

Monitoring VMware Systems

VMware: vSphere Base Pack PowerPack version 207

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Chapter

Introduction

Overview

For the ScienceLogic platform to discover and collect information from a VMware vCenter Server, you must ensure that the platform can communicate with the vCenter Server. This manual describes how to configure VMware vCenter Servers and ESX/ESXi servers for communication with the ScienceLogic platform.

The ScienceLogic platform can use the data collected from VMware vCenter Servers to create device records for all components managed by that vCenter server, such as datastores and guest VMs. This manual describes how to configure the platform to create component devices for VMware systems.

This manual describes:

- Configuring a vCenter Server
- Discovering a vCenter Server
- Configuring SNMP on ESXi 4.x & 5.x and ESX 4.x
- Dashboards for VMware devices

NOTE: Before you read this manual or use the ScienceLogic platform to monitor VMware, you might want to familiarize yourself with the terminology used by VMware. The VMware Master Glossary is available at: http://www.vmware.com/pdf/master_glossary.pdf

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What is VMware vSphere?

vSphere is VMware's cloud virtualization platform that enables users to deploy and manage VMware cloud-based resources using a suite of components, including the vCenter Server centralized management application and ESX/ESXi host servers.

What Does the VMware: vSphere Base Pack PowerPack Monitor?

To monitor VMware virtual infrastructure using the ScienceLogic platform, you must install the VMware: vSphere Base Pack PowerPack. This PowerPack enables you to discover, model, and collect data about VMware virtual devices.

The VMware: vSphere Base Pack PowerPack includes:

- Two example credentials you can use as templates to create SOAP/XML credentials to connect to the VMware devices you want to monitor
- Dynamic Applications to discover, model, and monitor performance metrics and/or collect configuration data for VMware devices.
- Device Classes for each of the VMware devices the ScienceLogic platform monitors
- A Device Template that enables you to easily align multiple Dynamic Applications to VMware devices
- Event Policies and corresponding alerts that are triggered when VMware devices meet certain status criteria
- Device dashboards for several of the discoverable VMware component devices

NOTE: The VMware: vSphere Dashboards PowerPack contains additional dashboards that display data collected from VMware systems. To view these dashboards, you must install the VMware: vSphere Dashboards PowerPack on your ScienceLogic system. (For more information, see the chapter on VMware Dashboards.)

Installing the VMware: vSphere Base Pack PowerPack

Before completing the steps in this manual, you must import and install version 207 of the VMware: vSphere Base Pack PowerPack.

NOTE: To install version 207 of the VMware: vSphere Base Pack PowerPack, your ScienceLogic system must be upgraded to the 8.2.0 or later release. The Dynamic Applications in version 207 of the VMware: vSphere Base Pack PowerPack support VMware vCenter Servers running versions 4.x, 5.x, and 6.x, and ESX/ESXi servers running versions 4.x and 5.x.

To download and install a PowerPack:

TIP: By default, installing a new version of a PowerPack overwrites all content in that PowerPack that has already been installed on the target system. You can use the *Enable Selective PowerPack Field Protection* setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. (For more information, see the *System Administration* manual.)

- 1. Download the PowerPack from the ScienceLogic Customer Portal.
- 2. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
- 3. In the **PowerPack Manager** page, click the **[Actions]** button, then select Import PowerPack.
- 4. The **Import PowerPack** dialog box appears:

Imp	ort PowerPack™	×
	Browse for file Browse License: Import	

- 5. Click the [Browse] button and navigate to the PowerPack file.
- 6. When the **PowerPack Installer** modal page appears, click the **[Install]** button to install the PowerPack.

NOTE: If you exit the **PowerPack Installer** modal page without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPack Manager** page. However, the imported PowerPack will appear in the **Imported PowerPacks** modal page. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

Version Requirements and Limitations

The following limitations and requirements apply to specific functionality in the VMware: vSphere Base Pack PowerPack:

- To collect I/O and latency metrics for datastores, you must enable Storage I/O Control. For information about Storage I/O Control, see the <u>VMware knowledge base</u>.
- Datastore Storage Performance Statistics are available only from vCenter systems running vSphere API 4.1.2 or later. The ScienceLogic platform will not collect Datastore Storage Performance Statistics if the Dynamic Applications that use Dynamic Component Mapping are used to monitor ESX or ESX is servers directly.
- Datastore Performance Statistics are unavailable for NFS datastores.
- If VMware Tools is not installed on a guest VM, the ScienceLogic platform cannot collect all performance statistics for that guest VM.
- Because no truly unique identifier is provided by the VMware vSphere API, it is possible that duplicate component devices could be created in the ScienceLogic platform when a virtual machine vMotions between separately monitored ESX/ESXi servers. (This issue does not affect vMotion events that occur within the same component tree, such as between two ESX/ESXi servers that are monitored through the same vCenter server.) Therefore, ScienceLogic recommends monitoring VMware servers through vCenter. In addition to accommodating vMotion events, monitoring through vCenter prevents performance issues on ESX/ESXi servers caused by API use.
- If you want to delete and reinstall version 203 or higher of the VMware: vSphere Base Pack PowerPack, you should first delete any existing copies of the Device Template included in the PowerPack and then create new versions of them after reinstalling the PowerPack. Doing so ensures that any copies of the Device Template included in the PowerPack will work properly after reinstallation. You should then assign the new Device Template(s) to any existing Discovery Sessions that were linked to the previous versions of the template(s).

Chapter

2

Configuring VMware vCenter Server for Monitoring

Overview

The following sections describe how to configure VMware vCenter resources for monitoring by the ScienceLogic platform using the VMware: vSphere Base Pack PowerPack:

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Prerequisites

Before performing the steps for configuring a vCenter server, you must have:

- Installed and configured a VMware vCenter server that monitors your ESX and ESXi servers.
- Installed the VMware vCenter web service. The VMware vCenter web service is installed by default on VMware vCenter servers. For more information about the installation of the VMware vCenter web service, see the <u>Web Service FAQs page on the VMware website</u>.
- Created a user account that the platform can use to access the web service. For vCenter 5.0 and earlier, the VMware vCenter web service uses the user groups and/or active directory users configured on the Windows Server on which vCenter is installed. For vCenter 5.1, the VMware vCenter web service uses the user groups and/or active directory users configured on the VMware SSO server. You might want to create a user account that is used by only the ScienceLogic platform. This chapter includes instructions on how to grant read-only

permissions to a vCenter user.

• Access to the vCenter server using the vSphere client.

Ensuring the VMware vCenter Web Service is Running

Using the default VMware configuration, the VMware vCenter Web Service is automatically started on VMware vCenter servers.

To verify that the web service is available, navigate to the following URL in a browser window:

https://ip-address-of-vcenter-server/sdk/vimService.wsdl

- If the web service is running, an XML document will be returned.
- If a connection error is displayed, the web service might not be running.

To verify the web service is running:

- 1. Log in to the Windows Server that hosts vCenter Server.
- 2. Open the Server Manager.
- 3. In the left pane, expand the **Configuration** entry and select **Services**.

🔿 📶 🗔 😖 🛛 📷 🕨 🕨 🗉 🕩			
Server Manager (LAB-VCENTER) Services			Actions
Roles	Status	Startup Type	Services
Features Diagnostics Active Directory Web Services	Started	Automatic	More Actions
Configuration	Started	Manual	More Acuoris
Conliguration Application Identity		Manual	
Windows Firewall with Adva Application Information		Manual	
Services		Manual	
WMI Control	Started	Manual	
Local Users and Groups		Manual	
Storage	Started	Automatic (Delayed Start	
Base Filtering Engine	Started	Automatic	
Certificate Propagation	Started	Manual	
Client for NFS	Started	Automatic	
CNG Key Isolation		Manual	
COM+ Event System	Started	Automatic	
COM+ System Application		Manual	
Computer Browser		Disabled	
🔨 Credential Manager		Manual	
Cryptographic Services	Started	Automatic	
COM Server Process Launcher	Started	Automatic	
Cesktop Window Manager Session Manager	Started	Automatic	
Q. DHCP Client	Started	Automatic	
Diagnostic Policy Service	Started	Automatic (Delayed Start	
Diagnostic Service Host		Manual	
Q Diagnostic System Host		Manual	
🔅 Disk Defragmenter		Manual	
Distributed Link Tracking Client	Started	Automatic	
Q Distributed Transaction Coordinator	Started	Automatic (Delayed Start	
ONS Client	Started	Automatic	
Encrypting File System (EFS)		Manual	
Extensible Authentication Protocol		Manual	
Supervision Discovery Provider Host	Started	Manual	
Sunction Discovery Resource Publication	_ 101 100	Manual	
Group Policy Client	Started	Automatic	
	_ 101 1010		

4. Locate the VMware VirtualCenter Management Webservices service. If the web service is configured and started correctly, the **Status** should be Started and the **Startup Type** should be Automatic.

WWware VirtualCenter Management Webservices Started Automatic

- 5. If the **Status** is not Started, right click on the VMware vCenter Management Webservices service, then select Start.
- 6. If the **Startup Type** is not Automatic, right click on the VMware vCenter Management Webservices service, then select Properties. The general properties for the service are displayed.

VMware VirtualCenter Management Webservices Properties (LAB 🗙				
General Log On	Recovery Dependencies			
Service name:	vctomcat			
Display name:	VMware VirtualCenter Management Webservices			
Description:	Allows configuration of VMware VirtualCenter			
Path to executable "C:\Program Files"	e: \VMware\Infrastructure\tomcat\bin\Tomcat6.exe" //RS/,			
Startup type:	Automatic Automatic (Delayed Start)			
Help me configure	Automatic Manual			
Service status:	Disabled Starteo			
Start	Stop Pause Resume			
You can specify the start parameters that apply when you start the service from here.				
Start parameters:				
	OK Cancel Apply			

7. In the Startup type drop-down list, select Automatic and then click the [OK] button.

After the web service starts, try navigating to the URL again. If a connection error is still displayed, your network's firewall may be blocking access to port 443 (HTTPS), which is required to use the VMware vCenter web service.

If the computer on which you navigated to the URL does not have access to port 443 on the ESX server, but the Data Collector responsible for monitoring the ESX server does, you can verify connectivity from the console of the Data Collector. Issue the following command from the console of the Data Collector:

curl -k "https://ip-address-of-vcenter-server/sdk/vimService.wsdl"

If the web service is running and the port is not blocked by a firewall, an XML document will be returned.

Creating a Read-Only User Account

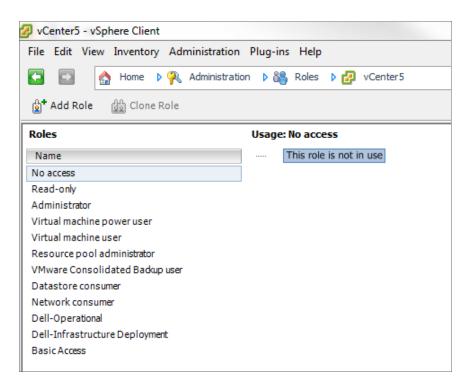
For vCenter 5.0 and earlier, the VMware vCenter web service uses the user groups and/or active directory users configured on the Windows Server on which vCenter is installed.

