

Novell® ZENworks® 7.2 Linux Management

March 30, 2007

NOVELL ZENWORKS 7.2 LINUX MANAGEMENT

Novell® ZENworks® Linux Management makes it easy to embrace and extend Linux* within your existing environment. It is the only solution that uses policy-driven automation to deploy, manage, and maintain Linux resources. These automated and intelligent policies allow you to provide centralized control across the lifecycle of Linux systems for desktop lockdown, imaging, remote management, inventory management, and software management. The result is a comprehensive Linux management solution that eliminates IT effort by dramatically reducing the required overhead needed to manage Linux systems.

PURPOSE OF THE SCENARIOS

The purpose of these scenarios is to familiarize you with some of the new features included in ZENworks 7.2 Linux Management (Breakout).

With the release of ZENworks 7.2 Linux Management, Novell engineering has compiled scenarios that represent a number of the new features and functions of the product. These scenarios are used by our test team and are now being shared outside of the internal teams to better facilitate testing by users. This information also helps to provide an overview of many of the features and also can educate users on the new capabilities of the product.

ASSUMPTIONS

We assume that you have followed:

- The instructions in [Installing the ZENworks Primary Server](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
- The instructions for [Setting Up Managed Devices](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).

ZENWORKS 7.2 LINUX MANAGEMENT SCENARIOS

Click any of the following headings to begin reviewing any of the included scenarios:

Installation Scenarios

1. [Installing the ZENworks Agent on a Dell PowerEdge Server](#)

Policy Management Scenarios

2. [Configuring the SUSE Linux Enterprise Desktop](#)

Package and Content Management Scenarios

3. [Using the Push Now Option to Install a Bundle Immediately After Creation](#)
4. [Scheduling the Bundle to Deploy and Install Now \(From the Device Object's Edit Effective Bundles List\)](#)
5. [Scheduling the Bundle to Deploy and Install Now \(From the Bundle Object's Edit Assignments List\)](#)
6. [Installing a Bundle with the Persistent Bundle Option](#)
7. [Viewing the Update Icon Indicating that Software Updates are Available](#)
8. [Locking Packages on a Managed Device](#)
9. [Locking Bundles on a Managed Device](#)
10. [Distributing Files to a Managed Device using a File Bundle](#)
11. [Installing Bundles using the ZENworks Linux Management Software Installer](#)
12. [Removing Packages using the ZENworks Linux Management Software Remover](#)
13. [Updating Packages using the ZENworks Linux Management Software Updater](#)
14. [Mirroring from a YUM Server](#)

Preboot Bundle Scenarios

15. [Creating a Dell Configuration Bundle](#)

ZENworks Management Daemon (zmd) Setting Scenarios

16. [Setting zmd Settings at the Folder or Zone Level \(Inheritance\)](#)
17. [Overriding zmd Settings at the Device Level \(Overriding Inheritance\)](#)
18. [Viewing zmd Setting Changes after an Inventory Scan](#)

1: INSTALLING THE ZENWORKS AGENT ON A DELL POWEREDGE SERVER

Objective:

Install the ZENworks Agent on a Dell* PowerEdge* server and obtain Dell Update Packages (DUPs).

Steps:

1. Install the ZENworks 7.2 Linux Management server components. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. Install the ZENworks Agent on a Dell PowerEdge server and register it in the Management Zone. For detailed information, see [Setting Up Managed Devices](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
3. On the ZENworks server, download Dell Update packages by using the ZENworks Linux Management Mirror utility. For detailed information, see [Mirroring Software](#) in the [ZENworks 7.2 Linux Management Administration Guide](#). Ensure that you follow the instructions in the Enabling Dell PowerEdge Support section.
4. In the ZENworks Control Center, perform the following steps:
 - a. Ensure that the Dell Update Package bundles are created. By default, the bundles are created and updated in the `zmmirror` folder.
 - b. Assign the bundle to the Dell PowerEdge server. For detailed information, see [Assigning Dell Update Package Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
 - c. Click the *Devices* tab, select the Dell PowerEdge server, click *Actions*, then click *Refresh*.

