Installation Quick Start

SUSE Linux Enterprise Desktop 15 SP1

This Quick Start guides you step-by-step through the installation of SUSE® Linux Enterprise Desktop 15 SP1.

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Contents

1 Welcome to SUSE Linux Enterprise Desktop

Use the following procedures to install the product on all supported hardware platforms. They assume you have successfully booted into the installation system. For more detailed installation instructions and deployment strategies, refer to the *Book "*Deployment Guide*"*. For preparations required to boot into the installation system, refer to *Book "*Deployment Guide*", Chapter 2 "Installation on AMD64 and Intel 64"*.

1.1 The Default Installation Procedure

Starting with SUSE Linux Enterprise Desktop 15, the installation medium only consists of the Installer, a minimal, command line-based system for installing, updating and registering SUSE Linux Enterprise Desktop. During the installation you can add functionality by selecting modules to be installed on top of the Installer.

A default installation requires network access to either contact the SUSE Customer Center or a local Repository Mirroring Tool server to retrieve repository data for the modules. In case you want to perform an installation without network access, a second installation medium, the SLE-15-SP1-Packages image, is required.

To install SUSE Linux Enterprise Desktop, boot into the installer from the Installer medium and start the installation.

1.1.1 Language, Keyboard, and Product Selection
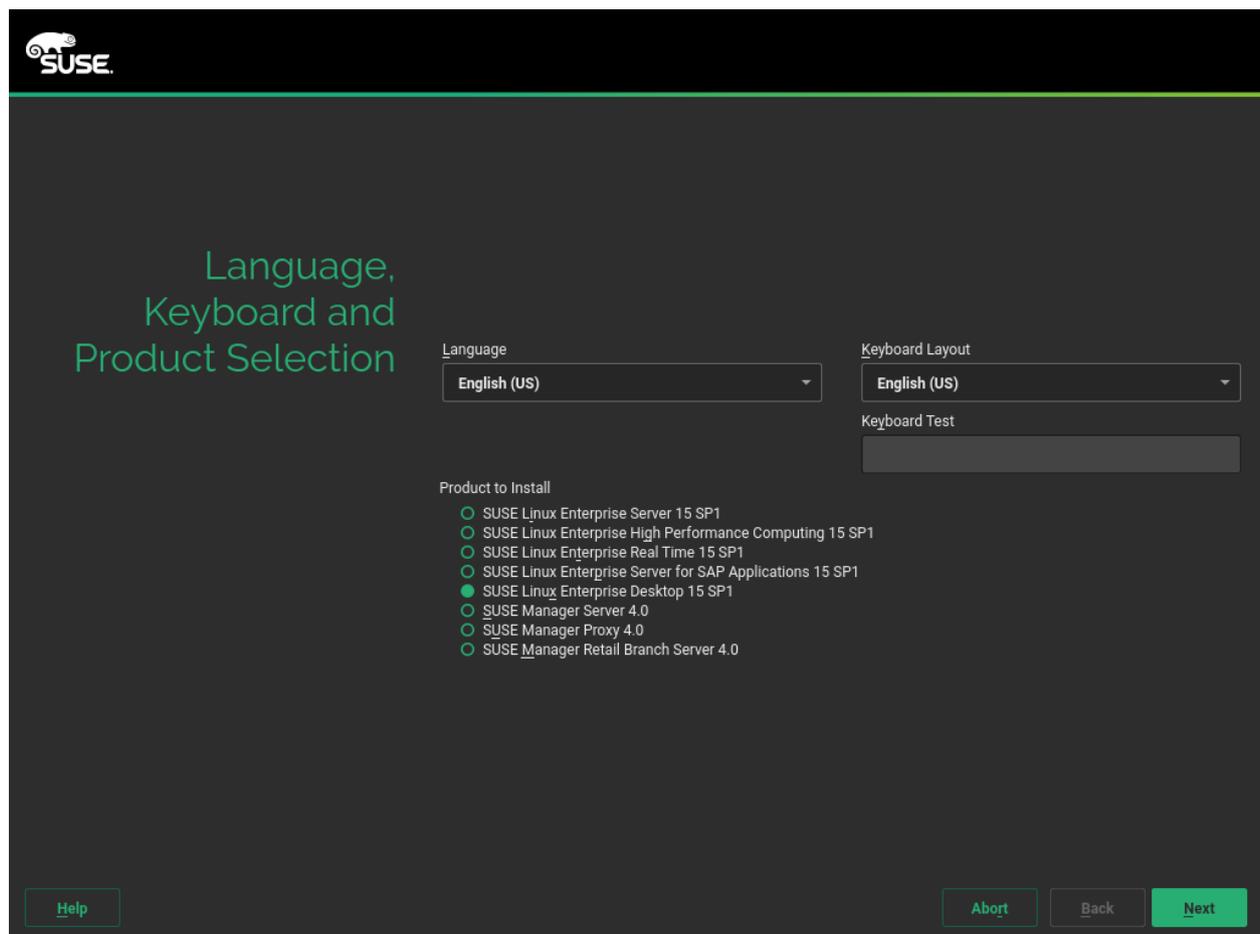
The *Language* and *Keyboard Layout* settings are initialized with the language you chose on the boot screen. If you did not change the default, it will be English (US). Change the settings here, if necessary. Use the *Keyboard Test* text box to test the layout.