For vCenter 5.1, the VMware vCenter web service uses the user groups and/or active directory users configured on the VMware SSO server.

Administrative users are the only default user type that have the level of access the ScienceLogic platform requires to collect data from the VMware vCenter web service. If you do not want to use the username and password of an administrative user in the SOAP/XML credential, you can set up a custom user role with the specific read-only access the ScienceLogic platform requires to the VMware vCenter web service.

To create a custom user role that grants the read-only access the ScienceLogic platform requires, perform the following steps:

- 1. Log in to the vCenter server as an administrator using the VMware vSphere client.
- 2. In the menu at the top of the page, click View > Administration > Roles. The **Roles** page appears:



3. Click the [Add Role] button. The Add New Role page appears:

- 4. Enter "ScienceLogic" in the **Name** field.
- 5. Expand the Storage views section in the Privileges pane and select the View checkbox.
- 6. Click the **[OK]** button.

To assign the custom role to a user account, perform the following steps:

- 1. Log in to the vCenter server as an administrator using the VMware vSphere client.
- 2. In the vSphere client, ensure the vCenter server is selected in the left pane.
- 3. Click the **[Permissions]** tab in the main pane.

er/Group		Role	Defined in
LAB-V	MWARE\em7admin	Administrator	This object
LAB-V	MWARE\rchart	Administrator	This object
LAB-V	MWARE\ccordray	Administrator	This object
- Admin	istrators	Administrator	This object
			Add Permission
			Refresh
			View Column 🕨

4. Right click in the main pane, then select Add Permission.... The Assign Permissions window appears.

5. In the **Assigned Role** drop-down list, select the ScienceLogic role that you created in the previous section. Click the **[Add]** button. The **Select Users and Groups** window appears.

Show Users First Name Description (Full Name	Check Names feature to validate y	in this role. You can also manually enter names and use t our entries against the directory.	he
Isees and Groups Show Users First Show Users First Iame Q	(server)		v
Show Users First Search Name Description / Full Name	e Users and Groups		irren
ame		Sea	arch
Administrator Administrator demo Demo User devuser devuser em7admin em7admin em7user em7user Add	Name	Description / Full Name	
Administrator demo Demo User devuser devuser em7admin em7admin em7user em7user Add users: Groups:		VMware_Conv_SA	
a demo Demo User a devuser devuser a em7admin em7admin a em7user em7user Add Users:			
ewvser devuser em7admin em7admin em7user em7user Add Users:		Demo User	
Add Users: Groups: Note: Separate multiple names with semicolons.	devuser	devuser	
Add Users: Groups: Note: Separate multiple names with semicolons.	em7admin	em7admin	
Users: Groups: Note: Separate multiple names with semicolons.		em7user	-
Note: Separate multiple names with semicolons.			
Note: Separate multiple names with semicolons.			- 11
Check Names	Note: Separate multi	ple names with semicolons.	
	Check Names		

6. From the list of users, select the user or group you want to assign the required permissions to, then click the **[Add]** button, followed by the **[OK]** button. The **Select Users and Groups** pop-up window closes.

Assign Permissions To assign a permission one or more of the na Users and Groups These users and grou object according to th	mes and assign a ro	le.	Add their names to the Users and Groups list below. Then select Assigned Role Selected users and groups can interact with the current object according to the chosen role and privileges.
Name	Role	Propagate	ScienceLogic
ar em7admin	ScienceLogic	Yes	All Privileges All Arms Datacenter Datastore Datastore cluster Datastore cluster Dell dvPort group ESX Agent Manager Extension
	Add	Remove	Propagate to Child Objects
Help			OK Cancel

- 7. In the Assign Permissions pop-up window, ensure that the user or group you selected is highlighted in the Users and Groups select list, and that the Propagate to Child Objects checkbox is checked.
- 8. Click the **[OK]** button.

To test that the user that you configured works with the VMware web service, navigate to the following URL in a browser window:

https://ip-address-of-vmware-server/mob

When prompted, enter the username and password you created for the platform to access the VMware Web Service. If the user is configured correctly, the following page appears:

Home Logout					
Managed Object Type: ManagedObjectReference:ServiceInstance Managed Object ID: ServiceInstance					
Properties					
NAME	түре	VALUE			
capability	Capabili	ty <u>capability</u>			
content ServiceContent		nt <u>content</u>			
serverClock dateTime		"2012-04-13T21:23:28.391016Z"			
Methods	Methods				
RETURN TYPE		NAME			
dateTime g		CurrentTime			
HostVMotionCompatibility[]		QueryVMotionCompatibility			
ServiceContent R		RetrieveServiceContent			
ProductComponentInfo[]		RetrieveProductComponents			
	Event[] ValidateMigration				

If the user is not configured correctly, you will be prompted again for a username and password.

Configuring a SOAP/XML Credential

To use the Dynamic Applications in the VMware: vSphere Base Pack PowerPack, you must configure a SOAP/XML credential for the VMware web service. The VMware: vSphere Base Pack PowerPack includes the following templates for SOAP/XML credentials that you can edit for use with your vCenter server:

- VMware Server (for use with vCenter Server versions 4.x and 5.x)
- VMware Server vCenter 6 (for use with vCenter Server version 6.x)

To modify either of the templates, perform the following steps:

1. Go to the **Credential Management** page (System > Manage > Credentials).

2. Click the wrench icon (*P*) for the "VMware Server" or "VMware Server vCenter 6" credential. The **Credential Editor** modal page appears:

Edit SOAP/XML Credential #4	New Reset
Basic Settings Profile Name Content Encoding Method HTTP Version [VMware Server [text/xml] ▼ [POST] [[HTTP/1.1] ▼ URL [https://%D/sdk/vimService	Soap Options Embedded Password [%P] Embed Value [%1] Embed Value [%1] Embed Value [%1] Embed Value [%1] Embed Value [%3] Embed Value [%3] Embed Value [%4] https:// <sso_server:< td=""></sso_server:<>
Proxy Settings Hostname/IP Port User	HTTP Headers + Add a header
CURL Options CAINFO CAPATH CLOSEPOLICY CONNECTIMEOUT COOKIE COOKIEJAR COOKIELIST CRLF CUSTOMREQUEST DNSCACHETIMEOUT	

- 3. Supply values in the following fields:
 - Profile Name. Enter a new name for the credential.
 - Embed Value [%1]. Enter the username the platform will use to connect to the VMware web service.
 - Embedded Password [%P]. Enter the password the platform will use to connect to the VMware web service.
 - Embed Value [%3]. Do one of the following, based on the vCenter system that you want to monitor:
 - If you are monitoring a vCenter 6.x system that uses SSO for authentication, enter "https://<sso-server ip-address>/sts/STSService/vc6.local" in this field, replacing "<sso-server ip-address>" with the IP address of the SSO server used by the vCenter system.
 - If you are monitoring a vCenter 5.x system that uses SSO for authentication, enter "https://<sso-server ip-address>:7444/ims/STSService" in this field, replacing "<sso-server ip-address>" with the IP address of the SSO server used by the vCenter system.
 - If you are monitoring a vCenter 5.x system and want to use the traditional, non-SSO authentication method, do not enter a value in this field.

NOTE: In some cases, the SSO server IP address will be the same as the vCenter server.

4. Click the [Save As] button to save your changes as a new credential.

Chapter

Discovering a vCenter Server

Overview

The following sections describe the steps required to discover a vCenter Server and component devices in the ScienceLogic platform:

- Discovering a vCenter Server
- Manually Aligning Dynamic Applications to a vCenter Server
- Configuring the "VMware: Events" Dynamic Application
- Viewing Component Devices
- Determining Availability for VMware Component Devices

Discovering a vCenter Server

To create and run a discovery session that will discover a vCenter server, perform the following steps:

- 1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
- 2. Click the **[Create]** button to create a new discovery session. The **Discovery Session Editor** modal page appears:

Discovery Session Editor Editing Sess	on [3]	New Reset
Identification Information	escription	•
IP and Credentials IP Address/Hostname Discovery List 10.0.0.55 Upload File Browse for file SNMP Credentials SNMP Cisco SNMPv2 - Example Cisco SNMPv3 - Example EM7 Default V2 EM7 Default V2 EM7 Default V2 EM7 Default V2 IPSLA Example LifeSize: Endpoint SNMP Nexus snmp SNMP Public V1 Other Credentials Trandberg: XML RPC2 Tandberg: XML RPC2 Tandberg: XML RPC2 Tandberg: XML Status Tomat Status - Example UCS UCS - 55 UCS Standalone - Example VMware Server [VMware Server 55]	Port Scan All IPs [[KNT-Patch1-CU1-58]] Port Scan Timeout 0rr [[System Default (recommended)] • Image: System Default (recommended)] • Detection Method & Port • Image: Default Method J • Detection Method & Port • Image: Default Method J • UDP: 161 SNNP • TCP: 1- tepmux • TCP: 1- tepmux • TCP: 7- echo • TCP: 13 - daytime • TCP: 13 - daytime • Interface Inventory Timeout (ms) • 600000 • Maximum Allowed Interfaces •	DHCP Protection Protection n Server PID: 3 ganization to Device Group(s) evice Template te 204 - 55]
	Save Save As	Log All

- 3. Enter values in the following fields:
 - IP Address Discovery List. Enter the IP address for the vCenter server.
 - **SNMP Credentials**. If the Windows server that hosts the vCenter server is SNMP-enabled, select the SNMP credential for the vCenter server in this field. If you do not select an SNMP credential in this field, you must select the **Discover Non-SNMP** checkbox.
 - Other Credentials. If you want to discover the vCenter server using a device template, select the SOAP/XML credential you created in this field. If you do so, you will also need to make a selection in the Apply Device Template field. Alternatively, you can leave both of these fields blank and manually align the necessary Dynamic Applications to the vCenter server instead.
 - **Discover Non-SNMP**. If the Windows server that hosts the vCenter server is not SNMP-enabled, you must select this checkbox.

- Apply Device Template. If you selected a SOAP/XML credential in the Other Credentials field, then select the VMware vSphere Template from the drop-down list.
- 4. Optionally, you can enter values in the other fields on this page. For more information about the other fields on this page, see the **Discovery & Credentials** manual.
- 5. Click the **[Save]** button and then close the **Discovery Session Editor** modal page.
- 6. The discovery session you created will appear at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (
- 7. The **Discovery Session** window appears. When the vCenter server is discovered, click its device icon (**W**) to view the **Device Properties** page for the vCenter server.

Manually Aligning Dynamic Applications to a vCenter Server

If you did not apply a device template when creating the vCenter server discovery session, then you must discover the VMware vSphere component devices by manually aligning the appropriate Dynamic Applications to the vCenter server.