The Dell PowerEdge server reboots, depending on the Dell Packages installed.

Expected Results:

On the Dell PowerEdge server, execute the `rug bl` command. This lists the DUP bundles available on the server. Review the list.

2: CONFIGURING THE SUSE LINUX ENTERPRISE DESKTOP

Objective:

Configure the SUSE® Linux Enterprise Desktop by using the SUSE Linux Enterprise Desktop policy.

Steps:

1. Install the ZENworks 7.2 Linux Management server components. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. Install the ZENworks Agent on a SUSE Linux Enterprise Desktop 10 (SLES 10) device and register it in the Management Zone. For detailed information, see [Setting Up Managed Devices](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
3. In ZENworks Control Center, create a SUSE Linux Enterprise Desktop policy. For more information, see [SUSE Linux Enterprise Desktop Policy](#) in the [ZENworks 7.2 Linux Management Administration Guide](#). In the SUSE Linux Enterprise Desktop Main menu Settings page, select the following options:
 - *Remove Search from Main Menu*
 - *Remove Recent Documents from Main Menu File Area*
 - *Favorite Applications Configuration > Configure Favorite Applications*, and delete a few applications from the list.
 - *Remove Application Browser from Main Menu*
 - *System Area Configuration > Configure System Area* and move a few items to the *Excluded Items* list.
4. Assign the policy to a SUSE Linux Enterprise Desktop 10 device. For more information, see [Assigning Policies](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
5. On the Policy Schedule page, set the schedule to *Event* and ensure that the *User Login* option is selected.
6. Log in to the managed device.

Expected Results:

The SUSE Linux Enterprise desktop is customized according to the settings configured in the SUSE Linux Enterprise Desktop policy.

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3: USING THE PUSH NOW OPTION TO INSTALL A BUNDLE IMMEDIATELY AFTER CREATION

Objective:

Verify that a bundle gets deployed and installed immediately at the completion of the Create New Bundle Wizard.

Steps:

1. Ensure that you have installed the ZENworks 7.2 Linux Management server components and the ZENworks Agent. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. On the managed device, ensure that the following zmd preferences are set with the values mentioned:
 - bind-ip must be set to either an empty string or to a valid IP address of the managed device
 - remote-enabled must be set to True

For detailed information on how to set the zmd preferences, see the [ZENworks 7.2 Linux Management Administration Guide](#).

3. In the ZENworks Control Center, create a bundle and assign it to a managed device. On the Bundle Options page, click the *Deploy and install immediately (when this wizard completes)* scheduling option. For detailed information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#)

Expected Results:

After the completion of the Create New Bundle Wizard, bundles that have been scheduled to deploy and install immediately at the completion of the wizard are deployed and installed on the managed device. Verify that by going to the assigned managed device and executing a `rug bl` command. This lists the deployed and installed the bundle.

4. SCHEDULING THE BUNDLE TO DEPLOY AND INSTALL NOW (FROM THE DEVICE OBJECT'S EFFECTIVE BUNDLES LIST)

Objective:

Verify that a bundle gets deployed and installed immediately using a device's Edit Effective Bundles *Actions* menu.

Steps:

1. Create a RPM bundle. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. On the Bundle Options page of the wizard, select a deployment and installation schedule for the bundle to get installed at a time and date in the future.
3. Complete the Create New Bundle Wizard.
4. Go to the managed device and run `rug sch` and notice that the bundle is scheduled to be installed sometime in the future.
5. Launch the ZENworks Control Center, click the *Devices* tab, then select the assigned device for the effective bundle.
6. From the Effective Bundles list, click the *Advanced* tab.
7. Check the effective bundle that you would like to deploy and install now.
8. Click *Actions*, then select *Deploy and Install Now*.

Expected Results:

After pressing *Deploy and Install Now*, the bundle is immediately installed to the managed device. Verify that the bundle is installed by going to the assigned managed device and executing a `rug bl` command. This lists the deployed and installed bundle.

