IBM Systems

IBM Director Release Notes

Version 5.10 Update 3

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Contents

Chapter 1. About this release

This document contains the release notes for IBM® Director 5.10 Update 3, also known as IBM Director 5.10.3.

See the IBM Director Web site for possible updates to these release notes and other documents at www.ibm.com/servers/eserver/xseries/systems_management/ibm_director/resources/.

New in this release

This topic provides information about new features and enhancements in IBM Director 5.10 Update 3.

Improvements to how you work in IBM Director

The following enhancements change or add user processes in IBM Director:

New Server Storage Provisioning Tool
The Server Storage Provisioning Tool is an extension to IBM Director for Intel-based management servers. It adds simplified and scriptable command-line manipulation of storage area network (SAN) block level storage to provision storage volumes and their mappings from storage to servers.

Installation and use of the Server Storage Provisioning Tool are documented in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_main.html .

New Configuration Manager Profile Backward Compatibility Utility
The Configuration Manager Profile Backward Compatibility Utility converts Deployment Wizard configuration profiles created in IBM Director versions 4.10, 4.20, 4.21, and 4.22 to Configuration Manager profiles that can be used in IBM Director 5.10.

Enhancements to the External Application Launch task
The External Application Launch task is supplemented by a new External Application Launch Wizard to help users more easily create and modify command task files. In addition, the following changes apply to external application tasks:

- Users can specify different icons to indicate that an external application task is selected or that it is not.
- External application tasks can be associated with multiple managed object types.
- External application tasks do not have the alphabetical naming restrictions that existed in previous versions.
- Users can refresh the external task list from the command line with the **dircli refreshcmdexts** command.
- Users can pass additional managed-object attributes to the external task using environment variables.
- Users can set tasks to only display or start if a user-specified file is present.
- Users can create non-interactive external application tasks to run on the management server.

Installation and use of the External Application Launch Wizard are documented in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/eal_wiz/frj0_main.html .

New iSCSI Configuration Wizard

The BladeCenter® Configuration Manager task includes a new iSCSI Configuration Wizard to create, read, and apply iSCSI configuration parameters for blade servers that support iSCSI hardware and software initiators with appropriate firmware levels, including IBM BladeCenter HS20, HS40, and LS20. The initiators use the iSCSI configuration parameters to initiate communication with an iSCSI target storage device such as DS300.

New version of IBM Director ServeRAID™ Manager extension available

IBM Director ServeRAID Manager V8.30 is available for download from the IBM Director Support Site at www.ibm.com/servers/eserver/xseries/systems_management/ibm_director/ . This version adds support for ServeRAID-8k and ServeRAID-8k-I controllers.

New events

IBM Director 5.10.3 includes the following new event types:

Correlation > NMO > Blade-Chassis

MPA > Component > BIOS > Corrupted

MPA > Component > Battery > Failed

MPA > Component > Blade Expansion Unit > Failed

MPA > Component > Blade Server > Incompatible

MPA > Component > Concurrent KVM > Failed

MPA > Component > Expansion Card > Failed

MPA > Component > Fan Pack > Failed

MPA > Component > Fan Pack > Inserted

MPA > Component > Fan Pack > PFA

MPA > Component > Fan Pack > Removed

MPA > Component > Front Panel > Failed

MPA > Component > I/O Board > Failed

MPA > Component > RAID > Failed

MPA > Component > Server > Power > Disabled

MPA > Component > Service Processor > Mismatched

MPA > Component > USB > Over Current

Support for new BladeCenter T management module event severity

With updated management module firmware for BladeCenter T managed objects, you can specify a non-default severity for an event using Alert Manager. When event severity has been defined in this way, IBM Director will recognize and use the specified severity.

Enhanced support for management of storage managed objects

IBM Director 5.10 Update 3 adds the following improvements to SMI-S managed-object support:

- Support for multiple storage devices using a single SMI-S proxy provider.
- Support for additional discovery preferences for SMI-S storage devices. These preferences include SLP directory agent servers, SLP scope, discovery timeout, and broadcast or multicast selection.

Support for OpenIPMI driver

IBM Director 5.10 Update 3 supports the open-source standard OpenIPMI driver included with the following Linux® distributions:

- Red Hat Enterprise Linux, version 3.0, update 6 and later
- Red Hat Enterprise Linux, version 4.0, update 3 and later
- SUSE Linux Enterprise Server 9, service pack 3 and later

On these systems there is no requirement to download the SP6 mapping layer or the proprietary IPMI driver. Installation of IBM Director 5.10 .3 will enable OpenIPMI and configure it appropriately.

Ability to configure IP through in-band communication

In IBM Director 5.10 Update 3, the Server Configuration Manager task can use in-band communications using IBM Director Agent to configure the IP address of a service processor on a server.

To configure the IP address of a service processor using in-band communication, apply the Server Configuration Manager profile to the managed system where the service processor resides. To use out-of-band communication, apply the Server Configuration Manager profile to the physical platform managed object that is the service processor.

Ability to limit the number of simultaneous Remote Control sessions

In IBM Director 5.10 Update 3, you can limit the number of simultaneous Remote Control sessions which are active through IBM Director Server at any given time.

To enable limits on simultaneous Remote Control sessions, IBM Director Server and any remote installations of IBM Director Console must be updated to 5.10 Update 3. The limit is specified in the classes/com/tivoli/twg/rcserver/RemoteControl.properties file on the management server. Change the value of the MaxNumActSessions property in this file to a value equal to the number of permitted Remote Control sessions plus one. For example, to limit the number of simultaneous Remote Control sessions to 5, change the property declaration to `MaxNumActSessions=6`. IBM Director Server must be restarted when this value is changed.

Security enhancement

IBM Director 5.10 Update 3 improves security for some managed systems through IPMI 2.0 support.

IBM Director 5.10 Update 3 includes support for Intelligent Platform Management Interface (IPMI) 2.0 communication using Enhanced Remote Management Control Protocol (RMCP+) on the following managed systems:

- IBM System x™3400
- IBM System x3455
- IBM System x3500
- IBM System x3550
- IBM System x3650
- IBM System x3655
- IBM System x3755
- IBM System x3800
- IBM System x3850
- IBM System x3950

Additional database versions supported for use with IBM Director

IBM Director 5.10 Update 3 adds support for the following database versions:
- Apache Derby V10.1
- IBM DB2® 8.1 with Fix Pack 11 (equivalent to IBM DB2 8.2 with Fix Pack 4)
- Microsoft® SQL Server 2005
- Microsoft SQL Server 2005 Express Edition
- Oracle Server, version 10g release 2

For a complete list of supported database applications, and their availability for use with different IBM Director installations, see the "Supported database applications" topic in the IBM Systems Software Information Center.

Additional operating system support

IBM Director 5.10 Update 3 adds support for management of systems running the following operating systems.

VMware ESX 2.5.4

IBM Director 5.10 Update 3 supports installation of IBM Director Agent on VMware ESX 2.5.4 console and guest operating systems. VMware ESX 2.5.4 provides fully virtualized guest systems that allow other operating systems to run without modification. For details, see "Support for VMware ESX 2.5.4" on page 35.

VMware ESX 3.0

IBM Director 5.10 Update 3 supports installation of IBM Director Agent on VMware ESX 3.0 console and guest operating systems. VMware ESX 3.0 provides fully virtualized guest systems that allow other operating systems to run without modification. For details, see "Support for VMware ESX 3.0" on page 36.

SUSE Linux Enterprise Server 10

IBM Director 5.10 Update 3 supports installation of IBM Director Agent and IBM Director Core Services on SUSE Linux Enterprise Server 10 managed systems. SUSE Linux Enterprise Server 10 provides fully-virtualized guest systems using Xen server virtualization. For details, see "Support for SUSE Linux Enterprise Server 10" on page 37.

Additional hardware support

IBM Director 5.10 Update 3 adds support for Level-2 management using IBM Director Agent on the following hardware.

Support

Most IBM products have support. All applicable features and functions that are available in the current version of IBM Director are supported on these products, if applicable. For example, if a system does not have a ServeRAID option installed, then ServeRAID Manager is not supported on that system.

IBM Director 5.10 Update 3 adds support for Level-2 management using IBM Director Agent on the following hardware:

IBM BladeCenter hardware

- IBM BladeCenter HS21 blade server (machine type 8853)
- IBM BladeCenter LS21 blade server (machine type 7971)

- IBM BladeCenter LS41 blade server (machine type 7972)
- Server Connectivity Module for IBM BladeCenter
- Emulex 4 Gb Small-Form-Factor Fibre Channel Expansion Card for IBM BladeCenter
- IBM BladeCenter Storage Expansion Unit 3
- Cisco 4X InfiniBand Switch Module for IBM BladeCenter
- Cisco 4X InfiniBand HCA Expansion Card for IBM BladeCenter
- Nortel 10Gb Uplink Ethernet Switch Module for IBM BladeCenter

IBM IntelliStation® systems and System x servers

- IBM IntelliStation Z Pro (machine type 9228)
- IBM System x3400 (machine types 7973, 7974, 7975, and 7976)
- IBM System x3455 (machine types 7984 and 7986)
- IBM System x3500 (machine type 7977)
- IBM System x3550 (machine type 7978)
- IBM System x3650 (machine type 7979)
- IBM System x3655 (machine type 7985)
- IBM System x3755 (machine type 8877)
- IBM System x3800 (machine type 8866)
- IBM System x3850 (machine type 8863)
- IBM System x3950 (machine type 8872)

Support with Limitation

Occasionally, IBM Director supports an IBM product, but one or more features or functions might not work as intended. The affected features and functions are described in the Release Notes section on Known limitations, problems, and workarounds.

IBM Director 5.10 Update 3 adds support with limitation for Level-2 management using IBM Director Agent on the following hardware:

- IBM IntelliStation M Pro (machine type 9229) (Environmental-sensor monitoring and hardware events are not supported.)
- IBM System x3105 (machine types 4347 and 4348) (Environmental-sensor monitoring and hardware events are not supported.)

Non-IBM-Hardware-Level support

For some systems and products, IBM Director provides basic systems-management capabilities. IBM Director Agent provides this level of support on non-IBM Intel-based or AMD-based systems with SMBIOS 2.1 or later that meet the Intel® Wired for Management (WfM) 2.0 specification. These functions and features include Asset ID™, CIM Browser, Discovery, File Transfer, Inventory (Software), Power Management, Process Management, Remote Control, Remote Session, Resource Monitors, SNMP events for SNMP Agent, SNMP Browser, and Software Distribution.

IBM Director 5.10 Update 3 adds non-IBM-hardware-level support with limitation for Level-2 management using IBM Director Agent on the following hardware:

- IBM System x3650 T (machine type 7980)

For a complete listing of supported hardware and software that can be managed with IBM Director, see the IBM Systems Software Information Center.

Product fix history

This section describes the limitations and problems resolved by IBM Director 5.10 Update 3.

Authorized Program Analysis Reports

The following Authorized Program Analysis Reports (APARs) were resolved in IBM Director 5.10 Update 3:

IC47586
Event action plan filters that use unmapped SNMP trap extended attributes as criteria do not succeed.

IC47691
Resource monitor thresholds that are disabled when the resource monitor task is exported become enabled when the task is imported.

IC47789
Incorrect online status is reported for network interface cards on managed systems running Linux if the default gateway is not available.

IC48489
Inventory incorrectly reports one QLA2340 fibre channel host bus adapter when two adapters are installed on managed systems running Windows®.

IC48621
IBM Director Server stops with an Out of Memory error when presence check is performed on a large number of Level-0 managed objects. Also, unicast discovery of a large number of Level-0 managed objects sometimes does not discover all managed objects in the specified unicast range.

IC48625
Requests to unlock a Level-0 managed system do not succeed when the correct user ID and password are entered if the password is longer than 14 characters.

IC49012
Discovery of a Level-0 managed system by IBM Director 5.10 might cause the following unhandled exception which is viewable in the TWGServer.err file:

```
Exception: java.lang.IllegalArgumentException
```

IC49059
The **Genevent** command does not create an event when the event text exceeds 511 characters in length. IBM Director Server does not process or log events for which the event description text exceeds 1023 characters in length.

IC49141
Web-based Access causes the browser to stop working if the password is entered incorrectly at the second login prompt.

Note: Disabling the browser when user authentication does not succeed is a security mechanism of Web-based Access. The fix allows users five attempts to enter the password before forcing the browser to stop working.

IC49154

IBM Director Server stops unexpectedly after being started on a System x management server.

IC49155

IBM Director Server starts slowly on a System x management server, especially when IBM Director is managing a large number of managed objects.

IC49156

When the TCP/IP Hosts attribute is selected for display in the Details view in IBM Director Console and IBM Director is managing a large number of Level-1 managed systems, tasks do not start on Level-1 managed systems, nor are the details for the Level-1 managed systems displayed in IBM Director Console.

IC49164

When the event action plan action Send an SNMP Trap to an IP Host is used to send an SNMP trap to a system with a different locale set than the locale defined on the management server, the Severity and Category fields are not translated. When the trap is sent from a management server having a locale other than English to an IP host with English set as the locale, these fields appear as UTF-8 numeric data rather than user-readable text.

