# Operational Technology Defense Console – Virtual Appliance 1.5

# Quick Setup Guide

**(for VMware ESXi and Workstation)**

2022-03-15

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This documentation introduces the main features of the product and/or provides installation instructions for a production environment. Read through the documentation before installing or using the product.

Detailed information about how to use specific features within the product may be available at the Trend Micro Online Help Center and/or the Trend Micro Knowledge Base.

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# ODC Onboarding to VMware ESXi

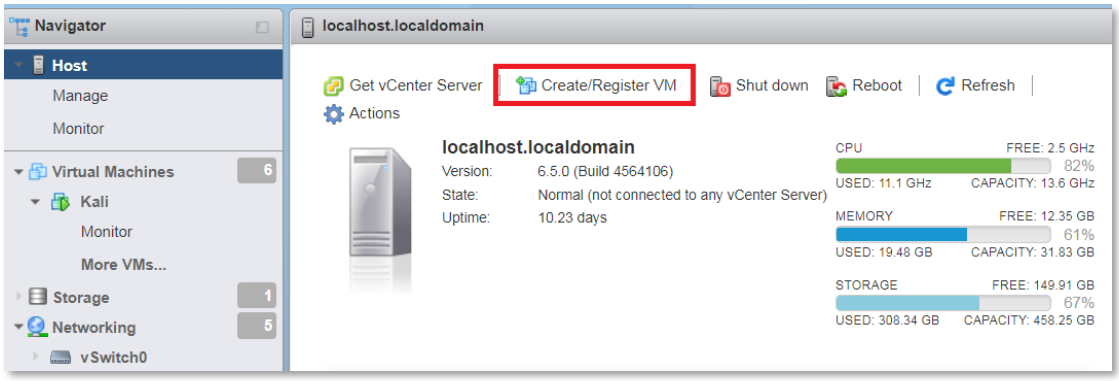
This chapter describes how to deploy OT Defense Console to a VMware ESXi system.

## Prerequisites

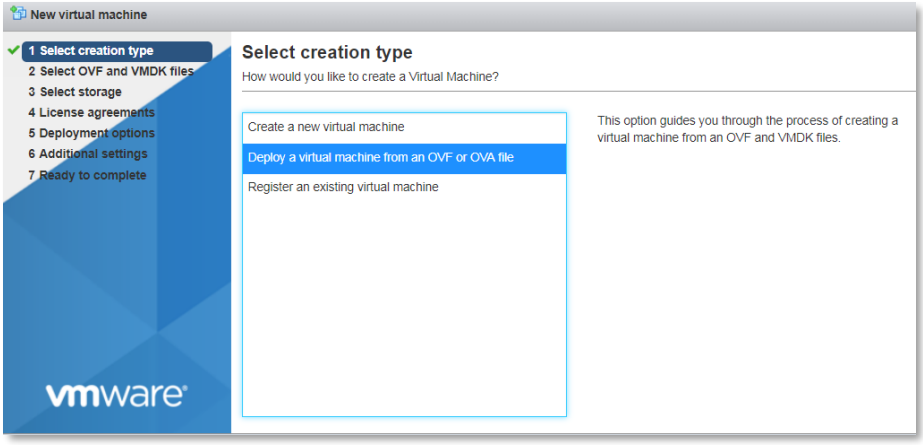
- The OVA packages provided by Trend Micro must be available and accessible to VMware ESXi.
- ESXi version 6 or above with the required specifications.
- The necessary networks have been properly created in ESXi.

## Deploying OT Defense Console

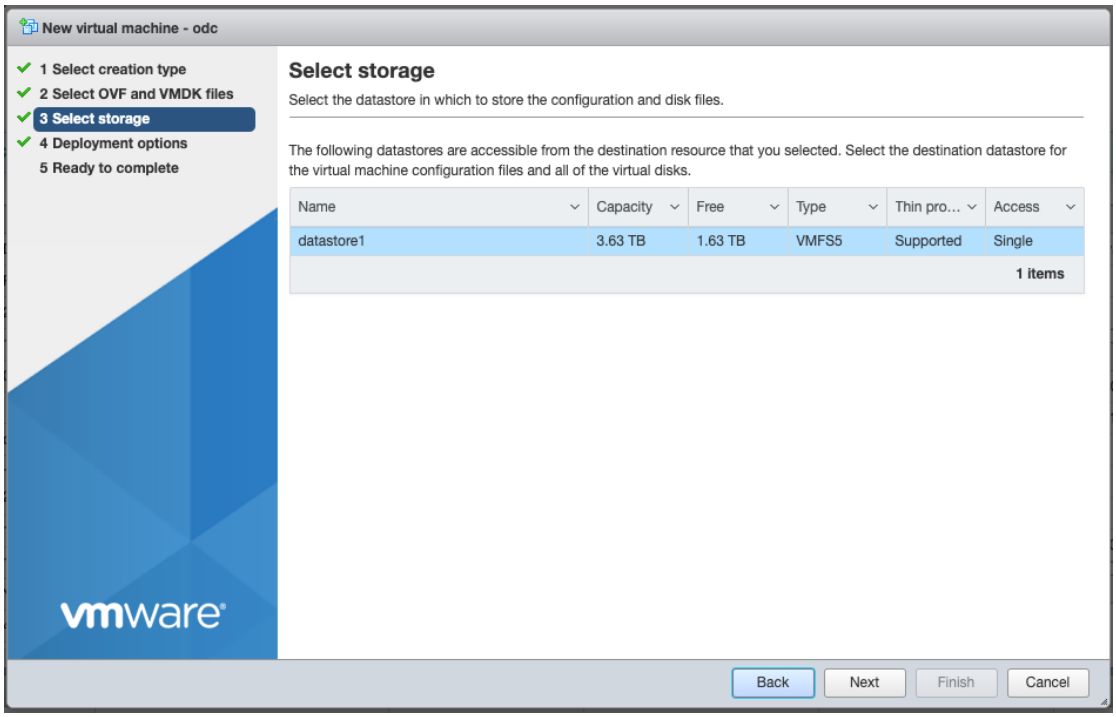
1. Log in to the VMware vSphere web client.
2. Under [Navigator], click [Host] and then click [Create/Register VM].