To align the Dynamic Applications to a vCenter server, perform the following steps:

NOTE: Use these steps if you want to check how many component device records will be created before starting the discovery of component devices. If you do not need to check the number of component devices, you can align the Dynamic Applications via device template.

 From the Device Properties page (Registry > Devices > wrench icon) for the vCenter server, click the [Collections] tab. The Dynamic Application Collections page appears. 2. Click the **[Action]** button and then select Add Dynamic Application. The **Dynamic Application Alignment** page appears:

Dynamic Application		×
Dynamic Application Alignment		Reset
Dynamic Applications	Credentials	
Bulk Snippet Configuration: EMC: VMAX LUN Config EMC: VMAX LUN Config EMC: VMAX Storage Pool Config EMC: VMX File System Configuration EMC: VNX File System Configuration HDS: VSP LUN Config HDS: VSP LUN Config Microsoft: Azure Active Directory Tenant Configuration Microsoft: Azure Storage Container Configuration CI Microsoft: Azure Storage Container Configuration Microsoft: Azure Storage Container Configuration Microsoft: Azure Virtual Machine Configuration CI Microsoft: Azure Virtual Machine Configuration C Microsoft: Azure Virtual Network Configuration C NetApp: Disk Config C-Mode NetApp: Volume Config C-Mode	Select A Dynamic Application First	
VMWare: ClusterComputeResource VSAN Hea Bulk Snippet Performance: AWS EBS Instance Performance AWS EC2 Instance Performance EMC: VMAX LUN Stats		
Sa	ve	

- 3. In the **Dynamic Applications** field, select the "VMware: Inventory Cache" Dynamic Application.
- 4. In the Credentials field, select the SOAP/XML credential you created.
- 5. Click the [Save] button.
- 6. Repeat steps 2–5 for the "VMware: Performance Cache" and "VMware: QuickStats Cache" Dynamic Applications.
- 7. If you want to check that your ScienceLogic system has enough capacity for all components managed by the vCenter server, repeat steps 2–5 for the "VMware: Inventory Count Performance" Dynamic Application.
- 8. After aligning the "VMware: Inventory Count Performance" Dynamic Application, click the **[Reset]** button and then click the plus icon (+) for the "VMware: Inventory Count Performance" Dynamic Application. If collection

for the Dynamic Application was successful, the graph icons (1111) for the "VMware: Inventory Count Performance" Dynamic Application are enabled:

Dynamic Application	ID	Poll Frequer		Тур	1		Credential		1
- VMware: Inventory Count Performance		5 mins	S	nippet Performa	nce	VMware - D)ocs		
Presentation Object +		Version	Pld	Found	Collecting	Group	Label	Precedence	1
+ MEntity Counts		1	p_2886	yes	yes			50	V
Misc Collection Object -				Cld	Found	Collecti	ng	Edited By	1
//Index				o_8943	yes	yes		-	V

9. Click a graph icon (¹¹¹) for the "Entity Counts" presentation object to view the collected data. The **Device Performance** page will display the number of components of each type managed by the vCenter server:

Overview	Options Report		VMware: Inventory	Count Performance	Entity Counts		Reset	Guide
VMware: Inventory Count Performance	Zoom 6H 12H 1D Max					From:	To:	
,	12							
	10							
	8						2014-12-09 1	7:20:00
	6						Datacenter: HostSystem	1
	4						Folder: 4 Datastore: 2 ResourcePo	
	2						Network: 4 VirtualMach ComputeRe	ine: 14
	•					111		
	Date Range Selection:	< Data Type/Label	Graph Type Trend	Mouse-over	Min	Max	Avg	Missed Polis
	Start 12/07/2014 17:2	🗾 Datacenter	line 💌 🗸	1	1	1		1 575
			line 🗶 🗸	1	1	1		1 575
	End 12/09/2014 17:2	🏑 Folder	line 💌 🔽	4	4	4		4 575
	Presets Set Custor	🌄 Datastore	line 🥃 🗸	2	2	2		2 575
		ResourcePool	line 🚽 🗸	1				

- 10. Leave the **Dynamic Application Collections** page and the **Device Performance** page open and go to the **Appliance Manager** page (System > Settings > Appliances) in your main browser window.
- 11. In the Appliance Manager page, locate the row for the primary Database Server or All-In-One Appliance. Verify that the difference between the Capacity and Allocation values for the primary Database Server or All-In-One Appliance is greater than the total number of components displayed in the Configuration Report page. If the difference between the Capacity and Allocation values is less than the total number of components, the platform will not be able to discover all the components managed by the vCenter server.
- 12. After you have verified that your ScienceLogic system has enough capacity for all components managed by the vCenter server, repeat steps 2–5 for the following Dynamic Applications:
 - VMware: ComponentCount Configuration
 - VMware: Events
 - VMware: Inventory Cache Meta Performance
 - VMware: LicenseManager RootDevice Configuration
 - VMware: Performance Counter Lookup Configuration
 - VMware: Perf Metadata Performance
 - VMware: QuickStats Cache Meta Performance
 - VMware: RetrieveServiceContent Metadata Performance
 - VMware: RootFolder Datacenter Discovery

- VMware: RootFolder Folder Discovery
- 13. If you want to collect VMware events, repeat steps 2–5 for the "VMware: Events" Dynamic Application.

Aligning Dynamic Applications to a VMware Device via Device Template

If you do not need to check how many component device records will be created before starting the discovery of component devices, you can align all applicable Dynamic Applications using the VMware vSphere Template device template. To apply the VMware vSphere Template device template to a device, perform the following steps:

- 1. Go to the **Device Manager** page (Registry > Devices > Device Manager).
- 2. Select the checkbox for the VMware device that you want to monitor.
- 3. In the **Select Action** drop-down list, select Modify By Template.
- 4. Click the **[Go]** button.
- 5. In the **Template** drop-down list, select VMware vSphere Template.
- 6. Click the [Apply] button.
- 7. In the confirmation page, click the **[Confirm]** button.
- 8. Click the wrench icon (\checkmark) for the VMware device.
- 9. Click the [Collections] tab. The Dynamic Application Collections page appears.
- 10. Select the checkboxes for the following Dynamic Applications:
 - VMware: ComponentCount Configuration
 - VMware: Events
 - VMware: Inventory Cache
 - VMware: Inventory Cache Meta Performance
 - VMware: Inventory Count Performance
 - VMware: LicenseManager RootDevice Configuration
 - VMware: Performance Cache
 - VMware: Performance Counter Lookup Configuration
 - VMware: Perf Metadata Performance
 - VMware: QuickStats Cache
 - VMware: QuickStats Cache Meta Performance
 - VMware: RetrieveServiceContent Metadata Performance
 - VMware: RootFolder Datacenter Discovery
 - VMware: RootFolder Folder Discovery

- 11. In the Select Action drop-down list, select the SOAP/XML credential you created.
- 12. Click the [Go] button.
- 13. Perform the additional configuration steps for the VMware: Events Dynamic Application.

Configuring the "VMware: Events" Dynamic Application

The "VMware: Events" Dynamic Application is designed to insert all VMware events into the device log of the aligned vCenter server.

For the platform to insert VMware events into the device log, the Data Collector that monitors the vCenter server must be configured to process API events. For instructions on how to configure a Data Collector to process API events, see the *Global Settings* chapter in the *System Administration* manual.

You can configure the "VMware: Events" Dynamic Application to ignore specific types of VMware events. To do this:

- 1. Go to the **Dynamic Applications Manager** page (System > Manage > Applications).
- 2. Click the wrench icon (*Properties Editor*) for the "VMware: Events" Dynamic Application. The **Dynamic Applications Properties Editor** page appears.
- 3. Click the [Snippets] tab. The Dynamic Applications Snippet Editor & Registry page appears.
- 4. Click wrench icon (I for the "VMware Event Collection" snippet.
- 5. Locate the section that looks like this:

```
event_dict = {
   "AlarmStatusChangedEvent": {"count": 0, "countAll": 0, "collect": True},
   "ClusterStatusChangedEvent": {"count": 0, "countAll": 0, "collect": True},
   "HostStatusChangedEvent": {"count": 0, "countAll": 0, "collect": True},
   "UserLoginSessionEvent": {"count": 0, "countAll": 0, "collect": True},
   "UserLogoutSessionEvent": {"count": 0, "countAll": 0, "collect": True},
   "VmEvent": {"count": 0, "countAll": 0, "collect": True},
   "VmMigratedEvent": {"count": 0, "countAll": 0, "collect": True},
   "other": {"count": 0, "countAll": 0, "collect": True},
}
```

For each event type you want the platform to ignore, change the "collect" value to "False". For example, to disable the User Login Session Event, you would change the "UserLoginSessionEvent" line to:

"UserLoginSessionEvent": {"count": 0, "countAll": 0, "collect": False},

6. Click the [Save] button.

If you have edited the "VMware Events" Dynamic Application, you must remove the Dynamic Application from the VMware: vSphere Base Pack PowerPack. If you do not remove the Dynamic Application from the PowerPack, your changes will be overwritten the next time the PowerPack is installed.

To remove the Dynamic Application from the PowerPack:

1. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).

- 2. Click the wrench icon (*P*) for the VMware: vSphere Base Pack PowerPack. The **Editing PowerPack** window appears.
- 3. In the left NavBar, click **Dynamic Applications**. The **Embedded/AvailableDynamic Applications** page appears.
- 4. In the **Embedded Dynamic Applications** pane, click the bomb icon () for the "VMware: Events" Dynamic Application.

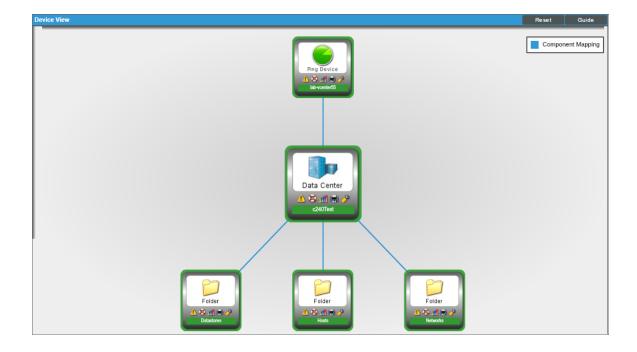
Viewing Component Devices

When the platform performs collection for the "VMware: RootFolder Datacenter Discovery" Dynamic Application, the platform will create component devices for the components managed by the vCenter server and align other Dynamic Applications to those component devices. Some of the Dynamic Applications aligned to the component devices are also used to create additional component devices. All component devices appear on the **Device Manager** page.

NOTE: During initial discovery, the ScienceLogic platform requests information about 200 devices per poll period until all component devices are discovered. After initial discovery, the ScienceLogic platform requests only the changes from the previously collected topology. If you have a large VMware infrastructure, it can take several collection cycles after the initial collection of the "VMware: RootFolder Datacenter Discovery" Dynamic Application for all component devices to be discovered.

