NSFOCUS vNTA
Installation and Deployment Guide

Version: V4.5R90F04SP02 (2023-04-14)

Confidentiality: RESTRICTED

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Preface

This document briefly describes virtual NSFOCUS Network Traffic Analyzer (vNTA) and details how to deploy and install it.

This document is provided for reference only. It may slightly differ from the actual product due to version upgrade of the virtual platform or other reasons.

Organization

Chapter	Description
1 Configuration Requirements	Describes configuration requirements of VMware ESXi and QEMU KVM.
2 Deployment on VMware ESXi	Describes how to import and configure vNTA on the VMware ESXi platform.
3 Deployment on QEMU KVM	Describes how to import and configure vNTA on the QEMU KVM platform.
A Default Parameters	Describes factory defaults of vNTA.
B FAQ	Describes questions frequently asked during product installation and answers to these questions.

Change History

Version	Description
V4.5R90F04SP02	First issue.

Conventions

Convention	Description
Bold font	Keywords, names of screen elements like buttons, drop-down lists or fields, and user-entered text appear in bold font.
Italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in italic font.

Convention	Description
Note	Reminds users to take note.
Tip	Indicates a tip to make your operations easier.
Caution	Indicates a situation in which you might perform an action that could result in equipment damage or loss of data.
Warning	Indicates a situation in which you might perform an action that could result in bodily injury.
A > B	Indicates selection of menu options.

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Documentation Feedback

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Email: info-support@nsfocus.com

1 Configuration Requirements

This chapter describes configuration requirements of VMware ESXi and QEMU KVM.

1.1 Configuration Requirements of VMware ESXi

This chapter describes configuration requirements of the VMware ESXi platform.

1.1.1 Version Requirement

Currently, NTA-VM supports only VMware ESXi 5.5 and 6.0. For other virtualization platforms, you need to use appropriate software to convert them to a platform that is compatible with vNTA.

1.1.2 Configuration Requirements

Make sure that VMware ESXi at least meets configuration requirements listed in Table 1-1.

Table 1-1 Reference configuration of VMware ESXi

Item	Reference Configuration
CPU	Intel(R) Xeon(R) CPU E5-2670 @ 2.60GHz 24 threads
Memory	32 GB
Hard disk drive	≥ 2 TB
NIC	2

If the resources assigned to VMware ESXi cannot meet configuration requirements, the system will possibly work improperly.

1.2 Configuration Requirements of QEMU KVM

This chapter describes configuration requirements of the QEMU KVM platform.

1.2.1 Version Requirement

QEMU KVM 1.5.3 or later versions are required.

1.2.2 Configuration Requirements

Make sure that vNTA at least meets configuration requirements listed in Table 1-2.

Table 1-2 Reference configuration of QEMU KVM

Item	Reference Configuration
CPU	Intel(R) Xeon(R) CPU E5-2670 @ 2.60GHz 24 threads
Memory	32 GB
Hard disk drive	≥ 2 TB
NIC	2

Note	If the resources assigned to VMware ESXi cannot meet configuration requirements, the system will possibly work improperly.

2 Deployment on VMware ESXi

This chapter describes how to import the virtual template of vNTA to the VMware ESXi platform and configure vNTA on the platform.

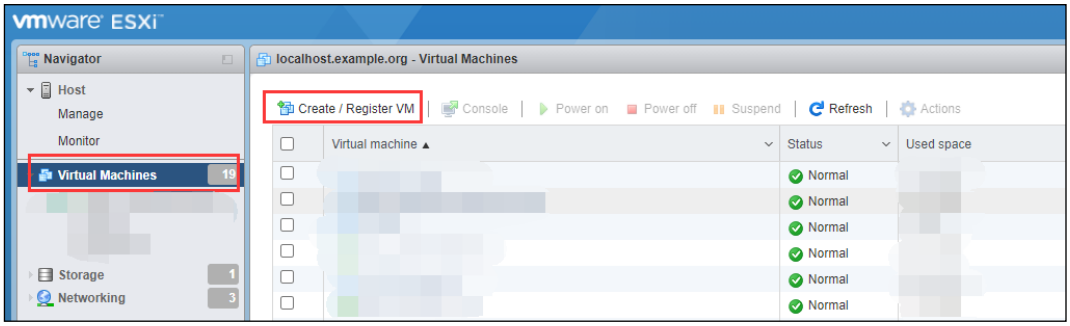
2.1 Importing the Virtual Template of vNTA

Before importing the virtual template of vNTA to the platform, you need to obtain the virtual template (.ova), such as **nta-r90f04.ova**.

To import the virtual template, follow these steps:

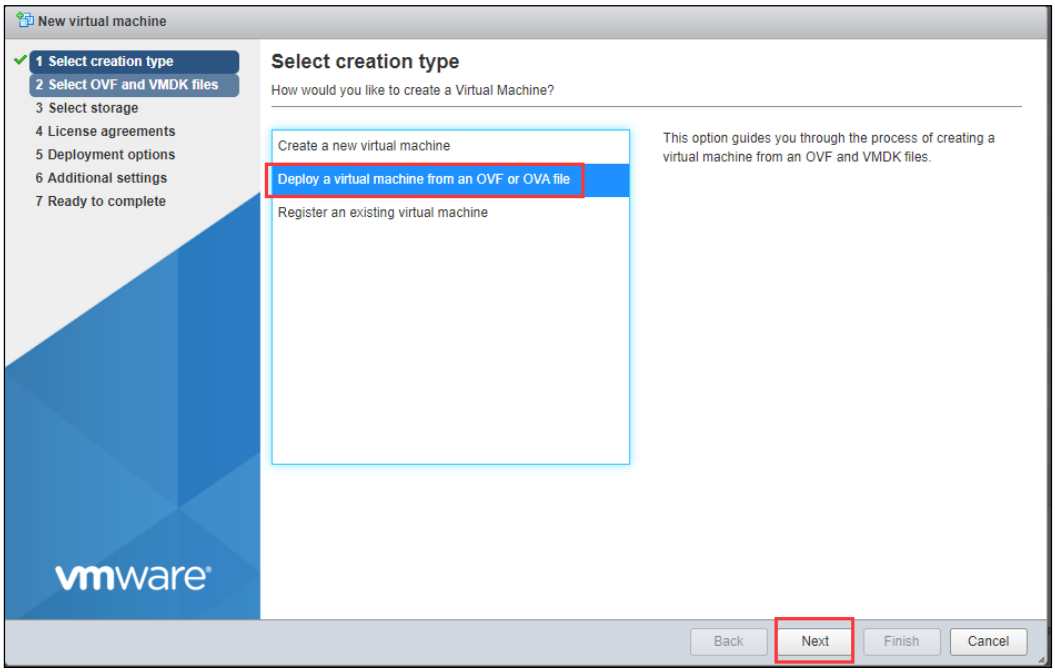
Step 1 Open VMware ESXi web and then choose **Virtual Machines > Create / Register VM**.

Figure 2-1 Creating/Registering VM



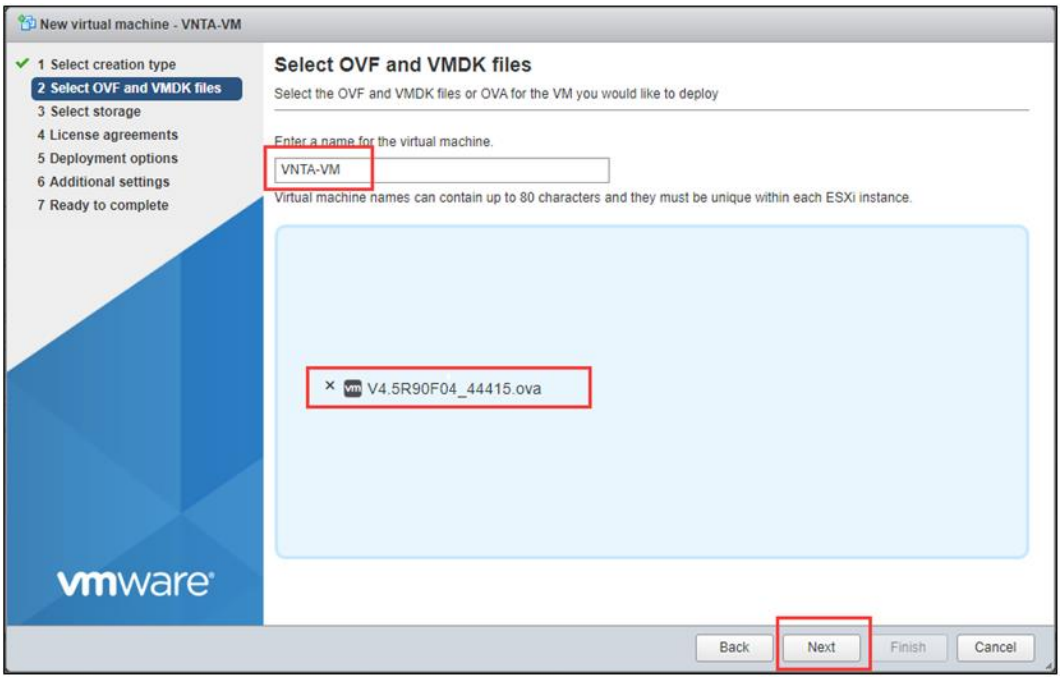
Step 2 Select **Deploy a virtual machine from an OVF or OVA file** and click **Next**.

