

openEuler 20.03 LTS

# **Installation Guide**

Date 2020-04-10

# **Contents**

Terms of Use	iv
Preface	v
1 Installation Preparations	6
1.1 Obtaining the Installation Source	6
1.2 Release Package Integrity Check	7
1.3 Installation Requirements for PMs	8
1.3.1 Hardware Compatibility	8
1.3.2 Minimum Hardware Specifications	8
1.4 Installation Requirements for VMs	9
1.4.1 Virtualization Platform Compatibility	9
1.4.2 Minimum Virtualization Space	9
2 Installation Mode	10
2.1 Installation Through a CD/DVD-ROM	10
2.2 Installation Through a USB Flash Drive	11
2.3 Installation Through the Network Using PXE	12
2.4 Installation Through a QCOW2 Image	12
2.5 Installation Through a Private Image	13
3 Installation Guideline	14
3.1 Starting the Installation	14
3.2 Installation in GUI Mode	16
3.2.1 Configuring an Installation Program Language	17
3.2.2 Entering the Installation Page	18
3.2.3 Setting Installation Parameters	18
3.2.3.1 Setting the Keyboard Layout	18
3.2.3.2 Setting a System Language	19
3.2.3.3 Setting Date and Time	20
3.2.3.4 Setting the Installation Source	21
3.2.3.5 Selecting Installation Software	23
3.2.3.6 Setting the Installation Destination	24
3.2.3.7 Setting the Network and Host Name	26
3.2.4 Starting Installation	27

	20
3.2.5 Configurations During Installation	
3.2.6 Completing the Installation	31
4 Using Kickstart for Automatic Installation	33
4.1 Introduction	33
4.2 Semi-automatic Installation Guide	34
4.3 Full-automatic Installation Guide	37
5 FAQs	42
5.1 Why Does openEuler Fail to Start After I Install It to the Second Disk?	42
5.2 What Are the Constraints on Network Configurations?	43
5.3 Why Does openEuler Enter Emergency Mode After It Is Powered On?	43
5.4 Failed to Reinstall openEuler When a Logical Volume Group That Cannot Be Activated Has Existed in open	nEuler 44
5.5 An Exception Occurs During the Selection of the Installation Source	45
5.6 How Do I Manually Enable the kdump Service?	45
5.7 Failed to Selected Only One Disk for Reinstallation When openEuler Was Installed on a Logical Volume C of Multiple Disks	_
5.8 Failed to Install openEuler on an x86 PM in UEFI Mode due to Secure Boot Option Setting	49

2020-04-10 iii

# **Terms of Use**

## Copyright © Huawei Technologies Co., Ltd. 2020. All rights reserved.

Your replication, use, modification, and distribution of this document are governed by the Creative Commons License Attribution-ShareAlike 4.0 International Public License (CC BY-SA 4.0). You can visit https://creativecommons.org/licenses/by-sa/4.0/ to view a human-readable summary of (and not a substitute for) CC BY-SA 4.0. For the complete CC BY-SA 4.0, visit https://creativecommons.org/licenses/by-sa/4.0/legalcode.

#### **Trademarks and Permissions**

openEuler is a trademark or registered trademark of Huawei Technologies Co., Ltd. All other trademarks and registered trademarks mentioned in this document are the property of their respective holders.

## Disclaimer

This document is used only as a guide. Unless otherwise specified by applicable laws or agreed by both parties in written form, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, including but not limited to non-infringement, timeliness, and specific purposes.

2020-04-10 iv

# **Preface**

## Overview

This guide describes how to install Huawei openEuler.

# **Intended Audience**

This guide is intended for openEuler users with a basic understanding of Linux system management, and is also recommended for administrators, system engineers, and maintenance personnel.

# **Symbol Conventions**

The symbols that may be found in this document are defined as follows.

Symbol	Description
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.  NOTICE is used to address practices not related to personal injury.
☐ NOTE	Supplements the important information in the main text.  NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

2020-04-10 v

# Installation Preparations

This section describes the compatibility of the hardware and software and the related configurations and preparations required for the installation.

- 1.1 Obtaining the Installation Source
- 1.2 Release Package Integrity Check
- 1.3 Installation Requirements for PMs
- 1.4 Installation Requirements for VMs

# 1.1 Obtaining the Installation Source

Obtain the openEuler release package and verification file before the installation.

Perform the following operations to obtain the openEuler release package:

- 1. Log in to the openEuler Community website.
- 2. Click **Download**.
- 3. Click the link provided after **Download ISO**. The download list is displayed.
- 4. Click **openEuler-20.03-LTS**. The openEuler 20.03 LTS version download list is displayed.
- 5. Click **ISO**. The ISO download list is displayed.
  - aarch64: ISO image file of the AArch64 architecture
  - x86\_64: ISO image file of the x86\_64 architecture
  - **source**: ISO image file of the openEuler source code
- 6. Select the openEuler release package and verification file to be downloaded based on the architecture of the environment to be installed.
  - If the AArch64 architecture is used:
    - i. Click aarch64.
    - ii. Click **openEuler-20.03-LTS-aarch64-dvd.iso** to download the openEuler release package to the local host.
    - iii. Click **openEuler-20.03-LTS-aarch64-dvd.iso.sha256sum** to download the openEuler verification file to the local host.
  - If the x86 64 architecture is used:

- i. Click **x86\_64**.
- ii. Click **openEuler-20.03-LTS-x86\_64-dvd.iso** to download the openEuler release package to the local host.
- iii. Click **openEuler-20.03-LTS-x86\_64-dvd.iso.sha256sum** to download the openEuler verification file to the local host.

# 1.2 Release Package Integrity Check

#### □ NOTE

This section describes how to verify the integrity of the release package in the AArch64 architecture. The procedure for verifying the integrity of the release package in the x86\_64 architecture is the same.

#### Introduction

To prevent the software package from being incompletely downloaded due to network or storage device faults during transmission, you need to verify the integrity of the software package after obtaining it. Only the software packages that pass the verification can be installed.

Compare the verification value recorded in the verification file with the .iso file verification value calculated manually to check whether the software package passes the verification. If the verification values are consistent, the .iso file is not damaged. If they are inconsistent, you can confirm that the file is damaged and you need to obtain the file again.

## **Prerequisites**

Before verifying the integrity of the release package, you need to prepare the following files:

ISO file: openEuler-20.03-LTS-aarch64-dvd.iso

Verification file: openEuler-20.03-LTS-aarch64-dvd.iso.sha256sum

#### Procedure

To verify the file integrity, perform the following operations:

**Step 1** Obtain the verification value in the verification file. Run the following command:

#cat openEuler-20.03-LTS-aarch64-dvd.iso.sha256sum

**Step 2** Calculate the SHA256 verification value of the file. Run the following command:

#sha256sum openEuler-20.03-LTS-aarch64-dvd.iso

After the command is run, the verification value is displayed.

**Step 3** Check whether the values calculated in step 1 and step 2 are consistent.

If the verification values are consistent, the .iso file is not damaged. If they are inconsistent, you can confirm that the file is damaged and you need to obtain the file again.

----End

# 1.3 Installation Requirements for PMs

To install the openEuler OS on a PM, the PM must meet the following hardware compatibility and minimum hardware requirements.

## 1.3.1 Hardware Compatibility

You need to take hardware compatibility into account during openEuler installation. Table 1-1 describes the types of supported servers.

## **Ⅲ** NOTE

- TaiShan 200 servers are backed by Huawei Kunpeng 920 processors.
- Currently, only Huawei TaiShan and FusionServer Pro servers are supported. More servers from other vendors will be supported in the future.

**Table 1-1** Supported servers

Server Type	Server Name	Server Model
Rack server	TaiShan 200	2280 balanced model
Rack server	FusionServer Pro	FusionServer Pro 2288H V5
		NOTE  The server must be configured with the Avago SAS3508 RAID controller card and the LOM-X722 NIC.

# 1.3.2 Minimum Hardware Specifications

Table 1-2 lists the minimum hardware specifications supported by openEuler.

