IBM Storage Management Pack for Microsoft System Center Operations Manager (SCOM)

Version 2.6.0

User Guide

GC27-3909-14

Note
Before using this document and the product it supports, read the information in "Notices" on page 53.

Edition notice

Publication number: GC27-3909-14. This publication applies to version 2.6.0 of the IBM Storage Management Pack for Microsoft System Center Operations Manager and to all subsequent releases and modifications until otherwise indicated in a newer publication.

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About this guide

This guide describes how to install, configure, and use the IBM® Storage Management Pack for Microsoft System Center Operations Manager (SCOM).

Who should use this guide

This guide is intended for system administrators who use SCOM together with IBM storage systems.

Conventions used in this guide

These notices are used in this guide to highlight key information.

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Related information and publications

You can find additional information and publications related to the IBM Storage Management Pack for Microsoft SCOM on the following information sources.

- IBM Storwize® V3500 on IBM Knowledge Center (ibm.com®/support/knowledgecenter/STLM6B)
- IBM Storwize V3700 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STLM5A)
- IBM Storwize V5000 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STHGUJ)
- IBM Storwize V7000 on IBM Knowledge Center (ibm.com/support/knowledgecenter/ST3FR7)
- IBM Storwize V7000 Unified on IBM Knowledge Center (ibm.com/support/knowledgecenter/ST5Q4U)
- IBM SAN Volume Controller on IBM Knowledge Center (ibm.com/support/knowledgecenter/STPVGU)
- IBM DS8700 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STUVMB)
- IBM DS8800 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STXN8P)
- IBM DS8870 on IBM Knowledge Center (ibm.com/support/knowledgecenter/ST8NCA)
- IBM DS8880 on IBM Knowledge Center (ibm.com/support/knowledgecenter/ST5GLJ)

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- IBM XIV® Storage System on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJTAG)
- IBM Spectrum Accelerate on IBM Knowledge Center (ibm.com/support/knowledgecenter/STZSWD)
- IBM FlashSystem® A9000 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKMM)
- IBM FlashSystem A9000R on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKN5)
- Microsoft System Center Technical Resources website (technet.microsoft.com/en-us/systemcenter)

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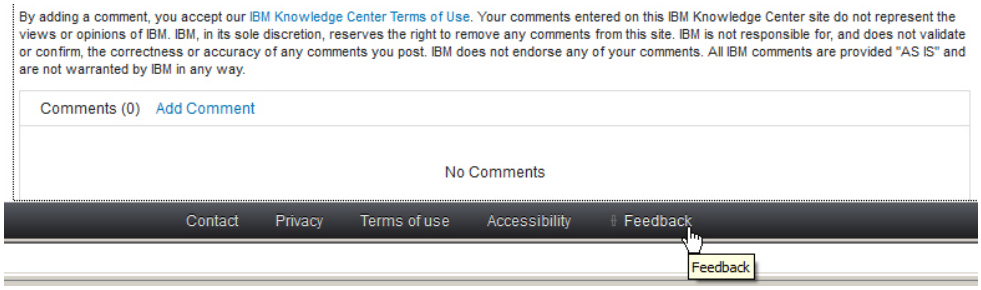

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Chapter 1. Introduction

The IBM Storage Management Pack for Microsoft SCOM is a set of software modules, called management packs, that help you access and monitor IBM storage systems from the host-based Microsoft SCOM interface.

You can install a specific management pack, add specific storage systems to the list of SCOM monitored IBM storage systems, or remove IBM storage systems from the SCOM monitoring list.

Bundled tools and management packs

The IBM Storage Management Pack for Microsoft SCOM includes the following components:

- IBM Storage SCOM-control utility (**scomu.cmd**), a stand-alone command-line interface (CLI) utility (command prompt utility) for configuration and diagnostics.
- Spectrum Virtualize Family management pack. Supports the following systems:
  - IBM Storwize V3500
  - IBM Storwize V3700
  - IBM Storwize V5000
  - IBM Storwize V7000
  - IBM Storwize V7000 Unified
  - IBM System Storage® SAN Volume Controller
  - IBM FlashSystem V9000
- DS8000® Family management pack. Supports the following systems:
  - DS8700
  - DS8800
  - DS8870
  - DS8880
- XIV and Spectrum Accelerate management pack. Supports the following systems:
  - IBM XIV Storage System
  - IBM Spectrum Accelerate™
- FlashSystem™ A9000/R management pack. Supports the following systems:
  - IBM FlashSystem A9000
  - IBM FlashSystem A9000R

Monitoring modules

The IBM Storage Management Pack for Microsoft SCOM includes the following monitoring modules:

- Alerts – Lists all alert notifications.
- Events – Lists the captured events for every component of the monitored storage systems.
- Systems – Displays the health state of entire storage systems and their objects (overall view).

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- Physical components – Displays the health state of any specific physical component.
- Logical components – Displays the health state of any defined logical component.
- Diagrams – Shows a visual representation of the hierarchy and relationship of selected components within a storage system, as well as more detailed information about it.

Concept diagram

The IBM Storage Management Pack comprises four separate management packs, each matching one or more IBM storage systems.

Accordingly, you can import a management pack into Microsoft SCOM for each IBM storage system.

The following block diagram illustrates how all management packs are integrated in Microsoft SCOM and connect to the storage systems.

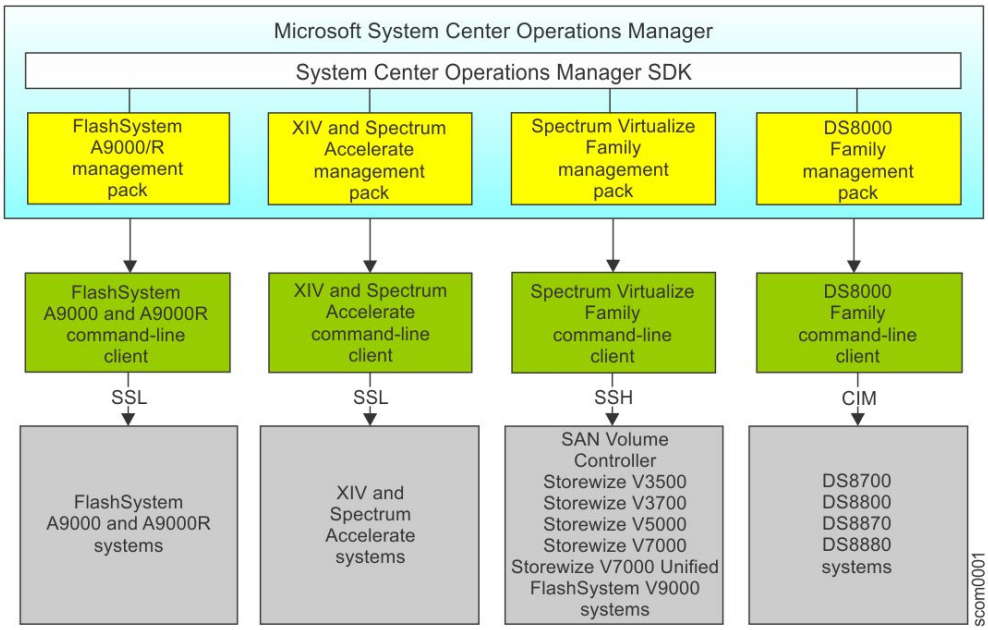

Figure 1. Individual management packs for IBM storage systems

The IBM management packs use different client types and communication channels to connect to their backend storage systems:

- The FlashSystem A9000/R management pack (for FlashSystem A9000 and FlashSystem A9000R) and the XIV and Spectrum Accelerate management pack (for XIV and Spectrum Accelerate) use the supported storage systems' respective command-line clients and communicate with their storage systems over SSL.
- The Spectrum Virtualize Family management pack (for Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, and FlashSystem V9000) uses the supported storage systems' respective command-line clients and communicate with their storage systems over SSH.

- The DS8000 Family management pack (for DS8700, DS8800, DS8870, and DS8880) uses a DS8000 client and communicates with the DS8000 storage system using the SMI-S standard Common Information Model (CIM) agent.

Compatibility and requirements

For complete and up-to-date information about compatibility and requirements of the IBM Storage Management Pack for Microsoft SCOM, refer to the latest release notes.

You can find the latest release notes on the following information sources:

- IBM Storage Management Pack for Microsoft System Center Operations Manager on IBM Knowledge Center (ibm.com/support/knowledgecenter/SSFQEY)
- IBM Fix Central (www.ibm.com/support/fixcentral)

Before you proceed

Before you proceed to the installation and usage of the IBM Storage Management Pack, you need to obtain the required user privileges for accessing the specific IBM storage systems that you intend to monitor from Microsoft SCOM.

Use your IBM storage system management GUI (or contact your storage administrator) to define your user account on the storage system in the appropriate user permission group.

Unless specified otherwise in the release notes of the IBM Storage Management Pack for Microsoft SCOM, your storage system user account should be defined in:

- **Monitor** user group – applicable to Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, FlashSystem V9000, DS8700, DS8800, DS8870, and DS8880.
- **Read Only** category – applicable to XIV, Spectrum Accelerate, FlashSystem A9000, and FlashSystem A9000R.

Chapter 2. Installation

This chapter describes the installation of the IBM Storage Management Pack for Microsoft SCOM, and includes the following sections:

Note:

- You can install the IBM Storage Management Pack on the Microsoft SCOM management server and on all site servers that run SCOM agents. This allows monitoring data to be collected by each SCOM agent service, which then sends the data to the SCOM management server.
- As a best practice, install IBM Storage Management Pack on SCOM agents. If you have many storage arrays to monitor, it is also recommended to distribute the monitoring over multiple SCOM agents, in order to balance the load across the agents.

Downloading the IBM Storage Management Pack

Download the IBM Storage Management Pack onto the host on which Microsoft SCOM is installed and used.

About this task

You can find the IBM Storage Management Pack for Microsoft SCOM installation package on the IBM Fix Central website (www.ibm.com/support/fixcentral).

Procedure

Two packages are available for download. Download the executable package that matches the Windows bit version that you are using on the host:

- `IBM_Storage_MP_for_SCOM-windows-x86-2.6.0.exe` – for 32-bit Windows Server versions
- `IBM_Storage_MP_for_SCOM-windows-x64-2.6.0.exe` – for 64-bit Windows Server versions

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Installation package contents

Some components in the installation package are required and some are optional, as detailed in the following table.

Table 1. Installation package contents

Component	Description	Required or optional
SCOM-control utility (**scomu.cmd**)	A stand-alone command-line interface (CLI) tool for configuration and diagnostics.	Required
Upgrade utility (**upgrade_config.cmd**)	A CLI utility for upgrading from version 1.1.1 or earlier.	Optional
DS8000 Family management pack	A module for monitoring DS8000 systems through Microsoft SCOM.	Optional
Spectrum Virtualize Family management pack	A module for monitoring SAN Volume Controller, Storwize series, and FlashSystem V9000 systems through Microsoft SCOM.	Optional
XIV and Spectrum Accelerate management pack	A module for monitoring XIV and Spectrum Accelerate systems through Microsoft SCOM.	Optional
FlashSystem A9000/R management pack	A module for monitoring FlashSystem A9000 and FlashSystem A9000R systems through Microsoft SCOM.	Optional

Note: The management packs are not automatically imported to Microsoft SCOM. You must manually import each pack that you want to use.

First-time installation vs. upgrade

If a previous version of the IBM Storage Management Pack is already installed, you can upgrade it.

When you run the installation (see "Running the installation wizard" on page 7) on a host with an existing installation of the IBM Storage Management Pack, the upgrade wizard is automatically invoked and it guides you through the upgrade process.

Important:

- After the upgrade, you need to delete and then re-import the management packs. For more information, see "Removing a specific management pack" on page 12 and "Importing management packs to Microsoft SCOM" on page 27.
- No IBM Storage events and alerts are kept in the database after the upgrade.

If you are upgrading to version 2.6.0 by installing it over version 1.1.1, run the **upgrade_config.cmd** CLI utility after version 2.6.0 is installed, in order to restore the earlier configurations.

