

Upgrading RHEV 3.3 to 3.4

In this appendix, we will learn how to update the RHEV environment between major releases. Though the whole book is based on **Red Hat Enterprise Virtualization (RHEV)** Version 3.3, in this appendix, we will see how to upgrade from Version 3.3 to 3.4. When I started writing this book, RHEV Version 3.3 was the latest production ready available for use. Red Hat has released the next update of RHEV Version 3.4 and added more feature enhancements to it. The rest of the appendix will introduce you to some of the major features added in the 3.4 release and also the steps and processes you need to follow to upgrade from RHEV Version 3.3 to 3.4.

In this chapter, we are going to learn the following topics:

- RHEV Version 3.4 features
- Upgrading to RHEV-Manager 3.4
- Upgrading RHEV reports
- Updating the RHEV-Hypervisor host for use with 3.4
- Performing post-upgrade tasks

Features of RHEV Version 3.4

There are numerous features and enhancements added across infrastructure, networking, storage, service-level agreements and scheduling, and other virtualization processes in 3.4 release of RHEV.

Some of the major features include the following:

- Red Hat Enterprise Linux 7 is now supported as a guest operating system
- Reboot option for virtual machines from RHEV-M admin and user interfaces
- Hot plugging of vCPU to a running guest operating system

- Multihost network configuration across hosts within data centers
- OpenStack Neutron integration
- RHEV-M now supports IPv6
- Supports multiple storage domain types in a data center and allows shared storage domains of multiple types (iSCSI, FCP, NFS, Posix, and Gluster), which can now be added to a single data center
- Multipathing supports for iSCSI target to aid redundancy and better throughput
- A single-disk snapshot to create customized snapshots of virtual disks
- Guest agent support for other Linux distributions such as OpenSUSE and Ubuntu
- Support for virtual machine affinity to define which virtual machines run together on the same or different hypervisor
- A new cluster policy called Even Virtual Machine distribution, which distributes virtual machines across a cluster of hosts based on the virtual machine count
- The user interface refresh synchronization feature

For a more detailed list of new features and enhancements added in the 3.4 release of RHEV, please refer to the release notes at https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.4/html/Manager_Release_Notes/index.html.

Upgrading to RHEV-M 3.4

During the process of the upgrade, your existing virtual guest on your RHEV infrastructure 3.3 continues to run independently without any issues.

The upgrade procedure in this section assumes the system is running the 3.3 release of the manager and is subscribed to all the required 3.3 channels, as described in *Chapter 2, Installing RHEV Manager and Hypervisor Hosts*, when we initially set up the manager to receive RHEV 3.3 packages. This is necessary to roll back to the original 3.3 state if upgrade to 3.4 fails for some reason. Also, make sure you are running the latest release of RHEV 3.3.



For more information on updating to the latest release, please refer to https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html-single/Installation_Guide/index.html#sect-Upgrades_between_Minor_Releases.

To upgrade RHEV-M from 3.3 to 3.4, perform the following steps:

1. Log in to RHEV-M as a root and open a terminal.
2. Subscribe the manager machine to the required software channels either using Red Hat Network Classic or using the subscription manager. However, it's strongly recommended that you use the subscription manager. In order to use Red Hat Network Classic, run the following command:

```
[root@rhevmanager ~]# rhn-channel --add -channel=rhel-x86_64-server-6-rhev-3.4
```

To use the subscription manager method to subscribe to the channels, run the following command:

```
[root@rhevmanager ~]# yum-config-manager --enable rhel-6-server-rhev-3.4-rpms
```