IC49174

IBM Director Server might encounter the following unhandled Java exception when performing discovery or presence check of a Level-0 managed system:

```
Exception: java.lang.ArrayIndexOutOfBoundsException: 16
```

IC49180

Using event detail keywords as event-substitution variables in event action plans does not work when the keyword has period (.) characters in it, for example, when the keyword is an SNMP object ID. IBM Director returns a ″Not applicable″ value when this type of keyword is used.

IC49199

For managed systems having a baseboard management controller, such as IBM BladeCenter HS20, IBM Director Agent reports sensor values of 0 when the sensor reports a lower value than the threshold value.

IC49216

You cannot enter event text to filter events with the Event Action Plan Builder.

When building a filter using the Event Action Plan Builder, the **Event Text** page does not permit you to enter text. You are prevented from creating a filter that uses event text as a filtering criterion.

IC49539

After upgrading IBM Director to version 5.10, some previously created software distribution packages are not listed in the Available Packages pane of the category editor, although they do appear in the **All Software Distribution Packages** menu.

IC49550

IBM Director Console closes unexpectedly with a `java.lang.NullPointerException` error after adding managed systems manually.

IC49613

IBM Director Server stops when it receives an alert forwarding profile from a management module which does not contain a valid value for the IP address.

IC49615

You cannot install the ServeRAID Manager extension after installing IBM Director Agent version 5.10.1 on the managed system. The following message appears:

```
Error - Can not install you must have IBM Director 5.10 Server/Agent Install
```

Discovery and Inventory tasks

- IBM Director Server generates an Unhandled Exception error and stops when a presence check is performed on a large number of managed objects.
- IBM Director Server shuts down when you request access to a discovered hardware management console.
-
- When two switches of the same model and having the same unique identifier are present, IBM Director can only discover and manage one of the switches.
- Inventory collection on a z/VM® manageability access point returns a ″no data″ message when successful, rather than a success message.
- After adding, unlocking, and then deleting a storage device, the same storage device in IBM Director can be added but cannot be unlocked.
- When a storage managed object is unlocked, taken offline, and the password changed, an attempt to unlock it again in IBM Director using an incorrect password causes IBM Director Server to stop and generate an unhandled exception error.
- Some columns in the **Software → Installed Packages** inventory query are not the correct size.

Installation

- On systems running i5/OS®, IBM Director Agent is not automatically started after installation. IBM Director Agent will now be started after installation.
- When IBM Director Console is uninstalled on SUSE Linux Enterprise server 8.3, the twgconsole.profile file is not removed.
- When IBM Director Server is installed or updated, the \IBM\Director\ proddata\snmp\switchmgt directory is removed (if it exists) or not created. As a result, management information base (MIB) data is not available for IBM SNMP nodes.
- With Software Distribution (Premium Edition), when creating a custom package for software distribution to a managed system running i5/OS, the software distribution task uses the names, rather than the values, of the environment variables specified on the Create Custom Package window: i5/OS page.

Miscellaneous

- A security vulnerability exists on port 5989 because of OpenSSL version 0.9.7g used with IBM Director. This security issue is described at www.securityfocus.com/bid/8732/solution/.
- Some information in ServeRAID Manager tables is not visible when the font size is set to Extra Large.
- When IBM Director is installed on a UNIX-based system and the database configuration tool is not run, incorrect information is displayed on the Database page of the Server Preferences window.

- You cannot edit the sysName value in the IBM Director SNMP Browser on management servers running i5/OS or Linux.
- After renaming a rack in Rack Manager, the old rack name is still displayed in the Rack View.
- When you import an event action plan that has import conflicts, sometimes all import conflicts are not displayed in the Import Action Plan window. Instead, only the first conflict is displayed.
- IBM Director Console shuts down occasionally when the Console Preferences window is opened.

Chapter 2. Installation and upgrade information

General installation notes

This section provides general information about installing and upgrading to IBM Director Version 5.10 Update 3.

IBM Director Version 5.10 Update 3 is not available for System p™.

See the *IBM Director Installation and Configuration Guide* for more installation information. Access this document from the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_main.html.

Version compatibility of IBM Director 5.10 Update 3 components

As with previous versions of IBM Director, the following rules apply to the version compatibility of IBM Director components:

- The versions of IBM Director Server and IBM Director Console must be the same, even when they are installed on different systems.
- Components which are installed on the same system, such as IBM Director Console and IBM Director Agent, must have the same version.
- The version of IBM Director Server must always be equal or later than the version of any IBM Director Agent or IBM Director Core Services installed on managed systems.

These rules imply some practical consequences.

- If you upgrade to IBM Director Server Version 5.10 Update 3, you must upgrade all instances of IBM Director Console also.
- If you upgrade to IBM Director Agent Version 5.10 Update 3 or IBM Director Core Services Version 5.10 Update 3 on any managed system, you must upgrade both IBM Director Server and all instances of IBM Director Console.

  Note: Since IBM Director Server on System p™ cannot be upgraded to Version 5.10 Update 3, you will not be able to manage IBM Director Agent Version 5.10 Update 3 or IBM Director Core Services Version 5.10 Update 3 using IBM Director Server on System p. Do not upgrade IBM Director Agent or IBM Director Core Services if management by IBM Director Server on System p is required.
- You *can* upgrade to IBM Director Server Version 5.10 Update 3 without necessarily upgrading all instances of IBM Director Agent or IBM Director Core Services.

See Table 1 on page 12 for a complete listing of compatible IBM Director component versions for each IBM Director Version 5.10 Update 3 component.

Table 1. Compatibility of IBM Director Version 5.10 Update 3 components with other component versions

IBM Director Version 5.10 Update 3 component	Compatible versions of IBM Director Server	Compatible versions of IBM Director Console	Compatible versions of IBM Director Agent	Compatible versions of IBM Director Core Services
IBM Director Server 5.10.3	N/A	5.10.3	5.10.3, 5.10.2, 5.10.1, 5.10, 4.22, 4.21, 4.20.2, 4.20, 4.12, 4.11, 4.10.2, 4.10	5.10.3, 5.10.2, 5.10.1, 5.10
IBM Director Console 5.10.3	5.10.3	N/A	5.10.3, 5.10.2, 5.10.1, 5.10, 4.22, 4.21, 4.20.2, 4.20, 4.12, 4.11, 4.10.2, 4.10	5.10.3, 5.10.2, 5.10.1, 5.10
IBM Director Agent 5.10.3	5.10.3 and later	5.10.3 and later	N/A	N/A
IBM Director Core Services 5.10.3	5.10.3 and later	5.10.3 and later	N/A	N/A

Obtaining upgrade packages

Before beginning installation procedures, obtain the upgrade packages for all components that will be upgraded to Version 5.10 Update 3.

Note: IBM Director Console and IBM Director Server must always be the same version. When upgrading one, you must upgrade the other.

IBM Director Version 5.10 Update 3 is available on the following CD-ROM media:

IBM Director Version 5.10 Update 3 for Intel and AMD-based hardware
Contains installation and upgrade packages for IBM Director components running on Linux for xSeries®, NetWare, and Windows operating systems.

IBM Director Version 5.10 Update 3 is also available for download as described in the following sections.

Note: To upgrade an installation of IBM Director Console and IBM Director Agent together on management consoles running Linux, you must use the downloaded IBM Director Console installation package.

Complete the following steps to download the upgrade packages for IBM Director 5.10 Update 3:

1. Navigate to the IBM Director Downloads Web Site at www.ibm.com/servers/eserver/xseries/systems_management/xseries_sm/dwnl.html.
2. Select **IBM Director 5.10 for xSeries and BladeCenter** from the list, complete the requested information, and click **Submit**.
3. Under the **Current version** heading, click **IBM Director 5.10 Update 3**.

4. Click the link for the package you want to download.

Table 2. IBM Director upgrade packages available on the IBM Director 5.10 for xSeries and BladeCenter download site

Operating system	Component	Package file name
i5/OS	IBM Director Agent 5.10 Update 3 for i5/OS	dir5.10.3_agent_i5OS.zip
	IBM Director Server 5.10 Update 3 for i5/OS (upgrade only)	dir5.10.3_server_patch_i5os.zip
Linux for Intel Itanium (64-bit)	IBM Director Agent 5.10 Update 3 for Linux for Intel Itanium (64-bit)	dir5.10.3_agent_linux64.tar
Linux on System x™	IBM Director Agent 5.10 Update 3 for Linux on System x	dir5.10.3_agent_linux.tar
	IBM Director Console 5.10 Update 3 for Linux on System x	dir5.10.3_console_linux.tar
	IBM Director Core Services 5.10 Update 3 for Linux on System x	dir5.10.3_coreservices_linux.tar
	IBM Director Server 5.10 Update 3 for Linux on System x	dir5.10.3_server_linux.tar
Linux on System z™	IBM Director 5.10 Update 3 upgrade for the z/VM CIM instrumentation that implements the z/VM management profile for Linux on System z	dir5.10.3_zvmmap-agent-linux-s390.tar
	IBM Director Agent 5.10 Update 3 for Linux on System z	dir5.10.3_agent-linux-s390.tar
	IBM Director Console 5.10 Update 3 for Linux on System z	dir5.10.3_console-linux-s390.tar
	IBM Director Core Services 5.10 Update 3 for Linux on System z	dir5.10.3_coreservices-agent-linux-s390.tar
	IBM Director Server 5.10 Update 3 for Linux on System z	dir5.10.3_server-linux-s390.tar
NetWare	IBM Director Agent 5.10 Update 3 for NetWare	dir5.10.3_agent_netware.zip
Windows	IBM Director Agent 5.10 Update 3 for Windows (32-bit)	dir5.10.3_agent_windows.zip
	IBM Director Agent 5.10 Update 3 for Windows for Intel Itanium® (64-bit)	dir5.10.3_agent_windows64.zip
	IBM Director Console 5.10 Update 3 for Windows (upgrade only)	dir5.10.3_console_patch_windows.zip
	IBM Director Console 5.10 Update 3 for Windows (full installation)	dir5.10.3_console_windows.zip
	IBM Director Core Services 5.10 Update 3 for Windows	dir5.10.3_coreservices_windows.zip
	IBM Director Server 5.10 Update 3 for Windows (upgrade only)	dir5.10.3_server_patch_windows.zip
	IBM Director Server 5.10 Update 3 for Windows (full installation)	dir5.10.3_server_windows.zip

Notes:

a. For z/VM Center extension information, see the *z/VM Center for IBM Director Version 5.10 Update 3 Release Notes*.

b. For IBM Director ServeRAID Manager information, see the *IBM Director ServeRAID Manager V8.30 Release Notes*.

c. For IBM Director External Application Launch Wizard information, see the External Application Launch Wizard information in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/eal_5.10.3/frj0_main.html.

d. For Server Storage Provisioning Tool information, see "Installing the IBM Server Storage Provisioning Tool" in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_sspt.html.

e. For Hardware Management Console extension information, see the *IBM Director Hardware Management Console extension, Version 5.10 Update 3 Release Notes*.

Upgrading IBM Director Server

This section describes procedures for upgrading IBM Director Server to Version 5.10 Update 3.

Upgrading IBM Director Server on i5/OS

The IBM Director Server 5.10 Update 3 for i5/OS package upgrades an existing installation of IBM Director Server Versions 5.10, 5.10.1, or 5.10.2 to IBM Director Server 5.10.3 , preserving user configuration data.

Upgrading IBM Director Server on i5/OS using the RSTLICPGM command

If you are not using IBM Director in a Virtualization Engine™ environment with the Virtualization Engine Console, you can use the Restore Licensed Program (RSTLICPGM) command to upgrade IBM Director Server to Version 5.10 Update 3. Complete the following steps to upgrade IBM Director Server on i5/OS to Version 5.10 Update 3:

1. Extract the contents of the dir5.10.3_server_patch_i5os.zip file to a local directory. This archive contains the SAVDR100MM.sav file.
2. On the i5/OS system, type the following command and press **Enter** to create a save file for the SAVDR100MM.sav file:

   ```
   CRTSAVF FILE(QGPL/SAVDR100MM)
   ```

3. From the directory into which you extracted the contents of the dir5.10.3_server_patch_i5os.zip file, start an FTP session to the i5/OS system and then type the following commands, pressing **Enter** after each:

   ```
   binary

   put FILES/SAVDR100MM.sav /qsys.lib/qgpl.lib/SAVDR100MM.file
   ```

4. Stop IBM Director Server by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('/qibm/userdata/director/bin/twgend')
   ```

5. Verify that IBM Director Server has been stopped by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('/qibm/userdata/director/bin/twgstat')
   ```

6. On the i5/OS system, type the following command and press **Enter** to install the upgrade:

   ```
   RSTLICPGM LICPGM(5722DR1) DEV(*SAVF) SAVF(QGPL/SAVDR100MM)
   ```

7. Restart IBM Director Server by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('/qibm/userdata/director/bin/twgstart
   ')
   ```

8. Verify that IBM Director Server has been restarted by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('
   /qibm/userdata/director/bin/twgstat')
   ```

9. To delete the SAVDR100MM.sav file, type the following command and press **Enter**:

   ```
   DLTF FILE(QGPL/SAVDR100MM)
   ```

After upgrading IBM Director Server, you must also upgrade all instances of IBM Director Console on other systems to the same version. See "Upgrading IBM Director Console" on page 17.

