IBM Director 4.1

Upward Integration Modules Installation Guide

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> **Note:** Before using this information and the product it supports, read the general information in Appendix E, "Notices", on page 73.

Contents

Figures

Tables

Preface

This book provides instructions for installing and integrating IBM® Director 4.1 Upward Integration Modules (UIM) into the following software:

- Microsoft® System Management Server (SMS)
- HP OpenView
- IBM Tivoli® NetView®
- IBM Tivoli Management Environment®

Note: The documentation for IBM Director 4.1 Upward Integration Module for CA Unicenter is included with the CA Unicenter UIM.

How this book is organized

Chapter 1, "Introducing IBM Director 4.1 Upward Integration Modules", on page 1 contains an overview of the IBM Director Upward Integration Modules.

Chapter 2, "Integrating IBM Director UIM for Microsoft System Management Server", on page 3 provides instructions for installing and configuring the UIM for SMS.

Chapter 3, "Integrating IBM Director UIM for HP OpenView", on page 11 provides instructions for installing and configuring the UIM for HP OpenView.

Chapter 4, "Integrating IBM Director UIM for IBM Tivoli NetView", on page 19 provides instructions for installing and configuring the UIM for Tivoli NetView.

Chapter 5, "Integrating IBM Director UIM for IBM Tivoli Management Environment", on page 27 provides instructions for configuring the UIM for the Tivoli Management Environment.

Appendix A, "IBM Director UIM events", on page 47 contains the list of events sent by IBM Director Agent.

Appendix B, "IBM Director UIM inventory collection", on page 65 contains the inventory collection for each UIM.

Appendix C, "Rule sets", on page 67 contains information about rules, their actions, and associated events.

Appendix D, "Getting help and technical assistance", on page 71 contains information about accessing IBM Support Web sites for help and technical assistance.

Appendix E, "Notices", on page 73 contains product notices and trademarks.

Notices that are used in this book

This book contains the following notices designed to highlight key information:

- **Notes:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or difficult situations.

- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.

IBM Director publications

The following publications are available in Portable Document Format (PDF) from the IBM Support Web site:

- *IBM Director 4.1 Installation and Configuration Guide* (dir41_install.pdf)
- *IBM Director 4.1 Systems Management Guide* (dir41_sysmgt.pdf)
- *IBM Director 4.1 Events Reference* (dir41_events.pdf)
- *IBM Director 4.1 Upward Integration Modules Installation Guide* (dir41_uim.pdf)

Check this Web site regularly for new or updated IBM Director publications. For additional information about downloading materials from the IBM Support Web site, see "IBM Director resources on the World Wide Web" on page xi.

For planning purposes, the following IBM xSeries™ publications might be of interest:

- *IBM @server BladeCenter Type 8677 Planning and Installation Guide*
- *Advanced System Management PCI Adapter, Software User's Guide*
- *Advanced System Management PCI Adapter, Installation Instructions*
- *Remote Supervisor Adapter, User's Guide*
- *Remote Supervisor Adapter, Installation Guide*
- *Remote Supervisor Adapter II, User's Guide*
- *Remote Supervisor Adapter II, Installation Guide*

For the integrated system management processor (ISMP), see the documentation that came with the server. You can obtain these publications from the IBM Support Web site.

In addition, the following IBM Redbooks™ publications might be of interest:

- *Implementing Systems Management Solutions using IBM Director* (SG24-6188)
- *IBM @server BladeCenter Systems Management* (REDP3582)
- *The Cutting Edge: IBM @server BladeCenter* (REDP3581)
- *IBM @server xSeries 440 Planning and Installation Guide* (SG24-6196)
- *Server Consolidation with the IBM @server xSeries 440 and VMware ESX Server* (SG24-6852)
- *Managing IBM TotalStorage NAS with IBM Director* (SG24-6830)
- *IBM Director Security* (REDPO417)
- *Integrating IBM Director with Enterprise Management Solutions* (SG24-5388)
- *Using Active PCI Manager* (REDP0446)
- *Implementing Asset ID* (SG24-6165)

You can download these books from the IBM Web site at http://www.ibm.com/redbooks/.

Note: Some of the Redbooks publications contain outdated information. Be sure to note the date of publication and to determine the level of IBM Director software to which the Redbooks publication refers.

IBM Director resources on the World Wide Web

The following Web pages provide resources for understanding, using, and troubleshooting IBM Director and systems-management tools.

IBM Online Assistant and e-Mail

http://www.ibm.com/pc/qtechinfo/MIGR-4Z7HJX.html

This Web page offers a quick resource to help solve your technical questions. Follow the instructions on this page to find additional solutions for your systems-management tools.

If you do not find an acceptable solution, or if you just want to bypass looking for your own solution, you can submit an electronic question. From any page within the IBM Online Assistant, click **None of the above** to submit an electronic inquiry. Response times vary between 24 and 48 hours.

IBM Universal Manageability Discussion Forum

http://www7.pc.ibm.com/~ums/

IBM forums put you in contact with other IBM customers. The forums are monitored by IBM technicians.

IBM Systems Management Software: Download/Electronic Support page

http://www.ibm.com/pc/us/eserver/xseries/systems_management/dwnl.html

Use this Web page to download IBM systems-management software, including IBM Director.

IBM xSeries Systems Management page

http://www.ibm.com/pc/ww/eserver/xseries/systems_management/index.html

This Web page presents an overview of IBM systems management and IBM Director. Click **IBM Director 4.1** for the latest information and publications.

IBM Universal Manageability page

http://www.ibm.com/pc/us/pc/um/index.html

This Web page links to an IBM portfolio of advanced management tools that help lower costs and increase availability throughout the life cycle of a product.

IBM ServerProven® page

http://www.ibm.com/pc/us/compat/index.html

This Web page provides information about IBM hardware compatibility, as well as supported operating systems.

IBM Director Agent page

http://www.ibm.com/pc/ww/eserver/xseries/systems_management/nfdir/agent.html

This Web page includes the compatibility document for IBM Director 4.1. It lists all the supported operating systems and is updated every 6 to 8 weeks.

IBM Support page

http://www.ibm.com/pc/support/

This is the IBM Support Web site for IBM hardware and systems-management software. For systems-management software support, click **Systems management**.

Chapter 1. Introducing IBM Director 4.1 Upward Integration Modules

IBM Director 4.1 Upward Integration Modules (UIMs) enable workgroup and enterprise systems-management products to interpret and display data provided by systems with IBM Director Agent installed. The modules provide enhancements to the workgroup and enterprise systems-management products that you can use to start IBM Director Agent from within the systems-management platform, collect IBM Director Agent inventory data, view IBM Director Agent event notifications, and for some UIMs, distribute IBM Director Agent software packages.

This book provides information about the following IBM Director UIMs:
- IBM Director UIM for Microsoft Systems Management Server (SMS)
- IBM Director UIM for HP OpenView
- IBM Director UIM for IBM Tivoli NetView
- IBM Director UIM for Tivoli Management Environment

IBM Director Agent

With the UIMs, you can use your systems-management software to manage systems installed with IBM Director Agent software. The IBM Director Agent software enables you to:
- Gather detailed inventory information about your systems, including operating system, memory, network adapters and hardware.
- Track your systems with features such as power management, event log and system monitor capabilities.

IBM Director Agent uses some of the latest systems-management standards, including Common Information Model (CIM), Web-Based Enterprise Management (WEBM) and the Extensible Markup Language (XML), to provide compatibility with your existing enterprise-management software.

Depending on your systems-management environment, you can choose to install all of IBM Director Agent, or you can choose to install only selected features of IBM Director Agent. For more information about IBM Director Agent software, see the *IBM Director 4.1 Installation and Configuration User's Guide*.

Chapter 2. Integrating IBM Director UIM for Microsoft System Management Server

This chapter contains information on integrating IBM Director UIM for Microsoft System Management Server (SMS). When you install IBM Director UIM for SMS, the following functions are added to the SMS environment:

- **Event notification**
  Provides notification of events occurring on systems with IBM Director Agent installed. These notifications are translated into SMS status messages. For a complete list of events that IBM Director Agent sends, see Appendix A, "IBM Director UIM events", on page 47.

  Note: Microsoft System Management Server 2.0 no longer supports SNMP trap listening.

- **Collections**
  Adds an SMS Collection to easily identify all systems with IBM Director Agent installed.

- **Inventory collection**
  Scans inventory directly from IBM Director Agent, including Asset ID™ data, BIOS details, field-replaceable unit (FRU) numbers, lease information, and network details. For a complete list of the inventory collected, see Appendix B, "IBM Director UIM inventory collection", on page 65.

  Notes:
  1. The inventory feature is not compatible with previous releases of IBM Director. You must use IBM Director Agent 4.1 to access inventory information.
  2. Inventory collection can scan static MIF files, which enables compatibility with SMS 1.2.

- **Monitors**
  Extends the health-monitoring feature of Microsoft SMS by adding new properties to be monitored, including hardware thresholds and status.

- **Queries**
  Adds an SMS Query to identify all systems with IBM Director Agent installed.

- **Software distribution**
  Distributes an IBM Director Agent software package and performs an unattended installation on any system in the Microsoft SMS environment.

- **Tools for managing IBM Director Agent systems**
  Provides a Microsoft Management Console snap-in so you can view real-time information about, and manage asset and health information on, systems with IBM Director Agent installed.

- **Wake on LAN®**
  Remotely powers on Wake on LAN-capable systems with IBM Director Agent installed.

The rest of this chapter provides the following information and instructions to help ensure a successful integration:

- Installation requirements on page 4
- Limitations on page 4
- Downloading IBM Director UIM for Microsoft SMS on page 4
- Installing IBM Director UIM for Microsoft SMS on page 5

- Distributing the IBM Director Agent software package on page 7
- Working with IBM Director UIM for Microsoft SMS on page 9
- Uninstalling IBM Director UIM for Microsoft SMS on page 10

Installation requirements

IBM Director UIM for Microsoft SMS can be installed on systems running the following applications and operating systems:

- Microsoft Systems Management Server 2.0, Service Pack 4.0
- Microsoft Windows NT® 4.0, Service Pack 5 or later, or Windows® 2000, Service Pack 2 or later
- Microsoft Windows Installer 2.0
- Microsoft Internet Explorer 5.0 or later or the latest version of the Microsoft Java® Virtual Machine (JVM) installed

   Note: If you need to install the Microsoft JVM, run the executable file (MSJava86.exe) that is located in the directory in which you installed the IBM Director UIM for SMS.

Limitations

When installing IBM Director UIM for SMS, you must first remove any previous version you have installed. Complete the following steps to remove a previous version of the UIM:

1. From a command prompt, type the following command:

   ```
   d:\directory\umscoll.exe "d:\directory\umscoll.ini" servername -D
   ```

   where:
   - *d* is the drive letter of the hard disk
   - *directory* is the installation directory, typically ..\program files\ums
   - *servername* is the name of the server on which the UIM is installed.

2. From a command prompt, type each of the following commands:

   ```
   regsvr32 /u umscons.dll
   regsvr32 /u umssmse1.dll
   regsvr32 /u umssmse2.dll
   ```

3. Remove the following keys from the registry:
   - LOCAL MACHINE\SOFTWARE\Microsoft\MMC\NodeTypes\ {22241306-2E64-11D2-AD56-0060B03CB511}
   - LOCAL MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog\ Application\IBM UMS

4. Delete the installation directory (*directory* in step 1).
5. Remove UMS_HOME from the SMS environment.

You can now install the new version of IBM Director UIM for Microsoft SMS.

Downloading IBM Director UIM for Microsoft SMS

You can download the IBM Director UIM for Microsoft SMS executable file, dir41_sms.exe and the readme file, dir41_sms.txt, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-51490. Download this file into a temporary directory.

Installing IBM Director UIM for Microsoft SMS

IBM Director UIM for Microsoft SMS must be installed on all servers in the SMS network. During the installation, the SMS Administrator Console is configured with IBM Director Agent entries in the Collections, Queries, and Tools trees. Also, the installation provides a Microsoft Management Console (MMC) snap-in module so you can view real-time information about, and manage asset and health information on, systems with IBM Director Agent installed.

Installation steps for IBM Director UIM for Microsoft SMS

To install IBM Director UIM for Microsoft SMS, you must be logged onto Microsoft SMS with administrator privileges.

Complete the following steps to install IBM Director UIM for Microsoft SMS:

1. Double-click **dir41_sms.exe**. The InstallShield Wizard starts and the "Preparing to Install" window opens.

   When the Windows Installer is configured, the "Welcome to the InstallShield Wizard for IBM Director UIM for Microsoft SMS" window opens.
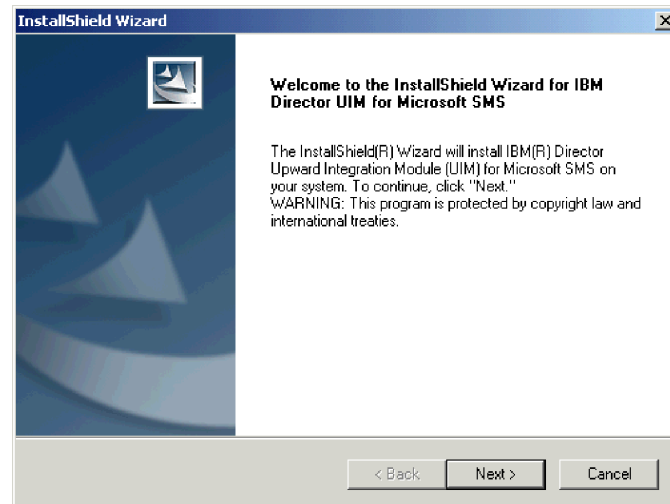
Figure 1. "Welcome to the InstallShield Wizard for IBM Director UIM for Microsoft SMS" window

2. Click **Next**. The "License agreement" window opens.
3. Click **Yes**. The "User information" window opens.
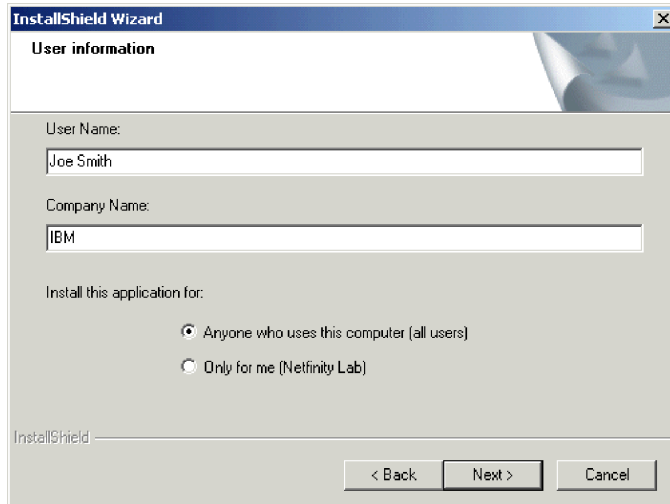
Figure 2. "User information" window

4. The following fields are filled in by default. If you want to change the information, type the following information in the entry fields:

    a. In the **User Name** field, type the name of the site server administrator.

    b. In the **Company Name** field, type the name of your company.

    c. If you want to enable access only for the current operating-system account, click **Only for me (*username*)**, where *username* is filled in by default. Otherwise, click **Anyone who uses this computer (all users)**.

5. Click **Next**. The "Installation type" window opens.

6. Click the type of installation you want.

    Typical
    > Installs IBM Director UIM for Microsoft SMS and the IBM Director UIM for Microsoft SMS help files.

    Compact
    > Installs IBM Director UIM for Microsoft SMS only.

    Custom
    > Installs IBM Director UIM for Microsoft SMS; you also can choose to install the IBM Director UIM for Microsoft SMS help files and database support.

7. Click **Next**.

8. If you specified a typical or compact installation, the "Setup Type" window opens; go to step 11.
    If you specified a custom installation, the "Feature selection" window opens; go to step 9.

9. Select the IBM Director features that you want to install. If you want to install database support, be sure to select the **Database support** check box.

10. Click **Next**. The "Setup Type" window opens.

11. If you are installing the UIM on a site server, click **Server and Console**. Otherwise, click **Console Only**.

12. Click **Next**. The "Choose Destination Location" window opens.

13. (Optional) By default, the UIM is installed to *d*:\Program Files\IBM\Director, where *d* is the drive letter of the hard disk drive.

If you want to specify an alternative location, click **Browse**. The "Choose Folder" window opens. Select the directory to which you want to install the UIM and click **OK**.

14. Click **Next**. The "Enter Text" window opens.
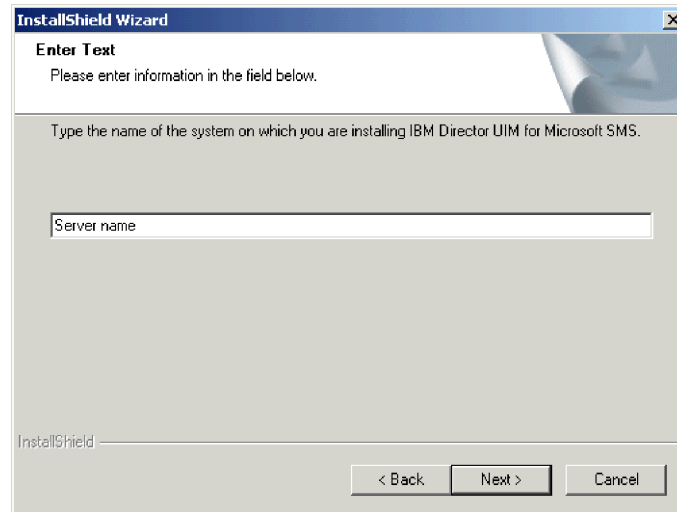
Figure 3. "Enter Text" window

15. In the entry field, type the SMS server name.
16. Click **Next**. The "Setup summary" window opens.
17. Review the setup summary. Click **Back** to make any changes. Otherwise, click **Next**. The "Setup Status" window opens. When the setup is completed, a command-prompt window opens and the progress of the installation is displayed. When the installation is completed, the "Restart" window opens.
18. Click **Yes, I want to restart my computer now.** and click **Finish**. The site server restarts (reboots).

