Zenoss Resource Manager Upgrade Guide

Release 5.1.9

Zenoss, Inc.

www.zenoss.com

Zenoss Resource Manager Upgrade Guide

Contents

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About this guide

Zenoss Resource Manager Upgrade Guide provides detailed instructions for upgrading Zenoss Resource Manager (Resource Manager) from one minor or micro version to a more recent version. All supported deployment configurations are included in this guide.

Note Zenoss strongly recommends reviewing the *Zenoss Resource Manager Planning Guide* carefully before using this guide.

Related publications

Title	Description
Zenoss Resource Manager Administration Guide	Provides an overview of Resource Manager architecture and features, as well as procedures and examples to help use the system.
Zenoss Resource Manager Configuration Guide	Provides required and optional configuration procedures for Resource Manager, to prepare your deployment for monitoring in your environment.
Zenoss Resource Manager Installation Guide	Provides detailed information and procedures for creating deployments of Control Center and Resource Manager.
Zenoss Resource Manager Planning Guide	Provides both general and specific information for preparing to deploy Resource Manager.
Zenoss Resource Manager Release Notes	Describes known issues, fixed issues, and late-breaking information not already provided in the published documentation set.
Zenoss Resource Manager Upgrade Guide	Provides detailed information and procedures for upgrading deployments of Resource Manager.

Additional information and comments

If you have technical questions about this product that are not answered in this guide, please visit the *Zenoss Support* site or contact Zenoss Support.

Zenoss welcomes your comments and suggestions regarding our documentation. To share your comments, please send an email to docs@zenoss.com. In the email, include the document title and part number. The part number appears at the end of the list of trademarks, at the front of this guide.

Change history

The following list associates document part numbers and the important changes to this guide since the previous release. Some of the changes involve features or content, but others do not. For information about new or changed features, refer to the *Zenoss Resource Manager Release Notes*.

1092.16.316

Add new version numbers.

1092.16.291

Add new version numbers.

1092.16.264

Add new version numbers.

1092.16.207

Add new version numbers.

1092.16.183

Add new version numbers.

Remove upgrade instructions for 1.0.x / 5.0.x.

1092.16.153

Add new version numbers.

1092.16.146

Add new version numbers.

1092.16.126

Add a new part for upgrading only the Pacemaker resource agents for Control Center.

Refine the procedure for creating the application data thin pool.

1092.16.118

Add a new part for upgrading only Resource Manager.

Modify supported upgrade paths for Resource Manager 5.1.2.

Add a substep to create the docker override directory.

1092.16.111

Add information about Control Center 1.1.3.

1092.16.102

Replace a placeholder instruction with the correct instruction.

Add the `install-registry` image to the list of offline images.

Include instructions to create a `systemd` override file instead of editing the Docker service definition file.

Correct the Btrfs filesystem cleanup command.

Add a symlink to `/tmp` in `/var/lib/docker`.

Update the commands for starting and testing a ZooKeeper ensemble.

Add a procedure for updating the *SERVICED_ZK* value on resource pool hosts that are not members of a ZooKeeper ensemble.

Add a reference topic for the ZooKeeper variables required on hosts in a Control Center cluster.

Improve high-availability procedures to ensure DRBD integrity.

Improve titles in the post-upgrade chapter.

1092.16.068

Add a list of links to the overview of Part I.

After converting the storage driver, perform a full backup.

The Docker configuration file needs a longer startup timeout value, to work around a known Docker issue with the `devicemapper` driver. All Docker configuration steps now include adding `TimeoutSec=300`.

1092.16.067

A new part is added, for upgrading only Control Center. Both parts are renamed to reflect the addition.

The scope of supported upgrade paths is changed to reflect the micro release of Control Center.

All Docker configuration steps now add the storage driver flag (`-s devicemapper`) to the `/etc/sysconfig/docker` file.

All resource pool host upgrade procedures include a step to umnount the distributed file system before restarting `serviced`.

A link the the post-upgrade chapter is added to the end of upgrade procedures, if one is available.

1092.16.060.1

Upgrades are grouped in parts by scope. Each part contains a preparation chapter, chapters for the supported upgrade paths, and a post-upgrade chapter. Only the latest scope is in this version of the guide; previous scopes are in earlier versions.

New procedures are included, for upgrading without internet access and for upgrading high-availability deployments.

A description of Zenoss Toolbox is included as an appendix.

Supported software and upgrade paths

1

Beginning with version 5.0.0, distributions of Resource Manager include an additional component, Control Center. Each component is developed and maintained separately, and each has its own version number. This chapter identifies the combinations of component versions that Zenoss supports, and the supported upgrade paths between the combinations.

Release dates and versions

Release Date	Control Center	Resource Manager
14 Nov 2016	**1.2.0**	**5.1.9**
17 Oct 2016	**1.1.9**	**5.1.8**
20 Sep 2016	**1.1.8**	**5.1.7**
25 Jul 2016	1.1.7	**5.1.5**
20 Jul 2016	**1.1.7**	5.1.4
28 Jun 2016	**1.1.6**	**5.1.4**
1 Jun 2016	**1.1.5**	5.1.3
24 May 2016	**1.1.4** (withdrawn)	**5.1.3**
27 Apr 2016	1.1.3	**5.1.2**
20 Apr 2016	**1.1.3**	5.1.1
4 Mar 2016	**1.1.2**	5.1.1
29 Feb 2016	**1.1.1**	**5.1.1**
20 Feb 2016	**1.0.10**	**5.0.10**
02 Dec 2015	**1.0.9**	**5.0.9**
16 Nov 2015	**1.0.8**	**5.0.8**
10 Oct 2015	**1.0.7**	**5.0.7**
14 Sep 2015	**1.0.6**	**5.0.6**
05 Aug 2015	**1.0.5**	**5.0.5**
10 Jul 2015	**1.0.4**	**5.0.4**

Release Date	Control Center	Resource Manager
27 May 2015	**1.0.3**	**5.0.3**
20 Apr 2015	**1.0.2**	**5.0.2**
03 Apr 2015	**1.0.1**	**5.0.1**
24 Feb 2015	**1.0.0**	**5.0.0**

Supported upgrade paths included in this document

For questions about performing an upgrade or for assistance, please contact Zenoss Support.

Upgrade only Control Center

Note   This guide does not include procedures for upgrading Control Center 1.1.x to 1.2.0. For more information, refer to the *Control Center Upgrade Guide*.

