

RHSA (Admin 1) Red Hat Enterprise Linux 8 Essentials

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Lecture 9

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Using Virtualized system



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Getting started with virtualization

- ❑ To start using [virtualization in RHEL 8](#), follow the steps below. The default method for this is using the command-line interface (CLI).
- ❑ Enable the virtualization module and install the virtualization packages - [Enabling virtualization](#).
- ❖ Create a virtual machine (VM):
 1. For CLI, [Creating virtual machines using the command-line interface](#).
 2. For GUI, [Creating virtual machines and installing guest operating systems using the web console](#).



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❑ Start the VM:

1. For CLI, [Starting a virtual machine using the command-line interface](#).
2. For GUI, [Starting virtual machines using the web console](#).
3. Connect to the VM:
4. For CLI, [Connecting to a virtual machine using SSH](#) or [Opening a virtual machine graphical console using Virt Viewer](#).



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1. Creating virtual machines using the command-line interface

❑ To create a virtual machine (VM) on your RHEL 8 host using the virt-install utility, follow the instructions below.

❖ Prerequisites

- Virtualization is [enabled](#) on your host system.
- You have sufficient a amount of system resources to allocate to your VMs, such as disk space, RAM, or CPUs. The recommended values may vary significantly depending on the intended tasks and workload of the VMs.
- An operating system (OS) installation source is available locally or on a network. This can be one of the following:
 - ❖ An ISO image of an installation medium
 - ❖ A disk image of an existing VM installation



❑ Procedure

❑ To create a VM and start its OS installation, use the **virt-install command**, along with the following mandatory arguments:

- The name of the new machine (**--name**)
- The amount of allocated memory (**--memory**)
- The number of allocated virtual CPUs (**--vcpus**)
- The type and size of the allocated storage (**--disk**)
- The type and location of the OS installation source (**--cdrom** or **--location**)

Based on the chosen installation method, the necessary options and values can vary. See below for examples:



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- The following creates a VM named **demo-guest1** that installs the Windows 10 OS from an ISO image locally stored in the **/home/username/Downloads/Win10install.iso** file.
- This VM is also allocated with 2048 MiB of RAM and 2 vCPUs, and an 80 GiB qcow2 virtual disk is automatically configured for the VM.

```
# virt-install \  
  --name demo-guest1 --memory 2048 \  
  --vcpus 2 --disk size=80 --os-variant win10 \  
  --cdrom /home/username/Downloads/Win10install.iso
```



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- The following creates a VM named **demo-guest2** that uses the **/home/username/Downloads/rhel8.iso** image to run a RHEL 8 OS from a live CD.
- No disk space is assigned to this VM, so changes made during the session will not be preserved. In addition, the VM is allocated with 4096 MiB of RAM and 4 vCPUs.

```
# virt-install \  
  --name demo-guest2 --memory 4096 --vcpus 4 \  
  --disk none --livecd --os-variant rhel8.0 \  
  --cdrom /home/username/Downloads/rhel8.iso
```



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- ❑ The following creates a RHEL 8 VM named **demo-guest3** that connects to an existing disk image, **/home/username/backup/disk.qcow2**. This is similar to physically moving a hard drive between machines,
- ❑ so the OS and data available to demo-guest3 are determined by how the image was handled previously. In addition, this VM is allocated with 2048 MiB of RAM and 2 vCPUs.

```
# virt-install \  
  --name demo-guest3 --memory 2048 --vcpus 2 \  
  --os-variant rhel8.0 --import \  
  --disk /home/username/backup/disk.qcow2
```



Troubleshooting

- If virt-install fails with a cannot find default network error:
 - a. Ensure that the *libvirt-daemon-config-network* package is installed:

```
# yum info libvirt-daemon-config-network
Installed Packages
Name           : libvirt-daemon-config-network
[...]
```

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b. Verify that the libvirt default network is active and configured to start automatically:

```
# virsh net-list --all
```

Name	State	Autostart	Persistent
default	active	yes	yes

c. If it is not, activate the default network and set it to auto-start:

```
# virsh net-autostart default
Network default marked as autostarted

# virsh net-start default
Network default started
```



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1. Creating virtual machines

To create a virtual machine (VM) on the host machine to which the web console is connected, follow the instructions below.