Distributing the IBM Director Agent software package

After you have installed IBM Director UIM for Microsoft SMS, you can use SMS software distribution to install IBM Director Agent on your systems. This section contains information about how to create, prepare, and distribute the IBM Director Agent software package.

Before you can distribute the IBM Director Agent software package to your SMS systems, you must download the IBM Director Agent installation file, IBMDirectorAgentWindows.zip, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-46492

Note: For additional information about IBM Director Agent features and installation requirements, see the *IBM Director 4.1 Installation and Configuration User's Guide*.

Creating the IBM Director Agent software package

Complete the following steps to create the IBM Director Agent software package:

1. Create a temporary directory on your SMS server to which you want to extract the software package.
2. Extract the IBMDirectorAgentWindows.zip file to the temporary directory.

3. Using an ASCII text editor, complete the following steps:

   a. Open the diragent.rsp file (located in the temporary directory) and view the configuration options. This file follows the Windows INI file format and is fully commented.

   b. Modify the diragent.rsp file to change any configuration options.

   c. Change the last line in the diragent.rsp file to

      ```
      RebootIfRequired = N
      ```

      Note: If you do not set this parameter to N, when you try to distribute the software package, the system restarts twice and the IBM Director Agent software does not install properly.

   d. Save the diragent.rsp file to the temporary directory.

4. Open the SMS Administrator Console.

5. In the SMS Administrator Console tree, right-click **Packages** and click **New → Package from Definition**. The Create Package from Definition wizard starts and the "Welcome to the Create New Package from Definition Wizard" window opens.

6. Click **Next**. The "Package Definition" window opens.

7. Click **Browse** and navigate to the IBM Director\bin subdirectory. If you installed the IBM Director UIM for SMS in the default location, the path is *d*:\Program Files\IBM\Director\bin, where *d* is the drive letter of the hard disk drive. Click **UMS.SMS** and click **Open**. The "Package Definition" window reopens, and DirectorAgent is displayed in the **Package definition** field.

8. Click **Next**. The "Source Files" window opens.

9. Click **Always obtain files from a source directory** and click **Next**. The "Source Directory" window opens.

10. Specify the location of the source files:

    a. In the **Source directory location** field, click **Local drive on site server** or **Network location**.

    b. In the **Source directory** field, type *d:\TemporaryDirectory* where *d:* is the drive letter of the hard disk drive and *TemporaryDirectory* is the directory to which you extracted the IBMDirectorAgentWindows.zip file.

11. Click **Next**. The "Completing the Create Package from Definition Wizard" window opens.

12. Review the package characteristics information and click **Finish**. The IBM Director Agent software package is displayed under Packages in the SMS Administrator Console tree.

Preparing the IBM Director Agent software package for distribution

Complete the following steps to prepare the IBM Director Agent software package for distribution:

1. Create a temporary directory on your site server to serve as a share distribution directory.

2. Copy the contents of the temporary directory to the temporary share distribution directory.

   Note: Do not use the temporary directory as the share distribution directory. The contents of the share distribution directory will be deleted after the software distribution is completed.

3. In the SMS Administrator Console tree, expand the **Packages** tree.

4. In the right pane, right-click **Director Agent** and click **Properties**. The "IBM Corp. DirectorAgent 4.1 English Package Properties" window opens.
5. Click the **Data Access** tab. The "Data Access" page is displayed.
6. Click **Share distribution folder** and in the **Name** field, type *SWDDirectory*, where *SWDDirectory* is the temporary directory that you created in step 1 on page 8.
7. Click **OK**.
8. In the SMS Administrator Console tree, click the **Programs** directory that is displayed under the IBM Corp.DirectorAgent English Package.
9. In the right pane, right-click **Director Agent** and click **Properties**. The "DirectorAgent Program Properties" window opens.
10. Change the contents of the **Command line** field to the following string:

    ```
    IBMDirectorAgent.exe -s -a SILENT RSP=\\server\SWDDirectory\diragent.rsp
    ```

    where:
    - *server* is the SMS site server.
    - *SWDDirectory* is the name of share distribution directory.
11. Click **OK**. The IBM Director Agent software package is ready for distribution.

Distributing an IBM Director Agent software package

Complete the following steps to distribute the IBM Director Agent software package:
1. In the SMS Administrator Console, right-click **Advertisements** and click **New → Advertisement**. The New Advertisement wizard opens.
2. On the General page, in the **Name** field, type a name for the package.
3. In the **Comment** field, type a comment, such as IBM Director Agent software.
4. In the **Package** list, click **DirectorAgent**.
5. In the **Program** list, click **Director Agent**.
6. In the **Collection** field, type the name of the collection to which you want to distribute the package, or click **Browse** to choose a collection.
7. Click the **Schedule** tab. Specify a date and time to distribute the package.
8. Click **OK**. The software package has been scheduled for distribution.

At the specified time and date, IBM Director Agent is installed on all the systems in your network.

Working with IBM Director UIM for SMS

After you install the IBM Director UIM for Microsoft SMS, several IBM Director functions can be accessed from the SMS Administrator Console.

Note: IBM Director functions cannot be used on systems that do not have IBM Director Agent installed, despite the fact that their context menu displays the Director Agent Resources option.

In the Systems Management Server tree, expand the **Collections** or **Queries** tree to view the All Systems with Director Agent node.

In the Systems Management Server tree, expand the **Tools** tree to view the Director Agent Console node.

Using the IBM Director Agent Console

Complete the following steps to use the IBM Director Agent Console against a managed system:

1. In the SMS Administrator Console tree, expand **Tools**.
2. Right-click **Director Agent Console** and click **All Tasks → Start**. The "Director Agent Console" window opens.
3. Click **Action → New → System**. The "Dialogue" window opens.
4. Type your information in the following fields:
    a. In the **Name** field, type the computer name of the system.
    b. In the **Web Address** field, type the IP address of the system or the alias mapped to the IP address.
    c. In the **Port** field, type the number of the port through which you access the IBM Director Agent system. By default, this is set to 411.
5. Click **OK**. The "Director Agent Console" window reopens.
6. Expand *My Computer*, where *My Computer* is the computer name of the system that you typed in step 4a.

Issuing a Wake on LAN command

Complete the following steps to issue a Wake on LAN command against a system with IBM Director Agent installed:

1. From the SMS Administrator Console, right-click on any system with IBM Director Agent installed and select **All Tasks → Wake on LAN**. A message is displayed, "Wake on LAN message sent."
2. Click **OK**. The system is powered on.

Uninstalling IBM Director UIM for SMS

Complete the following steps to uninstall IBM Director UIM for SMS:

1. From the Windows task bar, click **Start → Settings → Control Panel**. The "Control Panel" window opens.
2. Double-click **Add/Remove Programs**. The "Add/Remove Programs" window opens.
3. Scroll down to Director Agent Integration with SMS and click **Remove**. The "Confirm File Deletion" window opens.
4. Click **OK**. The uninstallation program begins.
5. When the uninstallation is completed, click **OK**.

Chapter 3. Integrating IBM Director UIM for HP OpenView

This chapter contains information on integrating IBM Director UIM for HP OpenView. When you install IBM Director UIM for HP OpenView, the following functions are added to the Network Node Manager:

* **Event notification**
Provides notification of events occurring on systems with IBM Director Agent installed. These notifications are delivered using SNMP traps. For a complete list of events that IBM Director Agent sends, see Appendix A, "IBM Director UIM events", on page 47.

* **Inventory collection**
Scans inventory using an inventory plug-in that launches a Java applet that collects the inventory from IBM Director Agent, including Asset ID data, BIOS details, and lease information. For a complete list of the inventory collected, see Appendix B, "IBM Director UIM inventory collection", on page 65.

* **Web browser launch**
Provides Web browser capability from within the HP OpenView environment so you can view and manage real-time asset and health information about systems that have IBM Director Agent installed.

* **Discovery**
Provides SNMP-based discovery of systems with IBM Director Agent installed.

The rest of this chapter provides the following information and instructions to help ensure a successful integration:

* Installation requirements on page 11
* Limitations on page 12
* Downloading IBM Director UIM for HP OpenView on page 12
* Installing IBM Director UIM for HP OpenView on page 12
* Post-installation tasks on page 14
* Working with IBM Director UIM for HP OpenView on page 15
* Uninstalling IBM Director UIM for HP OpenView on page 16

Installation requirements

IBM Director UIM for HP OpenView can be installed on systems running the following applications and operating systems:

* HP OpenView Network Node Manager, version 6.2 with patches NNM_00932 and NNM_00983 installed, and version 6.31 with patches NNM_00973 and NNM_00981 installed.
* Microsoft Windows NT 4.0 and Windows 2000
* Microsoft Windows Installer 2.0

The following additional installation requirements must be met:

* If you want to install database support, you must have installed and configured Microsoft SQL Server 7.0 prior to installing IBM Director UIM for HP OpenView.
* For IBM Director Agent discovery, you must have Windows SNMP support enabled on the system and the SNMP option must be enabled when installing IBM Director Agent on the system.
* To access the Web browser function or to receive health alerts, you must enable these functions when installing IBM Director Agent on the system.

Limitations

When installing IBM Director UIM for HP OpenView, consider the following limitations:

- Discovery, inventory, and event notification are supported on all client/server operating system combinations for HP OpenView, with one exception: An HP OpenView server installed with Windows NT cannot collect inventory data from a Windows XP system.
- Inventory data for multiple video cards is not retrieved correctly. The problem is with CIM. Even if you try the *wbemtest* tool, you still do not retrieve the correct information for multiple video cards.
- With SMBIOS 2.3.3:
  - PCI-X slots do not report the correct connector type. Retrieved inventory data displays the connector type as *Unknown* for all PCI-X slots.
  - Some multi-threaded processors might report processor details incorrectly. For these processors, the inventory function reports two processors, one with the correct information and the other with no information.
- With older versions of SMBIOS, ISA slots do not report current usage correctly. For these systems, current usage for ISA slots is reported as 7.
- Windows 2000 Professional systems with S3 Trio 3D video cards might not report the correct amount of adapter RAM. For these cards adapter RAM is reported as 0.

Downloading IBM Director UIM for HP OpenView

You can download the IBM Director UIM for HP OpenView executable file, dir41_openview.exe, and the readme file, dir41_openview.txt, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-51490. Download this file into a temporary directory.

Installing IBM Director UIM for HP OpenView

This section provides installation steps for the UIM. After you install the UIM for HP OpenView, you must configure a database source if you want to collect inventory data. See "Configuring the database source" on page 14 for instructions.

Installation steps for IBM Director UIM for HP OpenView

Complete the following steps to install IBM Director UIM for HP OpenView:

1. Stop Network Node Manager.
2. Double-click **dir41_openview.exe**. The InstallShield Wizard starts and the "Preparing to Install" window opens. When the Windows Installer is configured, the "Welcome to the InstallShield Wizard for IBM Director UIM for HP OpenView" window opens.
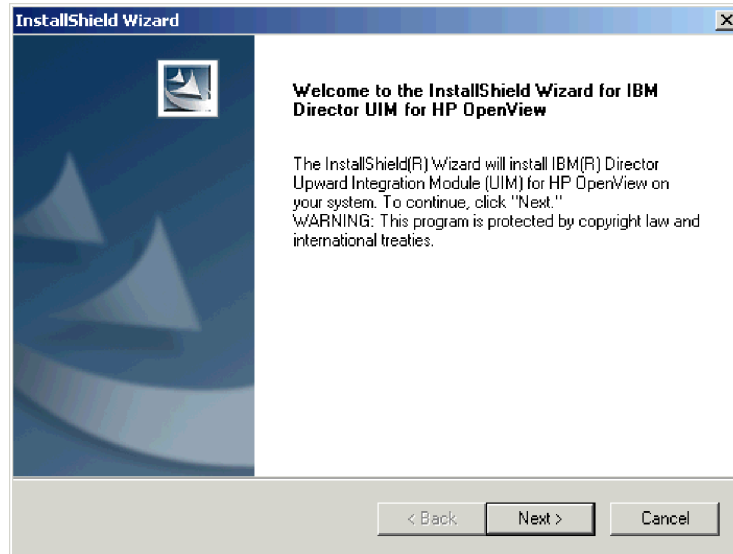
Figure 4. "Welcome to the InstallShield Wizard for IBM Director UIM for HP OpenView" window

3. Click **Next**. The "License agreement" window opens.
4. Click **Yes**. The "IBM Director UIM for HP OpenView" window opens.
5. Read the information displayed on the screen and click **Next**. The "User information" window opens.
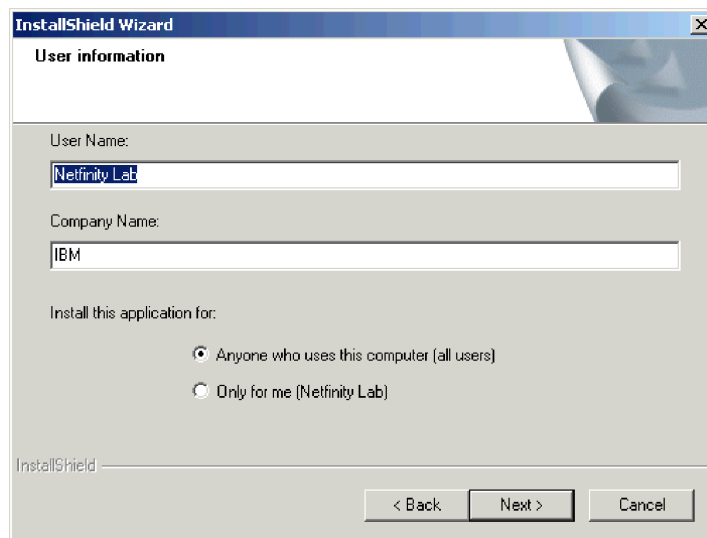
Figure 5. "User information" window

6. The following fields are filled in by default. If you want to change what is displayed, type the following information in the entry fields:

   a. In the **User Name** field, type the name of the OpenView administrator.

   b. In the **Company Name** field, type the name of your company.

   c. If you want to enable access only for the current operating-system account, click **Only for me (*username*)**, where *username* is filled in by default. Otherwise, click **Anyone who uses this computer (all users)**.

7. Click **Next**. The "Installation type" window opens.

8. Click the type of installation you want.

Typical
> Installs IBM Director UIM for HP OpenView and the IBM Director UIM for HP OpenView help files.

Compact
> Installs IBM Director UIM for HP OpenView only.

Custom
> Installs IBM Director UIM for HP OpenView; you can also choose to install the IBM Director UIM for HP OpenView help files and database support.

9. Click **Next**.

10. If you specified a typical or compact installation, the "Setup summary" window opens; go to step 12.
    If you specified a custom installation, the "Feature selection" window opens; go to step 11.

11. Select the IBM Director features that you want to install and click **Next**. If you want to install database support, be sure to select the **Database support** check box.

    Note: To use this option, you already must have installed and configured Microsoft SQL Server 7.0.
    The "Setup summary" window opens.

12. Review the setup summary. Click **Back** to make any changes. Otherwise, click **Next**. The "Setup Status" window opens.

    When the installation is completed, the "Restart" window opens.

13. Click **Finish** to restart the system now. The system restarts (reboots).

14. Start Network Node Manager. The Root window opens, displaying the error log containing error messages about MIBs for IBM Director event alerts.

15. Click **Edit → Clear**; then, close the window.

16. Start Network Node Manager again. The problem is corrected and the error log does not display.

Post-installation tasks

After installing IBM Director UIM for HP OpenView, you must configure a database source. You might also need to fix inventory collection on Windows XP.

Configuring the database source

If you specified a custom installation to include database support, you must configure the database source. Also, you must have installed and configured Microsoft SQL Server 7.0 prior to installing IBM Director UIM for HP OpenView.

Complete the following steps to configure a database source:

1. Start Network Node Manager.

2. Double-click the Director Agent icon.

3. Click **Tools → Director Agent → Configure ODBC DataSource**. The "Configure DataSource for Database Access" window opens.
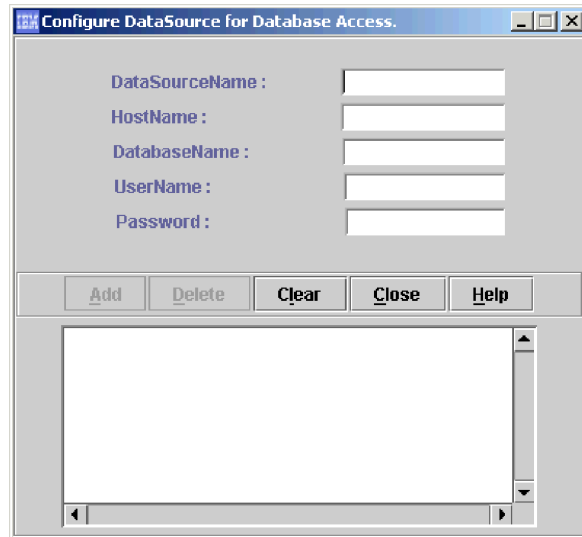
Figure 6. "Configure DataSource for Database Access" window

4. Complete the fields. Click **Add**. A message is displayed in the bottom pane indicating if the database tables were created successfully.
5. Click **Close**.

Collecting inventory from IBM Director Agent systems running Windows XP

After installing IBM Director UIM for HP OpenView on a server running Windows 2000, you might not be able to collect inventory data from IBM Director Agent systems running Windows XP. Complete the following steps on the HP OpenView server running Windows 2000 to fix this problem:

1. Install Service Pack 2 on the HP OpenView server running Windows 2000.
2. Click **Start → Settings → Control Panel**. The "Control Panel" window opens.
3. Double-click **Administrative Tools**. The "Administrative Tools" window opens.
4. Double-click **Local Security Policy**. The "Local Security Settings" window opens.
5. In the left pane, expand the **Local Policies** tree and click **Security Options**.
6. In the right pane, double-click **Network Access: Sharing and security model for local accounts**. The "Local Security Policy Setting" window opens.
7. Click **Classic**; then, click **OK**.
8. Close the window.

