



Denodo Education

Denodo Training

QuickStart Virtual Machine

Installation and Configuration

Denodo Education
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Introduction

The **Denodo Training QuickStart Virtual Machine** (*DQVM* from now on) is a virtual machine based on CentOS 7 that helps students doing Denodo Training on demand courses. This virtual machine includes all the different data sources required for completing any on demand training course.

By using the virtual machine, students just need to run it and all the different data sources will be available for them in their machines, so they would just need to connect to them using the Denodo Platform.

Installation

The DQVM does not need to be installed. Students just need to launch it with the virtualization applications **Oracle VM Virtualbox 5.2.x, VMware vSphere v5.5 or Hyper-V Manager 10.0.18362.1.**

Hardware Requirements

The DQVM has the following hardware requirements:

Processor	2 cores or more.
Physical memory (RAM)	By default, the base RAM memory configured for the Virtual Machine is 4 GB . The host Operating System should have that amount of RAM x2.
Disk space	By default, the size of the virtual machine is 1.5 GB . More disk space will be needed if modifications are done to the virtual machine (e.g. insertion of new rows in the database).

It is recommended to avoid memory overcommitment. That is, the amount of memory assigned to the virtual machine has to be backed by physical memory. Otherwise, the host operating system will have to swap to disk parts of the virtual machine. This will lead to a decrease in the performance of the Virtual Machine.

Note: if you are going to install Denodo Platform on the same machine, you also have to consider the [Denodo Platform requirements](#).

Configuration Overview

Each version of the DQVM has the appropriate downloadable file. Please, you have to download the correct one for your virtualization application. Please, note that when the DQVM is running, it will use an internal IP address which could be different on your machine.

Oracle VirtualBox

This DQVM version is configured to use a specific network adapter and that adapter must be pre-configured to set the specific IP address that will be used in all Denodo Training on demand labs.

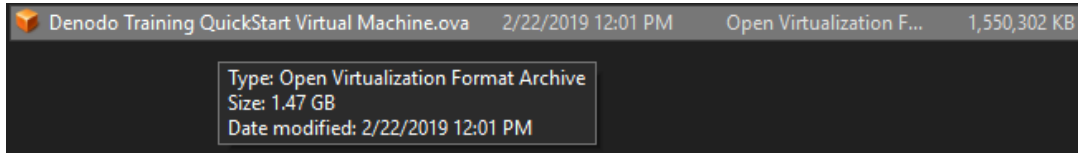
In the following sections, we will explain how to configure the Oracle VirtualBox network adapter and how to launch the DQVM.

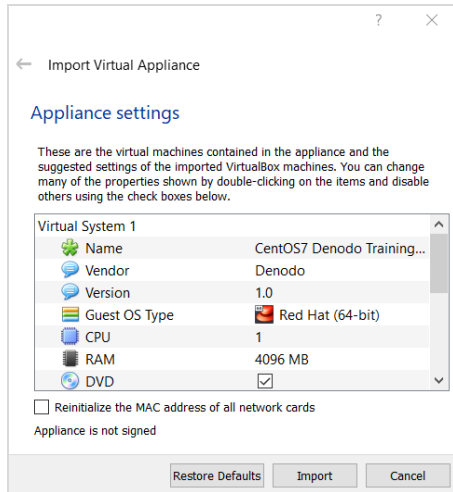
Keep in mind that all Denodo Training on demand labs are based on this configuration, as all labs use the IP “**192.168.100.X**” (The IP assigned to this Virtual Machine by VirtualBox will be in the range 192.168.100.3 - 192.168.100.254) or the name of the host “**data-server**” when connecting to a data source.

Note: This document assumes that students already have installed Oracle VM VirtualBox (version 5.2.x or newer). If you need to install it, please visit: www.virtualbox.org or [Oracle VM VirtualBox](#)

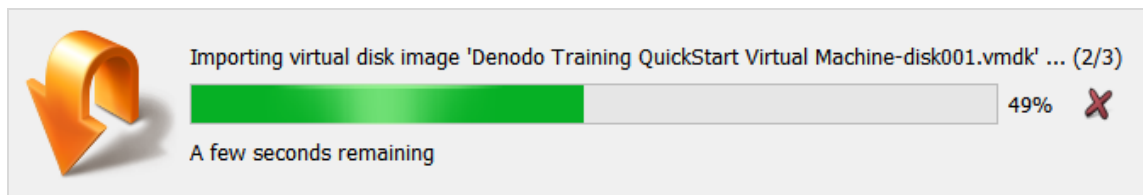
Importing the DQVM in Oracle VM VirtualBox

These are the steps for importing the DQVM:

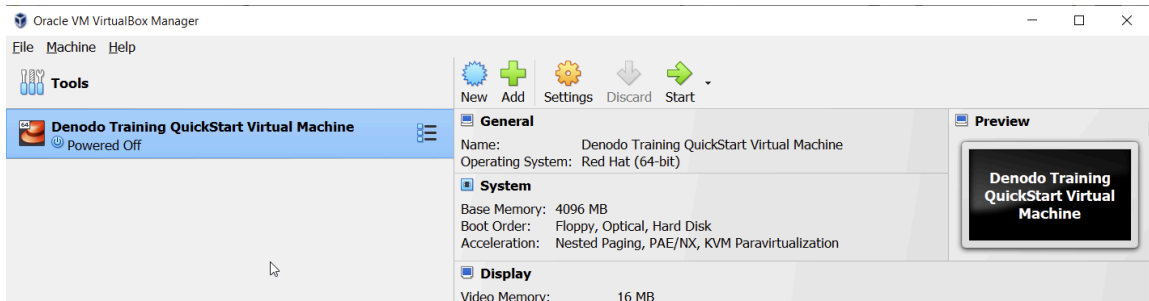
1. You have two main options for importing the DQVM in Oracle VM VirtualBox:
 - a. You can double-click over the “Denodo Training QuickStart Virtual Machine.ova” file (if .ova files are opened by default with Oracle VirtualBox in your system).
- 
- b. You can right-click on the “Denodo Training Virtual QuickStart Machine.ova” file and select “Open With > VirtualBox Manager”.
2. You will see a new window showing the details of the DQVM (set name as: **Denodo Training QuickStart Virtual Machine**):



3. Click on “**Import**” to start the process:



4. After it is imported, you will see it in the left panel with your other virtual machines.

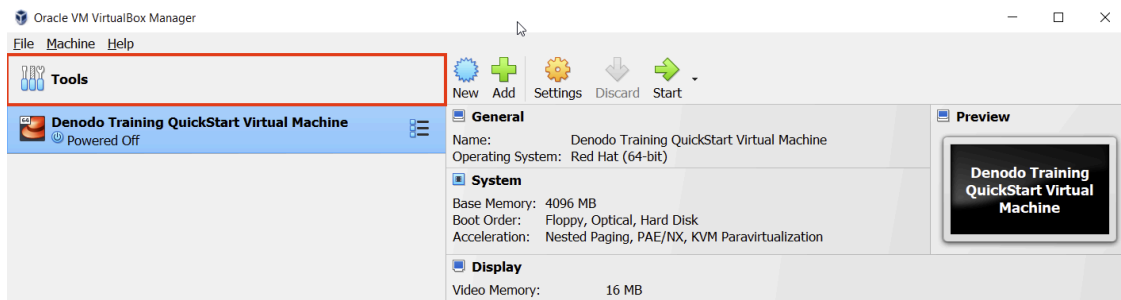


Network Adapter configuration in Oracle VM VirtualBox

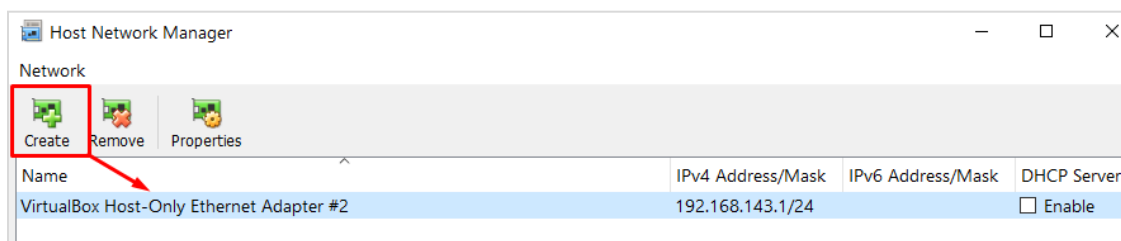
Note: These steps are not mandatory for using the Virtual Machine but are recommended.

Find below the steps required for students using Oracle VM VirtualBox to configure the IP address of the DQVM:

5. Configure the network for your VirtualBox administrator tool by accessing the “Tools” option (navigating to “File > Host Network Manager” in older versions of VirtualBox).



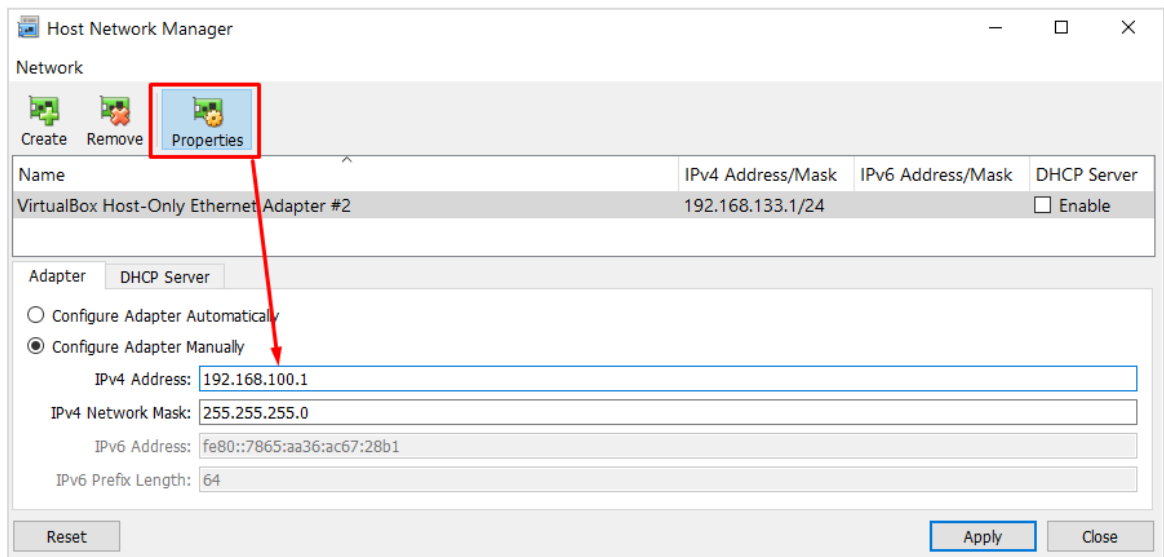
6. Click on the button “Create” to create a new VirtualBox **Host-Only** Network.
 - a. After you click on this button you will see a new “VirtualBox Host-Only Ethernet Adapter” listed in this panel:



