



Installing the Prime Optical Virtual Appliance

You can deploy a preconfigured Prime Optical virtual appliance stored in Open Virtual Machine Format (OVF). The procedure involves deploying a ready-for-use virtual machine that has RHEL, Oracle, and Prime Optical installed and configured in it that is released as OVF/OVA file.

Information About Deploying the OVF Template

The Prime Optical virtual appliance is a preconfigured Prime Optical virtual machine with a single-server, Oracle-embedded database in a medium-size network configuration. It is configured with the user `optusr`. The default Prime Optical client username is `SysAdmin` and the password is `Ctm123!`.

All the properties fields in the OVF template must have values. The entries and selections you make on the deployment configuration pages control which fields are required.

During initial power on, all input is validated. Once validated, the Prime Optical virtual appliance is installed, and the VM is configured and then rebooted.

VM Requirements

The requirements to deploy the Virtual Appliance (VA) are:

- VMWare setup ESXi 5.5 and 6.0
- 2 virtual CPU (vCPU)
- 16 GB memory
- 488 GB total disk space

VM Configuration

The configuration of the VM distributed in the OVA file is as follows:

- Prime Optical client default credentials: `SysAdmin/Ctm 123!`
- Prime Optical medium installation, single server, embedded Oracle, root user
- OS—RHEL 6.7 with basic server installation (no graphics)
- OS default credentials: `root/cisco!` (ssh access)

**Note**

Customer is strongly recommended to change default credentials.

- Operating System configuration details: the local language is set to English (US)

**Note**

Customer is suggested to check them and realign them based on specific configuration needs.

- RAM—16 GB
- Processors—2 virtual CPUs
- Disk 1 (/dev/sda), 38GB for /, swap
- Disk 2 (/dev/sdb), 106GB for / cisco, /db01, /db04,
- Disk 3 (/dev/sdc), 136GB for /oracle, /db02, /db03, /db05
- Disk 3 (/dev/sdd), 208 GB for /ctm_backup
- Total disk size is 488GB
- 4 disks (thin provisioning format)
- Disk Space and Partition Allocation—See [Table 9-1](#) for more information on the disk space description for OVA installation.

Refer to [Table 2-5 “Disk Space and Partition Requirements for Installing the Prime Optical Server and Oracle on the Same Workstation—PM Collection Enabled”](#) for more information.

Table 9-1 *Disk Space Description for OVA Installation*

Disk Name	Disk Size	List of Partitions
Disk 1(/dev/sda)	38 GB	<ul style="list-style-type: none"> • / • swap
Disk 2(/dev/sdb)	106 GB	<ul style="list-style-type: none"> • /cisco • /db01 • /db04
Disk 3(/dev/sdc)	136 GB	<ul style="list-style-type: none"> • /oracle • /db02 • /db03 • /db05
Disk 3(/dev/sdd)	208 GB	<ul style="list-style-type: none"> • /ctm_backup

Deploying the Prime Optical Virtual Appliance

You can deploy a preconfigured Prime Optical virtual appliance. This consists in deploying a ready for use virtual machine, already installed and configured with RHEL, Oracle and Prime Optical. It is distributed/released as OVF/OVA file (Open Virtual Machine Format).

Before You Begin

- Make sure that NTFS file system is supported by your Linux workstation where you would mount the USB drive. To configure NTFS portion on Linux, follow [NTFS Setup and Configuration, page 9-3](#).
- Make sure you have the Prime Optical installation USB drive—Linux.
- Make sure that the VMware setup is available and accessible via vSphere client (Consult your system administrator on the VMware configuration).
- Make sure that VMwAre setup can support the virtual machine to be deployed as a virtual appliance. Check the VM disk, memory, and CPU description (Consult your system administrator on the VMware configuration).
- Note the name for the VM, inventory location, host/cluster name, and disk format and location to store the VM virtual disks (Consult your system administrator on the VMware configuration).



Note See “[About Virtual Disk Provisioning Policies](#)” in VMware vSphere documentation for disk format details.

To setup NTFS file System on your Linux machine, follow the below instructions:

NTFS Setup and Configuration

Due to FAT32 limitation, copying of files greater than 4GB to the FAT32 file system is always an issue. Therefore, the NTFS support is implemented to avoid this file limitation.

EPEL Packages or Extra Packages for Enterprise

To mount NTFS File System for RHEL 6 or RHEL 7:



Note This procedure is applicable for online repository only (with active internet connectivity)

Step 1 Execute the following command to enable EPEL repository:

For RHEL 6.x:

```
# wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-6.noarch.rpm
# rpm -ivh epel-release-latest-6.noarch.rpm
# yum clean all
```

For RHEL 7.x:

```
# wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
# rpm -ivh epel-release-latest-7.noarch.rpm
# yum clean all
```

Step 2 Execute the following command to install NTFS-3G packages for enabling support for NTFS file system:

```
# yum install ntfs-3g -y
```

If there is any error in EPEL repository while installing any packages, execute the below command:

```
# sed -i 's/https/http/g' /etc/yum.repos.d/epel.repo; sleep 2; yum install ntfs-3g -y
```

Step 3 Execute the following command to enable NTFS support for file managers:

```
# yum install ntfsprogs -y
```

**Note**

This procedure is applicable for online repository only (with limited internet connectivity)

Step 1 Download the NTFS-3g and Ntfsprogs packages:

For RHEL-6.x:

```
https://dl.fedoraproject.org/pub/epel/6/x86_64/ntfs-3g-2016.2.22-1.e16.x86_64.rpm
https://dl.fedoraproject.org/pub/epel/6/x86_64/ntfs-3g-devel-2016.2.22-1.e16.x86_64.rpm
https://dl.fedoraproject.org/pub/epel/6/x86_64/ntfsprogs-2016.2.22-1.e16.x86_64.rpm
```