Upgrading IBM Director Server on i5/OS using the Virtualization Engine Update Installer

If you are using IBM Director in a Virtualization Engine environment with the Virtualization Engine Console, you can use the Virtualization Engine Update Installer to upgrade IBM Director Server to Version 5.10 Update 3. Complete the following steps to upgrade IBM Director Server on i5/OS to Version 5.10 Update 3:

1. Obtain the IBM Director Server 5.10 Update 3 for i5/OS upgrade package. See "Obtaining upgrade packages" on page 12.
2. Create the `/QIBM/UserData/VE2/Updates` directory on the management server if it does not already exist, and move the upgrade package to the `/QIBM/UserData/VE2/Updates` directory.
3. Obtain the Virtualization Engine Update Installer and install it on the management server. See publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/veicinfo/eicarfixparent.htm for instructions.
4. After installing the Virtualization Engine Update Installer, type the following command to upgrade IBM Director Server:

   ```
   java -jar /QOpenSys/QIBM/ProdData/ci/gmi/lib/gmi.jar
        -discriminant /QIBM/ProdData/VE2
        -mdvFile /QIBM/UserData/VE2/Updates/dir5.10.3_server_patch_i5os.zip
        -silent
   ```

5. Restart IBM Director Server by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('/qibm/userdata/director/bin/twgstart
   ')
   ```

6. Verify that IBM Director Server has been restarted by typing the following command from a command prompt and pressing **Enter**:

   ```
   QSH CMD('
   /qibm/userdata/director/bin/twgstat')
   ```

After upgrading IBM Director Server, you must also upgrade all instances of IBM Director Console on other systems to the same version. See "Upgrading IBM Director Console" on page 17.

Upgrading IBM Director Server on Linux for xSeries

The IBM Director Server 5.10 Update 3 for Linux for xSeries package performs a complete new installation or upgrades an existing installation of IBM Director Server Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Server 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Server on Linux for xSeries to Version 5.10 Update 3:

1. Obtain the IBM Director Server 5.10 Update 3 for Linux for xSeries installation package. See "Obtaining upgrade packages" on page 12.
2. Stop IBM Director Server. From a command prompt, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/twgstop
   ```
3. Install the dir5.10.3_server_linux.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server.html, substituting the new package file name for the file name given in the instructions.
4. Restart IBM Director Server. From a command prompt, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/twgstart
   ```

When you install IBM Director Server Version 5.10 Update 3, IBM Director Console and IBM Director Agent are installed automatically on the management server. After upgrading IBM Director Server, you must also upgrade all instances of IBM Director Console on other systems to the same version. See "Upgrading IBM Director Console" on page 17.

Upgrading IBM Director Server on Linux for System z

Note: If your target system is a z/VM manageability access point, follow the steps in "Upgrading a z/VM manageability access point" on page 22.

The IBM Director Server 5.10 Update 3 for Linux for System z package upgrades an existing installation of IBM Director Server Version 5.10 or 5.10.1 to IBM Director Server 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Server on Linux for System z to Version 5.10 Update 3:

1. Obtain the IBM Director Server 5.10 Update 3 for Linux for System z installation package. See "Obtaining upgrade packages" on page 12.
2. Stop IBM Director Server. From a command prompt, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/twgstop
   ```
3. Install the dir5.10.3_server-linux-s390.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server.html, substituting the new package file name for the file name given in the instructions.
4. Restart IBM Director Server. From a command prompt, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/twgstart
   ```

After upgrading IBM Director Server, you must also upgrade all instances of IBM Director Console on other systems to the same version. See "Upgrading IBM Director Console."

Upgrading IBM Director Server on Windows

The IBM Director Server 5.10 Update 3 for Windows package upgrades an existing installation of IBM Director Server Version 5.10, 5.10.1, or 5.10.2 to IBM Director Server 5.10.3.

Complete the following steps to upgrade IBM Director Server on Windows to Version 5.10 Update 3:

1. Obtain the IBM Director Server 5.10 Update 3 for Windows upgrade package. See "Obtaining upgrade packages" on page 12.
2. Extract the files from the dir5.10.3_server_patch_windows.zip package.
3. Run one of the upgrade files extracted from the upgrade package. This package includes both .exe and .msp files. Advanced users who are familiar with Windows Installer technology can use the .msp file; other users should use the .exe file.

After upgrading IBM Director Server, you must also upgrade all instances of IBM Director Console on other systems to the same version. See "Upgrading IBM Director Console."

Upgrading IBM Director Console

This section describes procedures for upgrading IBM Director Console to Version 5.10 Update 3.

Upgrading IBM Director Console on Linux for xSeries

The IBM Director Console 5.10 Update 3 for Linux for xSeries package performs a complete new installation or upgrades an existing installation of IBM Director Console Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Console 5.10.3, preserving user configuration data.

Note: To upgrade an installation of IBM Director Console and IBM Director Agent together on management consoles running Linux, you must use the downloaded IBM Director Console installation package.

Complete the following steps to upgrade IBM Director Console on Linux for xSeries to Version 5.10 Update 3:

1. Obtain the IBM Director Console 5.10 Update 3 for Linux for xSeries installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_console_linux.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_console.html, substituting the new package file name for the file name given in the instructions.

If IBM Director Agent is installed on the management console, this package also upgrades the IBM Director Agent installation to version 5.10.2. If IBM Director Agent is not already installed, this package only installs or upgrades IBM Director Console.

Upgrading IBM Director Console on Linux for System z

Note: If your target system is a z/VM manageability access point, follow the steps in "Upgrading a z/VM manageability access point" on page 22.

The IBM Director Console 5.10 Update 3 for Linux for System z package performs a complete new installation or upgrades an existing installation of IBM Director Console Version 5.10 or 5.10.1 to IBM Director Console 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Console on Linux for System z to Version 5.10 Update 3:

1. Obtain the IBM Director Console 5.10 Update 3 for Linux for System z installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_console-linux-s390.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_console.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Console on Windows

The IBM Director Console 5.10 Update 3 for Windows package upgrades an existing installation of IBM Director Console Version 5.10, 5.10.1, or 5.10.2 to IBM Director Console 5.10.3.

Complete the following steps to upgrade IBM Director Console on Windows to Version 5.10 Update 3:

1. Obtain the IBM Director Console 5.10 Update 3 for Windows installation package. See "Obtaining upgrade packages" on page 12.
2. Extract the files from the dir5.10.3_console_patch_windows.zip package.
3. Run one of the upgrade files extracted from the upgrade package. This package includes both .exe and .msp files. Advanced users who are familiar with Windows Installer technology can use the .msp file; other users should use the .exe file.

Upgrading IBM Director Agent

This section describes procedures for upgrading IBM Director Agent to Version 5.10 Update 3.

Upgrading IBM Director Agent on i5/OS

The IBM Director Agent 5.10 Update 3 for i5/OS package performs a complete new installation or upgrades an existing installation of IBM Director Agent Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Agent on i5/OS to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for i5/OS installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_i5OS.zip package using Software Distribution. See the instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_

upgrading_ibm_director_agent_using_the_software_distribution_task.html Substitute the new package file name for the file name given in the instructions.

Note: If you installed IBM Director Agent on your i5/OS managed system using the Restore Licensed Program (RSTLICPGM) command, see the instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_agent_using_rstlicpgm.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on Linux for xSeries

The IBM Director Agent 5.10 Update 3 for Linux for xSeries package performs a complete new installation or upgrades an existing installation of IBM Director Agent Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Note: If IBM Director Agent is installed on the management console, you do not need to separately upgrade IBM Director Agent; applying the downloaded IBM Director Console upgrade package also upgrades the IBM Director Agent installation to version 5.10.3.

Complete the following steps to upgrade IBM Director Agent on Linux for xSeries to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for Linux for xSeries installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_linux.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on Linux for System z

Note: If your target system is a z/VM manageability access point, follow the steps in "Upgrading a z/VM manageability access point" on page 22.

The IBM Director Agent 5.10 Update 3 for Linux for System z package performs a complete new installation or upgrades an existing installation of IBM Director Agent Version 5.10 or 5.10.1 to IBM Director Agent 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Agent on Linux for System z to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for Linux for System z installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent-linux-s390.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on Linux for Intel Itanium (64-bit)

The IBM Director Agent 5.10 Update 3 for Linux for Intel Itanium (64-bit) package performs a complete new installation or upgrades an existing installation of IBM Director Agent Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Note: This package is for Itanium 2 support only.

Complete the following steps to upgrade IBM Director Agent on Linux for Intel Itanium (64-bit) to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for Linux for Intel Itanium (64-bit) installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_linux64.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on NetWare

The IBM Director Agent 5.10 Update 3 for NetWare package performs a complete new installation or upgrades an existing installation of IBM Director Agent Version 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Agent on NetWare to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for NetWare installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_netware.zip package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on Windows (32-bit)

The IBM Director Agent 5.10 Update 3 for Windows (32-bit) package performs a complete new installation or upgrades an existing installation of IBM Director Agent Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Agent on Windows (32-bit) to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for Windows (32-bit) installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_windows.zip package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Agent on Windows for Intel Itanium (64-bit)

The IBM Director Agent 5.10 Update 3 for Windows for Intel Itanium (64-bit) package performs a complete new installation or upgrades an existing installation of IBM Director Agent Versions 4.10, 4.20, 4.21, 4.22, 5.10, 5.10.1, or 5.10.2 to IBM Director Agent 5.10.3, preserving user configuration data.

Note: This package is for Itanium 2 support only.

Complete the following steps to upgrade IBM Director Agent on Windows for Intel Itanium (64-bit) to Version 5.10 Update 3:

1. Obtain the IBM Director Agent 5.10 Update 3 for Windows for Intel Itanium (64-bit) installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_agent_windows64.zip package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installingIibm_director_agent.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Core Services

This section describes procedures for upgrading IBM Director Core Services to Version 5.10 Update 3.

Upgrading IBM Director Core Services on Linux for xSeries

The IBM Director Core Services 5.10 Update 3 for Linux for xSeries package performs a complete new installation or upgrades an existing installation of IBM Director Core Services Version 5.10, 5.10.1, or 5.10.2 to IBM Director Core Services 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Core Services on Linux for xSeries to Version 5.10 Update 3:

1. Obtain the IBM Director Core Services 5.10 Update 3 for Linux for xSeries installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_coreservices_linux.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_core_services.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Core Services on Linux for System z

Note: If your target system is a z/VM manageability access point, follow the steps in "Upgrading a z/VM manageability access point" on page 22.

The IBM Director Core Services 5.10 Update 3 for Linux for System z package performs a complete new installation or upgrades an existing installation of IBM Director Core Services Version 5.10 or 5.10.1 to IBM Director Core Services 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Core Services on Linux for System z to Version 5.10 Update 3:

1. Obtain the IBM Director Core Services 5.10 Update 3 for Linux for System z installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_coreservices-agent-linux-s390.tar package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_core_services.html, substituting the new package file name for the file name given in the instructions.

Upgrading IBM Director Core Services on Windows

The IBM Director Core Services 5.10 Update 3 for Windows package performs a complete new installation or upgrades an existing installation of IBM Director Core Services Version 5.10, 5.10.1, or 5.10.2 to IBM Director Core Services 5.10.3, preserving user configuration data.

Complete the following steps to upgrade IBM Director Core Services on Windows to Version 5.10 Update 3:

1. Obtain the IBM Director Core Services 5.10 Update 3 for Windows installation package. See "Obtaining upgrade packages" on page 12.
2. Install the dir5.10.3_coreservices_windows.zip package using the installation instructions found in the IBM Systems Software Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_core_services.html, substituting the new package file name for the file name given in the instructions.

Upgrading a z/VM manageability access point

This topic describes how to upgrade the IBM Director components on a z/VM manageability access point. You are advised to create a backup of the Common Information Model Object Manager (CIMOM) data repository when upgrading the IBM Director components on a z/VM manageability access point.

A z/VM manageability access point is the Linux system that runs in a z/VM guest virtual machine and that implements the Common Information Model (CIM) profile for z/VM management (that is, the z/VM management profile). See publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/vsd0_c_map.html for more details on z/VM manageability access points.

The z/VM manageability access point always has at least IBM Director Agent installed. It can optionally have IBM Director Server installed.

Complete these tasks to upgrade the IBM Director components on a z/VM manageability access point:

1. Create a backup of the CIMOM data repository.
2. Upgrade IBM Director Agent or IBM Director Server, as applicable.
3. Upgrade the z/VM CIM instrumentation that implements the z/VM management profile.

If the upgrade fails, perform a new installation of IBM Director Agent or IBM Director Server and the z/VM CIM instrumentation that implements the z/VM management profile and restore the CIMOM data repository from the backup (see "Recovering from a failed upgrade" on page 24).

Creating a backup of the CIMOM data repository

This section describes how to create a backup of the CIMOM data repository on a z/VM manageability access point.

From a terminal session on the z/VM manageability access point, complete the following steps to create a backup of the CIMOM data repository:

1. Type the following command and press **Enter** to ensure that CIMOM is not running:

   ```
   /etc/init.d/dacimom stop
   ```

2. Type the following command and press **Enter** to create a tar file with a backup of the CIMOM data repository:

   ```
   tar czf repository_backup.tgz -C inst_dir/cimom/repository .
   ```

   inst_dir is the directory in which IBM Director Server or IBM Director Agent has been installed on the z/VM manageability access point.

3. Type the following command and press **Enter** to restart CIMOM:

   ```
   /etc/init.d/dacimom start
   ```

Upgrading IBM Director Agent or IBM Director Server

This section describes how to upgrade IBM Director Agent or IBM Director Server on a z/VM manageability access point.

Complete the following steps to upgrade IBM Director Agent or IBM Director Server:

1. Obtain the installation packages for the z/VM CIM instrumentation that implements the z/VM management profile and for IBM Director Server or IBM Director Agent from the IBM Director site www.ibm.com/servers/eserver/xseries/systems_management/ibm_director/. See Table 2 on page 13 for an overview of the available installation packages.
2. Install the IBM Director Server or IBM Director Agent upgrade.

   If you are upgrading IBM Director Agent, follow the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_agent_level2_on_linux_for_zseries.html.

   If you are upgrading IBM Director Server, follow the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server_on_linux_for_zseries.html.

Upgrading the z/VM CIM instrumentation that implements the z/VM management profile

To install the upgrade for the z/VM CIM instrumentation that implements the z/VM management profile, follow the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/vsd0_t_install_map_rpm.html.

To obtain an RPM for installing or upgrading the z/VM CIM instrumentation, complete the following steps:

1. Navigate to the IBM Director Downloads Web Site at www.ibm.com/servers/eserver/xseries/systems_management/xseries_sm/dwnl.html.
2. Select **IBM Director 5.10 for xSeries and BladeCenter** from the list, complete the requested information, and click **Submit**.
3. Under the **Current version** heading, click **IBM Director 5.10 Update 3**. The download package is called dir5.10.3_zvmmap-agent-linux-s390.tar.

When you are satisfied that your upgrade has completed successfully and that z/VM Center works as required and without loss of data, you can optionally delete the backup of the CIMOM data repository; see step 7b on page 25 for directions. If the upgrade fails, proceed as described in "Recovering from a failed upgrade."

Recovering from a failed upgrade

This section describes how to use a backup of the CIMOM data repository to recover from a failed upgrade of IBM Director Agent or IBM Director Server on a z/VM manageability access point.

From a terminal session on the z/VM manageability access point, complete the following steps to recover from a failed upgrade:

1. Type the following command and press **Enter** to uninstall IBM Director:

   ```
   /opt/ibm/director/bin/diruninstall
   ```

   See publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_uninstalling_ibm_director_on_linux.html for information on persistent data that is backed up during the uninstall process.
2. Install the upgraded IBM Director version.

   For IBM Director Agent, follow the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_agent_level2_on_linux_for_zseries.html.

   For IBM Director Server, follow the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server_on_linux_for_zseries.html.
3. Restore the persistent data that you have backed up during the uninstall process. See publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_r_cli_twgrestore.html.
4. For IBM Director Server, ensure that the file *inst_dir*/proddata/ZvmCenter.properties exists. If it does not exist, create it according to the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/vsd0_t_install_key.html.

   inst_dir is the directory in which you have installed IBM Director Server.
5. Install the z/VM CIM instrumentation that implements the z/VM management profile by following the steps in publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/vsd0_t_install_map_rpm.html.
6. Restore the backed up CIMOM data repository:
   a. Type the following command and press **Enter** to ensure that CIMOM is not running:

      ```
      /etc/init.d/dacimom stop
      ```
   b. Type the following command and press **Enter** to rename the directory with the CIMOM data repository that was installed with the new installation:

      ```
      mv inst_dir/cimom/repository inst_dir/cimom/new_repository_unused
      ```

      inst_dir is the directory to which IBM Director Server or IBM Director Agent has been installed.
   c. Type the following command and press **Enter** to create a new directory for the CIMOM data repository:

      ```
      mkdir inst_dir/cimom/repository
      ```
   d. Type the following command and press **Enter** to untar the backup to the new directory:

