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Transforming IT Operations

Zenoss Service Dynamics ZenUp Installation and Administration

Release 1.1

Zenoss, Inc.

www.zenoss.com

Zenoss Service Dynamics ZenUp 1.1 Installation and Administration

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Chapter 1. Introduction to ZenUp

ZenUp 1.1 is the client side tool for Zenoss patch management products. It is a standalone product that users will download and install onto their system to install service packs (packaged into ZUP files), detect local code changes on their product, apply individual patches, and track changes made on their local Zenoss instance as well as a number of installed Zenoss products. A ZUP file is a collection of patches, ZenPacks, and database and binary updates. In order for a ZenPack to be updated by a ZUP file, the ZenPack must be already installed on the system.

ZenUp replaces Quilt as the patch management product. For existing users of Resource Manager who are not currently using ZenUp, pay special attention to Chapter 4, *Migrating from Quilt to ZenUp*.

1.1. Requirements

The following requirements are needed in order to use ZenUp with Resource Manager:

- Resource Manager 4.2.4 or higher running on Red Hat Enterprise Linux (5 or 6) or CentOS (5 or 6)
- UNIX file command
- UNIX patch command

Note

Resource Manager 4.1.1 will continue to use Quilt for patch management. Resource Manager 4.2.3 will continue to use ZenUp 1.0 for patch management.

1.2. Included Dependencies

- Python 2.7 (as pyrun)
- pyyaml

1.3. Terminology

The following are relevant terms and definitions of items related to the ZenUp tool:

Term	Definition
Pristine source	The source code for a product in its unaltered, unpatched, original release state
Local diffs	Any differences between the local product file and those that appear in the pristine source
ZUP file	The artifact format that is used by the ZenUp tool
RPS	Recommended patch set that is packaged in a .tgz or in a .zup depending on the product and product version
Service pack	General term for a specific set of changes that are packaged as a ZUP file

Chapter 2. Installing ZenUp 1.1

If you are currently using ZenUp 1.0, proceed to Chapter 3, *Upgrading to ZenUp 1.1*

Perform the following steps to install ZenUp 1.1:

1. Browse to the following URL:

   https://support.zenoss.com.

   ### Note

   Contact your Zenoss representative for site login credentials.

2. In the Downloads area of the Home tab, locate the current Service Dynamics installation files.
3. Download the ZenUp RPM file. The file to download is: `zenup-1.1.0-version-1.elX.x86_64.rpm`
4. As the root user, enter the following command to install ZenUp in the `/opt/zenup` folder:

   ```
   yum localinstall zenup-1.1.0-version-1.elX.x86_64.rpm -y --nogpgcheck
   ```

   ### Note

   ZenUp is installed in a new `/opt/zenup` folder, not in the `/opt/zenoss` folder where Resource Manager is installed. As such, all log files for ZenUp are located in `/opt/zenup/log`.

   ### Note

   If you experience install errors, make sure that `/home` is root-writable. If `/home` is NFS mounted, you will need to create the zenoss group and zenup user directly in the LDAP directory (or whatever system is being used for user authentication) prior to installation.

5. Log in as the zenoss user:

   ```
   su - zenoss
   ```

   When you log in as the zenoss user, `/opt/zenup/bin` is automatically added to your `$PATH`.

6. As the zenoss user, enter the following command to see the ZenUp help prompt:

   ```
   zenup -h
   ```

   Each of the commands is documented in Chapter 8, *ZenUp Commands*.

2.1. Uninstalling ZenUp

To uninstall ZenUp:

1. As the root user, run the following command:

   ```
   yum remove zenup -y
   ```

Chapter 3. Upgrading to ZenUp 1.1

This chapter provides instructions for upgrading ZenUp from version 1.0 to version 1.1. The following table lists the Resource Manager version and the ZUP files that require ZenUp 1.1. You will not be able to use ZenUp 1.0 with these files.

Table 3.1. Minimum RPS for use with ZenUp 1.1

Zenoss Resource Manager version	Recommended Patch Set (RPS)
4.2.4	> SP525 (SP525 is the last RPS that works with ZenUp 1.0)
4.2.5	> SP136 (SP136 is the last RPS that works with ZenUp 1.0)

This procedure is only applicable if you are currently using ZenUp 1.0. If you are migrating from a quilt-based patching environment, refer to Chapter 4, *Migrating from Quilt to ZenUp*.

Perform the following steps to upgrade to ZenUp 1.1:

> ## Note
>
> Perform this procedure in a development or testing environment before performing it in a production environment.

