Allied Telesis™

AR4000S-Cloud on Microsoft Hyper-V Installation Guide

Installation Guide

Introduction

The AR4000S-Cloud is a virtual router appliance product that provides functions such as VPN and firewall.

This installation guide enables you to install and configure your AR4000S-Cloud in a Microsoft Hyper-V environment.

Microsoft Hyper V recommended system requirements

The recommended system requirements for the Hyper-V environment are as follows:

Physical Machine - the recommended requirements for physical servers that provide a Hyper-V environment:

- CPU: Intel Core i7-8700K Processor (6 cores 3.70 GHz) or higher

- Memory: 32GB or more

- Storage: 32GB or more

- Network interfaces: 1-12

- Host OS

    - Windows 10

    - Windows Server 2019

    - Windows Server 2016

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OPERATING SYSTEM

Virtual Machine - the recommended requirements for allocating resources to the AT-AR4000S-Cloud Virtual Machine:

- CPU: 1 or more

- Memory: 32GB or more

- Storage: 32GB or more

- Network interfaces: 1-12

For more details about the AR4000S-Cloud, please refer to the AR4000S-Cloud Datasheet.

Contents

Procedure overview

The general procedure for setting up this product on Hyper-V is as follows:

1. Select installation method

Select the installation method for this product. You can install from either an ISO image or a VHD image.

2. Prepare the image file

Download the ISO or VHD image file of this product to your Hyper-V host, depending on the installation method you have chosen.

3. Create the virtual machine

Create a virtual machine on the Hyper-V host to run this product.

4. Configure the virtual switch

Create a virtual switch on the Hyper-V host and set up a virtual network.

5. Configure virtual machine settings

Change the settings of the created virtual machine for this product.

Select installation method

In a Hyper-V environment, you can select one of the following two installation methods for this product.

Depending on the installation method you choose, this will determine:

- the image file to be used,

- the configuration of the virtual machine, and

- the firmware update method.

ISO image method

This method allows you to boot from the ISO image in the virtual DVD drive.

- Set the ISO image of this product in the virtual DVD drive, and create a virtual HDD (hard disk) for data storage on the user side.

- The firmware will boot from the ISO image.

- Data such as configuration is saved in the virtual flash area that is automatically created in the virtual HDD.

- The firmware is updated by changing the ISO image set in the virtual DVD drive from the Hyper-V manager.

VHD image method

This method allows you to use the VHD image as a virtual HDD (hard disk).

- The VHD image is used as a virtual HDD (hard disk), rather than using a virtual DVD drive.

- The firmware boots from the firmware included in the VHD image.

- Data such as configuration is saved in the virtual flash area included in the VHD image.

- The firmware is updated by downloading the new ISO image, and executing the **software-upgrade** command from the user interface (CLI or GUI).

Prepare the image file

Depending on your chosen installation method, download or copy the ISO or VHD image file to your Hyper-V host.

Image files are distributed with names in the following format. The "X.Y.Z-A.B" section contains the version.

ISO image file:

```
AR4000S-Cloud-X.Y.Z-A.B.iso
```

VHD image file:

```
AR4000S-Cloud-X.Y.Z-A.B.vhd
```

Create the virtual machine

Create the virtual machines required to run this product on the Hyper-V host.

1. Start **Hyper-V Manager** from the Start menu.

2. If the Hyper-V host name (local server name) you are working on is not displayed in the left pane of the Hyper-V Manager window, add it using the following procedure.

   If the local server name is displayed, proceed to step 3.

