

ApplianceWatch for Microsoft® Operations Manager 1.1 **Installation and Setup Guide for MOM 2000**

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Preface

About this guide

This guide describes how to install the ApplianceWatch for MOM management pack. The management pack contains the required files and registry settings to support NetApp storage system and DataFabric® Manager monitoring via MOM.

Before installing this product, you must have:

- ◆ Ensured that your configuration is supported by referring to the *Compatibility and Configuration Guide for NetApp's FCP and iSCSI Products*, available on the NetApp on the Web™ (NOW) site at http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/.
- ◆ Installed your storage system according to the instructions in the documentation for your specific storage system.
- ◆ Configured your storage system according to the instructions in the following documents:
 - ❖ *Data ONTAP® Software Setup Guide*
 - ❖ *iSCSI Support Kit* for your specific host
 - ❖ *SAN Setup Overview for FCP*
 - ❖ *SAN Host Attach Kit for Fibre Channel Protocol* for your specific host
 - ❖ Any SAN switch documentation for your specific FCP switch, which you can find at <http://now.netapp.com/NOW/knowledge/docs/san/>

Audience

This guide is for system and network administrators responsible for monitoring NetApp storage systems and DataFabric Manager servers via the MOM.

Terminology

This guide uses the following terms:

- ◆ NetApp storage products (filers, FAS appliances, and NearStore® systems) are all *storage systems*—also sometimes called filers or storage appliances.
- ◆ *Enter* refers to pressing one or more keys on the keyboard and then pressing the Enter key.
- ◆ *Type* refers to pressing one or more keys on the keyboard.

Command conventions

In examples that illustrate commands executed on a UNIX workstation, the command syntax and output shown in this guide might differ from what you see on your display, depending on your version of UNIX.

**Keyboard
conventions**

When describing key combinations, this guide uses the hyphen (-) to separate individual keys that you press at the same time. For example, *Ctrl-D* means pressing the Control and D keys simultaneously. This guide uses the term *Enter* to refer to the key that generates a carriage return, although the key is named Return on some keyboards.

**Typographic
conventions**

The following table describes typographic conventions used in this guide.

Convention	Type of information
<i>Italic font</i>	Words or characters that require special attention. Placeholders for information you must supply. For example, if the guide says to enter the <code>arp -d <i>hostname</i></code> command, you enter the characters <i>arp -d</i> followed by the actual name of the host. Book titles in cross-references.
Monospaced font	Command and daemon names. Information displayed on the system console or other computer monitors. The contents of files.
Bold monospaced font	Words or characters you type. What you type is always shown in lowercase letters, unless you must type it in upper case.

Special messages

This guide contains special messages that are described as follows:

Note

A note contains important information that helps you install or operate the system efficiently.

CAUTION

An attention contains instructions that you must follow to avoid damage to the equipment, a system crash, or loss of data.

About this chapter

This chapter provides a brief overview of ApplianceWatch for MOM, the ApplianceWatch for MOM management pack, and lists the prerequisites for installing it.

Topics in this chapter

This chapter discusses the following topic(s):

- ◆ [“What ApplianceWatch for MOM is”](#) on page 2

What ApplianceWatch for MOM is

What is ApplianceWatch for MOM?

Microsoft® Operations Manager (MOM) is an enterprise level software tool designed to monitor events, collect performance statistics, and report alert conditions across a Microsoft OS-based enterprise

ApplianceWatch for MOM is designed to be installed on the MOM server and to interpret SNMP traps from NetApp systems, thus allowing MOM's standard event classification and response rules to be applied to NetApp systems.

Support matrix for ApplianceWatch for MOM includes the following:

- ◆ Data ONTAP 7.2.x and earlier releases
- ◆ DataFabric Manager server 3.5 and earlier releases
- ◆ MOM 2000 and MOM 2005

ApplianceWatch for MOM components

The ApplianceWatch for MOM management pack contains the required files and registry settings to support NetApp storage systems and DataFabric Manager server monitoring via MOM. Follow the instructions in this document to install the management pack.

The ApplianceWatch for MOM installation package installs the following files on the MOM server:

- ◆ dfm.mof - converted NetApp DataFabric Manager MIB file.
- ◆ netapp.mof - converted NetApp storage system MIB file.
- ◆ license.txt - licensing information for ApplianceWatch for MOM.
- ◆ netapp.akm - ApplianceWatch for MOM management pack.
- ◆ installMOF.bat - batch file to register dfm.mof and netapp.mof files with Windows Management Instrumentation (WMI). Microsoft's mofcomp.exe must be installed on the computer.
- ◆ uninstall.exe - uninstall program to remove NetApp support for MOM.

About this chapter This chapter describes how to install ApplianceWatch for MOM.

Topics in this chapter

This chapter discusses the following topic:

- ◆ [“Before you begin”](#) on page 4
- ◆ [“Installing the ApplianceWatch for MOM support files”](#) on page 8
- ◆ [“Installing the ApplianceWatch for MOM management pack”](#) on page 12
- ◆ [“Verifying the management pack installation”](#) on page 13

Before you begin

Prerequisites

Before installing the management pack, ensure you meet the following prerequisites:

- ◆ MOM server is installed on the computer.
- ◆ You have administrative privileges on the computer on which the management pack is to be installed.
- ◆ You have the privileges required to provision the NetApp storage systems and DataFabric Manager servers being monitored via ApplianceWatch for MOM.
- ◆ Simple Network Management Protocol (SNMP) and WMI SNMP Provider are installed on the MOM server, and the SNMP trap service is properly configured.

The use of a registry key for the MOM Server

To enable MOM to monitor NetApp storage systems and DataFabric Manager servers, a registry key is required on the MOM server. This registry key is created during the MOM management pack installation.

MOM uses this registry key to discover NetApp *Computer Groups*, which enable the MOM server to monitor NetApp storage systems and DataFabric Manager servers.

The registry key created by this installation package is **HKEY_LOCAL_MACHINE\SOFTWARE\Network Appliance\ApplianceWatch for MOM**, and contains the following values:

- ◆ dfm - dfm.mof
- ◆ netapp - netapp.mof
- ◆ management pack - netapp.akm
- ◆ installpath - <install directory>
- ◆ version - <version>

Provisioning SNMP and SNMP trap services

Before installing ApplianceWatch for MOM, you must install SNMP and SNMP trap services. You should:

1. Verify that these items are installed. See [“Verifying SNMP and SNMP trap services are installed”](#) on page 5.

2. Install the services on the MOM server, if they are not already installed. See [“Adding SNMP and WMI SNMP Provider to the MOM server”](#) on page 5.
3. Configure the SNMP service. See [“Configuring the SNMP service”](#) on page 5.
4. Configure SNMP trap service. See [“Configuring the SNMP trap service”](#) on page 6.