With the Installer you can install all SUSE Linux Enterprise base products:

- SUSE Linux Enterprise Server 15 SP1 (refer to https://www.suse.com/documentation/sles/ ↗ for installation instructions)

- SUSE Linux Enterprise Desktop 15 SP1 (covered here)

- SUSE Linux Enterprise High Performance Computing 15 SP1

- SUSE Linux Enterprise Real Time 15 SP1 (refer to https://www.suse.com/documentation/slerte/ ↗ for installation instructions)

- SUSE Linux Enterprise Server for SAP Applications 15 SP1 (refer to https://www.suse.com/documentation/sles-for-sap/ ↗ for installation instructions)

- SUSE Manager Server 4.0 (refer to https://www.suse.com/documentation/suse-manager/ ↗ for installation instructions)

- SUSE Manager Proxy 4.0 (refer to https://www.suse.com/documentation/suse-manager/ ↗ for installation instructions)

- SUSE Manager Retail Branch Server 4.0 (refer to https://www.suse.com/documentation/suse-manager-for-retail/ ↗ for installation instructions)

Select a product for installation. You need to have a registration code for the respective product. In the course of this document it is assumed you have chosen SUSE Linux Enterprise Desktop. Proceed with *Next*.

1.1.2   License Agreement
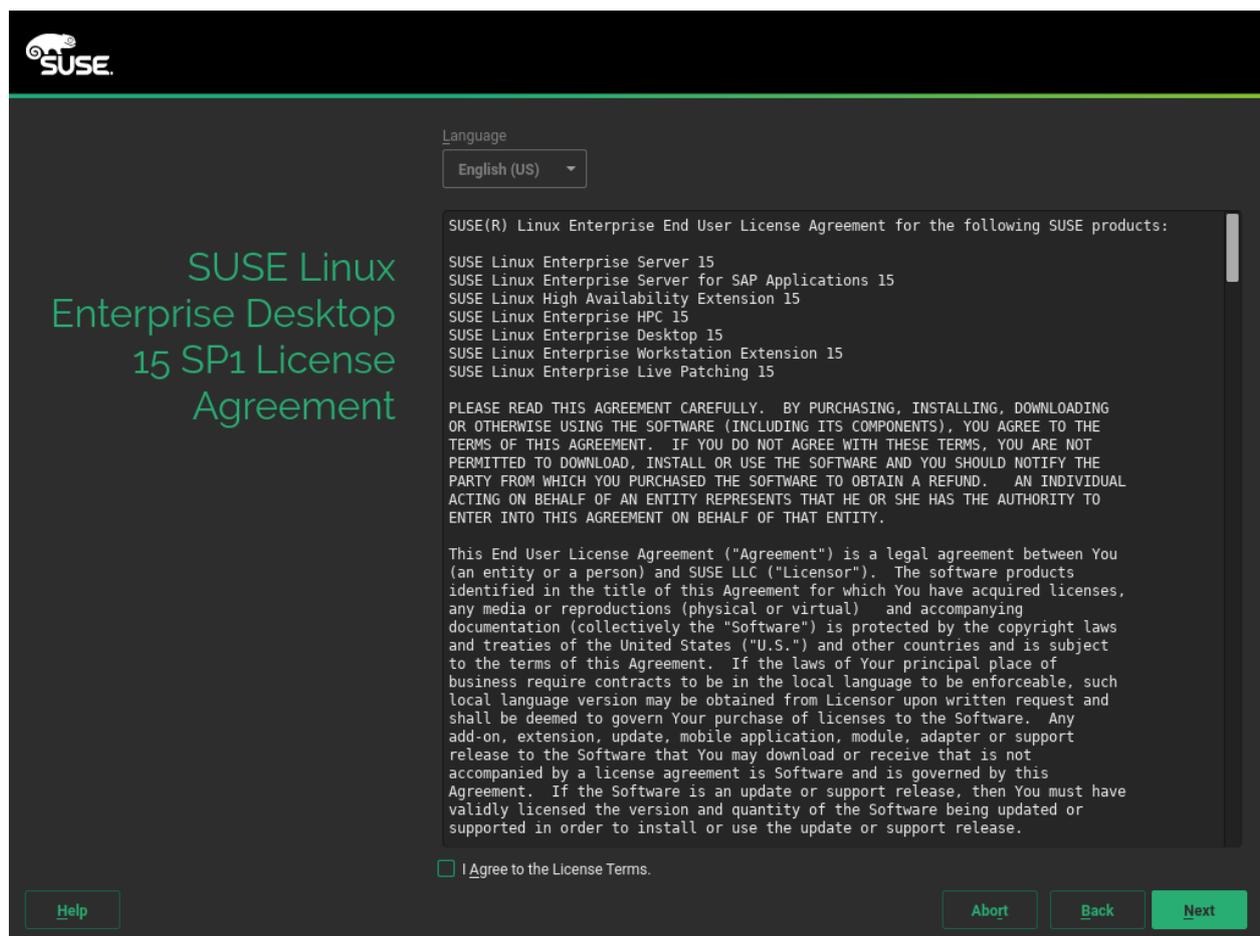
Read the License Agreement. It is presented in the language you have chosen on the boot screen. Translations are available via the *License Language* drop-down box. You need to accept the agreement by checking *I Agree to the License Terms* to install SUSE Linux Enterprise Desktop. Proceed with *Next*.