For example:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>upgrade_config.cmd
Upgrade complete.
```

Running the installation wizard

To install the IBM Storage Management Pack, run the installation wizard as described in the following procedure.

Before you begin

Attention: Before installing, updating, or uninstalling the IBM Storage Management Pack, close the configuration shell (**scomu.cmd**) and all other running applications that may be using the IBM Storage Solutions External Runtime Components (such as the IBM XIV Host Attachment Kit). This is to avoid errors or disruptive restart of the host server.

About this task

You can install the IBM Storage Management Pack on the Microsoft SCOM management server and on all site servers that run SCOM agents. This allows monitoring data to be collected by each SCOM agent service, which then sends the data to the SCOM management server.

Procedure

1. Run the executable file that you have downloaded (see "Downloading the IBM Storage Management Pack" on page 5). The welcome panel of the installation wizard is displayed.

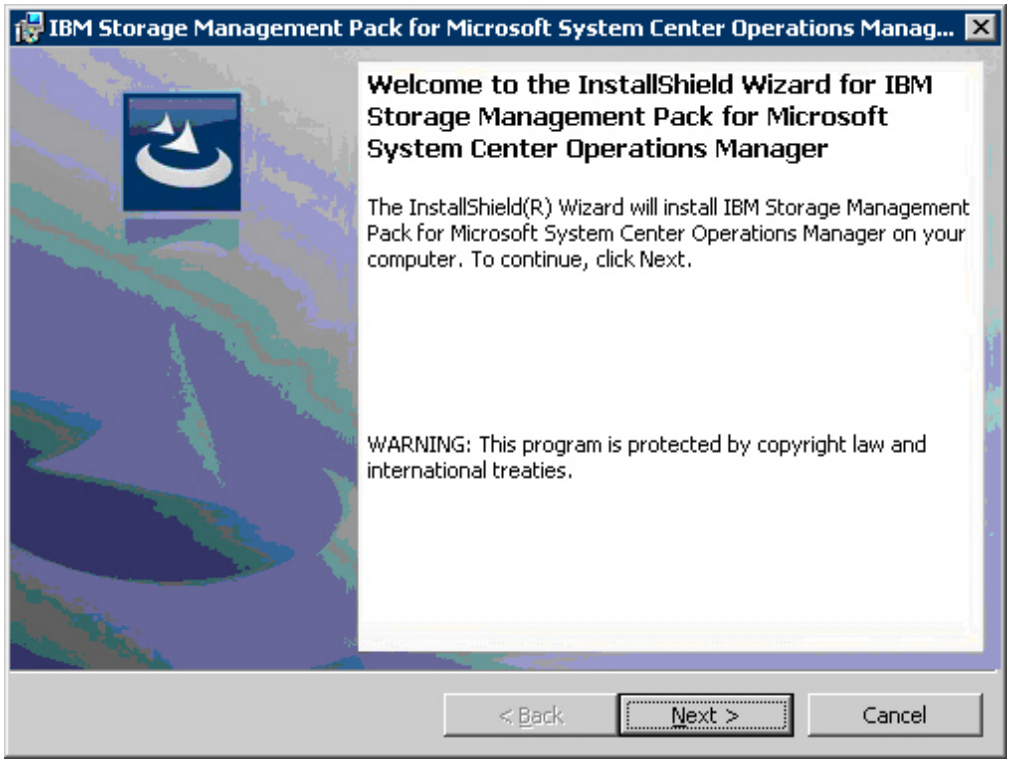

Figure 2. IBM Storage Management Pack for Microsoft SCOM – Installation Wizard

2. Click **Next**. The License Agreement panel is displayed.
3. Read and accept the terms of the license agreement, and then click **Next**. The Setup Type panel is displayed.

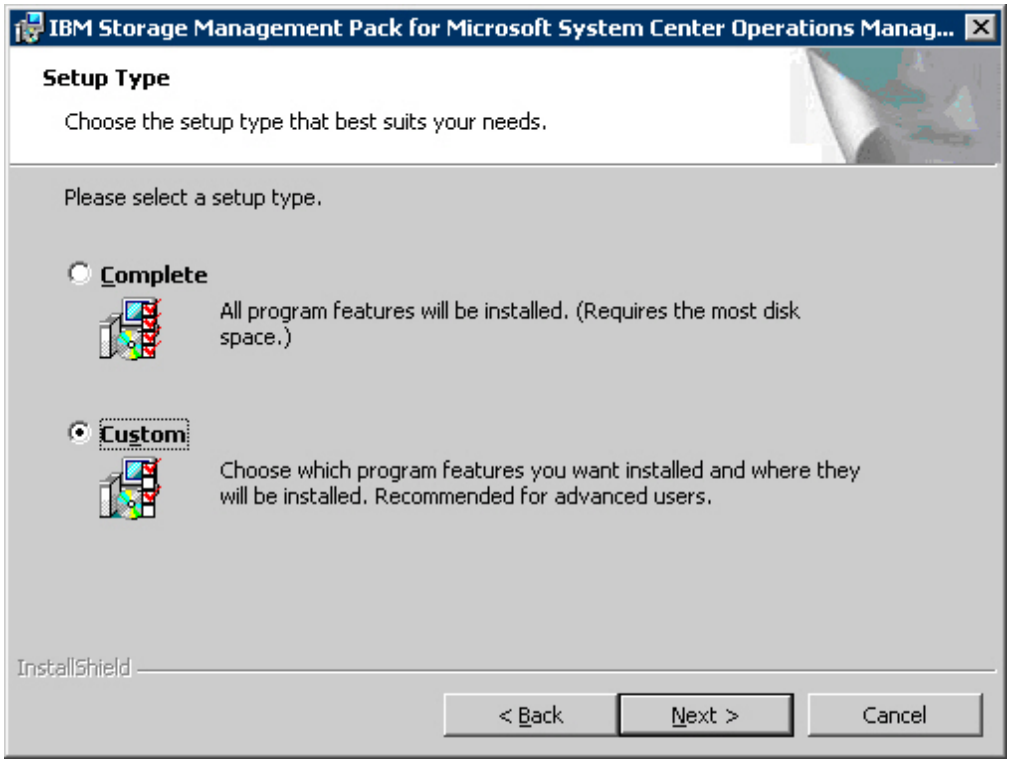

Figure 3. Setup type selection

4. Select the setup type:
   - **Complete** – Select this option to install all management packs (see "Installation package contents" on page 6).
   - **Custom** – Select this option to install only the management packs that you specify.
5. Click **Next**. If you previously selected **Custom**, the Select Features panel is displayed, and you can select the specific management packs that you want to install.

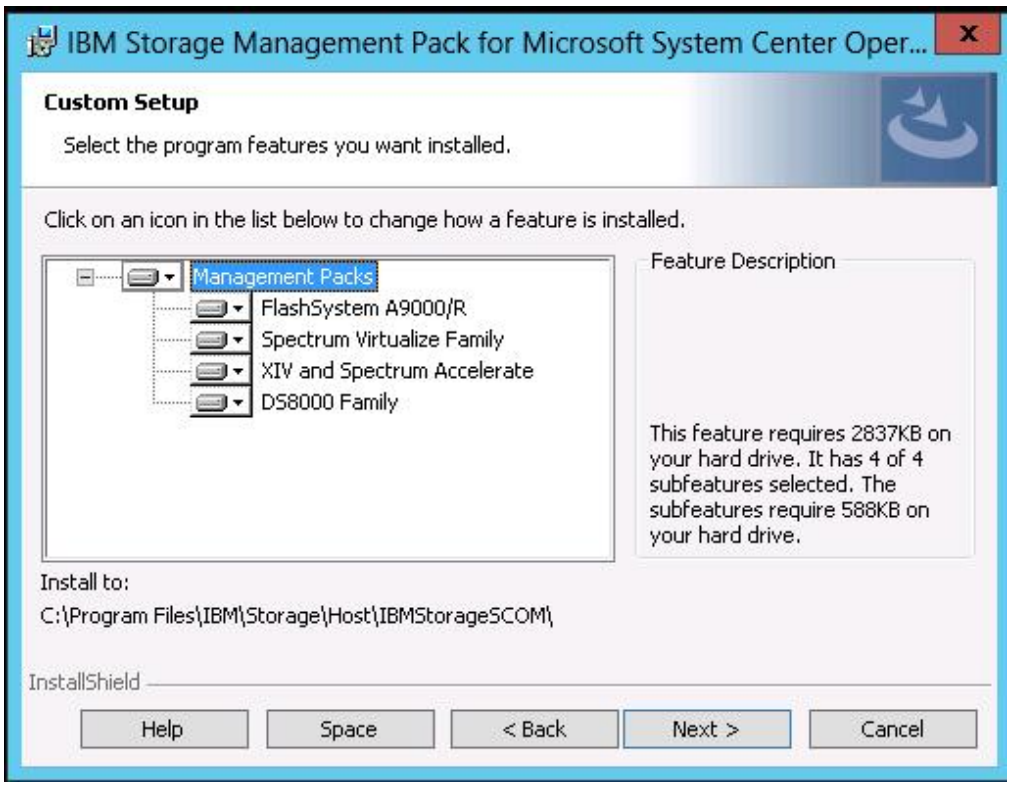

Figure 4. Custom setup

6. Click **Next**. The Ready to Install the Program panel is displayed.

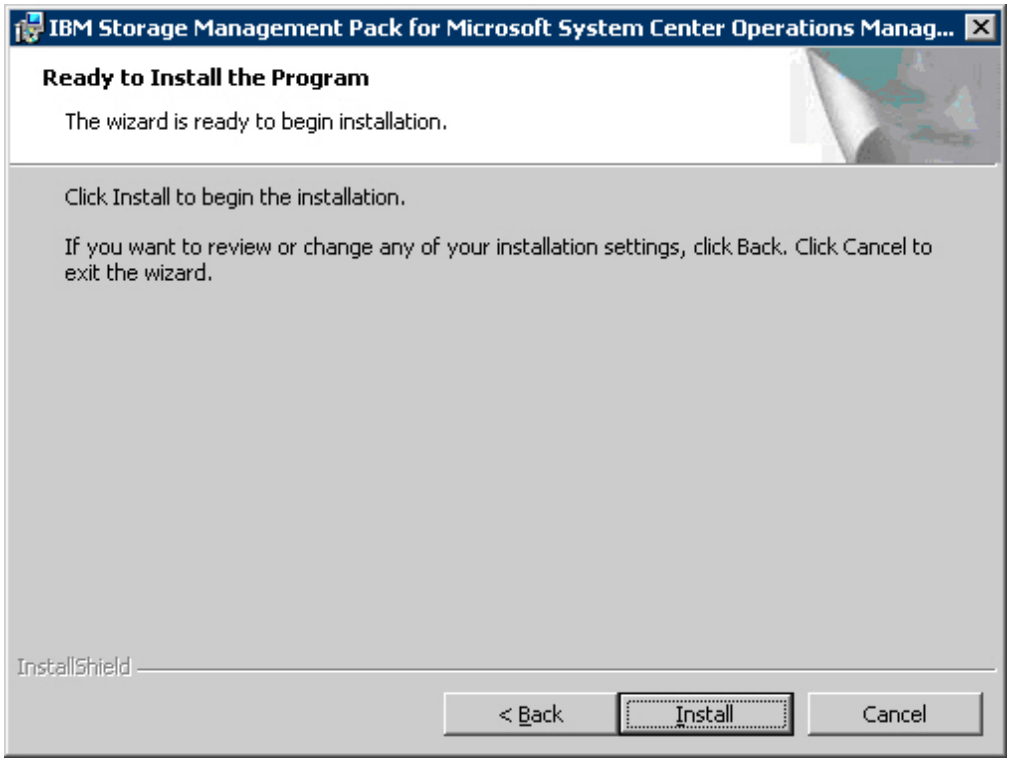

Figure 5. Ready to install the program

7. Click **Install**. The installation process begins, and files are copied to the following directory: `%ProgramFiles%\IBM\Storage\Host\IBMStorageSCOM`
8. After the installation process is complete, click **Finish**.

Installing the Microsoft Operations Manager SDK on an agent server

The Microsoft Operations Manager Software Development Kit (SDK) is required for any IBM Storage Management Pack that runs on a SCOM agent server. The SDK is not installed by default on the SCOM agent server, and you need to install it manually.

Before you begin

The Microsoft Operations Manager SDK component must be installed on the SCOM agent server **only after** the IBM Storage Management Pack is installed.

For the latest up-to-date information about this SDK, refer to the MSDN web page for System Center 2012 – Operations Manager SDK (msdn.microsoft.com/en-us/library/hh329086.aspx).

Note: The term *agent server* refers to any host computer on which a SCOM agent runs in the background, as opposed to the server upon which the actual SCOM platform is installed (referred to as *management server*).

Procedure

There are two methods of installing the Microsoft Operations Manager SDK on the SCOM agent:

- Install the SDK on the agent server. The SDK is installed in one of the following directories, depending on the Microsoft SCOM version that you are using:
  - `C:\Program Files\System Center 2012\Operations Manager\Console\SDK Binaries`
- Copy the SDK from the management server to the agent server in the following manner:
  1. On the **management server**, find the '`SDK Binaries`' folder located in one of the following directories, depending on the Microsoft SCOM version that you are using:
     - `C:\Program Files\System Center 2012\Operations Manager\Server`
     - `C:\Program Files\Microsoft System Center 2012 R2\Operations Manager\Server`
  2. Copy the `SDK Binaries` folder to one of the following directories on the **agent server**:
     - Default directory for Microsoft SCOM 2012 R2:

       `C:\Program Files\Microsoft Monitoring Agent\Agent`
     - Default directory for Microsoft SCOM 2012:

       `C:\Program Files\System Center Operations Manager\Agent`
     - Any local directory that you have defined in a configuration file named **`SDKdir.cfg`**. The file must be placed in:

       `C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\config`

       The **`SDKdir.cfg`** configuration file should contain only one text line specifying the directory path.

Uninstalling management packs

When any specific management pack is no longer needed, you can remove it individually from Microsoft SCOM or, alternatively, you can uninstall all management packs together.

Procedure

Accordingly, the following subsections describe:

- "Removing a specific management pack"
- "Uninstalling all management packs"

Removing a specific management pack

This section describes how to remove a specific management pack.

Procedure

1. On the Administration panel, click **Management Packs**.
2. On the Management Packs list, select the management pack that you want to remove.
3. Right-click the management pack, and select **Delete** from the pop-up menu. Alternatively, press **Delete** or **Del** on the keyboard when the row of the management pack is selected.

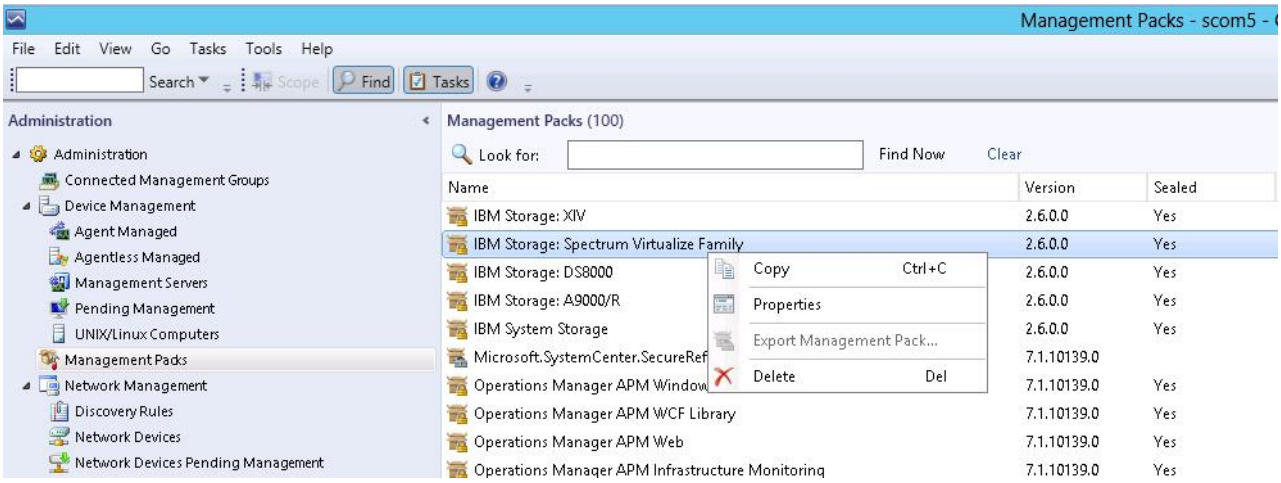

Figure 6. Deleting a management pack

Important: If the management pack you deleted is the last remaining pack in the Operations Manager, you must delete the IBM Storage common management pack as well.

Uninstalling all management packs

This section describes how to completely uninstall all IBM management packs.

Procedure

1. Select and delete each management pack as explained in "Removing a specific management pack."

2. Go to **Control Panel** > **Add/Remove Programs**, and uninstall **IBM Storage Management Pack for Microsoft SCOM**.

Chapter 3. Configuration

After the IBM Storage Management Pack for Microsoft SCOM has been successfully installed, you can configure it.

Configuring the IBM Storage Management Pack involves different tasks, as described in the following sections:

Using the command-line utility

The IBM Storage Management Pack includes a standalone command-line interface (CLI) utility, **scomu.cmd**, which you can use from a desktop shortcut or from the **Run** command box on the Windows Start menu.

Using a set of CLI commands, you can configure the IBM storage systems that are monitored by Microsoft SCOM, as explained in the following subsections.

Note: **scomu.cmd** can also be used to diagnose issues and collect logs for troubleshooting. For more information, see Chapter 5, "Diagnostics and troubleshooting," on page 47.

To display the full list of commands and options available for the CLI utility, enter **scomu.cmd --help** in the command prompt window.

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```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --help
IBM Storage SCOM-control Utility - Version 2.6.0

Usage: Usage:
  scomu.cmd --add [--no-test | --timeout TIMEOUT] [device options]
  scomu.cmd --modify [--no-test | --timeout TIMEOUT] [device options]
  scomu.cmd --del [device options]
  scomu.cmd --list [-t DEVICE_TYPE] [--format FORMAT]
  scomu.cmd --test [--timeout TIMEOUT] [device options]
  scomu.cmd --setseverity -t DEVICE_TYPE --event_id [EVENT ID] --severity [SEVERITY]
  scomu.cmd --restoreseverity -t DEVICE_TYPE --event_id [EVENT ID]
  scomu.cmd --listseverity
  scomu.cmd --loglevel -t DEVICE_TYPE [LOG_LEVEL]
  scomu.cmd --diag [--no-test]
  scomu.cmd --precheck
  scomu.cmd --migrate
  scomu.cmd --sc-get
  scomu.cmd --sc-set [--servername SERVERNAME | --domain DOMAIN | --username USERNAME |
                      --password PASSWORD]
  scomu.cmd --sc-del
  scomu.cmd --sc-check
  scomu.cmd --help
```

```
Options:
  Main operation mode:
    --add               Add a connection
    --modify            Modify a connection
    --del               Delete a connection
    --list              List all connections
    --test              Test whether a connection can be established
    --loglevel          View the log level, or set log level to ['NOTSET', 'TRACE',
                        'DEBUG', 'INFO', 'WARNING', 'ERROR', 'CRITICAL']
    --diag              Collect diagnostic data
    --precheck          Pre-check the environment
    --setseverity       Set event severity
    --restoreseverity   Restore event severity
    --listseverity      List event severity mappings
    --sc-get            Get configurations for System Center
    --sc-set            Set configurations for System Center
    --sc-del            Delete configurations for System Center
    --sc-check          Check configurations for System Center
    --migrate           Migrate configurations and synchronize them with System Center

  Operation modifiers:
    -F FILE, --file=FILE
                        Obtain configuration from a file or read the environment
                        IBM_SCOM_HOME (used only by the service team)
    --debug             Display debug information (used by service team)
    --no-test           Skip the connection test
    --timeout=TIMEOUT   The device connection time-out duration in seconds, which can
                        be any value between 1s and 3600s. Default value: 60s
    --format=FORMAT     The output format:  html (default) or csv
```

```
Device options:
  -t DEVICE_TYPE, --dev_type=DEVICE_TYPE
                      Set the device type to  ['ds8k', 'a9000r', 'svc',
                      'xiv'], 'ds8k' for IBM System Storage DS8000,'a9000r'
                      for IBM FlashSystem A9000/R,'svc' for IBM Spectrum
                      Virtualize Family,'xiv' for IBM XIV Storage System
  --ip=IP, --host=IP  IP address or hostname
  -U USERNAME, --username=USERNAME
                      username
  -P PASSWORD, --password=PASSWORD
                      password
  -p PASSPHRASE, --passphrase=PASSPHRASE
                      passphrase
  --url=URL           URL, for example <http | https>://<hostname or
                      IP>:<port>
  --namespace=NAMESPACE
                      namespace
  --authmode=AUTHMODE
                      Set authentication mode to AUTHMODE. "publickey" for a
                      certificate file, "password" for password (can be used
                      for SAN Volume Controller or Storwize V7000 of
                      microcode version 6.3 or later.)
  --certpath=CERTPATH
                      certificate file path
  --event_id=EVENT_ID
                      event ID
  --severity=SEVERITY
                      Set event severity to SEVERITY

Device options for IBM System Storage DS8000:
  -t ds8k --url URL [--username USERNAME] [--password PASSWORD]
  [--namespace NAMESPACE]

Device options for IBM Spectrum Virtualize Family:
  -t svc --ip IP [--authmode AUTHMODE] [--username USERNAME]
  [--password] PASSWORD [--certpath CERTPATH] [--passphrase] PASSPHRASE

Device options for IBM XIV Storage System:
  -t xiv --ip IP [--username USERNAME] [--password PASSWORD]

Device options for IBM FlashSystem A9000 or FlashSystem A9000R:
  -t a9000r --ip IP [--username USERNAME] [--password PASSWORD]

Device options to set System Center configurations:
  --sc-set [--servername SERVERNAME | --domain DOMAIN | --username
  USERNAME | --password PASSWORD]

  --servername=SERVERNAME
                      The server name of System Center Operations Manager
                      Management Server
  --domain=DOMAIN     The Windows domain name
```

```
  Other options:
    -h, --help          Display help information
    --version           Display the IBM Storage Management Pack version number

Examples:
  scomu.cmd --add -t xiv --ip 192.0.2.10 -U u1 -P 123 # adds a connection
  scomu.cmd --add -t a9000r --ip 192.0.2.10 -U u1 -P 123 # adds a connection
  scomu.cmd --add -t svc --ip 192.0.2.10 --authmode password --username usr1
                         --password pass1 # adds a connection
  scomu.cmd --add -t svc --no-test --ip 192.0.2.10 --authmode password
                         --username usr1 --password pass1 # adds a connection
  scomu.cmd --modify -t xiv --ip 192.0.2.10 -P x # modifies a connection
  scomu.cmd --modify -t a9000r --ip 192.0.2.10 -P x # modifies a connection
  scomu.cmd --del -t svc --ip 192.0.2.10 # deletes a connection
  scomu.cmd --list  # lists all connections
  scomu.cmd --test -t xiv --ip 192.0.2.10 -U u1 -P 123 # tests a connection
  scomu.cmd --test -t a9000r --ip 192.0.2.10 -U u1 -P 123 # tests a connection
  scomu.cmd --loglevel -t ds8k ERROR # sets log level
  scomu.cmd --setseverity -t svc --event_id 980001 --severity information # set
                                 severity in SCOM MP of event 980001 to information
  scomu.cmd --restoreseverity -t svc --event_id 980001 # restore severity SCOM MP
                                       of event 980001 to default
  scomu.cmd --listseverity # list all customized event severity mappings
  scomu.cmd --sc-get # get configurations for System Center
  scomu.cmd --sc-set --servername scomsrv01 --domain domain01 --username usr
                     --password pass # set configurations for System Center in agent
  scomu.cmd --sc-set --servername localhost # set configurations for System Center
                       in management server
  scomu.cmd --sc-del # delete configurations for System Center
  scomu.cmd --sc-check # check configurations for System Center
  scomu.cmd --migrate # migrate configurations and synchronize them with System Center
```