```
tar xzf repository_backup.tgz -C inst_dir/cimom/repository
```

e. Type the following command and press **Enter** to restart CIMOM:

```
/etc/init.d/dacimom start
```

7. **(Optional)** When you are satisfied that IBM Director and z/VM Center work as required and without loss of data, you can clean up the backups of the old and the new CIMOM data repository.

   a. Type the following command and press **Enter** to remove the renamed new CIMOM data repository:

   ```
   rm -rf inst_dir/cimom/new_repository_unused
   ```

   b. Type the following command and press **Enter** to remove the backup of the restored CIMOM data repository:

   ```
   rm repository_backup.tgz
   ```

Chapter 3. Known limitations, problems, and workarounds

This section provides information about known limitations, problems, and workarounds when using IBM Director 5.10 Update 3.

Limitations

IBM Director 5.10 Update 3 has the following limitations:

(Systems running Red Hat Enterprise Linux with the Gnome desktop environment only) A new window does not automatically become the active window.

If you perform an action that causes a new window to display, the new window might not become the active window by default, even though it is the topmost window. This situation is caused by a known problem in the Java Runtime Environment. Workarounds include clicking on the new window to make it active, or using the keyboard shortcut (Alt+Tab) to change the focus to the new window. This limitation does not apply to systems running the K Desktop Environment.

The Hardware Status task might incorrectly report the failing drive number for IBM BladeCenter servers.

This limitation occurs because the LSI Logic Serial Attached SCSI (SAS) 1064 controller installed on some hardware does not report the slot information on IBM BladeCenter servers.

Users should verify the failing drive number using the LSI BIOS utility, which will report the actual degraded/missing drive number.

IBM IntelliStation Z Pro, model 9228 does not support Alert Standard Format on Linux.

When you try to start the Alert Standard Format (ASF) configuration task on a managed IBM IntelliStation Z Pro, model 9228 running Linux, the task does not succeed and returns the error "Agent service not available."

IBM IntelliStation Z Pro, model 9228 does not support the CPU temperature event when the CPU gets hot.

The processor environmental control (temperature) is controlled by the processor. This is a limitation of the IBM IntelliStation Z Pro hardware. Do not design event action plans that rely on the MPA > Environmental > Temperature event for the IBM IntelliStation Z Pro.

Some events are displayed as "Sensor *xx*" hardware events on managed servers supporting IPMI.

On managed servers supporting Intelligent Platform Management Interface (IPMI) with IBM Director Agent installed, some management controller events might appear in IBM Director Console with the label **Sensor** *xx* (where *xx* is a number) rather than a more descriptive label.

Servers affected by this problem include the following:

- xSeries 346
- xSeries 366
- xSeries 460
- System x3850

This behavior occurs when an out-of-band request for additional information from the management controller does not succeed, and might be indicative of another problem. Possible causes that should be investigated include the following:

- IBM Director has not discovered the physical platform managed object
- the physical platform managed object has not been unlocked
- a temporary network communication problem (packet loss) occurred
- the management controller firmware is causing the problem

Only one resource-monitor threshold value is allowed on each managed system for event action plans, even when multiple event action plans exist.

When the value is changed in the current plan, this limitation can lead to unexpected behavior and unwanted changes to the resource monitor threshold values in other event action plans.

IC46865: (Windows systems only) Using the reboot option in the Custom Package Editor with custom packages in categories can cause Software Distribution jobs to fail.

If you create a custom package for Windows using the Software Distribution task and you want to make that package part of a category, do not use the Restart Computer option in the Custom Package Editor. This option will cause the Software Distribution job to fail. Instead, use the reboot option in the Category Editor.

The Inventory Query Browser displays IBM Director Agent as IBM Director Core Services.

When Level 2: IBM Director Agent is installed, the Inventory Query Browser displays IBM Director Core Services.

Managed systems running slpd and Linux are incorrectly discovered as Level-1 managed systems after IBM Director Core Services is uninstalled.

When IBM Director Core Services is uninstalled, managed systems which use the SLP daemon (slpd) are not deregistered. These managed systems include many servers running SUSE Linux Enterprise Server, on which slpd runs in the default configuration.

Managed systems which use slpd are incorrectly discovered as Level-1 managed systems until the SLP registration expires, which typically occurs about 18 hours after IBM Director Core Services is uninstalled.

The setkvm command does not work when used with the -owner option

When attempting to set the KVM (keyboard, video, and mouse) owner to a System p blade server using the Management Processor Command-Line Interface command `setkvm -owner n` (where *n* is the number of the blade server to assume ownership), the command will indicate a successful completion, but the KVM ownership is not changed.

Problems

IBM Director 5.10 Update 3 has the following known problems:

The IBM Server Storage Provisioning Tool causes session limit Out of Resource errors

If administrative security is not enabled for a managed Qlogic switch, issuing a series of Server Storage Provisioning Tool commands can cause session limit Out of Resource errors. This is expected to occur if more than 15 Server Storage Provisioning Tool commands are issued in a five-minute period. The problem occurs because with security disabled, session handles are not cleaned up until they time out after five minutes.

To resolve this problem, administrative security should be enabled for the switch. Refer to the switch documentation for information about performing this configuration.

System health is not correctly reported for DS4000 series storage devices

Problem

Release 9.16.G0.17 of the SMI-S 1.1 provider from Engenio for DS4000™ series devices does not correctly report the health of the device.

This problem means that the health of DS4000 series devices is not correctly displayed in IBM Director.

Investigation

To resolve this problem, obtain and install release 9.16.G0.19 of the Engenio SMI-S 1.1 provider, which is available at the following location: www.engenio.com/products/smi_provider_archive.html.

If Hyper-Threading is enabled, the Resource Monitors task displays two CPU Monitor resources even if only one CPU exists.

On some managed Windows systems with Hyper-Threading capability, resource attributes for two microprocessors (or CPUs) are displayed when you run the Resource Monitors task on a managed system and view the CPU Monitors resources, despite the fact that the system contains only one microprocessor. This problem occurs if Hyper-Threading is enabled for the microprocessor. The

Resource Monitor task draws data from the operating system, and the operating system interprets a single Hyper-Threaded microprocessor as two logical microprocessors.

HMC managed objects are not discovered

This problem affects the IBM Director Hardware Management Console (HMC) extension.

Problem

When using the IBM Director HMC extension, IBM Director Server fails to discover the HMC managed object and the following message is displayed:

```
Error occurred while attempting to add the HMC.
Unable to establish a connection with the system.
```

Investigation

After an upgrade installation of the HMC hardware, the firewall ports for Open Pegasus and SLP are disabled and no longer have firewall access.

To correct this problem, complete the following steps:

1. In the HMC Navigation Area pane, expand the affected HMC and expand **HMC Management**. Click **HMC Configuration**.
2. In the HMC Configuration pane, click **Customize Network Settings**.
3. In the Network Settings window, click the **LAN Adapters** page.
4. Select the LAN Adapter that is connected to your LAN and click **Details**.
5. In the LAN Adapter Details window, click the **Firewall** page.
6. The top pane displays the firewall ports that you can enable. Select **Open Pegasus** from the list and click **Allow Incoming**. Open Pegasus is added to the bottom pane of enabled ports.
7. In the top pane, select **SLP** from the list and click **Allow Incoming**. SLP is added to the bottom pane of enabled ports.
8. Click **OK**; then click **OK** again.
9. If a message window about restarting the HMC is displayed, click **OK**. After the HMC is restarted, the ports are enabled and IBM Director Server can discover the HMC.

Workarounds

This section addresses problems you might encounter when using IBM Director 5.10 Update 3. For troubleshooting information about additional issues not listed here, see the Troubleshooting section of the IBM Director Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_r_tbs_solving_problems.html.

Managed systems running VMware ESX 3.0 do not send events.

The OpenIPMI drivers are not enabled by the VMware ESX 3.0 operating system, causing these managed systems not to send in-band events to IBM Director. Use the following procedure to enable the OpenIPMI drivers on VMware ESX 3.0

Complete the following steps *each time the VMware ESX 3.0 system is started*:

1. Log in as the root user, and then type the following commands to activate the IPMI modules:

   ```
   modprobe -v ipmi_devintf
   modprobe -v ipmi_si_drv
   ```

2. Type the following command to list the active IPMI modules:

   ```
   lsmod | grep ipmi
   ```

   Verify that the listed modules include all three of the following:

   ```
   ipmi_devintf
   ipmi_msghandler
   ipmi_si_drv
   ```

3. Type the following command to delete the IPMI device if it exists:

   ```
   rm /dev/ipmi0
   ```

4. Identify the major number that should be used for new IPMI devices. Issue the following command:

   ```
   cat /proc/devices | grep ipmi
   ```

   The command should result in a line of output containing a number followed by `ipmidev`. This number is the major number you should use to create IPMI devices. For example, if the command output were `253 ipmidev`, you would use major number 253.

5. Issue the following command to create the IPMI device using the major number you identified, substituting the actual value for *major_no*:

   ```
   mknod /dev/ipmi0 c major_no 0
   ```

6. Stop and restart the CIM server so it will use the OpenIPMI driver. Issue the following commands:

   ```
   /etc/init.d/dacimom stop
   /etc/init.d/dacimom start
   ```

HS21 blade servers might generate MPA > Unknown events

HS21 blade servers might generate an MPA > Unknown event. This event provides a firmware code through an extended attribute. If the Firmware code extended attribute is a value between 0x0E012001 and 0x0E01200E, the event indicates that the blade server vital product data (VPD) could not be read and that the blade server will not be allowed to power on. The last digit in the Firmware code extended attribute indicates the slot number of the affected blade server.

IBM Director Server installed on SUSE Linux Enterprise Server 9 must be manually configured to collect hardware status and receive events from the management server.

After installing IBM Director Server on SUSE Linux Enterprise Server 9, hardware status and events do not appear in IBM Director Console. To receive events from the management server, complete the following steps to manually configure event subscriptions:

1. In IBM Director Console, discover the management server on which you installed IBM Director Server.
2. Double-click the management server in IBM Director Console to open the Display System Attributes window.
3. In the Display System Attributes window, scroll to each of the following attributes and note their values:
   - **Unique System ID**

- **TCP/IP Addresses**

4. Open a command shell and change to the /opt/ibm/director/cimom/bin directory.

   Note: If you installed IBM Director Server in a location other than /opt/ibm/director, modify the path accordingly.

5. Type each of the following commands, substituting the values noted in step 3 on page 31 for *unique_id* and *ip_address*. Press **Enter** after each command.

