

# **Red Hat Enterprise Virtualization 3.0 Power User Portal Guide**

**Create and Manage Virtual Resources using the Power User Portal**



**Cheryn Tan**

# Red Hat Enterprise Virtualization 3.0 Power User Portal Guide

## Create and Manage Virtual Resources using the Power User Portal

### Edition 1

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Use this book to create, access and manage virtual machines, templates and snapshots through the Power User Portal. This self service portal enables power users of the Red Hat Enterprise Virtualization system to monitor and access virtual machines.

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# Preface

The Red Hat Enterprise Virtualization platform is a richly featured virtualization management solution providing fully integrated management across virtual machines. It is based on the leading open source virtualization platform and provides superior technical capabilities. The platform offers scalability in the management of large numbers of virtual machines.

## 1. About this Guide

This guide describes how users of the Red Hat Enterprise Virtualization Power User Portal can create, access and manage virtual resources. This includes virtual machines, templates and snapshots, and using the graphical interface.

### 1.1. Audience

This is a guide for Linux or Windows system administrators who are familiar with virtual machine operations. Users are typically virtual system administrators responsible for providing end users with virtual machines, and managing a virtual system environment. In the Red Hat Enterprise Virtualization environment, the RHEVMPowerUser role provides these permissions.

### 1.2. Overview

A power user needs to connect to, create and manage virtual machines.

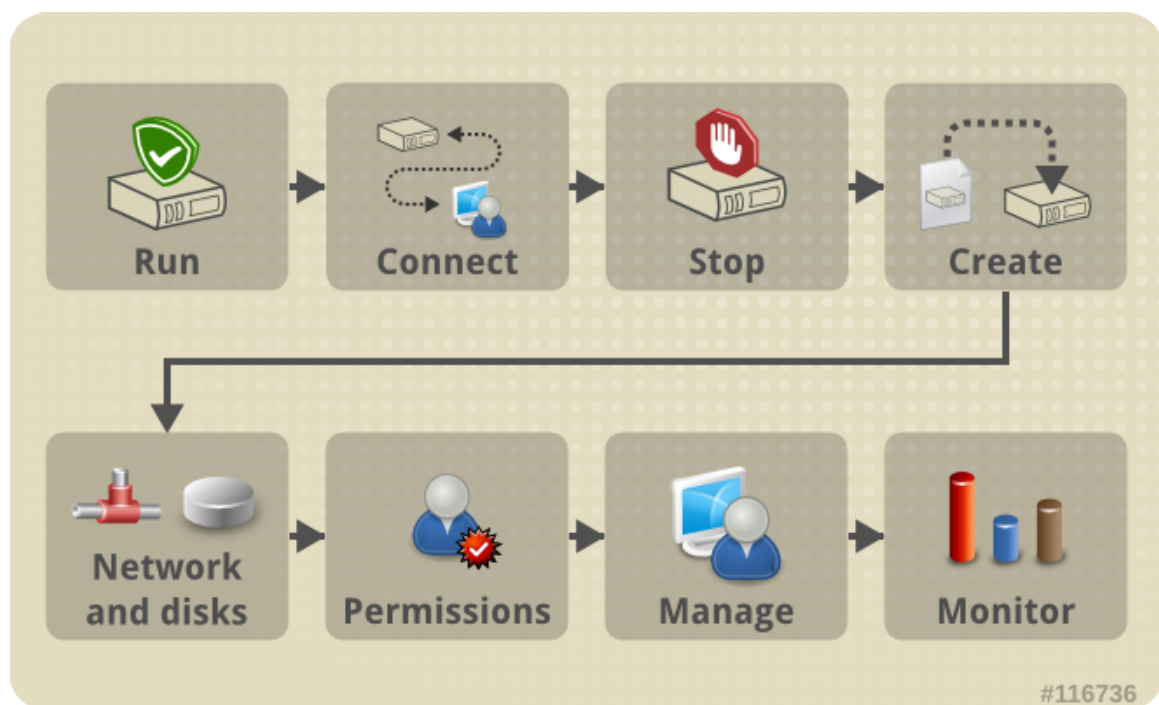


Figure 1. Power User Portal Workflow

### 1.3. Documentation Suite

The Red Hat Enterprise Virtualization documentation suite provides information on installation, development of applications, configuration and usage of the Red Hat Enterprise Virtualization platform and its related products.

- *Red Hat Enterprise Virtualization — Administration Guide* describes how to setup, configure and manage Red Hat Enterprise Virtualization. It assumes that you have successfully installed the Red Hat Enterprise Virtualization manager and hosts.
- *Red Hat Enterprise Virtualization — Evaluation Guide* enables prospective customers to evaluate the features of Red Hat Enterprise Virtualization. Use this guide if you have an evaluation license.
- *Red Hat Enterprise Virtualization — Installation Guide* describes the installation prerequisites and procedures. Read this if you need to install Red Hat Enterprise Virtualization. The installation of hosts, manager and storage are covered in this guide. You will need to refer to the *Red Hat Enterprise Virtualization Administration Guide* to configure the system before you can start using the platform.
- *Red Hat Enterprise Virtualization — Manager Release Notes* contain release specific information for Red Hat Enterprise Virtualization Managers.
- *Red Hat Enterprise Virtualization — Power User Portal Guide* (the book you are reading) describes how power users can create and manage virtual machines from the Red Hat Enterprise Virtualization user portal.
- *Red Hat Enterprise Virtualization — Quick Start Guide* provides quick and simple instructions for first time users to set up a basic Red Hat Enterprise Virtualization environment.
- *Red Hat Enterprise Virtualization — REST API Guide* describes how to use the REST API to set up and manage virtualization tasks. Use this guide if you wish to develop systems which integrate with Red Hat Enterprise Virtualization, using an open and platform independent API.
- *Red Hat Enterprise Virtualization — Technical Reference Guide* describes the technical architecture of Red Hat Enterprise Virtualization and its interactions with existing infrastructure.
- *Red Hat Enterprise Virtualization — User Portal Guide* describes how users of the Red Hat Enterprise Virtualization system can access and use virtual desktops.
- *Red Hat Enterprise Linux — Hypervisor Deployment Guide* describes how to deploy and install the hypervisor. Read this guide if you need advanced information about installing and deploying Hypervisors. The basic installation of Hypervisor hosts is also described in the *Red Hat Enterprise Virtualization Installation Guide*.
- *Red Hat Enterprise Linux — V2V Guide* describes importing virtual machines from KVM, Xen and VMware ESX to Red Hat Enterprise Virtualization and KVM managed by libvirt.

## 2. Document Conventions

This manual uses several conventions to highlight certain words and phrases and draw attention to specific pieces of information.

In PDF and paper editions, this manual uses typefaces drawn from the [Liberation Fonts](https://fedorahosted.org/liberation-fonts/)<sup>1</sup> set. The Liberation Fonts set is also used in HTML editions if the set is installed on your system. If not, alternative but equivalent typefaces are displayed. Note: Red Hat Enterprise Linux 5 and later includes the Liberation Fonts set by default.

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<sup>1</sup> <https://fedorahosted.org/liberation-fonts/>

## 2.1. Typographic Conventions

Four typographic conventions are used to call attention to specific words and phrases. These conventions, and the circumstances they apply to, are as follows.

### Mono-spaced Bold

Used to highlight system input, including shell commands, file names and paths. Also used to highlight keycaps and key combinations. For example:

To see the contents of the file **my\_next\_bestselling\_novel** in your current working directory, enter the **cat my\_next\_bestselling\_novel** command at the shell prompt and press **Enter** to execute the command.

The above includes a file name, a shell command and a keycap, all presented in mono-spaced bold and all distinguishable thanks to context.

Key combinations can be distinguished from keycaps by the hyphen connecting each part of a key combination. For example:

Press **Enter** to execute the command.

Press **Ctrl+Alt+F2** to switch to the first virtual terminal. Press **Ctrl+Alt+F1** to return to your X-Windows session.

The first paragraph highlights the particular keycap to press. The second highlights two key combinations (each a set of three keycaps with each set pressed simultaneously).

If source code is discussed, class names, methods, functions, variable names and returned values mentioned within a paragraph will be presented as above, in **mono-spaced bold**. For example:

File-related classes include **filesystem** for file systems, **file** for files, and **dir** for directories. Each class has its own associated set of permissions.

### Proportional Bold

This denotes words or phrases encountered on a system, including application names; dialog box text; labeled buttons; check-box and radio button labels; menu titles and sub-menu titles. For example:

Choose **System** → **Preferences** → **Mouse** from the main menu bar to launch **Mouse Preferences**. In the **Buttons** tab, click the **Left-handed mouse** check box and click **Close** to switch the primary mouse button from the left to the right (making the mouse suitable for use in the left hand).

To insert a special character into a **gedit** file, choose **Applications** → **Accessories** → **Character Map** from the main menu bar. Next, choose **Search** → **Find...** from the **Character Map** menu bar, type the name of the character in the **Search** field and click **Next**. The character you sought will be highlighted in the **Character Table**. Double-click this highlighted character to place it in the **Text to copy** field and then click the **Copy** button. Now switch back to your document and choose **Edit** → **Paste** from the **gedit** menu bar.

The above text includes application names; system-wide menu names and items; application-specific menu names; and buttons and text found within a GUI interface, all presented in proportional bold and all distinguishable by context.

### **Mono-spaced Bold Italic** or **Proportional Bold Italic**

Whether mono-spaced bold or proportional bold, the addition of italics indicates replaceable or variable text. Italics denotes text you do not input literally or displayed text that changes depending on circumstance. For example:

To connect to a remote machine using ssh, type **ssh *username@domain.name*** at a shell prompt. If the remote machine is **example.com** and your username on that machine is john, type **ssh john@example.com**.

The **mount -o remount *file-system*** command remounts the named file system. For example, to remount the **/home** file system, the command is **mount -o remount /home**.

To see the version of a currently installed package, use the **rpm -q *package*** command. It will return a result as follows: ***package-version-release***.

Note the words in bold italics above — *username*, *domain.name*, *file-system*, *package*, *version* and *release*. Each word is a placeholder, either for text you enter when issuing a command or for text displayed by the system.

Aside from standard usage for presenting the title of a work, italics denotes the first use of a new and important term. For example:

Publican is a *DocBook* publishing system.

## 2.2. Pull-quote Conventions

Terminal output and source code listings are set off visually from the surrounding text.

Output sent to a terminal is set in **mono-spaced roman** and presented thus:

```
books      Desktop  documentation  drafts  mss    photos  stuff  svn
books_tests Desktop1  downloads      images  notes  scripts svgs
```

Source-code listings are also set in **mono-spaced roman** but add syntax highlighting as follows:

```
package org.jboss.book.jca.ex1;

import javax.naming.InitialContext;

public class ExClient
{
    public static void main(String args[])
        throws Exception
    {
        InitialContext iniCtx = new InitialContext();
        Object          ref    = iniCtx.lookup("EchoBean");
        EchoHome        home   = (EchoHome) ref;
        Echo             echo   = home.create();

        System.out.println("Created Echo");

        System.out.println("Echo.echo('Hello') = " + echo.echo("Hello"));
    }
}
```

## 2.3. Notes and Warnings

Finally, we use three visual styles to draw attention to information that might otherwise be overlooked.





### Note

Notes are tips, shortcuts or alternative approaches to the task at hand. Ignoring a note should have no negative consequences, but you might miss out on a trick that makes your life easier.



### Important

Important boxes detail things that are easily missed: configuration changes that only apply to the current session, or services that need restarting before an update will apply. Ignoring a box labeled 'Important' will not cause data loss but may cause irritation and frustration.



### Warning

Warnings should not be ignored. Ignoring warnings will most likely cause data loss.

## 3. We Need Feedback!

If you find a typographical error in this manual, or if you have thought of a way to make this manual better, we would love to hear from you! Please submit a report in Bugzilla: <http://bugzilla.redhat.com/> against the product **Red Hat Enterprise Virtualization Manager**.

When submitting a bug report, be sure to mention the manual's identifier: *Guides-Power User Portal*.

