Total Performance Visibility

Integrating the eG Manager with SCOM

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Introduction

System Center Operations Manager (**SCOM**), formerly Microsoft Operations Manager (MOM or OpsMgr), is a performance and event monitoring product for Microsoft Windows operating systems. Typically, SCOM agents installed on target Windows systems monitor several sources for specific events or alerts generated by the applications executing on the systems, and forwards the alerts (if any) to a central SCOM servre; the SCOM server then triggers some pre-defined action to correct the cause of the alert. Many Microsoft server products, such as Active Directory, Microsoft SQL Server, Microsoft Exchange Server and SCOM itself can be monitored with SCOM. In addition, SCOM also provides limited out-of-the-box support to Unix hosts and network devices.

However, in the present times, when IT infrastructures are characterized by a multitude of components executing on heterogenous platforms, a tool such as SCOM that is an expert in monitoring Windows-based applications might not suffice. Though SCOM provides limited monitoring support to Unix systems and network devices, to enable the tool to pull out detailed metrics from these environments you may have to perform cumbersome customizations in SCOM. Moreover, while SCOM can provide extensive support for Microsoft applications, for monitoring non-Microsoft applications running on Windows systems the solution turns to specific application monitors offered by the application vendors themselves. The use of multiple tools developed by different vendors for different applications can greatly reduce the usability of the SCOM solution and can only compound the administrator's problems! What is needed therefore is a single, integrated solution that can update administrators on component health and alert them to anomalies across the target environment, regardless of the operating system or type of application/device in use.

The eG Enterprise suite is capable of monitoring 120+ applications executing on over 10 different operating systems including Windows, Linux, Solaris, AIX, HPUX, FreeBSD, and Tru64. This monitoring solution can be seamlessly integrated with SCOM, so that SCOM administrators are able to check the status of eG-managed Windows and non-Windows operating systems, and Microsoft and non-Microsoft applications and network devices directly in the SCOM operation console itself. This integration enables every target monitored in eG Enterprise to be represented in SCOM as a monitoring object, and its operational state updated in SCOM from time to time. Whenever the state of any eG-managed component changes in SCOM, "SCOM alerts" are automatically generated. These alerts are automatically closed when the state of the object becomes healthy. In addition, administrators can quickly launch the eG monitoring console from specific eG-managed objects in SCOM and thus initiate instant diagnosis. Moreover, upon successful integration, the following tasks can be directly performed in the SCOM console for the eG-managed objects:

- Use the features and interfaces built into the SCOM console to instantly determine the health of eG-managed components and easily troubleshoot issues;
- Define custom views in the SCOM console for effectively analyzing the performance data reported by the eG manager;
- Quickly turn on/off specific monitors in the SCOM console;
- Instantly launch the eG monitoring console from the SCOM console to deep dive into performance issues;

The key benefits of this integration are as follows:

- **Provides a complete and comprehensive solution for the varied monitoring needs of a target environment:** This integration successfully combines the Windows monitoring capabilities of the SCOM agents with the multi-platform, muti-application expertise of the eG agents, and provides administrators with a single, central console for monitoring the entire monitored environment.

- **Shorter learning curve for administrators:** Besides fusing the strengths of two monitoring solutions, this integration also saves administrators the trouble of shuttling between and operating multiple consoles to receive status and problem updates related to the monitored environment.

1.1 How does the eG Manager-SCOM Integration Work?

Figure 1.1 depicts how the integration works.

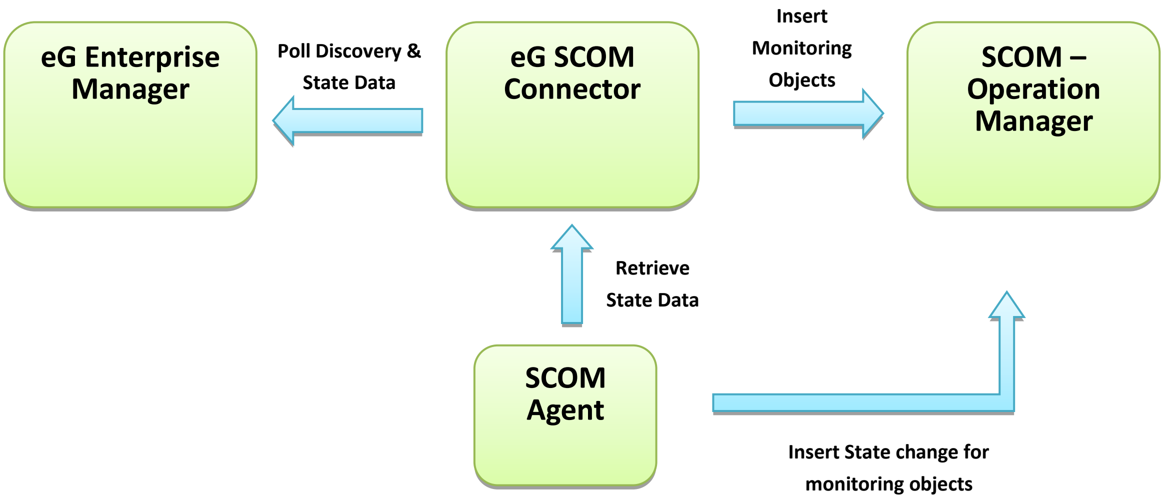

eG Enterprise Manager
Poll Discovery & State Data
eG SCOM Connector
Insert Monitoring Objects
SCOM – Operation Manager
Retrieve State Data
SCOM Agent
Insert State change for monitoring objects

Figure 1.1: How the eG Manager - SCOM server integration works

The eG manager-SCOM integration is implemented using the following components:

- The **eG SCOM Connector**: The **eG SCOM Connector** is a software component, which needs to be installed and started on a system hosting a SCOM agent. The connector polls the eG manager at pre-configured intervals to retrieve the complete list of components/layers/tests/descriptors managed by the eG Enterprise system, import the required eG management packs, and inserts corresponding monitoring objects in the SCOM server via the SCOM SDK. In addition, from time to time, the connector pulls out the state of the managed components/layers/test/descriptors/measures from the eG manager, and publishes the state information to an eventlog called *eG Enterprise* on the local machine.

- The **SCOM Agent**: The SCOM agent, which runs on the same system as the connector, uses its **Health Service** to manage the state of all the eG monitoring objects in the SCOM server. The SCOM agent executes the unit monitors created in the eG management pack for every measurement reported by the eG Enterprise system. Upon execution, the unit monitors listen for any new eventlog entries in the *eG Enterprise* log. If a new entry is created in the eventlog, the unit monitors execute and update the SCOM server with the state information. The SCOM server then processes the state information so received, and accordingly changes the state of the monitoring objects.

Every time the state of a monitoring object changes, the SCOM server automatically generates alerts. Likewise, once the object is restored to normalcy, the SCOM server automatically closes the alert.

This document provides the detailed procedure for enabling the eG Manager-SCOM integration, and uses an example to discuss how this integration works.

2

How to Integrate the eG Manager with SCOM?

This chapter discusses the pre-requisites and the procedure for integrating the eG manager with SCOM.

2.1 Pre-requisites for the eG Manager-SCOM Integration

The eG manager-SCOM integration can be implemented only if the following broad pre-requisites are fulfilled:

- eG Manager v5.6.2 (or above) should be available
- The 'External Super Manager' capability should be enabled in the eG manager license
- Microsoft System Center Operations Manager 2012 / 2012 SP1 / 2012 R2 / 2016 should be available

2.2 Steps for Integrating the eG Manager with SCOM

To enable the eG manager to integrate with SCOM, the following broad steps are to be followed:

1. Install the eG SCOM Connector
2. Configure the eG SCOM Connector
3. Install the eG Console Tasks application
4. Tune the monitoring thresholds of the SCOM agent on the connector machine

The sections that follow will discuss the procedure involved in accomplishing the tasks enumerated above.

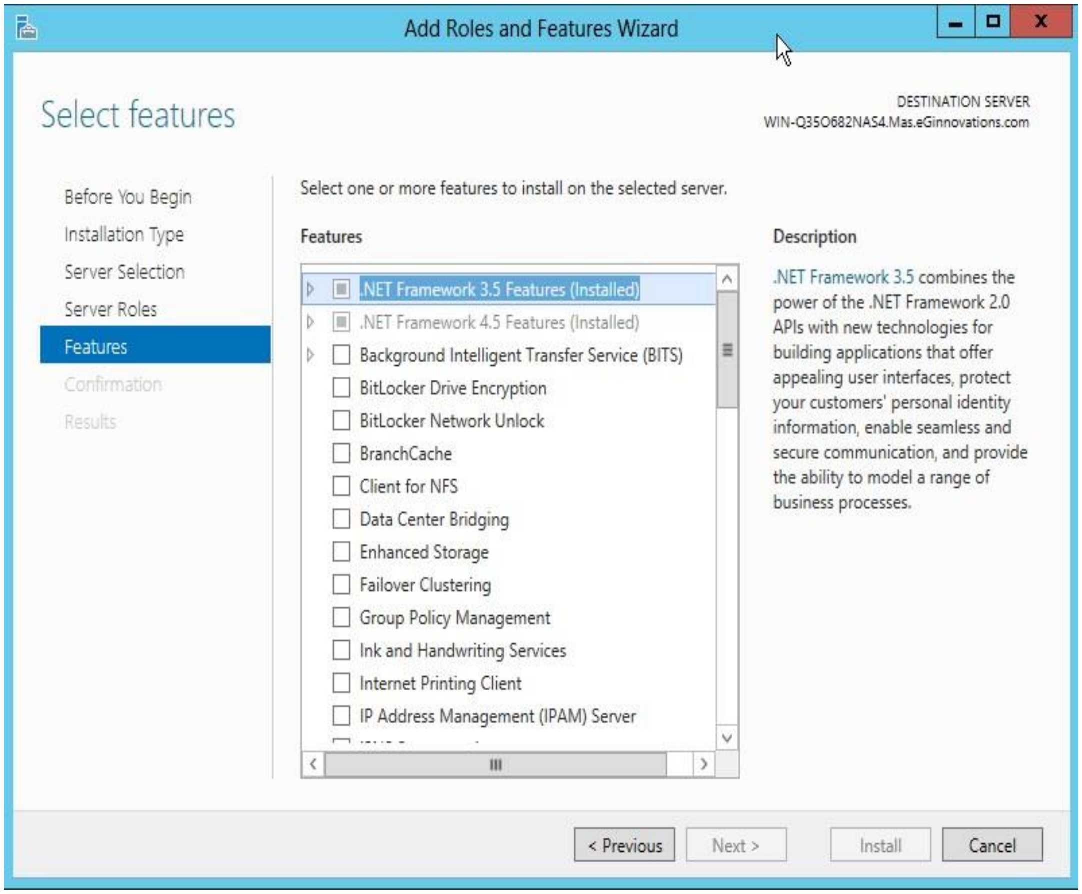
2.2.1 Installing the eG SCOM Connector

2.2.1.1 Pre-requisites for Installing the eG SCOM Connector

The first step towards integrating the eG manager with SCOM is to install the eG SCOM Connector. Before installing this software, ensure that the following requirements are met:

Software Requirements:

Operating Systems	• Windows 2012 • Windows 2012 R2

	• Windows 8/8.1 • Windows 2008 R2 • Windows 2008 • Windows 2003 • Windows 7 / Vista / XP • All operating systems must be installed with latest service pack • Server operating system is recommended for production deployments
Other Software Requirements	• SCOM Agent 2012 / 2012 SP1 / 2012 R2 / 2016 • For SCOM 2012, Microsoft .NET version 4.0/4.5/4.6 (Full) is required. For SCOM 2016, Microsoft .NET version 4.5.2 (or above) is required. • Make sure that **.NET Framework 3.5 Features** (indicated by Figure 2.1 below) is installed on the host on which the eG SCOM Connector is to be installed.  Add Roles and Features Wizard Select features DESTINATION SERVER WIN-Q35O682NAS4.Mas.eGinnovations.com Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results Select one or more features to install on the selected server. Features ■ .NET Framework 3.5 Features (Installed) ■ .NET Framework 4.5 Features (Installed) □ Background Intelligent Transfer Service (BITS) □ BitLocker Drive Encryption □ BitLocker Network Unlock □ BranchCache □ Client for NFS □ Data Center Bridging □ Enhanced Storage □ Failover Clustering □ Group Policy Management □ Ink and Handwriting Services □ Internet Printing Client □ IP Address Management (IPAM) Server Description .NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes. < Previous Next > Install Cancel Figure 2.1: Checking whether the .NET Framework 3.5 Features is installed

Hardware Requirements:

CPU	2GHz or faster x86 or x64 processor. This can support integration of up to 100 monitored components in eG manager. Thereafter, for every additional 100 components to be integrated, add 1 additional processor with 2GHz processing speed.
Memory	Minimum 2 GB (recommended: 4 GB); this can support integration of up to 100 monitored components in eG manager. Thereafter, for every additional 100 components to be integrated, add another 2 GB.
Disk Space	Minimum 2 GB (recommended: 4 GB)

Other Requirements:

- The connector software should be installed on a system that is installed with a SCOM agent and is managed by a SCOM server;
- The Windows Installer Service should pre-exist on the system chosen for installing the eG connector;
- The system hosting the connector should be able to communicate with the eG manager and the SCOM SDK service via TCP ports; the specific ports that need to be opened and the direction of communication has been provided below:

Source	Destination	Access Required
eG SCOM Connector	eG Manager Server	TCP 7077
eG SCOM Connector	SCOM 2012 Server or SCOM 2016 Server / SDK Service	TCP 5723

- It is recommended that the connector software be deployed on a dedicated system; this is because, the connector machine hosts the SCOM agent as well, and the load on the SCOM agent is normally high. You also have the option of installing the eG SCOM connector on a VM. While running on a VM, make sure that the VM is allocated with 2 or more virtual processors. For large environments where hundreds of eG components need to be integrated with SCOM, you can also uniformly distribute the load amongst multiple SCOM agents and eG SCOM connectors.
- To enable the connector to communicate with the eG manager, configure the connector with the credentials of a user who is registered with the eG Enterprise system. **We recommend that a user who is assigned the Monitor role be used for this purpose.**
- To enable the connector to communicate with the SCOM server, configure the connector with the credentials of a user who has the right to access the SDK service.

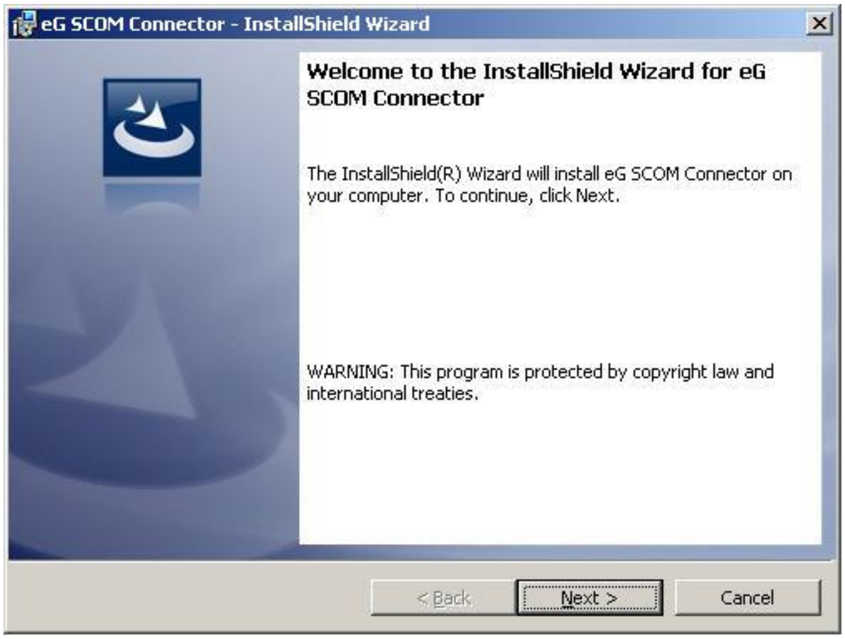
2.2.1.2 How to Install the eG SCOM Connector?

The eG SCOM Connector installable is provided as an MSI package named, **eG SCOM Connector.exe**. To install the connector using this package, do the following:

1. From the URL that is provided to you, download the **eG SCOM Connector.exe** that corresponds to the SCOM

version that is in use in your environment (i.e., SCOM 2012/2016) and the processor configuration (i.e., 32-bit or 64-bit).

2. Once the executable is downloaded to a directory on the local host, run the executable by double-clicking on it.
3. If the target server does not meet the software pre-requisites described in Section 2.1 above, the installer will not proceed.
4. If all the documented pre-requisites are fulfilled, then Figure 2.2 will appear.



eG SCOM Connector - InstallShield Wizard

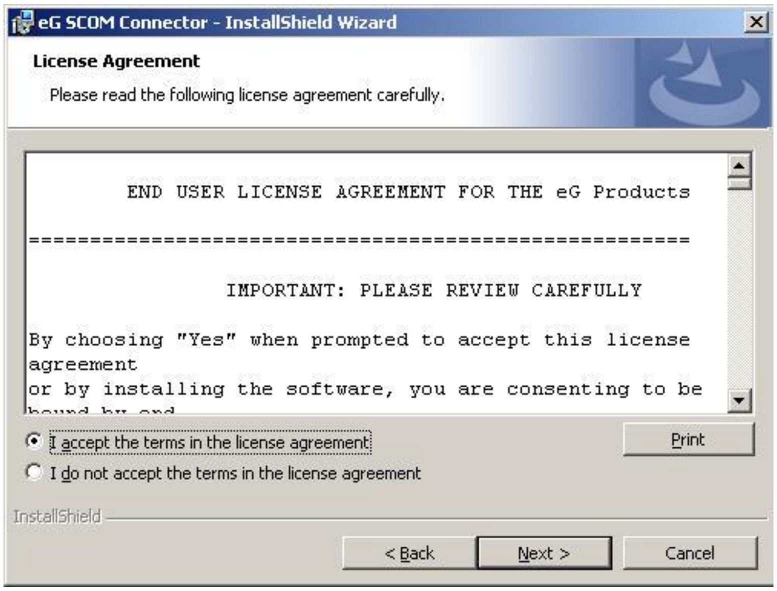
Welcome to the InstallShield Wizard for eG SCOM Connector

The InstallShield(R) Wizard will install eG SCOM Connector on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

Figure 2.2: The Welcome screen

5. Click the **Next** button in Figure 2.2 to proceed with the installation. Figure 2.3 will then appear.



eG SCOM Connector - InstallShield Wizard

License Agreement

Please read the following license agreement carefully.

```
        END USER LICENSE AGREEMENT FOR THE eG Products
=======================================================
              IMPORTANT: PLEASE REVIEW CAREFULLY
By choosing "Yes" when prompted to accept this license
agreement
or by installing the software, you are consenting to be
```

● I accept the terms in the license agreement

○ I do not accept the terms in the license agreement

Figure 2.3: The License agreement

6. Accept the license agreement and click the **Next** button in Figure 2.3.

7. When Figure 2.4 appears, the directory in which the eG SCOM Connector will be installed by default, will be displayed. **This default directory cannot be changed.** Click the **Next** button to proceed.

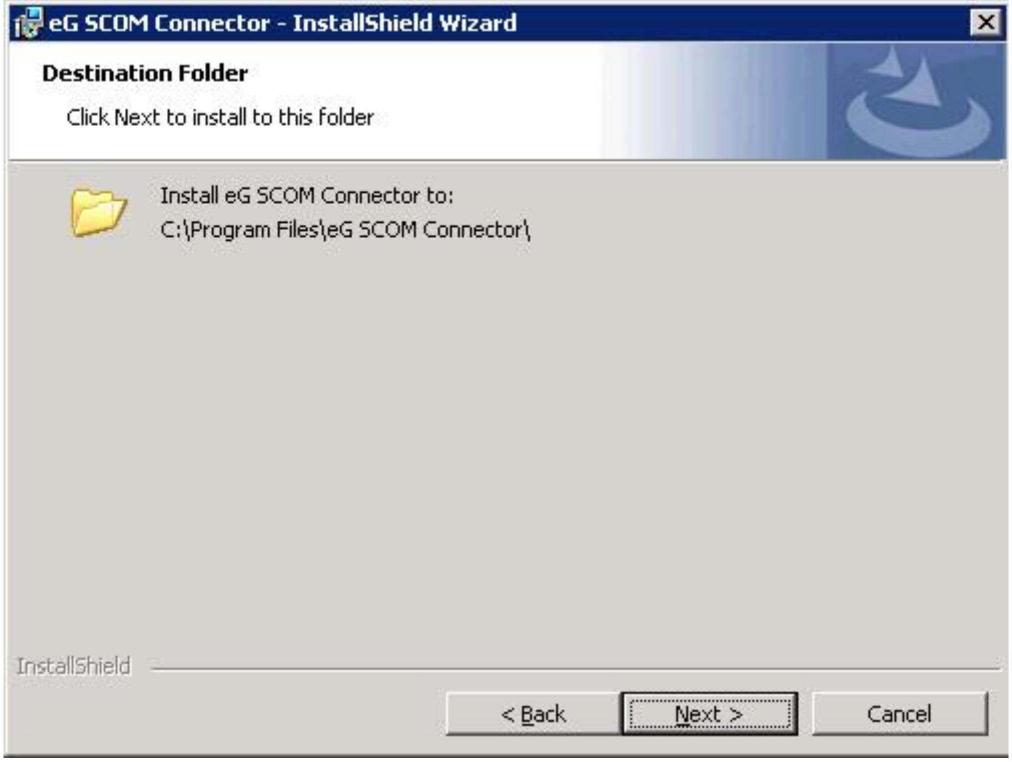
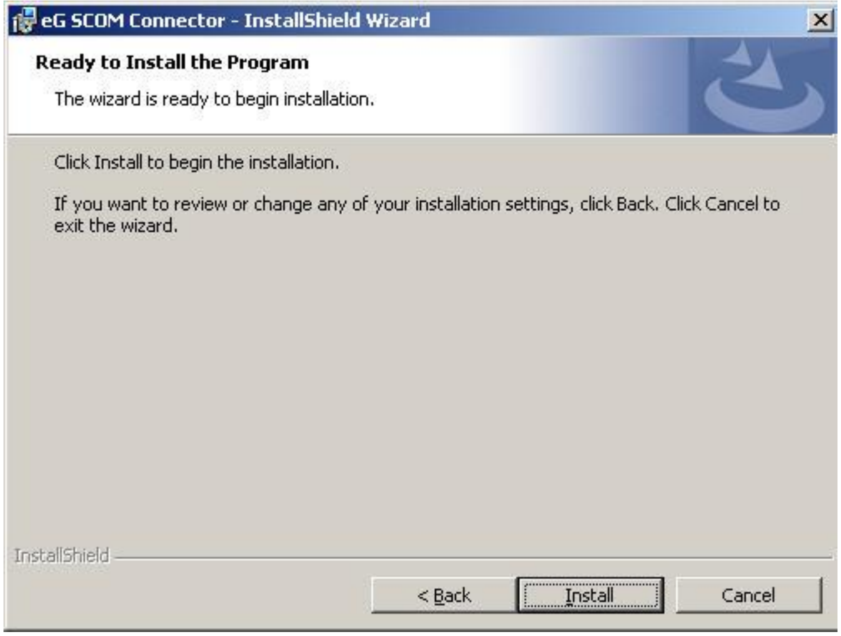

eG SCOM Connector - InstallShield Wizard
Destination Folder
Click Next to install to this folder
Install eG SCOM Connector to:
C:\Program Files\eG SCOM Connector\
InstallShield
< Back
Next >
Cancel

Figure 2.4: Specifying the install directory of the connector

8. When Figure 2.5 appears, click **Install** to begin the installation.



eG SCOM Connector - InstallShield Wizard

Ready to Install the Program

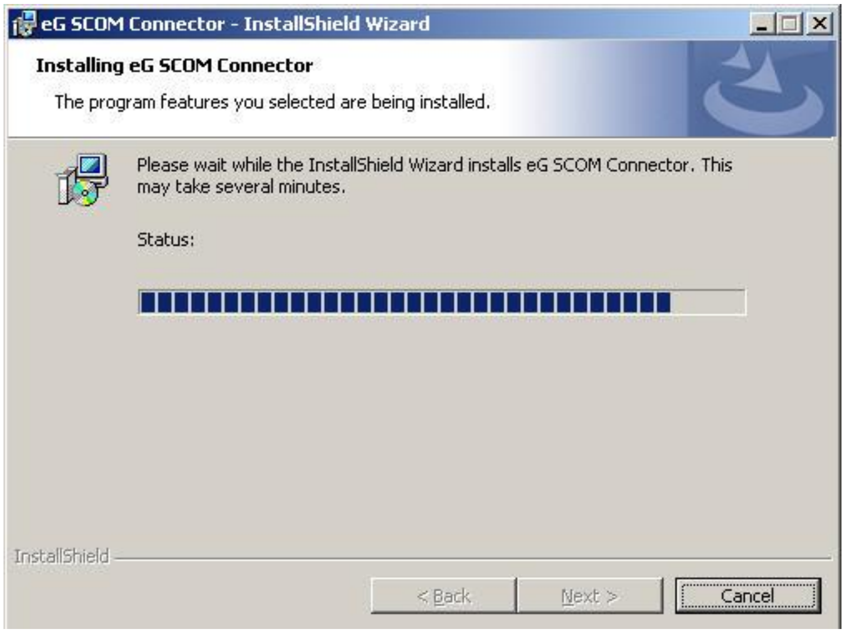
The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

Figure 2.5: Clicking 'Install' to begin the installation

9. Figure 2.6 will indicate the progress of the installation to you.



eG SCOM Connector - InstallShield Wizard

Installing eG SCOM Connector

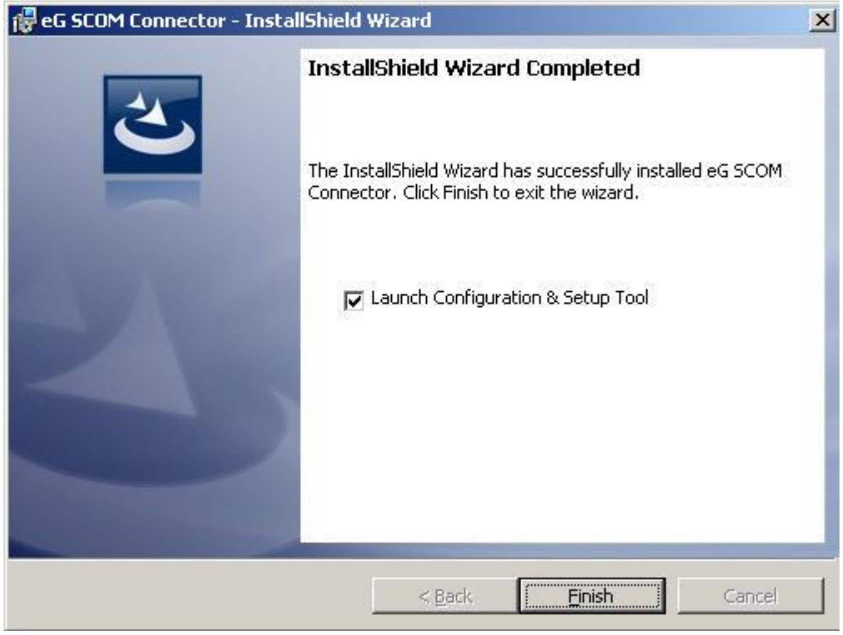
The program features you selected are being installed.

Please wait while the InstallShield Wizard installs eG SCOM Connector. This may take several minutes.

Status:

Figure 2.6: Progress of the installation

10. When installation ends, Figure 2.7 will appear. Click **Finish** to exit the wizard.



eG SCOM Connector - InstallShield Wizard

InstallShield Wizard Completed

The InstallShield Wizard has successfully installed eG SCOM Connector. Click Finish to exit the wizard.

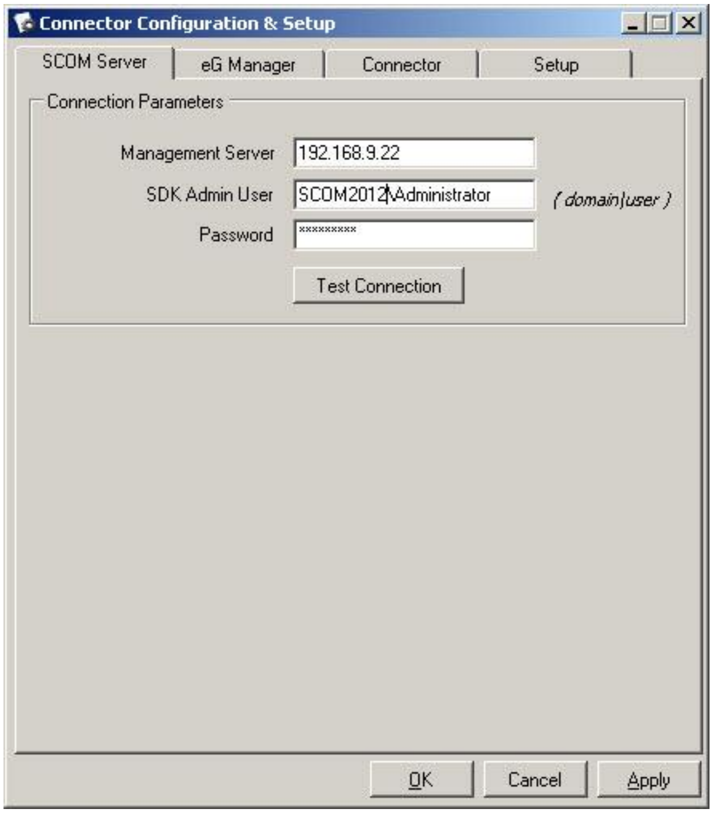
☑ Launch Configuration & Setup Tool

Figure 2.7: Finishing the installation

2.2.2 Configuring the eG SCOM Connector

If the **Launch Configuration & Setup Tool** check box is selected in Figure 2.7, then **Finish**ing the installation will automatically launch the eG SCOM Connector configuration tool. If this check box is deselected, then, you will have to manually launch the configuration tool by following the menu sequence: *Start -> Programs -> eG SCOM Connector*. Either way, once the tool is launched, proceed to configure the connector using the steps discussed below:

1. Upon launching the tool, Figure 2.8 will appear with the **SCOM Server** tab page open.



Management Server: 192.168.9.22

SDK Admin User: SCOM2012\Administrator

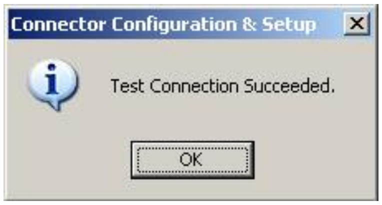
Password: *********

Figure 2.8: The SCOM Server tab page

2. If the eG manager is integrating with SCOM 2012/2016, you can specify the IP address/host name of any management server in the environment in the **Management Server** text box of Figure 2.8.

3. The eG SCOM Connector needs to connect to the SCOM SDK Service (on the SCOM server) to update the SCOM server with monitoring objects that have been newly added/removed from the eG Enterprise system, and to import and author eG management packs. To enable this connection, you need to configure the connector with the credentials of a user who is authorized to connect to the SDK service and perform administration functions. Specify the credentials of such a user in the **SDK Admin User** and **Password** text boxes. **Note that the SDK Admin User has to be specified in the following format: <domainname>\<username>**

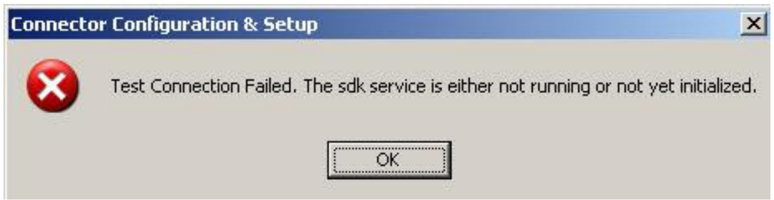
4. Then, to check whether your specifications are correct, click the **Test Connection** button. If the eG SCOM Connector is able to connect to the SCOM server with the given specifications, then a message to that effect will appear.



Test Connection Succeeded.

Figure 2.9: Connection to the SCOM server is successful

5. On the other hand, if the connector is not able to connect to the SCOM server, then a message indicating the connection failure and reasons for the same will appear.


Connector Configuration & Setup

Test Connection Failed. The sdk service is either not running or not yet initialized.

Figure 2.10: Connect to the SCOM server failed

6. In case of a failure, first click the **OK** button in Figure 2.10 to close the message box. Then, take another look at your specifications, make changes wherever necessary, test the connectivity yet again, and if successful, proceed with your configuration. To proceed, click the **eG Manager** tab page in Figure 2.11. Typically, the eG connector polls the eG manager for discovering the managed components/layers/tests/descriptors/measures from the eG Enterprise system and inserting corresponding monitoring objects and unit monitors in the SCOM server. Using the **eG Manager** tab page of Figure 2.11, you can indicate which eG manager is integrating with the SCOM server and how to connect to it. As part of this exercise, specify the following:

- In the **Manager Unique ID** text box, provide a unique ID for the eG manager with which the SCOM server will be integrating.

Note

- Before providing the manager ID, make sure that you have not used the same ID for any other eG SCOM Connector that may be communicating with the target SCOM server.
- Ensure that the **Manager Unique ID** you provide does not contain any special character, other than the underscore (_).

- In the **Manager URL** text box, specify the URL using which the connector should connect to the eG manager. The URL should be of one of the following formats, depending upon whether the eG manager is SSL-enabled or not: *http://<eGManagerIP>:<Portno>* or *https://<eGManagerIP>:<Portno>*.

Note

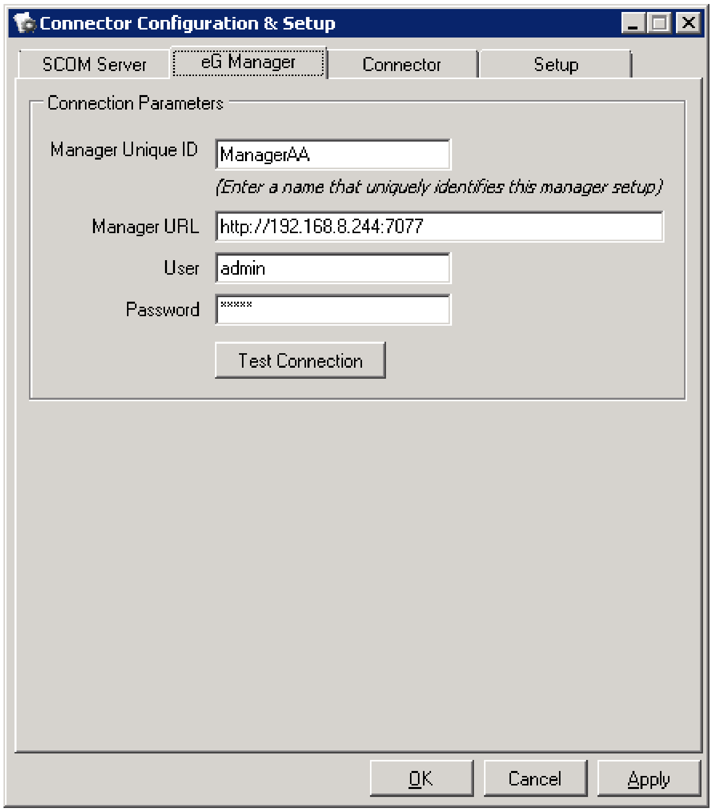
The integration will work in a redundant eG manager setup as well. In other words, if the primary manager fails, then the SCOM connector is capable of automatically polling the secondary manager in the environment for state information.

- Next, in **User** and **Password** text boxes specify the credentials of a user who is registered with the eG Enterprise system, and who has the right to monitor one/more components in the target environment. The components assigned to this user will only be managed by the SCOM server.

Note

- Currently, the eG SCOM Connector does not support Active Directory group users registered with the eG Enterprise system.
- If VMs are mapped to a user registered with the eG SCOM Connector, such VMs will not be visible in the SCOM console after the integration.
- Ensure that the eG user account configured in the SCOM connector does not contain special characters other than Underscore (_) and Dot (.)
- If you have built custom help pages in eG Enterprise for IC-based tests and for new aggregate tests, then the **Knowledge Base** feature of SCOM will not support these help pages.
- If an IC/aggregate test, measure, layer or component type in eG consists of double-byte characters (i.e., Chinese, Korean, or Japanese characters), then such tests, measures, layers, and component types will not be displayed in the SCOM console.

- Finally, test whether the given specifications are correct by clicking the **Test Connection** button.



Manager Unique ID: ManagerAA

(Enter a name that uniquely identifies this manager setup)

Manager URL: http://192.168.8.244:7077

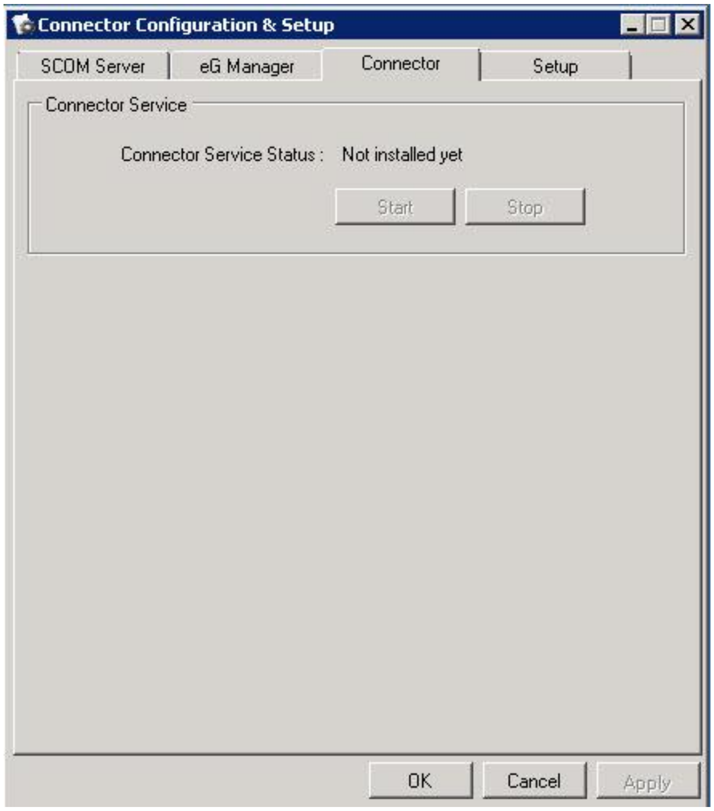
User: admin

Password: *****

Figure 2.11: Configuring the eG Manager

7. Then, click on the **Apply** button in Figure 2.11 to apply the changes.

8. Click on the **Connector Service** tab page. If the connector service is yet to be installed, then the **Start** and **Stop** buttons in Figure 2.12 will be disabled. Also, the **Connector Service Status** will be *Not installed* (as shown by Figure 2.12). If the connector has been installed but is yet to be started, then the **Start** button alone will be enabled. You can click on the **Start** button to start the service and the **Stop** button to stop the service.



Connector Service Status : Not installed yet

Figure 2.12: The Connector tab page

9. Now, click on the **Setup** tab in Figure 2.12 to execute the setup tasks. The **Setup** tab provides 2 options. Automatic setup will execute all the required tasks in a single action. To perform this auto setup, click on the **Install** button in the **Automatic** section of Figure 2.13. You can uninstall the connector at any point in time, by simply clicking the **Uninstall** button in the **Automatic** section.

   On the other hand, if you wish to execute specific setup tasks, click on the **Custom** option and proceed as follows:

   - **Connector Windows Service**: Click the **Install** button here to install the Windows service for the eG SCOM Connector, and use the **Uninstall** button to uninstall the service.

   - **Connector Configuration**: The **Create** button here, when clicked, will create a new connector configuration for eG integration in the SCOM server. The **Delete** option can be used to remove the connector configuration from the server. When the delete operation is performed, all the monitoring objects discovered by the eG connector will also be deleted from the SCOM server. You can also use the **Create**/**Delete** options to cleanup and recreate monitoring objects in SCOM server.

