a	Ð

This view consists of the following embedded views:

- Subnets
- Connected Virtual Machines
- Resource Information

Table 33. Subnets

Data displayed

Description Lists the subnets associated with the selected virtual network.

- Subnet Name. The name of the subnet.
 - Address Range. Indicates the IP address and its range.

Table 34. Connected Virtual Machines

Description	Lists the virtual machines connected with the selected virtual network.				
Data displayed	• Severity. Indicates the alarm severity: Warning, Critical, or Fatal.				
	• Name. The name of the virtual machine.				
	• Resource Group : Indicates the resource group that is associated with the selected virtual network.				
	• Region . Indicates the region where the selected virtual network locates.				
	Network Transfer Rate. Indicates the network transfer rate.				
	Network In. Indicates bytes received for the virtual machine.				
	Network Out. Indicates bytes sent for the virtual machine.				
Where to go next	Drill down on:				
	 Name. Displays the Virtual Machine dialog box, showing additional information about the virtual machine, including <i>Resource Information, CPU, Memory, Network,</i> and Storage. 				
	 Resource Group. Displays the Resource Group dialog box, showing additional information about the resource group, including Virtual Machines, Storage Accounts, and Virtual Networks. 				
	 Regions. Displays the Region dialog box, showing additional information about the region, including Virtual Machines, Storage Accounts, Resource Groups, and Virtual Networks. 				
	• Network Transfer Rate . Displays the Network Usages dialog box, showing <i>Network</i> <i>Transfer Rate, Network In,</i> and <i>Network Out</i> .				

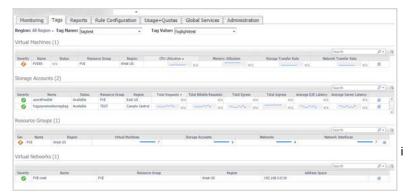
Table 35. Resource Information

Description Shows the name of the selected virtual network, its resource group, address spaces, location, and DNS Servers.

Tags Tab

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

Figure 21. 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 Azure provides the following elements:

- 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.
- Virtual Machines table: Shows Virtual Machine Name, Power State, CPU Utilization, Memory Utilization, Network Utilization, and Volume Utilization of the VMs that include the specified tag name or value.
- Storage Accounts table: Shows Storage Account Name, Status, and Metrics of the VMs that include the specified tag name or value.
- Resource Groups table: Shows Resource Group name, related Virtual Machines, Storage Accounts, Networks, and Networks interfaces of the VMs that include the specified tag name or value.
- Virtual Networks table: Shows Virtual Networks name, Resource Group, and Address Space of the VMs that include the specified tag name or value.

Reports Tab

Foglight Hybrid Cloud Manager for Azure 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 Azure 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 22. Report dashboard

Monitoring	Tags Reports Rule Configuration	Usage+Quotas	Global Services	Administration						_
Tasks:		Recent Report History				About Reports				
	* Create a Report					Understanding Templates vs. Instances				
	* Copy Existing Report					?	Working With Report Sched	duling		
	* Edit Existing Report						Viewing Report History			
Reports	Reports									
	Delete						5	Search	, D +	÷Ę
	Name Da	te 🕶	Last Run	History		hedule	Run Now	Template		
	There Is No Data To Display									

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 Azure.

 Table 36. Report templates

Report Template Name	This template can be used to generate a report that
Azure Optimizer - All Reports	Summarizes the Azure Optimizer resources.
Azure Optimizer - Potential Zombie VMs Reports	Summarizes the potential zombie VM resources.
Azure Optimizer - Unused Resources Reports	Summarizes the unused VM resources.

Foglight Hybrid Cloud Manager for Azure 7.1.0 User and Administration Guide Reports Tab

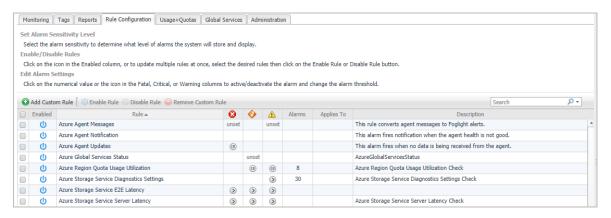
Table 36. Report templates

Report Template Name	This template can be used to generate a report that…
Azure Optimizer - VM Resizing Reports	Summarizes the VM resizing resources.
Azure Resource Group Performance Report - Summary	Summarizes your Resource Group, so that you could know all Resource Group' performance.
Azure Storage Account Performance Report - Detail	Summarizes the capacity and performance details of the selected Storage Account.
Azure Tenant Performance Report - Summary	Summarizes your Tenant infrastructure, so that you could know your Tenant's performance.
Azure Virtual Machine Performance Report - Detail	Summarizes the capacity and performance details of the selected Virtual Machine.
Azure Virtual Machine Performance Report By Tenant - Summary	Summarizes the capacity and performance details of all Virtual Machines.
Cost - All Subscriptions Summary Report	Summarizes the cost for all subscriptions.
Cost - Single Subscription Cost Report	Summarizes the cost for select subscription.

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 Azure rules and alarms.

Figure 23. 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 3, Critical 3, and Warning A 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.

- 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.