Configuring the SCOM management server

Before adding or modifying an IBM storage system, configure the SCOM management server as described in the following sections.

- "Checking the existing management server configuration"
- "Setting the management server domain and credentials" on page 19
- "Deleting the management server information" on page 20

Note: The IBM Storage Management Pack only works if the SCOM Root Management Server (RMS) and SCOM agents are deployed in the same domain.

Checking the existing management server configuration

This section describes how to check the credential configuration of the management server before adding or modifying specific IBM storage systems to the Microsoft SCOM monitoring list.

About this task

You can use the **SCOMU.cmd** utility and the **--sc-check** command to check the credential configuration of the management server.

Procedure

To check the connection with the management server, enter **scomu.cmd --sc-check**.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-check
There is no System Center configuration.

C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-check
Checking the connection to the management server...
The connection to the management server is OK.
```

What to do next

If the management server configuration is missing or incorrect, use **--sc-set** to configure or modify the management server info. See the detailed explanation in "Setting the management server domain and credentials."

Setting the management server domain and credentials

The management server domain and credential information should be configured before adding or modifying specific IBM storage systems in the Microsoft SCOM monitoring list.

Procedure

You can use the **SCOMU.cmd** utility and the **--sc-set** command to configure the management server information.

1. To configure the management server information on the agent, type the following details in a single command line:
   - Server name (**--servername**) of the management server.
   - Domain (**--domain**) of the management server.
   - User name (**--username**) and password (**--password**).

Important:

- If the management server user account and software development kit (SDK) user account are different, use the username and password of the SDK user account.
- The domain of the management server must be the same domain of the SCOM agent nodes.

---

2. To configure the management server information on the server, type the following details in a single command line:
   - Server name (**--servername**) of the management server.

Example

The following is an example of configuring the management server information on the agent:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-set
--servername scom1234.domain.com --domain scom.domain.com
--username administrator --password pass
```

The following is an example of configuring the management server information on the server:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-set
--servername localhost
```

What to do next

If you want to delete the management server information, use the **--sc-del** command.

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-del
Checking the connection to the management server...
The connection to the management server is OK
The connection to the management server is deleted
```

If you want to get the management server information, use **--sc-get** command.

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-get
Management Server: scom1234
Windows domain: scom.domain.com
Username: administrator
Password: ********
```

Deleting the management server information

When required, you can delete the management server information.

About this task

You can use the **SCOMU.cmd** utility and the **--sc-del** command to delete the management server information.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-del
Checking the connection to the management server...
The connection to the management server is OK.
The connection to the management server is deleted.
```

Adding IBM storage systems

You can use the **SCOMU.cmd** utility and the **--add** command to add specific IBM storage systems to the Microsoft SCOM monitoring list.

Management packs must be imported into the Microsoft SCOM environment before adding IBM storage systems. If the management pack is not yet imported, import it as specified in "Importing management packs to Microsoft SCOM" on page 27.

Notes:

- After importing a management pack, check the connection with the SCOM server using **scomu.cmd --sc-check**. If the connection is not OK, you should correct it before adding IBM storage systems
- When adding a storage system to the monitoring list, the connection to the storage system is tested before it is added. You can skip the testing by specifying **--no-test** when adding the storage system.

Adding a DS8000 system

This section describes how to add a DS8000 system to the list of SCOM-monitored IBM storage systems.

About this task

The DS8000 management pack connects to the DS8000 storage system through a DS CIM agent. The DS CIM agent runs embedded on the DS8000 system or in proxy mode, depending on the microcode version (for more information, refer to the release notes).

Procedure

To add a DS8000 system to the monitoring list, type the following details in a single command line:

- Type of system to be added (**-t**) – Use "**ds8k**" to specify DS8000 as the system type.
- URL (**--url**) – Web address of the DS CIM agent
- Namespace (**--namespace**) – CIM namespace of the DS CIM agent (for example: root/ibm)
- Login user name (**--username**) and password (**--password**) – For a proxy DS CIM agent, use the CIM agent user account. For an embedded DS CIM agent, use the DS8000 user account.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --add -t ds8k --url https://host1.domain1.com:6989
--namespace root/ibm --username usr1 --password pwd1
Connecting to the device ...
1 IBM DS8000 is found.
device ID: xx, code level: x.x.x.x, CIM server version: x.x.x.x

The connection is OK.
Trying to add the connection.
New connection is added.
```

Adding a Spectrum Virtualize Family system

This section describes how to add a SAN Volume Controller, Storwize series, or FlashSystem V9000 system to the list of SCOM-monitored IBM storage systems.

Procedure

After the **--add** command, specify the following parameters (CLI arguments followed by values):

- IP address (**--ip**) or host name (**--host**) of the SAN Volume Controller, Storwize series, or FlashSystem V9000 system.
- Type of system to be added (**-t**) – Use "**svc**" to specify SAN Volume Controller, a Storwize series system, or FlashSystem V9000 as the system type.
- Authentication mode (**--authmode**) – You can specify the public key mode (**publickey**), or, if you are using microcode version 6.3 or later – you can specify the password mode (**password**).
  - If the public key authentication mode is used, enter the authentication user name (**--username**) and then the folder location and name of the private SSH key (**--certpath**). If the SSH requires a passphrase (**--passphrase**), enter it as well.

    For example:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --add -t svc --ip 192.100.200.150
--authmode publickey --username john1 --certpath c:\svc.cert --passphrase xxxxx
Connecting to the device ...
1 IBM SAN Volume Controller is found.
cluster ID: xx, code level: x.x.x.x, location: local

The connection is OK.
Trying to add the connection.
New connection is added.
```

– If the password authentication mode is used (applicable only to microcode version 6.3 or later), enter the authentication user name (**--username**) and then the authentication password (**--password**).

For example:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --add -t svc --ip 192.100.200.150
--authmode password --username john1 --password xxxxxxxxxx
Connecting to the device ...
1 IBM SAN Volume Controller is found.
cluster ID: xx, code level: x.x.x.x, location: local

The connection is OK.
Trying to add the connection.
New connection is added.
```

Important:

- If you are using a SAN Volume Controller system with microcode version 6.1, only "**admin**" is accepted as the user name. Using "**admin**" does not necessarily mean that you have administrator credentials, but rather a user name spelled as "**admin**". It also does not mean that the matching user name defined on the storage system is also "**admin**". The pairing between the SCOM Management Pack user and the storage system user account is performed only by the SSH key pairing (any valid SSH key grants access).
- The private SSH key (in all cases in which it is used) must be in the OpenSSH format. If your key is not in the OpenSSH format, you can use a certified OpenSSH conversion utility. For more information, see the OpenSSH website (www.openssh.org).

Adding an XIV or Spectrum Accelerate system

This section describes how to add an XIV or Spectrum Accelerate system to the list of SCOM-monitored IBM storage systems.

About this task

SCOM version 2.6.0 includes XIV multi-tenancy support, which applies to XIV and Spectrum Accelerate microcode version 11.5 or later. To use multi-tenancy support, a non-domain user must have global visibility and then can have access only when the access policy is set to “Open.”

Note: SCOM only accepts non-domain LDAP users.

Procedure

To add an XIV or Spectrum Accelerate system to the monitoring list, use **-t xiv** to specify XIV as the system type, and then specify the IP address (**--ip**) or host name (**--host**) of the XIV or Spectrum Accelerate system, followed by the **--username** and **--password** login details.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --add -t xiv --ip 192.0.2.10 --username usr4 --password pwd4
Connecting to the device ...
1 IBM XIV Storage System is found.
device ID: xx, code level: x.x.x.x

The connection is OK.
Trying to add the connection.
New connection is added.
```

Adding a FlashSystem A9000 or FlashSystem A9000R system

This section describes how to add a FlashSystem A9000 or FlashSystem A9000R system to the list of SCOM-monitored IBM storage systems.

About this task

SCOM version 2.6.0 includes XIV multi-tenancy support, which applies to FlashSystem A9000 and A9000R microcode version 12.0.1 or later. To use multi-tenancy support, a non-domain user must have global visibility and then can have access only when the access policy is set to "Open."

Note: SCOM only accepts non-domain LDAP users.