If you have a suggestion for improving the documentation, try to be as specific as possible when describing it. If you have found an error, include the section number and some of the surrounding text so we can find it easily.

---

# Getting Started

The Red Hat Enterprise Virtualization Power User Portal provides a graphical user interface to connect to, manage and monitor virtual resources. Using any web browser, power users can connect to multiple virtual machines. In addition, power users can:

- Create, edit and remove virtual machines
- Manage virtual disks and network interfaces
- Assign user permissions to virtual machines
- Create and use templates to rapidly deploy virtual machines
- Monitor resource usage and high-severity events
- Create and use snapshots to restore virtual machines to a previous state

## 1.1. Logging in to the Power User Portal

To get started all you need is the URL and domain name of the User Portal, and your username and password. You can log in to the Red Hat Enterprise Virtualization User Portal directly from your web browser.

**To log in to the User Portal:**

1. Enter the provided **User Portal URL** in the address bar of your web browser to display the login screen. The address should be in the format of `https://server.example.com:8443/UserPortal`.

Alternately, enter the provided **server address** into the web browser, to access the welcome screen. Click **User Portal** to be directed to the User Portal.

2. Enter your **User Name** and **Password**. Use the **Domain** drop-down menu to select the correct domain.
  - If you have only one running virtual machine in use, select the **Connect Automatically** checkbox and connect directly to your virtual machine.
  - If you wish to create new virtual machines or make changes to your resources in the User Portal, do not select the **Connect Automatically** checkbox.
3. Click **Login**. The list of virtual machines assigned to you displays.

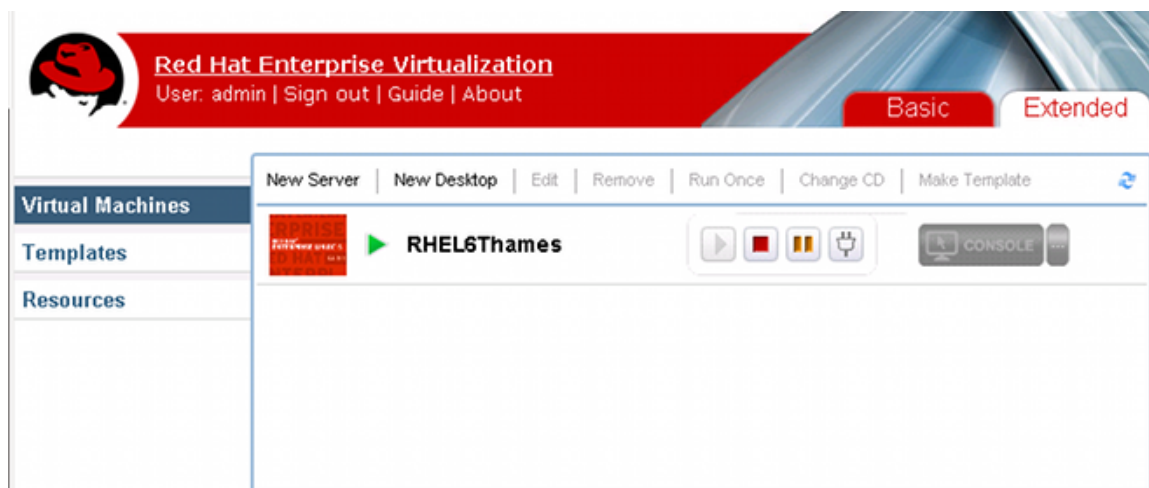


Figure 1.1. User Portal

### To log out of the User Portal

- At the title bar of the User Portal, click **Sign out**. You are logged out and the User Portal login screen displays.

## 1.2. Logging in for the First Time

As you are using a secure connection to log in to the User Portal, you will be prompted to trust the site's identity the first time you log in. Once you have confirmed a security exception for the website, or added the website to your browser's list of trusted sites, you will be taken to the login screen.

If you wish to use the SPICE protocol for connecting to virtual machines, install the appropriate plugins for your browser. You will need to do this only once.

If you are accessing the User Portal from a Linux client machine with Mozilla Firefox, install the SPICE Firefox plugin. If you are accessing the User Portal from a Windows client machine with Internet Explorer, add the SPICE ActiveX component to your web browser.

SPICE is not supported for Mozilla Firefox on Windows. If you are using a Windows computer, use Internet Explorer.

### To install the SPICE plugin for Mozilla Firefox on Linux

1. Open a terminal and run the following command as root:

```
# yum install spice-xpi
```

The plugin will be installed the next time Firefox is started.

### To install the SPICE ActiveX component for Internet Explorer on Windows

1. The first time you attempt to connect to a virtual machine, an add-on notification bar displays in the browser, prompting you to install the SPICE ActiveX component. You need administrative privileges on your client machine to install the component. Contact your systems administrator if you do not have the necessary permissions.
2. When you accept the prompt to install the SPICE ActiveX component, Internet Explorer may issue a security warning. Confirm that you wish to proceed, and the component will be installed.

## 1.3. The Power User Portal Graphical Interface

When you are logged in, the Power User Portal Graphical Interface enables you to access and monitor all the virtual resources that are available to you. The screen consists of three areas: the title bar, the navigation pane and the virtual resources frame.

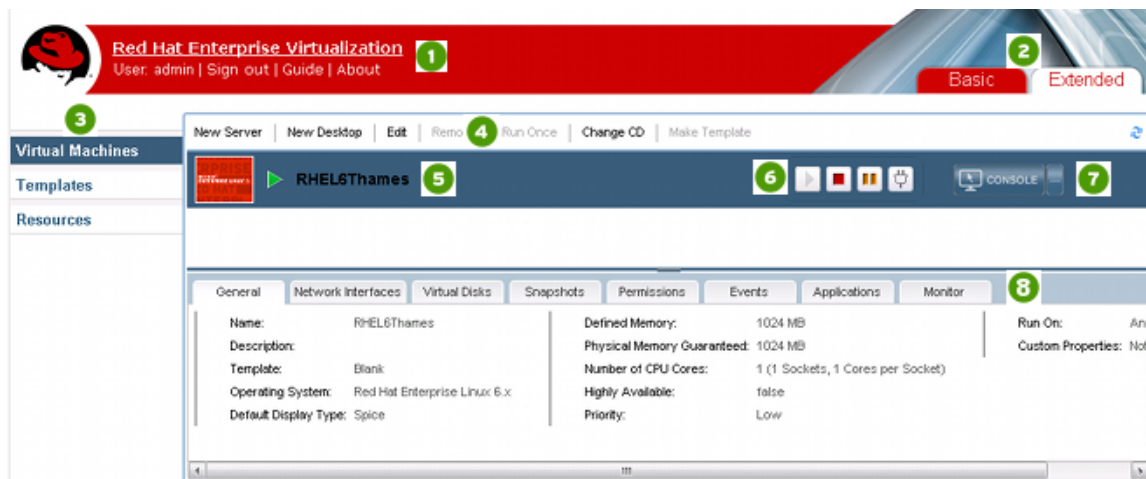


Figure 1.2. The Power User Portal

The title bar (1) includes the name of the **User** logged in to the portal and the **Sign Out** button.

For Power Users, the **Extended** view of the User Portal displays when you log in. You can also switch to the **Basic** view (2), which is the default for users with basic permissions. The Basic User Portal is explained in the *Red Hat Enterprise Virtualization User Portal Guide*.

The navigation pane (3) allows you to toggle between the **Virtual Machines**, **Templates** and **Resources** tabs. When a tab is selected, the available virtual resources display. This example uses the Virtual Machines tab.

The management bar (4) enables you to create and make changes to virtual machines. The virtual machines or desktop pools available to you display in a list (5) which shows the virtual machine's name, operating system logo and status (running, paused or stopped).

On each virtual machine, control buttons allow you to play, stop, pause or power off a virtual machine. They perform the same functions as buttons on a media player (6).

- The green play button starts up the virtual machine. It is available when the virtual machine is paused, stopped or powered off.
- The red stop button stops the virtual machine. It is available when the virtual machine is running.
- The orange pause button temporarily halts the virtual machine. To restart it, press the green play button.
- The power button turns off the virtual machine. It is available when the virtual machine is running.

When a virtual machine is powered up, you can click on the **Console** (7) button to connect to it. You can select between the SPICE or RDP connection protocols.

Clicking on a virtual machine displays the statistics of the selected virtual machine on the details pane (8). Click the tabs to access them in turn.

### Details Pane Tab Functions:

- The **General** tab displays basic software and hardware information of the virtual machine, including its name, operating system, display protocol and defined memory.
- The **Network Interfaces** tab displays the name, type and speed of the network connected to the virtual machine. You can add, edit and remove network interfaces using this tab.
- The **Virtual Disks** tab displays the name, size and format of the disk attached to the virtual machine. You can add, edit and remove virtual disks using this tab.
- The **Snapshots** tab displays a view of the virtual machine's operating system and applications. You can create and use snapshots using this tab.
- The **Permissions** tab displays the users and roles assigned to each virtual machine. You can assign and remove user permissions using this tab.
- The **Events** tab displays the description and time of events which affect the virtual machine.
- The **Applications** tab displays the applications which have been installed on the virtual machine.
- The **Monitor** tab displays the CPU usage, memory usage and network usage of the virtual machine.

# Running Virtual Machines

This chapter describes how to run, connect to and stop virtual machines on the Power User Portal. You can use multiple virtual machines simultaneously, or use machines running different operating systems.

## 2.1. Connecting to Virtual Machines

After you have logged into the portal, you can start, stop, or connect to the virtual machines that are displayed.

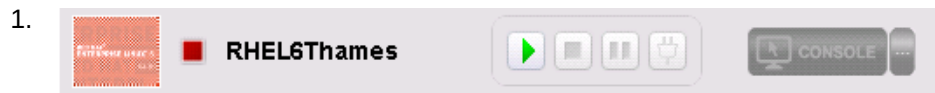




Figure 2.1. Virtual machine turned off

Select the virtual machine you wish to connect to and click the Play  button. The virtual machine powers up. The Stop symbol next to the virtual machine's name changes to a Powering Up  symbol.

When the virtual machine is turned on, the Play symbol displays next to the virtual machine's name.



Figure 2.2. Virtual machine turned on

2. Click the **Console** button to connect to the virtual machine.



Figure 2.3. Connect to virtual machine

3. If it is the first time connecting with SPICE, you will be prompted to install the appropriate SPICE component or plugin. If you are connecting from a Windows computer, install the ActiveX component. If you are connecting from a Red Hat Enterprise Linux computer, install the Mozilla Firefox plugin. See [Section 1.2, "Logging in for the First Time"](#) for details if required.
4. A console window of the virtual machine displays. You can now use the virtual machine in the same way that you would use a physical desktop.

