

# FUJITSU Server PRIMERGY GX2460 M1



## Installing the SUSE Linux Enterprise Server OS Manually

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### SUSE Linux Enterprise Server 15 SP1

- This document is described installation method and operation for using SUSE Linux Enterprise Server 15 SP1 with GX2460 M1.
- The installation method Described in this document is an example. If you need detail information about setting etc, please refer to installation guide published SUSE.

<https://documentation.suse.com/en-us/sles/15-SP1/>




# Before reading this document

## Write in this document.

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### ■ Symbol in this document

The Symbols mentioned in this document have following meaning.

	It describes precautions to be taken when using and what you should not do. Be sure to read it.
	The necessary things to operate hardware and software correctly are written. Be sure to read it.
	It indicates referred page. You can refer corresponding page to click this symbol.

### ■ Key write and operating method

The key write in this document is not described all character written in keyboard but only character needed for description as following.

e.g. : **[Ctrl]** key、**[Enter]** key、**[→]** key, etc.

When multiple keys are pressed at the same time, they are connected by "+" as shown below.

e.g. : **[Ctrl]** + **[F3]** key、**[Shift]** + **[↑]** key, etc.

### ■ About the spell of DVD-ROM drive

In this document, DVD-ROM drive is written "CD/DVD drive"

### ■ Command entry (key entry)

In this document, Command entry is written as following.

```
diskcopy a: a:  
  ↑  ↑
```

- Press **[SPACE]** key once for the part written with spaces between letters like "↑".
- Entry command and press **[Enter]** key for command execution.

## ■ The case CD/DVD cannot be mounted automatically

When you login by single user mode or text mode, the media like CD/DVD cannot be mounted automatically.

If CD/DVD cannot be mounted automatically, execute following command.

```
# mount -r /dev/cdrom /media/<Volume name of the media >
```

For the first time to mount CD/DVD, execute following command and make CD/DVD mount point.

```
# mkdir /media/cdrom
```

## ■ About Maintenance Services

Our company prepare for compensation support and service for relieved Linux using. If contract compensation support and service, we support solution about question about this document and trouble occurred by installation and operation. We recommend that you subscribe to paid support services.

## ■ About driver and amendment program for GX2460 M1

Latest module of firmware for driver and BOIS, attached software are provided in internet information page of our company. For stable operation of the system, it is recommended to always apply the latest module.

<https://support.ts.fujitsu.com/IndexDownload.asp?lng=en>

About download and application operation latest module, please do on your own.

If you want to request our company application operation, we insource for a fee.

Please inquire sales staff or vendor.

## ■ Trademarks

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# 1 . PREPARATION BEFORE INSTALLATION

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Provides step-by-step instructions on how to install to a hard drive connected directly to the local system using a CD/DVD drive (and DVD installation media). Create the required disks before starting the installation.

## 1.1 Make installation DVD

---

Before you begin the installation, you must create the following DVDs. Please prepare one unused DVD.

Item	Write in this document	note
SUSE Linux Enterprise Server 15 SP1 Installation DVD	Installation DVD	Download and create SUSE Linux Enterprise Server 15 SP1, available from SUSE.

- 1** Go to SUSE. ( <https://download.suse.com/index.jsp> )
- 2** Download **SLE-15-SP1-Installer-DVD-x86\_64-GM-DVD1.iso**.
- 3** Create an installation DVD from the downloaded ISO image.

Write "Installation DVD" on the DVD you created.

### POINT

- There are two methods of installation.
  - default installation  
How to obtain the necessary modules from the registration server over the network at the time of installation  
⇒see "2.2 Starting the Default Installation" (→ p.7).
  - install without registering  
How to (Do not use a network) Without a Registration Server  
⇒see "2.3 Installation without registration" (See page 18.).
- The installation DVD is required for both "Default Installation" and "unregistered installations".
- "unregistered installations" requires a second installation media (SLE -15 SP1 Packages Image). For instructions on creating the second installation media, see (See page 18.) "2.3 Installation without registration". "

## 2 System Installation

---

Describes how to install a system.

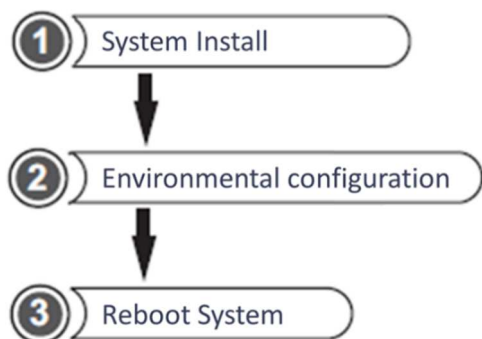
### POINT

- Refer to "Chapter 1 Preparation before installation " (→ p.5) and make installation disk in advance.

## 2.1 Installation Flow

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The installation flow is following.



### •Prepared items

Before installation, prepare following items.

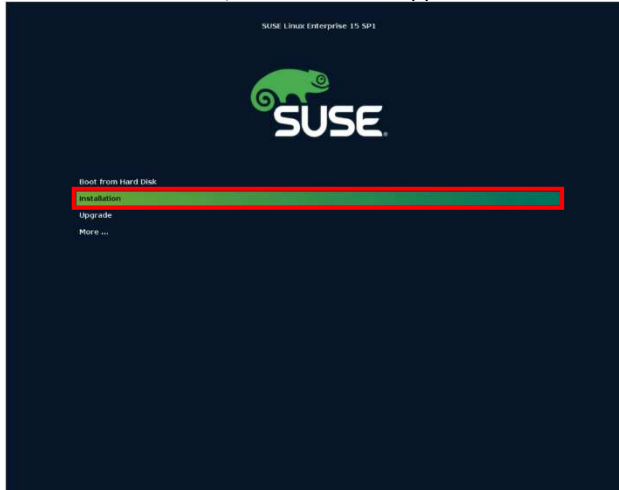
- Installation DVD
  - "1.1 *Make installation DVD*" ([→P.5](#))

---

## 2.2 Begin installation

- 1 Press the power button, plug in the DVD drive and insert the installation DVD.

After a few moments, the boot menu appears.



Select "Installation" and press the [Enter] key.