From	To
Control Center 1.1.8	Control Center 1.1.9
Control Center 1.1.7	Control Center 1.1.9
Control Center 1.1.6	Control Center 1.1.9
Control Center 1.1.5	Control Center 1.1.9
Control Center 1.1.4	Control Center 1.1.9
Control Center 1.1.3	Control Center 1.1.9
Control Center 1.1.2	Control Center 1.1.9
Control Center 1.1.1	Control Center 1.1.9

Upgrade only Resource Manager

From	To
Resource Manager 5.1.8	Resource Manager 5.1.9
Resource Manager 5.1.7	Resource Manager 5.1.9
Resource Manager 5.1.5	Resource Manager 5.1.9
Resource Manager 5.1.4	Resource Manager 5.1.9
Resource Manager 5.1.3	Resource Manager 5.1.9
Resource Manager 5.1.2	Resource Manager 5.1.9
Resource Manager 5.1.1	Resource Manager 5.1.9

Upgrade only the Pacemaker resource agent for Control Center

This upgrade path is valid only for high-availability deployments. The procedures in this part are valid for upgrading from any version of the resource agent to a newer (latest) version.

Upgrade paths included in previous versions

The following tables identify upgrade paths that are supported but documented only in previous editions of this guide.

For questions about performing an upgrade or for assistance, please contact Zenoss Support.

Table 1: Upgrade from 1.0.x / 5.0.x to 1.1.x / 5.1.x

From combination	To combination
Control Center 1.0.6 and Resource Manager 5.0.6	Control Center 1.1.9 and Resource Manager 5.1.9
Control Center 1.0.7 and Resource Manager 5.0.7	Control Center 1.1.9 and Resource Manager 5.1.9
Control Center 1.0.8 and Resource Manager 5.0.8	Control Center 1.1.9 and Resource Manager 5.1.9
Control Center 1.0.9 and Resource Manager 5.0.9	Control Center 1.1.9 and Resource Manager 5.1.9
Control Center 1.0.10 and Resource Manager 5.0.10	Control Center 1.1.9 and Resource Manager 5.1.9

Table 2: Upgrade to 1.0.10 / 5.0.10

From combination	To combination
Control Center 1.0.3 and Resource Manager 5.0.3	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.4 and Resource Manager 5.0.4	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.5 and Resource Manager 5.0.5	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.6 and Resource Manager 5.0.6	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.7 and Resource Manager 5.0.7	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.8 and Resource Manager 5.0.8	Control Center 1.0.10 and Resource Manager 5.0.10
Control Center 1.0.9 and	Control Center 1.0.10 and

From combination	To combination
Resource Manager 5.0.9	Resource Manager 5.0.10

Table 3: Upgrade to 1.0.3 / 5.0.3

From combination	To combination
Control Center 1.0.0 and Resource Manager 5.0.0	Control Center 1.0.3 and Resource Manager 5.0.3
Control Center 1.0.1 and Resource Manager 5.0.1	Control Center 1.0.3 and Resource Manager 5.0.3
Control Center 1.0.2 and Resource Manager 5.0.2	Control Center 1.0.3 and Resource Manager 5.0.3

Part I: Upgrading only Control Center

The chapters in this part provide instructions for upgrading Control Center without upgrading Resource Manager.

Note Before upgrading only Control Center, make sure that you are upgrading to a supported combination of Control Center and Resource Manager. For more information, see *Supported upgrade paths included in this document* on page 10.

The following table identifies the supported upgrades of Control Center alone.

From	To
Control Center 1.1.8	Control Center 1.1.9
Control Center 1.1.7	Control Center 1.1.9
Control Center 1.1.6	Control Center 1.1.9
Control Center 1.1.5	Control Center 1.1.9
Control Center 1.1.4	Control Center 1.1.9
Control Center 1.1.3	Control Center 1.1.9
Control Center 1.1.2	Control Center 1.1.9
Control Center 1.1.1	Control Center 1.1.9

Note This guide does not include procedures for upgrading Control Center 1.1.x to 1.2.0. For more information, refer to the *Control Center Upgrade Guide*.

To perform an upgrade, select one of the following chapters:

Upgrading Control Center with internet access on page 14
Upgrading Control Center without internet access on page 17
Upgrading high-availabilty deployments with internet access on page 20
Upgrading high-availabilty deployments without internet access on page 24

Upgrading Control Center with internet access

2

This chapter includes detailed procedures for upgrading Control Center cluster hosts that have internet access. For hosts that do not have internet access, or that are configured for high-availability, use one of the other chapters in this part.

Stopping applications

This procedure stops all Control Center applications.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Identify the applications to stop.

    a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

    b Identify the applications that are running.

    Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.

    a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

    b Verify the application is stopped.

    Repeat the following command until the STATUS column reads Stopped:

```
serviced service status Zenoss.resmgr
```

Upgrading the master host

This procedure upgrades the Control Center master host to version 1.1.9.

1 Log in to the master host as `root`, or as a user with superuser privileges.
2 Verify that accidental upgrades of Docker are disabled.

    a Check the Docker repository.

```
grep enabled /etc/yum.repos.d/docker.repo
```

    If the result is `enabled=1`, perform the following substeps.

    b Open `/etc/yum.repos.d/docker.repo` with a text editor.

    c Change the value of the `enabled` key from `1` to `0`.

    d Save the file and close the text editor.

3 Stop Control Center.

```
systemctl stop serviced
```

4 Install the new version of Control Center.

```
yum --enablerepo=zenoss-stable install -y serviced-1.1.9
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

5 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

6 Optional: Install the new Resource Manager application template, if necessary.

This step is useful when the following conditions are true:

- You plan to update Resource Manager immediately after updating Control Center.
- You need to delete the current instance of Resource Manager and deploy a new one, or you need to deploy a secondary instance of Resource Manager.

```
yum --enablerepo=zenoss-stable install -y zenoss-resmgr-service-5.1.9
```

7 Start Control Center.

```
systemctl start serviced
```

- **Single-host deployments:** You may log in to the Control Center browser interface, and then restart Resource Manager, if desired.
- **Multi-host deployments:** Update all resource pool hosts (the next procedure).

Upgrading resource pool hosts

This procedure upgrades Control Center resource pool hosts to version 1.1.9.

Perform this procedure on each resource pool host in your deployment.

1 Log in to the resource pool host as `root`, or as a user with superuser privileges.

2 Verify that accidental upgrades of Docker are disabled.

    a Check the Docker repository.

