

How to Install the DevNet Expert Candidate Workstation

To assist candidates in preparing for the DevNet Expert Lab Exam, Learning at Cisco has made available a VM image that matches the configuration of the candidate workstation (CWS) that is used during the exam. This virtual machine represents an engineer's development workstation and is already loaded with the software, libraries, and tools necessary to complete the exam.

You can see specific details about the tools and versions that are installed by reviewing the [Cisco Certified DevNet Expert Equipment and Software List](#).

This brief guide illustrates how to install and use the VM image on a vCenter server.

Note: Credentials for the users are as follows:

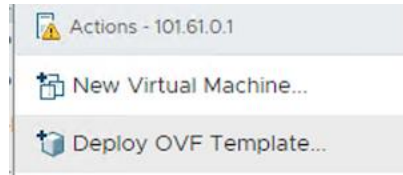
- Expert user: This account represents the access and configuration that you will have during the exam.
 - expert / 1234QWer!
- Super-user (root): During the exam, candidates do *not* have access to the super-user account on the CWS.
 - root / 1234QWer!

Table of Contents

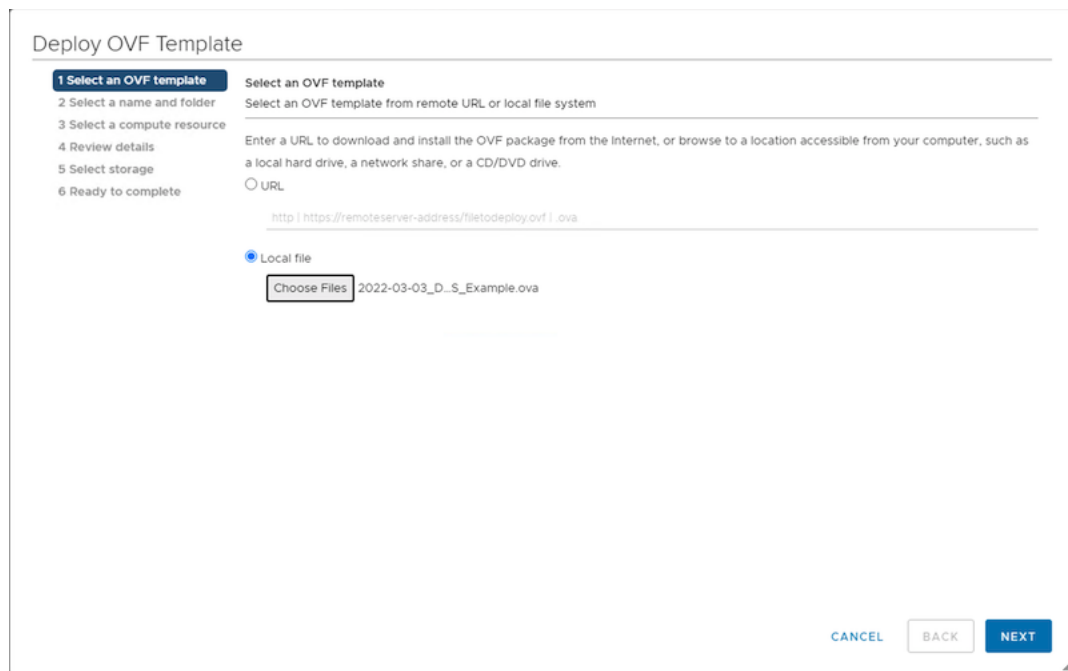
Task 1: Deploying the OVF in vCenter	2
Task 2: Accessing the CWS and Checking Network Configuration.....	7
Task 3: Using Your CWS to Study and Prepare	10
Option 1: RDP Access	10
Option 2: SSH Access.....	10
Note: Installing Cisco NSO onto the CWS	10
Note: Using YANG Suite	10

Task 1: Deploying the OVF in vCenter

1. Download the candidate workstation OVA template.
2. From vCenter, choose the **Deploy OVF Template** option.



3. Click the **Local file** option and the **Choose Files** button. Locate the downloaded OVA file in the file browser that opens, select it, and click **Next**.