Usage & Quotas Tab

Foglight Hybrid Cloud Manager for Azure allows you to view the subscription details by four filters, including *Quota, Provider, Region*, and *Option*.

Figure	24.	Usage	&	Quotas	dashboard

Quota All Service Quotas	T	Provider All Pro	viders 🔻	Region All Reg	ion • O	otion Show	All	•			
								S	earch	۰ ۹	
Subscription		Quota		Provider	Region	Usage	Limit		Utilization 👻		
AND THE OWNER OF A DESIGNATION OF A DESI	Network Watcher	rs	Microso	oft.Network	West US	1	1	100 %			
the other and a support of the second	Network Watcher	rs	Microso	oft.Network	East US	1	1	100 %			
HERE AND A REAL PROPERTY OF AN ADDRESS	Network Watcher	rs	Microso	oft.Network	East Asia	1	1	100 %			
Constitution of a Westman of States	Network Watcher	rs	Microso	oft.Network	East US	1	1	100 %			
Reprint March	Network Watcher	rs	Microso	oft.Network	West US	1	1	100 %			
A SALE OF THE OWNER	Network Watcher	rs	Microso	oft.Network	East US	1	1	100 %			
figs ago - term - diffe	Network Watcher	rs	Microso	oft.Network	Central US	1	1	100 %			
Standard and Standard Street Street	Network Watcher	rs	Microso	oft.Network	East US	1	1	100 %			
English discounts	Total Regional vo	CPUs	Microso	oft.Compute	West US	242	350	69 %			
The second second	Standard Av2 Far	mily vCPUs	Microso	oft.Compute	West US	136	350	39 %			
Westman and Minister	Total Regional vo	CPUs	Microso	oft.Compute	East US	86	350	25 %	1		
Another a Distance of	Standard Dv3 Fa	mily vCPUs	Microso	oft.Compute	East US	84	350	24 %			

To access the Usage & Quotas 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 Usage+Quotas in the actions bar.

6

7

Global Services Tab

Foglight Hybrid Cloud Manager for Azure allows you to check the service status on various services in your cloud environment.

Figure 25. Global Services dashboard

foglight (Tenant) Global Services: 142 Global Services: 142 Global Services: 142 Monitoring Tags Reports Rule Configuration Usage+Quotas Global Services:								
Unhealthy Services								
All services are operating normally.								
Healthy Services								
Compute •	Networking •	Storage 🔻						
Mobile •	Containers •	Databases 💌						
AI + Machine Learning *	Internet of Things 🔹	Integration •						
Security *	DevOps 🔻	Management Tools 🔻						
Migration]							

To access the Global Services 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 Azure, then Global Services in the actions bar.

Healthy Services and *Unhealthy Services* can also be accessed by clicking the numbers listed besides *Global Services*.

Subscription Unhealthy Services

Subscription Unhealthy Services collect the Azure Subscription service issues displaying in the Azure portal Service Health.

By clicking the number listed besides *Subscription Unhealthy Services*, a *Services Health Information* dialog box opens.

Figure 26. Services Health Information dialog box

foglight (Tenant)				T	Global Services:	142 0 Subs	cription Unhealthy Se				
Monitoring Tags Re	ports Ru	le Configuration	Usage+Quotas	Global Serv	ices Administration						
Unhealthy Services	Servio	es Health Inform	ation								×
All services are operating n	orma	Search 🔎 🗸							• -=		
	Level	Subsc	cription 🔺	Azure Track Id		Title			Туре	Impact Region	Statu:
Healthy Services	0	Application (1990)	101010-000	_46B-TWG	We have important in	formation for your Azi	ure Monitor Action Grou	p service	Informational		Active *
Compute	0	And Address of Concession, Name		_46B-TWG	We have important in	formation for your Az	ure Monitor Action Grou	p service	Informational	Global	Active
	0	difference () and		B55W-J_Z	RCA - Backup - East	JS			Incident	East US	RCA
Mobile	0	38.101(Bbc/1	and strategies and	_46B-TWG	We have important in	formation for your Aze	ure Monitor Action Grou	p service	Informational	Global	Active
AI + Machine Learning											
Security											
Migration											
											- 11
											- 11
	4										

- i : Click to display the Summary of impact.
- $^{\circ}$: Click the label to mark the service issue as resolved.

Administration Tab

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

Figure 27. 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 Azure Performance Agent
- Editing agent properties

Tasks view

The Tasks view allows you to create an Azure agent, to create virtual machine credentials, and to review license usage. For more information about how to create an Azure agent, refer to Creating Azure Performance Agent on page 11.

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.

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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 Azure in the Review License Usage dialog box to review the current Azure license information.

The Azure license table shows the Account, Monitoring Agent, and Monitored Virtual Machine Count of your license.

7 Click the number in the Monitored Virtual Machine Count column.

The **Virtual Machines** dialog box opens and shows the detailed information about all monitored virtual machines.

If the number of monitored virtual machines goes beyond your valid license, the following message will shows on the Cloud Manager dashboard: "Caution: Foglight Hybrid Cloud Manager is overdeployed 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 Azure Performance 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 Azure accounts 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 Azure accounts.
- 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

The Azure Performance Agents collect data from your Azure infrastructure and sends 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 shareable and agent properties, configure agent properties that apply only to a specific agent instance, and create edited clones of shareable properties that are used by a subset of agents of a certain type.

