Red Hat Enterprise Virtualization 3
Installation Instructions And Important Information

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Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Contents

Installation Instructions

Introduction

Red Hat Enterprise Virtualization (RHEV) is an end-to-end virtualization solution. RHEV 3 supports an increased number of virtual machine resource allocations, live migration, and increased operational efficiency.

> **NOTE:** For instructions on installing RHEV 3, see **docs.redhat.com**.

The RHEV platform contains two main components:

- RHEV-Manager (RHEV-M) — Provides a graphical user interface to manage the physical and logical resources of the Red Hat Enterprise Virtualization infrastructure. RHEV-M is installed on a Red Hat Enterprise Linux 6 server and accessed from a client installed with a browser. The RHEV-M constitutes of:
    - Administration Portal — Used to setup, configure, and manage the RHEV environment.
    - User Portal — Used to connect to virtual machines. You can create virtual machine templates and virtual machines from this interface.
- RHEV-Hypervisor (RHEV-H) — Is based on Kernel-Based Virtual Machine (KVM) virtualization technology. To increase operational efficiency, you can either use RHEV-H as a standalone hypervisor or integrate it with Red Hat Enterprise Linux 6.2, Red Hat Enterprise Linux 6.3, Red Hat Enterprise Linux 6.4, and Red Hat Enterprise Linux 6.5.

    > **NOTE:** You can download the RHEV 3 image from Red Hat Network.

Hardware Requirements

To set up a Red Hat Enterprise Virtualization environment, you require:

- A management server
- Virtualization hosts — Minimum two to support migration and power management
- Clients — One or more to access the Administration Portal
- Storage infrastructure — Provided by NFS, iSCSI, FC, or locally attached to virtualization hosts

Management Server Requirements

> **NOTE:** The minimum and recommended requirements are for a small to a medium size installation. The exact system requirements may vary depending upon sizing and load.

Table 1. System Requirement (Minimum)

Component	Description
Processor	Dual core
Memory	4 GB
Disk space	25 GB

Component	Description
Network	One network interface card with a bandwidth of 1Gbps

Table 2. System Requirement (Recommended)

Component	Description
Processor	Quad core processor or multiple dual core processor
Memory	4 GB
Disk space	50 GB
Network	One network interface card with a bandwidth of 1Gbps

Virtualization Host Requirements

This section provides information on the minimum hardware requirements to support RHEV-H and Red Hat Enterprise Linux Hosts.

Processor

All processors must support Intel 64 or AMD 64 processor extensions, and the AMD-V or Intel VT hardware virtualization extensions must be enabled. Support for the No eXecute flag (NX) is also required.

Memory

It is recommended that virtualization hosts have a minimum of 2 GB RAM. The amount of RAM required varies depending on:

- Guest operating system requirements
- Guest application requirements
- Memory activity and usage of guests

KVM is able to overcommit physical RAM for virtualized guests. Overcommit allows the RHEV environment to present more memory to guests than is actually physically present. The default overcommit ratio is 0.5.

Storage

Virtualization hosts require local storage to store configuration, logs, kernel dumps, and to swap space. The storage requirements for Red Hat Enterprise Linux hosts vary based on the amount of disk space used by their existing configuration, but should be greater than the RHEV-H.

It is recommended that each virtualization host has minimum 10 GB of internal storage comprising of:

- Root partition — 512 MB
- Configuration partition — 8 MB
- Logging partition — 2048 MB
- Swap partition — 8 MB
- Data partition — 256 MB

    NOTE: The recommended size of the swap partition depends on the system the hypervisor is being installed on and the anticipated level of overcommit for the environment.

    NOTE: You may not be able to upgrade the hypervisor from the RHEV-M if you use a smaller data partition. By default, disk space remaining after allocation of swap space will be allocated to the data partition.

Software Requirements

This section lists the minimum software required to work in a Red Hat Enterprise Virtualization Environment.

Operating System

To install:

- Red Hat Enterprise Linux Hypervisor, see *Red Hat Enterprise Linux - Hypervisor Deployment Guide* at **redhat.com**.
- RHEV-M, install Red Hat Enterprise Linux 6.*x.*

    NOTE: To use Red Hat Enterprise Linux hosts install the RHEV-M.