```
cimsubscribe -ch -hn unique_id
          -d "http://localhost:6988/CIMListener/DirectorConsumer/ip_address
cimsubscribe -cf -fn unique_id -q "SELECT * FROM CIM_AlertIndication"
cimsubscribe -cs -hn unique_id -fn unique_id
```

The IBM Director Server event subscription is configured, and events will appear in the **Event Log**. The hardware status tree will also reflect event information.

The Server Storage Provisioning Tool might return errors if hardware changes are made

If there is any change to the hardware in a managed BladeCenter chassis (such as adding or removing a blade server or fibre channel switch), the Server Storage Provisioning Tool commands might cause errors unless discovery is performed before issuing the command.

To avoid this problem, always discover BladeCenter chassis before issuing a Server Storage Provisioning Tool command.

Server Configuration Manager and Management Processor Command-Line Interface fail for 5.10 Update 2 and later

For 5.10 Update 2 and later, this problem affects the Server Configuration Manager and Management Processor Command-Line Interface tasks. The problem occurs only on certain managed systems running VMware ESX Console, version 2.5.2 or 2.5.3.

Problem

On managed systems which have both a Baseboard Management Controller (BMC) and Remote Supervisor Adapter II installed (for example, certain xSeries servers such as the xSeries 366 and xSeries 460), when the managed system is running VMware ESX Console, version 2.5.2 or 2.5.3, IBM Director can only manage the system using the BMC because VMware ESX Console, version 2.5.2 or 2.5.3 does not support the Universal Serial Bus (USB) protocol. The BMC is represented as a physical platform in IBM Director Console. If discovery of all physical platforms is performed and the Remote Supervisor Adapter II adapter is connected to the network, the managed physical platform is changed from the BMC to the Remote Supervisor Adapter II. This causes the Server Configuration Manager and Management Processor Command-Line Interface to fail.

Resolution

To avoid this problem: Do not perform discovery of all physical platforms if you have managed systems in your environment which have both BMC and Remote Supervisor Adapter II installed and are running VMware ESX Console, version 2.5.2 or 2.5.3.

To correct this problem: If this problem occurs, complete the following steps to correct the problem:

1. In IBM Director Console, delete the Remote Supervisor Adapter II physical platform managed object. Right-click the physical platform managed object, and then click **Delete**.
2. Manually add the Remote Supervisor Adapter II physical platform managed object.
   a. In IBM Director Console, click **Console** → **New** → **Managed Objects** → **Physical Platforms**.
   b. Type a name for the physical platform. The name will appear in IBM Director Console as the physical platform name.
   c. Type the network address of the physical platform.
   d. Click **OK**.

   The BMC physical platform managed object is created again in IBM Director Console.

The fwupdate command does not update Advanced Management Module firmware.

The format of the Advanced Management Module firmware update file has changed. The `CNETCMUS.pkt` file is not a true pkt format file, but instead is a tar archive containing two pkt format files (`CNETBRUS.pkt` and `CNETMNUS.pkt`).

Extract these two files from the `CNETCMUS.pkt` file and then use the fwupdate command to update the Advanced Management Module firmware.

Installing the External Application Launch Wizard fails.

When attempting to install the External Application Launch Wizard, the installation fails and displays the following error message:

```
A suitable JVM could not be found. Please select a JVM by selecting its Java.exe file
```

The InstallShield Wizard requires a version of the Java™ Virtual Machine (JVM) that is not present on the system. This JVM is installed when IBM Director Server is installed, and the External Application Launch Wizard does not have any functionality without IBM Director Server.

First install IBM Director Server, and then install the External Application Launch Wizard on the management server.

Chapter 4. Documentation updates

For IBM Director 5.10 Update 3, documentation updates that might not appear in the IBM Director 5.10 online help are available in the IBM Director Information Center at publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_main.html. The IBM Director Information Center includes updates to both the printed and online documentation.

Users of translated information should consider these facts:

- The IBM Director Information Center updates for IBM Director 5.10 Update 3 are in English only and have not been translated into other languages.
- The English documentation has been approved by technical reviewers and is updated more frequently than the translated documentation; when discrepancies occur between translated documentation and the English documentation, you should rely on the English documentation.

This section includes documentation updates that might not appear in the IBM Director online help, IBM Director Information Center, or printed IBM Director publications that you might receive or access.

Support for VMware ESX 2.5.4

IBM Director 5.10 Update 3 supports installation of IBM Director Agent on VMware ESX 2.5.4 console and guest operating systems. VMware ESX 2.5.4 provides fully virtualized guest systems that allow other operating systems to run without modification.

Consider the following issues affecting management of VMware ESX 2.5.4 console and guest operating systems with IBM Director Agent:

- You must use the OSA IPMI driver instead of the IPMI driver that is installed by default.
  1. Go to the IBM Support Web site at www.ibm.com/pc/support, and then click **Downloads and drivers**.
  2. Under **Brand**, select Servers, and then select your server family.
  3. Under **Operating system**, select Red Hat Linux, and then click **Continue**.
  4. Download the "OSA IPMI Device Drivers for Linux" and "Mapping layer software source for OSA IPMI on Linux" drivers. To find these drivers, you can select OSA IPMI under **Refine results**.
  5. Install the OSA IPMI device driver first, and then install the IBM Mapping layer for OSA IPMI.

  Note: During IBM Director installation, you might see the following message:

  ```
  Failed to load OpenIPMI modules. Check OpenIPMI driver configuration.
  ```

  This message is harmless and should be ignored.
- In the guest environment, IBM Director Agent can access only the virtualized hardware, and provides limited hardware-monitoring functions.
- The Network Configuration task cannot be used to change the network configuration of VMware ESX 2.5.4 managed systems.

- IBM Director ServeRAID Manager version 8.30 and earlier is not supported on VMware ESX 2.5.4 managed systems.
- The default installation of VMware ESX 2.5.4 includes the OpenPegasus CIMOM, which could conflict with the Pegasus CIMOM used by IBM Director Agent. In order to avoid conflicts, IBM Director uses some different ports when communicating with VMware ESX 2.5.4 systems than when communicating with other managed systems. The following table contains a complete list of the ports that IBM Director uses to communicate with VMware ESX 2.5.4 systems.

Table 3. Ports used by IBM Director to communicate with VMware ESX 2.5.4 systems

Category	Connection	Port
IBM Director interprocess communication	IBM Director Server ↔ IBM Director Agent	14247 UDP and TCP; 14248 TCP
CIM-XML over HTTP	IBM Director Server → Level-1 or Level-2 managed system	15988 TCP
CIM-XML over HTTPS	IBM Director Server → Level-1 or Level-2 managed system	15989 TCP
SLP	IBM Director Server ↔ SLP service agents or SLP directory agents	427 TCP and UDP
SNMP	IBM Director Server → SNMP agent	161 TCP and UDP
	SNMP agent → IBM Director Server	162 TCP and UDP

When you install IBM Director Agent on VMware ESX 2.5.4, the installation automatically detects that installation is on VMware ESX 2.5.4, configures the firewall, and opens these ports.

Support for VMware ESX 3.0

IBM Director 5.10 Update 3 supports installation of IBM Director Agent on VMware ESX 3.0 console and guest operating systems. VMware ESX 3.0 provides fully virtualized guest systems that allow other operating systems to run without modification.

Consider the following issues affecting management of VMware ESX 3.0 console and guest operating systems with IBM Director Agent:

- In the guest environment, IBM Director Agent can access only the virtualized hardware, and provides limited hardware-monitoring functions.
- The Network Configuration task cannot be used to change the network configuration of VMware ESX 3.0 managed systems.
- IBM Director ServeRAID Manager version 8.30 and earlier is not supported on VMware ESX 3.0 managed systems.
- The default installation of VMware ESX 3.0 includes the OpenPegasus CIMOM, which could conflict with the Pegasus CIMOM used by IBM Director Agent. In order to avoid conflicts, IBM Director uses some different ports when communicating with VMware ESX 3.0 systems than when communicating with other managed systems. The following table contains a complete list of the ports that IBM Director uses to communicate with VMware ESX 3.0 systems.

Table 4. Ports used by IBM Director to communicate with VMware ESX 3.0 systems

Category	Connection	Port
IBM Director interprocess communication	IBM Director Server ↔ IBM Director Agent	14247 UDP and TCP; 14248 TCP
CIM-XML over HTTP	IBM Director Server → Level-1 or Level-2 managed system	15988 TCP
CIM-XML over HTTPS	IBM Director Server → Level-1 or Level-2 managed system	15989 TCP
SLP	IBM Director Server ↔ SLP service agents or SLP directory agents	427 TCP and UDP
SNMP	IBM Director Server → SNMP agent	161 TCP and UDP
	SNMP agent → IBM Director Server	162 TCP and UDP

When you install IBM Director Agent on VMware ESX 3.0, the installation automatically detects that installation is on VMware ESX 3.0, configures the firewall, and opens these ports.

Support for SUSE Linux Enterprise Server 10

IBM Director 5.10 Update 3 supports installation of IBM Director Agent and IBM Director Core Services on SUSE Linux Enterprise Server 10 managed systems. SUSE Linux Enterprise Server 10 provides fully-virtualized guest systems using Xen server virtualization.

Consider the following issues affecting management of SUSE Linux Enterprise Server 10 domain 0 (dom0) physical systems and domain U (domU) virtual systems with IBM Director Agent:

- IBM Director Agent can access only the virtualized hardware in the guest environment, and provides limited hardware monitoring functions.
- The Network Configuration task cannot be used to change the network configuration of SUSE Linux Enterprise Server 10 managed systems.
- IBM Director ServeRAID Manager version 8.30 and earlier is not supported on SUSE Linux Enterprise Server 10.

In order to provide Level-1 or Level-2 management of systems running SUSE Linux Enterprise Server 10 with IBM Director, you must complete the following steps:

1. Obtain and install the correct versions of the SMBUS and LM78 device drivers on the managed systems.
2. Install IBM Director Core Services on Level-1 managed systems running SUSE Linux Enterprise Server 10.
3. Install IBM Director Agent on Level-2 managed systems running SUSE Linux Enterprise Server 10.

These steps are described in the following sections.

Installing LM78 and SMBus device drivers on managed systems running SUSE Linux Enterprise Server 10

If your managed system requires an LM78 or SMBus driver, you must obtain the correct driver version for SUSE Linux Enterprise Server 10 support from the IBM Director Support Web Site.

1. Review the LM78 and SMBus requirements in the IBM Director Information Center at the following address: publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_r_ibm_lm78_and_smbus_device_drivers_for_linux.html.
2. If an LM78 or SMBus driver is required for your managed system, obtain it from the IBM Director Support Web Site at www.ibm.com/servers/eserver/xseries/systems_management/xseries_sm/dwnl.html. Select **IBM Director 5.10 for xSeries and BladeCenter** from the list, complete the requested information, and click **Submit**. Under the **Current version** heading, click **IBM Director 5.10 Update 3**, and then download the following packages:
   - ibmlm78-5.10-3.tgz
   - ibmsmb-5.10-3.tgz
3. Build the binary RPM files and install them as described in the IBM Director Information Center. The topics describing these steps are located under publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_r_ibm_lm78_and_smbus_device_drivers_for_linux.html.

Installing Level 1: IBM Director Core Services on SUSE Linux Enterprise Server 10

This topic describes how to install IBM Director Core Services on a system that is running SUSE Linux Enterprise Server 10.

Complete the following steps to install Level 1: IBM Director Core Services on SUSE Linux Enterprise Server 10:

1. Obtain the IBM Director Core Services for SUSE Linux Enterprise Server 10 package from the IBM Director Support Web site:
   a. Download the dir5.10.3_coreservices_sles10.tar file from the IBM Director Support Web site at .
   b. Extract the contents of the dir5.10.3_coreservices_sles10.tar file into a local directory.
   c. Change to the directory in which the installation script is located. Type the following command and press **Enter**:

      ```
      cd /directory/FILES
      ```

      where *directory* is the local directory into which you extracted the files.

      Go to step 2.
2. If you want to customize the installation, go to step 3. If you want to accept the default settings for the installation, type the following command and press **Enter**:

   ```
   ./dir5.10.3_coreservices_sles10.sh
   ```

   The installation is completed.
3. To customize the installation, copy the response file (coresvcs.rsp) to a local directory. Type the following command and press **Enter**:

   ```
   cp coresvcs.rsp /directory/
   ```

   where *directory* is the local directory.
4. Open an ASCII text editor and modify the installation settings in the copy of the coresvcs.rsp file. This file is fully commented.

   You can specify the location of the RPM files and select log file options.
5. Save the modified response file with a new file name.

6. To install Level 1: IBM Director Core Services using the response file, type the following command and press **Enter**:

   ```
   ./dir5.10.3_coreservices_sles10.sh -r /directory/response.rsp
   ```

   where *directory* is the local directory to which you copied the response file, and *response.rsp* is the name of the response file saved in step 5 on page 38.

After IBM Director Agent is installed, you can enable the Wake on LAN® feature. For more information, see Enabling the Wake on LAN feature for Linux or AIX® in the IBM Director Information Center.

To enable SNMP Access and Trap Forwarding, you must install and configure Net-SNMP, version 5.2.1. For more information, see Enabling SNMP access and trap forwarding for Linux in the IBM Director Information Center.

Installing Level 2: IBM Director Agent on SUSE Linux Enterprise Server 10

This topic describes how to install Level 2: IBM Director Agent on a system that is running SUSE Linux Enterprise Server 10.

Important:

- IBM Director Server includes all the functionality of IBM Director Agent. It is not possible or necessary to separately install IBM Director Agent on the management server after installing IBM Director Server. Any IBM Director tasks requiring IBM Director Agent will be performed for systems with IBM Director Server installed.
- The version of IBM Director Agent cannot be later than the version of IBM Director Server running on the management system.
- If IBM Director Console and IBM Director Agent are installed on the same system, both software components must be at the same release level as IBM Director Server.

Complete the following steps to install Level 2: IBM Director Agent on SUSE Linux Enterprise Server 10:

1. Obtain the IBM Director Agent for SUSE Linux Enterprise Server 10 package from the IBM Director Support Web site:
   a. Download the dir5.10.3_agent_sles10.tar file from the IBM Director Support Web site at .
   b. Extract the contents of the dir5.10.3_agent_sles10.tar file into a local directory.
   c. Change to the directory in which the installation script is located. Type the following command and press **Enter**:

      ```
      cd /directory/FILES
      ```

      where *directory* is the local directory into which you extracted the files.

      Go to step 2.
2. If you want to customize the installation, go to step 3 on page 40. If you want to accept the default settings for the installation, type the following command and press **Enter**:

   ```
   ./dir5.10.3_agent_sles10.sh
   ```

Go to step 7.

3. To customize the installation, copy the response file (diragent.rsp) to a local directory. Type the following command and press **Enter**:

   ```
   cp diragent.rsp /directory
   ```

   where *directory* is the local directory.
4. Open an ASCII text editor and modify the installation settings in the copy of the diragent.rsp file. This file is fully commented.
5. Save the modified response file with a new file name.
6. To install IBM Director Agent using the response file, type the following command and press **Enter**:

   ```
   ./dir5.10.3_agent_sles10.sh -r /directory/response.rsp
   ```

   where *directory* is the local directory to which you copied the response file, and *response.rsp* is the name of the response file saved in step 5.
7. **Optional:** By default, encryption using the Advanced Encryption Standard (AES) algorithm is enabled during installation. To disable encryption or change security settings, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/cfgsecurity
   ```
8. To start IBM Director Agent, type the following command and press **Enter**:

   ```
   /opt/ibm/director/bin/twgstart
   ```

After IBM Director Agent is installed, you can enable the Wake on LAN feature. For more information, see Enabling the Wake on LAN feature for Linux or AIX in the IBM Director Information Center.

To enable SNMP Access and Trap Forwarding, you must install and configure Net-SNMP, version 5.2.1. For more information, see Enabling SNMP access and trap forwarding for Linux in the IBM Director Information Center.

Installing required RPMs on Linux on POWER before installing IBM Director components

Before installing IBM Director components (IBM Director Server, IBM Director Agent, or IBM Director Core Services) on a System p server running Linux on POWER™, it might be necessary to install two required RPMs on the server.

Complete this procedure before you install version 5.10, 5.10.1, or 5.10.2 of IBM Director Server, IBM Director Agent, or IBM Director Core Services on a System p server running any supported version of Linux on POWER. Affected operating systems include, but are not limited to, the following operating systems:

- Red Hat Enterprise Linux AS, version 3.3, for IBM POWER
- Red Hat Enterprise Linux AS, version 4.3, for IBM POWER
- SUSE Linux Enterprise Server 8 for IBM POWER
- SUSE Linux Enterprise Server 9 for IBM POWER

This procedure is required only for new installations of IBM Director on a System p server. If IBM Director Server, IBM Director Agent, or IBM Director Core Services was previously installed successfully on a server, the required RPMs should already be present.

Complete the following steps to obtain and install the required RPMs before installing IBM Director components on a System p server.

1. Check the version of the ppc64-utils RPM you have installed. At a Linux command prompt, type the following command:

   ```
   rpm -qa | grep ppc64-utils
   ```

   The ppc64-utils RPM filename indicates the file version (for example, ppc64-utils-2.5-2.ppc64.rpm).

   - If the ppc64-utils RPM is installed with version 2.5 or higher, the required RPM version is already installed, and you do not need to complete this procedure.
   - If the ppc64-utils RPM is installed with a version lower than 2.5, continue to step 2.
   - If the ppc64-utils RPM is not installed, continue to step 2.

2. Obtain the required RPM from the IBM Service and productivity tools for Linux on POWER systems Web Site. The ppc64-utils RPM is replaced by two other rpm files: powerpc-utils and powerpc-utils-papr.
   a. Navigate to www14.software.ibm.com/webapp/set2/sas/f/lopdiags/ .
   b. Under Hardware diagnostic aids and productivity tools, click the link which matches your System p server.
   c. Click the heading which identifies your version of either Red Hat Enterprise Linux or SUSE Linux Enterpriser Server.
   d. In the list of tools, right-click **powerpc-utils-1.0.0-1.ppc64.rpm**, and then click **Save Link As** or **Save Target As**, depending on your browser. Save the file on your System p server.
   e. In the list of tools, right-click **powerpc-utils-papr-1.0.3-1.ppc64.rpm**, and then click **Save Link As** or **Save Target As**, depending on your browser. Save the file on your System p server.

3. Install the RPMs. Change to the directory in which you saved the two RPM files, and issue the following commands:
   - If the ppc64-utils RPM is installed with a version lower than 2.5:

     ```
     rpm -Uvh --force powerpc-utils-1.0.0-1.ppc64.rpm
     rpm -Uvh --force powerpc-utils-papr-1.0.3-1.ppc64.rpm
     ```

   - If the ppc64-utils RPM is not installed:

     ```
     rpm -Uvh powerpc-utils-1.0.0-1.ppc64.rpm
     rpm -Uvh powerpc-utils-papr-1.0.3-1.ppc64.rpm
     ```

4. Attempt installation of the IBM Director component you want to install. The installation will not complete, but it will install scripts that are required for the following step.

IBM Director component	**Link to installation instructions (also see the Release Notes for the version you are installing)**
IBM Director Server	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server_on_linuxonpower.html
IBM Director Agent	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_agent_level2_on_linuxonpower.html
IBM Director Core Services	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_core_services_on_linuxonpower.html

5. Install IBM Director Core Services files manually.

a. Change to the *install_source*/director/server/linux/ppc directory, where *install_source* is the base directory of your installation media (CD or download).

b. At a command prompt, issue the following command:

```
rpm -Uvh -nodeps pSeriesCoreServices-level1-version-1_os_abbr.ppc.rpm
```

where *version* is the version identifier of the IBM Director Core Services package you are installing:
- 5.10
- 5.10.1
- 5.10.2

and *os_abbr* is an abbreviation of the operating system on which you are installing:

Operating system	*os_abbr*
Red Hat Enterprise Linux version 3.x	RHEL3
Red Hat Enterprise Linux version 4.x	RHEL4
SUSE Linux Enterprise Server 8	SLES8
SUSE Linux Enterprise Server 9	SLES9

6. Install the IBM Director component you want to install.

IBM Director component	**Link to installation instructions (also see the Release Notes for the version you are installing)**
IBM Director Server	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_server_on_linuxonpower.html
IBM Director Agent	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_ibm_director_agent_level2_on_linuxonpower.html
IBM Director Core Services	publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_t_installing_core_services_on_linuxonpower.html

Using the IBM Server Storage Provisioning Tool when IBM Remote Deployment Manager is installed

As noted in "Installing the IBM Server Storage Provisioning Tool," the IBM Server Storage Provisioning Tool can coexist with IBM Remote Deployment Manager (RDM) version 4.30 or higher. You might want to be aware of the following information regarding the behaviors of the Server Storage Provisioning Tool when RDM is also installed on the management server.

- On installation of the Server Storage Provisioning Tool, if RDM 4.3 has installed a SSPT.jar file, the existing SSPT.jar file is deleted and replaced by the SSPT.jar file installed by the Server Storage Provisioning Tool. Any other common files used by both RDM and the Server Storage Provisioning Tool are also overwritten by the Server Storage Provisioning Tool files.
- If both the ssptConfig.xml and ssptConfigRDM.xml configuration files are present, the Server Storage Provisioning Tool merges the information from the two files. Where conflicts occur between the configuration information in these two files, the configuration specified by ssptConfig.xml takes precedence.
- When uninstalling the Server Storage Provisioning Tool on a management server on which RDM is also installed, only the files specific to the Server Storage Provisioning Tool are removed.

Keyboard shortcuts for standard interface controls

You can use keys or key combinations to navigate standard controls in the IBM Director Console interface.

Buttons

Table 5. Keyboard shortcuts for buttons

Action	Keyboard shortcut
Navigate forward.	Tab
Navigate backward.	Shift+Tab
Activate the default button.	Enter
Activate any button	Space bar or Alt+Character accelerator key (if defined).
Activate Cancel or Close.	Esc

Check boxes

Table 6. Keyboard shortcuts for check boxes

Action	Keyboard shortcut
Navigate forward.	Tab
Navigate backward.	Shift+Tab
Navigate within a group.	Arrow keys
Select or clear a check box.	Space bar

Radio buttons

Table 7. Keyboard shortcuts for radio buttons

Action	Keyboard shortcut
Navigate forward.	Tab
Navigate backward.	Shift+Tab
Navigate within a group.	Arrow keys **Note:** To select the radio button, navigate to it.
Select or clear a radio button.	Space bar

Combination boxes

Table 8. Keyboard shortcuts for combination boxes

Action	Keyboard shortcut
Navigate forward out of the combination box.	Tab
Navigate backward out of the combination box.	Shift+Tab
Navigate into a combination box within a table cell (focus must be in the table cell).	F2
Display the drop-down list.	Down arrow

Table 8. Keyboard shortcuts for combination boxes (continued)

Action	Keyboard shortcut
Hide the drop-down list.	Esc or Alt+Up arrow
Activate the selected menu item.	Enter
Navigate up or down the drop-down list.	Alt+Up arrow or Alt+Down arrow
Navigate up or down the drop-down list for a combination box in a table.	Up arrow or Down arrow
Navigate to a list item without selecting it.	Initial character of the list item
Move up or down the drop-down list.	Up arrow or down arrow

Lists

Table 9. Keyboard shortcuts for lists

Action	Keyboard shortcut
Navigate forward out of the list.	Tab
Navigate backward out of the list.	Shift+Tab
Activate the selected list item.	Enter
Navigate within the list.	Up arrow or down arrow
Navigate to the beginning or end of the list.	Ctrl+Home or Ctrl+End
Select all list items.	Ctrl+A
Select a single list item	Space bar **Note:** Using the space bar clears the previous selection.
Select an additional list item.	Ctrl+Space bar
Select a range of list items.	Shift+Space bar
Extend the selection up or down one item.	Shift+Up arrow or Shift+Down arrow
Extend the selection to the top or bottom of the list.	Shift+Home or Shift+End
Extend the selection up or down one block.	Shift+PgUp or Shift+PgDn
Navigate up or down a block.	PgUp or PgDn

Sliders

Table 10. Keyboard shortcuts for sliders

Action	Keyboard shortcut
Navigate forward out of the slider.	Tab
Navigate backward out of the slider.	Shift+Tab
Increase the value	Up arrow or right arrow.