7. Configure the new adapter just by clicking over it and selecting the “Properties” option:

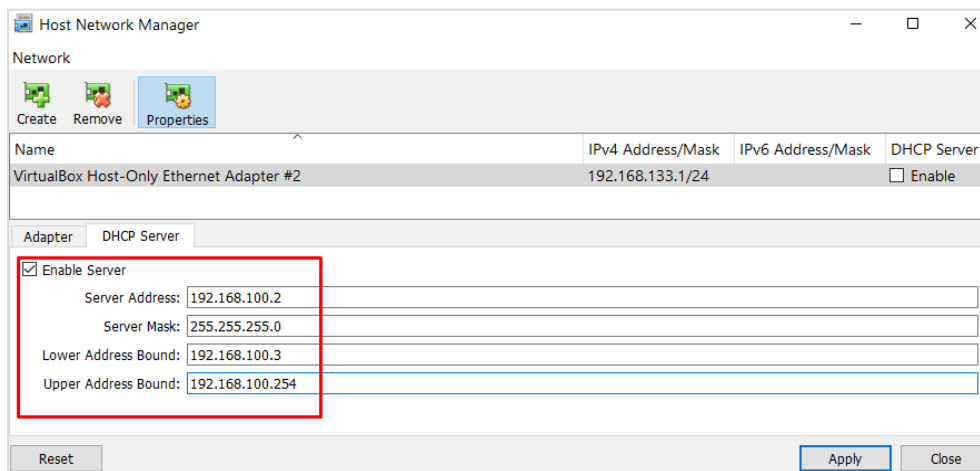
a. Select the option “*Configure Adapter Manually*” and add the following information:

- **IPv4 Address:** 192.168.100.1
- **IPv4 Network Mask:** 255.255.255.0

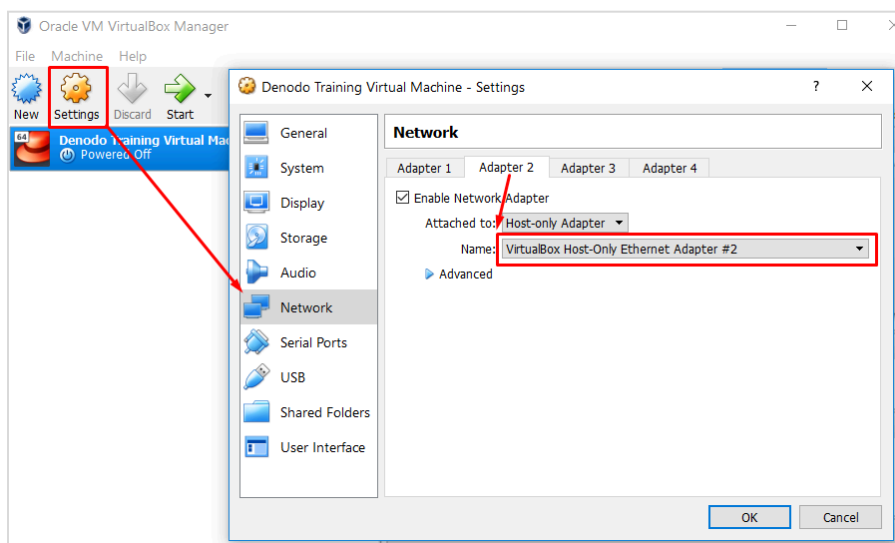


b. Inside the configuration of the adapter, open the “*DHCP Server*” tab and configure the following:

- Select **Enable Server**
- **Server Address:** 192.168.100.2
- **Server Mask:** 255.255.255.0
- **Lower Address Bound:** 192.168.100.3
- **Upper Address Bound:** 192.168.100.254



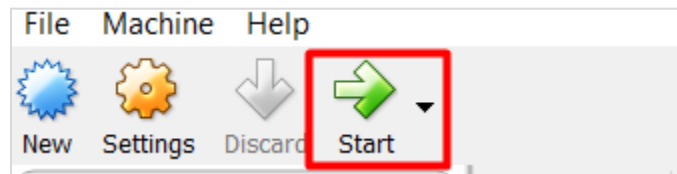
- c. After all the changes have been applied, click on “**Apply**” and then close this panel.
8. Return to the list of virtual machines, select the DQVM, right-click over it, and click on “**Settings**”. Then open the “**Network**” tab:
- a. Open the “*Adapter 2*” and be sure that is using the following configuration:
- **Attached to:** Host-only Adapter
 - **Name:** (Here you should select the name of the ethernet adapter you configured at step 2).



- b. Then Click on “**OK**” to save the changes.

Launching DQVM

Once all the configuration steps are done, you can launch the DQVM just simply selecting the Virtual Machine in the left panel and clicking on “**Start**” (green arrow).



VMware vSphere

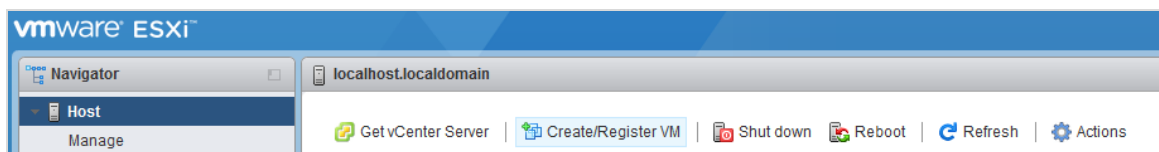
In the following sections, we will explain how to configure the VMware vSphere and how to launch the DQVM.

Note: This document assumes that students already have installed VMware vSphere. If you need to install it, please visit: <https://www.vmware.com>

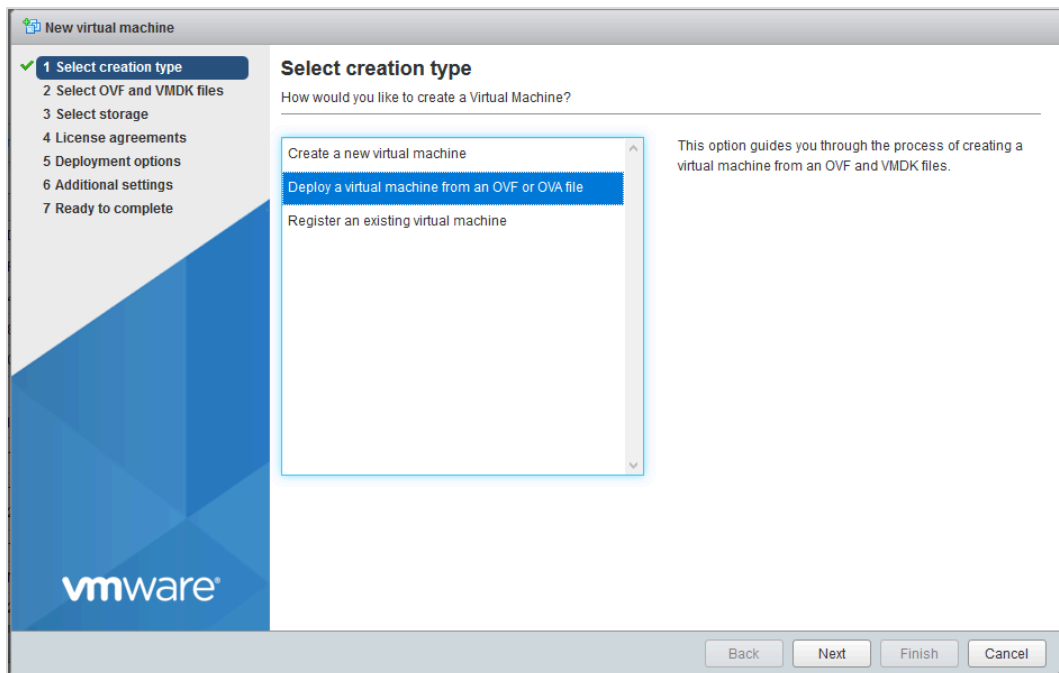
Importing the DQVM in VMware vSphere

These are the steps for importing the DQVM:

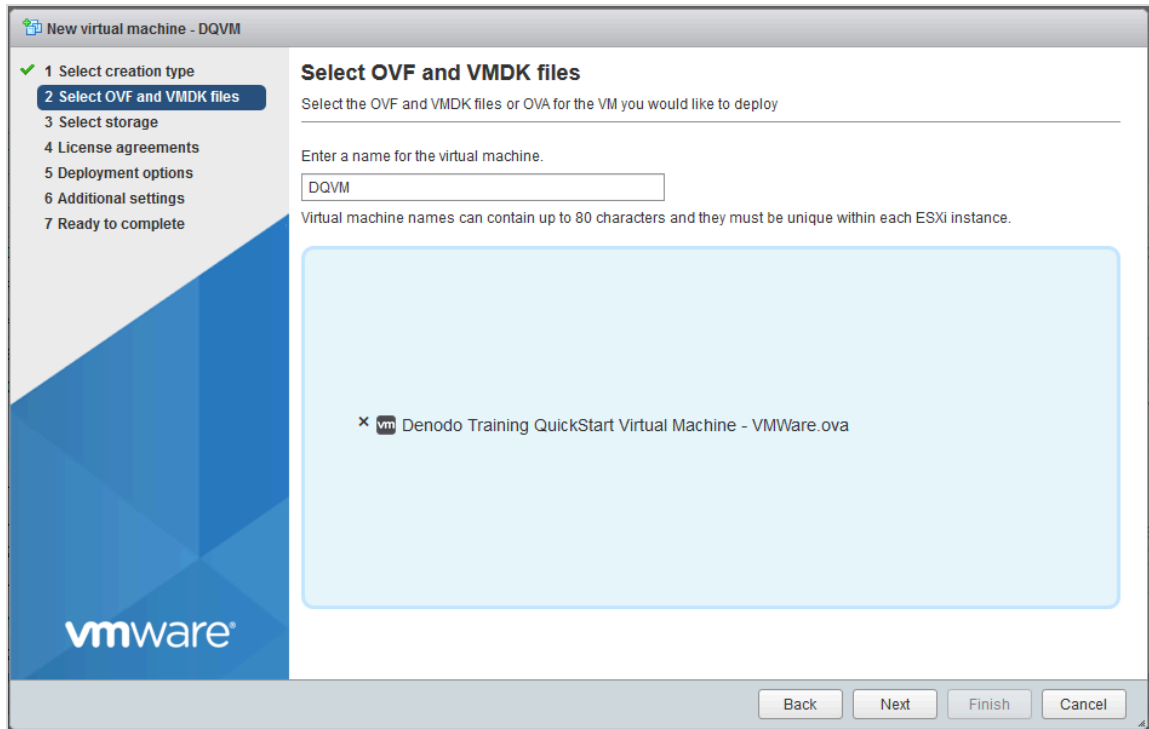
1. For importing the DQVM in VMware vSphere, you can click on the button “Create/Register VM” on the page “Host”.