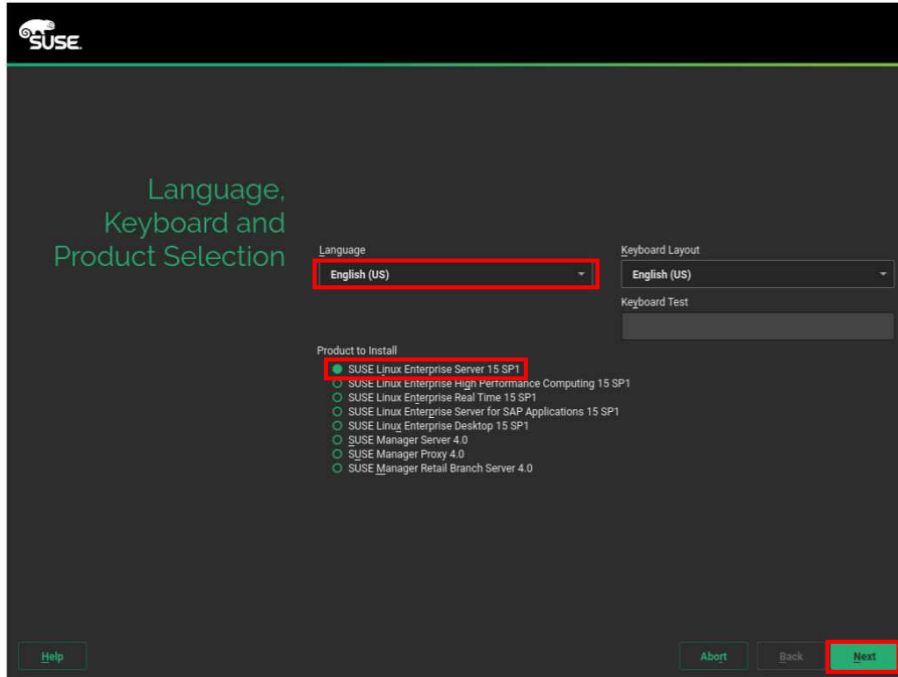
### POINT

- Use the keyboard.  
keyMove item : [←] [→] [↑] [↓] key or [tab] key  
Select item : [Enter] key

\* No drivers are required for installation at this time.

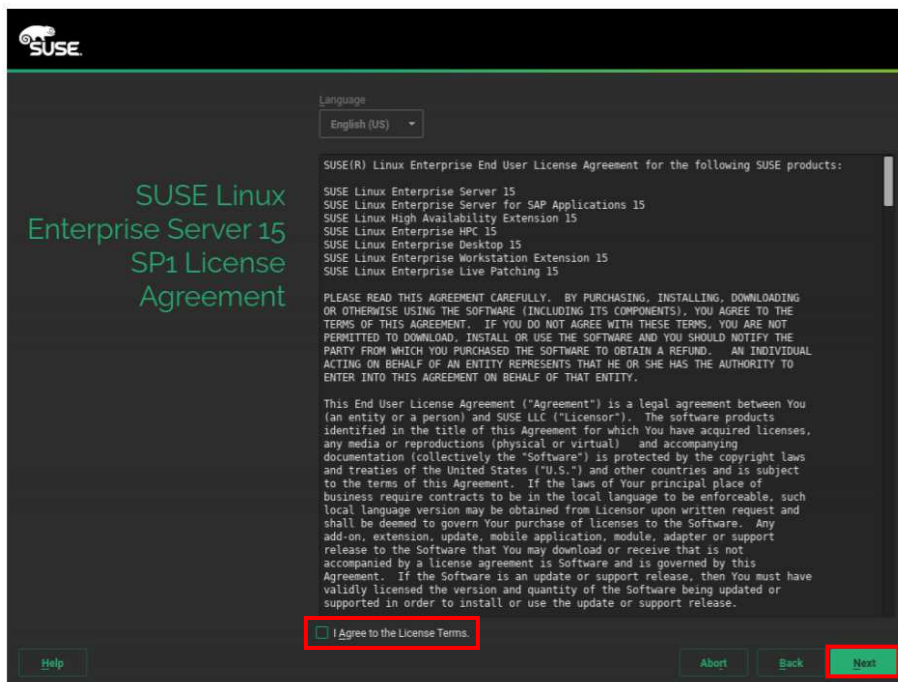
## 2 The Select Language/Keyboard/Product screen appears.

Select the language "English (US)", the product you want to install "SUSE Linux Enterprise Server 15 SP1", and then click "Next (N)".



The keyboard may not work with this operation. If this happens, temporarily disconnect the keyboard, plug in the mouse, and then use the mouse to control it.

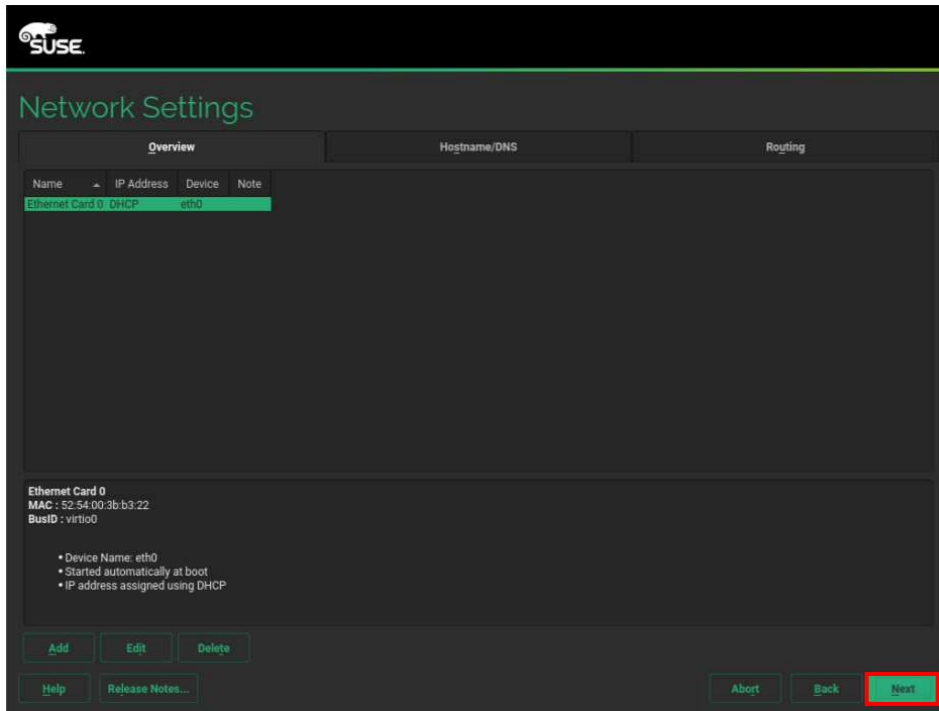
## 3 Review the terms of your license agreement, and if you are satisfied, check "I Agree to the License Terms" and click "Next".





#### 4 Configure network settings.

Set the desired network and click "Next".



#### POINT

- This screen does not appear if your network is automatically configured through DHCP when you begin the installation.
- If you want to install without network access, click "Next (N)" without making any changes. In this case, see "2.3 Installation without registration".

## 5 Set up registration.

The registration setting screen appears.