1. Browse to the following URL:

   https://support.zenoss.com.

   > ## Note
   >
   > Contact your Zenoss representative for site login credentials.

2. In the Downloads area of the Home tab, locate the current Service Dynamics installation files.
3. Download the ZenUp 1.1 RPM file. The file to download is: `zenup-1.1.0-version-1.el5.x86_64.rpm` for RHEL/CentOS 5 or `zenup-1.1.0-version-1.el6.x86_64.rpm` for RHEL/CentOS 6.
4. As the root user on the Resource Manager host, enter the following command to upgrade ZenUp:

   ```
   RHEL/CentOS 5: rpm -Uvh zenup-1.1.0-version-1.el5.x86_64.rpm
   RHEL/CentOS 6: rpm -Uvh zenup-1.1.0-version-1.el6.x86_64.rpm
   ```

   > ## Note
   >
   > You do not have to stop Resource Manager in order to upgrade ZenUp.

   > ## Note
   >
   > All log files for ZenUp are located in `/opt/zenup/log`.

   > ## Note
   >
   > If you experience install errors, make sure that `/home` is root-writable. If `/home` is NFS mounted, you will need to create the zenoss group and zenup user directly in the LDAP directory (or whatever system is being used for user authentication) prior to upgrade.

5. Change to the zenoss user:

```
su - zenoss
```

6. As the zenoss user, enter the following command to see the ZenUp help prompt:

```
zenup -h
```

   Each of the commands is documented in Chapter 8, *ZenUp Commands*.

7. You do not have to re-register the pristine source, you can proceed directly to Section 5.1, “Upgrading to Latest RPS”

Chapter 4. Migrating from Quilt to ZenUp

For patch management on Resource Manager 4.2.3 and earlier, Quilt was used as the software utility. With the launch of ZenUp, existing Zenoss installations will need to migrate from Quilt to ZenUp. To effectively migrate from Quilt to ZenUp, it is important to understand all the custom changes that are made in the user's environment. While it is true Quilt tracks all of that patches that are applied through Quilt, there is a possibility that changes are applied manually, or through means other than Quilt. This section will describe how to successfully extract these orphaned changes and correctly apply them with ZenUp.

Note

If you are upgrading from Resource Manager 4.2.4, you are already using ZenUp for patch management. See Chapter 7, *Upgrading Resource Manager, ZenUp 1.1 already in use* for information about this upgrade path.

4.1. Prerequisites

The following prerequisites are required to migrate from Quilt to ZenUp:

- Zenoss 4.2.3 (Both the init pristine source and install ZUP scripts check the Zenoss version.)
- Quilt
- ZenUp 1.1 installed
- ZenUp pristine source downloaded
- ZenUp latest ZUP file downloaded (e.g., `zenoss_resmgr-4.2.3-SPXXX.zup`)
- Backup Zenoss environment

4.2. Assumptions

For ZenUp to determine whether migration is necessary, it checks for the presence of the zenquilt install script (`$ZENHOME/bin/zenquilt_update.sh`). If found, ZenUp loads all of the quilted changes onto its pristine source (from `$ZENHOME/patches`). It is up to the user to calculate what changes need to be preserved before removing zenquilt and applying the latest ZUP file.

4.3. Migration to ZenUp without Resource Manager Upgrade

To migrate from Quilt to ZenUp without upgrading Resource Manager:

1. With ZenUp installed, register the pristine source:

   ```
   zenup init zenoss_resmgr-4.2.3-XXXX.elX-pristine.tgz $ZENHOME
   ```

   Upon registration, ZenUp checks for the presence of the zenquilt_update script and, if found, loads all of the quilted changes.

2. Check the ZenUp status to make sure the pristine source is present:

```
zenup status
```

This should return the product name (e.g., `zenoss-resmgr-4.2.3`)

3. Extract the local diff using ZenUp and save it to a file. Remember that any diffs found using this method accounts for items that are not tracked with quilt:

```
zenup diff > ~/zenup-local-changes.diff
```

4. In order to provide a list of custom patches that are not in the RPS, use the `zencheckrps` utility. You can download and get more information about `zencheckrps` from the Zenoss Support site.