   - **Management Pack**: Using the **Import** option here, you can import the eG management pack which is stored in the connector's installation directory into the SCOM server. The management pack includes abstract classes, relationships, monitor types, default views etc. Once the management pack is imported into the SCOM sever, the connector service will start to update it as and when new component types are discovered. The **Delete** option can be used to remove the eG management pack from the SCOM server.

- **SCOM Agent**: In large environments where hundreds of components are managed by the eG Enterprise manager, the load on the connector would increase as it attempts to discover all the components from the eG manager. This in turn may increase the load on the SCOM agent on the connector system as well, as this agent would now be handling the hundreds of discovered components and their corresponding state changes. Under conditions of such high load, the default performance settings for the SCOM agent may not be conducive to healthy agent-connector traction. By clicking the **Optimize** button here, you can change the values of default parameters to the values shown in the table below:

Registry Parameter	Location in Registry	Value
Persistence Version Store Maximum	HKLM\System\CurrentControlSet\Services\HealthService\Parameters\	65536 decimal
Persistence Cache Maximum	HKLM\SYSTEM\CurrentControlSet\Services\HealthService\Parameters\	1048576 decimal
State Queue Items	HKLM\SYSTEM\CurrentControlSet\Services\HealthService\Parameters	250000 decimal
MaximumQueueSizeKb	HKLM\SYSTEM\CurrentControlSet\Services\HealthService\Parameters\ ManagementGroups\<Management_Group_Name>	262144 decimal
Persistence Checkpoint Depth Maximum	HKLM\SYSTEM\CurrentControlSet\Services\HealthService\Parameters	52428800 decimal

These default settings are ideal for small/medium-sized environments, where only a few components are monitored - say, less than 50 components. Where the connector needs to handle a large number of components, the value of these registry entries have to be tuned further. This is because, with an increase in monitored targets, the load on the SCOM agent also increases. The agent will hence require more memory for its processing to be faster and also to avoid the following error in “Operations Manager” event log on the connector machine.

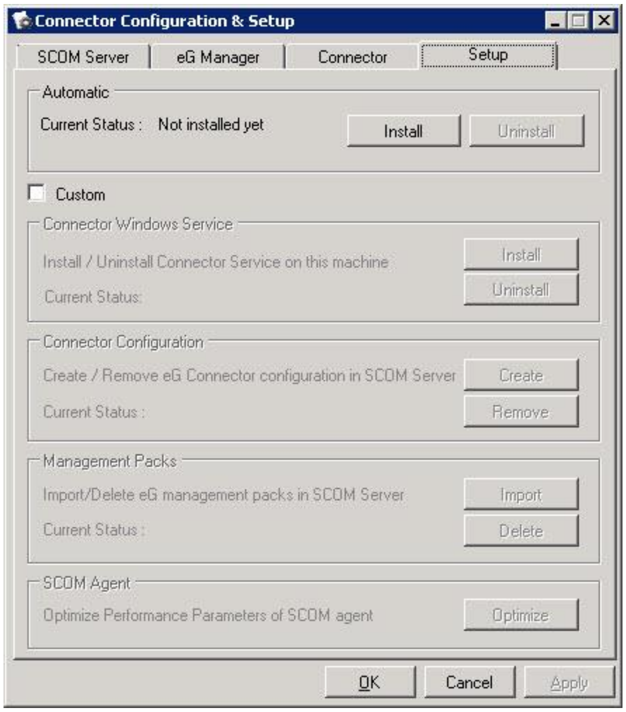
```
Event ID: 4506
Event Source: HealthService
Event Description: Operations Manager
Data was dropped due to too much outstanding data in rule <rulename> running
for instance <instance name> with id:<instance id> in management group
<management group name>.
```

To allow the SCOM agent to utilize more memory available in the system, you can use **regedit** to manually set a higher value for the **Persistence Cache Maximum** registry entries in HKLM\System\CurrentControlSet\Services\ HealthService\Parameters\.

First, double the current value of this parameter and check if performance improves. Also, confirm that no errors are captured by the event log post this change. If no performance improvements are visible, double the value of this parameter again. Repeat this procedure until the value of this parameter is set as high as “2048000”.

With the above setting, the typical memory usage of SCOM agent processes would be around 3GB.

Also, with this value increased, the startup and stopping of the “Health Service” will take longer than normal.



Connector Configuration & Setup
SCOM Server
eG Manager
Connector
Setup
Automatic
Install
Uninstall
Custom
Connector Windows Service
Install / Uninstall Connector Service on this machine
Install
Uninstall
Connector Configuration
Create / Remove eG Connector configuration in SCOM Server
Create
Remove
Management Packs
Import/Delete eG management packs in SCOM Server
Import
Delete
SCOM Agent
Optimize Performance Parameters of SCOM agent
Optimize
OK
Cancel
Apply

Current Status : Not installed yet

☐ Custom

Current Status:

Current Status :

Current Status :

Figure 2.13: The Setup tab

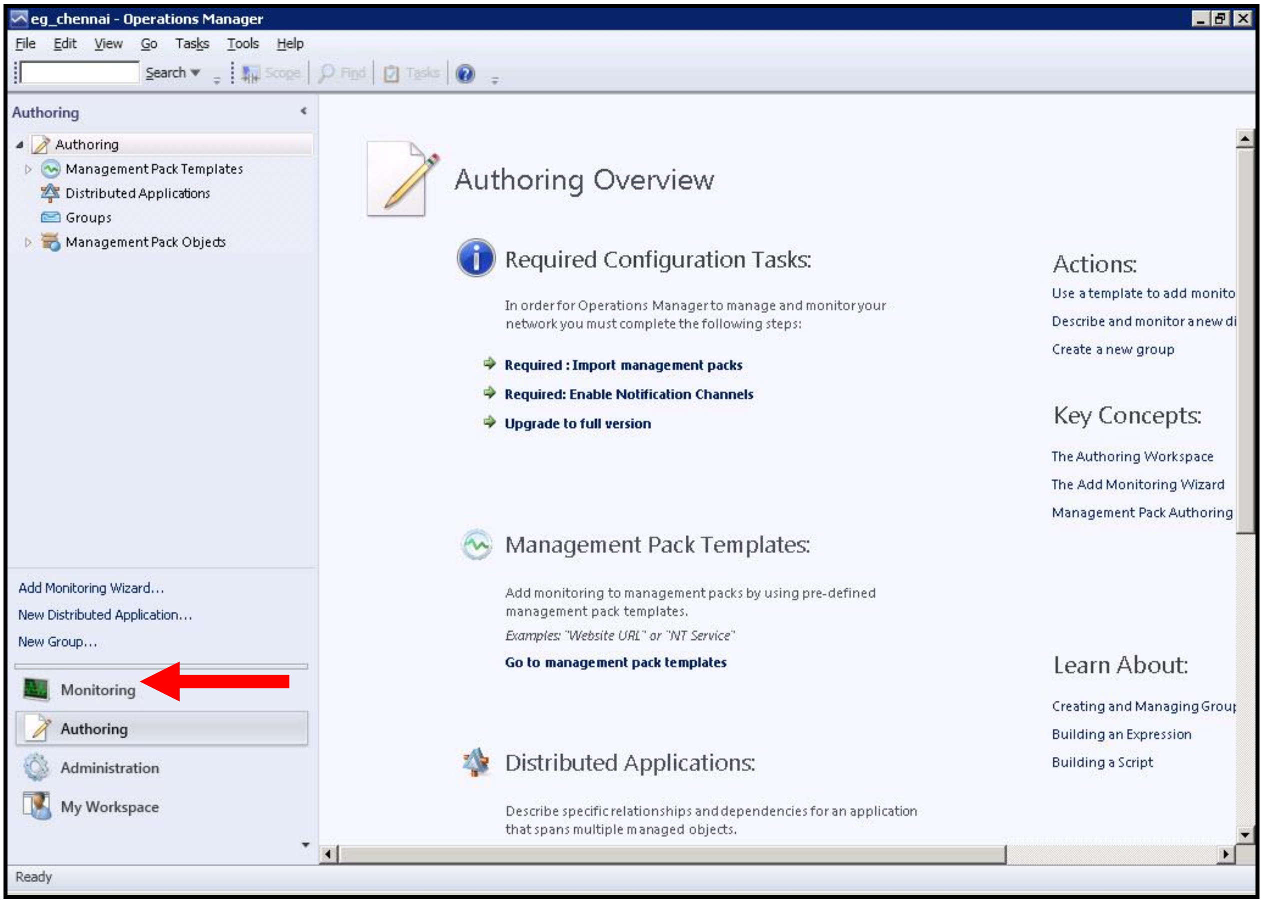
The **Optimize** button will be disabled if the registry entries mentioned in the table above have already been set to the values prescribed above.

10. Finally, click the **OK** button to exit the connector configuration window.

2.2.3 Tuning the Monitoring Thresholds of the SCOM Agent on the Connector Machine

If the SCOM agent on the connector machine is not configured with adequate memory and handles, then, in the event of excessive activity, the SCOM server may experience delays while receiving status or problem updates related to the monitoring objects from the agent. To avoid such delays, you **have to tune the monitoring thresholds of the SCOM agent on the connector machine**. This can be achieved by following the steps below:

1. Login to the SCOM console and click the **Authoring** tab indicated by Figure 2.14 below:



eg_chennai - Operations Manager
File
Edit
View
Go
Tasks
Tools
Help
Search
Scope
Find
Tasks
Authoring
Authoring
Management Pack Templates
Distributed Applications
Groups
Management Pack Objects
Add Monitoring Wizard...
New Distributed Application...
New Group...
Monitoring
Authoring
Administration
My Workspace
Ready
Authoring Overview
Required Configuration Tasks:
Required : Import management packs
Required: Enable Notification Channels
Upgrade to full version
Management Pack Templates:
Go to management pack templates
Distributed Applications:
Actions:
Use a template to add monito
Describe and monitor a new di
Create a new group
Key Concepts:
The Authoring Workspace
The Add Monitoring Wizard
Management Pack Authoring
Learn About:
Creating and Managing Grou
Building an Expression
Building a Script

In order for Operations Manager to manage and monitor your network you must complete the following steps:

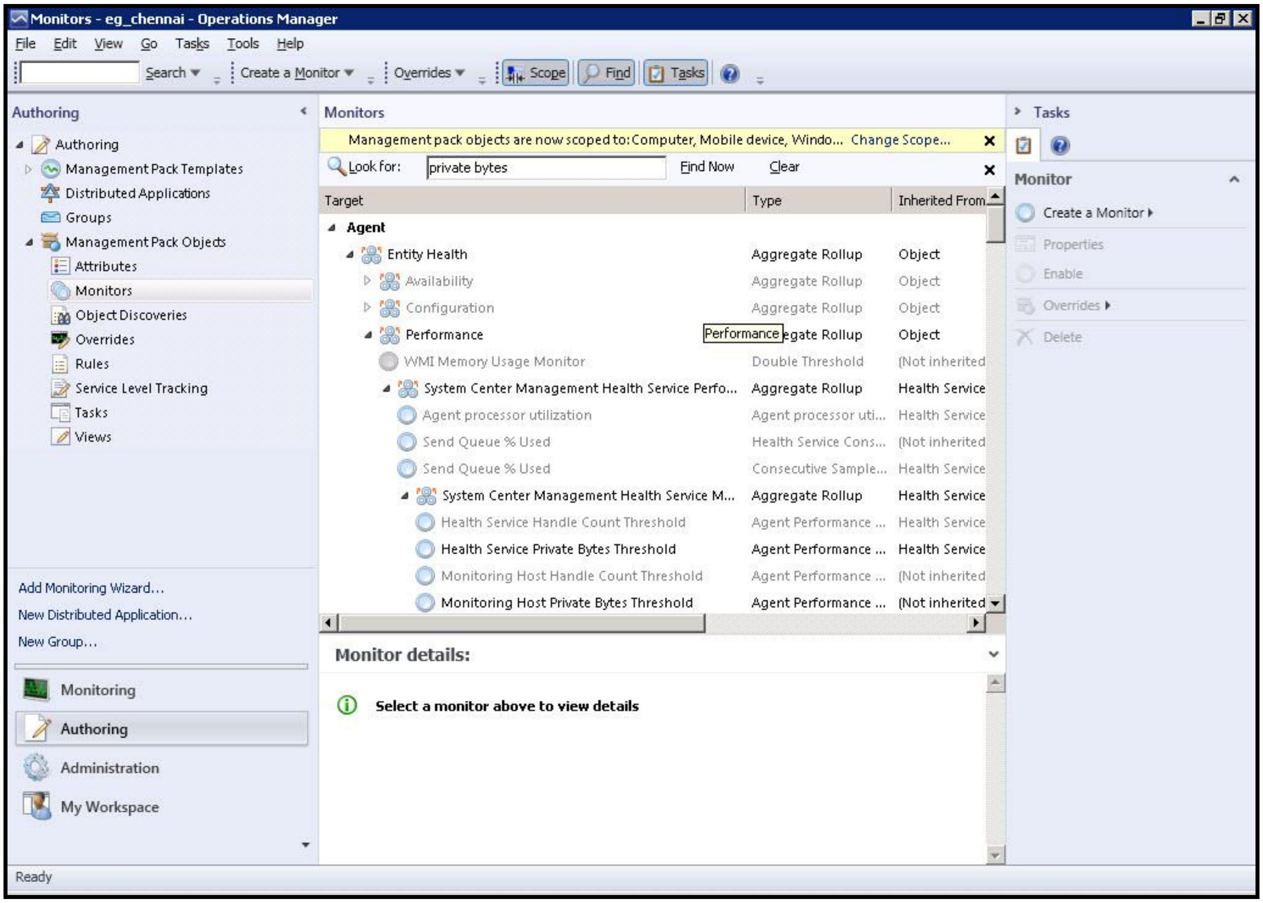
Add monitoring to management packs by using pre-defined management pack templates.

Examples: "Website URL" or "NT Service"

Describe specific relationships and dependencies for an application that spans multiple managed objects.

Figure 2.14: Clicking on the Authoring tab

2. When Figure 2.15 appears, expand the **Management Pack Objects** node in the tree-structure in the left panel of Figure 2.15, and select the **Monitors** sub-node within. The right panel will then change to display a variety of monitors. Next, using the **Look for** text box just above the list of monitors in Figure 2.15, type **private bytes**, and click **Find Now**.



Monitors - eg_chennai - Operations Manager

Management pack objects are now scoped to: Computer, Mobile device, Windo... Change Scope...

Look for: private bytes

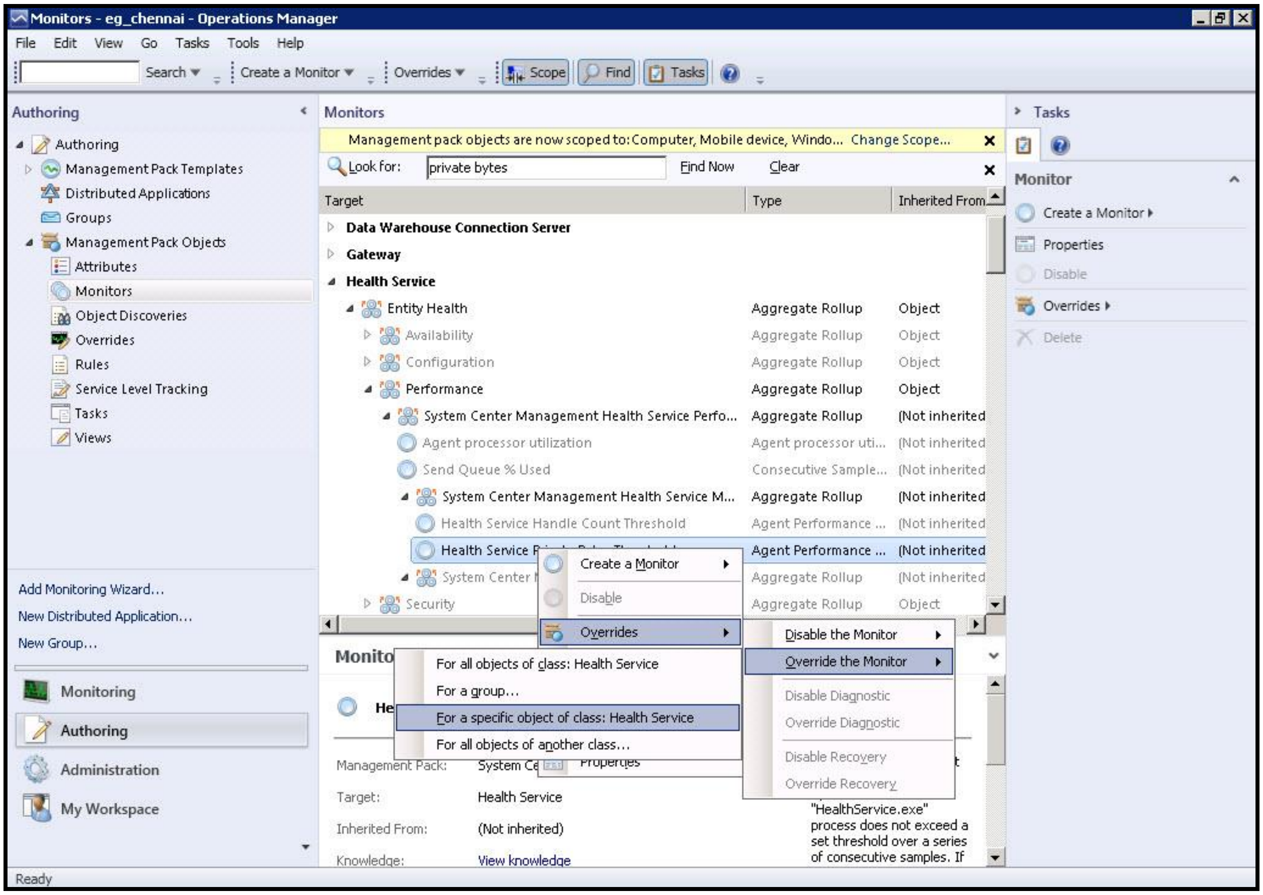
Target	Type	Inherited From
Agent		
Entity Health	Aggregate Rollup	Object
Availability	Aggregate Rollup	Object
Configuration	Aggregate Rollup	Object
Performance	Aggregate Rollup	Object
WMI Memory Usage Monitor	Double Threshold	(Not inherited
System Center Management Health Service Perfo...	Aggregate Rollup	Health Service
Agent processor utilization	Agent processor uti...	Health Service
Send Queue % Used	Health Service Cons...	(Not inherited
Send Queue % Used	Consecutive Sample...	Health Service
System Center Management Health Service M...	Aggregate Rollup	Health Service
Health Service Handle Count Threshold	Agent Performance ...	Health Service
Health Service Private Bytes Threshold	Agent Performance ...	Health Service
Monitoring Host Handle Count Threshold	Agent Performance ...	(Not inherited
Monitoring Host Private Bytes Threshold	Agent Performance ...	(Not inherited

Monitor details:

Select a monitor above to view details

Figure 2.15: Looking for 'private bytes' in the list of monitors

3. First, scroll down the list of monitors to look for the target, **Health Service**. Under the **Performance** category of that target, look for the monitor named, **Health Service Private Bytes Threshold**. Then, right-click on that monitor and follow the menu sequence, *Overrides -> Override the Monitor -> For a specific object of class: Health Service* (see Figure 2.16).



Look for: private bytes

Target	Type	Inherited From
Data Warehouse Connection Server		
Gateway		
Health Service		
Entity Health	Aggregate Rollup	Object
Availability	Aggregate Rollup	Object
Configuration	Aggregate Rollup	Object
Performance	Aggregate Rollup	Object
System Center Management Health Service Perfo...	Aggregate Rollup	(Not inherited
Agent processor utilization	Agent processor uti...	(Not inherited
Send Queue % Used	Consecutive Sample...	(Not inherited
System Center Management Health Service M...	Aggregate Rollup	(Not inherited
Health Service Handle Count Threshold	Agent Performance ...	(Not inherited
Health Service P	Agent Performance ...	(Not inherited
System Center	Aggregate Rollup	(Not inherited
Security	Aggregate Rollup	Object

Monito

He

Management Pack: System Ce

Target: Health Service

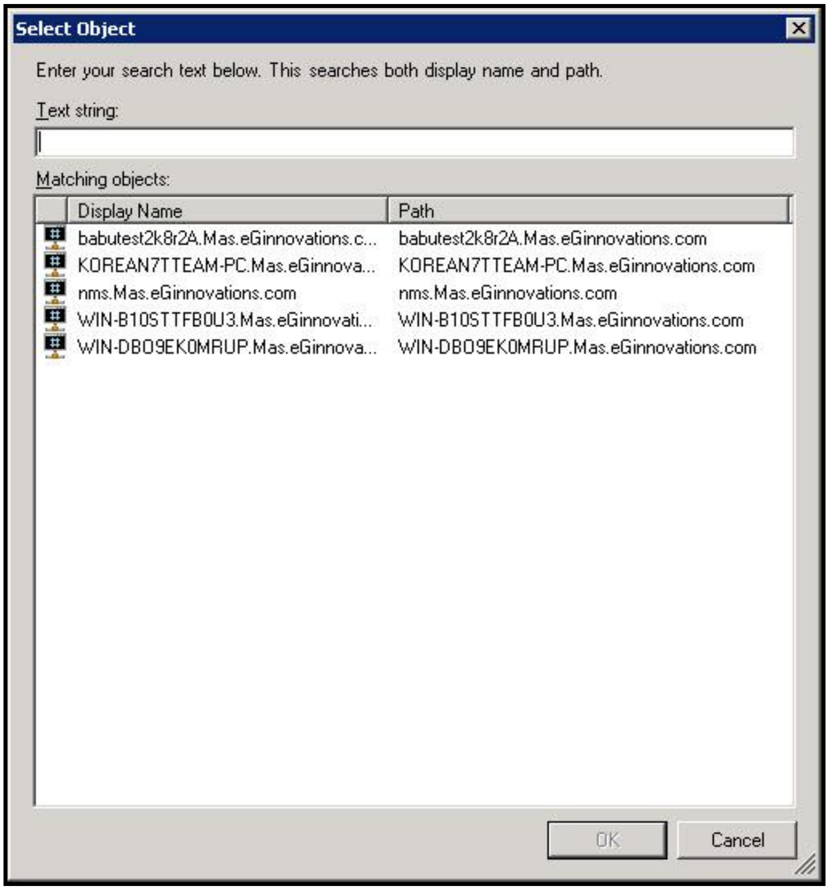
Inherited From: (Not inherited)

Knowledge: View knowledge

"HealthService.exe" process does not exceed a set threshold over a series of consecutive samples. If

Figure 2.16: Overriding the 'Health Service Private Bytes Threshold' monitor

4. Figure 2.17 will then appear. From the list of **Matching objects** displayed here, pick the server that hosts the eG SCOM Connector. Then, click the **OK** button in Figure 2.17.

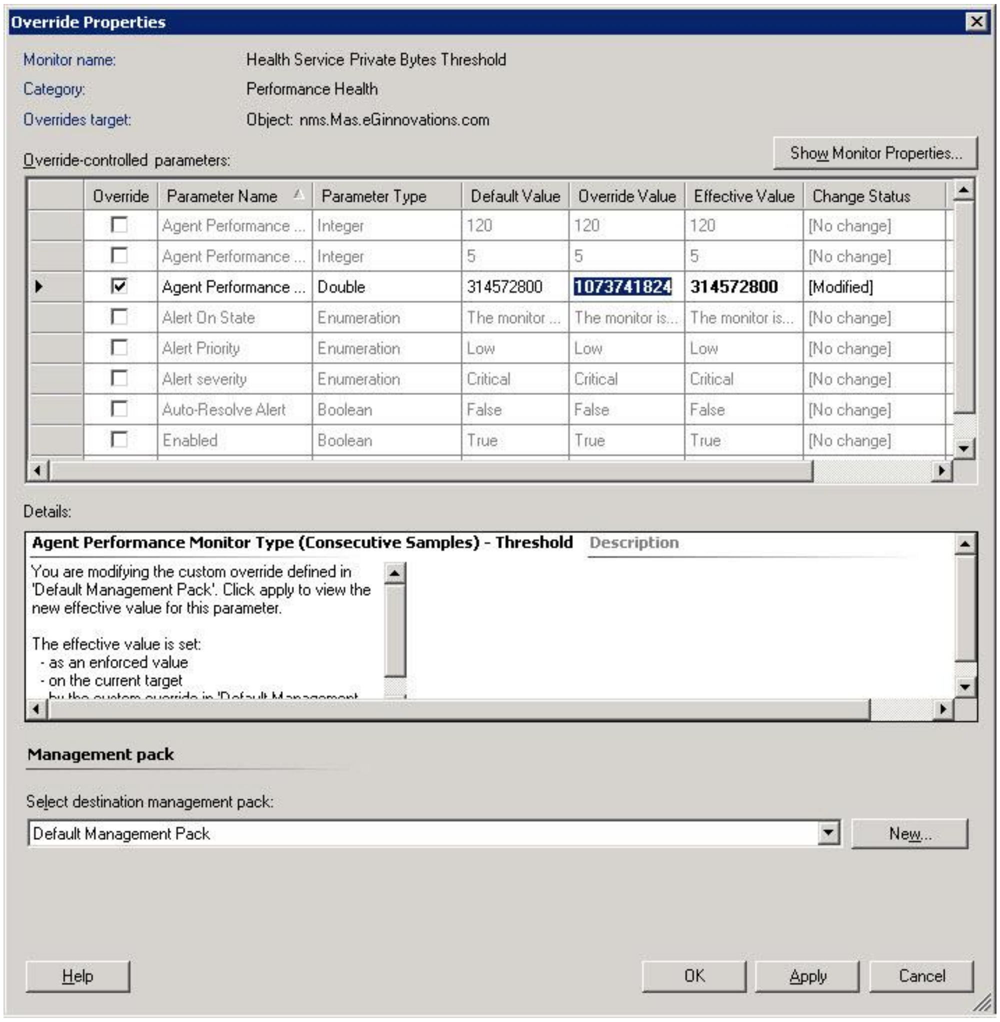


Enter your search text below. This searches both display name and path.

Display Name	Path
babutest2k8r2A.Mas.eGinnovations.c...	babutest2k8r2A.Mas.eGinnovations.com
KOREAN7TTEAM-PC.Mas.eGinnova...	KOREAN7TTEAM-PC.Mas.eGinnovations.com
nms.Mas.eGinnovations.com	nms.Mas.eGinnovations.com
WIN-B10STTFB0U3.Mas.eGinnovati...	WIN-B10STTFB0U3.Mas.eGinnovations.com
WIN-DBO9EK0MRUP.Mas.eGinnova...	WIN-DBO9EK0MRUP.Mas.eGinnovations.com

Figure 2.17: Selecting the server that hosts the eG SCOM Connector service

5. From the **Override-controlled parameters** listed in Figure 2.18, select **Agent Performance Monitor Type - Threshold** by clicking on the corresponding check box. Then, set the **Override value** of this parameter to *3221225472* (equal to 3 GB). Pick the **Default Management Pack** option from the **Management Pack** section, and click the **Apply** and **OK** buttons in Figure 2.18.



Override Properties

Monitor name: Health Service Private Bytes Threshold

Category: Performance Health

Overrides target: Object: nms.Mas.eGinnovations.com

Override-controlled parameters:

	Override	Parameter Name	Parameter Type	Default Value	Override Value	Effective Value	Change Status
	□	Agent Performance ...	Integer	120	120	120	[No change]
	□	Agent Performance ...	Integer	5	5	5	[No change]
▶	☑	Agent Performance ...	Double	314572800	1073741824	314572800	[Modified]
	□	Alert On State	Enumeration	The monitor ...	The monitor is...	The monitor is...	[No change]
	□	Alert Priority	Enumeration	Low	Low	Low	[No change]
	□	Alert severity	Enumeration	Critical	Critical	Critical	[No change]
	□	Auto-Resolve Alert	Boolean	False	False	False	[No change]
	□	Enabled	Boolean	True	True	True	[No change]

Details:

Agent Performance Monitor Type (Consecutive Samples) - Threshold Description

You are modifying the custom override defined in 'Default Management Pack'. Click apply to view the new effective value for this parameter.

The effective value is set:
- as an enforced value
- on the current target
- by the custom override in 'Default Management

Management pack

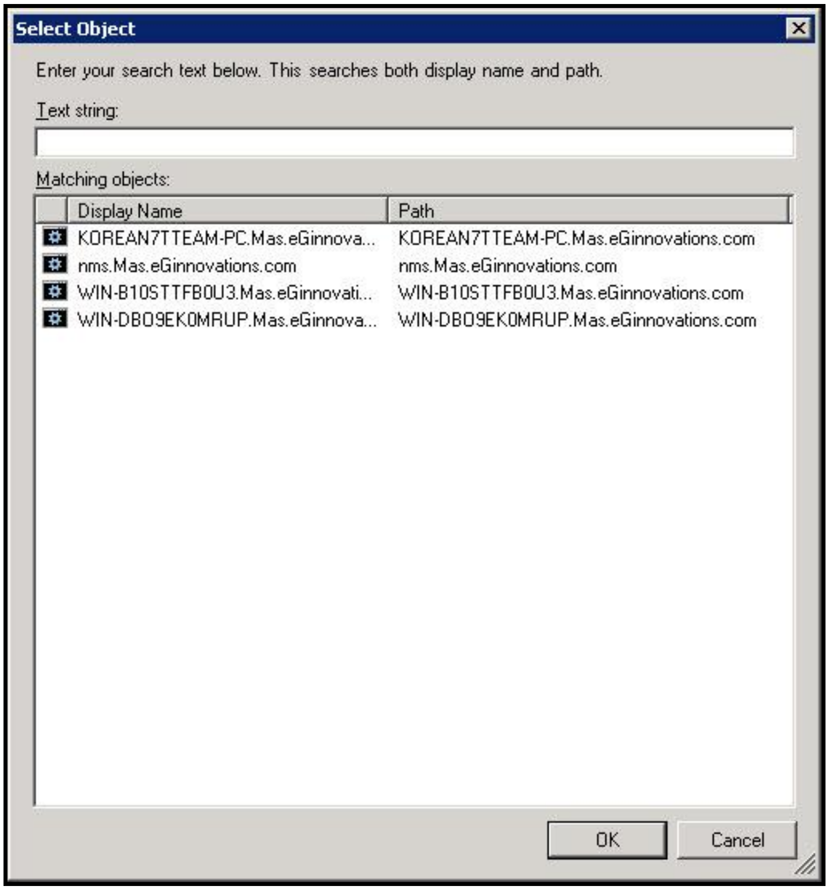
Select destination management pack:

Default Management Pack

Figure 2.18: Modifying the 'Override value' of the 'Agent Performance Monitor Type - Threshold' parameter of the 'Health Service Private Bytes Threshold' monitor

6. You will then return to the **Monitors** view of Figure 2.16. Now, from the **Performance** category of the **Health Service** target, right-click on the monitor named **Health Service Handle Count Threshold**, and follow the menu sequence: *Overrides -> Override the Monitor -> For a specific object of class: Health Service*

7. Figure 2.19 then appears. Like before, from Figure 2.19, select the server on which the eG SCOM Connector service is running, and click the **OK** button therein.



Select Object

Enter your search text below. This searches both display name and path.

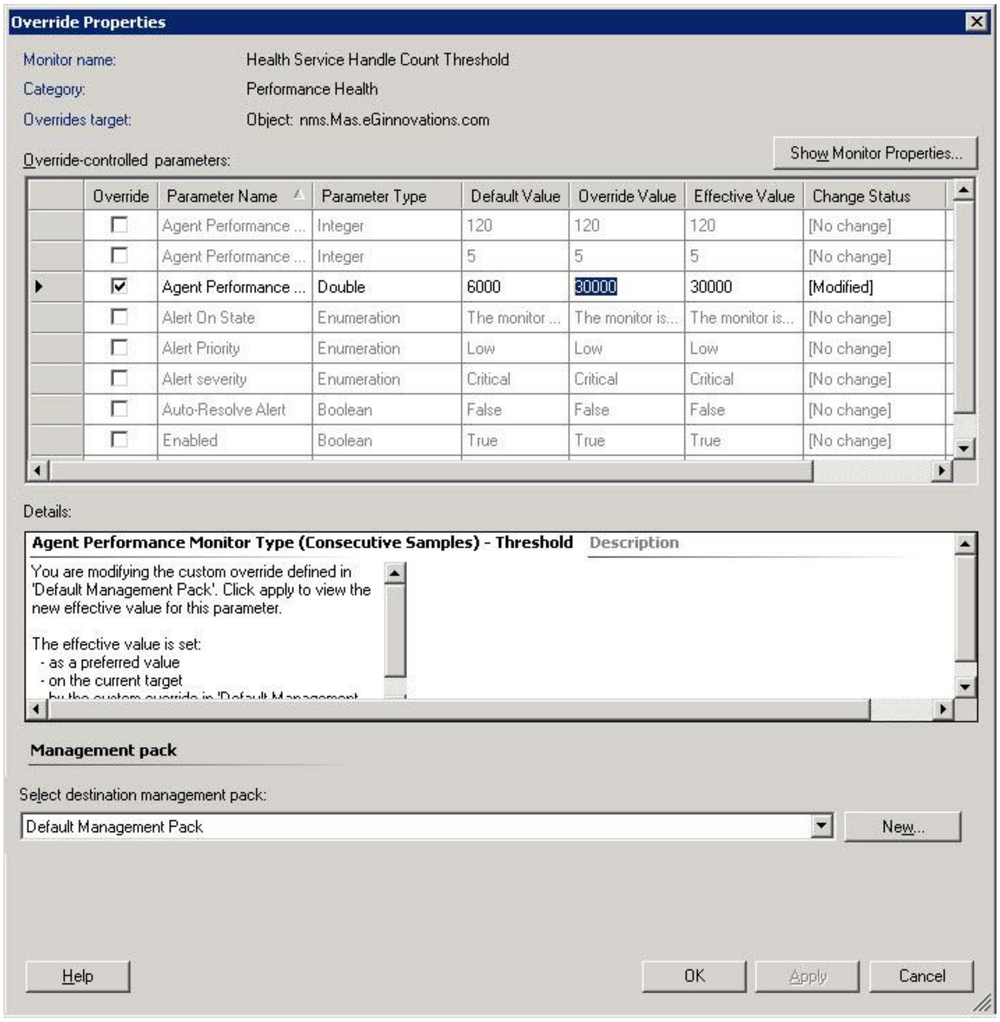
Text string:

Matching objects:

Display Name	Path
KOREAN7TTEAM-PC.Mas.eGinnova...	KOREAN7TTEAM-PC.Mas.eGinnovations.com
nms.Mas.eGinnovations.com	nms.Mas.eGinnovations.com
WIN-B10STTFB0U3.Mas.eGinnovati...	WIN-B10STTFB0U3.Mas.eGinnovations.com
WIN-DBO9EK0MRUP.Mas.eGinnova...	WIN-DBO9EK0MRUP.Mas.eGinnovations.com

Figure 2.19: Choosing the server on which the eG SCOM Connector is running

8. From the **Override-controlled parameters** listed in Figure 2.20, select **Agent Performance Monitor Type - Threshold** by clicking on the corresponding check box. Then, set the **Override value** of this parameter to *30000*. Finally, pick the **Default Management Pack** option from the **Management Pack** section, and click the **Apply** and **OK** buttons in Figure 2.20.



Override Properties

Monitor name: Health Service Handle Count Threshold

Category: Performance Health

Overrides target: Object: nms.Mas.eGinnovations.com

Override-controlled parameters:

	Override	Parameter Name	Parameter Type	Default Value	Override Value	Effective Value	Change Status
	□	Agent Performance ...	Integer	120	120	120	[No change]
	□	Agent Performance ...	Integer	5	5	5	[No change]
▶	☑	Agent Performance ...	Double	6000	30000	30000	[Modified]
	□	Alert On State	Enumeration	The monitor ...	The monitor is...	The monitor is...	[No change]
	□	Alert Priority	Enumeration	Low	Low	Low	[No change]
	□	Alert severity	Enumeration	Critical	Critical	Critical	[No change]
	□	Auto-Resolve Alert	Boolean	False	False	False	[No change]
	□	Enabled	Boolean	True	True	True	[No change]

Details:

Agent Performance Monitor Type (Consecutive Samples) - Threshold Description

You are modifying the custom override defined in 'Default Management Pack'. Click apply to view the new effective value for this parameter.