Figure 2-2 Selecting a creation type



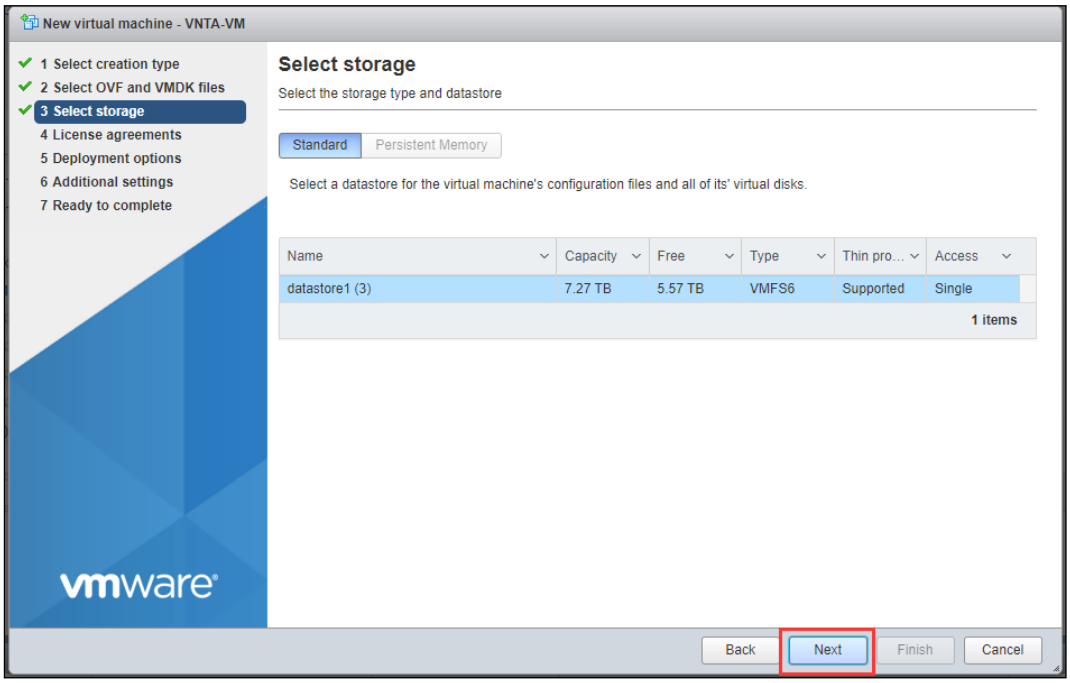
Step 3 Type the VM name, drag the template to the blue area, and click **Next**.

Figure 2-3 Configuring the VM name



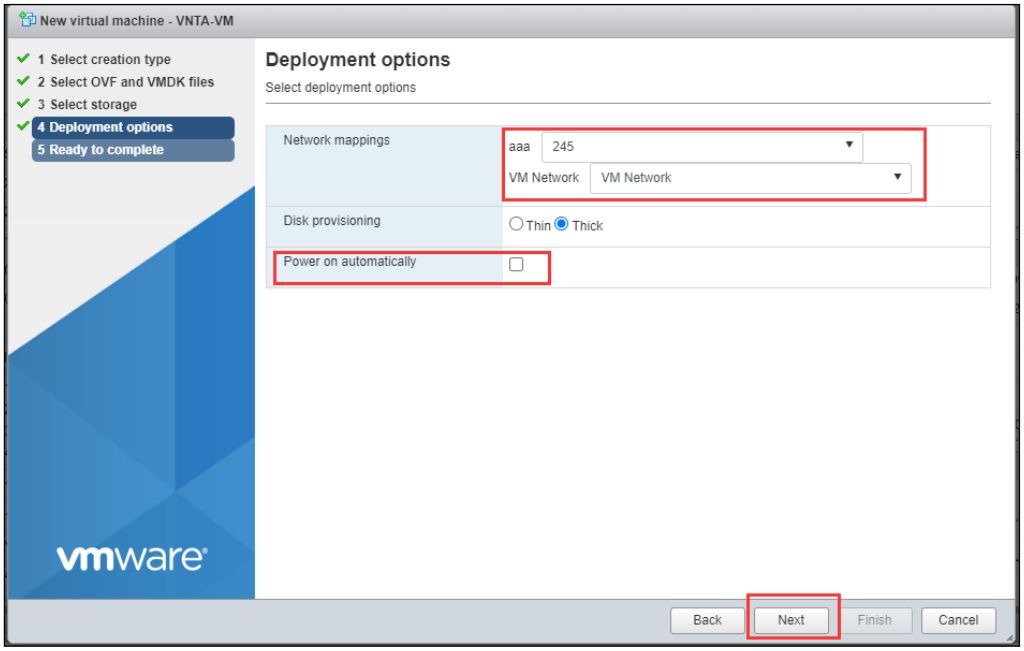
Step 4 Select a storage type and a datastore in which you want to store the VM configuration file and click **Next**..

Figure 2-4 Selecting a datastore



Step 5 Select a network and cancel the selection of **Power on automatically**.

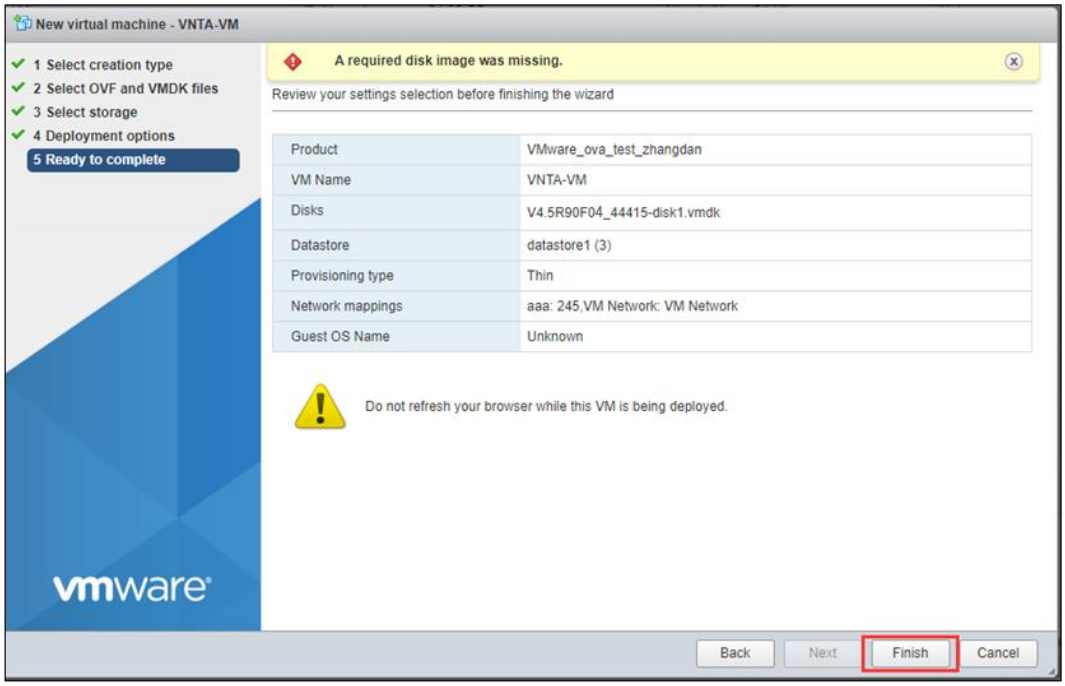
Figure 2-5 Selecting a network



Note	You are advised to select **Thick** for **Disk provisioning** for the fastest disk read and write speed.

Step 6 Confirm the configuration and then click **Finish**.