Client

To access the **Administration Portal**, you require a client with a supported web browser. The **Administration Portal** supports the following clients and browsers:

Client	Windows XP
	Windows 7 (x86, AMD64, and Intel 64)
	Windows 2008/R2 (x86, AMD64, and Intel 64)
Browser	Internet Explorer 7 and higher on Windows, with the .NET Framework 4 installed

To access the **User Portal** , you need a thin client with a supported web browser. The **User Portal** supports the following clients and browsers:

Client	Red Hat Enterprise Linux 5.5 (i386, AMD64, and Intel 64)
	Red Hat Enterprise Linux 6.0 (i386, AMD64, and Intel 64)
	Red Hat Enterprise Virtualization Certified Linux-based thin clients
	Windows XP
	Windows XP Embedded (XPe)
	Windows 7 (x86, AMD64, and Intel 64)
	Windows 2008/R2 (x86, AMD64, and Intel 64)
	Windows Embedded Standard 2009
Browser	Internet Explorer 7 and higher on Windows, with the SPICE ActiveX control installed
	Mozilla Firefox 3.5 and higher on Red Hat Enterprise Linux, with the SPICE plugin installed

Red Hat Network Channels

To install RHEV-M, subscribe to Red Hat Network channels. These channels are used to retrieve the initial installation packages and updates as they become available. The channels are:

- Red Hat Enterprise Virtualization Manager (v.3 x86_64)
- JBoss Application Platform (v.5) for RHEL 6 Server x86_64
- Red Hat Enterprise Linux Server Supplementary (v.6 64-bit x86_64)

2

Important Information

Known Issues In Red Hat Enterprise Virtualization 3.3

DDR DMA Testing Fails In ethtool On RHEV-H 3.3

Description	On a RHEV-H 3.3 using the Emulex OCM14104 adapter, the Double Data Rate (DDR) Direct Memory Access (DMA) testing on the ethtool fails, when the cable is unplugged.
Cause	The DDR DMA test is executed after the external loopback test. On certain physical layers the loopback test might take up to 15 seconds. The driver polls for the completion of the test for 12 seconds only and the DDR DMA fails in cases where the loopback takes up to 15 seconds.

RHEV-H 6.5 Displays Incorrect Processor Details

Description	RHEV-H 6.5 displays the processor details incorrectly. There is no functionality loss.
Cause	RHEV-H 6.5 displays the virtualized processor details and not the physical processor details.

Known Issues In Red Hat Enterprise Virtualization 3.2

Navigating To Red Hat Network Settings Displays A Blank Red Screen

Description	When a user scrolls to the **Red Hat Network** option in RHEV–H 3.2 to access the configuration screen, a blank red screen is displayed instead for a prolonged period of time.
Work Around	This issue is fixed in RHEV 3.3.
Cause	The python script tries to connect to the Red Hat subscription and fails multiple times.

Incorrect Details Reported For Intel Xeon E7 Processor In RHEV-H 3.2/RHEL-H 6.4

Description	Dell PowerEdge servers with Intel Xeon E7 processors and RHEV-H 3.2/RHEL-H 6.4 lists the following processor details incorrectly: • Processor type: Intel Xeon E5 processor listed instead of Intel Xeon E7 processor. • Processor sockets: One socket is listed instead of two.
Cause	Hosts with multiple NUMA nodes cause incorrect information in `libvirt` capabilities.

Known Issues In Red Hat Enterprise Virtualization 3.1

biosdevname Names SR-IOV Virtual Function From Intel rNRC As ethN

Description   Servers installed with RHEV 3.1 and Intel Ethernet NDC controller, the biosdevname 0.3.11 utility names the SR-IOV virtual functions from 10GbE port of Intel rNRC as ethN. The VFs are named ethN instead of the following format:

```
em<port number>_<virtual function instance>
```

This issue affects Dell PowerEdge 12th generation platforms with on-board network adapters NDC, which support SR-IOV when SR-IOV is enabled for the adapters.

Workaround   To turn off the new naming convention, enter the kernel command line parameter, `biosdevname=0` in the boot command line during and after installation. This issue is fixed in biosdevname-0.4.0. For more information, see **http://linux.dell.com/biosdevname/ biosdevname-0.4.1/**.

> **NOTE:** This issue is fixed in RHEV 3.2.

Cause   SR-IOV virtual functions from on-board network adapters do not have SMBIOS type 41 records. To retrieve the port number, use the SMBIOS device type instance from the physical function that has the virtual functions.

Unable To Configure RHEV 3.1 Home Page Setup, After Accessing It Multiple Times

Description   RHEV 3.1 home page becomes unresponsive when the setup parameters are accessed multiple times, displaying the following error:

```
Maximum recursion depth exceeded.
```

Cause   The Text User Interface becomes unresponsive when you use the arrow keys to move between different pages repeatedly (over 200 times).