❑ Prerequisites

- ❖ Virtualization is [enabled](#) on your host system.
- ❖ The web console VM plug-in [is installed on your system](#).
- ❖ You have sufficient a amount of system resources to allocate to your VMs, such as disk space, RAM, or CPUs. The recommended values may vary significantly depending on the intended tasks and workload of the VMs.



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❑ Procedure

In the Virtual Machines interface of the web console, click **Create VM**.

The Create new virtual machine dialog appears.

Create new virtual machine

Name Unique name

Details Automation

Installation type Download an OS

Operating system Choose an operating system

Storage Create new volume

Storage Limit 10 GIB
198.8 GiB available at default location

Memory 1 GIB
15.2 GiB available on host

Create and run Create and edit Cancel

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2. Enter the basic configuration of the VM you want to create.

- ❖ **Name** - The name of the VM.
- ❖ **Installation type** - The installation can use a local installation medium, a URL, a PXE network boot, a cloud base image, or download an OS from a limited set of operating systems.
- ❖ **Operating system** - The VM's operating system. Note that Red Hat provides support only for [a limited set of guest operating systems](#).
- ❖ **Storage** - The type of storage with which to configure the VM.
- ❖ **Storage Limit** - The amount of storage space with which to configure the VM.
- ❖ **Memory** - The amount of memory with which to configure the VM.



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3.Create the VM:

- ☐ If you want the VM to automatically install the operating system, click **Create and run**.
- ☐ If you want to edit the VM before the operating system is installed, click **Create and edit**.



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Creating virtual machines by importing disk images

To create a virtual machine (VM) by importing a disk image of an existing VM installation, follow the instructions below.

Prerequisites

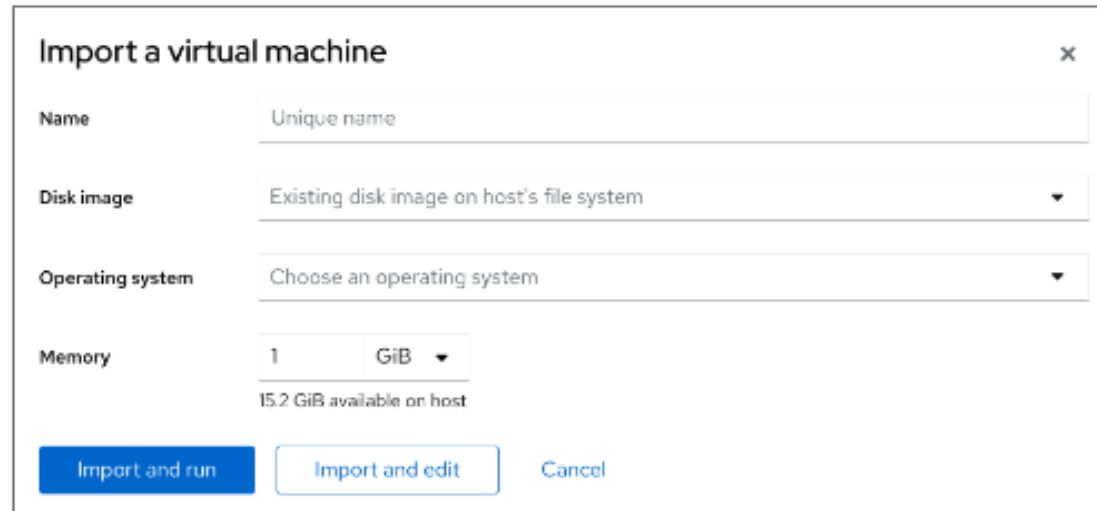
- The web console VM plug-in [is installed on your system](#).
- You have sufficient a amount of system resources to allocate to your VMs, such as disk space, RAM, or CPUs. The recommended values can vary significantly depending on the intended tasks and workload of the VMs.
- Make sure you have a disk image of an existing VM installation



Procedure

1. In the Virtual Machines interface of the web console, click **Import VM**.

The Import a virtual machine dialog appears.