```
grep enabled /etc/yum.repos.d/docker.repo
```

    If the result is `enabled=1`, perform the following substeps.

    b Open `/etc/yum.repos.d/docker.repo` with a text editor.

    c Change the value of the `enabled` key from `1` to `0`.

    d Save the file and close the text editor.

3 Stop Control Center and Docker.

```
systemctl stop serviced && systemctl stop docker
```

4 Unmount the distributed file system (DFS).

    a Identify the file system specification to unmount.

```
mount | awk '/serviced/ { print $1 }'
```

    b Unmount the DFS.
    Replace *DFS-Mount* with the file system specification returned in the previous substep:

```
umount DFS-Mount
```

5 Install the new version of Control Center.

```
yum --enablerepo=zenoss-stable install -y serviced-1.1.9
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

6 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

7 Start Control Center.

```
systemctl start serviced
```

Upgrading Control Center without internet access

3

This chapter includes detailed procedures for upgrading Control Center cluster hosts that do not have internet access. For hosts that do have internet access, or that are configured for high-availability, use one of the other chapters in this part.

Downloading the RPM package

This procedure describes how to download the `serviced` RPM package to your workstation.

To perform this procedure, you need:

- A workstation with internet access.
- A portable storage medium, such as a USB flash drive, with at least 20MB of free space.
- Permission to download the required files from the *Zenoss Enterprise Software Downloads* site. You may request permission by filing a ticket at the *Zenoss Support* site.

1 In a web browser, navigate to the *Zenoss Enterprise Software Downloads* site.
2 Click **File Portal - Zenoss Enterprise Software Downloads**.
3 Log in with the account provided by Zenoss Support.
4 Download the `serviced` RPM package.

   Replace *Version* with the most recent version number available on the download page:

   ```
   serviced-Version.x86_64.rpm
   ```

5 Copy the file to your portable storage medium.

Staging the RPM package

To perform this procedure, you need the portable storage medium that contains the `serviced` RPM package file.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Copy `serviced-*.x86_64.rpm` from your portable storage medium to `/tmp`.
3 Change the access permissions of the package file.

   ```
   chmod 777 /tmp/serviced-*.x86_64.rpm
   ```

Upgrading the master host

This procedure upgrades the Control Center master host to version 1.1.9.

1 Log in to the master host as `root`, or as a user with superuser privileges.
2 Stop Control Center.

```
systemctl stop serviced
```

3 Install the new version of Control Center.

```
yum install -y /tmp/serviced-*.x86_64.rpm
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

4 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

5 Start Control Center.

```
systemctl start serviced
```

- **Single-host deployments:** You may log in to the Control Center browser interface, and then restart Resource Manager, if desired.
- **Multi-host deployments:** Update all resource pool hosts (the next procedure).

Upgrading resource pool hosts

This procedure upgrades Control Center resource pool hosts to version 1.1.9.

Perform this procedure on each resource pool host in your deployment.

1 Log in to the resource pool host as `root`, or as a user with superuser privileges.
2 Copy the `serviced` RPM file from the master host.
Replace *Master-Host-IP* with the IP address of the master host:

```
scp root@Master-Host-IP:/tmp/serviced-*.x86_64.rpm /tmp
```

3 Stop Control Center and Docker.

```
systemctl stop serviced && systemctl stop docker
```

4 Unmount the distributed file system (DFS).
a Identify the file system specification to unmount.

```
mount | awk '/serviced/ { print $1 }'
```

b Unmount the DFS.
Replace *DFS-Mount* with the file system specification returned in the previous substep:

```
umount DFS-Mount
```

5 Install the new version of Control Center.

```
yum install -y /tmp/serviced-*.x86_64.rpm
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

6   Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

7   Start Control Center.

```
systemctl start serviced
```

Upgrading high-availabilty deployments with internet access

<div align="right">4</div>

This chapter includes detailed procedures for upgrading Control Center in high-availability deployments that have internet access. For hosts that do not have internet access, or that are not configured for high-availability, use one of the other chapters in this part.

Stopping applications

This procedure stops all Control Center applications.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Identify the applications to stop.
   a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

   b Identify the applications that are running.
   Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.
   a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

   b Verify the application is stopped.
   Repeat the following command until the STATUS column reads `Stopped`:

```
serviced service status Zenoss.resmgr
```

Stopping Control Center

This procedure stops Control Center on the master host, and on resource pool hosts.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.

2 Display the public hostname of the current node.

```
uname -n
```

Make a note of which node (primary or secondary) is the current node, for use in a subsequent procedure.

3 Stop Control Center with the cluster management tool.

```
pcs cluster standby --all
```

4 Monitor the status of cluster resources.

```
watch pcs status
```

Monitor the status until all resources report `Stopped`. Resolve any issues before continuing.

5 Stop Control Center on all resource pool hosts.

Repeat this step on each resource pool host in your deployment.

a Log in to the resource pool host as `root`, or as a user with superuser privileges.

b Stop Control Center.

```
systemctl stop serviced
```

Upgrading the master nodes

This procedure upgrades the Control Center master nodes to version 1.1.9.

Perform this procedure on the primary node and on the seconday node.

1 Log in to the master node as `root`, or as a user with superuser privileges.

2 Verify that accidental upgrades of Docker are disabled.

a Check the Docker repository.

```
grep enabled /etc/yum.repos.d/docker.repo
```

If the result is `enabled=1`, perform the following substeps.

b Open `/etc/yum.repos.d/docker.repo` with a text editor.

c Change the value of the `enabled` key from `1` to `0`.

d Save the file and close the text editor.

3 Install the new version of Control Center.

```
yum --enablerepo=zenoss-stable install -y serviced-1.1.9
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

4 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

5 Optional: Install the new Resource Manager application template, if necessary.

This step is useful when the following conditions are true:

■ You plan to update Resource Manager immediately after updating Control Center.

■ You need to delete the current instance of Resource Manager and deploy a new one, or you need to deploy a secondary instance of Resource Manager.

```
yum --enablerepo=zenoss-stable install -y zenoss-resmgr-service-5.1.9
```

6 Disable `serviced`.

The cluster management software controls `serviced`.