- Right-click **Hyper-V Manager** in the left pane and select **Connect to Server** from the context menu.
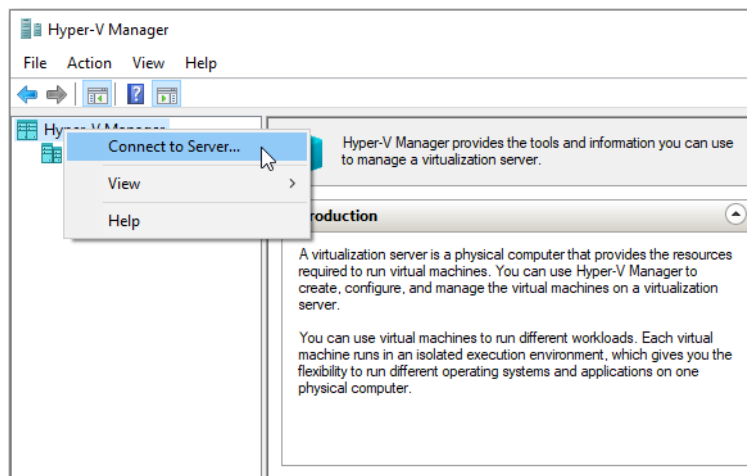
- In the **Select Computer** dialog, select **Local Computer** and click **OK**.
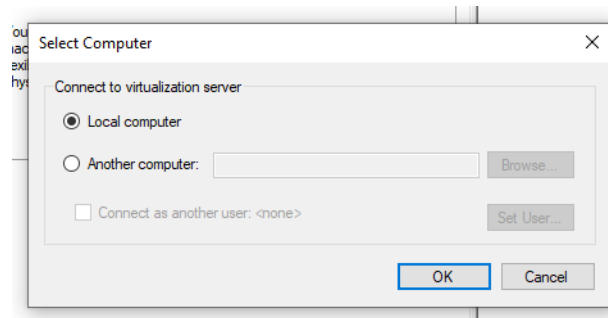
3. Right-click the local server name displayed in the left pane and select **New > Virtual Machine** from the context menu.
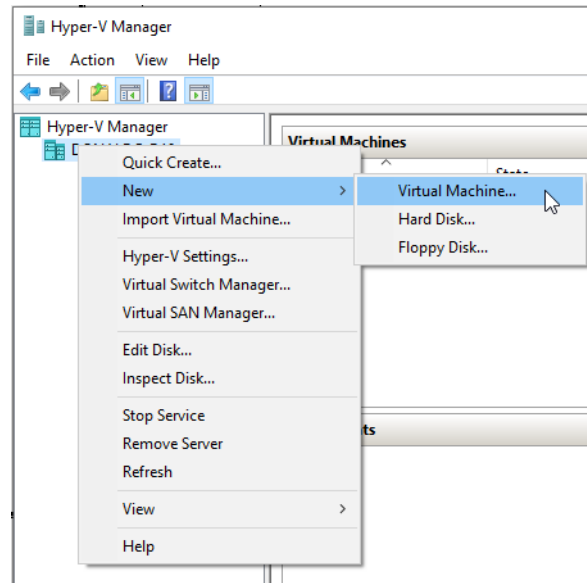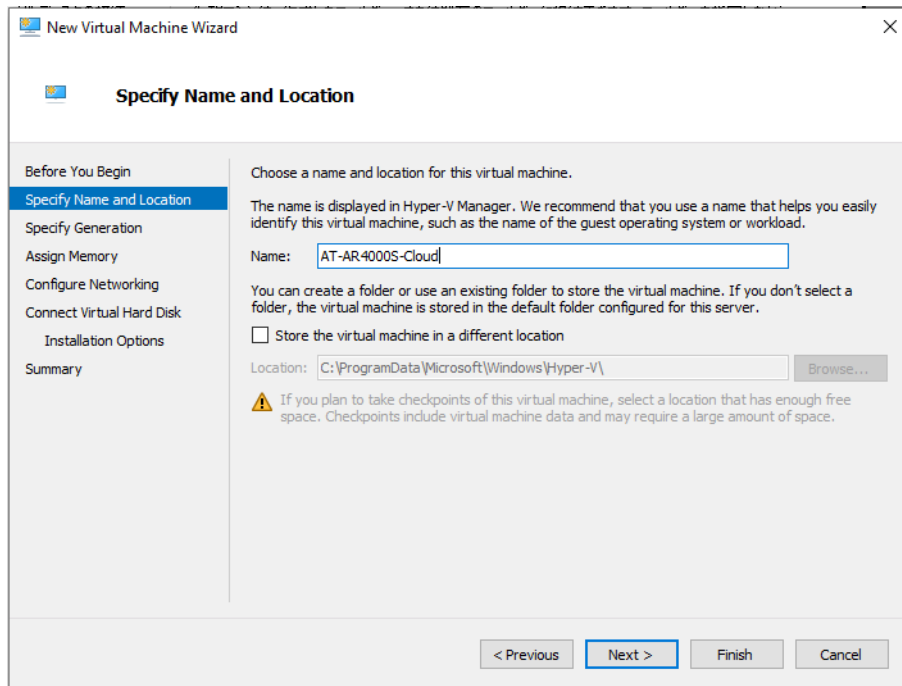
4. When the **Before You Begin** screen of the **New Virtual Machine Wizard** appears, click **Next**.
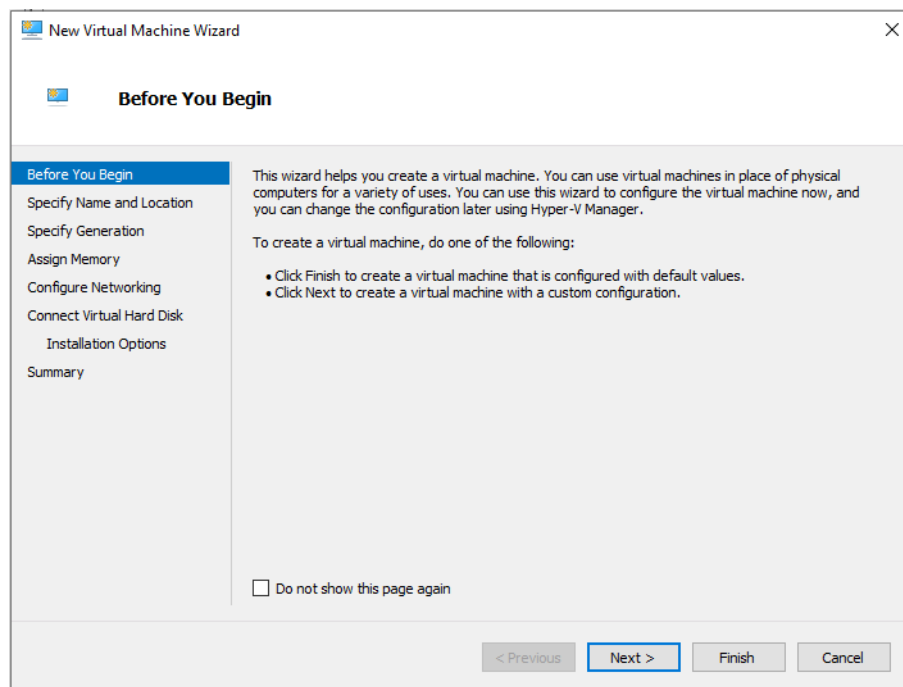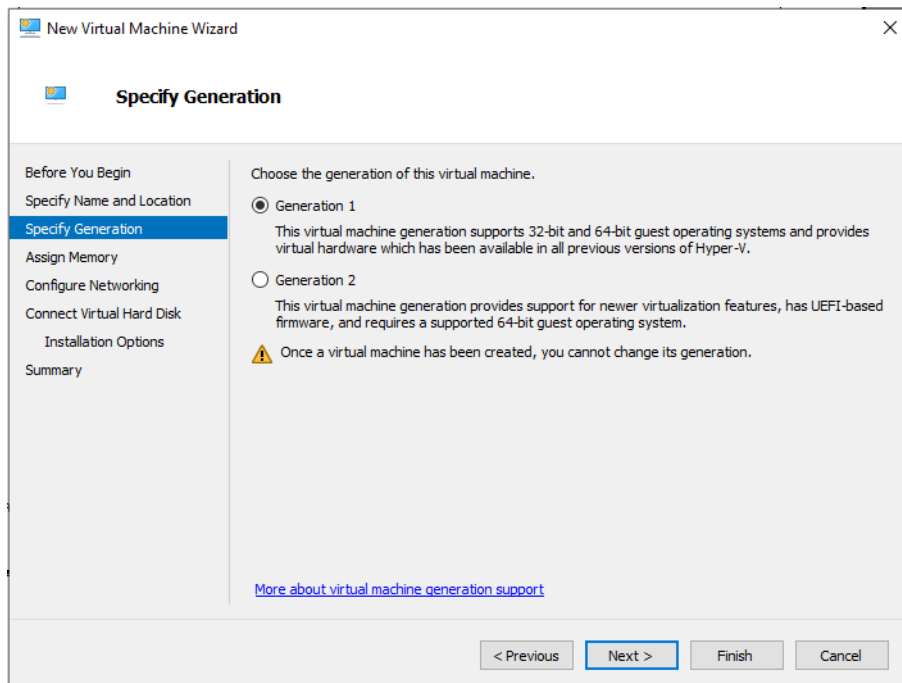
5. On the **Specify Name and Location** screen, enter the name of the virtual machine in the **Name** field and click **Next**.

   You can leave the default storage location for the virtual machine.

6. On the **Specify Generation** screen, select **Generation 1** and click **Next**.

7. On the **Assign Memory** screen, enter the amount of memory to be allocated in the **Startup memory** field and click **Next**. See the Microsoft Hyper V recommended system requirements section for recommended system requirements.