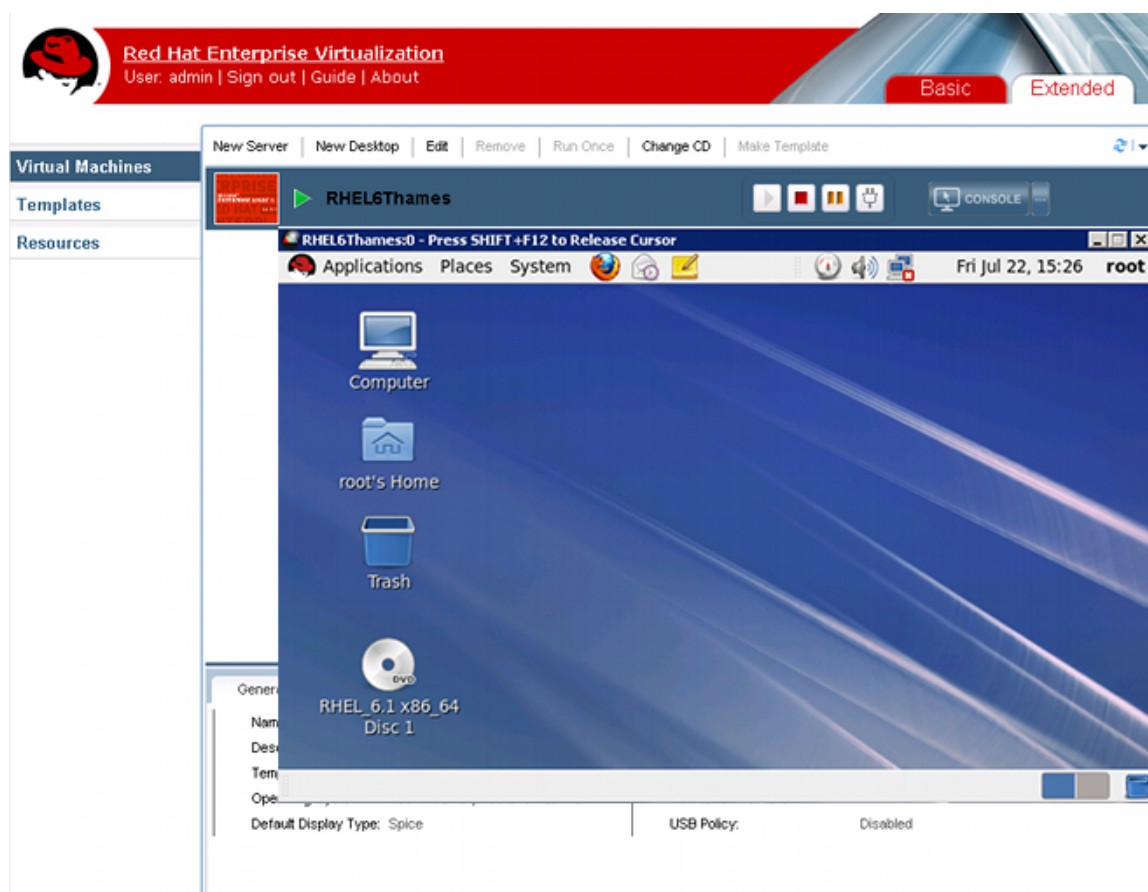


Figure 2.4. Connect to virtual machine



### Warning

By default, a virtual machine running on Windows 7 will be suspended after an hour of inactivity. This prevents users from connecting to the virtual machine from the User Portal. To avoid this, disable the power-saving feature on the guest's power manager.


## 2.2. Turning Off a Virtual Machine

It is recommended that you log out from a virtual machine before shutting it down, to minimize the risk of data loss. If you attempt to shut down a virtual machine from the User Portal, its status will be frozen at "Powering Down", indicating that it is not completely shut down. To gracefully turn off a virtual machine, use the following steps.

### To power off a virtual machine

1. When you have finished using a virtual machine, log out using instructions specific to the operating system.
  - To log out from Windows, click **Start** → **Log Off**.
  - To log out from Red Hat Enterprise Linux, click **System** → **Log Out**.
2. If you were using your virtual machine in full screen mode, press **Shift+F11** to exit full screen mode, and close the virtual machine's console window. You are now returned to the User Portal.



To shut down the virtual machine, click the  button. The Stop symbol appears next to the virtual machine's name when it has been turned off.

3. When you have finished using the User Portal, you can sign out. See [To log out of the User Portal](#) for details.



# Creating Virtual Machines - Simple

As a Power User you can create virtual machines as required for your environment. Creating a virtual machine is as simple as selecting a name and an operating system, and finalizing its creation with the click of a button. This chapter enables you to quickly create a virtual machine using a template with pre-configured settings.

Red Hat Enterprise Virtualization supports the following virtual machine guest operating systems:

- Red Hat Enterprise Linux 3 and above (32 bit and 64 bit)
- Windows XP Service Pack 3 and newer (32 bit only)
- Windows 7 (32 bit and 64 bit)
- Windows Server 2003 Service Pack 2 and newer (32 bit and 64 bit)
- Windows Server 2008 (32 bit and 64 bit)
- Windows Server 2008 R2 (64 bit only)

For information on virtual machine performance parameters, refer to the *Red Hat Enterprise Virtualization Administration Guide*.

## 3.1. Creating New Virtual Machines from Templates

Templates for virtual machines are available from the Red Hat Enterprise Virtualization Manager administration portal or from the Extended User Portal under the Templates tab. You can use templates to rapidly deploy customized and pre-installed virtual machines complete with virtual disks, network interfaces, operating systems and applications.

Use the following procedure to create a new server virtual machine or a new desktop virtual machine. The only difference is that high availability cannot be configured for desktop virtual machines.

To create a virtual machine from a template

1. Select the **Virtual Machines** tab in the navigation pane. Click **New Server** or **New Desktop**.
2. The **New Virtual Machine** dialog displays. On the **General** tab, click the **Based on Template** drop down menu and select the required template. Enter a suitable **Name** and **Description**, and accept the default values from the template in the other fields. You can change them now or later, if necessary.

**New Desktop Virtual Machine**

**General**

Console

Host

Resource Allocation

Boot Options

Data Center : Finance-dep

Host Cluster : FinanceDesktops

Name : RHEL6-Ganges

Description : RHEL6 Desktop

☒ Based on Template EngRHEL6Base

Memory Size : 1 GB

Total Cores : 1

CPU Sockets : 1

Operating System : Red Hat Enterprise Linux

☐ Stateless

OK Cancel

Figure 3.1. Create virtual machine based on template

3. Click **OK**. The new virtual machine is created, and displays in the list on the **Virtual Machines** tab. Creating a virtual machine can take a few minutes, during which time the virtual machine's status is represented by an animated hourglass symbol. The action buttons for the virtual machine are disabled until the hourglass changes to a Stop symbol. To use the virtual machine, turn it on and then connect to it. See [Section 2.1, "Connecting to Virtual Machines"](#) for details if required.

You now know how to create new virtual machines based on existing templates. However, the Power User Portal also allows further flexibility and granularity in creating virtual machines with customized properties. For instance, you can configure virtual machines to be highly available, define the default display protocol, add storage and networks. See the next chapter for details.

# Creating Virtual Machines - Advanced

While the previous chapter provided a quick and simple method of creating virtual machines, this chapter shows you a more flexible method of creating customized virtual machines for other users in your environment. You will learn how to create virtual machines without using templates, and how to complete the setup of new virtual machines, including adding new network interfaces, adding new virtual disks, installing operating systems and assigning permissions to users.

## 4.1. Creating New Virtual Machines Without Templates

If you do not have a pre-existing template, you can manually create a virtual machine and customize all its settings.

Before you create a virtual machine from scratch, ensure that you understand the requirements and have access to the prerequisites, including installation images. In contrast to virtual machines created using a template, you will need to add at least one network interface and one virtual disk before you can use the machine.

To create a virtual machine from scratch

1. To create a new server virtual machine, select the **Virtual Machines** tab in the navigation pane. Click **New Server** or **New Desktop**.

The **New Virtual Machine** window displays, with the **General** tab selected.

New Server Virtual Machine	
<b>General</b>	Data Center : Default
Console	Host Cluster : Default
Host	Name : RHEL6Erie
High Availability	Description :
Resource Allocation	Based on Template : Blank
Boot Options	Memory Size : 1024MB
	Total Cores : 1
	CPU Sockets : 1
	Operating System : Red Hat Enterprise Linux
	<input type="checkbox"/> Stateless
OK Cancel	

Figure 4.1. New Server Virtual Machine

2. Enter a suitable **Name** for the virtual machine, and ensure that the **Based on Template** field is set to **Blank**. Select the virtual machine's **Operating System** from the list. You can accept the default settings and proceed to Step 9 to create the virtual machine.

Otherwise, navigate between the tabs and populate the required fields, starting with the **General** settings:

- Select the **Data Center** and **Host Cluster** in which the virtual machine will reside.
- Allocate up to 256GB for the virtual machine's **Memory Size**.

- Allocate **Total Cores** of CPU processing power to the virtual machine.
  - Allocate the number of **CPU sockets** for the virtual machine, from 1 to 16.
  - Tick the **Stateless** checkbox if your virtual machine is to discard all changes and revert to its original state upon shutdown.
3. If you selected Windows as an **Operating System**, the **Windows Sys. Prep** tab displays. Enter the domain in which the virtual machines are to be created and select the time zone in which the virtual machines are to run. This ensures that the machines are available to users in the correct time zones.
  4. Select the **Console** tab. Use the drop down menu to select the suitable display **Protocol** - SPICE or VNC.
    - **SPICE** is the recommended protocol for Linux and Windows virtual machines. If you wish to use USB devices on your virtual machine, set the **USB Policy** to Enabled. SPICE supports multiple monitor display for Windows 7 and Windows XP virtual desktops, if you wish to use this feature allocate the number of **Monitors** for your virtual machine.
    - **VNC** is compatible with Linux virtual machines and does not require additional plug-ins. If this protocol is selected, the USB Policy and Monitors options will not be available. VNC display can only be used in the administration portal.
  5. Select the **Host** tab and define the host requirements.
    - **Run On:** Select **Any Host in Cluster** for virtual machines to run on any available host, or **Specific** for them run on a particular host which has to be selected from the provided list.
    - **Run/Migration Options:** Select **Run VM only in the selected host** if the virtual machine is to run only on the specified host. Otherwise select **Allow VM migration only upon Administrator specific request** to prevent migration in mid-operation to other hosts in the cluster, for example, in case of overload or fencing of the host.
  6. The **High Availability** tab is accessible if you are creating a server virtual machine. If your machine is to be highly available, tick the **Highly Available** checkbox and set the **Priority for Run/ Migrate Queue** to Low, Medium or High depending on your server requirements.
  7. Select the **Boot Options** tab.
    - A newly installed virtual machine must go into Boot mode before powering up. On the drop-down menu, select between **Hard Disk**, **CD-ROM** or **Network** as the first and second devices for the virtual machine to boot from.
    - The **kernel path**, **initrd path** and **kernel parameters** boot options can only be used for Linux virtual machines.
  8. Press **OK** to create your virtual machine. The new virtual machine displays in the list of virtual machines with a corresponding operating system logo.

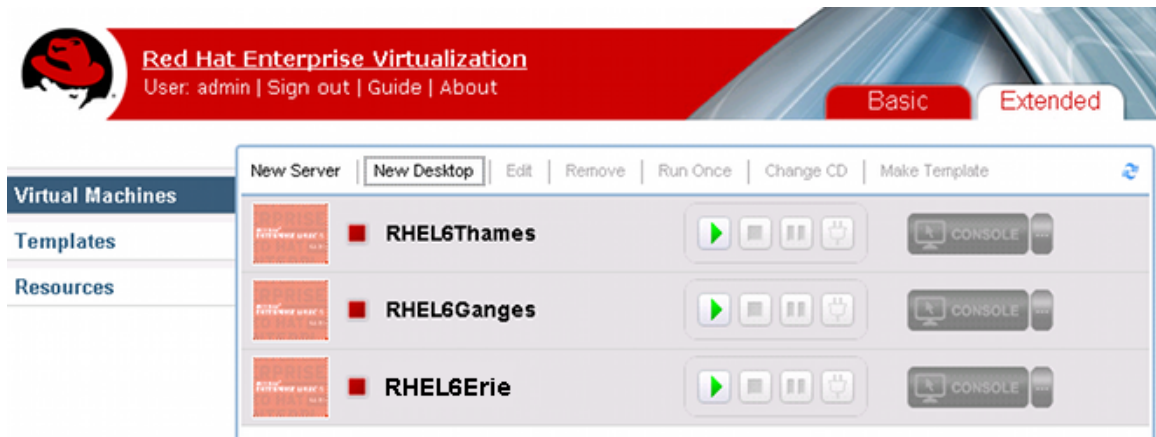


Figure 4.2. New virtual machine displays

You will now have to make further configuration changes before you can run your newly created virtual machine. This includes adding at least one virtual disk, adding at least one network interface, and installing the operating system onto the virtual machine.

## 4.2. Adding Network Interfaces to Virtual Machines

Before running your virtual machine, add at least one network interface to it. If your virtual machine was created from a template in which network interfaces have been defined, you can use this procedure if you wish to add additional network interfaces to a virtual machine.

To add a new network interface

1. Select the required virtual machine. Select the **Network Interfaces** tab in the details pane and click **New**.
2. The **New Network Interface** window displays.