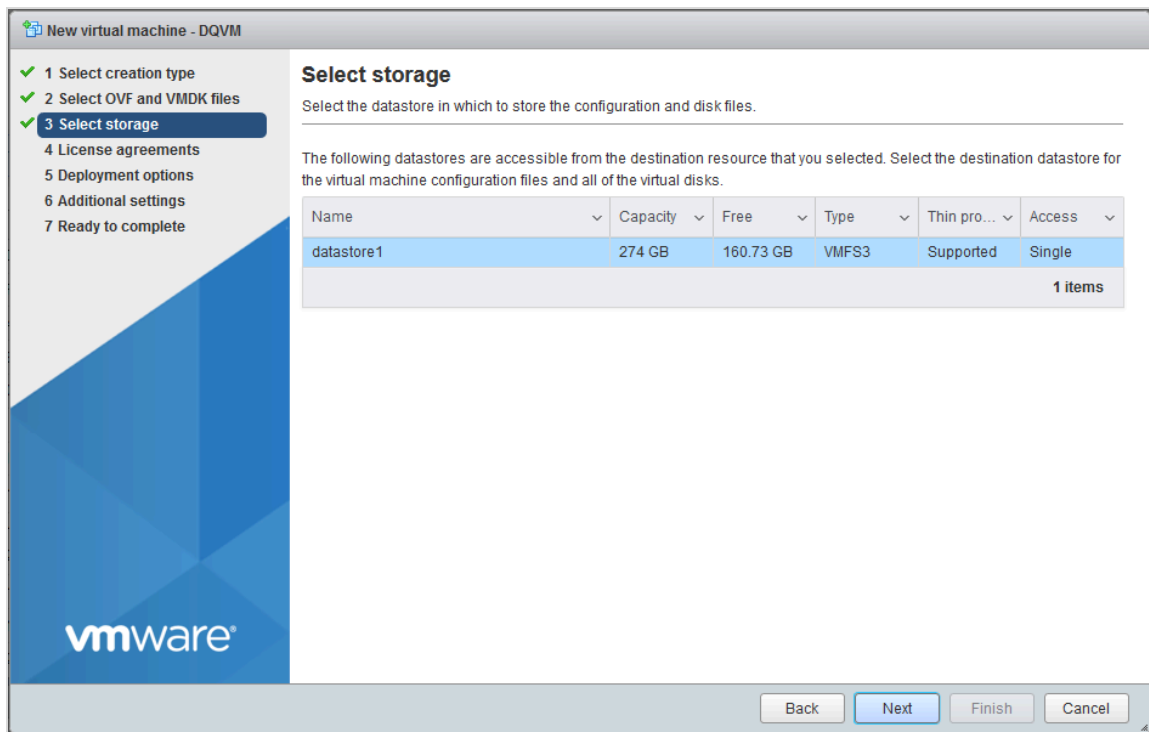
2. In the window “Select creation type” select the option “Deploy a virtual machine from an OVF or OVA file” and click on “Next”.



3. In the window “Select OVF and VMDK files” give a name to the new VM, like “DQVM”, and select the .ova file on the section “Click to select files or drag/drop”.



4. Select your datastore in the window “Select storage”.



5. Leave the default options in the window “Deployment options”.

The screenshot shows the 'New virtual machine - DQVM' wizard. On the left, a progress bar indicates the steps: 1 Select creation type, 2 Select OVF and VMDK files, 3 Select storage, 4 Deployment options (highlighted), and 5 Ready to complete. The main area is titled 'Deployment options' with the subtitle 'Select deployment options'. It contains three rows of settings: 'Network mappings' with a dropdown menu set to 'VM Network', 'Disk provisioning' with radio buttons for 'Thin' (selected) and 'Thick', and 'Power on automatically' with a checked checkbox. At the bottom right, there are four buttons: 'Back', 'Next' (highlighted), 'Finish', and 'Cancel'.

Network mappings	VM Network
Disk provisioning	<input checked="" type="radio"/> Thin <input type="radio"/> Thick
Power on automatically	<input checked="" type="checkbox"/>

6. Click “Finish” to import the DQVM in the window “Ready to complete”.

The screenshot shows the 'New virtual machine - DQVM' wizard at the 'Ready to complete' step. The progress bar on the left now highlights '5 Ready to complete'. The main area is titled 'Ready to complete' with the subtitle 'Review your settings selection before finishing the wizard'. It contains a table summarizing the selected settings. Below the table is a yellow warning icon and the text 'Do not refresh your browser while this VM is being deployed.' At the bottom right, there are four buttons: 'Back', 'Next', 'Finish' (highlighted), and 'Cancel'.

Product	DQVM-VMWare
VM Name	DQVM
Disks	DQVM-VMWare-disk1.vmdk
Datastore	datastore1
Provisioning type	Thin
Network mappings	VM Network: VM Network
Guest OS Name	Unknown

! Do not refresh your browser while this VM is being deployed.

Launching DQVM

Once all the configuration steps are done, you can launch the DQVM just simply selecting the Virtual Machine in the left panel and clicking on “**Power on**” (green arrow).

Create / Register VM

Console

Power on

Power off

Suspend

Refresh

Actions

<input type="checkbox"/>	Virtual machine ▲	Status ▼	Used space
<input checked="" type="checkbox"/>	DQVM	Normal	4.09 GB

Microsoft Hyper-V

In the following sections, we will explain how to configure the Hyper-V Manager and how to launch the DQVM.

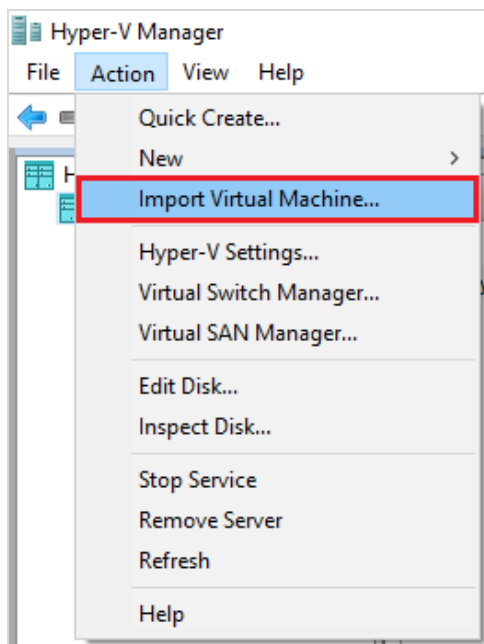
Note: This document assumes that students already have Hyper-V activated on your Windows installation. If you need to install it, please visit:

<https://docs.microsoft.com/virtualization/hyper-v-on-windows/quick-start/enable-hyper-v>

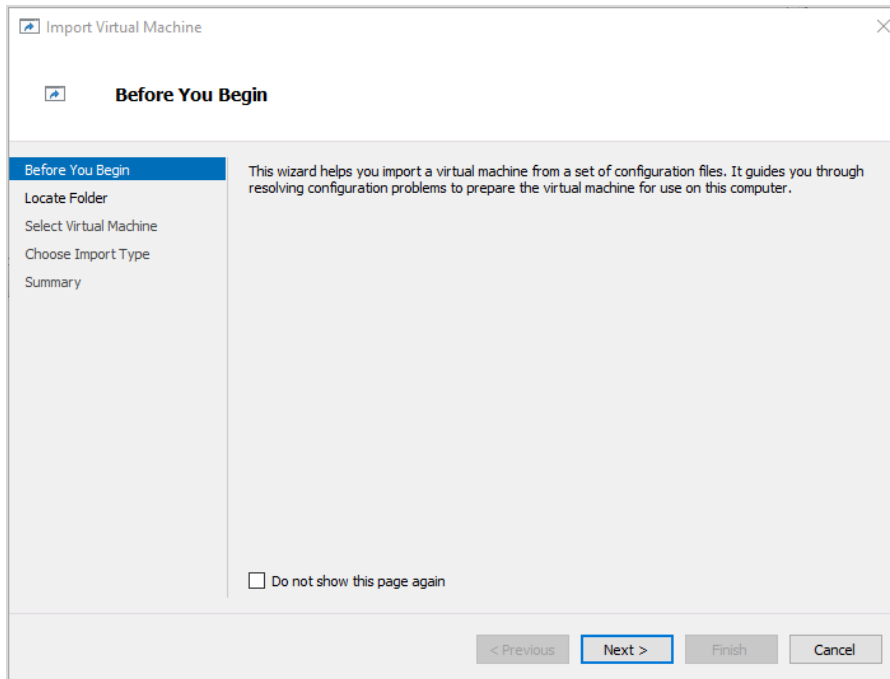
Importing the DQVM in Hyper-V

These are the steps for importing the DQVM:

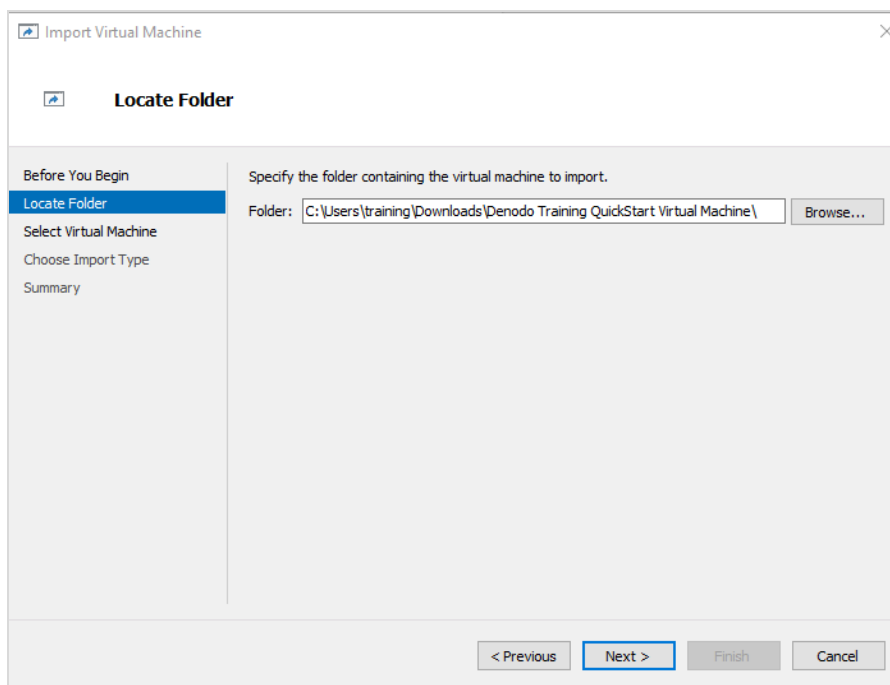
1. For importing the DQVM in Hyper-V, you can click on the button “Import Virtual Machine...” located on the menu “Action”.