    Do not check "Use Dynamic Memory for this virtual machine".
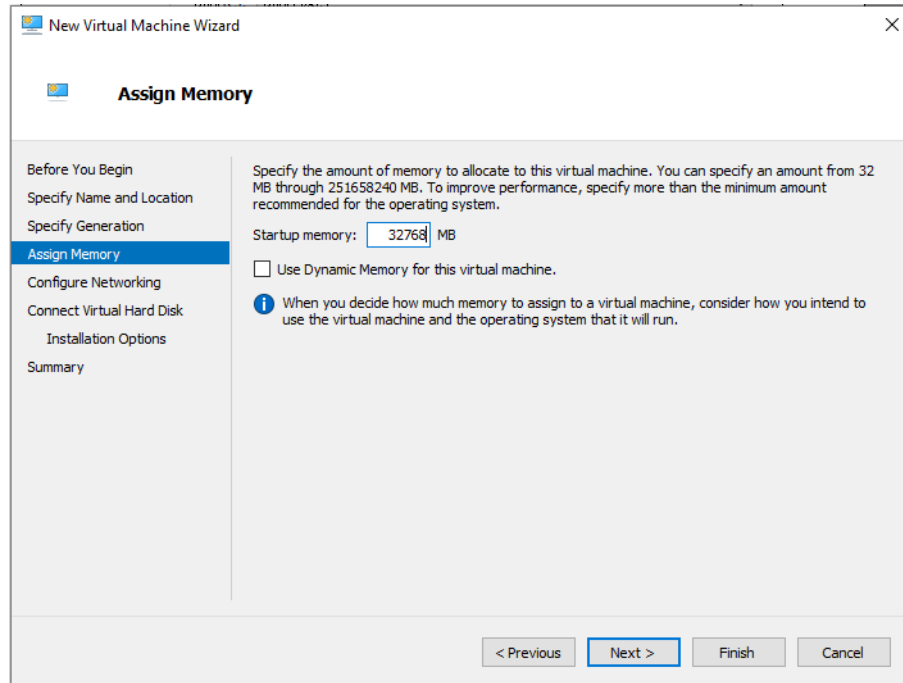
8. On the **Configure Networking** screen, leave the **Connection** field set to **Not Connected** and click **Next**. You will configure the network later.
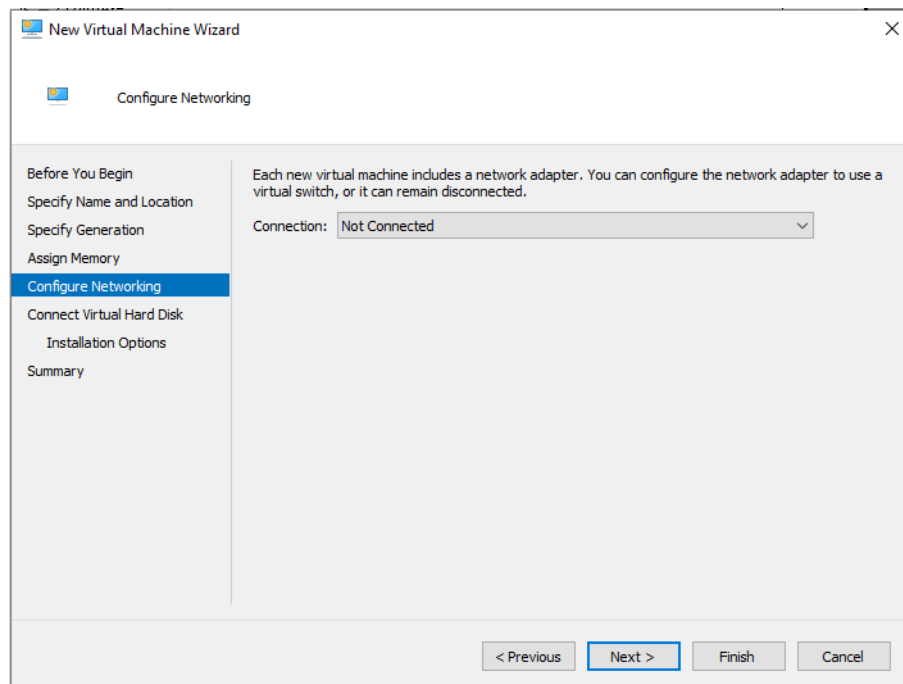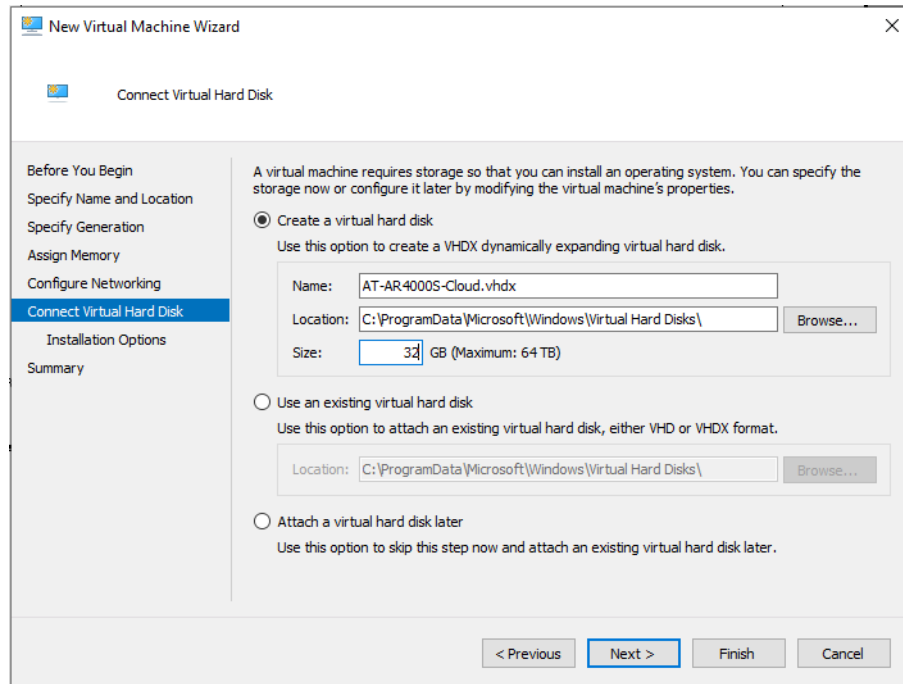
9. The **Connect Virtual Hard Disk** screen has different steps depending on the installation method you choose.

For the ISO image method:

■ Select **Create a virtual hard disk**. Specify the **Name**, enter the space to be allocated in the **Size** field, and click **Next**. See the Microsoft Hyper V recommended system requirements section for recommended system requirements.
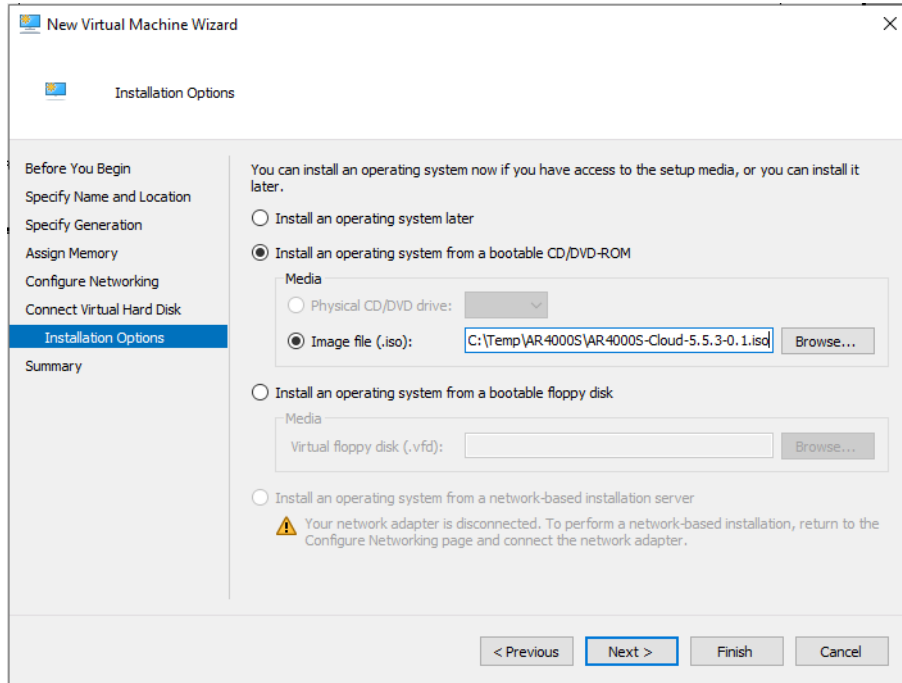
Leave the **Location** as default.

■ The **Installation Options** screen will be displayed. Select **Install an operating system from a bootable CD/DVD-ROM** and select the ISO of this product in the **Image file (.iso)** field. Specify the image file and click **Next**.

Note: This screen is not displayed in the VHD image method.

For the VHD image method:

■ Select **Use an existing virtual hard disk**. Click the **Browse** button, select the location of the VHD image file, and click **Next**.
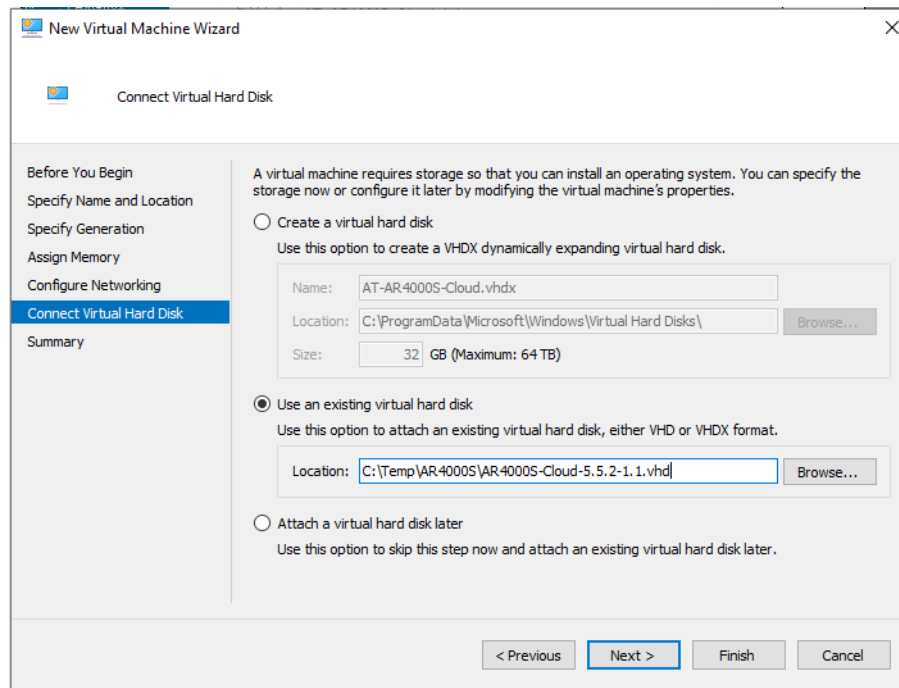
10. Review the summary on the **Completing the New Virtual Machine Wizard** screen. If there are no problems, click **Finish** to close the wizard screen.