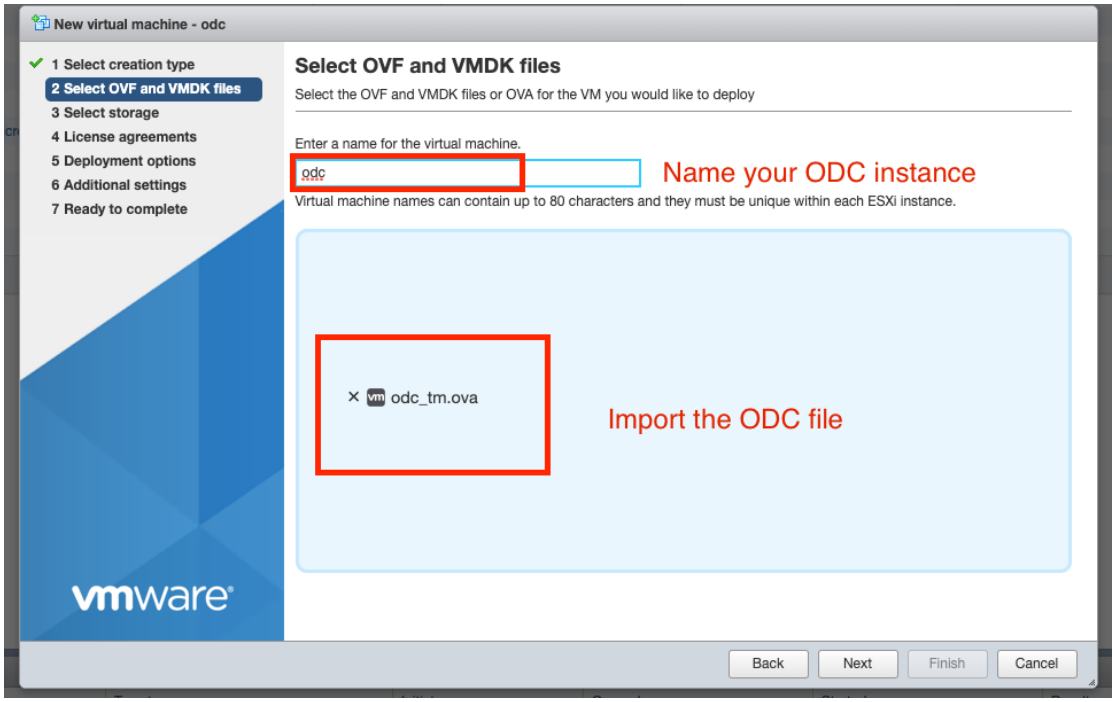

3. Select [Deploy a virtual machine from an OVF or OVA file].



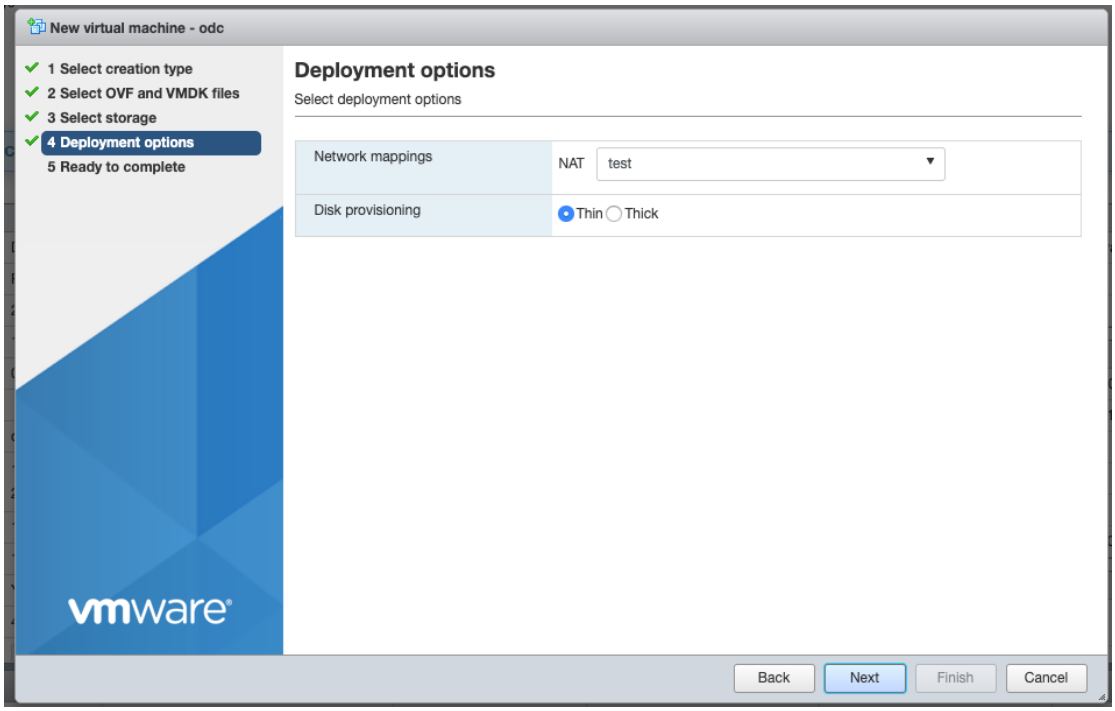

4. Input a name for your ODC and then select an ODC image to upload.



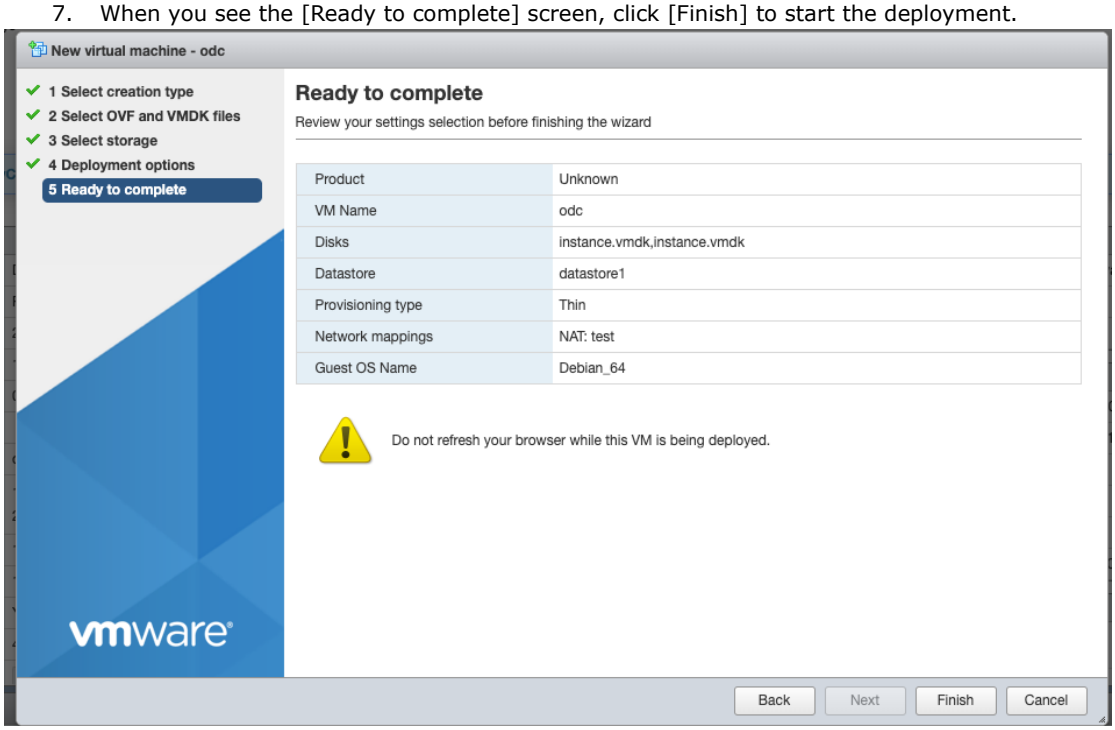

5. Choose a storage location for the ODC virtual machine.



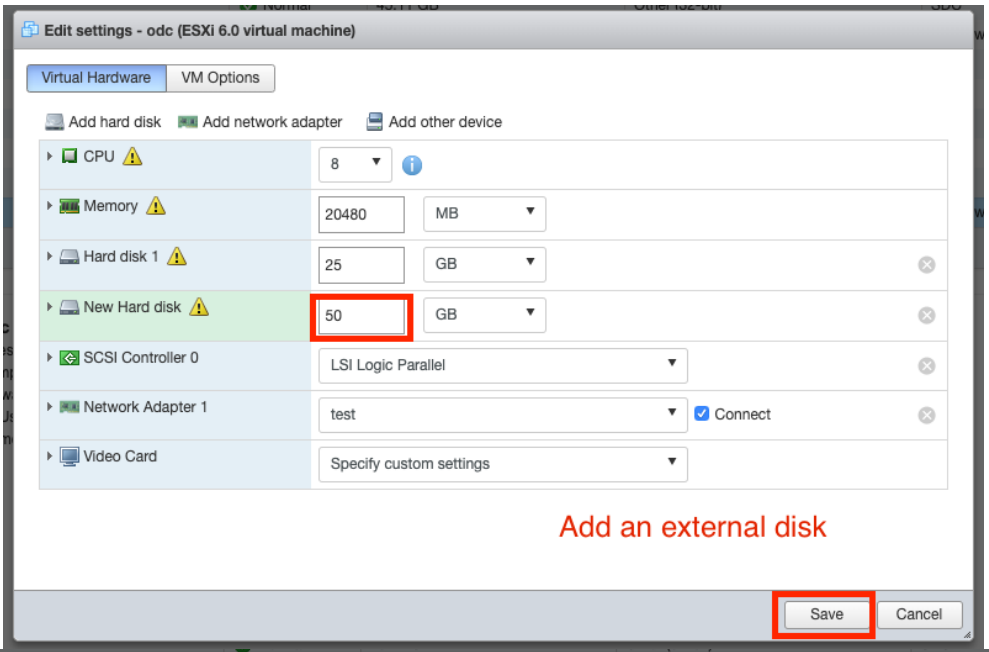

6. Select deployment options.

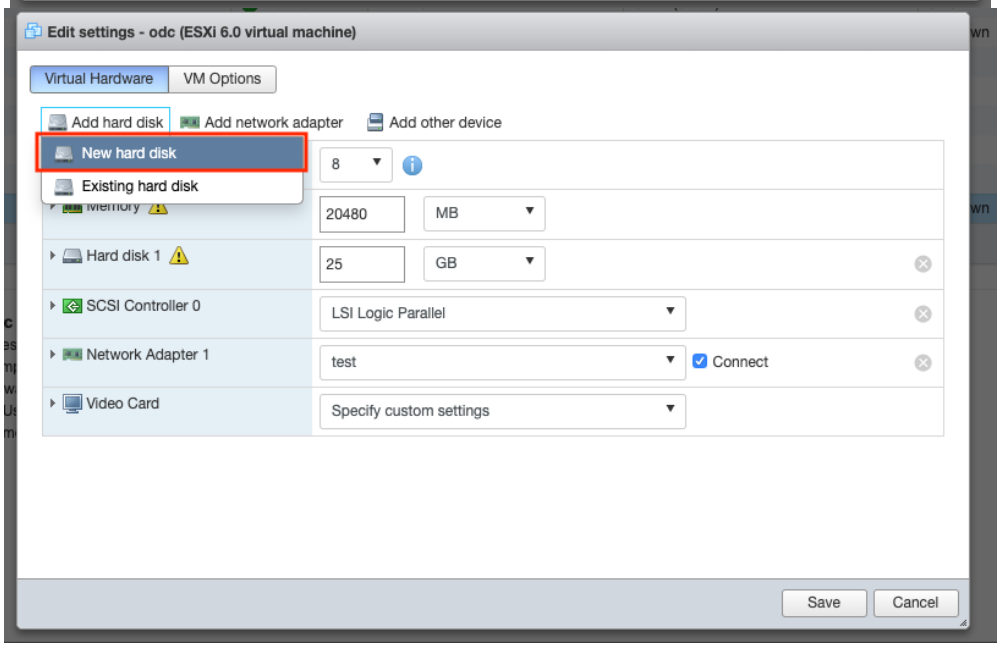



7. When you see the [Ready to complete] screen, click [Finish] to start the deployment.




8. Under the [Recent tasks] pane, you will see a progress bar indicating that the ODC image is being uploaded. Please wait until the upload is finished.
9. Add an external disk with at least 50 GB space to the ODC instance.
   a. Power off the ODC instance if it is powered on.
   b. Add the external disk by the following steps: [Actions] → [Edit settings] → [Add hard disk] → [Save].




c. The external disk size can be decided depending on the number of logs to be stored, as shown on the suggestion table below.

d. If ODC needs to increase the number of the logs to be stored, the steps are (1) power off the ODC, (2) enlarge the external disk size to fit the maximum log requirement, and (3) power on the ODC instance. After that, ODC will enlarge the storage available for log files.

e. If we want to migrate the existing ODC setting to the newly launched VM, please refer to *System Migration on page 21*.

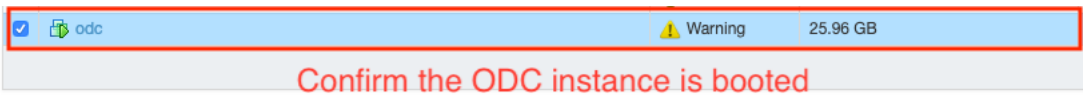
The external disk size can be decided depending on the number of logs to be stored, as shown on the suggestion table below.

| Disk space | Maximum event logs | Note |
|---|---|---|
| >= 50 GB | 5,000,000 logs | Modified and enlarge size since support more log type |
| >= 170 GB | 10,000,000 logs | Modified and enlarge size since support more log type |
| >= 330 GB | 50,000,000 logs | Modified and enlarge size since support more log type |