Verifying SNMP and SNMP trap services are installed: Follow these instructions to determine if SNMP and SNMP trap services are already installed on the MOM server.

Step	Action
1	From the MOM server desktop, right-click My Computer and select Manage.
2	Expand Services and Applications; then click Services.
3	Verify that SNMP Service and SNMP Trap Service appear in the list of services. If they are not installed, see “Adding SNMP and WMI SNMP Provider to the MOM server” on page 5 to install them.

Adding SNMP and WMI SNMP Provider to the MOM server: Follow these instructions to add SNMP and WMI SNMP Provider to the MOM server if they are not already installed.

Step	Action
1	Open the Add/Remove software control panel.
2	Select the Add/Remove Windows components.
3	Select Management and Monitoring Tools.
4	Select Simple Network Management Protocol and WMI SNMP Provider.
5	Click OK.

Configuring the SNMP service: Follow these instructions to install the SNMP service on the MOM server.

Step	Action
1	From the MOM server desktop, right-click My Computer and select Manage.
2	Expand Services and Applications; then click Services.
3	Right-click SNMP Trap Service and select Properties.
4	Click the General tab.
5	Select the Automatic startup type.
6	Click the Traps tab.
7	Type <i>public</i> in the Community Name drop-down list and select Add to List.
8	Click the Security tab.
9	Select Accept SNMP Packets from any Host.
10	Click Apply; then click OK.

Configuring the SNMP trap service: Follow these instructions to install the SNMP trap service on the MOM server.

Step	Action
1	From the MOM server desktop, right-click My Computer and select Manage.
2	Expand Services and Applications; then click Services.
3	Right-click SNMP Trap Service and select Properties.
4	Click the General tab.
5	Select the Automatic startup type.
6	Click Apply; then click OK.

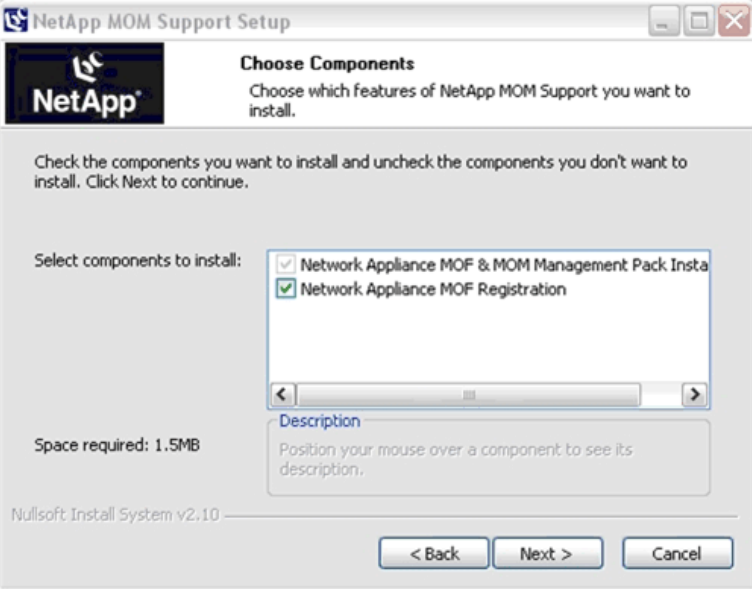
Installation process overview

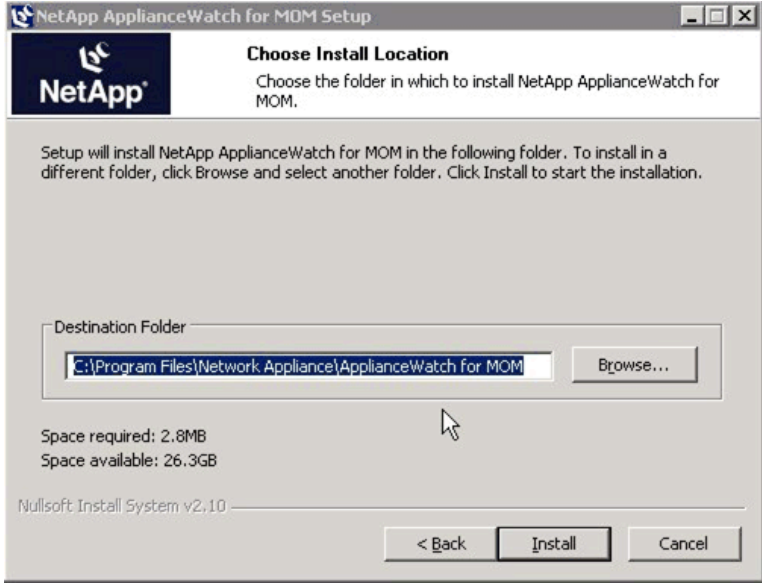
The ApplianceWatch for MOM installation process consists of the following main steps:

1. Downloading the ApplianceWatch for MOM management pack from NetApp on the Web (NOW).
2. Installing the ApplianceWatch for MOM support files.
3. Installing the ApplianceWatch for MOM management pack.
4. Configuring the appropriate devices to forward all SNMP traps to the MOM server:
 - ❖ To directly monitor storage systems from MOM, configure each storage system to forward all SNMP traps to the MOM server.
 - ❖ To monitor the storage systems via DataFabric Manager, configure DataFabric Manager to forward all SNMP traps to the MOM server.