Table 1-2 Minimum hardware specifications

Comp onent	Minimum Hardware Specifications	Description
Archite cture	<ul><li>AArch64</li><li>x86_64</li></ul>	<ul><li>64-bit Arm architecture</li><li>64-bit Intel x86 architecture</li></ul>
CPU	Huawei Kunpeng 920 series     Intel ® Xeon® processor	-
Memor y	≥ 4 GB (8 GB or higher recommended for better user experience)	-
Hard disk	≥ 120 GB (for better user experience)	The hard disk supports IDE, SATA, SAS interfaces.

# 1.4 Installation Requirements for VMs

To install the openEuler OS on a VM, the VM must meet the following hardware compatibility and minimum hardware requirements.

# 1.4.1 Virtualization Platform Compatibility

When installing openEuler, pay attention to the compatibility of the virtualization platform. Currently, the following virtualization platforms are supported:

- A virtualization platform created by the virtualization components (openEuler as the host OS and QEMU and KVM provided in the release package) of openEuler
- x86 virtualization platform of Huawei public cloud

## 1.4.2 Minimum Virtualization Space

Table 1-3 lists the minimum virtualization space required by openEuler.

Table 1-3 Minimum virtualization space

Comp onent	Minimum Virtualization Space	Description
Archite cture	<ul><li>AArch64</li><li>x86_64</li></ul>	-
CPU	Two CPUs	-
Memor y	≥ 4 GB (8 GB or higher recommended for better user experience)	-
Hard disk	≥ 32 GB (120 GB or higher recommended for better user experience)	-

# **2** Installation Mode

## **NOTICE**

- Only TaiShan 200 servers are supported. For details about the supported server models, see 1.3.1 Hardware Compatibility. Only a virtualization platform created by the virtualization components (openEuler as the host OS and QEMU and KVM provided in the release package) of openEuler and the x86 virtualization platform of Huawei public cloud are supported.
- Currently, only installation modes such as CD-ROM, USB flash drive, network, QCOW2 image, and private image are supported. In addition, only the x86 virtualization platform of Huawei public cloud supports the private image installation mode.
- 2.1 Installation Through a CD/DVD-ROM
- 2.2 Installation Through a USB Flash Drive
- 2.3 Installation Through the Network Using PXE
- 2.4 Installation Through a QCOW2 Image
- 2.5 Installation Through a Private Image

# 2.1 Installation Through a CD/DVD-ROM

This section describes how to create or use a CD/DVD-ROM to install the openEuler.

## **Preparing the Installation Source**

If you have obtained a CD/DVD-ROM, install the OS using the CD/DVD-ROM. If you have obtained an ISO file, record the ISO file to a DVD and install the OS using the obtained DVD.

## Starting the Installation

Perform the following operations to start the installation:

#### 

Set the system to preferentially boot from the CD/DVD-ROM drive. Take the BIOS as an example. You need to move the **CD/DVD-ROM Drive** option under **Boot Type Order** to the top.

- 1. Disconnect all drives that are not required, such as USB drives.
- 2. Start your computer system.
- 3. Insert the installation CD/DVD-ROM into the CD/DVD-ROM drive.
- 4. Restart the computer system.

After a short delay, a graphical wizard page is displayed, which contains different boot options. If you do not perform any operation within one minute, the installation starts automatically with the default options.

# 2.2 Installation Through a USB Flash Drive

This section describes how to create or use a USB flash drive to install the openEuler.

## **Preparing the Installation Source**

Pay attention to the capacity of the USB flash drive. The USB flash drive must have sufficient space to store the entire image. It is recommended that the USB flash drive has more than 16 GB space.

1. Connect the USB flash drive to the system and run the **dmesg** command to view related log. At the end of the log, you can view the information generated by the USB flash drive that is just connected. The information is similar to the following:

```
[ 170.171135] sd 5:0:0:0: [sdb] Attached SCSI removable disk
```

#### □ NOTE

Take the **sdb** USB flash drive as an example.

2. Switch to user **root**. When running the **su** command, you need to enter the password.

```
$ su - root
```

3. Ensure that the USB flash drive is not mounted. Run the following command:

```
# findmnt /dev/sdb
```

- If no command output is displayed, the file system is not mounted. Go to the next step.
- If the following information is displayed, the USB flash drive is automatically mounted.

```
# findmnt /dev/sdb

TARGET SOURCE FSTYPE OPTIONS
/mnt/iso /dev/sdb iso9660 ro,relatime
```

In this case, you need to run the **umount** command to uninstall the device.

```
# umount /mnt/iso
```

4. Run the **dd** command to write the ISO image to the USB flash drive.

```
# dd if=/path/to/image.iso of=/dev/device bs=blocksize
```

Replace /path/to/image.iso with the complete path of the downloaded ISO image file, replace device with the device name provided by the dmesg command, and set a proper block size (for example, 512 KB) to replace blocksize to accelerate the write progress.

For example, if the ISO image file name is

/home/testuser/Downloads/openEuler-20.03-LTS-aarch64-dvd.iso and the detected device name is sdb, run the following command:

# dd if=/home/testuser/Downloads/openEuler-20.03-LTS-aarch64-dvd.iso of=/dev/sdb bs=512k

5. After the image is written, remove the USB flash drive.

No progress is displayed during the image write process. When the number sign (#) appears again, the write is complete. Exit the **root** account and remove the USB flash drive. In this case, you can use the USB flash drive as the installation source of the system.

## **Starting the Installation**

Perform the following operations to start the installation:

## **□** NOTE

Set the system to preferentially boot from the USB flash drive. Take the BIOS as an example. You need to move the **USB** option under **Boot Type Order** to the top.

- 1. Disconnect all drives that are not required.
- 2. Open your computer system.
- 3. Insert the USB flash drive into the computer.
- 4. Restart the computer system.

After a short delay, a graphical wizard page is displayed, which contains different boot options. If you do not perform any operation within one minute, the installation program automatically starts the installation.

# 2.3 Installation Through the Network Using PXE

To boot with PXE, you need to properly configure the server and your computer's network interface to support PXE.

If the target hardware is installed with a PXE-enabled NIC, we can configure it to boot the computer from network system files rather than local media (such as CD-ROMs) and execute the Anaconda installation program.

For installation through the network using PXE, the client uses a PXE-enabled NIC to send a broadcast request for DHCP information and IP address to the network. The DHCP server provides the client with an IP address and other network information, such as the IP address or host name of the DNS and FTP server (which provides the files required for starting the installation program), and the location of the files on the server.

## **□** NOTE

The TFTP, DHCP, and HTTP server configurations are not described here. For details, see 4.3 Full-automatic Installation Guide.

# 2.4 Installation Through a QCOW2 Image

This section describes how to create or use a QCOW2 image to install the openEuler.

## **Creating a QCOW2 Image**

1. Install the **qemu-img** software package.

```
# dnf install -y qemu-img
```

2. Run the **create** command of the qemu-img tool to create an image file. The command format is as follows:

```
$ qemu-img create -f <imgFormat> -o <fileOption> <fileName> <diskSize>
```

The parameters are described as follows:

- imgFormat: Image format. The value can be raw or qcow2.
- fileOption: File option, which is used to set features of an image file, such as specifying a backend image file, compression, and encryption.
- *fileName*: File name.
- *diskSize*: Disk size, which specifies the size of a block disk. The unit can be K, M, G, or T, indicating KiB, MiB, GiB, or TiB.

For example, to create an image file **openEuler-imge.qcow2** whose disk size is 32 GB and format is qcow2, the command and output are as follows:

```
$ qemu-img create -f qcow2 openEuler-image.qcow2 32G
Formatting 'openEuler-image.qcow2', fmt=qcow2 size=34359738368 cluster size=65536
lazy refcounts=off refcount bits=16
```

## Starting the Installation

Perform the following operations to start the installation:

- Prepare a QCOW2 image file.
- 2. Prepare the VM network.
- 3. Prepare the UEFI boot tool set EDK II.
- 4. Prepare the VM XML configuration file.
- 5. Create a VM.
- 6. Start the VM.