5. Store the custom patches in an external directory. Then, delete the current ZenUp registration of Resource Manager:

```
zenup delete --force zenoss-resmgr-4.2.3
```

6. Delete zenquilt_update.sh:

```
rm $ZENHOME/bin/zenquilt_update.sh
```

7. Re-run the `zenup init` command:

```
zenup init zenoss_resmgr-4.2.3-XXXX.elX-pristine.tgz $ZENHOME
```

8. Since the zenquilt_update script has been removed, ZenUp does not try to push the quilt patches onto the pristine source. To verify this, perform the `zenup diff` command after product registration. The number of diffs will be much greater:

```
zenup diff zenoss-resmgr-4.2.3 --summarize
```

9. Install the latest ZUP file with the `--force` flag. Force will rollback all diffs against the pristine source and apply the latest patches from the ZUP file:

Warning

This step is irreversible, so back up your environment beforehand!

```
zenup install --force zenoss_resmgr-4.2.3-SPXXX.zup
```

Note

The `zenup install --force` command fails if there is a symlink to a file that is not patched by the ZUP file. You need to manually resolve the symlink in order to install the ZUP file.

10. Perform any necessary post-installation steps (i.e., update BigIpMonitor ZenPack (if installed), restart zenoss, push changes to remote collectors, etc.). For more information, see *Zenoss Resouce Manager Installation*.

4.4. Migration to ZenUp with a Resource Manager Upgrade

If you are upgrading from a quilted-version of Resource Manager, perform the following procedure to migrate from Quilt to ZenUp as part of your upgrade process.

Note

If you are upgrading Resource Manager from a version that is already using ZenUp, e.g., from version 4.2.4 to 4.2.5, see Chapter 7, *Upgrading Resource Manager*, *ZenUp 1.1 already in use* for instructions.

To migrate from Quilt to ZenUp while upgrading Resource Manager:

Note

These instructions show how you would migrate from a quilted-version of Resource Manager 4.2.3 to version 4.2.5.

1. With ZenUp installed, register the pristine source:

   ```
   zenup init zenoss_resmgr-4.2.3-XXXX.elX-pristine.tgz $ZENHOME
   ```

   Upon registration, ZenUp checks for the presence of the `zenquilt_update` script and, if found, loads all of the quilted changes.

2. Check the ZenUp status to make sure the pristine source is present:

   ```
   zenup status
   ```

   This should return the product name (e.g., `zenoss-resmgr-4.2.3`)

3. Extract the local diff using ZenUp and save it to a file. Remember that any diffs found using this method accounts for items that are not tracked with quilt:

   ```
   zenup diff > ~/zenup-local-changes.diff
   ```

4. In order to provide a list of custom patches that are not in the RPS, use the `zencheckrps` utility. You can download and get more information about `zencheckrps` from the Zenoss Support site.

5. Store the custom patches in an external directory. Then, delete the current ZenUp registration of Resource Manager:

   ```
   zenup delete --force zenoss-resmgr-4.2.3
   ```

6. Upgrade Resource Manager with the latest RPM. See *Zenoss Resouce Manager Installation* for more information.

7. Re-run the `zenup init` command:

   ```
   zenup init zenoss_resmgr-4.2.5-XXXX-elX-pristine.tgz $ZENHOME
   ```

8. Delete zenquilt_update.sh:

   ```
   rm $ZENHOME/bin/zenquilt_update.sh
   ```

9. Now that the zenquilt_update script has been removed, ZenUp does not try to push the quilt patches onto the pristine source. To verify this, perform the `zenup diff` command after product registration. The number of diffs will be much greater:

   ```
   zenup diff zenoss-resmgr-4.2.5 --summarize
   ```

10. Install the latest ZUP file, if necessary:

    ```
    zenup install --force zenoss-resmgr-4.2.5-SPXXX.zup
    ```

    ## Note

    The `zenup install --force` command fails if there is a symlink to a file that is not patched by the ZUP file. You need to manually resolve the symlink in order to install the ZUP file.

11. Perform any necessary post-installation steps (i.e., update BigIpMonitor ZenPack (if installed), restart zenoss, push changes to remote collectors, etc.). For more information, see *Zenoss Resouce Manager Installation*.

Chapter 5. Managing Zenoss Resource Manager with ZenUp

In order for ZenUp to manage the installation of service packs, patches, and other changes, you must register your Resource Manager instance to use the ZenUp tool.

To register Resource Manager to use ZenUp:

1. From the Downloads area of the Zenoss Support site, download the Resource Manager pristine .tgz source for your version of Resource Manager and RHEL/CentOS (5 or 6). For example, if you are running Resource Manager 4.2.4 on CentOS 6, download `zenoss_resmgr-4.2.4-1859.el6-pristine-version.tgz`.