5: SCHEDULING THE BUNDLE TO DEPLOY AND INSTALL NOW (FROM THE BUNDLE OBJECT'S EDIT ASSIGNMENTS LIST)

Objective:

Verify that a bundle gets deployed and installed immediately using bundle object's Edit Assignments, *Actions* menu.

Steps:

1. Create a RPM bundle. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. On the Bundle Options page, select a deployment and installation schedule for the bundle to get installed at a time and date in the future.
3. Complete the Create New Bundle Wizard.
4. Go to the managed device and execute `rug sch` and notice the bundle and its scheduled time to be installed sometime in the future.
5. Launch the ZENworks Control Center, click the *Bundles* tab, then select the bundle that was just created.
6. From the *Assignments* list, click *Advanced*.
7. Check the device object assigned to the bundle that you would like to have deployed and installed now.
8. Click *Actions*, then select *Deploy and Install Now*.

Expected Results:

After pressing *Deploy and Install Now*, the bundle is immediately installed to the managed device. Verify that by going to the assigned managed device and executing a `rug bl` command. This lists the deployed and installed bundle.

6: INSTALLING A BUNDLE WITH THE PERSISTENT BUNDLE OPTION

Objective:

Install a bundle on a managed device; configure the bundle using the *Persistent bundle* option so that the bundle cannot be uninstalled by the managed device user.

Steps:

Ensure that you have installed the ZENworks 7.2 Linux Management server components and the ZENworks Agent. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).

Part 1: Create, Install, and Uninstall a RPM Package Bundle by Configuring the Persistent Option

In ZENworks Control Center, create a RPM Package bundle with default options. For detailed information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).

1. In Step 2 of the Create New Bundle Wizard, verify that the *Ensure this bundle stays installed on all assigned devices (enforce persistence)* option is selected. By default, this option is selected.
2. Assign the bundle to a managed device.
3. Set the schedule to *Relative to Refresh*.
4. On the managed device, perform the following:
 - a. Start a console session and execute the `rug refresh` command.
 - b. Ensure that the RPM package bundle created in Step 1 is installed on the device by executing the `rug bl` command.
 - c. Remove the RPM packaged in the bundle by executing the `rug rm rpm_name` command.
 - d. On the managed device, execute the `rug refresh` command.

Expected Results:

The uninstalled RPM Package is reinstalled. To view the list of bundles available on the managed device, use the `rug bl` command. The list includes the RPM Package bundle created in Step 1. Verify that the RPM is reinstalled by executing the following command:

```
rpm -qa | grep rpm_name
```

Part 2: Create, Install, and Uninstall a RPM Package Bundle by Not Configuring the Persistent Option

1. In the ZENworks Control Center, create a RPM Package bundle with default options. For detailed information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. In Step 2 of the Create New Bundle wizard, deselect the *Ensure this bundle stays installed on all assigned devices (enforce persistence)* option. By default, this option is selected.
3. Assign the bundle to a managed device.
4. Set the schedule to *Relative to Refresh*.
5. On the managed device, perform the following:
 - a. Start a console session and execute the `rug refresh` command.
 - b. Ensure that the RPM package bundle created in Step 1 is installed on the device by executing the `rug bl` command.
 - c. Remove the RPM packaged in the bundle by executing the `rug rm rpm_name` command.
 - d. On the managed device, execute the `rug refresh` command.

Expected Results:

The uninstalled RPM package bundle is not reinstalled. Verify that the RPM is not installed on the managed device by executing the following command: `rpm -qa | grep rpm_name`.

7: VIEWING THE UPDATE ICON INDICATING THAT SOFTWARE UPDATES ARE AVAILABLE

In ZENworks 6.6.x Linux Management, administrators could see whether or not a device had any package updates by checking for the presence of an icon in the Updates Available column of the web user interface. Similarly, in ZENworks Linux Management - Dell Edition (or Avenger), an icon was shown in the Updates Available column in the device list when a Dell system set, or DUP Bundle, was in the system but was not assigned to the devices it needed to be assigned to. In the ZENworks 7.2 Linux Management release, the Updates Available icon combines these two concepts into a single location.