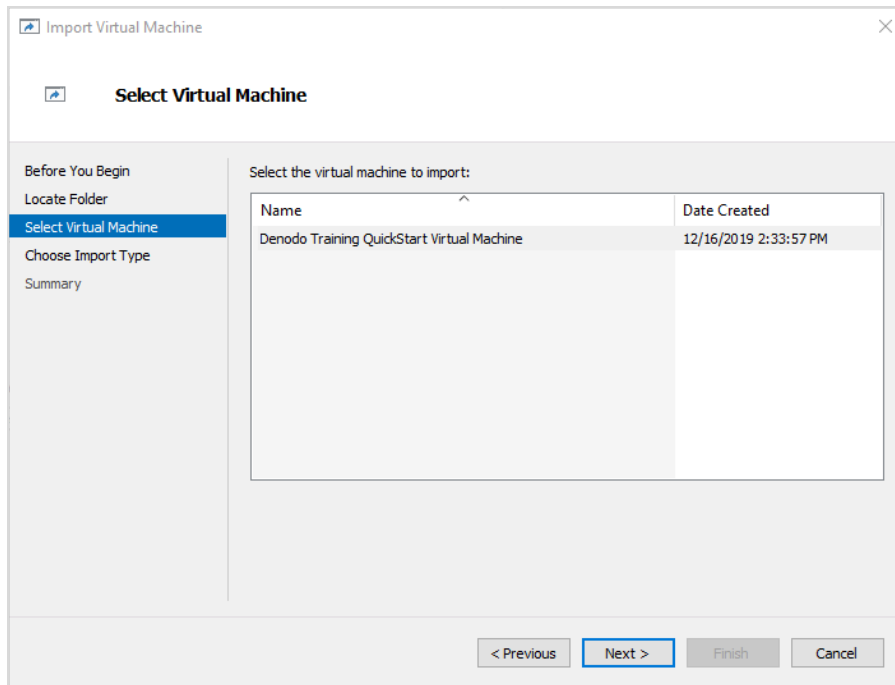
2. In the “Before you begin” page, you can check the content and click on “Next >”:



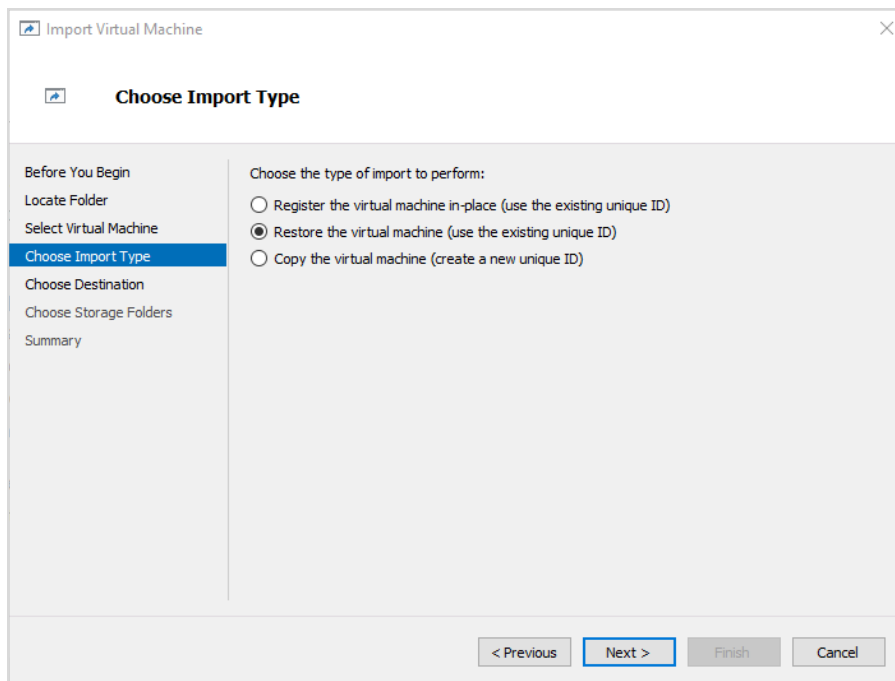
3. On the new page, you have to locate where you have the DQVM files for the Hyper-V. Please, be sure that you have selected the root path where you have unzipped the zip file that contains the DQVM.



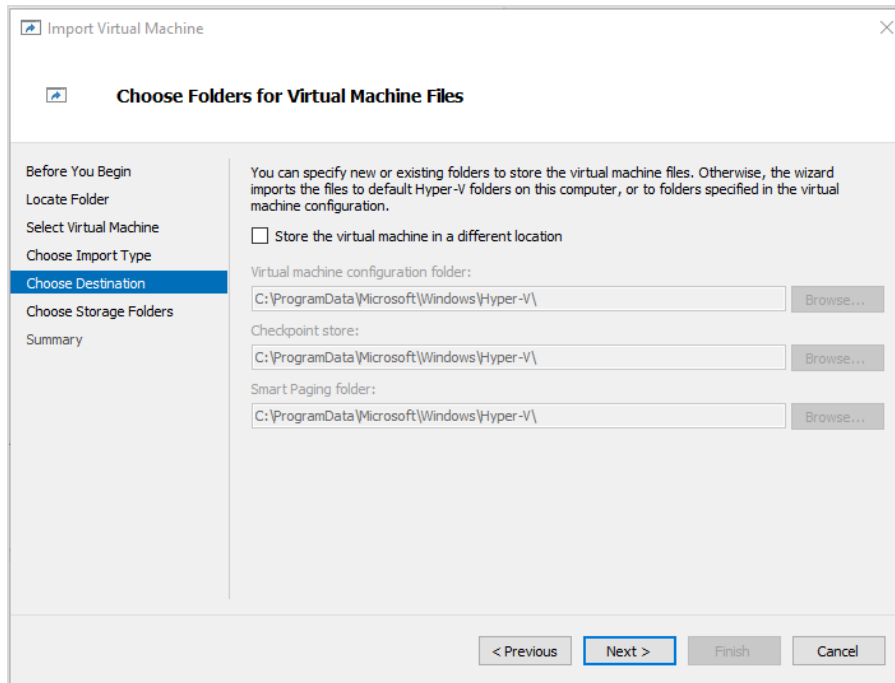
4. Select the DQVM to start the process of importing the Virtual Machine



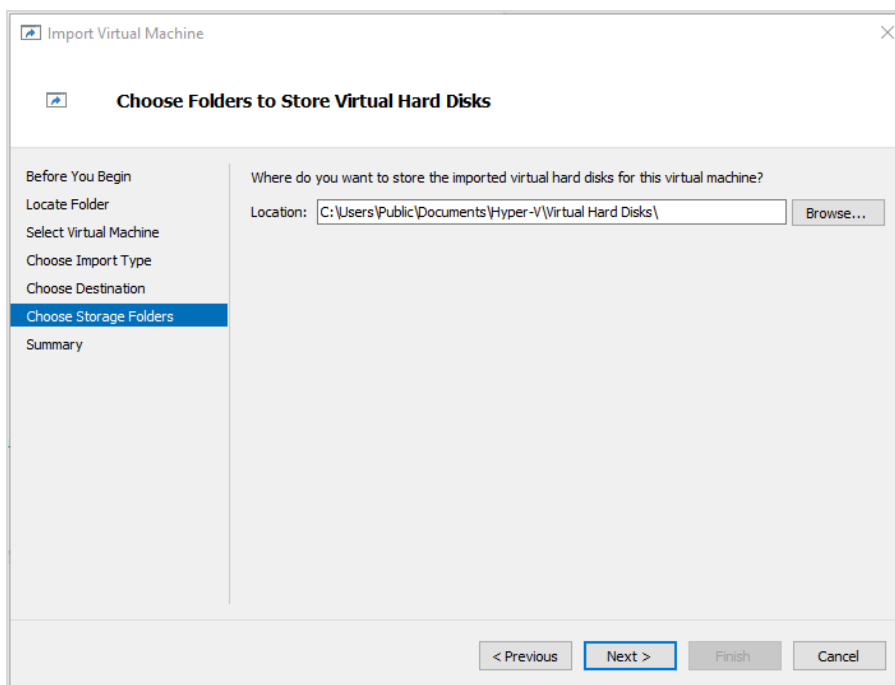
5. Select how you want to import the VM. In these steps, we are going to select “Restore”. The import process will copy the VM to a new path and will maintain the unique ID.



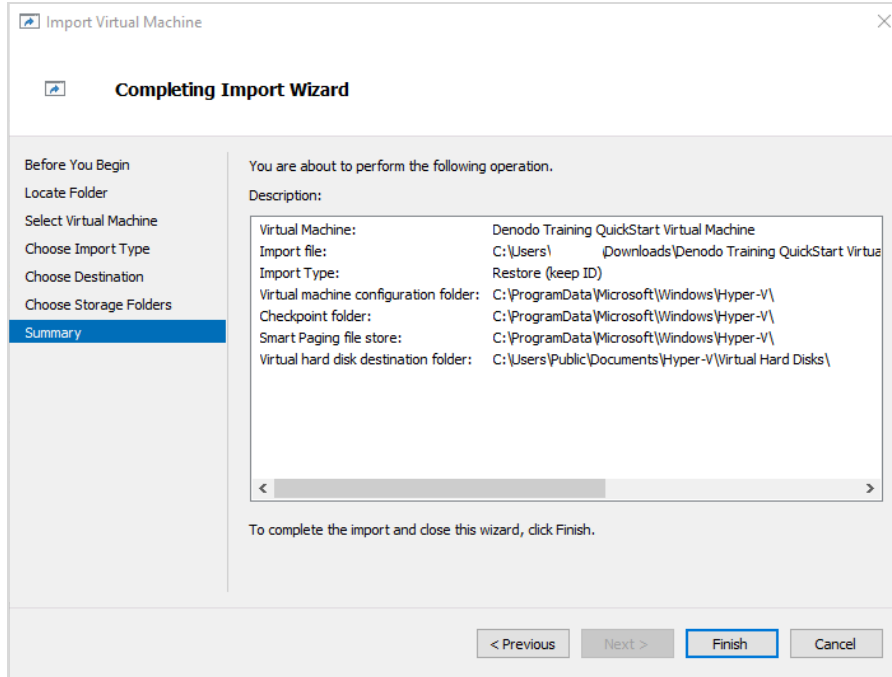
6. In the “Choose Folders for Virtual Machine Files”, you can leave the default paths. Or, if you prefer, you can choose other ones.