2. Establish a `$ZENHOME` on your system by installing a clean version of Resource Manager. See *Resource Manager Installation* for more information.

3. As the zenoss user, perform the following command to register the Resource Manager with ZenUp:

   ```
   zenup init zenoss_resmgr-4.2.X-XXXX.elX-pristine-version.tgz $ZENHOME
   ```

   Use the filename of the .tgz you downloaded in step 1. This process will take a few minutes.

4. Verify that the product is registered with ZenUp:

   ```
   zenup status
   ```

   This action returns the product name.

5.1. Upgrading to Latest RPS

After you register your Resource Manager instance with ZenUp, you can upgrade to the latest recommended patch set (RPS) by applying the latest ZUP file.

Warning

You cannot revert back to an earlier ZUP file once you have upgraded due to the iterative nature of the patches.

To upgrade to the latest RPS:

1. Download the latest Resource Manager 4.2.X ZUP file from https://support.zenoss.com.

2. As the zenoss user, perform a dry run to see what would happen if the Resource Manager was upgraded:

   ```
   zenup install --dry-run zenoss_resmgr-4.2.X-SPXXX.zup
   ```

   The dry run only tests whether code changes can be applied cleanly. This does not include any ZenPack upgrades or custom command execution. For a listing of all the options available on any ZenUp command, see the "ZenUp Commands" section.

   If you had a failed install, the next time you run `zenup install` the installation process will resume with the last attempted step. To see all the steps that are involved in the install and their status, run `zenup status`.

3. If you are satisfied with the results of the dry run, perform the upgrade:

   ```
   zenup install zenoss_resmgr-4.2.X-SPXXX.zup
   ```

4. Confirm you are on the latest RPS:

```
zenup status
```

Chapter 6. Backing Up and Restoring Resource Manager

To back up Resource Manager in preparation for an upgrade:

1. Stop Zenoss on all hubs and collectors. For detailed instructions, see the "Stopping Resource Manager" section in *Resource Manager Installation and Upgrade*.
2. As the zenoss user on the master, run `zenbackup`.
3. As the root user, backup `/opt/zenoss` on the master and all remote zenhubs and collectors. On each server perform the following command:

   ```
   tar --exclude backups --exclude perf --exclude log \
     -czf zenoss_resmgr-4.2.X-SPXXX_backup.[TIMESTAMP].tgz /opt/zenoss
   ```

4. As root user on the master, change to the /opt directory:

   ```
   cd /opt/
   ```

5. Back up the /opt/zenup directory:

   ```
   tar -czf zenup-1.0_zenoss-4.2.X_SPXXX_backup.[TIMESTAMP].tgz zenup
   ```

To restore Resource Manager on the same machine from which you took a backup:

1. Stop Zenoss on all hubs and collectors. For detailed instructions, see the "Stopping Resource Manager" section in *Resource Manager Installation and Upgrade*.
2. As the zenoss user on the master, run `zenrestore`.
3. As the root user on the master, change to the /opt directory:

   ```
   cd /opt/
   ```

4. Restore zenup on the master:

   ```
   tar -xzf zenup-1.0_zenoss-4.2.X_SPXXX_backup.[TIMESTAMP].tgz
   ```

Chapter 7. Upgrading Resource Manager, ZenUp 1.1 already in use

7.1. Prerequisites

When upgrading Resource Manager with ZenUp 1.1 already in use for patch management, a few extra steps need to be taken to ensure your custom patches and local changes persist from the old version to the new version. The following lists the prerequisite conditions:

- Resource Manager installed and ZenUp 1.1 is installed, registered, and managing patches.
- Resource Manager RPM for new version has been downloaded.
- Pristine artifact for the new version has been downloaded.
- (optional) ZUP file for the new version has been downloaded.

Note

If you are upgrading a Resource Manager version that was using ZenUp 1.0, contact Product Support for additional instructions for migrating custom patches and local changes during your upgrade.

7.2. Preserving Patches during Upgrade

The following instructions focus on the patch management portion of the larger Resource Manager upgrade procedure. For complete details about upgrading Resource Manager, see *Resource Management Installation and Upgrade*.