Note: The screen below is an example for the ISO image method.
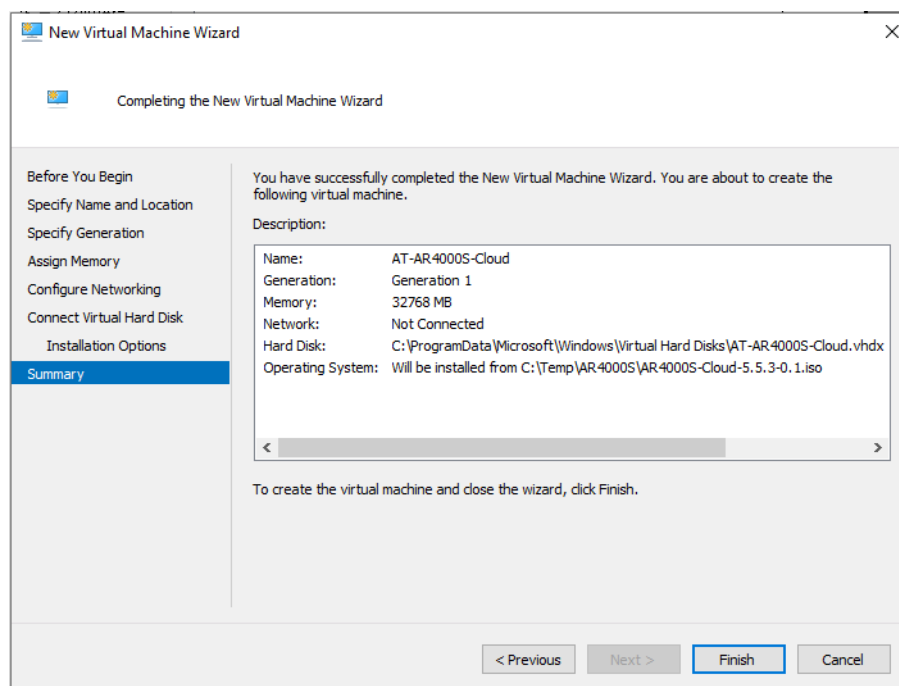
11. The creation of the virtual machine is now complete.

The created virtual machine will now be displayed in the **Virtual Machines** pane of Hyper-V Manager.
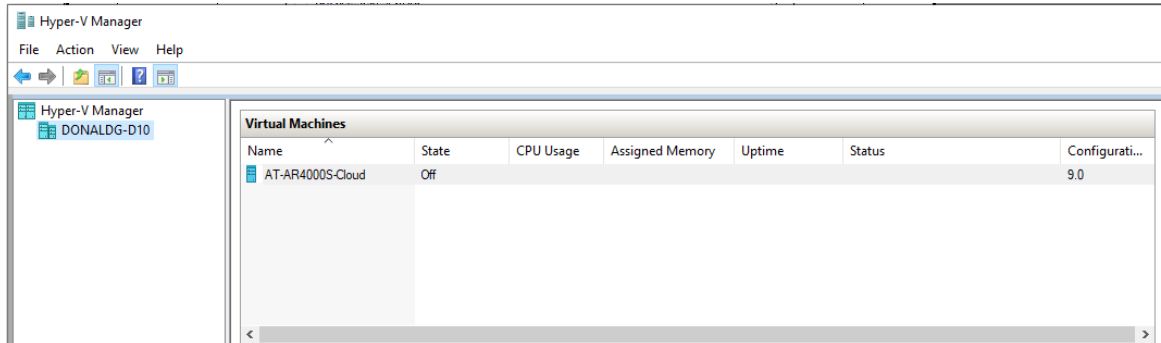
Configure the virtual switch

Next, configure the virtual switch.

1. Right-click the Hyper-V host name (local server name) displayed in the left pane of Hyper-V Manager and select **Virtual Switch Manager** from the context menu.

2. If the virtual switch containing the name of the network adapter used in this product is displayed in **Virtual Switch** on the left pane, select it and change the settings below.

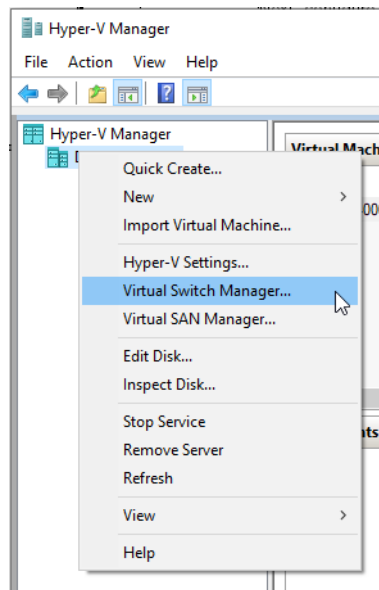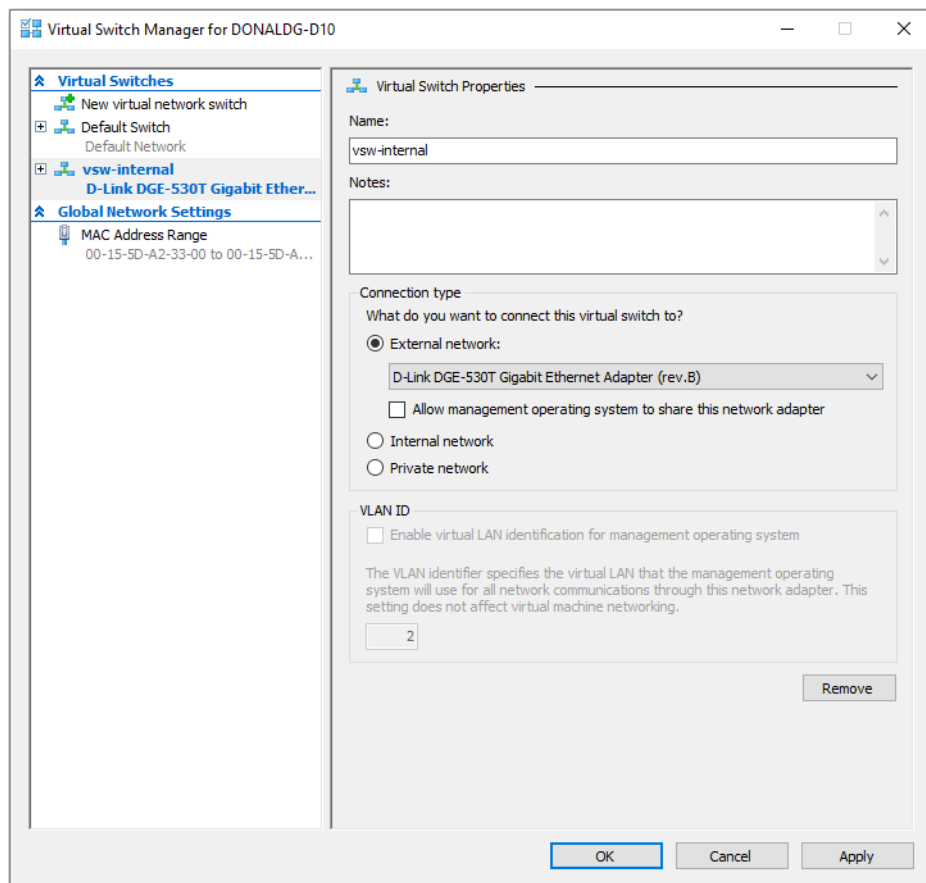If not, select **New virtual network switch** to create a new virtual switch and configure the settings as shown below.
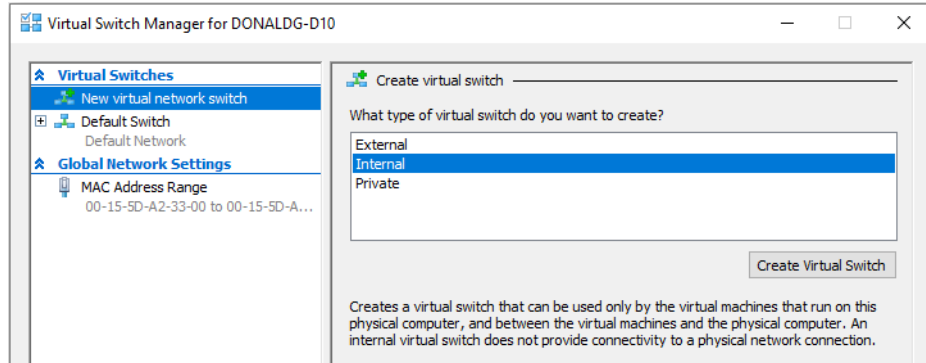
- Enter an appropriate virtual switch name in the **Name** field.