Procedure

To add a FlashSystem A9000 or FlashSystem A9000R system to the monitoring list, use **-t a9000r** to specify A9000 or A9000R as the system type. Then specify the IP address (**--ip**) or host name (**--host**) of the A9000 or A9000R system, followed by the **--username** and **--password** login details.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --add -t a9000r --ip 192.0.2.10 --username usr4 --password pwd4
Connecting to the device ...
1 IBM FlashSystem A9000R Storage System is found.
device ID: xx, code level: x.x.x.x

The connection is OK.
Trying to add the connection.
New connection is added.
```

Displaying the monitored storage systems

This section describes how to display the list of SCOM-monitored storage systems.

Procedure

To view the list of monitored storage systems, enter **scomu.cmd --list**. The default output format is HTML, and the list is displayed in the default web browser.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --list
9 connections are found.
```

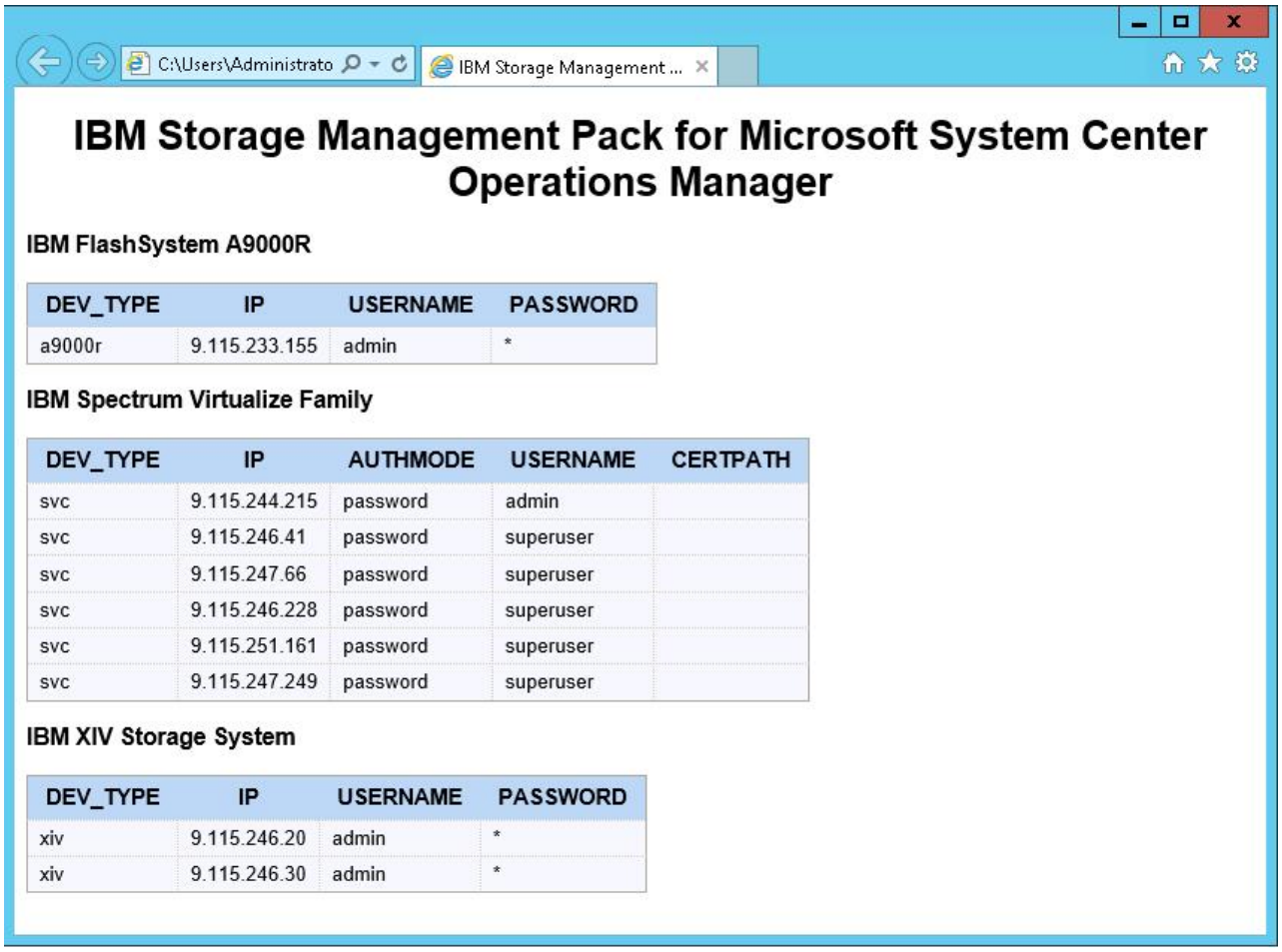

Figure 7. HTML output

What to do next

To display the list in comma-separated values (CSV) format, add **--format csv** to the command. For example:

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --list --format csv
9 connections have been found.

DEV_TYPE,IP,USERNAME,PASSWORD
a9000r,9.115.233.155,admin,*

DEV_TYPE,IP,AUTHMODE,USERNAME,CERTPATH
svc,9.115.244.215,password,admin,
svc,9.115.246.41,password,superuser,
svc,9.115.247.66,password,superuser,
svc,9.115.246.228,password,superuser,
svc,9.115.251.161,password,superuser,
svc,9.115.247.249,password,superuser,

DEV_TYPE,IP,USERNAME,PASSWORD
xiv,9.115.246.20,admin,*
xiv,9.115.246.30,admin,*
```

Modifying storage system connection parameters

This section describes modifying storage system connection parameters.

Procedure

To modify the connection parameters for a specific monitored storage system, enter **--modify** followed by the system to be modified, the new parameter names and values.

Example

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --modify -t xiv --ip 192.0.2.10 --username usr5
Connecting to the device ...
1 IBM XIV Storage System is found.
device ID: xx, code level: x.x.x.x

The connection is OK.
Trying to modify the connection.
The connection is modified.
```

Removing a storage system from the monitoring list

This section describes how to remove a storage system from the list of SCOM-monitored IBM storage systems.

Procedure

To remove the storage system from the monitored list, enter **--del** and then the IP address or host name of the storage system.

Example

```
C:\Program Files\IBM\StorageMPIBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --del -t xiv --ip 192.0.2.40
1 connection is deleted.
```

Changing event severity levels

You can use the **scomu.cmd** CLI utility to change the severity level of logged events.

About this task

Depending on your environment and preferences, you can change the default severity level of logged events. This allows you to set automated alerts for events that their default severity does not match your particular environment and preference. You can lower the severity level of events about which you do not want to be alerted, or raise the severity level of events about which you do want to be alerted.

Note:

- This feature is supported only with Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, and FlashSystem V9000.
- The default alert severity level is **Warning**.

Use the **--setseverity** command to change event severity levels, as described in the following procedure.

Procedure

After the **--setseverity** command, specify the following parameters (CLI arguments followed by values):

- Type of system for which the severity change should be made – Use **-t** followed by "**svc**".
- ID of the event for which you want to change the severity level – Use **--event_id** followed by the ID number of the event.
- The severity level that you want to set for the event – Use **--severity** followed by the name of the severity level that you want to set.

Note: Different severity level types are available depending on the IBM storage system that you are using. For more information, see Chapter 4, "Monitoring," on page 33.

Example

```
scomu.cmd --setseverity -t svc --event_id 980001 --severity information
```

What to do next

- To display a list of all the customized severity levels, use the **--listseverity** command as follows:

  ```
  scomu.cmd --listseverity
  ```

- If you want to restore the severity level of a certain event to its default severity, use the **--restoreseverity** command as shown in this example:

  ```
  scomu.cmd --restoreseverity -t svc --event_id 980001
  ```

Importing management packs to Microsoft SCOM

If any specific management pack (for a storage system type) is not already imported, you can import it to the Microsoft SCOM environment by performing the following procedure.

Before you begin

Important: Any management pack that was previously imported with version 1.3.0 or earlier must be deleted before importing management packs with newer versions of the IBM Storage Management Pack for Microsoft SCOM. For more information, see "Removing a specific management pack" on page 12.

Procedure

To import an IBM management pack in Microsoft SCOM 2012 or 2012 R2:

1. On the Administration panel, right-click **Management Packs**, and select **Import Management Packs**.

   The Import Management Pack dialog box is displayed.

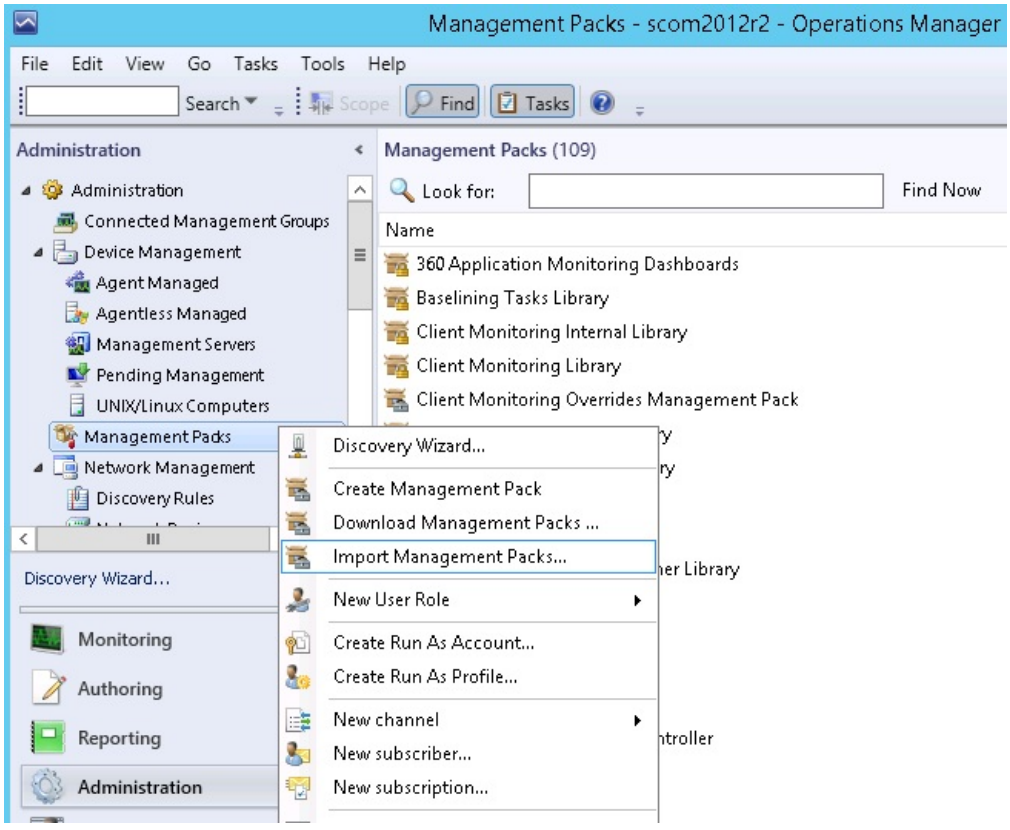

Figure 8. Import Management Packs selected

2. Click **Add**, and then click **Add from disk**.

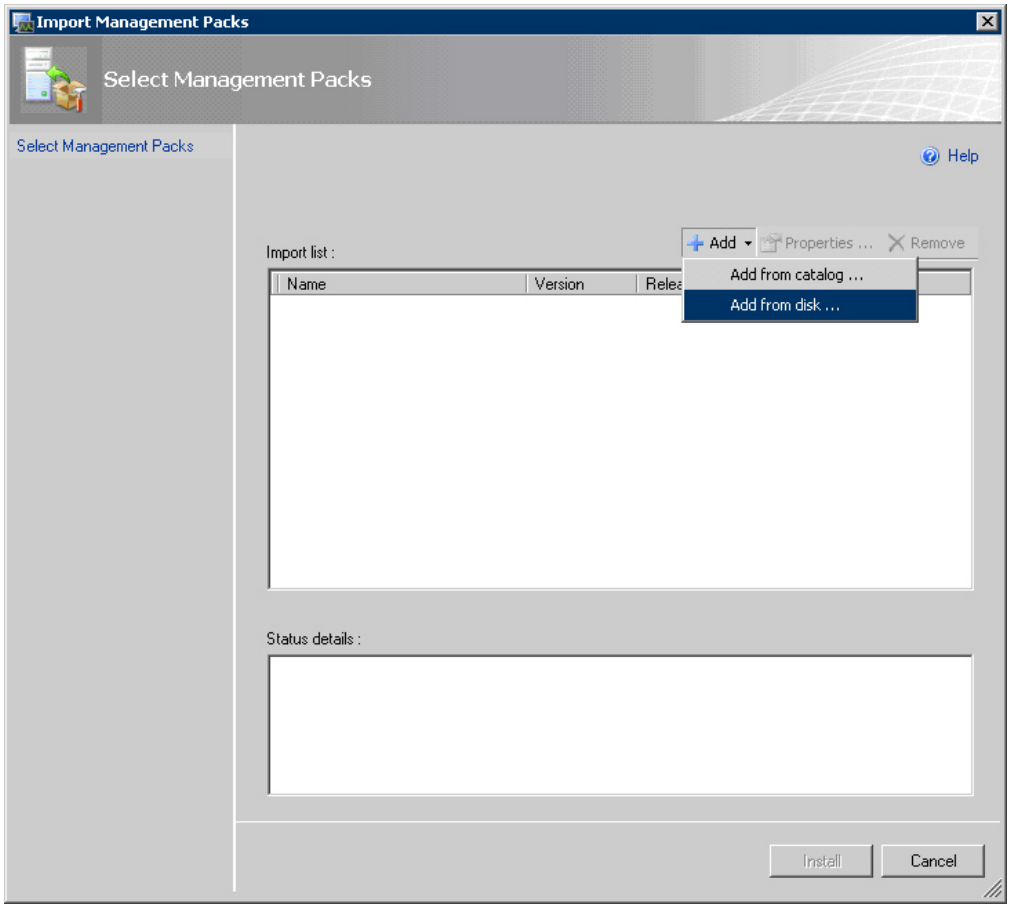

Figure 9. Add from disk

The Online Catalog Connection confirmation is displayed.

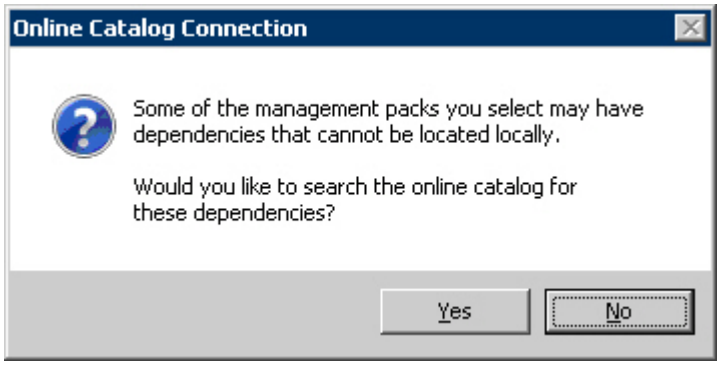

Figure 10. Online Catalog Connection Confirmation

3. Click **No** to locate the management pack locally. The Select Management Packs to Import dialog box is displayed.
4. Access the `%ProgramFiles%\IBM\Storage\Host\IBMStorageSCOM\mps` directory and select the following files:
   - `IBM.Storage.Common.mp`

- The file of the management pack that you want to add (for example, select `IBM.Storage.DS8K.mp` for adding the DS8000 management pack). You can select more than one management pack by pressing the CTRL key when selecting.

Important: You must select the `IBM.Storage.Common.mp` file together with the first management pack that you add. After this initial addition, you do not need to select `IBM.Storage.Common.mp` file again.

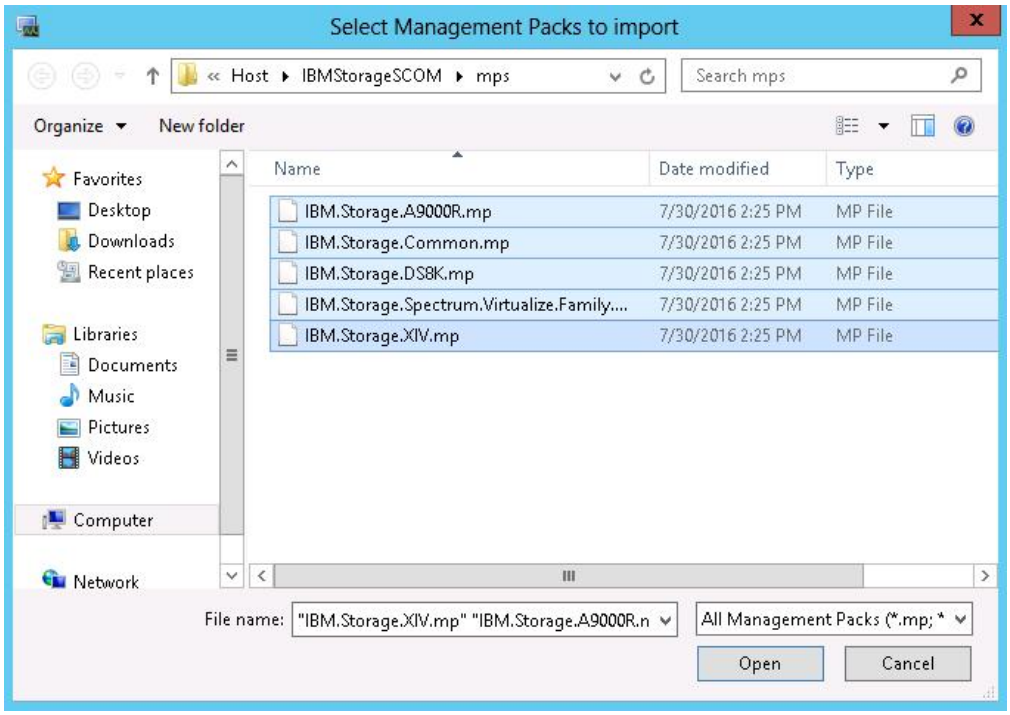

Figure 11. Pack file selection

5. When the files are selected, click **Open**. The Import Management Packs dialog box lists the management packs to be added.

