



Zenoss Core Upgrade Guide

Release 5.2.0

Zenoss, Inc.

www.zenoss.com

Zenoss Core Upgrade Guide

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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 Zenoss Core publications

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

1091.16.335

Remove procedures for upgrading Control Center clusters. That information is now in the *Control Center Upgrade Guide*.

1091.16.316

Add new version numbers.

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 unmount 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 operating environments

Zenoss Core, Control Center, and operating systems

The following table identifies the supported combinations of Zenoss Core, Control Center, and operating system releases.

Zenoss Core Release	Control Center	
	Release	Host OS
5.2.0	1.2.0	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.9, 5.1.10	1.1.9, 1.2.0	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.8	1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.7	1.1.5, 1.1.6, 1.1.7, 1.1.8	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.6 (internal release only)	(none)	(none)
5.1.4, 5.1.5	1.1.5, 1.1.6, 1.1.7	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.3	1.1.2, 1.1.3, 1.1.5	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.2	1.1.2, 1.1.3	RHEL/CentOS 7.1 or 7.2 (64-bit)
5.1.1	1.1.1, 1.1.2	RHEL/CentOS 7.1 or 7.2 (64-bit)

1

Documented upgrade paths

This chapter identifies the release dates of Control Center and Zenoss Core, and the upgrade paths included in this guide.

Release dates and versions

Release 5.2.x

Release Date	Control Center	Zenoss Core
28 Nov 2016	1.2.0	5.2.0

Release 5.1.x

Release Date	Control Center	Zenoss Core
29 Nov 2016	1.2.0	5.1.10
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

Release 5.0.x

Release Date	Control Center	Zenoss Core
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
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

Upgrade paths included in this document**Upgrade Zenoss Core**

From	To
Zenoss Core 5.1.10	Zenoss Core 5.2.0
Zenoss Core 5.1.9	Zenoss Core 5.2.0
Zenoss Core 5.1.8	Zenoss Core 5.2.0
Zenoss Core 5.1.7	Zenoss Core 5.2.0
Zenoss Core 5.1.5	Zenoss Core 5.2.0
Zenoss Core 5.1.4	Zenoss Core 5.2.0
Zenoss Core 5.1.3	Zenoss Core 5.2.0
Zenoss Core 5.1.2	Zenoss Core 5.2.0
Zenoss Core 5.1.1	Zenoss Core 5.2.0

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 1.2.0 and Zenoss Core 5.1.9

From combination	To combination
Control Center 1.0.7 and Zenoss Core 5.0.7	Control Center 1.2.0 and Zenoss Core 5.1.9
Control Center 1.0.8 and Zenoss Core 5.0.8	Control Center 1.2.0 and Zenoss Core 5.1.9
Control Center 1.0.9 and Zenoss Core 5.0.9	Control Center 1.2.0 and Zenoss Core 5.1.9
Control Center 1.0.10 and Zenoss Core 5.0.10	Control Center 1.2.0 and Zenoss Core 5.1.9

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

From combination	To combination
Control Center 1.0.2 and Zenoss Core 5.0.2	Control Center 1.0.3 and Zenoss Core 5.0.3

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Before upgrading

This chapter provides information and procedures to prepare your Zenoss Core deployment for an upgrade.

Importing from Docker Hub

To perform this procedure, the Control Center master host must have internet access.

Use this procedure to import Zenoss Core images from Docker Hub. Pulling and importing the images takes approximately 10-20 minutes.

- 1 Log in to the Control Center master host as `root`, or as a user with superuser privileges.
- 2 Pull the Zenoss Core image for this release.

```
docker run -it --rm -v /root:/mnt/root \  
zenoss/core_5.2:5.2.0_1 rsync -a /root/5.2.x /mnt/root
```

When the download completes, the `rsync` command copies scripts to `/root/5.2.x`.

- 3 Pull the HBase and OpenTSDB images for Zenoss Core.

```
/root/5.2.x/pull-docker-images.sh
```

Upgrading Zenoss Core

This chapter includes the procedures for upgrading Zenoss Core. The procedures in the preceding chapter must be completed before performing the procedures in this chapter.

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 15.

Stopping Zenoss Core

- 1 Log in to the Control Center master host as a user with `serviced` CLI privileges.
- 2 Check the status of Zenoss Core.

```
serviced service status | awk '/Name|Zenoss.core/'
```

- If the status is stopped, this procedure is complete. Continue to the next procedure.
- If the status is running, perform the remaining steps.

- 3 Stop Zenoss Core.

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

- 4 Check the status of Zenoss Core.

```
serviced service status | awk '/Name|Zenoss.core/'
```

Repeat the command until the status is stopped.

Upgrading Zenoss Core

Use this procedure to upgrade Zenoss Core.

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

```
/root/5.2.x/upgrade-core.sh
```

The upgrade process begins. If you encounter errors, see [Common upgrade error recovery procedures](#) on page 18.

3 Restart Zenoss Core.

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

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

After upgrading

Perform the procedures in this chapter after Zenoss Core is upgraded.

Deleting the pre-upgrade snapshot

The Zenoss Core upgrade script uses Control Center to create and tag a snapshot of the system before it begins the upgrade process. Tagged snapshots persist until they are explicitly removed, and grow over time. 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 a user with `serviced` CLI 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-core-5.2.0

The snapshot identifier is shown in the first column.

- 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
```

A

Using Zenoss Toolbox

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 Zenoss Core 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 temporary 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
```

- 6 Optional: Delete the Zenoss Toolbox source file, if desired.

```
rm -rf /tmp/toolbox
```

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 15.
- 5 Exit the `zenoss` user account.

```
exit
```

- 6 Exit the Zope container.

```
exit
```

Common upgrade error recovery procedures

B

This appendix describes common error messages during upgrades, and provides procedures for recovering and continuing.

Version of root service is empty

In some releases of Zenoss Core, the application template includes an empty value for the Version object of the Zenoss.core service. Use this procedure to set the version number and restart the upgrade.

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

Replace *Version-Number* with the current version of Zenoss Core:

```
/opt/serviced/bin/serviced-set-version Zenoss.core Version-Number
```

- 3 Restart the upgrade script.

```
/root/5.2.x/upgrade-core.sh
```

A snapshot with the given tag already exists

When an upgrade attempt fails, the upgrade script does not remove the snapshot it creates at the beginning of the upgrade process. Use this procedure to remove the tag of the pre-upgrade snapshot and restart the upgrade. Untagged snapshots are removed when their time-to-live (TTL) expires. The TTL value is defined by the `SERVICED_SNAPSHOT_TTL` variable in the Control Center configuration file.

- 1 Log in to the Control Center master host as a user with `serviced` CLI 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-core-5.2.0

The snapshot identifier is shown in the first column.

- 3 Remove the tag of the pre-upgrade snapshot.

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

```
serviced snapshot untag Snapshot-ID
```

- 4 Restart the upgrade script.

```
/root/5.2.x/upgrade-core.sh
```