Select the desired setting and click "Next".

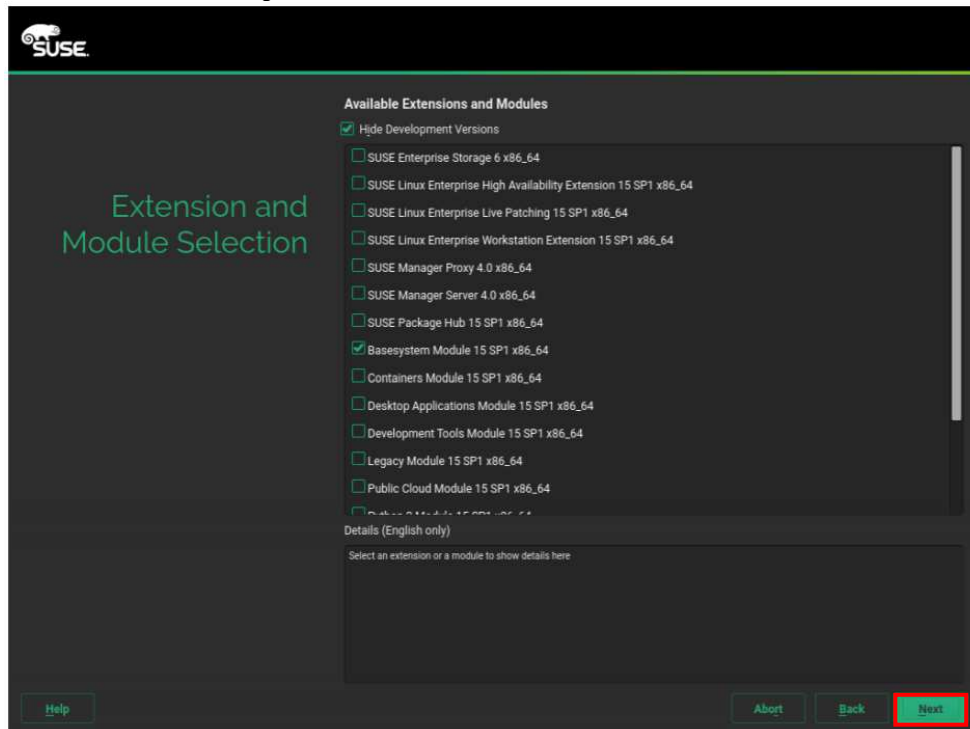
The screenshot shows the registration screen for SUSE Linux Enterprise Server 15 SP1. The interface is dark-themed. At the top left is the SUSE logo. The main heading is "Registration" in green. Below it, the text "SUSE Linux Enterprise Server 15 SP1" is displayed. A prompt says "Please select your preferred method of registration." There are three radio button options: "Register System via scc.suse.com" (which is selected), "Register System via local SMT Server", and "Skip Registration". The "Register System via scc.suse.com" option has two input fields: "E-mail Address" and "Registration Code". The "Register System via local SMT Server" option has a dropdown menu for "Local Registration Server URL" with the value "https://smt.example.com". At the bottom of the screen, there are four buttons: "Help", "Abort", "Back", and "Next". The "Next" button is highlighted with a red border.

### POINT

- To obtain technical support information and product updates, you must register and activate the product at the SUSE Customer Center or on a local registration server. If you register SUSE Linux Enterprise Server at this stage, you will have immediate access to the update repository. This allows you to install your system with the latest available updates and patches.
- If you are not connected to a network or want to skip registration, enable [Skip without performing the registration]. Proceed with the installation as described in Section 2.3, "unregistered installations".

## 6 Select Extensions and Modules

Select the desired setting and click "Next".



### POINT

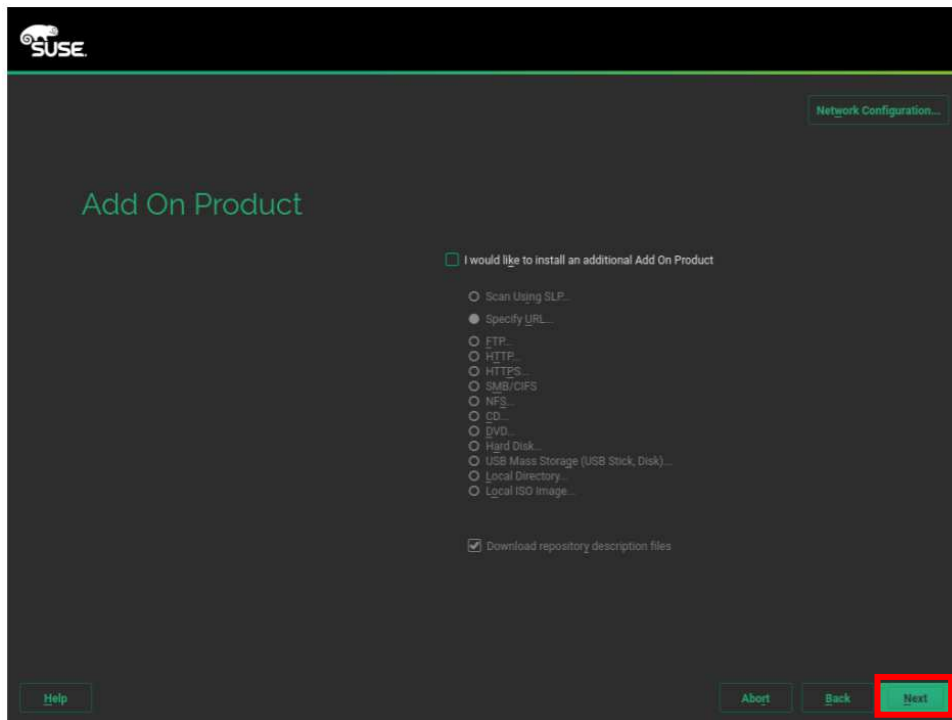
- Modules are free components that can be built to meet your needs. Extensions add specific functionality to a product. The extension is provided as a subscription and requires a paid registration key.
- See below for the module to install.  
Modules and Extensions Quick Start  
<https://documentation.suse.com/sles/15-SP1/single-html/SLES-modulesquick/#sec-modules-what-modules>
- Installation of [SLES15-SP1 15.1-0], [Basesystem-Module 15.1-0], and [Server - Applications - Module 15.1-0] is mandatory.

