

# **Red Hat Enterprise Virtualization 3.0 Manager Release Notes**

Release notes for Red Hat Enterprise Virtualization Manager 3.0.



**Kate Grainger**

**Stephen Gordon**

**Misha Husnain Ali**

# Red Hat Enterprise Virtualization 3.0 Manager Release Notes

## Release notes for Red Hat Enterprise Virtualization Manager 3.0. Edition 1

Author	Kate Grainger	<a href="mailto:kgrainge@redhat.com">kgrainge@redhat.com</a>
Author	Stephen Gordon	<a href="mailto:sgordon@redhat.com">sgordon@redhat.com</a>
Author	Misha Husnain Ali	

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1801 Varsity Drive  
Raleigh, NC 27606-2072 USA  
Phone: +1 919 754 3700  
Phone: 888 733 4281  
Fax: +1 919 754 3701

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<b>I. Introduction</b>	<b>1</b>
<b>1. What's New?</b>	<b>3</b>
<b>II. Technical Notes</b>	<b>7</b>
<b>2. Recommended Practices</b>	<b>9</b>
2.1. General .....	9
2.2. Hosts .....	9
2.3. Virtual Machines .....	9
<b>3. Considerations</b>	<b>11</b>
3.1. General .....	11
3.2. Administration Portal .....	11
3.3. Hosts .....	12
3.4. Storage and Network .....	13
3.5. Virtual Machines .....	13
3.6. Reports .....	14
3.7. SPICE .....	14
<b>4. Resolved Issues</b>	<b>15</b>
<b>5. Security</b>	<b>17</b>
<b>A. Revision History</b>	<b>19</b>



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# Part I. Introduction

Red Hat is pleased to announce the availability of Red Hat Enterprise Virtualization Manager 3.0. Red Hat Enterprise Virtualization Manager is a feature-rich server and desktop virtualization management system that provides advanced capabilities for hosts and guests, including high availability, live migration, storage management and system scheduling. It features improved disk I/O performance for virtual machines using thin provisioning or snapshots.

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# What's New?

This section covers the highlights of Red Hat Enterprise Virtualization 3.0.

The following features have been added since the release of Red Hat Enterprise Virtualization 2.2:

- **Adding Red Hat Enterprise Virtualization Hypervisor hosts.** You can now add Red Hat Enterprise Virtualization Hypervisor hosts in addition to Red Hat Enterprise Linux hosts using the Administration Portal, as long as you have enabled the registration password on the hosts first.

Previously, to add a Red Hat Enterprise Virtualization Hypervisor to the Red Hat Enterprise Virtualization Manager, the manager's details (server name, port number) were manually provided during the hypervisor's installation. Now, a hypervisor can also be added from the manager administration portal even if the manager's details were not provided to the hypervisor.

- **Approving Red Hat Enterprise Virtualization Hypervisor hosts.** The Red Hat Enterprise Virtualization Manager Administration Portal now provides an in-line approval mechanism for Red Hat Enterprise Virtualization Hypervisor hosts that are automatically added to the environment when the Manager is upgraded.

To approve Hypervisor hosts into your upgraded environment, click the Approve button in the Status column of the pending host on the main Hosts tab.

- **Single local administrative user.** The Red Hat Enterprise Virtualization Manager now provides an internal administrative user, `admin@internal`, to facilitate initial setup and troubleshooting of the environment without a directory server. The `admin` and the `internal` domain are created during Red Hat Enterprise Virtualization Manager installation.