- Under **Connection type**, select the appropriate option for the connection destination of the virtual switch.

  - If you select **External network**, select the network adapter from the drop-down list.

After configuring the virtual switch, click **OK** to close the **Virtual Switch Manager** screen.

Configure virtual machine settings

Next, configure the settings for the new virtual machine.
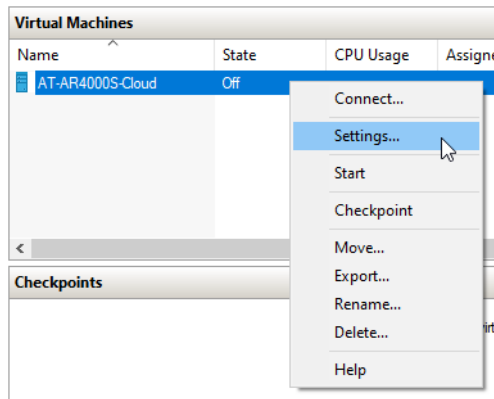
1. Right-click the virtual machine in the **Virtual Machines** pane and select **Settings** from the context menu.

2. By default, Hyper-V virtual machines automatically synchronize with the time of the Hyper-V host. You can disable automatic synchronization so that the virtual machine can synchronize its own time. To do this, go to **Management > Integration Services** in the left pane, uncheck **Time synchronization** under Services, and click **Apply**.
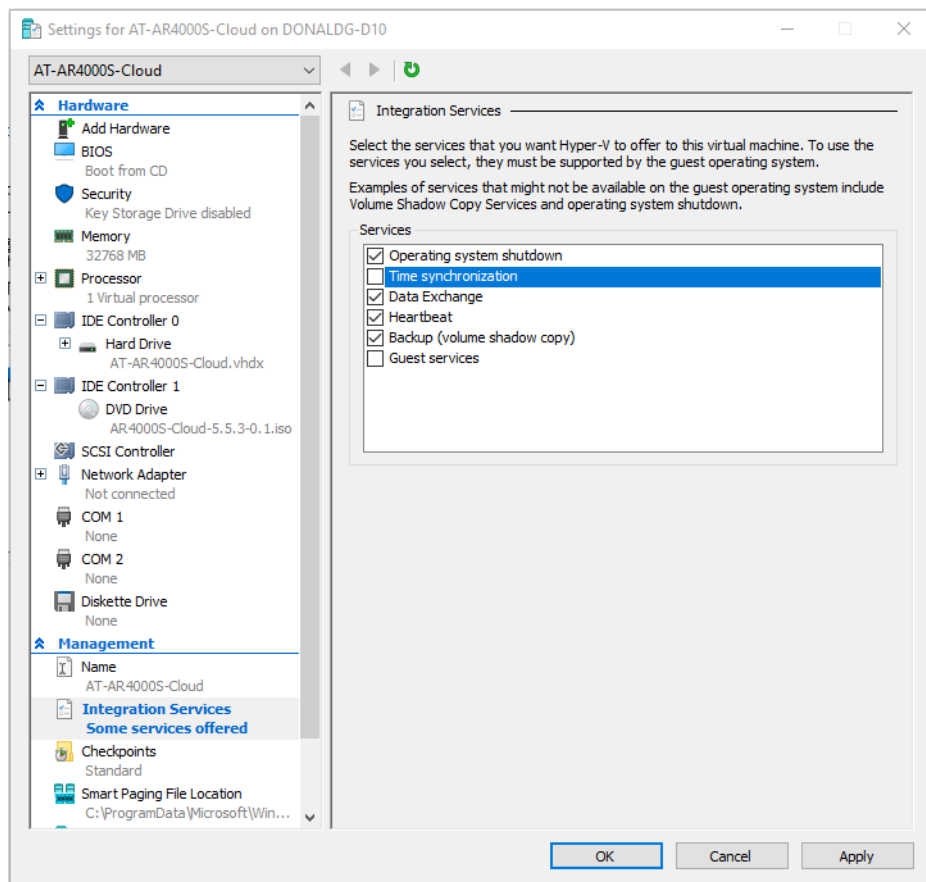
3. For the ISO image method only, select **Hardware > BIOS** in the left pane and confirm that **CD** is at the top of the **Startup order** displayed.