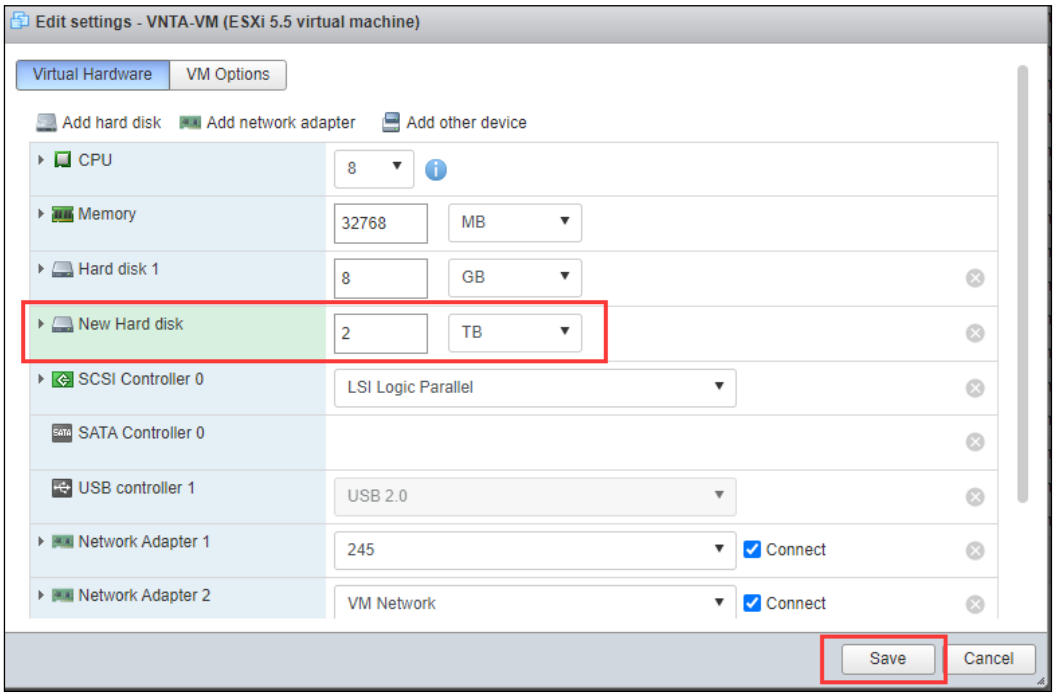
Figure 2-6 Confirming configuration



Step 7 Edit the VM by adding a hard disk with the minimum size of 2 TB.

Note	For the proper running of vNTA, you must add a hard disk before powering on vNTA.

Figure 2-7 Configuring a hard disk



Step 8 Click **Save** to commit the changes and then power on the VM.

----End

2.2 Configuring vNTA

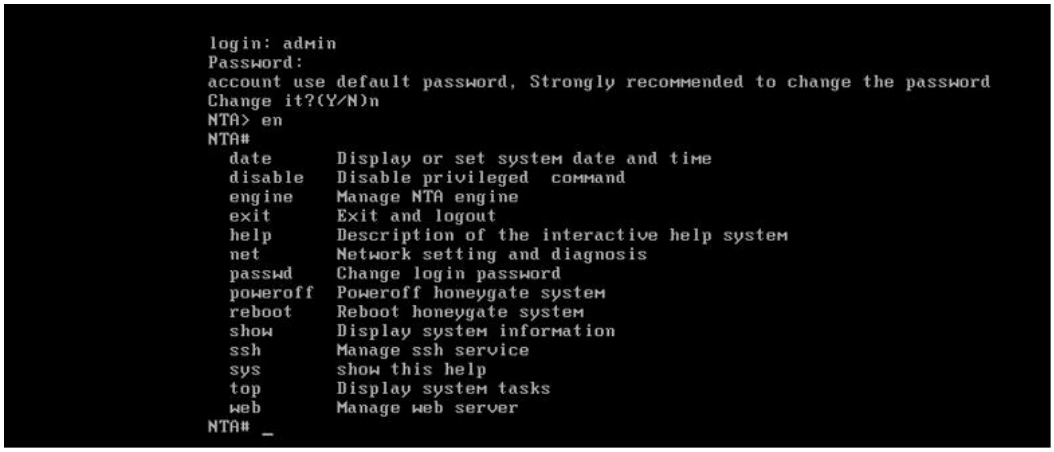
After importing the virtual template of vNTA to the VMware ESXi platform, you need to power on the virtual machine and then perform initial configuration via the console.

2.2.1 Login via the Console

Log in to the console with the default user name and password.

For information about default accounts, see appendix A Default Parameters.

Figure 2-8 Login window



2.2.2 Network Configuration

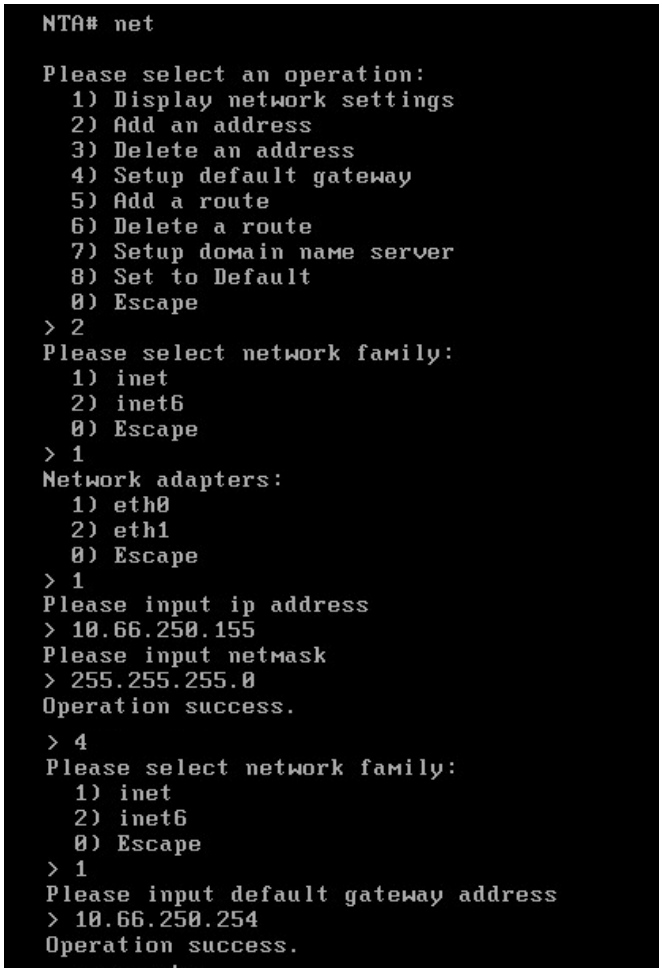
After logging in, configure network settings by reference to the description of console-based management in the *NSFOCUS NTA User Guide*.

Configure parameters.

1. Type **en** to enter the privileged mode.
2. Type **net** for network configuration.
3. Type **2** to add an IP address.
   - Type **1** to configure an IPv4 address.
   - Type **1** to select the eth0 network adapter.
   - Type a correct IP address and netmask.
4. Type **4** for gateway configuration.
   - Type **1** to configure an IPv4 address.
   - Type the confirmed default gateway IP address.

Figure 2-9 shows the window in which network settings have been configured.

Figure 2-9 Configuring network settings



2.2.3 Login via the Web

Note	• Before login, check whether **Block pop-ups** is selected or JavaScript is disabled in the browser in the browser. If yes, deselect it. • You are advised to use the latest Firefox or Chrome browser and set the browser resolution to 1024x768 or higher.

To log in to the web-based manager of vNTA, perform the following steps (Chrome is used as an example):

Step 1 Make sure that the client communicates properly with vNTA (open port 443 if the traffic needs to go through a firewall).

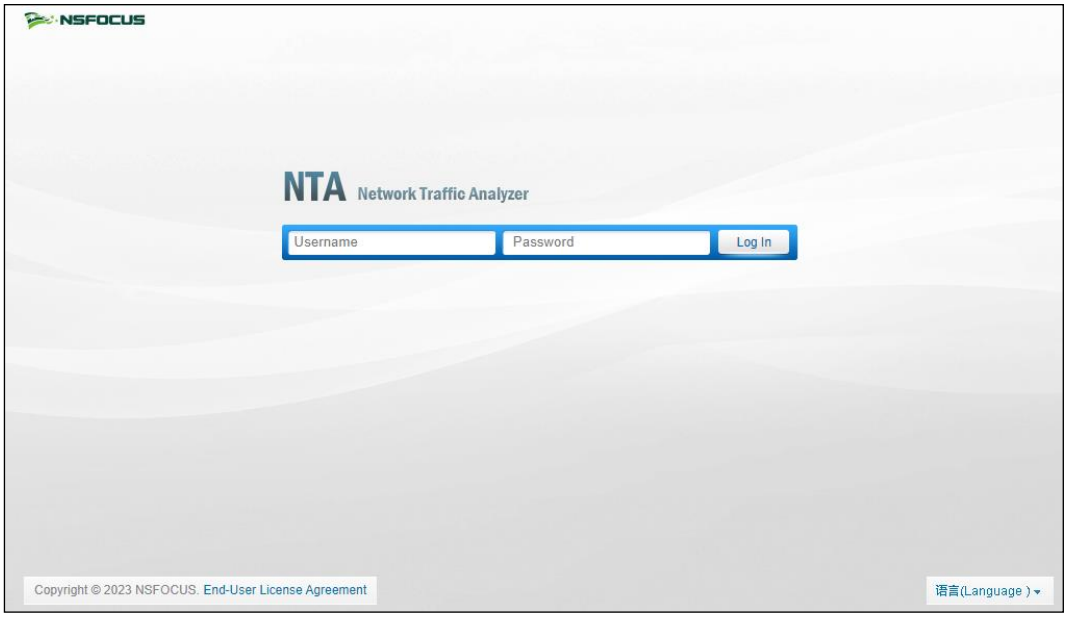
Step 2 Open the Chrome browser and connect to the management IP address of vNTA over HTTPS, for example, enter **https://10.30.2.204** in the address bar.