Working with IBM Director UIM for HP OpenView

After you install IBM Director UIM for HP OpenView, IBM Director functions can be accessed from the Network Node Manager. In the "Network Node Manager Root" window, double-click the **DirectorAgent** icon to begin working with systems with IBM Director Agent installed. The "Director Agent" window opens.

Saving inventory data to the database

Complete the following steps to save the IBM Director Agent inventory data to the database:

1. Click **Tools → Director Agent → Get Director Agent Nodes**. The "Get Director Agent Nodes" window opens.
2. Click **OK**.
3. Click **Tools → Director Agent → Save Inventory to Database**. The "Inventory Status" window opens.

   In the bottom pane, a message is displayed when the inventory has been saved successfully.
4. Click **Close**.

Viewing inventory

Complete the following steps to view the inventory for a system:

1. In the "Director Agent" window, click the system.
2. Click **Tools → Director Agent → Director Agent Inventory** and click the inventory item you want to view.

Viewing event notifications

To view the event notifications for a single system, in the "Director Agent" window, right-click the system and click **Alarms.** To view all event notifications, in the "Alarm Categories" window, click **Status Alarms**.

For a list of IBM Director Agent events, see Appendix A, "IBM Director UIM events", on page 47. For more information on how to customize events, see your HP OpenView documentation.

Using discovery

To discover all systems with IBM Director Agent installed, in the "Director Agent" window, click **Tools → Director Agent → Director Agent Status**.

To remove any systems that have been removed by the Network Node Manager due to status polling, click **Tools → Director Agent → Remove Offline Nodes**.

Accessing the Web browser

To access the Web browser, click **Tools → Director Agent → Director Agent Browser**. The "Web browser" window opens.

Uninstalling IBM Director UIM for HP OpenView

Complete the following steps to uninstall IBM Director UIM for HP OpenView:

1. Stop the HP OpenView server.
2. From the Windows task bar, click **Start → Settings → Control Panel**. The "Control Panel" window opens.
3. Double-click **Add/Remove Programs**. The "Add/Remove Programs" window opens.
4. Scroll down to Director Agent Integration with HP OpenView and click **Remove**. The "Confirm File Deletion" window opens.
5. Click **OK**. The uninstallation program begins.
6. When the uninstallation is completed, click **OK**. Then, restart the system or refresh the Windows directory to remove the Director Agent folder icons in the Start menu.

Unloading the MIB files

The MIB files must be unloaded manually to complete the uninstallation. Complete the following steps to unload the MIB files:

1. In Network Node Manager, click **Options → Load/Unload MIBs:SNMP**.
2. Click the MIBs you want to unload.
3. Click **Unload**.

Removing the database entry for IBM Director Agent

The database entry for IBM DIrector Agent must be deleted to complete the uninstallation. Complete the following steps to remove the database entry for IBM Director Agent:

1. Start Microsoft SQL Server 7.0 Enterprise Manager.
2. Expand the **Microsoft SQL Servers** tree.
3. Expand the **SQL Servers Group** tree.
4. Navigate to the IBM Director database.
5. Right-click the database and click **Delete**.

Chapter 4. Integrating IBM Director UIM for IBM Tivoli NetView

This chapter contains information on integrating IBM Director UIM for IBM Tivoli NetView. When you install IBM Director UIM for IBM Tivoli NetView, the following functions are added to the Tivoli NetView Console:

- **Event notification**
  Provides notification of events occurring on systems with IBM Director Agent installed. These notifications are delivered using SNMP traps. For a complete list of events that IBM Director Agent sends, see Appendix A, "IBM Director UIM events", on page 47.

- **Inventory collection**
  Scans inventory using an inventory plug-in that launches a Java applet that collects the inventory from IBM Director Agent, including Asset ID data, BIOS details, FRU service numbers, lease information, and network details. For a complete list of the inventory collected, see Appendix B, "IBM Director UIM inventory collection", on page 65.

- **Web browser launch**
  Provides Web browser capability from within the Tivoli NetView environment so you can view and manage real-time asset and health information about systems that have IBM Director Agent installed.

- **Discovery**
  Provides SNMP-based discovery capability for systems with IBM Director Agent installed.

The rest of this chapter provides the following information and instructions to help ensure a successful integration:

- Installation requirements on page 19
- Limitations on page 20
- Downloading IBM Director UIM for Tivoli NetView on page 20
- Installing IBM Director UIM for Tivoli NetView on page 21
- Post-installation tasks on page 23
- Working with IBM Director UIM for Tivoli NetView on page 25
- Uninstalling IBM Director UIM for Tivoli NetView on page 25

Installation requirements

IBM Director UIM for Tivoli NetView can be installed on systems running the following applications and operating systems:

- IBM Tivoli NetView, versions 6.0.2 and 7.1.3
- Microsoft Windows NT 4.0 and Windows 2000
- Microsoft Windows Installer 2.0

The following additional installation requirements must be met:

- If you want to install database support, you must have installed and configured Microsoft SQL Server 7.0 prior to installing IBM Director UIM for Tivoli NetView.
- For IBM Director Agent discovery, you must have Windows SNMP support enabled on the system and the SNMP option must be enabled when installing IBM Director Agent on the system.
- To access the Web browser function or to receive health alerts, you must enable these functions when installing IBM Director Agent on the system.

Limitations

When installing IBM Director UIM for Tivoli NetView, consider the following limitations:

- Discovery, inventory, and event notification are supported on all client/server operating system combinations for Tivoli NetView, with one exception: A Tivoli NetView server installed with Windows NT cannot collect inventory data from a Windows XP system.

- Before starting IBM Director Agent on Tivoli NetView, make sure the Web browser on the NetView server is not set to use proxy accounts; otherwise, discovery fails.

- In Windows Internet Explorer 5.0, starting the HTTP-based IBM Director Agent through Tivoli NetView displays a proxy server authorization window even if the browser options are set to bypass a proxy server for local addresses. To fix this problem, you must upgrade to Internet Explorer 5.5.

- Inventory data for multiple video cards is not retrieved correctly. The problem is with CIM. Even if you try the *wbemtest* tool, you still do not retrieve the correct information for multiple video cards.

- With SMBIOS 2.3.3:

  - PCI-X slots do not report the correct connector type. Retrieved inventory data displays the connector type as *Unknown* for all PCI-X slots.

  - Some multi-threaded processors might report processor details incorrectly. For these processors, the inventory function reports two processors, one with the correct information and the other with no information.

- With older versions of SMBIOS, ISA slots do not report current usage correctly. For these systems, current usage for ISA slots is reported as 7.

- Windows 2000 Professional systems with S3 Trio 3D video cards might not report the correct amount of adapter RAM. For these cards adapter RAM is reported as 0.

- All IBM Director Agent traps received are reported as *Critical* regardless of their severity. You can modify the severity by selecting **Options → Trap Settings** from the NetView server menu.

- If IBM Director UIM for Tivoli NetView is uninstalled and then reinstalled, you might receive an error: Browser service event ID: 8032. Complete the following steps to fix this problem:

  1. Open Internet Explorer.
  2. Click **Tools → Internet Options**.
  3. Click **Delete Files**, then click **OK**.
  4. Click **Clear History**, then click **OK**.

Downloading IBM Director UIM for Tivoli NetView

You can download the IBM Director UIM for Tivoli NetView executable file, dir41_netview.exe, and the readme file, dir41_netview.txt, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-51490. Download this file into a temporary directory.

Installing IBM Director UIM for Tivoli NetView

This section provides installation steps for the UIM. After you install the UIM for Tivoli NetView, you must configure a database source and create an IBM Director Agent SmartSet if you want to collect inventory data. See "Configuring the database source" on page 23 and "Creating an IBM Director Agent SmartSet to access IBM Director Agent inventory" on page 24 for instructions.

Installation steps for IBM Director UIM for Tivoli NetView

Complete the following steps to install IBM Director UIM for Tivoli NetView:

1. Stop Tivoli NetView.
2. Double-click **dir41_netview.exe**. The InstallShield Wizard starts and the "Preparing to Install" window opens. When the Windows Installer is configured, the "Welcome to the InstallShield Wizard for IBM Director UIM for Tivoli NetView" window opens.
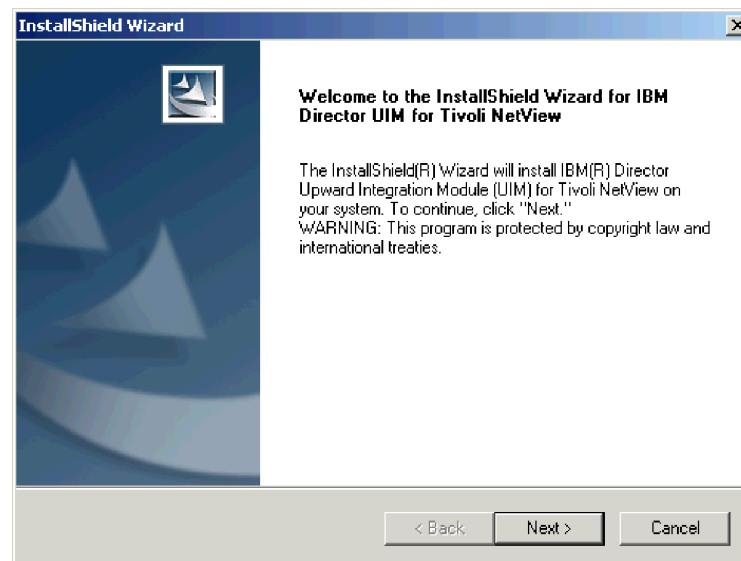

Figure 7. "Welcome to the InstallShield Wizard for IBM Director UIM for Tivoli NetView" window

3. Click **Next**. The "License agreement" window opens.
4. Click **Yes**. The "IBM Director UIM for NetView" window opens.
5. Read the information displayed in the window and click **Next**. The "IBM Director UIM for NetView" window opens.
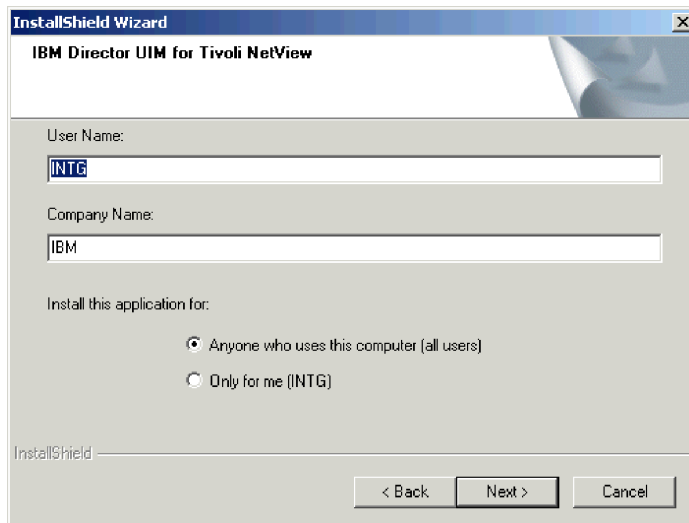
Figure 8. "IBM Director UIM for Tivoli NetView" window

6. The following fields are filled in by default. If you want to change the information, type the following information in the entry fields:

   a. In the **User Name** field, type the name of the NetView administrator.

   b. In the **Company Name** field, type the name of your company.

   c. If you want to enable access only for the current operating-system account, click **Only for me (*username*)**, where *username* is filled in by default. Otherwise, click **Anyone who uses this computer (all users)**.

7. Click **Next**. The "Installation type" window opens.

8. Click the type of installation you want:

   Typical
   > Installs IBM Director UIM for Tivoli NetView and the IBM Director UIM for Tivoli NetView help files.

   Compact
   > Installs IBM Director UIM for Tivoli NetView only.

   Custom
   > Installs IBM Director UIM for Tivoli NetView; you can also choose to install the IBM Director UIM for Tivoli NetView help files and database support.

9. Click **Next**.

10. If you specified a typical or compact installation, the "Setup Type" window opens; go to step 12.
    If you specified a custom installation, the "Features selection" window opens; go to step 11.

11. Select the IBM Director features that you want to install and click **Next**. If you want to install database support, be sure to select the **Database support** check box.

    Note: To use this option, you already must have installed and configured Microsoft SQL Server 7.0.
    The "Setup Type" window opens.

12. If you are installing the UIM on a management system, click **NetView Server**. Otherwise, click **NetView Console**.

13. Click **Next**. The "Setup summary" window opens.

14. Review the setup summary. Click **Back** to make any changes. Otherwise, click **Next**. When the installation is completed, the "Restart" (reboot) window opens.

15. Click **Yes, I want to restart my computer now**; then, click **Finish**. The system restarts (reboots).

Post-installation tasks

After installing IBM Director UIM for Tivoli NetView, you must configure a database source and create an IBM Director Agent SmartSet. You might also need to fix how icons display or fix inventory collection on Windows XP.

Configuring the database source

If you specified a custom installation to include database support, you must configure the database source. Also, you must have installed and configured Microsoft SQL Server 7.0 prior to installing IBM Director UIM for Tivoli NetView.

Complete the following steps to configure a database source:

1. Start Tivoli NetView.

2. Click **Tools → Director Agent → Configure ODBC DataSource**. The "Configure DataSource for Database Access" window opens.
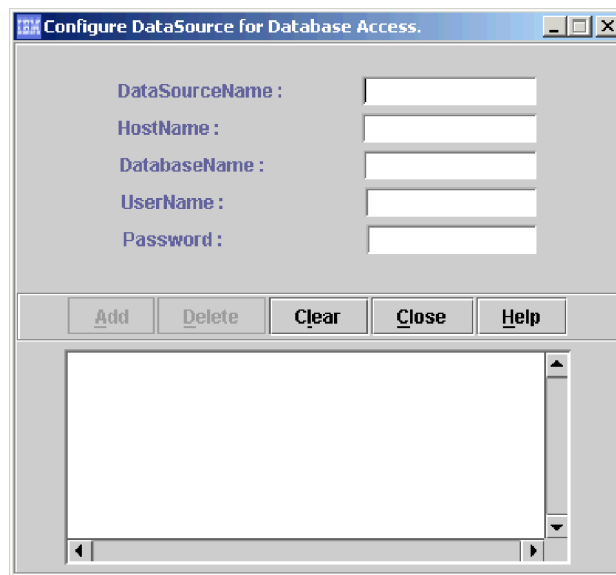
Figure 9. "Configure DataSource for Database Access" window

3. Complete the fields. Click **Add**. A message is displayed in the bottom pane indicating if the database tables were created successfully.

4. Click **Close**.

5. Click **Tools → Director Agent → Get Director Agent Nodes**. The "Get Director Agent Nodes" window opens.

6. Click **OK**.

7. Click **Tools → Director Agent → Save Inventory to Database**. The "Inventory Status" window opens.

   In the bottom pane, a message is displayed when the inventory has been saved successfully.

8. Click **Close**.

Creating an IBM Director Agent SmartSet to access IBM Director Agent inventory

To create an IBM Director Agent SmartSet to access IBM Director Agent inventory, you edit both the nvsniffer.conf file and the nvsniffer_ums.conf file and must run the nvsniffer.exe file. These files are located in *d*:\usr\ov\conf, where *d* is the drive letter of the hard disk drive.

Complete the following steps to create a Director Agent SmartSet to access IBM Director Agent inventory:

1. Open the nvsniffer.conf file in an ASCII text editor.
2. Uncomment the following line in the "Director Agent discovery tests" section, near the bottom of the file:

   `isUMSCim||||\usr\ov\bin\umscimtest.exe|\usr\ov\bin\umscimtest.exe|*`
3. Save the modified file.
4. Repeat steps 1 through 3 for the nvsniffer_ums.conf file.
5. At a command prompt, type `nvsniffer.exe`.
6. When nvsniffer is finished running, close Tivoli NetView. This allows the system to update with the inventory information.
7. Reopen Tivoli NetView.
   You are now able to view the inventory.

Fixing how the icons for IP Internet and SmartSet display

After installing the IBM Director UIM for Tivoli NetView, the icons for IP Internet and SmartSets might not display properly. Complete the following steps to fix the problem:

1. From the NetView Server, click **Options → Server Setup**. The "Server Setup" window opens.
2. Click the **Databases** tab. The "Databases" pane is displayed.
3. In the top entry field, click **Clear Databases**. The text on the window refreshes.
4. Click **Clear Bitmap Database**; then, click **OK**.
5. Close and reopen NetView Server. The icons for IP Internet and SmartSets are properly displayed.

Collecting inventory from IBM Director Agent systems running Windows XP

After installing the IBM Director UIM for Tivoli NetView on a server running Windows 2000, you might not be able to collect inventory data from IBM Director Agent systems running Windows XP. Complete the following steps on the Tivoli NetView server running Windows 2000 to fix this problem:

1. Install Service Pack 2 on the Tivoli NetView server running Windows 2000.
2. Click **Start → Settings → Control Panel**. The "Control Panel" window opens.
3. Double-click **Administrative Tools**. The "Administrative Tools" window opens.
4. Double-click **Local Security Policy**. The "Local Security Settings" window opens.
5. In the left pane, expand the **Local Policies** tree and click **Security Options**.
6. In the right pane, double-click **Network Access: Sharing and security model for local accounts**. The "Local Security Policy Settings" window opens.

7. Click **Classic**; then, click **OK**.
8. Close the window.

Working with IBM Director UIM for Tivoli NetView

After you install IBM Director UIM for Tivoli NetView, IBM Director functions can be accessed from the Tivoli NetView Root window. In the "Tivoli NetView Root" window, double-click the **SmartSets** icon; then, double-click the **DirectorAgent** icon to begin working with systems with IBM Director Agent installed. The "Director Agent" window opens.