1.1.3   Network Settings
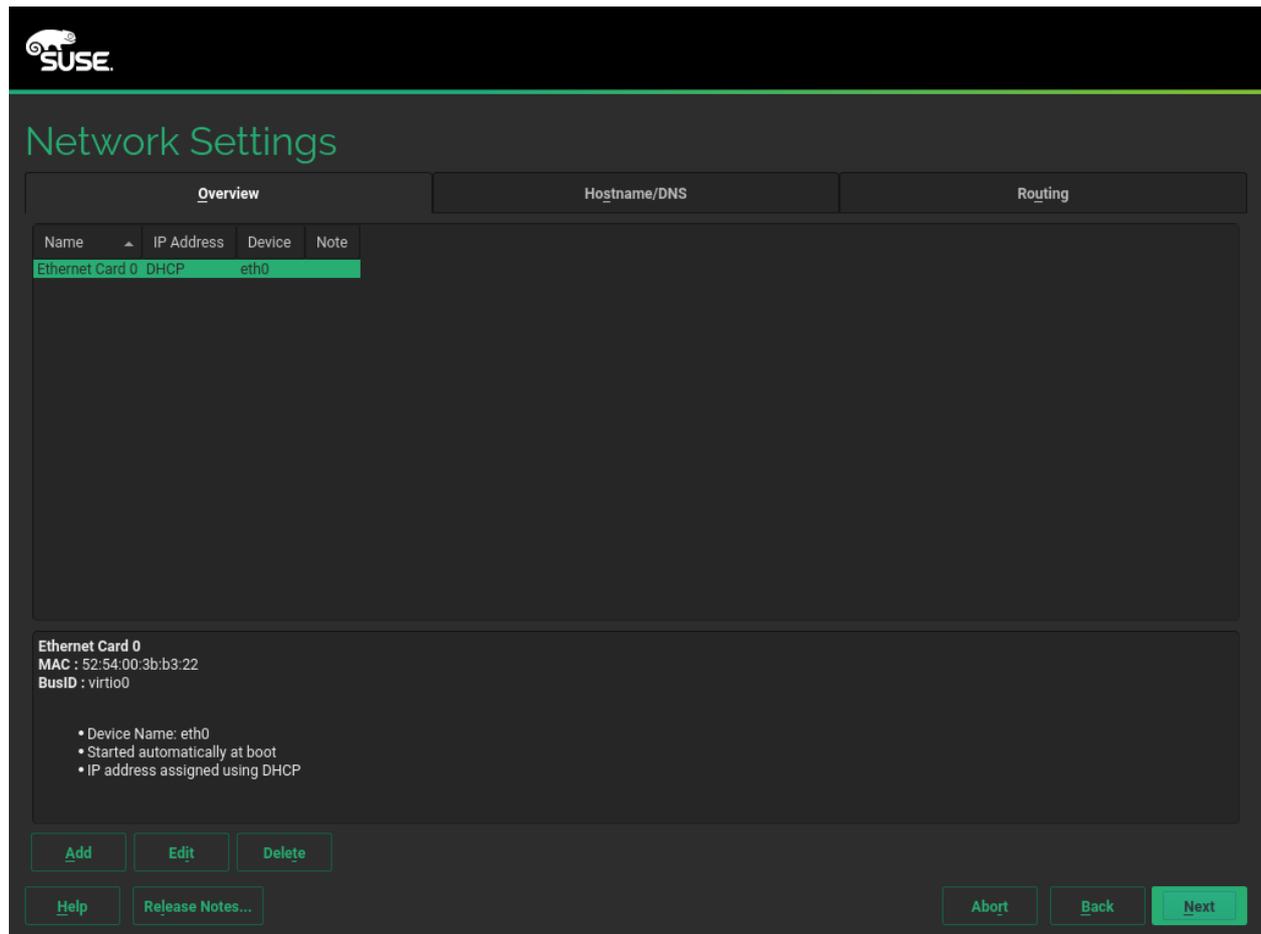
A system analysis is performed, where the installer probes for storage devices, and tries to find other installed systems. If the network was automatically configured via DHCP during the start of the installation, you will be taken to the registration step.