1. Preserve all custom patches and changes on the old version of Resource Manager. There a two ways to accomplish this:
   - The easiest way to accomplish this is to store all the custom patches and changes in one large diff. However, this diff will not be broken down into individual patches and may be difficult to fix if it does not apply cleanly.
     a. Log in to the Resource Manager master host as `zenoss`.
     b. Create the diff file:

     ```
     zenup diff > ~/all_custom_changes.diff
     ```
2. Upgrade your Resource Manager instance. See *Resource Management Installation and Upgrade* for information on your particular upgrade path.
3. Remove the existing registration of Resource Manager.

   ```
   zenup delete Product-ID --force
   ```

   where *Product-ID* represents the old version of Resource Manager, e.g., `zenoss_resmgr-4.2.4`
4. Register the new version of Resource Manager with ZenUp by specifying the "pristine" file.

   ```
   zenup init Pristine-File $ZENHOME --name zenoss
   ```

   where *Pristine-File* represents the pristine file of the new version of Resource Manager, e.g., `zenoss_resmgr-4.2.5-XXXX.elX-pristine.tgz`

5. (Optional) Install the latest ZUP file to get the latest patches for the new version of Resource Manager.

```
zenup install zenoss_XXX-XXX-SPXXX.zup
```

6. Ensure there are no local changes. The result of the following command should say `0 files added/deleted/modified/unknown`

```
zenup diff --summarize
```

7. Apply the diff created prior to upgrading to restore local changes. Use the `patch` command on the Resource Manager master host as follows:

```
patch -p0 < all_custom_changes.diff
```

Note

Changes retrieved prior to upgrade many apply cleanly to your newly upgraded product, however this does not mean that the changes will function the same. Test your changes in an upgraded environment before applying this to a production system.

8. Verify the registration and list the applied patches.

```
zenup status --verbose
```

Chapter 8. ZenUp Commands

The following commands can be used to invoke ZenUp functionality by the zenoss user:

8.1. Init

Allows a user to register a product with the ZenUp tool, while supplying the products pristine source .tgz file and the location of the product's home directory.

8.1.1. Usage

```
zenup init [-h] [--name NAME] source home
```

Arguments:

- --name: [OPTIONAL] Product alias
- source: Path to the product's pristine source .tgz file
- home: Path to the product's home, e.g., `$ZENHOME`

8.2. Delete

Allows a user to delete a registered ZenUp product.

> **Warning**
>
> This operation cannot be undone!

8.2.1. Usage

```
zenup delete --force product
```

Arguments:

- --force: Always required on the delete command
- product: Product name or ID

8.3. Status

Allows a user to check the status of all registered ZenUp products or the details of a particular registered ZenUp product. If you had a failed install, the output of `zenup status` will reflect that you are in the middle of an upgrade and will indicate the last attempted step. When you retry the install, ZenUp will resume at the last attempted step, skipping any already-completed steps.

8.3.1. Usage

```
zenup status [-h] [--verbose] [product]
```

Arguments:

- --verbose: [OPTIONAL] Increases the verbosity of the output. All the patches that are installed will be listed. Only applicable when a single product is specified.

- product: [OPTIONAL] Product Name or ID. It is required if you have two or more products registered.

8.4. Info

Allows a user to view information about a ZUP file or prints the contents of a patch to the screen. You can also view all of the steps that are involved in the install of a particular ZUP file.

8.4.1. Usage

```
zenup info [-h] [--showfix FIX-ID] [--showall] source
```

Arguments:

- --showfix FIX-ID: [OPTIONAL] Displays information about a particular fix in the ZUP file.
- --showall: [OPTIONAL] Displays information about all fixes in the ZUP file.
- source: Path to ZUP or patch file

8.5. Diff

Allows a user to view local changes made to a product since the product's installation or last ZUP patching.

8.5.1. Usage

```
zenup diff [-h] [--summarize] [product]
```

Arguments:

- --summarize: [OPTIONAL] When enabled, only displays a summary of the product's local diff as a listing of all of the files that have been added, deleted, and modified, or is marked as unknown.
- product: [OPTIONAL] Product Name or ID. It is required if you have two or more products registered.

8.6. Install

Allows a user to apply a service pack (ZUP) upgrade file to a registered ZenUp product.

Warning

This operation cannot be undone!

If you had a failed install, the next time you run `zenup install` the installation process will resume with the last attempted step. To see all the steps that are involved in the install and their status, run `zenup status`.

8.6.1. Usage

```
zenup install [--dry-run | --force] zupfile
```

Arguments:

- --dry-run: [OPTIONAL] Does not actually change any files. Only prints what would happen.
- --force: [OPTIONAL] Apply a ZUP while reverting all local changes.
- zupfile: Path to the ZUP file