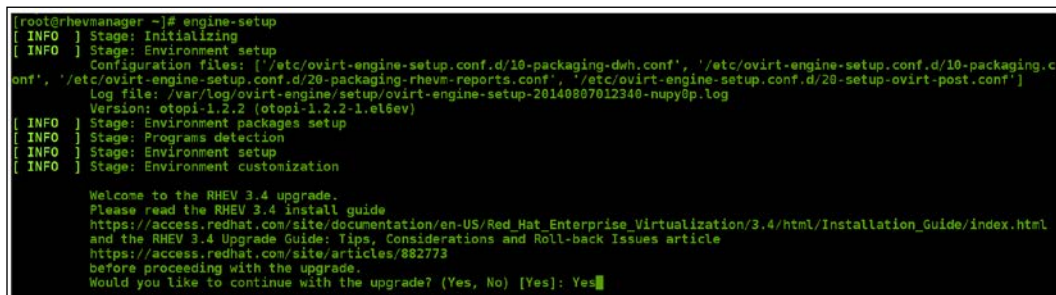
3. Update the RHEV-M setup to ensure you have the recent version of engine setup installed on your system using the following command:

```
[root@rhevmanager ~]# yum update rhvm-setup -y
```

4. Update `rhvm-reports-setup` and `rhvm-dwh-setup` packages to ensure the latest version of these packages are installed:

```
[root@rhevmanager ~]# yum install rhvm-reports-setup rhvm-dwh-setup -y
```

5. Run the `engine-setup` command, as shown in the following screenshot, and follow the onscreen instructions to upgrade the manager from 3.3 to 3.4:



```
[root@rhevmanager ~]# engine-setup
[ INFO ] Stage: Initializing
[ INFO ] Stage: Environment setup
Configuration files: [/etc/ovirt-engine-setup.conf.d/10-packaging-dwh.conf', '/etc/ovirt-engine-setup.conf.d/10-packaging.c
onf', '/etc/ovirt-engine-setup.conf.d/20-packaging-rhev-reports.conf', '/etc/ovirt-engine-setup.conf.d/20-setup-ovirt-post.conf']
Log file: /var/log/ovirt-engine/setup/ovirt-engine-setup-20140807012340-nupy0p.log
Version: otopi-1.2.2 (otopi-1.2.2-1.el6ev)
[ INFO ] Stage: Environment packages setup
[ INFO ] Stage: Programs detection
[ INFO ] Stage: Environment setup
[ INFO ] Stage: Environment customization

Welcome to the RHEV 3.4 upgrade.
Please read the RHEV 3.4 install guide
https://access.redhat.com/site/documentation/en-US/Red\_Hat\_Enterprise\_Virtualization/3.4/html/Installation\_Guide/index.html
and the RHEV 3.4 Upgrade Guide: Tips, Considerations and Roll-back Issues article
https://access.redhat.com/site/articles/682773
before proceeding with the upgrade.
Would you like to continue with the upgrade? (Yes, No) [Yes]: Yes
```

6. Once the upgrade is successful without any error, you can safely remove or disable the subscribed software channels of RHEV 3.3 by running either one of the following commands:

```
[root@rhevmanager ~]# rhn-channel --remove -channel=rhel-x86_64-server-6-rhev-3.3
```

```
[root@rhevmanager ~]# yum-config-manager --disable rhel-6-server-rhev-3.3-rpms
```

7. Finally, make sure your manager system is updated with the latest packages by running the following command:

```
[root@rhevmanager ~]# yum update -y
```
8. If a new kernel is installed by the previous Yum update, reboot the manager system once.
9. Now you have completed the upgrade of manager from 3.3 to 3.4. To check this, log in to the admin portal and click on the **About** button in the top-left corner of the window next to **Signout**.

Upgrading RHEV reports

After you perform a successful upgrade of your manager system, you can upgrade the **Data Warehouse (DWH)** and/or reports installed on your manager system.

To upgrade reports, perform the following steps:

1. Log in as root on the manager system, and from the terminal, run the following command to update the respective report and data warehouse-related packages:

```
[root@rhevmanager ~]# yum update rhvm-dwh rhvm-reports -y
```
2. Once you have updated the packages, rerun the `engine-setup` command to reconfigure the report and data warehouse, if the previous Yum command installed any latest versions of these respective packages.

Updating the RHEV-Hypervisor host for use with 3.4

Ensure that all of your virtualization hosts are up to date and running the most recent RHEL packages or hypervisor images. You can upgrade and reinstall a RHEV-H host from an ISO stored on the RHEV-M or use the CD-ROM or DVD media.