If the network is not yet configured, the *Network Settings* dialog opens. Choose a network interface from the list and configure it with *Edit*. Alternatively, *Add* an interface manually. See *Book "Deployment Guide", Chapter 4 "Installation Steps", Section 4.5 "Network Settings"* and *Book "Adminis-*

tration Guide*", Chapter 17 "Basic Networking", Section 17.4 "Configuring a Network Connection with YaST"* for more information. If you prefer to do an installation without network access, skip this step without making any changes and proceed with *Next*.

1.1.4 Registration
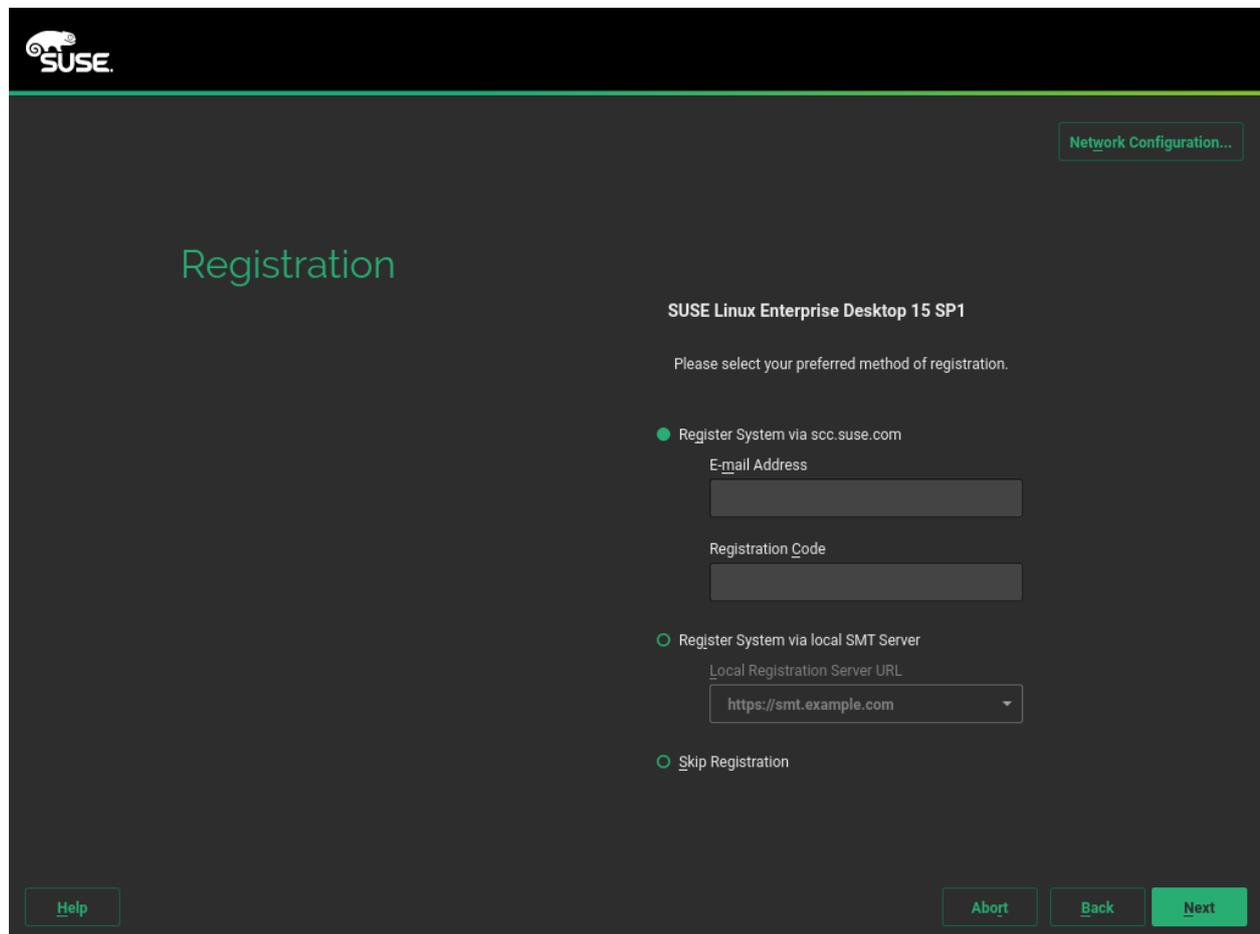
To get technical support and product updates, you need to register and activate your product with the SUSE Customer Center or a local registration server. Registering SUSE Linux Enterprise Desktop at this stage also grants you immediate access to the update repository. This enables you to install the system with the latest updates and patches available.