You can use the `rhevms-config` utility to set the `admin@internal` user password:

```
rhevms-config -s AdminPassword=<your_password>
```

You do not need to use quotes, but you do need to escape shell characters if you include them in the password. Changes take effect only after you restart the JBoss service:

```
service jbossas restart
```

- **Support for authentication against multiple directory services domains.** The Red Hat Enterprise Virtualization Manager is able to use IPA, Active Directory, or a combination of the two, to provide user authentication. Directory services domains are managed post-installation using the `rhevms-manage-domains`.
- **Linux backend.** The Red Hat Enterprise Virtualization Manager now provides a backend and supporting tools that run exclusively on Red Hat Enterprise Linux 6.
- **Improved Administrator Portal user interface.** The Administration Portal interface has been updated to simplify administration tasks based on customer feedback and user testing and now includes:
  - A landing page with links to the Administrator Portal, User Portal, and documentation.
  - A tree view that supports more efficient management of the objects that make up the environment including data centers, clusters, storage domains, hosts, and virtual machines
  - A new storage management interface that simplifies the administration of storage.

## Chapter 1. What's New?

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- A new network management interface that simplifies advanced operations, such as creating and managing VLANs on bonded interfaces, and improves the graphical representation of network topology.
- Context-sensitive help on every dialog to provide users with help information only when and where it is needed.
- **New Power User Portal.** The User Portal has been extended to include a Power User Portal, which, depending on permissions, can allow users access to perform tasks that were previously available only through the Administrator Portal.
- **Updated Red Hat Enterprise Virtualization Hypervisor user interface.** The user interface of the hypervisor has been extensively improved. Interactive installation and configuration is now performed using an enhanced text-based user interface. Unattended installation and configuration options are also still available.
- **New RESTful API.** The new RESTful API allows users to integrate Red Hat Enterprise Virtualization Manager with their own applications. All API functions are exposed in the REST interface. A Python-based command line interface allows for scripting and automation and has been developed with the upstream community.
- **Customization hooks.** A new hook mechanism for customization allows administrators to define scripts to modify virtual machine definitions or run system commands. For example, administrators can use these hooks to add extra options such as CPU pinning, watchdog devices, direct LUN access, and more. Sample hooks of common custom features are included as examples.
- **Local storage.** Red Hat Enterprise Virtualization can now use the local storage of Red Hat Enterprise Virtualization Hypervisor and Red Hat Enterprise Linux hosts. Local storage uses a dedicated local filesystem for virtual machines and templates.
- **Multi-level Administration (MLA) support.** Administrators are able to grant users as much or as little control over the environment as required. When permissions are granted over an object with children in the object hierarchy, for example clusters that have attached hosts, the user is granted permission over both the selected object and its children.
- **Red Hat Enterprise Virtualization Manager Reports.** A new reporting engine, accessible through a web interface, is included. It produces reports which can be rendered to screen, printed, or exported to a variety of formats including PDF, Excel, CSV, Word, RTF, Flash, ODT, and ODS.
- **Red Hat Enterprise Linux guest agent.** The agent can be installed inside the virtual machines and allows the Red Hat Enterprise Virtualization Manager to monitor their health and status.

Additionally on Red Hat Enterprise Linux 6 when the GNOME or KDE graphical desktop environments are in use features including Single Sign On and desktop locking are supported.

The agent is available for both 64-bit and 32-bit systems running Red Hat Enterprise Linux 5 or Red Hat Enterprise Linux 6 guests. You will find the *rhev-guest-agent* package in the **rhe1-x86\_64-rhev-agent-6-server** channel on Red Hat Network (<https://rhn.redhat.com/>).

- **New format for block storage domains.** The new format for block storage domains provides support extending of a domain to up to 50 LUNs and removes the dependency on LUN GUIDs.
- **Performance.**

- 
- The maximum allowable CPU and memory allocation for a virtual machine has been increased to 64 virtual CPUs and 2 TB of RAM, allowing even the most memory-intensive enterprise workloads to be virtualized.
  - The hypervisor has also been updated to use the Red Hat Enterprise Linux 6 kernel, allowing customers to take advantage of the latest hardware.
  - The updated *vds*m package provides increased performance, and scalability over previous versions.



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## Part II. Technical Notes

The following sections cover recommendations and considerations for Red Hat Enterprise Virtualization Manager 3.0. For information about the Red Hat Enterprise Virtualization Hypervisor, refer to the *Red Hat Enterprise Linux Release Notes*.