Upgrading hypervisor hosts involves shutting down and deactivating virtual machines and restarting the physical server. So, it's highly recommended that you plan the upgrade activity and live migrate the virtual machine running on the physical hypervisor hosts that you are planning to upgrade, before performing the required steps.

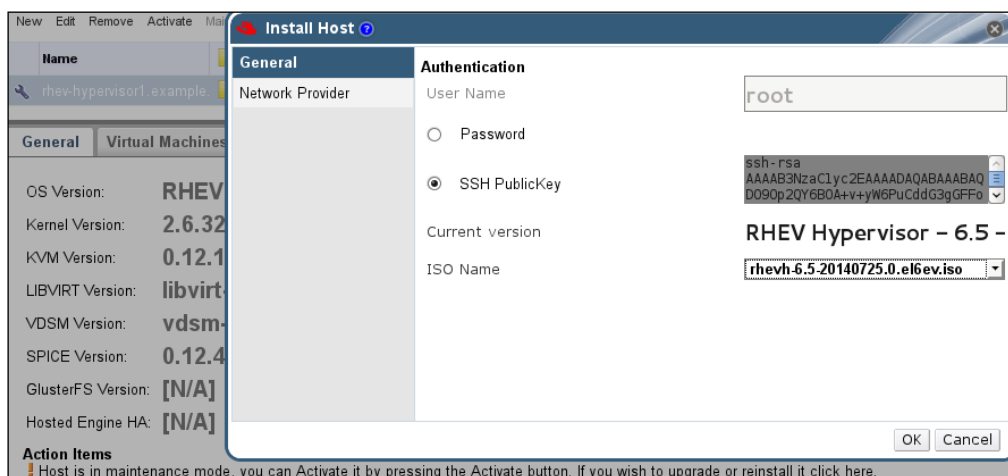
To upgrade RHEV-H host from the administration portal using the latest RHEV-H ISO stored on manager system, make sure the latest version of hypervisor is stored on the manager system by performing the following steps:

1. Log in to the manager system as a root, and from the terminal, subscribe to the RHEV-H (v.6 x86_64) channel on the Red Hat Network by running either one of the following commands:

```
[root@rhevmanager ~]# rhn-channel -a -c rhel-x86_64-server-6-rhev
[root@rhevmanager ~]# subscription-manager repos --enable=rhel-6-server-rhev-rpms
```

2. Then, install the latest RHEV-H package by executing the following command from the same manager system:


```
[root@rhevmanager ~]# yum install rhev-hypervisor -y
```
3. After the successful installation of the latest hypervisor, it's time to log in to the administrator portal of the manager and select the host you plan to upgrade.
4. Live migrate all the virtual machines running on the selected host to other host in the cluster.
5. Once all the virtual machines are live migrated out of the hypervisor host, put the host in the maintenance mode.
6. Select the host and navigate to the **General** tab at the bottom pane. You can see an alert message, which indicates that a new version of the RHEV-H is available, and if you wish to upgrade or reinstall, please click on it.
7. Click on **click here**, and this will open up a new **Install Host** window, as show in the following screenshot:



8. Leave the rest of the fields of the **Install Host** window as their default values, and select the latest ISO from the drop-down menu and click on **OK**.
9. This will upgrade the hypervisor host to the selected version of RHEV-H ISO, and the host status will change from **Maintenance** to **Installing**. To track the status of the upgrade, click on the **Events** tab in the bottom pane of the manager console and expand it using the up arrow sign in the bottom-left corner of the same manager console.
10. After the successful upgrade process, the hypervisor host will go for a reboot before turning back to the maintenance state. Select the host and click on **Activate** to bring the host back to the up state.
11. Once the host is back to the up and running state, migrate the virtual machine back to the upgraded host, and perform the same steps to upgrade the rest of other hosts in the cluster as well in the data center.