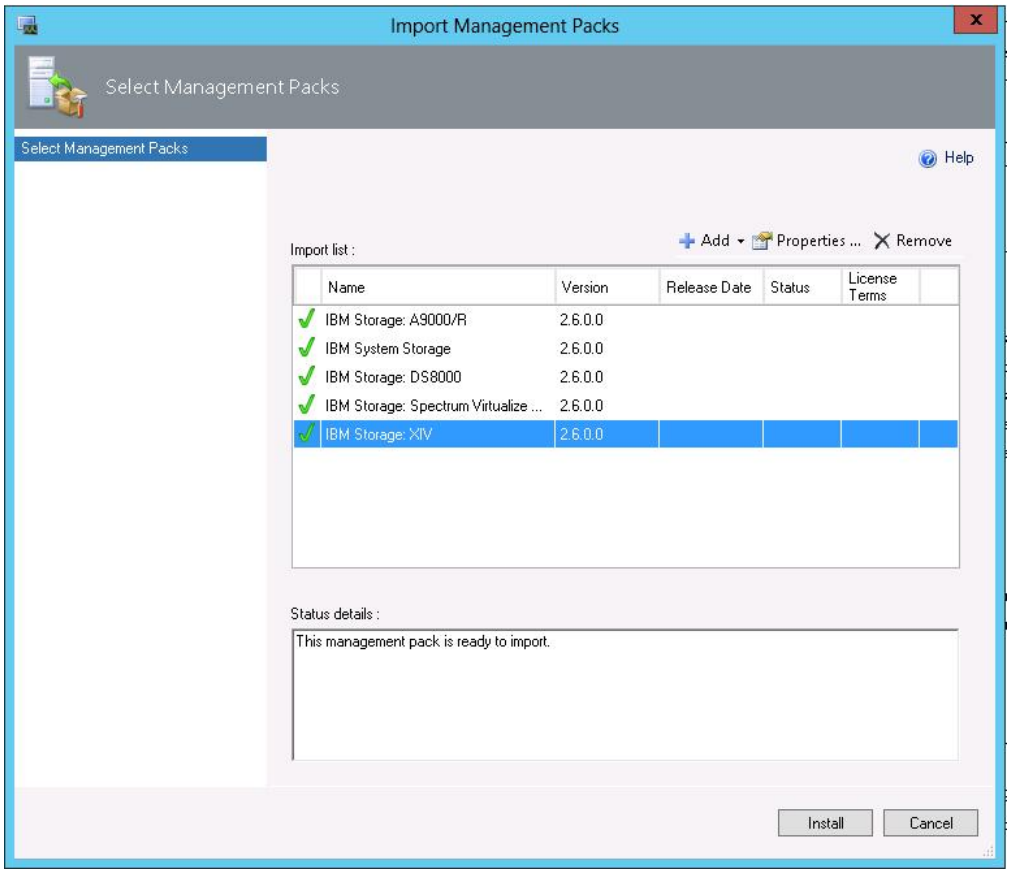

Figure 12. List of management packs to be imported

6. Click **Install** to start the import. When the management packs are successfully imported, click **Close**.

Setting the storage system discovery and event collection intervals

Before or at any time after you start using the IBM Storage Management Pack, you can set the time intervals that define the rate by which Microsoft SCOM discovers new storage systems and collects information about new events.

Setting the storage system discovery intervals

This section describes how to set the storage system discovery intervals.

Procedure

The default interval for the discovery of DS8000 storage systems is 20 minutes. The default interval for the discovery of all other IBM storage systems is 10 minutes. To change the IBM storage system discovery interval in Microsoft SCOM 2012:

1. Click the Microsoft SCOM **Authoring** pane.
2. Select **Rules**, and then select **IncrementalDiscoveryRule** for the relevant management pack.
3. In the Actions pane (located on the right), select **Overrides** > **Override the Rule** > **For all objects of class**. The Override Properties dialog box is displayed.

4. Select **Override for Interval Seconds**, and then enter a new numerical **Override Value**. The numerical value that you enter defines the number of seconds for the interval.
5. Click **Apply**. The new discovery interval is set.

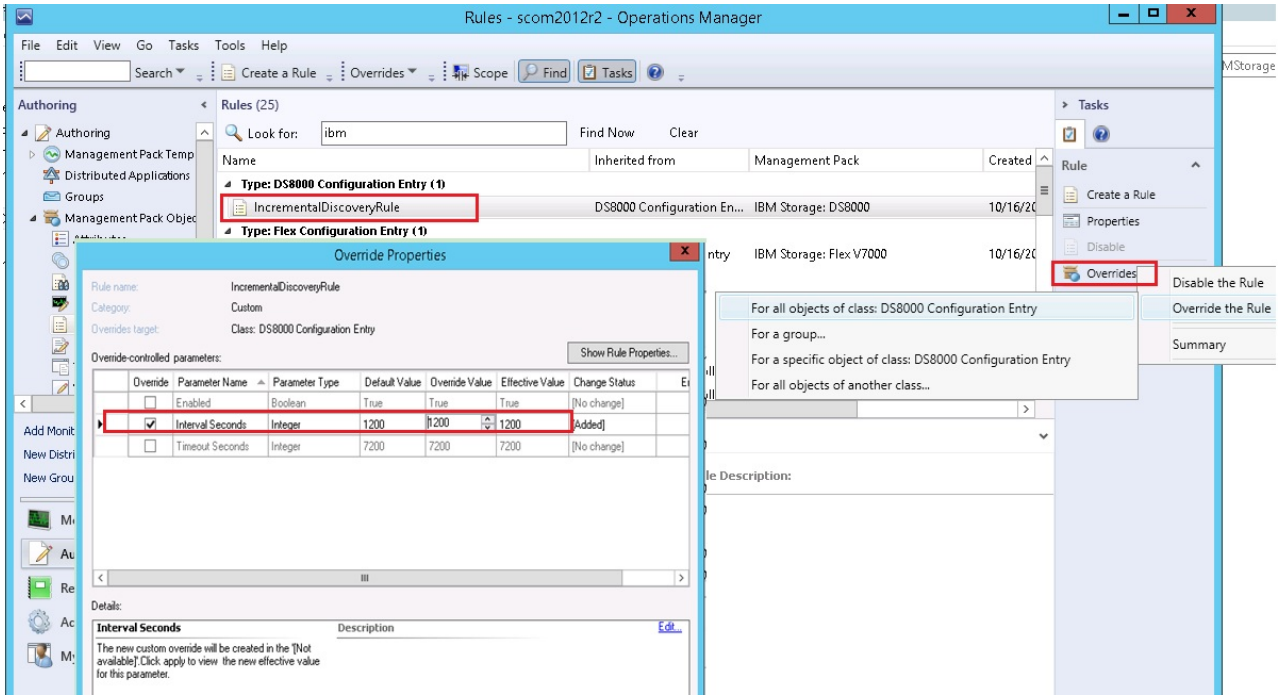

Figure 13. Interval setting for storage system discovery

Setting the event collection intervals

This section describes how to set the storage system event collection intervals.

About this task

If you need SCOM to collect storage system events at a higher or a lower frequency, you can change the event collection time interval as explained in the following procedure.

Note: Storage system event collection is not supported by DS8000 storage systems.

Procedure

The default interval for event collection of any IBM storage system (except DS8000) is set to 10 minutes. Perform the following procedure to change the collection interval.

1. Click the Microsoft SCOM **Authoring** pane.
2. Select **Rules**, and then select **Event Rule** for the relevant management pack.
3. In the Actions pane (located on the right), select **Overrides** > **Override the Rule** > **For all objects of class: System**. The Override Properties dialog box appears.
4. Select **Override** for **Interval Seconds**, and then enter a new numerical value **Override Value**. The numerical value that you enter defines the number of seconds for the interval.

5. Click **Apply**. The new event collection interval is set.

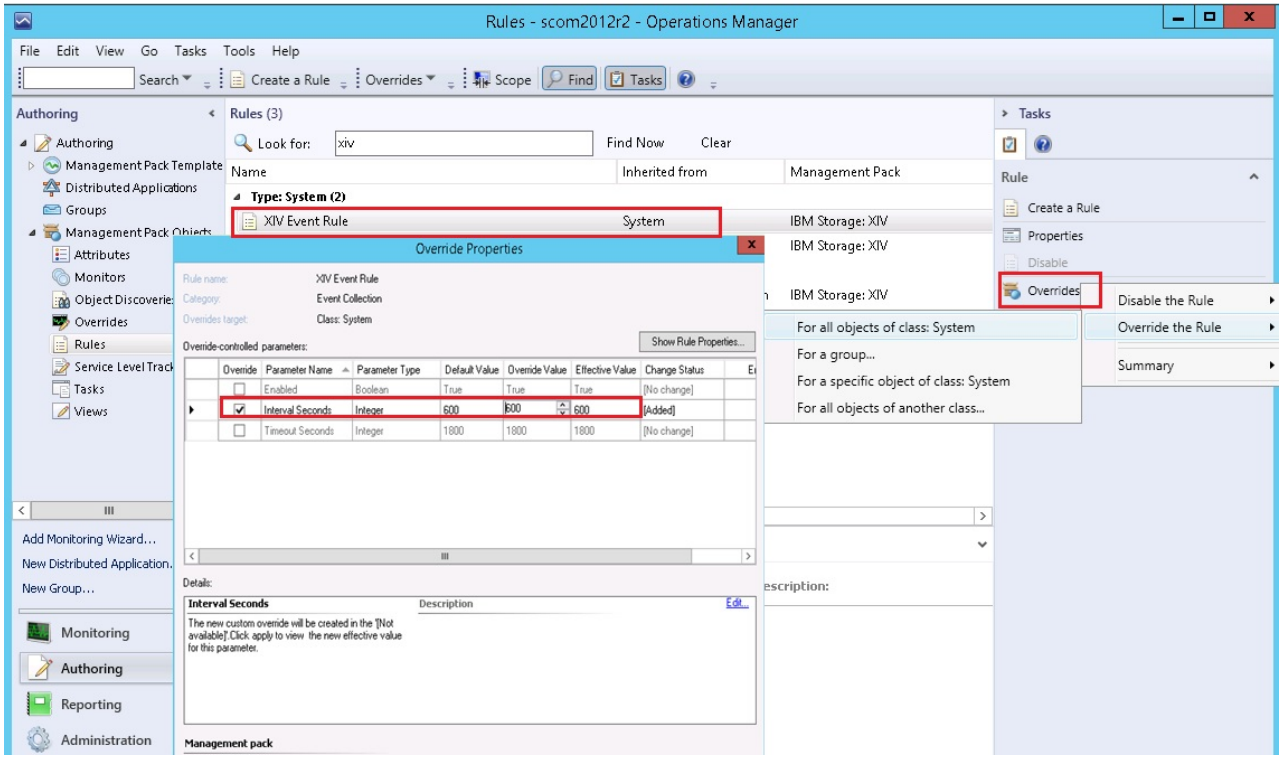

Figure 14. Interval setting for event collection

Chapter 4. Monitoring

After installing the IBM Storage Management Pack, configuring the management server, and adding IBM Storage Systems, you can use the Monitoring tab of the Microsoft SCOM console to monitor the storage systems.

Note: The examples in this chapter are from Microsoft SCOM 2012 R2.

To start the monitoring, click the **Monitoring** tab on the left pane of the Operations Manager console, and then expand the **IBM System Storage** folder, located on the Monitoring tree.

Depending on the installed management packs, the subfolders under **IBM System Storage** display the information about the different IBM storage systems that are monitored via Microsoft SCOM.

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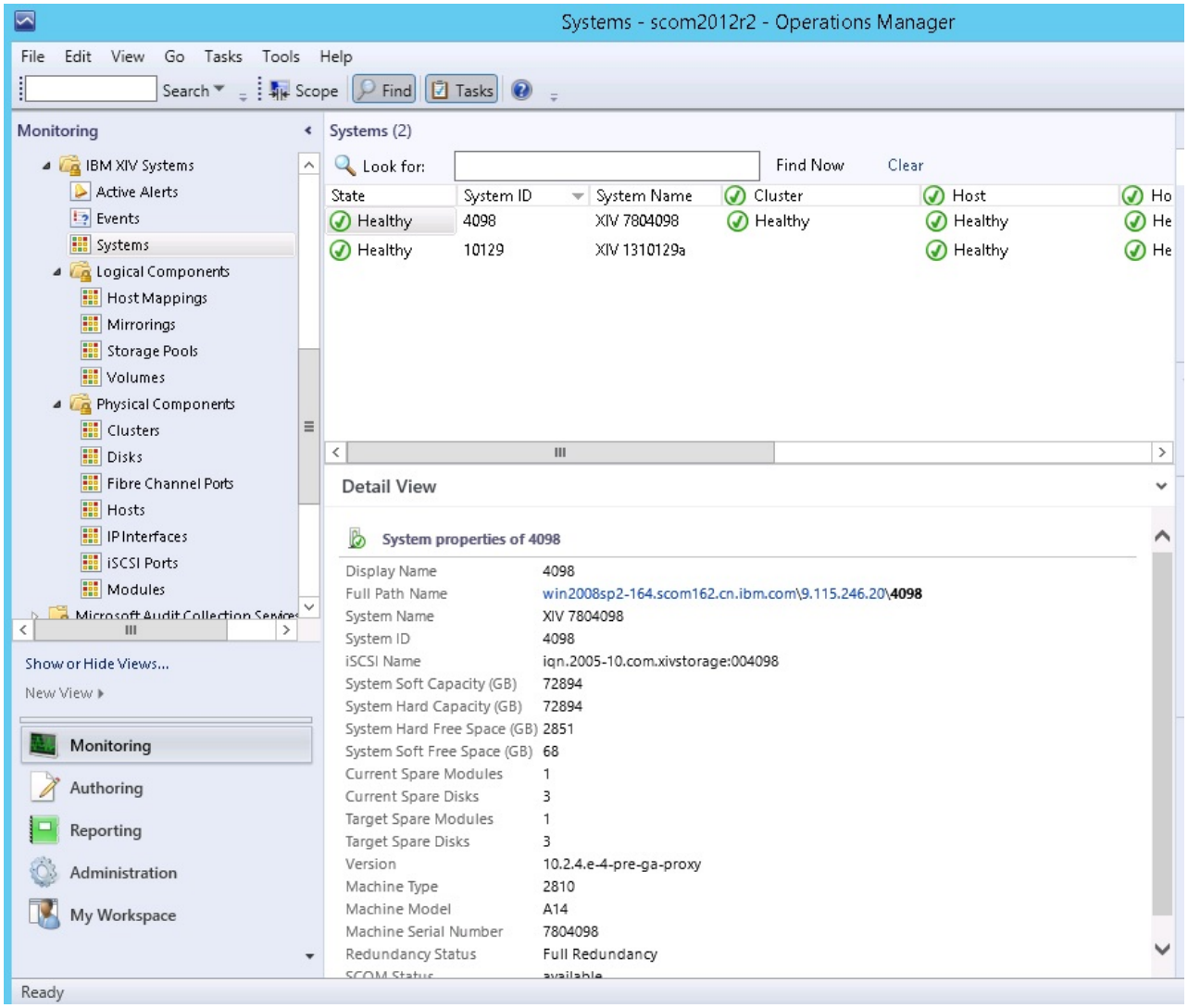

Figure 15. Monitoring Tree

Under each management pack subfolder (of a storage system type), the following options are available:

- Monitoring alerts
- Monitoring events
- Monitoring systems
- Monitoring physical and logical components
- Viewing diagrams

Monitoring alerts

This section describes how to monitor alerts for IBM storage systems.