In addition to the **Device Manager** page, you can view the vCenter server and all associated component devices in the following places in the user interface:

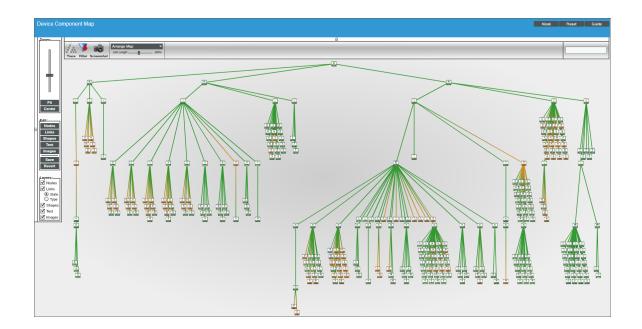
• The **Device View** modal page (click the bar-graph icon [**1**] for a device, then click the **Topology** tab) displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the listed devices reloads the page to make the selected device the primary device:



 The Device Components page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by the platform. The Device Components page displays all root devices and component devices in an indented view, so you can easily view the hierarchy and relationships between child devices, parent devices, and root devices. To view the component devices associated with a vCenter server, find the vCenter server and click its plus icon (+):

	Device Name *	IP Address 0.0.55	Category	Device Class Sub-class		Organization	Current Collection State Group	Collection State	
= 🤌 🚮 lab-vce	enter55	10.0.0.55	Pingable	Ping ICMP	98	TestOrg_VMware	Healthy CUG_Automation	Active	10 15 N
	Device Name *	IP Address	Device Category	Device Class Sub-class		Organization	Current Collection State Group	Collection	1
1. – 🥜 🚮 C	:240Test		Infrastructure	VMware Datacenter	101	TestOrg_VW/ware	Healthy CUG_Automation	Active	19 1 5 N
	Device Name •	IP. Address	Device Category	Device Class Sub-class		<u>Orcanization</u>	Current Collection State Group	Collection State	
1. +	🖞 🚮 Datastores		Infrastructure	VMware Folder	109	TestOrg_VMware	A Healthy CUG_Automation	Active	
2 2	Hosts	۰. ۳	Infrastructure	VMware Folder	108	TestOrg_VMware	Healthy CUG_Automation	Active	₩ 23 %
	Device Name *	IP Addr	tea Categ	e Device Class Sub-class		D Organization	Current Collection State Group	Collection	
1.	+ 🤌 🚮 rstehesxhsbc01.eng.sciencelogic.local		VMware	VMware Host Server	126	TestOrg_VMware	Healthy CUG_Automation	Active	10 13 10 1
2.	+ Pmrstehesxhsbc02.eng.sciencelogic.local	۰. ۳	\/Mware	VMware Host Server	124	TestOrg_VMware	Major CUG_Automation	Active	
3.	+ 🤌 🚮 rstehesxhsbc03.eng.sciencelogic.local	۳	VMware	VMware Host Server	128	TestOrg_VMware	Healthy CUG_Automation	Active	8 8
4.	+ 🤌 👬 rstehesxhsbc04.eng.sciencelogic.local	۰. ۳	VMware	VMware Host Server	120	TestOrg_VMware	Healthy CUG_Automation	Active	🖶 🔀 🗞
5.	+ 🤌 🔐 rstehesxhsbc05.eng.sciencelogic.local	۳.	VMware	VMware Host Server	123	TestOrg_VMware	Healthy CUG_Automation	Active	1 N N 1
6.	+ 🎤 🔐 rstehesxhsbc06.eng.sciencelogic.local	۰. ۳	VMware	VMware Host Server	100	1 TestOrg_VMware	Healthy CUG_Automation	Active	🗃 🔀 🗞
7.	+ 🎤 🔐 rstehesxhsbc07.eng.sciencelogic.local	۳	VMware	VMware Host Server	100	12 TestOrg_VMware	Healthy CUG_Automation	Active	10 <mark>13</mark> 10,
8.	+ 🤌 🔐 rstehesxhsbc08.eng.sciencelogic.local	۰. ۳	VMware	VMware Host Server	100	0 TestOrg_VMware	Healthy CUG_Automation	Active	🖶 🔀 🗞
9.	+ 🎤 🔐 rstehesxhsbc09.eng.sciencelogic.local	۳.	VMware	VMware Host Server	100	18 TestOrg_VMware	Healthy CUG_Automation	Active	🖶 🔀 🗞
10.	+ 🥜 🚮 rstehesxhsbc10.eng.sciencelogic.local	۰. ۳	VMware	VMware Host Server	100	7 TestOrg_VMware	Healthy CUG_Automation	Active	🖶 🔀 🗞
3. + 🧧	P 📶 Networks	۳	Infrastructure	VMware Folder	110	TestOrg_VMware	A Healthy CUG_Automation	Active	8 13 0
2. + 2.15	FlexPod		Infrastructure	VMware Datacenter	99	TestOrg_VMware	A Healthy CUG_Automation	Active	

The Component Map page (Views > Device Maps > Components) allows you to view devices by root node and view the relationships between root nodes, parent components, and child components in a map. This makes it easy to visualize and manage root nodes and their components. The ScienceLogic platform automatically updates the Component Map as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for a vCenter server, go to the Component Map page and select the map from the list in the left NavBar. To learn more about the Component Map page, see the Views manual.



Relationships with Other Types of Component Devices

In addition to the parent/child relationships between component devices, the following relationships are automatically created by the Dynamic Applications in the VMware: vSphere Base Pack PowerPack:

- VMware Virtual Machines and VMware Datastores
- VMware Virtual Machines and VMware Networks
- VMware Virtual Machines and Cisco Cloud Center
- VMware VirtualApps and VMware Networks
- VMware Hosts and VMware Datastores
- VMware Hosts and VMware Networks
- VMware Hosts and VMware Virtual Machines
- VMware Datastore Clusters and VMware Virtual Machines
- VMware Datastore Clusters and VMware Host Clusters
- VMware Datastore Clusters and VMware Hosts

The ScienceLogic platform can also automatically build relationships between VMware component devices and other associated devices. If you discover one or more of the following:

- An EMC VNX device using the Dynamic Applications in the EMC: VNX PowerPack
- A NetApp device using the Dynamic Applications in the NetApp Base Pack PowerPack
- A UCS device using the Dynamic Applications in the Cisco: UCS PowerPack

The platform automatically creates relationships between the following types of component devices, where appropriate:

- EMC VNX LUNs and VMware Datastores
- NetApp LUNs and VMware Datastores
- NetApp Volumes and VMware Datastores
- VMware Hosts and UCS Service Profiles

Determining Availability for Component Devices

The Dynamic Applications that discover the component devices managed by a vCenter server include collection objects that define the availability status of those component devices.

The following types of component devices are considered unavailable if a vCenter server reports that the power state is off:

Compute Resource

- Host Server (i.e., ESX and ESXi Servers)
- Virtual Machine

The following types of component devices are considered unavailable if a vCenter server loses its connection to an ESXi hypervisor host server:

- Host Server
- Virtual Machine

The following types of component devices are considered unavailable if a vCenter server does not include information about those components in the appropriate response:

- Distributed Virtual Switch
- Distributed Virtual Portgroup
- Folder
- Network
- Resource Pool

The following types of component devices are considered unavailable based on other conditions:

- **Datastore**. A datastore is considered unavailable if it is not accessible. A datastore is not accessible if no hosts have successfully mounted the datastore volume.
- **Cluster**. A cluster is considered unavailable if no hosts are associated with the cluster or all hosts associated with the cluster are powered off.

When a VMware device is shut down, an event is created to alert the user that the device is unavailable. If you turn off VMware devices intentionally, you can suppress these availability events.

To suppress these events:

- Create a device group that contains the VMware devices for which you want to suppress availability events.
- Suppress that device group in the relevant Event Policies.

To create the device group:

1. Go to the **Device Groups** page (Registry > Devices > Device Groups).

2. Click the [Create] button. The Device Group Editor page appears:

Device Group Editor Creating new group		Guide Reset
Device Group Name	Force Child Visibility?	Sharing Permissions [Private (visible to you only)]
lcon	Visibility	Permission Keys
	Maps/Views Config Policies/Buik Edit Notification/Automation Discovery Device Schedules Event Suppression RSS Feeds	
Static Devices and Groups Devices [0] Groups [0]		De I Add
Device Name • Class Sub-class	ID Organization I Device (Group Name • ID Devices Groups Rules 🔽
No devices in current device group		No sub-groups in current device group.
Dynamic Rules Rules Found [0]		Del Add
Selector Type	Selector Targets No dynamic rules in current device group.	Matched Devs 🗹
		Matched
	Save	Materieu

- 3. Enter values in the following fields:
 - Device Group Name. In this field you can enter a customized Device Group Name. For example, "Event Suppressed VMs".
 - Visibility. Select Event Suppression.

4. If you want to suppress one or a few individual devices, click the **[Add]** button under the **Static Devices and Groups** pane and select *Add Devices*. The **Device Alignment** modal page appears:

ce Alignment						Res	et
Device Name •	IP Address	Category	Class Sub-class	ID	Organization	Action	
. MIXen		Servers	Xen Cluster Xen Cluster	1924	Svstem		d
. 10-Forward	10.20.30.195	Servers	NET-SNMP FreeBSD	115	System		1
. 10.0.0.3	10.0.0.3	Unknown	Cisco Systems OEM	1944	System		ï
. 10.0.0.5	10.0.0.5	Unknown	Cisco Systems OEM	1943	System		
. 10.0.10.21		VMware	VMware Host Server	1722	System		ï
. 10.0.10.22		VMware	VMware Host Server	1723	System		
. 10.0.10.23		VMware	VMware Host Server	1721	System		i.
. 10.0.10.24		VMware	VMware Host Server	1716	System		
. 10.0.10.25		VMware	VMware Host Server	1719	System		ï
. 10.0.10.26		VMware	VMware Host Server	1709	System		1
. 10.0.10.27		VMware	VMware Host Server	1710	System		ï
. 10.0.10.29		VMware	VMware Host Server	1690	System		1
. 10.0.10.30		VMware	VMware Host Server	1712	System		ï
. 10.0.10.31		VMware	VMware Host Server	1714	System		1
. 10.0.10.32		VMware	VMware Host Server	1927	System		ï
. 10.0.10.33		VMware	VMware Host Server	1912	System		
. 10.0.10.33		VMware	VMware Host Server	1711	System		Ē
. 10.0.10.34		VMware	VMware Host Server	1708	System		
. 10.0.10.40		VMware	VMware Host Server	1922	System		Ē
. 10.0.9.180		VMware	VMware Host Server	1657	System		
. 10.0.9.180		VMware	VMware Host Server	1408	System		Ē
. 10.0.9.181	-	VMware	VMware Host Server	1411	System		
. 10.0.9.181		VMware	VMware Host Server	1656	System		ī
. 📶 10.0.9.182		VMware	VMware Host Server	1558	System		
. 10.0.9.182		VMware	VMware Host Server	1409	System		
. 📶 10.0.9.183		VMware	VMware Host Server	1414	System		
. 10.0.9.183		VMware	VMware Host Server	1646	System		Ĩ
. 10.0.9.184		VMware	VMware Host Server	1645	System		
. 10.0.9.184		VMware	VMware Host Server	1412	System		Ĩ
10.0.9.185		VMwara	VMware Host Server	1/10	Svetam		

- 5. In the **Device Alignment** modal page, perform a search in the **Class | Sub-class** column for "Virtual Machine" to bring up the available VMware devices.
- 6. Find the device(s) for which you want to suppress availability events and select their checkbox (
- 7. Click the [Add/Remove] button to add the device(s).