For details, see the openEuler 20.03 LTS Virtualization User Guide.

# 2.5 Installation Through a Private Image

This section describes how to create or use a private image to install the openEuler.

## **Creating a Private Image**

For instructions about how to create a private image, see *Image Management Service User Guide*.

## Starting the Installation

For details about how to start the x86 virtualization platform of Huawei public cloud, see Elastic Cloud Server User Guide.

# 3 Installation Guideline

This section describes how to install openEuler using a CD-ROM. The installation process is the same for other installation modes except the boot option.

- 3.1 Starting the Installation
- 3.2 Installation in GUI Mode

# 3.1 Starting the Installation

## Booting from the CD/DVD-ROM Drive

Load the ISO image of openEuler from the CD/DVD-ROM drive of the server and restart the server. The procedure is as follows:

## **□** NOTE

Before the installation, ensure that the server boots from the CD/DVD-ROM drive preferentially. The following steps describe how to install the openEuler using the virtual CD/DVD-ROM drive on the baseboard management controller (BMC). Installing the openEuler from a physical drive is simple. After the installation starts, the procedure for the physical drive is the same as that of the virtual drive.

1. On the toolbar, click the icon shown in the following figure.

Figure 3-1 Drive icon



An image dialog box is displayed, as shown in the following figure.

Figure 3-2 Image dialog box



2. Select **Image File** and then click **Browse**. The **Open** dialog box is displayed.

- Select the image file and click Open. In the image dialog box, click Connect. If Connect changes to Disconnect, the virtual CD/DVD-ROM drive is connected to the server.
- 4. On the toolbar, click the restart icon shown in the following figure to restart the device.

Figure 3-3 Restart icon



## **Installation Wizard**

A boot menu is displayed after the system is booted using the boot medium. In addition to options for starting the installation program, some other options are available on the boot menu. During system installation, the **Test this media & install openEuler 20.03 LTS** mode is used by default. Press the arrow keys on the keyboard to change the selection, and press **Enter** when the desired option is highlighted.

#### □ NOTE

- If you do not perform any operations within 1 minute, the system automatically selects the default option **Test this media & install openEuler 20.03 LTS** and enters the installation page.
- During PM installation, if you cannot use the arrow keys to select boot options and the system does
   not respond after you press Enter, click
   on the BMC page and configure Key & Mouse
   Reset.

Figure 3-4 Installation Wizard

```
Install openEuler 20.03 LTS

Test this media & install openEuler 20.03 LTS

Troubleshooting -->

Use the ▲ and ▼ keys to change the selection.

Press 'e' to edit the selected item, or 'c' for a command prompt.

The selected entry will be started automatically in 56s.
```

Installation wizard options are described as follows:

- Install openEuler 20.03 LTS: Install openEuler on your server in GUI mode.
- Test this media & install openEuler 20.03 LTS: Default option. Install openEuler on your server in GUI mode. The integrity of the installation medium is checked before the installation program is started. For details, see 3.2 Installation in GUI Mode.
- **Troubleshooting**: Troubleshooting mode, which is used when the system cannot be installed properly. In troubleshooting mode, the following options are available:
  - Install openEuler 20.03-LTS in basic graphics mode: Basic graphics installation mode. In this mode, the video driver is not started before the system starts and runs.
  - Rescue the openEuler system: Rescue mode, which is used to restore the system.
     In rescue mode, the installation process is printed in the VNC or BMC, and the serial port is unavailable.

On the installation wizard screen, press e to go to the parameter editing screen of the selected option, and press e to go to the command-line interface (CLI).

## 3.2 Installation in GUI Mode

On the installation wizard page, select **Test this media & install openEuler 20.03 LTS** to enter the GUI installation mode.

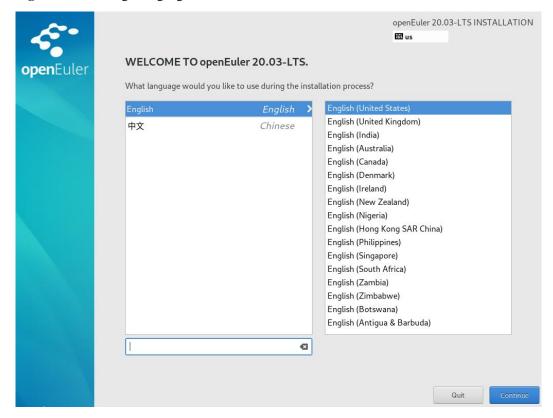
Perform graphical installation operations using a keyboard.

- Press **Tab** or **Shift**+**Tab** to move between GUI controls (such as buttons, area boxes, and check boxes).
- Press the up or down arrow key to move a target in the list.
- Press the left or right arrow key to move between the horizontal toolbar and watch bar.
- Press the spacebar or **Enter** to select or delete highlighted options, expand or collapse a drop-down list.
- Press Alt+a shortcut key (the shortcut key varies for different pages) to select the control
  where the shortcut key is located. The shortcut key can be highlighted (underlined) by
  holding down Alt.

## 3.2.1 Configuring an Installation Program Language

After the installation starts, the system will prompt the language that is used during the configuration installation process. English is configured by default, as shown in Figure 3-5. Configure another language as required.

Figure 3-5 Selecting a language



After configurations, click Continue. The main installation configuration page is displayed.

If you want to exit the installation, click **Exit**. The message "Are you sure you want to exit the installation program?" is displayed. Click **Yes** in the dialog box to go back to the installation wizard page.

# 3.2.2 Entering the Installation Page

After the installation program starts, the main installation configuration page is displayed, as shown in Figure 3-6. On the page, you can configure the time, language, installation source, network, and storage device.

Some configuration items are matched with safety symbols. A safety symbol will disappear after the item is configured. Start the installation only when all the safety symbols disappear from the page.

If you want to exit the installation, click **Exit**. The message "Are you sure you want to exit the installation program?" is displayed. Click **Yes** in the dialog box to go back to the installation wizard page.

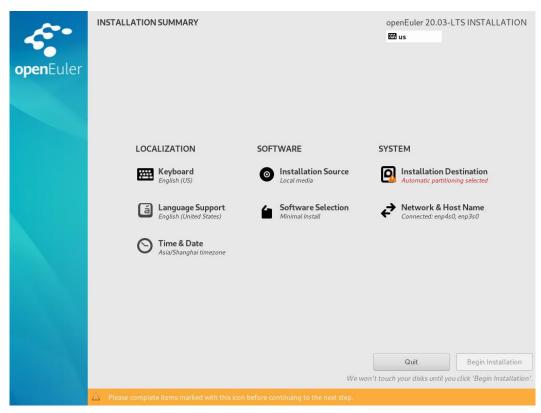


Figure 3-6 Installation summary

# 3.2.3 Setting Installation Parameters

# 3.2.3.1 Setting the Keyboard Layout

On the **INSTALLATION SUMMARY** page, click **KEYBOARD**. You can add or delete multiple keyboard layouts in the system.

- On the left white box, click to select the keyboard layout and click the keyboard under the box.
- To test the keyboard layout: On the left white box, click to select the keyboard layout, click the inside of the right text box, and enter the text to ensure that the keyboard layout can work properly.

Figure 3-7 Setting the keyboard layout

# 3.2.3.2 Setting a System Language

On the **INSTALLATION SUMMARY** page, click **LANGUAGE SUPPORT** to set the system language, as shown in Figure 3-8. Set another language as required, such as Chinese.

#### **Ⅲ** NOTE

- If you select Chinese, the system does not display Chinese characters after you log in to the system using VNC, because VNC does not support Chinese characters. If you log in to the system in SSH mode, Chinese characters will be displayed.
- If you select English, there will be no impact.