About this task

You can monitor two types of alerts:

- **Health monitoring alerts** – Alerts about the health state of the monitored storage components. Health monitoring alerts are applicable to all the supported

IBM storage systems. For example, an alert is created when the health state of a certain component changes from **Healthy** to **Critical**.

- **Event log alerts** – Alerts about system events that are defined as error or warning events. Event log alerts are **not applicable to DS8000 systems**, but are applicable to all the other supported IBM storage systems and are monitored as follows:
  - For Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, and FlashSystem V9000 systems, **Error** events are displayed in SCOM as **Warning** alerts.

Note:

- To increase or decrease alerting regarding certain events of Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, and FlashSystem V9000 systems, change the severity level of any event as explained in "Changing event severity levels" on page 25.
- For more information about SAN Volume Controller error events, refer to the *IBM System Storage SAN Volume Controller Troubleshooting Guide* available on the IBM SAN Volume Controller Information Center (pic.dhe.ibm.com/infocenter/svc/ic/index.jsp). In the guide, refer to the section: 'Error event IDs and error codes'.

  - For XIV, Spectrum Accelerate, FlashSystem A9000, and FlashSystem A9000R systems, **Major** and **Critical** events are displayed in SCOM as **Critical** alerts, while **Minor** and **Warning** events are displayed in SCOM as **Warning** alerts.

Note: The alert severity level of XIV, Spectrum Accelerate, FlashSystem A9000, and FlashSystem A9000R system events cannot be modified.

Procedure

To view more details regarding a specific alert, select its row. A detailed description of the alert is displayed in the Alert Details pane (below the alerts list).

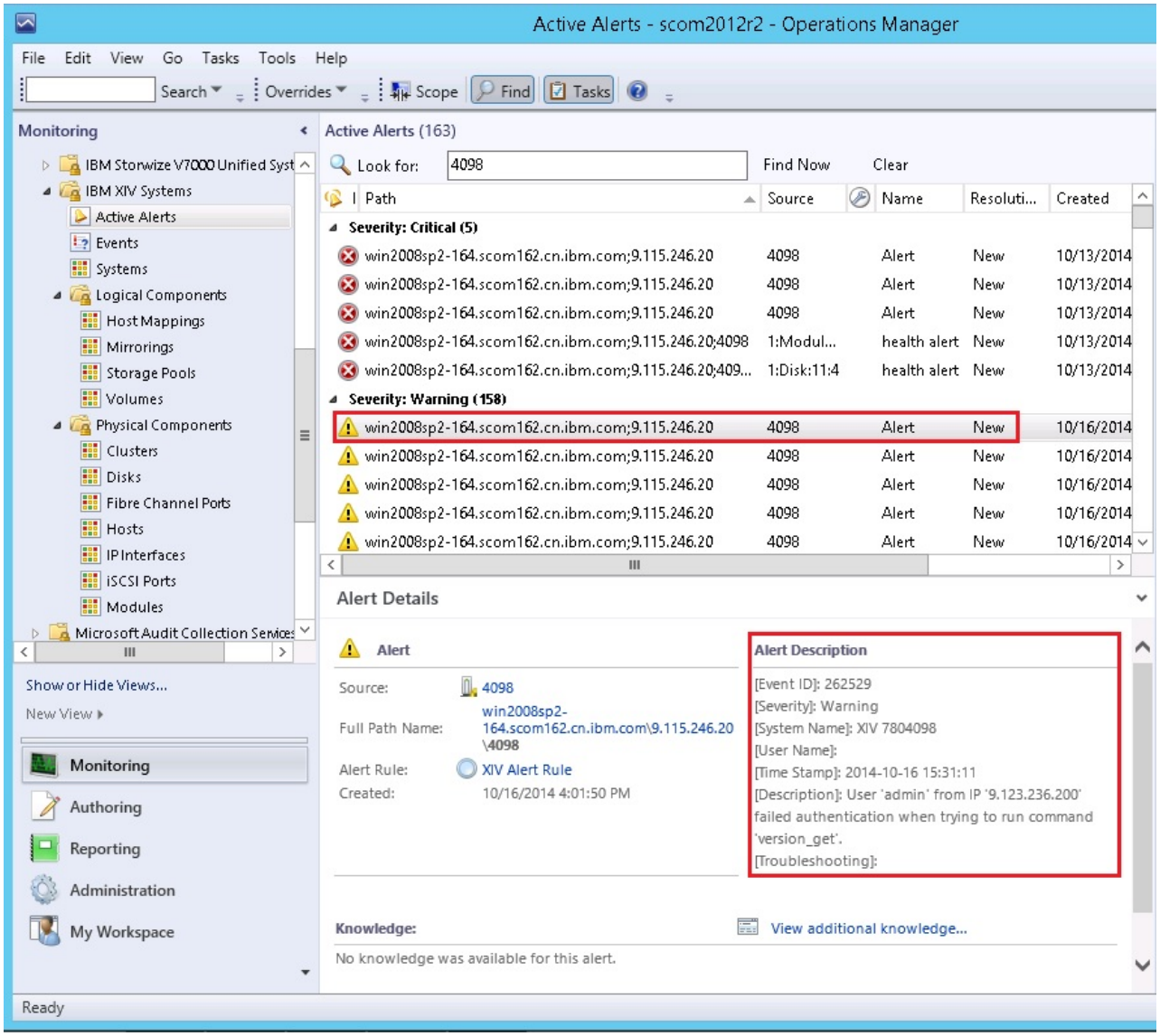

Figure 16. Alert Monitoring

Monitoring events

This section describes how to monitor events for IBM storage systems.

About this task

Events are displayed differently in the management packs:

- For Storwize V3500, Storwize V3700, Storwize V5000, Storwize V7000, Storwize V7000 Unified, SAN Volume Controller, and FlashSystem V9000 systems, **Information** and **Configuration** events are displayed.

Note: To learn about SAN Volume Controller Information or Configuration events, refer to the *IBM System Storage SAN Volume Controller Troubleshooting Guide* available on the IBM SAN Volume Controller Information Center(pic.dhe.ibm.com/infocenter/svc/ic/index.jsp). In the guide, refer to the sections: 'Informational events' and 'Configuration event IDs'.

- For XIV, Spectrum Accelerate, FlashSystem A9000, and FlashSystem A9000R systems, all event levels are displayed: **Information**, **Error**, and **Warning**.
- For the DS8000 systems, events are not displayed.

Note: By default, the list of events is refreshed every 10 minutes. You can change the default interval as explained in "Setting the event collection intervals" on page 31.

Procedure

- To view more details regarding a specific event, select its row. A detailed description of the event is displayed in the Event Details pane (below the events list).

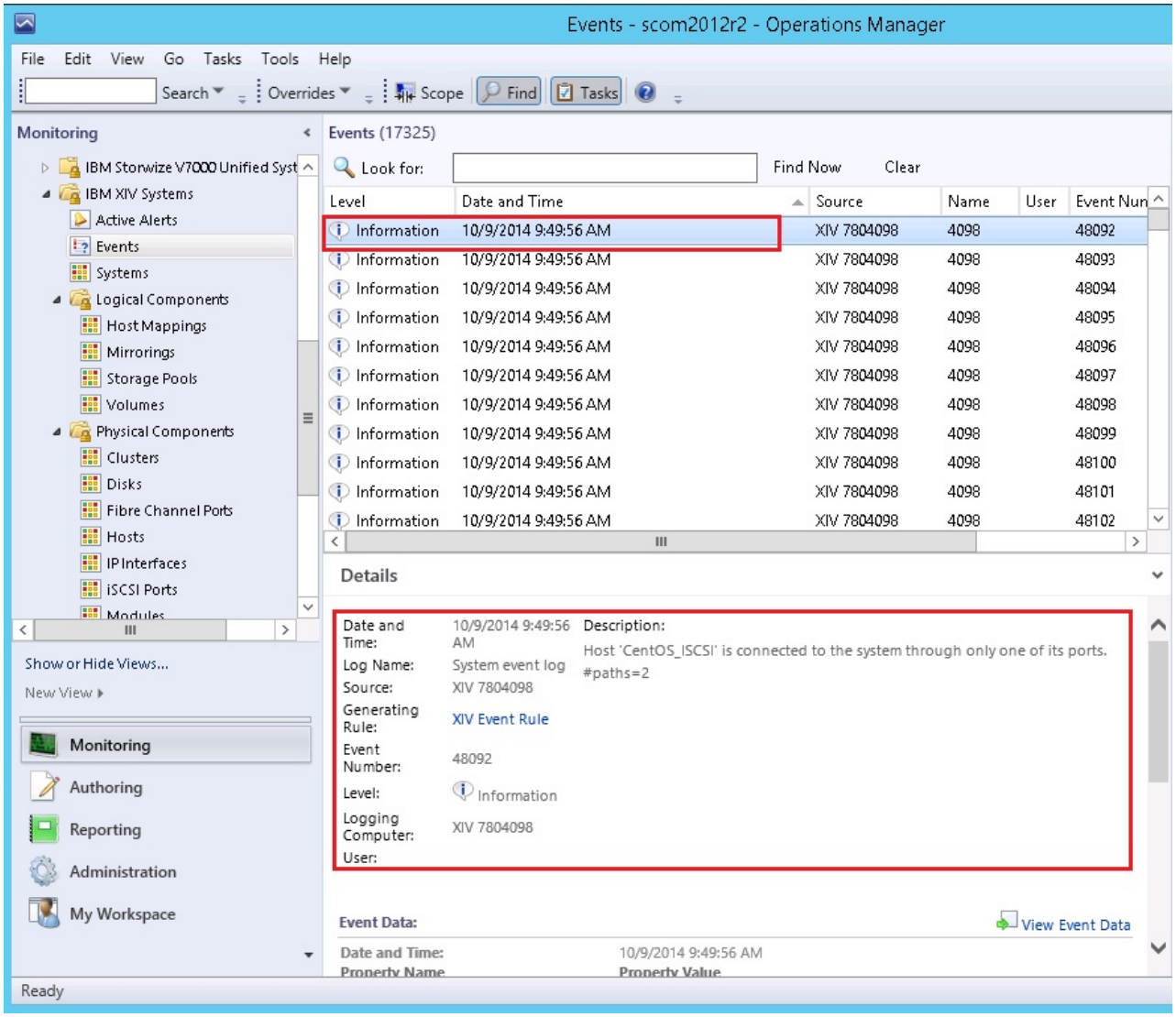

Figure 17. Event Monitoring

- To view the raw data of the selected event, click **View Event Data**. The XML code is displayed in your system's default browser or XML viewer, as shown in the following figure.

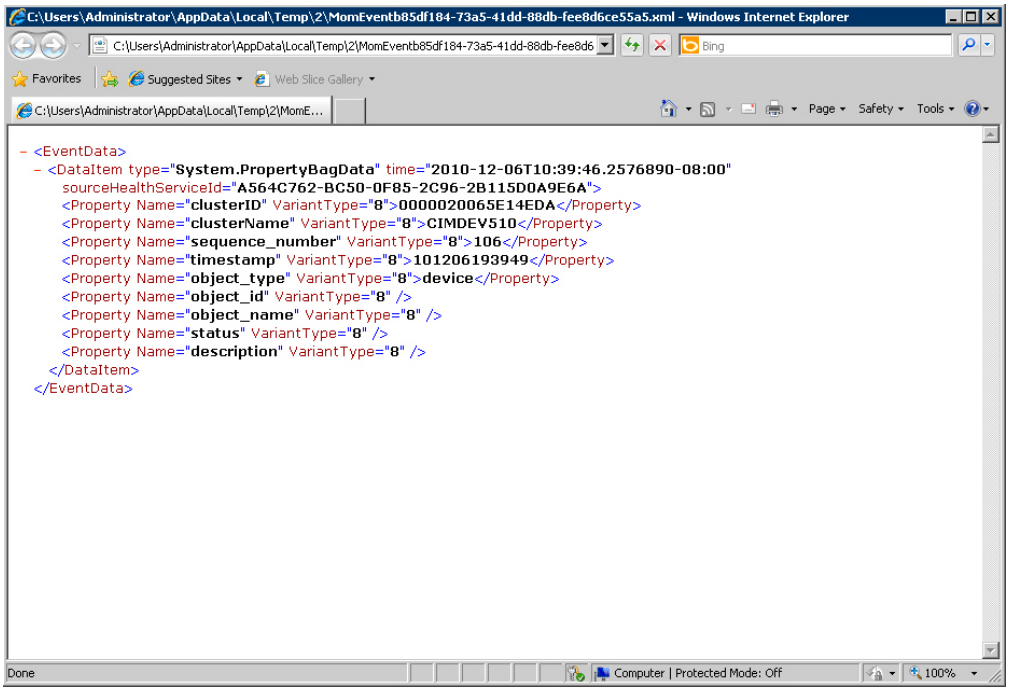

Figure 18. Event data in XML format

Monitoring systems

This section describes how to monitor IBM storage systems.

About this task

The Systems monitoring module provides a global health view of the monitored IBM storage systems and their associated components and objects (disks, volume group, volume mapping, and so on) in one general list.

Procedure

- To view more detailed information about a specific system component or object, click on its row. The details are displayed in the Detailed View pane located below the systems list.

Notes:

- By default, the systems monitoring list is refreshed every 10 minutes (20 minutes for DS8000). You can change this interval as described in “Setting the storage system discovery intervals” on page 30.
- SAN Volume Controller is monitored by clusters and not by systems. Therefore, its equivalent monitoring tree level displays 'Clusters' instead of 'Systems'.