To edit the Azure 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**.

The Cloud Manager dashboard opens.

4 Click Administration.

The **Administration** dashboard opens.

- 5 Select the instance of the Azure Performance Agent which properties that you want to modify, and then click **Edit Properties.**
- 6 In the Edit Properties dialog box, edit the properties as needed, and then click Save.
 - Azure Environment*: The value of Azure Environment: Azure.com (default value) or Azure.cn (China).
 - *Tenant Directory ID* *: The value of *Tenant ID* retrieved in Getting authentication information through Azure portal.
 - Tenant Alias Name: The display name that identifies your Tenant.
 - Application ID *: The value of Application ID retrieved in Getting authentication information through Azure portal.
 - Access Key *: The value of Access Key retrieved in Getting authentication information through Azure portal.
 - Select Resource Groups to be monitored: Specify to monitor all resource groups or only monitor specified resource group.
 - If Monitor All is selected: By monitoring all Resource Groups or any Resource Group that is running on the monitored cloud which will be monitored 24x7 may consume licenses depending the number of virtual machines in the Resource Group.
 - If Monitor All is not selected: The following view appears on the bottom of the Select Resource Groups to be monitored dialog box. Select virtual machines that you want to monitor, and then click >> to move selected Resource Groups to the Resource Groups Monitored by Foglight Hybrid Cloud Manager table.

Resource Groups	- >>	Resource Grou	ps Monitored by Foglight Hybrid	Cloud Manager
Search 🔎 🗸	Landrageneral		Search	<i>p</i> -
Resource Groups	<<		Resource Groups	
			There Is No Data To Display	
Contraction and				
- Silling of a Sector Sector States				
(
1 - 1 - 1 - 2 - 2				
(Manager B				
a second and the second second second second				
() - step patients				
a state where a second that				
Contractor Property Contractor				
Louis March 1995				
(
In the second committee				
le -main anno				
Contract Charges and spaces				
-				

- If the Removed from Monitoring and Virtual Machines Monitored by Foglight Hybrid Cloud Manager tables are empty, and Monitor All is not selected, the Azure agent will not collect any Virtual Machine data.
- Select laaS Virtual Machines to Monitor: Specify to monitor all virtual machines or only monitor specified virtual machine.
 - 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.

irtual Machines			/irtual Machines Monitored by Foglight Hybrid Cloud Manager
	_	>>	Monitored Instances
	•	<<	There Is No Data To Display
Instance			
Not at autoscaling group	- Ē		
suse12sp2_paulo			
fvedemo			
amazon linux			
Redhat7.3			
for test _virginia			
redhat_Virginia_instance			
Ubuntu14.01_vigmia			
Ubuntu_virginia			
🔲 hahhahhahhhahahah_test		>>	Removed from Monitoring
New instance in virginia			Instances
🔲 amzn-ami-hvm-2016.03.0.x86_64-gp2 - ami-08111	_	<<	There Is No Data To Display
suse-sles-11-sp4-v20160804-hvm-ssd-x86_64 -mu	mbai		There is no bata to bisplay
windows_mumbai_create for private ami			
i-0a044a249bf221b28			
suse-sles-12-sp1_mumbai			
redhat7.1_mumbai			
Amazon linux_Ireland			
Redhat_7.0Ireland.			
_			

- If Automatically Monitor New Virtual Machines is selected, select virtual machines that you do not want to monitor, and then click >> to move selected virtual machines to the *Removed from Monitoring* table.
- If Automatically Monitor New Virtual Machines is not selected, select virtual machines that you want to monitor, and then click >> to move selected virtual machines 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 Virtual Machines* is not selected, the Azure agent will not collect any virtual machine data.
- Configure Subscription Cost to Monitor:

Configure cost metrics for subscriptions. Configurations will take effects only after a complete metrics collection cycle is finished.

- Collect Cost Metrics: Select the checkbox to enable and configure the cost metrics collection. Configurations will take effects only after a complete metrics collection cycle is finished.
- Collect Cost Metrics by Enterprise Agreement API: Enterprise Agreement Billing API only applies to Enterprise Agreement subscriptions and collects cost metrics directly from the Azure Enterprise Portal. If not, Foglight Hybrid Cloud Manager will use Usage and Rate Card APIs to collect and populate the cost data for subscriptions.
 - *Enrollment Number*: See To get the Enrollment Number and Usage API Access Key: to get this value.
 - Usage API Access Key: See To get the Enrollment Number and Usage API Access Key: to get this value.
- If you do not select the option, specify the Billing Cycle Day, and then use Usage and Rate Card APIs to collect and populate the cost data for subscriptions. Foglight Hybrid Cloud Manager for Azure supports two types of subscription: *Pay As You Go* and *Azure In-Open*.
 - *Billing Cycle Day*: Calculate the total usage from the specified Billing Cycle Day of the month, and then populate the rate card data. See To get the subscription information: to get this value.
- Subscriptions table: Move the subscriptions that you want to monitor from the left to the right table.
- Configure Proxy (Optional):

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

Configure Proxy		×
Enable Proxy		
Proxy Server:		
Proxy Type:	нттр	
Proxy Port:	80	
Authorization		
Username:		()
Password:		
Confirm Password:		
		Save Cancel

a Select the Enable Proxy check box to enable the proxy settings.