7. Also, you can use the default path where the hard disk will be imported, or choose a new one.

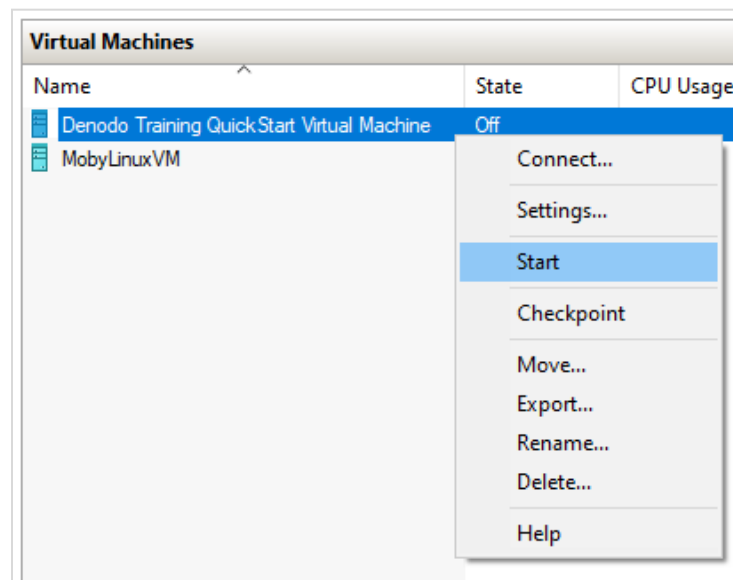


8. In the last step, you can review all the options before the import begins.



Launching DQVM

Once all the configuration steps are done, you can launch the DQVM just simply selecting the Virtual Machine in the left panel and select “**Start**” after doing a right-click over the VM.

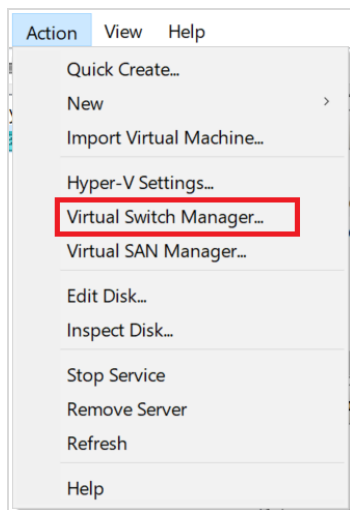


Network Adapter configuration in Hyper-V

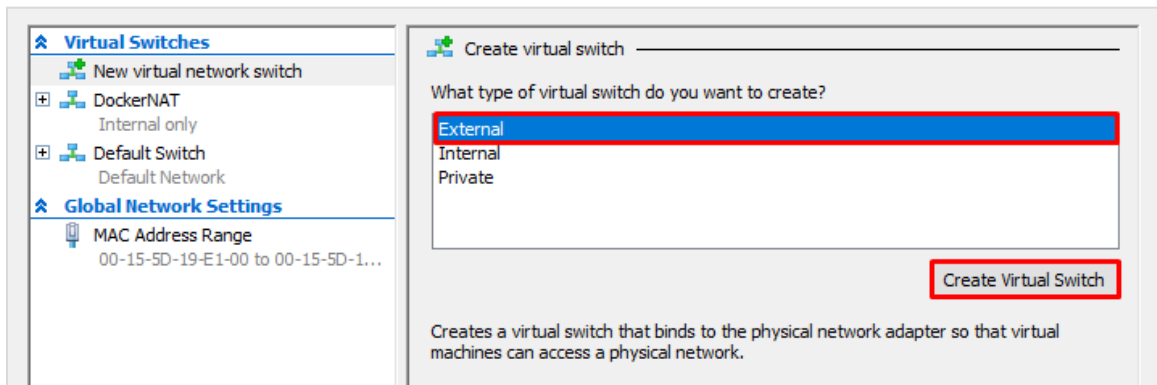
Note: These steps only are necessary if your Hyper-V DQVM does not have configured an Ip address after it starts.

Find below the steps required for students using Hyper-V to configure the IP address of the DQVM. First of all, you have to create a network switch that can access your network. To that, please, follow these steps:

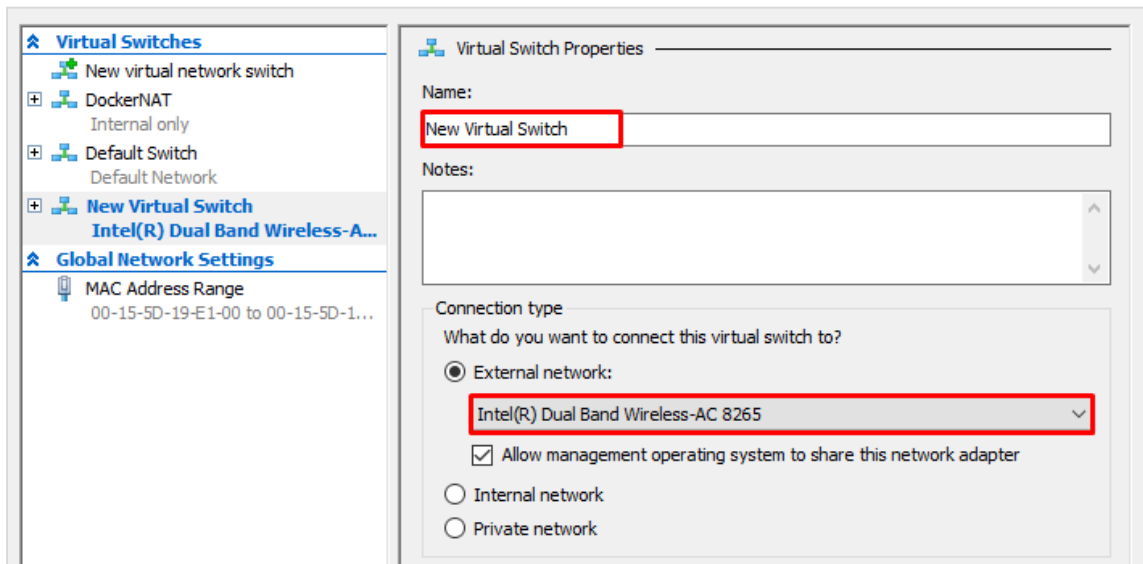
1. Launch your “Hyper-V Manager”. Locate the option “Virtual Switch Manager...” under the menu Action.



2. In the “Virtual Switch Manager” window:
 - a. Click on “New virtual network switch”.
 - b. Select “External” as the type of the new virtual switch to create.
 - c. Finally, click on “Create Virtual Switch” to create it.

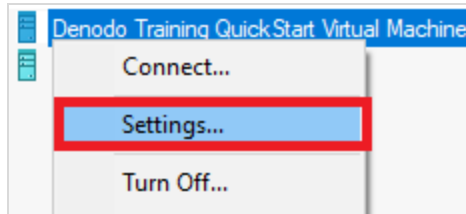


3. In the configuration window of the new virtual switch:
 - a. Give a name to this new virtual switch. In this example, we are going to name it "External Switch".
 - b. Select "External network" as the "Connection type", and select the network used by your computer to access the network.
 - c. When done, click on "Ok" to save the changes.

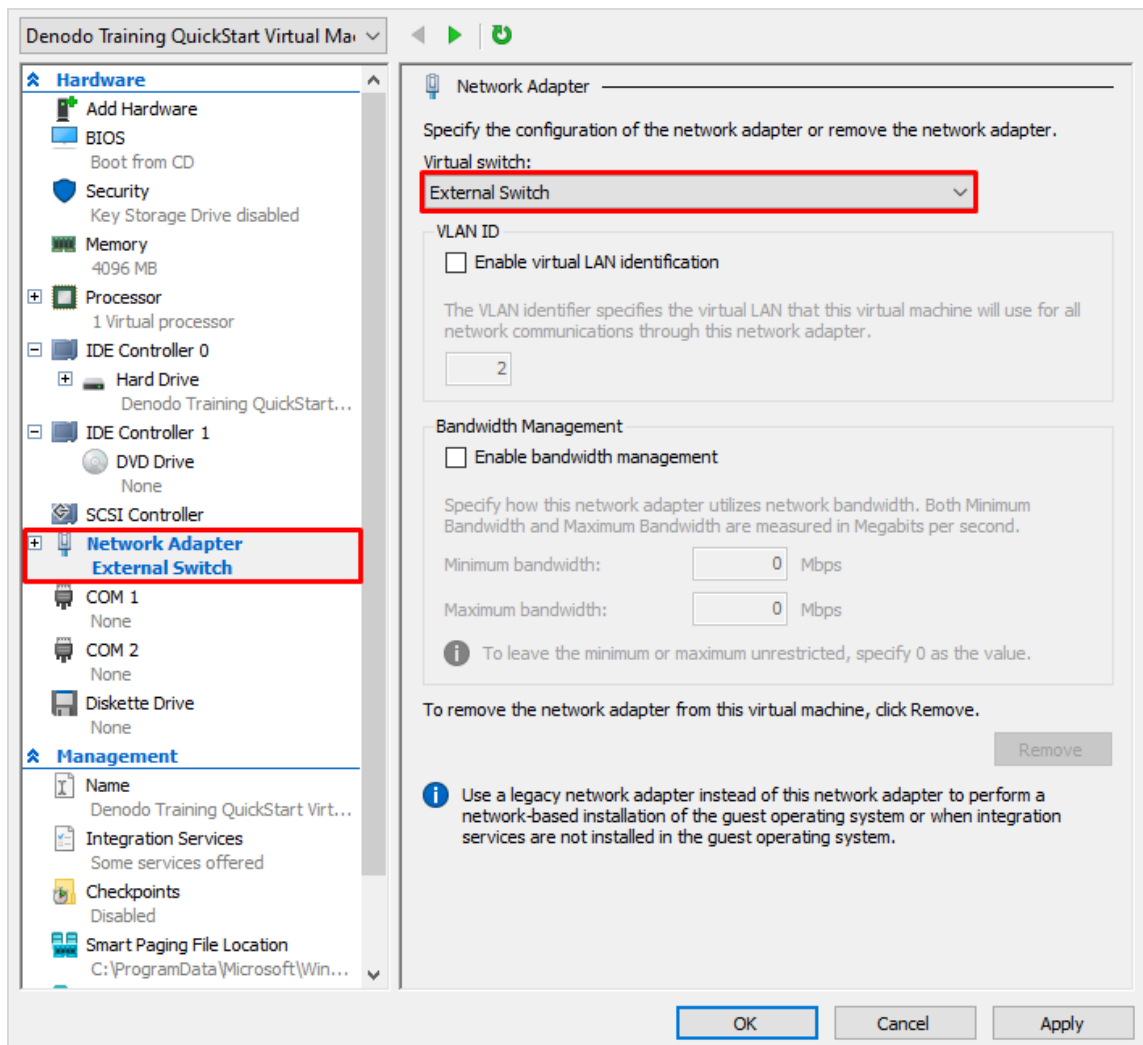


When done, you must configure your DQVM to use your new virtual switch. To do that, please, follow these steps:

1. Right click on the DQVM and select the option “Settings...”:



2. Click on the “Network Adapter” section, and select the new virtual Switch created previously (“External Switch” in this example). Click on “Ok” to save the changes.