Table 10. Keyboard shortcuts for sliders (continued)

Action	Keyboard shortcut
Decrease the value	Down arrow or left arrow.
Set the maximum value.	Home
Set the minimum value.	End
Increase the value by a set range.	PgUp
Decrease the value by a set range.	PgDn

Tables

Table 11. Keyboard shortcuts for tables

Action	Keyboard shortcut
Navigate forward out of the table.	Ctrl+Tab
Navigate backward out of the table.	Ctrl+Shift+Tab
Navigate to the next cell.	Tab or right arrow
Navigate to the previous cell.	Shift+Tab or left arrow
Navigate to the next row from the last column.	Tab or right arrow
Navigate to the previous row from the first column.	Shift+Tab or left arrow
Navigate vertically to the next or previous block.	PgUp or PgDn
Navigate horizontally to the left or right one block.	Ctrl+PgUp or Ctrl+PgDn
Navigate to the first or last cell in the row.	Home or End
Navigate to the first or last cell in the table.	Ctrl+Home or Ctrl+End
Select all cells in the table.	Ctrl+A
Clear the current selection.	Use one of these keyboard shortcuts: • Up arrow or down arrow • Ctrl+Up arrow or Ctrl+Down arrow • PgUp or PgDn • Ctrl+PgUp or Ctrl+PgUp • Home or End • Ctrl+Home or Ctrl+End
Extend the selection up or down one row.	Shift+Up arrow or Shift+Down arrow
Extend the selection to the right or left one column.	Shift+Left arrow or Shift+Right arrow
Extend the selection to the beginning or end of the row.	Shift+Home or Shift+End
Extend the selection up or down one block.	Shift+PgUp or Shift+PgDn

Table 11. Keyboard shortcuts for tables (continued)

Action	Keyboard shortcut
Extend the selection left or right one block.	Ctrl+Shift+PgUp or Ctrl+Shift+PgDn
Extend the selection to the beginning or end of the column.	Ctrl+Shift+Home or Ctrl+Shift+End
Edit the cell without overriding the existing text.	F2
Delete the cell text before editing.	Esc

Trees

Table 12. Keyboard shortcuts for trees

Action	Keyboard shortcut
Navigate forward out of the tree.	Tab
Navigate backward out of the tree.	Shift+Tab
Expand the entry	Right arrow or Enter (if collapsed).
Collapse the entry	Left arrow or Enter (if expanded).
Navigate up or down one entry.	Up arrow or down arrow
Navigate to the first entry in the tree.	Home
Navigate to the last visible entry in the tree.	End
Navigate vertically up or down one block.	PgUp or PgDn
Navigate to the left or right one block.	Ctrl+PgUp or Ctrl+PgDn
Select all entries.	Ctrl+A or Ctrl+Slash
Clear the selection.	Ctrl+\
Select a single entry.	Ctrl+Space bar
Select a range of entries.	Shift+Space bar
Extend the selection up or down one block.	Shift+PgUp or Shift+PgDn
Extend the selection to the top of the tree.	Shift+Home
Extend the selection to the bottom of the tree.	Shift+End

Using the Configuration Manager Profile Backward Compatibility Utility

For 5.10 Update 3 and later, the Configuration Manager Profile Backward Compatibility Utility is a standalone application installed with IBM Director that is used to migrate Deployment Wizard configuration profiles created in IBM Director versions 4.10, 4.20, 4.21, and 4.22 to Configuration Manager profiles which can be used in IBM Director 5.10.

Note: The Configuration Manager Profile Backward Compatibility Utility is automatically installed with IBM Director Server version 5.10.3.

Complete the following steps to run the Configuration Manager Profile Backward Compatibility Utility:

1. From a command prompt, change to the classes directory under the directory in which IBM Director Server is installed.
2. Type one of the following commands and press **Enter**:

Operating system	Command
Windows	`WizardToConfigMgr.bat`
AIX, i5/OS, Linux	`WizardToConfigMgr.sh`

The Configuration Manager Profile Backward Compatibility Utility finds all the existing Deployment Wizard profiles in the database and converts them to Configuration Manger profiles without user intervention. If Deployment Wizard XML files are found, they are converted to Configuration Manager XML files. The Configuration Manager XML files can be imported manually if desired.

As the Configuration Manager Profile Backward Compatibility Utility runs, it displays status messages, which are described in the following table:

Message	Description
Operation succeeded!	A configuration profile was successfully converted.
Output = Error: could not connect to CLI daemon.	IBM Director Server is not running, and configuration profiles will not be converted. Deployment Wizard XML files, if they are found, will be converted to Configuration Manager XML files.
Execution Error: The specified Configuration Manager profile already exists.	A Configuration Manager profile was found with the same name as a Deployment Wizard profile. The Deployment Wizard profile will not be converted. Deployment Wizard XML files, if they are found, will be converted to Configuration Manager XML files.
Password missing or invalid	The configuration data of for a component is not correct or missing. The Deployment Wizard profile will not be converted. Deployment Wizard XML files, if they are found, will be converted to Configuration Manager XML files.
abcwizard.dtd may be missing!	The Document Type Definition (DTD) schema file (abcwizard.dtd) to validate the tags is missing. This file must be present in the same directory as the `WizardToConfigMgr` batch or shell script file. If this file is missing, Deployment Wizard profiles and Deployment Wizard XML files will not be converted.
No Deployment Wizard profiles found	The utility could not locate any Deployment Wizard profiles to be converted. Deployment Wizard XML files, if they are found, will be converted to Configuration Manager XML files.

Enabling SNMP access and trap forwarding for VMware

IBM Director 5.10.3 supports SNMP access and trap forwarding on VMware ESX Server, and will inter-operate with the ucd-snmp versions that ship with VMware ESX Server version 2.5.2 and 3.0.

These instructions apply only to using IBM Director SNMP support on VMware ESX Server. SNMP configuration instructions for other Linux installations are provided in the *IBM Director Installation and Configuration Guide*.

Complete the following steps to enable SNMP access and trap forwarding for managed systems running VMware:

1. Download the net-snmp-5.2.1.tar.gz file from the Net-SNMP Web site at www.net-snmp.org/download.html.
2. Build and install the Net-SNMP libraries using the following steps.

   Notes:

   - This procedure does not perform a full installation of Net-SNMP, but installs only the Net-SNMP libraries, which are required for IBM Director Core Services SNMP functions.
   - Refer to the INSTALL and README files included in the net-snmp-5.2.1.tar.gz package for additional installation information.

   a. Untar the source files. Type the following command and press **Enter**.

      ```
      tar -xvzf net-snmp-5.2.1.tar.gz
      ```

   b. Change to the source directory. Type the following command and press **Enter**.

      ```
      cd net-snmp-5.2.1
      ```

   c. Build the Net-SNMP libraries with default options. Type the following commands (press **Enter** after each).

      ```
      ./configure --with-defaults
      make
      ```

   d. Install the Net-SNMP libraries only to /usr/local/lib. Type the following command and press **Enter**.

      ```
      make installlibs
      ```

3. To enable trap forwarding, edit the /etc/init.d/dacimlist file and uncomment the following two lines two lines in the SNMP End Consumer section.

   ```
   LD_LIBRARY_PATH=/usr/local/lib
   export LD_LIBRARY_PATH
   ```

   Note: The configuration changes will not take effect until you restart the cimlistener daemon in step 7 on page 49.

4. To enable SNMP access, edit the /etc/init.d/dasnmp file and uncomment the following two lines in the section regarding the location of the net-snmp libraries.

   ```
   LD_LIBRARY_PATH=/usr/local/lib
   export LD_LIBRARY_PATH
   ```

5. Configure the SNMP daemon that ships with VMware to support AgentX agents. For details, see the VMware documentation at www.vmware.com/support/pubs/esx_pubs.html.
6. Create the file /usr/local/share/snmp/snmpd.conf to specify trapsink and trapcommunity settings. You might have to create the directory. This file should contain only settings for trapcommunity and trapsink.

a. Specify a trap community value by adding a line containing the word `trapcommunity` followed by a space and the trapcommunity value, as in the following example.

```
trapcommunity public
```

b. Specify a trapsink value for each destination to which IBM Director will send SNMP traps. Add a line containing the word `trapsink` followed by a space and the trapsink value, as in the following example.

```
trapsink 192.168.1.1
```

7. Restart the cimlistener daemon by typing the following commands and pressing **Enter** after each:

```
/etc/init.d/dacimlist stop
/etc/init.d/dacimlist start
```

8. Restart the IBM Director AgentX subagent by typing the following commands and pressing **Enter** after each:

```
/etc/init.d/dasnmp stop
/etc/init.d/dasnmp start
```

Enabling SNMP access and trap forwarding for Red Hat Enterprise Linux versions 3 and 4

The OpenIPMI driver supported on Red Hat Enterprise Linux versions 3 and 4 has a dependency on the version of Net-SNMP that is included with those Linux distributions. IBM Director Core Services requires a different Net-SNMP version, 5.2.1. Installation of Net-SNMP 5.2.1 without removing the existing Net-SNMP version is required for IBM Director SNMP access and trap forwarding without compromising OpenIPMI services.

Complete the following steps to enable SNMP access and trap forwarding for managed systems running Red Hat Enterprise Linux versions 3 and 4:

1. Download the net-snmp-5.2.1.tar.gz file from the Net-SNMP Web site at www.net-snmp.org/download.html.
2. Build and install the Net-SNMP libraries using the following steps.

   Notes:

   - This procedure does not perform a full installation of Net-SNMP, but installs only the Net-SNMP libraries, which are required for IBM Director Core Services SNMP functions.
   - Refer to the INSTALL and README files included in the net-snmp-5.2.1.tar.gz package for additional installation information.

   a. Untar the source files. Type the following command and press **Enter**.

   ```
   tar -xvzf net-snmp-5.2.1.tar.gz
   ```

   b. Change to the source directory. Type the following command and press **Enter**.

   ```
   cd net-snmp-5.2.1
   ```

   c. Build the Net-SNMP libraries with default options. Type the following commands (press **Enter** after each).

   ```
   ./configure --with-defaults
   make
   ```

   d. Install the Net-SNMP libraries only to /usr/local/lib. Type the following command and press **Enter**.

   ```
   make installlibs
   ```

3. To enable trap forwarding, edit the /etc/init.d/dacimlist file and uncomment the following two lines two lines in the SNMP End Consumer section.

   ```
   LD_LIBRARY_PATH=/usr/local/lib
   export LD_LIBRARY_PATH
   ```

   Note: The configuration changes will not take effect until you restart the cimlistener daemon in step 7.

4. To enable SNMP access, edit the /etc/init.d/dasnmp file and uncomment the following two lines in the section regarding the location of the net-snmp libraries.

   ```
   LD_LIBRARY_PATH=/usr/local/lib
   export LD_LIBRARY_PATH
   ```

5. Configure the SNMP daemon that ships with Red Hat Enterprise Linux to support AgentX agents. For details, see the documentation on the Net-SNMP Web Site.
6. Create the file /usr/local/share/snmp/snmpd.conf to specify trapsink and trapcommunity settings. You might have to create the directory. This file should contain only settings for trapcommunity and trapsink.
   a. Specify a trap community value by adding a line containing the word `trapcommunity` followed by a space and the trapcommunity value, as in the following example.

      ```
      trapcommunity public
      ```

   b. Specify a trapsink value for each destination to which IBM Director will send SNMP traps. Add a line containing the word `trapsink` followed by a space and the trapsink value, as in the following example.

      ```
      trapsink 192.168.1.1
      ```

7. Restart the cimlistener daemon by typing the following commands and pressing **Enter** after each:

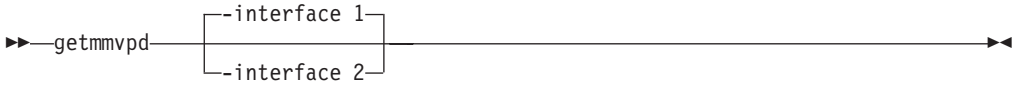
   ```
   /etc/init.d/dacimlist stop
   /etc/init.d/dacimlist start
   ```

8. Restart the IBM Director AgentX subagent by typing the following commands and pressing **Enter** after each:

   ```
   /etc/init.d/dasnmp stop
   /etc/init.d/dasnmp start
   ```

Management Processor Command-Line Interface getmmvpd command

The Management Processor Command-Line Interface **getmmvpd** command retrieves the vital product data (VPD) for both the primary and redundant management modules.