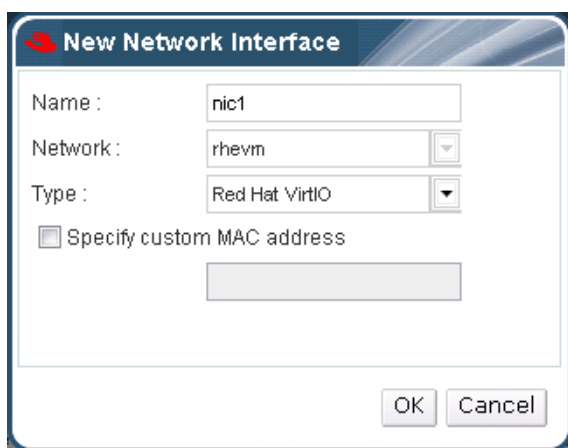


Figure 4.3. New Network Interface menu

Enter a suitable **Name** for the new network interface. You can retain the rest of the default settings and proceed to the next step, otherwise configure the following options:

- Click on the drop-down menu to select the **Network** to connect to.
- The network interface **Type** depends on the operating system of your virtual machine. If your virtual machine is running Linux, use e1000 or Red Hat VirtIO. If your virtual machine is running Windows, use rtl8139.

- If required, tick the **Specify custom MAC address** checkbox and enter the address.
3. Click **OK** to save your settings. The new network interface displays in the details pane under the **Network Interfaces** tab.

### 4.3. Adding New Virtual Disks to Virtual Machines

Before running your virtual machine, add at least one virtual disk to it. If your virtual machine was created from a template in which virtual disks have been defined, you can use this procedure if you wish to add additional virtual disks to a virtual machine.

#### To add a new virtual disk

1. Select the required virtual machine. Select the **Virtual Disks** tab in the details pane and click **New**.
2. The **New Virtual Disk** window displays.

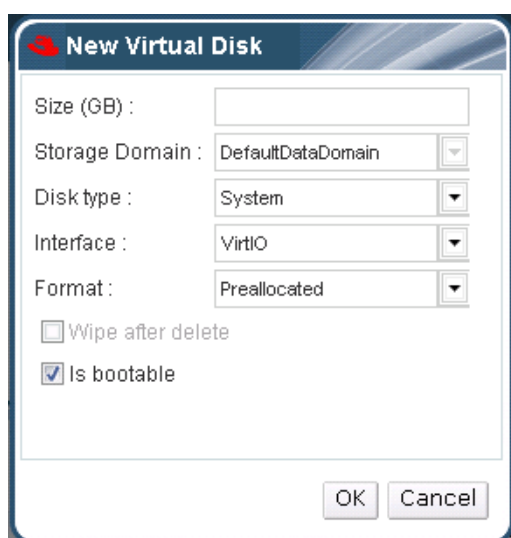


Figure 4.4. New Virtual Disk menu

Enter a suitable **Size** for the virtual disk. You can retain the rest of the default settings and proceed to the next step, otherwise configure the following options:

- Click the drop-down menu to select the **Storage Domain** where the virtual disk image is to be created. If your virtual machine already has a disk, this field cannot be changed as all disks of a virtual machine must reside on the same storage domain.
- For **Disk Type**, select **System** if the virtual machine is to be bootable or **Data** if the virtual machine is to have a pre-determined amount of disk space.
- For **Interface**, select **VirtIO** for virtual machines running Linux or **IDE** for virtual machines running Windows.
- Click on the drop-down menu to select the disk **Format**.
  - For a **Thin Provision** virtual disk, backing storage is not reserved and is allocated as needed during runtime. This allows for storage over commitment.
  - A **Pre-Allocated** virtual disk has a reserved storage of the same size as the virtual disk itself. This results in better performance because no storage allocation is required during runtime.





### Note

If you select **Pre-Allocated** as your disk format, the setup process can take a few minutes, during which time you will see the hourglass animation, and the action buttons for the disk will be unavailable.

- Tick the **Wipe after delete** checkbox if you wish to remove all the data in the virtual machine after the virtual machine is deleted. Tick the **Is bootable** checkbox if you have selected **System** as your disk type.
3. Click **OK** to save your settings. The new virtual disk displays in the details pane under the **Virtual Disks** tab.

## 4.4. Installing Operating Systems onto Blank Virtual Machines

A virtual machine that is newly created from a blank template requires an operating system and applications to be installed on it. Use the **Run Once** function to install an Operating System and relevant applications onto the new virtual machine.

1. On the **Virtual Machines** tab, select the virtual machine you wish to install and click **Run Once**.

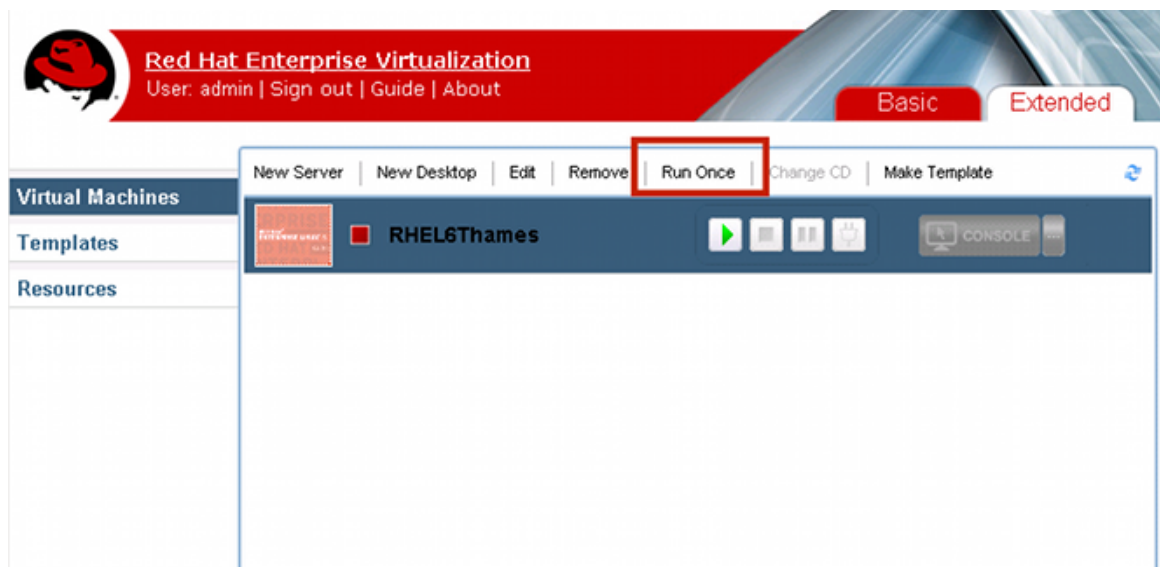


Figure 4.5. Run Once

2. The **Run Virtual Machines** dialog displays.

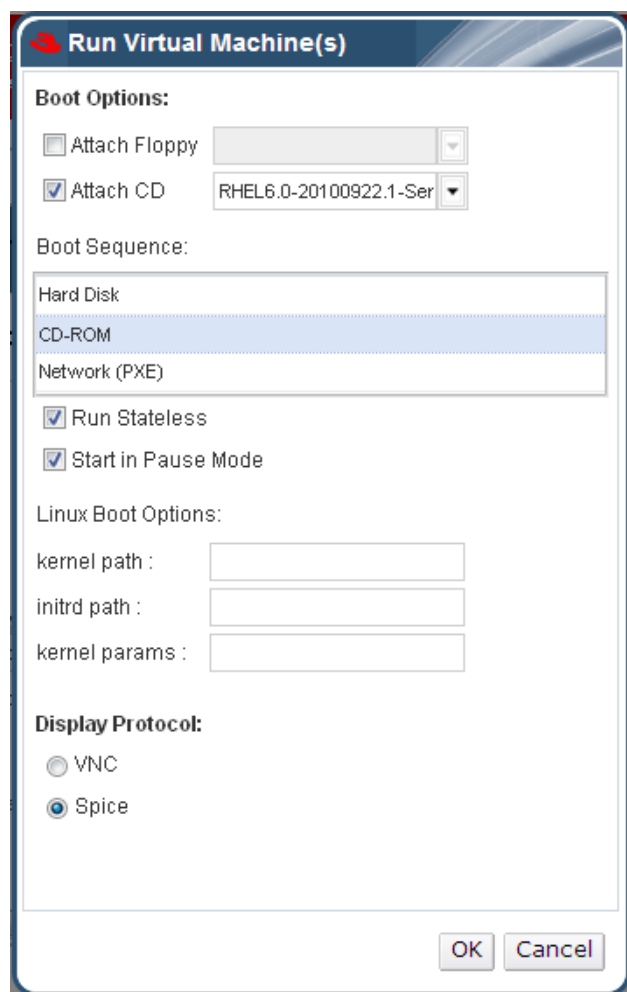


Figure 4.6. Run Virtual Machines

Configure the options in the following fields:

- Tick the **Attach Floppy** checkbox and select a file from the menu if you wish to install Windows drivers.
  - Tick the **Attach CD** checkbox and select an ISO image from the menu if you wish to install the virtual machine's operating system and applications from a CD. This list is populated by images uploaded onto the Red Hat Enterprise Virtualization Manager ISO domain.
  - The **Boot Sequence** determines the order in which the installation occurs. Click one of the available options to select it as the first device to boot from.
  - Tick the **Run Stateless** checkbox if your virtual machine is to discard all changes upon shutdown.
  - The **Start in Pause Mode** option is suitable for virtual machines which require a long time to establish a SPICE connection, for example virtual machines in remote locations.
  - The **Linux Boot Options** are only available for Linux virtual machines. Fill them in if required.
  - SPICE is the recommended **Display Protocol** to connect to the virtual machine.
3. Press **OK** to run the virtual machine. Open a console window to the virtual machine and follow the prompts to install the operating system onto the virtual machine.

## 4.5. Assigning Virtual Machines to Users

If you are creating virtual machines for users other than yourself, you have to assign roles to the users before they can use the virtual machines. Note that permissions can only be assigned to existing users. See the *Red Hat Enterprise Virtualization Installation Guide* for details on creating user accounts.

The Red Hat Enterprise Virtualization User Portal supports three default roles: User, PowerUser and UserVmManager. However, customized roles can be configured via the Red Hat Enterprise Virtualization Manager Administration Portal. The default roles are described below.

- A **User** can connect to and use virtual machines. This role is suitable for desktop end users performing day-to-day tasks.
- A **PowerUser** can create virtual machines and view virtual resources. This role is suitable if you are an administrator or manager who needs to provide virtual resources for your employees.
- A **UserVmManager** can edit and remove virtual machines, assign user permissions, use snapshots and use templates. It is suitable if you need to make configuration changes to your virtual environment.

When you create a virtual machine, you automatically inherit UserVmManager privileges. This enables you to make changes to the virtual machine and assign permissions to the users you manage, or users who are in your IPA group.