LANGUAGE SUPPORT ⊞ us Select additional language support to be installed: English English (United States) English (United Kingdom) 中文 Chinese English (India) English (Australia) English (Canada) English (Denmark) English (Ireland) English (New Zealand) English (Nigeria) English (Hong Kong SAR China) English (Philippines) English (Singapore) English (South Africa) English (Zambia) English (Zimbabwe) English (Botswana) English (Antigua & Barbuda) •

Figure 3-8 Setting a system language

## 3.2.3.3 Setting Date and Time

On the **INSTALLATION SUMMARY** page, click **TIME & DATE**. On the **TIME & DATE** page, set the system time zone, date, and time.

When setting the time zone, you can click a specific city on the map with the mouse, or select a region from the drop-down list of **Region** or a city from the drop-down list of **City** at the top of the page, as shown in Figure 3-9.

If your city is not displayed on the map or in the drop-down list, select the nearest city in the same time zone.

#### ☐ NOTE

- Before manually setting the time zone, disable the network time synchronization function in the upper right corner.
- If you want to use the network time, ensure that the network can connect to the remote NTP server. For details about how to set the network, see 3.2.3.7 Setting the Network and Host Name.



Figure 3-9 Setting date and time

# 3.2.3.4 Setting the Installation Source

On the **INSTALLATION SUMMARY** page, click **INSTALLATION SOURCE** to locate the installation source.

If you use a CD/DVD-ROM for installation, the installation program automatically detects and displays the installation source information. You can use the default settings. Figure 3-10 shows an example.

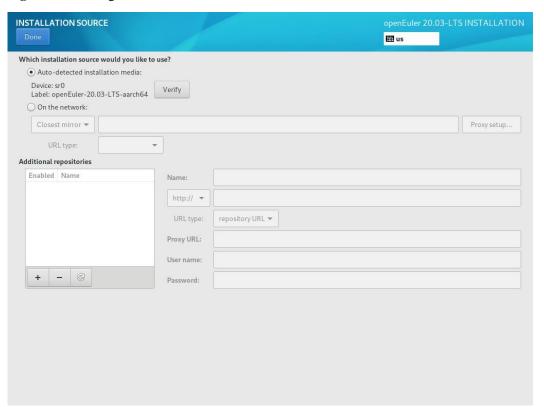


Figure 3-10 Setting the installation source

When you use the network for installation, if the HTTPS server uses a private certificate, press **e** on the installation wizard page to go to the parameter editing page and add the **inst.noverifyssl** parameter, as shown in Figure 3-11.

Figure 3-11 Adding the inst.noverifyssl parameter



## **□** NOTE

During the installation, if you have any questions about configuring the installation source, see 5.5 An Exception Occurs During the Selection of the Installation Source.

## 3.2.3.5 Selecting Installation Software

On the **INSTALLATION SUMMARY** page, click **SOFTWARE SELECTION** to specify the software package to be installed.

Based on the actual requirements, select **Minimal Install** on the left box and select an add-on in the **Add-Ons for Selected Environment** area on the right, as shown in Figure 3-12.

SOFTWARE SELECTION Base Environment Add-Ons for Selected Environment Minimal Install Basic functionality. Container Management
Tools for managing Linux containers An integrated, easy-to-manage server. Virtualization Host Development Tools Minimal virtualization host. A basic development environment. Headless Management Tools for managing the system without an attached graphical console. Legacy UNIX Compatibility Compatibility programs for migration from or working with legacy UNIX environments. These packages include network-based servers such as DHCP, Kerberos and NIS Scientific Support
Tools for mathematical and scientific computations, and parallel computing. Security Tools Security tools for integrity and trust verification.

System Tools

Smart Card Support

Support for using smart card authentication

This group is a collection of various tools for the system, such as the client for connecting to SMB shares and tools to monitor network traffic.

Figure 3-12 Selecting installation software

#### 

- In Minimal Install mode, not all packages in the installation source will be installed. If the required
  package is not installed, you can mount the installation source to the local PC and configure a repo
  source, and use DNF to install the package.
- If you select **Virtual Host**, the virtualization components QEMU, libvirt, and edk2 are installed by default. You can select whether to install the OVS component in the add-on area.

After the setting is complete, click **Done** in the upper left corner to go back to the **INSTALLATION SUMMARY** page.

## 3.2.3.6 Setting the Installation Destination

On the **INSTALLATION SUMMARY** page, click **INSTALLATION DESTINATION** to select the OS installation disk and partition.

You can view available local storage devices in Figure 3-13. You can also add an attached device or a network disk specified by clicking **Add a disk**.

#### **NOTICE**

When selecting the device to be installed, you are advised not to use the NVMe SSD storage medium as the OS installation disk.

INSTALLATION DESTINATION Device Selection Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button. Local Standard Disks 110 GiB C QEMU QEMU HARDDISK sda / 110 GiB free Disks left unselected here will not be touched Specialized & Network Disks Add a disk... Disks left unselected here will not be touched Storage Configuration Custom Automatic I would like to make additional space available. 1 disk selected; 110 GiB capacity; 110 GiB free Refresh. Full disk summary and boot loader...

Figure 3-13 Setting the installation destination

## **Storage Configuration**

On the **INSTALLATION DESTINATION** page, configure storage for system partition. You can either manually configure partitions or select **Automatic** to automatically configure partitioning.

#### □ NOTE

- During partitioning, to ensure system security and performance, you are advised to divide the device into the following partitions: /boot, /var, /var/log, /var/log/audit, /home, and /tmp.
- If the system is configured with the swap partition, the swap partition is used when the physical memory of the system is insufficient. Although the swap partition can be used to expand the physical memory, if the swap partition is used due to insufficient memory, the system response slows and the system performance deteriorates. Therefore, you are not advised to configure the swap partition in the system with sufficient physical memory or the performance sensitive system.
- If you need to split a logical volume group, select **Custom** to manually partition the logical volume group. On the **MANUAL PARTITIONING** page, click **Modify** in the **Volume Group** area to reconfigure the logical volume group.

### Automatic

Select **Automatic** if the software is installed in a new storage device or the data in the storage device is not required.

#### Customize

If you need to manually partition the disk, click **Customize** and click **Done** in the upper left corner. The following page is displayed.

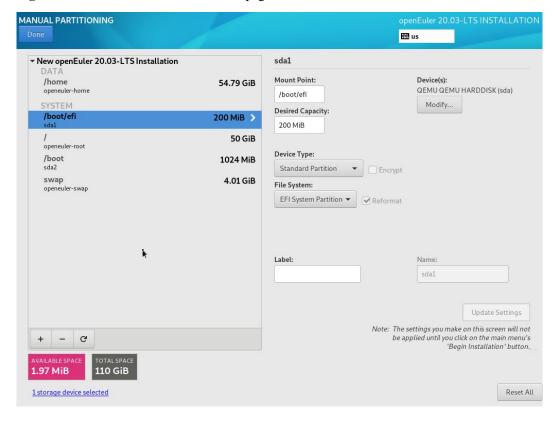


Figure 3-14 MANUAL PARTITIONING page

On the **MANUAL PARTITIONING** page, you can partition the disk in either of the following ways:

- Automatic creation: Click Click here to create them automatically. The system
  automatically assigns four mount points according to the available storage space: /boot, /,
  /boot/efi, and swap.
- Manual creation: Click to add a mount point. It is recommended that the expected capacity of each mount point not exceed the available space.

#### □ NOTE

If the expected capacity of the mount point exceeds the available space, the system allocates the remaining available space to the mount point.

After the setting is complete, click **Done** in the upper left corner to go back to the **INSTALLATION SUMMARY** page.

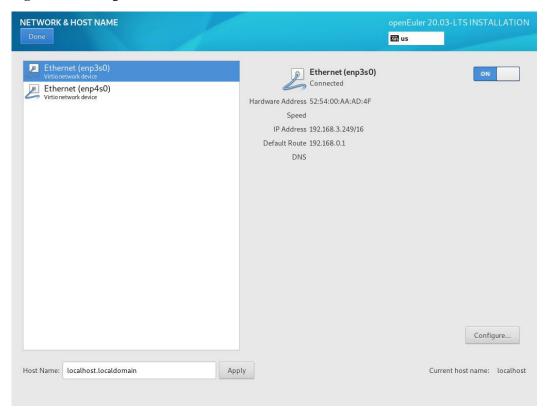
# 3.2.3.7 Setting the Network and Host Name

On the **INSTALLATION SUMMARY** page, select **NETWORK & HOST NAME** to configure the system network functions.