A security alert appears.

Step 3 Click **Proceed to 10.30.2.204 (unsafe)** to accept the channel secured by the NTA certificate.

The NTA login page appears, as shown in Figure 2-10.

Figure 2-10 Login page



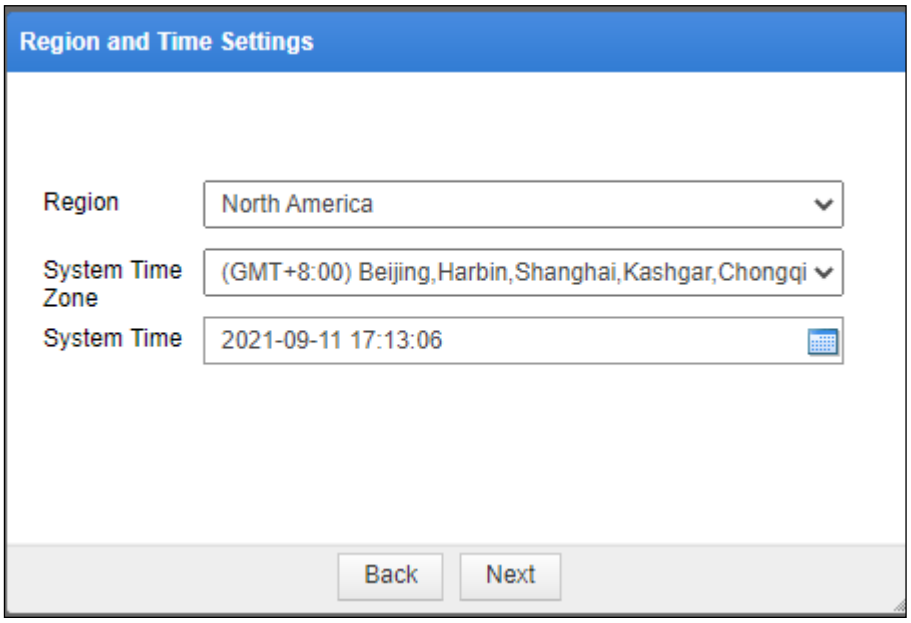
Step 4 Type the initial user name and password (both are **admin**), and then click **Log In**.

A dialog box shown in Figure 2-11 appears, prompting you to select a UI language.

Figure 2-11 Setting the UI language

Step 5 Select a language. After the system directs you to the page shown in Figure 2-12, set the locality of the device, time zone, and system time.

Figure 2-12 Setting the time zone and system time

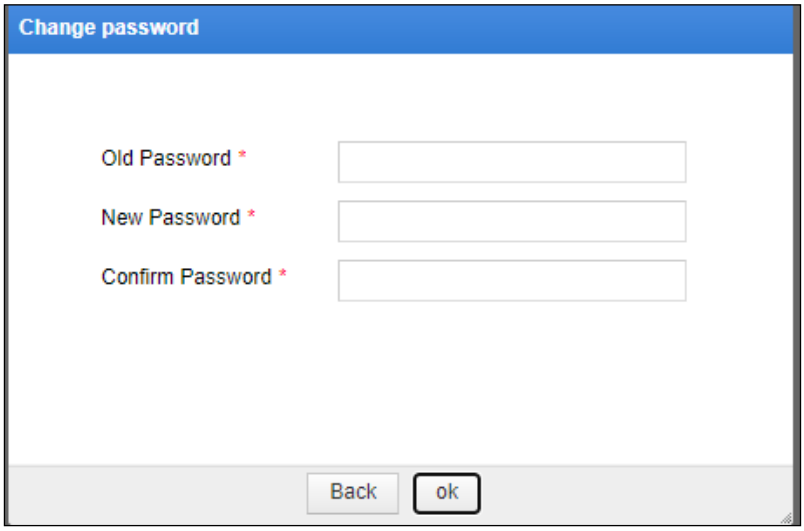


Step 6 Click **Next**.

The page for changing the initial password appears, as shown in Figure 2-13.

The new password must be a string of no less than eight characters and contain at least two of the following character types: English letters, digits, and special characters.

Figure 2-13 Changing the initial password



Step 7 After changing the initial password, click **OK** to make the settings take effect.

Then you successfully log in to the web-based manager.

----End

2.2.4 License Import

You can import vNTA after obtaining the license. Without such a license, vNTA cannot work properly.

Note that you must configure the authorization mode when importing the license. vNTA can work properly only after being authorized locally or on the cloud side.

You can import a license for vNTA using either of the following methods:

- Cloud-based authorization

  If this mode of authorization is adopted, vNTA will regularly instruct the cloud center to verify the validity of the license.
- Local authorization

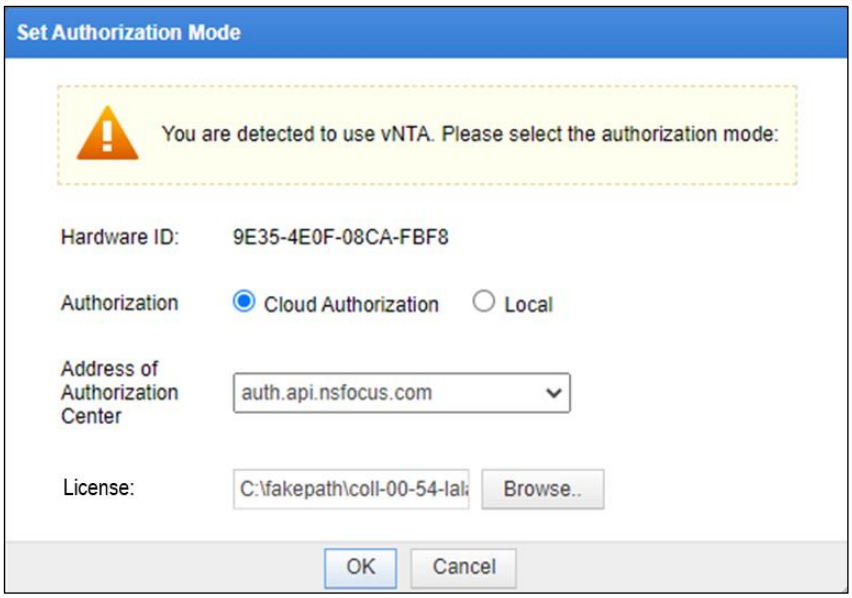
  For this mode of authorization, vNTA obtains authorization from ADS M.

2.2.4.1 Cloud-based Authorization

To import the license with cloud-based authorization, follow these steps:

Step 1 On the web-based manager of vNTA, choose **Administration** > **License** and select **Cloud Authorization** as the authorization mode.

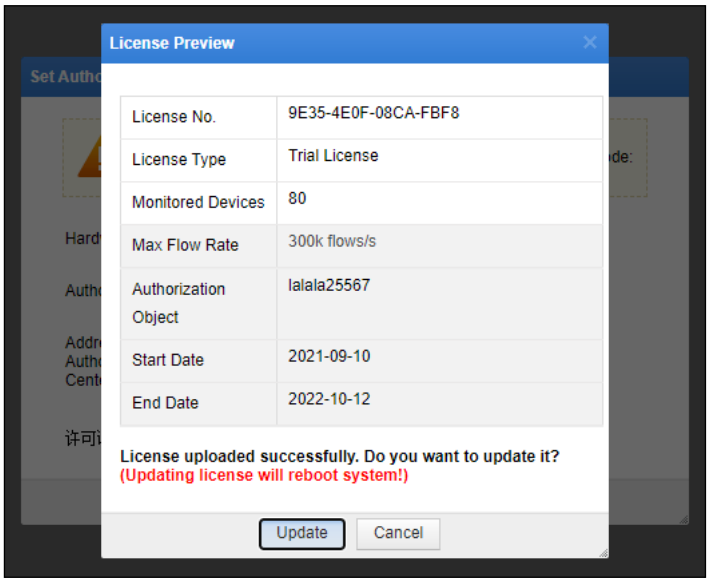
Figure 2-14 Selecting the authorization mode



Step 2 Browse to the license file stored in a local hard disk drive and upload it.