### Important

- The following modules and extension products are purchased in addition to SLES and cannot be installed with a SLES subscription key alone. Do not select. (You need to purchase the product separately.)  
<Products Not Available Online/add\_on>
  - [SUSE CaaS Platform 4.0 x86\_64]
  - [SUSE Enterprise Storage 6 x86\_64]
  - [SUSE Linux Enterprise High Availability Extension 15 SP1 x86\_64]
  - [SUSE Linux Enterprise Live Patching 15 SP1 x86\_64]
  - [SUSE Linux Enterprise Workstation Extension 15 SP1 x86\_64]

## 7 Select the add-on product.

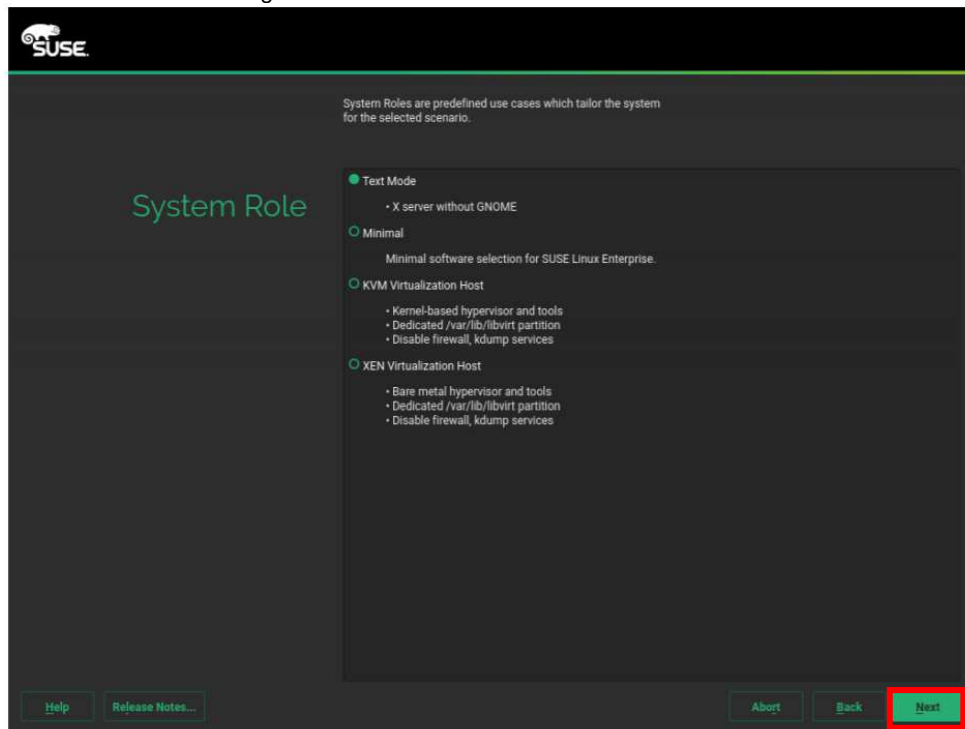
Select the desired setting and click "Next".



- You can add other software sources ("Repository") to SUSE Linux Enterprise Server that are not provided by the SUSE Customer Center. These add-on products include third-party products and drivers or additional software for your system.
- If you want to skip this step, continue with [Next]. Select [Install add-on products] if you do not want to skip. Specify the media type, local path, or network resource hosting the repository, and follow the on-screen instructions.

## 8 System Roles

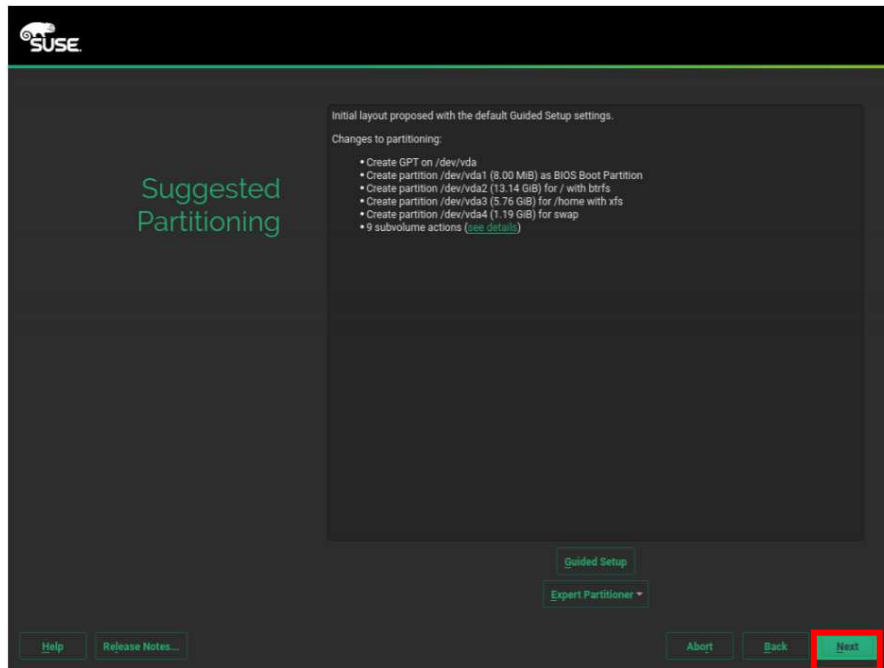
Select the desired setting and click "Next".



- The system roles that are available depend on the selected module and extension. The system role defines the recommended settings for partitions and sets of software patterns that are preselected for installation. Refer to the on-screen instructions when making your selection.

## 9 Set up partitions.

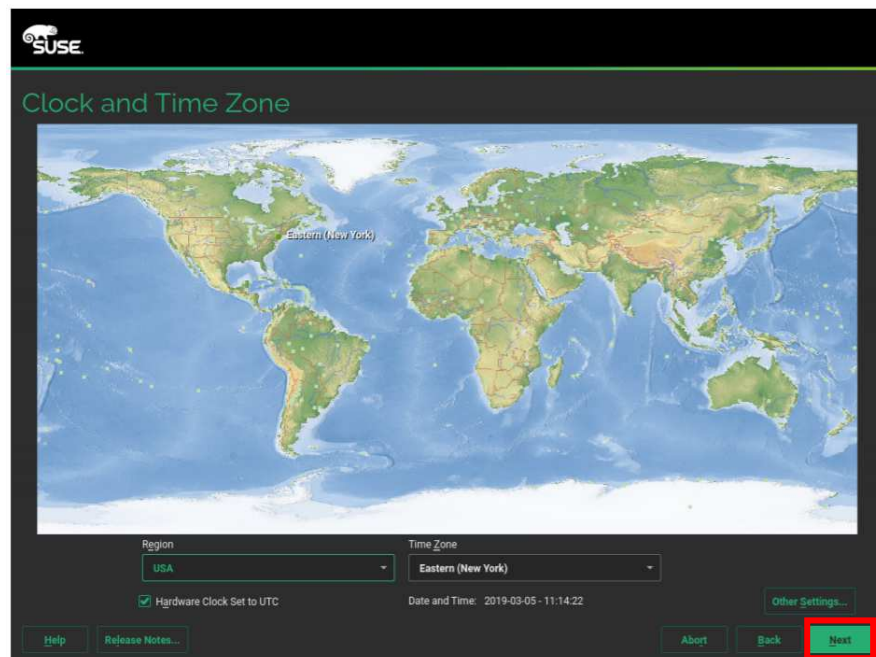
Check the partition settings recommended by the system. Change settings as needed, and then click "Next".