| >= 600 GB | 100,000,000 logs | Modified and enlarge size since support more log type |

**Note:** The ODC requires one external disk and the minimum size of the external disk must be above 50GB, otherwise the ODC will not finish initialization and will not complete the boot process.

**Note:** The external disk is used to store the system configurations and event logs. You may attach the external disk of a terminated ODC instance here instead of adding a new disk if you want to migrate the previous configurations and logs to the new ODC instance.

10. Power on the VM.




Confirm the ODC instance is booted

**odc**

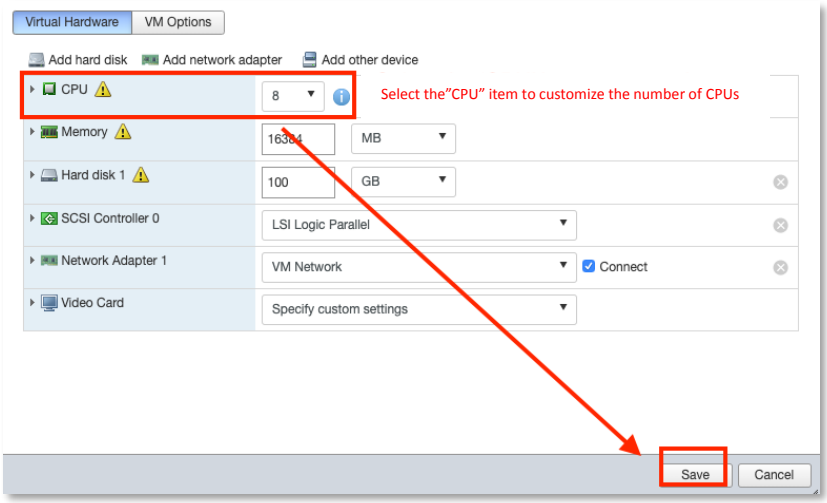
| | |
|---|---|
| Guest OS | Other (32-bit) |
| Compatibility | ESXi 6.0 and later (VM version 11) |
| VMware Tools | Yes |
| CPUs | 8 |
| Memory | 20 GB |

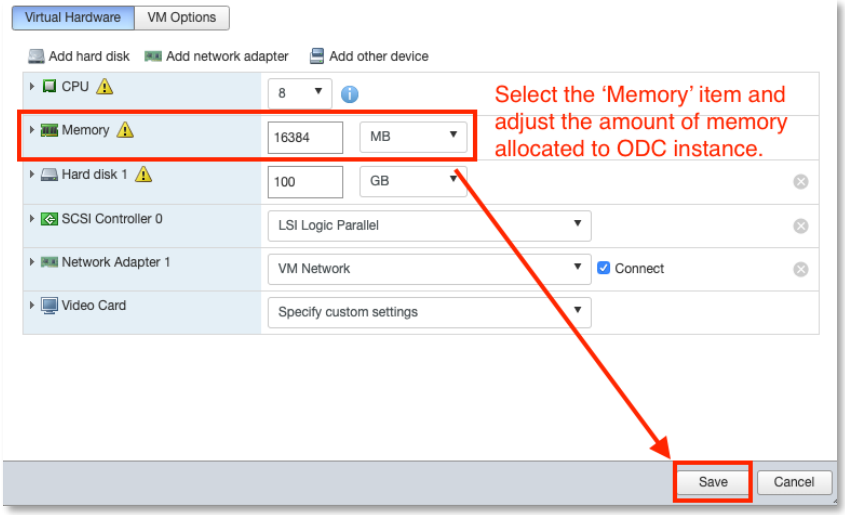
Click the window to log into the vShell of ODC

11. **(Optional)** Adjust your ODC instance to use proper resource configurations based on the following sizing table or using the default settings (8 core CPU, 16 GB memory).
    a. Shut down the instance of ODC and click [Edit].
       The [Edit settings] window will appear.
    b. Configure the number of CPU cores.
    c. Configure the amount of memory.
    d. Boot the ODC instance.

**Sizing Table**

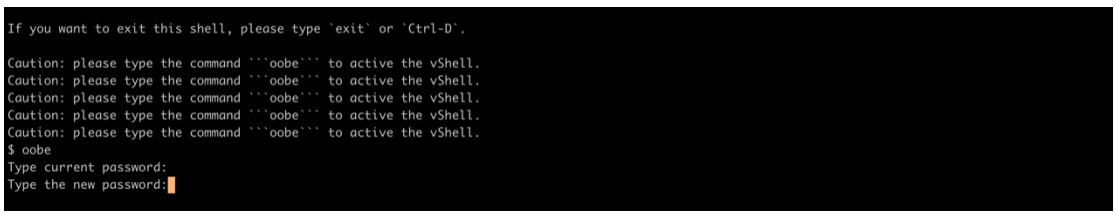
| Nodes | CPU | Memory |
|---|---|---|
| 50 | 4 cores | 16 GB |
| 100 | 4 cores | 16 GB |
| 150 | 6 cores | 32 GB |
| 200 | 8 cores | 32 GB |
| 300 | 12 cores | 64 GB |
| 500 | 16 cores | 96 GB |
| 1000 | 32 cores | 128 GB |



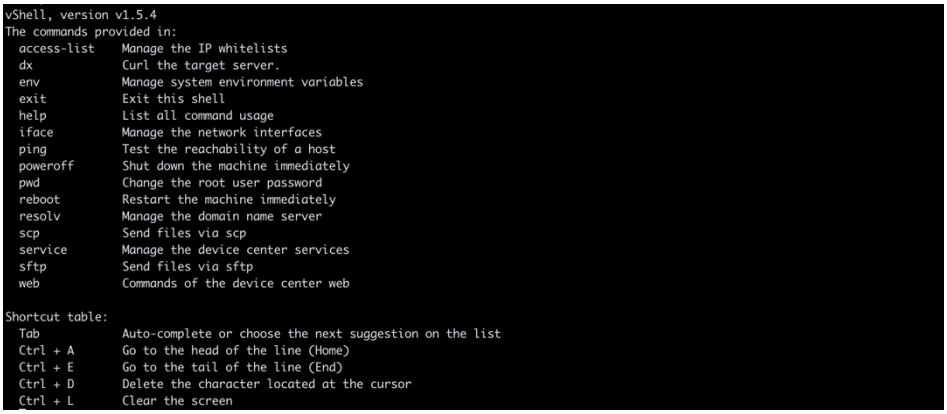




## Accessing the ODC CLI

1. Open the ODC VM console.
2. Log in with "root / txone"
3. Change the default password
    a. Type oobe
    b. Change the default password
    c. Re-log in to the ODC with your new password