After the license is successfully uploaded, a license preview dialog box appears, as shown in Figure 2-15.

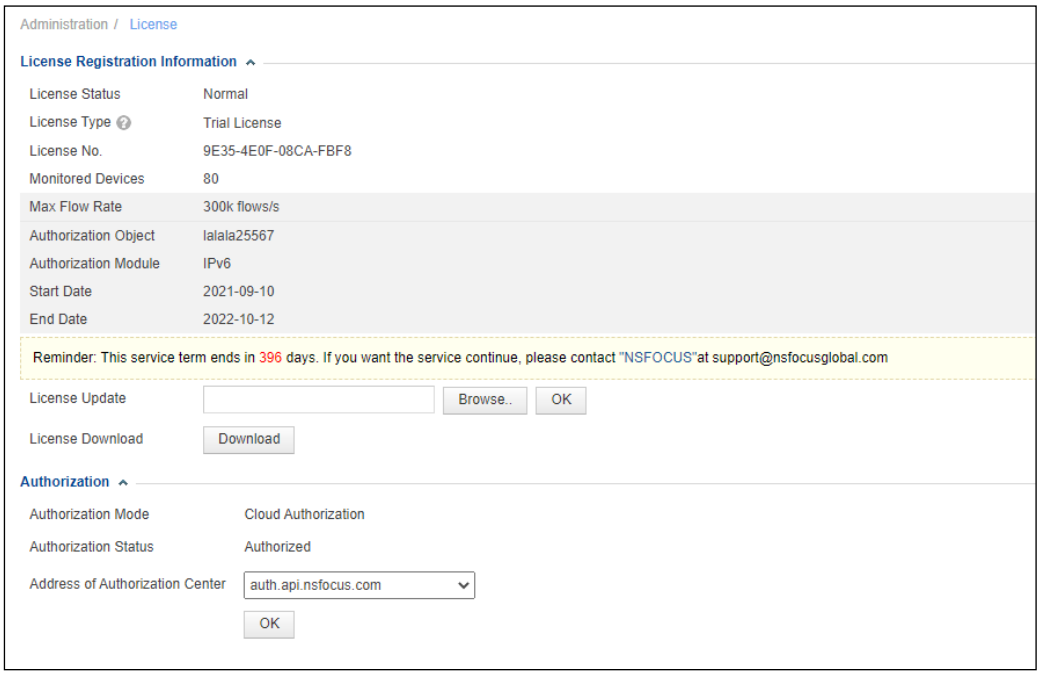
Figure 2-15 License preview



Step 3 Click **Update** to import the license to the system.

Figure 2-16 shows the **License** page with the license successfully imported.

Figure 2-16 License successfully imported



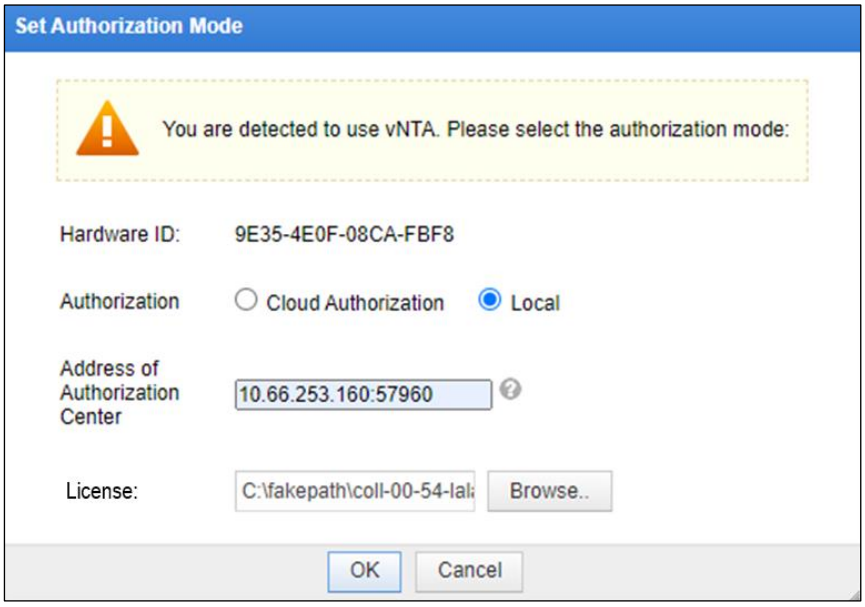
----End

2.2.4.2 Local Authorization

To import the license with local authorization, follow these steps:

Step 1 On the web-based manager of vNTA, choose **Administration** > **License** and select **Local** as the authorization mode.

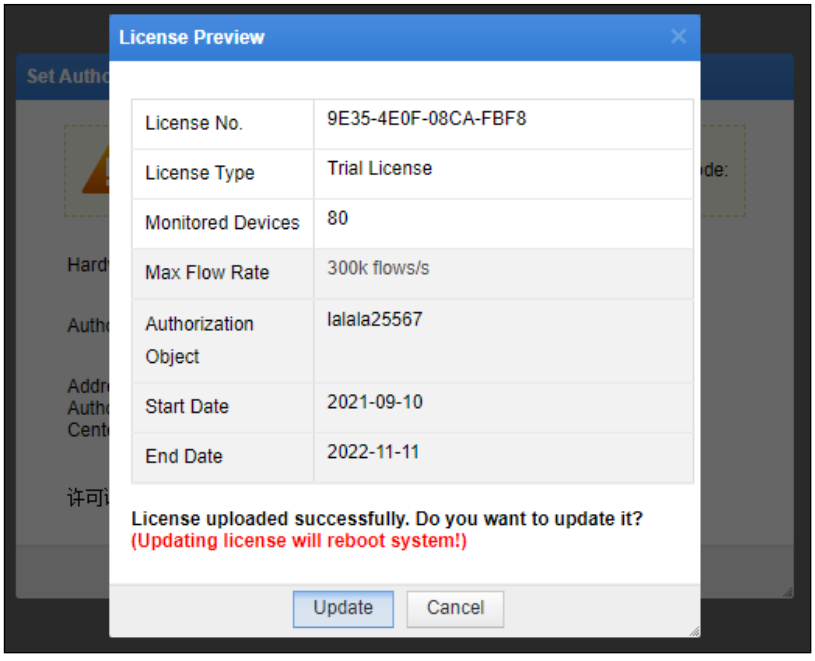
Figure 2-17 Selecting the authorization mode



Step 2 Browse to the license file stored in a local hard disk drive and upload it.

After the license is successfully uploaded, a license preview dialog box appears, as shown in Figure 2-18.

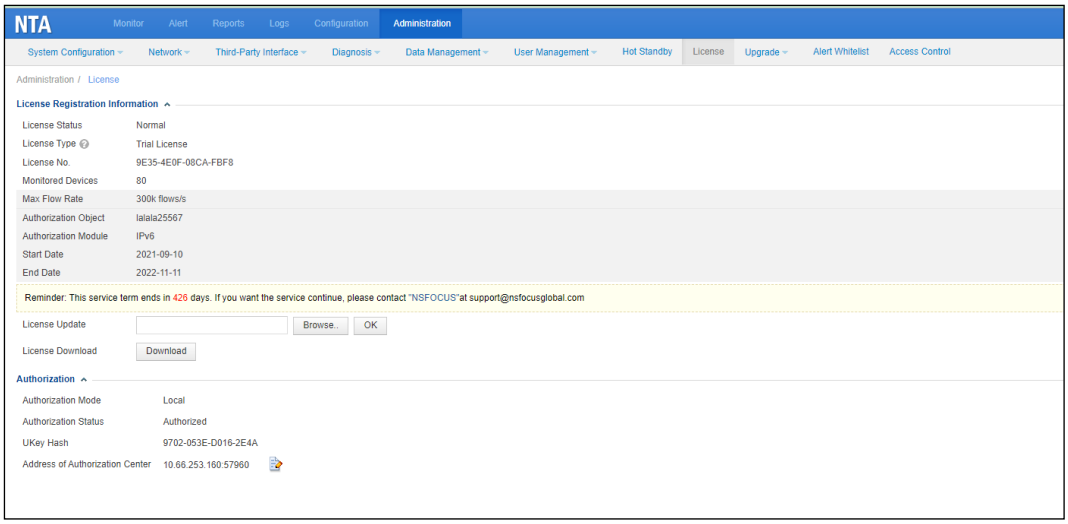
Figure 2-18 License preview



Step 3 Click **Update** to import the license to the system.

Figure 2-19 shows the **License** page with the license successfully imported.

Figure 2-19 License successfully imported



----End

3 Deployment on QEMU KVM

This chapter describes how to import the virtual template of vNTA to the QEMU KVM platform and configure vNTA on the platform.