## 10 Set the clock and time zone.

Select the clock and time zone that you want your system to use. Select [Other Settings] to manually adjust the time or set the NTP server for time synchronization.

When you are finished, click "Next".

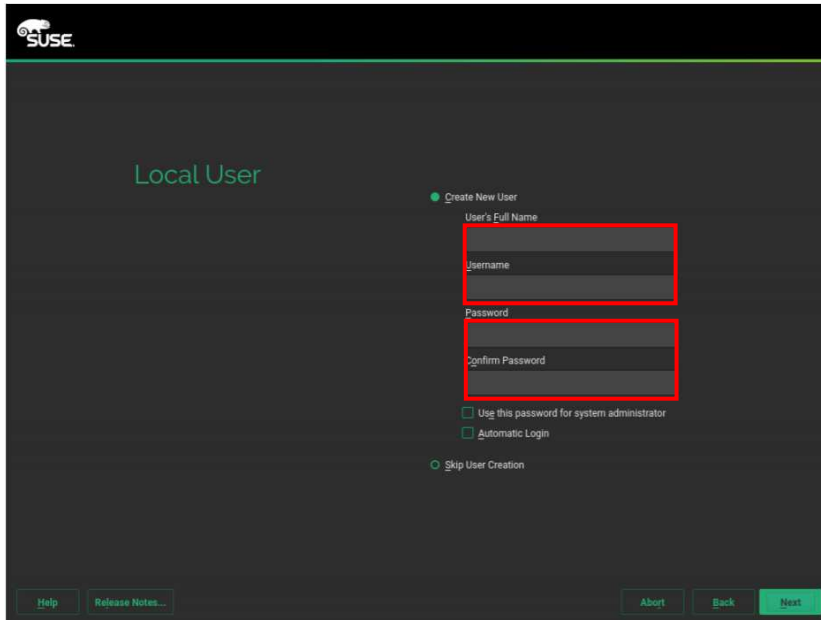


## 11 Configure local user settings.

The Local User Settings screen appears.

If you are creating a new user, set the user's full name, username, and password and click "Next".

(\* You can skip this setting, but you will be asked to do it the first time you log in.)

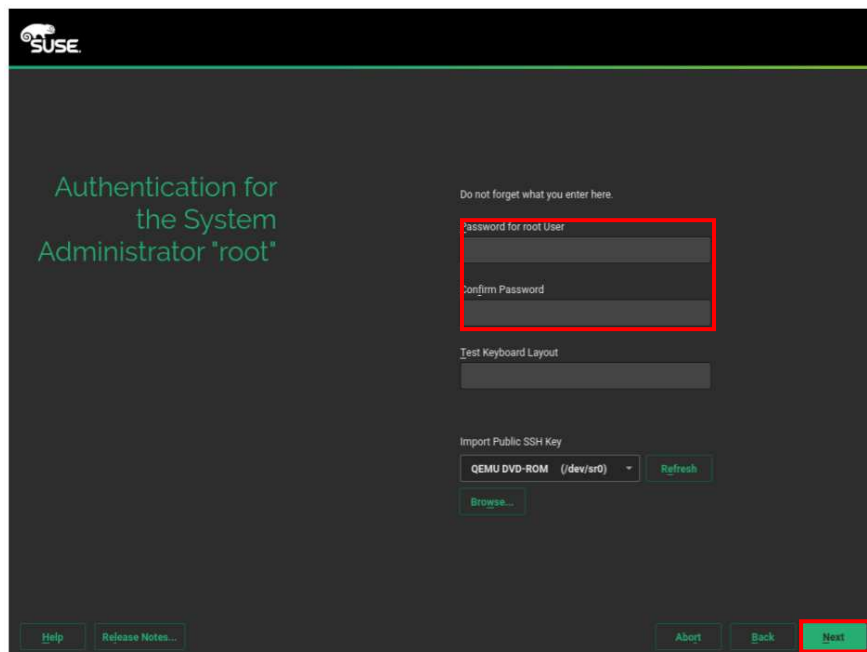


The screenshot shows the SUSE Local User Settings screen. The title is "Local User". There are two radio buttons: "Create New User" (selected) and "Skip User Creation". Under "Create New User", there are input fields for "User's Full Name", "Username", "Password", and "Confirm Password". There are also two checkboxes: "Use this password for system administrator" and "Automatic Login". At the bottom, there are buttons for "Help", "Release Notes...", "About", "Back", and "Next".

## 12 Set the root user.

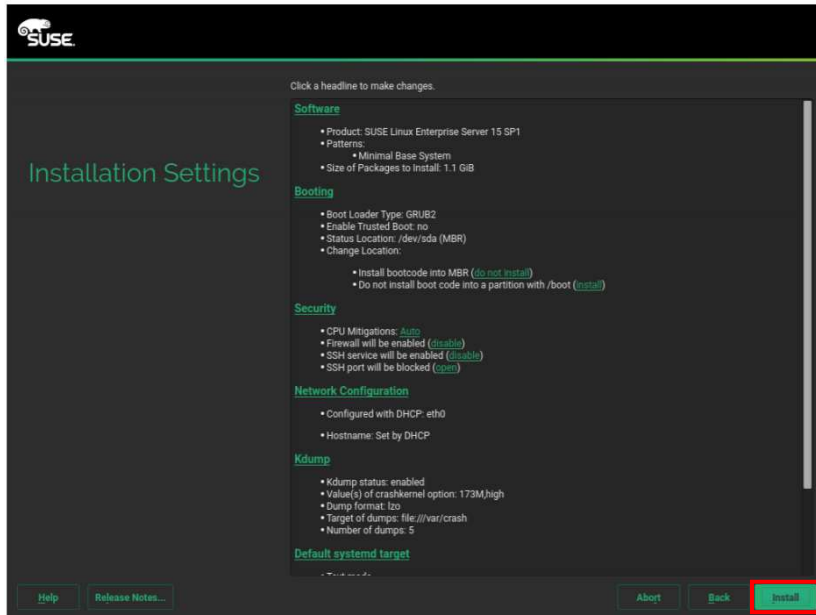
The setup screen for the root user appears.

Set the root password and click "Next".