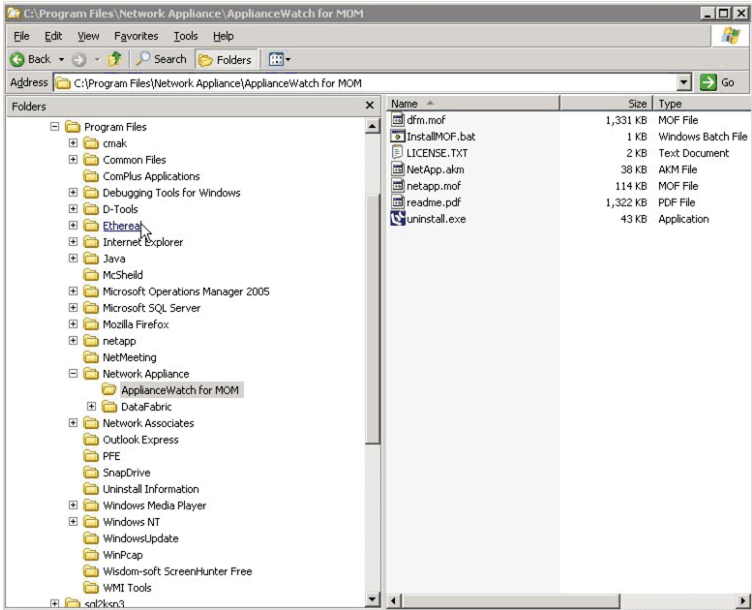
Installing the ApplianceWatch for MOM support files

Follow these steps to install the ApplianceWatch for MOM support files.

Step	Action
1	Copy the awMOM2000setup-1-1win.exe file to a directory on the computer running MOM server.
2	Double-click awMOM2000setup-1-1win.exe. Result: The Choose Components dialog box appears. 
3	Select Network Appliance MOF Registration. Result: The Netapp .mof files are registered with WMI. Note _____ The MOM server will not be able to monitor NetApp storage systems and DataFabric Manager servers without registering the .mof files.

Step	Action
4	Click Next. Result: The Choose Install Location dialog box appears. 
5	Type the install directory in the Destination Folder field, or click Browse to select a directory.
6	Click Install. Result: The NetApp support files are installed.

Step	Action
7	Click Show Details to view the installed files, and click Next to continue. Result: The Completing the NetApp MOM Support Setup Wizard dialog box appears. 
8	Select Show Readme to view the Readme file; then click Finish.

Step	Action
9	Verify that the installation is complete by opening Windows Explorer and navigating to the install directory. The following files should appear. 

Installing the ApplianceWatch for MOM management pack

After you install the NetApp support files, follow these steps to install the ApplianceWatch for MOM management pack.

Step	Action
1	Open the MOM Administrator Console.
2	Right-click Processing Rule Group and select Import Management Pack from the pop-up menu. Result: The Import Options dialog appears.
3	Select Replace Existing Management Pack and Backup existing Management Pack on upgrade.
4	Enter the path where you installed the NetApp support files, or click Browse and locate the correct path; the default is c:\Program Files\Network Appliance\ApplianceWatch for MOM . Click Next. Result: The Import Summary dialog box appears.
5	Click Finish to install the management pack.

Verifying the management pack installation

After you install the ApplianceWatch for MOM management pack, follow these steps to verify the installation.

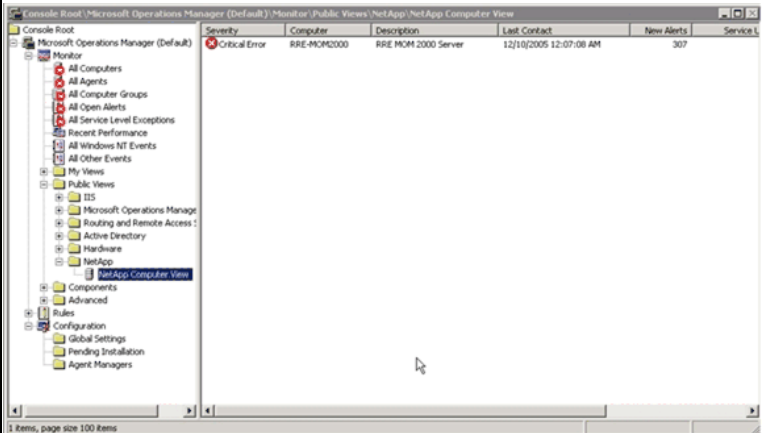
The NetApp Management Pack contains the following entries in the MOM Administrator Console. Verify that each entry exists after installation.

- ◆ Public Views
- ◆ Computer Group
- ◆ Rules Group
- ◆ Scripts
- ◆ Computer Attributes
- ◆ Providers

Verifying the Public Views entries

Follow these steps to verify that the Public Views entries exist. The Public Views contain a list of devices that are currently configured for monitoring via MOM.

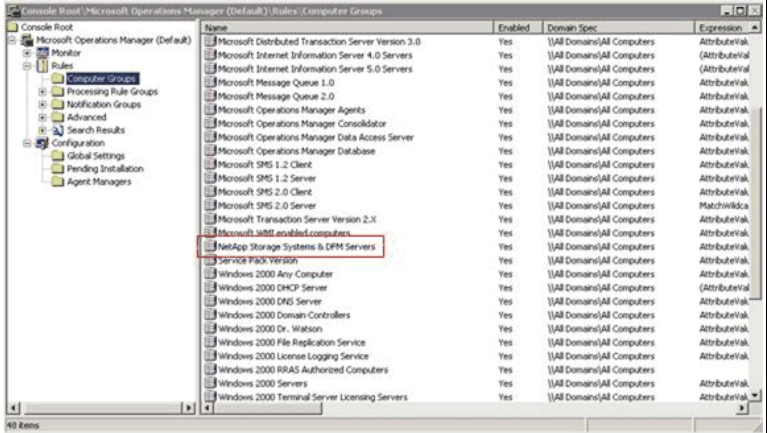
Step	Action
1	Open the MOM 2000 Administrator Console.
2	Expand the Monitor item in the left pane; then expand the Public Views folder and the NetApp folder.
3	Verify that the Netapp Computer View item appears under the NetApp folder.

Step	Action												
4	Select NetApp Computer View. Result: All computers configured for monitoring via MOM appear in the right pane.  <table><thead><tr><th>Severity</th><th>Computer</th><th>Description</th><th>Last Contact</th><th>New Alerts</th><th>Service L</th></tr></thead><tbody><tr><td>Critical Error</td><td>RRE-MOM2000</td><td>RRE MOM 2000 Server</td><td>12/10/2005 12:07:08 AM</td><td>307</td><td></td></tr></tbody></table>	Severity	Computer	Description	Last Contact	New Alerts	Service L	Critical Error	RRE-MOM2000	RRE MOM 2000 Server	12/10/2005 12:07:08 AM	307	
Severity	Computer	Description	Last Contact	New Alerts	Service L								
Critical Error	RRE-MOM2000	RRE MOM 2000 Server	12/10/2005 12:07:08 AM	307									

Verifying the Computer Group entries

Follow these steps to verify that the NetApp Computer Group entries exist. This Computer Group identifies how MOM discovers and manages NetApp storage systems and DataFabric Manager servers.