The installation program automatically detects a local access interface. The detected interface is listed in the left box, and the interface details are displayed in the right-hand area, as shown in Figure 3-15. In the upper right corner, click the switchover button to enable or disable the network interface. You can also click **Configure** to configure the selected interface.

In the lower left box, enter the host name. The host name can be the fully quantified domain name (FQDN) in the format of hostname.domainname or the brief host name in the format of hostname.

Figure 3-15 Setting the network and host name



After the setting is complete, click **Done** in the upper left corner to go back to the **INSTALLATION SUMMARY** page.

# 3.2.4 Starting Installation

On the installation page, after all the mandatory items are configured, the safety symbols will disappear. Then, you can click **Begin Installation** to install the system.

INSTALLATION SUMMARY

LOCALIZATION

SOFTWARE

Keyboard

English (US)

Installation Source

Local media

Language Support

English (Ushited states)

Time & Date

Asia/Shanghai timezone

Software Selection

Minimal Install

Quit

Begin Installation

We won't touch your disks until you click 'Begin Installation'

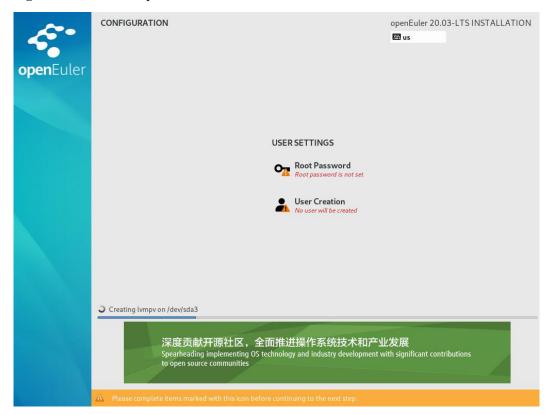
We won't touch your disks until you click 'Begin Installation'

Figure 3-16 Starting installation

# 3.2.5 Configurations During Installation

After the installation starts, the overall installation progress and the progress of writing the software package to the system are displayed.

Figure 3-17 Installation process



During the process of installing software packages, you need to configure the root password and create users.

## **Password Complexity**

The password of the **root** user or the password of the new user must meet the password complexity requirements. Otherwise, the password configuration or user creation will fail. The password complexity requirements are as follows:

- 1. A password must contain at least eight characters.
- 2. A password must contain at least three of the following types: uppercase letters, lowercase letters, digits, and special characters.
- 3. A password must be different from the account name.
- 4. A password cannot contain words in the dictionary.
  - Querying a dictionary

In the installed openEuler environment, you can run the following command to export the dictionary library file **dictionary.txt**, and then check whether the password is in the dictionary.

cracklib-unpacker /usr/share/cracklib/pw dict > dictionary.txt

- Modifying a dictionary
  - i. Modify the exported dictionary library file, and then run the following command to update the dictionary library:

# create-cracklib-dict dictionary.txt

ii. Run the following command to add another dictionary file **custom.txt** to the original dictionary library.

# create-cracklib-dict dictionary.txt custom.txt

## **Setting the Root User Password**

Click **Root Password**. In the displayed dialog box, as shown in Figure 3-18, enter a password and re-enter to confirm.

### **□** NOTE

The root password is required to be configured at the same time of installing software packages. Otherwise, the installation will fail. A **root** account is used for performing critical system administration tasks. It is not recommended to use this account for daily work or system access.

Figure 3-18 Password of the root account



After configuration, click **Done** in the left-upper corner to switch back to the installation process page.

## Creating a User

Click **User Creation**. Figure 3-19 shows the page for creating a user. Enter a username and set a password. By clicking **Advanced**, you can also configure a home directory and a user group, as shown in Figure 3-20.

Figure 3-19 Creating a user

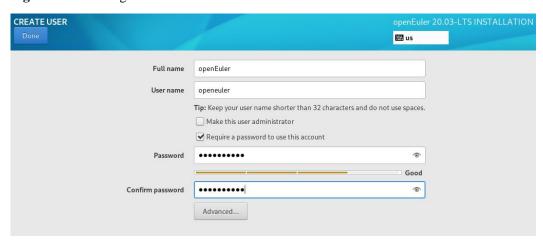
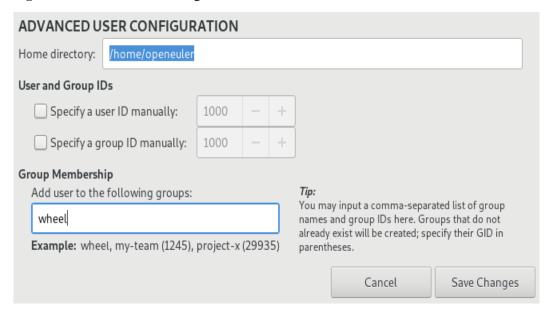
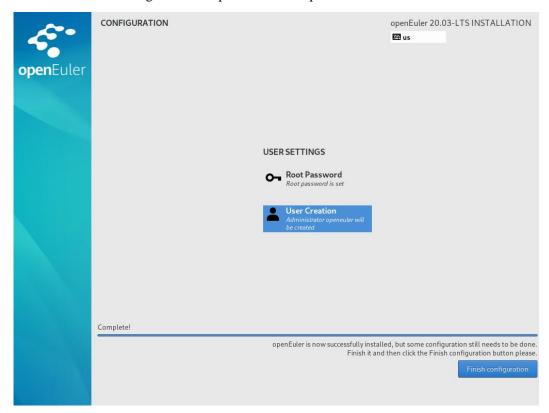


Figure 3-20 Advanced user configuration



After configuration, click **Done** in the left-upper corner to switch back to the installation process page.

Click **Finish**. The configuration of openEuler is complete.



# 3.2.6 Completing the Installation

openEuler has been installed, as shown in Figure 3-21. Click **Reboot** to restart the system.



Figure 3-21 Completing the installation

- If the physical DVD-ROM is used to install the OS and the DVD-ROM drive is not automatically ejected during the restart, manually remove the DVD-ROM. Then, the openEuler CLI login page is displayed.
- If the virtual DVD-ROM drive is used to install the OS, change the server boot option to **Hard Disk** and restart the server. Then, the openEuler CLI login page is displayed.

# 4

# Using Kickstart for Automatic Installation

- 4.1 Introduction
- 4.2 Semi-automatic Installation Guide
- 4.3 Full-automatic Installation Guide

## 4.1 Introduction

## Overview

You can use the kickstart tool to automatically install the openEuler OS in either of the following ways:

- Semi-automatic installation: You only need to specify the location of the kickstart file. Kickstart automatically configures OS attributes such as keyboard, language, and partitions.
- Automatic installation: The OS is automatically installed.

## Advantages and Disadvantages

Table 4-1 lists the advantages and disadvantages of semi-automatic installation and full-automatic installation using kickstart. You can select an installation mode as required.

Table 4-1 Advantages and disadvantages

Installa tion Mode	Advantage	Disadvantage
Semi-au tomatic installati on	Services such as TFTP, PXE, and DHCP do not need to be prepared.	You need to manually specify the path of the kickstart file.
Full-aut omatic installati on	The OS is installed automatically.	Services, such as TFTP, DHCPD, and PXE, need to be configured.

## Background

#### Kickstart

Kickstart is an unattended installation mode. The principle of kickstart is to record typical parameters that need to be manually entered during the installation and generate the configuration file **ks.cfg**. During the installation, the installation program searches the **ks.cfg** configuration file first for required parameters. If no matching parameters are found, you need to manually configure these parameters. If all required parameters are covered by the kickstart file, automatic installation can be achieved by only specifying the path of the kickstart file.

Both full-automatic or semi-automatic installation can be achieved by kickstart.