```
systemctl disable serviced
```

Upgrading resource pool hosts

This procedure upgrades Control Center resource pool hosts to version 1.1.9.

Perform this procedure on each resource pool host in your deployment.

1 Log in to the resource pool host as `root`, or as a user with superuser privileges.
2 Verify that accidental upgrades of Docker are disabled.
   a Check the Docker repository.

```
grep enabled /etc/yum.repos.d/docker.repo
```

   If the result is `enabled=1`, perform the following substeps.
   b Open `/etc/yum.repos.d/docker.repo` with a text editor.
   c Change the value of the `enabled` key from `1` to `0`.
   d Save the file and close the text editor.
3 Stop Control Center and Docker.

```
systemctl stop serviced && systemctl stop docker
```

4 Unmount the distributed file system (DFS).
   a Identify the file system specification to unmount.

```
mount | awk '/serviced/ { print $1 }'
```

   b Unmount the DFS.
   Replace *DFS-Mount* with the file system specification returned in the previous substep:

```
umount DFS-Mount
```

5 Install the new version of Control Center.

```
yum --enablerepo=zenoss-stable install -y serviced-1.1.9
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.
6 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

Restarting Control Center

1 Log in to the primary node as `root`, or as a user with superuser privileges.

For this procedure, the primary node is the node that was the current node when you stopped Control Center.

2 Take the cluster out of standby mode.

```
pcs cluster unstandby --all
```

3 Monitor the status of cluster resources.

```
watch pcs status
```

Monitor the status until all resources report `Started`. Resolve any issues before continuing.

4 Start Control Center on all resource pool hosts.

Repeat this step on each resource pool host in your deployment.

a Log in to the resource pool host as `root`, or as a user with superuser privileges.

b Start Docker and Control Center.

```
systemctl start docker && systemctl start serviced
```

Log in to the Control Center browser interface, and then start applications.

Upgrading high-availabilty deployments without internet access

5

This chapter includes detailed procedures for upgrading Control Center in high-availability deployments that do not have internet access. For hosts that do have internet access, or that are not configured for high-availability, use one of the other chapters in this part.

Downloading the RPM package

This procedure describes how to download the `serviced` RPM package to your workstation.

To perform this procedure, you need:

- A workstation with internet access.
- A portable storage medium, such as a USB flash drive, with at least 20MB of free space.
- Permission to download the required files from the *Zenoss Enterprise Software Downloads* site. You may request permission by filing a ticket at the *Zenoss Support* site.

1 In a web browser, navigate to the *Zenoss Enterprise Software Downloads* site.
2 Click **File Portal - Zenoss Enterprise Software Downloads**.
3 Log in with the account provided by Zenoss Support.
4 Download the `serviced` RPM package.

   Replace *Version* with the most recent version number available on the download page:

   ```
   serviced-Version.x86_64.rpm
   ```

5 Copy the file to your portable storage medium.

Staging the RPM package

To perform this procedure, you need the portable storage medium that contains the `serviced` RPM package file.

Perform this procedure on the primary node and on the seconday node.

1 Log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Copy `serviced-*.x86_64.rpm` from your portable storage medium to `/tmp`.
3 Change the access permissions of the package file.

   ```
   chmod 777 /tmp/serviced-*.x86_64.rpm
   ```

Stopping applications

This procedure stops all Control Center applications.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Identify the applications to stop.

    a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

    b Identify the applications that are running.

      Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.

    a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

    b Verify the application is stopped.

      Repeat the following command until the `STATUS` column reads `Stopped`:

```
serviced service status Zenoss.resmgr
```

Stopping Control Center

This procedure stops Control Center on the master host, and on resource pool hosts.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Display the public hostname of the current node.

```
uname -n
```
Make a note of which node (primary or secondary) is the current node, for use in a subsequent procedure.
3 Stop Control Center with the cluster management tool.

```
pcs cluster standby --all
```

4 Monitor the status of cluster resources.

```
watch pcs status
```

Monitor the status until all resources report `Stopped`. Resolve any issues before continuing.
5 Stop Control Center on all resource pool hosts.

Repeat this step on each resource pool host in your deployment.

    a Log in to the resource pool host as `root`, or as a user with superuser privileges.
    b Stop Control Center.

```
systemctl stop serviced
```

Upgrading the master nodes

This procedure upgrades the Control Center master nodes to version 1.1.9.

Perform this procedure on the primary node and on the seconday node.

1 Log in to the master node as `root`, or as a user with superuser privileges.

2 Install the new version of Control Center.

```
yum install -y /tmp/serviced-*.x86_64.rpm
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

3 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

4 Disable `serviced`.

The cluster management software controls `serviced`.

```
systemctl disable serviced
```

5 Start Control Center with the cluster management tool.

```
pcs cluster unstandby --all
```

Upgrading resource pool hosts

This procedure upgrades Control Center resource pool hosts to version 1.1.9.

Perform this procedure on each resource pool host in your deployment.

1 Log in to the resource pool host as `root`, or as a user with superuser privileges.

2 Copy the `serviced` RPM file from a master node.
Replace *Master-Host-IP* with the IP address of a master node:

```
scp root@Master-Host-IP:/tmp/serviced-*.x86_64.rpm /tmp
```

3 Stop Control Center and Docker.

```
systemctl stop serviced && systemctl stop docker
```

4 Unmount the distributed file system (DFS).

a Identify the file system specification to unmount.

```
mount | awk '/serviced/ { print $1 }'
```

b Unmount the DFS.
Replace *DFS-Mount* with the file system specification returned in the previous substep:

```
umount DFS-Mount
```

5 Install the new version of Control Center.

```
yum install -y /tmp/serviced-*.x86_64.rpm
```

The installation preserves the existing version of the `serviced` configuration file, and installs the new one as `/etc/default/serviced.rpmnew`.

6 Review the contents of the new Control Center configuration file.

If there are additions or subtractions, migrate your settings to the new file.

Restarting Control Center

1 Log in to the primary node as `root`, or as a user with superuser privileges.

For this procedure, the primary node is the node that was the current node when you stopped Control Center.

2 Take the cluster out of standby mode.

```
pcs cluster unstandby --all
```

3 Monitor the status of cluster resources.

```
watch pcs status
```

Monitor the status until all resources report `Started`. Resolve any issues before continuing.

4 Start Control Center on all resource pool hosts.

Repeat this step on each resource pool host in your deployment.

a Log in to the resource pool host as `root`, or as a user with superuser privileges.

b Start Docker and Control Center.