Objective:

Verify that the Updates Available column for the device list shows an icon for the following reasons:

- There is a bundle assigned to this device, whose latest version isn't currently deployed.
- There is a Dell system set (DUP Bundle) for this device's model in the repository, but it is not assigned to this device.
- There is a package in the repository that is an update to a package installed on this device, but the package:
 - is contained in a bundle not assigned to this device
 - is contained in a version of a bundle assigned to this device that isn't currently deployed
 - is contained in a bundle assigned to this device, but simply hasn't been installed yet
 - is not contained in any bundle

Steps:

To verify that the Updates Available icon shows properly:

Part 1: Latest version not deployed

1. From the *Bundles* tab of the ZENworks Control Center, create a File or RPM bundle, and assign it to a device. For more information, see [Creating File Bundles](#) or [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. On the *Devices* tab, click to view the list of servers or workstations. Verify that the device in the previous step has no updates available.

3. Go back to the bundle created in Step 1, and change one of its properties, such as description. This will cause a new version of the bundle to be created. Be sure not to deploy this new version.
4. Go back to the list of devices, and check the Updates Available column. Verify that an icon is now shown, and that clicking the icon tells you the latest version of the assigned bundle is not deployed.

Part 2: DUP Bundle not assigned to the device

1. Use zlmirror to import Dell DUP Bundles (Dell System Sets) into the system from the Dell remote server. For more information, see [Mirroring Dell Update Packages to Your ZENworks Server](#) in the [ZENworks 7.2 Administration Guide](#).
2. Register a device whose model number matches one of the Dell System Sets previously imported (click the *Bundles* tab to see the list of available system sets, or DUP bundles).
3. Click the *Devices* tab, and click to view the list of servers or workstations. Verify that an icon is shown for the supported Dell device (Note: the device inventory scanner needs to be run on the supported device before the system will know the model number of the Dell system).

Part 3: Package updates

Part 3a: Package in a bundle not assigned to the device

1. Create two RPM bundles, one containing any package you choose, and the other bundle containing an update to that package. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. Assign the first bundle to a device, and make sure that the bundle gets installed and that the inventory scanner acknowledges that the package is installed (check on the *Inventory* tab of the device's Details page).
3. From the device list page, verify that an icon is shown in the Updates Available column, and that clicking it gives the explanation that an updated package exists in another bundle.

Part 3b: Package in a bundle version not deployed

1. Create an RPM bundle, and add any package you would like. By default this bundle should be at version 1. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. Add a newer version of the package to the bundle, which will automatically bump the bundle to version 2, but do not deploy this version.

3. Assign the bundle to a device and make sure that the bundle gets installed and that the inventory scanner detects that the package has been installed successfully (check the *Inventory* tab of the bundle's Details page).
4. From the device list page, verify that an icon is shown in the Updates Available column, and that clicking it gives the explanation that an updated package exists in a newer version of the bundle.

Part 3c: Package not installed yet

1. Create an RPM bundle and add any package you would like. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. Assign the bundle to a device and make sure that the schedule is set for some time in the future. Make sure the device is refreshed and that executing the `rug sch` command shows that the bundle will be installed at a future time.
3. From the device list page, verify that an icon is shown in the Updates Available column, and that clicking it gives the explanation that an updated package exists in a bundle that hasn't been installed yet.

Part 3d: Package not in any bundle

1. Create two RPM bundles, one containing any package you choose, and the other bundle containing an update to that package. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
2. Assign the first bundle to a device and make sure that the bundle gets installed and that the inventory scanner acknowledges that the package is installed (check on the *Inventory* tab of the device's Details page).
3. Delete the second bundle so that the updated package is in the system, but it is not contained in any bundle.
4. From the device list page, verify that an icon is shown in the Updates Available column, and that clicking it gives the explanation that an updated package exists in the system, but is not made available by any bundles.