    If **CD** is not at the top, change the order with the buttons on the right and click **Apply**.
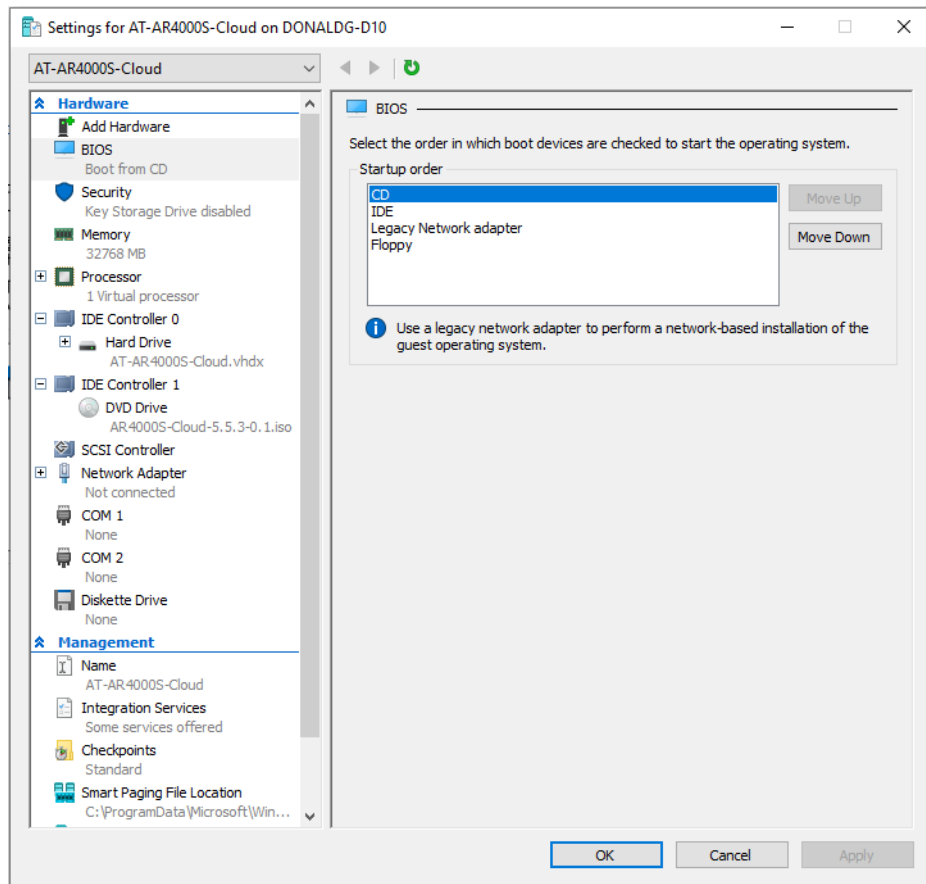
4. Select **Hardware > Processors** in the left pane. Enter the number of virtual CPUs to be allocated in **Number of virtual processors**, and click Apply. See the Microsoft Hyper V recommended system requirements section for recommended system requirements.
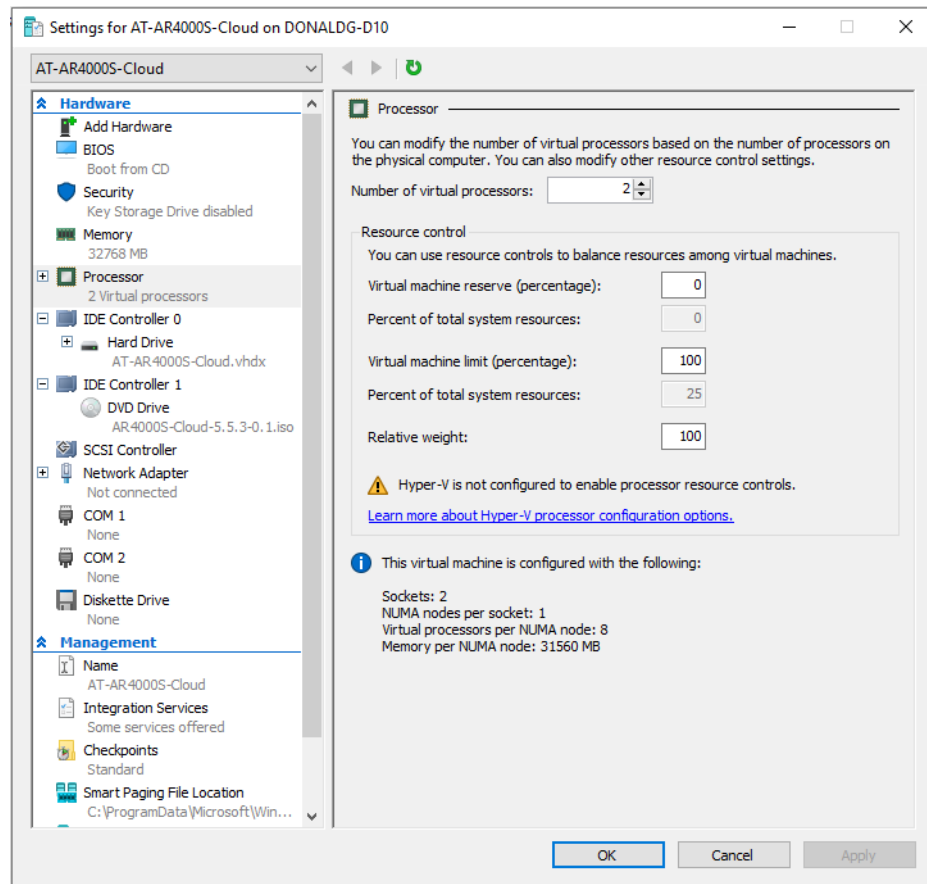
5. Select **Network Adapters** in the left pane to display the **Network Adapters** screen.
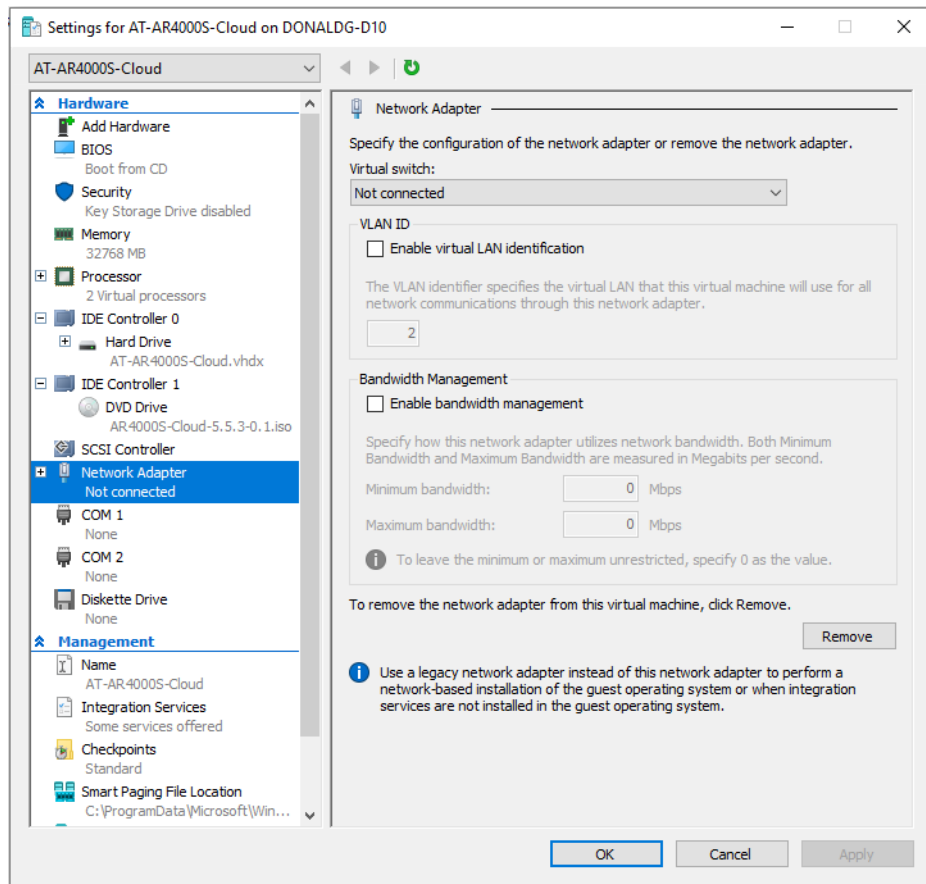
At first, **Virtual switch** is set to **Not connected**. Select the virtual switch name created in the virtual switch settings from the drop-down list and click **Apply**.
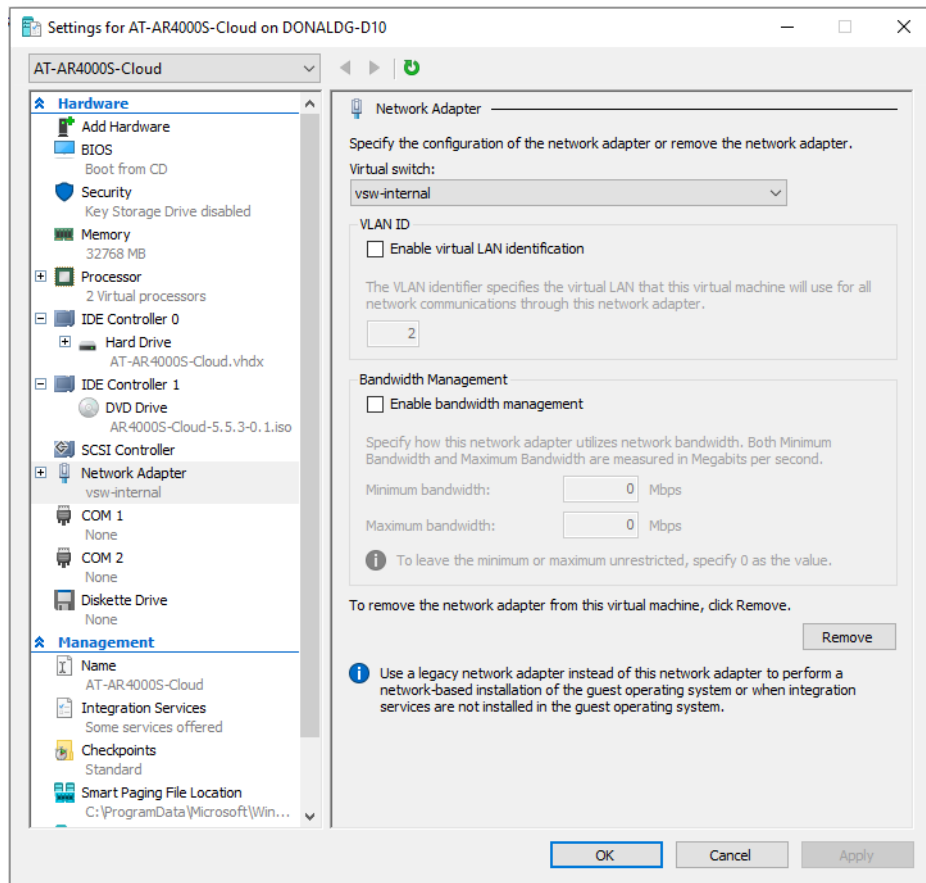
Basic operation of this product

This section covers basic operation methods, such as starting and stopping this product, accessing the console, and upgrading or downgrading the firmware.