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- b Input the host name or IP address for the Proxy Server and input the Proxy Port number.
- c If the proxy requires an authorization, select the *Authorization* check box, and input the Username and Password.
- **i** 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 FgIAM

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

Prerequisite

All the certificate-related command line options require that FgIAM 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.

```
      FgIAM 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-----

      XXXXXXX=

      -----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 FgIAM

· Add an example certificate into FgIAM 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 FgIAM certificate store

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

Alias	Certificate
Evolve-test	Issuer:
	CN: XXX

Delete the example certificate from the FgIAM certificate store

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```
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 FIPScompliant 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
```

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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 FIPScompliant 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

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i 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 28. Optimizer tab

Total Potential Savin	gs \$19 p	er Month						🔅 Settings 🍵	Scheduled Action
VM Resizing Poter	ntial Zombi VMs	e Unused	Resources						
📶 Reclaim Savin	gs Toda	y Sele	ect instances to start reclai	ming resources				Reclaim Now	
Exclude	🔳 sh	ow Exclud	ed Items 0 Total La	ast Month Billing \$502.24	Total Potential Savings	\$-413.91 per Month			
arch	Q								
Virtual Machine	Region	05	CPU Utilization	Memory Utilization	Original VM size	Original Prices (\$/Month)	Recommendation	New Prices (\$/Month)	Saving(\$/Month) -
Fealiaht	West US	CentOS	3.48% (334 MHz of 9.6 GHz)	81.47% (13 GB of 16 GB)	Standard_D4s_v3	1 1 32	Standard_DS11_v2	135.05	38.77
Fitters mysiqu	West US	Ubuntu	15.58% (748 MHz of 4.8 GHz)	30.04% (4.2 GB of 14 GB)	Standard_DS11_v2	1	Standard_DS2_v2	332,20	32.45
Filt maken	West US	Windows	6.84% (315 MHz of 4.6 GHz)	95.99% (7.7 GB of 8 GB)	Standard_B2ms	78.11	Standard_E2s_v3	175.20	-817 (19
Firms	West US	Windows	16.33% (1.6 GHz of 9.6 GHz)	89.69% (25 GB of 28 GB)	Standard_DS12_v2_Promo	385.44	Standard_DS13_v2	779.88	-285.44
ts don't include tax. Moi nge History 0		stimates are	based on 730 hours of usage.						
show all Optimizer histor Target Name	У		Change	Executed - Create			Description		

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 \blacktriangleright 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 Azure. The Optimizer Azure view opens.

The Optimizer - Azure view includes the following elements:

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

quest (Tenant)	-
	*
quest (Tenant)	

- **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, potential zombie VMs, and unused resources.

	ial Zombie	Month Vinused Reso	urces			
	VMs			Total Potential Savings	Total Resources	Savings Tota
Reclaim Saving		Select I	nstances to	VM Resizing	4	\$-404
iearch	q			Potential Zombie VMs	6	\$10.00
Virtual Machine	Region West US	O5 CentOS	3,48% (334	Unused Resources	277	\$3
	West US	Ubuntu	15.58% (748			
Patergan	West US	Windows	6.84% (315			
Piem	West US	Windows	16.33% (1.6			
				3	Total Potential Savi	ngs 🛊 🚺

- 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.
- Scheduled Actions. The Scheduled Actions dialog shows the list of operations scheduled to be run at a particular time in the future, and allows you to edit or remove any scheduled actions. To view only the actions specific to Foglight Resource Optimizer, select the *show only Optimizer actions* checkbox. When the checkbox is not selected, the dialog shows all actions scheduled for your virtual environment.
- VM Resizing. Shows virtual machine name, utilization and recommendations for both CPU and memory resources.
- Potential Zombie VMs table. Shows virtual machine name, regions, CPU, memory, disk throughput, network, current month Billing, and last month billings of the zombie virtual machines based on calculation settings.
- **Unused Resources table**. Detects and shows those unused resources. For example, a virtual machine has been deleted, but its Disk/Network Interface/Public IP/Network Security Group/Storage Account are still remained in Azure.
- **Reclaiming Savings** bar. The **Reclaiming Savings** bar enables the system administrator to select instances from the list and review the resources that can be reclaimed.
 - To reclaim the resources wasted for a selected instance, click Reclaim Now.
 - To schedule reclaiming the resources wasted for a selected instance, click Reclaim Later.
 - **NOTE:** To use the Optimizer Reclaim actions, the minimum application privileges are required. For more information, see Minimum application privileges on page 7.
- The Exclude button. Select an object from the Virtual Machine table and click Exclude. Then this object is added to the list of excluded objects under a specific category.
 - **NOTE:** The **Reclaim Now** and **Reclaim Later** buttons and the **Exclude** link are enabled only after selecting an instance from the table.