#### **PXE**

Pre-boot Execution Environment (PXE)) works in client/server network mode. The PXE client can obtain an IP address from the DHCP server during the startup and implement client boot and installation through the network based on protocols such as trivial file transfer protocol (TFTP).

#### **TFTP**

TFTP is used to transfer simple and trivial files between clients and the server.

## 4.2 Semi-automatic Installation Guide

## **Environment Requirements**

The environment requirements for semi-automatic installation of openEuler using kickstart are as follows:

- PM/VM (for details about how to create VMs, see the documents from corresponding vendors): includes the computer where kickstart is used for automatic installation and the computer where the kickstart tool is installed.
- Httpd: stores the kickstart file.
- ISO: openEuler-20.03-LTS-aarch64-dvd.iso

#### Procedure

To use kickstart to perform semi-automatic installation of openEuler, perform the following steps:

## **Environment Preparation**

## ☐ NOTE

Before the installation, ensure that the firewall of the HTTP server is disabled. Run the following command to disable the firewall:

iptables -F

**Step 1** Install httpd and start the service.

```
# dnf install httpd -y
# systemctl start httpd
# systemctl enable httpd
```

#### **Step 2** Run the following commands to prepare the kickstart file:

```
# mkdir /var/www/html/ks
#vim /var/www/html/ks/openEuler-ks.cfg ===>The file can be obtained by modifying the
anaconda-ks.cfg file automatically generated from openEuler, or can be created using
the system-config-kickstart tool.
_____
***Modify the following information as required.***
#version=DEVEL
ignoredisk --only-use=sda
autopart --type=lvm
# Partition clearing information
clearpart --none --initlabel
# Use graphical install
graphical
# Use CDROM installation media
cdrom
# Keyboard layouts
keyboard --vckeymap=cn --xlayouts='cn'
# System language
lang zh CN.UTF-8
# Network information
network --bootproto=dhcp --device=enp4s0 --ipv6=auto --activate
network --hostname=openeuler.com
# Root password
rootpw --iscrypted
$6$fQE831xEZ48Or4zc$j7/PlUMHn29yTjCD4Fi44WTZL/RzVGxJ/7MGsZM16QfE3KjIVT7M4UrhFXbafv
Rq21UddAFcyWHd5WRmXfEK20
# Run the Setup Agent on first boot
firstboot --enable
# Do not configure the X Window System
skipx
# System services
services --disabled="chronyd"
# System timezone
timezone Asia/Shanghai --isUtc--nontp
%packages
@^minimal-environment
@standard
%end
%anaconda
pwpolicy root --minlen=8 --minquality=1 --notstrict --nochanges --notempty
pwpolicy user --minlen=8 --minquality=1 --notstrict --nochanges --emptyok
pwpolicy luks --minlen=8 --minquality=1 --notstrict --nochanges --notempty
%end
%post
#enable kdump
```

#### □ NOTE

The method of generating the password ciphertext is as follows:

# python3

Python 3.7.0 (default, Apr 1 2019, 00:00:00)

[GCC 7.3.0] on linux

Type "help", "copyright", "credits" or "license" for more information.

>>> import crypt

>>> passwd = crypt.crypt("myPasswd")

>>> print(passwd)

\$6\$63c4tDmQGn5SDayV\$mZoZC4pa9Jdt6/ALgaaDq6mIExiOO2EjzomB.Rf6V1BkEMJDcMddZeGdp17cMyc9l9ML9ldthytBEPVcnboR/0

**Step 3** Mount the ISO image file to the CD-ROM drive of the computer where openEuler is to be installed.

If you want to install openEuler through the NFS, specify the path (which is **cdrom** by default) of installation source in the kickstart file.

----End

### **Installing the System**

- **Step 1** The installation selection dialog box is displayed.
  - 1. On the installation wizard page in 3.1 Starting the Installation, select **Install openEuler 20.03 LTS** and press **e**.
  - 2. Add inst.ks=http://server ip/ks/openEuler-ks.cfg to the startup parameters.

3. Press **Ctrl**+**x** to start the automatic installation.

### **Step 2** Verify that the installation is complete.

After the installation is complete, the system automatically restarts. Then, the installation page is displayed again. Shut down the computer and change startup option to start from the hard disk preferentially.

```
openeuler login: _
```

### 4.3 Full-automatic Installation Guide

### **Environment Requirements**

The environment requirements for full-automatic installation of openEuler using kickstart are as follows:

- PM/VM (for details about how to create VMs, see the documents from corresponding vendors): includes the computer where kickstart is used for automatic installation and the computer where the kickstart tool is installed.
- Httpd: stores the kickstart file.
- TFTP: provides vmlinuz and initrd files.
- DHCPD/PXE: provides the DHCP service.
- ISO: openEuler-20.03-LTS-aarch64-dvd.iso

### **Procedure**

To use kickstart to perform full-automatic installation of openEuler, perform the following steps:

### **Environment Preparation**

#### 

Before the installation, ensure that the firewall of the HTTP server is disabled. Run the following command to disable the firewall:

```
iptables -F
```

### **Step 1** Install httpd and start the service.

```
# dnf install httpd -y
# systemctl start httpd
# systemctl enable httpd
```

### Step 2 Install and configure TFTP.

```
# dnf install tftp-server -y
# vim /etc/xinetd.d/tftp
service tftp
{
socket type = dgram
protocol = udp
```

```
wait = yes
user = root
server = /usr/sbin/in.tftpd
server_args = -s /var/lib/tftpboot
disable = no
per_source = 11
cps = 100 2
flags = IPv4
}
# systemctl start tftp
# systemctl enable tftp
# systemctl start xinetd
# systemctl status xinetd
# systemctl enable xinetd
```

### **Step 3** Run the following commands to prepare the installation source:

```
# mount openEuler-20.03-LTS-aarch64-dvd.iso /mnt
# cp -r /mnt/* /var/www/html/openEuler/
```

### **Step 4** Set and modify the kickstart configuration file **openEuler-ks.cfg**. Select the HTTP installation source by referring to #EN-US\_TOPIC\_0229291289/11692f6b9284e493683ffa2ef804bc7ca.

```
#vim /var/www/html/ks/openEuler-ks.cfg
***Modify the following information as required.***
#version=DEVEL
ignoredisk --only-use=sda
autopart --type=lvm
# Partition clearing information
clearpart --none --initlabel
# Use graphical install
graphical
# Keyboard layouts
keyboard --vckeymap=cn --xlayouts='cn'
# System language
lang zh CN.UTF-8
#Use http installation source
url --url=//192.168.122.1/openEuler/
%post
#enable kdump
sed -i "s/ ro / ro crashkernel=1024M, high /" /boot/efi/EFI/openEuler/grub.cfg
%end
```

### **Step 5** Modify the PXE configuration file **grub.cfg** as follows:

```
# cp -r /mnt/images/pxeboot/* /var/lib/tftpboot/
# cp /mnt/EFI/BOOT/grubaa64.efi /var/lib/tftpboot/
# cp /mnt/EFI/BOOT/grub.cfg /var/lib/tftpboot/
# ls /var/lib/tftpboot/
grubaa64.efi grub.cfg initrd.img TRANS.TBL vmlinuz
# vim /var/lib/tftpboot/grub.cfg
set default="1"

function load video {
```

```
if [ x$feature all video module = xy ]; then
   insmod all video
 else
   insmod efi gop
   insmod efi uga
   insmod ieee1275 fb
   insmod vbe
   insmod vga
   insmod video bochs
   insmod video_cirrus
 fi
load video
set gfxpayload=keep
insmod gzio
insmod part_gpt
insmod ext2
set timeout=60
### BEGIN /etc/grub.d/10 linux ###
menuentry 'Install openEuler 20.03 LTS' --class red --class gnu-linux --class gnu --class
os {
      set root=(tftp,192.168.1.1)
      linux /vmlinuz ro inst.qeoloc=0 console=ttyAMA0 console=tty0 rd.iscsi.waitnet=0
inst.ks=http://192.168.122.1/ks/openEuler-ks.cfg
      initrd /initrd.img
```