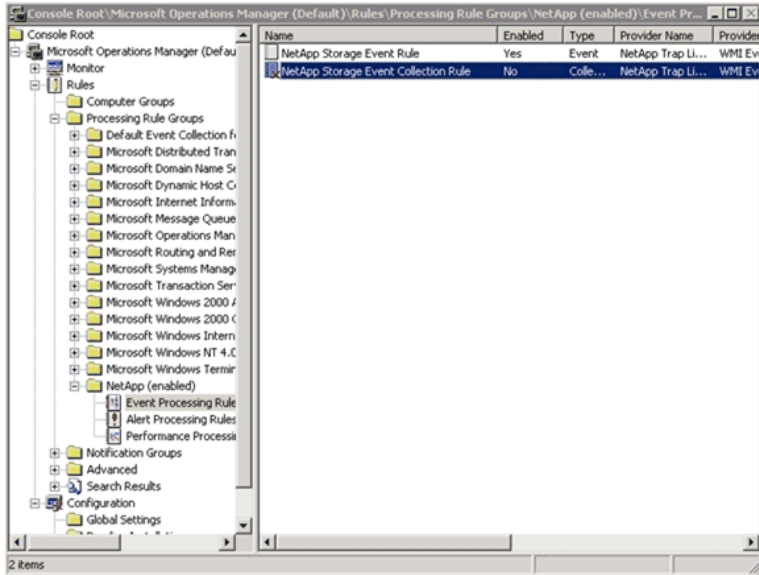
Step	Action
1	In the MOM 2000 Administrator Console, expand the Rules item.

Step	Action
2	Select Computer Groups. Result: In the right pane, an entry for NetApp Storage Systems and DFM servers appears. 

Verifying the Rules Group entries

Follow these steps to verify that the NetApp rules are installed. The rules developed for NetApp are used to execute a processing script when MOM receives an event (SNMP trap) from a DataFabric Manager server or storage system.

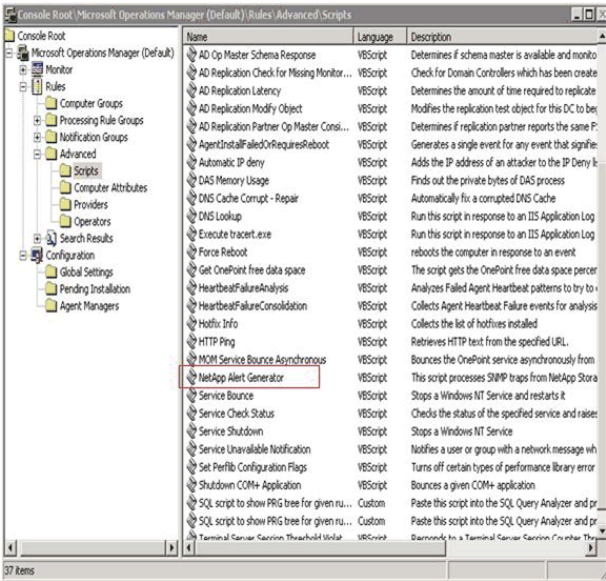
Step	Action
1	In the MOM 2000 Administrator Console, expand the Rules item.
2	Expand the Processing Rules Groups folder.

Step	Action															
3	Select NetApp. Result: The NetApp rules appear.  The screenshot shows the Microsoft Operations Manager console. The left pane displays a tree view of the console structure, with 'NetApp (enabled)' expanded under 'Rules'. The right pane shows a table of rules: <table><thead><tr><th>Name</th><th>Enabled</th><th>Type</th><th>Provider Name</th><th>Provider</th></tr></thead><tbody><tr><td>NetApp Storage Event Rule</td><td>Yes</td><td>Event</td><td>NetApp Trap Li...</td><td>WMI Ev...</td></tr><tr><td>NetApp Storage Event Collection Rule</td><td>No</td><td>Colle...</td><td>NetApp Trap Li...</td><td>WMI Ev...</td></tr></tbody></table>	Name	Enabled	Type	Provider Name	Provider	NetApp Storage Event Rule	Yes	Event	NetApp Trap Li...	WMI Ev...	NetApp Storage Event Collection Rule	No	Colle...	NetApp Trap Li...	WMI Ev...
Name	Enabled	Type	Provider Name	Provider												
NetApp Storage Event Rule	Yes	Event	NetApp Trap Li...	WMI Ev...												
NetApp Storage Event Collection Rule	No	Colle...	NetApp Trap Li...	WMI Ev...												

Verifying the Script entries

Follow these steps to verify that the NetApp script is installed. This script is used to process the SNMP trap events that are specific to NetApp by converting them into the appropriate MOM alert and inserting the alert into the MOM database.

Step	Action
1	In the MOM 2000 Administrator Console, expand the Rules item.
2	Expand the Advanced folder.
3	Select Scripts. Result: The list of scripts appears in the right pane.

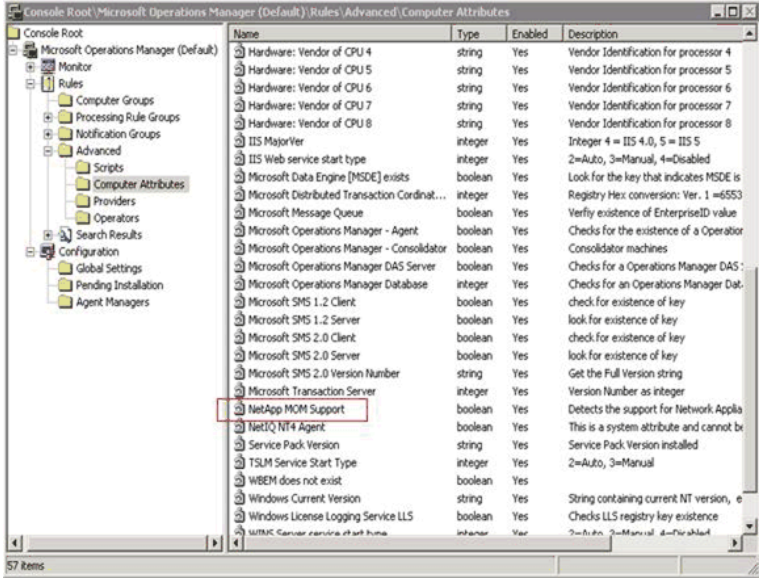
Step	Action
4	Verify that the NetApp Alert Generator script appears in the right pane. 