Expected Results:

Verify that the Updates Available icon is shown for the following reasons:

- There is a bundle assigned to this device, whose latest version isn't currently deployed.
- There is a Dell system set (DUP Bundle) for this device's model in the repository, but it is not assigned to this device.

- There is a package in the repository that is an update to a package installed on this device, but the package:
 - is contained in a bundle not assigned to this device
 - is contained in a version of a bundle assigned to this device, which isn't currently deployed
 - is contained in a bundle assigned to this device, but simply hasn't been installed yet
 - is not contained in any bundle

8: LOCKING PACKAGES ON A MANAGED DEVICE

Objective:

Prevent deletion of a package on a managed device by locking the package.

Steps:

To lock a package:

1. Ensure that you have installed the ZENworks Agent. For detailed information, see [Setting Up Managed Devices](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. Register the managed device to a Red Carpet Enterprise (RCE) or a YUM server by executing the `rug sa URL_of_the_RCE_or_YUM_server` command.
3. On the managed device, list all packages installed by executing the `rug pa` command.
4. Select a package you want to lock, and lock it by executing the `rug la package_name` command.
5. On the managed device, list all the locked packages by executing the `rug ll` command.

Expected Results:

On the managed device, delete the locked package by executing the `rug rm package_name` command. Notice that the specified package is not deleted in this scenario because it is locked. The following message is displayed: “*package_name* is locked and cannot be removed.”

For information on how to unlock a package, see [rug](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).

9: LOCKING BUNDLES ON A MANAGED DEVICE

Objective:

Prevent deletion of a bundle on a managed device by locking the bundle.

Steps:

To lock a bundle:

1. Ensure that you have installed the ZENworks 7.2 Linux Management server components and ZENworks Agent. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. In the ZENworks Control Center, create a bundle and assign it to the managed device. For detailed information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
3. On the managed device, perform the following steps:
 - a. Verify that the bundle created in the previous step is installed on the device by executing the `rug bl` command.
 - b. Lock the bundle by executing the `rug bla bundle_name` command.
 - c. Verify that the bundle is locked by executing the `rug bll` command.

Expected Results:

On the managed device, delete the locked bundle by executing the `rug brm bundle_name` command. Notice that the specified bundle is not deleted in this scenario because it is locked.

For information on how to unlock a bundle, see [rug](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).

10: DISTRIBUTING FILES TO A MANAGED DEVICE USING A FILE BUNDLE

Objective:

Use a File bundle to automatically distribute files to a managed device.

Steps:

1. Ensure that you have installed the ZENworks 7.2 Linux Management server components and the ZENworks Agent. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. In the ZENworks Control Center, create a File bundle and assign it to a managed device. For detailed information, see [Creating File Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).

Expected Results:

On the managed device, execute the `rug refresh` command. Depending on the bundle schedule, the files are copied to the specified destination folder on the managed device.

11: INSTALLING BUNDLES USING THE ZENWORKS LINUX MANAGEMENT SOFTWARE INSTALLER

Objective:

Install a bundle on a managed device using the ZENworks Linux Management Software Installer interface.

Steps:

1. Ensure that you have installed the ZENworks 7.2 Linux Management server components and the ZENworks Agent. For detailed information, see [Installation](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. In the ZENworks Control Center, do the following:
 - a. Create a RPM bundle. For more information, see [Creating RPM Bundles](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
 - b. Create a catalog. For more information, see [Creating Catalogs](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
 - c. Add the bundle to the catalog. For more information, see [Adding Bundles to Catalogs](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).
3. On the managed device, launch the ZENworks Linux Management Software Installer by executing the `zen-installer` command.
4. Click *Configure*, then click *Catalog*.
5. Subscribe to the catalog created in Step 2b.
6. In the ZENworks Linux Management Software Installer window, select the RPM bundle created in Step 2a.
7. Click *Install*.

Expected Results:

On the managed device, execute the `rug bl` command. The list includes the bundled installed.

12: REMOVING PACKAGES USING THE ZENWORKS LINUX MANAGEMENT SOFTWARE REMOVER

Objective:

Uninstall an RPM package on a managed device using the ZENworks Linux Management Software Remover interface.