When registering, repositories and dependencies for the modules and extensions, which you may install with the next step, are loaded from the registration server.

If you are offline or want to skip registration, activate *Skip Registration*. Proceed with the installation by following the instructions in *Section 1.2, "Installing without Registration"*.

To register with the SUSE Customer Center, enter the *E-mail Address* associated with your SCC account and the *Registration Code* for SUSE Linux Enterprise Desktop. If your organization provides a local registration server, you may alternatively register there. Activate *Register System via local SMT Server* and either choose a URL from the drop-down box or type in an address.

Note: Trusting Repositories

Depending on your hardware, additional repositories containing hardware drivers may be added during the registration. If so, you will be asked to *Trust* each of these repositories.

Tip: Installing Product Patches at Installation Time

After SUSE Linux Enterprise Desktop has been successfully registered, you are asked whether to install the latest available online updates during the installation. If choosing *Yes*, the system will be installed with the most current packages without having to apply the updates after installation. Activating this option is recommended.

1.1.5 Extension and Module Selection
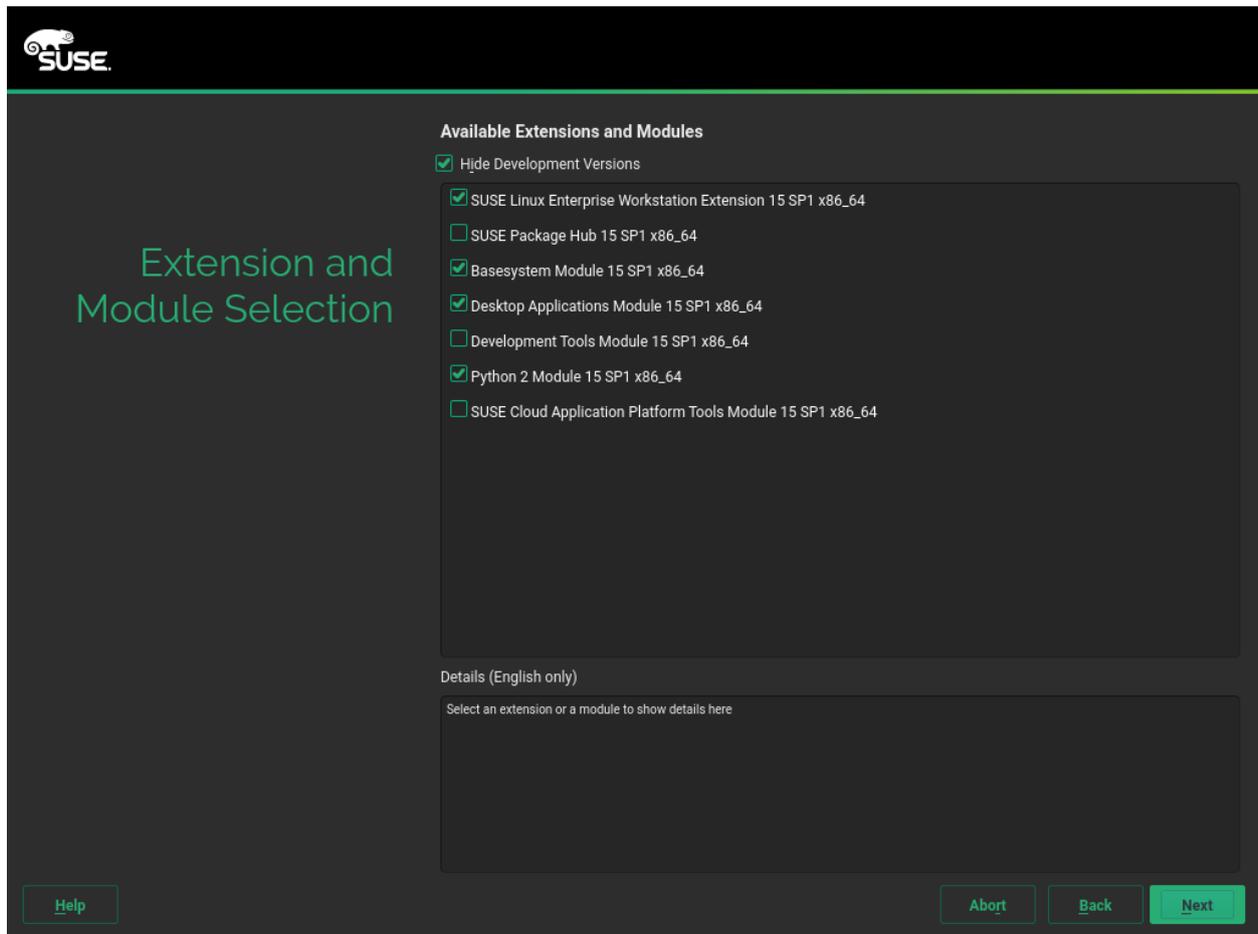
After the system is successfully registered, the installer lists modules and extensions that are available for SUSE Linux Enterprise Desktop. Modules are components which allow you to shape the product according to your needs. They are free of charge. Extensions add functionality to your product. They are offered as subscriptions and require a registration key that is liable for costs.