3.1 Preparations for vNTA Installation

Before installing vNTA locally, you must make preparations listed in Table 3-1.

Table 3-1 List of items to be prepared for installing vNTA locally

Item		Description
Host	IP address	Make sure that the host can properly connect to the network.
	Account	This account must have privileges of a system administrator.
	Network interface	At least one 100M interface available
	Operating system (OS)	CentOS 7 recommended
	Virtual support	QEMU KVM 1.5.3 required
vNTA	vNTA image file	nta_r90f04.qcow2
	IP address	IP address of the management interface of vNTA

3.1.1 Enabling Virtualization

This section describes the virtualization procedure and provides an example to illustrate the procedure.

Procedure

To enable virtualization, follow these steps:

Step 1 Reboot the computer and open the system's BIOS menu.

You can open the BIOS menu by pressing **Delete**, **F1**, or **Alt+F4** during the reboot, depending on the operating system you use.

Step 2 Enable virtualization extensions in BIOS.

a. Open the **Processor** submenu.

The processor settings menu may be hidden in the **Chipset**, **Advanced CPU Configuration**, or **North Bridge** tab.

b. Enable **Intel Virtualization Technology** (also known as Intel VT-X).

The virtualization extensions may be labeled **Virtualization Extensions**, **Vanderpool**, or various other names, depending on the OEM and system BIOS.

AMD-V extensions cannot be disabled in the BIOS and should already be enabled.

c. Enable **Intel VTd** or **AMD IOMMU**, if these options are available.

They are used for PCI device assignment.

d. Select **Save & Exit**.

Note	The preceding configurations may vary with your motherboard, processor type, chipset, and OEM. For how to correctly configure your system, see your system's accompanying documentation.

Step 3 Restart the computer.

Step 4 Check whether virtualization is enabled.

Run the following command to check whether CPU virtualization extensions are available. If there is no command output, virtualization extensions are not enabled. In this case, you need to check and modify BIOS settings accordingly.

```
grep -E "vmx|svm" /proc/cpuinfo
```

Run the following command to check whether virtualization extensions are available. If there is no command output, virtualization extensions are not enabled and device assignment cannot be done.

```
ls /sys/kernel/iommu_groups/
```

----End

Example

The following is an example of enabling virtualization:

Step 1 Enable CPU virtualization (Intel Virtualization).

Figure 3-1 Enabling CPU virtualization (substep 1)

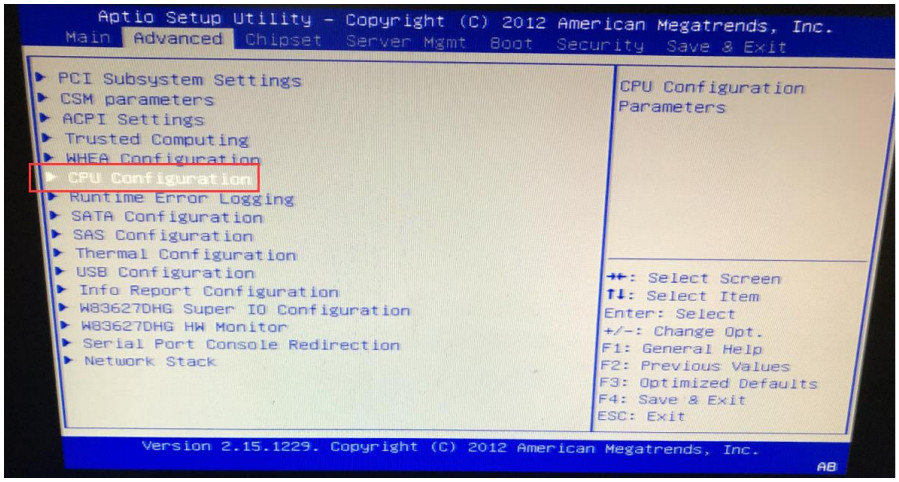
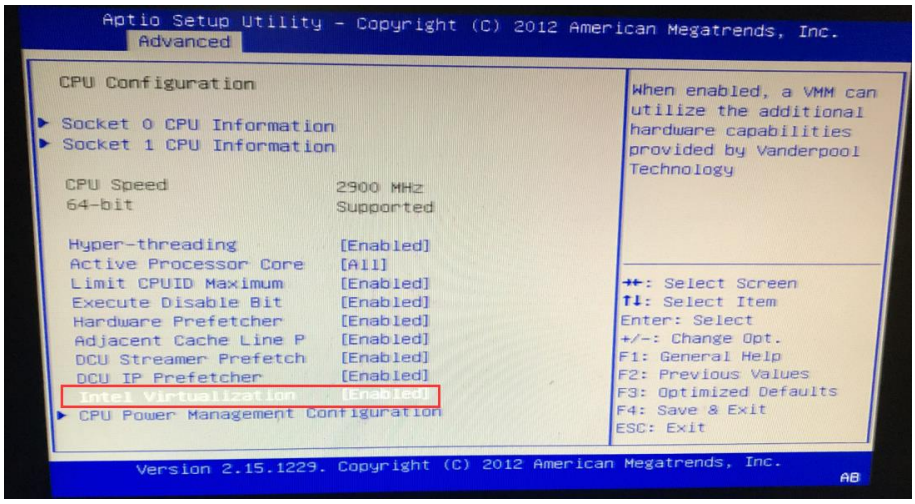


Figure 3-2 Enabling CPU virtualization (substep 2)



Step 2 Enable IOMMU support (Intel(R) VT-d) in the BIOS.

Figure 3-3 Enabling IOMMU support (Intel(R) VT-d) in the BIOS (substep 1)

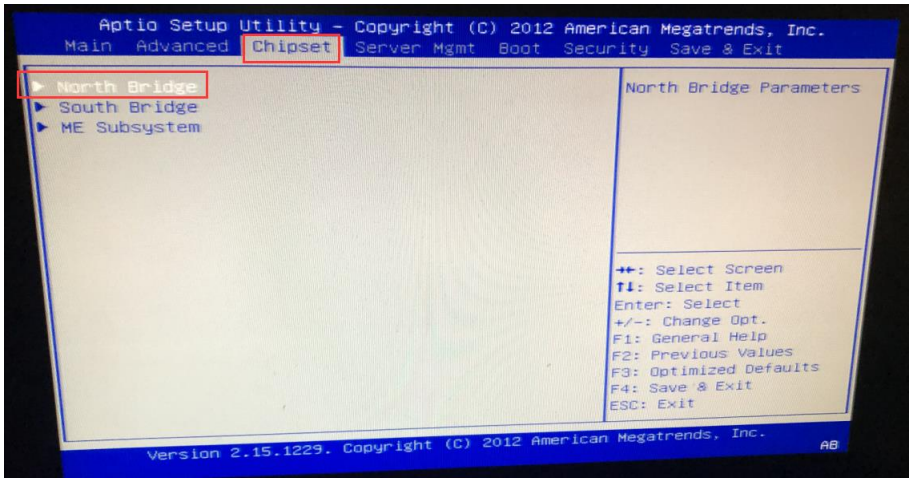


Figure 3-4 Enabling IOMMU support (Intel(R) VT-d) in the BIOS (substep 2)

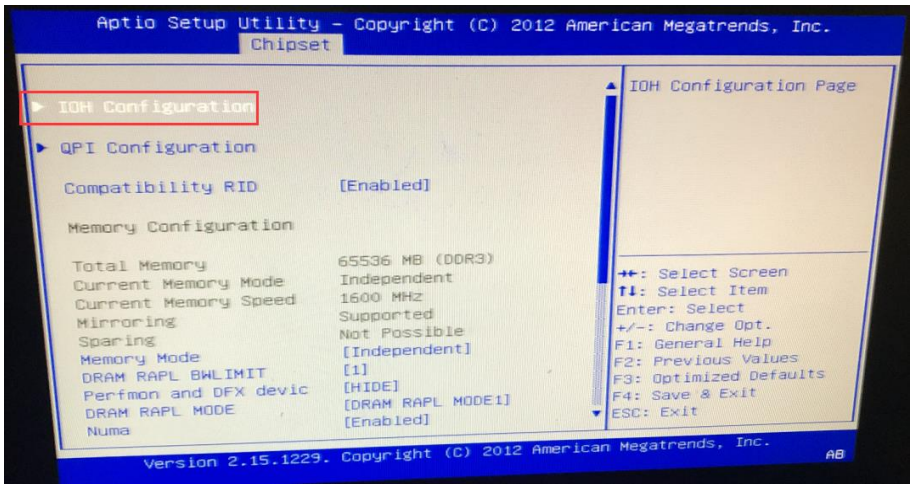


Figure 3-5 Enabling IOMMU support (Intel(R) VT-d) in the BIOS (substep 3)