The effective value is set:
- as a preferred value
- on the current target
- by the custom override in 'Default Management

Management pack

Select destination management pack: Default Management Pack

Figure 2.20: Modifying the 'Override value' of the 'Agent Performance Monitor Type - Threshold' parameter of the 'Health Service Handles Count Threshold' monitor

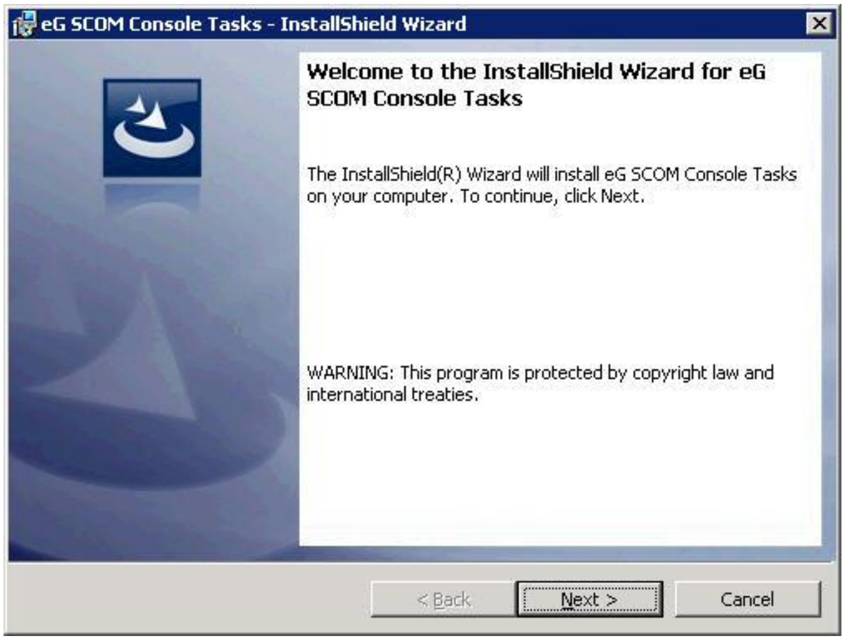
9. Once back in the **Monitors** view of Figure 2.20, locate the target **Agent** and expand its **Performance** category. Then, using the procedure discussed in steps 3-5 or 6-9 above, set the **Override value** of the **Agent Performance Monitor Type - Threshold** parameter of the following monitors to the value prescribed in the table below:

Monitor Name	Override Value
Monitoring Host Private Bytes Threshold	3221225472
Monitoring Host Handle Count Threshold	30000

2.2.4 Installing the eG Console Tasks Application

The **eG Console Tasks** application enables users to the SCOM console to instantly launch the eG monitoring console from the SCOM console itself. This way, users can take the help of analytical and daignostic tools provided by the eG monitoring console to investigate performance setbacks experienced by eG-managed components. To install this application, do the following:

1. Login to the SCOM console's host.
2. Download the **eG SCOM Console Tasks.zip** file from the URL that is provided to you, to any location on the SCOM host.
3. Extract the contents of the zip file and then run the **eG SCOM Console Tasks.msi** file within.
4. Then, switch to the directory that holds the downloaded executable, and double-click on it.
5. Figure 2.21 will then appear.



eG SCOM Console Tasks - InstallShield Wizard

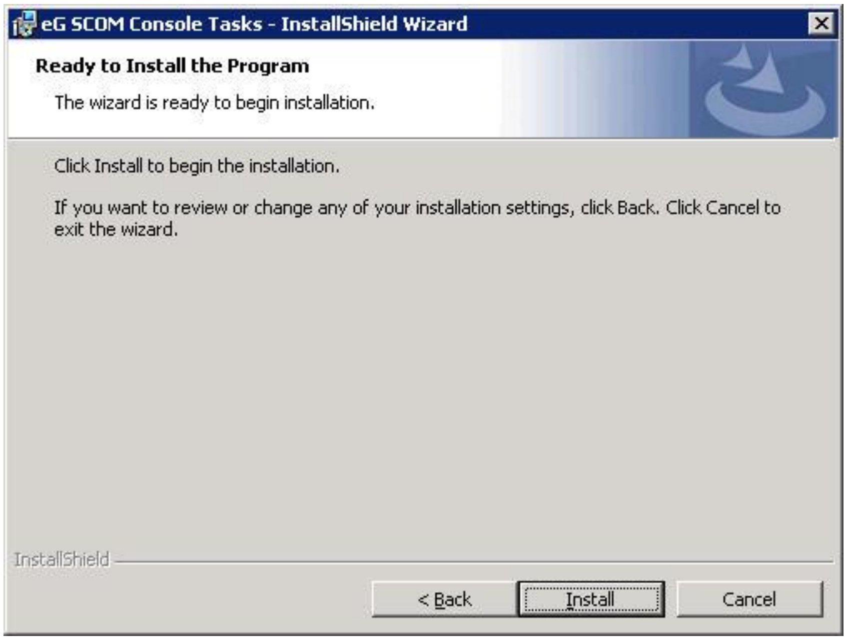
Welcome to the InstallShield Wizard for eG SCOM Console Tasks

The InstallShield(R) Wizard will install eG SCOM Console Tasks on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

Figure 2.21: Welcome screen of the Console Tasks Application wizard

6. Click **Next** on Figure 2.21 to proceed. When Figure 2.22 appears, click **Install** to begin installing the eG Console Tasks application.



eG SCOM Console Tasks - InstallShield Wizard

Ready to Install the Program

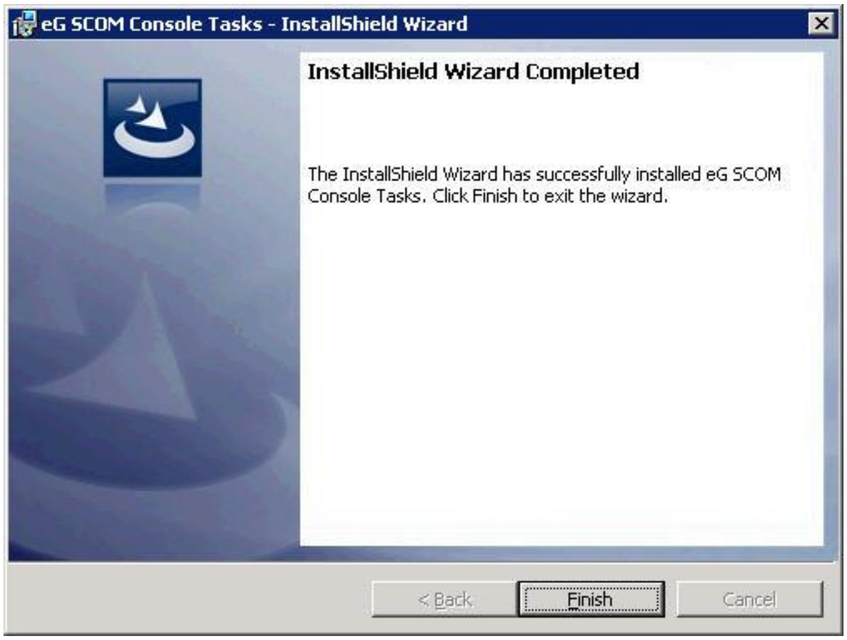
The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

Figure 2.22: Click 'Install' to install the eG Console Tasks application

7. Upon completion of installation, click the **Finish** button in Figure 2.23.



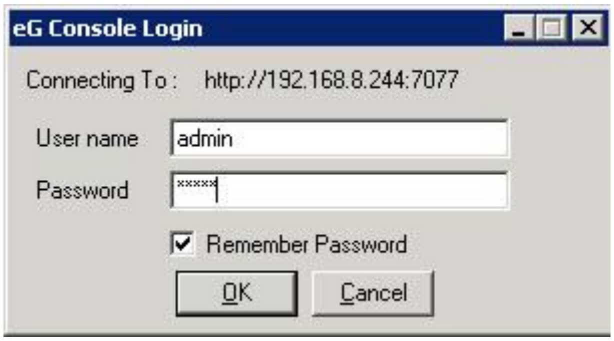
eG SCOM Console Tasks - InstallShield Wizard

InstallShield Wizard Completed

The InstallShield Wizard has successfully installed eG SCOM Console Tasks. Click Finish to exit the wizard.

Figure 2.23: Completing the installation

8. If you now click on the **Diagnose using eG** option in the **Actions** pane of your SCOM console, you will be prompted for the login credentials (see Figure 2.24) for accessing the eG monitoring console. This prompt will appear only when you click the **Diagnose using eG** option for the very first time. Provide valid login credentials and click the **OK** button in Figure 2.24. This will automatically invoke the eG monitoring console. The same credentials will be used to launch the eG monitoring console during all your subsequent attempts to **Diagnose using eG**.



eG Console Login

Connecting To : http://192.168.8.244:7077

User name: admin

Password: *****

☑ Remember Password

Figure 2.24: Login credentials for accessing the eG management console

2.3 Configuring Multiple eG SCOM Connectors for a Single eG Manager

For scalability, one may wish to setup multiple connectors on different machines, each of which integrates with the same eG manager. The process of installing and configuring each of these connectors is the same as what has been discussed in the previous sections. However, while doing so, consider the following points:

- Configure the same SDK user account in all connectors.
- Configure different manager IDs (for the same eG manager) – one for each eG SCOM connector.
- Every connector is configured with a unique eG user. Only the list of components assigned to that user get integrated with SCOM.
- Each eG user has to be associated with a unique list of components. If say, two users are assigned the same component, component discovery will fail for the second user.

2.4 Integrating Multiple eG Managers with SCOM

If multiple eG managers are required to be integrated with a SCOM server, a dedicated eG SCOM connector setup is required for every eG manager. The following configuration guidelines need to be followed for this specific case.

- Configure the same SDK user account in all connectors.
- Configure a different manager ID for every connector.
- The eG management pack which gets installed on the SCOM server will be common for all connectors. The configuration tool automatically determines whether/not multiple connectors are configured on the SCOM server. If some other connector is already using the eG management pack, the tool will skip the import/delete operation for the eG management pack.

Note

If two/more managers that are to be integrated with SCOM have IC/aggregate tests with the same names, then before integrating these managers with SCOM, make sure that these common tests report the same measures – i.e., the names, functionality, and the count of measures should be the same.

3

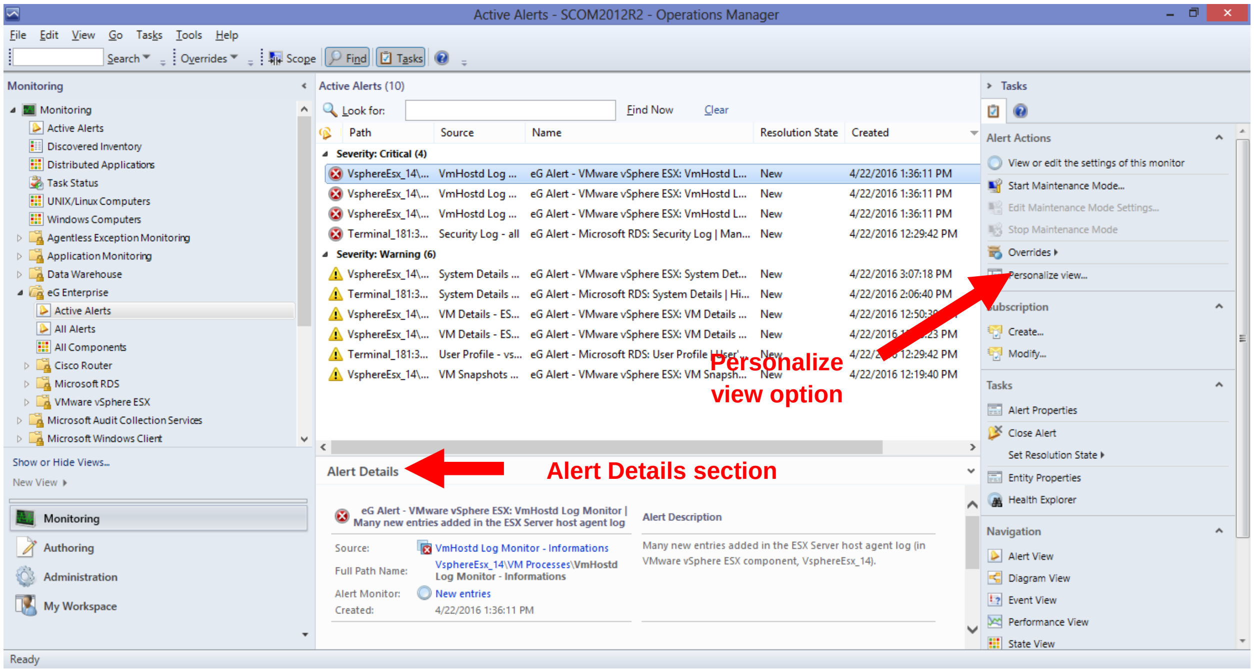
Effects of the eG Manager - SCOM Integration

Once the eG manager successfully integrates with SCOM, you will find eG-managed components appear as monitoring objects in the SCOM console. Using the SCOM console, you can then:

- View the current state of the eG-managed components;
- Be alerted to problems experienced by eG-managed components;
- Isolate problem layers, tests, and measurements;
- Analyze state transitions experienced by eG-managed components;
- Monitor business service performance using SCOM and identify the root-cause of service slowdowns/outages
- Launch the eG monitoring console from the SCOM console to perform further diagnosis of problems;
- Enable/disable specific monitors using the SCOM console

This chapter takes the help of an example to explain how the eG-SCOM integration works.

This example takes the case of a target environment comprising of an eG manager that is monitoring a VMware vSphere/ESX server, a Cisco router, and a Microsoft Terminal server. Soon after the eG manager is integrated with the SCOM server, login to the SCOM console. Figure 3.1 will then appear. Post the integration, the tree-structure in the left pane of Figure 3.1 will display a new **eG Enterprise** node.



Active Alerts (10)

Look for: Find Now Clear

Path	Source	Name	Resolution State	Created
Severity: Critical (4)				
VsphereEsx_14\...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
Terminal_181:3...	Security Log - all	eG Alert - Microsoft RDS: Security Log | Man...	New	4/22/2016 12:29:42 PM
Severity: Warning (6)				
VsphereEsx_14\...	System Details ...	eG Alert - VMware vSphere ESX: System Det...	New	4/22/2016 3:07:18 PM
Terminal_181:3...	System Details ...	eG Alert - Microsoft RDS: System Details | Hi...	New	4/22/2016 2:06:40 PM
VsphereEsx_14\...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 12:50:3[illegible]
VsphereEsx_14\...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 [illegible]:23 PM
Terminal_181:3...	User Profile - vs...	eG Alert - Microsoft RDS: User Profile | User'...	New	4/22/2[illegible] 12:29:42 PM
VsphereEsx_14\...	VM Snapshots ...	eG Alert - VMware vSphere ESX: VM Snapsh...	New	4/22/2016 12:19:40 PM

Personalize view option

Alert Details

Alert Details section

eG Alert - VMware vSphere ESX: VmHostd Log Monitor | Many new entries added in the ESX Server host agent log

Source: VmHostd Log Monitor - Informations
Full Path Name: VsphereEsx_14\VM Processes\VmHostd Log Monitor - Informations
Alert Monitor: New entries
Created: 4/22/2016 1:36:11 PM

Alert Description

Many new entries added in the ESX Server host agent log (in VMware vSphere ESX component, VsphereEsx_14).

Figure 3.1: The tree-structure displaying a new 'eG Enterprise' node

If you expand the **eG Enterprise** node, you will find a series of sub-nodes. Clicking on each sub-node will enable you to do the following:

- View the currently active alerts pertaining to eG-managed components;
- View all the alerts that were generated by the eG manager during the last 3 days;
- View the components managed by eG Enterprise and their current state;
- Focus on the overall performance and problems related to each eG-managed component;

The sections that follow will take a closer look at each sub-node of the **eG Enterprise** node.

3.1 Viewing the Active Alerts

Let us begin by clicking the **Active Alerts** node under **eG Enterprise**.

1. When the **Active Alerts** node is clicked, the contents of the right panel will change to display all the currently open alarms for the eG-managed components, grouped by the alarm severity/priority. Each alert displayed in the right panel will indicate the following by default:

   ➢ **Severity**: This refers to the alarm priority. The severity that corresponds to each of the alarm priorities supported by eG Enterprise are as follows:

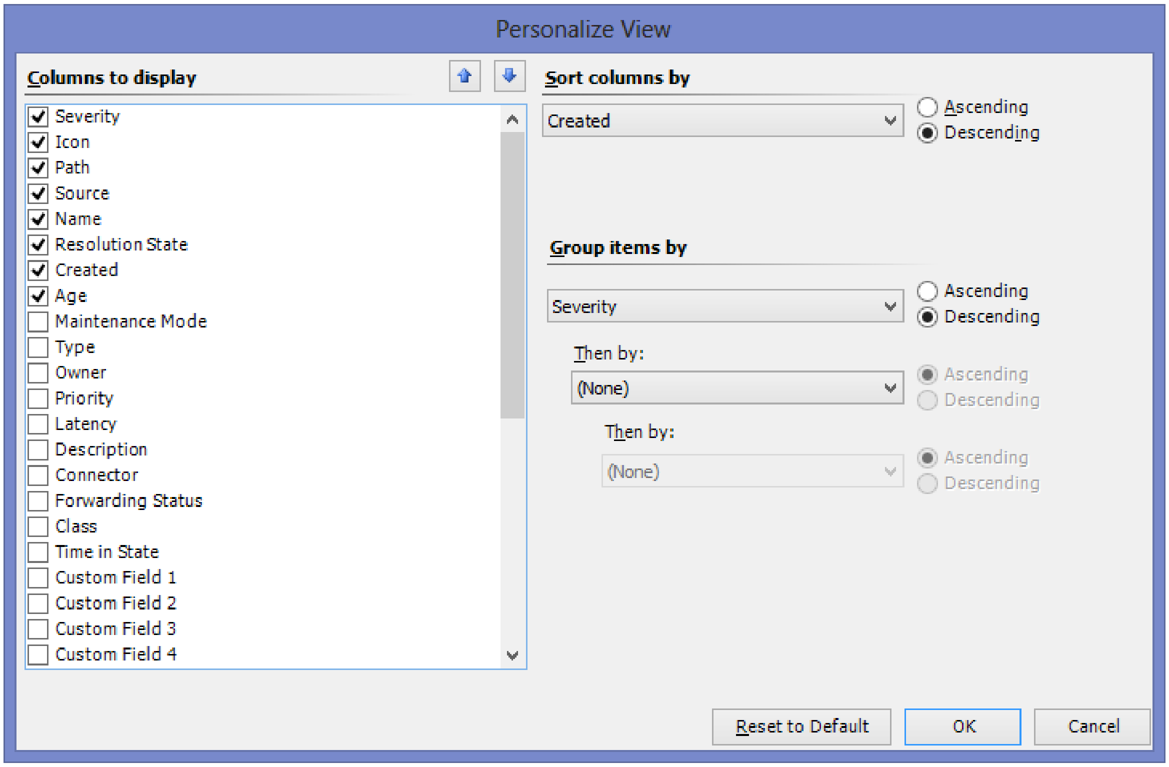
eG Alert Priority	SCOM Alert Severity
Critical	Critical
Major	Warning
Minor	Warning

Note

Though the SCOM console categorizes both the **Major** and **Minor** eG alerts as **Warnings**, you can differentiate between the two by instantly launching the eG monitoring console from the SCOM console. To do so, just click on the **Diagnose using eG** option indicated by Figure 3.1.

- **Path**: The **Path** specification indicates the problem component, the problem component type, and the problem layer, and is expressed in the following format: **<ComponentName>\<ComponentType>\<Layer>**
- **Source**: This indicates the problem test and problem descriptor (in case of a descriptor-based test).
- **Name:** For all alerts related to eG-managed components, this will be **<Component_Type>:<Test_Name>|<Measure_Name>.**
- **Resolution State**: This typically indicates whether the problem is currently active or has been closed. For all **Active Alerts** however, the **Resolution State** will be **New**.
- **Created**: This indicates when the problem was detected by the eG manager.
- **Age**: This indicates how long the problem has remained unresolved.

2. You can, if you so need, customize your default **Active Alerts** view to include more columns or exclude one/more default columns. To achieve this, click on the **Personalize view** option in the **Actions** pane to the far right of Figure 3.1. Figure 3.2 will then appear. Select one/more check boxes from the **Columns to display** section to add more information to the **Active Alerts** view, or deselect one/more check boxes to remove the alarm details that pre-exist. Click the **OK** button in Figure 3.2 to save your customizations.



Personalize View

Columns to display

☑ Severity
☑ Icon
☑ Path
☑ Source
☑ Name
☑ Resolution State
☑ Created
☑ Age
□ Maintenance Mode
□ Type
□ Owner
□ Priority
□ Latency
□ Description
□ Connector
□ Forwarding Status
□ Class
□ Time in State
□ Custom Field 1
□ Custom Field 2
□ Custom Field 3
□ Custom Field 4

Sort columns by: Created ○ Ascending ● Descending

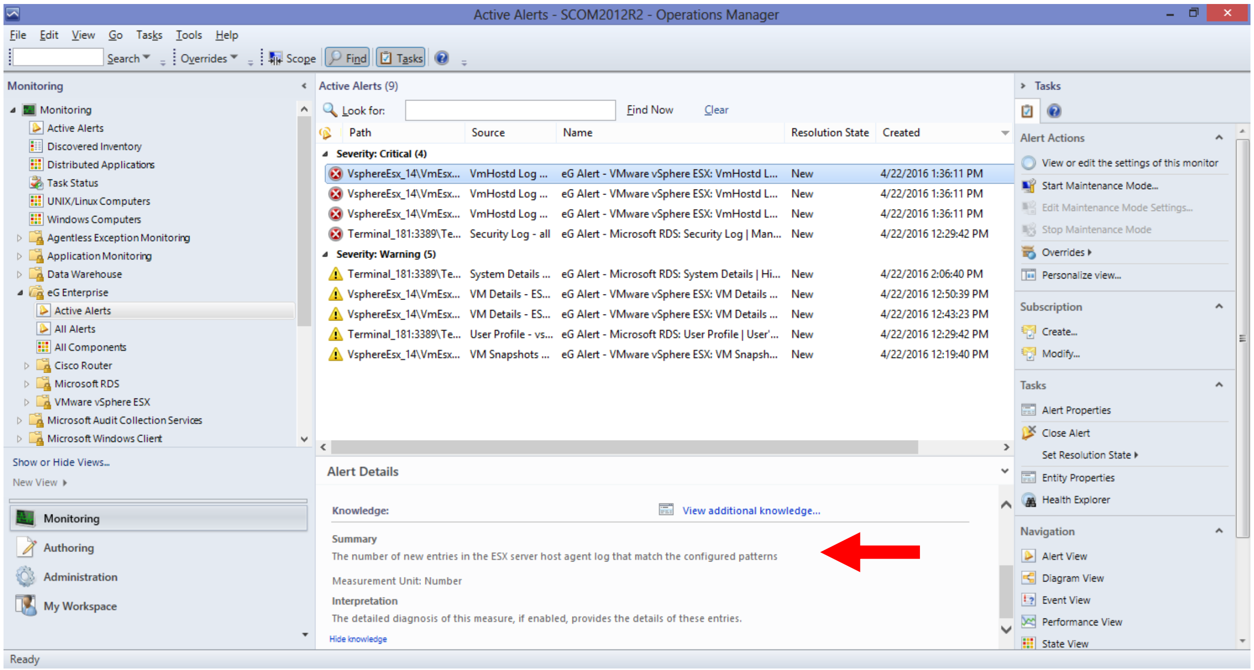
Group items by: Severity ○ Ascending ● Descending

Then by: (None) ● Ascending ○ Descending

Then by: (None) ● Ascending ○ Descending

Figure 3.2: Personalizing the Active Alerts view

3. Once back in the **Active Alerts** view, you can click on a specific critical alert/warning to view the alert details more clearly in the **Alert Details** section indicated by Figure 3.1. Scrolling down the contents of the **Alert Details** section will reveal a **View additional knowledge** link (see Figure 3.3).



Active Alerts - SCOM2012R2 - Operations Manager

Active Alerts (9)

Look for: Find Now Clear

Path	Source	Name	Resolution State	Created
Severity: Critical (4)				
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
Terminal_181:3389\Te...	Security Log - all	eG Alert - Microsoft RDS: Security Log | Man...	New	4/22/2016 12:29:42 PM
Severity: Warning (5)				
Terminal_181:3389\Te...	System Details ...	eG Alert - Microsoft RDS: System Details | Hi...	New	4/22/2016 2:06:40 PM
VsphereEsx_14\VmEsx...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 12:50:39 PM
VsphereEsx_14\VmEsx...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 12:43:23 PM
Terminal_181:3389\Te...	User Profile - vs...	eG Alert - Microsoft RDS: User Profile | User'...	New	4/22/2016 12:29:42 PM
VsphereEsx_14\VmEsx...	VM Snapshots ...	eG Alert - VMware vSphere ESX: VM Snapsh...	New	4/22/2016 12:19:40 PM

Alert Details

Knowledge: View additional knowledge...

Summary

The number of new entries in the ESX server host agent log that match the configured patterns

Measurement Unit: Number

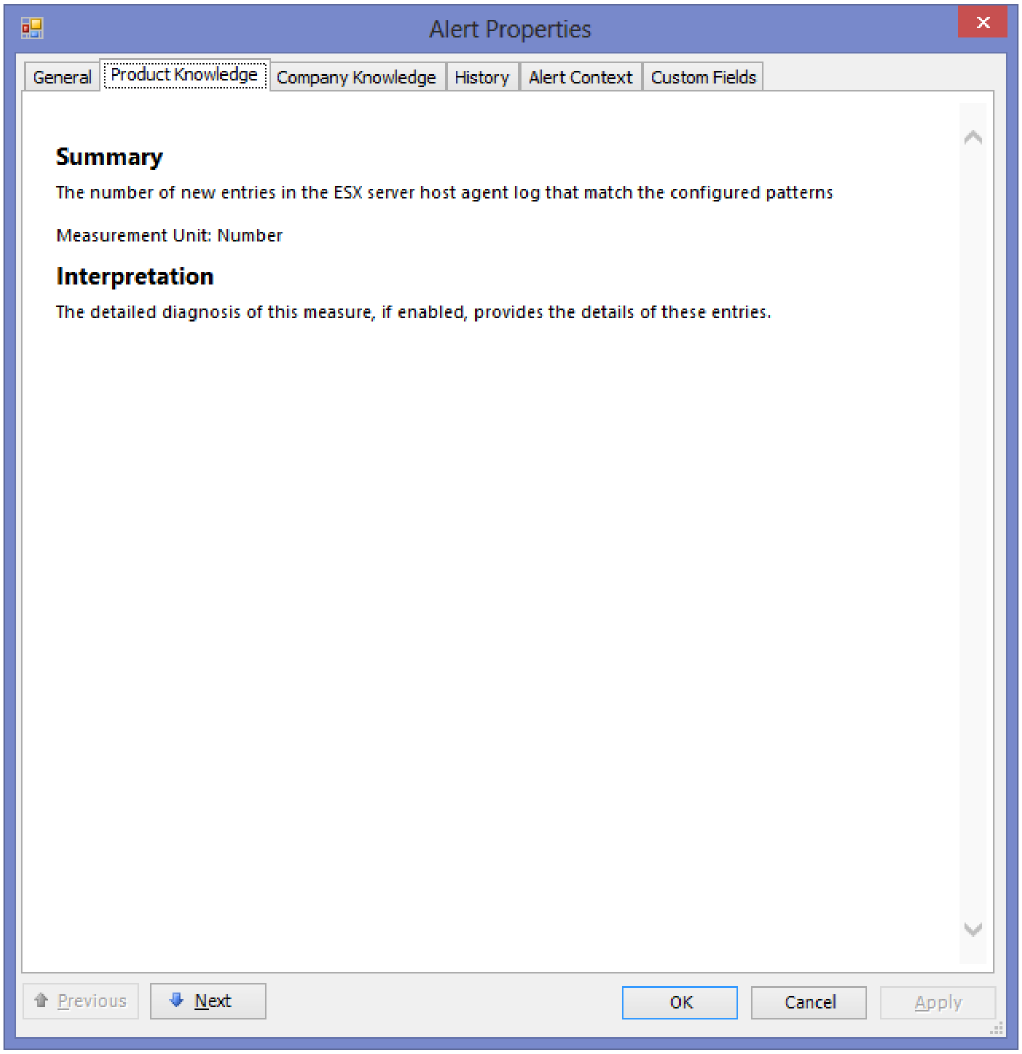
Interpretation

The detailed diagnosis of this measure, if enabled, provides the details of these entries.

Hide knowledge

Figure 3.3: Scrolling down the Alert Details section to View additional knowledge

4. To understand a problem better, click on the **View additional knowledge** link and tap the knowledge base of the eG Enterprise system. The **Product Knowledge** tab page of the **Alert Properties** window will automatically open displaying the details related to the measure on which the selected alert was raised. Figure 3.4 depicts a sample **Alert Properties** window displaying the details of the **Number of system errors** measure.



Summary

The number of new entries in the ESX server host agent log that match the configured patterns

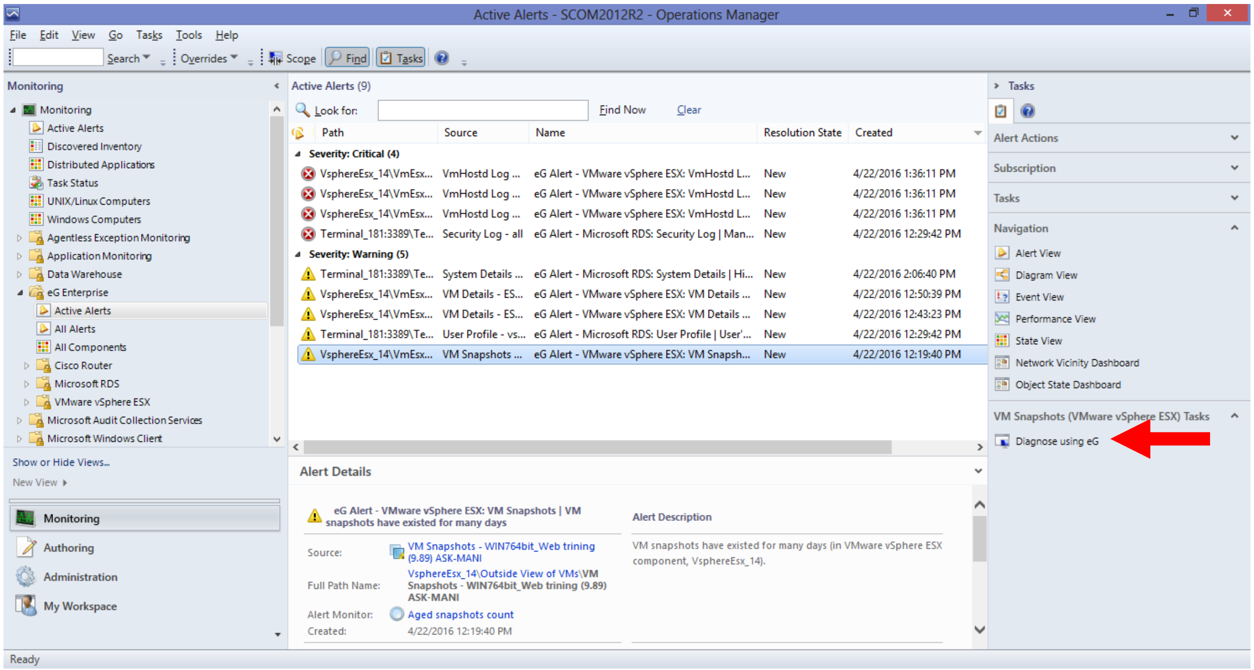
Measurement Unit: Number

Interpretation

The detailed diagnosis of this measure, if enabled, provides the details of these entries.

Figure 3.4:The description of a measure reported by a test

5. To investigate the problem at hand further, you can even instantly launch the eG monitoring console from the **Active Alerts** view. For this, just select an alert from the view and click on the **Diagnose using eG** link in the **Actions** pane of Figure 3.5.



Active Alerts (9)

Look for: Find Now Clear

Path	Source	Name	Resolution State	Created
Severity: Critical (4)				
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
VsphereEsx_14\VmEsx...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 1:36:11 PM
Terminal_181:3389\Te...	Security Log - all	eG Alert - Microsoft RDS: Security Log | Man...	New	4/22/2016 12:29:42 PM
Severity: Warning (5)				
Terminal_181:3389\Te...	System Details ...	eG Alert - Microsoft RDS: System Details | Hi...	New	4/22/2016 2:06:40 PM
VsphereEsx_14\VmEsx...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 12:50:39 PM
VsphereEsx_14\VmEsx...	VM Details - ES...	eG Alert - VMware vSphere ESX: VM Details ...	New	4/22/2016 12:43:23 PM
Terminal_181:3389\Te...	User Profile - vs...	eG Alert - Microsoft RDS: User Profile | User'...	New	4/22/2016 12:29:42 PM
VsphereEsx_14\VmEsx...	VM Snapshots ...	eG Alert - VMware vSphere ESX: VM Snapsh...	New	4/22/2016 12:19:40 PM

Alert Details

eG Alert - VMware vSphere ESX: VM Snapshots | VM snapshots have existed for many days

Source: VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

Full Path Name: VsphereEsx_14\Outside View of VMs\VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

Alert Monitor: Aged snapshots count

Created: 4/22/2016 12:19:40 PM

Alert Description

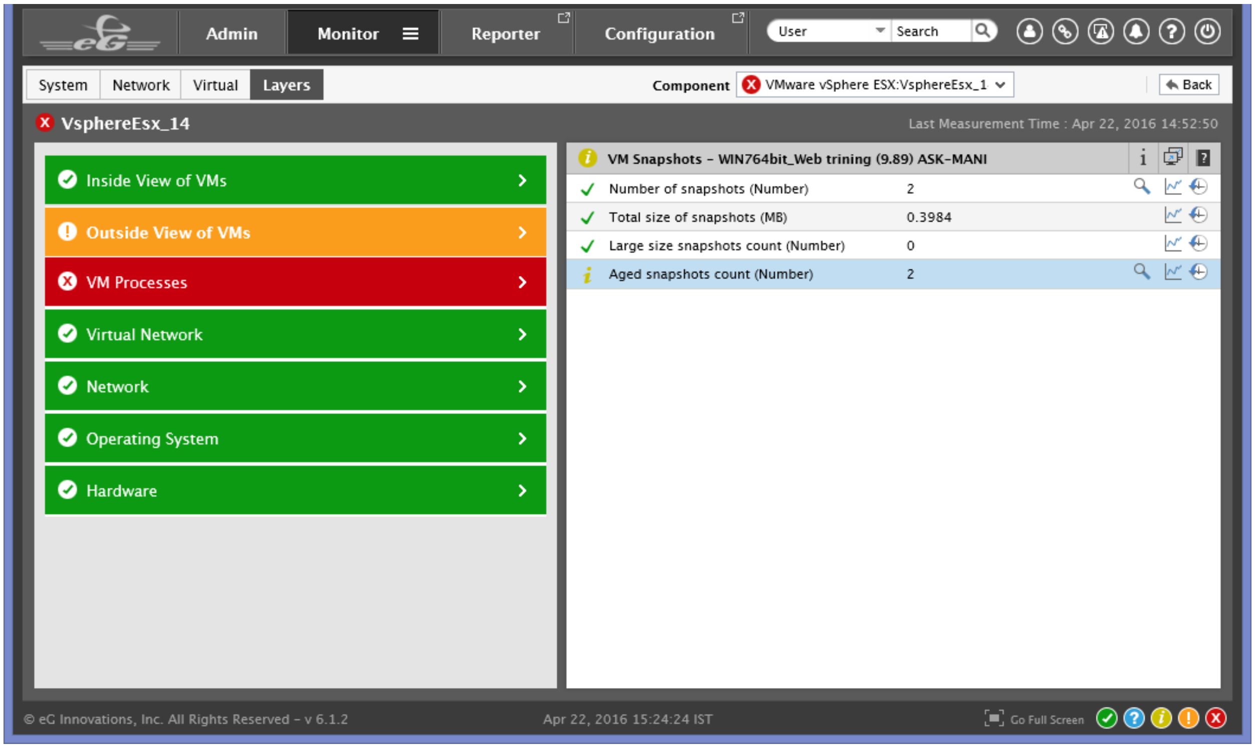
VM snapshots have existed for many days (in VMware vSphere ESX component, VsphereEsx_14).

Figure 3.5: Launching the eG monitoring console from the SCOM console

6. Doing so will lead you to that page in the eG monitoring console that indicates the problem layer, test, and measurement that corresponds to the alert chosen from the SCOM console.

Note

Clicking on the **Diagnose using eG** option will launch the eG monitoring console only if the **eG Console Tasks** application is installed on the system on which the SCOM console is operating. To know how to install this application, refer to Section 2.2.4 of Chapter 2 of this document. Also, when the eG console is launched for the very first time from the SCOM console, a login screen will appear, where you will have to manually key in the user credentials for logging into the eG monitoring console. The same credentials will be used to launch the eG monitoring console during your subsequent attempts to **Diagnose using eG**.



VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

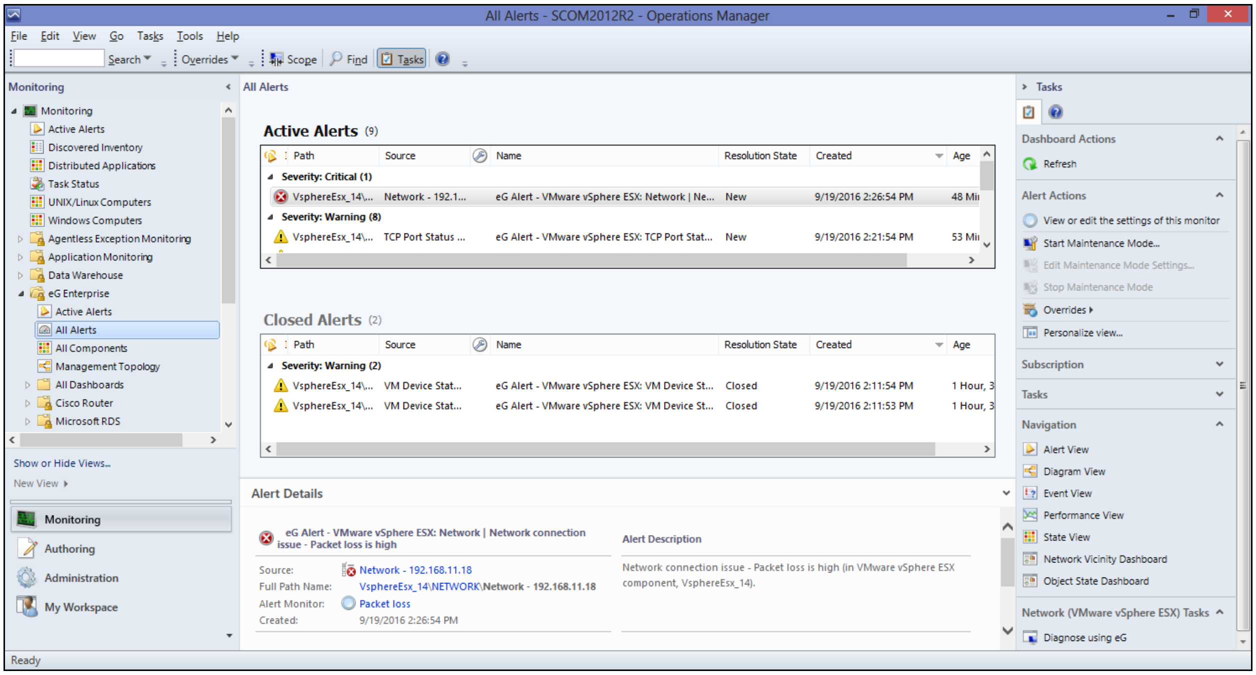
✓	Number of snapshots (Number)	2
✓	Total size of snapshots (MB)	0.3984
✓	Large size snapshots count (Number)	0
i	Aged snapshots count (Number)	2

Figure 3.6: The eG monitoring console indicating the problem layer, tes, and measurement related to the alert chosen from the SCOM console

3.2 Viewing All Alerts

To view the alert history of eG-managed components from the SCOM console, do the following:

1. Click on the **All Alerts** sub-node of the **eG Enterprise** node in the tree-structure in the left panel of the SCOM console.



Active Alerts (9)

Path	Source	Name	Resolution State	Created	Age
Severity: Critical (1)					
VsphereEsx_14\...	Network - 192.1...	eG Alert - VMware vSphere ESX: Network | Ne...	New	9/19/2016 2:26:54 PM	48 Mi
Severity: Warning (8)					
VsphereEsx_14\...	TCP Port Status ...	eG Alert - VMware vSphere ESX: TCP Port Stat...	New	9/19/2016 2:21:54 PM	53 Mi

Closed Alerts (2)

Path	Source	Name	Resolution State	Created	Age
Severity: Warning (2)					
VsphereEsx_14\...	VM Device Stat...	eG Alert - VMware vSphere ESX: VM Device St...	Closed	9/19/2016 2:11:54 PM	1 Hour, 3
VsphereEsx_14\...	VM Device Stat...	eG Alert - VMware vSphere ESX: VM Device St...	Closed	9/19/2016 2:11:53 PM	1 Hour, 3

Alert Details

eG Alert - VMware vSphere ESX: Network | Network connection issue - Packet loss is high

Source: Network - 192.168.11.18
Full Path Name: VsphereEsx_14\NETWORK\Network - 192.168.11.18
Alert Monitor: Packet loss
Created: 9/19/2016 2:26:54 PM

Alert Description

Network connection issue - Packet loss is high (in VMware vSphere ESX component, VsphereEsx_14).

Figure 3.7: The All Alerts view

2. The right dashboard panel will then display all alerts that were raised on the eG-managed components (see Figure 3.7). Here again, the alerts will be grouped by severity. Also, like in the **Active Alerts** view, each alert in the **All Alerts** view will display the alert **Path**, **Source**, **Name**, **Resolution State**, **Created** date/time, and **Age**, by default. If one/more problems were resolved, then the **Resolution State** of such alerts will be **Closed. Closed Alerts** will be displayed in a separate section in the alerts view. The **Closed Alerts** section will display alerts on the basis of the following criteria: *"View all alerts with Closed(255) resolution state"*. New alerts will be displayed on the basis of the following criteria: *"View all alerts with New(0) resolution state"*..

You can access the eG knowledge base (i.e., the eG online help system) from the **All Alerts** view, and also launch the eG monitoring console to perform deeper diagnosis of a particular problem.

Note

Clicking on the **Diagnose using eG** option will launch the eG monitoring console only if the **eG Console Tasks** application is installed on the system on which the SCOM console is operating. To know how to install this application, refer to Section 2.2.4 of Chapter 2 of this document. Also, when the eG console is launched for the very first time from the SCOM console, a login screen will appear, where you will have to manually key in the user credentials for logging into the eG monitoring console. The same credentials will be used to launch the eG monitoring console during your subsequent attempts to **Diagnose using eG**.