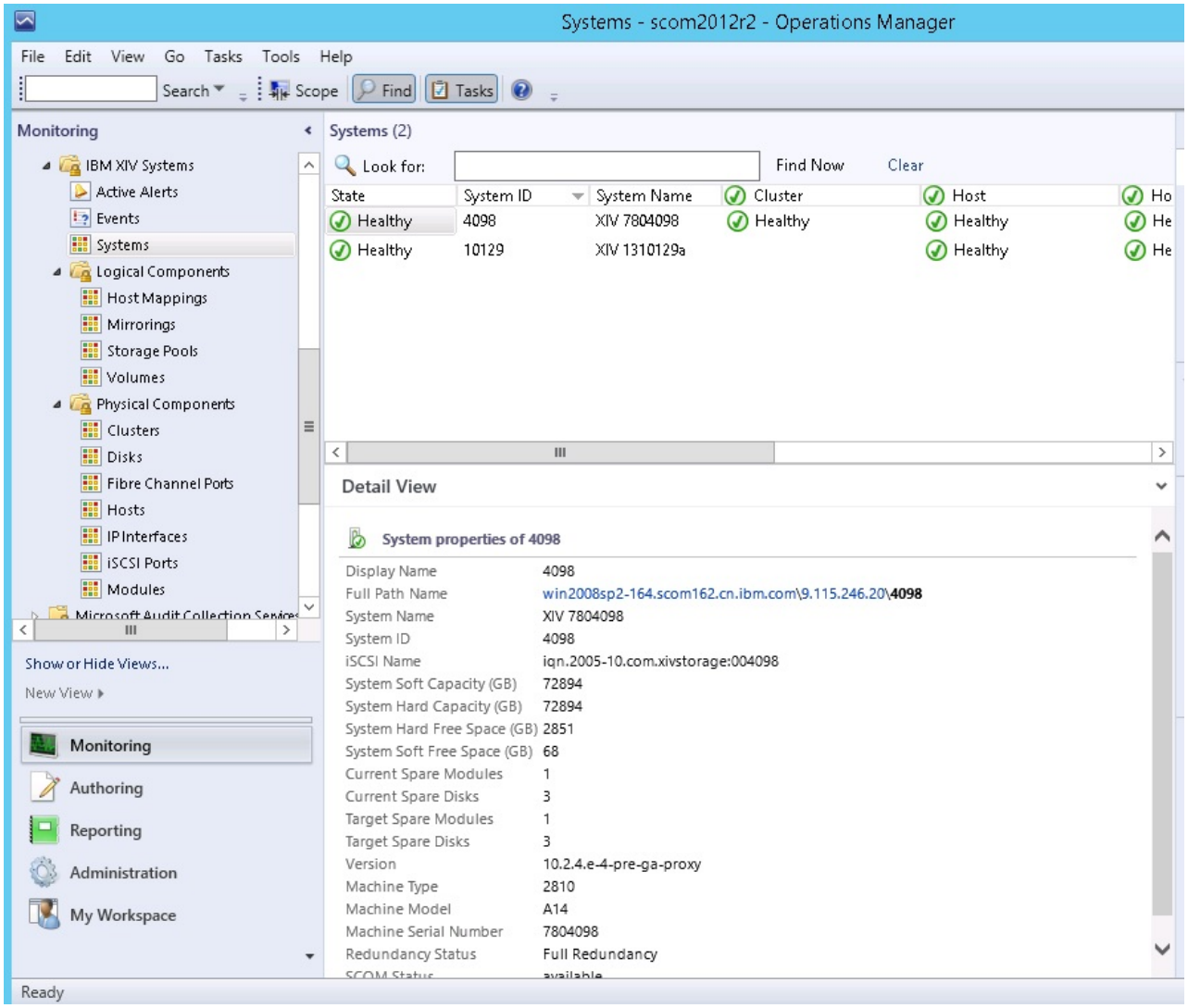

Figure 19. System monitoring per system ID

- Alternatively, you can click on a specific component cell on a specific column to see its associated components and details in the Detailed View pane.

Note: Only the object availability is monitored. The object status can be **Healthy**, **Warning**, or **Critical**.

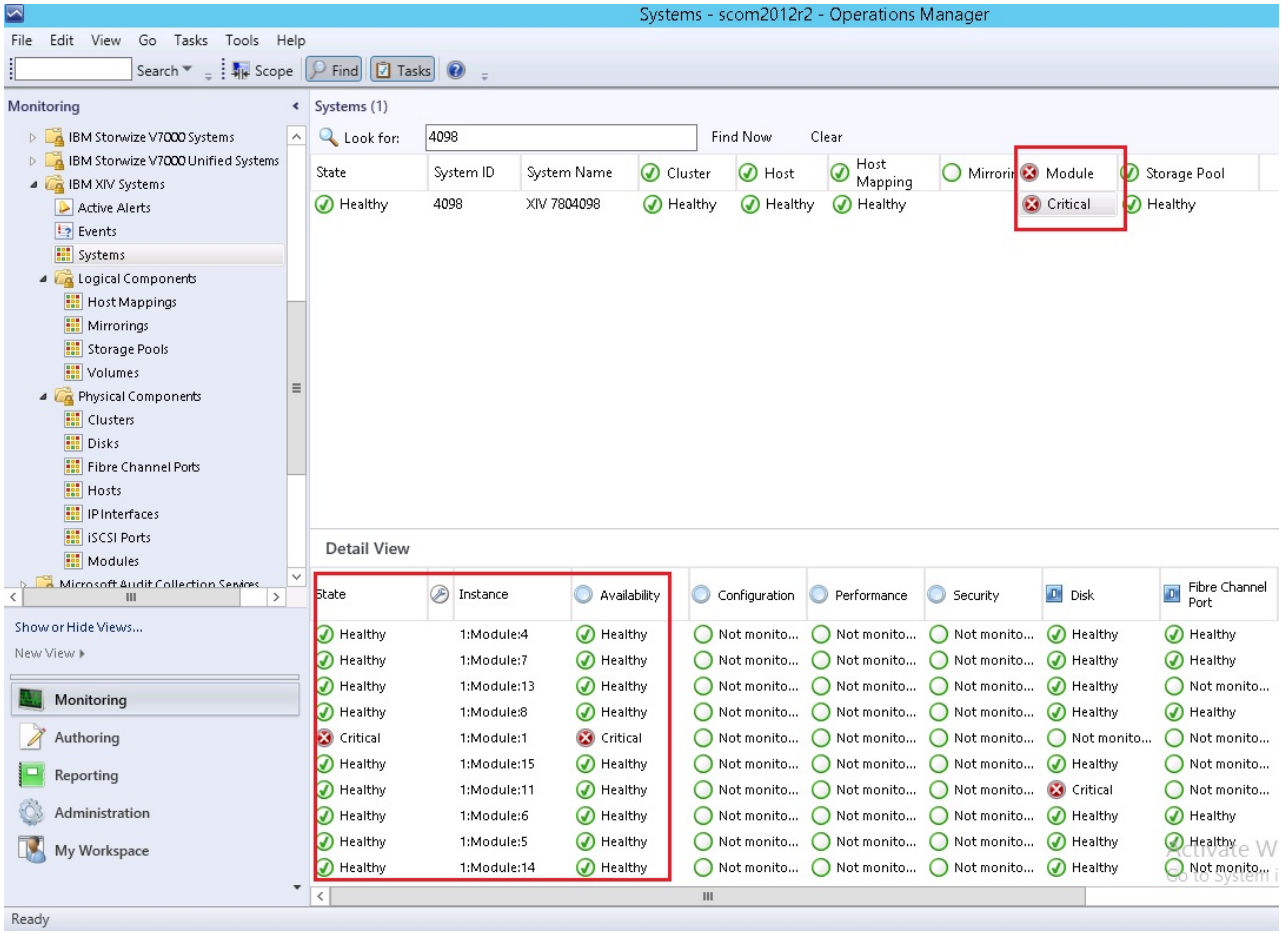

Figure 20. System monitoring per object status

Monitoring physical and logical components

This section describes monitoring physical and logical components.

About this task

Each management pack folder includes two sub-folders that you can use to monitor two major types of components:

- Physical components – Hardware components that a storage system comprises.
- Logical components – User-defined storage entities that can be modified during operation and added or removed per specific use as necessary.

The following table summarizes the logical and physical components that are monitored for each IBM storage system.

Table 2. Monitored physical and logical components per storage system

Storage system	Logical components	Physical components
• DS8700 • DS8800 • DS8870 • DS8880	• Array • Array site • Extent pool • IBM FlashCopy® • Host volume mapping • Rank • Standard volume • Space-efficient (SE) volume • Virtual pool • Volume group	• Disk • FC port • Host port
• IBM Storwize V3500 • IBM Storwize V3700 • IBM Storwize V5000 • IBM Storwize V7000 • IBM Storwize V7000 Unified • IBM System Storage SAN Volume Controller • IBM FlashSystem V9000	• FlashCopy consistency group • FlashCopy mapping • Host mapping • Remote Copy consistency group • Remote Copy relationship • Storage pool • Volume	• Array • Drive • Enclosure • FCoE port • Fibre Channel port • Host • iSCSI port • MDisk • Node
• IBM XIV Storage System • IBM Spectrum Accelerate	• Mapping • Mirror • Pool • Volume	• Cluster • Disk • FC Port (does not apply to Spectrum Accelerate) • Host • IP interface • iSCSI port • Module
• IBM FlashSystem A9000 • IBM FlashSystem A9000R	• Mapping • Mirror • Pool • Volume	• Cluster • FC Port • Host • IP interface • iSCSI port • Module

Procedure

To view the monitoring details of a specific physical or logical component, click its item on the monitoring tree. The details are displayed in the Detailed View pane.

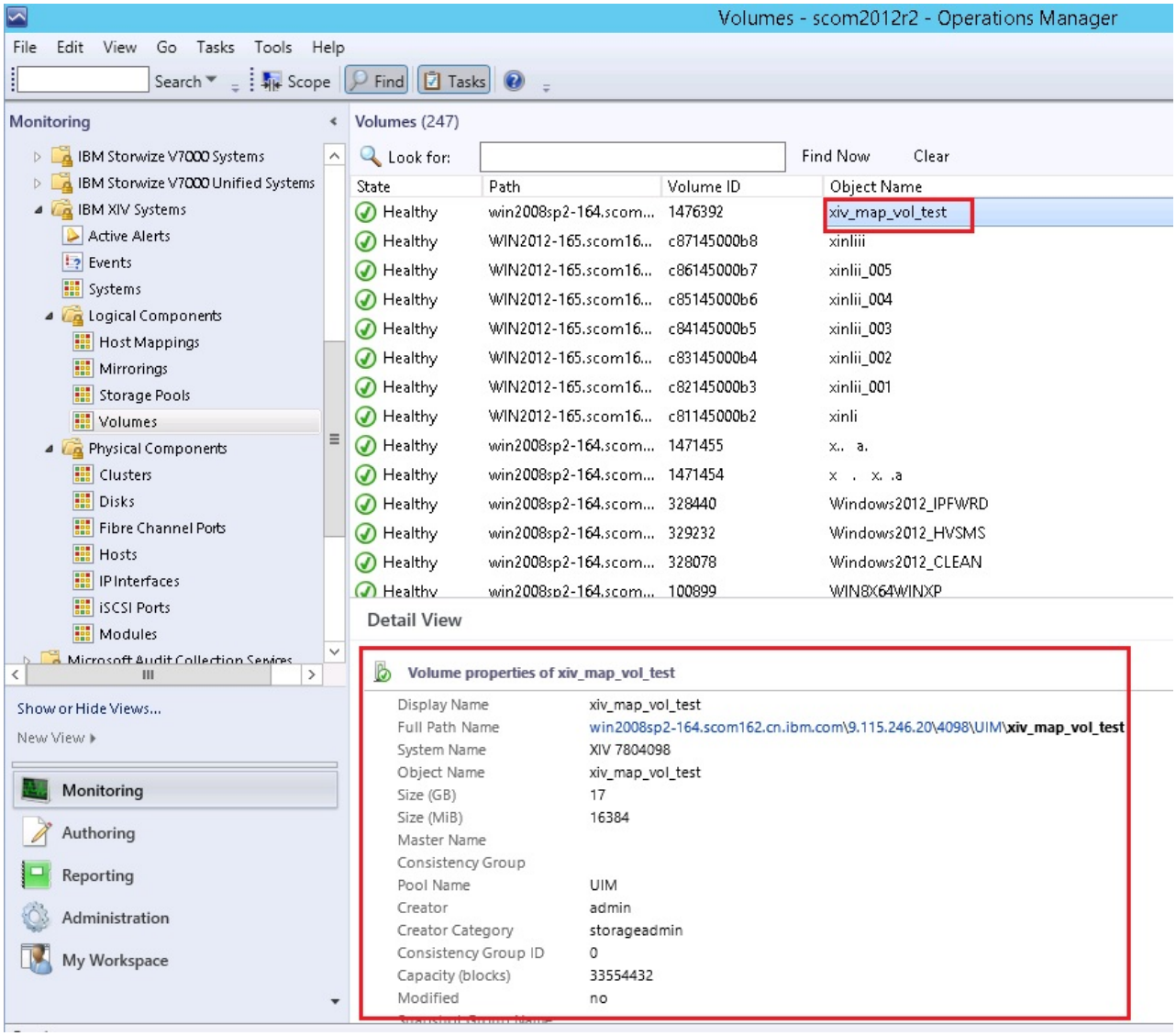

Figure 21. Volume details

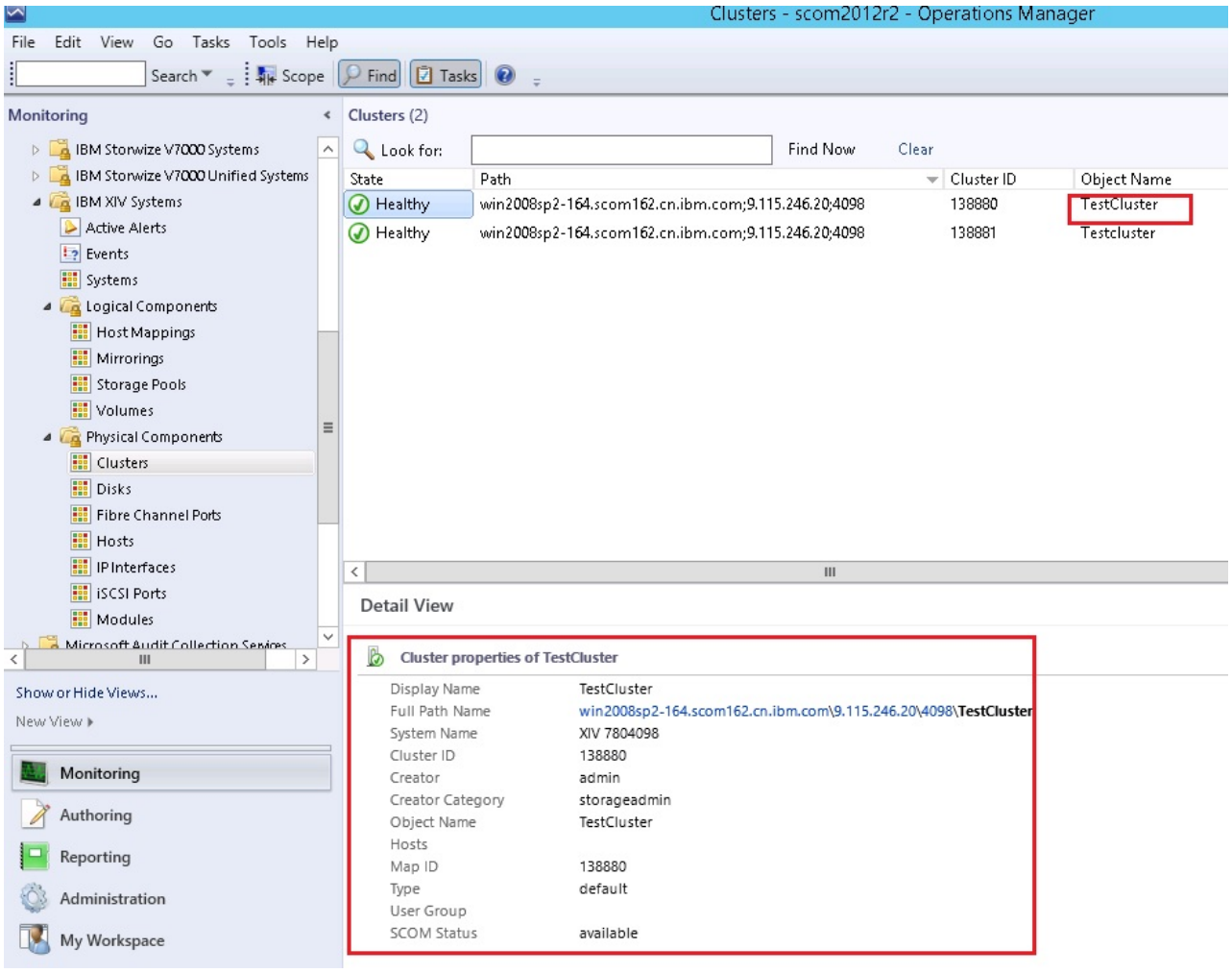

Figure 22. Cluster details

Viewing diagrams

In addition to monitoring the IBM storage systems through a table and an information pane (as described in the previous sections), you can view any information object in a diagram.