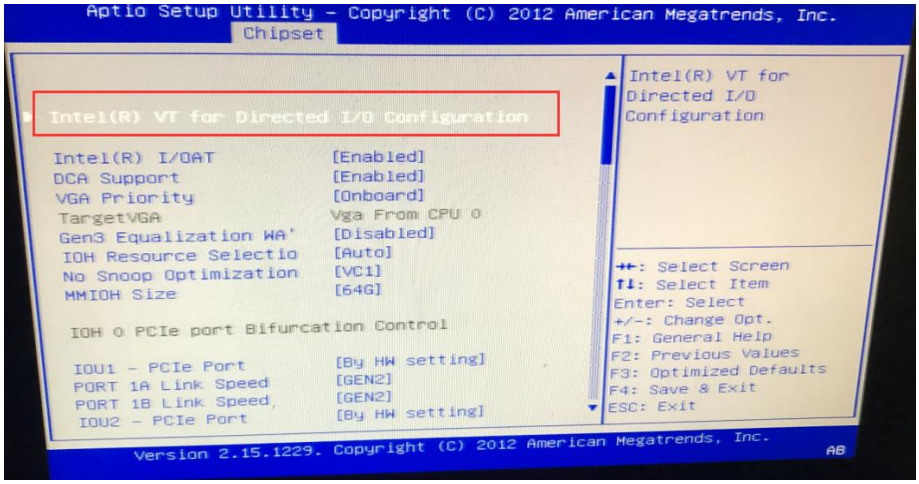
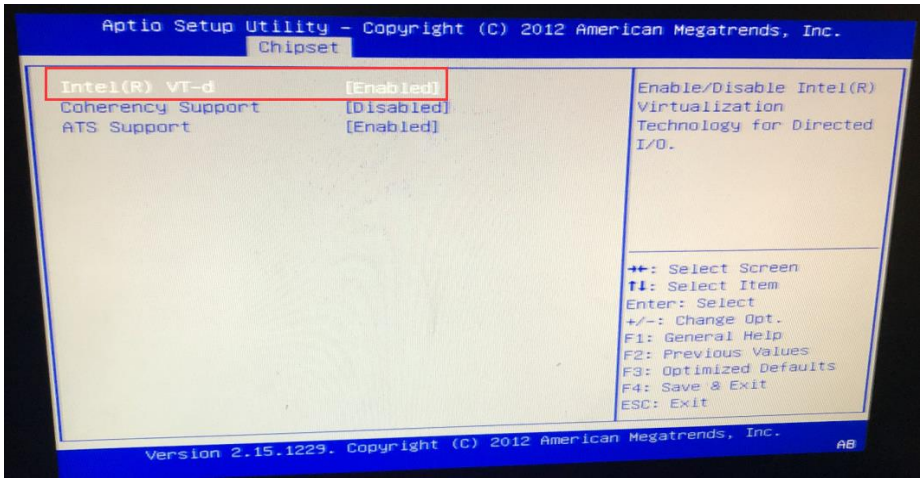
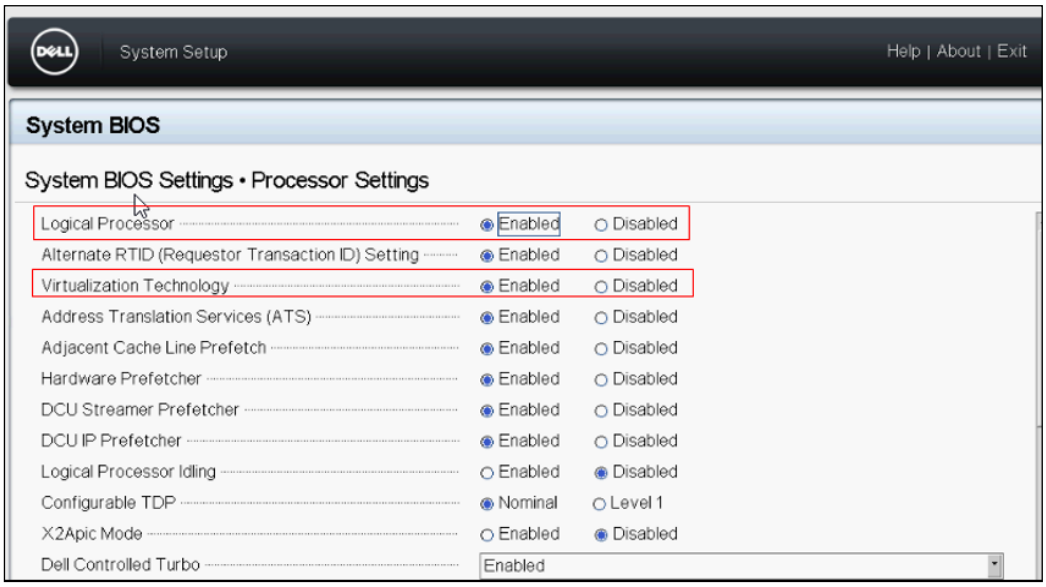


Figure 3-6 Enabling IOMMU support (Intel(R) VT-d) in the BIOS (substep 4)



Step 3 Choose **Bios > Processor Settings > Virtualization Technology** and set Dell R730 BIOS parameters.

Figure 3-7 Setting Dell R730 BIOS parameters



----End

3.1.2 Installing KVM

To install KVM, follow these steps:

Step 1 Install KVM as **root** from the network.

```
yum install kvm  virt-viewer virt-manager libvirt libvirt-python python-virtinst
libvirt-client qemu-kvm qemu-img bridge-utils libguestfs-tools -y
```

Step 2 Start KVM.

```
systemctl start libvirtd     #starts KVM
systemctl enable libvirtd   #configures KVM to start upon system boot
```

----End

3.1.3 Configuring the Network Bridge Connection

This section describes network bridge configuration requirements and provides an example to illustrate the configuration procedure.

Configuration Requirements

Create bridge interfaces. vNTA needs at least two bridge interfaces, with one as the management interface and the other as the service interface.

- By default, vNTA's management interface uses the bridge NIC virbr0.
- By default, vNTA's service interface uses the bridge NIC virbr1.

For details about configuration commands and parameters, visit the following link:

https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/networking_guide/sec-network_bridging_using_the_command_line_interface

Configuration Example

Create a bridge interface virbr0 on the Ethernet interface eno1 and set the IP address of this bridge interface.

Create a bridge interface virbr1 on the Ethernet interface eno3 and set the IP address of this bridge interface.

Step 1 Perform network configurations.

In **/etc/sysconfig/network-scripts/ifcfg-eno1**, configure parameters as follows:

```
DEVICE="eno1"
ONBOOT=yes
BRIDGE="virbr0"
```

In **/etc/sysconfig/network-scripts/ifcfg-virbr0**, configure parameters as follows:

```
IPADDR="192.168.1.100"
NETMASK="255.255.255.0"
GATEWAY="192.168.1.254"
DEVICE="virbr0"
ONBOOT="yes"
BOOTPROTO="none"
STP="on"
DELAY="0"
TYPE="Bridge"
```

In **/etc/sysconfig/network-scripts/ifcfg-eno3**, configure parameters as follows:

```
DEVICE="eno3"
ONBOOT=yes
BRIDGE="virbr1"
```

In **/etc/sysconfig/network-scripts/ifcfg-virbr1**, configure parameters as follows:

```
IPADDR="192.168.88.100"
NETMASK="255.255.255.0"
GATEWAY="192.168.88.254"
DEVICE="virbr1"
ONBOOT="yes"
BOOTPROTO="none"
STP="on"
DELAY="0"
TYPE="Bridge"
```

- The interface em3 should be changed to the actual interface of the server.
- The host information, including IPADDR, NETMASK, and GATEWAY, should be configured according to the actual network deployment scenario.