3.3 Closing Alerts in the SCOM Console

The eG-SCOM integration is by default **uni-directional**. In other words, it is the eG manager that communicates state changes and alarm transitions to the SCOM server, and not the other way round. By default therefore, an alarm deleted in the eG manager gets automatically closed in the SCOM server, but an alarm that is closed using the SCOM console, does not get automatically deleted in the eG manager. This default behavior however, can be overridden starting from v6.0 of the eG Enterprise Suite. From v6.0, the eG SCOM Connector can be configured to automatically delete alarms in the eG manager, as soon as the same alarms are closed in the SCOM console. To enable this capability, follow the steps below:

- Stop the eG SCOM Connector service.
- Edit the **ConnectorService.exe.config** file located in the **<EG SCOM CONNECTOR INSTALL DIR>** directory.
- Look for the following entry in the file:

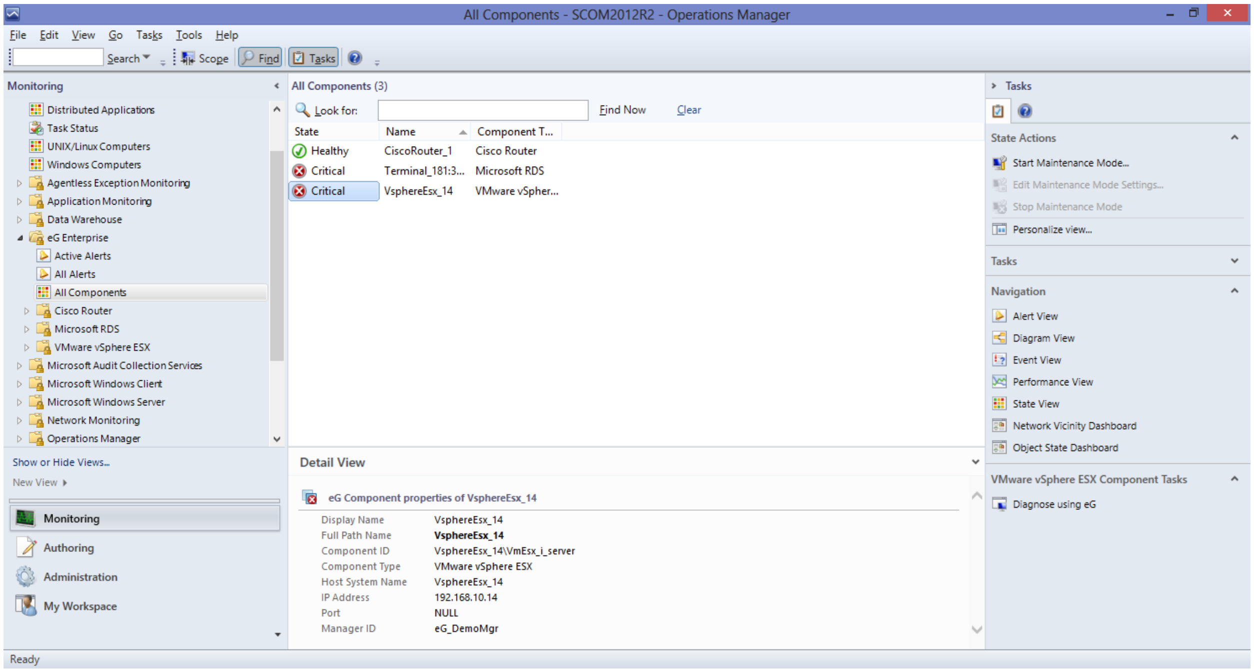
  <add key="BidirectionalAlertClosing" value="false" />

- Change the text *"false"* in the above entry to *"true"*.
- Finally, save the file.
- Start the eG SCOM Connector service.

3.4 Viewing Component Health

To view the current state of the eG-managed components, do the following:

1. Click on the **All Components** sub-node under the **eG Enteprise** node in the tree-structure in the left panel of the SCOM console. The right panel will then display all the eG-managed components and their current state (see Figure 3.8).



State	Name	Component T...
Healthy	CiscoRouter_1	Cisco Router
Critical	Terminal_181:3...	Microsoft RDS
Critical	VsphereEsx_14	VMware vSpher...

Detail View

eG Component properties of VsphereEsx_14

Display Name	VsphereEsx_14
Full Path Name	**VsphereEsx_14**
Component ID	VsphereEsx_14\VmEsx_i_server
Component Type	VMware vSphere ESX
Host System Name	VsphereEsx_14
IP Address	192.168.10.14
Port	NULL
Manager ID	eG_DemoMgr

Figure 3.8: The All Components sub-node

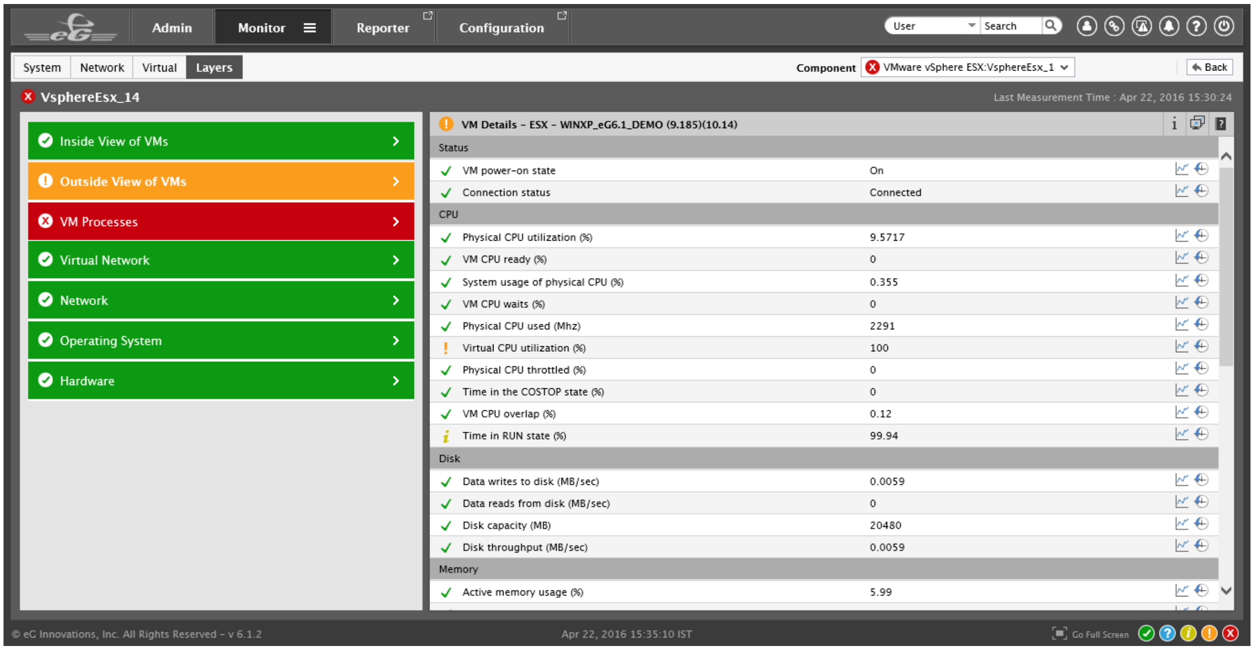
2. From the **All Components** view, you can determine the current **State** of the eG-managed components, the **Name** of the components, and the **Component Type**. The SCOM states that correspond to the states prescribed by eG Enterprise are discussed in the table below:

eG State	SCOM State
Normal	Healthy
Critical	Critical
Major	Warning
Minor	Warning
Unknown	Not Monitored / Uninitialized

3. From Figure 3.8, it is evident that while the Terminal and vSphere servers in our example are in a **Critical** state currently, the Cisco router is in a healthy state.

4. Clicking on a row in the **All Components** view will reveal additional details of the chosen component in the **Detail View** section below. You can use the **Personalize view** option in the **Actions** pane to customize the **All Components** view - this way, you can include more columns to the default view or exclude existing columns.

5. If you select a component from the **All Components** view and click the **Diagnose using eG** option in the **Actions** pane, Figure 3.9 will appear.



VM Details - ESX - WINXP_eG6.1_DEMO (9.185)(10.14)

Status		
✓	VM power-on state	On
✓	Connection status	Connected
CPU		
✓	Physical CPU utilization (%)	9.5717
✓	VM CPU ready (%)	0
✓	System usage of physical CPU (%)	0.355
✓	VM CPU waits (%)	0
✓	Physical CPU used (Mhz)	2291
!	Virtual CPU utilization (%)	100
✓	Physical CPU throttled (%)	0
✓	Time in the COSTOP state (%)	0
✓	VM CPU overlap (%)	0.12
i	Time in RUN state (%)	99.94
Disk		
✓	Data writes to disk (MB/sec)	0.0059
✓	Data reads from disk (MB/sec)	0
✓	Disk capacity (MB)	20480
✓	Disk throughput (MB/sec)	0.0059
Memory		
✓	Active memory usage (%)	5.99

Figure 3.9: Launching the eG monitoring console from the SCOM console

6. Figure 3.9 reveals the layer model of the component chosen from the **All Components** view, and also displays the problem layer, problem test and problem measures related to that component. This way, you can quickly isolate why the component is in an abnormal state currently.

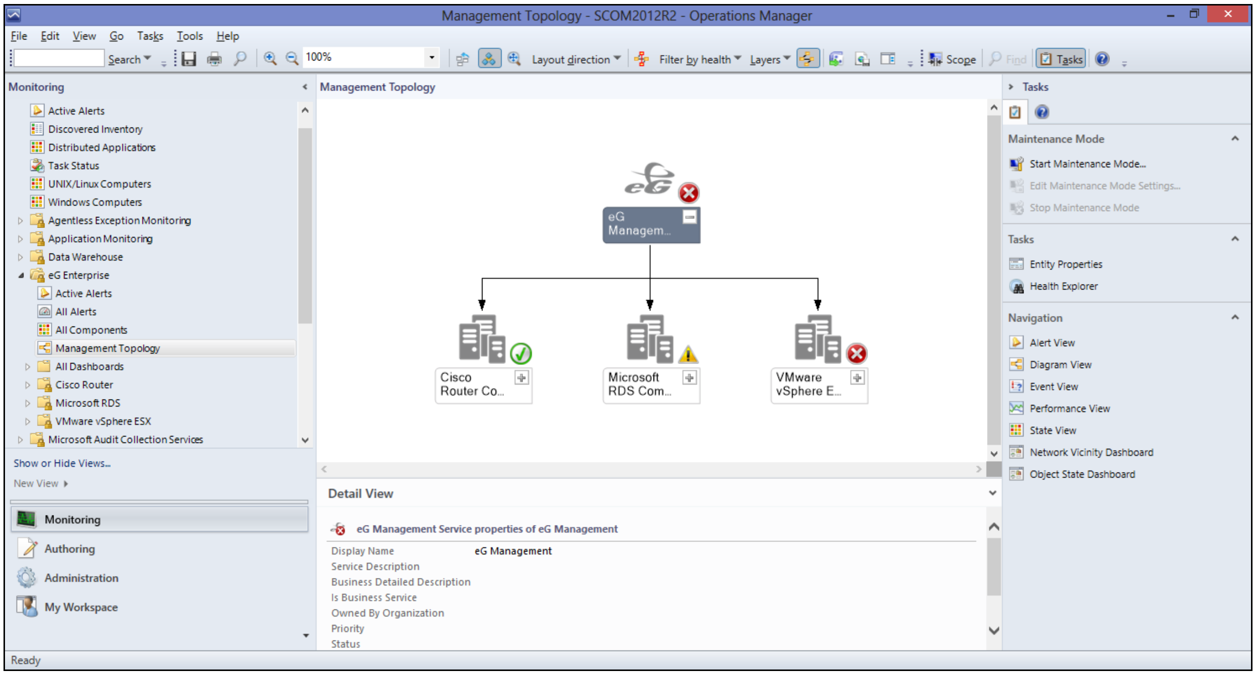
Note

Clicking on the **Diagnose using eG** option will launch the eG monitoring console only if the **eG Console Tasks** application is installed on the system on which the SCOM console is operating. To know how to install this application, refer to Section 2.2.4 of Chapter 2 of this document. Also, when the eG console is launched for the very first time from the SCOM console, a login screen will appear, where you will have to manually key in the user credentials for logging into the eG monitoring console. The same credentials will be used to launch the eG monitoring console during your subsequent attempts to **Diagnose using eG**.

3.5 Viewing Infrastructure Health

The SCOM console also provides a more graphical, end-to-end view of the eG-managed infrastructure via its topology representation. To obtain this view, do the following:

1. Click the **Management Topology** node below the **All Components** node (see Figure 3.10). The right panel will then display the topology representation depicted by Figure 3.10. From the topology, it is clear that the eG-managed infrastructure is currently in a Critical state, because one of the servers in the infrastructure – namely, the VMware vSphere server – is experiencing Critical issues.



eG Management Service properties of eG Management

Display Name eG Management
Service Description
Business Detailed Description
Is Business Service
Owned By Organization
Priority
Status

Figure 3.10: The Management Topology of the eG-managed infrastructure

2. You can also drill-down from the high-level topology view of Figure 3.10 to identify the vSphere server that is experiencing the Critical issues and to zero-in on the precise problems that are impacting this server's performance. For this click on the '+' icon alongside *VMware vSphere ESX* in Figure 3.10. Figure 3.11 will then appear.

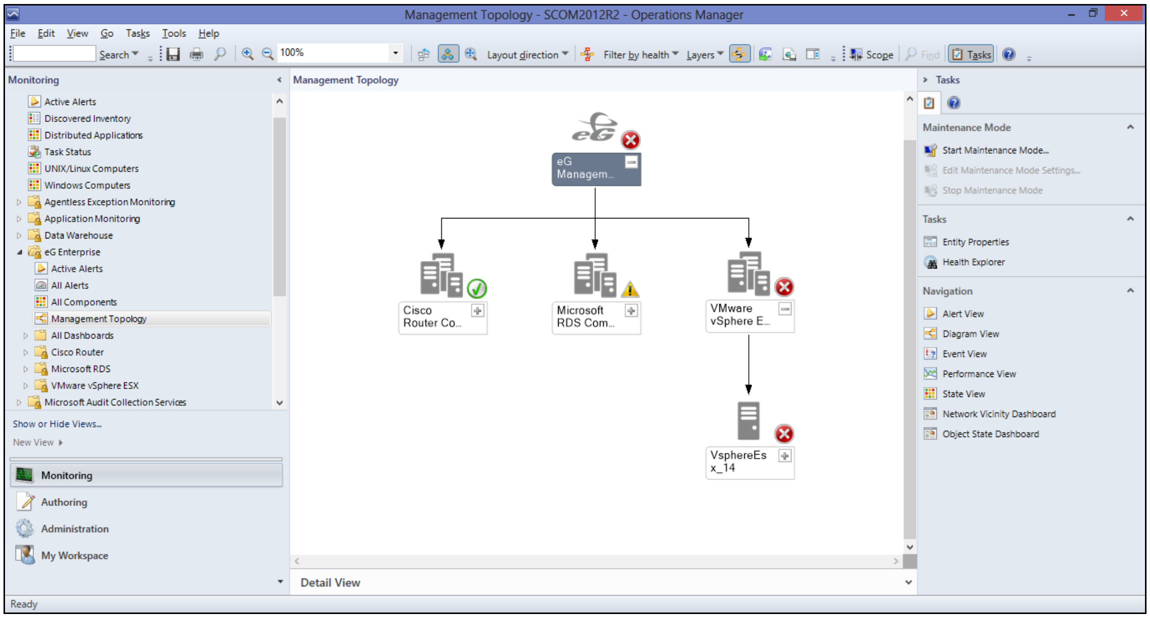


Figure 3.11: Drilling down from the high-level topology view to know which VMware vSphere server is in a Critical state

3. Figure 3.11 reveals that the vSphere server, *VsphereEsx_14*, is the only vSphere server that is managed in the environment, and is currently in a Critical state. To identify the exact layer where the Critical issue occurred,

drill down from the component view by clicking on the '+' icon alongside *VsphereEsx_14*. Figure 3.12 will then appear displaying the layers of eG's specialized layer model for VMware vSphere ESX. From the state of the layers, it is clear that Critical issues have occurred in **NETWORK** layer. If you now drill down from the **NETWORK** layer by clicking on the '+' icon alongside, you can identify the exact test that reported the Critical problem. In the case of our example, the **Network** test seems to have captured a Critical issue; this implies that a critical network-related issue is what caused the performance of the VMware vSphere server to suffer.

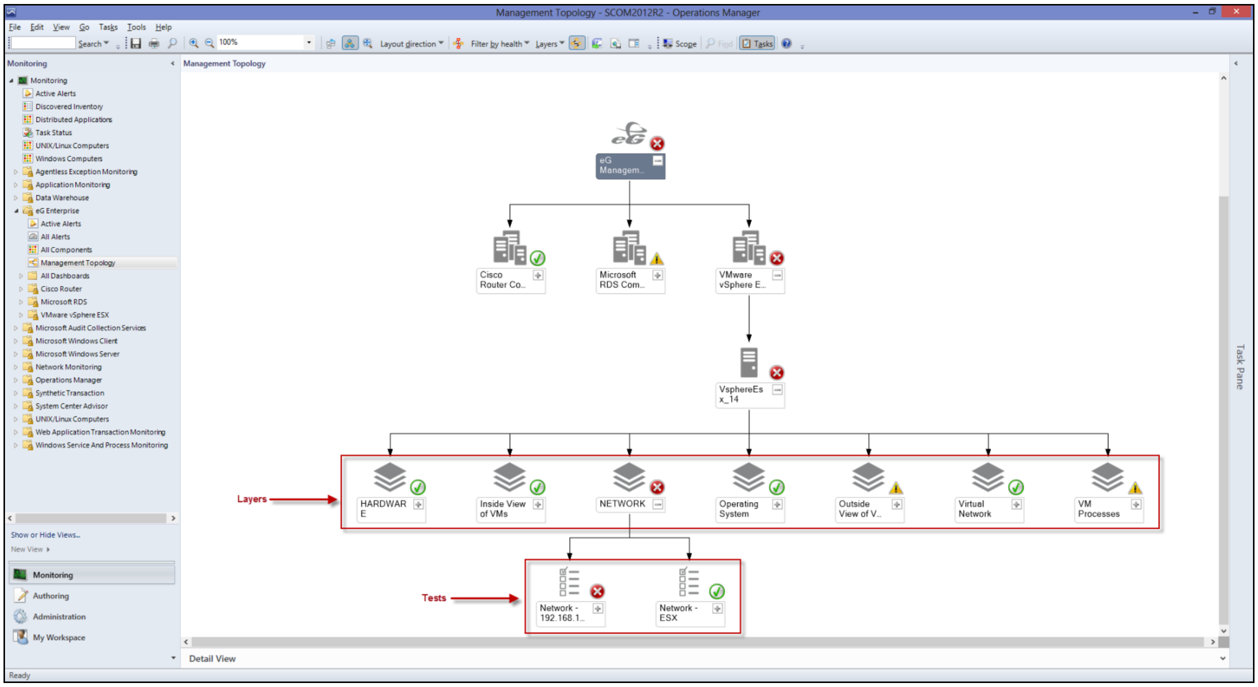
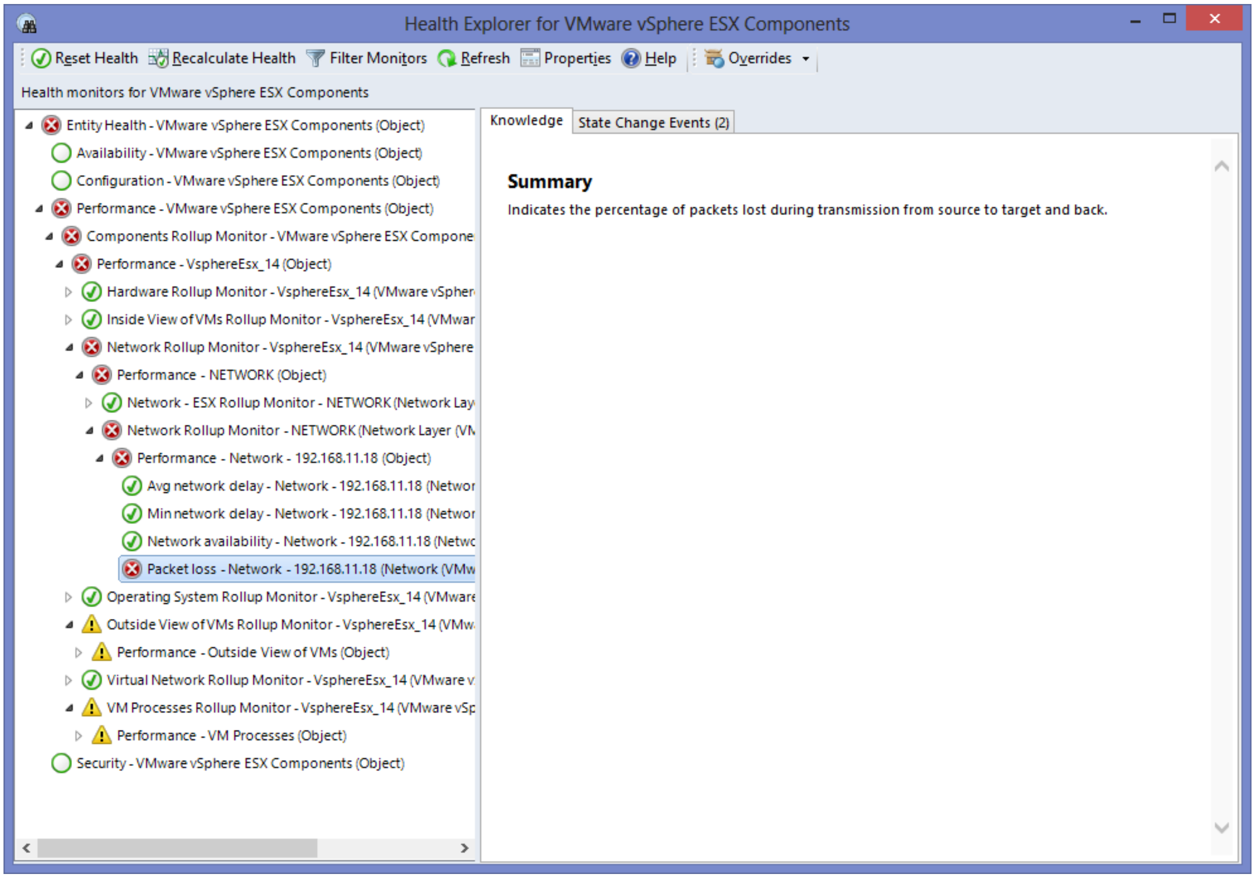


Figure 3.12: Isolating the layer and test that reported the Critical issue

4. To zero-in on the precise issue, right-click on the **Network** test representation in the topology and pick the **Health Explorer** option. Figure 3.13 will then appear pointing you to the exact measure that deviated from the threshold and caused the Critical problem. As can be inferred from Figure 3.13, a high packet loss on the network link to the VMware vSphere ESX server is what led to the Critical state of the vSphere server.



Health Explorer for VMware vSphere ESX Components

Health monitors for VMware vSphere ESX Components

- ✗ Entity Health - VMware vSphere ESX Components (Object)
  - ○ Availability - VMware vSphere ESX Components (Object)
  - ○ Configuration - VMware vSphere ESX Components (Object)
  - ✗ Performance - VMware vSphere ESX Components (Object)
    - ✗ Components Rollup Monitor - VMware vSphere ESX Compone
      - ✗ Performance - VsphereEsx_14 (Object)
        - ✓ Hardware Rollup Monitor - VsphereEsx_14 (VMware vSpher
        - ✓ Inside View of VMs Rollup Monitor - VsphereEsx_14 (VMwar
        - ✗ Network Rollup Monitor - VsphereEsx_14 (VMware vSphere
          - ✗ Performance - NETWORK (Object)
            - ✓ Network - ESX Rollup Monitor - NETWORK (Network Lay
            - ✗ Network Rollup Monitor - NETWORK (Network Layer (VM
              - ✗ Performance - Network - 192.168.11.18 (Object)
                - ✓ Avg network delay - Network - 192.168.11.18 (Networ
                - ✓ Min network delay - Network - 192.168.11.18 (Networ
                - ✓ Network availability - Network - 192.168.11.18 (Netwo
                - ✗ Packet loss - Network - 192.168.11.18 (Network (VMw
        - ✓ Operating System Rollup Monitor - VsphereEsx_14 (VMware
        - ⚠ Outside View of VMs Rollup Monitor - VsphereEsx_14 (VMw
          - ⚠ Performance - Outside View of VMs (Object)
        - ✓ Virtual Network Rollup Monitor - VsphereEsx_14 (VMware v
        - ⚠ VM Processes Rollup Monitor - VsphereEsx_14 (VMware vSp
          - ⚠ Performance - VM Processes (Object)
  - ○ Security - VMware vSphere ESX Components (Object)

Summary

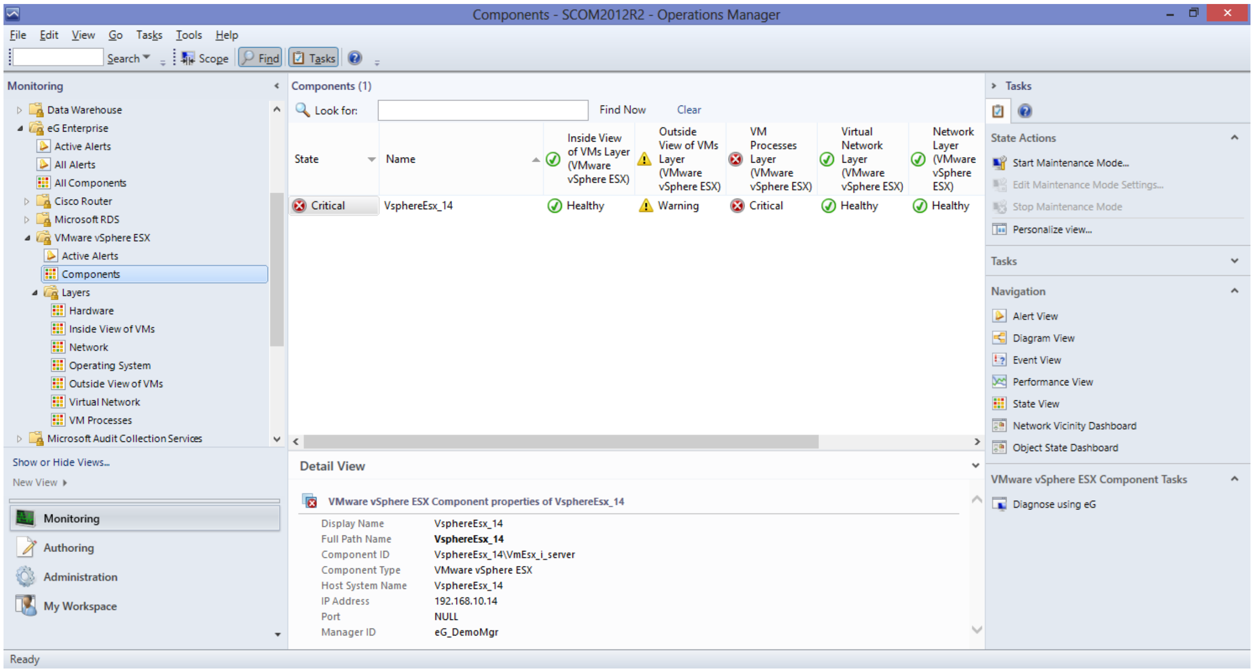
Indicates the percentage of packets lost during transmission from source to target and back.

Figure 3.13: Health Explorer revealing the accurate reason for the Network problem with the VMware vSphere ESX server

3.6 Viewing Component Type Health

To view the health of all eG-managed components of a particular type, do the following:

1. In the tree-structure in the left panel of the SCOM console, expand the sub-node representing a particular component-type under the **eG Enterprise** node. For instance, to view the health of all components of type *VMware vSphere ESX* in the case of our example, expand the **VMware vSphere ESX** sub-node of the **eG Enterprise** node.



State	Name	Inside View of VMs Layer (VMware vSphere ESX)	Outside View of VMs Layer (VMware vSphere ESX)	VM Processes Layer (VMware vSphere ESX)	Virtual Network Layer (VMware vSphere ESX)	Network Layer (VMware vSphere ESX)
Critical	VsphereEsx_14	Healthy	Warning	Critical	Healthy	Healthy

VMware vSphere ESX Component properties of VsphereEsx_14

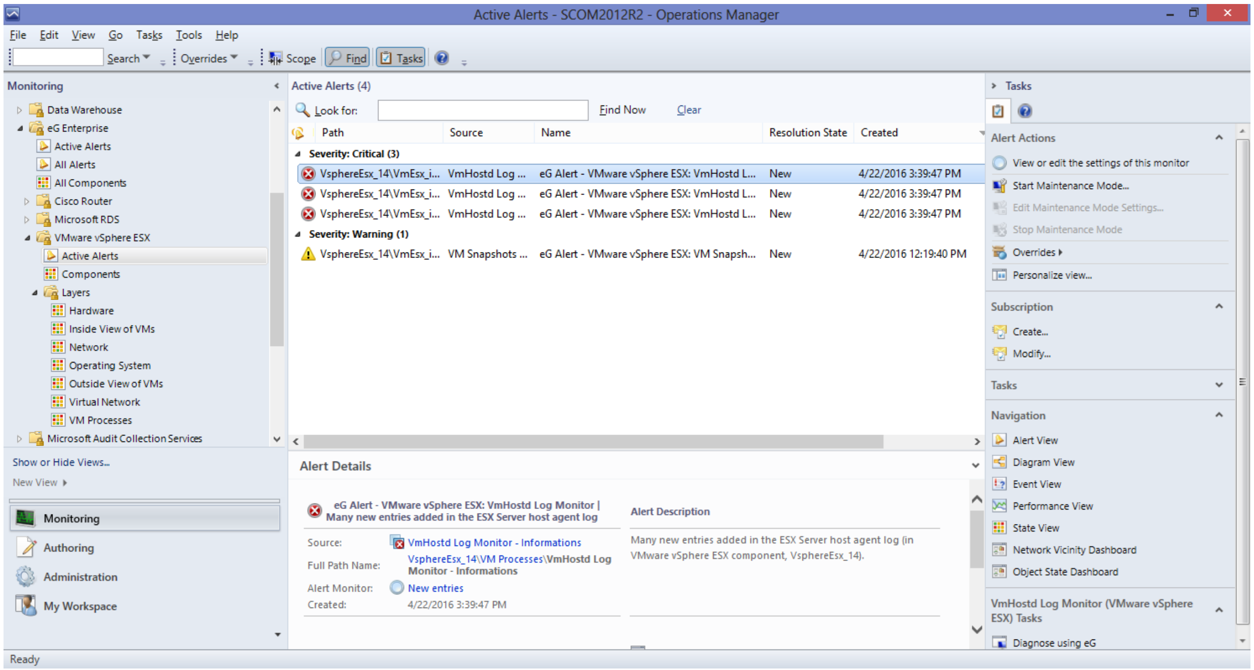
Display Name	VsphereEsx_14
Full Path Name	**VsphereEsx_14**
Component ID	VsphereEsx_14\VmEsx_i_server
Component Type	VMware vSphere ESX
Host System Name	VsphereEsx_14
IP Address	192.168.10.14
Port	NULL
Manager ID	eG_DemoMgr

Figure 3.14: Expanding the sub-node representing a component type

2. Expanding the **VMware vSphere ESX** sub-node will provide you with the following options:

   - Viewing only the **Active Alerts** pertaining to the managed VMware vSphere ESX servers;
   - Determining the overall health of each managed component of type **VMware vSphere ESX**;
   - Viewing a **Components Topology** of the **VMware vSphere ESX** component type, and graphically isolating the vSphere server that is performing poorly and the reason for its performance degradation;
   - Exploring the health of every layer of every component of type **VMware vSphere ESX**, and isolating the problem layers

To view the open alarms related to VMware vSphere ESX servers, click on the **Active Alerts** sub-node. Figure 3.15 will then appear.



Active Alerts (4)

Look for: Find Now Clear

Path	Source	Name	Resolution State	Created
Severity: Critical (3)				
VsphereEsx_14\VmEsx_i...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 3:39:47 PM
VsphereEsx_14\VmEsx_i...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 3:39:47 PM
VsphereEsx_14\VmEsx_i...	VmHostd Log ...	eG Alert - VMware vSphere ESX: VmHostd L...	New	4/22/2016 3:39:47 PM
Severity: Warning (1)				
VsphereEsx_14\VmEsx_i...	VM Snapshots ...	eG Alert - VMware vSphere ESX: VM Snapsh...	New	4/22/2016 12:19:40 PM

Alert Details

eG Alert - VMware vSphere ESX: VmHostd Log Monitor | Many new entries added in the ESX Server host agent log

Source: VmHostd Log Monitor - Informations
Full Path Name: VsphereEsx_14\VM Processes\VmHostd Log Monitor - Informations
Alert Monitor: New entries
Created: 4/22/2016 3:39:47 PM

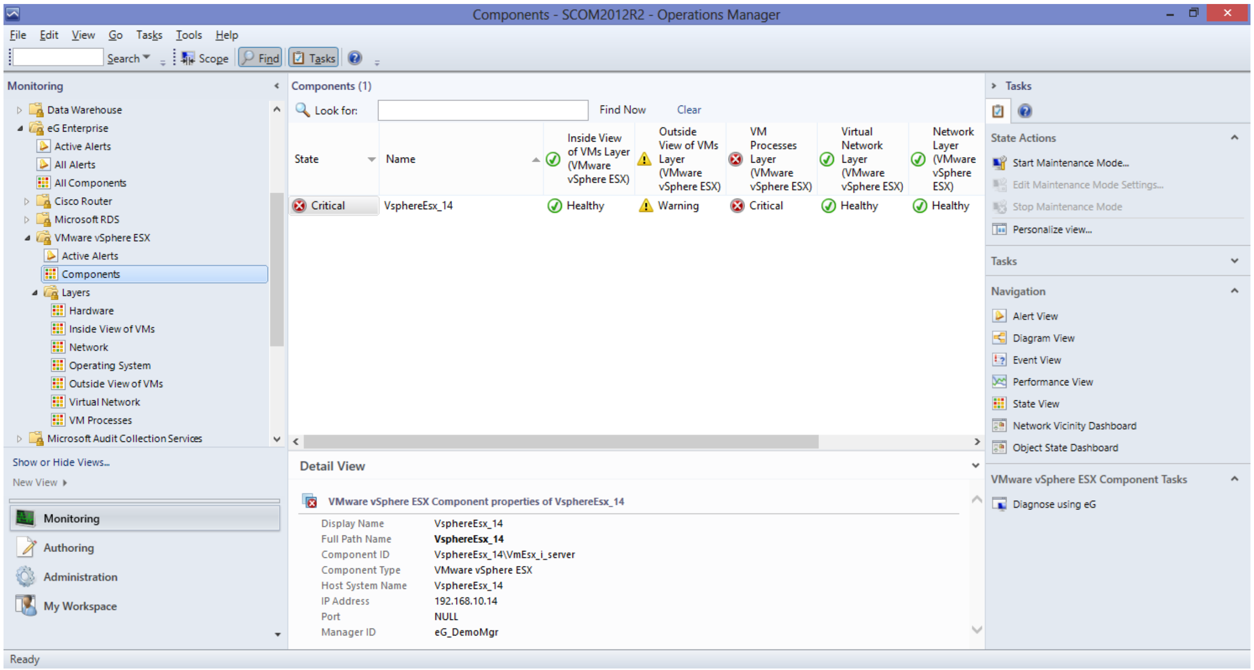
Alert Description

Many new entries added in the ESX Server host agent log (in VMware vSphere ESX component, VsphereEsx_14).

Figure 3.15: Viewing the active alerts of VMware vSphere ESX servers

3. In the right panel of Figure 3.15, you can view all the currently unresolved issues pertaining to VMware vSphere ESX servers, grouped by severity.

4. Next, if you want to know which components of type **VMware vSphere ESX** are currently managed and what their current states are, click on the **Components** sub-node under the **VMware vSphere ESX** node. You will then view the complete list of managed VMware vSphere ESX components and their current states in the right panel (see Figure 3.16).



State	Name	Inside View of VMs Layer (VMware vSphere ESX)	Outside View of VMs Layer (VMware vSphere ESX)	VM Processes Layer (VMware vSphere ESX)	Virtual Network Layer (VMware vSphere ESX)	Network Layer (VMware vSphere ESX)
Critical	VsphereEsx_14	Healthy	Warning	Critical	Healthy	Healthy

Detail View

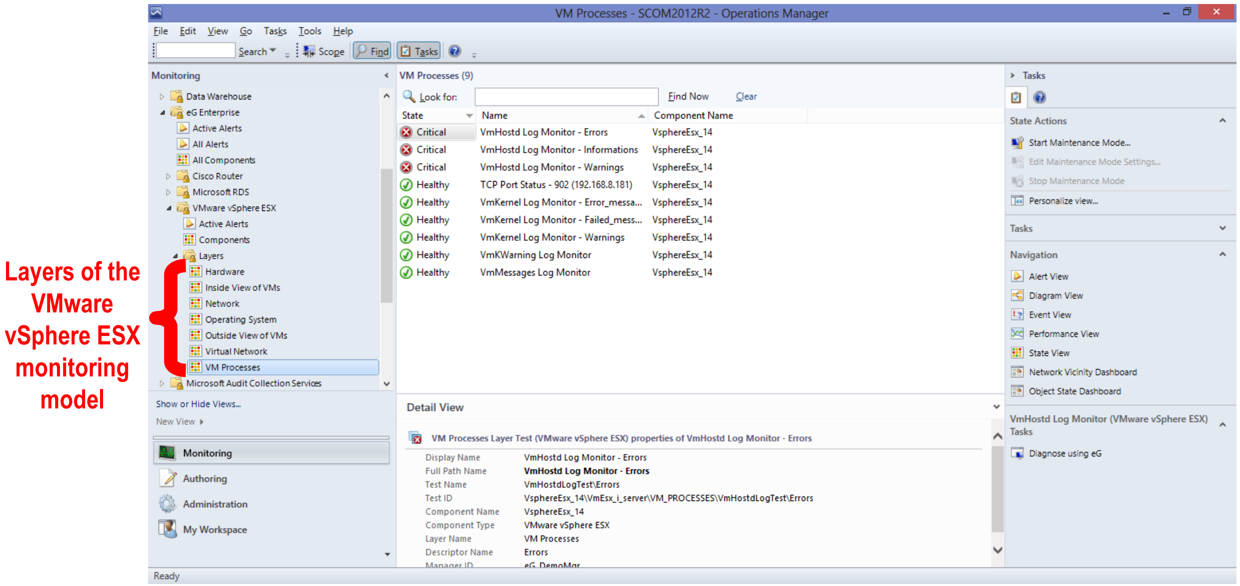
VMware vSphere ESX Component properties of VsphereEsx_14

Display Name	VsphereEsx_14
Full Path Name	**VsphereEsx_14**
Component ID	VsphereEsx_14\VmEsx_i_server
Component Type	VMware vSphere ESX
Host System Name	VsphereEsx_14
IP Address	192.168.10.14
Port	NULL
Manager ID	eG_DemoMgr

Figure 3.16: Viewing the managed components of type VMware vSphere ESX and their current state

5. In addition to the component **Name** and **State**, the right panel will also display all the layers that form the layer model of the VMware vSphere ESX server, and the state of each layer for every managed **VMware vSphere ESX** component. This way, you can not only identify problem components, but also accurately isolate the layers that contributed to the problem.

6. To focus on the health of the individual layers, expand the **Layers** sub-node of the **VMware vSphere ESX** node. This will reveal all the layers that are part of the built-in monitoring model that eG Enterprise offers for the VMware vSphere ESX server.