• The Show Excluded Items button. If you want to see the excluded objects, click Show Excluded Items. The Settings dialog box appears. For more information, see Settings on page 58.

Settings		×
Configuration Waste	Excluded	
VM Resizing	Remove Virtual Machine	
Unused Resources	There Is No Data To Display	
Potential Zombie VMs		
	Save Cance	2

 Change History view. The Change History embedded view shows the changes that have been implemented in the environment during the History Period [x] Day(s), the object that was affected, and the result of the operation.

To view the change history of all Optimizer tabs, select the **show all Optimizer history** checkbox. When the checkbox is not selected, the view shows only the change history for the selected Optimizer tab.

The number at the top of the view indicates the total number of changes executed for the selected VM component, during the **History Period [x] Day(s)**.

- Target Name. Virtual machine that was affected by the change.
- **Change**. Type of change.
- Executed. Date and time when the change was executed.
- Created By. User who scheduled the change.
- **Description**. Operation result: *Completed*, *In progress*, or *Failed* (and an explanation why the job has failed).

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

ttings						
Configuration	Waste	Excluded				
	These	e settings are for CP	U and Memory Optimiz	ation.		
		Thr	eshold			
CPU		Me	mory	Storage(Coming soon)	
Warning: 80% Crit	tical: 85%	Warning: 80%	6 Critical: 85%	Warning: 90% Critical: 95%		
			ation Calculation	Storage(Coming soon) Warning: 90% Critical: 95% Ory Storage(Coming soon) % 5 % 0 MB 3 % 1024 MB zation ▼ Average Utilization ▼		
Resource	(CPU	Memory	St	orage(Coming soon)	
Reserve Margin	5	%	5 %		5 %	
Acceptable Variation	3 %	50 MHz	3 % 50	MB 3	% 1024 MB	
Recommended Basis	Average I	Utilization 🔻	Average Utilizatio	n 🔻 🛛 🖌	Average Utilization 🔻	
Evaluate calculation over	this period of t	ime 2 Day((s)			
					Save Cance	

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. This parameter is used for calculating the Evaluation Result, which is needed for making recommendations. The Acceptable Variation percentage is the minimum percentage deviation of the Evaluation Result from the current setting, which results in a recommendation. The Acceptable Variation value is the minimum difference between the Evaluation Result and the current setting, which results in a recommendation.
 - **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

٠

Settings	×
-	r Potential Zombie VMs. otential zombie if:
Time period used for average calculation is	30 Days
Average Resource Utilization	Deviation
2500 MHz for CPU	30 %
10240 MB for Memory	15 %
100 MB/s for Disk Throughput	200 %
500 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

Settings		2	<
Configuration Waste	Excluded		
VM Resizing	Remove Virtual Machine		
Unused Resources	There Is No Data To Display		
Potential Zombie VMs			
	Save	el	

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 accesses by clicking Show Excluded Items on the Optimizer tab.

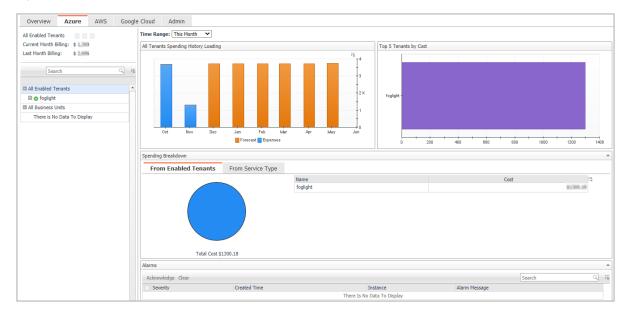
Cost Tab

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

i NOTE: Ensure that you have configured the cost metrics for subscriptions 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 Subscription Cost to Monitor: on page 51.

Figure 29. 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 Azure.

Cost - Overview

The Cost-Overview includes the following elements:

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

- **Cost Overview**: A stacked bar chart to display the Month-to-date Expenses and Forecast by Azure, AWS, and Google Cloud 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, AWS Accounts, or Google Cloud Billing 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, Azure Subscriptions, or Google Cloud Billing Accounts to a BU under Cost > Admin.
 - Cost Breakdown by Platforms: Displays the Month-to-date cost by Azure, AWS, and Google Cloud platforms.

Cost - Azure view

The Cost - Azure view includes the following elements:

- Overview of all enabled Tenants cost: Lists the enabled tenants, billing of the current month, and billing of the last month.
- Object tree view: Lists the enabled tenants 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 Tenants Spending History/Top 5 Tenants by cost/Spending Breakdown: These three views will
 display the relevant cost information if you select All Enabled Tenants or All Business Units from the object
 tree view.
- Tenant Spending History/Top 5 Subscriptions by Cost/Cost Breakdown By Service Type/Subscriptions: These four views will display the cost information of the selected tenant or business unit.
- Alarms: Lists all alarms against the selected tenant or business unit.
- Select a Target Tenant displays the cost overview and subscriptions cost for the selected Tenant.
- Select a Subscription displays the cost overview, virtual machines in subscription, resource group cost overview, and Resource cost overview.