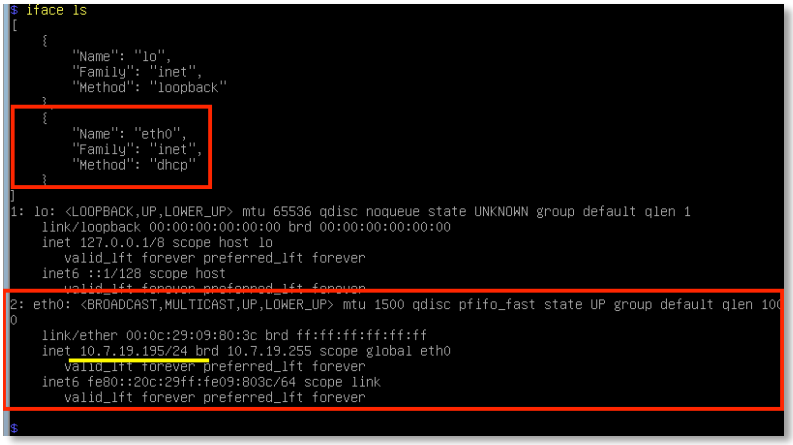
4. After re-logging in to ODC, you may optionally type the “help” command to see a list of available commands for the instance.



# Getting the IP Address of the ODC Instance

1. Type the following command to get the IP address of the ODC Instance

   ```
   $ iface ls
   ```




# [Optional] Configure the IP Address Settings

You can choose to configure the IP address manually.

1. Use the "iface update" command to update the settings of an existing network interface. For example, the following command sets the interface "eth0" to a static IP address 10.7.19.157/24 with the Gateway IP address 10.7.19.254:

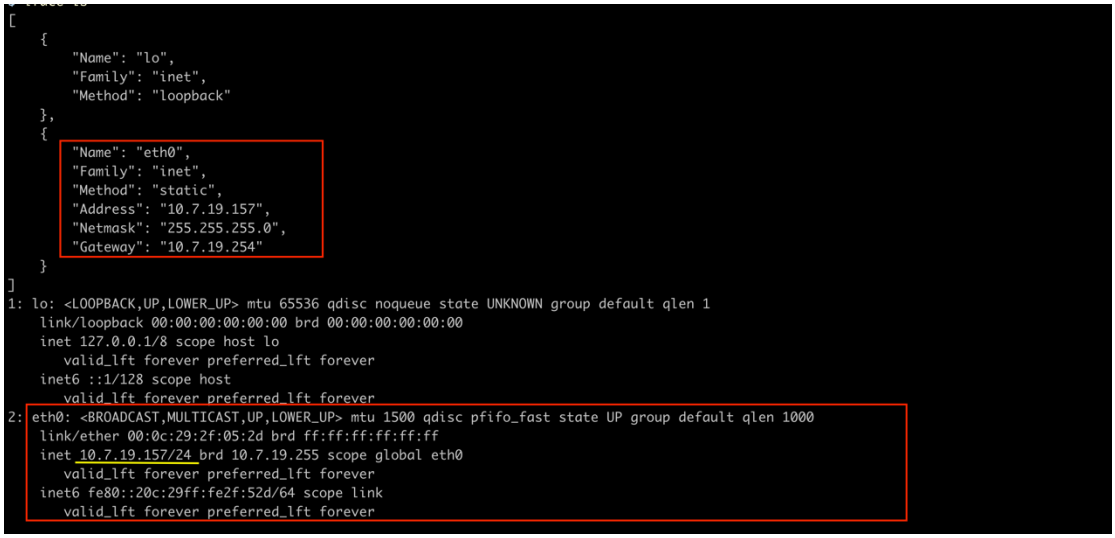
   ```
   $ iface update eth0 --method static --address 10.7.19.157  --netmask
   255.255.255.0 --gateway 10.7.19.254
   ```

2. Confirm the network interface settings are correct and execute the following command to bring the new settings into effect:

   ```
   $ iface restart eth0
   ```

3. Execute the following command to view the network interface settings:

   ```
   $ iface ls
   ```

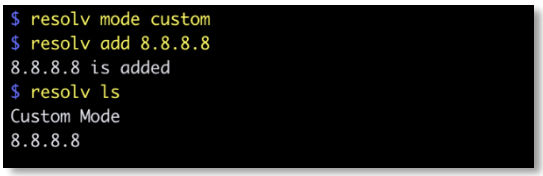


4. Use the "resolv add" command to add a DNS server and "resolv ls" to list the DNS servers you've added. For example, the following command adds "8.8.8.8" to the DNS server list.

```
$ resolv mode custom
$ resolv add 8.8.8.8
```

5. Type the following command to view the DNS server settings.

```
$ resolv ls
```




6. Execute the following command to reboot the VM:

```
$ reboot
```

# Opening the Management Console

OT Defense Console provides a built-in management console that you can use to configure and manage the product. View the management console using a web browser.

**Note:** View the management console using Google Chrome version 63 or later; Firefox version 53 or later; Safari version 10.1 or later; or Edge version 15 or later.

### Procedure

1. In a web browser, type the address of the OT Defense Console in the following format:

   `https://<target server IP address or FQDN>`

   The login screen will appear.
2. Enter your credentials (user name and password).

   Use the default administrator credentials when logging in for the first time:

   - User name: `admin`
   - Password: `txone`
3. Click Log On.

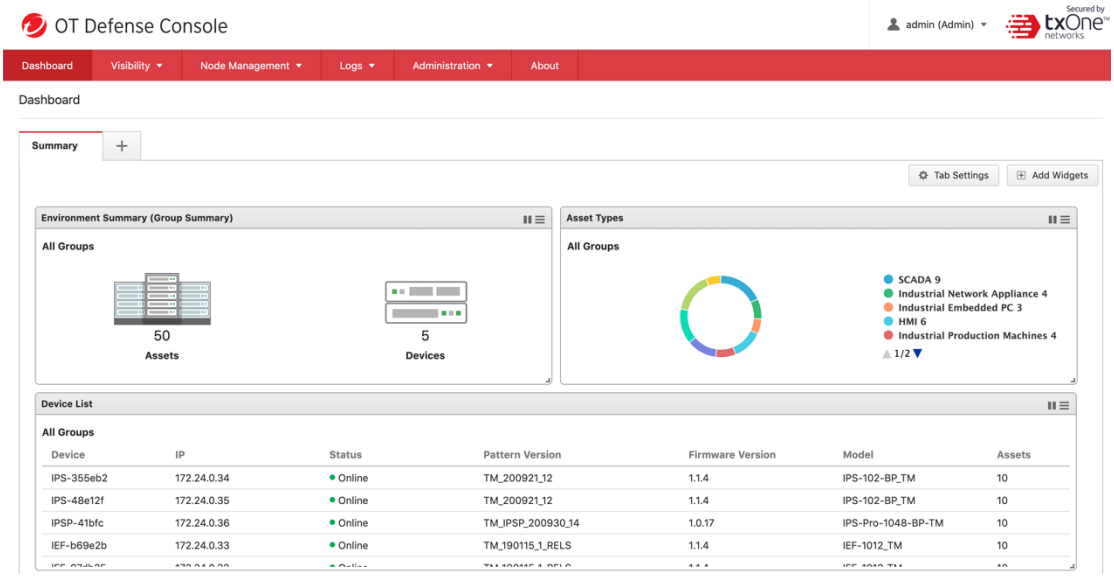
   If this is your first log on, the Login Information Setup frame will appear.

**Note:** You must change the default login name and password at first log on before you can access the management console.

**Note:** New login name can not be "root", "admin", "administrator" or "auditor" (case-insensititive).

   a. Confirm your password settings.
      - New Login Name
      - New Password
      - Retype Password
   b. Click Confirm.

      You will be automatically logged out of the system. The Log On screen will appear again.
   c. Log on again using your new credentials.