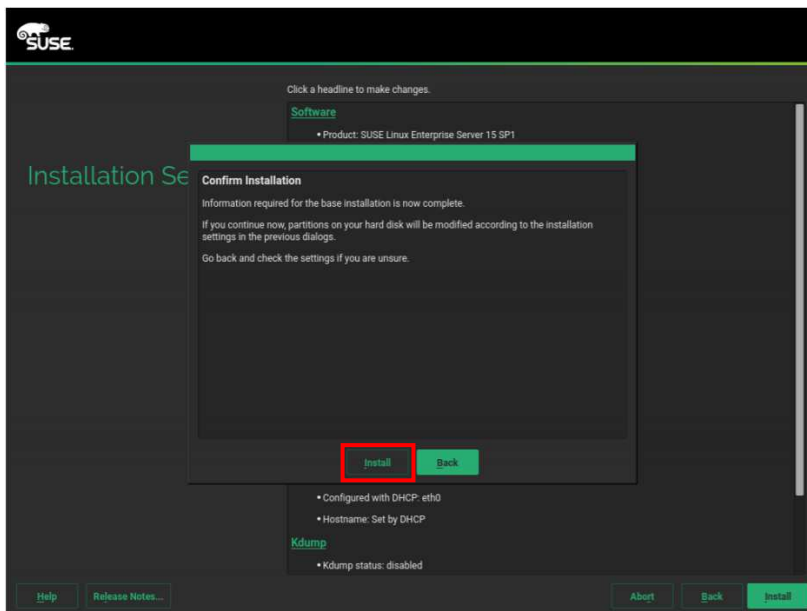
The screenshot shows the SUSE Authentication for the System Administrator "root" screen. The title is "Authentication for the System Administrator 'root'". There is a warning: "Do not forget what you enter here." There are input fields for "password for root User" and "Confirm Password". Below that is a "Test Keyboard Layout" section with a dropdown menu. There is also an "Import Public SSH Key" section with a dropdown menu showing "QEMU DVD-ROM (/dev/sr0)" and a "Refresh" button, and a "Browse..." button. At the bottom, there are buttons for "Help", "Release Notes...", "About", "Back", and "Next".

### 13 Review the installation settings and click "Installation (I)".



- You can change the settings as needed.
- By default, the SSH service is disabled. You may need to enable it.

### 14 Click "Install " to begin the installation.



### 15 Automatically restarts when installation is complete.



## 2.3 unregistered installations

If you run the installation without being connected to a registration server, you will not be able to register the system during the installation. For normal installation, use a second installation media called the SLE -15 SP1-Packages image.

To perform an unregistered installation, make the contents of the SLE -15 SP1-Packages image accessible during the installation. This can be done by copying the image to a local hard disk, removable flash disk, or by publishing it on a local network. Please choose a method supported by your hardware.

As an example, we will install using a removable flash disk.

Before starting the installation, create the following removable flash disk. Prepare an unused removable flash disk.

- 1** Browse to SUSE (<https://download.suse.com/index.jsp>).
- 2** Download **SLE-15-SP1-Packages-x86\_64-GM-DVD1.iso**.
- 3** Use the following commands to copy data to a removable flash disk:

```
sudo dd if=PATH TO IMAGE of=FLASH STORAGE PARTITION bs=4M && sync
```

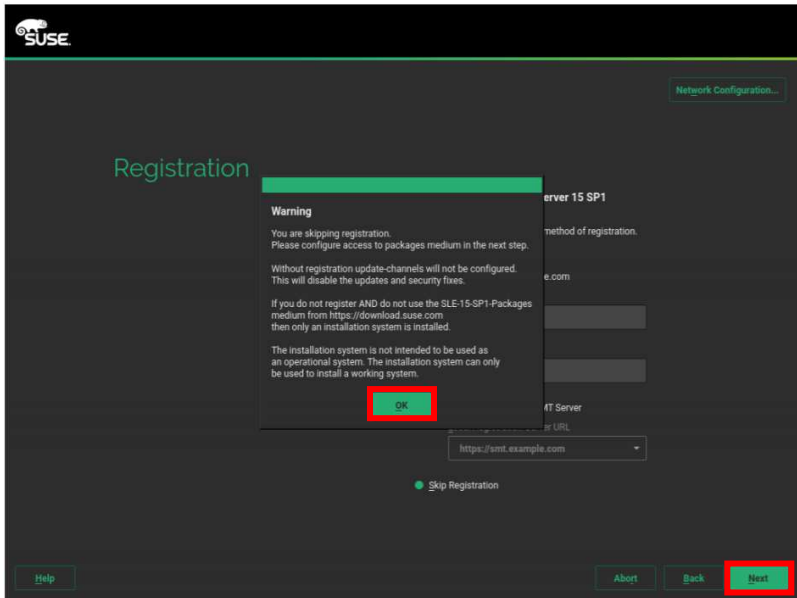
Replace `PATH _ TO _ IMAGE` with a relative or absolute path to this image file.  
Replace `FLASH _ STORAGE _ PARTITION` with the path to the partition on the flash device.

**1 Press the power button, connect the removable flash disk to the DVD drive, and insert the installation DVD into the DVD drive.**

**2 Skip without registering**

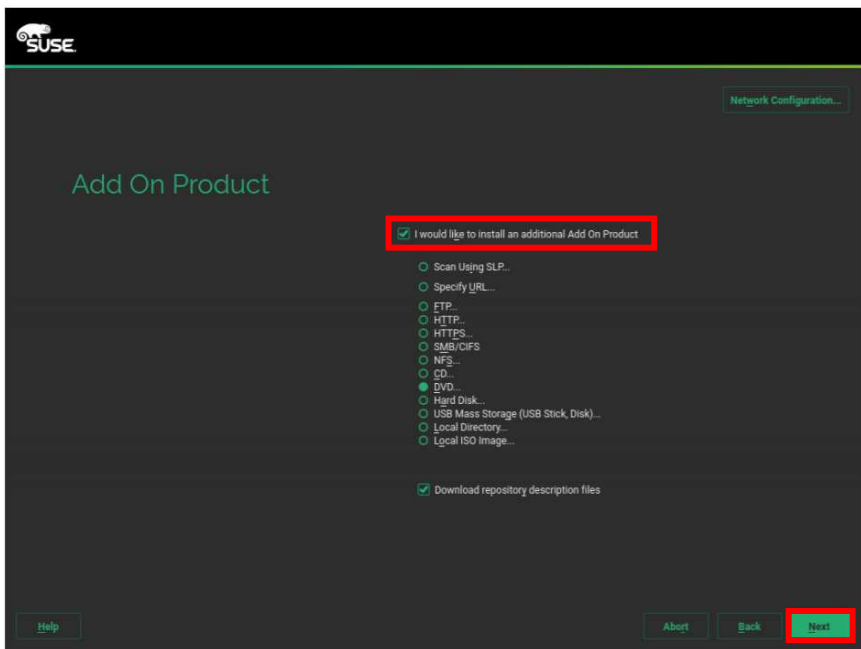
Complete the steps in Section 2.2, "Network Settings" through Section 4, "Starting the Default Installation".