The availability of certain modules or extensions depends on the product you have chosen in the first step of this installation. For a description of the modules and their lifecycles, select a module to see the accompanying text. More detailed information is available in the *Modules and Extensions Quick Start* and the Release Notes (https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15/#Intro.Module) ↗ .

The selection of modules indirectly affects the scope of the installation, because it defines which software sources (repositories) are available for installation and in the running system.

The following modules and extensions are available for SUSE Linux Enterprise Desktop:

Basesystem Module

This module adds a basic system on top of the Installer. It is required by all other modules and extensions. The scope of an installation that only contains the base system is comparable to the installation pattern *minimal system* of previous SUSE Linux Enterprise Desktop versions. This module is selected for installation by default and should not be deselected.

Dependencies: None

Desktop Applications Module

Adds a graphical user interface and essential desktop applications to the system. This module is selected for installation by default; deselecting it is not recommended.

Dependencies: Basesystem

Development Tools Module

Contains compilers (including `gcc`) and libraries required for compiling and debugging applications. Replaces the former Software Development Kit (SDK).

Dependencies: Basesystem, Desktop Applications

Python 2 Module

SUSE Linux Enterprise 15 SP1 uses Python version 3. This module contains the Python 2 runtime and modules. It is selected for installation by default; deselecting it is not recommended.

Dependencies: Basesystem

SUSE Cloud Application Platform Tools Module

Adds tools allowing you to interact with a SUSE Cloud Application Platform product.

Dependencies: Basesystem

SUSE Linux Enterprise Workstation Extension

Contains additional desktop tools such as an office suite or multimedia software such as music and video players. This extension is included in the SUSE Linux Enterprise Desktop subscription and is selected for installation by default; deselecting it is not recommended.

Dependencies: Basesystem, Desktop Applications

SUSE Package Hub

Provides access to packages for SUSE Linux Enterprise Desktop maintained by the openSUSE community. These packages are delivered without L3 support and do not interfere with the supportability of SUSE Linux Enterprise Desktop. For more information refer to https://packagehub.suse.com/ ⬈ .

Dependencies: Basesystem

Some modules depend on the installation of other modules. Therefore, when selecting a module, other modules may be selected automatically to fulfill dependencies.

Depending on the product, the registration server can mark modules and extensions as recommended. Recommended modules and extensions are preselected for registration and installation. To avoid installing these recommendations, deselect them manually.

Select the modules and extension you would like to install and proceed with *Next*. In case you have chosen one or more extensions, you will be prompted to provide the respective registration codes. Depending on your choice, it may also be necessary to accept additional license agreements.