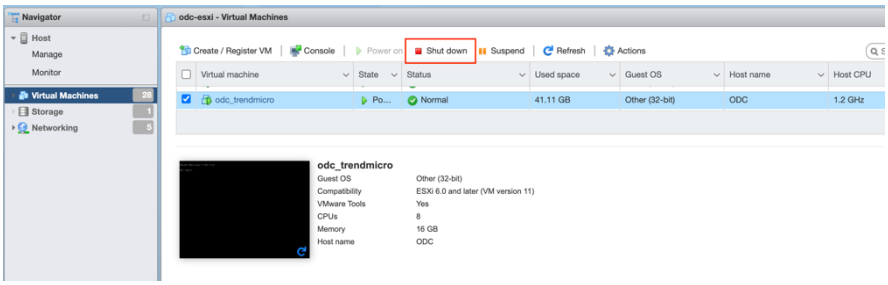

# System Migration

When a new version of ODC is released, we can migrate the settings of the old ODC by attaching the external disk of the old ODC to the new ODC VM. The migration of settings includes:

- The UUID of the old ODC
- The pattern and firmware downloaded by the old ODC
- The system configuration set from the old ODC including its license, accounting information, security policies, and so on
- The security event logs stored by old ODC

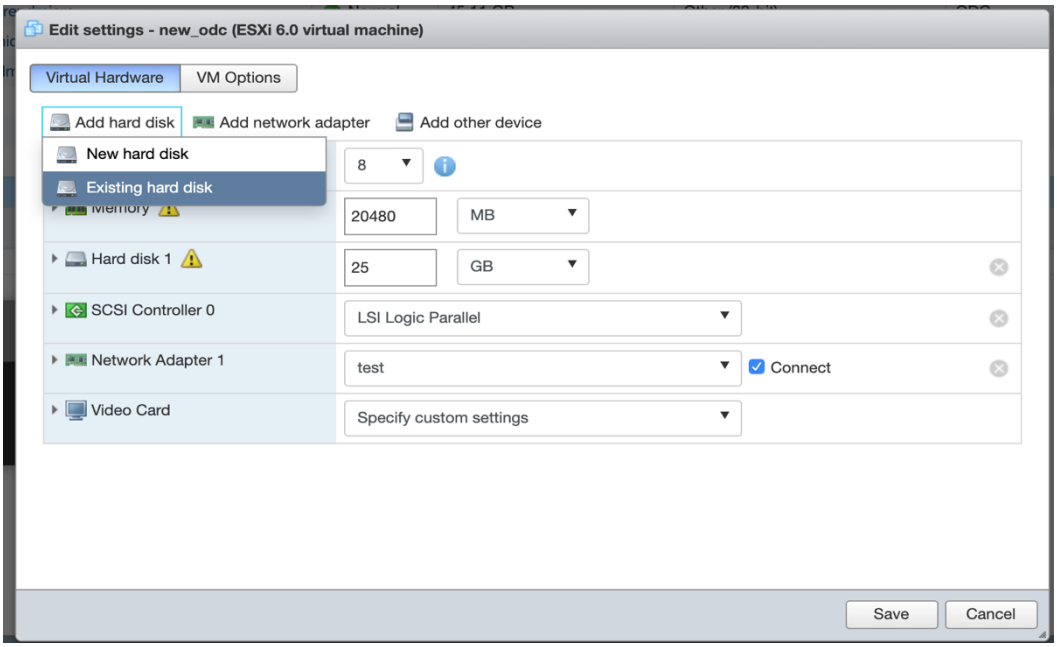
### Procedure

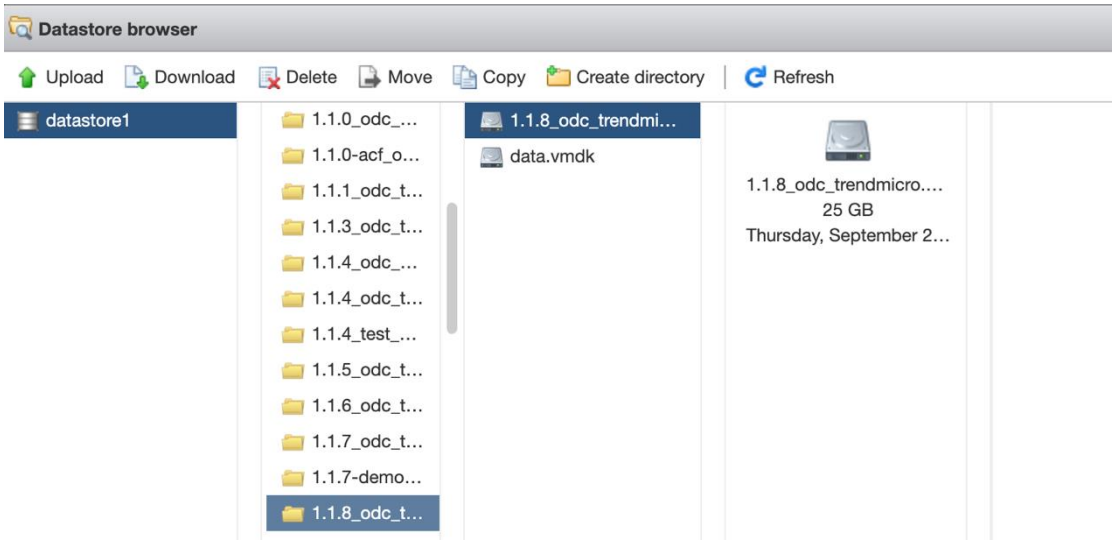
1. Launch the new instance of ODC (refer to section "Deploying OT Defense Console")
2. Power off the old ODC




3. Attach the external disk of the old ODC to the new ODC.

4. The old ODC's information will be migrated into the new ODC.



# Installing ODC on a VMware Workstation

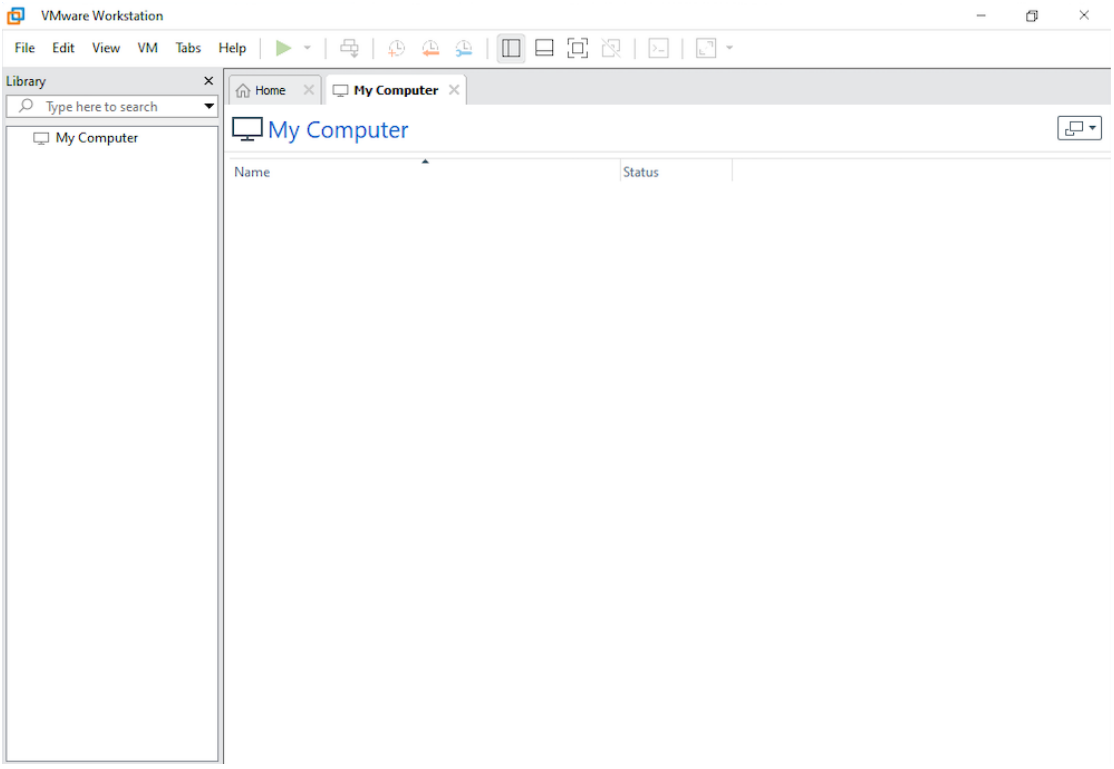
This chapter describes how to deploy OT Defense Console to a VMware Workstation system.

