Hardware and Software Inventory

VII

The following sections provide information on Novell® ZENworks® Linux Management - Dell Edition hardware and software inventory features:

Inventory Overview

<div style="text-align: right; font-size: 3em;">28</div>

The Server Inventory component of Novell® ZENworks® Linux Management - Dell Edition allows you to collect hardware and software inventory information from local and remote servers or workstations of your enterprise. This inventory information is scanned and stored in a database that can be accessed by the ZENworks administrator.

The Inventory scanning capability of ZENworks Linux Management - Dell Edition performs the following tasks:

- Collects hardware and software inventory information from workstations and servers managed within your enterprise.
- Stores the inventory information in a database that can be accessed by the ZENworks administrator.
- Rolls up the hardware inventory data from the database to the ZENworks 7 Server Management database or the ZENworks 7 Desktop Management Inventory database so you can view the inventory data at the enterprise level.

Reviewing the Device Inventory

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From the ZENworks® Control Center you can view the complete hardware and software inventory of servers and workstations. This section discusses the following topics:

29.1 Accessing the Device Inventory

To view a device's hardware and software inventory:

1 In the ZENworks Control Center, click the *Devices* tab.

2 Navigate the folder structure to locate the desired device, then click the device to show its details.

3 Click the *Inventory* tab.

Refer to the following sections for descriptions of the inventory information:

29.2 Reviewing Device Inventory Summaries

The Inventory page provides the following inventory information about each device:

Table 29-1 *Inventory Information for Devices*

Scan Data Item	Description
Last Scan Date	The last time the selected managed device was scanned for inventory information
Alias	The alternative name for the managed device
Host Name	The network name that should resolve to the managed device's IP address
Mac Address	The hardware address of the managed device's network interface card
IP Address	The unique address of the managed device on the TCP/IP network
Subnet Mask	The network segment the managed device is on

Scan Data Item	Description
Location	The server location

29.3 Reviewing Hardware (General)

The Inventory page provides the following general information about the device's hardware. For detailed hardware information, see .

Table 29-2 *General Information about Device Hardware*

Scan Data Item	Description
Asset Tag	The asset identification number assigned to the machine by the company
Serial Number	A unique number assigned to the machine by the manufacturer
Vendor	The product supplier, such as Dell or Compaq*
Operating System	The operating system currently installed on the machine
Code Page	The selected character set of the machine
Visible Memory	Total physical memory available to the operating system
Virtual Memory	Amount of virtual memory assigned

29.4 Reviewing Software (General)

The Inventory page provides the following information about the device's software. Click *Bundles* (Details) or *Packages* (Details) or *Dell Applications* (Details) for detailed information about each.

Table 29-3 *General Information about Device Software*

Scan Data Item	Description
Bundles	Software bundled with the server
Packages	Additional software deployed on the server
Dell Applications	Dell applications installed on the selected managed device

29.5 Reviewing Hardware Details

The following table provides common device information that might be useful for troubleshooting. For detailed information about each device, click the hardware component name in the interface.

Table 29-4 *Common Device Information*

Inventory Item	Attributes	Description
Batteries	Name	Battery name.

Inventory Item	Attributes	Description
	Manufacturer	Battery manufacturer name.
	Serial Number	Battery serial number.
	Chemistry	The battery chemistry, for example, lithium-ion or nickel metal hydride.
BIOS	Name	BIOS name.
	Manufacturer	BIOS manufacturer name.
	Version	The version or revision level of the BIOS.
Busses	Name	Bus type, such as PCI, ISA, and others.
	Description	Bus description.
CD ROMs	Name	CD-ROM name.
	Manufacturer	CD-ROM manufacturer.
Chassis	Name	Chassis name.
	Manufacturer	Chassis manufacturer.
	Asset Tag	A code for property and product identification.
	Serial Number	Serial number assigned by the manufacturer.
Dell Device	Name	Dell hardware name.
	Version	Dell version.
	Component ID	Dell Component ID.
	Dell PCI Information	Click for additional details.
	Dell Applications	Click for a list of all applications associated with this Dell device.
Desktop Monitors	Name	Monitor name. When a monitor is connected through a KVM (keyboard, video, mouse) switch, the system might pass two instances of the desktop monitor. This is because of manufacturing limitations for the device.
	Manufacturer	Monitor manufacturer.
	Model	Identifying information of the monitor.
	Size	Monitor screen size.
Floppy Disks	Name	Floppy disk name.

Inventory Item	Attributes	Description
	Capacity	Floppy disk capacity.
	Description	Floppy disk description.
Keyboards	Name	Keyboard brand name and model.
	Description	Description of the keyboard, such as interface, ergonomics, system requirements, and so on.
Logical Disks	Volume Label	Name of the logical disk volume.
	Filesystem Type	Type of file system, such as File Allocation Table (FAT).
	Filesystem Size	Drive's actual size in MB.
	Available Space	Available space on the logical disk.
Modems	Name	Modem name.
	Manufacturer	Modem manufacturer.
Motherboards	Name	Motherboard name.
	Manufacturer	Motherboard manufacturer name.
	Version	The version of the motherboard.
	Slots	The number of expansion slots in the motherboard for adding more memory, graphic capabilities, and support for special devices.
Network Adapters	Name	Network adapter name.
	Manufacturer	Network adapter manufacturer.
	Maximum Speed	Rate at which the information is transferred over the LAN.
	Mac Address	Short for Media Access Control address, a hardware address that uniquely identifies each node of a network.
Parallel Ports	Name	Port name.
	Description	Port description.
Physical Disks	Name	Disk name.
	Manufacturer	Disk manufacturer.
	Capacity	Capacity of the disk.
	Free Space	Remaining free space on the disk.