```
systemctl start docker && systemctl start serviced
```

Log in to the Control Center browser interface, and then start applications.

Part II: Upgrading only Resource Manager

The chapters in this part provide instructions for upgrading Resource Manager without upgrading Control Center.

Note Before upgrading only Resource Manager, make sure that you are upgrading to a supported combination of Control Center and Resource Manager. For more information, see *Supported upgrade paths included in this document* on page 10.

The following table identifies the supported upgrades of Resource Manager alone.

From	To
Resource Manager 5.1.8	Resource Manager 5.1.9
Resource Manager 5.1.7	Resource Manager 5.1.9
Resource Manager 5.1.5	Resource Manager 5.1.9
Resource Manager 5.1.4	Resource Manager 5.1.9
Resource Manager 5.1.3	Resource Manager 5.1.9
Resource Manager 5.1.2	Resource Manager 5.1.9
Resource Manager 5.1.1	Resource Manager 5.1.9

To perform an upgrade, select one of the following chapters:

Upgrading Resource Manager with internet access

6

This chapter includes detailed procedures for upgrading Resource Manager on hosts that have internet access. For hosts that do not have internet access, or that are configured for high-availability, use one of the other chapters in this part.

Note Zenoss strongly recommends checking the integrity of Resource Manager databases before performing an upgrade or installing a ZenPack. For more information, see *Using Zenoss Toolbox* on page 49.

Stopping applications

This procedure stops all Control Center applications.

1 Log in to the Control Center master host as root, or as a user with superuser privileges.
2 Identify the applications to stop.
   a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

   b Identify the applications that are running.
   Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.
   a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

   b Verify the application is stopped.
   Repeat the following command until the STATUS column reads Stopped:

```
serviced service status Zenoss.resmgr
```

Clear checksums from Docker images

To perform this task, first upgrade Control Center, and then stop Resource Manager.

This procedure provides a workaround for a condition that arises when Docker images for Resource Manager are restored from backup.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Determine whether the image ID for Zope has the `latest` tag.

```
serviced service list zope | grep ImageID
```

- If the result includes `:latest` at the end of the string, proceed to the next step.
- If the result does not include `:latest` at the end of the string, add it to the service definition.

```
serviced service edit zope
```

3 Delete the checksums from all Docker images.

```
for LAYER in $(ls /var/lib/docker/graph)
do
  echo "y" | rm /var/lib/docker/graph/$LAYER/checksum
done
```

Upgrading Resource Manager

This procedure upgrades Resource Manager.

Before performing this procedure, stop Resource Manager.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Download the primary Docker image of Resource Manager for this release
   The download takes approximately 10-20 minutes.

```
docker run -it --rm -v /root:/mnt/root \
  zenoss/resmgr_5.1:5.1.9_1 rsync -a /root/5.1.x /mnt/root
```

When the download completes, the `rsync` command copies scripts that perform the upgrade to `/root/5.1.x`.

3 Pull additional images for Resource Manager from Docker Hub.

```
/root/5.1.x/pull-docker-images.sh
```

4 Start the upgrade script.
   The script to start depends on whether Service Impact is installed.

- If Service Impact is installed, enter the following command.

```
/root/5.1.x/upgrade-impact-5.1.x.sh
```

Note   The script upgrades Resource Manager, but does not upgrade Service Impact. For more information about upgrading Service Impact, refer to the *Zenoss Service Impact Installation Guide for Resource Manager 5.x*.

- If Service Impact is not installed, enter the following command.

```
/root/5.1.x/upgrade-resmgr-5.1.x.sh
```

5 Restart Resource Manager.

Some Resource Manager services are started during the upgrade, and they need to be restarted.

```
serviced service restart Zenoss.resmgr
```

Proceed to

Upgrading Resource Manager without internet access

7

This chapter includes detailed procedures for upgrading Resource Manager on hosts that do not have internet access. For hosts that do have internet access, or that are configured for high-availability, use one of the other chapters in this part.

Note Zenoss strongly recommends checking the integrity of Resource Manager databases before performing an upgrade or installing a ZenPack. For more information, see *Using Zenoss Toolbox* on page 49.

Downloading files for offline installation

This procedure describes how to download Docker image files to your workstation.

To perform this procedure, you need:

- A workstation with internet access.
- A portable storage medium, such as a USB flash drive, with at least 5 GB of free space.
- Permission to download the required files from the *File Portal - Download Zenoss Enterprise Software* site. You may request permission by filing a ticket at the *Zenoss Support* site.

1 In a web browser, navigate to the *File Portal - Download Zenoss Enterprise Software* site.
2 Log in with the account provided by Zenoss Support.
3 Download archive files to your workstation.

   Replace *Version* with the most recent version number available on the download page:

   - `install-zenoss-hbase:v`*`Version`*`.run`
   - `install-zenoss-opentsdb:v`*`Version`*`.run`
   - `install-zenoss-resmgr_5.1:5.1`*`Version`*`.run`
4 Copy the files to your portable storage medium.

Staging archive files

To perform this procedure, you need the portable storage medium that contains the archive files.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Copy `*.run` from your portable storage medium to `/root`.

3 Add execute permission to the archive files.

```
chmod +x /root/*.run
```

Stopping applications

This procedure stops all Control Center applications.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.

2 Identify the applications to stop.

  a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

  b Identify the applications that are running.

  Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.

  a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

  b Verify the application is stopped.

  Repeat the following command until the STATUS column reads Stopped:

```
serviced service status Zenoss.resmgr
```

Clear checksums from Docker images

To perform this task, first upgrade Control Center, and then stop Resource Manager.

This procedure provides a workaround for a condition that arises when Docker images for Resource Manager are restored from backup.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.

2 Determine whether the image ID for Zope has the `latest` tag.

```
serviced service list zope | grep ImageID
```

- If the result includes `:latest` at the end of the string, proceed to the next step.
- If the result does not include `:latest` at the end of the string, add it to the service definition.

```
serviced service edit zope
```

3 Delete the checksums from all Docker images.