## Prerequisites

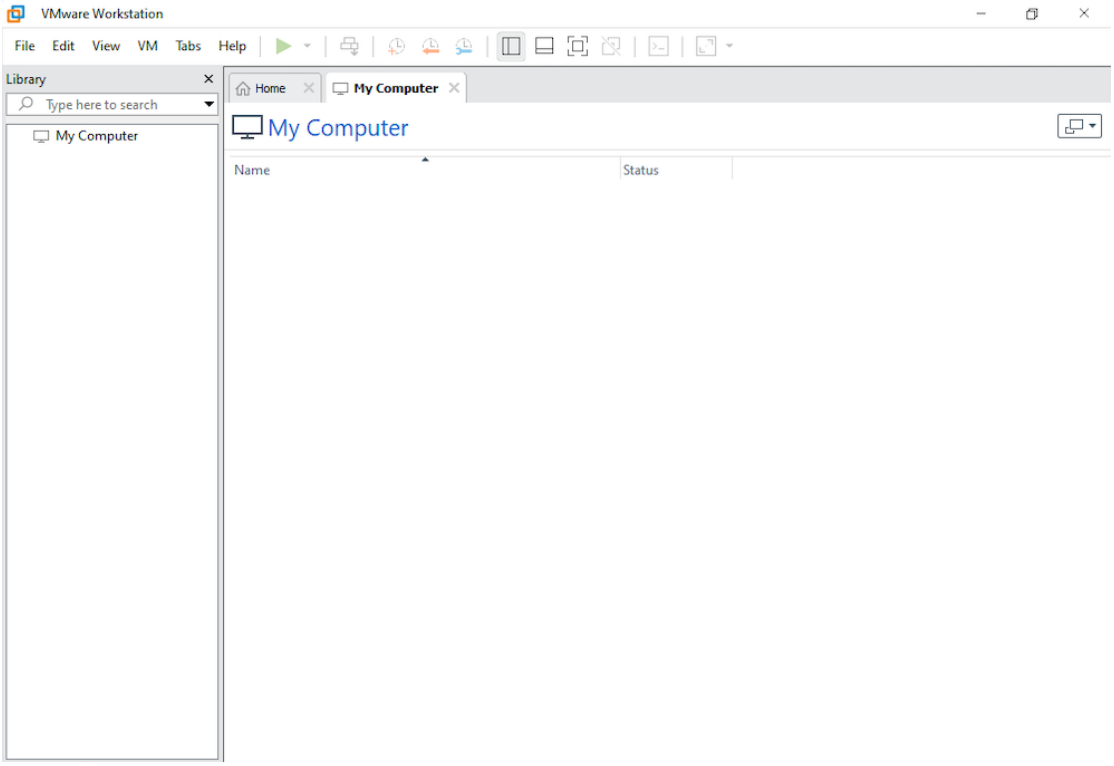
- The OVA packages provided by Trend Micro must be available and accessible to the VMware Workstation.
- VMware workstation 14 or later is required.

## Deploying OT Defense Console

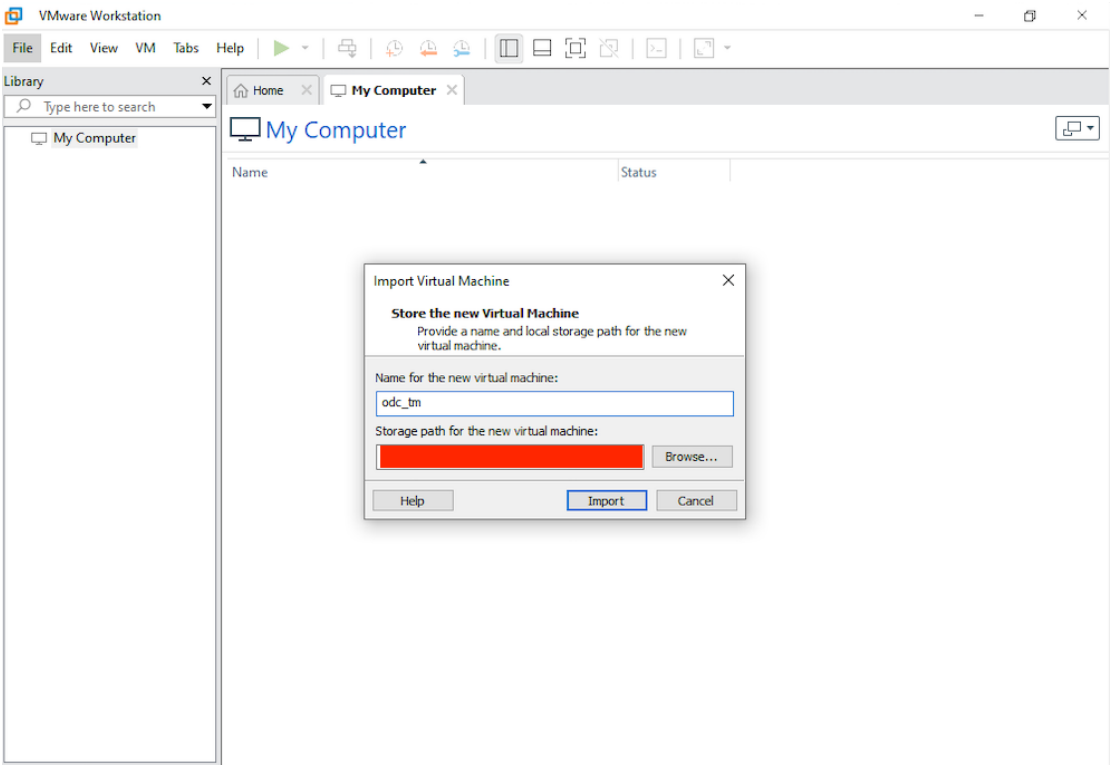
1. Start the VMware Workstation and click [File] on the menu bar.