1.1.6   Add-On Product
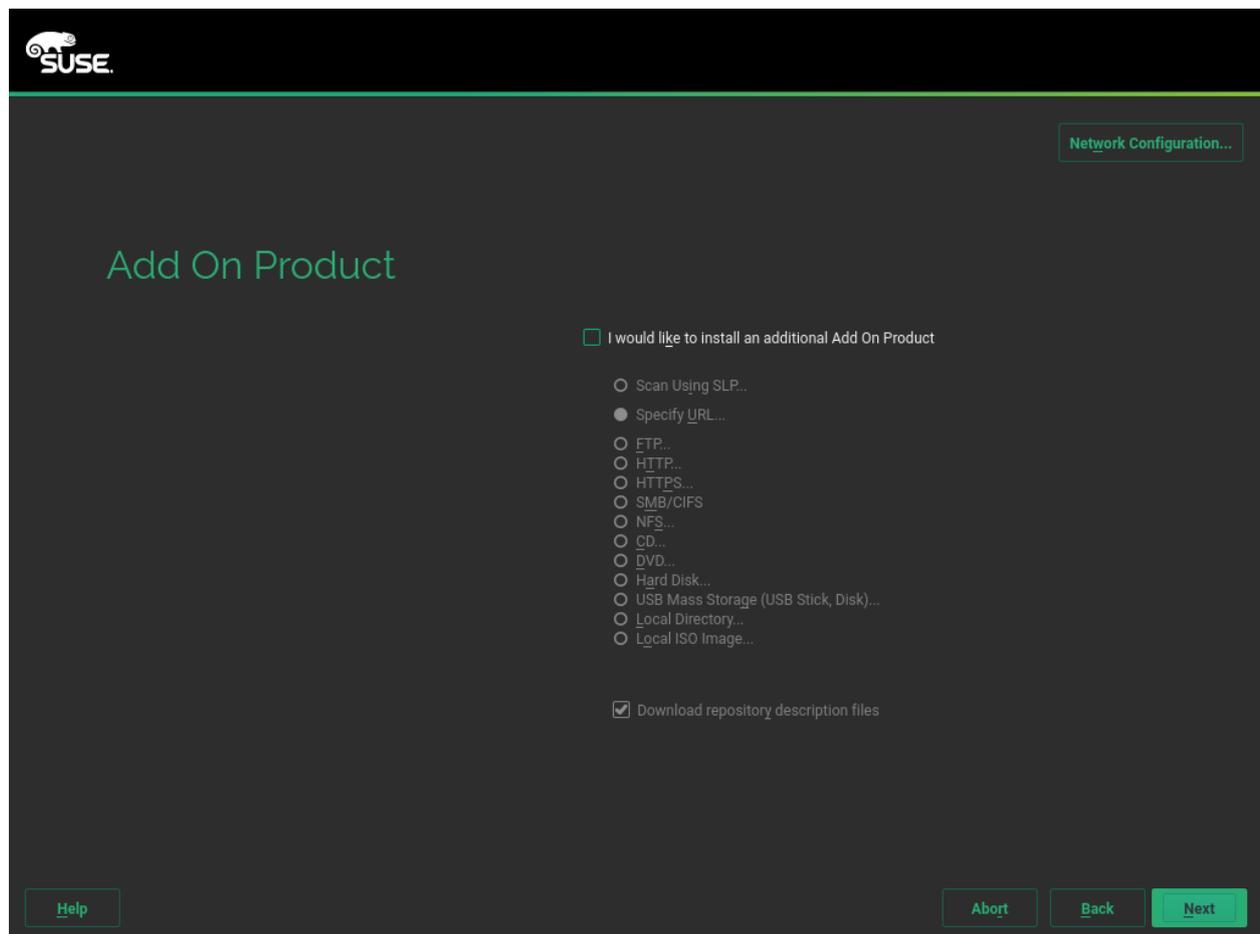
The *Add-On Product* dialog allows you to add additional software sources (so-called "repositories") to SUSE Linux Enterprise Desktop, that are not provided by the SUSE Customer Center. Such add-on products may include third-party products and drivers or additional software for your system.

💡 Tip: Adding Drivers During the Installation

You can also add driver update repositories via the *Add-On Product* dialog. Driver updates for SUSE Linux Enterprise are provided at http://drivers.suse.com/ ↗. These drivers have been created via the SUSE SolidDriver Program.

If you want to skip this step, proceed with *Next*. Otherwise activate *I would like to Install an Add-on Product*. Specify a media type, a local path, or a network resource hosting the repository and follow the on-screen instructions.