"Skip without performing the registration". Click "OK " and continue with "Next".



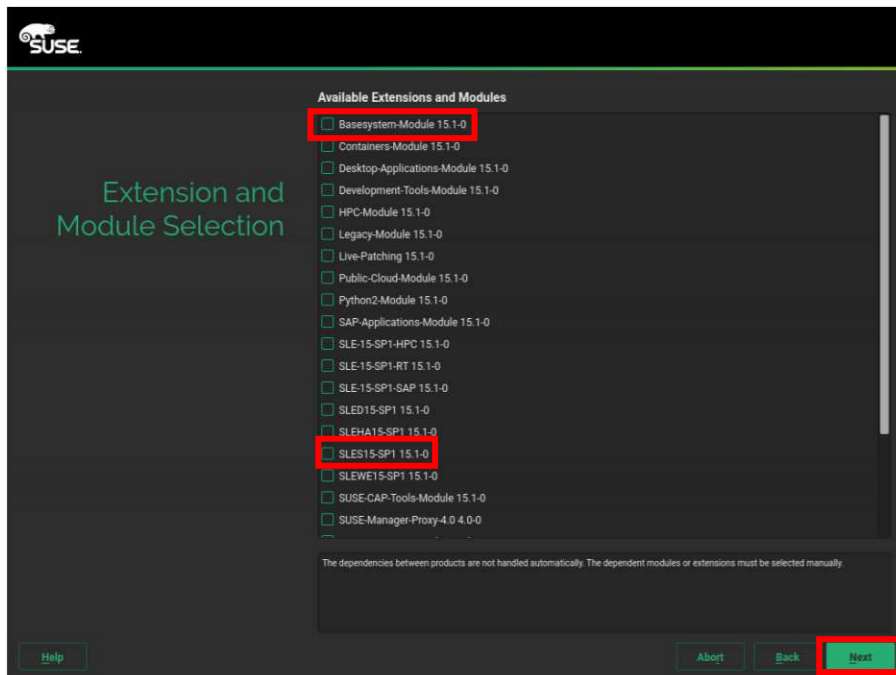
**3 Accessing the SLE -15 SP1-Packages Image**

Enable [Install additional add-on products] and specify the source for the SLE -15 SP1-Packages image. Continue with "Next".



#### 4 Accessing the SLE -15 SP1-Packages Image

Select the desired setting and click "Next (N)".



#### POINT

- Modules are free components that can be built to meet your needs. Extensions add specific functionality to a product. The extension is provided as a subscription and requires a paid registration key.

- See below for the module to install.

Modules and Extensions Quick Start

<https://documentation.suse.com/sles/15-SP1/single-html/SLES-modulesquick/#sec-modules-what-modules>

- Installation of [SLES15-SP1 15.1-0], [Basesystem-Module 15.1-0], and [Server - Applications - Module 15.1-0]. is mandatory.

#### Important

- The following modules and extension products are purchased in addition to SLES and cannot be installed with a SLES subscription key alone. Do not select. (You need to purchase the product separately.)

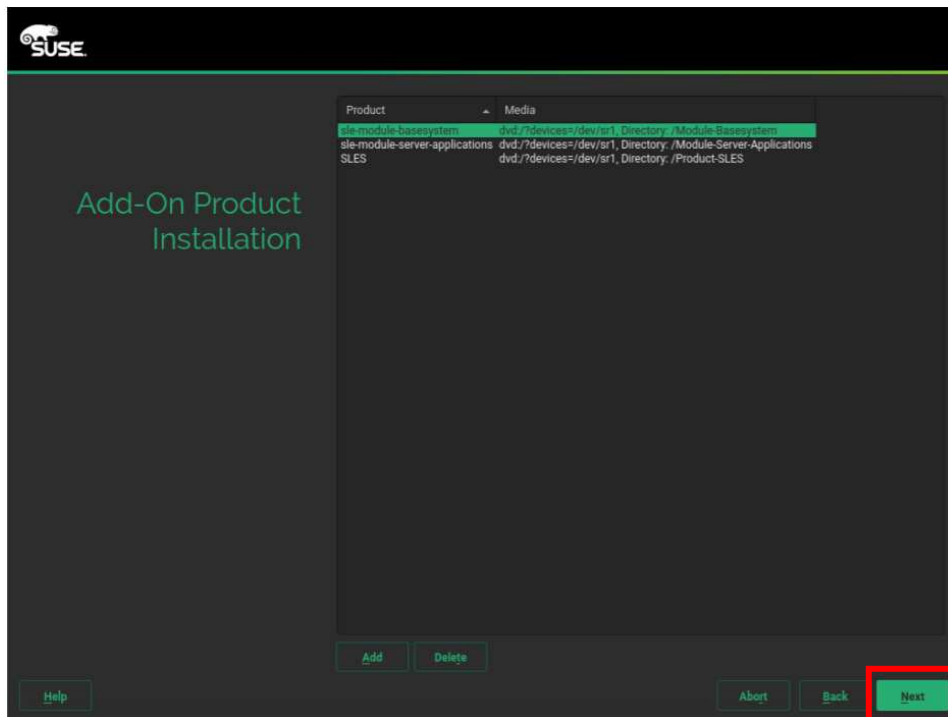
<Offline-selectable but unavailable modules and extension products>

- [HPC-Module 15.1-0]
- [Live-Patching 15.1-0]
- [SAP-Applications-Module 15.1-0]
- [SLE-15-SP1-HPC 15.1-0]
- [SLE-15-SP1-RT 15.1-0]
- [SLE-15-SP1-SAP 15.1-0]
- [SLED15-SP1 15.1-0]
- [SLEHA15-SP1 15.1-0]

- [SLEWE15-SP1 15.1-0]
- [SUSE-CAP-Tools-Module 15.1-0]
- [SUSE-Manager-Proxy4.0 4.0-0]
- [SUSE-Manager-Retail-Branch-Server-4.0 4.0-0]
- [SUSE-Manager-Server-4.0 4.0-0]
- [SUSE-Real-Time-Module 15.1-0]

## 5 Confirm Extension and Module Selection

Select [Next] to continue the installation.



### POINT

- Use the "Add" or "Deletion" options to modify this list. You can optionally add other add-on products using "Add".

## 6 finalizing the installation

The installation procedure from here is the same as for the default installation.

Proceed to Section 8 "role of the system" in Section 2.2 "Starting the Default Installation".