Steps:

1. Use the same setup as [the previous scenario](#).
2. On the managed device, launch ZENworks Linux Management Software Remover by executing the `zen-remover` command.
3. Specify the package you want to uninstall, and click *Search*.
4. From the Search result, select the package you want to uninstall.
5. Click Uninstall.

Expected Results:

On the managed device, execute the `rpm -qa` command. The list does not include the uninstalled package.

13: UPDATING PACKAGES USING THE ZENWORKS LINUX MANAGEMENT SOFTWARE UPDATER

Objective:

Update software packages installed on a managed device from a YUM repository using the ZENworks Linux Management Software Updater.

Steps:

1. Install the ZENworks Agent and register it in the Management Zone. For detailed information, see [Setting Up Managed Devices](#) in the [ZENworks 7.2 Linux Management Installation Guide](#).
2. On the managed device, launch the ZENworks Linux Management Software Updater by executing the `zen-updater` command.
3. Click *Configure*, then click *Catalog*.
4. Subscribe to the catalog available on the YUM server.
5. Click *Add Service*.
6. Select the YUM service type.
7. Specify the service URI of a public YUM repository you want to use to update your packages.
8. Specify a service name.
9. Click *Add*.
10. In the Configuration window, click *Catalog* and subscribe to the catalog provided by the service.
11. In the Software Updater window, select the packages you want to update.
12. Click *Update*.

Expected Results:

On the managed device, execute the `rug pa` command. The list includes the updated packages.

14: MIRRORING FROM A YUM SERVER

Objective:

To verify content from YUM servers can be successfully mirrored down to the ZENworks Linux Management server.

Steps:

To mirror from a YUM server:

1. Choose a YUM server containing content you would like to mirror. You can get a list of official YUM servers for SUSE Linux 10.1 from the [openSUSE Web site](#).
2. Create a new mirroring configuration file. For more information, see [Mirroring Software](#) in the [ZENworks 7.2 Linux Management Administration Guide](#).

For example, you could create a file named yumToZlm.xml as follows:

```
<ZLMMirrorConf>
  <Session>
    <RemoteServer>
      <Base>http://suse.cs.utah.edu/suse/update/10.1/</Base>
      <Proxy></Proxy>
      <Type>YUM</Type>
      <SystemID></SystemID>
      <User></User>
      <Password></Password>
      <Platform>sled-10</Platform>
    </RemoteServer>
    <LocalServer>
      <Base></Base>
      <Type>ZLM</Type>
      <User>Administrator</User>
      <Password>novell</Password>
    </LocalServer>
    <Catalog>
      <Name></Name>
      <LocalName></LocalName>
      <Folder>my_folder</Folder>
      <Target></Target>
      <ExcludeTarget></ExcludeTarget>
      <Bundle></Bundle>
      <ExcludeBundle></ExcludeBundle>
      <Package>samba</Package>
      <ExcludePackage></ExcludePackage>
    </Catalog>
  </Session>
</ZLMMirrorConf>
```

In this example, the package named “samba” will be downloaded from the YUM server: suse.cs.utah.edu. Note: you can specify values for <Package> and <Target>, but <Name> and <Bundle> should be left blank because these concepts don't exist for a YUM server.

3. Perform the mirroring operation by executing the following command

```
zlmirror m -c yumToZlm.xml
```

Expected Results:

After a successful mirroring operation, a new catalog and bundle is created in your system containing RPMs as specified in your configuration file. In this example, you can verify these objects by doing the following:

- Open the ZENworks Control Center and click the *Bundles* tab, and verify that a new folder named “my_folder” exists containing a catalog and bundle both named “sled-10.”
- Verify that the bundle contains one or more packages with the name “samba” (possibly have different architectures).