**Verifying the
Computer Attribute
entries**

Follow these steps to verify that the NetApp MOM Support computer attribute is installed. This attribute is a registry value that is created when you install the NetApp for MOM support files. It allows the MOM server to discover the NetApp computer group.

See “[What ApplianceWatch for MOM is](#)” on page 2 for more information.

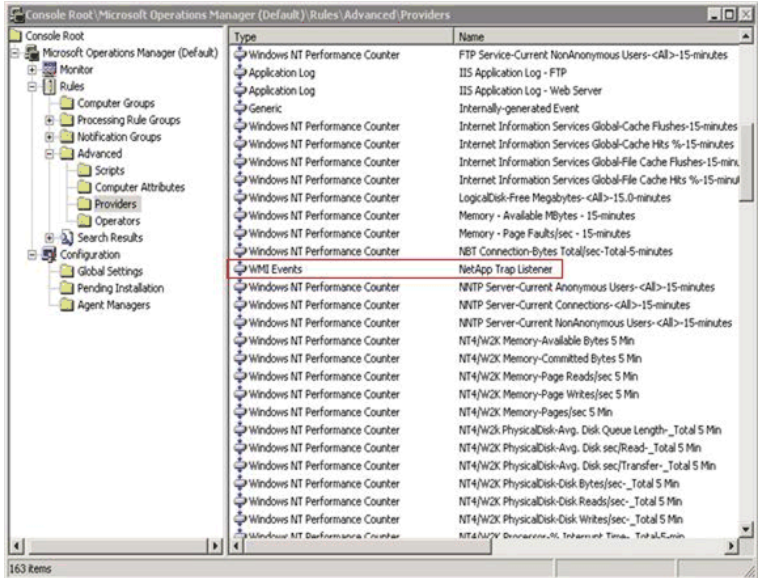
Step	Action
1	In the MOM 2000 Administrator Console, expand the Rules item.
2	Expand the Advanced folder.
3	Select Computer Attributes. Result: The list of computer attributes appears in the right pane.

Step	Action
4	Verify that the NetApp MOM Support entry appears in the right pane.  The screenshot shows the Microsoft Operations Manager console with the 'Computer Attributes' list expanded. The list contains various system attributes such as 'Hardware: Vendor of CPU 4', 'IIS MajorVer', and 'NetApp MOM Support'. The 'NetApp MOM Support' entry is highlighted with a red box, indicating its presence in the system.

**Verifying the
Provider entries**

Follow these steps to verify that the NetApp Provider entry is installed. This provider uses the WMI Event base provider and then selects from SNMP V1 notifications from the WMI SNMP namespace.

Step	Action
1	In the MOM 2000 Administrator Console, expand the Rules item.
2	Expand the Advanced folder.
3	Select Providers. Result: The list of providers appears in the right pane.

Step	Action																																																										
4	Verify that the NetApp Trap Listener entry appears in the right pane.  The screenshot shows the Microsoft Operations Manager console window titled 'Console Root\Microsoft Operations Manager (Default)\Rules\Advanced Providers'. The left pane displays a tree view with 'Advanced Providers' selected. The right pane shows a list of providers with columns 'Type' and 'Name'. The 'NetApp Trap Listener' entry is highlighted with a red box. The list includes various Windows NT Performance Counters and WMI Events. <table border="1"> <thead> <tr> <th>Type</th> <th>Name</th> </tr> </thead> <tbody> <tr><td>Windows NT Performance Counter</td><td>FTP Service-Current NonAnonymous Users-<All>-15-minutes</td></tr> <tr><td>Application Log</td><td>IIS Application Log - FTP</td></tr> <tr><td>Application Log</td><td>IIS Application Log - Web Server</td></tr> <tr><td>Generic</td><td>Internally-generated Event</td></tr> <tr><td>Windows NT Performance Counter</td><td>Internet Information Services Global-Cache Flushes-15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>Internet Information Services Global-Cache Hits %-15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>Internet Information Services Global-File Cache Flushes-15-min</td></tr> <tr><td>Windows NT Performance Counter</td><td>Internet Information Services Global-File Cache Hits %-15-min</td></tr> <tr><td>Windows NT Performance Counter</td><td>LogicalDisk-Free Megabytes-<All>-15.0-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>Memory - Available MBytes - 15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>Memory - Page Faults/sec - 15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>NBT Connection-Bytes Total/sec-Total-5-minutes</td></tr> <tr><td>WMI Events</td><td>NetApp Trap Listener</td></tr> <tr><td>Windows NT Performance Counter</td><td>NWTP Server-Current Anonymous Users-<All>-15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>NWTP Server-Current Connections-<All>-15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>NWTP Server-Current NonAnonymous Users-<All>-15-minutes</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K Memory-Available Bytes 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K Memory-Committed Bytes 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K Memory-Page Reads/sec 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K Memory-Page Writes/sec 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K Memory-Pages/sec 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K PhysicalDisk-Avg. Disk Queue Length-Total 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K PhysicalDisk-Avg. Disk sec/Read-Total 5 Min</td></tr> <tr><td>Windows NT Performance Counter</td><td>NT4/W2K PhysicalDisk-Avg. 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About this chapter This chapter describes how to configure your storage systems and DataFabric Manager servers to forward their SNMP traps to the MOM server.

Topics in this chapter This chapter discusses the following topic:

- ◆ “[Configuring storage systems](#)” on page 22
- ◆ “[Configuring DataFabric Manager Servers](#)” on page 26

Configuring storage systems

There are two ways to configure your storage systems:

- ◆ Use the CLI.
- ◆ Use the FilerView® administration tool.

Using the CLI to configure storage systems

After you connect to the storage system via the CLI, follow these steps to set the SNMP settings. Type `snmp options` at the command prompt for a list of options:

```
usage: snmp options
Options are:

                                (no option => display current settings)
authtrap    [ 0|1 ]            (0 => disabled, 1 => enabled)
community   [ add ro <community> ]
community   [ delete { all | ro <community> } ]
contact     [ <contact> ]
init        [ 1 ]              (0 => uninitialized, 1 => initialized)
location    [ <location> ]
traphost    [ add|delete <hostname|ipaddress> ]
traps       [ enable|disable|reset|delete ] [ <trapname> ]
traps       <trapname>.<parm> <value>
traps       walk <prefix>
traps       load <filename>
```

Note—
Use single quotes (for example, 'abc def') to enclose strings that include spaces or tabs.