A screenshot of the 'Deploy OVF Template' wizard in vCenter. The wizard has six steps: 1. Select an OVF template, 2. Select a name and folder, 3. Select a compute resource, 4. Review details, 5. Select storage, and 6. Ready to complete. Step 1 is currently active. It shows two options: 'URL' and 'Local file'. The 'Local file' option is selected. Below it, there is a 'Choose Files' button and a text field containing the filename '2022-03-03_D_S_Example.ova'. At the bottom right, there are three buttons: 'CANCEL', 'BACK', and 'NEXT'. The 'NEXT' button is highlighted in blue.

4. Enter a name for your new VM or keep the default name, and click **Next**.

The screenshot shows the 'Deploy OVF Template' wizard at step 2, 'Select a name and folder'. The left sidebar shows a progress list with steps 1 through 6. Step 2 is highlighted. The main area has a section 'Select a name and folder' with the instruction 'Specify a unique name and target location'. Below this, the 'Virtual machine name' is set to '2022-03-03_DevNetExpert_CWS_Example'. Another section, 'Select a location for the virtual machine', shows a tree view with 'sj-vcsa1-devnet.ccie.cisco.com' expanded and 'DEVNET-Datacenter' selected. At the bottom right are 'CANCEL', 'BACK', and 'NEXT' buttons.

5. From your vCenter environment, choose a host on which to deploy the new VM, and click **Next**.

The screenshot shows the 'Deploy OVF Template' wizard at step 3, 'Select a compute resource'. The left sidebar shows steps 1 through 6, with step 3 highlighted. The main area has a section 'Select a compute resource' with the instruction 'Select the destination compute resource for this operation'. Below this, a tree view shows 'DEVNET-Datacenter' expanded, with three hosts listed: '101.61.0.1', '101.61.0.2', and '101.61.0.3'. The first host, '101.61.0.1', is selected. Below the tree view is a 'Compatibility' section with a green checkmark and the text 'Compatibility checks succeeded.'. At the bottom right are 'CANCEL', 'BACK', and 'NEXT' buttons.

- Review the details that are displayed and click **Next**.

Deploy OVF Template

✓ 1 Select an OVF template

✓ 2 Select a name and folder

✓ 3 Select a compute resource

4 Review details

5 Select storage

6 Select networks

7 Ready to complete

Review details

Verify the template details.

⚠ The OVF package contains advanced configuration options, which might pose a security risk. Review the advanced configuration options below. Click next to accept the advanced configuration options.

Publisher	No certificate present
Description	Created on 2022-03-03: This is an example build of the candidate workstation provided during the DevNet Expert Lab exam. It has the same software (and versions) of tools, libraries, and utilities that are available to candidates during the actual exam attempt. It is provided as-is, without any support.
Download size	Unknown
Size on disk	Unknown (thin provisioned) 50.0 GB (thick provisioned)
Extra configuration	nvrnm = ovt./file/file2

CANCEL

BACK

NEXT

- Choose a data store on which to deploy the VM. Optionally, change the virtual disk format. "Thin Provision" should be sufficient for lab use. Click **Next**.

Deploy OVF Template

✓ 1 Select an OVF template

✓ 2 Select a name and folder

✓ 3 Select a compute resource

✓ 4 Review details

5 Select storage

6 Select networks

7 Ready to complete

Select storage

Select the storage for the configuration and disk files

☐ Encrypt this virtual machine (No encryption policies available)

Select virtual disk format:

Thin Provision

VM Storage Policy:

Name	Capacity	Provisioned	Free	Type	Cluster
datastore1	3.48 TB	3.35 TB	1.89 TB	VMFS 6	
Lab_Archive	3 TB	1.46 GB	3 TB	VMFS 6	
Prod_Devnet	4 TB	1.08 TB	3.59 TB	VMFS 6	

Compatibility

✓ Compatibility checks succeeded.

CANCEL

BACK

NEXT

- Map the network adapter to the port group that your lab VM should be added to, and click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 Select storage
- 6 Select networks**
- 7 Ready to complete

Select networks

Select a destination network for each source network.