Import a virtual machine

Name Unique name

Disk image Existing disk image on host's file system

Operating system Choose an operating system

Memory 1 GiB
15.2 GiB available on host

Import and run Import and edit Cancel

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- ❑ Enter the basic configuration of the VM you want to create.
 - **Name** - The name of the VM.
 - **Disk image** - The path to the existing disk image of a VM on the host system.
 - **Operating system** - The VM's operating system. Note that Red Hat provides support only for [a limited set of guest operating systems](#).
 - **Memory** - The amount of memory with which to configure the VM.

➤ Import the VM:

If you want the VM to automatically install the operating system, click **Import and run**.
If you want to edit the VM before the operating system is installed, click **Import and edit**.



3. Installing guest operating systems using the web console

The first time a virtual machine (VM) loads, you must install an operating system on the VM.

Prerequisites

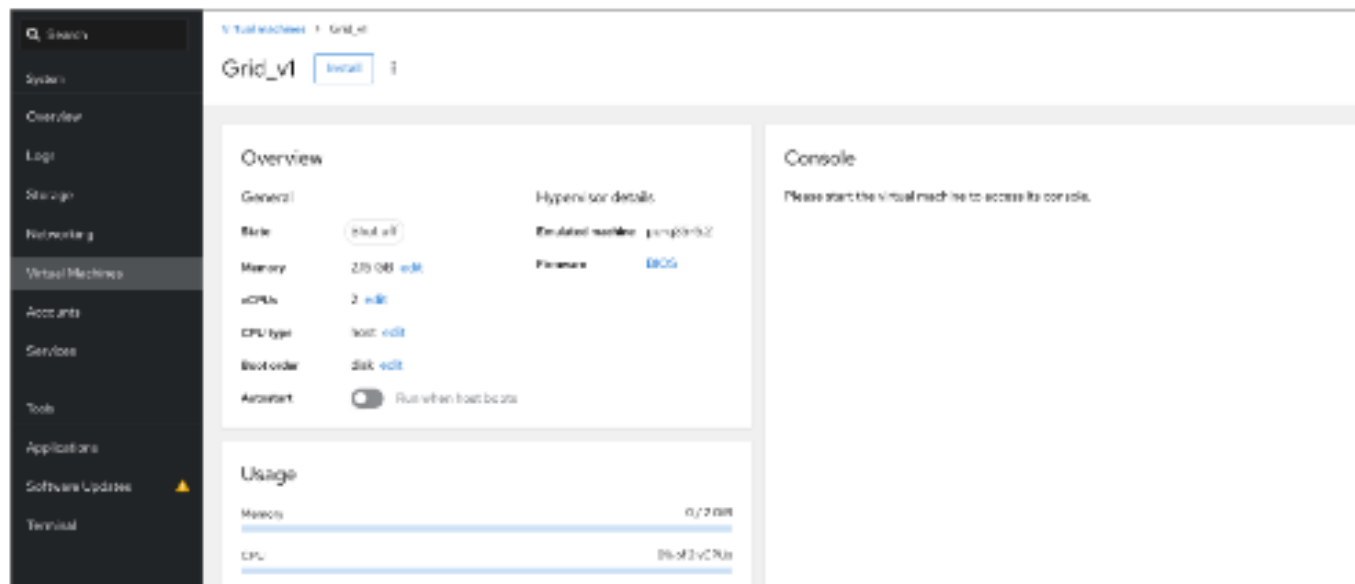
The web console VM plug-in [is installed on your system](#).

A VM on which to install an operating system must be available.

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Procedure

- In the Virtual Machines interface, click the VM on which you want to install a guest OS.
- A new page opens with basic information about the selected VM and controls for managing various aspects of the VM.



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Optional: Change the firmware.

- I. Click the firmware.
 - II. In the Change Firmware window, select the desired firmware.
 - III. Click save
- ☐ The installation routine of the operating system runs in the VM console.



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