Starting the product

To start the device, right-click the virtual machine in the **Virtual Machines** pane of Hyper-V Manager, and select **Start** from the context menu.
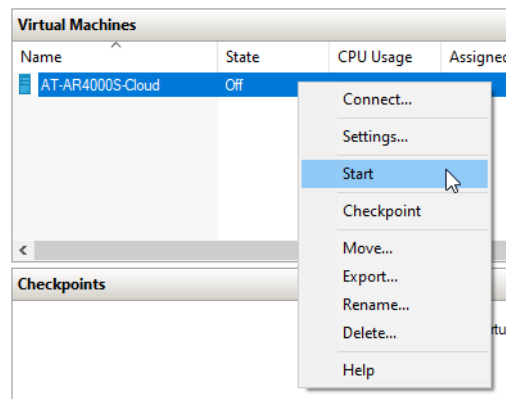
Stop the product

To stop the device, right-click the virtual machine in the **Virtual Machines** pane of Hyper-V Manager, and select **Shut Down** from the context menu.

Accessing the console

To access the console:

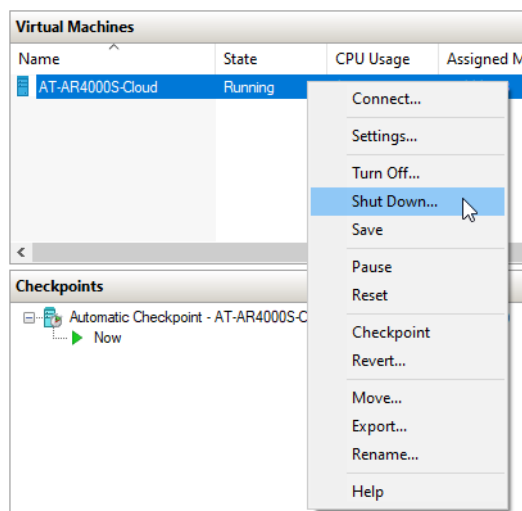1. Right-click the virtual machine of this product in the **Virtual Machines** pane of Hyper-V Manager, and select **Connect** from the context menu.
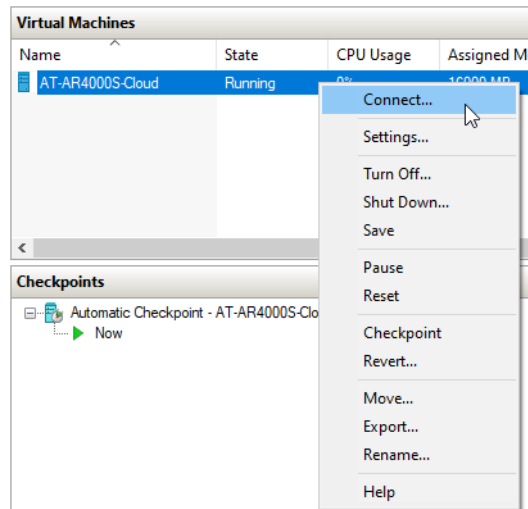
2. A virtual machine window opens and the console screen is displayed.

The device can also be started and stopped by selecting **Start** or **Shutdown** from the **Operation** menu of the virtual machine window.

Firmware update

To update the firmware of this product, follow the steps below for the selected installation method.

When installing using the ISO image method

If the product was installed using the ISO image method, the ISO image file is also used when updating the firmware. After you have prepared a new ISO image file, follow the steps below.

1. If the virtual machine of this product is running, stop the machine as described in the "Stop the product" section.
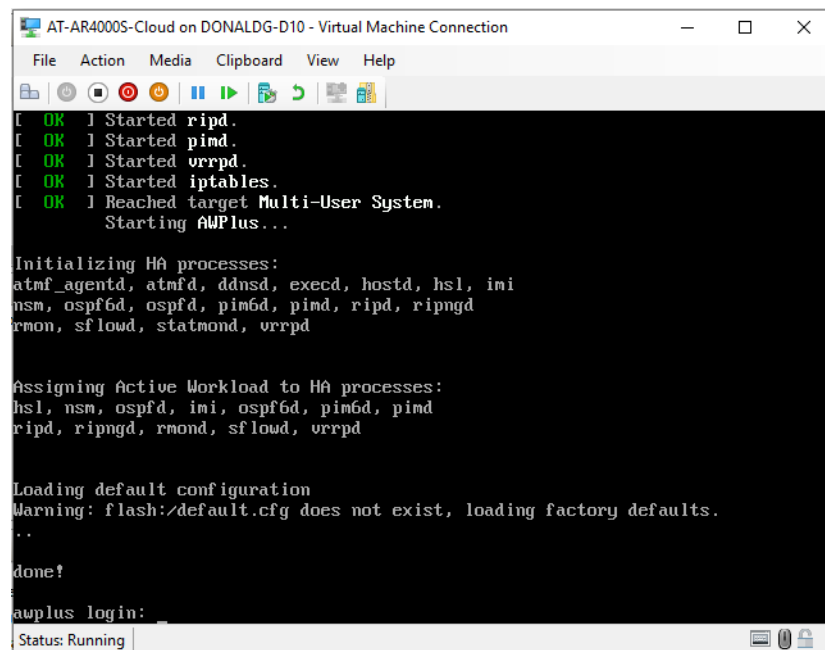
2. Right-click the virtual machine of this product in the **Virtual Machines** pane of Hyper-V Manager, and select **Settings** from the context menu.

3. Select **Hardware > IDE Controller 1 > DVD Drive** on the left pane, then specify the new ISO image file in the **Image file** displayed and click **OK** to open the virtual machine settings screen. Close.

Note: Firmware downgrades are not supported. For **Image File**, specify an ISO image file that is newer than the version currently in use.
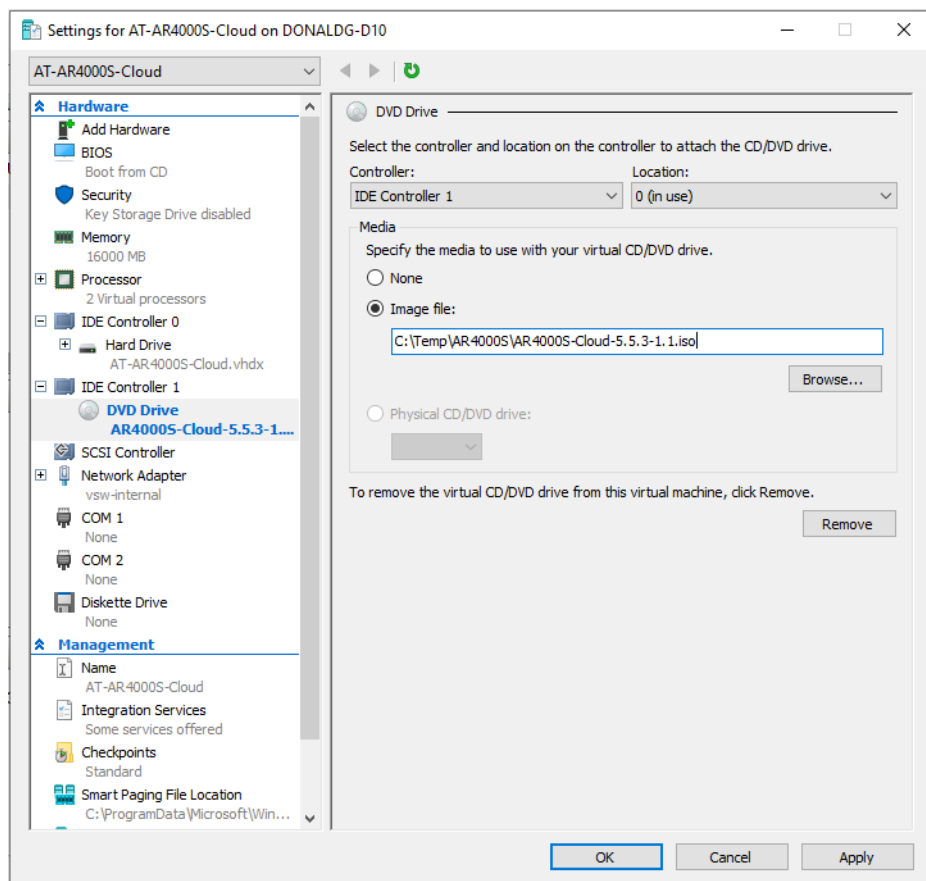
4. Start this product according to the procedure in "Starting the product".