Source Network	Destination Network
NO-NETWORK	DevNet Expert Lab

1 item

IP Allocation Settings

IP allocation: Static - Manual

IP protocol: IPv4

CANCEL BACK NEXT

Note: The CWS has DHCP configured on the network interface. See Task 2 for how to configure a static IP address.

- Click **Finish** to complete the installation.

10. Verify that your new VM is listed in vCenter.

The screenshot shows the vCenter interface for a virtual machine named '2022-03-03_DevNetExpert_CWS_Example'. The 'Summary' tab is selected, displaying the VM's status as 'Powered Off'. Key details include: Guest OS: Ubuntu Linux (64-bit), Compatibility: ESXi 6.7 Update 2 and later (VM version 15), VMware Tools: Not running, version:11360 (Current), DNS Name, IP Addresses, and Host: 101.61.0.1. Resource usage is shown as 0 Hz CPU usage, 0 B memory usage, and 16.15 GB storage usage. The 'VM Hardware' section lists 4 CPU(s), 8 GB memory (0 GB active), a 50 GB hard disk, a disconnected network adapter, a disconnected CD/DVD drive, a 4 MB video card, a VMCi device, and additional hardware. The 'Notes' section contains a description of the VM as a candidate workstation. The 'Custom Attributes' section is empty. The 'VM Storage Policies' section is partially visible at the bottom.

2022-03-03_DevNetExpert_CWS_Example

Summary Monitor Configure Permissions Datastores Networks Updates

Powered Off

Guest OS: Ubuntu Linux (64-bit)
Compatibility: ESXi 6.7 Update 2 and later (VM version 15)
VMware Tools: Not running, version:11360 (Current)
[More info](#)

DNS Name:
IP Addresses:
Host: 101.61.0.1

CPU USAGE
0 Hz

MEMORY USAGE
0 B

STORAGE USAGE
16.15 GB

[Launch Web Console](#)
[Launch Remote Console](#)

VM Hardware

> CPU	4 CPU(s)
> Memory	8 GB, 0 GB memory active
> Hard disk 1	50 GB
> Network adapter 1	DevNet Expert Lab (disconnected)
CD/DVD drive 1	Disconnected
> Video card	4 MB
VMCI device	Device on the virtual machine PCI bus that provides support for the virtual machine communication interface
> Other	Additional Hardware
Compatibility	ESXi 6.7 Update 2 and later (VM version 15)

[Edit Settings...](#)

Notes

Created on 2022-03-03: This is an example build of the candidate workstation provided during the DevNet Expert Lab exam. It has the same software (and versions) of tools, libraries, and utilities that are available to candidates during the actual exam attempt. It is provided as-is, without any support.

[Edit Notes...](#)

Custom Attributes

Attribute	Value
No items to display	

[Edit...](#)