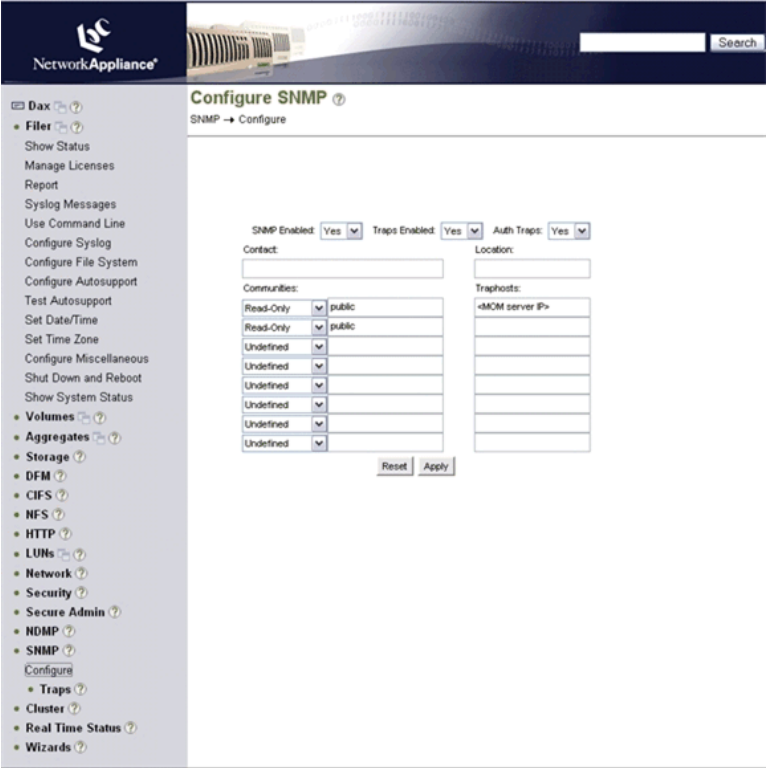
Step	Action
1	From the command prompt, enter the following command: <code>snmp init</code>
2	Enter the following command: <code>snmp authtrap 1</code>
3	Enter the following command: <code>snmp contact <contact person></code>

Step	Action
4	Enter the following command: snmp community add ro public
5	Enter the following command: snmp location <filer location>
6	Enter the following command: snmp trapshot add <MOM server IP>
7	Enter the following command: snmp Example: Dax*> snmp contact: <contact person> location: <filer location> authtrap: 1 community: ro public traphost: MOM server IP (MOM server IP) < MOM server IP > init: 1
8	Repeat these steps for each storage system.

Using FilerView to configure storage systems

To configure storage systems via FilerView, you can either connect through your Web browser or access FilerView through the DataFabric Manager application.

Step	Action
1	Open FilerView.
2	From the left pane, click SNMP.

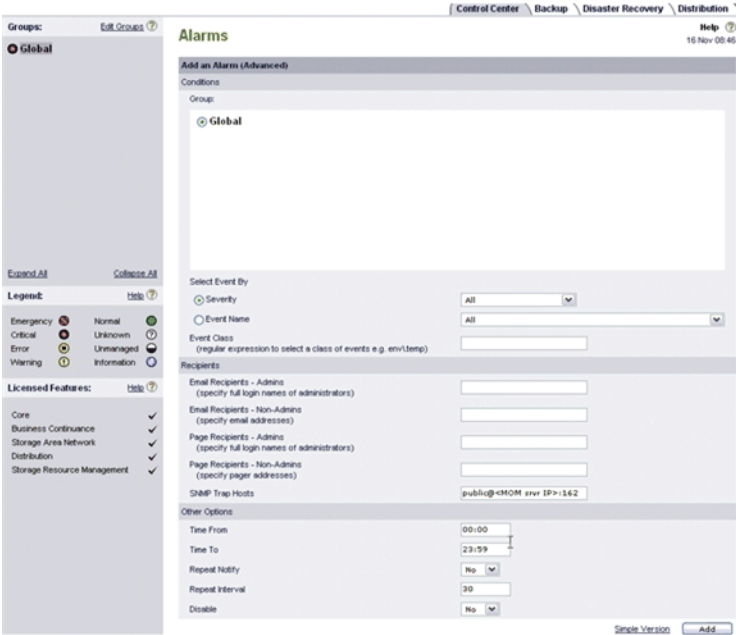
Step	Action
3	Under SNMP, click Configure. Result: The Configure SNMP options appear. 
4	Select Yes from the SNMP Enabled drop-down list.
5	Select Yes from the Traps Enabled drop-down list.
6	Select Yes from the Auth Traps drop-down list.
7	Type a contact name in the Contact field.
8	Type the location of the storage system in the Location field.
9	In the Communities section, select an open row and select Read Only from the drop-down list; then type Public in the text box.

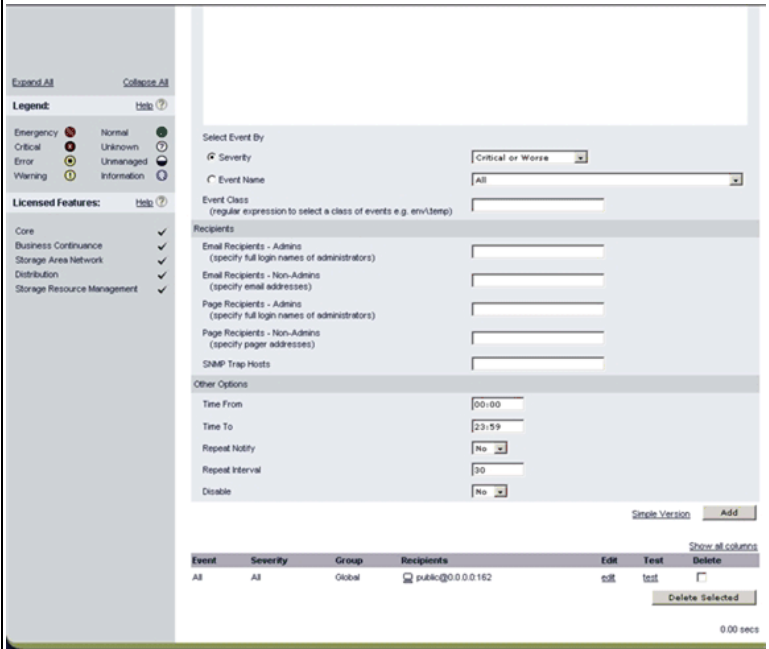
Step	Action
10	In the Traphosts section, type the MOM server IP address in the text box in the same row from Step 9 (see the illustration above, for example).
11	Click Apply. Result: The configuration settings are saved.
12	Repeat these steps for each storage system.