Performing post-upgrade tasks

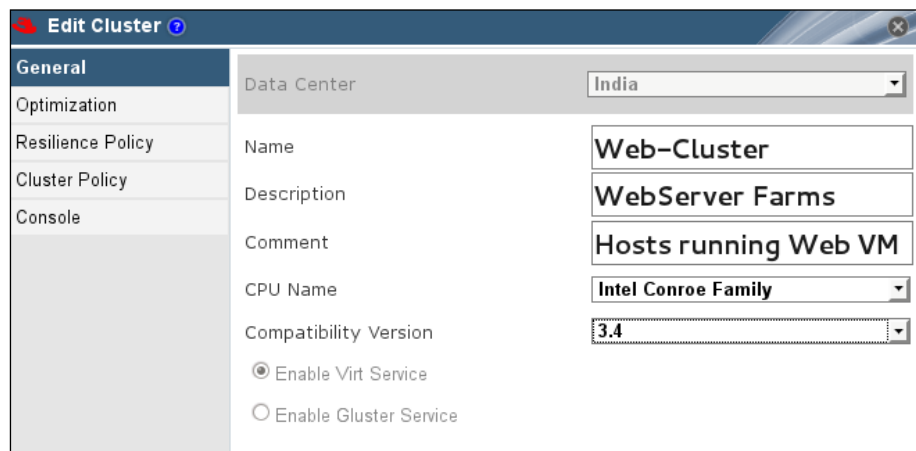
After the successful upgrade of the manager and all hypervisor hosts that run on your RHEV data center and cluster, it's the time to perform some final post-upgrade tasks from the administration portal of the manager console.


All clusters configured in RHEV have some cluster version configured. If you followed the steps outlined in the book, your cluster compatibility version will be shown as 3.3. You need to change this to Version 3.4 to utilize the new feature added in RHEV 3.4 release.

To change the cluster's compatibility version, perform the following steps:

1. Log in to the administration portal of manager.
2. Navigate to the **Cluster** tab, and select the cluster whose compatibility version you want to change.

3. Click on **Edit** and change **Compatibility Version** from 3.3 to 3.4 under the **General** tab of the **Edit Cluster** window. A warning window will pop up. Please accept and click on **OK**, as shown in the following screenshot:



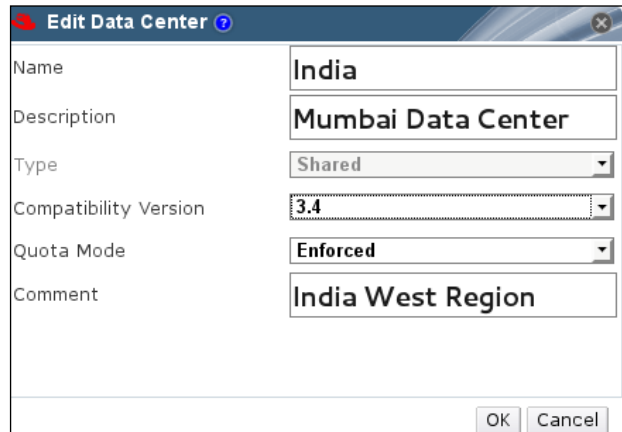
 To change the cluster's compatibility level, all the hosts running the cluster must be upgraded to the same release of the RHEV hypervisor.

Once you have changed the cluster compatibility level from 3.3 to 3.4 for all the clusters in the data center, you can change the compatibility version of the data center to 3.4.

To change your data center's compatibility version, perform the following steps:

1. Log in to the administration portal of manager.
2. Navigate to the **Data Centers** tab, and select the data center whose compatibility version you want to change.

3. Click on **Edit** and change **Compatibility Version** from 3.3 to 3.4 in the **Edit Data Center** window. A warning window will pop up. Please accept and click on **OK**, as shown in the following screenshot:



The **Compatibility Version** field indicates the version of RHEV that the data center is intended to be compatible with. All clusters in the data center must support the desired compatibility level.

References

The following is the list of various documentations, which were instrumental in conceiving this book:

- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Manager_Release_Notes/index.html
- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Technical_Notes/index.html
- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Installation_Guide/index.html
- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Administration_Guide/index.html

- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Command_Line_Shell_Guide/index.html
- https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Virtualization/3.3/html/Technical_Reference_Guide/index.html

Summary

In this appendix, we have our RHEV infrastructure upgraded from 3.3 to the latest 3.4 release. This will help you to use the latest virtualization features and performance improvements added on RHEV 3.4.