Saving inventory data to the database

Complete the following steps to save the IBM Director Agent inventory data to the database:

1. Click **Tools → Director Agent → Get Director Agent Nodes**. The "Get Director Agent Nodes" window opens.
2. Click **OK**.
3. Click **Tools → Director Agent → Save Inventory to Database**. The "Inventory Status" window opens.

   In the bottom pane, a message is displayed when the inventory has been saved successfully.
4. Click **Close**.

Viewing inventory

Complete the following steps to view the inventory for a system:

1. In the "Director Agent" window, click the system.
2. Click **Tools → Director Agent → Director Agent Inventory** and click the inventory item you want to view.

Viewing event notifications

To view the event notifications for a single system, in the "Director Agent" window, select the system and click the **Events** icon. The "Event Browser" window opens and displays all events for the system.

For a list of IBM Director Agent events, see Appendix A, "IBM Director UIM events", on page 47. For more information on how to customize events, see your Tivoli NetView documentation.

Accessing the Web browser

To access the Web browser, click **Tools → Director Agent → Director Agent Browser**. The "Web browser" window opens.

Uninstalling IBM Director UIM for Tivoli NetView

Complete the following steps to uninstall IBM Director UIM for Tivoli NetView:

1. Stop the Tivoli NetView server.
2. From the Windows task bar, click **Start → Settings → Control Panel**. The "Control Panel" window opens.
3. Double-click **Add/Remove Programs**. The "Add/Remove Programs" window opens.

4. Scroll down to Director Agent Integration with Tivoli NetView and click **Remove**. The "Confirm File Deletion" window opens.

5. Click **OK**. The uninstallation program begins.

6. When the uninstallation is completed, click **OK**. Then, manually remove any objects that you have added to the Tivoli NetView environment.

Chapter 5. Integrating IBM Director UIM for IBM Tivoli Management Environment

This chapter provides information on configuring IBM Director UIM for Tivoli Management Environment. IBM Director UIM for Tivoli Management Environment provides enhancements to Tivoli systems-management products by using IBM Director Agent capabilities. When you configure the components of this module, the following systems-management functions are available in the Tivoli Management Environment:

- **Event notification**
  Provides notification of events occurring on systems with IBM Director Agent installed. These notifications can be sent as native Tivoli Enterprise Console® events, as SNMP traps, and as Windows event log events. For a complete list of events that IBM Director Agent sends, see Appendix A, "IBM Director UIM events", on page 47.

- **Inventory**
  Scans inventory directly from systems with IBM Director Agent installed using custom MIF files, SQL scripts, and inventory queries. For a complete list of the inventory collected, see Appendix B, "IBM Director UIM inventory collection", on page 65.

- **Monitors**
  Provides monitors for systems with IBM Director Agent installed. For Tivoli Distributed Monitoring 3.7 you can monitor systems to determine if the HTTP server or SNMP service is running. For IBM Tivoli Distributed Monitoring 5.1.1, you can monitor hardware thresholds, various system status, HTTP server status, and SNMP service status.

- **Software distribution**
  Enables you to build and distribute a package for IBM Director Agent software and perform an unattended installation on any Tivoli endpoint that is running Microsoft Windows.

- **Tasks**
  Provides tasks for you to view information and restart or shut down a system installed with IBM Director Agent.

The rest of this chapter provides the following information and instructions to help ensure a successful integration:

- Integration requirements on page 27
- Limitations on page 28
- Downloading IBM Director UIM for Tivoli Management Environment on page 28
- Configuring IBM Director UIM for Tivoli Management Environment on page 29
- Creating the IBM Director Agent software package on page 42
- Working with IBM Director UIM for Tivoli Management Environment on page 43
- Upgrading or removing components on page 45

Integration requirements

To use IBM Director UIM for Tivoli Management Environment, one of the following Tivoli Management Framework versions must be installed:

- Tivoli Management Framework 3.7.1
- Tivoli Management Framework 4.1

In addition, the following table lists the Tivoli components that must be installed to enable the UIM functions:

Table 1. Tivoli components needed for Framework version

Function	Framework 3.7.1	Framework 4.1
Events	Tivoli Enterprise Console 3.7.1	IBM Tivoli Enterprise Console 3.8
Inventory	Tivoli Inventory 4.0 with 4.0-INV-FP05 and 4.0-INV-E-FIX 36	Tivoli Inventory 4.2, part of IBM Tivoli Configuration Manager 4.2
Monitoring	Tivoli Distributed Monitoring 3.7	IBM Tivoli Distributed Monitoring 5.1.1
Software distribution	Tivoli Software Distribution 4.0	Tivoli Software Distribution 4.2, part of IBM Tivoli Configuration Manager 4.2

Notes:

1. (Linux only) IBM recommends using the following patches with Tivoli Management Framework 3.7.1 for Linux:
   - 3.6.1-TMF-034
   - 3.6.1-TMF-062
   - 3.7.1-CLL-002
   - 3.7.1-TMF-073
   - 3.7.1-TMF-090

2. (Systems running Microsoft Windows NT or Windows 2000) For Tivoli Management Framework 3.7.1 or 4.1, you must source your command environment for Tivoli Management Environment commands to work. To do this, run `setup_env.cmd` from a command prompt.

Limitations

When installing IBM Director UIM for Tivoli Management Environment, consider the following limitations:

- Microsoft Windows 2000 servers running IBM Tivoli Terminal Services might be severely limited in functionality.
- Due to the way Tivoli classifies events, all informational events generated by systems with IBM Director Agent installed are classified as test traps.

Downloading IBM Director UIM for Tivoli Management Environment

IBM Director UIM for Tivoli Management Environment is a compressed file that contains the following components:

- Events
- Inventory
- Monitors
- Software distribution
- Tasks

Note: You can configure any or all of these components and in any order; however, you must configure each component individually.

Complete the following steps to download and expand the IBM Director UIM for Tivoli Management Environment:

1. Download IBM Director UIM for Tivoli Management Environment compressed file, dir41_tme.tar, and the readme file, dir41_tme.txt, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-51490 into a temporary directory.

2. To expand the TAR file, type the following command from a command prompt:

   ```
   tar -xvf dir41_tme.tar
   ```

A new directory is created in the temporary directory with the following content:

Table 2. Directory structure of extracted IBM Director UIM for Tivoli Management Environment file

Directory name	Contents
..\datme	Component subdirectories and readme file
..\datme\DM	Monitoring component
..\datme\INV	Inventory component
..\datme\SD	Software distribution component
..\datme\Tasks	Tasks component
..\datme\TEC	Event component

Configuring IBM Director UIM for Tivoli Management Environment

You can configure any or all of the IBM Director UIM for Tivoli Management Environment components and in any order; however, you must configure each component individually. This section contains instructions for the following:

- Configuring the events component
- Configuring the inventory component
- Configuring the monitors component
- Configuring the tasks component

Configuring the events component

To receive native Tivoli Enterprise Console events from IBM Director Agent, you must install the Tivoli Enterprise Console Adapter Configuration Facility on all your endpoint gateways. Complete the following steps to configure the Tivoli Enterprise Console server for the events component:

1. To create a new rule base, an IBM Director Agent event source, and load the IBM Director Agent .baroc file, from a command prompt on your Tivoli Enterprise Console server, change to the ..\datme\TEC directory and type one of the following commands:

For a Windows Tivoli Management Environment	`bash datec.sh` *NewRuleBase d:\NewDirectory SourceRulebase*
For a UNIX® Tivoli Management Environment	`./datec.sh` *NewRuleBase d:/NewDirectory SourceRulebase*

   where:
   - *NewRuleBase* is the name you want to assign to the new rule base.

- *d:\NewDirectory* and *d:/NewDirectory* are the path names of the new directory you want to create.
- *SourceRuleBase* is the name of the rule base you want to use as a template for the new rule base. If you do not specify a source rule base, the Default rule base is used.

> **Note:** If you are using the IBM Director monitors component, you might want to use the same rule base. In this case, for *SourceRuleBase* specify the name of the rule base created for monitors.

The event server is restarted and a message is displayed stating that the Tivoli Enterprise Console integration is complete.
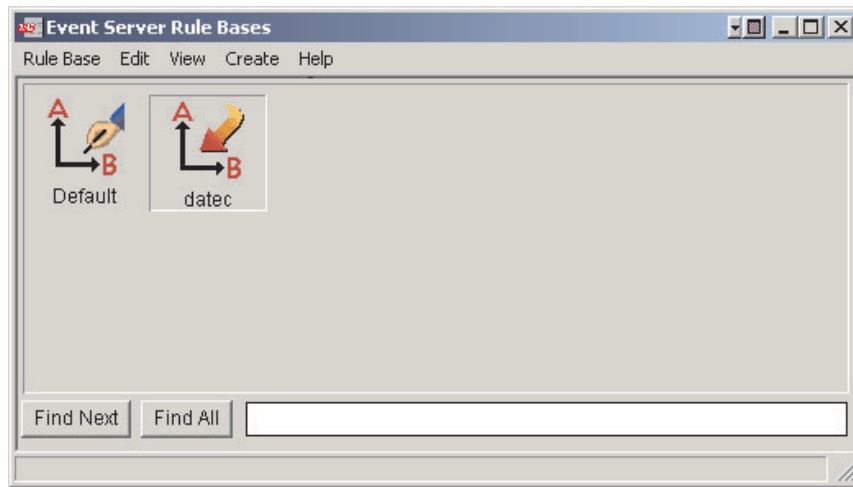

Figure 10. New rule base displayed in "Event Server Rule Bases" window

2. (Optional) To load the rule sets for IBM Director Agent events into a rule base, type one of the following commands:

For a Windows Tivoli Management Environment	`bash darules.sh RuleBase`
For a UNIX Tivoli Management Environment	`./darules.sh RuleBase`

where:

- *RuleBase* is the name of the rule base where the rule sets are imported.

> **Note:** You can manually load rule sets into a rule base one at a time. The rule sets are located in the ..\datme\TEC directory.

3. Start the Tivoli Enterprise Console.
4. To create the IBM Director Agent event groups and console, import the DirectorTEC file from the ..\datme\TEC directory using the "Tivoli Enterprise Console Configuration" window.

   a. From the Tivoli Enterprise Console, click **File → Import → Browse**.

   b. Navigate to the ..\datme\TEC directory and select **DirectorTEC**; then, click **OK**. The "Import" window opens.

   c. From the "Consoles" section, select **Director Agent**.

d. From the "Event Groups" section, select **Director Agent**, **Director Agent SNMP**, and **Director ServeRAID SNMP**.

e. Click **OK**.

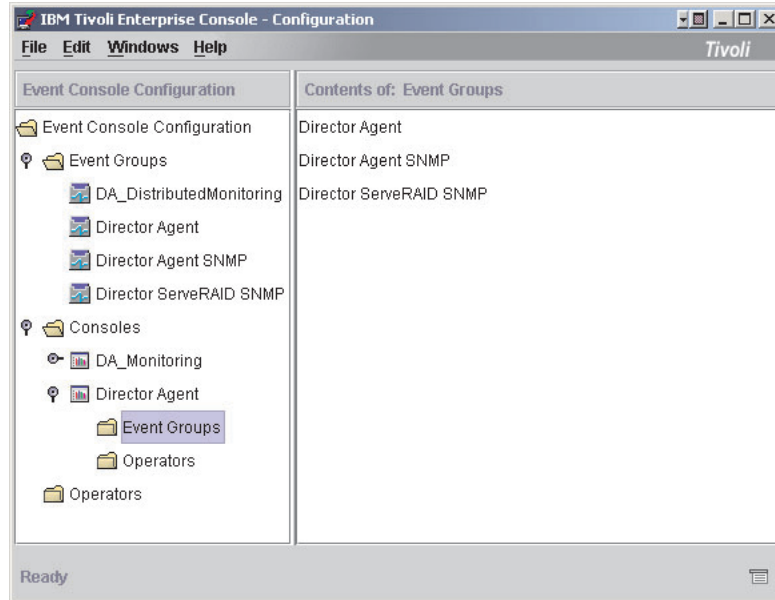5. Shut down and restart the Tivoli Enterprise Console.

Figure 11. Director Agent console and event groups displayed in the configuration window

6. (Optional) If you want to receive IBM Director Agent SNMP traps, you must configure the Tivoli Enterprise Console SNMP Adapter by completing the following steps:

a. Append the contents of Director.cds, located in the ..\datme\TEC directory, to tecad_snmp.cds.

b. Append the contents of Director.oid, located in the ..\datme\TEC directory, to tecad_snmp.oid.

In the "Tivoli Enterprise Console Configuration" window, the Director Agent console is displayed and contains the following event groups:

- **Director Agent**
  Native IBM Director events
- **Director Agent SNMP**
  IBM Director SNMP traps
- **Director Agent ServeRAID™ SNMP**
  IBM ServeRAID SNMP traps

Note: If you are using the IBM Director Agent monitors component also, assign the DA_Monitoring event group to the Director Agent console.

Configuring the inventory component

To scan and retrieve inventory information from IBM Director Agent systems, you must ensure that Tivoli Inventory Gateway is installed on the systems as well. Complete the following steps to configure the inventory component:

1. Verify that you have administrator privileges and the proper Tivoli Management Environment authorization for the Tivoli Management Region where the inventory library must reside.
2. To create the IBM Director Agent inventory library and queries, from a command prompt change to the ..\datme\INV directory and type one of the following commands:

For a Windows Tivoli Management Environment	`bash dainv_queries.sh` *RIMName PolicyRegion QueryLibrary*
For a UNIX Tivoli Management Environment	`./dainv_queries.sh` *RIMName PolicyRegion QueryLibrary*

where:

- *RIMName* is the name of the RIM host for your inventory query. This is usually inv_query.
- *PolicyRegion* is the name of your policy region.
- *QueryLibrary* is the name for your IBM Director Agent query library. If you do not specify a name, the default is DIRECTOR_AGENT_INV.

In your policy region, the IBM Director Agent query library is created and contains thirty-five inventory queries.
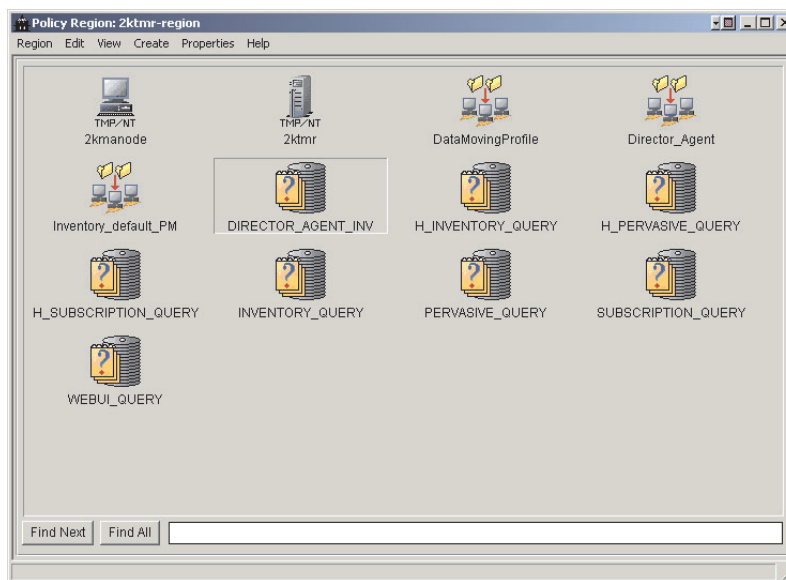

Figure 12. IBM Director Agent query library displayed in policy region

3. From the policy region where you want to add the inventory profile, create a profile manager for IBM Director Agent, for example Director_Agent (see Figure 13). Make sure you select **Dataless Endpoint Mode**.
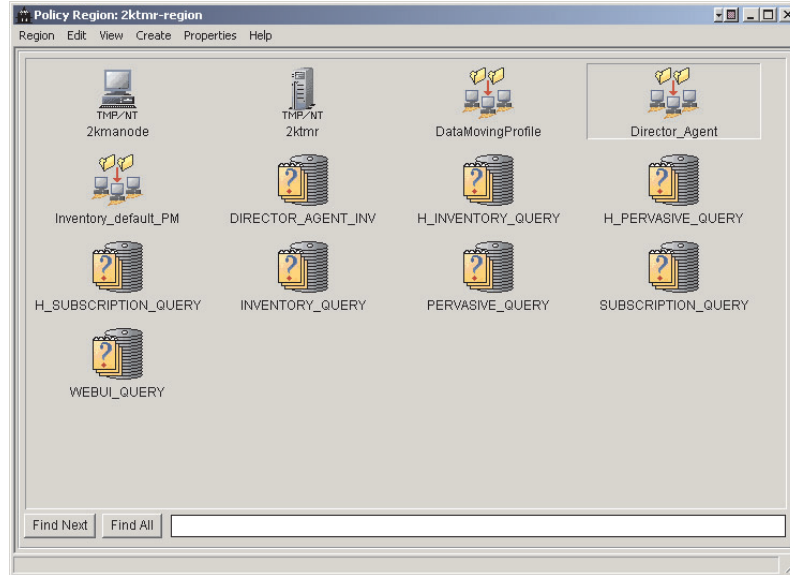
Figure 13. IBM Director Agent profile manager displayed in policy region

> **Note:** You can use the same profile manager for the monitors and inventory components profiles.