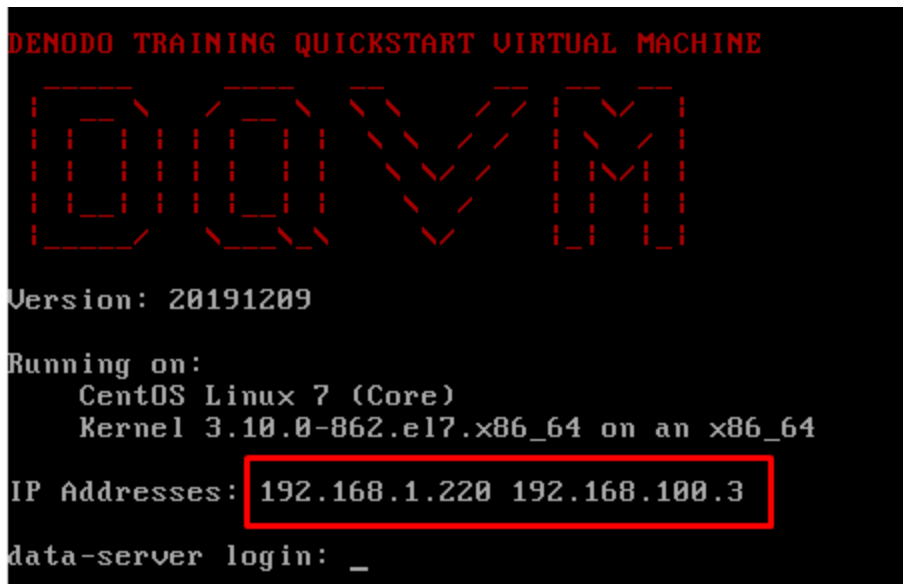
Post-configuration tasks

In this section, some recommended configurations are explained. They are not needed for running the DQVM, but you can follow them to simplify the access to the virtual machine.

Getting the IP of the Virtual Machine

Let's see how you can obtain the **IP address** of the virtual machine.

1. When the DQVM is launched a new window is opened. In that window, you can see the startup progress.
2. At some point, you will be asked for login credentials. You can see the IP address in this window.



```
DENODO TRAINING QUICKSTART VIRTUAL MACHINE

DQVM

Version: 20191209

Running on:
  CentOS Linux 7 (Core)
  Kernel 3.10.0-862.el7.x86_64 on an x86_64

IP Addresses: 192.168.1.220 192.168.100.3

data-server login: _
```

3. Please, note that the recommended IP Address to communicate with the VM is 192.168.100.X. If you see only one IP, please, use that to access the VM.

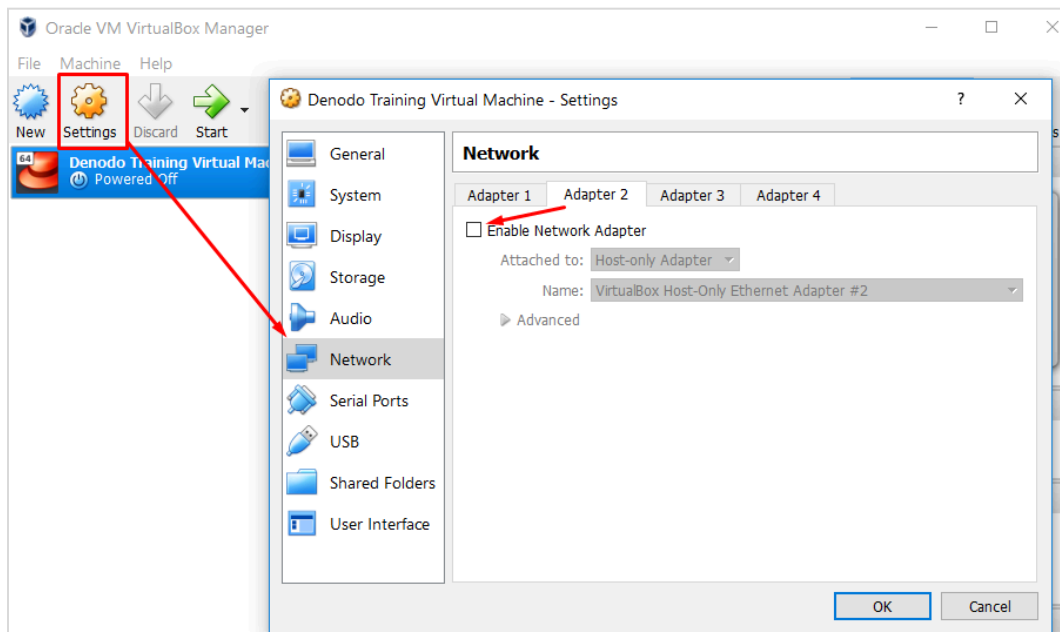
Note: If the field “IP Addresses” is empty after the DQVM startup, please, follow the steps listed in the section [Getting the IP from the command line](#) to get the IP manually.

IP without pre-configuration in Oracle VirtualBox

Although the recommendation for using the DQVM is to configure the network adapter to use the IP address 192.168.100.X, you can also use this virtual machine even without configuring the network adapter.

If you are not going to configure the network adapter, you need to change the network settings of the DQVM by removing the second adapter:

1. Open the **Settings** of the Virtual Machine.
2. Select the **Network** settings.
3. Remove or disable **Adapter 2**



4. Click OK to save the changes.

Accessing the Virtual Machine

You can access this virtual Machine if you need, for example, to check the IP address from the command line. Let's see how you can obtain the **IP address** of the virtual machine.

1. When the DQVM is launched a new window is opened. In that window you can see the startup progress.

2. At some point you will be asked for login credentials. Use the “denodo” user:

- a. Login: denodo
- b. Password: denodo

Getting the IP from the command line

After logged in, launch the following command to get the IP of the machine:

- `hostname -I`

Or alternative you can launch the following command:

- `ip addr`

After you perform all the above steps, you will get the IP address that you can use for connecting to the data source for the different training labs. In case of using the “ip addr” command, you will get something like the following screenshot, in which you can see the IP (marked in red) you have to use for the labs:

```
[denodo@data-server ~]$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:7b:41:e8 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.183/24 brd 192.168.1.255 scope global noprefixroute dynamic enp0s3
        valid_lft 431989sec preferred_lft 431989sec
    inet6 fe80::83da:c746:295b:d0b9/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[denodo@data-server ~]$ _
```

Accessing as “root”

You can access the DQVM by using the “root” user, for example if you need to restart a service or update any configuration. To access “root”, please, follow these steps:

1. When the DQVM is launched a new window is opened. In that window you can see the startup progress.
2. At some point you will be asked for login credentials. Use the “root” user:
 - a. Login: root

- b. Password:** denodo

Please, note that the default “denodo” user is not included in the sudoers users.

Change your keyboard layout

To change the keyboard layout of the DQVM, access to the Virtual Machine and execute the following:

- `localectl set-keymap <map>`

Where <map> if the code of the keyboard layout that you want to set. For example, you can execute the following to set the US keyboard layout:

- `localectl set-keymap us`

Please, note that non-root users must enter the `root` password, defined in the previous section, to execute this command. To see the complete list of the available maps to set your keyboard layout, please, execute the following command:

- `localectl list-locales`

Editing your local hosts file for using data-server as hostname

You can edit the hosts file of your Operating System for mapping the IP address of the DQVM to “**data-server**” host name. By doing that, it will be easy for you to do the on demand labs, as you will just need to enter “data-server” for any data source connection instead of the whole IP address.

For configuring that, you have to locate the hosts file in your system. Find below the instructions for Windows:

- The hosts file is located at `C:\Windows\System32\drivers\etc`
 - a.** Open the file “**hosts**” (you can use any text editor, just keep in mind you would need admin privileges for editing this file).
 - b.** Add a new line at the bottom of this file with the following (change 192.168.100.100 with the IP address of your DQVM):

```
192.168.100.100 data-server
```

```
*C:\Windows\System32\drivers\etc\hosts
hosts
1 # Copyright (c) 1993-2009 Microsoft Corp.
2 #
3 # This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
4 #
5 # This file contains the mappings of IP addresses to host names. Each
6 # entry should be kept on an individual line. The IP address should
7 # be placed in the first column followed by the corresponding host name.
8 # The IP address and the host name should be separated by at least one
9 # space.
10 #
11 # Additionally, comments (such as these) may be inserted on individual
12 # lines or following the machine name denoted by a '#' symbol.
13 #
14 # For example:
15 #
16 #       102.54.94.97       rhino.acme.com          # source server
17 #       38.25.63.10       x.acme.com              # x client host
18
19 # localhost name resolution is handled within DNS itself.
20 #   127.0.0.1       localhost
21 #   ::1             localhost
22
23 192.168.100.100 data-server
24
```

- c. Save the file.
- d. You can confirm that this modification in the hosts file has been done by opening a command-line window and just doing a ping to “data-server”.

```
Command Prompt
C:\>ping data-server

Pinging data-server [192.168.100.100] with 32 bytes of data:
Reply from 192.168.100.100: bytes=32 time<1ms TTL=64
Reply from 192.168.100.100: bytes=32 time<1ms TTL=64
Reply from 192.168.100.100: bytes=32 time<1ms TTL=64
Reply from 192.168.100.100: bytes=32 time<1ms TTL=64
```

Managing Data Sources - Webmin

There is a web-based system administration tool called Webmin which is bundled with this Virtual Machine. Webmin is a web-based server management control panel for Unix-like systems. Webmin allows the user to configure operating system internals, such as users, disk quotas, services and configuration files, as well as modify and control open-source apps, such as BIND, Apache HTTP Server, PHP, and MySQL.