Layers of the VMware vSphere ESX monitoring model

State	Name	Component Name
Critical	VmHostd Log Monitor - Errors	VsphereEsx_14
Critical	VmHostd Log Monitor - Informations	VsphereEsx_14
Critical	VmHostd Log Monitor - Warnings	VsphereEsx_14
Healthy	TCP Port Status - 902 (192.168.8.181)	VsphereEsx_14
Healthy	VmKernel Log Monitor - Error_messa...	VsphereEsx_14
Healthy	VmKernel Log Monitor - Failed_mess...	VsphereEsx_14
Healthy	VmKernel Log Monitor - Warnings	VsphereEsx_14
Healthy	VmKWarning Log Monitor	VsphereEsx_14
Healthy	VmMessages Log Monitor	VsphereEsx_14

VM Processes Layer Test (VMware vSphere ESX) properties of VmHostd Log Monitor - Errors

Display Name	VmHostd Log Monitor - Errors
Full Path Name	**VmHostd Log Monitor - Errors**
Test Name	VmHostdLogTest\Errors
Test ID	VsphereEsx_14\VmEsx_i_server\VM_PROCESSES\VmHostdLogTest\Errors
Component Name	VsphereEsx_14
Component Type	VMware vSphere ESX
Layer Name	VM Processes
Descriptor Name	Errors
Manager ID	eG_DemoMgr

Figure 3.17: Viewing the layers as sub-nodes of the 'Layers' node

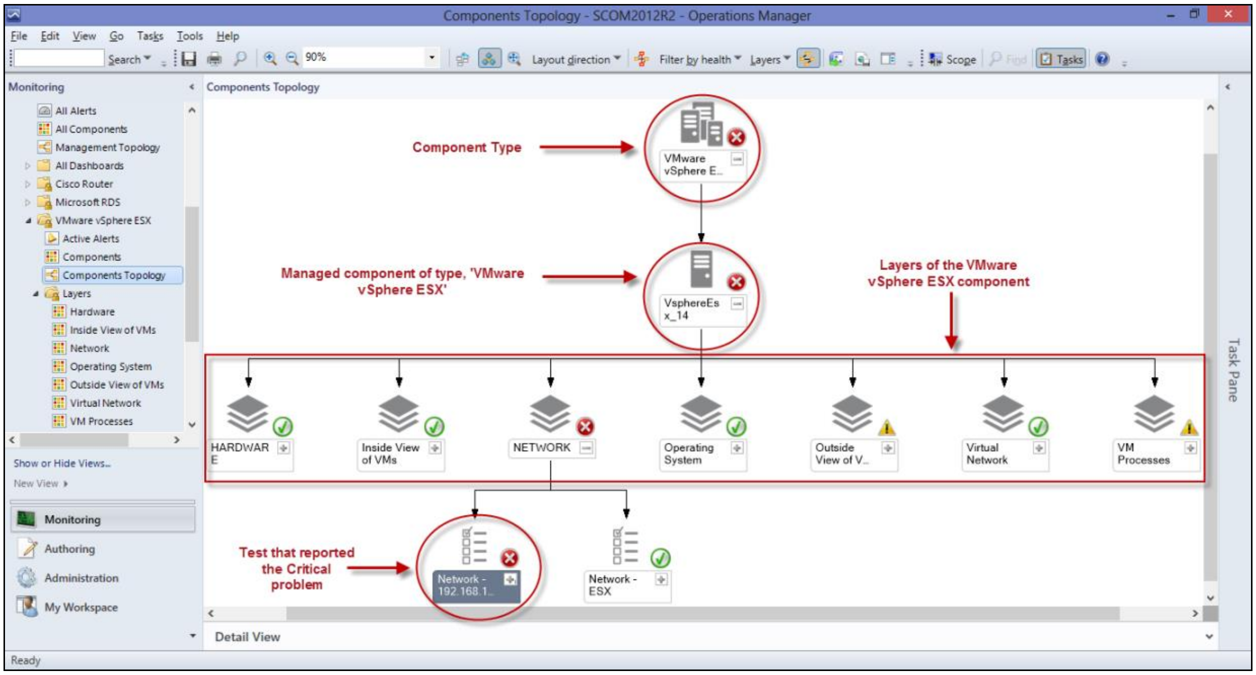
7. Then, click on a layer in the tree-structure. Upon clicking, all the tests mapped to that layer, the descriptors they support (if any), and the current state of each test will be available in the right panel (see Figure 3.17). Clicking on a row of information here will provide complete details of the test and descriptor in the **Detail View** below.

8. If a test is in a **Critical** or **Warning** state, you may want to know which measure of that test reported the abnormal measures and why. To zoom into the root-cause, you may want to launch the eG monitoring console from the SCOM console itself. For that, click on the **Diagnose using eG** option in the **Actions** pane of Figure 3.17. This will launch the eG monitoring console, where the complete layer model of the VMware vSphere ESX server will be displayed, and the problem layer, test, and measurement highlighted.

Note

Clicking on the **Diagnose using eG** option will launch the eG monitoring console only if the **eG Console Tasks** application is installed on the system on which the SCOM console is operating. To know how to install this application, refer to Section 2.2.4 of Chapter 2 of this document. Also, when the eG console is launched for the very first time from the SCOM console, a login screen will appear, where you will have to manually key in the user credentials for logging into the eG monitoring console. The same credentials will be used to launch the eG monitoring console during your subsequent attempts to **Diagnose using eG**.

9. For a more graphical, comprehensive view of the performance of a component type, click on the **Components Topology** node (see Figure 3.18). An icon representing the *VMware vSphere ESX* component type will then appear. Using an intuitive icon and a conventional color code (Red), the component-type representation clearly indicates that the *VMware vSphere ESX* component-type is in a Critical state presently. To know which vSphere servers have contributed to this abnormal state, drill down by clicking the '+' icon alongside. This will reveal all managed vSphere servers and their current state. In the case of our example, only a single single vSphere server has been managed. We can infer from Figure 3.18 that this vSphere server is in a Critical state presently. To understand why, click on the '+' icon alongside the vSphere server (i.e., component) representation in Figure 3.18.



Component Type

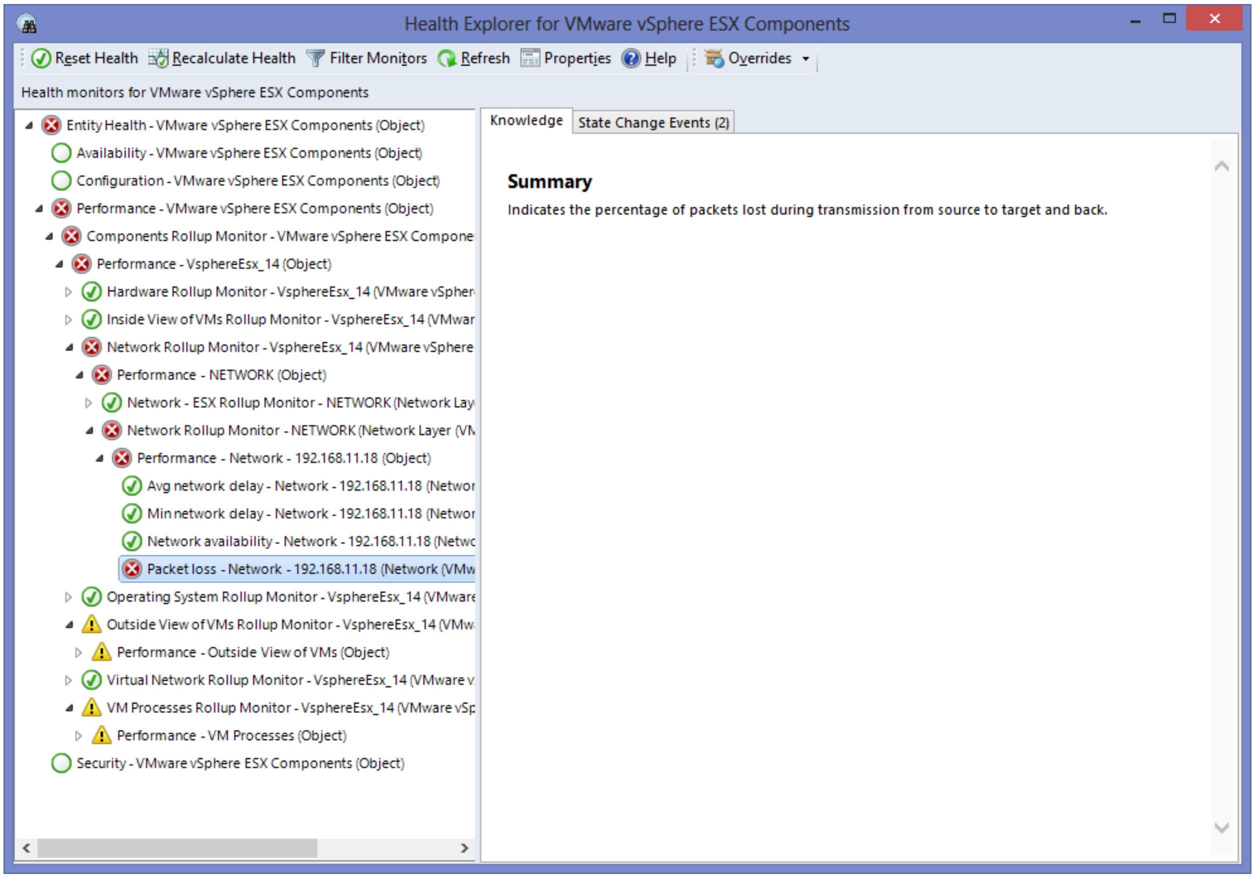
Managed component of type, 'VMware vSphere ESX'

Layers of the VMware vSphere ESX component

Test that reported the Critical problem

Figure 3.18: The topology representation revealing the exact component of a type, layer of component, and test mapped to the layer that is a Critical state

10. This will invoke the layer model of the VMware vSphere ESX server. Each layer will be represented as a separate object in the topology and its state will be indicated. From the layer display, it is evident that the Critical issue has been detected in the **NETWORK** layer. If you now click on the '+' icon alongside **NETWORK**, the tests mapped to that layer will appear, accurately pinpointing the test that captured the Critical issue. In the case of our example, the Critical issue has been reported by the **Network** test. To zero-in on the precise issue, right-click on the **Network** test representation in the topology and pick the **Health Explorer** option. Figure 3.19 will then appear pointing you to the exact measure that deviated from the threshold and caused the Critical problem. As can be inferred from Figure 3.19, a high packet loss on the network link to the VMware vSphere ESX server is what led to the Critical state of the vSphere server.



Health Explorer for VMware vSphere ESX Components

Reset Health | Recalculate Health | Filter Monitors | Refresh | Properties | Help | Overrides

Health monitors for VMware vSphere ESX Components

- ✗ Entity Health - VMware vSphere ESX Components (Object)
  - ○ Availability - VMware vSphere ESX Components (Object)
  - ○ Configuration - VMware vSphere ESX Components (Object)
  - ✗ Performance - VMware vSphere ESX Components (Object)
    - ✗ Components Rollup Monitor - VMware vSphere ESX Compone
      - ✗ Performance - VsphereEsx_14 (Object)
        - ✓ Hardware Rollup Monitor - VsphereEsx_14 (VMware vSpher
        - ✓ Inside View of VMs Rollup Monitor - VsphereEsx_14 (VMwar
        - ✗ Network Rollup Monitor - VsphereEsx_14 (VMware vSphere
          - ✗ Performance - NETWORK (Object)
            - ✓ Network - ESX Rollup Monitor - NETWORK (Network Lay
            - ✗ Network Rollup Monitor - NETWORK (Network Layer (VN
              - ✗ Performance - Network - 192.168.11.18 (Object)
                - ✓ Avg network delay - Network - 192.168.11.18 (Networ
                - ✓ Min network delay - Network - 192.168.11.18 (Networ
                - ✓ Network availability - Network - 192.168.11.18 (Netwo
                - ✗ Packet loss - Network - 192.168.11.18 (Network (VMw
        - ✓ Operating System Rollup Monitor - VsphereEsx_14 (VMware
        - ⚠ Outside View of VMs Rollup Monitor - VsphereEsx_14 (VMw
          - ⚠ Performance - Outside View of VMs (Object)
        - ✓ Virtual Network Rollup Monitor - VsphereEsx_14 (VMware v
        - ⚠ VM Processes Rollup Monitor - VsphereEsx_14 (VMware vSp
          - ⚠ Performance - VM Processes (Object)
  - ○ Security - VMware vSphere ESX Components (Object)

Knowledge | State Change Events (2)

Summary

Indicates the percentage of packets lost during transmission from source to target and back.

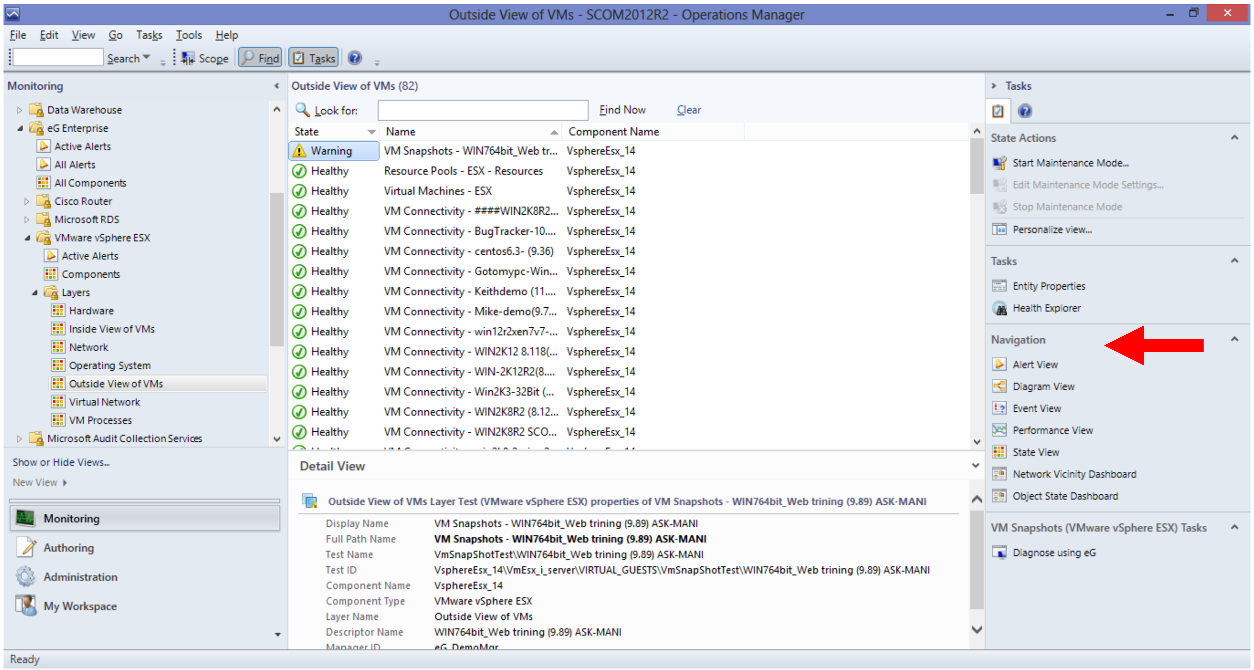
Figure 3.19: Health Explorer revealing the accurate reason for the Network problem with the VMware vSphere ESX server

3.7 Working with the Health Explorer

The health explorer provides options to troubleshoot the problems detected by health monitors. It depicts how the various health monitors inter-operate to determe the state of a monitoring object. Every measurement reported by an eG test is mapped to a corresponding health monitor in SCOM. The monitors of a test are grouped together under the **Performance** category. A rollup monitor exists for every test which automatically propagates the state of a test object into its parent layer object. Similarly, a rollup monitor exists for every layer object which automatically propagates the state of a layer object into its parent component object. This entire state hierarchy is called as **Heath Model** in SCOM.

To access the health explorer screen, do the following:

1. In the SCOM operation console, select the monitored target (component/layer/test/measure) from one of the eG views and then select the **Health Explorer** option in the **Actions** pane. In the case of our example, let us launch the **Health Explorer** for the **Warning** raised on the **VM Snapshots** test mapped to the **OutsideView of VMs** layer of a VMware vSphere ESX server.



State	Name	Component Name
Warning	VM Snapshots - WIN764bit_Web tr...	VsphereEsx_14
Healthy	Resource Pools - ESX - Resources	VsphereEsx_14
Healthy	Virtual Machines - ESX	VsphereEsx_14
Healthy	VM Connectivity - ####WIN2K8R2...	VsphereEsx_14
Healthy	VM Connectivity - BugTracker-10....	VsphereEsx_14
Healthy	VM Connectivity - centos6.3- (9.36)	VsphereEsx_14
Healthy	VM Connectivity - Gotomypc-Win...	VsphereEsx_14
Healthy	VM Connectivity - Keithdemo (11....	VsphereEsx_14
Healthy	VM Connectivity - Mike-demo(9.7...	VsphereEsx_14
Healthy	VM Connectivity - win12r2xen7v7-...	VsphereEsx_14
Healthy	VM Connectivity - WIN2K12 8.118(...	VsphereEsx_14
Healthy	VM Connectivity - WIN-2K12R2(8....	VsphereEsx_14
Healthy	VM Connectivity - Win2K3-32Bit (...	VsphereEsx_14
Healthy	VM Connectivity - WIN2K8R2 (8.12...	VsphereEsx_14
Healthy	VM Connectivity - WIN2K8R2 SCO...	VsphereEsx_14

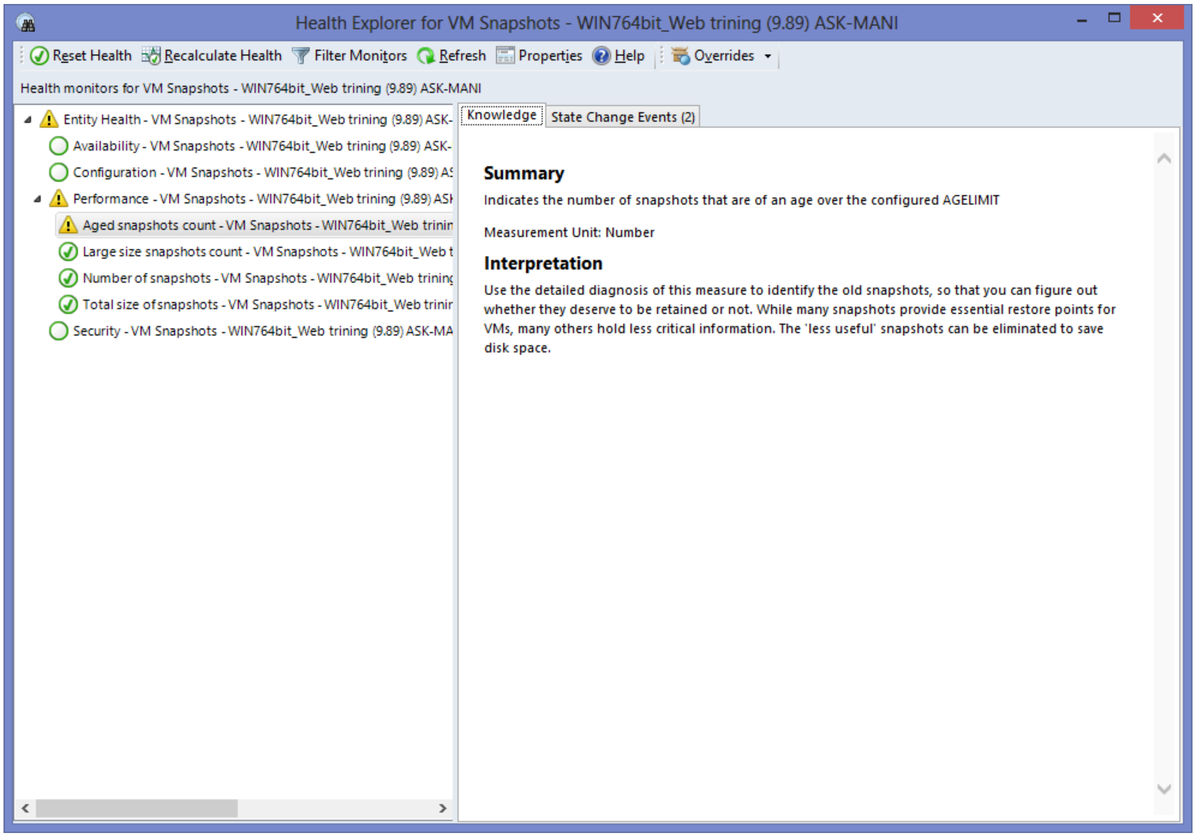
Detail View

Outside View of VMs Layer Test (VMware vSphere ESX) properties of VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

Display Name	VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI
Full Path Name	**VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI**
Test Name	VmSnapShotTest\WIN764bit_Web trining (9.89) ASK-MANI
Test ID	VsphereEsx_14\VmEsx_i_server\VIRTUAL_GUESTS\VmSnapShotTest\WIN764bit_Web trining (9.89) ASK-MANI
Component Name	VsphereEsx_14
Component Type	VMware vSphere ESX
Layer Name	Outside View of VMs
Descriptor Name	WIN764bit_Web trining (9.89) ASK-MANI
Manager ID	eG_DemoMgr

Figure 3.20: Clicking on the Health Explorer option of a test mapped to a particular layer

2. Figure 3.21 will then appear. As you can see, in the left panel of Figure 3.21, all the measures of the **VM Snapshots** test (that we had earllier selected from the SCOM console of Figure 3.20) are grouped under the **Performance** node (i.e., category) as monitors. From the left panel, we can clearly infer that the **Warning** on the **VM Snapshots** test is owing to a **Warning** alert on the **Aged snapshots count** measure of the test.



Health monitors for VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

- Entity Health - VM Snapshots - WIN764bit_Web trining (9.89) ASK-
  - Availability - VM Snapshots - WIN764bit_Web trining (9.89) ASK-
  - Configuration - VM Snapshots - WIN764bit_Web trining (9.89) AS
  - Performance - VM Snapshots - WIN764bit_Web trining (9.89) ASK
    - Aged snapshots count - VM Snapshots - WIN764bit_Web trinin
    - Large size snapshots count - VM Snapshots - WIN764bit_Web t
    - Number of snapshots - VM Snapshots - WIN764bit_Web trining
    - Total size of snapshots - VM Snapshots - WIN764bit_Web trinir
  - Security - VM Snapshots - WIN764bit_Web trining (9.89) ASK-MA

Summary

Indicates the number of snapshots that are of an age over the configured AGELIMIT

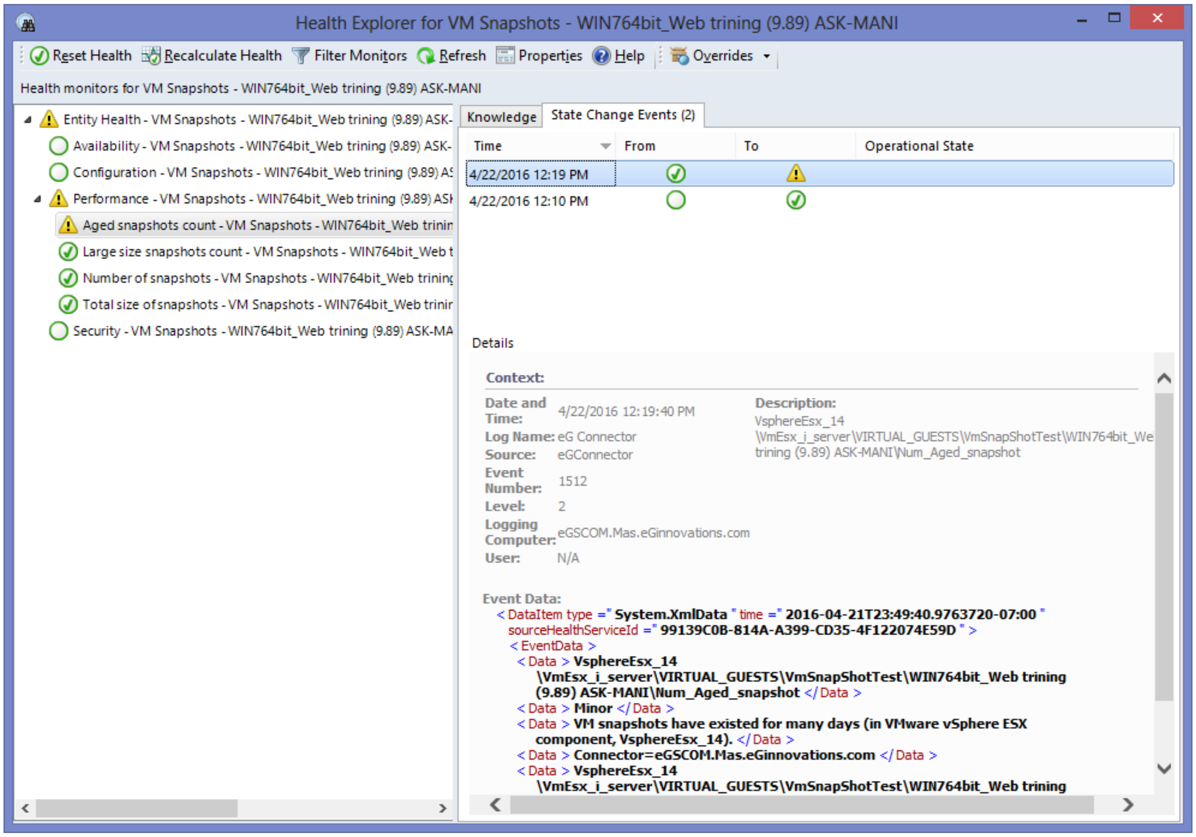
Measurement Unit: Number

Interpretation

Use the detailed diagnosis of this measure to identify the old snapshots, so that you can figure out whether they deserve to be retained or not. While many snapshots provide essential restore points for VMs, many others hold less critical information. The 'less useful' snapshots can be eliminated to save disk space.

Figure 3.21: Health explorer for the VM Snapshots test mapped to the OutsideView of VMs layer of a VMware vSphere ESX server

3. The right panel comes with two tabs. In the **Knowledge** tab, you can easily and instantly view the details of the chosen measure as described in the context-sensitive help page that corresponds to the chosen test. In the **State Change Events** tab on the other hand, you can view the transitions in the state of a test/measure chosen from the left panel. For instance, in Figure 3.22 below, you can view the state transitions for the **Aged snapshot counts** measure chosen from the left panel. This way, you can easily view the state history of a test/measure and effortlessly figure out what state a test/measure has been in at what time.



Health monitors for VM Snapshots - WIN764bit_Web trining (9.89) ASK-MANI

- ⚠ Entity Health - VM Snapshots - WIN764bit_Web trining (9.89) ASK-
  - ○ Availability - VM Snapshots - WIN764bit_Web trining (9.89) ASK-
  - ○ Configuration - VM Snapshots - WIN764bit_Web trining (9.89) AS
  - ⚠ Performance - VM Snapshots - WIN764bit_Web trining (9.89) ASK
    - ⚠ Aged snapshots count - VM Snapshots - WIN764bit_Web trinin
    - ✓ Large size snapshots count - VM Snapshots - WIN764bit_Web t
    - ✓ Number of snapshots - VM Snapshots - WIN764bit_Web trining
    - ✓ Total size of snapshots - VM Snapshots - WIN764bit_Web trinir
  - ○ Security - VM Snapshots - WIN764bit_Web trining (9.89) ASK-MA

Time	From	To	Operational State
4/22/2016 12:19 PM	✓	⚠	
4/22/2016 12:10 PM	○	✓	

Context:

Date and Time:	4/22/2016 12:19:40 PM	**Description:** VsphereEsx_14 \VmEsx_i_server\VIRTUAL_GUESTS\VmSnapShotTest\WIN764bit_We trining (9.89) ASK-MANI\Num_Aged_snapshot
Log Name:	eG Connector	
Source:	eGConnector	
Event Number:	1512	
Level:	2	
Logging Computer:	eGSCOM.Mas.eGinnovations.com	
User:	N/A	

Event Data:

```
 < DataItem type =" System.XmlData " time =" 2016-04-21T23:49:40.9763720-07:00 "
   sourceHealthServiceId =" 99139C0B-814A-A399-CD35-4F122074E59D " >
   < EventData >
    < Data > VsphereEsx_14
       \VmEsx_i_server\VIRTUAL_GUESTS\VmSnapShotTest\WIN764bit_Web trining
       (9.89) ASK-MANI\Num_Aged_snapshot </ Data >
    < Data > Minor </ Data >
    < Data > VM snapshots have existed for many days (in VMware vSphere ESX
       component, VsphereEsx_14). </ Data >
    < Data > Connector=eGSCOM.Mas.eGinnovations.com </ Data >
    < Data > VsphereEsx_14
       \VmEsx_i_server\VIRTUAL_GUESTS\VmSnapShotTest\WIN764bit_Web trining
```

Figure 3.22: State Change Events tab

3.8 Monitoring Business Services

If you have configured one/more business services for monitoring in eG Enterprise, then post the integration with SCOM, you can use SCOM to view the current state of these business services. Moreover, in the event of a service slowdown/outage, you can even view and analyze the service topology in the SCOM console itself, and isolate the service component that could have caused the abnormality, **without launching the eG monitoring console!**

To achieve this, you will have to login to the SCOM console and **recreate the topology of each business service that you want monitored**. To help you understand this process better, let us take the example of the *infomart* service. Figure 3.23 below depicts the topology of this service.

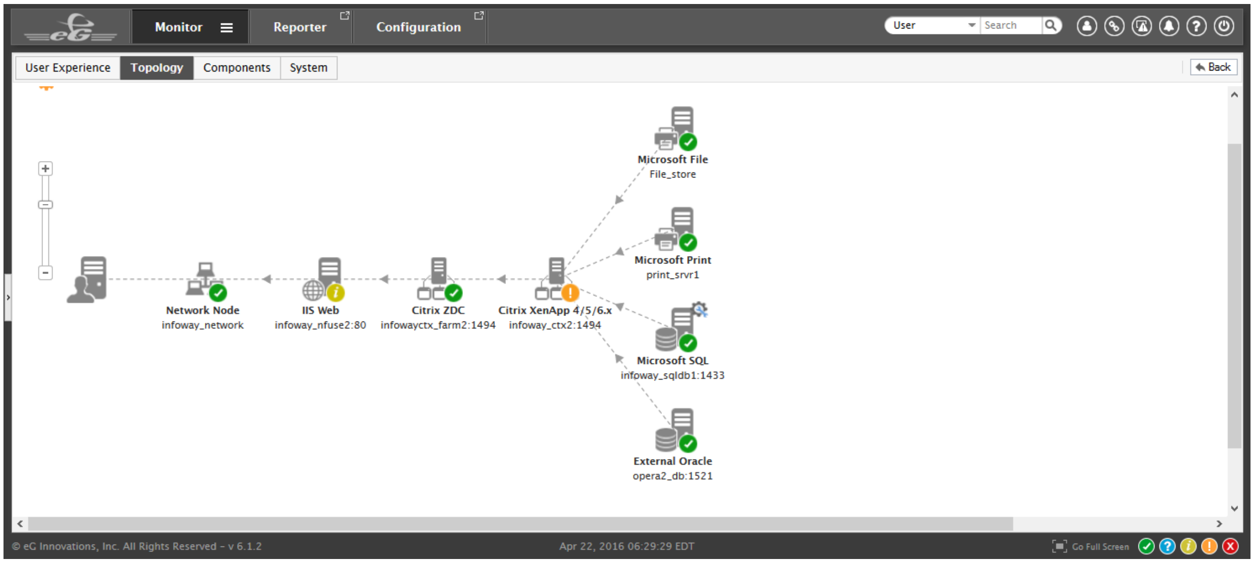


Figure 3.23: The topology of the *Infomart* service as viewed in the eG web interface

The *Infomart* service, as you can see, is a virtualized Citrix XenApp service, where the XenApp server, *Infoway_ctx2:1494*, is running on a VM configured on the ESXi server, *nyc_vm_02*. Users login to the Citrix farm via the Citrix web interface hosted on the IIS web server, *infoway_nfuse2:80*. The Citrix ZDC, *infowayctx_farm2:1494*, that balances the load on the farm, receives the user request and transmits it to the least-loaded XenApp server, *infoway_ctx2:1494*, in the farm. The XenApp server services the user request by taking help from the MSSQL database server, External Oracle server, an MS File sever, and the Print server.

To build the topology of the *Infomart* service in the SCOM console, do the following:

1. A business service in eG has to be defined as a 'Distributed Application' in SCOM. In other words, the *Infomart* service in our example, will have to be configured as the *Infomart* distributed application in SCOM. This implies that the topology that you built for the *Infomart* service in eG should be built again in SCOM for the *Infomart* distributed application. For this, first, login to the SCOM console. Then, click the **Authoring** tab page depicted by Figure 3.24 below.

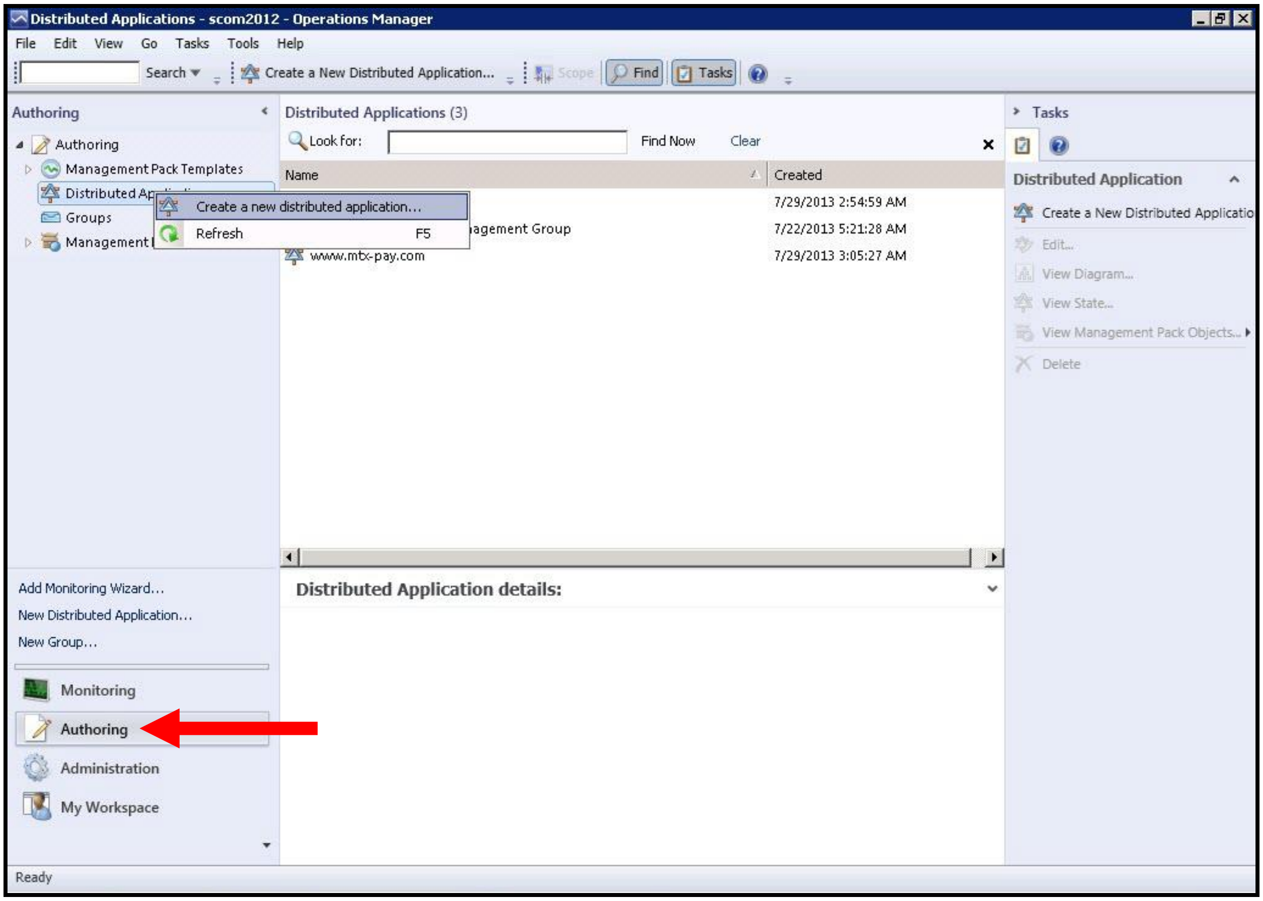
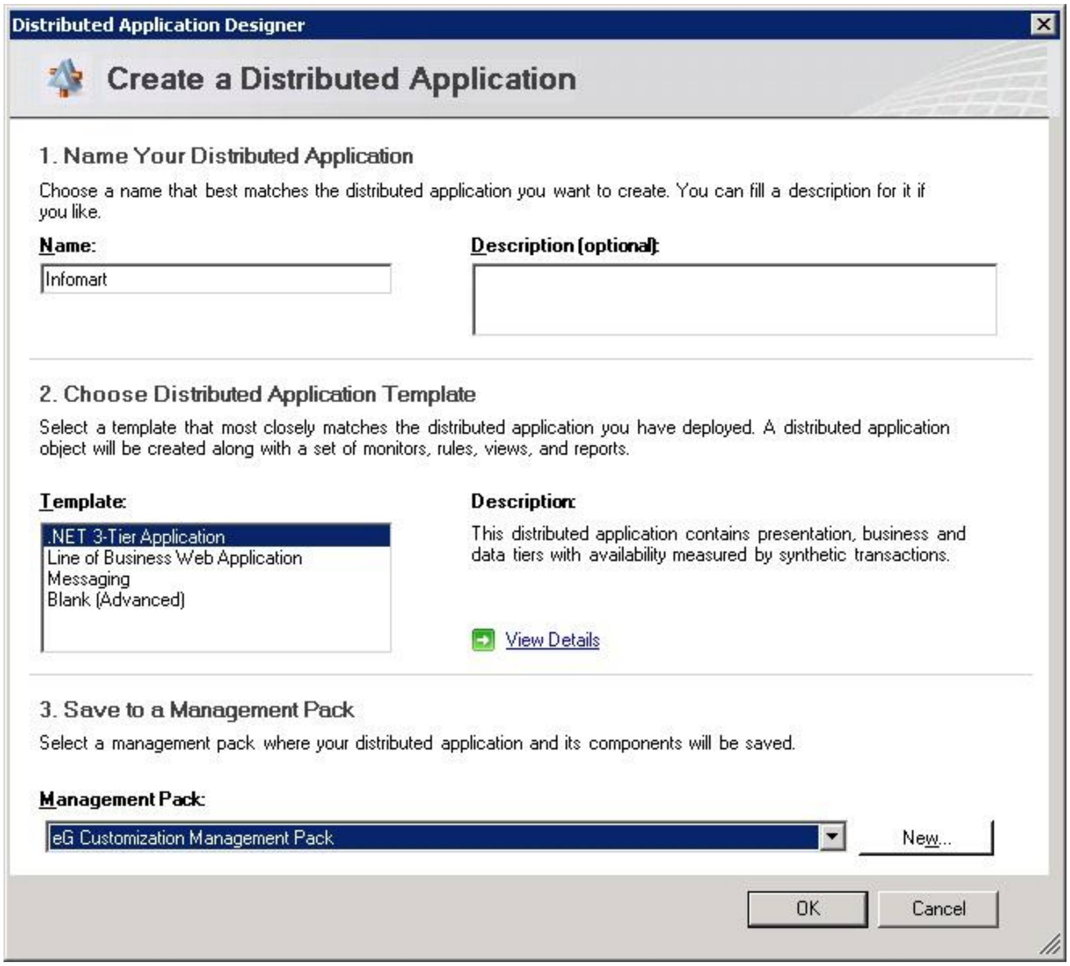


Figure 3.24: Starting Distributed Application Configuration

2. When the **Authoring** tree appears in the left panel, expand the **Authoring** node in the tree-structure, right-click on the **Distributed Application** sub-node, and pick the **Create a new distributed application** option (see Figure 3.24).

3. Figure 3.25 then appears.



Distributed Application Designer

Create a Distributed Application

1. Name Your Distributed Application

Choose a name that best matches the distributed application you want to create. You can fill a description for it if you like.

Name: Infomart

Description (optional):

2. Choose Distributed Application Template

Select a template that most closely matches the distributed application you have deployed. A distributed application object will be created along with a set of monitors, rules, views, and reports.

Template:

- .NET 3-Tier Application
- Line of Business Web Application
- Messaging
- Blank (Advanced)

Description:

This distributed application contains presentation, business and data tiers with availability measured by synthetic transactions.