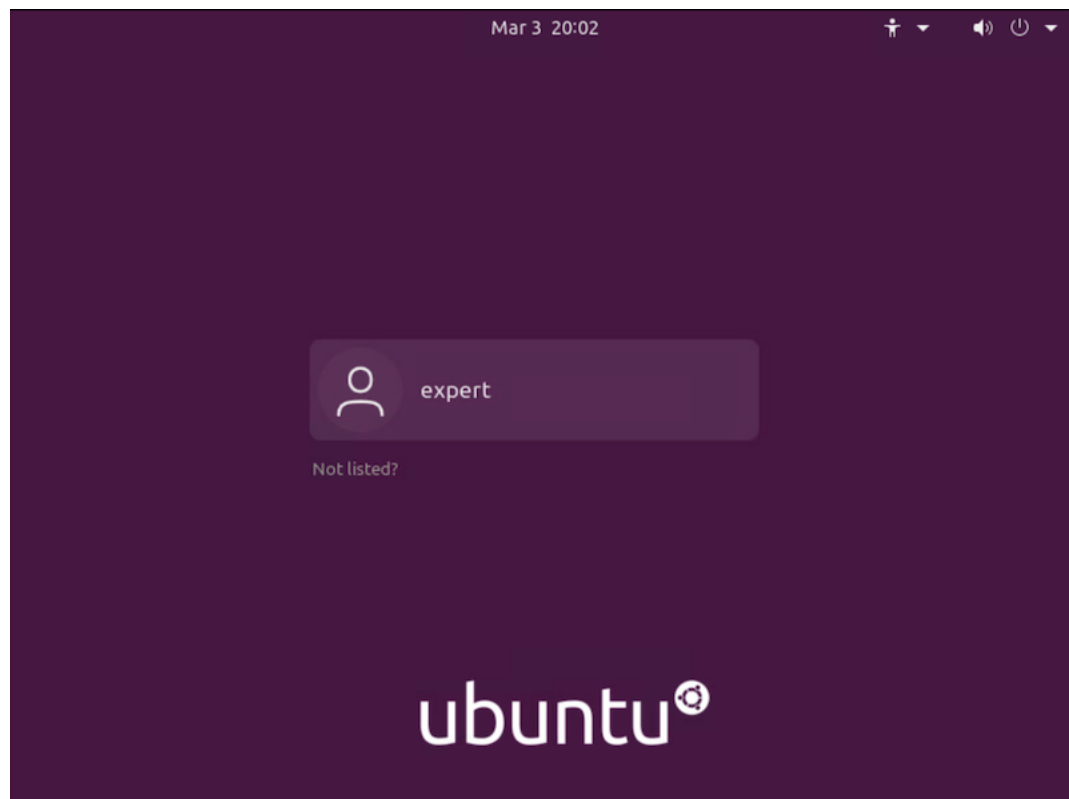
VM Storage Policies

11. Power on your new VM.

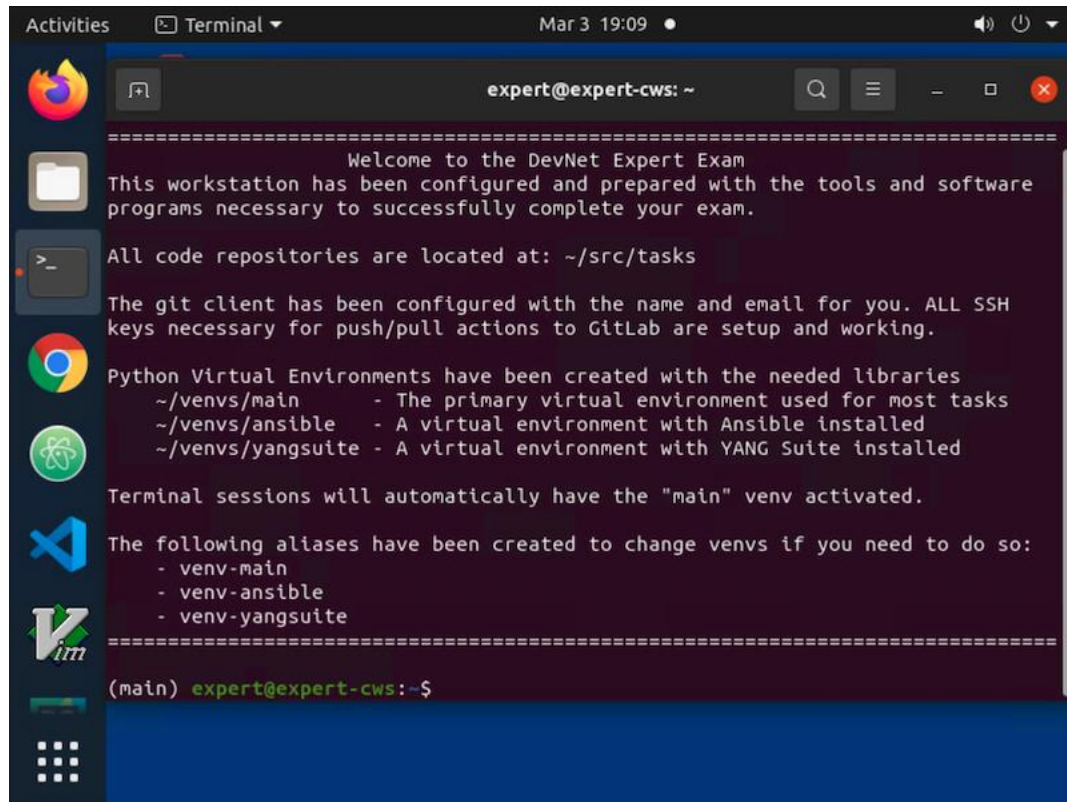
Task 2: Accessing the CWS and Checking Network Configuration

When you start your VM, it is on whatever network segment you assigned it to during deployment. If DHCP is configured on this network segment, the VM requests and uses an IP address. If you require (or would like) a static IP assignment, you can configure it by following these steps.