Step 2 Restart the network.

```
systemctl restart network
```

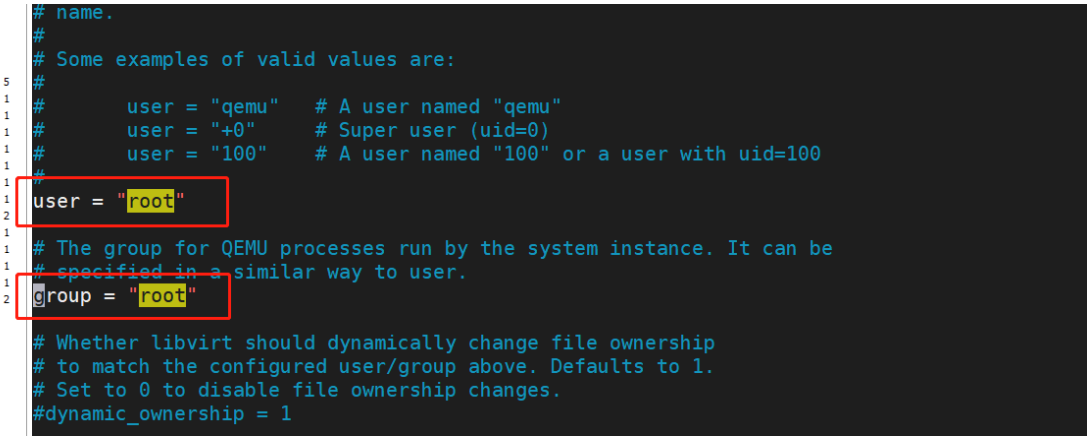
Step 3 Verify that the bridge interfaces are successfully configured.

```
brctl show
#-----The command output is as follows:--------
bridge name     bridge id               STP enabled     interfaces
virbr0          8000.002590f4355e       yes             eno1
virbr1          8000.002590f43561       yes             eno3
```

----End

3.1.4 Modifying the Configuration File

Edit the configuration file **/etc/libvirt/qemu.conf** as follows:



3.2 vNTA Installation

Note	The following operations, namely command executions and file edits, are all done on a Linux host.

3.2.1 Importing the vNTA Image

Before importing the vNTA image, you need to obtain **nta_r90f04.qcow2**.

To import the vNTA image, follow these steps:

Step 1 Log in to the host and create the **/home/NTA** directory.

```
mkdir -p /home/NTA
```

Step 2 Put the vNTA image file in the **/home/NTA** directory.

Step 3 Create a hard disk for vNTA's use with a minimum size of 2 TB, and view hard disk information.

```
qemu-img create -f qcow2 nta_disk.qcow2 2T
[root@localhost NTA]# qemu-img info nta_disk.qcow2
image: nta_disk.qcow2
file format: qcow2
```

```
virtual size: 2.0T (2199023255552 bytes)
disk size: 224K
cluster_size: 65536
Format specific information:
    compat: 1.1
    lazy refcounts: false
```

Step 4 Run the following command to import vNTA:

```
virt-install --name=vNTA --ram 32768 --vcpus=24 --disk
bus=virtio,path=./nta_r90f04.qcow2 --disk bus=virtio,path=./nta_disk.qcow2  --
network bridge=virbr0,model=e1000 --network bridge=virbr1,model=e1000 --
noautoconsole --boot hd --nographics
```

The blue part of the above command needs to be specified by the user:

- vNTA specifies the name of the virtual machine.
- virbr0 specifies the name of the network bridge used by the management interface.
- virbr1 specifies the name of the network bridge used by the service interface.
- **--network** sets NICs. If there are multiple service interfaces, please add them by yourself.

----End

3.2.2 Enabling vNTA

To enable vNTA, follow these steps:

Step 1 Start vNTA.

```
virsh start vNTA
```

Step 2 Several minutes later, set the IP address of the management interface, subnet mask, and gateway of vNTA.

Step 3 Run the following command on the host to connect to the console of vNTA:

```
virsh console vNTA --force
```

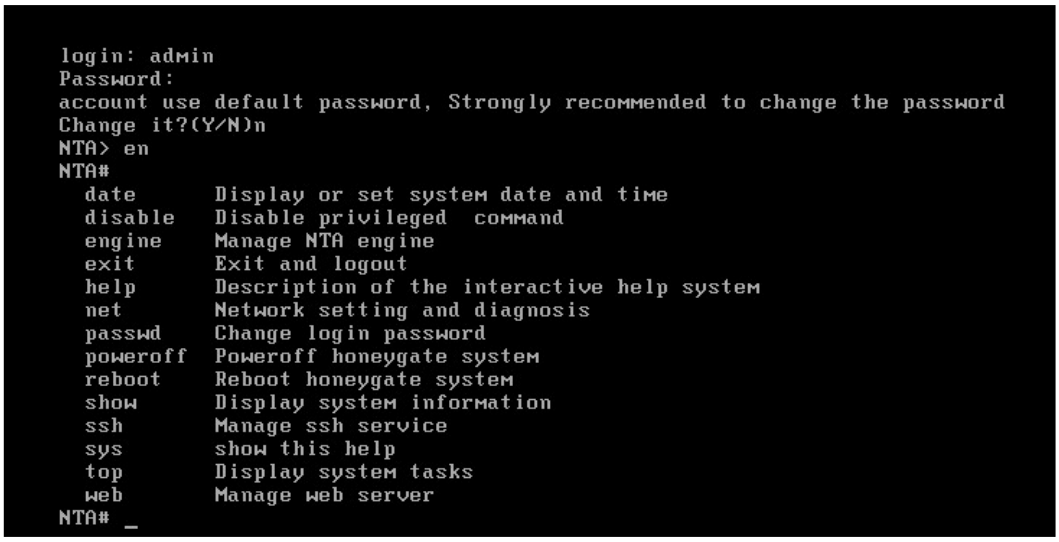
----End

3.2.3 Login via the Console

Log in to the console with the default user name and password.

For information about default accounts, see appendix A Default Parameters.

Figure 3-8 Login window



3.2.4 Network Configuration

The network configuration method is similar to that for configuration on the VMware ESXi platform. For details, see section 2.2.2 Network Configuration.

A Default Parameters

A.1 Default Network Settings

A.1.1 Local Interfaces

eth0 (interface M)	192.168.1.100/255.255.255.0
Other Interfaces	None

A.1.2 Default Gateway

IPv4 Gateway	192.168.1.1
IPv6 Gateway	None

A.2 Default Accounts

Role	User Name	Password	SSH Port
Web administrator	admin	admin	/
Console administrator	admin	admin	/
SSH administrator	conadmin	k@eT!23i	50022

A.3 Console Communication Parameters

Baud Rate	115200
Data Bits	8

B FAQ

After the KVM platform is installed, it may fail to start, as shown in Figure B-1. This is just an issue about the starting sequence, with no impact on the proper functioning of the system.

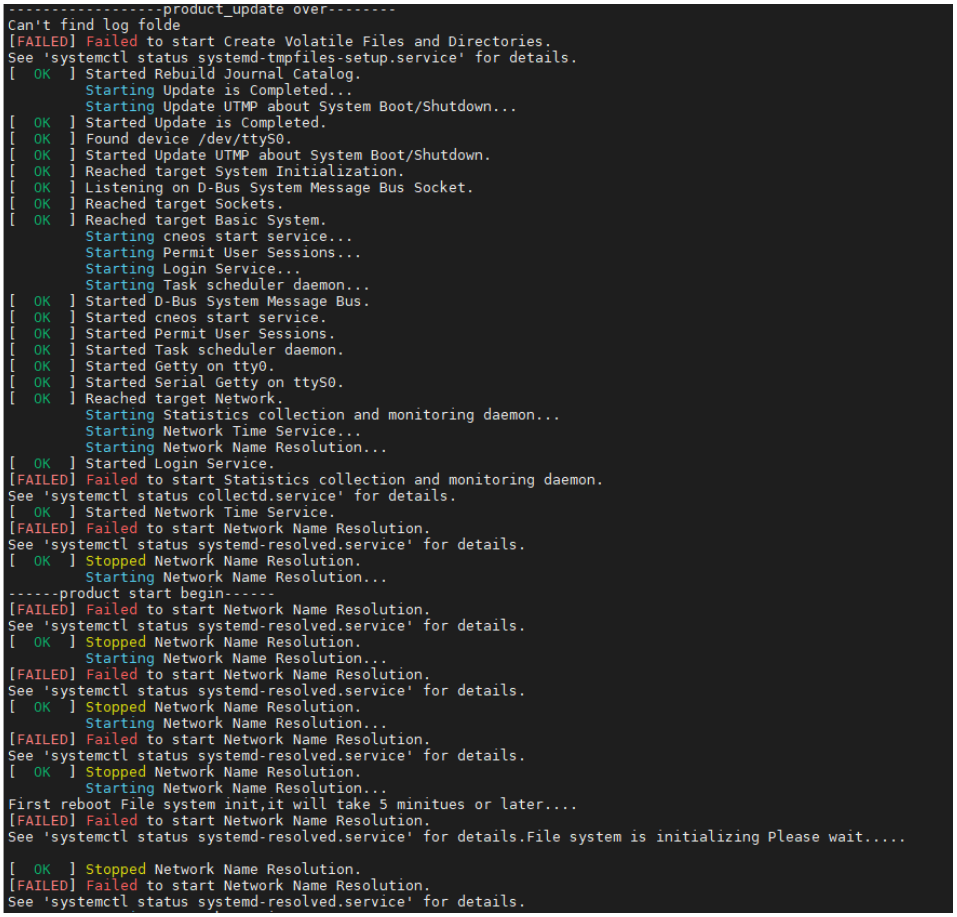



Figure B-1 Starting the installation file