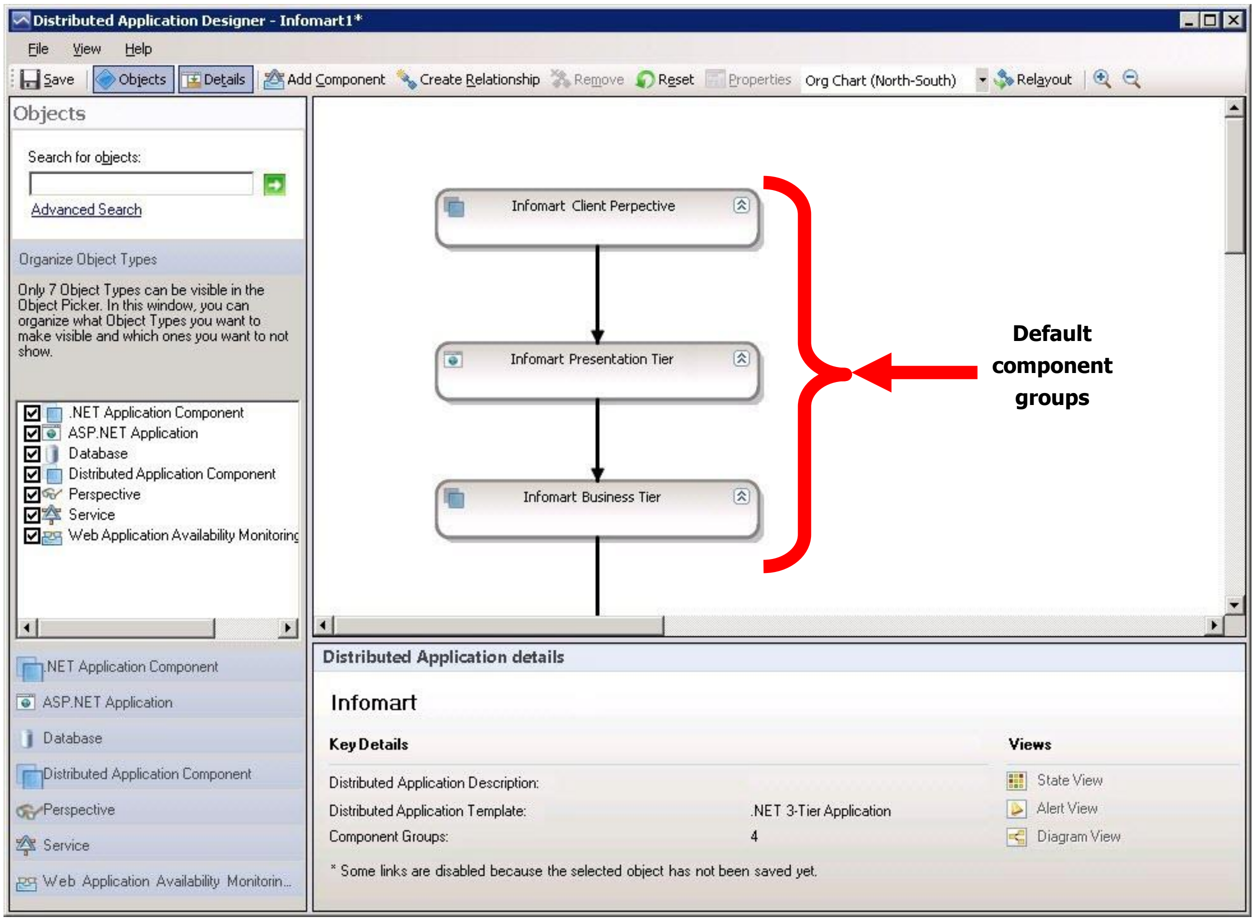
3. Save to a Management Pack

Select a management pack where your distributed application and its components will be saved.

Management Pack: eG Customization Management Pack

Figure 3.25: Creating a Distributed Application

4. In the **Name Your Distributed Application** section of Figure 3.25, provide a uniqe **Name** to your distributed application – for easy identification, its best to name the distributed application after the business service it corresponds to. In the case of our example therefore, set *Infomart* as the **Name** of the distributed application. Next, select the **.NET 3-Tier Application** option from the **Template** list in the **Choose Distributed Application Template** section, and pick the **eG Customization Management Pack** option from the **Management Pack** drop-down in the **Save to a Management Pack** section. Finally, click the **OK** button in Figure 3.25. This will invoke the **Distributed Application Designer** window (see Figure 3.26).



Only 7 Object Types can be visible in the Object Picker. In this window, you can organize what Object Types you want to make visible and which ones you want to not show.

Distributed Application Description:

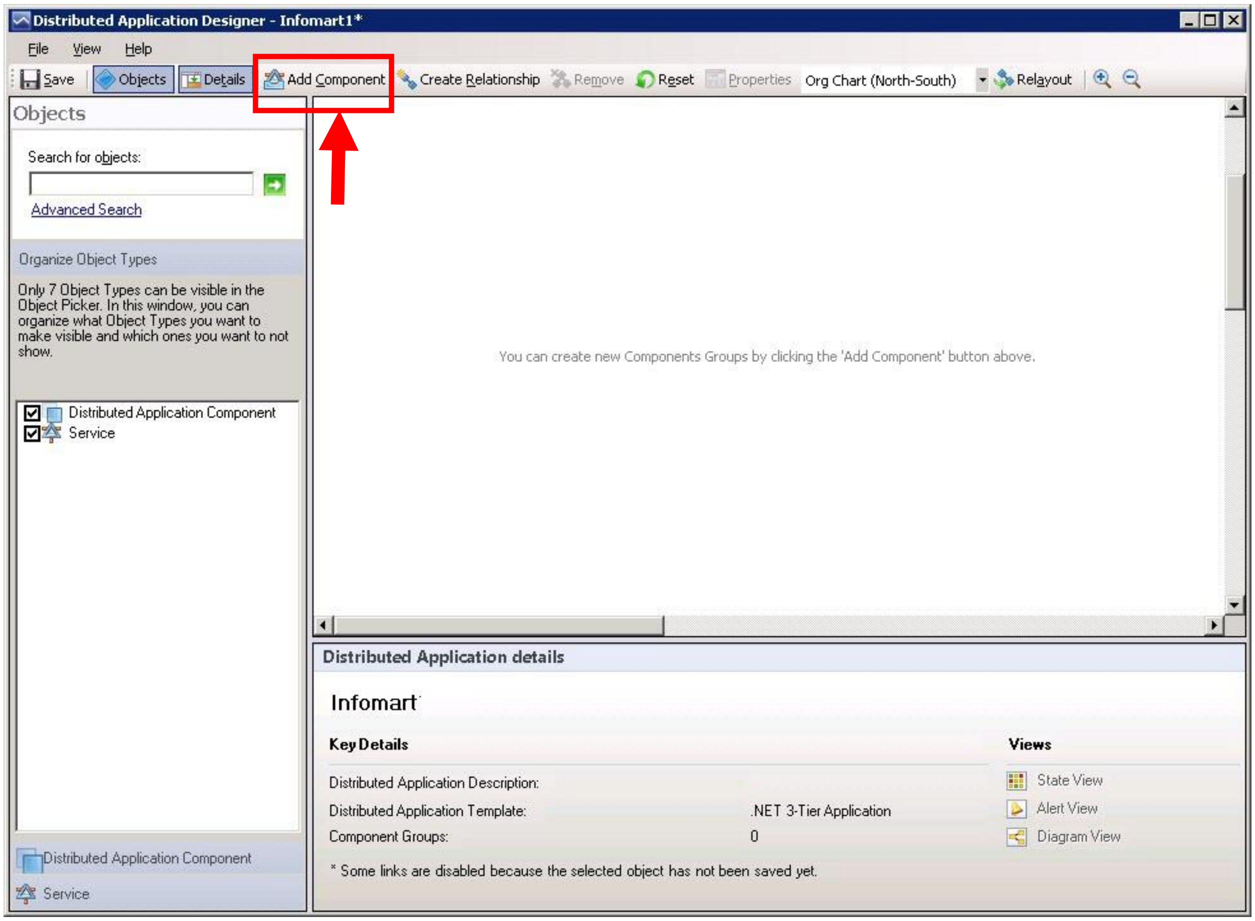
Distributed Application Template: .NET 3-Tier Application

Component Groups: 4

* Some links are disabled because the selected object has not been saved yet.

Figure 3.26: The Distributed Application Designer

5. The **Distributed Application Designer** window will display a default template for constructing the topology of the distributed application. Each 'box' in the default template represents a default component group that you can use in your service topology. As we do not intend to use this default template, delete it by selecting every 'box' in the template and pressing the **Delete** button on the keyboard. Once all the default component groups are removed, you can proceed to add new component groups (see Figure 3.27) using the **Distributed Application Designer** window.



Only 7 Object Types can be visible in the Object Picker. In this window, you can organize what Object Types you want to make visible and which ones you want to not show.

☑ Distributed Application Component
☑ Service

You can create new Components Groups by clicking the 'Add Component' button above.

Infomart

Key Details

Distributed Application Description:

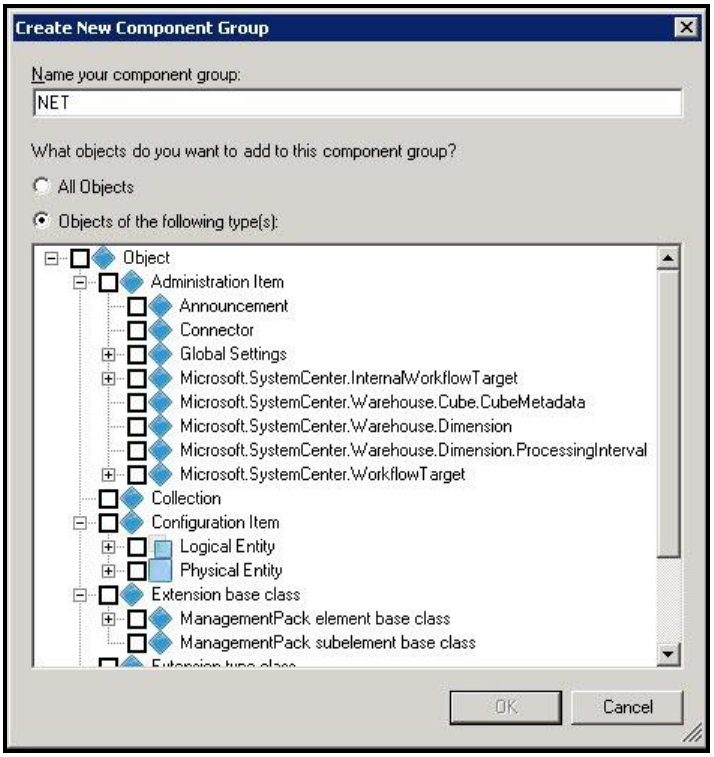
Distributed Application Template: .NET 3-Tier Application

Component Groups: 0

* Some links are disabled because the selected object has not been saved yet.

Figure 3.27: A message indicating that new component groups have to be added

6. To add a new component group, click on the **Add Component** button indicated by Figure 3.27. The **Create New Component Group** dialog box will then appear (see Figure 3.28). Let us begin topology building by adding the *Network Node* component in our example, *infoway_network*. For this, first create the *Network Node* component group using Figure 3.28 and then add the *infoway_network* component to it. To achieve this, first specify the name that you wish to assign to the *Network Node* component group in the **Name your component group** text box in Figure 3.28. For the purpose of our example, let us name this group, **NET**. Then, pick the **Objects of the following type(s)** option in Figure 3.28 and then scroll down the tree-structure below until you find the **eG Component** node (see Figure 3.29). Expand the node, and pick the **Network Node Component** group by selecting the check box alongside. Then, click the **OK** button in Figure 3.29.



Name your component group: NET

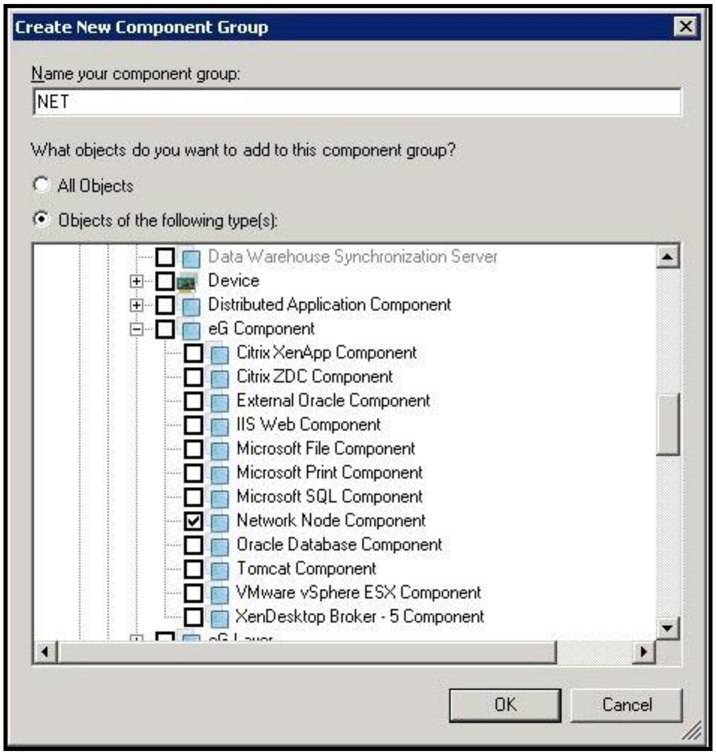
What objects do you want to add to this component group?

○ All Objects

● Objects of the following type(s):

- □ Object
  - □ Administration Item
    - □ Announcement
    - □ Connector
    - □ Global Settings
    - □ Microsoft.SystemCenter.InternalWorkflowTarget
    - □ Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata
    - □ Microsoft.SystemCenter.Warehouse.Dimension
    - □ Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval
    - □ Microsoft.SystemCenter.WorkflowTarget
  - □ Collection
  - □ Configuration Item
    - □ Logical Entity
    - □ Physical Entity
  - □ Extension base class
    - □ ManagementPack element base class
    - □ ManagementPack subelement base class
  - □ Extension type class

Figure 3.28: Naming the component group



Name your component group: NET

What objects do you want to add to this component group?

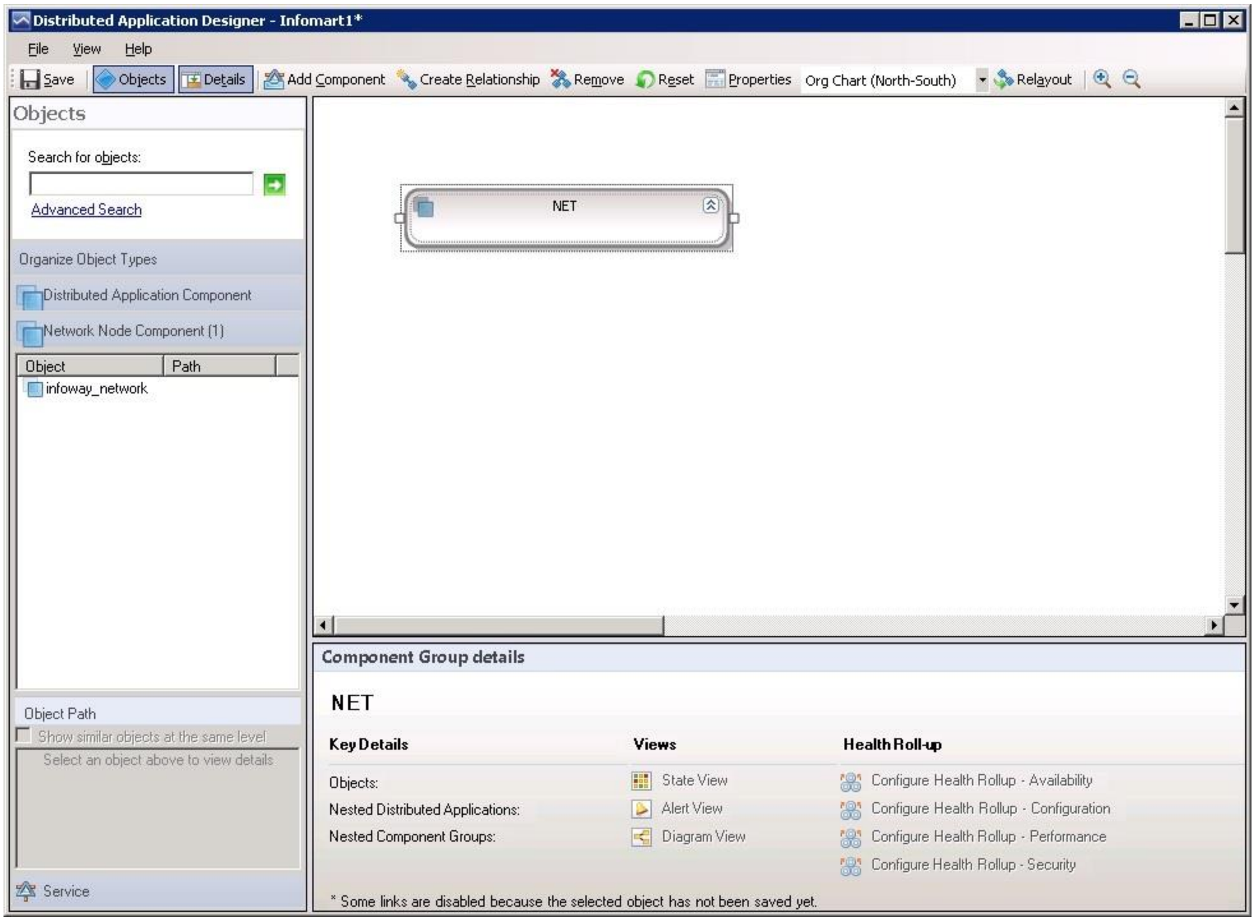
○ All Objects

● Objects of the following type(s):

- □ Data Warehouse Synchronization Server
- □ Device
- □ Distributed Application Component
- □ eG Component
  - □ Citrix XenApp Component
  - □ Citrix ZDC Component
  - □ External Oracle Component
  - □ IIS Web Component
  - □ Microsoft File Component
  - □ Microsoft Print Component
  - □ Microsoft SQL Component
  - ☑ Network Node Component
  - □ Oracle Database Component
  - □ Tomcat Component
  - □ VMware vSphere ESX Component
  - □ XenDesktop Broker - 5 Component
- □ eG Layer

Figure 3.29: Selecting the Network Node Component group

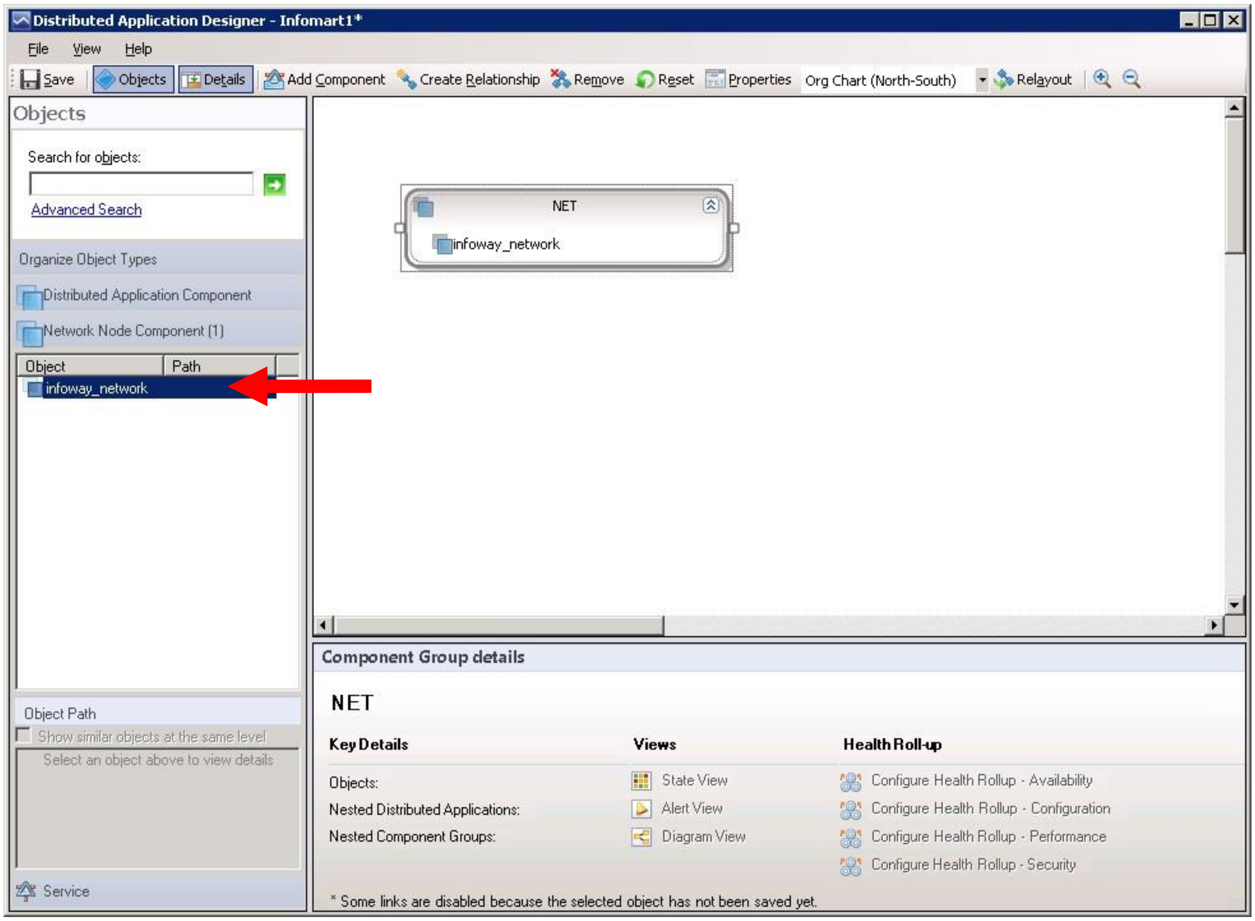
7. This will invoke Figure 3.30. In the **Distributed Application Designer** window of Figure 3.30, you will find a 'box' representing the new **NET** component group that you just added.


Distributed Application Designer - Infomart1*
File
View
Help
Save
Objects
Details
Add Component
Create Relationship
Remove
Reset
Properties
Org Chart (North-South)
Relayout
Objects
Search for objects:
Advanced Search
Organize Object Types
Distributed Application Component
Network Node Component (1)
Object
Path
infoway_network
Object Path
Show similar objects at the same level
Select an object above to view details
Service
NET
Component Group details
NET
Key Details
Views
Health Roll-up
Objects:
Nested Distributed Applications:
Nested Component Groups:
State View
Alert View
Diagram View
Configure Health Rollup - Availability
Configure Health Rollup - Configuration
Configure Health Rollup - Performance
Configure Health Rollup - Security

* Some links are disabled because the selected object has not been saved yet.

Figure 3.30: The newly added Network Node Component group appearing in the Designer window

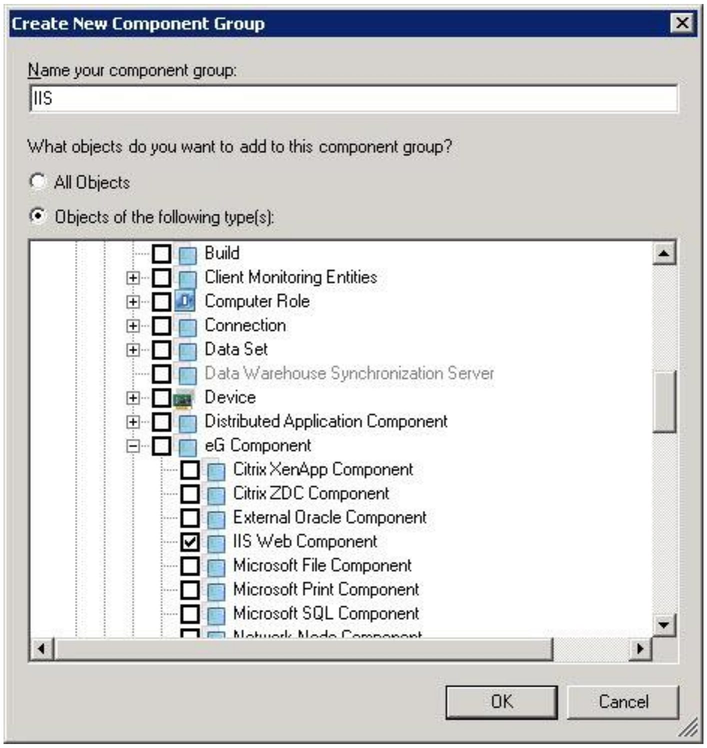
8. Next, click on the **Network Node Component** section in the left panel of Figure 3.30 (as indicated), to view all the eG-managed network nodes. From the list that appears beneath, select the *infoway_network* component, drag it, and drop it into the **NET** box in the right panel (see Figure 3.31).


Distributed Application Designer - Infomart1*
File
View
Help
Save
Objects
Details
Add Component
Create Relationship
Remove
Reset
Properties
Org Chart (North-South)
Relayout
Objects
Search for objects:
Advanced Search
Organize Object Types
Distributed Application Component
Network Node Component (1)
Object
Path
infoway_network
Object Path
Show similar objects at the same level
Select an object above to view details
Service
NET
infoway_network
Component Group details
NET
Key Details
Views
Health Roll-up
Objects:
Nested Distributed Applications:
Nested Component Groups:
State View
Alert View
Diagram View
Configure Health Rollup - Availability
Configure Health Rollup - Configuration
Configure Health Rollup - Performance
Configure Health Rollup - Security

* Some links are disabled because the selected object has not been saved yet.

Figure 3.31: Adding the *infoway_network* component to the NET component group you created

9. With that, the **Network Node Component** group has been created, and the *infoway_network* component has been added to it. The next step is to create the IIS web server component and configure a relationship between the network node and the web server. For this, click on the **Add Component** button in Figure 3.31 again. When the **Create New Component Group** dialog box of Figure 3.32 appears, name the new component group as **IIS**, select the **Object of the following type(s)** option, scroll down the object type list, expand the **eG Component** node, and select the **IIS Web Component** group.



Create New Component Group

Name your component group:

IIS

What objects do you want to add to this component group?

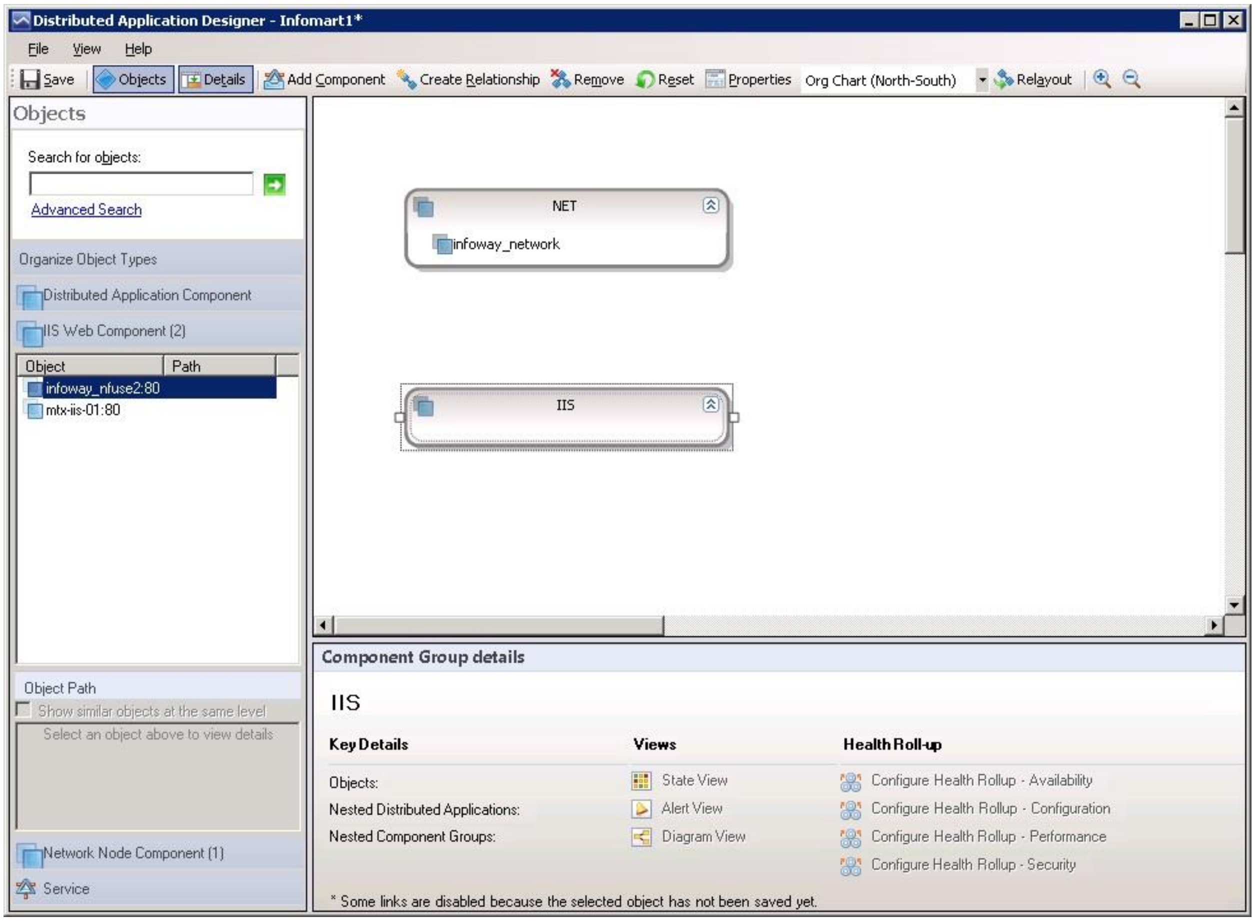
○ All Objects

● Objects of the following type(s):

- □ Build
- □ Client Monitoring Entities
- □ Computer Role
- □ Connection
- □ Data Set
- □ Data Warehouse Synchronization Server
- □ Device
- □ Distributed Application Component
- □ eG Component
  - □ Citrix XenApp Component
  - □ Citrix ZDC Component
  - □ External Oracle Component
  - ☑ IIS Web Component
  - □ Microsoft File Component
  - □ Microsoft Print Component
  - □ Microsoft SQL Component
  - □ Network Node Component

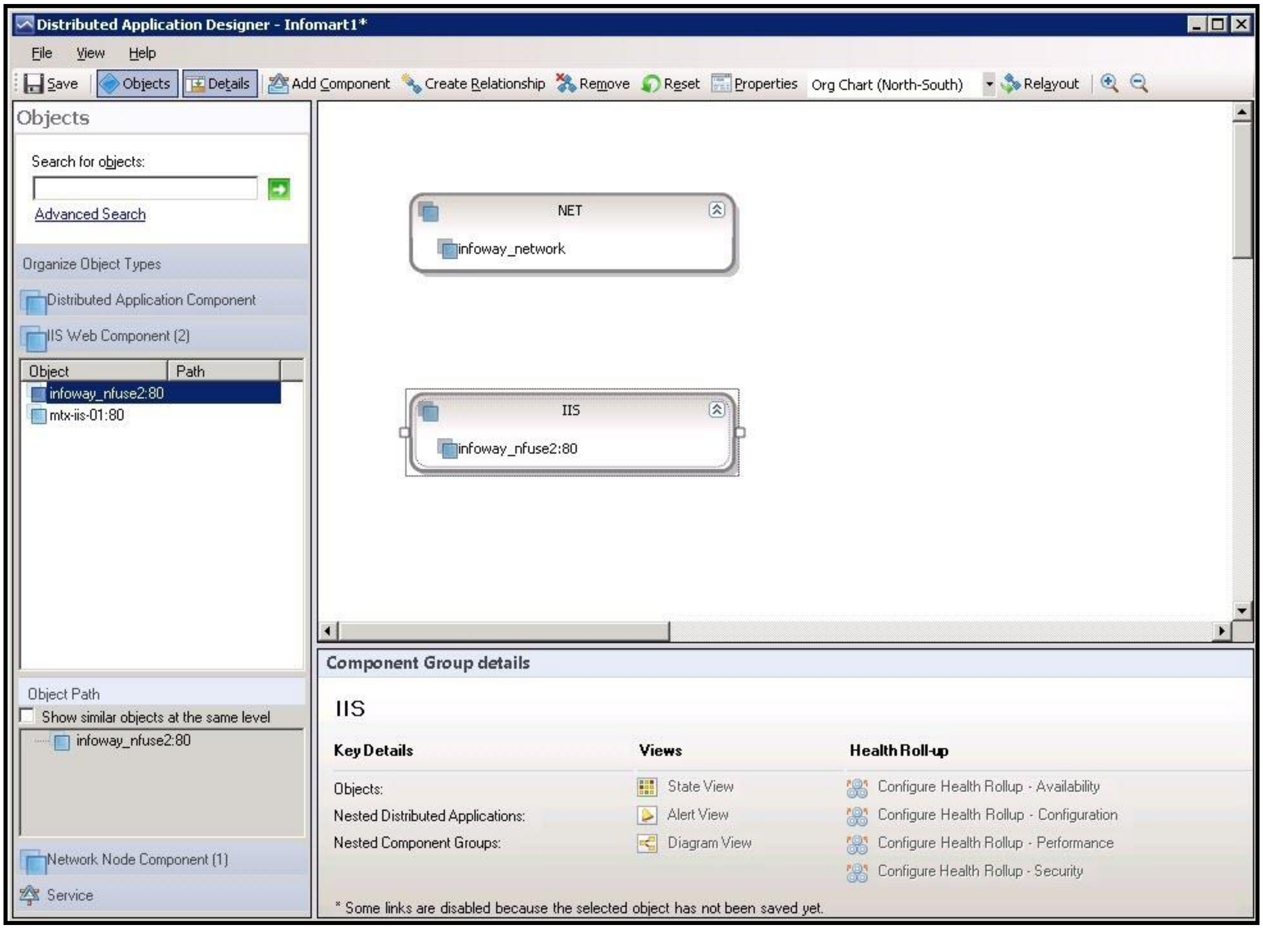
Figure 3.32: Creating an IIS Web Component group

10. The **Distributed Application Designer** window now reappears displaying a separate box for the **IIS** component group that you just created (see Figure 3.33). In the left panel of Figure 3.33, click on the **IIS Web Component** section (as indicated), select the *infoway_nfuse2:80* component from the web server list that appears, drag it, and drop it into the **IIS** box (as shown by Figure 3.34).



* Some links are disabled because the selected object has not been saved yet.

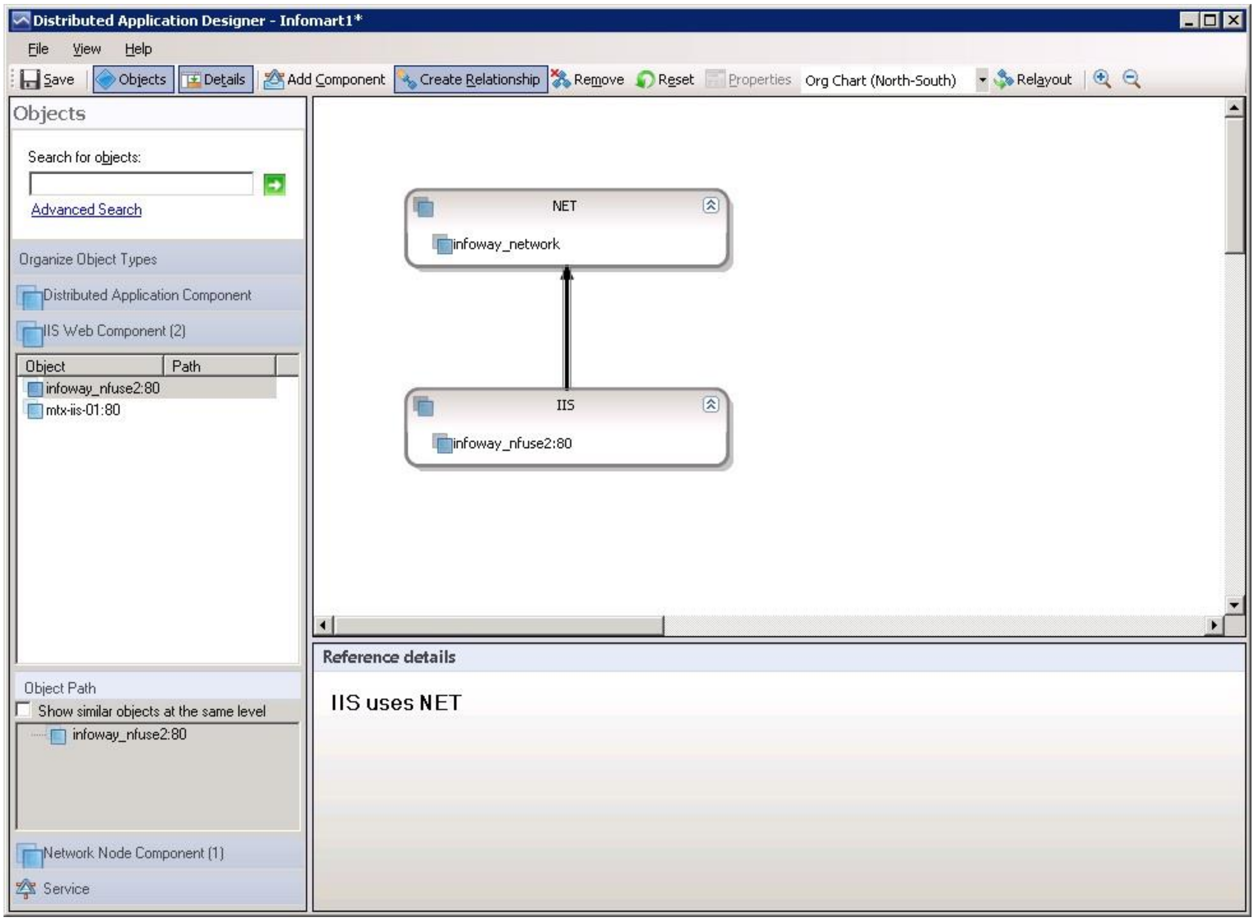
Figure 3.33: The IIS Web Component group appearing in the Designer window



* Some links are disabled because the selected object has not been saved yet.

Figure 3.34: Adding the *infoway_nfuse2:80* component to the IIS component group

11. Now, proceed to create a relationship between the IIS web component and the Network node component. For this, click on the **Create Relationship** button in Figure 3.34, and then draw an arrow connecting the **IIS** box in the **Designer** window with the **NET** box, as depicted by Figure 3.35. Since **IIS** is dependent on the **NET** component in our example for its functioning, the direction of the arrow should indicate the 'Uses' relationship – i.e., the arrow head should face the **NET** component. Once done, you can look up the **Reference Details** section of the **Designer** window to know whether the intended relationship has been established between the two components. For instance, in the case of our example, if this section displays the message, **IIS uses NET**, it is a clear indication that your 'relationship configuration' is correct.


Distributed Application Designer - Infomart1*
File View Help
Save Objects Details Add Component Create Relationship Remove Reset Properties Org Chart (North-South) Relayout
Objects
Search for objects:
Advanced Search
Organize Object Types
Distributed Application Component
IIS Web Component (2)
Object Path
infoway_nfuse2:80
mtx-iis-01:80
Object Path
Show similar objects at the same level
infoway_nfuse2:80
Network Node Component (1)
Service
NET
infoway_network
IIS
infoway_nfuse2:80
Reference details

IIS uses NET

Figure 3.35: Creating a relationship between the IIS and NET components

12. Likewise, proceed to add the other component groups and components as required by the *Infomart* application, and configure the same relationship between these components as depicted by the service topology preview of Figure 3.23. Figure 3.36 below depicts the final topology of the *Infomart* application.