1. Open a connection to the console for the VM using vCenter Web Console or another utility. Choose the **expert** user from the menu and login. The password for the **expert** user is **1234QWer!**.



- The desktop is displayed. Chrome and the terminal start automatically. Close Chrome.
Note: The default homepage configured for Chrome and Firefox is a documentation page available during the exam. This site will likely not load in your local environment.



- You can check the current configuration by running `ip add show dev ens160`.

```
(main) expert@expert-cws:~$ ip add show dev ens160
2: ens160: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group d
default qlen 1000
    link/ether 00:50:56:bd:56:13 brd ff:ff:ff:ff:ff:ff
    inet 192.168.4.241/23 brd 192.168.5.255 scope global ens160
        valid_lft forever preferred_lft forever
    inet6 fe80::250:56ff:febd:5613/64 scope link
        valid_lft forever preferred_lft forever
(main) expert@expert-cws:~$
```

- The CWS uses `netplan` for network configuration. You can change the network configuration from DHCP -> Static by editing the file `/etc/netplan/00-cws-dhcp-config.yaml`.

Note: You must log in to the machine as `root` to make this change. `root` is not enabled for GUI login, but you can use `ssh root@localhost` from the terminal.

5. The contents of the file will look like the following. An example static IP configuration is provided but commented out.

```
# Configure ens160 for DHCP
network:
  version: 2
  renderer: networkd
  ethernets:
    ens160:
      dhcp4: true

# Reference: Configuring Static IP address
# network:
#   version: 2
#   renderer: networkd
#   ethernets:
#     ens160:
#       addresses:
#         - 10.10.10.2/24
#       nameservers:
#         search: [mydomain, otherdomain]
#         addresses: [10.10.10.1, 1.1.1.1]
#       routes:
#         - to: default
#           via: 10.10.10.1
```

Make the changes required and save the file.

6. Apply the changes to netplan by running `netplan apply`.

Task 3: Using Your CWS to Study and Prepare

Now that you have installed and set up your CWS for your lab, you can begin using it in your studies. While you can continue to use the Web GUI from vCenter, that doesn't offer the best experience. Two other options available are remote desktop (RDP) and ssh access.

Option 1: RDP Access

The CWS has Remote Desktop Protocol (RDP) enabled and set up. Connect to your system using your favorite RDP client and log in as `expert`.

The desktop experience from this example of CWS is set up to mirror the candidate experience during the real exam. That way, you can become familiar with the installed IDEs and tools like VS Code, Postman, and so on.

Option 2: SSH Access

If you'd prefer to work from the terminal, you can leverage ssh to connect to your CWS and work from there using command-line tools like `vim`.

Note: Installing Cisco NSO onto the CWS

Cisco NSO is a part of the DevNet Expert blueprint and is installed on the **CWS** that is used during the exam. It is *not* installed on the sample CWS that is published for studying.

However, Cisco has made the software for NSO freely available on Cisco DevNet for nonproduction use, including studying for certifications. Visit the page [Getting NSO](#) on Cisco DevNet to download the required files and review the installation guide.

A file named `INSTALL_NS0_README` exists on the CWS in the directory `~/nso` with this same information. During the exam, candidates will find that NSO has been "locally installed" on the CWS in this same directory.

Note: Using YANG Suite

YANG Suite has been predeployed, and the server is running by default. To connect to it, open the browser of your choice and go to <http://localhost:8480>. You might need to initially accept the EULA. The login to YANG Suite is the username **expert** with the password **1234QWer!**.