```
for LAYER in $(ls /var/lib/docker/graph)
do
  echo "y" | rm /var/lib/docker/graph/$LAYER/checksum
done
```

Upgrading Resource Manager

This procedure upgrades Resource Manager.

Before performing this procedure, stop Resource Manager.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Install the new Resource Manager images.

   a Change directory to `/root`.

   ```
   cd /root
   ```

   b Install the HBase image.

   ```
   ./install-zenoss-hbase*.run
   ```

   c Install the OpenTSDB image.

   ```
   ./install-zenoss-opentsdb*.run
   ```

   d Install the Resource Manager image.

   ```
   ./install-zenoss-resmgr*.run
   ```

   e Optional: Delete the self-extracting image files, if desired.

   ```
   rm ./install-zenoss-*.run
   ```

3 Extract files from the Resource Manager image.

```
docker run -it --rm -v /root:/mnt/root \
  zenoss/resmgr_5.1:5.1.9_1 rsync -a /root/5.1.x /mnt/root
```

The preceding commands copy upgrade scripts to `/root/5.1.x`.
4 Start the upgrade script.

The script to start depends on whether Service Impact is installed.

   ■ If Service Impact is installed, enter the following command.

   ```
   /root/5.1.x/upgrade-impact-5.1.x.sh
   ```

   Note   The script upgrades Resource Manager, but does not upgrade Service Impact. For more information about upgrading Service Impact, refer to the *Zenoss Service Impact Installation Guide for Resource Manager 5.x*.

   ■ If Service Impact is not installed, enter the following command.

   ```
   /root/5.1.x/upgrade-resmgr-5.1.x.sh
   ```

5 Restart Resource Manager.

Some Resource Manager services are started during the upgrade, and they need to be restarted.

```
serviced service restart Zenoss.resmgr
```

Proceed to

zenoss

Upgrading high-availabilty deployments with internet access

8

This chapter includes detailed procedures for upgrading Resource Manager in high-availability deployments that have internet access. For deployments that do not have internet access, or that are not configured for high-availability, use one of the other chapters in this part.

Note   Zenoss strongly recommends checking the integrity of Resource Manager databases before performing an upgrade or installing a ZenPack. For more information, see *Using Zenoss Toolbox* on page 49.

Stopping applications

This procedure stops all Control Center applications.

1   Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2   Identify the applications to stop.
   a   Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

   b   Identify the applications that are running.
      Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3   Stop Resource Manager, and then verify it is stopped.
   a   Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

   b   Verify the application is stopped.
      Repeat the following command until the STATUS column reads `Stopped`:

```
serviced service status Zenoss.resmgr
```

Clear checksums from Docker images

To perform this task, first upgrade Control Center, and then stop Resource Manager.

This procedure provides a workaround for a condition that arises when Docker images for Resource Manager are restored from backup.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Determine whether the image ID for Zope has the `latest` tag.

```
serviced service list zope | grep ImageID
```

- If the result includes `:latest` at the end of the string, proceed to the next step.
- If the result does not include `:latest` at the end of the string, add it to the service definition.

```
serviced service edit zope
```

3 Delete the checksums from all Docker images.

```
for LAYER in $(ls /var/lib/docker/graph)
do
  echo "y" | rm /var/lib/docker/graph/$LAYER/checksum
done
```

Upgrading Resource Manager

This procedure upgrades Resource Manager.

Before performing this procedure, stop Resource Manager. For more information, see *Stopping applications* on page 20.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 Download the primary Docker image of Resource Manager for this release

The download takes approximately 10-20 minutes.

```
docker run -it --rm -v /root:/mnt/root \
  zenoss/resmgr_5.1:5.1.9_1 rsync -a /root/5.1.x /mnt/root
```

When the download completes, the `rsync` command copies scripts that perform the upgrade to `/root/5.1.x`.

3 Pull additional images for Resource Manager from Docker Hub.

```
/root/5.1.x/pull-docker-images.sh
```

4 Start the upgrade script.

The script to start depends on whether Service Impact is installed.

- If Service Impact is installed, enter the following command.

```
/root/5.1.x/upgrade-impact-5.1.x.sh
```

Note   The script upgrades Resource Manager, but does not upgrade Service Impact. For more information about upgrading Service Impact, refer to the *Zenoss Service Impact Installation Guide for Resource Manager 5.x*.

- If Service Impact is not installed, enter the following command.

```
/root/5.1.x/upgrade-resmgr-5.1.x.sh
```

5 Restart Resource Manager.

Some Resource Manager services are started during the upgrade, and they need to be restarted.

```
serviced service restart Zenoss.resmgr
```

Proceed to *After upgrading*

Upgrading high-availabilty deployments without internet access

9

This chapter includes detailed procedures for upgrading Resource Manager in high-availability deployments that do not have internet access. For deployments that do have internet access, or that are not configured for high-availability, use one of the other chapters in this part.

Note Zenoss strongly recommends checking the integrity of Resource Manager databases before performing an upgrade or installing a ZenPack. For more information, see *Using Zenoss Toolbox* on page 49.

Downloading files for offline installation

This procedure describes how to download Docker image files to your workstation.

To perform this procedure, you need:

- A workstation with internet access.
- A portable storage medium, such as a USB flash drive, with at least 5 GB of free space.
- Permission to download the required files from the *File Portal - Download Zenoss Enterprise Software* site. You may request permission by filing a ticket at the *Zenoss Support* site.

1 In a web browser, navigate to the *File Portal - Download Zenoss Enterprise Software* site.
2 Log in with the account provided by Zenoss Support.
3 Download archive files to your workstation.

   Replace *Version* with the most recent version number available on the download page:

   - `install-zenoss-hbase:vVersion.run`
   - `install-zenoss-opentsdb:vVersion.run`
   - `install-zenoss-resmgr_5.1:5.1Version.run`
4 Copy the files to your portable storage medium.

Staging archive files

To perform this procedure, you need the portable storage medium that contains the archive files.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Copy `*.run` from your portable storage medium to `/root`.

3 Add execute permission to the archive files.

```
chmod +x /root/*.run
```

Stopping applications

This procedure stops all Control Center applications.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.

2 Identify the applications to stop.

    a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

    b Identify the applications that are running.

       Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.

    a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

    b Verify the application is stopped.

       Repeat the following command until the STATUS column reads Stopped:

```
serviced service status Zenoss.resmgr
```

Clear checksums from Docker images

To perform this task, first upgrade Control Center, and then stop Resource Manager.

This procedure provides a workaround for a condition that arises when Docker images for Resource Manager are restored from backup.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.

2 Determine whether the image ID for Zope has the `latest` tag.

```
serviced service list zope | grep ImageID
```

- If the result includes `:latest` at the end of the string, proceed to the next step.
- If the result does not include `:latest` at the end of the string, add it to the service definition.