### To add permissions to users

1. Click on the virtual machine you wish to assign users to. On the details pane, select the **Permissions** tab.

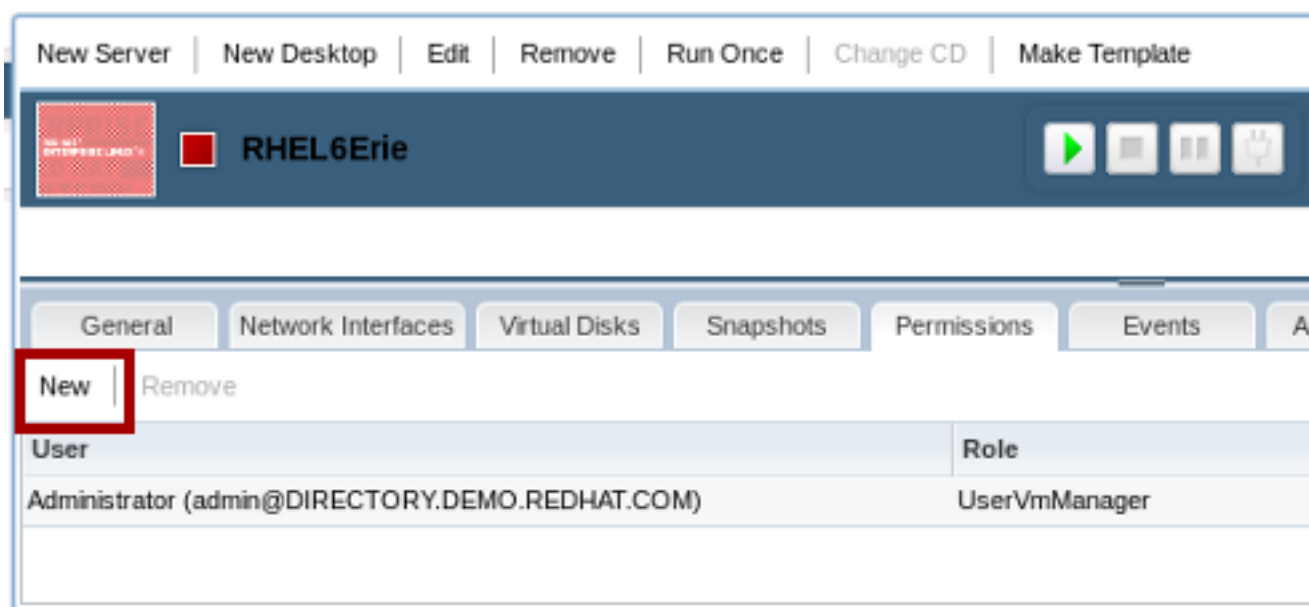


Figure 4.7. Assign permission to user

2. Click **New**. The **Add Permission to User** dialog displays. Enter a Name, or User Name, or part thereof in the **Search** textbox, and click **Go**. A list of possible matches display in the results list.

**Add Permission to User**

Search : directory.demo.redhat.co admin GO

	First Name	Last Name	User Name
<input checked="" type="checkbox"/>		Administrator	admin@DIRECTORY.DEMO.REDHAT.COM

Role to Assign : UserRole

OK Cancel

Figure 4.8. Add UserRole Permission

3. Select the check box of the user to be assigned the permissions. Scroll through the **Role to Assign** list and select **UserRole**. Click **OK**.
4. The user's name and role display in the list of users permitted to access this virtual machine.



### Note

If a user is assigned permissions to only one virtual machine, Single Sign On (SSO) can be configured for the virtual machine. SSO enables the user to bypass the User Portal and log in directly to the virtual machine. See [Section 8.2.4, “Configuring Single Sign On for Virtual Machines”](#).

### To remove user permissions

1. Click on the virtual machine you wish to remove users from. On the details pane, select the **Permissions** tab.
2. Click **Remove**. A warning message displays, asking you to confirm if you want to remove the selected permissions.
3. To proceed, click **OK**. To abort, click **Cancel**.

# Managing Virtual Machines

After the initial setup of your virtual machines, you will occasionally need to make configuration changes to your virtual environment. This chapter enables you to edit your virtual machine settings, and to make backups of your virtual machine's data.

## 5.1. Editing Virtual Machine Properties

As the administrator of your virtual machines, you will need to change or even remove machines to keep your system updated. Virtual machines must be powered off before any changes can be made to them. See [Section 2.2, “Turning Off a Virtual Machine”](#).

### 5.1.1. Editing Virtual Machines

Changes to storage, operating system or networking parameters can adversely affect the virtual machine. Ensure that you have the correct details before attempting to make any changes.

To edit a virtual machine:

1. Select the virtual machine to be edited. Click the **Edit** button.



Figure 5.1. Edit virtual machine button

2. The **Edit Server Virtual Machine** window displays. The fields are identical to the **New Server Virtual Machine** window. See [Figure 4.1, “New Server Virtual Machine”](#).
3. Change the **General**, **Console**, **Host**, **High Availability**, **Resource Allocation** and **Boot Options** fields as required.
4. Click **OK** to save your changes. Your changes will be applied once you restart your virtual machine.

To remove a virtual machine:

1. Select the virtual machine to be removed. Click the **Remove** button.



Figure 5.2. Remove virtual machine

2. A warning message displays, asking if you wish to proceed. Select **OK** to continue or **Cancel** to abort the procedure.

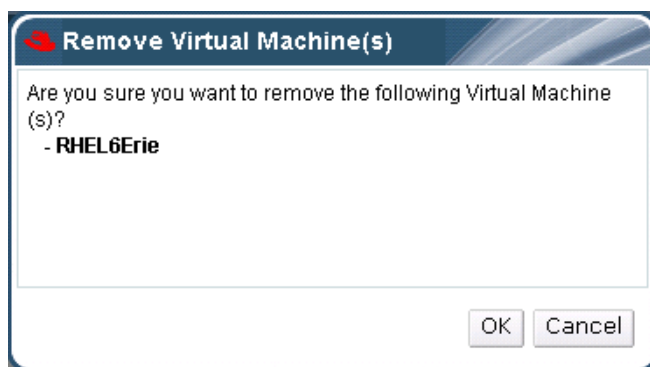


Figure 5.3. Remove virtual machine warning

### 5.1.2. Editing Network Interfaces

For each virtual machine, you can attach one or more Network Interface Cards (NICs) to the logical network in the Red Hat Enterprise Virtualization Manager as described in [Section 4.2, "Adding Network Interfaces to Virtual Machines"](#).

**To edit a network interface:**

1. To change the settings of an existing network interface, select the virtual machine and click the **Network Interfaces** tab of the details pane. Select the network interface you wish to edit and click **Edit**.
2. The **Edit Network Interface** window displays. This dialog contains the same fields as the **New Network Interface** dialog. See [Figure 4.3, "New Network Interface menu"](#).
3. After you have made the required changes, click **OK** to save your changes.

**To remove a network interface:**

1. To remove an existing network interface, select the virtual machine and click the **Network Interfaces** tab of the details pane. Select the network interface you wish to remove and click **Remove**.
2. A warning message displays, asking you to confirm if you wish to proceed. Select **OK** to continue or **Cancel** to abort the procedure.

### 5.1.3. Editing Virtual Disks

The Virtual Disks tab on allows you to manage one or more storage disks to virtual machines. Adding virtual disks is described in [Section 4.3, “Adding New Virtual Disks to Virtual Machines”](#).

To edit a virtual disk:

1. To change the settings of an existing virtual disk, select the virtual machine and click the **Virtual Disks** tab of the details pane. Select the virtual disk you wish to edit and click **Edit**.
2. The **Edit Virtual Disk** window displays. This dialog contains the same fields as the **New Virtual Disk** dialog. See [Figure 4.4, “New Virtual Disk menu”](#).
3. After you have made the changes required, click **OK** to save your changes.

To remove a virtual disk:

1. To remove an existing virtual disk, select the virtual machine and click the **Virtual Disks** tab of the details pane. Select the virtual disk you wish to remove and click **Remove**.
2. A warning message displays, asking you to confirm if you wish to proceed. Select **OK** to continue or **Cancel** to abort the procedure.

### 5.1.4. Changing ISO Images

If you installed your virtual machine from an ISO image, you may have to change or remove the CD which has been attached to your virtual machine. For example, you can remove the existing installation media and attach the Guest Tools ISO which provides virtio drivers and additional tools. To do so, use the **Change CD** utility. **Change CD** can only be used when a virtual machine is running, unlike **Run Once** which allows you to boot a powered down virtual machine from a CD.

Note that only ISO images which have been uploaded onto the Red Hat Enterprise Virtualization Manager storage domain can be attached to virtual machines. For more information see the *Red Hat Enterprise Virtualization Administration Guide*.

To change CD on a virtual machine:

1. Select the virtual machine you wish to attach a new ISO image to and click **Change CD**.

The **Change CD** dialog displays.

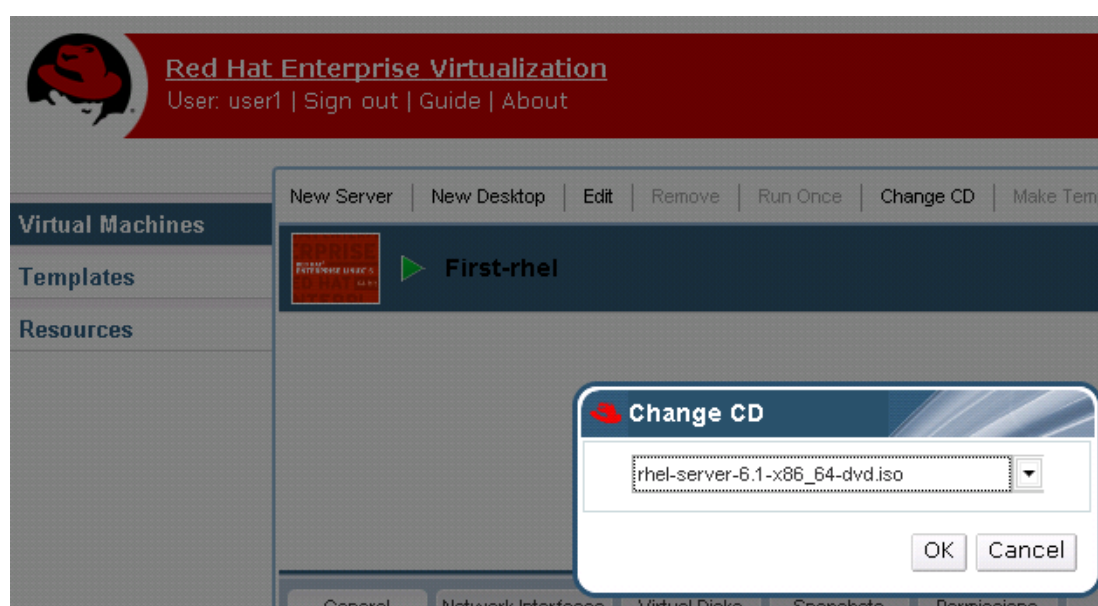


Figure 5.4. Change CD on a virtual machine

- From the drop-down menu, select the name of the ISO image you wish to use. Click **OK**.
- The new ISO image can now be accessed from your virtual machine.

### 5.2. Managing Snapshots

Before you make changes to your virtual machine, it is good practice to back up all the virtual machine's existing data using snapshots. A snapshot displays a view of the virtual machine's operating system and all its applications at a given point in time, and can be used to restore a virtual machine to its previous state. Snapshots can only be taken when a virtual machine is powered off.

To create a snapshot:

- Select the virtual machine you wish to create a snapshot of. Select the **Snapshots** tab in the details pane. Click **New**.