15: CREATING A DELL CONFIGURATION BUNDLE

The ZENworks 7.2 Linux Management release introduces the ability to create Dell Configuration Bundles for Dell PowerEdge servers that are generation 7 or newer. When deployed, these bundles can configure system BIOS, BMC, DRAC, RAID, and Utility Partitions on Dell machines. Dell Configuration Bundles also contain a Preboot Bundle field that is used to apply a ZENworks image after the previously mentioned configurations have been made.

Objective:

Successfully create a Dell Configuration Bundle.

Important Notes:

- `/srv/tftp/dell-dtk/` is the location on your ZENworks server where you will store your Dell configuration files.
- The creation of a Dell Utility Partition requires a Utility Partition image file named `upimg.bin`, which can be found on your *Dell Server Assistant* CD. You can also download the Systems Management Dell CD for your system from <http://support.dell.com>. For more information, please consult the Deployment Toolkit Documentation.
- There are two Dell Configuration related menu items new to the Novell Preboot Services Menu. The Novell Preboot Services menu can be accessed, by default, by holding down `ctrl+alt` during a PXE boot or a ZEN Partition boot. It can also be accessed by booting via ZENworks boot CD. The new menu items are *Start DELL DTK* and *Start DELL DTK (Maintenance Mode)*. These new menu items are comparable to *Start ZENworks Imaging* and *Start ZENworks Imaging Maintenance* for preboot imaging work.
- A BIOS configuration text file can be created by booting into Dell DTK Maintenance Mode, accessing a shell (by pressing `ALT+F2`, `F3`, `F4...`), and running `syscfg -o biosconfig.txt`. The `-o` option specifies the output filename. You may change `biosconfig.txt` to anything you like.

Steps:

1. Click the *Bundles* tab in the ZENworks Control Center to open the Bundles Task screen.
2. From the Bundles screen, create a new bundle by clicking *New Bundle* in the Bundle Tasks list or by clicking *New* and then *Bundle* on the toolbar.
3. Select the bundle type. The Dell Configuration is a Preboot Bundle. Select *Preboot Bundle* and click *Next*.
4. Select the preboot bundle type. Select *Dell Configuration Bundle* and click *Next*.

5. Set the general information for your Dell Configuration Bundle. This includes selecting a name, a folder in which to store your bundle, and a description for your bundle. Click *Next* when you have filled in the appropriate fields.
6. At this point you have reached the Dell Config Bundle Options step; things will look new if this is the first time creating a Dell Configuration Bundle. For this example we will create a Dell Configuration Bundle that configures the BIOS, creates a Dell Utility Partition, and applies an image after the configuration steps have been taken.
7. Create a BIOS configuration file for your system using the instructions above (`syscfg -o` from the Dell DTK Maintenance Mode). Make changes to the BIOS configuration file with a text editor and save the configuration file in `/srv/tftp/dell-dtk/` on your ZENworks server.
8. Obtain a Dell utility partition file from your Dell Server Assistant CD or from <http://support.dell.com>. This is a binary file and should not be modified. Save it in `/srv/tftp/dell-dtk/` on your server.
9. Check the *BIOS/BMC/DRAC 5 Configuration File* check box; this allows you to type in this field. Specify the path and filename of the BIOS configuration file, relative to the TFTP directory. Do not specify the TFTP directory or any of the path that precedes it. For example, you might enter `/dell-dtk/biosconfig.txt`.
10. Check the *Create Dell Utility Partition* check box; this allows you to edit the partition size of the utility partition, the target disk, and the Dell utility partition file mentioned above. Please note, if you use this option, all existing partitions on the identified disk are replaced by the Dell utility partition. However, you can select the *Overwrite Existing Dell Utility Partition* check box. This option is used to update an existing Dell utility partition.
11. Fill out the three fields under the *Create Utility Partition* heading. These fields are: *Partition Size*, *Target Disk*, and *File*. The minimum partition size required by the utility partition is 32 MB. The target disk is the device on which you want the utility partition installed, for example, `/dev/hda`. In the File field, specify the path to the utility partition file relative to the TFTP directory, for example, `/dell-dtk/upimg.bin`.
12. Check the *Preboot Bundle* check box to apply an additional preboot bundle after the selected configuration steps have been taken. If a preboot bundle containing a ZENworks image file is specified here, the image file must have been created from a system that already contained a Dell utility partition.