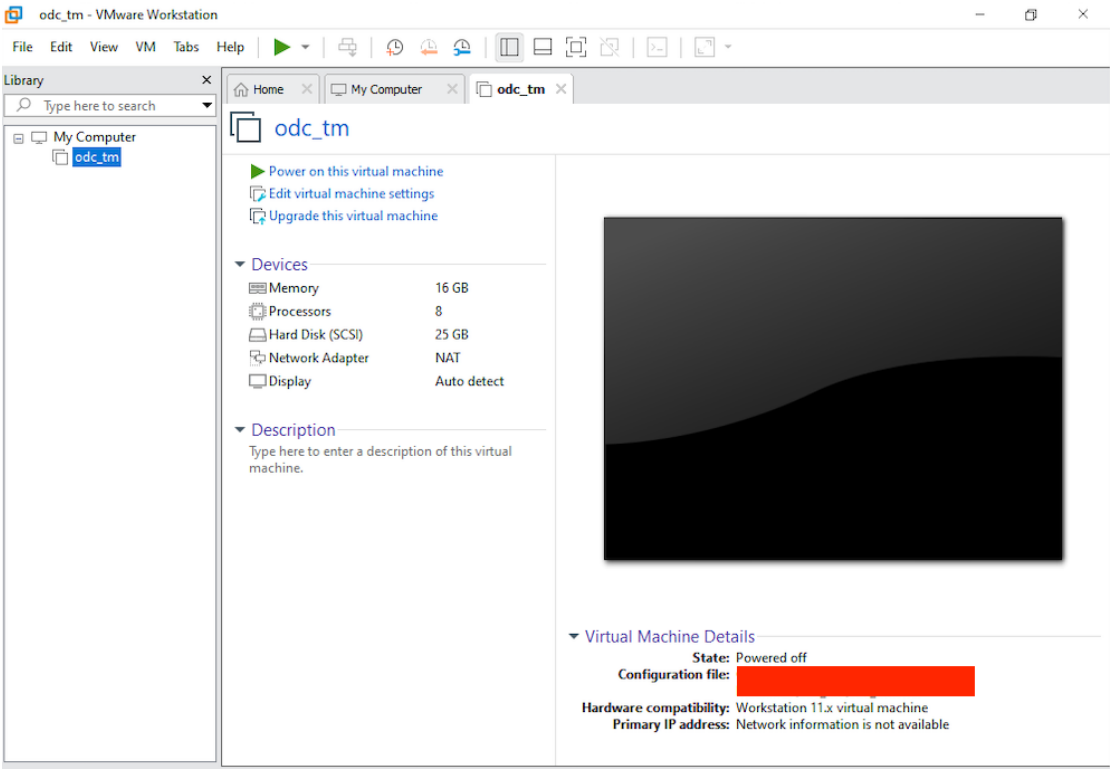

2. Select [Open] to import the ODC VM image file (*.ova).



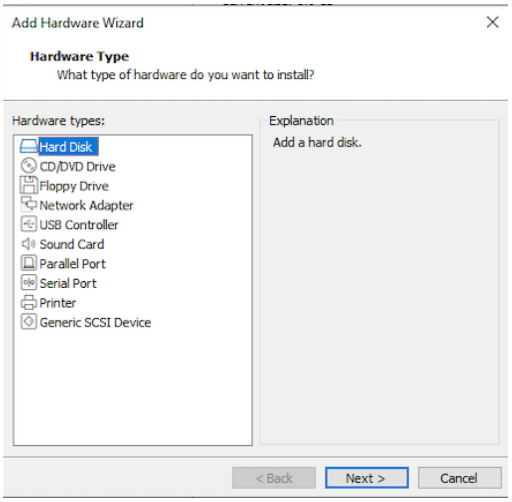

3. Select the ODC VM image file from your localhost file path and click the [Import] button.



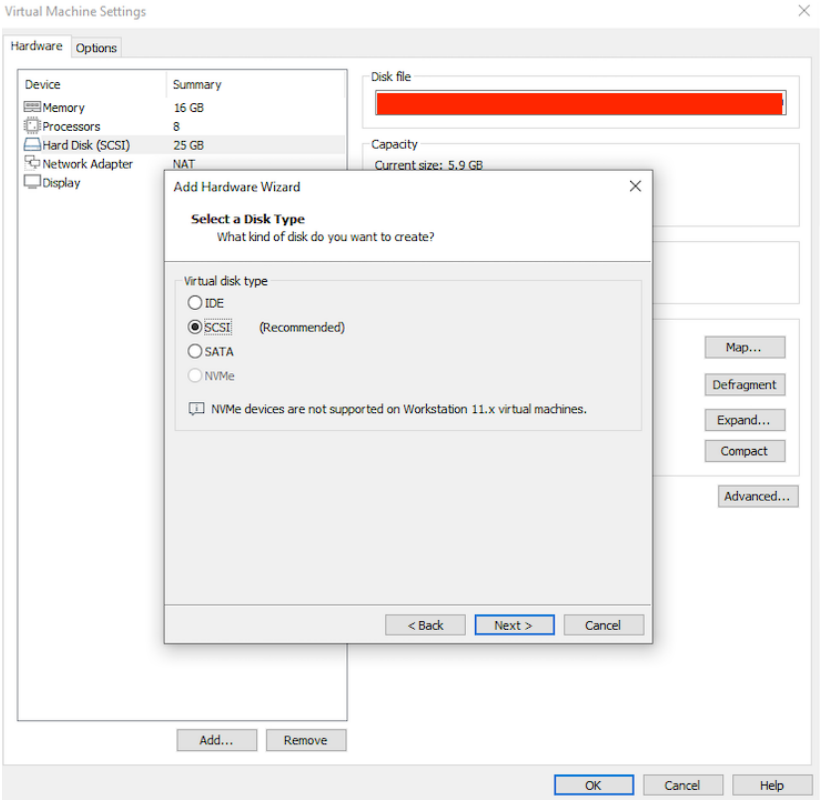

4. Check the detailed VM information of the imported ODC VM.



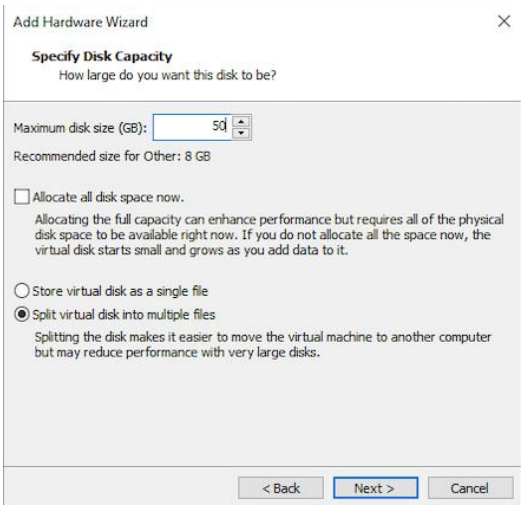

5. Add an extra disk.
   a. Click [Edit virtual machine settings].
   b. Click [Add], then choose [Hard Disk].




   c. Select Disk type.




d. Select Disk size.




e. Select path to store the disk.

f. Click [OK].

6. **(Optional)** Adjust your ODC instance to use proper resource configurations based on the following sizing table or using default settings (8 CPU cores, 16 GB of memory).