8. To add all VM devices to the device group, click the **[Add]** button in the **Dynamic Rules** pane of the **Device Group Editor** page. The **Device Group Rule Editor** page appears:

tive Selectors	Selector Definition	s							
Organization 🔺									
Device Class									
Device Category									
Device Name									
Device IP									
Device State									
Collection State									
Open TCP Ports									
Running Process									
Windows Service									
Subscribed Product									
Active Event									
Asset Make									
tched Devices [1120]									-
								Collection	
Device N	lame •	Category	Class Sub-class	D		Organization	4 F	Collection State	
. M.Xen	iame •	Servers	Xen Cluster Xen Cluster	1924	-	<u>Organization</u>	Active		
Device N 		Servers Servers	Xen Cluster Xen Cluster NET-SNMP FreeBSD	1924 115	System	Organization	Active		
Device 1 		Servers	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM	1924	System System	Organization			
Device N		Servers Servers Unknown	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM	1924 115 1944	System System System	Organization	Active Active		
Device N 		Servers Servers Unknown Unknown	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM Cisco Systems OEM	1924 115 1944 1943	System System System	Organization	Active Active Active		
Device N 		Servers Servers Unknown Unknown VMware VMware VMware	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM Cisco Systems OEM VMware Host Server VMware Host Server VMware Host Server	1924 115 1944 1943 1722 1723 1721	System System System System System	Organization	Active Active Active Active Active Active		
Device N M[10-Forward M[10.0.0.3 M[10.0.10.21 M[10.0.10.22 M[10.0.10.23 M[10.0.10.24		Servers Servers Unknown Unknown VMware VMware VMware VMware	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM Cisco Systems OEM VMware Host Server VMware Host Server VMware Host Server VMware Host Server	1924 115 1944 1943 1722 1723 1721 1721	System System System System System System	Organization	Active Active Active Active Active Active Active		
Device N 		Servers Servers Unknown Unknown VMware VMware VMware VMware VMware	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM Cisco Systems OEM VMware Host Server VMware Host Server VMware Host Server VMware Host Server VMware Host Server	1924 115 1944 1943 1722 1723 1721 1716 1719	System System System System System System System	Organization	Active Active Active Active Active Active Active Active		
Device N 		Servers Servers Unknown Unknown VMware VMware VMware VMware	Xen Cluster Xen Cluster NET-SNMP FreeBSD Cisco Systems OEM Cisco Systems OEM VMware Host Server VMware Host Server VMware Host Server VMware Host Server	1924 115 1944 1943 1722 1723 1721 1721	System System System System System System System System	Organization	Active Active Active Active Active Active Active		

9. In the **Device Group Rule Editor** page, select the checkbox (12) for **Device Class** in the **Active Selectors** pane.

10. In the Selector Definitions pane, the Device Class field appears. Perform a search for "VMware" in the Device Class field, and select VMware | Virtual Machine. All virtual machines will appear in the Matched Devices pane:

vice Group Rule Editor					
ativo Solostoro					Rese
clive selectors	Selector Definitions				
Organization	Device	Class	Invert		
Device Class	VMware				
Device Category	VMware Host Server		*		
Device Name	VMware Network				
Device IP	VMware Resource Pool				
Device State	VMware vCenter				
Collection State	VMware Virtual App VMware Virtual Machine		-		
Open TCP Ports	vintuare p virtual machine				
· ·					
Running Process					
Windows Service					
Subscribed Product					
Active Event					
Asset Make					
atched Devices [360]					
					Collection
Device Nam			<u>ID</u>	Organization	State
1. 100.10_IS_10.100.100.1 2. 10.100.8_IS_10.100.100.15		VMware Virtual Machine	1587	System	Active
2100.8_IS_10.100.100.15 37.1.10_IS	VMware VMware	VMware Virtual Machine VMware Virtual Machine	1591 1490	System System	Unavailable
4. 117.1.X-7.2.beta.internal	VMware	VMware Virtual Machine	1482	•	Unavailable
5. 17.1.X-7.2.beta.internal	VMware	VMware Virtual Machine	1672	*	Unavailable
6. 11 7Safe Test System	VMware	VMware Virtual Machine	1606	System	Unavailable
7. 17Safe Test System	VMware	VMware Virtual Machine	1500	System	Unavailable
8. <mark>///</mark> 8633_AIO	VMware	VMware Virtual Machine	1635	System	Active
9. <mark>///</mark> 8633_AIO	VMware	VMware Virtual Machine		System	Active
0. MAIO_snader	VMware	VMware Virtual Machine		System	Active
1. MAnalytics VM	VMware	VMware Virtual Machine	1753		Active
Apache Web Server 1	VMware	VMware Virtual Machine	1250	System	Unavailable

11. Click the **[OK]** button. The Device Class will appear in the **Dynamic Rules** pane.

Next, you need to suppress two Event Policies for this Device Group. To do this:

- 1. Go to the **Event Policy Manager** page (Registry > Events > Event Manager).
- 2. Perform a search in the *Event Policy Name* column for "Availability".

3. Click the wrench icon (*P*) for the **Poller: Availability Check Failed** policy. The **Event Policy Editor** page appears:

Event Policy Editor Editing Event Policy [927]		New Reset 0	Guide
Policy Advanced Suppressions			
Available Device Groups		Suppressed Device Groups	
mh-Test Group aws Data Centers mh Testgroup2	~	Event Suppressed VMs	*
	-		-
Available Devices	-	Suppressed Devices	
Advanced Telecommunications Modules Ld: OEM: Broadxent system Altiga Networks: OEM: Custo_10.20.30.134 Atiga Networks: OEM: Custb_VPN3000 Altiga Networks: OEM: Custb_VPN3000 Altiga Networks: OEM: Custb_VPN3000 Altiga Networks: OEM: Custb_VPN3000 Altiga Networks: OEM: Custb_VPN3000 APC: MasterSwitch PDU: Imnt-reset1 APC: Web/SNMP Management Card: power16 APC: Web/SNMP Management Card +: LA3-POWER101 Ascend Communications: Pipeline BRI: acct-341474 Ascend Communications: Pipeline BRI: acct-341474 ASKEY Computer Corp.: OEM: 10.20.30.52 Avaya: OEM: MCTS8720Act Avocent: DSR1021 03.03.00.07: DSR1021 06-E0-7D Avocent: DEM: 102.03.50.07: DSR1021 06-E0-7D Avocent: DEM: CPM: 161 90-8F-22 Avocent: OEM: 02M: 1092 02-10-63	~	(No devices suppressed)	*
L	Save	Save As	

- 4. Click the [Suppressions] tab in the Event Policy Editor page.
- 5. In the **Available Device Groups** field, select the device group you created. In this example, you would select *Event Suppressed VMs*.
- 6. Click the right arrow button, [>>], and the device group moves to the **Suppressed Device Groups** field.
- 7. Click the **[Save]** button.
- 8. Repeat these steps for the **Poller: Availability Healthy** event policy to suppress events that will occur when a VMware device is turned back on again.

Chapter

VMware Dashboards

Overview

The ScienceLogic platform includes the VMware: vSphere Dashboards PowerPack. The VMware: vSphere Dashboards PowerPack contains two dashboards that display data collected from VMware systems:

- VMware Host Performance. Displays information about monitored ESX and ESXi host servers.
- VMware vCenter Overview. Displays information about guest VMs that consume the most system resources.

In addition, the VMware: vSphere Base Pack PowerPack includes device dashboards that provide summary information for VMware component devices. The following device dashboards in the VMware: vSphere Base Pack PowerPack are aligned as the default device dashboard for the equivalent device class:

- VMware: Cluster
- VMware: Datastore
- VMware: Datastore Cluster
- VMware: Host
- VMware: Resource Pool
- VMware: Virtual App
- VMware: Virtual Machine

This chapter describes how to install these dashboards and includes a description of each.

Installing the VMware: vSphere Dashboards PowerPack

Before you can view the VMware Host Performance or VMware vCenter Overview dashboards in the ScienceLogic platform, you must first install the VMware: vSphere Dashboards PowerPack. To do so:

- 1. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
- 2. Click the [Actions] button, then select Install PowerPack. The Imported PowerPacks modal page appears.
- Use the search filter in the *PowerPack Name* column heading to locate the PowerPack you want to install. To do so, enter text to match, including special characters, and the *Imported PowerPacks* modal page displays only PowerPacks that have a matching name.