Cost - Admin view

The Cost - Admin view includes the following:

- Subscriptions tab: Displays the overview of all subscriptions, including the subscription name, tenant, business unit, spending, monthly budget, last month billing, current month billing, and next month projection.
 - Set Monthly Budget: Update monthly budget for selected subscription.
 - Assign Business Unit: Assign the select subscriptions to a Business Unit,
 - Remove from Business Units: Exit the selected business units.
- Business Units tab: Lists business units name, location, organization, and subscriptions.
 - Add Business Units: Create a business unit, specify Business Unit name, description, location, longitude, latitude, and assign to a new organization or existing organization.
 - Delete Business Units: Delete selected business units.

• Assign Organization: Select the organization from the list for selected business units.

Policy Management Tab

Policy Management enables user to start or stop their resources by schedule. Currently, only the resource type of VM is supported.

NOTE: To use the Policy Management feature, a Foglight Evolve Cloud or Flex license is required. Contact Quest Support to purchase a license.

Figure 30. Policy Management tab

	Policy	R	Resource Schedule P	olicy Executed History							
3	Total I	Pote	ential Savings \$0.05 this I	Month 🖵 Total r	esources under policy	11 Alarms: 0 0				Execute No	W
S	chedule	: [All 🗸 Resou	Irce Action: All 🗸	Policy Status: All	~					
C	Add Polic	y (😑 Delete 🕛 Enable 🕕 Disable						Search	9	÷Ę
	Edit (U	Policy Name	Resource Action	Schedule	Next Enforcement	Last Status	Apply Resource	es	Potential Saving	
	1.	ሀ	Test policy1	▶ start	daily run 16:00	11/11/20 4:00 PM	Successful	4 AzureVirtualMachine	6 EC2Instance	n/a	-
	1.	С	Test policy stop VM	stop	daily run stop VM	11/11/20 4:30 PM	Successful	3 AzureVirtualMachine	4 EC2Instance	\$0.05	

To access the Policy Management 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 **Policy Management**. The **Policy Management** tab opens on the bottom of **Cloud Manager** dashboard.

Policy view

The Policy view includes the following elements:

- Total Potential Savings: Shows the total potential savings of this month under the policies. The potential
 savings are calculated by the total hours the VMs has been stopped by the policy multiply the unit price of
 each VM.
- **Total resources under policy**: Shows the total number of resources managed under the policies. For a detailed resource list, refer to Resource view on page 67.
- Alarms: Shows the number of alarms (multiple-severity rules only) generated by the policy. Clicking the
 numbers, an alarm list will be displayed. The list shows the severity of each alarm, when the alarm was
 generated, and the detailed alarm message.
- Execute Now: Click Execute Now to execute the selected policy immediately.
- Filters. Including by **Schedule**, by **Resource Action** (Start or Stop), and by **Policy Status** (Enable or Disable).
- Add Policy. Click Add Policy and an Add Policy dialog box appears. It includes the following elements:

- Policy Name: Specify a policy name.
- Description: Add descriptions about the policy.
- Enable: Select the checkbox to enable the policy.
 - i | NOTE: Only the enabled policies will be executed by schedule.
- Action: Select an action for the policy. You can either start a VM or stop a VM.
- Schedule: Select a schedule. You can either assign the policy to a new schedule or assign the policy to an existing schedule.
- Apply Resources: Select the resources you would like to apply the policy. Click Apply Resources and a Select Resources dialog box appears.

Resources				>>	Target I	Resources		
Azure Virtual Machines AWS I	EC2 Instances	Services		100	-		Search	Q
Subscription All		Region All	~	<<		Resources	TopologyTypeNam	e
	•	All	•	2		There	Is No Data To Display	
ResourceGroup All								
Select All Select None	Search		Q					
	Resources							
FogligHt			*					
🗆 FagiligHt								
🖾 🗌 orietal emdere d'25								
amdee del um ditta			-					
🗆 🗌 orialisi: den dennya								
C orfolial asses								
asic push flarvard								
C MC Othing Child Search Least	COuter_weilu	e						
institute:								
instrum ²								
🖾 🗌 deputytes (partitions)								
🗌 orbitali vendovo scanner								
🖬 🗌 dennym tig atin k								
in anticocitie								
golfana server								
🖬 🗌 designs with constantly								
denus legited								
🗂 deconardi:			-					

Select Resources by types:

- Azure Virtual Machines: A tree table lists VMs by Resource Groups.
- AWS EC2 Instances: A Tree table lists Instances by Auto scaling group.
- Services: Lists the service from Dashboards > Services > Service Builder.
- Email Notification: Enter e-mail addresses to notify the users when the policy is executed.
- Process Service Dependencies: If applying resources by a service and the resources are collected by the same agent, the VMs under the child service will be executed first.
- A policy list table. The table includes the following elements:
 - Edit: Click the icon and an Edit Policy dialog box appears. Update the policy and save the changes.
 - Enable: Click the icon to enable a policy.
 - Policy Name: Lists the name of the policy.
 - Resource Action: Shows the action status of the policy, including start and stop.
 - Schedule: Shows the schedule of the policy.
 - Next Enforcement: Shows the time when the policy will be executed again.
 - Last Status: Shows the last status after the policy was executed. Click the status and a *Policy Executed History by Agent* dialog box will appear.