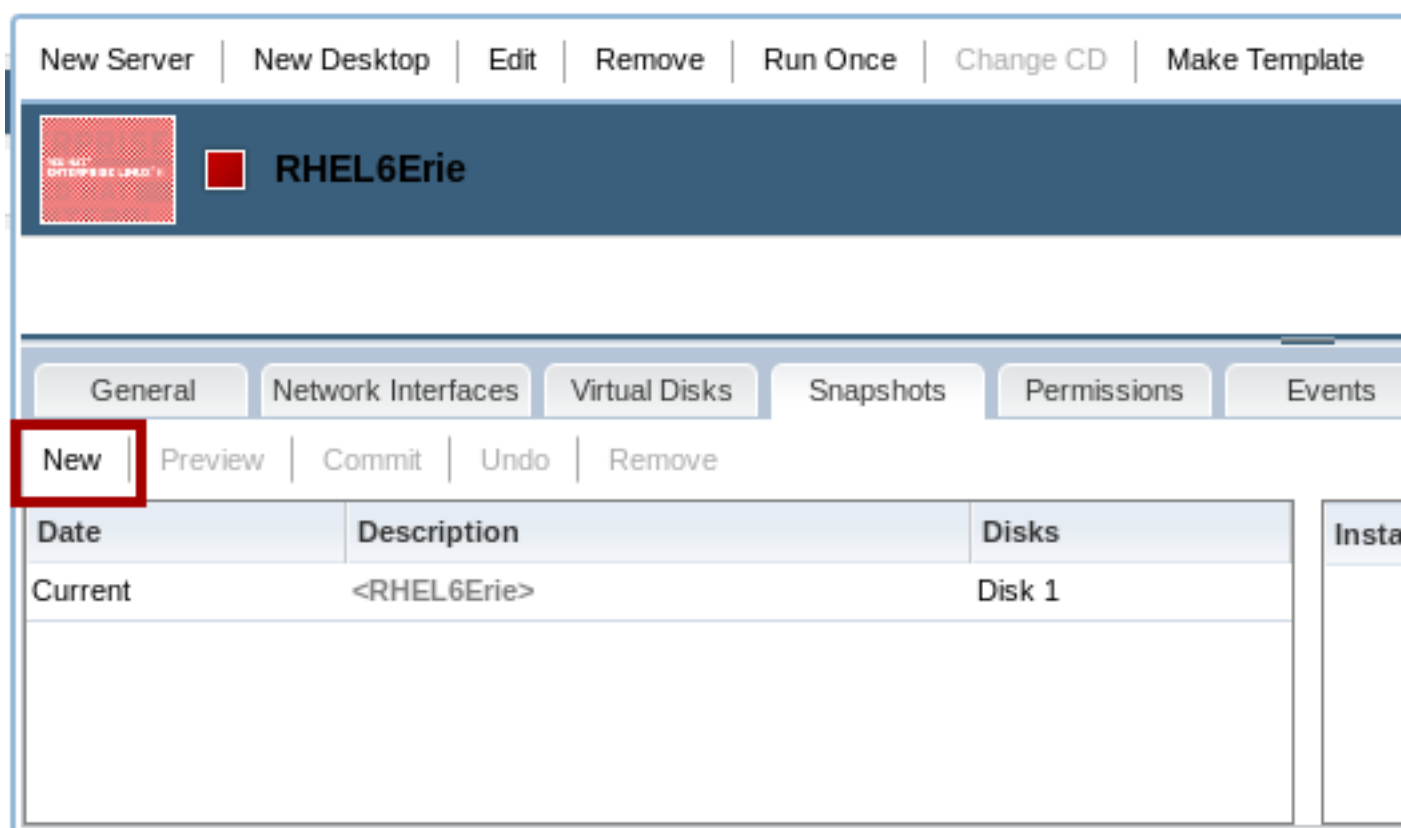


Figure 5.5. New Snapshot button

- The **Create Snapshot** dialog displays. Enter a description for the snapshot and click **OK**.



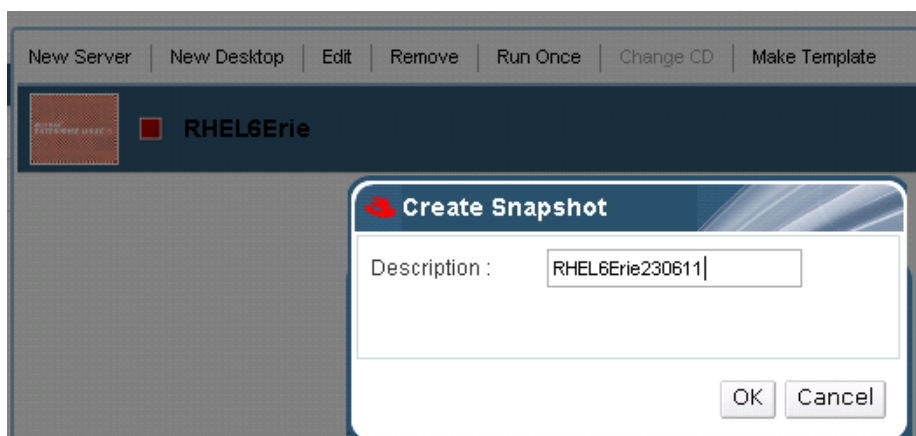


Figure 5.6. Create a Snapshot

3. A new snapshot of the virtual machine's operating system and applications is created. It displays in a list on the left side of the **Snapshots** tab.

**To restore a virtual machine from a snapshot:**

1. Click on the virtual machine you wish to restore from a snapshot. Select the **Snapshots** tab. A list of snapshots displays.
2. Select the snapshot that you wish to use. The snapshot's details display on the right pane, including a list of installed applications on the virtual machine. Click the **Preview** button to preview the snapshot.
3. At this point, you can start the virtual machine and it will run with a "hard" drive that is identical to the snapshot point. After you have checked the snapshot do one of the following:
  - To restore to this point, click **Commit**. The virtual machine is restored to the state it was in at the time of the snapshot, and erases any subsequent snapshots.
  - To undo the changes, click **Undo**. The virtual machine is not restored to the state of the snapshot.

**To delete a snapshot:**

1. Click on the virtual machine from which you wish to remove a snapshot. Select the **Snapshots** tab. A list of snapshots displays.
2. Select the snapshot that you wish to delete and click the **Remove** button. A dialog prompts you to confirm the snapshot's removal, click **OK** to continue.



**Important**

Removing a snapshot does not remove any information from the virtual machine - it simply removes a return-point. However, restoring a virtual machine from a snapshot deletes any content that was written to the virtual machine after the point which the snapshot was taken.



# Using Templates

Templates are model virtual machines that are used as an efficient way to create and deploy new virtual machines of the same type and content. A template can contain an operating system only, or can contain all applications required by a particular department. Using templates ensures that network, storage, processing and memory are set up correctly.

This chapter shows you how to create templates from existing virtual machines, and how to clone virtual machines from templates.

## 6.1. Creating a Virtual Machine Template

When selecting an existing virtual machine as the source for a template, ensure that the virtual machine is general enough for this purpose. A virtual machine that is too specific to a particular user or group may require a lot of changes, and is therefore not practical to use as a template.

To create a virtual machine template:

1. On the **Virtual Machines** tab, select the virtual machine you wish to use as a basis to create a template. Click **Make Template**.



Figure 6.1. Make Template

2. The **New Template** dialog displays.

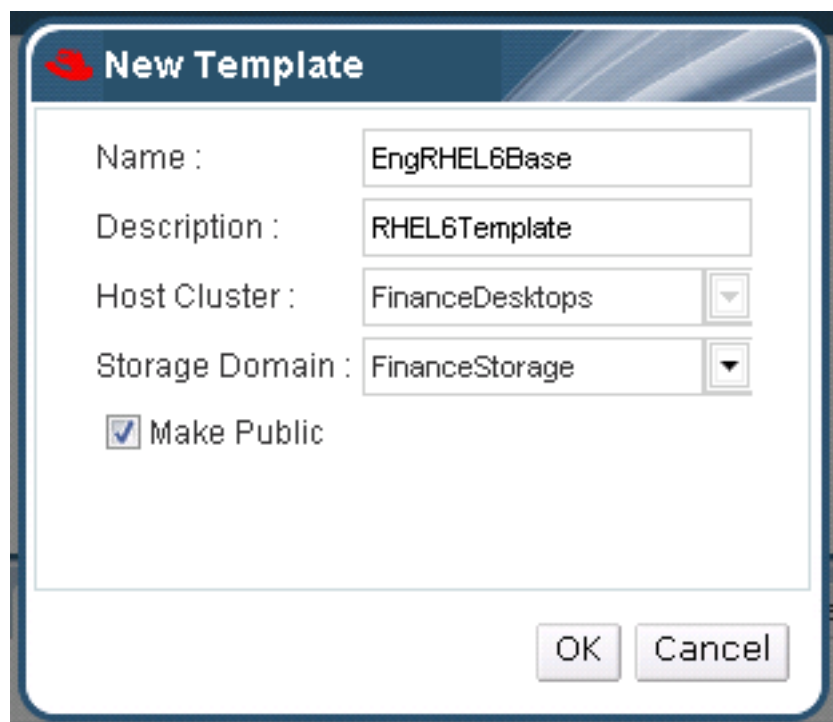


Figure 6.2. Create New Template

Configure the following options:

- Enter a suitable **Name** and **Description** for the template.
  - Select the **Host Cluster** and **Storage Domain** for the virtual machines created using this template.
  - Tick the **Make Public** checkbox if you wish to allow all users to access this template.
3. Click **OK**. The virtual machine will be locked while the template is being created. Once created, select the **Templates** tab in the navigation pane. The newly created template displays in the results list.

## 6.2. Editing or Removing a Virtual Machine Template

A template can be modified or removed when necessary.

To edit a virtual machine template:

1. On the **Templates** tab, select the template you wish to edit. Click the **Edit** button.
2. The **Edit Template** dialog displays. The fields are identical to that of [Figure 6.2, “Create New Template”](#).
3. Make the changes as necessary, and press **OK** to save your settings.

To remove a virtual machine template:

1. On the **Templates** tab, select the template you wish to remove. Click the **Remove** button.
2. The **Remove Template(s)** dialog displays, asking if you wish to remove the selected templates. Click **OK** to proceed or **Cancel** to abort the procedure.



## Warning

If you have used a template to create a virtual machine, make sure that you do not delete the template as the virtual machine needs it to continue running.

## 6.3. Cloning Virtual Machines

You can clone a virtual machine from an existing template. Cloning a virtual machine is essentially the same as creating a virtual machine from a template, in both cases the settings of the original virtual machine are inherited by the new one. The difference is that a virtual machine created from a template cannot be used if its template is removed. In contrast, a cloned virtual machine does not depend on its template once it has been created.

To clone a virtual machine:

1. To clone a virtual machine from an existing template, select the **Virtual Machines** tab in the navigation pane. Click **New Server** or **New Desktop**.
2. The **New Server Virtual Machine** window displays.
  - On the **General** tab, click on the **Based on Template** drop down menu and select the template you wish to clone a virtual machine from, as depicted in [Figure 3.1, “Create virtual machine based on template”](#).
  - Enter a suitable **Name** and **Description**, and accept the default values inherited from the template in the other fields. You can change them if necessary. Refer to [Section 4.1, “Creating New Virtual Machines Without Templates”](#) for information on each field.
  - The **Resource Allocation** tab is now available. Click to display it. In the **Provisioning** field, select the **Clone** option.

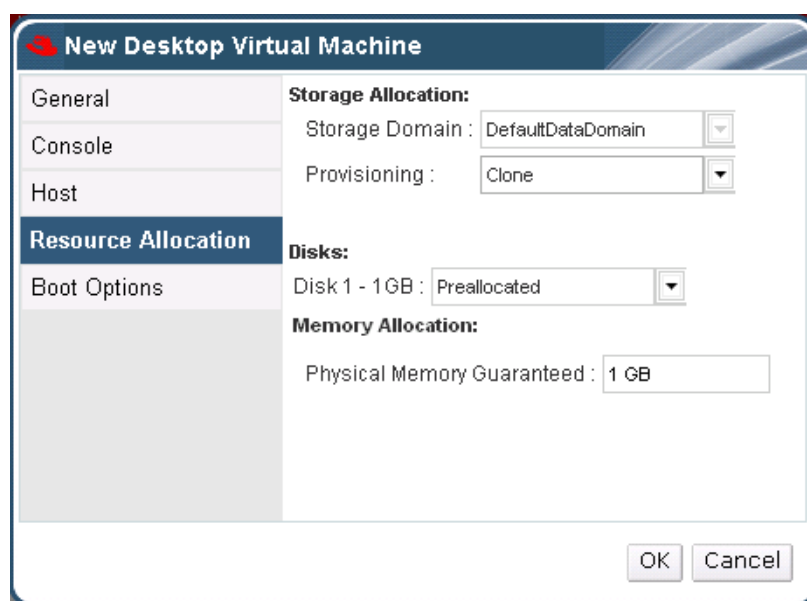


Figure 6.3. New virtual machine - Resource Allocation

3. Click **OK** to create the cloned virtual machine.



# Monitoring Virtual Resources

In addition to creating virtual machines, a virtual machine administrator can view and manage resources in the virtual environment. This chapter describes how to monitor virtual resources.

## 7.1. Monitoring Power User Portal Resources

Before making configuration changes to virtual machines in the User Portal, it is recommended that you take an inventory of the resources available. This is to ensure the resources are sufficient for peak performance and to avoid overloading the hosts running the virtual machines.

The **Resources** tab in the navigation pane shows a cumulative view of all the resources available in the User Portal, and the performance and statistics of each virtual machine.