```
serviced service edit zope
```

3 Delete the checksums from all Docker images.

```
for LAYER in $(ls /var/lib/docker/graph)
do
  echo "y" | rm /var/lib/docker/graph/$LAYER/checksum
```

```
done
```

Upgrading Resource Manager

This procedure upgrades Resource Manager.

Before performing this procedure, stop Resource Manager.

1   Log in to the primary node as `root`, or as a user with superuser privileges.
2   Install the new Resource Manager images.

   a   Change directory to `/root`.

   ```
   cd /root
   ```

   b   Install the HBase image.

   ```
   ./install-zenoss-hbase*.run
   ```

   c   Install the OpenTSDB image.

   ```
   ./install-zenoss-opentsdb*.run
   ```

   d   Install the Resource Manager image.

   ```
   ./install-zenoss-resmgr*.run
   ```

   e   Optional: Delete the self-extracting image files, if desired.

   ```
   rm ./install-zenoss-*.run
   ```

3   Extract files from the Resource Manager image.

```
docker run -it --rm -v /root:/mnt/root \
  zenoss/resmgr_5.1:5.1.9_1 rsync -a /root/5.1.x /mnt/root
```

The preceding commands copy upgrade scripts to `/root/5.1.x`.

4   Start the upgrade script.

The script to start depends on whether Service Impact is installed.

   ■   If Service Impact is installed, enter the following command.

   ```
   /root/5.1.x/upgrade-impact-5.1.x.sh
   ```

   Note   The script upgrades Resource Manager, but does not upgrade Service Impact. For more information about upgrading Service Impact, refer to the *Zenoss Service Impact Installation Guide for Resource Manager 5.x*.

   ■   If Service Impact is not installed, enter the following command.

   ```
   /root/5.1.x/upgrade-resmgr-5.1.x.sh
   ```

5   Restart Resource Manager.

Some Resource Manager services are started during the upgrade, and they need to be restarted.

```
serviced service restart Zenoss.resmgr
```

Proceed to

After upgrading

<div style="text-align: right">

10

</div>

This chapter includes information about what to do after upgrading Resource Manager.

Deleting the pre-upgrade snapshot

Before the Resource Manager upgrade begins, the upgrade script creates and tags a snapshot of the system. Tagged snapshots persist until they are explicitly removed. When you are satisfied the new release is working properly, delete the pre-upgrade snapshot.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Display a list of all Control Center snapshots, with their tags.

```
serviced snapshot list -t
```

Example result:

```
Snapshot                            Description  Tags
xm5mtezbyo2_20160211-220535.480                  preupgrade-resmgr-5.1.2
```

3 Delete the pre-upgrade snapshot.

Replace *Snapshot-ID* with the identifier of the pre-upgrade snapshot returned in the previous step:

```
serviced snapshot remove Snapshot-ID
```

Part III:Upgrading only the Pacemaker resource agent for Control Center

The chapters in this part provide instructions for upgrading only the Pacemaker resource agent for Control Center. This upgrade path is valid only for high-availability deployments.

The procedures in this part are valid for upgrading from any version of the resource agent to a newer (latest) version. To perform an upgrade, select one of the following chapters:

Upgrading high-availabilty deployments with internet access

11

This chapter includes detailed procedures for upgrading the Pacemaker resource agent for Control Center in high-availability deployments that have internet access. For deployments that do not have internet access, use the other chapter in this part.

Identifying the Pacemaker resource agent version

This procedure identifies the installed version of the Pacemaker resource agent for Control Center. Perform this procedure to determine whether to upgrade the resource agent.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 In a separate window, log in to the secondary node as `root`, or as a user with superuser privileges.
3 On both nodes, identify the installed version of the Pacemaker resource agent for Control Center.

```
rpm -qa | grep serviced-resource-agents
```

The result includes the version number; in this example, `0.0.5`:

```
serviced-resource-agents-0.0.5-1.x86_64
```

4 On either node, identify the currently-available version.

```
yum list all --enablerepo=zenoss-stable serviced-resource-agents
```

The result includes the version number; in this example, `0.0.6`:

```
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: centos.mirror.nac.net
* epel: mirror.es.its.nyu.edu
* extras: mirror.cisp.com
* updates: mirrors.advancedhosters.com
Available Packages
serviced-resource-agents.x86_64          0.0.6-1          zenoss-stable
```

If the number of the currently-available version is greater than the number of the installed version, proceed to the next topic.

Note   Version 0.0.6 includes an important fix, and is recommended for all deployments.

Stopping applications

This procedure stops all Control Center applications.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Identify the applications to stop.
   a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

   b Identify the applications that are running.
      Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.
   a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

   b Verify the application is stopped.
      Repeat the following command until the `STATUS` column reads `Stopped`:

```
serviced service status Zenoss.resmgr
```

Upgrading the Pacemaker resource agent

This procedure upgrades the Pacemaker resource agent for Control Center.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 Stop Control Center.

```
pcs resource disable serviced
```

3 In a separate window, log in to the secondary node as `root`, or as a user with superuser privileges.
4 On both nodes, install the latest version of the resource agent for Control Center.

```
yum install -y --enablerepo=zenoss-stable serviced-resource-agents
```

5 On either node, start Control Center.

```
pcs resource enable serviced
```

6 Start Resource Manager.

```
serviced service start Zenoss.resmgr
```

Upgrading high-availabilty deployments without internet access

12

This chapter includes detailed procedures for upgrading the Pacemaker resource agent for Control Center in high-availability deployments that do not have internet access. For deployments that do have internet access, use the other chapter in this part.

Identifying the Pacemaker resource agent version

This procedure identifies the installed version of the Pacemaker resource agent for Control Center.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 In a separate window, log in to the secondary node as `root`, or as a user with superuser privileges.
3 On both nodes, identify the installed version of the Pacemaker resource agent for Control Center.