The diagram shows a graphic representation of the selected object, as well as its relationship with other objects. This viewing option helps you obtain a clear picture of the object condition and its influence on other objects in real time.

To display a diagram for a selected object on the table, right-click the object, and then select **Open** > **Diagram View** from the pop-up menu.

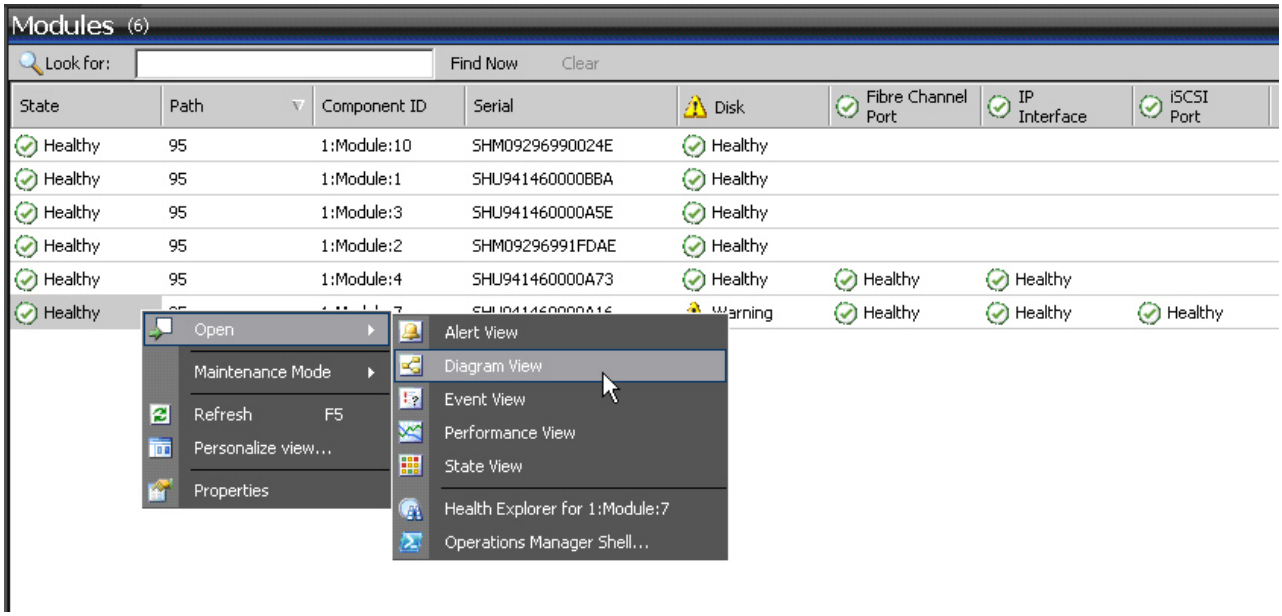

Figure 23. Opening Diagram View

The displayed diagram shows the object icon, current status and relationships. You can click any icon in the diagram to display more information in the **Detailed View** pane.

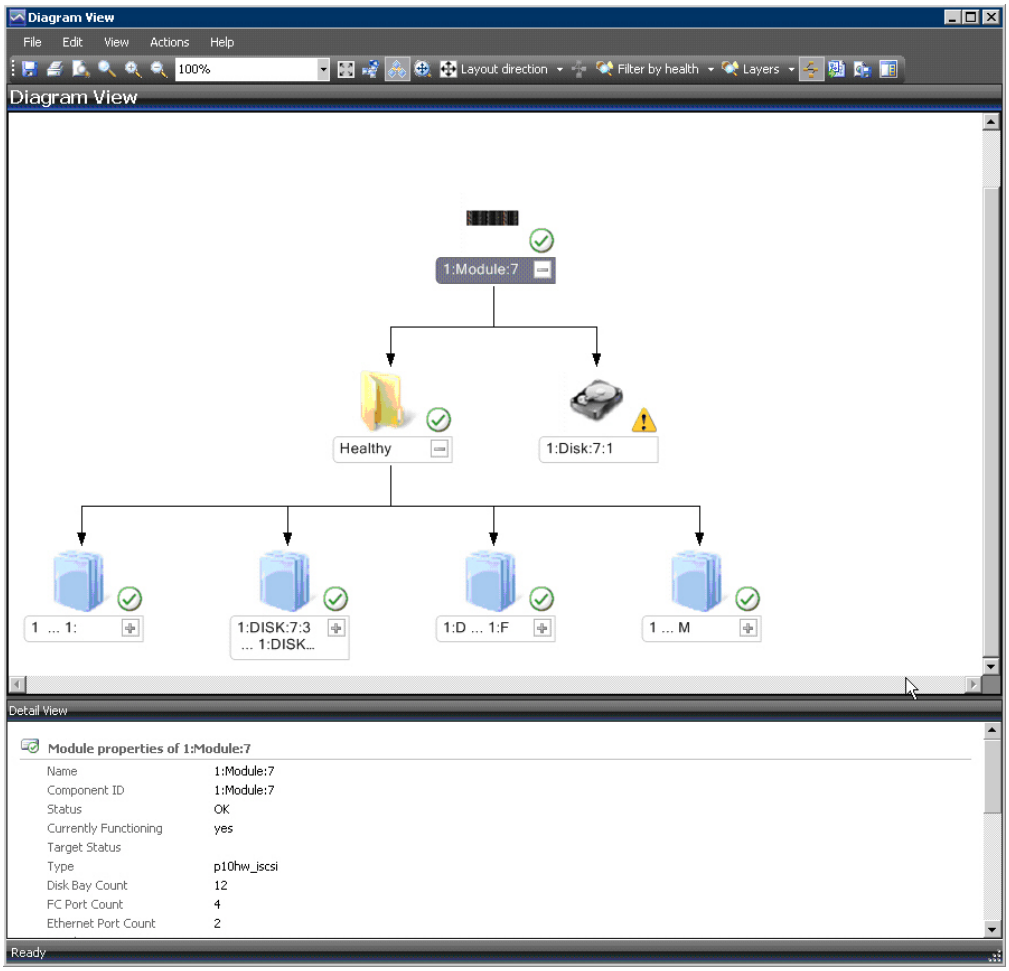

Figure 24. Diagram View

Chapter 5. Diagnostics and troubleshooting

This chapter describes diagnostic and troubleshooting information.

You can use the **scomu.cmd** utility to perform different diagnostic tasks, as described in the following sections:

- "Testing the connection to the SCOM management server"
- "Testing the connectivity to storage systems"
- "Setting the logging level"
- "Collecting diagnostic information" on page 48
- "Checking the running environment" on page 48

For troubleshooting info, refer to "Troubleshooting" on page 48.

Testing the connection to the SCOM management server

You can check whether the Microsoft SCOM agent can successfully connect to the SCOM management server using the **scomu.cmd --sc-check** command.

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>scomu.cmd --sc-check
Checking the connection to the management server...
The connection to the management server is OK.
```

Testing the connectivity to storage systems

When required, you can check whether the Microsoft SCOM server can successfully connect to the storage system using the **scomu.cmd --test** command.

If the network is slow, you can set the timeout value for the connection, using the **scomu.cmd --timeout** command. The default timeout is 60 seconds.

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --test -t ds8k --url https:// host1.domain1.com:6989
--namespace root/ibm --username usr1 --password pwd1 --timeout=300
Connecting to the device ...
1 IBM DS8000 Storage System is found.
device ID: xx, code level: x.x.x.x, CIM server version: x.x.x.x

The connection is OK.
```

Setting the logging level

You can set the logging level for each management pack, so that the logging is performed only for events with severity level equivalent or lower than the severity level that you set.

The IBM Storage management packs logs activity in the following directory: `%ProgramFiles%\IBM\Storage\Host\IBMStorageSCOM\log`

The possible logging levels are: **Critical**, **Error**, **Warning**, **Info**, **Debug**, or **Trace**.

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```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd -t ds8k --loglevel
Log level is INFO.
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd -t ds8k --loglevel DEBUG
Log level is set to DEBUG.
```

Collecting diagnostic information

Use the **scomu.cmd --diag** command to collect diagnostic information and include the generated tar file when reporting the issue.

The tar file is located in the following directory: `%ProgramFiles%\IBM\Storage\Host\IBMStorageSCOM`

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --diag
"C:\PROGRA~1\IBM\STORAG~1\scom_20101019202551_lt_ras.tgz"
is created with diagnostic data.
```

Checking the running environment

Use the **scomu.cmd --precheck** command to check whether the running environment of the management packs is correctly set, and whether the installed libraries are corrupted.

```
C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\bin>
scomu.cmd --precheck
The pre-check is successful. No error is found.
```

Troubleshooting

The following table lists some typical problems that you might encounter, along with the possible solution for each problem.

Note:

- For additional up-to-date troubleshooting information, refer to the Known Issues section in the latest release notes.
- Check the SCOM event log to obtain any relevant information that might help in troubleshooting. Check for event ID 700 to trace any fatal error.

Table 3. Typical problems and possible solutions

Problem	Possible solution
During the installation, the following error message may appear: `The installation package is not supported by the processor type.` This problem might occur when you are installing a 32-bit package on a 64-bit operating system, or vice versa.	Check which bit version of the operating system you are using, and run the matching installation package.

Table 3. Typical problems and possible solutions (continued)

Problem	Possible solution
No storage system is listed under Systems or Clusters.	Use the **scomu.cmd --list** command to check the list of monitored storage systems. Use the **scomu.cmd --test** command to check the connection to each storage system.
The connection to DS8000 storage systems fails.	Make sure that the web address of the DS CIM agent is correct. The protocol is usually HTTPS and not HTTP. By default, the embedded DS CIM agent communicates through port 6989, and the proxy agent communicates through port 5989.
Event information is not synchronized with System information. In some cases, the information displayed under **Events** is not immediately synchronized with the information under **Systems**. For example, the creation of a new volume may be registered as an event, but may not be displayed under Systems, or vice-versa.	This occurs due to a default data refresh interval in **Events** is 10 minutes (DS8000 is 20 minutes), and in **Systems** it is 30 minutes. Accordingly, wait until the next refresh interval for the synchronization to occur. In addition, if numerous events are generated within a short time, only the last 300 events are reported (fewer events are reported for SAN Volume Controller with microcode 5.1.0 or later). This is an intended restriction that is imposed due to performance considerations.
IBM management packs still appear in Microsoft SCOM after uninstallation.	IBM management pack entries may remain in Microsoft SCOM after uninstallation. This occurs when installed management packs are not manually deleted from SCOM prior to uninstalling the IBM Storage Management pack via the Windows Control Panel. Accordingly, you must manually remove the IBM management packs from the Administration pane of Microsoft SCOM (before or after you use the Windows Control Panel to uninstall the IBM Storage Management Pack). For more information, refer to the Microsoft SCOM documentation.
Delay in storage systems display.	After you import a management pack to Microsoft SCOM, it might take several minutes before the relevant storage systems are displayed, and it might take several minutes more before all health state icons are correctly presented. You can encounter this delay depending on the following circumstances: • Network traffic • The number of monitored storage systems • The performance of the Microsoft SCOM database.
Reset to default has no effect on the order of columns.	Under Alerts or Systems, columns cannot be restored to their default order after it is manually changed, and the **Reset to Default** option in Personalize View has not effect on the order of columns. Due to this limitation of Microsoft SCOM, you need to re-order the columns manually.

Table 3. Typical problems and possible solutions (continued)

Problem	Possible solution
Status icon of newly discovered systems displays a wrong status.	Immediately after the storage systems are discovered, the status icon (Healthy, Warning or Critical) does not indicate the actual state of the system. This may occur due to data refresh timing in Microsoft SCOM. Press **F5** to manually refresh the displayed status information.
Modified sticky views are kept after re-importing management packs.	Microsoft SCOM allows you to use modifiable sticky views that are kept across sessions even after removing the IBM management packs from the Administration pane and re-importing them. To resolve this, use the **Reset to Default** option in Personalize View.
Management packs cannot be removed due to a dependency. When attempting to delete an IBM management pack, a message appears and states that due to a dependency on the Default Management Pack, you must first remove the Default Management Pack.	This message, which is normal in Microsoft SCOM, appears whenever one or more manual overrides were defined for the rules or monitors in the IBM management pack. Such overrides are saved in either the default management pack, or in the IBM management pack. To resolve this, save the overrides in a custom management pack, and then delete the existing overrides or import new ones if necessary.
When the IBM Storage Management Pack is installed on a SCOM agent and the connected storage system has a large amount of volumes (about 300 volumes per storage system), the discovery data package may exceed the SCOM size limit (4MB). In such a case, a relevant alert message (event ID: 2015) is added to the SCOM event log.	Consider installing the IBM System Storage Management Pack on the SCOM management server.
While adding IBM storage, the following error message may appear: `The Monitor Computer object required by the storage system is not found in the management server.`	Delete the management pack and re-import the management pack in the Operation Manager control panel, and then wait for the Monitor Computer to be discovered. Alternatively, shorten the Monitor Computer discovery time. Click the Microsoft SCOM Authoring pane, select **ObjectDiscoveries** for the relevant storage system type, then in the Actions pane, select **Overrides** > **Override the Rule** > **For all objects of class: Window Computer**.
The following error massage may appear when configuring IBM storage after upgrade from version 1.1.0 to a newer version: `Fail to parse C:\PROGRA~1\IBM\Storage\Host\IBMSTO~1\config\DeviceConfig.xml.`	Run **upgrade_config.cmd** from IBM standalone command-line interface (CLI) utility, as explained in "First-time installation vs. upgrade" on page 6.

Table 3. Typical problems and possible solutions (continued)

Problem	Possible solution

The following error may appear in `C:\Program Files\IBM\Storage\Host\IBMStorageSCOM\log\scsdk.log`:
`2013-05-30 09:33:39,595 ERROR 724# do_discovery fail.`
`Traceback (most recent call last):`
`File "scsdk", line 39, in _call_`
`File "scsdk", line 158, in do_discovery`
`Exception: The Configuration "9.115.246.54" of the MonitorComputer "scom-167.scom145.cn.ibm.com" does not exist. Fail to save its discovery data.`
`2013-05-30 09:33:39,830 INFO 724# SDK CLI end`
	The **OpsMgr** configuration service failed to send the dirty state notifications to the dirty OpsMgr Health Services. This may occur because the root **OpsMgr** health service is not running.
	
	Restart the healthy service on the SCOM management server.

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