Zenoss Core Upgrade Guide

Release 5.1.8

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Contents

About this guide

Zenoss Core Upgrade Guide provides detailed instructions for upgrading Zenoss Core from one minor or micro version to a more recent version.

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

Related publications

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

Additional information and comments

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 Core Release Notes*.

1091.16.291

Add new version numbers.

1091.16.264

Add new version numbers.

1091.16.207

Add new version numbers.

1091.16.183

Add new version numbers.

1091.16.153

Add new version numbers.

1091.16.146

Add new version numbers.

1091.16.126

Refine the procedure for creating the application data thin pool.

1091.16.118

Add a new part for upgrading only Zenoss Core.

Modify supported upgrade paths for Zenoss Core 5.1.2.

Add a substep to create the docker override directory.

1091.16.111

Add information about Control Center 1.1.3.

1091.16.102

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 titles in the post-upgrade chapter.

1091.16.068

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`.

1091.16.067

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.

1091.16.060.1

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.

A description of Zenoss Toolbox is included as an appendix.

Supported software and upgrade paths

1

Beginning with version 5.0.0, distributions of Zenoss Core 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	Zenoss Core
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**
27 May 2015	**1.0.3**	**5.0.3**

Release Date	Control Center	Zenoss Core
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

Upgrade only Control Center

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 Zenoss Core

From	To
Zenoss Core 5.1.7	Zenoss Core 5.1.8
Zenoss Core 5.1.5	Zenoss Core 5.1.8
Zenoss Core 5.1.4	Zenoss Core 5.1.8
Zenoss Core 5.1.3	Zenoss Core 5.1.8
Zenoss Core 5.1.2	Zenoss Core 5.1.8
Zenoss Core 5.1.1	Zenoss Core 5.1.8

Upgrade paths included in previous versions

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

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 Zenoss Core 5.0.6	Control Center 1.1.9 and Zenoss Core 5.1.8
Control Center 1.0.7 and	Control Center 1.1.9 and

From combination	To combination
Zenoss Core 5.0.7	Zenoss Core 5.1.8
Control Center 1.0.8 and Zenoss Core 5.0.8	Control Center 1.1.9 and Zenoss Core 5.1.8
Control Center 1.0.9 and Zenoss Core 5.0.9	Control Center 1.1.9 and Zenoss Core 5.1.8
Control Center 1.0.10 and Zenoss Core 5.0.10	Control Center 1.1.9 and Zenoss Core 5.1.8

Table 2: Upgrade to 1.0.10 / 5.0.10

From combination	To combination
Control Center 1.0.3 and Zenoss Core 5.0.3	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.4 and Zenoss Core 5.0.4	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.5 and Zenoss Core 5.0.5	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.6 and Zenoss Core 5.0.6	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.7 and Zenoss Core 5.0.7	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.8 and Zenoss Core 5.0.8	Control Center 1.0.10 and Zenoss Core 5.0.10
Control Center 1.0.9 and Zenoss Core 5.0.9	Control Center 1.0.10 and Zenoss Core 5.0.10

Table 3: Upgrade to 1.0.3 / 5.0.3

From combination	To combination
Control Center 1.0.0 and Zenoss Core 5.0.0	Control Center 1.0.3 and Zenoss Core 5.0.3
Control Center 1.0.1 and Zenoss Core 5.0.1	Control Center 1.0.3 and Zenoss Core 5.0.3
Control Center 1.0.2 and	Control Center 1.0.3 and

From combination	To combination
Zenoss Core 5.0.2	Zenoss Core 5.0.3

Part I: Upgrading only Control Center

The chapters in this part provide instructions for upgrading Control Center without upgrading Zenoss Core.

Note   Before upgrading only Control Center, make sure that you are upgrading to a supported combination of Control Center and Zenoss Core. For more information, see *Supported upgrade paths included in this document* on page 7.

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

To perform an upgrade, proceed to *Upgrading Control Center with internet access* on page 11.

Upgrading Control Center with internet access

2

This chapter includes detailed procedures for upgrading Control Center cluster hosts that have internet access.

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 Stop Zenoss Core, and then verify it is stopped.
    a Stop Zenoss Core.

```
serviced service stop Zenoss.core
```

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

```
serviced service status Zenoss.core
```

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 Zenoss Core application template, if necessary.

This step is useful when the following conditions are true:

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

```
yum --enablerepo=zenoss-stable install -y zenoss-core-service-5.1.8
```

7 Start Control Center.

```
systemctl start serviced
```

- **Single-host deployments:** You may log in to the Control Center browser interface, and then restart Zenoss Core, 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
```

Part II: Upgrading only Zenoss Core

The chapters in this part provide instructions for upgrading Zenoss Core without upgrading Control Center.

Note   Before upgrading only Zenoss Core, make sure that you are upgrading to a supported combination of Control Center and Zenoss Core. For more information, see *Supported upgrade paths included in this document* on page 7.

The following table identifies the supported upgrades of Zenoss Core alone.

From	To
Zenoss Core 5.1.7	Zenoss Core 5.1.8
Zenoss Core 5.1.5	Zenoss Core 5.1.8
Zenoss Core 5.1.4	Zenoss Core 5.1.8
Zenoss Core 5.1.3	Zenoss Core 5.1.8
Zenoss Core 5.1.2	Zenoss Core 5.1.8
Zenoss Core 5.1.1	Zenoss Core 5.1.8

To perform an upgrade, proceed to *Upgrading Zenoss Core with internet access* on page 15.

Upgrading Zenoss Core with internet access

3

This chapter includes detailed procedures for upgrading Zenoss Core on hosts that have internet access.

Note   Zenoss strongly recommends checking the integrity of Zenoss Core databases before performing an upgrade or installing a ZenPack. For more information, see *Using Zenoss Toolbox* on page 18.

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   Stop Zenoss Core, and then verify it is stopped.

   a   Stop Zenoss Core.

```
serviced service stop Zenoss.core
```

   b   Verify the application is stopped.

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

```
serviced service status Zenoss.core
```

Clear checksums from Docker images

To perform this task, first upgrade Control Center, and then stop Zenoss Core.

This procedure provides a workaround for a condition that arises when Docker images for Zenoss Core 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 Zenoss Core

This procedure upgrades Zenoss Core.

Before performing this procedure, stop Zenoss Core.

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 Zenoss Core for this release

The download takes approximately 10-20 minutes.

```
docker run -it --rm -v /root:/mnt/root \
  zenoss/core_5.1:5.1.8_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 Zenoss Core from Docker Hub.

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

4 Start the upgrade script.

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

The upgrade takes about 25-50 minutes.

5 Restart Zenoss Core.

Some Zenoss Core services are started during the upgrade, and they need to be restarted.

```
serviced service restart Zenoss.core
```

Proceed to *After upgrading* on page 17.

After upgrading

4

This chapter includes information about what to do after upgrading Zenoss Core.

Deleting the pre-upgrade snapshot

Before the Zenoss Core 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
```

Using Zenoss Toolbox

A

This appendix describes how to install and use Zenoss Toolbox.

Zenoss Toolbox tools

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

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
```

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 18.

5 Exit the `zenoss` user account.

```
exit
```

6 Exit the Zope container.

```
exit
```