```
rpm -qa | grep serviced-resource-agents
```

The result includes the version number; in this example, `0.0.5`:

```
serviced-resource-agents-0.0.5-1.x86_64
```

Perform the next procedure to determine what is the currently-available version of the resource agents package.

Identifying the currently-available version of the Pacemaker resource agent

This procedure describes how to identify the currently-available version of the Pacemaker resource agent for Control Center, and how to download its RPM package, if necessary.

To perform this procedure, you need:

■ A workstation with internet access.
■ A portable storage medium, such as a USB flash drive, with at least 1 MB of free space.
■ Permission to download the required files from the *File Portal - Download Zenoss Enterprise Software* site. You may request permission by filing a ticket at the *Zenoss Support* site.

1 In a web browser, navigate to the *File Portal - Download Zenoss Enterprise Software* site.
2 Log in with the account provided by Zenoss Support.
3 Identify the version number of the resource agents RPM file.

The file name is `serviced-resource-agents-Version.x86_64.rpm`.

- If the version number of the RPM package file is greater than the version number of the packages installed on your master nodes, download the package file.
- If the version number of the RPM package file is equal to the version number of the packages installed on your master nodes, do not download the package file.

4 Copy the RPM package file to your portable storage medium.

Staging the RPM package file

To perform this procedure, you need the portable storage medium that contains the RPM package file.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 In a separate window, log in to the secondary node as `root`, or as a user with superuser privileges.
3 On both nodes, copy RPM package file from your portable storage medium to `/root`.

Stopping applications

This procedure stops all Control Center applications.

1 Use the virtual hostname or virtual IP address of the high-availability cluster to log in to the Control Center master node as `root`, or as a user with superuser privileges.
2 Identify the applications to stop.

   a Identify the applications that Control Center is managing.

```
serviced service list | awk '/Zenoss\./ { print $1 }'
```

   b Identify the applications that are running.

   Replace *Application* with the name of each application returned from the preceding commands:

```
serviced service status Application
```

3 Stop Resource Manager, and then verify it is stopped.

   a Stop Resource Manager.

```
serviced service stop Zenoss.resmgr
```

   b Verify the application is stopped.

   Repeat the following command until the STATUS column reads `Stopped`:

```
serviced service status Zenoss.resmgr
```

Upgrading the Pacemaker resource agent

This procedure upgrades the Pacemaker resource agent for Control Center.

1 Log in to the primary node as `root`, or as a user with superuser privileges.
2 Stop Control Center.

```
pcs resource disable serviced
```

3 In a separate window, log in to the secondary node as `root`, or as a user with superuser privileges.

4 On both nodes, install the latest version of the resource agent for Control Center.

```
yum install -y -/root/serviced-resource-agents-*.rpm
```

5 On either node, start Control Center.

```
pcs resource enable serviced
```

6 Start Resource Manager.

```
serviced service start Zenoss.resmgr
```

Using Zenoss Toolbox

A

This appendix describes how to install and use Zenoss Toolbox.

Zenoss Toolbox tools

The Zenoss Toolbox tools examine key Resource Manager components for common issues affecting data integrity. Zenoss recommends running the following tools, in order, before upgrading Resource Manager:

1   The *zodbscan* tool quickly scans the Zope Object Database (ZODB) to provide a preliminary indication of the health of the database, and to determine whether the database needs to be compressed with `zenossdbpack` before upgrading.
2   The *findposkeyerror* tool checks objects and their relationships, and provides options for fixing errors.
3   The *zenrelationscan* tool checks only ZenRelations between objects.
4   The *zencatalogscan* tool checks ZODB object catalogs, which speed up web interface access.

The tools are run inside a Zope container, and the log files for each command are found in `$ZENHOME/log/toolbox`.

Downloading Zenoss Toolbox with internet access

This procedure describes how to download Zenoss Toolbox to a Control Center master host that has internet access.

1   Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2   Create a temporary directory, and change the current working directory to the temporary directory.
    The directory must be local (not mounted).

```
mkdir /tmp/toolbox && cd /tmp/toolbox
```

3   Download Zenoss Toolbox.

```
myUrl=https://github.com/zenoss/zenoss.toolbox/archive/master.zip
curl -sL --insecure -o master.zip $myUrl
```

4   Change the directory and file permissions.
    The directory and file must be readable, writable, and executable by all users.

```
chmod -R 777 /tmp/toolbox
```

Downloading Zenoss Toolbox without internet access

This procedure downloads Zenoss Toolbox to a Control Center master host that does not have internet access.

1 Log onto a system that has internet access.
2 Start a web browser, and then navigate to *the Zenoss Toolbox releases page*.
3 Download the latest version of the Zenoss Toolbox source code ZIP file.
   The name of the file is `zenoss.toolbox-Version.zip`.
4 Use your operating system to rename the file to `master.zip`.
5 Use a file transfer utility such as *WinSCP* to copy the file to the Control Center master host.
6 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
7 Create a temporary directory, and change the current working directory to the temporary directory.
   The directory must be local (not mounted).

```
mkdir /tmp/toolbox && cd /tmp/toolbox
```

8 Copy the Zenoss Toolbox ZIP file to the temporary directory.

   Replace *Path-to-File* with the location of the `master.zip` file.

```
cp Path-to-File /tmp/toolbox
```

9 Change the directory and file permissions.
   The directory and file must be readable, writable, and executable by all users.

```
chmod -R 777 /tmp/toolbox
```

Installing Zenoss Toolbox

This procedure describes how to install Zenoss Toolbox for use in Control Center Zope containers.

1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
2 Start a shell as the `zenoss` user in a Zope container.
   a Change directory to the tempoarary location of the Zenoss Toolbox `master.zip` file.

```
cd /tmp/toolbox
```

   b Start an interactive shell in a Zope container and save a snapshot named `InstallZenossToolbox`.

```
mySnap=InstallZenossToolbox
serviced service shell -i -s $mySnap zope bash
```

   c Switch user to `zenoss`.

```
su - zenoss
```

3 Install Zenoss Toolbox, and then exit the container.
   a Install Zenoss Toolbox.

```
easy_install /mnt/pwd/master.zip
```

    b Exit the `zenoss` user account.

```
exit
```

    c Exit the Zope container.

```
exit
```

4 Commit the named snapshot.

```
serviced snapshot commit $mySnap
```

5 Restart the Zope service.

```
serviced service restart zope
```

Running Zenoss Toolbox tools

1 Log in to the Control Center master host as a user with `serviced` CLI privileges.

2 Start an interactive session in a Zope container.

```
serviced service attach zope/0
```

3 Switch user to `zenoss`.

```
su - zenoss
```

4 Run the Zenoss Toolbox tools, in order.

For more information about the tools, see *Zenoss Toolbox tools* on page 49.

5 Exit the `zenoss` user account.

```
exit
```

6 Exit the Zope container.

```
exit
```