Inventory Item	Attributes	Description
Pointing Devices	Name	Pointing device name.
		When a pointing device is connected through a KVM (keyboard, video, mouse) switch, the system might not pass the correct name and configuration of the device, because of manufacturing limitations for the device.
	Buttons	Number of buttons.
	Description	Description of the pointing device.
Power Supplies	Name	Name of the power supply.
	Description	A description of the power supply.
Processors	Name	Processor name.
	Family	The name of the class or group to which the processor belongs, such as Pentium II, Pentium III, and others.
	Speed	The speed at which a microprocessor executes instructions. Every computer contains an internal clock that regulates the rate at which instructions are executed and that synchronizes all the various computer components. Clock speeds are expressed in megahertz (MHz) or gigahertz (GHz).
Serial Ports	Name	Serial port name.
	Description	Serial port description.
Sound Adapters	Name	Sound adapter name.
	Description	A description of the sound adapter.
Video Adapters	Name	Video adapter name.
	Manufacturer	Manufacturer name.

29.6 Refreshing Device Inventory

Device inventory is broken down into three areas:

- Software
- Hardware
- System (disk size, usage, and operating system information)

Inventory data is refreshed in three ways:

1. At client (zmd) start up.

   - The device sends hardware and system information to the server where the device is registered.

   - A new software hash is calculated to check if there has been a change, for example, if a new package or bundle has been installed. If the hash has changed, the device sends the new software inventory to the server where the device is registered.

2. When new software in installed on a client, that software inventory information will be sent to the server immediately.

3. At a scheduled refresh, which refreshes data as described in the client start up above.

Device inventory is refreshed at start up and then every twenty-four hours by default. This schedule cannot be directly changed on the server side, but it can be changed on the client side using `rug refresh-interval-hardware` *time_in_second*s, `rug refresh-interval-software` *time_in_seconds*, and `rug refresh-interval-system` *time_in_seconds*. If you want to change the inventory refresh schedule for multiple managed devices, you can use a Remote Execute policy. For more information, see Section 15.6, "Remote Execute Policy," on page 138.

IMPORTANT: The Device Refresh Schedule setting does not affect refresh inventory information.

Rolling Up Hardware Inventory

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You can roll up the hardware inventory data from the Novell® ZENworks® Linux Management database to the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory database to view the inventory data at the enterprise level.

Review the following sections:

- Section 30.1, "Preparing to Roll Up Inventory," on page 415
- Section 30.2, "Configuring the Inventory Roll-Up Policy," on page 415
- Section 30.3, "Understanding the Roll-Up Process," on page 416
- Section 30.4, "Understanding the Components Involved in the Inventory Roll-Up," on page 417
- Section 30.5, "Viewing the Inventory Data Stored in the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory Database," on page 418

30.1 Preparing to Roll Up Inventory

Ensure that the following prerequisites are met:

❑ ZENworks 7 Linux Management has been successfully installed.

❑ The hardware inventory data has been stored in the ZENworks Linux Management database.

❑ The ZEN Loader service is up and running on the ZENworks Linux Management server.

❑ The Inventory server and Inventory database components of ZENworks 7 Server Management or ZENworks 7 Desktop Management have been successfully installed and set up.

❑ One of the following roles for the ZENworks 7 Inventory server has been configured:

  - Root Server
  - Root Server with Workstations
  - Intermediate Server with Database
  - Intermediate Server with Database and Workstations

❑ The Inventory service is up and running on the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory server.

30.2 Configuring the Inventory Roll-Up Policy

1 In the ZENworks Control Center, click *Configuration*.

2 In the *Management Zone Settings* pane, click the *Device Inventory* category.

Management Zone Settings		⌃
Category	**Description**	**Is Configured**
System Variables	Configure system variables.	No
Device Refresh Schedule	Configure the refresh interval for policies, settings, and inventory scanning	Yes
Device Inventory	Configure inventory settings.	No
Local Device Logging	Enable and configure local logging of warnings and errors encountered by managed devices.	Yes
Preboot Services	Configure Preboot Services.	Yes
Remote Management	Enable and configure remote management.	Yes
Centralized Message Logging	Configuration of settings related to logging performed by the central server.	Yes
Content Replication Schedule	Configuration of the refresh schedule used for replicating content between ZENworks servers.	No
Platforms	Configuration of the available target platforms.	Yes

3 In the *Inventory Roll-Up Settings* pane, do the following:

3a Specify the DNS name or the IP address of the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory server to which you want to roll up the hardware inventory data.