For RHEL-7.x:

```
https://dl.fedoraproject.org/pub/epel/7/x86_64/n/ntfs-3g-2016.2.22-1.e17.x86_64.rpm
https://dl.fedoraproject.org/pub/epel/7/x86_64/n/ntfs-3g-devel-2016.2.22-1.e17.x86_64.rpm
https://dl.fedoraproject.org/pub/epel/7/x86_64/n/ntfsprogs-2016.2.22-1.e17.x86_64.rpm
```

Step 2 Install the NTFS-3g packages by executing the following command:

```
# rpm -ivh ntfs-3g*.rpm
```

Step 3 Install the NTFSprogs packages by executing the following command:

```
# rpm -ivh ntfsprogs*.rpm
```

To deploy the Cisco Prime Optical virtual appliance:

**Note**

Make sure to identify the network information of the VM to deploy such as the hostname, domain name, IP address, netmask/prefix, default gateway, and DNS.

Step 1 Insert the Cisco Prime Optical Server installation USB drive—Linux in your workstation.

Wait for the automatic discovery of the device.

You can find the OVF file at the following location:

```
/media/<USB-mount-point>/PrimeOptical_10_6_0/PrimeOptical10.6.ovf file
```

Step 2 If you have the Cisco Prime Optical Server installation USB drive image file (80-101212-01.img) instead of the physical media, enter the following commands to mount it:

```
losetup /dev/loop1 80-101212-01.img
mkdir /mnt
mount -t ntfs /dev/loop1 /mnt
```

Navigate to the PrimeOptical_10_6 directory to locate the PrimeOptical10.6 ovf file.

Step 3 Start the VMware vSphere Client and enter the IP address or name of the host that needs to be directly managed.

- Step 4** Enter the username and password of the VMware server.
- Step 5** Click **Login**.
- Step 6** Choose **File > Deploy OVF Template**.
- Step 7** Navigate to the OVF template file (va.ovf), then click **Next**.
- Step 8** Verify OVF details, and then click **Next**.
- Step 9** Specify the virtual appliance name and location for the template that you are deploying, then click **Next**.
- Step 10** Select the VM host or cluster on which you want to run the OVF template, then click **Next**.
- Step 11** Navigate to and select the resource pool (if required) where you want to run the OVF template (check with the VMware setup administrator), and then click **Next**.
- Step 12** Select a datastore to store the deployed OVF template, and then click **Next**.
- On this page, the datastore is a logical repository that has already been configured on the destination cluster or host. Select a datastore that has enough space to store the VM and all its virtual disks.
- Step 13** Select a disk format to store the virtual disks, and then click **Next**. See “[About Virtual Disk Provisioning Policies](#)” in VMware vSphere documentation for disk format details.
- Step 14** Verify the details of the OVF file, the name of the virtual appliance, size, host, and storage details, then click **Finish** to start the deployment. Consult your system administrator for more information on the VMware setup.
- This may take a while to complete. Check the progress bar in the Deploying Virtual Application window to monitor the task status.
- After the deployment task has successfully completed, a confirmation window appears.
- Step 15** Click **Close**.
- The virtual appliance that you deployed is listed under the host, in the left pane of the vSphere client.
- Step 16** Enter the following commands to unmount the image file and free the device:

```
umount /mnt
losetup -d /dev/loop1
```

Booting and Configuring the Prime Optical Virtual Appliance

To boot and then configure the Prime Optical virtual appliance:

- Step 1** After deploying the virtual appliance, select the virtual machine name in vSphere, right-click it and choose **Open Console**.
- Step 2** Choose **Power > Power On**, and then click in the window.
- During initial boot of the newly deployed machine, you will be prompted to enter root (system) credentials (password is cisco!).
- The VM is reachable only through the console till the network configuration is done.
- Step 3** Configure IP, DNS, Domain name, and host file name manually.

How to configure network manually:

- a. Identify the VM net if (ifconfig -a) (ex: eth1). Execute the following command:

```
ifconfig -a
```

- b. Go to `/etc/sysconfig/network-scripts` and execute the following command:

```
cd /etc/sysconfig/network-scripts
```
- c. Backup `ifcfg-eth0`.

```
mv ifcfg-eth0 to ifcfg-eth0.orig
```
- d. Copy `ifcfg-eth0.orig` to `ifcfg-eth1`.

```
cp ifcfg-eth0.orig ifcfg-eth1
```
- e. Edit `ifcfg-eth1` file:
 - fix ethx.
 - fix the hardware address.
 - fix UUID.
 - fix the gateway.
 - fix the domain.
 - fix the netmask.
 - fix the IP.
- f. Save the `ifcfg-eth1` file and **Exit** when you are done editing.
- g. Change the DNS server in `/etc/resolve.conf`.
- h. Update the hosts file entry with the new IP and hostname in the format (For example: `10.58.236.181 cpo98 cpo98.cisco.com`).
- i. Edit the `/etc/sysconfig/network` and fix the hostname.
- j. Restart network service.

```
service network restart
```
- k. Power-off the VM and check connectivity

```
init 6
```

Step 4 Login to the new VM remotely.

Step 5 Run the `/opt/CiscoTransportManagerServer/bin/opt_sysconfig.sh` script and change the new IP and the hostname of the new VM as prompted by the script.

You should see a success message once the script is executed with the changes.

Step 6 When you are prompted, reboot the VM by executing the following command:

```
init 6
```

Step 7 After reboot, the VM is reachable using SSH and Prime Optical will start to boot. It may take some time.