Configuring DataFabric Manager Servers

To enable MOM to monitor NetApp DataFabric Manager servers, you must configure the DataFabric Manager server to forward its events to MOM via SNMP traps.

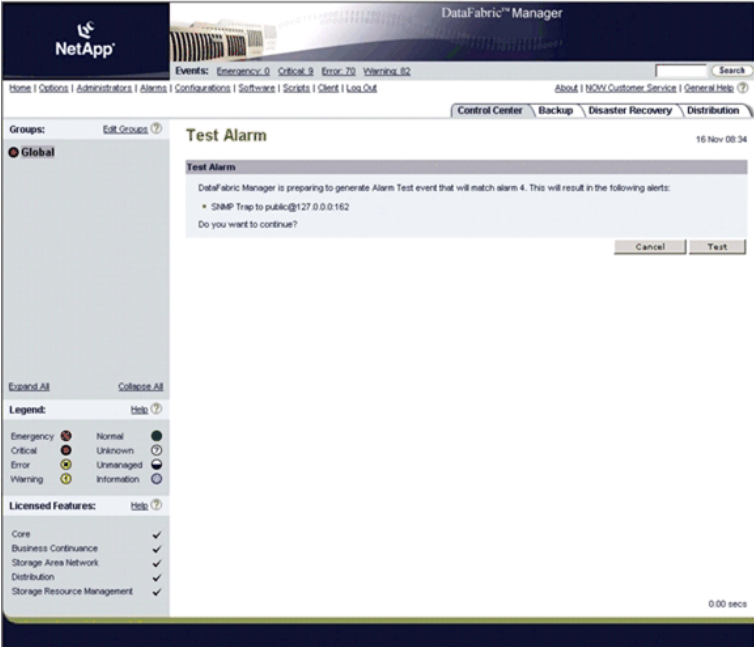
Selecting the configuration settings

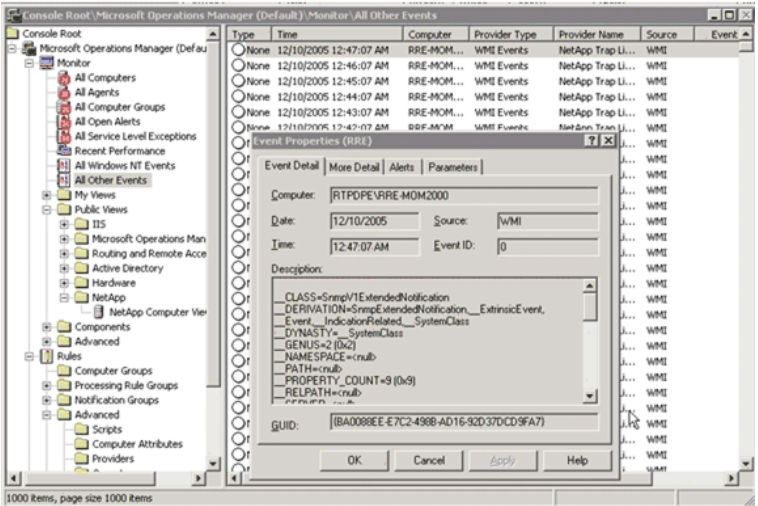
Step	Action
1	Connect to the DataFabric Manager server via your Web browser.
2	Click the Alarms menu at the top of the window.
3	Click Advanced Version near the bottom of the window. Result: The Alarms options appear. 

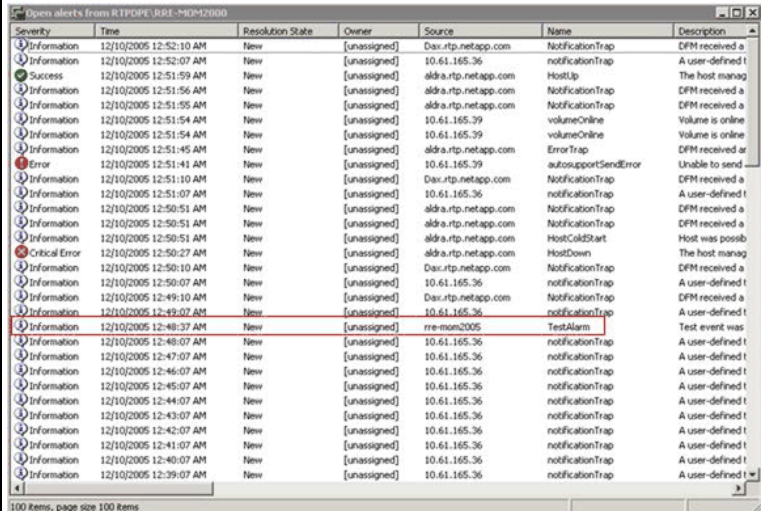
Step	Action
4	Under Select Event By, select Severity, then select All from the drop list. Result: The DataFabric Manager server will forward all events to the MOM server.
5	In the SNMP Trap Hosts field, enter the community string, IP address, and trap port for the MOM server. Note_____ The default community string is <i>public</i> and the default trap port is <i>162</i>. _____ Example: public@<MOM Server IP address>:162
6	Click Add. Result: The new details appear at the bottom of the window. 

Testing the configuration settings

To verify that the DataFabric Manager server is configured correctly, you can send a test SNMP trap to the MOM server. Follow these steps to test the configuration settings.

Step	Action
1	Click Test at the bottom of the window, as shown in the previous illustration. Result: The Test Alarm window appears. 
2	Click Test. Result: A test SNMP trap is sent to the MOM server.
3	Open the MOM Administrator Console and expand the Monitor item.

Step	Action
4	Select All Other Events. Result: The test SNMP event appears. 
5	In the MOM Administrator Console, expand the Public Views folders.
6	Expand the NetApp folder.
7	Select NetApp Computer View.