рc	rted PowerPacks™ PowerPack	Files F	ound	d [298]
	Denne Den is Marrie		Revisio	
	PowerPack Name	Version	<u>n</u>	GUID Last Edited Imported • 🗹
1	Event Association Test	1	1	DED1884762194566B70BCD4DF3A742 2015-12-16 09:43:07 2015-12-16 09:43:07
	Event Suppression Test	1	1	EC64565DCA55E155135F91F81F44D8 2015-12-09 07:44:17 2015-12-09 07:44:12 //
	SLPSD: Onboarding	0.20000		E121312B60972ED35BEDA19E88D195 2015-11-12 12:14:05 2015-11-12 12:13:50 //
	SL PS Cisco 3rd Party Device Support	1.39999		8B78EDB3A373B2D187ECEAE2545744 2015-11-05 12:17:39 2015-11-05 12:16:54 //
	NetApp Base Pack		6873	8014D5DAD2B8C9AC3E1DD84CC227E 2015-11-03 12:17:03 2015-11-03 12:10:34 / [
6		0.5	1119	7CC6AD933EFB4FF5D840EFEA40F85C 2015-12-24 13:51:472015-10-29 14:56:54 //
7	EM7 Standard Device Categories		255	7A7322AA30F189B42943C082EFD7121 2015-06-02 18:30:5€ 2015-10-29 14:56:54 //
	BL Test	1	200	74F7E816CF0FC9153700D2AF0982C2; 2015-10-29 10:56:112015-10-29 10:56:0€ //
	BL Test	1	1	74F7E816CF0FC9153700D2AF0982C2; 2015-10-29 10:56:11 2015-10-29 10:54:15 //
	Microsoft: Office 365 *BETA*	0.5	138	8FA30F7D1FAC9162DD8C717D9EF778 2015-10-20 16:44:37 /
11.	NetApp Base Pack		6838	8014D5DAD2B8C9AC3E1DD84CC227E 2015-10-21 13:31:47 2015-10-20 16:44:37 /
		0.5	1109	7CC6AD933EFB4FF5D840EFEA40F85C 2015-12-14 13:50:5(2015-10-20 16:44:3)
	EM7 Default Internal Events		316	BE1F363DB4BA9A10F5C6BC28931F0B 2015-10-28 13:26:25 2015-10-20 16:44:35 //
	E5 BIG-IP *BETA*	7.7.0	3242	BFA4E6B316FD2302D913EF38FE7FF82 2015-10-28 13:26:27 2015-10-20 16:44:3€ //
	Microsoft: Office 365 *BETA*		136	8FA30F7D1FAC9162DD8C717D9EF778 - 2015-10-14 15:12:24
	Cisco: Contact Center Enterprise *BETA*	0.5	1022	7CC6AD933EFB4FF5D840EFEA40F85C 2015-12-14 13:50:5(2015-10-14 15:12:2; 9
17.	Microsoft Base Pack		868	97469E96E98B5DAB516F3CCC8747CE 2015-10-28 13:26:2€ 2015-10-13 12:47:54 //
	EM7 Default Internal Events		315	BE1F363DB4BA9A10F5C6BC28931F0B 2015-10-28 13:26:25 2015-10-13 12:47:54
19.	NetApp Base Pack	7.7.0	6792	8014D5DAD2B8C9AC3E1DD84CC227E 2015-10-21 13:31:47 2015-10-13 12:47:54

4. Click the lightning-bolt icon (🖉) for the PowerPack that you want to install.

5. The Install PowerPack modal page appears. To install the PowerPack, click [Install].

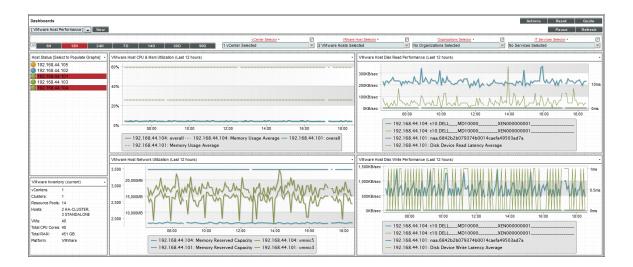
nstall Power-Pack™ .kates_test_	pp_3 Version 1			Reset
Package Information GUID: 9 Created: 2015-07-28 14:		Revision: 2 Compi	Exported From: 7.6.0.beta led: 2015-07-28 14:12:21	
Package Content				
	Theme Name		GUID	Action
1. kates_test_theme_3			A6D9EA56C5FAE1F35E6F0411BD79AD0	update
kates_test_theme_4			ADA02B6763C3CCA014FBB00A9A21A64	update
Installation Key: hBGC6WETV3SI	H8Epeyp7cpySyuEak0FeBpD/IYENPd0oBScXO.	JmVT4Z1ZfC	ImolbNRR/6MJw6aZOvgFY(

6. The PowerPack now appears in the **PowerPack Manager** page. The contents of the PowerPack are automatically installed in your ScienceLogic system.

VMware Host Performance Dashboard

The VMware Host Performance dashboard allows service providers to monitor VMware hosts and diagnose problems with those hosts. The dashboard can include data from up to four hosts in each graph. This allows users to find correlations between hosts in data drops or spikes, making it easier for users to identify and diagnose issues.

The dashboard displays the following widgets:



Context Quick Selector. This widget is located along the top of the dashboard and contains:

- *Time span presets*. Users select the time span over which they want to view data. Selections range from 6 hours to 90 days.
- vCenter Selector. If a user has multiple vCenters, this drop-down list allows the user to select one or several vCenters for which they want to view data.
- Organizations Selector. This drop-down list allows a user to select specific organizations for which they want to view data.
- IT Services Selector. If a user has an ITSM service (for example, for e-commerce), the IT Services Selector drop-down list allows them to select an IT service for which they want to view data.

Host Status. Displays the IP address of each VMware ESX/ESXi server and its status with a color-coded "traffic light" icon. When you select one or more VMware ESX/ESXi server, the four performance widgets are populated with data from that host server(s). The status of each host is indicated as follows:

- Critical. Host has a serious problem that requires immediate attention.
- Major. Host has a problem that requires immediate attention.
- Minor. Host has a less-serious problem.
- Notice. Host has an informational event associated with it.
- Healthy. Host is running with no problems.

NOTE: More than four hosts can be selected in the **Host Status** widget, but the dashboard will only display data from the first four that have been selected.

VMware Inventory. This widget displays information based on the user's credentials. The widget displays inventory information about the following:

- vCenters
- Clusters
- Resource Pools
- Hosts
- VMs
- Total CPU Cores
- Total RAM
- Platform

The following four widgets measure different aspects of VMware performance. Select one or more hosts in the *Host Status* widget to view data in these widgets:

• VMware Host CPU & Memory Utilization. Displays overall and average CPU and Memory Utilization in percent. Displays a line graph with a line each for CPU Utilization and Memory Utilitization over the time period selected in the Context Quick Selector by percent.

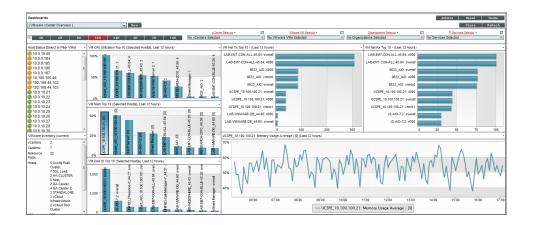
- VMware Host Disk Read Performance. Displays the Disk Read Performance of the selected host in a line graph.
- VMware Host Network Utilization. Displays the Network Utilization of the selected host in a line graph.
- VMware Host Disk Write Performance. Displays the Disk Write Performance of the selected host in a line graph.

Each of the four performance widgets has the following features:

- The X-axis of each widget displays time selected in the Context Quick Selector by hours or days.
- For the selected VMware ESX/ESXi server, the Y-axis displays either performance or utilization by percentage or in a format that is auto-converted to the most consumable value based on the server.
- You can hide a data series by selecting the label in the legend that appears at the bottom of the widget. To show a hidden data series, select the label again.
- You can zoom in on a section of the graph by clicking, holding, and dragging your mouse across the section you want to view. If you are zoomed in on a section of the graph, you can revert to the original time span by selecting *Reset zoom* in the top-right corner of the graph.
- Hovering the cursor over a single line reveals details about specific data points. If you select a data point, the **Device Performance** page will open in a separate window with the graph for the selected metric displayed.

VMware vCenter Overview Dashboard

The VMware vCenter Overview dashboard allows users to have visibility into their VMware environment. Users can view how their VMs and hosts are performing over a given period of time. The dashboard allows diagnostics with its overlay capability. By selecting up to four hosts, the usage average of those devices and hosts can reveal correlations in spikes or drops in data, allowing the user to quickly diagnose issues.



Context Quick Selector. This widget contains the time span presets buttons, vCenter Selector, VMware VM Selector, Organizations Selector, and IT Services Selector.

• *Time span presets*. Users select the time span over which they want to view data. Selections range from 6 hours to 90 days.

- vCenter Selector. If a user has multiple vCenters, this drop-down list allows the user to select one or several vCenters for which they want to view data
- VMware Host Selector. This drop-down list allows a user to select up to four VMware Hosts for which they want to view data.
- Organizations Selector. This drop-down list allows a user to select specific organizations for which they want to view data
- IT Services Selector. If a user has an ITSM service for e-commerce, for example, the IT Services Selector drop-down list allows them to select an IT service for which they want to view data.

Host Status. Displays the IP address of each VMware server and its status with a color-coded "traffic light" icon. When one or more are selected, the graphs will be populated with data from that host server(s). The status of each host is indicated as follows:

- Critical. Host has a serious problem that requires immediate attention.
- Major. Host has a problem that requires immediate attention.
- Minor. Host has a less-serious problem.
- Notice. Host has an informational event associated with it.
- Healthy. Host is running with no problems.

NOTE: More than four hosts can be selected in the *Host Status* widget, but the dashboard will only display data from the first four that have been selected. It is recommended that you select VMware devices from the *VMware VM Selector* drop-down list in the *Quick Context Selector* widget.

VMware Inventory. This widget displays information based on the user's credentials. The widget displays inventory information about the following:

- vCenters
- Clusters
- Resource Pools
- Hosts
- VMs
- Total CPU Cores
- Total RAM
- Platform

VM CPU Utilization. Displays the 10 guest VMs with the highest average CPU utilization over the selected time period. The widget displays a bar graph with percentage utilized as the Y-axis.

VM Memory Top 10. Displays the 10 guest VMs with the highest average memory utilization over the selected time period. The widget displays a bar graph with percentage utilized as the Y-axis.

VM Disk IO Top 10. Displays the 10 guest VMs with the highest average disk usage over the selected time period. The widget displays a bar graph with disk utilization as the Y-axis.

VM Network Transmit Top 10. Displays the 10 guest VMs with the highest average outbound network utilization over the selected time period. The widget displays a bar graph with outbound network utilization as the Y-axis.

VM Network Receive Top 10. Displays the 10 guest VMs with the highest average inbound network utilization over the selected time period. The widget displays a bar graph with inbound network utilization as the Y-axis.

Detailed Performance Graph. The widget in the bottom-right of the dashboard displays data when a bar on any of the other graphs in this dashboard is selected. When a bar is selected, it displays the selected metric over time. You can select up to eight metrics to display in this graph by holding down the **<Ctrl>** key when you select each bar.