4. Create an inventory profile, DA_Inventory (see Figure 14), for the Director_Agent profile manager. Make sure you select **InventoryConfig** as the profile type.
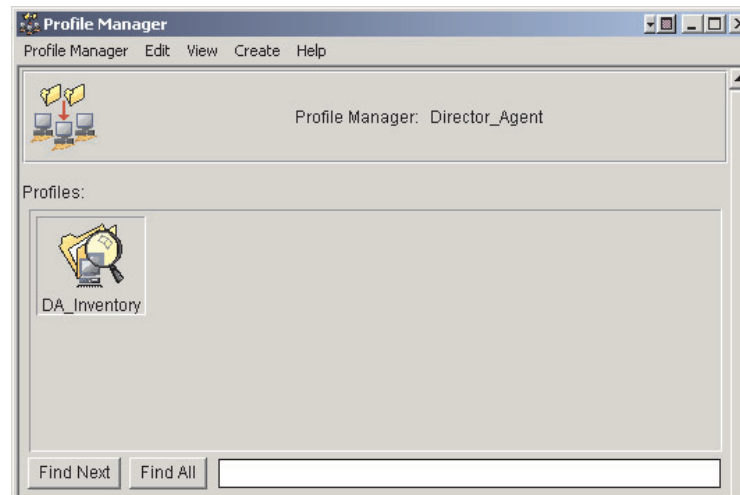

Figure 14. IBM Director Agent inventory profile displayed in Profile Manager

5. Make the following modifications to the properties for the DA_Inventory profile:

   a. In the "Inventory Administration" window, click the applicable **Scripts and MIF Files** node and type the applicable script in the **Enter a script to be run before the scan** field:

   > **Note:** Because of its length and to avoid any errors, copy the PC script from the ..\datme\dir41_tme_readme.txt file and paste into this field.

For PC client systems	`%UMS_DRIVE% @cd "%UMS_HOME%\inventory" IF NOT EXIST "%UMS_HOME%" GOTO tag IF NOT EXIST "%UMS_HOME%"\jre\bin\java.exe GOTO jre @..\jre\bin\java.exe -D:WINDIR="%WINDIR%" -cp .\cim2mif.jar;"%UMS_HOME%\httpserv\cimdre.jar"; "%UMS_HOME%\httpserv\cimxml.jar";"%UMS_HOME%\ httpserv\guitools.jar";"%UMS_HOME%\httpserv\ cimfac.jar";"%UMS_HOME%\httpserv\cimwmi.jar"; "%UMS_HOME%\httpserv\cimcmn.jar" com.ibm.sysmgt.cim.cim2mif.cim2mif /TME c:\ "%UMS_HOME%\inventory\dmi2tiv.exe" @dmi.lst exit 0 :jre IF NOT EXIST "%UMS_HOME%"\jre\bin\jre.exe GOTO jview @..\jre\bin\jre.exe -D:WINDIR="%WINDIR%" -cp .\cim2mif.jar;"%UMS_HOME%\httpserv\cimdre.jar"; "%UMS_HOME%\httpserv\cimxml.jar";"%UMS_ HOME%\httpserv\guitools.jar";"%UMS_HOME%\ httpserv\cimfac.jar";"%UMS_HOME%\httpserv\ cimwmi.jar";"%UMS_HOME%\httpserv\cimcmn.jar" com.ibm.sysmgt.cim.cim2mif.cim2mif /TME c:\ "%UMS_HOME%\inventory\dmi2tiv.exe" @dmi.lst exit 0 :jview @jview -d:WINDIR="%WINDIR%" -cp:a .\cim2mif.jar;"%UMS_HOME%\httpserv\cimdre.jar"; "%UMS_HOME%\httpserv\cimxml.jar";"%UMS_HOME %\httpserv\guitools.jar";"%UMS_HOME%\httpserv\ mswmi.jar";"%UMS_HOME%\httpserv\xml4j2.jar"; "%UMS_HOME%\httpserv\xml4j.jar" com.ibm.sysmgt.cim.cim2mif.cim2mif /TME c:\ "%UMS_HOME%\inventory\dmi2tiv.exe" @dmi.lst exit 0 :tag pegsunprv.exe -D"WINDIR=%WINDIR%" -cp %%DIRECTOR_HOME%%\classes\cim2mif.jar;%%DIRECTOR _HOME%%\classes\cimdre.jar;%%DIRECTOR_HOME%%\ httpserv\cimxml.jar;%%DIRECTOR_HOME%%\httpserv\ guitools.jar;%%DIRECTOR_HOME%%\classes\ cimfac.jar;%%DIRECTOR_HOME%%\classes\ cimwmi.jar;%%DIRECTOR_HOME%%\classes\ cimutl.jar;%%DIRECTOR_HOME%%\classes\cimcmn.jar com.ibm.sysmgt.cim.cim2mif.cim2mif /TME exit 0`
For UNIX client systems	`/etc/DirAgent/tmeinv.sh`

    b. Type the appropriate MIF text into the **Enter the path and name of custom MIF files to be read during installation** field:

For PC client systems	For DB2®, type `c:\umsinvdb2.mif`
	For other databases, type `c:\umsinv.mif`
For UNIX client systems	For DB2, type `/etc/DirAgent/data/umsinvdb2.mif`
	For other databases, type `/etc/DirAgent/data/umsinv.mif`

    Note: The default path is c:\; however, this might change depending on where you tell the script to put the files.
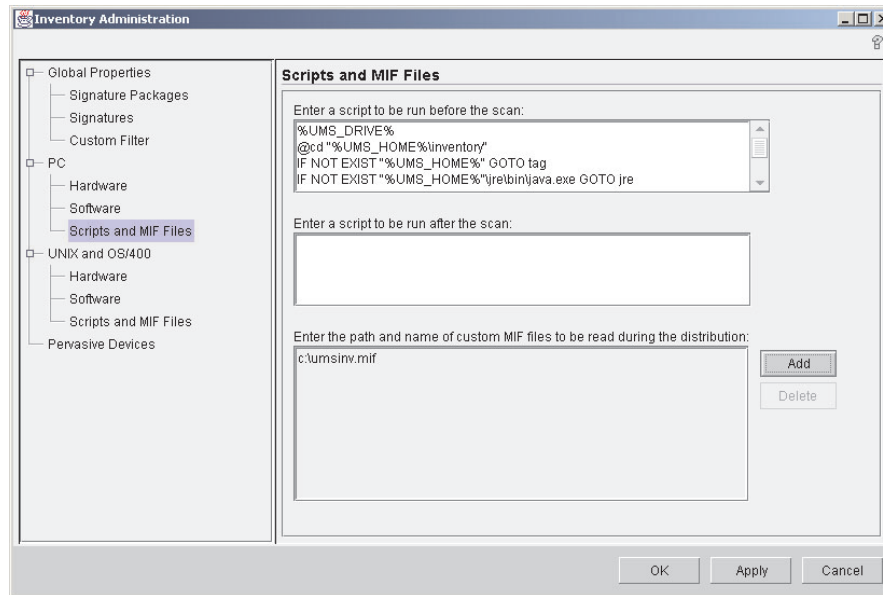
Figure 15. Scripts and MIF Files pane of "Inventory Administration" window

    c. Click **Apply**.

6. To configure the software scan so it will detect if IBM Director Agent is installed on subscribers, click the applicable **Software** node and complete the following steps:

    a. Select **Run the scan**.

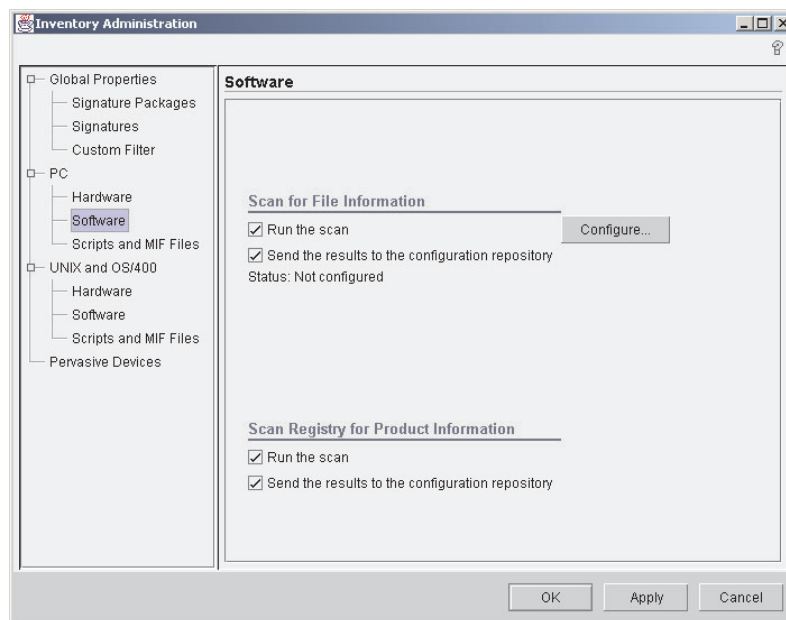   b. Select **Send the results to the configuration repository**.

Figure 16. Software pane of "Inventory Administration" window

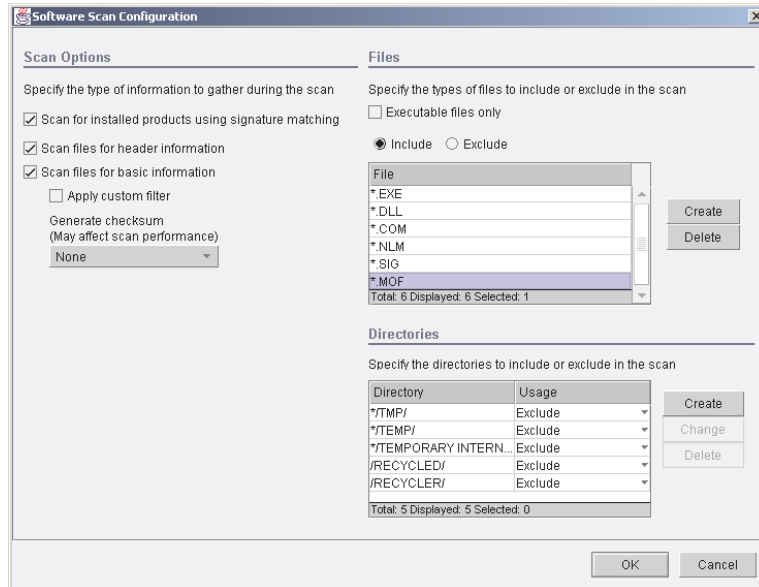   c. Click **Configure**. The "Software Scan Configuration" window opens.

Figure 17. "Software Scan Configuration" window

    d. From the **Scan Options** group, select the following options:

- **Scan for installed products using signature matching**
- **Scan files for header information**
- **Scan files for basic information**

    e. From the **Files** list, add ***.MOF**, then click **OK** to return to the "Inventory Administration" window.

    f. Click **OK** to save the changes.

7. Connect to your Tivoli inventory database and load the IBM Director inventory schemas. From the ..\datme\INV directory, load the appropriate database schema file:

For IBM DB2	ums_db2_schema.sql
For Microsoft SQL	ums_ms_sql_schema.sql
For Oracle	ums_oracle_schema.sql

    Attention: Do not make any changes to the schema file.

The inventory component is now configured.

Configuring the monitors component

The steps for configuring monitors for Tivoli Distributed Monitoring 5.1.1 (page 36) and Tivoli Distributed Monitoring 3.7 (page 40) differ; be sure to follow the applicable steps.

Configuring monitors for Tivoli Distributed Monitoring 5.1.1

Complete the following steps to configure the monitors component for Tivoli Distributed Monitoring 5.1.1:

1. To add distributed monitoring resource models, from a command prompt on your IBM Tivoli Monitoring Server, change to the ..\datme\DM directory and type one of the following commands:

For a Windows Tivoli Management Environment	`bash damonitors.sh`
For a UNIX Tivoli Management Environment	`./damonitors.sh`

A message is displayed stating the installation is complete.

2. To create a new rule base and classes, from a command prompt on your Tivoli Enterprise Console server, type one of the following commands:

For a Windows Tivoli Management Environment	`bash damonitorsTEC.sh `*`NewRuleBase d:\NewDirectory SourceRulebase`*
For a UNIX Tivoli Management Environment	`./damonitorsTEC.sh `*`NewRuleBase d:/NewDirectory SourceRulebase`*

where:

- *NewRuleBase* is the name you want to assign to the new rule base.
- *d:\NewDirectory* and *d:/NewDirectory* are the path names of the new directory you want to create.
- *SourceRuleBase* is the name of the rule base you want to use as a template for the new rule base. If you do not specify a source rule base, the Default rule base is used.

  Note: If you are using the IBM Director event component, you might want to use the same rule base. In this case, for *SourceRuleBase* specify the name of the rule base created for events.

  Attention: You must have the tmw2k.baroc file loaded into the source rule base before loading the IBM Director.baroc file. If you have only the default rule base, you must create a new rule base manually and import the tmw2k.baroc into the new rule base. Then, run the shell script against this new rule base.

3. The event server is restarted. A message is displayed stating that Tivoli Event Console integration is completed.

4. (Optional) To load the rule sets for IBM Director Agent monitors into a rule base, from a command prompt on your Tivoli Enterprise Console server, type one of the following commands:

For a Windows Tivoli Management Environment	`bash damonrules51.sh `*`RuleBase`*
For a UNIX Tivoli Management Environment	`./damonrules51.sh `*`RuleBase`*

where:

- *RuleBase* is the name of the rule base where the rule sets are imported.

  Note: You can manually load rule sets into a rule base one at a time. The rule sets are located in the ..\datme\DM directory.

Complete the following steps to add the IBM Director Agent monitors:

1. From the policy region where you want to add the monitors, create a profile manager for IBM Director Agent, for example Director_Agent. Make sure you select **Dataless Endpoint Mode**.
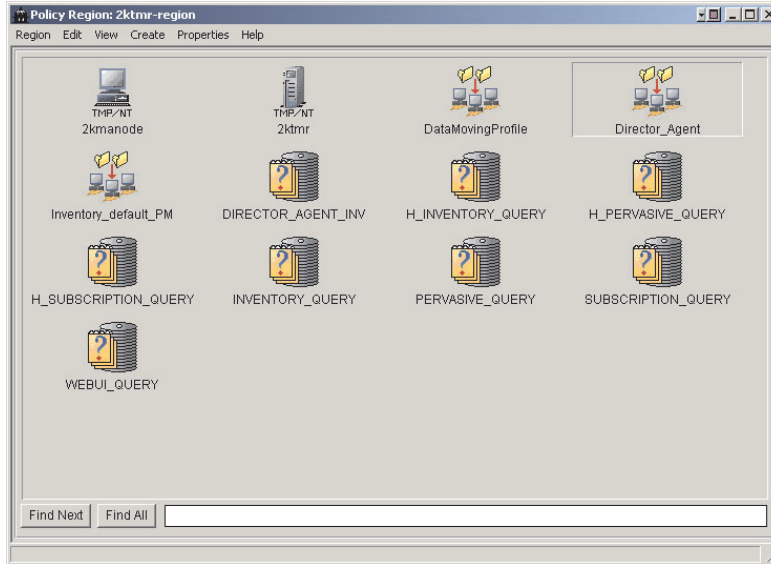
Figure 18. IBM Director Agent profile manager displayed in policy region

> **Note:** You can use the same profile manager for the monitors and inventory components profiles.

2. Create a monitors profile for the Director_Agent profile manager, for example DA_Monitors. Make sure you select **Tmw2kProfile** as the profile type.
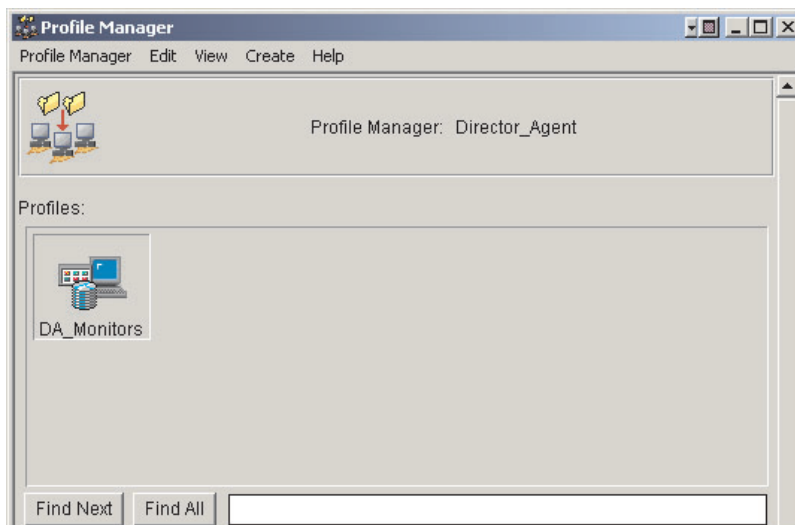

Figure 19. IBM Director Agent profile displayed in profile manager

3. Add the IBM Director Agent monitors to **DA_Monitors**. Make sure you select the **Wizard Generated Resource Models** category and add any of the following monitors:
   - HTTPCheck_sh
   - IBMPSG_Chassis
   - IBMPSG_PhysicalNetworkAdapter
   - IBMPSG_PortableBattery
   - IBMPSG_Tachometer

- IBMPSG_TemperatureSensor
- IBMPSG_VoltageSensor
- SNMPCheck_sh

4. Double-click the **DA_Monitors** profile. The "IBM Tivoli Monitoring Profile" window opens.

5. Click **Edit → Properties**. The "Profile Properties" window opens.

6. Select **Send TEC events**.

7. Select **TME (secure) delivery**.

8. From the **Choose TEC server** list, select your event server.

9. Click **OK**.

10. Open the "IBM Tivoli Enterprise Console Configuration" window and create a new event group, for example **DA_DistributedMonitoring**.
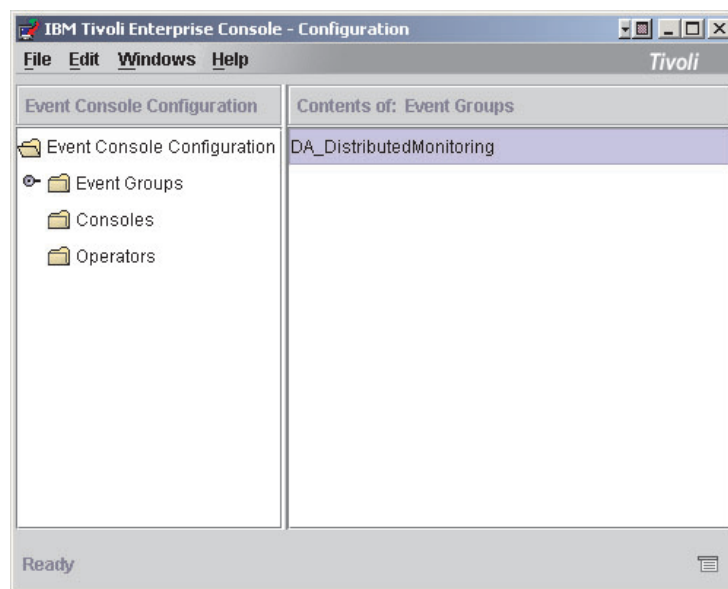

Figure 20. IBM Director Agent monitoring event group displayed in configuration window

11. Create a filter for the DA_DistributedMonitoring event group, for example **DA_EventFilter**. Use the following constraints:

   a. From the **Attribute** list, select **Class**.

   b. From the **Operator** list, select **in (IN)**.

   c. From the **Value** list, select **TMW_Event folder**.
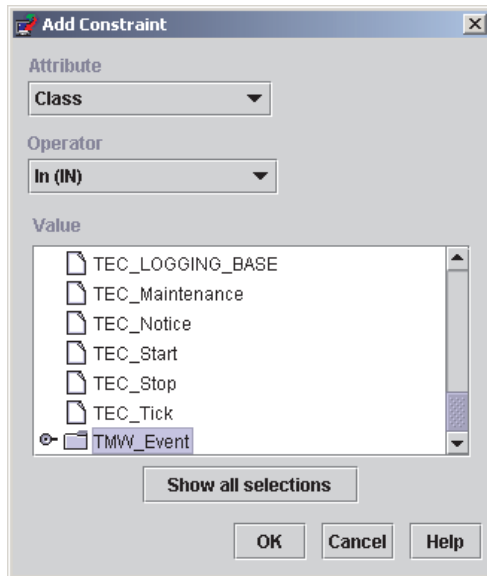
Figure 21. "Add Constraint" window

12. (Optional) Assign the **DA_DistributedMonitoring** event group to an existing console or create a new console, for example, **DA_Monitoring**.