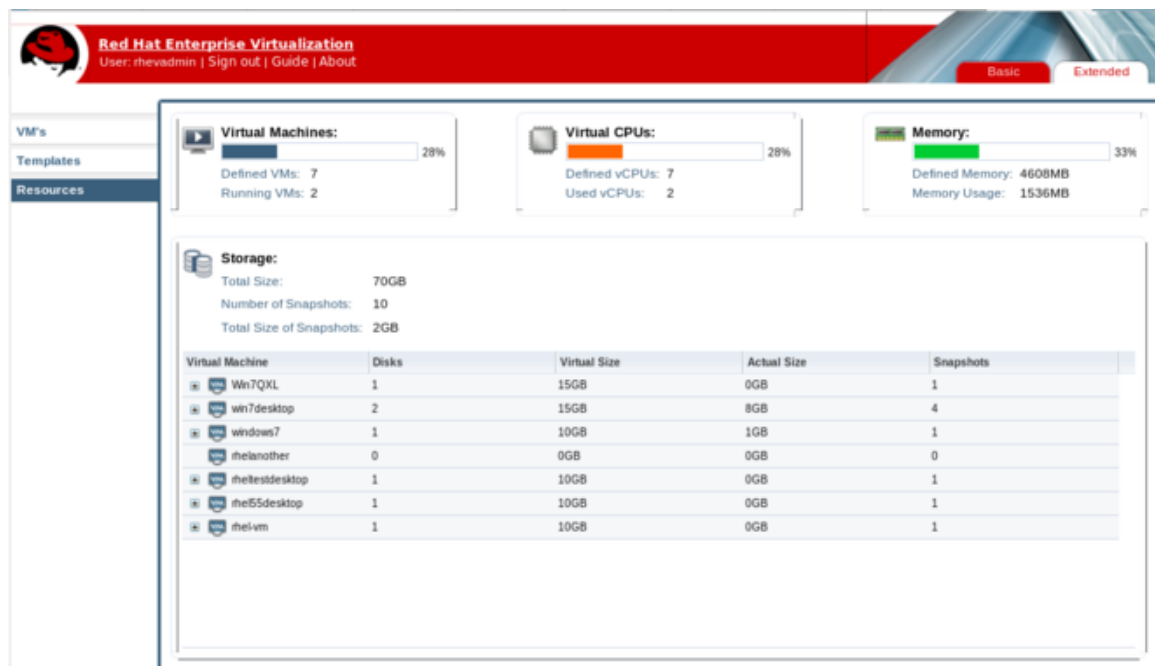


Figure 7.1. Resources tab

- **Virtual Machines:** This box displays the total number of virtual machines assigned to you, and the number of your virtual machines which are powered on.
- **Virtual CPUs:** This box displays the total number of your machines' virtual processors, and the number of virtual CPUs in use.
- **Memory:** This box displays the accumulated memory of your virtual machines, and the memory used by your virtual machines which are powered on.
- **Storage:** This box displays the total size of all your virtual disks, the number and total size of your virtual machines' snapshots. It also displays a breakdown of storage details for each virtual machine. Click the + button next to the virtual machine name to display all the virtual disks attached to the virtual machine.





# Using Virtual Machines - Advanced

This chapter describes how to configure advanced operations on virtual machines. You will learn how to configure connection protocol options and enable the use of local drives and USB devices on your virtual machine.

## 8.1. Configuring Connection Protocols

A connection protocol enables you to see and interact with a virtual machine. When connecting to virtual machines, SPICE or RDP connection protocols can be used. Each protocol offers several connection options which can be enabled when the virtual machine is running.

### 8.1.1. Configuring SPICE Console Options

SPICE is the recommended connection protocol for Linux and Windows virtual machines.

To configure SPICE connection protocol options

1. Select a running virtual machine. Click the **Edit Console Options** button.



Figure 8.1. Select connection protocol

2. The **Console Options** dialog displays.

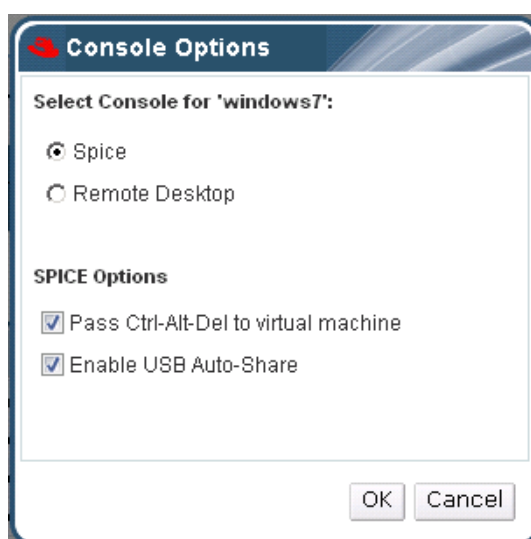


Figure 8.2. Configure Console Options

3. Select **SPICE**. The **SPICE Options** display.

- **Pass Ctrl-Alt-Del to virtual machine:** Tick this checkbox for this keystroke to be intercepted on the virtual guest. The use of this command depends on the operating system: on Red Hat Enterprise Linux, it sends a signal to reboot the computer; and on Windows, it displays the task manager or Windows Security dialog.
- **Enable USB Auto-Share:** Tick this checkbox to use USB devices on the virtual guest.

4. Click **OK**. You are returned to the **Virtual Machines** tab.

### 8.1.2. Configuring RDP Console Options

Remote Desktop Protocol (RDP) can be used for Windows virtual machines.

To configure RDP connection protocol options

1. Select a running virtual machine. Click the **Edit Console Options** button as illustrated in [Figure 8.1, “Select connection protocol”](#).
2. The **Console Options** dialog displays as illustrated in [Figure 8.2, “Configure Console Options”](#).
3. Select **Remote Desktop**. The **RDP Options** display.
  - **Use Local Drives:** Tick this checkbox to use local CD or DVD drives on the virtual guest.
4. Click **OK**. You are returned to the **Virtual Machines** tab.

Note that if your Linux virtual machine uses VNC as its default display protocol, you will not be able to connect to it on the User Portal. On the other hand, a Windows virtual machine using VNC display can be accessed via RDP. You can only establish an RDP connection once remote access has been enabled on the virtual machine. To do so, the initial log in to the Windows virtual machine must be performed using the SPICE protocol.

To enable remote desktop connection on a Windows desktop

1. Select the Windows virtual machine and click **Edit**. The **Edit Server Virtual Machine** dialog displays.
2. On the **Console** tab, set the **Protocol** to *SPICE*. Click **OK**.
3. Turn on the virtual machine as instructed in [Section 2.1, “Connecting to Virtual Machines”](#) and click the **Console** button to log in. Make sure you have administrative permissions for the virtual machine.
4. On the Windows virtual machine, enable remote access according to instructions specific to your operating system.

You will now be able to access the Windows virtual machine using RDP from the User Portal. Repeat this procedure for every Windows guest which uses RDP. Once you are done, you can change the default connection protocol for the virtual machines back to RDP.

## 8.2. Using Advanced Features

The SPICE protocol allows you to connect to a virtual machine and use it the same way you would use a physical desktop. In addition to standard tasks in-built with each operating system, Red Hat Enterprise Virtualization supports features including USB redirection, multiple monitor display and using local drives. The options available for use with virtual machines depend on the connection protocol and options used.

### 8.2.1. Using SPICE Connection Options

When using the SPICE protocol to connect to a virtual machine, you can configure a number of connection options. If you are using a Windows client to connect to virtual machines, you can right-click on the virtual machine window title bar to display the connection menu. This menu is not available to a Red Hat Enterprise Linux client, but you can also use the same hotkeys as described in the table below.

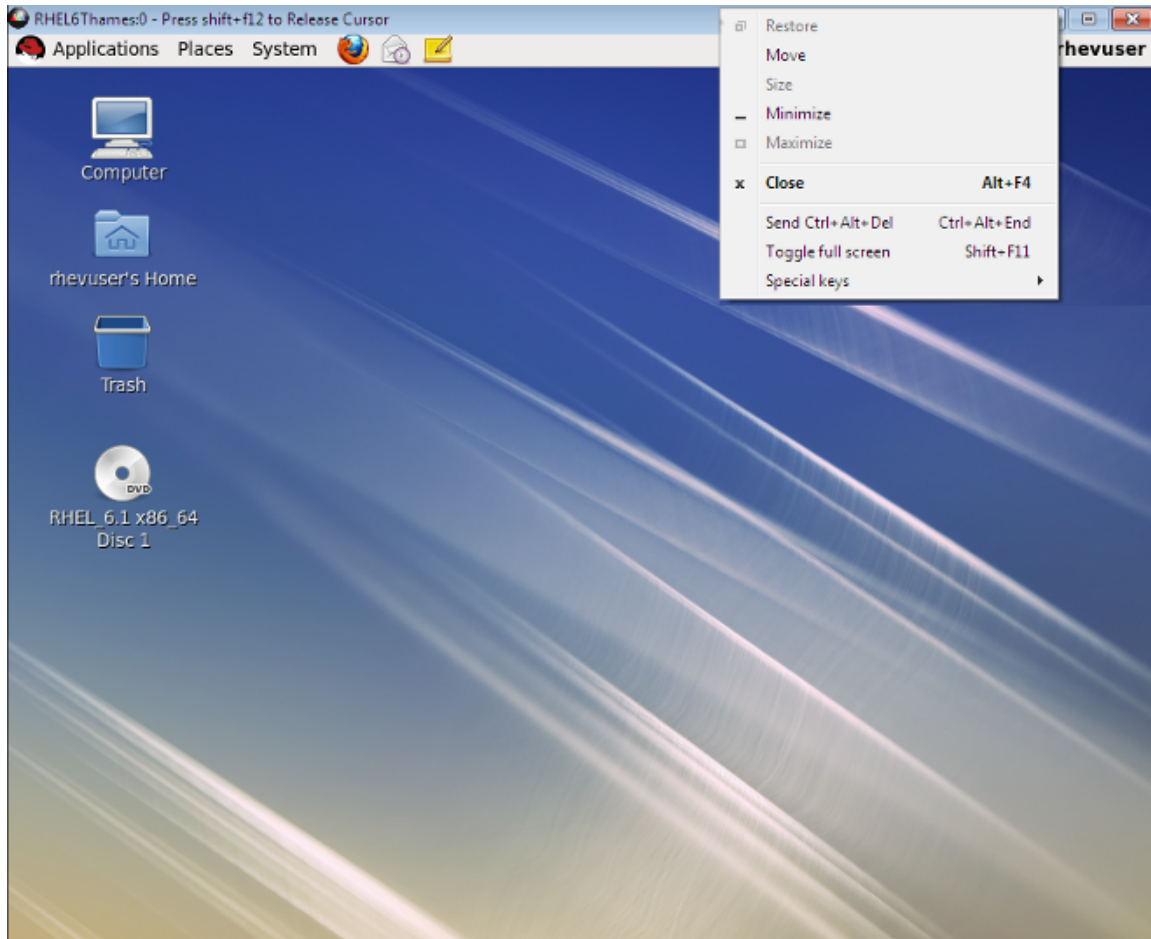


Figure 8.3. SPICE Connection menu

Table 8.1. Connection menu options

Option	Description	Hotkey
Send Ctrl+Alt+Del	Sends the Ctrl+Alt+Del key combination to the virtual machine. On a Red Hat Enterprise Linux virtual machine, it sends a signal to reboot the machine. On a Windows virtual machine, it displays the task manager or Windows Security dialog.	<b>Ctrl+Alt+End</b>
Toggle Full Screen	Toggles full screen mode on or off. When enabled, full screen mode expands the virtual machine to fill the entire screen. When disabled, the	<b>SHIFT+F11</b>

Option	Description	Hotkey
	virtual machine is displayed as a window.	
Special Keys	Shows a menu of special key combinations which can be sent to the virtual machine. <ul style="list-style-type: none"> <li>• <b>SHIFT+F11</b>: Toggles full screen mode</li> <li>• <b>SHIFT+F12</b>: Releases cursor from the virtual machine window</li> <li>• <b>Ctrl+Alt+End</b>: Reboots virtual machine or displays task manager</li> </ul>	-

### 8.2.1.1. SPICE hotkeys

In addition to accessing the connection options through the connection menu, it is possible to use the hotkeys listed in [Table 8.1, “Connection menu options”](#), when using a virtual machine in full screen mode or from a Linux client. For Windows clients, the menu can be accessed by clicking on the virtual machine window title bar when not in full screen mode.