Step	Action																																																																																																																																																																																																																									
8	Double-click the computer listed in the right pane. Result: The Alerts window appears.  The screenshot shows a window titled 'Open alerts from RDPDPF_R001-MDM2000'. It contains a table with the following columns: Severity, Time, Resolution State, Owner, Source, Name, and Description. The table lists various alerts, including 'NotificationTrap', 'HostUp', 'HostColdStart', and 'TestAlarm'. The 'TestAlarm' entry is highlighted with a red border. <table border="1"><thead><tr><th>Severity</th><th>Time</th><th>Resolution State</th><th>Owner</th><th>Source</th><th>Name</th><th>Description</th></tr></thead><tbody><tr><td>Information</td><td>12/10/2005 12:52:10 AM</td><td>New</td><td>[unassigned]</td><td>Dax.rtp.netapp.com</td><td>NotificationTrap</td><td>DFM received a</td></tr><tr><td>Information</td><td>12/10/2005 12:52:07 AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.36</td><td>notificationTrap</td><td>A user-defined t</td></tr><tr><td>Success</td><td>12/10/2005 12:51:59 AM</td><td>New</td><td>[unassigned]</td><td>aldr.rtp.netapp.com</td><td>HostUp</td><td>The host manag</td></tr><tr><td>Information</td><td>12/10/2005 12:51:56 AM</td><td>New</td><td>[unassigned]</td><td>aldr.rtp.netapp.com</td><td>NotificationTrap</td><td>DFM received a</td></tr><tr><td>Information</td><td>12/10/2005 12:51:55 AM</td><td>New</td><td>[unassigned]</td><td>aldr.rtp.netapp.com</td><td>NotificationTrap</td><td>DFM received a</td></tr><tr><td>Information</td><td>12/10/2005 12:51:54 AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.39</td><td>volumeOnline</td><td>Volume is online</td></tr><tr><td>Information</td><td>12/10/2005 12:51:54 AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.39</td><td>volumeOnline</td><td>Volume is online</td></tr><tr><td>Information</td><td>12/10/2005 12:51:45 AM</td><td>New</td><td>[unassigned]</td><td>aldr.rtp.netapp.com</td><td>ErrorTrap</td><td>DFM received ar</td></tr><tr><td>Error</td><td>12/10/2005 12:51:41 AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.39</td><td>autosupportSendError</td><td>Unable to send</td></tr><tr><td>Information</td><td>12/10/2005 12:51:10 AM</td><td>New</td><td>[unassigned]</td><td>Dax.rtp.netapp.com</td><td>NotificationTrap</td><td>DFM received a</td></tr><tr><td>Information</td><td>12/10/2005 12:51:07 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AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.36</td><td>notificationTrap</td><td>A user-defined t</td></tr><tr><td>Information</td><td>12/10/2005 12:39:07 AM</td><td>New</td><td>[unassigned]</td><td>10.61.165.36</td><td>notificationTrap</td><td>A user-defined t</td></tr></tbody></table>	Severity	Time	Resolution State	Owner	Source	Name	Description	Information	12/10/2005 12:52:10 AM	New	[unassigned]	Dax.rtp.netapp.com	NotificationTrap	DFM received a	Information	12/10/2005 12:52:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t	Success	12/10/2005 12:51:59 AM	New	[unassigned]	aldr.rtp.netapp.com	HostUp	The host manag	Information	12/10/2005 12:51:56 AM	New	[unassigned]	aldr.rtp.netapp.com	NotificationTrap	DFM received a	Information	12/10/2005 12:51:55 AM	New	[unassigned]	aldr.rtp.netapp.com	NotificationTrap	DFM received a	Information	12/10/2005 12:51:54 AM	New	[unassigned]	10.61.165.39	volumeOnline	Volume is online	Information	12/10/2005 12:51:54 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Information	12/10/2005 12:51:55 AM	New	[unassigned]	aldr.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:51:54 AM	New	[unassigned]	10.61.165.39	volumeOnline	Volume is online																																																																																																																																																																																																																				
Information	12/10/2005 12:51:54 AM	New	[unassigned]	10.61.165.39	volumeOnline	Volume is online																																																																																																																																																																																																																				
Information	12/10/2005 12:51:45 AM	New	[unassigned]	aldr.rtp.netapp.com	ErrorTrap	DFM received ar																																																																																																																																																																																																																				
Error	12/10/2005 12:51:41 AM	New	[unassigned]	10.61.165.39	autosupportSendError	Unable to send																																																																																																																																																																																																																				
Information	12/10/2005 12:51:10 AM	New	[unassigned]	Dax.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:51:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:50:51 AM	New	[unassigned]	aldr.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:50:51 AM	New	[unassigned]	aldr.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:50:51 AM	New	[unassigned]	aldr.rtp.netapp.com	HostColdStart	Host was possib																																																																																																																																																																																																																				
Critical Error	12/10/2005 12:50:27 AM	New	[unassigned]	aldr.rtp.netapp.com	HostDown	The host manag																																																																																																																																																																																																																				
Information	12/10/2005 12:50:10 AM	New	[unassigned]	Dax.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:50:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:49:10 AM	New	[unassigned]	Dax.rtp.netapp.com	NotificationTrap	DFM received a																																																																																																																																																																																																																				
Information	12/10/2005 12:49:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:48:37 AM	New	[unassigned]	rre-mon2005	TestAlarm	Test event was																																																																																																																																																																																																																				
Information	12/10/2005 12:48:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:47:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:46:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:45:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:44:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:43:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:42:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:41:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:40:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
Information	12/10/2005 12:39:07 AM	New	[unassigned]	10.61.165.36	notificationTrap	A user-defined t																																																																																																																																																																																																																				
9	Locate the test alarm sent by the DataFabric Manager server, as highlighted in the previous illustration.																																																																																																																																																																																																																									

SNMP Event Severity Mappings

Understanding how NetApp SNMP events map to MOM events

The current MOM management pack allows the MOM server to process all SNMP traps generated by both the DataFabric Manager servers and storage systems. You can simultaneously monitor both the devices. Keep in mind that if you have a DataFabric Manager server monitoring storage systems and you are also individually monitoring one of the storage systems, you will receive duplicate alerts.

The follow tables list the NetApp storage system and DataFabric Manager severities and their corresponding MOM severities.

DataFabric Manager Event Severity	MOM Severity
1 (Normal)	Success
2 (Information)	Information
3 (Warning)	Warning
4 (Error)	Error
5 (Critical)	Critical
6 (Emergency)	Critical

Storage System SNMP Severity	MOM Severity
1 (Emergency)	Critical
2 (Alert)	Critical
3 (Critical)	Critical
4 (Error)	Error
5 (Warning)	Warning
6 (Notification)	Information
7 (Information)	Information
8 (Debug)	Information