Known Issues In Red Hat Enterprise Virtualization 3.0

Disk Description Unknown While Installing RHEV-H On SUT

Description   While installing RHEV-H on SUT, disk displays **UNKNOWN** in the **Description** field.

> **NOTE:** This issue occurs only with SAS disks.

> **NOTE:** This issue is fixed in RHEV 3.2.

Cause   In earlier versions, **ID_SCSI_COMPAT** was the value for **Description** under **Disk Details** in the storage selection screen. If **ID_SCSI_COMPAT** is not defined for a device, the device checks for virtio disk. If virtio disk does not exist, **UNKNOWN** is displayed in the **Description** field.

RHEV-H 3.0 Installation Fails In UEFI Mode Using Optical Or USB Media

Description   RHEV-H 3.0 installation fails in UEFI mode using optical or USB media.

Workaround   UEFI is not supported in RHEV-H 3.0.

> **NOTE:** It has been added as tech preview in RHEV-H 3.1 and it will be fixed in RHEV-H 3.2.

RHEV 3.0 Displays Wrong Time Zone While Configuring Windows VMs

Description   While configuring Windows Virtual Machines (VMs), RHEV 3.0 displays wrong time zones as compared to the standard time zones.

Workaround   This issue is fixed in RHEV-M 3.1.

Cause   RHEV-M has the wrong time zone values in its data base (vdsbroker).

Additional Information

- Peripherals with native support in Red Hat Enterprise Linux 6.2, Red Hat Enterprise Linux 6.3, Red Hat Enterprise Linux 6.4, and Red Hat Enterprise Linux 6.5 will have native support in RHEV-H 6.2, RHEV-H 6.3, RHEV-H 6.4, and RHEV-6.5.
- Peripherals without native support will not be supported on RHEV-H 6.2, RHEV-H 6.3, RHEV-H 6.4, and RHEV-H 6.5. New add-on drivers/Red Hat DUP can use Red Hat Enterprise Linux as a hypervisor.
- RHEV 3 is supported on all Dell PowerEdge servers. For more information on RHEV Support Matrix for Dell PowerEdge Servers, see **http://linux.dell.com/files/supportmatrix/**
- For information on deploying Red Hat Enterprise Virtualization, see the product documentation available on **docs.redhat.com**.

Getting Help

Contacting Dell

📝 **NOTE:** Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area.

To contact Dell for sales, technical support, or customer-service issues:

1. Go to **dell.com/support**.
2. Select your country from the drop-down menu on the top left corner of the page.
3. For customized support:
   a) Enter your system service tag in the **Enter your Service Tag** field.
   b) Click **Submit**.

   The support page that lists the various support categories is displayed.
4. For general support:
   a) Select your product category.
   b) Select your product segment.
   c) Select your product.

   The support page that lists the various support categories is displayed.

Related Documentation

⚠ **WARNING: See the safety and regulatory information that shipped with your system. Warranty information may be included within this document or as a separate document.**

📝 **NOTE:** For all PowerEdge and PowerVault documentation, go to **dell.com/support/manuals** and enter the system Service Tag to get your system documentation.

📝 **NOTE:** For all Dell OpenManage documents, go to **dell.com/openmanagemanuals**.

📝 **NOTE:** For all operating system documents, go to **dell.com/operatingsystemmanuals**.

📝 **NOTE:** For all storage controllers and PCIe SSD documents, go to **dell.com/storagecontrollermanuals**.

Your product documentation includes:

- The *Owner's Manual*, which provides information about system features and describes how to troubleshoot the system and install or replace system components. This document is available online at **dell.com/support/manuals**.
- The rack documentation included with your rack solution describes how to install your system into a rack, if required.
- Any media that ships with your system provides documentation and tools for configuring and managing your system, including those pertaining to the operating system, system management software, system updates, and system components that you purchased with your system.
- The *Administrator's Guide*, which provides information about configuring and managing the system.

NOTE: Always check for updates on **dell.com/support/manuals** and read the updates first because they often supersede information in other documents.

NOTE: When upgrading your system, it is recommended that you download and install the latest BIOS, driver, and systems management firmware on your system from **dell.com/support**.

Locating Your System Service Tag

Your system is identified by a unique Express Service Code and Service Tag number. The Express Service Code and Service Tag are found on the front of the system by pulling out the information tag. This information is used by Dell to route support calls to the appropriate personnel.

Documentation Feedback

If you have feedback for this document, write to **documentation_feedback@dell.com**. Alternatively, you can click on the **Feedback** link in any of the Dell documentation pages, fill out the form, and click **Submit** to send your feedback.