Accessing Webmin

The Webmin web console can be accessed from

- **http://<IP address of VM>:10000**

Once the Webmin web console is launched you need to enter the user name and password as **admin/admin**

Once the login is successful, you can find list of Webmin modules available under the “Tools” menu such as:

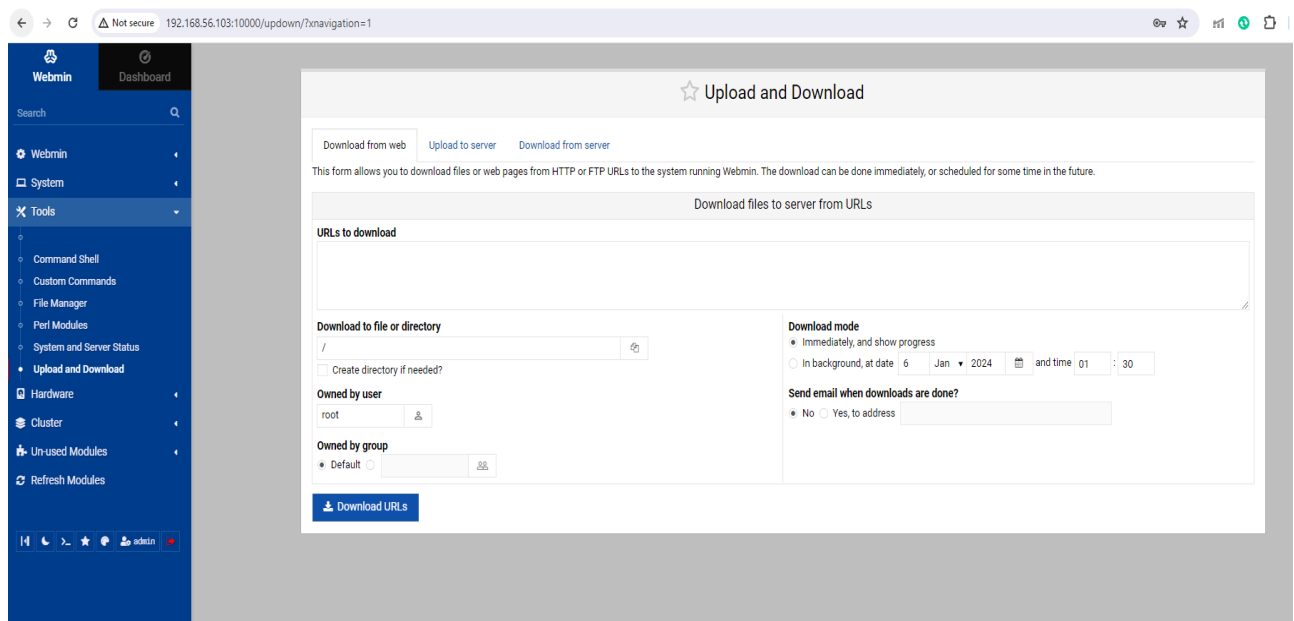
1. **Command Shell** - This module allows to enter shell commands into the field next to the Execute command button, which are run when the button is clicked or the return key pressed. All output from the command is displayed in the Command history section at the top of the page.
2. **Custom Commands** - The Custom Commands module allows to create simple web interfaces for shell scripts and commands, so that they can be run from within Webmin at the click of a button. It also allows to define parameters of various types for each command that can be entered by the user and substituted into the shell command. This can be used to provide additional arguments or input to the scripts that are run, depending on selections made by the user before running it.
3. **File Manager** - Allows the user to view and manipulate files on the server through an HTML interface. This HTML File Manager replaces the old Java-based File Manager.
4. **System and Server Status** - This module allows you to monitor the status of various servers and daemons running on your system, so that you can easily see which are running properly and which are down.

5. Upload and Download - Upload and Download module in Webmin provides tools to transfer files to and from the server
 - a. Upload to server - This function allows to upload files from your local system to the Webmin server.
 - b. Download from server - This function is used to download files stored on your Webmin server to your local machine.

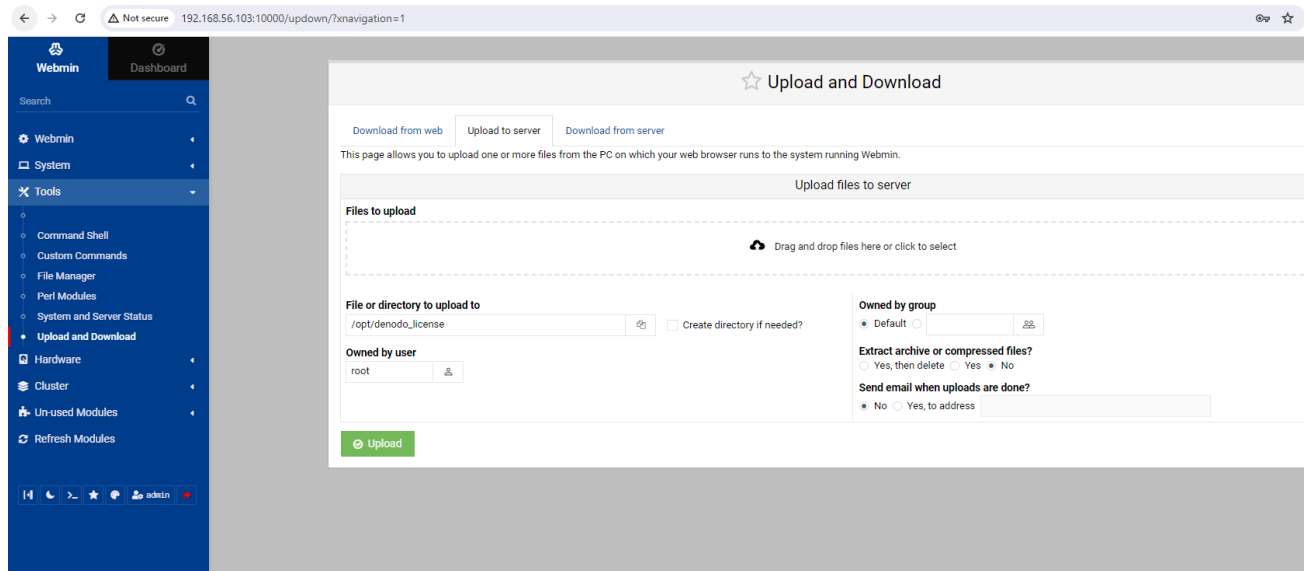
Example : Upload and Download Module

To upload files such as Denodo License to the Webmin Server. You can follow the below steps:

Step 1: Click on “Tools” > “Upload and Download” > “Upload to server”

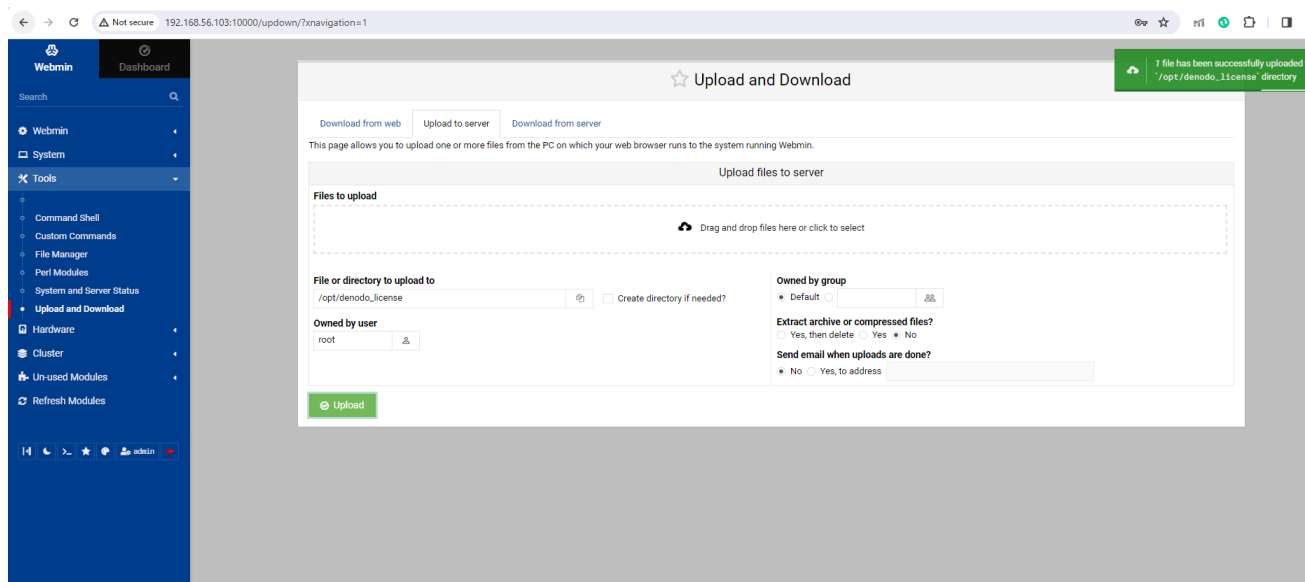


Step 2: In the dialog box that pops up, click on “Drag and drop files here or click to select”



Step 3: In the “File or directory to upload to”, specify the destination on the server where you want to place the uploaded file(s). You can also create a new directory by checking the option “Create directory if needed?” option.