> **Note:** If you are configuring the IBM Director Agent event component also, you might want to assign the DA_DistributedMonitoring event group to the Director Agent console. This console is created when you configure the event component.

13. From the Tivoli desktop, double-click **EventServer**. The "Event Server Rule Base" window opens and the new rule base is displayed:
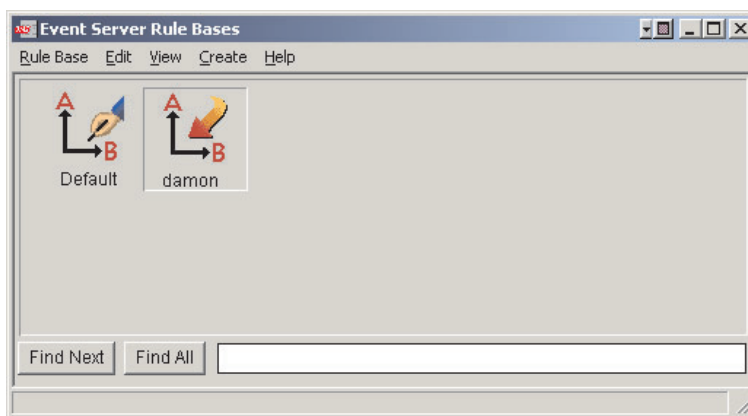

Figure 22. New rule base displayed in the "Event Server Rule Bases" window

14. Right-click the new rule base and select **Import**. The "Import Into Rule Base" window opens and the added monitors are displayed in the Imported Class File field.

Configuring monitors for Tivoli Distributed Monitoring 3.7

Complete the following steps to configure the monitors component for Tivoli Distributed Monitoring 3.7:

1. From the policy region where you want to add the monitors, verify that SentryProfile and SentryProxy are set as managed resources.
2. To create the HTTP and SNMP monitors, from a command prompt, change to the ..\datme\DM directory and type one of the following commands:

For a Windows Tivoli Management Environment	`bash damonitors37.sh HostName PolicyRegion`
For a UNIX Tivoli Management Environment	`./damonitors37.sh HostName PolicyRegion`

   where:
   - *HostName* is the name of the host system where your monitors are installed.
   - *PolicyRegion* is the name of your policy region.

   The DIRECTOR_MONITORS profile manager is created.
3. Verify that the sentry.baroc and universal.baroc files are loaded into your Tivoli Event Console rule base in that order to properly receive native events from the monitors.
4. (Optional) To load the rule sets for IBM Director Agent monitors into a rule base, from a command prompt type one of the following commands:

For a Windows Tivoli Management Environment	`bash damonrules37.sh RuleBase`
For a UNIX Tivoli Management Environment	`./damonrules37.sh RuleBase`

   where:
   - *RuleBase* is the name of the rule base where the rule sets are imported.

   Note: You can manually load rule sets into a rule base one at a time. The rule sets are located in the ..\datme\DM directory.
5. From the Tivoli desktop, open your policy region.
6. Double-click **DIRECTOR_MONITORS** to verify that the IBM Director Agent monitors were added.

Configuring the tasks component

To enable shut down, restart (reboot), or view version information for systems with IBM Director Agent installed, you must configure the tasks component.

1. Verify that you have administrator privileges and the proper Tivoli Management Environment authorization for the Tivoli Management Region where the tasks library must reside.
2. To create the tasks, from a command prompt, change to the ..\datme\Tasks directory and type one of the following command:

For a Windows Tivoli Management Environment	`bash datasks.sh HostName PolicyRegion TaskLibraryName`
For a UNIX Tivoli Management Environment	`./datasks.sh HostName PolicyRegion TaskLibraryName`

   where:
   - *HostName* is the name of the host system for your tasks.

- *PolicyRegion* is the name of your policy region.
- *TaskLibraryName* is the name of your IBM Director Agent task library. If you do not specify a name, the default is DIRECTOR_TASKS.

The DIRECTOR_TASKS library contains three tasks: About, Reboot, and Shutdown.

Creating the IBM Director Agent software package

To take advantage of IBM Director functions, you must install IBM Director Agent on the endpoints you want to manage. You can create an IBM Director Agent software package, then distribute it for installation. To distribute IBM Director Agent to endpoints, you must first meet the following requirements:

- Tivoli Software Distribution Server is installed on the software distribution server.
- Tivoli Software Distribution Gateway is installed on any managed nodes you plan to use as a software distribution gateway.
- A Tivoli endpoint is installed on any system you want to manage that has IBM Director Agent installed.
- The target system must be running Windows.

Complete the following steps to create an IBM Director Agent software package to install on endpoints in your Tivoli Management Environment:

1. Create a temporary directory on your software distribution server.
2. Download the IBM Director Agent Install for Windows version 4.1, ibmdirectoragentwindows.zip, from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-46492 into a temporary directory.
3. Extract IBMDirectorAgentWindows.zip to the temporary directory.
4. (Optional step) From the staging directory you can edit the response file, diragent.rsp, to set the desired IBM Director Agent installation options. For example, you might need to change the target drive if you have installed Windows on a drive other than c.
   a. Using an ASCII text editor, open the diragent.rsp file and view the configuration options. This file follows the Windows INI file format and is fully commented.
   b. Modify and save the diragent.rsp file.
5. To create a new IBM Director Agent package, from a command prompt, change to the ..\datme\SD directory and type one of the following commands:

For a Windows server	`bash daswd.sh HostName PolicyRegion d:` `TemporaryDirectory PackageName SWDversion`
For a UNIX server	`./daswd.sh HostName PolicyRegion d:` `TemporaryDirectory PackageName SWDversion`

where:

- *HostName* is the name of the host system for software distribution.
- *PolicyRegion* is the name of your policy region.
- *d:* is the drive of your temporary directory.
- *TemporaryDirectory* is the directory of the extracted files.

Note: If the temporary directory structure contains subdirectories, they must be separated with a forward slash (/) for either a Windows or UNIX system.

- *PackageName* is the name you want to give the IBM Director Agent software package.
- *SWDversion* is the version number (either 4.0 or 4.2) of the Tivoli Software Distribution installed.

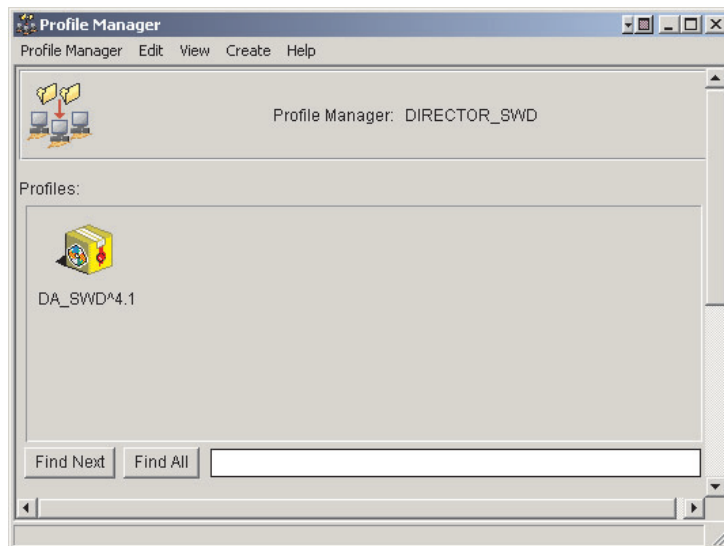The DIRECTOR_SWD profile manager is created with an IBM Director Agent software package.

Figure 23. IBM Director Agent software package displayed in Profile Manager

Using the IBM Director Agent software package

After the IBM Director Agent software package is created, see the *IBM Director 4.1 Installation and Configuration Guide* for information on installing and configuring IBM Director Agent. For more information on distributing the software package, see your IBM Tivoli documentation.

Working with IBM Director UIM for Tivoli Management Environment

After you configure the IBM Director UIM for Tivoli Management Environment components and install IBM Director Agent software on your endpoints, you can begin using the event notification, inventory collection, distributed monitoring, and tasks functions.

Using IBM Director events

The event server processes events that are sent to it by distributed monitors, native Tivoli Enterprise Console events and SNMP traps. The event server processes the events according to a rule base. Depending on the event and the rule used to handle it, the server can forward the event to a Tivoli Enterprise Console or perform actions in response. At least one event console must be installed before the event server can be set up.

You can view and manage the IBM Director events through the event console on the Tivoli desktop. You can further customize IBM Director UIM for Tivoli Management Environment event component, for example:

- Assign the event groups to other event consoles
- Trigger rules and actions by an event or a combination of events

For a list of IBM Director events, see Appendix A, "IBM Director UIM events", on page 47. For more information on how to customize events, see your IBM Tivoli documentation.

IBM Director Agent also logs all events to the Windows event log. For detailed information on Windows event log events as well as SNMP traps, see the *IBM Director 4.1 Events Reference* (dir41_events.pdf) which you can download from http://www-3.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-46492.

Using IBM Director inventory

Before you can collect any inventory, you must add the subscribers that are running IBM Director Agent. After running an inventory scan, an entry is written to the inventory group reporting success or failure. Then, you can run any inventory query.

Each query has its own set of information that is populated by default and can be modified. Some inventory items extend the Tivoli inventory and some are additions to the Tivoli Management Environment, thus adding function. See Appendix C, "Rule sets", on page 67 for a list of the inventory queries that are created.

Using IBM Director monitors

You can configure the IBM Director monitors to suit your needs. All monitors are preconfigured to poll at 5-minute intervals; however, you can set polling intervals for each monitor. You can also enable or disable a monitor.

You can check the status of monitors in Tivoli Management Environment in the following ways:

- Changing icon graphics
- Displaying popups
- Sending e-mails
- Sending Tivoli notices
- Sending Tivoli Enterprise Console events

See your IBM Tivoli documentation for more information on how to configure monitors.

Using IBM Director tasks

You can edit and run these tasks as you would any other Tivoli task. The About task returns information about the IBM Director UIM for Tivoli Management Environment that is installed. The Reboot task restarts subscribers installed with IBM Director Agent. The Shutdown task shuts down subscribers installed with IBM Director Agent.

Using IBM Director rule sets

Rule sets provide a mechanism for automatically handling events as they appear in the Tivoli Enterprise Console. These rules implement such tasks as dropping incoming events and canceling other events to reduce the number of insignificant or

outdated events present in the Tivoli Enterprise Console. IBM Director UIM for Tivoli Management Enterprise provides a set of rules which can be used to automatically and intelligently handle certain IBM Director-generated events.

All IBM Director rules function to either drop incoming events or cancel already received events. When an incoming event is caught by a rule, the event server searches through all the events in the Tivoli Enterprise Console that occurred within the previous twenty-four hours and cancels any events that meet the rule's criteria. This way old events are canceled and replaced by new events; thus, only the most recent event is present in the Tivoli Enterprise Console for any given sensor on a particular host.

For example, Fan Sensor 2 on host ABC has reached *critical* status. The Tivoli Enterprise Console receives an IBMPSG_FanEvent. Then, two hours later the condition is rectified. Now, the Tivoli Enterprise Console receives a *harmless* IBMPSG_FanEvent. If the IBM Director rule sets have been loaded, the *harmless* IBMPSG_FanEvent automatically closes the *critical* IBMPSG_FanEvent that was received.

IBM Director rule sets are located in the ..\datme\DM directory for Distributed Monitoring and in the ..\datme\TEC directory for native Tivoli Enterprise Console and SNMP events. These rule sets can be imported one at a time into a desired rule base. Then, you recompile and reload the rule base, and restart the event server. Or, you can follow the instructions in "Configuring the events component" on page 29 and "Configuring the monitors component" on page 36 to automatically import all IBM Director rule sets.

Note: Neither method works if the rule base you are modifying is read-only. Also, the rule base will not compile if the .baroc files have not been imported.

For more information on the rule sets, see Appendix C, "Rule sets", on page 67.

Upgrading or removing components

There is no upgrade path from the IBM Director 3.x Upward Integration Plus Module to the IBM Director UIM for Tivoli Management Environment. You must follow the uninstallation procedures in *Director Agent Plus, version 3.11 for Tivoli*. Then, you can configure one or more of the IBM Director UIM for Tivoli Management Environment components.

To remove any IBM Director UIM for Tivoli Management Environment components, you must undo the configuration changes you have made and remove any information from the database and event server.

Appendix A. IBM Director UIM events

IBM Director Agent can send events to your systems-management software. For HP OpenView and Tivoli NetView, the events are sent as SNMP traps. For Microsoft SMS and Tivoli Management Environment, the events are converted to each system's native format. Also, with Tivoli Management Environment, you have the option of using SNMP traps if preferred.

For detailed information on SNMP traps and Windows Event Log events, see the *IBM Director 4.1 Events Reference* (dir41_events.pdf) which you can download from http://www-3.ibm.com/pc/support/site.wss/document.do?Indocid=MIGR-46492.

Events

The following sections lists events that IBM Director Agent sends. Following the event definition are the Tivoli Enterprise Console and Microsoft SMS native event types and the Tivoli Enterprise Console SNMP event types.

Note: Microsoft SMS does not support ServeRAID controller events.

iBMPSGTemperatureEvent
> This event occurs when the state of a system temperature sensor changes with respect to a manufacturer-defined or user-defined threshold.

Tivoli Enterprise Console Native event type	*IBMPSG_TemperatureEvent*
Tivoli Enterprise Console SNMP event types	*UMS_TemperatureNormal* *UMS_TemperatureOutOfRange* *UMS_TemperatureCriticallyOutOfRange*
Microsoft SMS Native event types (Message ID 50020)	*IBM_UMS_AGENT_TEMPERATURE_INFO_* *IBM_UMS_AGENT_TEMPERATURE_WARNING_* *IBM_UMS_AGENT_TEMPERATURE_ERROR_*

iBMPSGVoltageEvent
> This event occurs when the state of a system voltage sensor changes with respect to a manufacturer-defined threshold.

Tivoli Enterprise Console Native event type	*IBMPSG_VoltageEvent*
Tivoli Enterprise Console SNMP event types	*UMS_VoltageNormal* *UMS_VoltageOutOfRange* *UMS_VoltageCriticallyOutOfRange*
Microsoft SMS Native event types (Message ID 50030)	*IBM_UMS_AGENT_VOLTAGE_INFO_* *IBM_UMS_AGENT_VOLTAGE_WARNING_* *IBM_UMS_AGENT_VOLTAGE_ERROR_*

iBMPSGChassisEvent
> This event occurs when the state of a system chassis changes.

Tivoli Enterprise Console Native event type	*IBMPSG_ChassisEvent*
Tivoli Enterprise Console SNMP event types	*UMS_ChassisInPlace* *UMS_ChassisIntruded*

Microsoft SMS Native event types (Message ID 50040)	IBM_UMS_AGENT_CHASSIS_INFO_ IBM_UMS_AGENT_CHASSIS_WARNING_ IBM_UMS_AGENT_CHASSIS_ERROR_

iBMPSGFanEvent

This event occurs when the state of a system fan has changed with respect to manufacturer-defined Rotation per Minute (RPM) values.

Tivoli Enterprise Console Native event type	IBMPSG_FanEvent
Tivoli Enterprise Console SNMP event types	UMS_FanOperational UMS_FanOutOfOrder
Microsoft SMS Native event types (Message ID 50050)	IBM_UMS_AGENT_FAN_INFO_ IBM_UMS_AGENT_FAN_WARNING_ IBM_UMS_AGENT_FAN_ERROR_

iBMPSGStorageEvent

This event occurs when the state of a system hard disk drive space changes with respect to user-defined levels of hard disk drive space remaining.

Tivoli Enterprise Console Native event type	IBMPSG_StorageEvent
Tivoli Enterprise Console SNMP event types	UMS_StorageNormal UMS_StorageLow UMS_StorageVeryLow
Microsoft SMS Native event types (Message ID 50070)	IBM_UMS_AGENT_STORAGE_INFO_ IBM_UMS_AGENT_STORAGE_WARNING_ IBM_UMS_AGENT_STORAGE_ERROR_

iBMPSGSMARTEvent

This event occurs when the state of an IDE or SCSI hard disk drive that complies with the self-monitoring, analysis, and reporting technology (SMART) changes with respect to its availability.