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# Recommended Practices

This section recommends practices that will help ensure the best possible outcomes from your Red Hat Enterprise Virtualization Manager.

## 2.1. General

- Red Hat Enterprise Virtualization 3.0 represents a major upgrade and now utilizes the power and stability of Red Hat Enterprise Linux 6.

Please ensure that your Red Hat Enterprise Linux 6 system is up to date before commencing an installation of, or upgrade to, Red Hat Enterprise Virtualization 3.0.

- Do not use non-ASCII characters in Red Hat Enterprise Virtualization group and user names because Kerberos authentication supports only ASCII characters.

## 2.2. Hosts

- The Red Hat Enterprise Virtualization Hypervisor provides a locked down environment. You must allocate enough storage space for the hypervisor's internal use. In particular `/data` is used for storage of upgrade images and, where local storage is being used, virtual machine images. Please refer to the *Red Hat Enterprise Linux Hypervisor Deployment Guide* for more information.

## 2.3. Virtual Machines

- After upgrading to 3.0, you also need to upgrade the guest agents for both Windows and Linux virtual machines.
- When exporting virtual machines and templates, ensure the target storage domain has sufficient free disk space to hold the exported virtual machine. If insufficient disk space is available, the export operation will fail.
- Do not use non-ASCII characters for snapshot names. The use of non-ASCII characters for snapshot names is not supported.



# Considerations

The following are presented for your consideration.

## 3.1. General

- Login names that contain characters outside of the US-ASCII character set are not currently supported. This is a limitation imposed by the Java Runtime Environment.
- The Red Hat Enterprise Virtualization Manager searches Active Directory users by first name and NT4 Security Accounts Manager (SAM) usernames. It does not search by User Principle Names (UPNs) of the form **user@domain**.
- When using the VNC client with languages other than English, the keyboard layout is the same as for QEMU.
- When working with an Active Directory LDAP server, all users, including administrators and standard users, must be bound and authenticated to log in. Kerberos pre-authentication is required on the Directory Server. It is not possible to authenticate users that are set not to require Kerberos pre-authentication in Active Directory.
- The Red Hat Enterprise Virtualization Manager welcome page does not render correctly in Internet Explorer 9 when compatibility view is enabled.

To disable compatibility view for the Red Hat Enterprise Virtualization Manager click the Compatibility View button on the address bar while the site is loaded.

- The REST API now includes a force action to assist with removal of a data center.
- The Red Hat Enterprise Virtualization Manager setup script, **rhevms-setup**, supports the **en\_US.UTF-8**, **en\_US.utf8**, and **en\_US.utf-8** locales. Attempts at installation on systems where the locale in use is not one of these supported values will fail.
- Occasionally, JBoss produces a timeout when trying to stop the jbossas service as part of the **rhevms-upgrade** process. When this is encountered you must manually issue the **service jbossas stop** command, as root, to stop the service before re-attempting the upgrade.
- Upgrades from beta to GA will result in an incorrect partitioning of the host. You must cleanly install the GA version.

Installations on UEFI machines will finish successfully but fail to boot. To successfully boot a UEFI machine, configure it to boot using legacy mode for the device.

## 3.2. Administration Portal

- In some cases adding a Red Hat Enterprise Linux host fails on the first attempt with the error "ImportError: No module named config". If you encounter this error, re-attempt adding the host.
- Due to the Enhanced Security Configuration (ESC), Internet Explorer versions 8 and 9 crash when attempting to download and install the required certificates to display the Red Hat Enterprise Virtualization Manager user interface. To work around this problem, add the "about:internet" page to the list of trusted websites to allow the required certificates to be added successfully.
- The Red Hat Enterprise Virtualization GUI Certificate Installer removes its record for the Add/Remove Programs menu after it concludes operations. The Windows Program Compatibility Assistant consequently pops up because it incorrectly concludes that the installation failed. This

problem can be avoided if the user clicks "Approve Installation Finished Successfully" to confirm a successful installation.