### **Step 6** Run the following commands to configure DHCP (which can be replaced by DNSmasq):

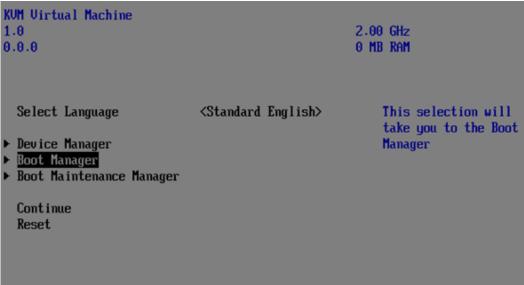
```
# dnf install dhcp -y
# DHCP Server Configuration file.
# see /usr/share/doc/dhcp-server/dhcpd.conf.example
# see dhcpd.conf(5) man page
# vim /etc/dhcp/dhcpd.conf
ddns-update-style interim;
ignore client-updates;
filename "grubaa64.efi"; # pxelinux location of the startup file;
next-server 192.168.122.1;
                            # (IMPORTANT) TFTP server IP address;
subnet 192.168.122.0 netmask 255.255.255.0 {
option routers 192.168.111.1; # Gateway address
option subnet-mask 255.255.255.0; # Subnet mask
range dynamic-bootp 192.168.122.50 192.168.122.200; # Dynamic IP address range
default-lease-time 21600;
max-lease-time 43200;
# systemctl start dhcpd
# systemctl enable dhcpd
```

#### ----End

### **Installing the System**

**Step 1** On the **Start boot option** screen, press **F2** to boot from the PXE and start automatic installation.







- **Step 2** The automatic installation window is displayed.
- **Step 3** Verify that the installation is complete.

```
openeuler login: _
```

## $\mathbf{5}$ faqs

- 5.1 Why Does openEuler Fail to Start After I Install It to the Second Disk?
- 5.2 What Are the Constraints on Network Configurations?
- 5.3 Why Does openEuler Enter Emergency Mode After It Is Powered On?
- 5.4 Failed to Reinstall openEuler When a Logical Volume Group That Cannot Be Activated Has Existed in openEuler
- 5.5 An Exception Occurs During the Selection of the Installation Source
- 5.6 How Do I Manually Enable the kdump Service?
- 5.7 Failed to Selected Only One Disk for Reinstallation When openEuler Was Installed on a Logical Volume Consisting of Multiple Disks
- 5.8 Failed to Install openEuler on an x86 PM in UEFI Mode due to Secure Boot Option Setting

### 5.1 Why Does openEuler Fail to Start After I Install It to the Second Disk?

### Symptom

The OS is installed on the second disk **sdb** during the installation. The openEuler fails to be started.

### **Possible Cause**

When openEuler is installed to the second disk, MBR and GRUB are installed to the second disk **sdb** by default. The following two situations may occur:

- 1. openEuler installed on the first disk is loaded and started if it is complete.
- 2. openEuler installed on the first disk fails to be started from hard disks if it is incomplete.

The preceding two situations occur because the first disk **sda** is booted by default to start openEuler on the BIOS window. If openEuler is not installed on the **sda** disk, system restart fails.

### Solution

This problem can be solved using either of the following two methods:

- During the installation of openEuler, select the first disk or both disks, and install the boot loader on the first disk **sda**.
- After installing openEuler, restart it by modifying the boot option on the BIOS window.

### 5.2 What Are the Constraints on Network Configurations?

The NetworkManager and network services are network service management tools. Some functions of the two services overlap.

• If the NetworkManager service is used, run the **nmcli** command or modify the configuration file to configure the network (such as the IP address and route). Do not run the **ip**, **ifconfig**, or **route** command to configure the network.

#### □ NOTE

When the NetworkManager service is enabled and you run commands such as **ip**, **ifconfig**, and **route** to configure the network, the configurations will be overwritten by NetworkManager.

To check whether NetworkManager is enabled, run the following command:

```
systemctl status NetworkManager
```

### **Ⅲ** NOTE

For details about the use of the **nmcli** command, see the execution result of the **nmcli** --**help** or **man nmcli** command.

 If you want to run commands such as ip, ifconfig, and route commands to manage network information, run the following command to disable the NetworkManager service:

systemctl stop NetworkManager

### 5.3 Why Does openEuler Enter Emergency Mode After It Is Powered On?

### **Symptom**

openEuler enters emergency mode after it is powered on.

```
Give root password for maintenance (or type Control-D to continue):
```

### **Possible Causes**

Damaged OS files result in disk mounting failure, or overpressured I/O results in disk mounting timeout (threshold: 90s).

An unexpected system power-off, and low I/O performance of disks may also cause the problem.

### Solution

- 1. Enter the password of the **root** account to log in to openEuler.
- 2. Check and restore files by using the file system check (fsck) tool, and restart openEuler.

#### □ NOTE

The fsck tool checks and maintains inconsistent file systems. If the system is powered off or a disk is faulty, run the **fsck** command to check file systems. Run the **fsck.ext3 -h** and **fsck.ext4 -h** commands to view the usage method of the fsck tool.

If you want to disable the timeout mechanism of disk mounting, add **x-systemd.device-timeout=0** to the **etc/fstab** file. For example:

```
#
# /etc/fstab
# Created by anaconda on Mon Sep 14 17:25:48 2015
#
# Accessible filesystems, by reference, are maintained under '/dev/disk'
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
/dev/mapper/openEuler-root / ext4 defaults, x-systemd.device-timeout=0 0 0
UUID=afcc811f-4b20-42fc-9d31-7307a8cfe0df /boot ext4
defaults, x-systemd.device-timeout=0 0 0
/dev/mapper/openEuler-home /home ext4 defaults 0 0
/dev/mapper/openEuler-swap swap swap defaults 0 0
```

### 5.4 Failed to Reinstall openEuler When a Logical Volume Group That Cannot Be Activated Has Existed in openEuler

### **Symptom**

After a disk fails, openEuler fails to be reinstalled because a logical volume group that cannot be activated has existed in openEuler.

### **Possible Cause**

During the installation of openEuler, a logical volume group cannot be activated.

### Solution

Before reinstalling openEuler, restore the abnormal logical volume group to the normal status or clear it. The following uses an example:

- Restore the logical volume group.
  - a. Run the following command to clear the active status of the abnormal logical volume group to ensure that the error message "Can't open /dev/sdc exclusively mounted filesystem" is not displayed:

```
vgchange -a n testvg32947
```

b. Run the following command to recreate a physical volume based on the backup file:

```
pvcreate --uuid JT7zlL-K5G4-izjB-3i5L-e94f-7yuX-rhkLjL --restorefile
/etc/lvm/backup/testvg32947 /dev/sdc
```

c. Run the following command to restore the logical volume group information:

```
vgcfgrestore testvg32947
```

d. Run the following command to reactivate the logical volume group:

```
vgchange -ay testvg32947
```

• Run the following commands to clear the logical volume group:

```
vgchange -a n testvg32947
vgremove -y testvg32947
```

### 5.5 An Exception Occurs During the Selection of the Installation Source

### **Symptom**

After the selection of the installation source, the message "Error checking software selection" is displayed.

### **Possible Cause**

This is because the software package dependency in the installation source is abnormal.

### **Solution**

Check whether the installation source is abnormal. Use the new installation source.

### 5.6 How Do I Manually Enable the kdump Service?

### **Symptom**

Run the **systemctl status kdump** command. The following information is displayed, indicating that no memory is reserved.

```
[root@localhost ~]# systemctl status kdump
  kdump.service - Crash recovery kernel arming
  Loaded: loaded (/usr/lib/systemd/system/kdump.service; enabled; vendor preset: enabled)
  Active: failed (Result: exit-code) since Mon 2019-09-16 05:36:56 EDT; 3min 14s ago
  Process: 2202 ExecStart=/usr/bin/kdumpctl start (code=exited, status=1/FAILURE)
Main PID: 2202 (code=exited, status=1/FAILURE)
Sep 16 05:36:55 localhost.localdomain systemd[1]: Starting Crash recovery kernel arming...
Sep 16 05:36:56 localhost.localdomain kdumpctt[2202]: No memory reserved for crash kernel
Sep 16 05:36:56 localhost.localdomain kdumpctt[2202]: Starting kdump: [FAILED]
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
Sep 16 05:36:56 localhost.localdomain systemd[1]: kdump.service: Main process exited, code=exited, status=1/FAILURE
```

### **Possible Cause**

The kdump service requires the system to reserve memory for running the kdump kernel. However, the system does not reserve memory for the kdump service. As a result, the kdump service cannot be started.