Tivoli Enterprise Console Native event type	IBMPSG_SMARTEvent
Tivoli Enterprise Console SNMP event types	UMS_SMARTNormal UMS_SMARTWarning UMS_SMARTCritical
Microsoft SMS Native event types (Message ID 50090)	IBM_UMS_AGENT_SMART_INFO_ IBM_UMS_AGENT_SMART_WARNING_ IBM_UMS_AGENT_SMART_ERROR_

iBMPSGLANLeashEvent

This event occurs when the state of the system LAN connectivity changes with respect to the physical connection between Alert on LAN™-capable network interface cards (NICs) and the LAN.

Tivoli Enterprise Console Native event type	IBMPSG_LANLeashEvent
Tivoli Enterprise Console SNMP event type	UMS_LANLeashEvent

Microsoft SMS Native event types (Message ID 50120)	IBM_UMS_AGENT_LANLEASH_INFO_ IBM_UMS_AGENT_LANLEASH_WARNING_ IBM_UMS_AGENT_LANLEASH_ERROR_

iBMPSGLeashExpirationEvent

This event occurs when the system lease expiration date has been reached with respect to the value configured for the date in the Asset ID task.

Tivoli Enterprise Console Native event type	IBMPSG_LeaseExpirationEvent
Tivoli Enterprise Console SNMP event types	UMS_LeashExpiredNormal UMS_LeashExpiredWarning UMS_LeashExpiredCritical
Microsoft SMS Native event types (Message ID 50130)	IBM_UMS_AGENT_LEASE_INFO_ IBM_UMS_AGENT_LEASE_WARNING_ IBM_UMS_AGENT_LEASE_ERROR_

iBMPSGWarrantyExpirationEvent

This event occurs when the system warranty expiration date has been reached with respect to the value configured for the date in the Asset ID task.

Tivoli Enterprise Console Native event type	IBMPSG_WarrantyExpirationEvent
Tivoli Enterprise Console SNMP event types	UMS_WarrantyExpiredNormal UMS_WarrantyExpiredWarning UMS_WarrantyExpiredCritical
Microsoft SMS Native event types (Message ID 50140)	IBM_UMS_AGENT_WARRANTY_INFO_ IBM_UMS_AGENT_WARRANTY_WARNING_ IBM_UMS_AGENT_WARRANTY_ERROR_

iBMPSGRedundantNetworkAdapterEvent

This event occurs when the state of a system NIC changes state with respect to redundancy.

Tivoli Enterprise Console Native event type	IBMPSG_RedundantNetworkAdapterEvent
Tivoli Enterprise Console SNMP event type	UMS_RedundantNetworkAdapterEvent
Microsoft SMS Native event types (Message ID 50150)	IBM_UMS_AGENT_REDUNDANTNETWORKADAPTER_INFO_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTER_ WARNING_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTER_ ERROR_

iBMPSGRedundantNetworkAdapterSwitchoverEvent

This event occurs in a teamed NIC configuration when the active NIC in the team fails over to the standby NIC.

Tivoli Enterprise Console Native event type	IBMPSG_RedundantNetworkAdapterSwitchoverEvent
Tivoli Enterprise Console SNMP event type	UMS_RedundantNetworkAdapterSwitchoverEvent

Microsoft SMS Native event types (Message ID 50160)	IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH OVER_INFO_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH OVER_WARNING_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH OVER_ERROR_

iBMPSGRedundantNetworkAdapterSwitchbackEvent
    This event occurs in a teamed NIC configuration when the primary NIC in the team is restored.

Tivoli Enterprise Console Native event type	IBMPSG_RedundantNetworkAdapterSwitchbackEvent
Tivoli Enterprise Console SNMP event type	UMS_RedundantNetworkAdapterSwitchbackEvent
Microsoft SMS Native event types (Message ID 50170)	IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH BACK_INFO_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH BACK_WARNING_ IBM_UMS_AGENT_REDUNDANTNETWORKADAPTERSWITCH BACK_ERROR_

iBMPSGProcessorPFEvent
    This event occurs when the state of a system processor changes with respect to availability.

Tivoli Enterprise Console Native event type	IBMPSG_ProcessorPFEvent
Tivoli Enterprise Console SNMP event types	UMS_ProcessorPFNormal UMS_ProcessorPFWarning UMS_ProcessorPFCritical
Microsoft SMS Native event types (Message ID 50180)	IBM_UMS_AGENT_PROCESSORPFA_INFO_ IBM_UMS_AGENT_PROCESSORPFA_WARNING_ IBM_UMS_AGENT_PROCESSORPFA_ERROR_

iBMPSGMemoryPFEvent
    This event occurs when a dual inline memory module (DIMM) in a system changes with respect to availability.

Tivoli Enterprise Console Native event type	IBMPSG_MemoryPFEvent
Tivoli Enterprise Console SNMP event types	UMS_MemoryPFNormal UMS_MemoryPFWarning UMS_MemoryPFCritical
Microsoft SMS Native event types (Message ID 50190)	IBM_UMS_AGENT_MEMORYPFA_INFO_ IBM_UMS_AGENT_MEMORYPFA_WARNING_ IBM_UMS_AGENT_MEMORYPFA_ERROR_

iBMPSGPFAEvent
    This event occurs when the Remote Supervisor Adapter detects that a component in a system is about to fail.

Tivoli Enterprise Console Native event type	IBMPSG_PFAEvent

Tivoli Enterprise Console SNMP event type	*UMS_PFAEvent*
Microsoft SMS Native event types (Message ID 50210)	*IBM_UMS_AGENT_PFA_INFO_* *IBM_UMS_AGENT_PFA_WARNING_* *IBM_UMS_AGENT_PFA_ERROR_*

iBMPSGPowerSupplyEvent

This event occurs when the state of a system power supply changes with respect to availability.

Tivoli Enterprise Console Native event type	*IBMPSG_PowerSupplyEvent*
Tivoli Enterprise Console SNMP event types	*UMS_PowerSupplyNormal* *UMS_PowerSupplyWarning* *UMS_PowerSupplyCritical*
Microsoft SMS Native event types (Message ID 50230)	*IBM_UMS_AGENT_POWERSUPPLY_INFO_* *IBM_UMS_AGENT_POWERSUPPLY_WARNING_* *IBM_UMS_AGENT_POWERSUPPLY_ERROR_*

iBMPSGErrorLogEvent

This event occurs when the Remote Supervisor Adapter detects that its error log is 75% or 100% of its capacity.

Tivoli Enterprise Console Native event type	*IBMPSG_ErrorLogEvent*
Tivoli Enterprise Console SNMP event type	*UMS_ErrorLogEvent*
Microsoft SMS Native event types (Message ID 50240)	*IBM_UMS_AGENT_ERRORLOG_INFO_* *IBM_UMS_AGENT_ERRORLOG_WARNING_* *IBM_UMS_AGENT_ERRORLOG_ERROR_*

iBMPSGRemoteLoginEvent

This event occurs when an end-user or application has logged into the Remote Supervisor Adapter.

Tivoli Enterprise Console Native event type	*IBMPSG_RemoteLoginEvent*
Tivoli Enterprise Console SNMP event type	*UMS_RemoteLoginEvent*
Microsoft SMS Native event types (Message ID 50250)	*IBM_UMS_AGENT_REMOTELOGIN_INFO_* *IBM_UMS_AGENT_REMOTELOGIN_WARNING_* *IBM_UMS_AGENT_REMOTELOGIN_ERROR_*

iBMPSGNetworkAdapterFailedEvent

This event occurs when a NIC in a system has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_NetworkAdapterFailedEvent*
Tivoli Enterprise Console SNMP event type	*UMS_NetworkAdapterFailedEvent*
Microsoft SMS Native event types (Message ID 50260)	*IBM_UMS_AGENT_NETWORKADAPTERFAILED_INFO_* *IBM_UMS_AGENT_NETWORKADAPTERFAILED_WARNING_* *IBM_UMS_AGENT_NETWORKADAPTERFAILED_ERROR_*

iBMPSGNetworkAdapterOfflineEvent

This event occurs when a NIC in a system goes offline.

Tivoli Enterprise Console Native event type	*IBMPSG_NetworkAdapterOfflineEvent*
Tivoli Enterprise Console SNMP event type	*UMS_NetworkAdapterOfflineEvent*
Microsoft SMS Native event types (Message ID 50270)	*IBM_UMS_AGENT_NETWORKADAPTEROFFLINE_INFO_* *IBM_UMS_AGENT_NETWORKADAPTEROFFLINE_WARNING_* *IBM_UMS_AGENT_NETWORKADAPTEROFFLINE_ERROR_*

iBMPSGNetworkAdapterOnlineEvent

This event occurs when the state of a system NIC is online.

Tivoli Enterprise Console Native event type	*IBMPSG_NetworkAdapterOnlineEvent*
Tivoli Enterprise Console SNMP event type	*UMS_NetworkAdapterOnlineEvent*
Microsoft SMS Native event types (Message ID 50280)	*IBM_UMS_AGENT_NETWORKADAPTERONLINE_INFO_* *IBM_UMS_AGENT_NETWORKADAPTERONLINE_WARNING_* *IBM_UMS_AGENT_NETWORKADAPTERONLINE_ERROR_*

iBMPSGSPPowerSupplyEvent

This event occurs when the Advanced Systems Management processor (ASM processor) detects that the state of the system power supply changes with respect to availability.

Tivoli Enterprise Console Native event type	*IBMPSG_SP_PowerSupplyEvent*
Tivoli Enterprise Console SNMP event type	*UMS_SPPowerSupplyEvent*
Microsoft SMS Native event types (Message ID 50290)	*IBM_UMS_AGENT_SPPOWERSUPPLY_INFO_* *IBM_UMS_AGENT_SPPOWERSUPPLY_WARNING_* *IBM_UMS_AGENT_SPPOWERSUPPLY_ERROR_*

iBMPSGDASDBackplaneEvent

This event occurs when the Remote Supervisor Adapter detects that the state of the system hard disk drive changes with respect to availability.

Tivoli Enterprise Console Native event type	*IBMPSG_DASDBackplaneEvent*
Tivoli Enterprise Console SNMP event type	*UMS_DASDBackplaneEvent*
Microsoft SMS Native event types (Message ID 50300)	*IBM_UMS_AGENT_DASDBACKPLANE_INFO_* *IBM_UMS_AGENT_DASDBACKPLANE_WARNING_* *IBM_UMS_AGENT_DASDBACKPLANE_ERROR_*

iBMPSGGenericFanEvent

This event occurs when the Remote Supervisor Adapter or ASM processor detects that the state of a system fan has changed with respect to manufacturer-defined RPM thresholds, but the precise fan instance cannot be determined.

Tivoli Enterprise Console Native event type	IBMPSG_GenericFanEvent
Tivoli Enterprise Console SNMP event type	UMS_GenericFanEvent
Microsoft SMS Native event types (Message ID 50310)	IBM_UMS_AGENT_GENERICFAN_INFO_ IBM_UMS_AGENT_GENERICFAN_WARNING_ IBM_UMS_AGENT_GENERICFAN_ERROR_

iBMPSGGenericVoltageEvent
> This event occurs when the Remote Supervisor Adapter or the ASM processor detects that the state of a system voltage sensor has changed with respect to a manufacturer-defined threshold, but the precise voltage sensor cannot be determined.

Tivoli Enterprise Console Native event type	IBMPSG_GenericVoltageEvent
Tivoli Enterprise Console SNMP event type	UMS_GenericVoltageEvent
Microsoft SMS Native event types (Message ID 50320)	IBM_UMS_AGENT_GENERICVOLTAGE_INFO_ IBM_UMS_AGENT_GENERICVOLTAGE_WARNING_ IBM_UMS_AGENT_GENERICVOLTAGE_ERROR_

iBMPSGServeRAIDNoControllers
> This event occurs when a ServeRAID controller is not detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDNoControllers
Tivoli Enterprise Console SNMP event type	ServeRAID_NoControllers

iBMPSGServeRAIDControllerFail
> This event occurs when a ServeRAID controller has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDControllerFail
Tivoli Enterprise Console SNMP event type	ServeRAID_ControllerFail

iBMPSGServeRAIDDeadBattery
> This event occurs when a ServeRAID battery has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDDeadBattery
Tivoli Enterprise Console SNMP event type	ServeRAID_DeadBattery

iBMPSGServeRAIDDeadBatteryCache
> This event occurs when a ServeRAID battery-backup cache has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDDeadBatteryCache
Tivoli Enterprise Console SNMP event type	ServeRAID_DeadBatteryCache

iBMPSGServeRAIDPollingFail

This event occurs when a ServeRAID polling has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDPollingFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PollingFail*

iBMPSGServeRAIDConfigFail

This event occurs when a ServeRAID configuration has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDConfigFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ConfigFail*

iBMPSGServeRAIDControllerAdded

This event occurs when a ServeRAID controller is added.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDControllerAdded*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ControllerAdded*

iBMPSGServeRAIDControllerReplaced

This event occurs when a ServeRAID controller is replaced.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDControllerReplaced*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ControllerReplaced*

iBMPSGServeRAIDControllerFailover

This event occurs when a ServeRAID controller has failed over.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDControllerFailover*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ControllerFailover*

iBMPSGServeRAIDControllerMismatchedVersions

This event occurs when the versions of drivers for a ServeRAID controller do not match the firmware on the controller.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDControllerMismatchedVersions*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ControllerMismatchedVersions*

iBMPSGServeRAIDControllerBatteryOvertemp

This event occurs when a ServeRAID controller battery has exceeded its temperature threshold.

Tivoli Enterprise Console Native event type	*Not applicable*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ControllerBatteryOvertemp*

iBMPSGServeRAIDLogicalDriveCritical
This event occurs when a ServeRAID logical drive is in a critical state.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDLogicalDriveCritical*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DriveCritical*

iBMPSGServeRAIDLogicalDriveBlocked
This event occurs when a ServeRAID logical drive is in a blocked state.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDLogicalDriveBlocked*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DriveBlocked*

iBMPSGServeRAIDLogicalDriveOffLine
This event occurs when a ServeRAID logical drive is in an offline state.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDLogicalDriveOffLine*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DriveOffLine*

iBMPSGServeRAIDRebuildDetected
This event occurs when a ServeRAID rebuild operation is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDRebuildDetected*
Tivoli Enterprise Console SNMP event type	*ServeRAID_RebuildDetected*

iBMPSGServeRAIDRebuildComplete
This event occurs when a ServeRAID rebuild operation is completed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDRebuildComplete*
Tivoli Enterprise Console SNMP event type	*ServeRAID_RebuildComplete*

iBMPSGServeRAIDRebuildFail
This event occurs when a ServeRAID rebuild operation has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDRebuildFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_RebuildFail*

iBMPSGServeRAIDSyncDetected
This event occurs when a ServeRAID synchronization is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDSyncDetected
Tivoli Enterprise Console SNMP event type	ServeRAID_SyncDetected

iBMPSGServeRAIDSyncComplete
This event occurs when a ServeRAID synchronization is completed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDSyncComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_SyncComplete

iBMPSGServeRAIDSyncFail
This event occurs when a ServeRAID synchronization has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDSyncFail
Tivoli Enterprise Console SNMP event type	ServeRAID_SyncFail

iBMPSGServeRAIDMigrationDetected
This event occurs when a ServeRAID logical-drive migration is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDMigrationDetected
Tivoli Enterprise Console SNMP event type	ServeRAID_MigrationDetected

iBMPSGServeRAIDMigrationComplete
This event occurs when a ServeRAID logical-drive migration is completed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDMigrationComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_MigrationComplete

iBMPSGServeRAIDMigrationFail
This event occurs when a ServeRAID logical-drive migration has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDMigrationFail
Tivoli Enterprise Console SNMP event type	ServeRAID_MigrationFail

iBMPSGServeRAIDCompressionDetected
This event occurs when a ServeRAID logical-drive compression is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDCompressionDetected

Tivoli Enterprise Console SNMP event type	*ServeRAID_CompressionDetected*

iBMPSGServeRAIDCompressionComplete
> This event occurs when a ServeRAID logical-drive compression is completed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDCompressionComplete*
Tivoli Enterprise Console SNMP event type	*ServeRAID_CompressionComplete*

iBMPSGServeRAIDCompressionFail
> This event occurs when a ServeRAID logical-drive compression has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDCompressionFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_CompressionFail*

iBMPSGServeRAIDDecompressionDetected
> This event occurs when a ServeRAID logical-drive decompression is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDecompressionDetected*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DecompressionDetected*

iBMPSGServeRAIDDecompressionComplete
> This event occurs when a ServeRAID logical-drive decompression is completed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDecompressionComplete*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DecompressionComplete*

iBMPSGServeRAIDDecompressionFail
> This event occurs when a ServeRAID logical-drive decompression has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDecompressionFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DecompressionFail*

iBMPSGServeRAIDFlashCopyDetected
> This event occurs when a ServeRAID FlashCopy® operation is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDFlashCopyDetected*