## 2.4 SR-IOV Configuration

To use the SR-IOV feature:

### 1 Updating the kernel

Update your kernel to 4.12.14-197.51.1 or later.

Update the kernel by running the following command:

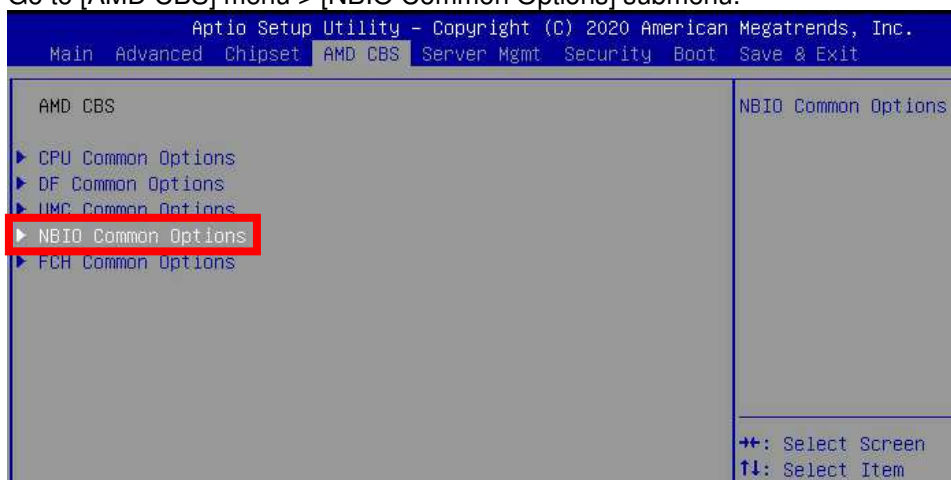
```
zypper in kernel-default-*.**.*-***.**.*(kernel version)
```

### 2 Changing BIOS settings

When the following screen appears, press the [F2] or [Del] key to enter System Setup.

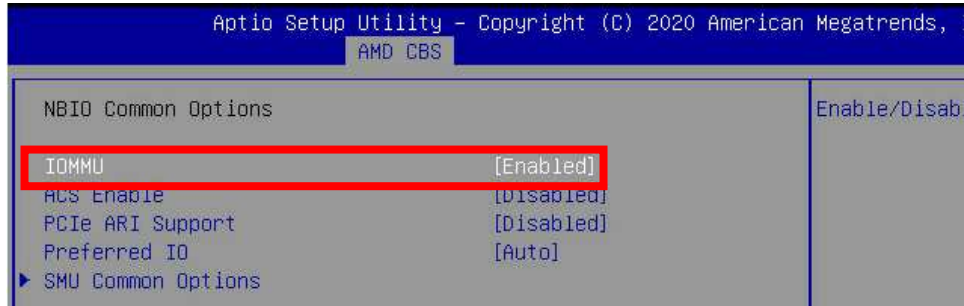


Go to [AMD CBS] menu > [NBIO Common Options] submenu.



Change the following three settings:

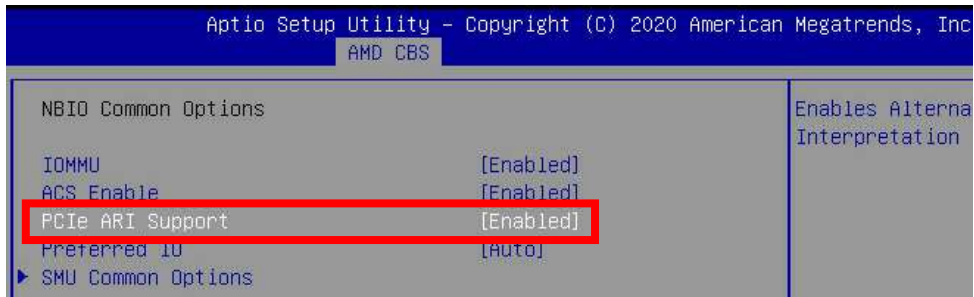
- [IOMMU] >> [Enabled] (default: Auto)



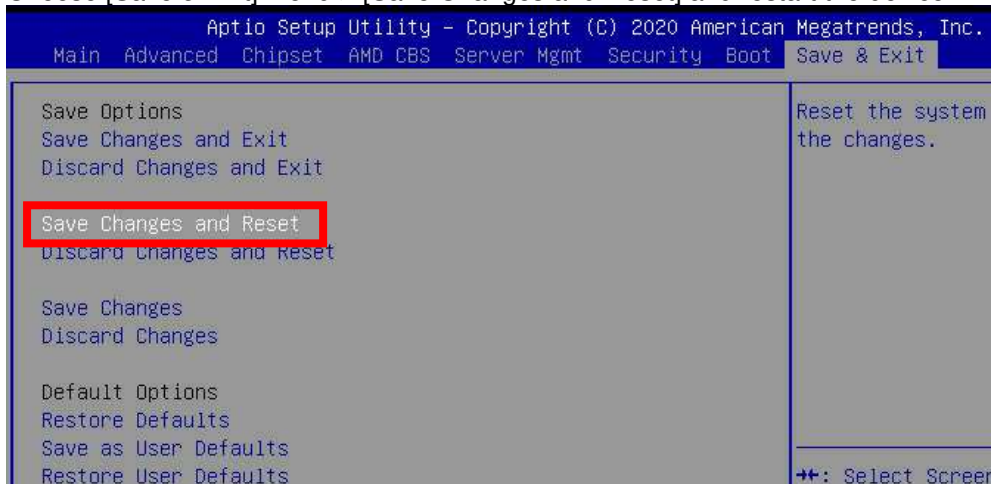
- [ACS Enable] >> [Enabled] (default: Disabled)



- [PCIe ARI Support] >> [Enabled] (default: Disabled)



Choose [Save & Exit] menu > [Save Changes and Reset] and restart the device.



Run the following command:

```
echo 2 > /sys/class/net/eth1/device/sriov_numvfs
```

Run the following command and verify that the result is "2".

```
cat /sys/class/net/eth1/device/sriov_numvfs
```

- reference

```
linux-lkq1:~ # cat /sys/class/net/eth1/device/sriov_numvfs
0
linux-lkq1:~ # echo 2 > /sys/class/net/eth1/device/sriov_numvfs
linux-lkq1:~ # cat /sys/class/net/eth1/device/sriov_numvfs
2
linux-lkq1:~ #
```

## Revision History

Revision	contents of revision
01	first edition



**Installing the SUSE Linux Enterprise Server OS Manually**  
**SUSE Linux Enterprise Server 15 SP1**

CA92344-4077-01

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<b>responsibility for issue</b>	<b>Fujitsu Limited</b>
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