VMware Device Dashboards

In addition, the VMware: vSphere Base Pack PowerPack includes device dashboards that provide summary information for VMware component devices. The following device dashboards in the VMware: vSphere Base Pack PowerPack are aligned as the default device dashboard for the equivalent device class:

- VMware: Cluster
- VMware: Datastore
- VMware: Datastore Cluster
- VMware: Host
- VMware: Resource Pool
- VMware: Virtual App
- VMware: Virtual Machine

VMware: Cluster

Device Dash	board: V	Mware: Cluster	•												
Dev	ce Name Cluster1						Managed Type Component Device							_	
	D 7292						Category Servers.VMware								
		Class VMware						Sub-Class Cluster							
Org	anization System							ptime 0 days, 00:00:00 Cluster Con Resource							e
Ro	Root Device flexpod-vcenter						/ Collector	CUG AWS	SdevAIO					al 📾 🧭	
Parent Device Hosts														uster1	
Device H	Hostname													Insteam	
Vitals [Curre												Elem	ents		
Overall Healthy													Active E	vents	1
Availability Okay									Cleared E	vents 27	-				
	There are no even						or tickets for	r this device	Active Tickets [OWP]	- 13				
Vitals [Average]													Resolved Ti	ickets	33
Avail. (24 Hr.) 100% Latency (24 Hr.) 0.00 ms													Log Mess	ages 36	
													Software	Titles	0
											Proce	- 2422	-		
														vices	- 10
											Ports	-			
Cluster Effective CPU Average (Mhz) (Last 12 hours)								sourcePool	CPU Usage A	Average (Mhz) (I	_ast 12 hours)			FUTIS	
20000Mhz							5000Mhz 2500Mhz			In	Lulu		Luh	Im	
0Mhz		03:00	06:00	09:0	0	12:00	0Mhz	02:00	0/	4:00	06:00	08:00	10:00	12:00	
						12.00		02.00	04				10.00	12.00	
Cluster Effective CPU Average (Mhz)								- CPU Usage Average (Mhz)							
Cluster Effect	ctive Men	nory Average an	id Total (Last 12 hours				Root Re	sourcePool	Memory Perfo	ormance (Last 1	2 hours)				
	_														_
100GB															
50GB							•		~~~~	~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····		~
							0GB	02:00	04:0	0 0	5:00 (08:00	10:00	12:00	_
0GB	02:00	04:00	06:00	08:00	10:00	12:00	1							72.00	
	- Clus	Cluster Effective Memory Average (MB) — Memory Total Average (MB)								oped Average on Average (N	med Average (MB) verage (MB)				

The VMware: Cluster device dashboard displays the following information:

- The basic information about the cluster
- The current health, availability, and latency for the cluster
- A list of active events and open tickets associated with the cluster
- A count of, and links to, the elements associated with the cluster
- Four instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - Cluster Effective CPU Average
 - CPU Usage Average
 - Cluster Effective Memory Average
 - Memory Total Average
 - Memory Swapped Average
 - Memory Consumed Average

- Memory Balloon Average
- Memory Active Average

VMware: Datastore



The VMware: Datastore device dashboard displays the following information:

- The basic information about the datastore
- The current health, availability, and latency for the datastore
- A list of active events and open tickets associated with the datastore
- A count of, and links to, the elements associated with the datastore
- Six instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - Datastore Throughput Usage
 - Datastore Throughput Contention
 - Datastore Capacity
 - Datastore Free Space
 - Datastore Space Used
 - Datastore Uncommitted Space

- Datastore Utilization
- Datastore Host Total IOPS
- Datastore Host Read IOPS
- Datastore Host Write IOPS
- Datastore VM Total IOPS
- Datastore VM Read IOPS
- \circ $\,$ Datastore VM Write IOPS $\,$
- Storage I/O Control Aggregate IOPS
- Virtual Disk Average Read IOPS
- Virtual Disk Average Write IOPS

VMware: Datastore Cluster

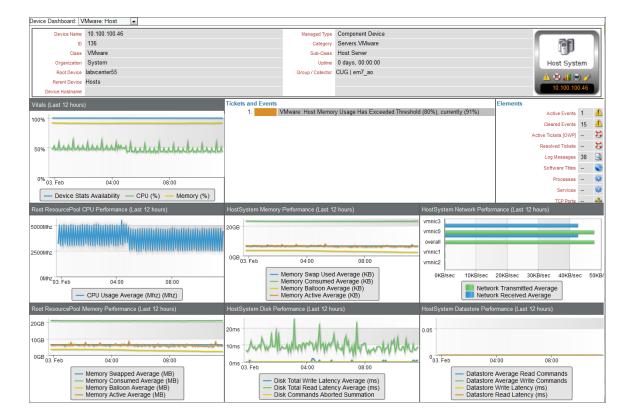
Device Dashboard: VMware: Datastore Cluster 💌															
Device Name DS Cluster						Managed Type	Component Device								
D 7306					Category Virtual.Infrastructure							4.4	R		
Class VMware						Sub-Class									
Organization System					Uptime 0 days, 00:00:00							Datastore C	luster		
Root Device flexpod-vcenter				Group / Collector CUG AWSdevAIO							A 🛛 🖬	5.0			
Parent Device Datastores												DS Clu			
Device	e Hostname											US Cit.			
Detectors Cluster Canacity (Last 12 hours)											Elements				
Datastore Cluster Capacity (Last 12 hours)								Active Events 💧							
476.84GiB					There are no events or tickets for this device							Cleared Events	20 👃		
												Active Tickets [OWP]	-		
238.42GiB	-											Resolved Tickets	-		
												Log Messages	-		
0GiB	-	04:00	08:00	12:00						Software Titles	-				
				12.00						Processes	-				
	Da	tastore Cluster	Capacity (kiB) Space Used (kiB)							Services	-				
			Space Allocated (kiB)							TCP Ports					
Datastore	Cluster IOF	PS (Last 12 hour	s)		Datastore Cluster Space (Last 12 hours)					Datastore Cluster Latency (Last 12 hours)					
0.07IOPs			,	_								,			
									20ms		-				
0.06IOPs					476.84GiB										
									17.5ms -						
0.05IOPs					381.47GiB				15ms		_				
0.04IOPs					286.1GiB				12.5ms -						
					200.1015				10ms -		-				
0.03IOPs															
					190.73GiB				7.5ms -						
0.02IOPs									5ms						
					95.367GiB										
0.01IOPs									2.5ms -						
					0GiB				0ms						
0IOPs		04:00	08:00	12:00	- UGIB	04:00	08:00	12:00	onis	04:00		08:00	12:00		
			Aggregate IOPs (IOPs)	12:00	Datastore Cluster Space Allocated (kiB) Datastore Cluster Capacity (kiB) Datastore Cluster Space Used (kiB)					Virtual Disk Average Read Latency (ms) Virtual Disk Average Write Latency (ms) Virtual Machine Observed Latency (ms)					

The VMware: Datastore Cluster device dashboard displays the following information:

- The basic information about the datastore cluster
- A list of active events and open tickets associated with the datastore cluster
- A count of, and links to, the elements associated with the datastore cluster

- Four instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - Datastore Cluster Capacity
 - Datastore Cluster Space Used
 - Datastore Cluster Space Allocated
 - Storage I/O Control Aggregate IOPS
 - Virtual Disk Average Read Latency
 - Virtual Disk Average Write Latency
 - Virtual Machine Observed Latency

VMware: Host



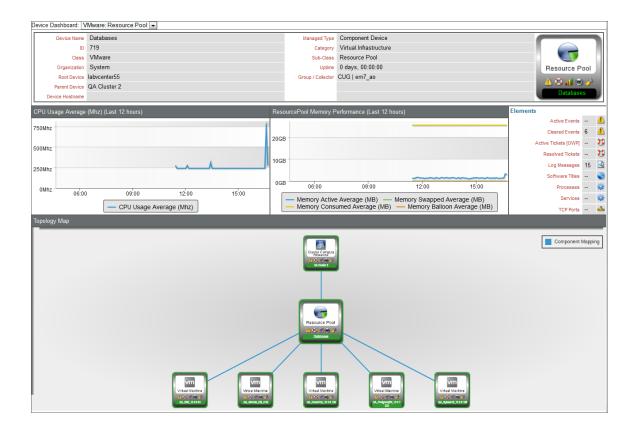
The VMware: Host device dashboard displays the following information:

- The basic information about the host
- A list of active events and open tickets associated with the host
- A count of, and links to, the elements associated with the host
- Seven instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - Availability

4

- CPU (%)
- Memory (%)
- CPU Usage Average
- Memory Swap Used Average
- Memory Consumed Average
- Memory Balloon Average
- Memory Active Average
- Network Transmitted Average
- Network Received Average
- Disk Total Write Latency Average
- Disk Total Read Latency Average
- Disk Commands Aborted Summation
- Datastore Average Read Commands
- Datastore Average Write Commands
- Datastore Write Latency
- Datastore Read Latency

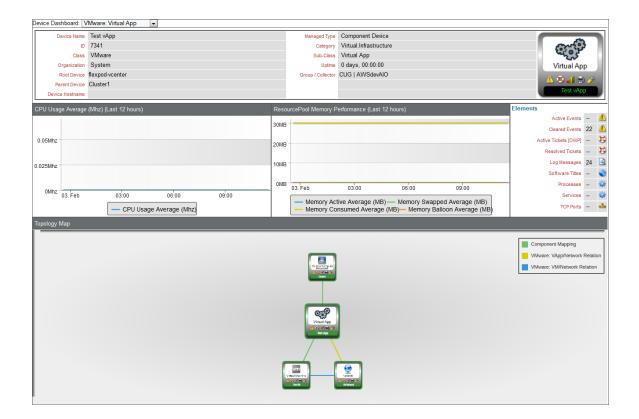
VMware: Resource Pool



The VMware: Resource Pool device dashboard displays the following information:

- The basic information about the resource pool
- A count of, and links to, the elements associated with the resource pool
- Two instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - CPU Usage Average
 - Memory Active Average
 - Memory Swap Used Average
 - Memory Consumed Average
 - Memory Balloon Average
- A topology map that shows the devices that are directly related to the resource pool

VMware: Virtual App

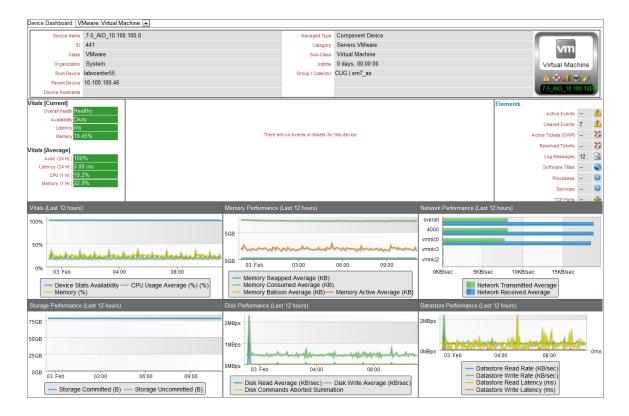


The VMware: Virtual App device dashboard displays the following information:

- The basic information about the virtual app
- A count of, and links to, the elements associated with the virtual app

- Two instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - CPU Usage Average
 - Memory Active Average
 - Memory Swap Used Average
 - Memory Consumed Average
 - Memory Balloon Average
- A topology map that shows the devices that are directly related to the virtual app

VMware: Virtual Machine



The VMware: Virtual Machine device dashboard displays the following information:

- The basic information about the virtual machine
- The current health, availability, latency, CPU, and memory for the virtual machine
- A list of active events and open tickets associated with the virtual machine
- A count of, and links to, the elements associated with the virtual machine
- Six instances of the Multi-series Performance Widget that display the following metrics trended over the last 12 hours:
 - Availability

- CPU (%)
- Memory (%)
- Memory Swapped Average
- Memory Consumed Average
- Memory Balloon Average
- Memory Active Average
- Network Transmitted Average
- Network Received Average
- Storage Committed
- Storage Uncommitted
- Disk Read Average
- Disk Write Average
- Disk Commands Aborted Summation
- Datastore Read Rate
- Datastore Write Rate
- Datastore Read Latency
- Datastore Write Latency

Appendix

Α

Configuring SNMP on ESXi 4.x and 5.x

Overview

To configure an ESXi server for communication via SNMP, you must perform the following tasks:

- 1. Locally, install the vSphere Command-Line Interface so you can communicate with the ESXi server.
- 2. On the ESXi server, assign the server at least one SNMP community.
- 3. On the ESXi server, configure SNMP Traps.
- 4. On the ESXi server, configure SNMP Polling.
- 5. On the ESXi server, enable the SNMP agent.