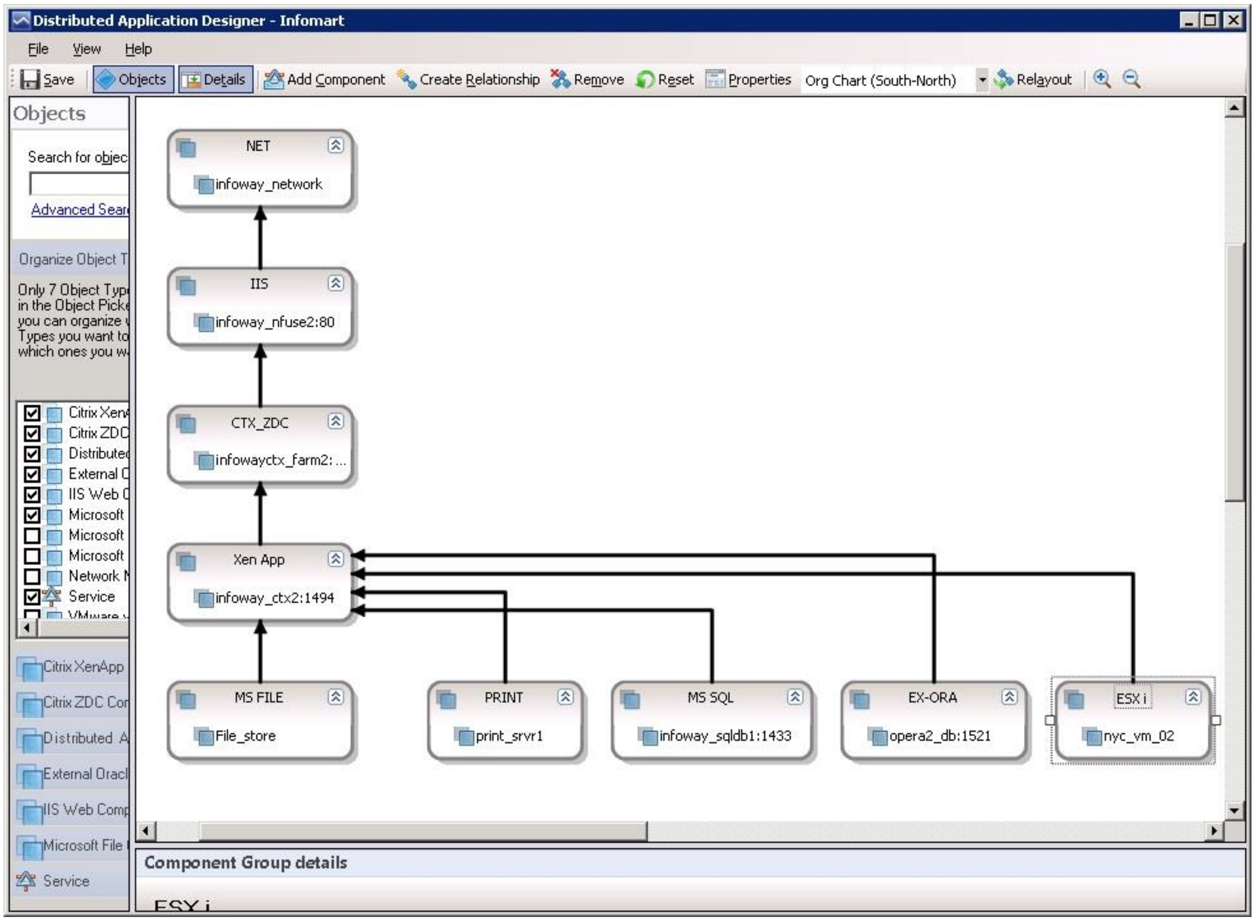
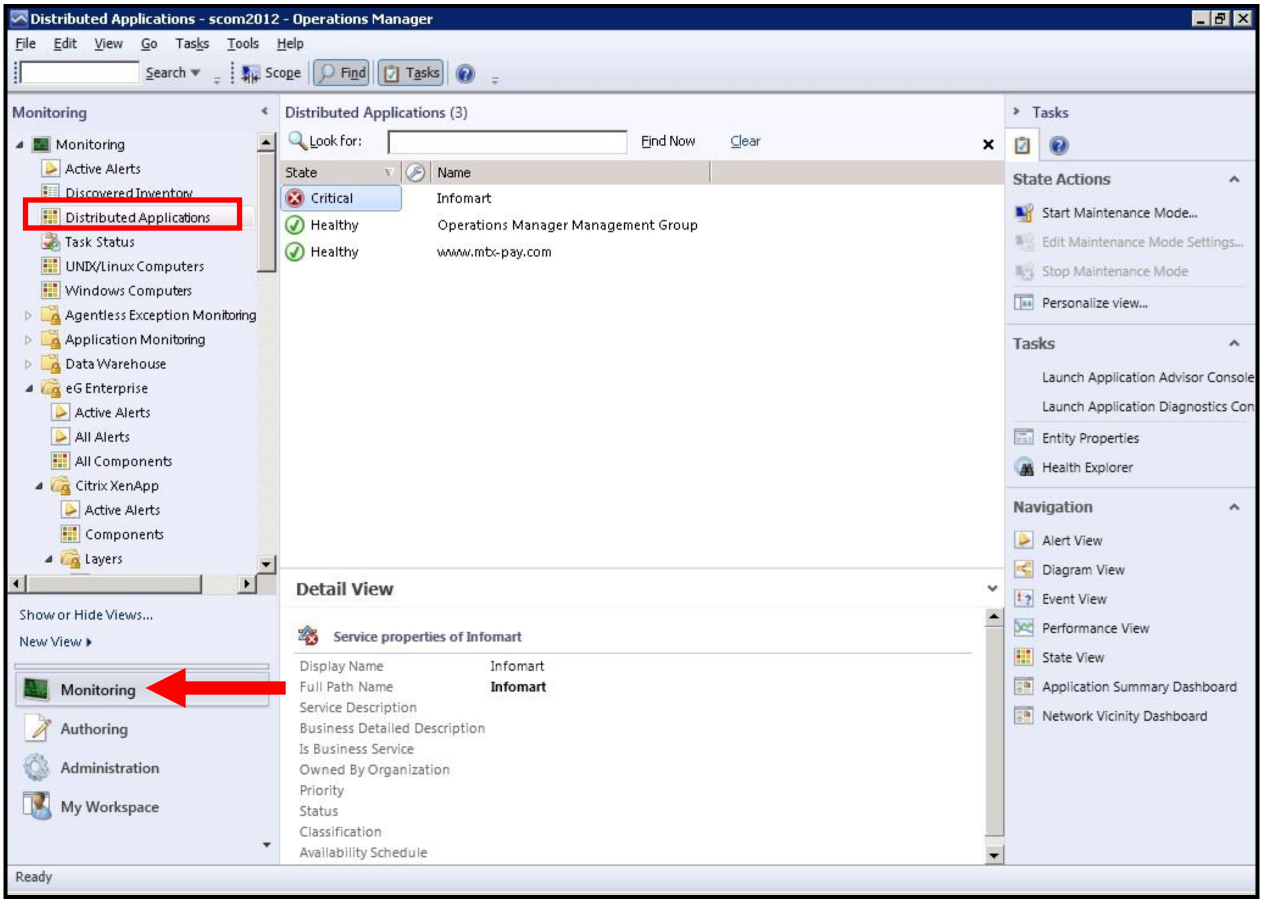


Figure 3.36: The fully-configured topology of the *Infomart* distributed application

13. With that, the topology of the distributed application has been fully configured. Once eG Enterprise is integrated with SCOM, the SCOM connector updates the state of the distributed application and its member components based on state computations performed in eG. To view the current state of the *Infomart* application, move to the **Monitoring** view, by clicking on the **Monitoring** tab page indicated by Figure 3.37. Then, click on the **Distributed Applications** sub-node in the **Monitoring** tree-structure in the left panel of Figure 3.37.

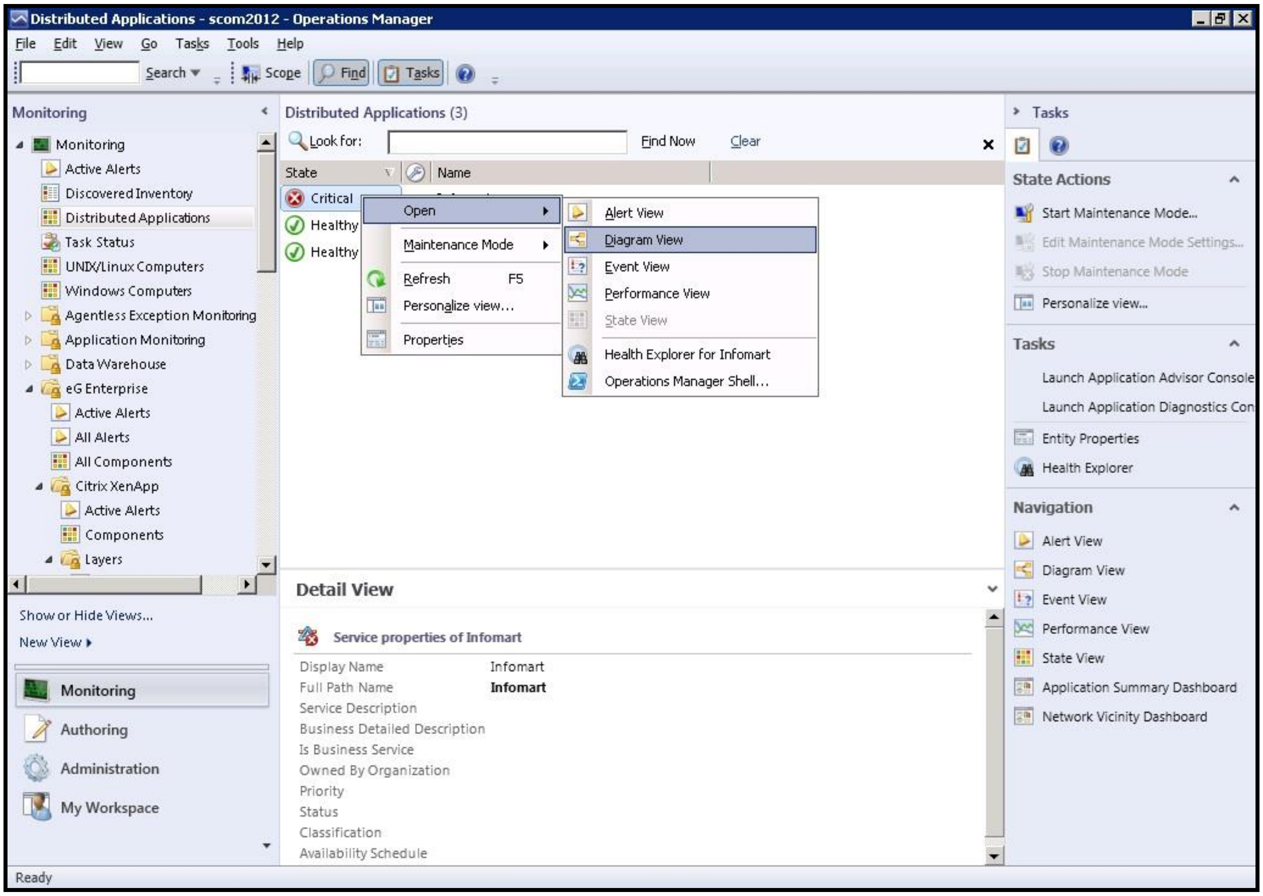


State	Name
Critical	Infomart
Healthy	Operations Manager Management Group
Healthy	www.mtx-pay.com

Display Name	Infomart
Full Path Name	**Infomart**
Service Description	
Business Detailed Description	
Is Business Service	
Owned By Organization	
Priority	
Status	
Classification	
Availability Schedule	

Figure 3.37: Viewing the state of the Infomart distributed application in the Monitoring mode

14. The right panel of Figure 3.37 will then display all the **Distributed Applications** that have been configured and their current state. From Figure 3.37, it is evident that the *Infomart* application is in a **Critical** state. To know which component engaged in the delivery of the *Infomart* application is responsible for this **Critical** problem, view the topology map of the *Infomart* application. For this, right-click on the **State** of that application (which is currently, **Critical**), and follow the menu sequence: Open -> Diagram View (see Figure 3.38).



Service properties of Infomart

Display Name	Infomart
Full Path Name	**Infomart**
Service Description	
Business Detailed Description	
Is Business Service	
Owned By Organization	
Priority	
Status	
Classification	
Availability Schedule	

Figure 3.38: Accessing the topology map of the Infomart application in the Monitoring mode

15. Figure 3.39 will then appear, displaying an ‘‘abridged” topology of the *Infomart* application; this topology indicates that while a single component is in the **Critical** state, some components are in the **Healthy** state and some others in the **Warning** state. From Figure 3.39, we can easily infer that the **ESXi** component is in the **Critical** state and is hence responsible for the dip in the performance of the *Infomart* application. Could this **Critical** issue have caused some components to be in the **Warning** state? Only detailed investigation can confirm that. To begin with however, let us focus on the **Critical** issue with the **ESXi** component.

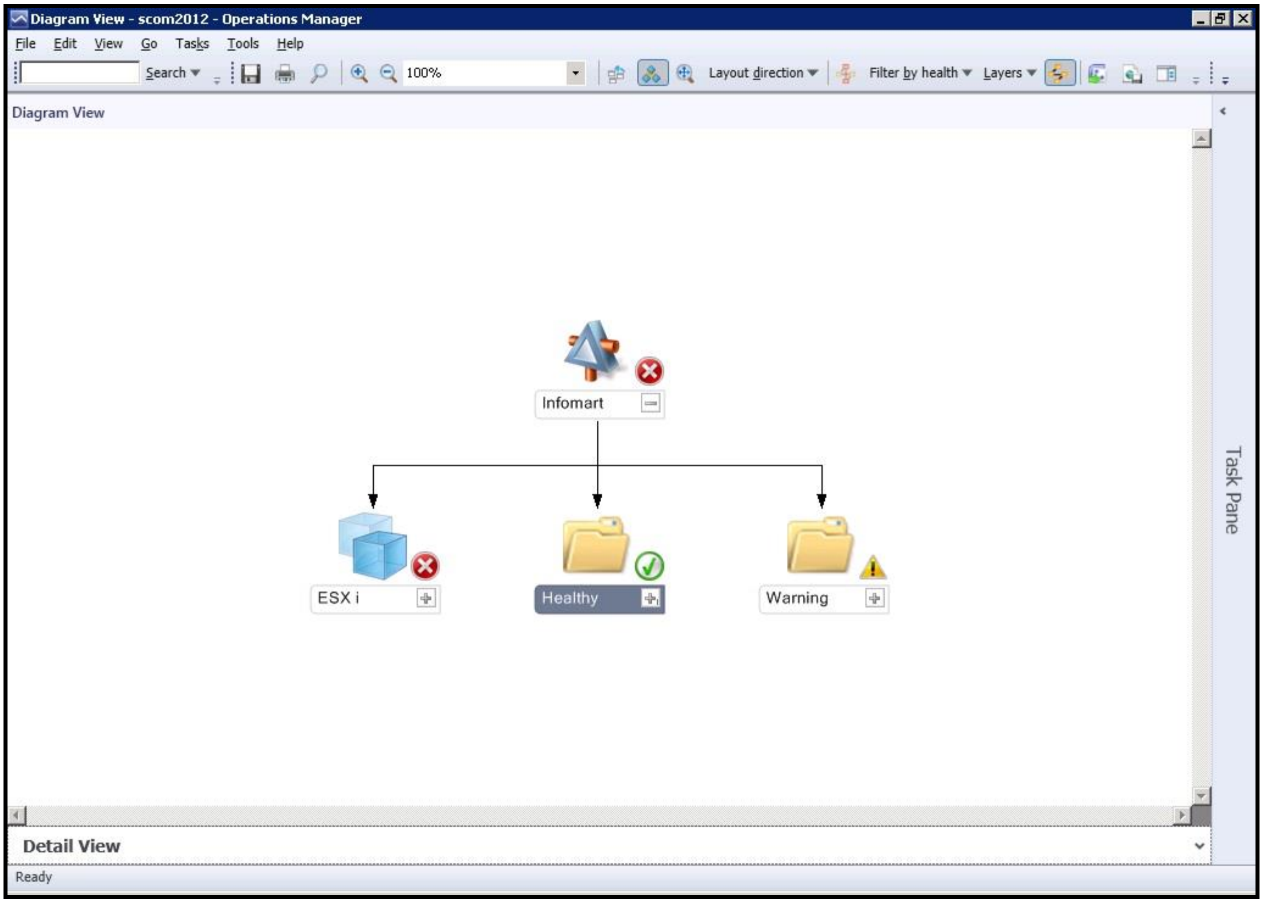


Figure 3.39; The abridged distributed application topology indicating the component in the Critical state

16. From the topology map of Figure 3.39, you can drill down further to discover where in the **ESXi** component's architecture the **Critical** issue occurred and which eG test caused it. To drill down, click on the **+** button adjacent to **ESXi** in Figure 3.39. This will reveal the name of the problematic **ESXi** component, which is *nyc_vm_02* in the case of our example (see Figure 3.40). Clicking on the **+** button next to *nyc_vm_02* will lead you to the layer in which the problem occurred – this is the **Operating System** layer in our example. By drilling one level down, will you can determine the exact test that reported the problem – this is the **System – Console** test in the case of our example. It is now apparent that the **Critical** anomaly occurred in the service **console** of the *nyc_vm_02* component. From Figure 3.40, it is also clear that the **Critical** problem with the **System-Console** test has rippled and affected the performance of the **CPU-Esx** test, forcing SCOM to signal the problem with that test as a **Warning**. To know the exact measures that captured these abnormalities, you have to use SCOM's Health Explorer. Refer to Section 3.6 of this document to know how to use the Health Explorer.

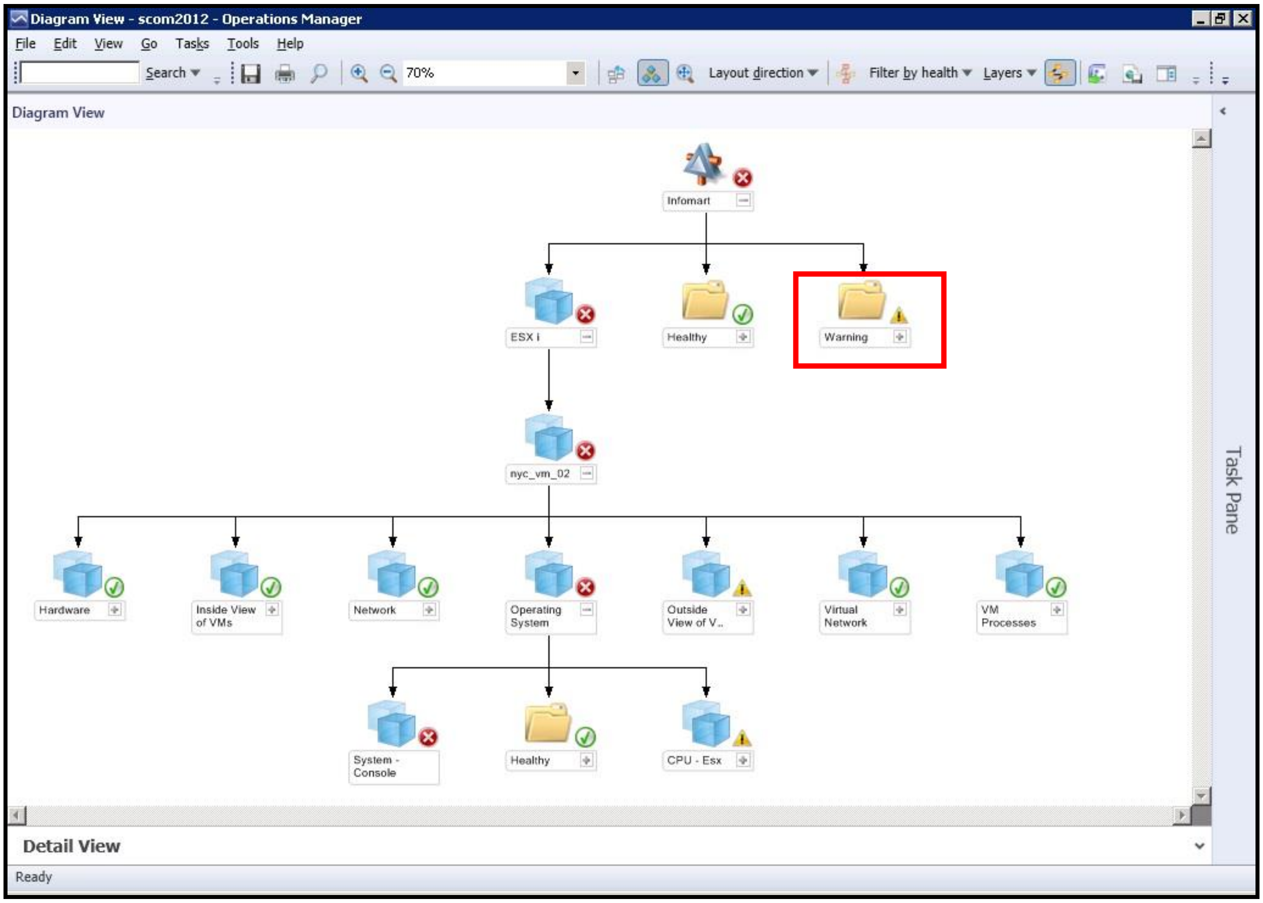


Figure 3.40: Drilling down from the ESXi component to know which eG test reported the Critical problem

17. Now, let us drill down the **Warning** node under **Infomart** in the topology map. This reveals that the **IIS** web server component and the **XenApp** server component in our example are currently in the **Warning** state, indicating that **Major** problems have been noticed in these two components. Also, the 'dotted arrow' in blue connecting the **ESXi** component and the **XenApp** component (see Figure 3.41) reveals that the XenApp server depends upon the ESXi server for its proper functioning; this implies that the **Critical** issue with the **ESXi** component impacted the performance of the XenApp server that was running on one of the VMs of the ESXi server, thus creating a **Major** problem with the XenApp server. This is how SCOM indicates cause-effect equations and helps you isolate the source of issues with your distributed applications –i.e., business services.

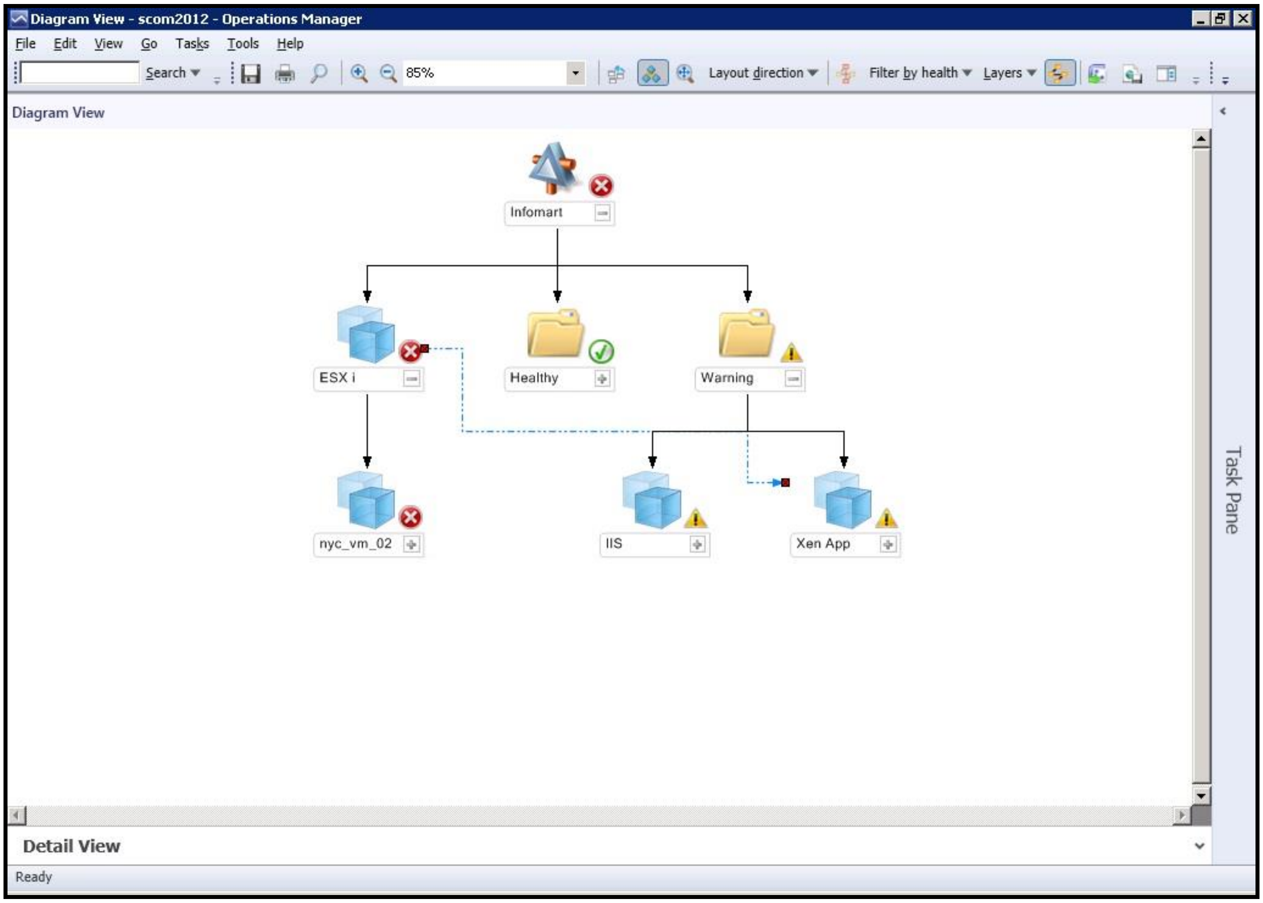


Figure 3.41: End-to-end correlation using SCOM

3.9 Publishing Dashboards

The SCOM console provides users with instant access to custom My Dashboards published from the eG monitoring console. This section explains the procedure for enabling access to these dashboards.

3.9.1 Pre-requisites for Publishing Custom MyDashboards in the SCOM Console

Before publishing the custom MyDashboards in the SCOM console, the following pre-requisites should be fulfilled:

- SCOM version should be **SCOM 2012 SP1 with Update Rollup 6 (or above)** (OR) **SCOM 2012 R2 with Update Rollup 2 or above**

- Make sure that the latest version of Microsoft.SystemCenter.Visualization.Library.mpb and Microsoft.SystemCenter.Visualization.Component.Library.mpb management packs are imported.

- MyDashboard names can include only the following characters: alphabets, integers, underscore (_), hyphen (-), and white spaces.

- Make sure that the MyDashboard is **Published** using the eG monitoring console before attempting to access it in the SCOM console.

- By default, SCOM publishes dashboards to Internet Explorer v7. However, custom dashboards published using eG can be viewed only using Internet Explorer v10 (or above). To be able to view eG dashboards in the SCOM console, you first need to make sure that the SCOM console is registered with Internet Explorer v10 (or above). To achieve this, follow the steps below:

- On the SCOM connector host, open the command prompt as administrator and move to *eGconsoletaskHandler* setup installed directory.

- Run the following command:

  eGconsoletaskHandler.exe presetup

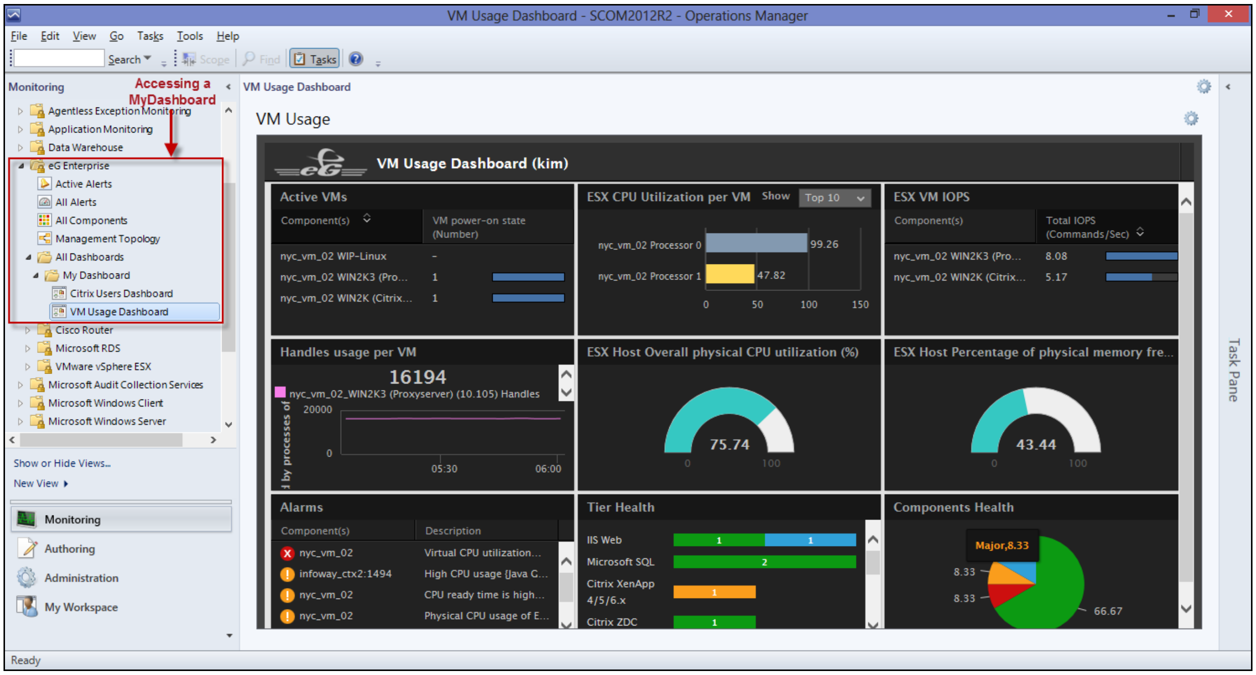
- Re-open the SCOM console.

3.9.2 Automated Dashboard Views

To view the custom MyDashboards, do the following once the aforesaid pre-requisites are fulfilled:

1. Open the SCOM console.

2. Expand the **eG Enterprise** node in the left panel of the console. Then, expand the **All Dashboards** sub-node within. This will reveal the **My Dashboard** node. Expand this node to view all the MyDashboards created by or shared with the user whose credentials were used for integrating the eG manager with SCOM. To view a dashboard, click on it. The dashboard will then be displayed in the left panel (see Figure 3.42).



Component(s)	VM power-on state (Number)
nyc_vm_02 WIP-Linux	-
nyc_vm_02 WIN2K3 (Pro...	1
nyc_vm_02 WIN2K (Citrix...	1

Component(s)	Total IOPS (Commands/Sec)
nyc_vm_02 WIN2K3 (Pro...	8.08
nyc_vm_02 WIN2K (Citrix...	5.17

Component(s)	Description
nyc_vm_02	Virtual CPU utilization...
infoway_ctx2:1494	High CPU usage (Java G...
nyc_vm_02	CPU ready time is high...
nyc_vm_02	Physical CPU usage of E...

Figure 3.42: Viewing a custom MyDashboard in the SCOM console

3.10 Alert Filter

By default, all eG alarms are displayed in the SCOM console. If required, you can have eG alarms of specific priorities/severities alone to be displayed in the SCOM console. To achieve this, do the following:

1. Edit the **eg_scom.ini** file in the **<EG_MANAGER_INSTALL_DIR>\manager\config** directory.
2. By default, the **StatePriority** parameter in the **[MISC_ARGS]** section is set to *All*, indicating that all eG alarms are displayed in the SCOM console by default.
3. To ensure that alarms of a specific priority are alone displayed in the SCOM console, set the **StatePriority** parameter to a specific priority. For instance, to display only Critical alarms in the SCOM console, your specification should be:

   StatePriority=Critical

4. You can even provide a comma-separated list of priorities against **StatePriority**. For instance:

   StatePriority=Critical,Major

5. Finally, save the file.

3.11 Performance Tuning of the eG SCOM Connector

To minimize the load on the SCOM connector and to ensure its peak performance at all times, eG Enterprise sends the measures of only the 'abnormal' descriptors to the SCOM connector by default. This default setting is governed by the *DisplayDescriptors* parameter and the *DescriptorsToTransmit* parameter in the **eg_scom.ini** file (in the **<EG_INSTALL_DIR>\manager\config** directory). By default, the *DisplayDescriptors* flag, which is in the **[MISC_ARGS]** section of the file, is set to *concise*. This indicates that measures reported by a concise set of descriptors alone will be communicated to the SCOM connector. To know which are these descriptors, take a look at the default setting of the *DescriptorsToTransmit* parameter in the **[CONCISE_SETTINGS]** section of the file. This parameter is set to *bad* by default. This indicates that measures of 'abnormal' descriptors will only be transmitted to the SCOM connector at all times. For instance, take the case of the *Disk Space* test, which reports metrics for descriptor *C* and *D*. Say that the descriptor *C* is in an abnormal state and *D* is in a normal state. In this case, the default setting of the *DescriptorsToTransmit* parameter will ensure that only the descriptor *C* and its measures are sent to the connector, and not descriptor D.

If you want the measures of all descriptors of all tests to be transmitted to the SCOM connector, regardless of their state, then set the *DisplayDescriptors* parameter to *All*. Once this is done, then the **[CONCISE_SETTINGS]** section and the parameters within will no longer apply.

On the other hand, if you want the measures of all descriptors (i.e., both normal and abnormal descriptors) of 'abnormal' tests alone to be transmitted to the SCOM connector, then, do the following:

1. Set the *DisplayDescriptors* parameter in the **[MISC_ARGS]** section to *concise*.
2. Set the *DescriptorsToTransmit* parameter in the **[CONCISE_SETTINGS]** section to *all*.

In this case however, normal tests and their descriptors will be disregarded. For instance, if the descriptor *C* of *Disk Space* test is in an abnormal state and descriptor *D* is in a normal state, then the measures of both descriptor *C* and *D* will be sent to the SCOM connector. However, if a *Disk Activity* test exists, with all descriptors in a normal state, then this test and all its descriptors will be ignored.

Since the *all* setting of the *DescriptorsToTransmit* parameter ensures that even normal descriptors (of abnormal tests) are considered, the connector may sometimes experience a descriptor overload – this is commonplace where tests report metrics for hundreds of descriptors. To minimize load on the connector under such circumstances, a *DescriptorMaxLimit* parameter is available in the **[CONCISE_SETTINGS]** section. This parameter applies only if the

DisplayDescriptors flag is set to *concise* and the *DescriptorsToTransmit* parameter is set to *all*. By default, the *DescriptorsMaxLimit* parameter is set to *10*. This means that for each 'abnormal test' (that supports descriptors), eG Enterprise will send the measures of a maximum of 10 descriptors alone to the SCOM connector. These 10 descriptors will include both normal and abnormal descriptors. If the 'abnormal' test supports more than 10 descriptors, then eG Enterprise will automatically send the measures of the 'abnormal' descriptors alone to the SCOM connector.

3.12 Updating SCOM with Measure-level Changes Made Post Integration

By default, after the eG manager is integrated with SCOM, if any *measure-level* changes are made using the eG management console, then such changes will not be reflected in the SCOM console. These changes include:

- Adding/removing a new measure using the Integration Console plugin
- Changing the display name of a measure using the Integration Console plugin
- Removing an aggregate measure from an aggregate test
- Changing the display name of an aggregate measure
- Adding an aggregate measure to an aggregate test

To update SCOM with these changes, do the following:

1. Stop the eG SCOM Connector service.
2. Open the command prompt on the Connector host as an *administrator* and switch to the **<EG_SCOM_CONNECTOR_INSTALL_DIR>**.
3. Run the following command:

   MpconfigSyncup.exe
4. Finally, start the eG SCOM Connector service

Note

If you change the display name of the measure of a pre-defined Performance Rating test post the eG-SCOM integration, then this change will not be supported by the Connector, even if **MpconfigSyncup** is used.

You can enable debugging of the **MpconfigSyncup** tool using the **MPConfigSyncUp.exe.config** file. Once debugging is enabled, an **MpConfigSyncUp.log** file will be created in the **Logs** folder in the **<EG_SCOM_CONNECTOR_INSTALL_DIR>**.

4

Uninstalling the eG SCOM Connector

Uninstalling the eG SCOM Connector involves the following broad steps:

1. Deleting the connector service from the local machine
2. Deleting the connector configuration from the SCOM server
3. Deleting the eG management pack from the SCOM server
4. Removing the installation files of the eG SCOM Connector from the connector host
5. Uninstalling the eG SCOM Console tasks

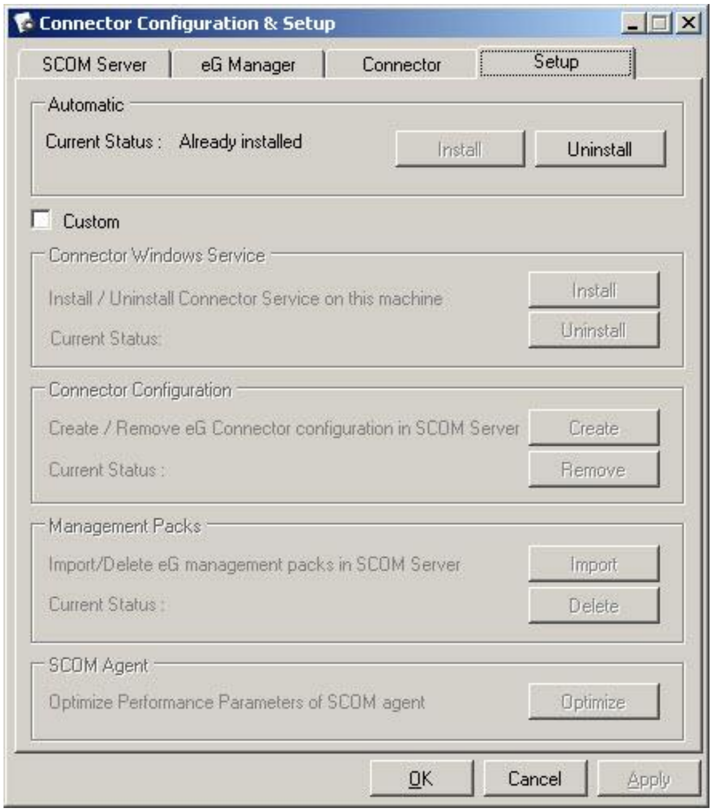
While the top 3 steps are to be performed using the **Configuration & Setup Tool** of the eG SCOM Connector, the last two steps require that you use the Windows Control Panel.

This chapter discusses these steps in detail.

4.1 Deleting the Connector Service, the eG SCOM Connector Configuration, and the eG Management Pack

To remove the eG management pack and connector configuration from the SCOM server, and to delete the connector service from the connector host, do the following:

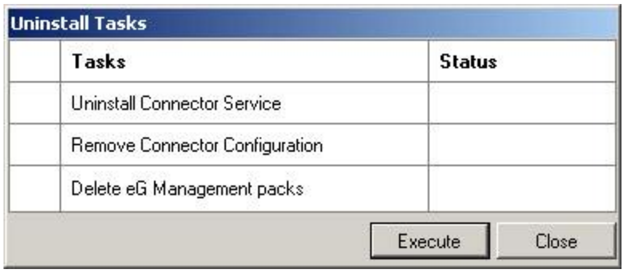
1. Launch the **Configuration & Setup Tool** using the menu sequence *Start -> Programs -> eG SCOM Connector*.
2. When the **Connector Configuration & Setup** dialog box appears (see Figure 4.1), click on the **Setup** tab page therein.


Connector Configuration & Setup
SCOM Server
eG Manager
Connector
Setup
Automatic
Install
Uninstall
□ Custom
Connector Windows Service
Install / Uninstall Connector Service on this machine
Current Status:
Install
Uninstall
Connector Configuration
Create / Remove eG Connector configuration in SCOM Server
Current Status :
Create
Remove
Management Packs
Import/Delete eG management packs in SCOM Server
Current Status :
Import
Delete
SCOM Agent
Optimize Performance Parameters of SCOM agent
Optimize
OK
Cancel
Apply

Current Status : Already installed

Figure 4.1: Clicking on the Setup tab page for uninstalling the connector configuration

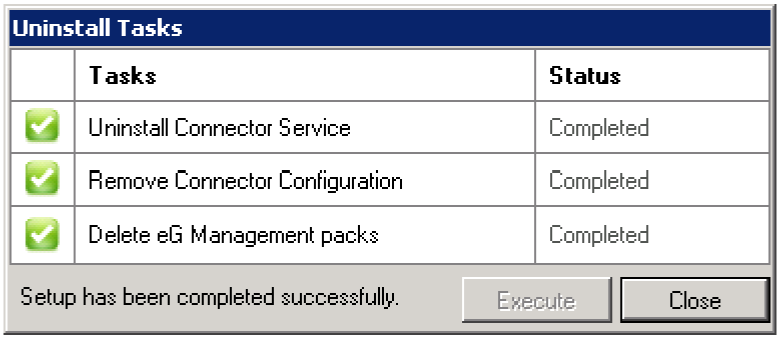
3. Click on the **Uninstall** button in the **Automatic** section of Figure 4.1. This will invoke Figure 4.2, which will list all the **Tasks** the uninstallation will perform.