Options and operands

-interface 1
Retrieves the VPD for the primary management module. This is the default behavior if no option is specified with the **getmmvpd** command.

-interface 2
Retrieves the VPD for the redundant management module.

Examples

Retrieve the VPD for the primary management module

```
getmmvpd -interface 1
```

Retrieve the VPD for the redundant management module

```
getmmvpd -interface 2
```

Create Custom Package window: i5/OS page

This topic describes the Create Custom Package window: i5/OS page in IBM Director.

Fields

Package can be distributed to i5/OS

When selected, this check box indicates that this package can be distributed to an i5/OS system, and the other fields on this page become active.

Destination Directory

Specifies the fully qualified path for where you want to put the files on the target systems. If you selected one or more subdirectories to distribute, the directory structures are appended to this path.

Note: If the path contains a space, then the complete path should be enclosed within quotation marks (″ ″).

Execute Pre-Distribution

Program or programs that are to be started before this distribution is run.

Advanced

User ID

The user ID to use for this distribution.

Password

The password associated with the user ID.

Confirm Password

Reentry of the password to confirm accuracy.

Programs

This pane provides for the selection of programs to be run before the distribution.

The use of system **Environment variables** (WRKENVVAR) is supported when entering the path for the program that you want to run. The correct syntax for using a system environment variable is *command* $(*env_var*). When running an i5 platform command, such as **WRKACTJOB** or **CRTLIB**, select **Native** mode. When running a QSHELL command, such as **ls** or **env**, you must fully qualify the command with /usr/bin and select **QSHELL** mode.

Note: If the command that you are using deals with an integrated file system (IFS) structure (*/directory1/directory2*), enclose this value in single quotation marks (’ ’) in the environment variable.

Examples of creating an environment variable

Library name

```
ADDENVVAR ENVVAR (libEnvvar) VALUE
('Library') LEVEL(*SYS)
```

Directory structure for Native commands

```
ADDENVVAR ENVVAR (dirEnvvar) VALUE
('"/directory name/"') LEVEL(*SYS)
```

Directory structure for QShell commands

```
ADDENVVAR ENVAR (qshEnvvar) VALUE
('/home_directory/directory2')
LEVEL(*SYS)
```

Examples of accessing an environment variable from Create Custom Package

Create a library

```
CTRLIB $(libEnvvar)
```

Native command with a directory structure

```
CHGCURDIR $(dirEnvvar)
```

QShell command

```
/usr/bin/ls $(qshEnvvar)
```

Path The path to the program.

Note: If the path contains a space then the complete path should be enclosed within quotation marks (" ").

Arguments
Parameters and settings to be used by the executing program.

QShell
Commands to execute in the i5/OS shell.

Add... Clicking **Add** displays a dialog for entering a **Path** and **Arguments**. Click **OK** to save the entered data in the Pre-Distribution Advanced settings pane, or **Cancel** to discard the entered data.

Remove
Clicking **Remove** erases the highlighted item in the Path/Arguments pane.

Up and Down arrows
These arrows are used to alter the sequence of items in the Path/Arguments pane. Select an item by clicking, then move the item up with the up (red) arrow, or down with the down (blue) arrow until the desired sequence is obtained.

Native or QShell
These radio buttons allow you to select between running in Native mode or QShell.

File exists on target system
Select this check box to indicate that the file that is to be run exists on the target system.

Execute Post-Distribution

Program or programs that are to be executed after this distribution is run. The use of system **Environment variables** are supported in the entering of the path. Correct syntax for using a system environment variable is `CRTLIB $(env_var)` If you use a system environment variable, you must select to run in **Native** mode.

Advanced

User ID

The user ID to use for this distribution.

Password

The password associated with the user ID.

Confirm Password

Reentry of the password to confirm accuracy.

Programs

This pane provides for the selection of programs to be run before the distribution.

The use of system **Environment variables** (WRKENVVAR) is supported when entering the path for the program that you want to run. The correct syntax for using a system environment variable is *command* `$(`*env_var*`)`. When running an i5 platform command, such as **WRKACTJOB** or **CRTLIB**, select **Native** mode. When running a QSHELL command, such as **ls** or **env**, you must fully qualify the command with `/usr/bin` and select **QSHELL** mode.

Note: If the command that you are using deals with an integrated file system (IFS) structure (*/directory1/directory2*), enclose this value in single quotation marks (' ') in the environment variable.

Path The path to the program.

Note: If the path contains a space then the complete path should be enclosed within quotation marks (" ").

Arguments

Parameters and settings to be used by the executing program.

QShell

Commands to execute in the i5/OS shell.

Add... Clicking **Add** displays a dialog for entering a **Path** and **Arguments**. Click **OK** to save the entered data in the Pre-Distribution Advanced settings pane, or **Cancel** to discard the entered data.

Remove

Clicking **Remove** erases the highlighted item in the Path/Arguments pane.

Up and Down arrows

These arrows are used to alter the sequence of items in the Path/Arguments pane. Select an item by clicking, then

move the item up with the up (red) arrow, or down with the down (blue) arrow until the desired sequence is obtained.

Native or QShell
These radio buttons allow you to select between running in Native mode or QShell.

File Permissions
Displays the File Permissions pane where you can set the file and directory permissions.

---

twgrestore

This topic provides information about the **twgrestore** command. This command restores the IBM Director persistent data.

Parameters

directory
Specifies the directory from which the persistent data is restored. The data that you restore must be from the same version of IBM Director Server or IBM Director Agent that is installed.

-t Specifies that neither the system unique identifier or system name are restored.

Note: This command must be run locally. Before you run this command, stop all IBM Director processes that are running on the system.

Examples

Restore all IBM Director persistent data
The following command restores all IBM Director persistent data:

```
twgrestore /opt/IBM/director.save.1
```

Exclude the unique system identifier and name
The following command restores all IBM Director persistent data except the unique system identifier and name:

```
twgrestore /opt/IBM/director.save.1 -t
```

Return codes

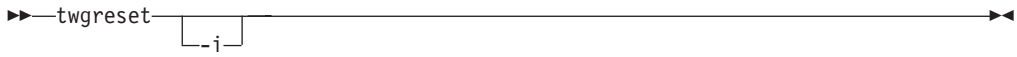
The **twgrestore** command returns the following codes.

Code	Meaning
0	The persistent data was successfully restored.
1	An invalid parameter was issued.
2	An IBM Director service is still running.
3	The tar command failed.
15	An inaccessible directory was specified.

twgreset

The **twgreset** command returns IBM Director Server to its installation default values and clears all tables in the database.

CAUTION:
twgreset changes the configuration of IBM Director Server and cannot be un-done except by manually re-configuring IBM Director Server.



Parameters

-i Specifies that **twgreset** will also erase the system's unique identification files.

Example

Reset the IBM Director Server configuration to the installation default values

The following command resets the IBM Director configuration and erases the system's unique identification files:

```
twgreset -i
```

Appendix A. Related information

Besides this documentation, there is additional information related to IBM Director.

IBM Director resources on the World Wide Web

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

IBM Director information center
publib.boulder.ibm.com/infocenter/eserver/v1r2/topic/diricinfo/fqm0_main.html

Updated periodically, the IBM Director information center contains the most recent documentation available on a wide range of topics.

IBM Director Web site on ibm.com®
www.ibm.com/servers/eserver/xseries/systems_management/ibm_director/

The IBM Director Web site on ibm.com has links to downloads and documentation for all currently supported versions of IBM Director. Information on this site includes:

- Downloads and documentation for the following IBM Director releases:
  - IBM Director 5.10 Update 3 (5.10.3)
  - IBM Director 5.10 Update 2 (5.10.2)
  - IBM Director 5.10 Update 2 (5.10.2) UIMs
  - IBM Director 5.10 Update 1 (5.10.1)
  - IBM Director 5.10 Update 1 (5.10.1) UIMs
  - IBM Director 5.10
  - IBM Director 5.10 UIMs
  - IBM Director 4.22
  - IBM Director 4.22 UIMs
  - IBM Director 4.21
  - IBM Director 4.20
- *IBM Director Hardware and Software Support Guide* document, which lists supported IBM systems and all supported operating systems. It is updated every 6 to 8 weeks.
- Printable documentation for IBM Director available in Portable Document Format (PDF) in several languages

IBM Director Software Developers Kit information center
publib.boulder.ibm.com/infocenter/dirinfo/toolkit/index.jsp

The IBM Director Software Developers Kit (SDK) information center provides information about the IBM Director SDK – a set of tools and documentation to help extend the capabilities of IBM Director by using the APIs and CLIs, creating tasks, and launching tools from the IBM Director user interface.

IBM Systems Software information center
www.ibm.com/servers/library/infocenter/

This Web page provides information about IBM Virtualization Engine, IBM Director, External Application Launch Wizard, Virtual System Manager, and other topics.

IBM ServerProven® page

www.ibm.com/servers/eserver/serverproven/compat/us/

This Web page provides information about IBM System x, BladeCenter, and IntelliStation hardware compatibility with IBM Director.

IBM Servers

www.ibm.com/servers/

This Web page on ibm.com links to information, downloads, and IBM Director extensions such as Remote Deployment Manager, Capacity Manager, Systems Availability and Software Distribution (Premium Edition) for the following IBM products:

- IBM BladeCenter
- IBM System i™
- IBM System p
- IBM System x
- IBM System z™

IBM Virtualization Engine systems services fixes

www14.software.ibm.com/webapp/set2/sas/f/VirtualizationEngine/home2.html

This Web page provides information about the required fixes for the Virtualization Engine system services. The fixes include operating system fixes that are required for each system service as well as application-level fixes that are required for each system service to function correctly.

IBM forums

www.ibm.com/developerworks/forums/dw_esforums.jsp

This Web page on ibm.com links to several forums, available as Web pages or using rich site summary (RSS) feeds, in which users can discuss technology issues relating to IBM servers.

Three of these forums are of particular interest to IBM Director users:

System x IBM Director forum

www.ibm.com/developerworks/forums/dw_forum.jsp?forum=759&cat=53

A forum for discussing any IBM Director topics. This Web page includes a link for obtaining the forum using an RSS feed.

System x Server forum

www.ibm.com/developerworks/forums/dw_forum.jsp?forum=740&cat=53

A forum for discussing System x server topics, including questions related to drivers, firmware, operating systems, clustering, and storage. This Web page includes a link for obtaining the forum using an RSS feed.

IBM Director SDK forum

www.ibm.com/developerworks/forums/dw_forum.jsp?forum=849&cat=53

A forum for discussing how to use the IBM Director SDK to extend the functionality of IBM Director to meet your specific needs. This Web page includes a link for obtaining the forum using an RSS feed.

IBM Redbooks™ publications

www.ibm.com/redbooks/

You can download the following documents from the IBM Redbooks Web page. You can also search this Web page for documents that focus on specific IBM hardware; such documents often contain systems-management material.

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

- *Creating a Report of the Tables in the IBM Director 4.1 Database* (TIPS0185)
- *IBM Director Security* (REDP-0417)
- *IBM BladeCenter Systems Management with IBM Director V4.1 and Remote Deployment Manager V4.1* (REDP-3776)
- *Implementing IBM Director 5.10* (SG24-6188)
- *Integrating IBM Director with Enterprise Management Solutions* (SG24-5388)
- *Managing IBM TotalStorage® NAS with IBM Director* (SG24-6830)
- *Monitoring Redundant Uninterruptible Power Supplies Using IBM Director* (REDP-3827)

Remote Supervisor Adapter

Remote Supervisor Adapter overview

www.ibm.com/support/docview.wss?uid=psg1MIGR-4UKSML

This Web page includes links to the *Remote Supervisor Adapter User's Guide* and the *Remote Supervisor Adapter Installation Guide*.

Remote Supervisor Adapter II overview

www.ibm.com/support/docview.wss?uid=psg1MIGR-50116

This Web page includes information about the Remote Supervisor Adapter II.

Other documents

For planning purposes, the following documents might be of interest:

- *Planning and Installation Guide - IBM BladeCenter (Type 8677)*
- *IBM Management Processor Command-Line Interface (MPCLI) User's Guide version 5.10*

Appendix B. Contacting customer support

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 section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your System x 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 are included with your system. You can find information about diagnostic tools for BladeCenter and System x systems in the *Problem Determination Service Guide* on the IBM *System x Documentation* CD. You can find information about diagnostic tools for IntelliStation in the IntelliStation *Hardware Maintenance Manual* at the IBM Support Web site.
- Go to the IBM Support Web site at www.ibm.com/support/us to check for technical information, hints, tips, and new device drivers or to submit a request for information.

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 BladeCenter, System x, 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 BladeCenter, System x, or IntelliStation system and preinstalled software, if any, is available in the documentation that is included 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 www.ibm.com/support/us and follow the instructions. Also, you can order publications through the IBM Publications Ordering System at www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi.

Getting help and information from the World Wide Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM BladeCenter, System x, and IntelliStation products, services, and support.

Use the following Web addresses for the applicable product information:

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Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems with IBM System x servers, IntelliStation workstations, and other products.

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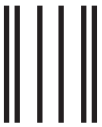

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