Policy Executed History	-,	-/				
				Search	+ 🔍	-
Policy Executed 👻	Status	Agent Executed	Executive Mode	Agent	Agent Status	
11/12/20 4:00 PM	Successful	11/12/20 4:00 PM	Running by Schedule	Food and the second second second	•	
11/12/20 4:00 PM	Successful	11/12/20 4:00 PM	Running by Schedule	Queen Secondaria	•	
11/12/20 3:30 PM	Successful	11/12/20 3:30 PM	Running by Schedule	Foglight server apportant.	•	
11/12/20 3:30 PM	Successful	11/12/20 3:30 PM	Running by Schedule	Quest Enginetia (%)	•	

 Apply Resources: Shows the selected resources by object type. Click the resources and an Apply VMs Detail Table will appear.

	Search	Q
	Resources Name	
est est		-
r n-po	icy	
run dimitivindov	v2012	

Potential Saving: Shows the total potential savings of this month under the policy. The potential
savings are calculated by the total hours the VMs stopped by the policy multiply the unit price of
each VM.

Resource view

The *Resource* view shows all the VMs which are managed by the polices. Users can add resources to polices or remove resources from polices.

Figure 31. Resource view

Pol	icy Resource Schedule Policy Executed Histo	ory				
loud	l Platform: All 🗸 Policy: All 🗸					
					Search	
Edit	Resource Name	Cloud Platform	Policies	Last Executed Time	Executed Status	Power Stat
1.	randimented [dataseVirtualMachine]	Azure	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	r - Automatica AzureVirtualMachine)	Azure	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	randool million 11/2 (AzureVirtualMachine)	Azure	Test policy stop VM	11/12/20 4:30 PM	Successful	Stoppe
1.	condition and all [EC2Instance]	AWS	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	c	AWS	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	caudium amagnifinux2 (EC2Instance)	AWS	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	vendore and 22Instance)	AWS	Test policy stop VM, Test policy1	11/12/20 4:30 PM	Successful	Runnin
1.	Testener (teamintualMachine)	Azure	Test policy1	11/12/20 4:00 PM	Successful	Runnin
1.	fundadioner (MareVirtualMachine)	Azure	Test policy1	11/12/20 4:00 PM	Successful	Runnin
1.	Manufacture enfoscalingGroup1 (EC2Instance)	AWS	Test policy1	11/12/20 4:00 PM	Successful	🐻 Stoppe
1.	Pir em Iden (dificienstance)	AWS	Test policy1	11/12/20 4:00 PM	Successful	Runnin

The Resource view includes the following elements:

- Filters. By Cloud Platform and by Policy.
- A resources table. Shows a list of resources managed by the policies. The table includes the following elements:
 - Edit: Click the icon and an Edit VM dialog box will appear.
 - Resource Name: Shows the name of the resource.
 - Cloud Platform: Shows the cloud platform the resource belongs to.
 - Policies: Shows the policy that manages the resource.
 - Last Executed Time: Shows the last time when the policy was executed. Click the time and a Policy Executed History by VM dialog box will appear.
 - Executed Status: Shows the last status after the policy was executed. Click the status and a Policy Executed History by VM dialog box will appear.

Policy Executed Status H	History by VM - rur, Judim	irtualMachin (العنية المراجع	e)			
				Search	Q	3
Policy Name	Executed Time 👻	Executive Mode	Executed Status	Detail Message		Т
Test policy stop VM	11/12/20 4:30 PM	Running by Schedule	Successful	Skip to execute due to it was matched the action.		

Power State: Shows the power status of the resource.

Schedule view

The Schedule view enables users to create, edit, delete, or copy a schedule.

Figure 32. Schedule view

P	olicy Resource	Schedule Policy E	excuted History		
•	Add 😄 Delete			Search	Q ==
	Sche	edule Name 🔺	Next Scheduled Time	Description	Сору
	daily run 16:00		Fri Nov 13, 2020 16:00:00 CST	N/A	<u>`</u>
	daily run stop VM		Fri Nov 13, 2020 16:30:00 CST	N/A	l

To create a new schedule, do either of the following:

- Click Add and a Create Schedule dialog box appears.
 - 1 Occurrence: Select the start date and start time and click Next.
 - 2 Recurrence: Select the recurrence and click Next.
 - a Specify the Recurrence Pattern according to the screen prompt. Click **Next**. For detailed information of the Recurrence Pattern, see Recurrence Pattern on page 69.
 - b Choose Never Stop or specify an End Time. Click Next.
 - 3 Summary: Specify a name for the schedule and descriptions for the schedule. Click Finish.
- Click Copy and a Copy [Schedule name] dialog box appears. Edit the schedule name and description. Click OK.

The schedule list refreshes and the newly-created schedule will be displayed in the list.

To delete a schedule, do the following:

- 1 Select a schedule from the schedule list and click **Delete**.
- 2 A Delete Schedules Confirmation dialog box appears.
- 3 Click OK.
- 4 The schedule list refreshes and the schedule will be removed from the schedule list.