- Automatic installation for the Certification Authorities (CA) certificate puts the certificate in the Intermediate CA directory instead of the Trusted Root CA directory. You can add a Trusted Root CA certificate two ways:
  1. Manually, by specifying the Trusted Root CA store.
  2. Using group policy.

For more information about adding a Trusted Root CA certificate, see the following site:

[http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag\\_cmuncertstor.msp?mfr=true](http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag_cmuncertstor.msp?mfr=true)

- Uniform Resource Locators (URLs) for the Administration Portal and User Portal are now case sensitive. If you have bookmarked or otherwise saved URLs to these sites that use alternative cases to the defaults, update your saved copies to use the default case.
- The Red Hat Enterprise Virtualization Manager cannot perform live upgrades to the presentation layer of its administration user interface. Before upgrading the Red Hat Enterprise Virtualization Manager, close all open instances of the administration user interface. After the upgrade has completed, re-connect to the administration user interface to see the updated interface.
- In some rare cases, the WPF clients may throw .NET exception when closing the browser tab/window in a time-out scenarios. To overcome this, close the browser and try again.
- Edits of the management interface properties that require resetting the NIC are time consuming. As a result the edit dialog takes a long time to respond, The dialog is released only after the state of the network connection has been verified. This is the case even for successful operations.
- Metadata about the agent tools is stored in a database that is local to the Red Hat Enterprise Virtualization Manager. On an ISO domain that is shared between multiple Red Hat Enterprise Virtualization Manager environments, the agent tools are available only on the manager that is used to upload the tools until the list of ISO images is updated. To update the list of ISO images, either click the refresh button or wait the amount of time that is specified for the *AutoRepoDomainRefreshTime* option in *vds\_options*.
- Red Hat Enterprise Virtualization Manager does not support the use of user accounts which are marked as expired in the directory server for the domain. This applies to both Active Directory and IPA domains.

The account's password must be changed in the directory server to re-enable the account before it is used with Red Hat Enterprise Virtualization Manager.

### 3.3. Hosts

- Power management parameters such as *userid*, *password*, and *options* are tested on a host by Red Hat Enterprise Virtualization Manager only when they are entered by the administrator. If the administrator chooses to ignore alerts about incorrect parameters, or if the parameters are changed on the power management hardware without a corresponding change in by Red Hat Enterprise Virtualization Manager, fencing fails and the host becomes non-responsive.
- The Red Hat Enterprise Virtualization Manager requires at least one host in a cluster to have an **Up** status for fencing to be available. If no hosts in a cluster have an **Up** status, fencing is not available for that cluster.

- When adding a host to a data center using FCP storage, you can activate the host even if a data storage domain in the data center is unavailable. After five minutes, Red Hat Enterprise Virtualization Manager sets the host to a status of "non-operational". If the host is manually re-activated, it is set to non-operational again after five minutes. This delay can create the illusion that the host is up when it in fact remains non-operational. To avoid hosts becoming non-operational because of this reason, ensure that the data storage domains for the data center are accessible before activating hosts.

### 3.4. Storage and Network

- Initialization scripts cannot handle network names that contain the - (hyphen) character, so choose network names that do not include the - character.
- When the master storage domain moves to the **Unknown** status, Red Hat Enterprise Virtualization Manager initiates a process to reconstruct the storage domain. After this process is complete, the manager reverts the status of the storage domain to its state prior to becoming unknown, which can result in the storage domain having a status of **Up** when it is not actually functioning correctly. In this case, the domain will be set to inactive after five minutes. To avoid this problem, test the master storage domain after it has been reconstructed to ensure that it is functioning correctly.
- Use of an export domain of a different type than the data center it is attached to is available but requires infrastructure support on the host. Where support is not available the export domain is liable to become inactive while exports are in progress. All hosts in the data center must have infrastructure support for the storage type presented by the export domain. Support for export domains on FCP and iSCSI will deprecate in future releases, so it is recommended that you use export domains on NFS instead.