This chapter describes how to perform these tasks on

- VMware ESXi 4.x
- VMware ESXi 5.x

CAUTION: The free versions of ESXi do not support SNMP.

Installing the vSphere Command-Line Interface

The vSphere Command-Line Interface allows you to communicate with an ESXi server directly from your desktop. The vSphere Command-Line Interface allows you to open a shell session or command-line session on your desktop and communicate with an ESXi server. **NOTE**: For details on the commands available with the vSphere Command-Line Interface (including details on the **vicfg_snmp** commands), see <u>http://www.vmware.com/pdf/vsphere4/r40_u1/vsp_40_u1_vcli.pdf</u>.

To download the vSphere Command-Line Interface, go to the following page: http://www.vmware.com/support/developer/vcli/ .

- The **Downloads** link at the top of the page allows you to download the vSphere Command-Line Interface.
- The **Documentation** links at the bottom of the page allow you to read instructions on downloading and installing vSphere Command-Line Interface.

Assigning an SNMP Community

To use SNMP on an ESXi server, you must configure at least one community for the SNMP agent on that server.

An SNMP community defines a group of devices and management systems. Only devices and management systems that are members of the same community can exchange SNMP messages. A device or management system can be a member of multiple communities.

NOTE: In the ScienceLogic platform, the SNMP community is called the **community string** and is used in credentials for SNMP v1 and SNMP v2 to authenticate communication with the ESXi server.

To define a community for the ESXi server, open a shell session or a command line session and enter the following at the command prompt:

vicfg-snmp.pl --server <hostname or IP address of the ESXi server> --username <your username on the ESXi server> --password <your password on the ESXi server> -c <one or more communities to assign to the ESXi server>

For example:

```
vicfg-snmp.pl --server 192.168.10.10 --username root --password esxadmin -c
public,servers
```

This example:

- connects to the ESXi server at 192.168.10.10
- connects as user "root" with password "esxadmin". This is the account name and password for the ESXi server.
- assigns the ESXi server to two communities: public and servers

Configuring SNMP Traps

Traps are unsolicited messages that are sent to the ScienceLogic platform from a device that the platform is monitoring. Before an EXSi server can send traps to the platform, you must tell the ESXi server where to send traps and assign the ScienceLogic appliance to the same community as the ESXi server.

To do this, open a shell session or a command line session and enter the following at the command prompt:

```
vicfg-snmp.pl --server <hostname or IP address of the ESXi server> --username <your
username on the ESXi server> --password <your password on the ESXi server> -t
<hostname or IP address of an EM7 All-In-One Appliance, Data Collector, or Message
Collector>@<port>/<community>.
```

For example:

```
vicfg-snmp.pl --server 192.168.10.10 --username root --password esxadmin -t
192.168.9.100@162/public
```

This example:

- connects to the ESXi server at 192.168.10.10
- connects as user "root" with password "esxadmin". This is the account name and password for the ESXi server.
- tells the ESXi server to send traps to 192.168.9.100, to the port 162. The All-In-One Appliance, Data Collector, or Message Collector is assigned the community "public".

Configuring SNMP Polling

You must configure the SNMP agent on an ESXi server to listen for communications from the platform. The platform will retrieve data from the ESXi server by sending SNMP GET requests (also known as "polling").

To configure an ESXi server for polling, open a shell session or a command line session and enter the following at the command prompt:

```
vicfg-snmp.pl --server <hostname or IP address of the ESXi server> --username <your
username on the ESXi server> --password <your password on the ESXi server> -p <port
for incoming SNMP GET requests>
```

For example:

```
vicfg-snmp.pl --server 192.168.10.10 --username root --password esxadmin -p 161
```

This example:

- connects to the ESXi server at 192.168.10.10
- connects as user "root" with password "esxadmin". This is the account name and password for the ESXi server.

 tells the ESXi server to use port 161 to listen for SNMP GET requests from the platform. Port 161 is the default port.

Enabling the SNMP Agent

The SNMP agent on each ESXi server provides the platform with information in response to the SNMP GET requests sent by the platform. By default, the SNMP agent on each ESXi server is disabled. You must enable the SNMP agent on the ESXi server before the platform can retrieve information from the ESXi server.

To enable the SNMP agent on the ESXi server, open a shell session or a command line session and enter the following at the command prompt:

vicfg-snmp.pl --server <hostname or IP address of the ESXi server> --username <your username on the ESXi server> --password <your password on the ESXi server> --enable

For example:

vicfg-snmp.pl --server 192.168.10.10 --username root --password esxadmin --enable

This example:

- connects to the ESXi server at 192.168.10.10
- connects as user "root" with password "esxadmin". This is the account name and password for the ESXi server.
- starts the SNMP agent on the ESXi server

Testing Traps

The vSphere Command-Line Interface includes a command for testing traps. You can use this command to send a test trap from the ESXi server to the platform.

To do this:

- In the platform, discover the ESXi server. When creating a credential for the ESXi server, use the community specified earlier in this chapter. For details on discovering a device in the ScienceLogic platform, see the Discovery and Credentials manual.
- 2. After the ESXi server has been successfully discovered in the platform, go to your desktop. Don't exit the user interface session.
- 3. Open a shell session or a command-line session. At the prompt, enter the following:

```
vicfg-snmp.pl --server <hostname or IP address of the ESXi server> --username
<your username on the ESXi server> --password <your password on the ESXi server>
--test
```

For example:

```
vicfg-snmp.pl --server 192.168.10.10 --username root --password esxadmin --test
```

This example:

- connects to the ESXi server at 192.168.10.10
- connects as user "root" with password "esxadmin". This is the account name and password for the ESXi server.
- sends a "test" trap, specifically a "warmstart" trap. The platform will receive this trap and store it in the device log for the ESXi server.

NOTE: The --test option sends a "warmstart" trap.

- 6. In the user interface, go to the **Device Manager** page (Registry > Devices > Device Manager) and find the ESXi server. Click its wrench icon (*P*).
- 7. Click the [Logs] tab. In the Device Logs & Messages page, you should see the "warmstart" trap message.

Appendix

Configuring SNMP on ESX 4.x

Overview

The configuration steps in the Configuring SNMP on ESXi 4.x & 5.x appendix can be used to configure SNMP on an ESX 4.x server; however, to allow the platform access to the largest amount of data, ScienceLogic recommends you use the configuration described in this chapter. VMware ESX 4.x servers have two SNMP agents available:

- UCD-SNMP. Reports information on interfaces, file systems, memory, and other components common to networked devices.
- VMware. Reports information specific to VMware ESX servers, such as configuration of Guest VMs.

Configuring SNMP Polling & SNMP Traps

The following configuration will allow both agents to run simultaneously. All SNMP requests on the standard port, 161, will be handled by the UCD-SNMP agent. If the UCD-SNMP agent receives a request for an OID in the VMware enterprise tree (.1.3.6.1.4.1.6876), it will act as a proxy to the VMware agent running on port 171. To configure both agents to run together, perform the following steps:

- 1. Log in to the ESX 4.x server as root at the console or using SSH.
- 2. Open /etc/vmware/snmp.xml using your preferred text editor. ESX 4.x servers have nano and vi installed.
- 3. Edit the values contained in the following XML tags:
 - <communities>. Enter the community string for the VMware agent. You can enter multiple community strings, separated by commas.
 - <enable>. Enter "true".
 - <port>. Enter "171".

 <targets>. Enter the IP address of the ScienceLogic appliance that handles traps for your ScienceLogic system (either an All-In-One Appliance, Message Collector, or Data Collector), followed by "@162", a space, then the community string to use for SNMP traps. For example:

```
192.168.9.1000162 public
```

This tells the ESX server to send traps to 192.168.9.100, to the port 162 using the community string "public".

- 4. Save your changes to the snmp.xml file and exit the text editor.
- 5. Issue the following command to stop the UCD-SNMP agent:

service snmpd stop

6. Open /etc/snmp/snmpd.conf using your preferred text editor.

NOTE: These instructions provide a basic configuration using a single community string, v1- and v2conly authentication, and access to the entire MIB tree used by the UCD-SNMP and VMware agents. You might want to make further changes to this file based on the security policies for your enterprise. The snmpd.conf file used by the UCD-SNMP agent uses syntax common to most linux-based systems.

7. Enter the community string at the end of the com2sec notConfigUser default line. For example: com2sec notConfigUser default public

Specifies the community string "public".

8. Add the following line to the view section of the file:

view systemview included .1

9. Add the following line to the end of the file, replacing community-string with one of the community strings you specified in the <communities> tag in the snmp.xml file:

proxy -v 1 -c community-string 127.0.0.1:171 .1.3.6.1.4.1.6876

- 10. Save your changes to the snmpd.conf file and exit the text editor.
- 11. Issue the following two commands to restart the VMware and UCD-SNMP agents:

service mgmt-vmware restart service snmpd restart

- 12. To ensure that the UCD-SNMP agent starts when the ESX server is rebooted, issue the following command: chkconfig --add snmpd
- 13. To ensure the ESX server firewall allows SNMP requests, issue the following command:

esxcfg-firewall -e snmpd

14. To test that your settings are correct, issue the following command, replacing community-string with the community string you entered in the snmpd.conf file:

```
snmpwalk -v 2c -c community-string localhost .1.3.6.1.4.1.6876 | grep 6876.1
```

If the settings are configured correctly, the UCD-SNMP agent will respond with three lines: "VMware ESX", the ESX version number, and the build number the ESX server is running.

Testing Traps

You can test that the ESX server is correctly configured to send traps by restarting the mgmt-vmware service. Restarting this service will make the ESX server send a "warmstart" trap.

To do this:

- In the platform, discover the ESX server. When creating a credential for the ESX server, use the community string specified earlier in this chapter. For details on discovering a device in the ScienceLogic platform, see the *Discovery and Credentials* manual.
- 2. After the ESX server has been successfully discovered in the platform, issue the following command from the console of the ESX server:

service mgmt-vmware restart

- In the user interface, go to the Device Manager page (Registry > Devices > Device Manager) and find the ESX server. Click its wrench icon (^J).
- 4. Click the [Logs] tab. In the Device Logs & Messages page, you should see the "warmstart" trap message.

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