5. The product will start with the new version. This completes updating the firmware of this product using the ISO image method.

When installing using the VHD image method

Even if you installed using the VHD image method, the ISO image file is used when updating the firmware.

Prepare a new ISO image file and then follow the steps below.

When using the Web GUI

1. Access the web GUI of this product.

2. From the menu on the left side of the screen, select **System > File Management** to open the file management screen. Click the **Upload** button to upload the new ISO image file to this product.
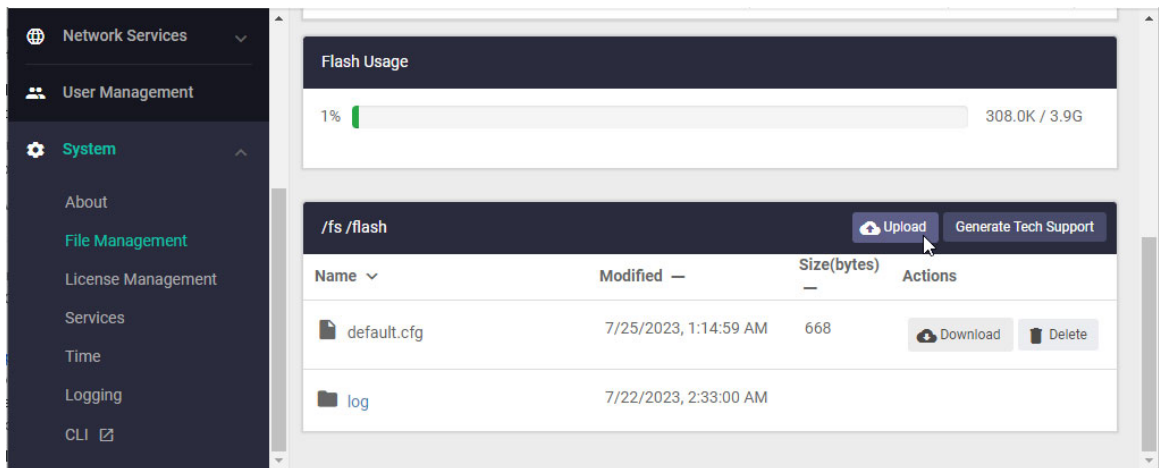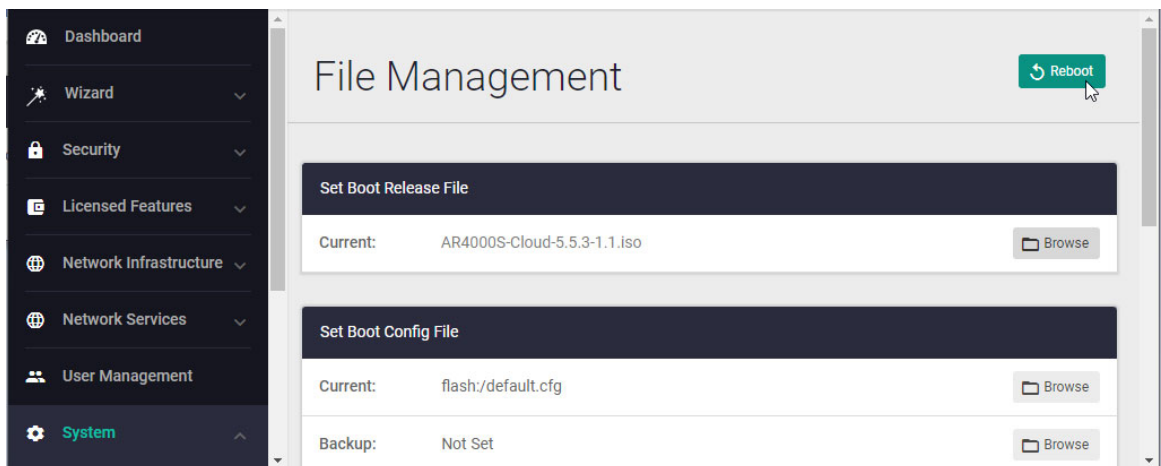
3. Click the **Browse** button in **Set Boot Release File** on the **File Management** screen, and select the new firmware.

Note: Firmware downgrades are not supported. Specify an ISO image file that is newer than the version currently in use.
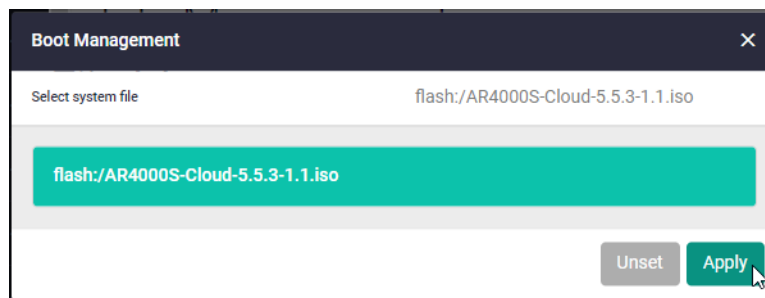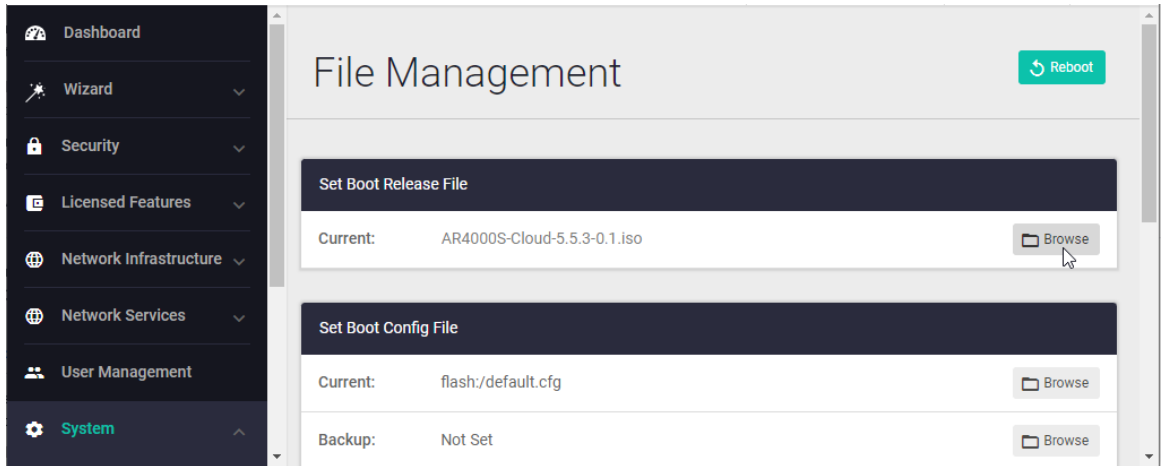
4. Press the **Reboot** button on the file management screen to restart this product.

Using the CLI

1. Access the command line interface (CLI) of this product and enter privileged exec mode.

   ```
   awplus> enable
   ```

2. Download the new ISO image file to the product using the copy command. The following is an example of downloading from an HTTP server with an ISO image file.

   ```
   awplus# copy http://example.com/ISO-Images/AR4000S-Cloud-5.5.2-0.3.iso
   flash:
   ```

3. Specify the ISO image file downloaded with the software-upgrade command.

Note: Firmware downgrades are not supported. For the **software-upgrade** command, specify an ISO image file that is newer than the version currently in use.

   ```
   awplus# software-upgrade AR4000S-Cloud-5.5.2-0.3.iso

   Install this release to disk? (y/n): y

   Upgrade started, the change will take effect after rebooting the
   device.
   ```

4. Restart with the **reload** command.

   ```
   awplus# reload

   reboot system? (y/n): y
   ```