When the mouse is used inside a virtual machine, it becomes locked in the virtual machine window and cannot be used elsewhere. To unlock the mouse, press **Shift+F12**.

### 8.2.2. Using USB Devices on Virtual Machines

A virtual machine that is connected with the SPICE protocol can be configured to connect USB devices. To do so, the USB device has to be plugged into the client machine, then redirected to appear on the guest machine. Red Hat Enterprise Virtualization presently supports USB usage on the following clients and guests:

- Client
  - Red Hat Enterprise Linux 6.0 and higher
  - Red Hat Enterprise Linux 5.5 and higher
  - Windows XP
  - Windows 7
  - Windows 2008
- Guest
  - Windows XP
  - Windows 7



## Important

It is important to note the distinction between the client machine and guest machine. The client is the hardware from which you access a guest. The guest is the virtual desktop or virtual server which can be connected through the User Portal.

### 8.2.2.1. Using USB Devices on a Linux Client

If you connect to a virtual guest from a Red Hat Enterprise Linux client machine, you have to install several SPICE packages before you can share USB devices between the client and the guest.

To use USB devices on Red Hat Enterprise Linux clients

#### 1. Install SPICE packages on client

On your Linux client machine, install the following packages:

- *spice-usb-share*
- *kmod-kspiceusb-rhel60* for Red Hat Enterprise Linux 6 or  
*kmod-kspiceusb-rhel5u6* for Red Hat Enterprise Linux 5

These packages are available from the Red Hat Network, from the Red Hat Enterprise Linux Supplementary software channel for your version of Red Hat Enterprise Linux. To install the packages, run:

```
# yum install spice-usb-share kmod-kspiceusb
```

#### 2. Run SPICE USB services

Start the **spiceusbsrvd** service and load the **kspiceusb** module. Run:

```
# service spiceusbsrvd start  
# modprobe kspiceusb
```

#### 3. Install RHEV-Tools on guest

On the Power User Portal, select the Windows guest on which you will use your USB device. Ensure that it is powered up, then click **Change CD**. From the list of images, select **RHEV-toolsSetup.iso**. If this image is not available in your ISO domain contact your system administrator.

Once you have attached the Guest Tools, click **Console** and log in to the guest machine. Locate the CD drive to access the contents of the Guest Tools ISO, and launch **RHEV-ToolsSetup.exe**. After the tools have been installed, you will be prompted to restart the machine for changes to be applied. Close the SPICE console window.

#### 4. Open firewall ports

Allow connections on TCP port 32023 on any firewalls between the guest machine and the client machine.

#### 5. Enable USB Auto-Share

On the Power User Portal, select your guest machine. Ensure that its connection protocol is SPICE, and that you have enabled USB Auto-Share as described in [Section 8.1.1, “Configuring SPICE Console Options”](#).

### 6. Attach USB device

Connect to your guest machine as instructed in [Section 2.1, “Connecting to Virtual Machines”](#). Place the SPICE console window of your guest desktop in focus, then attach a USB device to the client. The USB device displays in your guest desktop.

When you close the SPICE session the USB device will no longer be shared with the guest.

## 8.2.2.2. Using USB Devices on a Windows Client

If you are connecting from a Windows client machine, and wish to use USB devices on your guest, you have to enable SPICE USB redirection.

To enable USB redirection on Windows:

### 1. Install USB redirector package on client

On a Windows client machine, install the **RHEV-USB-Client.exe** package. This package can be obtained from the **Red Hat Enterprise Virtualization Manager (v.3 x86\_64)** channel on the Red Hat Network, under the **Downloads** list.

### 2. Install RHEV-Tools on guest

On the Power User Portal, select the Windows guest on which you will use your USB device. Ensure that it is powered up, then click **Change CD**. From the list of images, select **RHEV-toolsSetup.iso**. If this image is not available in your ISO domain contact your system administrator.

Once you have attached the Guest Tools, click **Console** and log in to the guest machine. Locate the CD drive to access the contents of the Guest Tools ISO, and launch **RHEV-ToolsSetup.exe**. After the tools have been installed, you will be prompted to restart the machine for changes to be applied. Close the SPICE console window.

### 3. Open firewall ports

Allow connections on TCP port 32023 on any firewalls between the guest machine and the client machine.

### 4. Enable USB sharing

On the Power User Portal, select your guest machine. Ensure that the connection protocol is SPICE, and that you have enabled USB Auto-Share as described in [Section 8.1.1, “Configuring SPICE Console Options”](#).

### 5. Attach USB device

Connect to your guest machine as instructed in [Section 2.1, “Connecting to Virtual Machines”](#), and attach a USB device to the client. If the required USB device does not appear directly on the guest desktop, right click on the SPICE frame and select **USB Devices**. Choose your device from the list displayed.

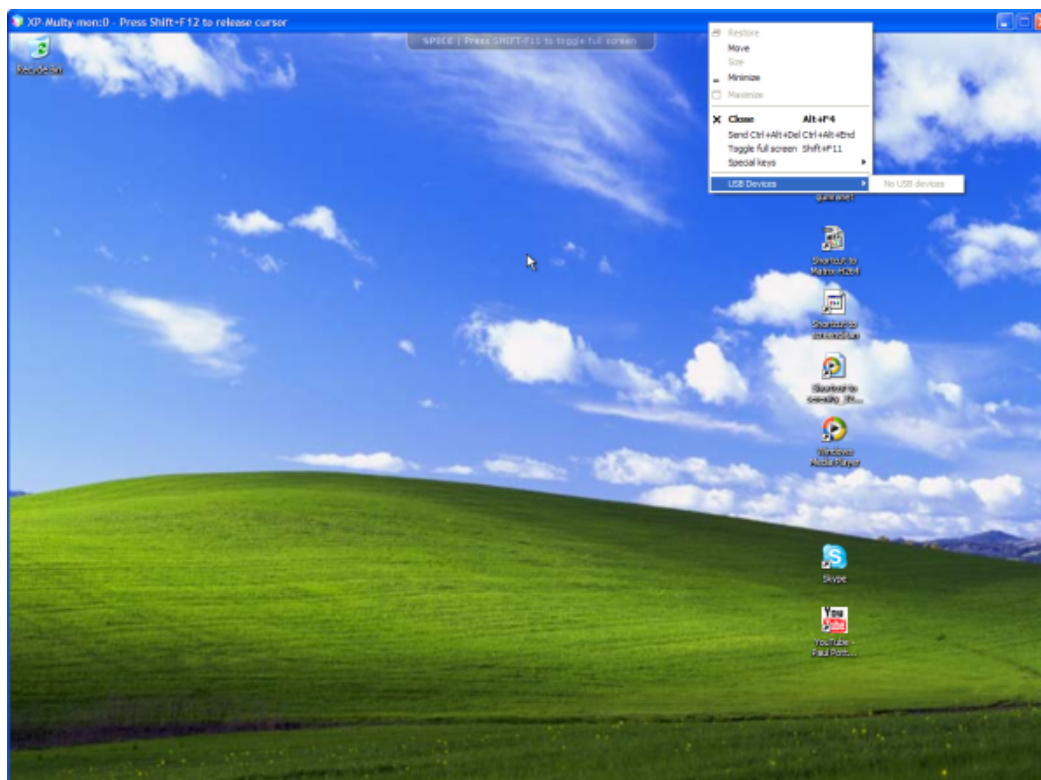


Figure 8.4. List of connected USB devices



### Important

When some USB devices are connected on Windows clients, the autoplay window will appear and the client will take control of the device, making it unavailable to the guest. To avoid this issue, disable USB autoplay on your Windows clients.



### Note

You can also define additional USB policies for Windows clients, to allow or block access to certain USB devices. For details, see the sections on USB Filter Editor in the *Red Hat Enterprise Virtualization Administration Guide*.

## 8.2.3. Using Local Drives

The RDP connection allows a local CD or DVD drive on the client machine to be used on a virtual machine.



To use local drives on a virtual machine:

1. Insert a CD or DVD into your client machine's CD drive.
2. Select the virtual machine you wish to use it on and click the **Edit Protocol Options** icon.
3. Select the **Remote Desktop** option and tick the **Use Local Drives** checkbox. Connect to your guest machine as instructed in [Section 2.1, “Connecting to Virtual Machines”](#).
4. Your CD or DVD is automatically detected, and can be used on the virtual machine.

### 8.2.4. Configuring Single Sign On for Virtual Machines

If you have only one running virtual machine in use, it is possible to bypass the User Portal and connect directly to the virtual machine using Single Sign On (SSO). SSO can be used on Red Hat Enterprise Linux and Windows virtual machines.

#### 8.2.4.1. Configuring Single Sign On for Red Hat Enterprise Linux Virtual Machines

To configure SSO on Red Hat Enterprise Linux virtual machines using GNOME and KDE graphical desktop environments, the Red Hat Enterprise Linux guest agent has to be installed onto the virtual machine. This package can be downloaded from the Red Hat Network.

1. Log in to your Red Hat Enterprise Linux virtual machine. See [Section 2.1, “Connecting to Virtual Machines”](#).
2. Ensure that the virtual machine has valid entitlements to the **Red Hat Enterprise Virt Agent (v.6 Server for x86\_64)** channel on the Red Hat Network. As root, open a terminal and run the following command:

```
# rhn-channel -v -u YOUR-RHN-USERNAME -a -c rhel-x86_64-rhev-agent-6-server
```

3. Download and install the *rhev-guest-agent* package. Run the following command:

```
# yum install rhev-guest-agent
```

Now that you have enabled SSO on your Red Hat Enterprise Linux virtual machine, the next time you log in to it, you do not have to go through the User Portal. Use the instructions in [Section 1.1, “Logging in to the Power User Portal”](#), and on the User Portal login screen tick the **Connect Automatically** checkbox to be taken directly to your virtual machine.

#### 8.2.4.2. Configuring Single Sign On for Windows Virtual Machines

To configure SSO on Windows virtual machines, the Windows guest agent has to be installed onto the virtual machine. The **RHEV Guest Tools** ISO provides this agent. If the **RHEV-toolsSetup.iso** image is not available in your ISO domain, contact your system administrator.

1. On the Power User Portal, select your Windows virtual machine. Ensure that the machine is powered up, then click the **Change CD** button.
2. From the list of images, select **RHEV-toolsSetup.iso**. Click **OK**.
3. Once you have attached the Guest Tools, click the **Console** icon and log in to the virtual machine.



4. On the virtual machine, locate the CD drive to access the contents of the Guest Tools ISO, and launch **RHEV-ToolsSetup.exe**. After the tools have been installed, you will be prompted to restart the machine for changes to be applied.

Now that you have enabled SSO on your Windows virtual machine, the next time you log in to it, you do not have to go through the User Portal. Use the instructions in [Section 1.1, “Logging in to the Power User Portal”](#), and on the User Portal login screen tick the **Connect Automatically** checkbox to be taken directly to your virtual machine.



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# Appendix A. Revision History

**Revision 1-6**    **Monday December 5 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Red Hat Enterprise Virtualization General Availability

**Revision 1-5**    **Tuesday October 4 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Red Hat Enterprise Virtualization External Beta 3

**Revision 1-4**    **Monday September 19 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Red Hat Enterprise Virtualization External Beta 2

**Revision 1-3**    **Wednesday August 3 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Red Hat Enterprise Virtualization External Beta 1

**Revision 1-2**    **Saturday July 30 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Edited as per technical review

**Revision 1-1**    **Wednesday June 22 2011**    Susan Burgess [sburgess@redhat.com](mailto:sburgess@redhat.com)  
Restructure as per PM review

**Revision 1-0**    **Tuesday May 31 2011**    Cheryn Tan [cheryntan@redhat.com](mailto:cheryntan@redhat.com)  
Initial creation of book by publican