### Solution

For the scenario where the OS has been installed

- 1. Add crashkernel=1024M,high to /boot/efi/EFI/openEuler/grub.cfg.
- 2. Restart the system for configuration to take effect.
- 3. Run the following command to check the kdump status:

```
systemctl status kdump
```

If the following information is displayed, the kdump status is **active**, indicating that the kdump service is enabled. No further action is required.

```
[root@localhost ~]# systemctl status kdump

• kdump.service - Crash recovery kernel arming
Loaded: loaded (/usr/lib/systemd/system/kdump.service; enabled; vendor preset: enabled)
Active: active (exited) since Sun 2019-09-29 11:16:03 CST; 2h 57min ago
Process: 3664 ExecStart=/usr/bin/kdumpctl start (code=exited, status=0/SUCCESS)
Main PID: 3664 (code=exited, status=0/SUCCESS)

Sep 29 11:15:58 localhost.localdomain systemd[]: Starting Crash recovery kernel arming...
Sep 29 11:16:00 localhost.localdomain kdumpctl[3664]: Kbox memory 0xef0000000-0x10000000: [OK]
Sep 29 11:16:03 localhost.localdomain kdumpctl[3664]: kexec: loaded kdump kernel
Sep 29 11:16:03 localhost.localdomain kdumpctl[3664]: Starting kdump: [OK]
Sep 29 11:16:03 localhost.localdomain systemd[]: Started Crash recovery kernel arming.
[root@localhost ~]# ■
```

### **Parameter Description**

The following table describes the parameters of the memory reserved for the kdump kernel.

Table 5-1 crashkernel parameters

Kernel Boot Parameter	Description	Default Value	Remarks
crashkernel=X	Reserve X of the physical memory for kdump when the physical memory is less than 4 GB.	None. You can adjust the value as required.	This configuration method is used only when the memory is less than 4 GB. Ensure that the continuous available memory is sufficient.
crashkernel=X@Y	Reserve X of the memory at the start address Y for kdump.	None. You can adjust the value as required.	Ensure that the X of the memory at the start address Y is not reserved for other modules.
crashkernel=X,high	Reserve 256 MB of the physical memory for kdump when the physical memory is less than 4 GB, and X of the physical memory for kdump when the physical memory is greater than or equal to 4 GB.	None. You can adjust the value based as required. The recommended value is 1024M,high.	Ensure that 256 MB of the memory is reserved for continuous use when the physical memory is less than 4 GB and X of the memory is reserved when the physical memory is greater than or equal to 4

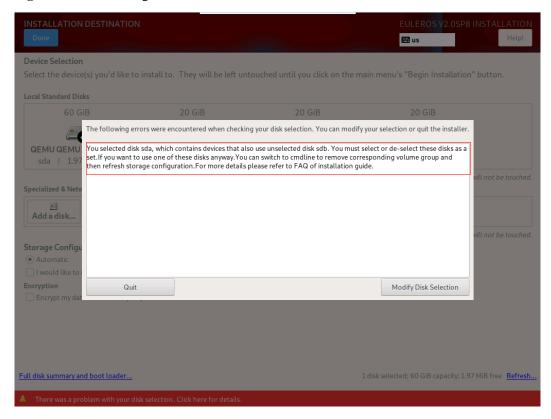
Kernel Boot Parameter	Description	Default Value	Remarks
			GB. The actual reserved memory size equals 256 MB plus X.
crashkernel=X,low crashkernel=Y,high	Reserve X of the physical memory for kdump when the physical memory is less than 4 GB and Y of the physical memory for kdump when the physical memory is greater than or equal to 4 GB.	None. You can adjust the value as required.	Ensure that X of the memory is reserved for continuous use when the physical memory is less than 4 GB and Y of the memory is reserved when the physical memory is greater than or equal to 4 GB. The actual reserved memory size equals X plus Y.

# 5.7 Failed to Selected Only One Disk for Reinstallation When openEuler Was Installed on a Logical Volume Consisting of Multiple Disks

### **Symptom**

If openEuler was installed on a logical volume consisting of multiple disks, an error message will be displayed as shown in Figure 5-1 when you attempt to select one of the disks for reinstallation.

Figure 5-1 Error message



### **Possible Cause**

The previous logical volume contains multiple disks. If you select one of the disks for reinstallation, the logical volume will be damaged.

### Solution

The logical volume formed by multiple disks is equivalent to a volume group. Therefore, you only need to delete the corresponding volume group.

**Step 1** Press **Ctrl**+**Alt**+**F2** to switch to the CLI and run the following command to find the volume group:



**Step 2** Run the following command to delete the volume group:

vgremove euleros

**Step 3** Run the following command to restart the installation program for the modification to take effect:

systemctl restart anaconda

#### 

You can also press **Ctrl+Alt+F6** to return to the GUI and click **Refresh** in the lower right corner to refresh the storage configuration.

----End

### 5.8 Failed to Install openEuler on an x86 PM in UEFI Mode due to Secure Boot Option Setting

### **Symptom**

During the installation of openEuler on an x86 PM in UEFI mode, the system stays at the "No bootable device" page and the installation cannot continue because **secure boot** is set to **enabled** (by default, it is set to **disabled**), as shown in Figure 5-2.

Figure 5-2 Dialog box showing "No bootable device"

EFI USB Device (Virtual DVD-ROM VM 1.1.0) has been blocked by the current security policy. No bootable device, System will find bootable device automatically after 5 seconds\_

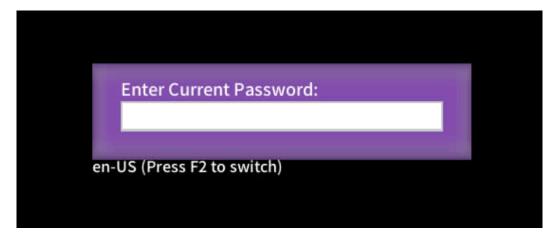
### **Possible Cause**

After **secure boot** is set to **enabled**, the mainboard verifies the boot program and OS. If the boot program and OS are not signed using the corresponding private key, the boot program and OS cannot pass the authentication of the built-in public key on the mainboard.

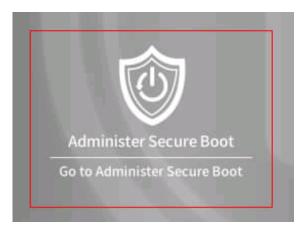
### **Solution**

Access the BIOS, set secure boot to disabled, and reinstall the openEuler.

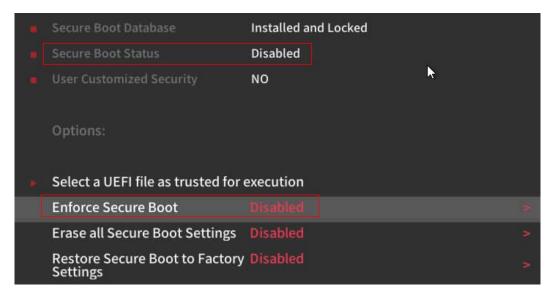
**Step 1** During the system startup, press **F11** and enter the password **Admin@9000** to access the BIOS.



Step 2 Choose Administer Secure Boot.



**Step 3** Set **Enforce Secure Boot** to **Disabled**.



### **Ⅲ** NOTE

After Enforce Secure Boot is set to Disabled, save the settings, and exit. Then, reinstall the system.

### ----End