	Tasks	Status
	Uninstall Connector Service	
	Remove Connector Configuration	
	Delete eG Management packs	

Figure 4.2: The tasks performed by the uninstallation

4. Click on the **Execute** button in Figure 4.2 to begin performing the **Tasks** listed. The uninstallation process will perform each task automatically and update the **Status** column of Figure 4.2 accordingly. When all tasks are completed, the **Status** column will indicate the same (see Figure 4.3).



Uninstall Tasks

	Tasks	Status
✓	Uninstall Connector Service	Completed
✓	Remove Connector Configuration	Completed
✓	Delete eG Management packs	Completed

Setup has been completed successfully.

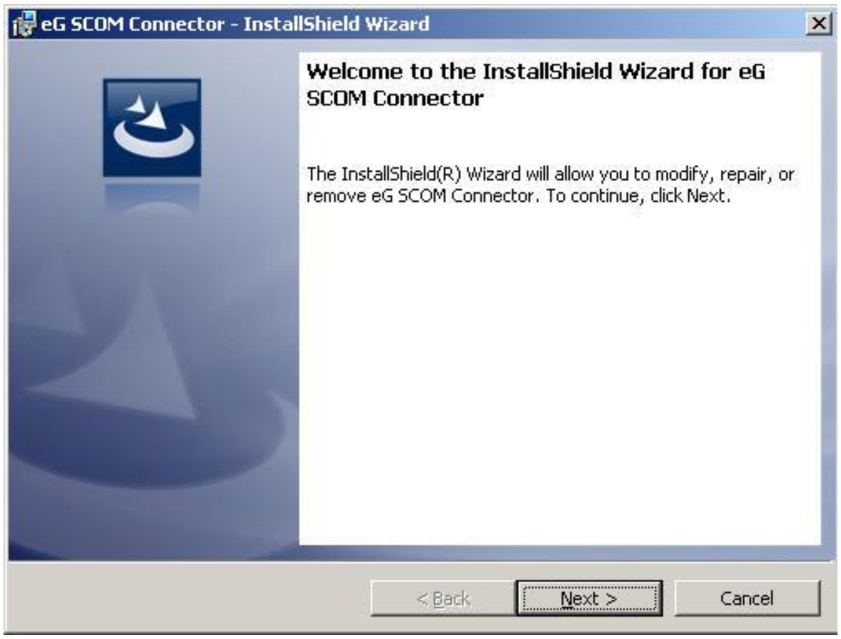
Figure 4.3: Completion of all uninstallation tasks

5. Click the **Close** button in Figure 4.3 to close the **Uninstall Tasks** window.

4.2 Removing the Installation Files of the eG SCOM Connector from the Target Host

To achieve this, do the following:

1. Login to the eG SCOM Connector host.
2. Go to Start -> Control Panel -> Add/Remove Programs
3. Select the **eG SCOM Connector** service fromthe list of Programs installed on that host, and click on **Remove**.
4. Figure 4.4 will then open. Click the **Next** button to proceed.

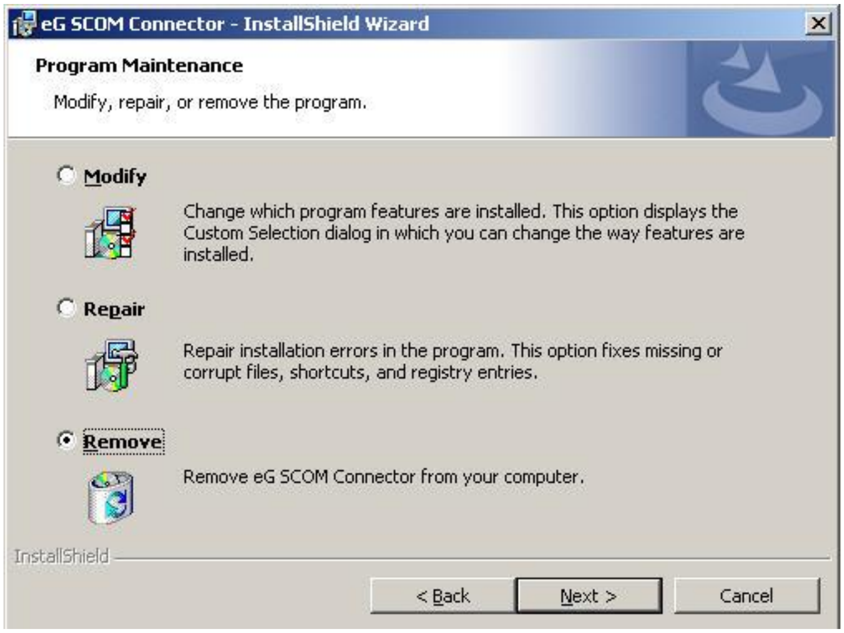


Welcome to the InstallShield Wizard for eG SCOM Connector

The InstallShield(R) Wizard will allow you to modify, repair, or remove eG SCOM Connector. To continue, click Next.

Figure 4.4: The Welcome screen of the uninstallation

5. From Figure 4.5 that then appears, pick the **Remove** option to uninstall the connector.



eG SCOM Connector - InstallShield Wizard

Program Maintenance

Modify, repair, or remove the program.

○ Modify

Change which program features are installed. This option displays the Custom Selection dialog in which you can change the way features are installed.

○ Repair

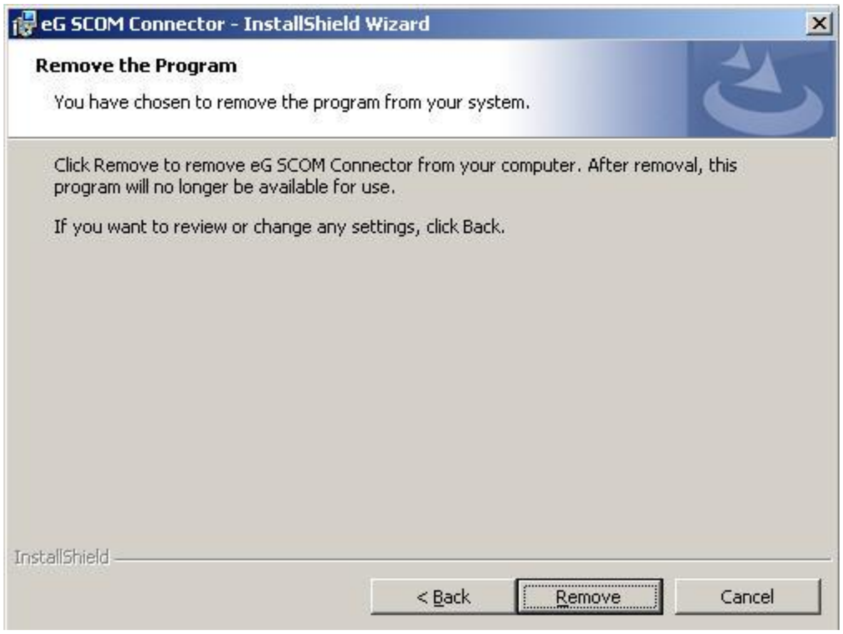
Repair installation errors in the program. This option fixes missing or corrupt files, shortcuts, and registry entries.

● Remove

Remove eG SCOM Connector from your computer.

Figure 4.5: Select the Remove option

6. When Figure 4.6 appears, click the **Remove** button here to confirm the uninstallation of the connector.



eG SCOM Connector - InstallShield Wizard

Remove the Program

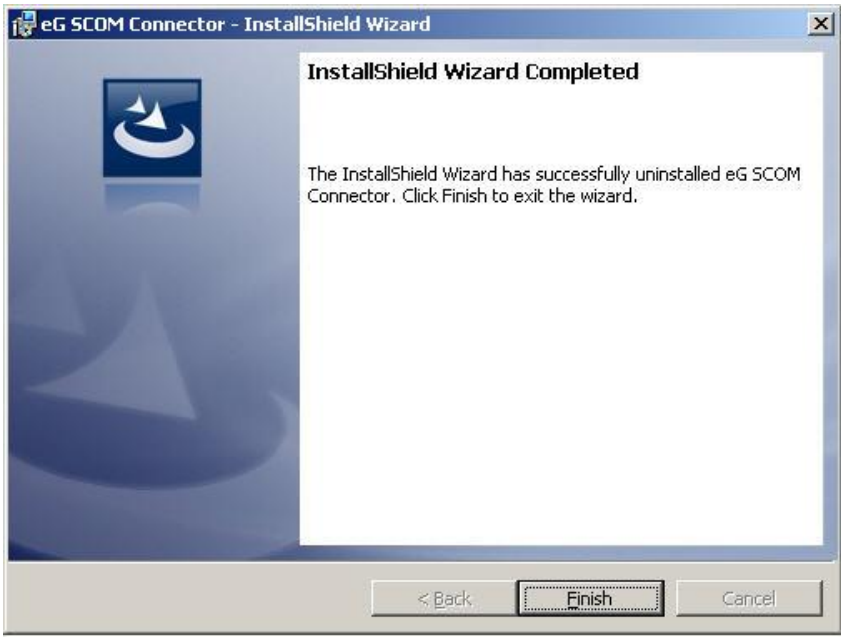
You have chosen to remove the program from your system.

Click Remove to remove eG SCOM Connector from your computer. After removal, this program will no longer be available for use.

If you want to review or change any settings, click Back.

Figure 4.6: Confirming the connector uninstallation

7. Once uninstallation completes, Figure 4.7 will appear. Click **Finish** here to exit the wizard.



InstallShield Wizard Completed

The InstallShield Wizard has successfully uninstalled eG SCOM Connector. Click Finish to exit the wizard.

Figure 4.7: End of uninstallation

4.3 Uninstalling the eG SCOM Console Tasks Application

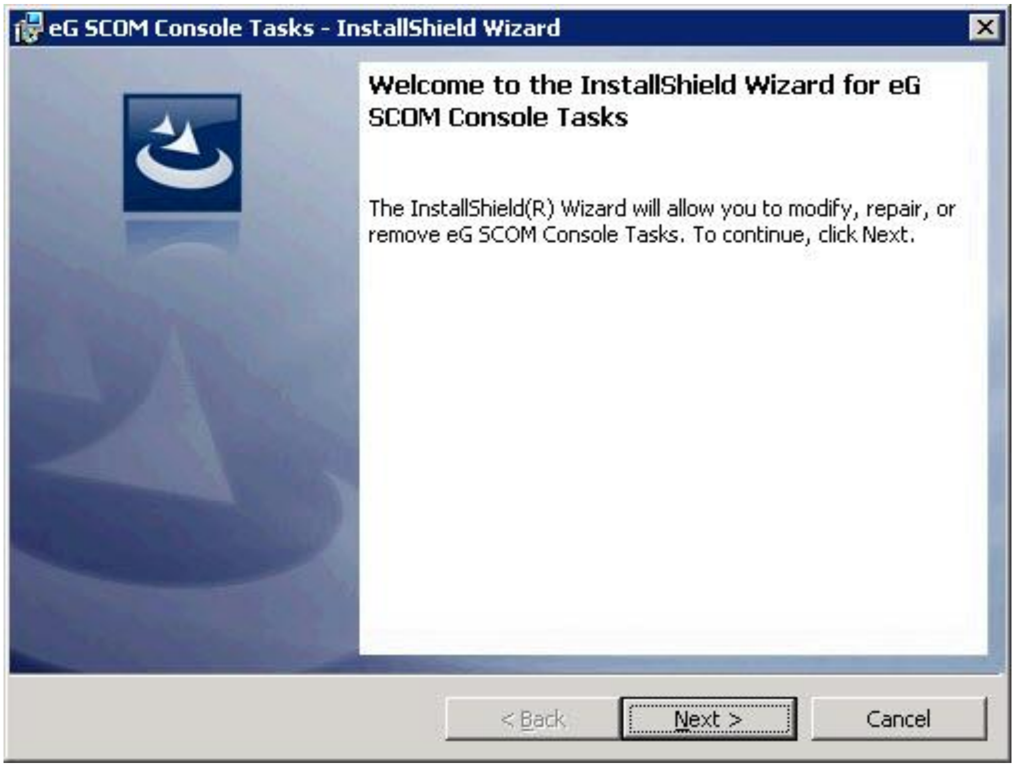
The **eG SCOM Console Tasks** application enables users to the SCOM console to instantly launch the eG monitoring console from the SCOM console itself. This way, users can take the help of analytical and daignostic tools provided by the eG monitoring console to investigate performance setbacks experienced by eG-managed components.

Before uninstalling this application, you will have to stop all running instances of the applicaton. For this, go to the command prompt in 'Run as administrator' mode, switch to the install directory of the **eG SCOM Console Tasks** application and run the following command:

eGConsoleTaskHandler.exe StopAllInstances

Then, proceed to uninstall the application. To uninstall, do the following:

1. Login to the eG SCOM Connector host.
2. Go to Start -> Control Panel -> Add/Remove Programs
3. Select the **eG Console Tasks** application from the list of Programs installed on that host, and click on **Remove.**
4. Figure 4.4 will then open. Click the **Next** button to proceed.



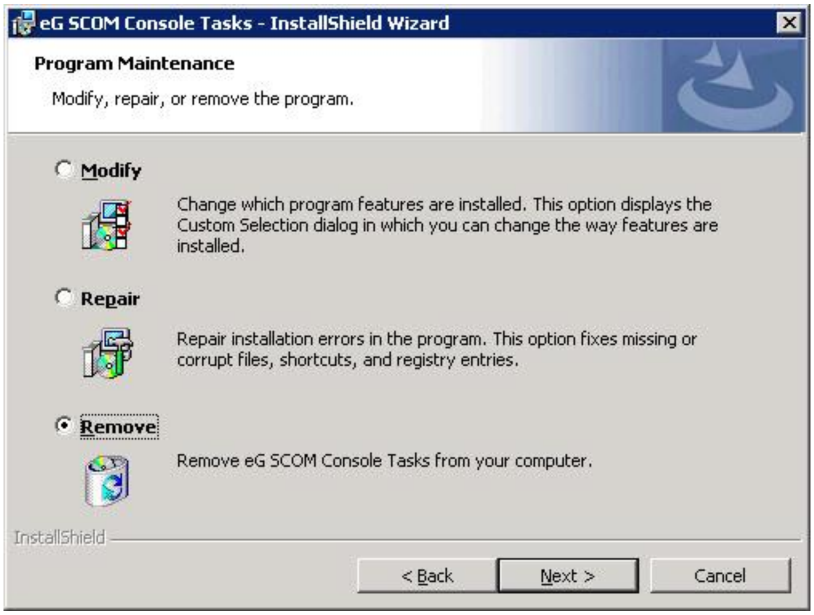
eG SCOM Console Tasks - InstallShield Wizard

Welcome to the InstallShield Wizard for eG SCOM Console Tasks

The InstallShield(R) Wizard will allow you to modify, repair, or remove eG SCOM Console Tasks. To continue, click Next.

Figure 4.8: Uninstalling the eG SCOM Console Tasks application

5. When Figure 4.9 appears, select the **Remove** option to begin the uninstallation. Then, click the **Next** button therein to proceed.



eG SCOM Console Tasks - InstallShield Wizard

Program Maintenance

Modify, repair, or remove the program.

○ Modify

Change which program features are installed. This option displays the Custom Selection dialog in which you can change the way features are installed.

○ Repair

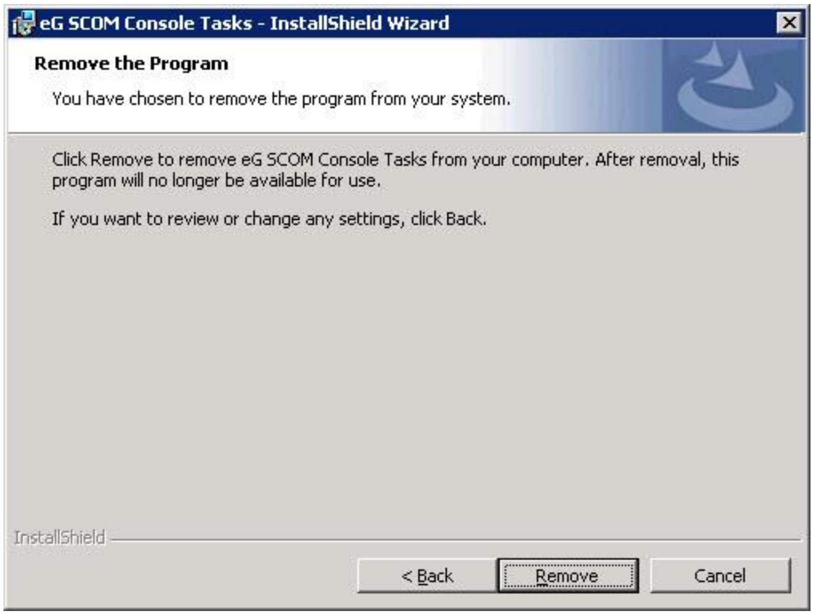
Repair installation errors in the program. This option fixes missing or corrupt files, shortcuts, and registry entries.

● Remove

Remove eG SCOM Console Tasks from your computer.

Figure 4.9: Selecting the Remove option

6. Then, click the **Remove** button in Figure 4.10 to confirm removal of the eG Console Tasks application.



Remove the Program

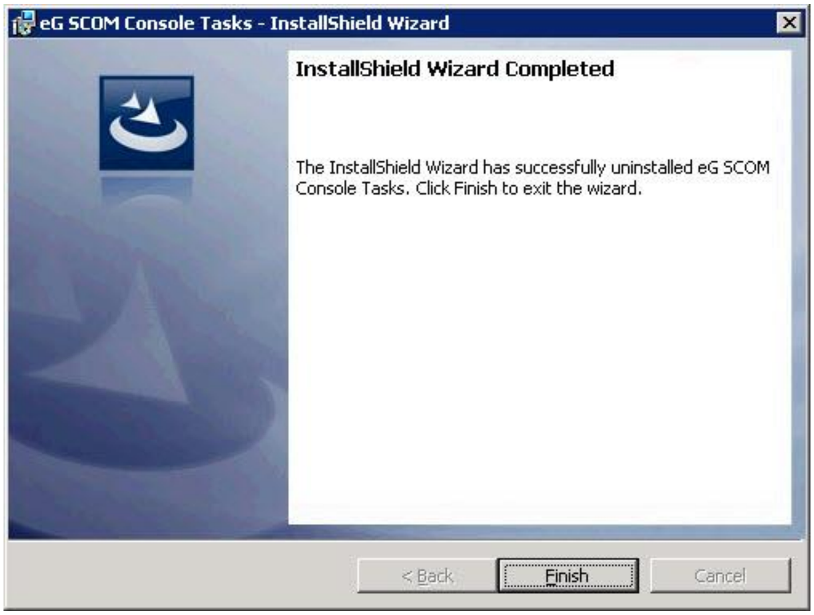
You have chosen to remove the program from your system.

Click Remove to remove eG SCOM Console Tasks from your computer. After removal, this program will no longer be available for use.

If you want to review or change any settings, click Back.

Figure 4.10: Clicking the Remove button

7. Upon successful uninstallation of the application, the message depicted by Figure 4.11 will appear. Click the **Finish** button in Figure 4.11 to exit the wizard.



InstallShield Wizard Completed

The InstallShield Wizard has successfully uninstalled eG SCOM Console Tasks. Click Finish to exit the wizard.

Figure 4.11: The completion of the uninstallation of the eG SCOM Console Tasks application

5

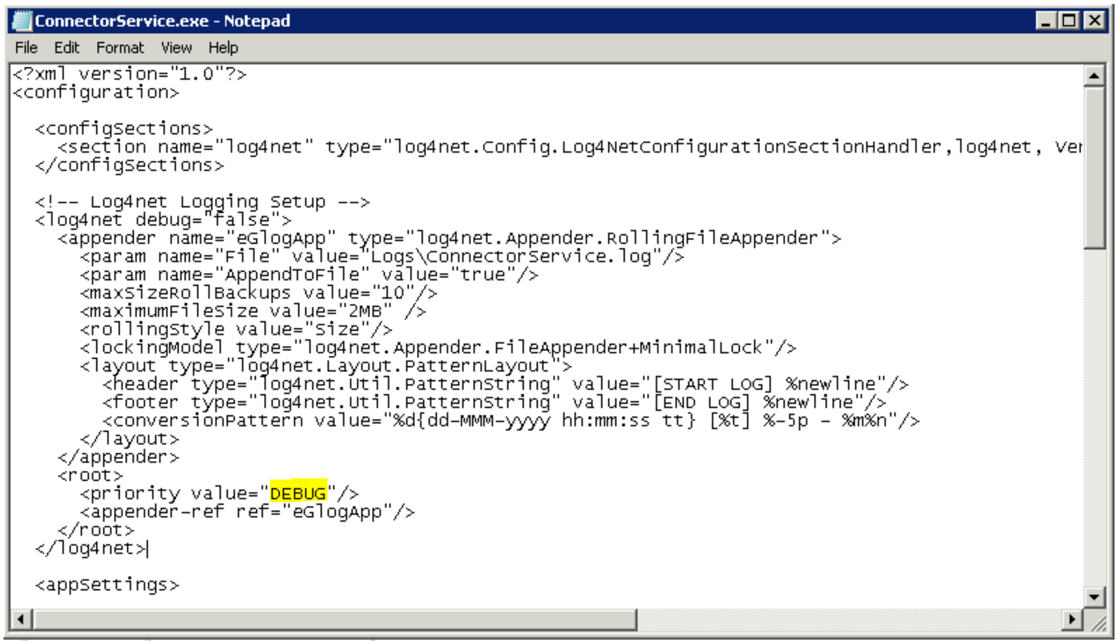
Troubleshooting

This chapter discusses what can go wrong with the eG-SCOM integration, and how such issues can be resolved.

5.1 Enabling Error Logging for the eG SCOM Connector

To troubleshoot issues with the operations of the eG SCOM Connector, use the **ConnectorService.log** file in the **<EG SCOM CONNECTOR INSTALL DIR>\Logs** directory. By default, the log file includes INFO, WARNING and ERROR messages. If any additional troubleshooting is required, DEBUG messages can be enabled in the same log. To enable debug entries:

- Edit the **ConnectorService.exe.config** file located in the **<EG SCOM CONNECTOR INSTALL DIR>** directory.
- Search for the block of code beginning with the entry **<log4net**. Once inside that block of code, look for the following entry: **<priority value**
- Then, set the **<priority value** to **"**debug" as indicated by Figure 5.1 below



```
<?xml version="1.0"?>
<configuration>

  <configSections>
    <section name="log4net" type="log4net.Config.Log4NetConfigurationSectionHandler,log4net, Ver
  </configSections>

  <!-- Log4net Logging Setup -->
  <log4net debug="false">
    <appender name="eGlogApp" type="log4net.Appender.RollingFileAppender">
      <param name="File" value="Logs\ConnectorService.log"/>
      <param name="AppendToFile" value="true"/>
      <maxSizeRollBackups value="10"/>
      <maximumFileSize value="2MB" />
      <rollingStyle value="Size"/>
      <lockingModel type="log4net.Appender.FileAppender+MinimalLock"/>
      <layout type="log4net.Layout.PatternLayout">
        <header type="log4net.Util.PatternString" value="[START LOG] %newline"/>
        <footer type="log4net.Util.PatternString" value="[END LOG] %newline"/>
        <conversionPattern value="%d{dd-MMM-yyyy hh:mm:ss tt} [%t] %-5p - %m%n"/>
      </layout>
    </appender>
    <root>
      <priority value="DEBUG"/>
      <appender-ref ref="eGlogApp"/>
    </root>
  </log4net>

  <appSettings>
```

Figure 5.1: Enabling debugging for the eG SCOM Connector

5.2 Troubleshooting State and Alert Mismatches between the SCOM Console and the eG Monitoring Console

Sometimes, state inconsistencies may be noticed between the eG monitoring console and the SCOM console; at a given point in time, a single component may be in different states in the eG monitoring console and in the SCOM console.

The first step towards troubleshooting such state inconsistencies is to determine whether/not there is any difference between the number of alerts generated by eG at a given point in time and the number of alerts displayed in the SCOM console. Ideally, the number of alerts in both consoles should be the same. However, if the SCOM console displays a lesser number of alerts than the eG monitoring console, a state inconsistency is bound to creep in. This is because, state changes are governed by alert severities, and if one/more alerts pertaining to a component are missing in SCOM, the state change may not be propogated to SCOM.

To periodically check whether discrepancies exist in the alert count between the two consoles, you can use the **ConnectorServices.log** file (in the **<EG_SCOM_CONNECTOR_INSTALL_DIR>\logs** directory). This file can be explicitly configured to periodically check the number of alerts in the eG Enterprise system and SCOM and report mismatches in count (if any). To achieve this, do the following:

1. Edit the **ConnectorService.exe.config** file located in the **<EG_SCOM_CONNECTOR_INSTALL_DIR>** directory.
2. Set the **LogStateChangeSummary** flag in the file to **true**.
3. Save the file.

5.3 Failure of eG-SCOM Integration owing to a Version Mismatch of the SCOM SDK

The eG SCOM Connector uses the SCOM SDK to insert monitoring objects into the SCOM system for each eG-managed component and to manage the state of these components. For this purpose, the SCOM SDK binary files are bundled into the eG SCOM Connector. Sometimes, there could be a version mismatch between the SCOM SDK binary files on the eG SCOM Connector host and those on the SCOM server. If this happens, then the eG SCOM Connector will not be able to insert/manage monitoring objects, causing the integration to fail as a result. To avoid this, **you need to ensure that the eG SCOM Connector uses the same version of the SCOM SDK binary files as those that are available on the SCOM server**. To ensure this, copy the SCOM SDK binary files from the SCOM server to the install directory of the eG SCOM Connector. On SCOM 2012, these files will be available in the **C:\Program Files\System Center 2012\Operations Manager\Server\SDK Binaries** directory. On SCOM 2016, these files will be available in the **C:\Program Files\System Center 2016\Operations Manager\Server\SDK Binaries** directory.

5.4 Issues when Re-installing the SCOM Agent on the eG SCOM Connector Host

If you reinstall the SCOM Agent on the eG SCOM Connector for any reason – say, to upgrade the SCOM agent – then, the eG monitoring objects discovered by this SCOM agent will become invalid. In this case, the monitoring objects already discovered by the SCOM agent should be deleted from the SCOM server and the eG objects have to be rediscovered. To make the connector perform this rediscovery, follow the steps given below:

1. Launch the **Configuration Tool** from the **eG SCOM Connector** shortcut in the **Start** menu.

2. Go to the **Connector** tab and click the **Stop** button therein to stop the connector service.
3. Next, select the **Setup** tab page and then select the **Custom** option.
4. Click the **Delete** button in the **Connector Configuration** section.
5. Then, click **Create**.
6. Finally, go to the **Connector** tab and click **Start** to start the connector service.

5.5 Monitoring Objects Tagged as 'Not Monitored' or ‘Gray’ State in the SCOM Console

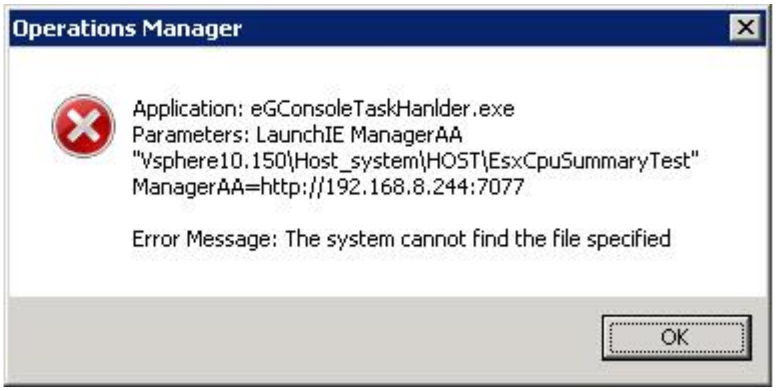
In the SCOM console, some eG-managed objects may appear as 'Not Monitored' or in the ‘Gray’ (inactive) state. The reasons for such an occurrence and how to work around it are being discussed in the table below:

Possible Causes	Resolution
If majority of the eG objects are shown as ‘Not monitored’, it could be due to a problem with the SCOM Agent service on the eG connector machine. The service might be down or experiencing some problem.	If the SCOM agent service is not started, start it manually. Go to Windows service, and then start System Center Management service. Go to Event viewer, check Operations Manager log for any errors and take necessary action.

If majority of the eG objects are shown in gray state, it could be due to a problem with the SCOM Agent service on the eG connector machine or it could be due to a network connectivity issue between SCOM agent and SCOM server.	➢ Restart SCOM Agent service. Go to windows services, and then restart System Center Management service. ➢ If the restart does not help, execute Flush Health Service State and Cache task for the SCOM agent in SCOM operation console. In the operation console, select **Administration** tab and select **Device Management -> Agent Managed**. Then, right click on the SCOM agent running on the eG connsector machine and select **State view**. In the resulting screen, click on the agent name column. In the **Actions pane -> Health Service Tasks**, select "Flush Health Service State and Cache". Then, execute the task. ➢ If the above steps do not help, follow the steps detailed in the following KB article: http://support.microsoft.com/kb/2288515
Consider the below cause if you have enabled unknown state integration in eG connector service. The original states of eG monitoring objects in eG console are Unknown. The reason for the unknown state could be:- ➢ eG agents are not reporting monitoring data to the eG manager. The agents might be either down or there is a network connectivity issue between eG agents and eG manager. ➢ One or more tests run by the eG agent are failing due to a misconfiguration. ➢ This will result the state of monitoring objects to become unknown in eG console. If the unknown state integration is enabled in the eG connector service, the status of the unknown eG objects are updated into SCOM server as 'Not Monitored'	Launch the eG console and check the status of affected components/tests. If the status is Unknown, troubleshoot and fix the problem in the eG system components.

5.6 Error while Launching the eG Web Console from the SCOM Operation Console

In the SCOM operation console, if the following error message (see Figure 5.2) appears when the console task, **Diagnose using eG** is executed, it indicates that the **eG Console Tasks** application has not been installed on the system on which the SCOM console is operating.



Application: eGConsoleTaskHanlder.exe
Parameters: LaunchIE ManagerAA
"Vsphere10.150\Host_system\HOST\EsxCpuSummaryTest"
ManagerAA=http://192.168.8.244:7077

Error Message: The system cannot find the file specified

Figure 5.2: The error message that appears when the Diagnose using eG task is executed from the Actions pane

In such a case, first install the **eG Console Tasks** application on the same system as the SCOM console, and then proceed to launch the eG monitoring console. To install the application, refer to Section 2.2.4 of Chapter 2 of this document.

6

Frequently Asked Questions

This chapter is a compilation of some of the frequently asked questions in SCOM integration and their responses.

- **Can the SCOM plugin work with a redundant eG manager setup? If so, how to configure it?**

  Yes. The SCOM plugin can work in a redundant eG manager setup.

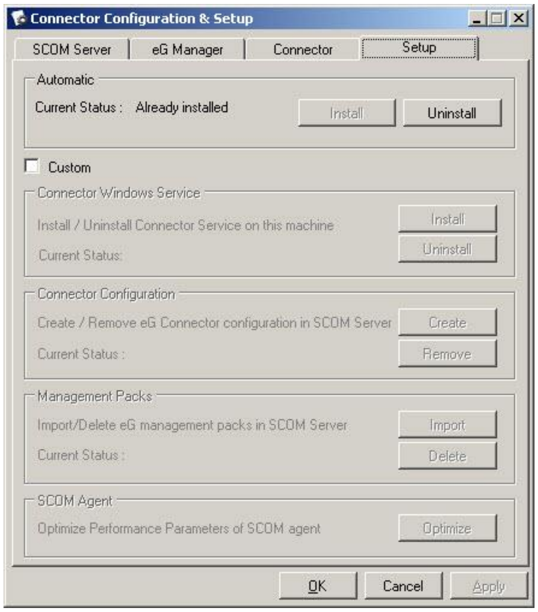
  If you want to configure a SCOM plugin for a redundant manager setup that pre-exists in an environment – i.e., a redundant manager setup that was operational before the eG manager was integrated with SCOM – then, post the integration, you just have to point the plugin to use the primary manager's URL. The plugin automatically discovers secondary managers and if there is a failure in the redundancy, it will automatically switch to the available manager.

  On the other hand, if you configure a redundant manager setup post the eG-SCOM integration, then, you will first have to point the plugin to use the primary manager's URL, and then, **restart the eG SCOM Plugin** – i.e., stop and then start the eG SCOM Connector. Only after the restart will the eG SCOM plugin automatically discover the secondary managers

- **I have configured an eG user account in the SCOM plugin and the integration has already been done. Can I now reconfigure the setup to use a different eG user? If so, how?**

  Yes, you can reconfigure the setup to use a different eG user. The steps in this regard are as follows:

  - Stop the connector.
  - Launch the **Configuration & Setup Tool** by following the menu sequence: *Start -> Programs -> eG SCOM Connector*
  - Switch to the **Setup** tab page of the **Connector Configuration & Setup** dialog box that then appears (see Figure 6.1). Click the **Uninstall** button therein to uninstall the configuration.

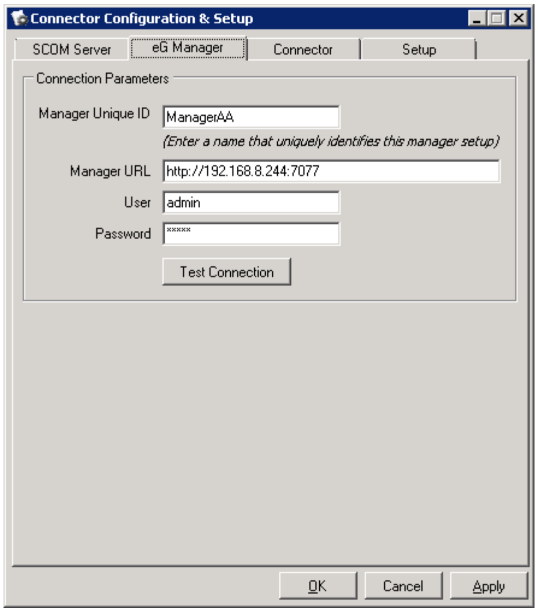

Connector Configuration & Setup
SCOM Server
eG Manager
Connector
Setup
Automatic
Install
Uninstall
Connector Windows Service
Install / Uninstall Connector Service on this machine
Current Status:
Install
Uninstall
Connector Configuration
Create / Remove eG Connector configuration in SCOM Server
Current Status :
Create
Remove
Management Packs
Import/Delete eG management packs in SCOM Server
Current Status :
Import
Delete
SCOM Agent
Optimize Performance Parameters of SCOM agent
Optimize
OK
Cancel
Apply

Current Status : Already installed

□ Custom

Figure 6.1: Clicking on the Setup tab page for uninstalling the connector configuration

- Then, switch to the **eG Manager** tab page. Provide a unique manager ID, specify the URL of the manager with which the plugin has to integrate, and then provide the credentials of the new eG user for the integration.


Connector Configuration & Setup
SCOM Server
eG Manager
Connector
Setup
Connection Parameters
(Enter a name that uniquely identifies this manager setup)
Test Connection
OK
Cancel
Apply

Manager Unique ID ManagerAA

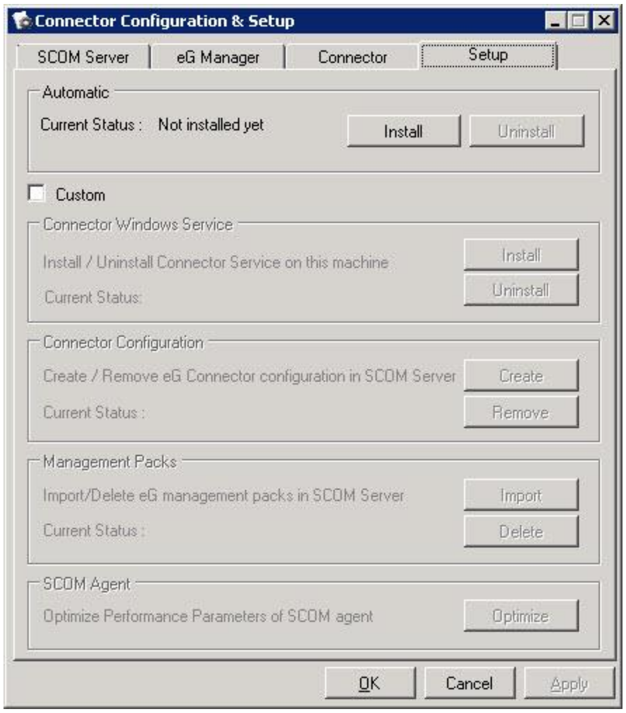
Manager URL http://192.168.8.244:7077

User admin

Password *****

Figure 6.2: Configuring a new eG user

- Finally, return to the **Setup** tab page, and this time, click on the **Install** button (see Figure 6.3) to install the configuration for the new eG user.



Connector Configuration & Setup

Automatic

Current Status : Not installed yet

☐ Custom

Connector Windows Service

Install / Uninstall Connector Service on this machine

Current Status:

Connector Configuration

Create / Remove eG Connector configuration in SCOM Server

Current Status :

Management Packs

Import/Delete eG management packs in SCOM Server

Current Status :

SCOM Agent

Optimize Performance Parameters of SCOM agent

Figure 6.3: Installing the configuration for the new eG user

- Finally, click the **Apply** and **OK** buttons in Figure 6.3.

➢ **I have two eG user accounts in a manager that needs to be integrated with SCOM? How do I achieve integration for two users?**

As per design, a single eG SCOM Connector can only integrate with a single eG user. If you want the SCOM Connector to integrate with all components managed by two different eG users, and each of these users require separate access rights to the SCOM console, then it is recommended that you install two different SCOM Connectors on two separate machines and configure each of them to integrate with a different user.

➢ **How do I enable the eG SCOM Connector to integrate with multiple eG managers?**

Please refer to Section 2.4 of this document for the relevant details.

➢ **In my SCOM 2012 environment, the SCOM plugin is configured to report to a specific SCOM management server in a management group. If the configured management server is down, will the SCOM plugin automatically report to the next available management server in the management group ?**

Yes. The SCOM plugin keeps track of the available management servers in the management group that it is currently reporting to. If the configured management server is down, the plugin automatically starts reporting to the next available management server. For this scenario to work, the plugin should be able to connect to all management servers in the management group.

- **In my SCOM environment, I have deployed SCOM agents in an untrusted domain. These SCOM agents are being managed by a SCOM server in a different domain via a gateway server. Can the eG SCOM Connector that is deployed along with the SCOM agents be able to communicate with the SCOM server via this gateway server?**

  Yes. The eG SCOM Connector is capable of integrating with the SCOM server in a different domain via a gateway server. No configuration changes need to be made to enable this communication.

- **Am I required to install the eG SCOM Connector on all SCOM agent hosts?**

  No. It would suffice to install the connector in any one of the SCOM agent hosts.

7

Conclusion

This document has described in detail the purpose and procedure for integrating the eG Manager with Microsoft SCOM.

We will be adding more integration capabilities into the future versions of the eG Enterprise suite. If you can identify new capabilities that you would like us to incorporate in the eG Enterprise suite of products, please contact support@eginnovations.com. We look forward to your support and cooperation. Any feedback regarding this manual or any other aspects of the eG Enterprise suite can be forwarded to feedback@eginnovations.com.