To edit a schedule, do the following:

1 Click the schedule you want to edit and an *Edit Schedule* dialog box appears.

Last Modified Description/C	Date: 11/13/20 10 omments: test	:53 AM]			
Description/C	omments: test					
-	Delete		Sear		٩	
	ext Scheduled Time 13, 2020 16:00:00 CST	Recurrence Pattern Daily	Range of Occurrence End By Dec 10, 2020 17:00	Details Every 1 day(s)	Time Range 16:00	

- 2 Click the schedule and an *Edit Schedule Item* dialog box appears.
- 3 Edit the Occurrence, Recurrence, and Summary if necessary and click Finish.

Recurrence Pattern

Table 37. Description of the Recurrence Pattern

Pattern Name	Pattern Description	Pattern Settings
Once	Starts at a specified date and time, for a specified duration, and ends at a defined end date and time.	N/A
Interval	Starts at a specified time and date for a certain duration, repeats at specified time periods, with or without a defined end date and time.	Specify Every xx and select from Days, Hours, Minutes, or Seconds.
Daily	Starts at a specified time and date, runs for a whole day or a fraction of a day, repeats at a regular interval of days, with or without a defined end date and time.	Specify <i>Every xx days</i> .
Weekly	Starts at a specified time and date, runs for a whole day or a fraction of a day, repeats at a regular interval of weeks on one or more days of the week, with or without a defined end date and time.	Specify <i>Every xx week (s)</i> and select the weekdays.
Monthly	Starts at a specified time and date, runs for a whole day or a	Select by Day or Week.
	fraction of a day, repeats at a regular interval of months on one or more days of the month, with or without a defined end date and time.	Specify Day xx of Every xx month(s).
Yearly	Starts at a specified time and date, runs for a whole day or a fraction of a day, repeats at a regular interval of years on one	Select by Day of Month or Week of Month.
	or more days of the year, with or without a defined end date and time.	Specify the date and select the month.

i IMPORTANT: Schedules consisting of multiple scheduled items must include a relevant start time. By default, the start time is the day the schedule is created. The start time of each schedule item must be specified to reflect the first run of the scheduled item.

Policy Executed History view

The Policy Executed History view shows the detailed history records of the executed policy by each Resource.

Figure 33. Policy Executed History view

Policy Resource Se	chedule Policy Exe	cuted History							
Cloud Platform: A	✓ Region:	All 🗸	Resource Action: All	▼ E	xecuted Status: A	· ·	Executive Mode: A	I	•
									Search
Resource Name	Cloud Platform	Region	Policy Name	Action	Executed Time 👻	Created By	Executive Mode	Executed Status	Detail Message
rurylinuxtest	Azure	West US 2	Policy Test by Rury - Stop	start	11/12/20 10:30 AM	foglight	Running by Schedule	Successful	Successful
capetown-centos610	AWS	Africa (Cape Town)	Policy Test by Rury - Stop	▶ start	11/12/20 10:30 AM	foglight	Running by Schedule	Successful	Successful
rurytestvm-policy	Azure	West US 2	Policy Test by Rury - Stop	▶ start	11/12/20 10:30 AM	foglight	Running by Schedule	Successful	Successful
rurylinuxtest	Azure	West US 2	Policy Test by Rury - Stop	▶ start	11/12/20 10:00 AM	foglight	Running by Schedule	Successful	Skip to execute due to it was matched the action.
capetown-centos610	AWS	Africa (Cape Town)	Policy Test by Rury - Stop	▶ start	11/12/20 10:00 AM	foglight	Running by Schedule	 Successful 	Successful
rurytestvm-policy	Azure	West US 2	Policy Test by Rury - Stop	▶ start	11/12/20 10:00 AM	foglight	Running by Schedule	Successful	Skip to execute due to it was matched the action.

Run Reports for Policy Management

Click **Reports** on the top right corner of the interface and choose **All Polices Execution Report**. An *All Polices Execution Report* dialog box will appear. Fill in required information to run the report.

The All Polices Execution Report will summarize the status for all of the Policies Execution.

Figure 34. Run reports for Policy Management

Policy Managemen	t				All Policies Execution Report
				•	Create a New Report
				0	Run a Report
					😤 Manage Reports
					Search
Executed Time -	Created By	Executive Mode	Executed Status		Detail Message
	Created By foglight	Executive Mode Running by Schedule	Executed Status Successful 	Skip to execute due t	
1/12/20 11:00 AM				Skip to execute due t Successful	Detail Message
1/12/20 11:00 AM 1/12/20 11:00 AM	foglight	Running by Schedule	 Successful 	Successful	Detail Message
1/12/20 11:00 AM 1/12/20 11:00 AM 1/12/20 11:00 AM	foglight foglight	Running by Schedule Running by Schedule	SuccessfulSuccessful	Successful	Detail Message to it was matched the action.
Executed Time - 11/12/20 11:00 AM 11/12/20 11:00 AM 11/12/20 11:00 AM 11/12/20 10:30 AM 11/12/20 10:30 AM	foglight foglight foglight	Running by Schedule Running by Schedule Running by Schedule	Successful Successful Successful Successful	Successful Skip to execute due t	Detail Message to it was matched the action

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- 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.