### 3.5. Virtual Machines

- Guest hibernation, through ram (S3) or disk (S4), does not function as expected in all cases. For example, resuming a guest can cause the guest agent to freeze. As a result it is currently recommended that you do not initiate hibernation from within virtual machines.
- Templates in Red Hat Enterprise Virtualization carry over template parameters but not configuration parameters from the virtual machine that is used to create the template.

High Availability is an example of a configuration parameter in a virtual machine that is not carried over when you create a template. If you use a High Availability virtual machine to create a template, none of the virtual machines created from the template will be High Availability by default.

- Windows virtual machines using virtio disks with drivers installed prior to Red Hat Enterprise Virtualization 2.2.7 are not able to run on Red Hat Enterprise Linux 6 hosts without the virtio drivers first being updated.

Consult the Red Hat Knowledge Base (<http://kbase.redhat.com/>) and User Groups (<https://access.redhat.com/groups/red-hat-enterprise-virtualization-3x-private>) for further information.

- In Windows virtual machines, Red Hat Enterprise Virtualization Manager uses the Red Hat Enterprise Virtualization agent that is installed inside the guest to monitor the health and status of the virtual machine. Killing or stopping the agent abnormally can cause status information to be inaccurate.
- When the "vmlinuz" and "initrd" options are added to the kernel boot for the "New", "Edit", or "Run Once" options under the Virtual Machines tab of the Red Hat Enterprise Virtualization

Manager, virtual machines are always started with the Linux boot option even when the primary and secondary boot devices are explicitly set to "CD-ROM" and "Hard Drive".

- In some instances, if you attempt to shut down a virtual machine from the User Portal, the status of the virtual machine is frozen at "Powering Down", which indicates that the virtual machine has not been completely shut down. The virtual machine is waiting for user input, such as clicking a button to confirm shutdown, so log into the virtual machine and shut it down gracefully.
- Snapshots cannot handle multiple virtual disks if they were added after the virtual machine was initially created. Ensure all virtual disks are added when a virtual machine is created if you want to take snapshots of the disks.
- The Single Sign On (SSO) is a recommended feature for Windows virtual desktops. However, the Single Sign On (SSO) feature and the Legal Notice caption are not simultaneously supported on virtual machines. To use SSO on a virtual machine, disable the Legal Notice caption. If you want to use the Legal Notice caption on the virtual machine, do not implement SSO.
- Single Sign On (SSO) requires that either the Red Hat Enterprise Virtualization Manager and the virtual machine authenticate to the same directory services domain - be it Active Directory or IPA. Alternatively, where domain authentication is not used in the guest, the user defined in Red Hat Enterprise Virtualization Manager must have the same credentials as are defined for the user locally inside the virtual machine.
- When upgrading the Windows guest tools from Red Hat Enterprise Virtualization 2.2 to 3.0, you need to restart Windows before you can use the updated tools.

### 3.6. Reports

- The ad hoc report options of the Red Hat Enterprise Virtualization Manager Reports requires an extensive knowledge of the database internal structure as well as an understanding of the capabilities of JasperServer.

The history database cannot be migrated from Red Hat Enterprise Virtualization version 2.2 to 3.0.

### 3.7. SPICE

- The list of attached ISO images is set at the beginning of a SPICE session. If you add a new ISO image while the SPICE session is running, it will be added to the list of attached ISO images only after the SPICE session has been reinitiated. To refresh the list of ISO images, close and reopen the SPICE console.
- The USB redirector transmits data between the client and the virtual desktop without authentication or encryption. When using USB redirection for sensitive material, note that the data is being transmitted in clear text.

# Resolved Issues

Issues present in previous Red Hat Enterprise Virtualization releases which have now been resolved are listed in this chapter.