Tivoli Enterprise Console SNMP event type	ServeRAID_FlashCopyDetected

iBMPSGServeRAIDFlashCopyComplete
This event occurs when a ServeRAID FlashCopy operation is completed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDFlashCopyComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_FlashCopyComplete

iBMPSGServeRAIDFlashCopyFail
This event occurs when a ServeRAID FlashCopy operation has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDFlashCopyFail
Tivoli Enterprise Console SNMP event type	ServeRAID_FlashCopyFail

iBMPSGServeRAIDArrayRebuildDetected
This event occurs when a ServeRAID array rebuild operation is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDArrayRebuildDetected
Tivoli Enterprise Console SNMP event type	ServeRAID_ArrayRebuildDetected

iBMPSGServeRAIDArrayRebuildComplete
This event occurs when a ServeRAID array rebuild operation is completed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDArrayRebuildComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_ArrayRebuildComplete

iBMPSGServeRAIDArrayRebuildFail
This event occurs when a ServeRAID array rebuild operation has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDArrayRebuildFail
Tivoli Enterprise Console SNMP event type	ServeRAID_ArrayRebuildFail

iBMPSGServeRAIDArraySyncDetected
This event occurs when a ServeRAID array synchronization is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDArraySyncDetected
Tivoli Enterprise Console SNMP event type	ServeRAID_ArraySyncDetected

iBMPSGServeRAIDArraySyncComplete
This event occurs when a ServeRAID array synchronization is completed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDArraySyncComplete*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ArraySyncComplete*

iBMPSGServeRAIDArraySyncFail

This event occurs when a ServeRAID array synchronization has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDArraySyncFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ArraySyncFail*

iBMPSGServeRAIDArrayFlashCopyDetected

This event occurs when a ServeRAID array FlashCopy operation is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDArrayFlashCopyDetected*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ArrayFlashCopyDetected*

iBMPSGServeRAIDArrayFlashCopyComplete

This event occurs when a ServeRAID array FlashCopy operation is completed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDArrayFlashCopyComplete*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ArrayFlashCopyComplete*

iBMPSGServeRAIDArrayFlashCopyFail

This event occurs when a ServeRAID array FlashCopy operation has failed.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDArrayFlashCopyFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_ArrayFlashCopyFail*

iBMPSGServeRAIDLogicalDriveUnblocked

This event occurs when a ServeRAID logical drive is unblocked.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDLogicalDriveUnblocked*
Tivoli Enterprise Console SNMP event type	*ServeRAID_LogicalDriveUnblocked*

iBMPSGServeRAIDCompactionDetected

This event occurs when a ServeRAID compaction operation is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDCompactionDetected*

Tivoli Enterprise Console SNMP event type	ServeRAID_CompactionDetected

iBMPSGServeRAIDCompactionComplete
This event occurs when a ServeRAID compaction operation is complete.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDCompactionComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_CompactionComplete

iBMPSGServeRAIDCompactionFail
This event occurs when a ServeRAID compaction operation has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDCompactionFail
Tivoli Enterprise Console SNMP event type	ServeRAID_CompactionFail

iBMPSGServeRAIDExpansionDetected
This event occurs when a ServeRAID expansion operation is detected.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDExpansionDetected
Tivoli Enterprise Console SNMP event type	ServeRAID_ExpansionDetected

iBMPSGServeRAIDExpansionComplete
This event occurs when a ServeRAID expansion operation is completed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDExpansionComplete
Tivoli Enterprise Console SNMP event type	ServeRAID_ExpansionComplete

iBMPSGServeRAIDExpansionFail
This event occurs when a ServeRAID expansion operation has failed.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDExpansionFail
Tivoli Enterprise Console SNMP event type	ServeRAID_ExpansionFail

iBMPSGServeRAIDLogicalDriveCriticalPeriodic
This event occurs when a ServeRAID logical drive is in a critical state.

Tivoli Enterprise Console Native event type	IBMPSG_ServeRAIDLogicalDriveCriticalPeriodic
Tivoli Enterprise Console SNMP event type	ServeRAID_LogicalDriveCriticalPeriodic

iBMPSGServeRAIDDefunctDrive
This event occurs when a ServeRAID physical drive is in a defunct state.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDefunctDrive*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DefunctDrive*

iBMPSGServeRAIDPFADrive

This event occurs when a ServeRAID physical drive with a Predictive Failure Analysis® (PFA) event is detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDPFADrive*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PfaDrive*

iBMPSGServeRAIDDefunctReplaced

This event occurs when a defunct physical drive is replaced in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDefunctReplaced*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DefunctReplaced*

iBMPSGServeRAIDDefunctDriveFRU

This event occurs when the field-replaceable unit (FRU) number is identified for a ServeRAID defunct physical drive.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDDefunctDriveFRU*
Tivoli Enterprise Console SNMP event type	*ServeRAID_DefunctDriveFRU*

iBMPSGServeRAIDPFADriveFRU

This event occurs when a FRU number is identified for a ServeRAID physical drive on which a PFA has been detected.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDPFADriveFRU*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PfaDriveFRU*

iBMPSGServeRAIDUnsupportedDrive

This event occurs when there is an unsupported physical drive is detected in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDUnsupportedDrive*
Tivoli Enterprise Console SNMP event type	*ServeRAID_UnsupportedDrive*

iBMPSGServeRAIDEnclosureOK

This event occurs when an enclosure is functioning properly in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureOk*
Tivoli Enterprise Console SNMP event type	*ServeRAID_EnclosureOK*

iBMPSGServeRAIDEnclosureFail
> This event occurs when an enclosure has failed in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDAEnclosureFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_EnclosureFail*

iBMPSGServeRAIDEnclosureFanOK
> This event occurs when an enclosure fan is functioning properly in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureFanOk*
Tivoli Enterprise Console SNMP event type	*ServeRAID_FanOK*

iBMPSGServeRAIDEnclosureFanFail
> This event occurs when an enclosure fan has failed in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureFanFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_FanFail*

iBMPSGServeRAIDEnclosureFanInstalled
> This event occurs when an enclosure fan is installed in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureFanInstalled*
Tivoli Enterprise Console SNMP event type	*ServeRAID_FanInstalled*

iBMPSGServeRAIDEnclosureFanRemoved
> This event occurs when an enclosure fan is removed from a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureFanRemoved*
Tivoli Enterprise Console SNMP event type	*ServeRAID_FanRemoved*

iBMPSGServeRAIDEnclosureTempOK
> This event occurs when an enclosure temperature is within a normal range in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureTempOk*
Tivoli Enterprise Console SNMP event type	*ServeRAID_TempOK*

iBMPSGServeRAIDEnclosureTempFail

This event occurs when an enclosure temperature exceeds a normal range in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosureTempFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_TempFail*

iBMPSGServeRAIDEnclosurePowerSupplyOK

This event occurs when an enclosure power supply is functioning properly in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosurePowerSupplyOk*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PowerSupplyOK*

iBMPSGServeRAIDEnclosurePowerSupplyFail

This event occurs when an enclosure power supply has failed in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosurePowerSupplyFail*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PowerSupplyFail*

iBMPSGServeRAIDEnclosurePowerSupplyInstalled

This event occurs when an enclosure power supply is installed in a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosurePowerSupplyInstalled*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PowerSupplyInstalled*

iBMPSGServeRAIDEnclosurePowerSupplyRemoved

This event occurs when an enclosure power supply is removed from a ServeRAID configuration.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDEnclosurePowerSupplyRemoved*
Tivoli Enterprise Console SNMP event type	*ServeRAID_PowerSupplyRemoved*

iBMPSGServeRAIDTestEvent

This event occurs when a ServeRAID test event occurs.

Tivoli Enterprise Console Native event type	*IBMPSG_ServeRAIDTestEvent*
Tivoli Enterprise Console SNMP event type	*ServeRAID_TestTrap*

Appendix B. IBM Director UIM inventory collection

The inventory function for the IBM Director UIMs collects the following inventory items, depending on your systems-management tool.

Table 3. Inventory items collected by systems-management tool

Microsoft SMS	HP OpenView and Tivoli NetView	Tivoli Management Environment
• Asset ID • BIOS Details • Cache • CIM • Firmware • FRU Service Numbers • IBM UM Services • IP Network Configuration • IPX Network Configuration • Lease Information • Memory Details • Motherboard • Network Details • Personalized Data • Processor Details • RAID Controllers • RAID Disk Drives • RAID Enclosures • RAID Logical Drives • Serial Number Information • SNMP Agent Configuration • System Board Configuration • System Enclosure • System Slots • User Details • Video Details • Warranty Information	• Asset ID • BIOS Details • Cache • CIMOM Identification • Director Agent • Director Agent HTTP port • Lease Information • Memory Details • Motherboard • Personalized Data • Port connectors • Processor Details • Serial Number Information • SNMP Configuration • System Board Configuration • System Enclosure • System Slots • User Details • Video Details **Note:** Due to a limitation with CIM, inventory for multiple video adapters is not collected correctly. • Warranty Information	• Alert on LAN Settings • Alert Standard Format Settings • Asset ID • BIOS Details • Cache • CIM • Firmware • FRU Service Numbers • Geographic Information • IBM Director Agent • Installed Director Agent • IP Network Configuration • IPX Network Configuration • Lease Information • Memory Details • Network Details • Personalized Data • Port Connectors • Processor Details • RAID Controllers • RAID Disk Drives • RAID Enclosures • RAID Logical Drives • Serial Number Information • ServeRAID Controllers • ServeRAID Disk Drives • ServeRAID Enclosures • ServeRAID Logical Drives • SNMP Agent Configuration • System Board Configuration • System Enclosure • System Slots • User Details • Video Details • Warranty Information

Appendix C. Rule sets

The following tables provide details about the rule sets for native Tivoli Enterprise Console and SNMP events and for distributed monitoring events.

Table 4. Native Tivoli Enterprise Console rules

File name	Rule action	Associated events
fan.rls	fan_cancel	IBMPSG_FanEvent
chassis.rls	chassis_cancel	IBMPSG_ChassisEvent
lease.rls	lease_cancel	IBMPSG_LeaseExpirationEvent
memory.rls	mem_cancel	IBMPSG_MemoryPFEvent
network.rls	net_cancel	IBMPSG_NetworkAdapterFailEvent IBMPSG_NetworkAdapterOnline Event IBMPSG_NetworkAdapterOffline Event
power.rls	pwr_cancel	IBMPSG_PowerSupplyEvent
processor.rls	proc_cancel	IBMPSG_ProcessorPFEvent
smart.rls	smart_cancel	IBMPSG_SMARTEvent
storage.rls	storage_cancel	IBMPSG_StorageEvent
temperature.rls	temperature_cancel	IBMPSG_TemperatureEvent
voltage.rls	voltage_cancel	IBMPSG_VoltageEvent
warranty.rls	warranty_cancel	IBMPSG_WarrantyExpirationEvent

Table 5. SNMP rules

File name	Rule action	Associated events
serveraid.rls	powersupply_ok_cancels_fail	ServeRAID_PowerSupplyOk cancels ServeRAID_PowerSupplyFail
serveraid.rls	powersupply_fail_cancels_ok	ServeRAID_PowerSupplyFail cancels ServeRAID_PowerSupplyOk
serveraid.rls	temp_ok_cancels_fail	ServeRAID_TempOk cancels ServeRAID_TempFail
serveraid.rls	temp_fail_cancels_ok	ServeRAID_TempFail cancels ServeRAID_TempOk
serveraid.rls	fan_ok_cancels_fail	ServeRAID_FanOk cancels ServeRAID_FanFail
serveraid.rls	fan_fail_cancels_ok	ServeRAID_FanFail cancels ServeRAID_FanOk
serveraid.rls	enclosure_ok_cancels_fail	ServeRAID_EnclosureOk cancels ServeRAID_EnclosureFail

Table 5. SNMP rules (continued)

File name	Rule action	Associated events
serveraid.rls	enclosure_fail_cancels_ok	ServeRAID_EnclosureFail cancels ServeRAID_EnclosureOk
ums.rls	networkadapter_offline_cancels_ online	UMS_NetworkAdapterOfflineEvent UMS_NetworkAdapterOnlineEvent
ums.rls	storage_normal_cancels-low	UMS_StorageNormal UMS_StorageLow UMS_StorageVeryLow
ums.rls	fan_operational_cancels_outoforder	UMS_FanOperational UMS_FanOutOfOrder
ums.rls	warranty_cancels	UMS_WarrantyExpiredNormal UMS_WarrantyExpiredWarning UMS_WarrantyExpiredCritical
ums.rls	lease_cancels	UMS_LeaseExpiredNormal UMS_LeaseExpiredWarning UMS_LeaseExpiredCritical
ums.rls	chassis_inplace_cancels_intruded	UMS_ChassisInPlace UMS_ChassisIntruded
ums.rls	pwr_cancels	UMS_PowerSupplyNormal UMS_PowerSupplyWarning UMS_PowerSupplyCritical
ums.rls	mem_cancels	UMS_MemoryPFNormal UMS_MemoryPFWarning UMS_MemoryPFCritical
ums.rls	proc_cancels	UMS_ProcessorNormal UMS_ProcessorWarning UMS_ProcessorCritical
ums.rls	voltage_normal_cancels_outofrange	UMS_VoltageNormal UMS_VoltageOutOfRange UMS_VoltageCriticallyOutOfRange
ums.rls	temperature_normal_cancels_ outofrange	UMS_TemperatureNormal UMS_TemperatureOutOfRange UMS_TemperatureCriticallyOutOf Range
ums.rls	smart_cancels	UMS_SMARTNormal UMS_SMARTWarning UMS_SMARTCritical

Table 6. Tivoli Distributed Monitoring 5.1.1 rules

File name	Rule action	Associated events
dm.rls	action_drop	TMW_ActionResult (HTTP and SNMP monitors only) This event is dropped from the event server because it misinforms the user on the success of a IBM Director Agent HTTP or SNMP service restart.

Table 6. Tivoli Distributed Monitoring 5.1.1 rules (continued)

File name	Rule action	Associated events
dm.rls	clearing_cancel	TMW_ClearingEvent clears Ev_HTTPCheck_sh_ScriptResult_matches Ev_SNMPCheck_sh_ScriptResult_matches IBMPSG_Chassis_SecurityBreach_is_Attempted IBMPSG_Chassis_SecurityBreach_is_Successful IBMPSG_Chassis_IsNotLocked
dm.rls	clearing_cancel2	Ev_HTTPCheck_sh_ScriptResult_matches Ev_SNMPCheck_sh_ScriptResult_matches IBMPSG_Chassis_SecurityBreach_is_Attempted IBMPSG_Chassis_SecurityBreach_is_Successful IBMPSG_Chassis_IsNotLocked clears TMW_ClearingEvent
dm.rls	clearing_cancel5	TMW_ClearingEvent clears IBMPSG_NetworkAdapter_Degraded IBMPSG_NetworkAdapter_Error IBMPSG_NetworkAdapter_PredFail
dm.rls	clearing_cancel6	IBMPSG_NetworkAdapter_Degraded IBMPSG_NetworkAdapter_Error IBMPSG_NetworkAdapter_PredFail clears TMW_ClearingEvent
dm.rls	clearing_cancel7	TMW_ClearingEvent clears IBMPSG_PortableBattery_BatteryStatus_is_ critical IBMPSG_PortableBattery_BatteryStatus_is_low IBMPSG_PortableBattery_CriticalLow IBMPSG_PortableBattery_FullChargeCapacity_ too_low
dm.rls	clearing_cancel8	IBMPSG_PortableBattery_BatteryStatus_is_ critical IBMPSG_PortableBattery_BatteryStatus_is_low IBMPSG_PortableBattery_CriticalLow IBMPSG_PortableBattery_FullChargeCapacity_ too_low clears TMW_ClearingEvent
dm.rls	clearing_cancel3	TMW_ClearingEvent clears IBMPSG_Tachometer_WarningHigh IBMPSG_Tachometer_CriticalHigh IBMPSG_Tachometer_CriticalLow IBMPSG_Tachometer_WarningLow
dm.rls	clearing_cancel4	IBMPSG_Tachometer_WarningHigh IBMPSG_Tachometer_CriticalHigh IBMPSG_Tachometer_CriticalLow IBMPSG_Tachometer_WarningLow clears TMW_ClearingEvent

Table 6. Tivoli Distributed Monitoring 5.1.1 rules (continued)

File name	Rule action	Associated events
dm.rls	clearing_cancel9	TMW_ClearingEvent clears IBMPSG_TemperatureSensor_CriticalHigh IBMPSG_TemperatureSensor_WarningHigh
dm.rls	clearing_cancel10	IBMPSG_TemperatureSensor_CriticalHigh IBMPSG_TemperatureSensor_WarningHigh clears TMW_ClearingEvent
dm.rls	clearing_cancel11	TMW_ClearingEvent clears IBMPSG_VoltageSensor_WarningHigh IBMPSG_VoltageSensor_CriticalHigh IBMPSG_VoltageSensor_CriticalLow IBMPSG_VoltageSensor_WarningLow
dm.rls	clearing_cancel12	IBMPSG_VoltageSensor_WarningHigh IBMPSG_VoltageSensor_CriticalHigh IBMPSG_VoltageSensor_CriticalLow IBMPSG_VoltageSensor_WarningLow clears TMW_ClearingEvent

Table 7. Tivoli Distributed Monitoring 3.7 rules

File name	Rule action	Associated events
httpsnmp_37.rls	plain_compound_rule1_33554437	This rule causes HTTP server normal events to cancel HTTP server critical events and vice versa. This rule also cancels redundant events of each type.
httpsnmp_37.rls	plain_compound_rule2_33554437	This rule causes SNMP service normal events to cancel SNMP service critical events and vice versa. This rule also cancels redundant events of each type.

Appendix D. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM® products, you will find a wide variety of sources available from IBM to assist you. This appendix contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your xSeries or IntelliStation® system, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system is turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to the IBM Support Web site at http://www.ibm.com/pc/support/ to check for technical information, hints, tips, and new device drivers.
- Use an IBM discussion forum on the IBM Web site to ask questions.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the publications that are provided with your system and software. The information that comes with your system also describes the diagnostic tests that you can perform. Most xSeries and IntelliStation systems, operating systems, and programs come with information that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the information for the operating system or program.

Using the documentation

Information about your IBM xSeries or IntelliStation system and preinstalled software, if any, is available in the documentation that comes with your system. That documentation includes printed books, online books, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/pc/support/ and follow the instructions. Also, you can order publications through the IBM Publications Ordering System at http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi.

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On the World Wide Web, the IBM Web site has up-to-date information about IBM xSeries and IntelliStation products, services, and support. The address for IBM xSeries information is http://www.ibm.com/eserver/xseries/. The address for IBM IntelliStation information is http://www.ibm.com/pc/intellistation/.

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Part Number: 01R0512

Printed in U.S.A.

(1P) P/N: 01R0512