3b Specify the time interval between roll-ups. By default, the time interval is 168 hrs.

Inventory Rollup Settings ⌃

Configure the following settings to roll up the hardware inventory information to a ZENworks 7 or later Server Management or Desktop Management Inventory Server:

DNS Name or IP address of the destination server: [   ]

Time interval between rollups (in hours): [   ]

OK   Apply   Reset   Cancel

4 Click *Apply*, then click *OK*.

30.3 Understanding the Roll-Up Process

ZENworks uses the following process to collect inventory and roll it up to the Inventory server

1. The Sender converts the hardware inventory stored in the ZENworks 7 Linux Management database into `.str` files, and places the files into the `/var/opt/novell/zenworks/inventory/entmerge` directory.

2. The Sender moves the `.str` files from the `entmergedir` directory to the `entpushdir` directory, and compresses the files as a `.zip` file.

3. The Sender sends the `.zip` file from the `entpushdir` directory to the Receiver on the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory server.

4. The Receiver places the `.zip` files in the `/entpushdir/zipdir` directory.

5. The Receiver copies the `.zip` files to the `/entpushdir` directory and deletes the `.zip` files from the `entpushdir\zipdir` directory.

6. The Receiver copies the `.zip` files to the database directory (`dbdir`) if a database is attached to the Inventory server.

7. The Sender-Receiver logs the status in Novell eDirectory™.

30.4 Understanding the Components Involved in the Inventory Roll-Up

The Sender on the Inventory servers transfer the scan files from the ZENworks 7 Linux Management Inventory server to the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory server. The following sections contain more information:

30.4.1 Understanding the Sender

The Sender is a Java component that runs on any ZENworks 7 Linux Management server. The Sender is a service loaded by the ZEN Loader.

The flow of information from the Sender in the roll-up of inventory information is as follows:

1. The ZEN Loader starts the Sender on the Inventory server. At the time specified in the Roll-Up Schedule, the Sender moves the scan data files (`.str`) from the enterprise merge directory (`entmergedir`) to the enterprise push directory (`entpushdir`).

   The Sender compresses these `.str` files in the `\entpushdir` directory of the Inventory server as a `.zip` file and then deletes the `.str` files. This `.zip` file is again compressed with the `.prp` file into a `.zip` file. The `.prp` file is an internal file containing information about the `.zip` file.

2. Based on the Discard Scan Data Time in the Inventory Service object properties of the Receiver, the Sender deletes the compressed `.zip` files in the `\entpushdir` directory that were created earlier than the specified discard scan data time. This removes unwanted scan information being sent in the roll-up.

3. The Sender sends the compressed `.zip` files to the Receiver, with the oldest compressed files sent first.

4. After transferring the `.zip` file, the Sender deletes the compressed files in the `\entpushdir` directory.

If the Sender is unable to connect to the Receiver, the Sender retries to connect after 10 seconds. The time interval increases exponentially by a factor of 2. After 14 retries, the Sender stops trying to connect to the Receiver. The Sender retries for approximately 23 hours before it discontinues trying. The Sender does not process any other information while it is establishing the connection.

30.4.2 Understanding the Compressed Scan Data File

The Sender compresses the scan data files (`.str`) into a `.zip` file. This `.zip` file is again compressed with the `.prp` file into a `.zip` file. The `.zip` file (containing the `.zip` files and `.prp`) is named using the following naming conventions:

scheduledtime_inventoryservername_treename_storedstatus.zip

where *scheduledtime* refers to the date and time when the `.zip` file is created, *inventoryservername* refers to the Inventory server on which the `.zip` file was compressed, *treename* refers to the unique tree name in which the `.zip` file is currently located, *storedstatus* refers to the storage status of the `.zip` file, and *zip* is the file extension for the compressed files. The *storedstatus* displays 0, 1, or 2. 0 indicates the `.zip` file has not yet been stored. 1 indicates the `.zip` file will be stored for the first time in the Inventory server. 2 indicates the `.zip` file has already been stored once.

The `.zip` filename changes depending on if the database is attached to the Inventory server.

The `.zip` file contains the `.zip` files and a property file. The property file is named using the following conventions:

scheduledtime_inventoryservername.prp

The property file contains the scheduled time, Inventory server name, and signature. The signature helps to authenticate the `.zip` file.

Each `.zip` file can contain a maximum of 50 `.str` files.

30.5 Viewing the Inventory Data Stored in the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory Database

You can view the inventory data stored in the ZENworks 7 Server Management or ZENworks 7 Desktop Management Inventory database using the following Inventory ConsoleOne® utilities:

- Inventory Query
- Inventory Reports

For More Information On How To Invoke And Work With These Utilities, See The Workstation Inventory Section In The Novell Zenworks 7 Desktop Management Administration Guide (http://www.novell.com/documentation/zenworks7/zen7_zdm7.html)Or The Server Inventory Section In The Novell Zenworks 7 Server Management Administration Guide (http://www.novell.com/documentation/zenworks7/zen7_zsm7.html).