13. Click *Next*, this will bring you to a summary screen. If you are satisfied with the summary information, click *Finish*. Your Dell Configuration preboot Bundle can then be assigned to the appropriate device in the same fashion you would assign any other preboot bundle.

Expected Results:

After a successful creation of a Dell Configuration Bundle, a new bundle appears in the Bundles portion of the ZENworks Control Center. You will notice a Dell icon next to the bundle name. The bundle type will read Dell Configuration Bundle.

After being assigned and applied to a device, the Dell Configuration Bundle executes its work when the machine is rebooted and prior to the operating system loading, just like other preboot bundles.

16: SETTING ZMD SETTINGS AT THE FOLDER OR ZONE LEVEL (INHERITANCE)

Objective:

Configure ZMD Settings at the folder or zone level that flow down to devices under them.

Steps:

To make sure devices are inheriting the settings that have been set at the zone level:

1. Log into the ZENworks Control Center and click to the *Configuration* tab.
2. Select *ZMD Settings* from the Management Zone Settings list.
3. Click *Add* to display the Configure Setting dialog box.
4. Select any setting from the drop-down list and specify a value other than the default.
5. Click *OK* on the dialog box, click *Apply*.
6. Go to the details of a device and click the *Settings* tab.
7. Click *ZMD Settings* from the *Settings* list.

Expected Results:

The Inherited ZMD Settings snapshot should show the setting and value set under the *Configuration* tab.

ZMD Settings are pushed to the device on the next refresh; however, they do not go into effect until ZMD is restarted on the device.

17: OVERRIDING ZMD SETTINGS AT THE DEVICE LEVEL (OVERRIDING INHERITANCE)

Objective:

Configure ZMD Settings at the folder or zone level and then override them at the device level.

Steps:

To show that a setting has been overridden at the device level:

1. Complete the [previous scenario](#) to configure an inherited setting.
2. Go to the Settings page for a device and choose *ZMD Settings* from the list.
3. Click *Override* in the header snapshot. This will enable the bottom snapshot on the page for editing.
4. Click *Add* to display the Configure Setting dialog box.
5. From the drop-down list, choose one of the settings you have already configured at the zone or folder level, and choose a new value for it.
6. Click *OK* on the dialog box, click *Apply*.
7. Refresh the device by clicking *Refresh* from the *Quick Tasks* list or by going to the device and executing `rug ref`.
8. At the device, execute `rug get` to display the current settings.

Expected Results:

You see the value set at the device, not the value inherited from the zone or folder level.

NOTE: ZMD Settings are pushed to the device on the next refresh; however, they do not go into effect until ZMD is restarted on the device.

18: VIEWING ZMD SETTING CHANGES AFTER AN INVENTORY SCAN

Objective:

View a device's current zmd settings after an inventory scan.

Steps:

To make sure devices are inheriting the settings that have been set at the zone level:

1. Log into the ZENworks Control Center, click the *Settings* tab for a device.
2. Click ZMD Settings from the Management Zone Settings list.
3. Use the [Inheritance](#) or [Override Inheritance](#) scenario to make changes to the default zmd Settings.
4. Click *Apply* to save your changes.
5. From the *Quick Tasks* list on the left side of the ZENworks Control Center, click *Refresh*.
6. Allow time for inventory to run. Time between inventory scans can be adjusted from the *Configuration* tab.
7. Click the device's *Settings* tab, then click *ZMD Settings* to observe the results.

Expected Results:

The Effective ZMD Settings on this device snapshot reflect the changes pushed to the device. If the change does not show up, go to the device and type `rug get`. This shows you the zmd settings on the device. If this shows the correct value, then inventory has not run or is not working. If the value is not correct, try executing a `rug ref` command and then execute `rug get` again.

NOTE: The settings shown for a device are the current settings that will be used the next time ZMD is started. They are not necessarily the settings it is currently using.

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