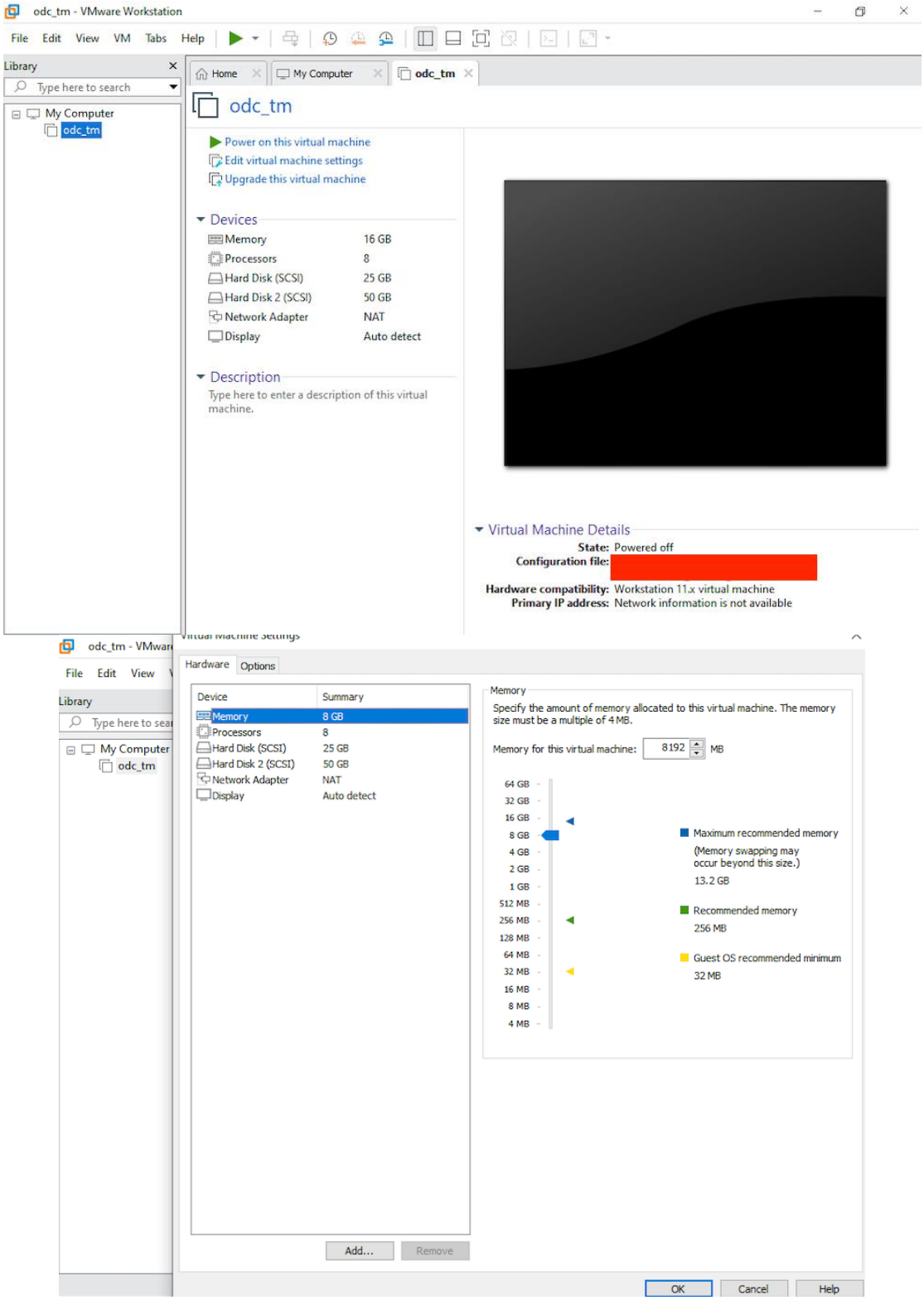
**Sizing Table**

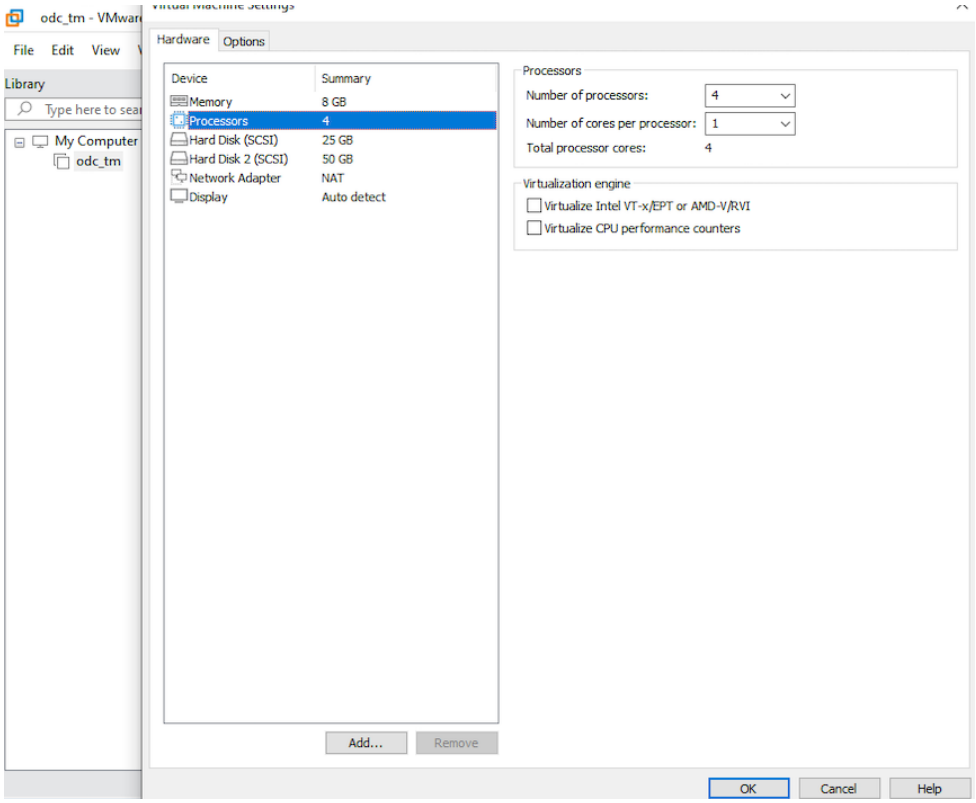
| Nodes | CPU | Memory |
|---|---|---|
| 50 | 4 cores | 16 GB |
| 100 | 4 cores | 16 GB |
| 150 | 6 cores | 32 GB |
| 200 | 8 cores | 32 GB |

a. Click [Edit virtual machine settings].

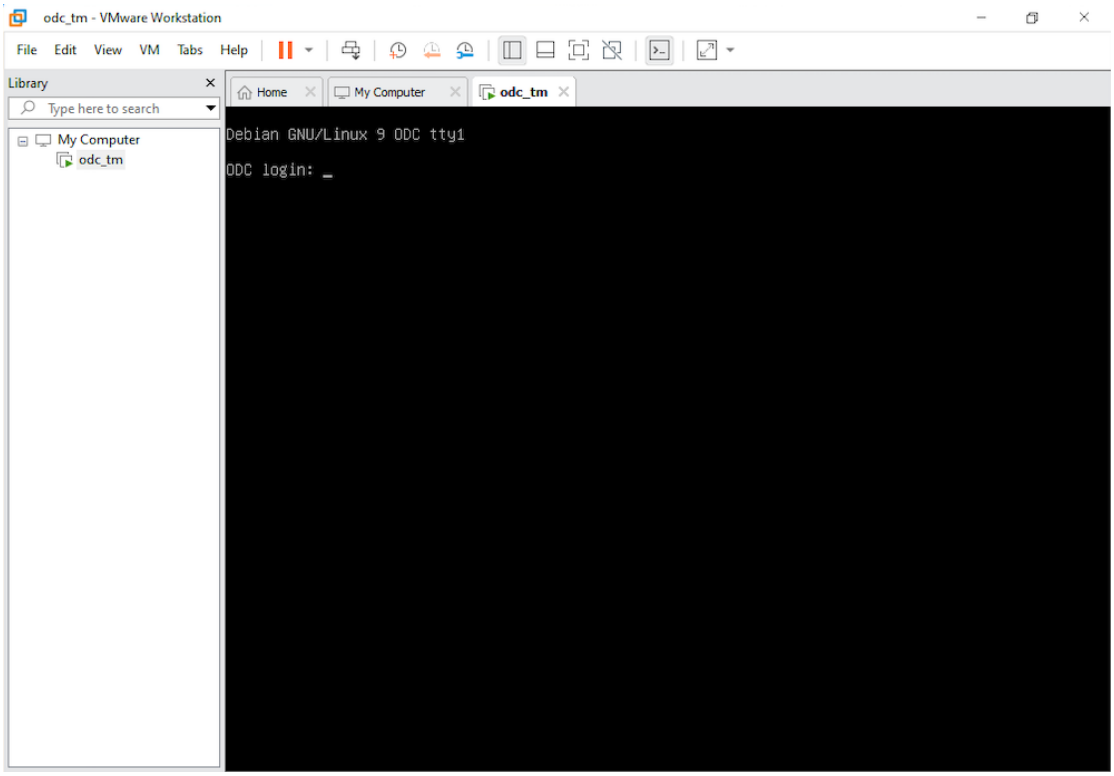
b. Configure the amount of memory.

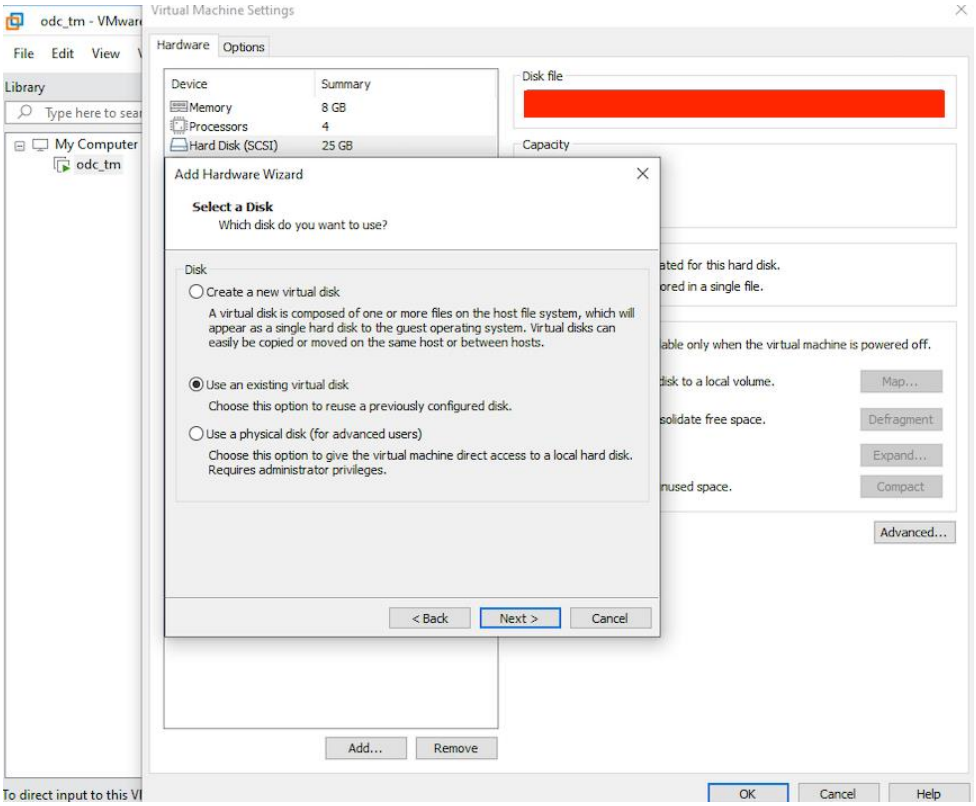
c. Configure the number of CPU cores.






7. **(Optional)** Change the network adapter setting from 'NAT' to 'Bridged'.
   a. Right click the ODC VM icon and select [Settings].
   b. Select [Network Adapter] and change the default setting from [NAT] to [Bridged] if necessary.
8. Boot the ODC VM, and the ODC instance will start.






# System Migration

When a new version of ODC is released, we can migrate the setting of the old ODC by attaching the external disk of the old ODC to the new ODC VM. The migration of settings can include:

- The UUID of the old ODC
- The pattern and firmware downloaded by the old ODC
- The system configuration set by the old ODC including license, accounting information, security policies, and so on.
- The security event logs stored by the old ODC

### Procedure

1. Launch the new ODC instance (refer to section "Deploying OT Defense Console")
2. Power off the old ODC
3. Attach the external disk of the old ODC to the new ODC.
4. A window will come up where you can select which settings and data will be migrated into the new ODC, and after your confirmation the old ODC's selected information will be migrated into the new ODC.

# Configuring the ODC system

Please check the following sections for directions on configuring your ODC system:

- *Accessing the ODC CLI on page 9*
-

- *Getting the IP Address of the ODC* Instance *on page 11*
- *[Optional] Configure the IP Address Settings on page 11*
- *Opening the Management Console on page 12*

# Terms and Acronyms

The following table lists the terms and acronyms used in this document.

| Term/Acronym | Definition |
|---|---|
| EWS | Engineering Workstation |
| HMI | Human-Machine Interface |
| ICS | Industrial Control System |
| IT | Informational Technology |
| ODC | Operational Technology Defense Console |
| OT | Operational Technology |
| OT Defense Console | Operational Technology Defense Console |
| PLC | Programmable Logic Controller |
| SCADA | Supervisory Control and Data Acquisition |