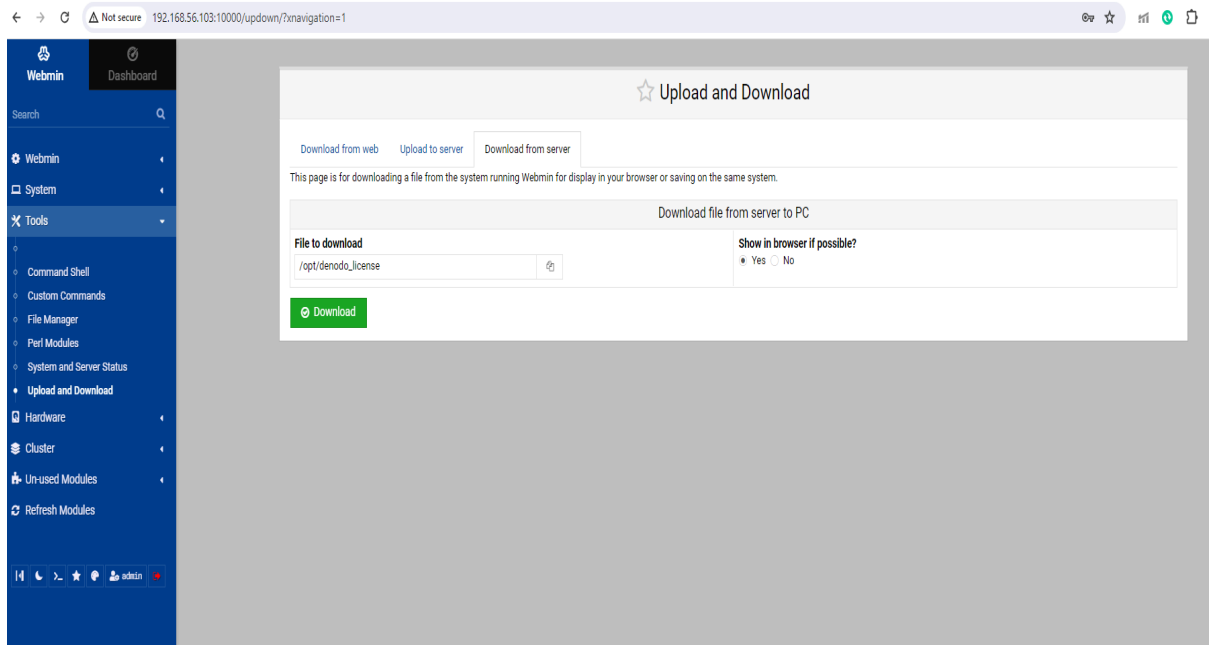
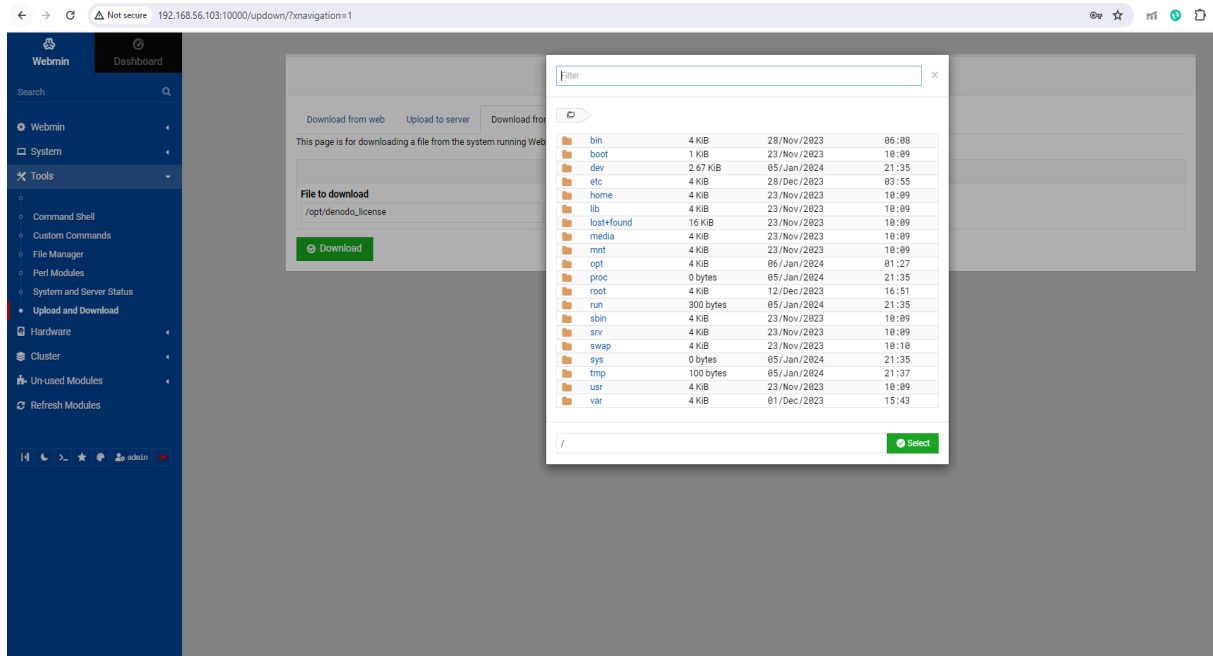
Step 4: Next, you can see two options such as Owned by user and Owner by group. These options allows you to designate the system user/system group which could own the uploaded file(s). Then, click on **Upload**.

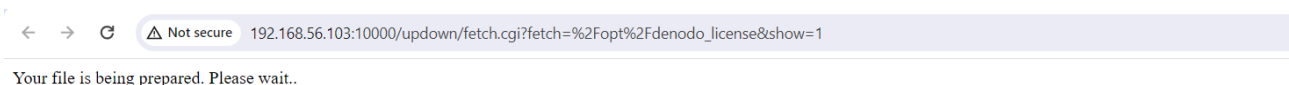


Download from server

With this function, you can download files stored on your Webmin server to your local machine.

- Click on icon beside “Files to Download” to get the directories inside the Webmin server:





Once the file is prepared it will be downloaded to your local machine.

Example : Executing Commands using “Command Shell”

Open the Command Shell under the Tools menu. Then, in the Execute Command box, you can specify any commands which you would like to execute in the Virtual Machine. For instance, to start the Denodo Platform

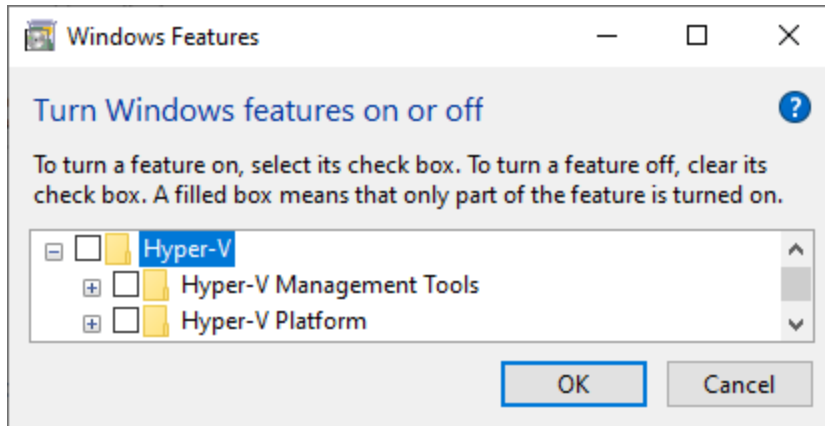
Common Issues

The message “VT-x is not available (VERR_VMX_NO_VMX)” is shown when trying to start the DQVM in VirtualBox.

Please, note that you have to enable the Virtualization option in your local machine BIOS. Check the manuals of your BIOS vendor, because this option can have different names based on the BIOS vendor.

If you have enabled the Virtualization option in your local machine BIOS, please, check if you have disabled the “Hyper-V” option. To check that, you can:

- Check it in the Windows Features (Windows button + r, type “OptionalFeatures.exe” and click Ok). Be sure that the Hyper-V options are disabled.



- Or you can open an administrator command console and execute the following command:

- `bcdedit /set hypervisorlaunchtype off`

Please, note that you have to restart the machine to apply this change. If you have enabled the Hyper-V options, note that you can use the “Microsoft Hyper-V” version of the DQVM.

The message “This kernel requires an x86-64 cpu but only detected an i686 cpu.” is shown when I try to start the DQVM in VirtualBox.

In VirtualBox, ensure that you have selected “Red Hat (64-bit)” as the version of the DQVM. To do that:

1. In VirtualBox, select the DQVM and click on “Settings”.
2. Navigate to the “General Settings” window > “Basic” tab.
3. Ensure that the “Version” is “Red Hat (64-bit)”.

The message “Failed to load R0 module C:\Program Files\Oracle\VirtualBox\VMMR0.r0: SUP_IOCTL_LDR_OPEN failed (VERR_LDR_GENERAL_FAILURE).” is shown when I try to start the DQVM in VirtualBox.

Your VirtualBox installation is affected by the bug [#20627](#). The Windows Hypervisor-enforced Code Integrity (HVCI) feature rejects the VirtualBox component VMMR0.r0 (*).

Ensure to use the latest version of VirtualBox or one of the tested versions of VirtualBox.

A workaround is to disable HVCI aka Memory integrity as follows:

1. On your Windows host, go to Start > Settings > Update & security > Windows Security > Device security > Core isolation details.
2. Turn “off” Memory integrity.
3. Reboot the Windows host.

Oracle is not reachable

If your DQVM has several IP addresses assigned, the Oracle listener could not be able to establish the connection with the Oracle database. You will be affected by this behavior if:

- You see the message “TNS:listener does not currently know of SID given in connect descriptor” when trying to connect to Oracle from the Virtual DataPort admin tool.
- You see the message “TNS:Connect timeout occurred” when trying to login to the Oracle database from the command line of the DVQM, for example using the the following command:

- `sqlplus incident_cc/incident@XE`

To solve this, you have to specify the IP address used to connect to the DQVM “data-server”. To do that, please, follow these steps:

1. Access to the DQVM as “root” (Check the section [Access as “root”](#)).
2. Execute the following command:

- `echo '<ip> data-server' >> /etc/hosts`

Where <ip> is the IP that you are using to connect to the DQVM. For example, if the IP is “192.168.100.100”, the command must be this one:

- `echo '192.168.100.100 data-server' >> /etc/hosts`

3. Then, restart the oracle server with this command:

- `systemctl restart oracle-xe`

Keycloak is not starting

When Keycloak service starts, it needs a valid IP address. If the DQVM tried to start the Keycloak before having the IP address, Keycloak would not start. To solve it, follow these steps:

1. Access to the DQVM as “root” (Check the section [Access as “root”](#)).
2. After logged in, launch the following command to start the Keycloak:

- `systemctl start keycloak`

Appendix: List of Data Sources Included in the Virtual Machine

The Denodo Training Virtual Machine includes different data sources. These data sources will be used for solving the different Denodo Training Labs for the different training courses available for Denodo Platform.

In the table below you can see all the sources installed in the DQVM (you can find more details on how to access them in the description of the labs of the Denodo On-demand training courses):

Name	Denodo Data Source	System	Port	Login	Password
Call Center	JDBC	Oracle 11g XE	1521	calltracking	phone
Web orders	JDBC	Oracle 11g XE	1521	website_sys	website
Support Site	JDBC	Oracle 11g XE	1521	incident_cc	incident
Human Resources	JDBC	Oracle 11g XE	1521	human_resources	human
CRM	JDBC	Oracle 11g XE	1521	crm	crm
Historical Orders	JDBC	Oracle 11g XE	1521	historical	historical
Domain DENODO.LOC	LDAP	ApacheDS	10389	uid=admin,ou	admin

(DC=denodo,DC=loc)				=system	
Product SOAP Web Service http://data-server:8080/product-ws/services/products-ws?wsdl	Web Service	Tomcat	8080	product	prOduc,t
Sales REST Web Service http://data-server:8080/sales-ws/sales/	XML or JSON	Tomcat	8080	admin	a,dmOn;
<i>Schema validation:</i> http://data-server/files/schema/sales-ws-schema.xsd	Schema	-	80	admin	admin
Sales Search REST Web Service http://data-server:8080/sales-ws/sales/	XML or JSON	Tomcat	8080	customer	c;st0m3r
Webmail http://data-server:8080/webmail/	Denodo ITPilot	Tomcat	8080	demos	DeMo.04
Neovisio http://data-server:8080/neovisio/	Denodo ITPilot	Tomcat	8080	admin	1234567890
Connection Logs http://data-server/files/df/	Delimited file	Log Files	80	admin	admin
Current Invoices http://data-server/files/excel	Excel	Excel Files	80	excel	excel
Old Invoices http://data-server/files/old_invoices	Delimited file	CSV Files	80	admin	admin
Modeling Files http://data-server/files/interfaces	Denodo Model Bridge	-	80	admin	admin
Git Server http://data-server:10789/denodo_training	VCS Management	GIT	10789	git	denodo
OAuth 2.0 http://data-server:8082/oauth_service/login	OAuth	OAuth 2.0	8082	dcox19	Denodo00
Single Sign-On http://data-server:8585/auth	SSO	Keycloak	8585	denodo	denodo

Thank you again for your continued trust in Denodo, and we look forward to providing you with the industry's best products and services over the coming year. Should you have any feedback or questions, please let us know.

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