The following issues have been resolved since the previous release of Red Hat Enterprise Virtualization:

- Red Hat Enterprise Virtualization Manager now uses Red Hat Enterprise Linux 6.2 for the default emulated machine that is sent to vdsm.
- A new script, **rhevm-manage-domains**, helps you add and manage directory services for Red Hat Virtualization Manager.
- The **rhevm-setup** script has been updated to ensure that the shared ISO domain mount point that you specify has the necessary permissions.
- Previously, if you removed permissions from a user that belongs to a group, the group's permissions would also be removed. Now, you can remove a user's permissions without affecting the group.
- Red Hat Enterprise Virtualization Manager now has an internal administrator, `admin@internal`. This internal administrator is created during installation and has superuser privileges.
- Red Hat Enterprise Virtualization Manager now supports defining a domain, user, and password for virtual machine templates.
- You can now specify a user and password when creating or editing a virtual machine, virtual machine template, or virtual machine pool, even when the domain has already been specified.
- The following charts, provided by Red Hat Enterprise Virtualization Manager Reports, that display network and disk usage, previously did not function correctly:
  - **BR2A, BR2B, BR2C**
  - **BR10A, BR10B, BR10C**

This has been corrected and the charts now function as expected.

- Red Hat Enterprise Virtualization now supports case sensitive names for objects.
- Previously, it was possible for a non-functional NIC to be assigned the role of management interface. This is now fixed to prevent the management interface role assignment to a non operational NIC.
- Previously, the recognition of a MAC address was case sensitive. This caused MAC addresses, such as `06:EC:F7:61:82:C0`, to not be recognized. With this update, the recognition of MAC addresses is case insensitive.
- Removed support for baseline CPU levels that have no NX flag. This includes hosts that the flag is disables in bios. Those hosts will become non-operational.
- SPICE is now supported on both 64-bit and 32-bit versions of Internet Explorer.
- The Windows Presentation Framework (WPF) log file is now located at `%TEMP%/domain/log.txt`. As an example, when the Administration Portal is accessed via the URL `https://manager.demo.redhat.com/RHEVManager/` the log would be found in `%TEMP%/manager.demo.redhat.com/log.txt`.

## Chapter 4. Resolved Issues

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- The SPICE client now works in Internet Explorer on Windows 7 on Internet Explorer without the need to make additional modifications to the system's Trusted Sites list.

To get these fixes, upgrade to Red Hat Enterprise Virtualization Manager 3.0.

# Security

Administrators can receive the latest security advisories from the Red Hat Enterprise Virtualization watch list. Subscribe to the Red Hat Enterprise Virtualization watch list to receive new security advisories for Red Hat Enterprise Virtualization products by email. Subscribe by completing this form: <http://www.redhat.com/mailman/listinfo/rhev-watch-list/>.



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# Appendix A. Revision History

**Revision 1-20** **Monday December 12 2011** **Kate Grainger** [kgrainge@redhat.com](mailto:kgrainge@redhat.com)  
Red Hat Enterprise Virtualization 3.0

**Revision 1-19** **Wednesday November 16 2011** **Kate Grainger** [kgrainge@redhat.com](mailto:kgrainge@redhat.com)  
Red Hat Enterprise Virtualization 3.0 External Beta 4

**Revision 1-17** **Tuesday October 18 2011** **Kate Grainger** [kgrainge@redhat.com](mailto:kgrainge@redhat.com)  
Red Hat Enterprise Virtualization 3.0 External Beta 3

**Revision 1-9** **Monday September 19 2011** **Stephen Gordon** [sgordon@redhat.com](mailto:sgordon@redhat.com)  
Red Hat Enterprise Virtualization 3.0 External Beta 2

**Revision 1-1** **Wednesday August 17 2011** **Stephen Gordon** [sgordon@redhat.com](mailto:sgordon@redhat.com)  
Red Hat Enterprise Virtualization 3.0 External Beta 1