Check *Download Repository Description Files* to download the files describing the repository now. If deactivated, they will be downloaded after the installation has started. Proceed with *Next* and insert a medium if required. Depending on the product's content it may be necessary to accept additional license agreements. Proceed with *Next*. If you have chosen an add-on product requiring a registration key, you will be asked to enter it before proceeding to the next step.

1.1.7 System Role
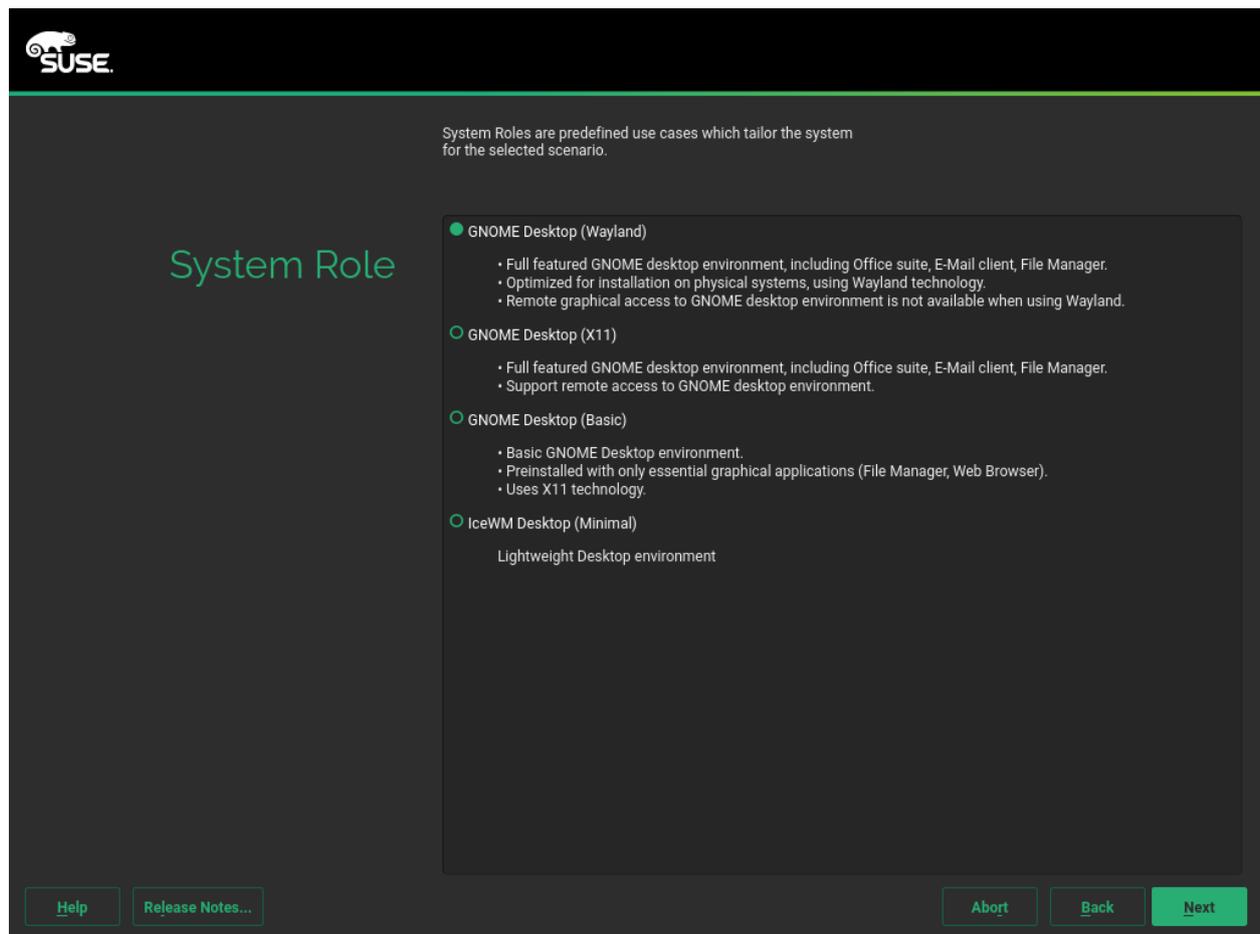
The availability of system roles depends on your selection of modules and extensions. System roles define, for example, the partitioning proposal and the set of software patterns that is going to be preselected for the installation. Refer to the description on screen to make your choice. Select a role and proceed with *Next*.

💡 Tip: Release Notes

From this point on, the Release Notes can be viewed from any screen during the installation process by selecting *Release Notes*.

1.1.8 Suggested Partitioning
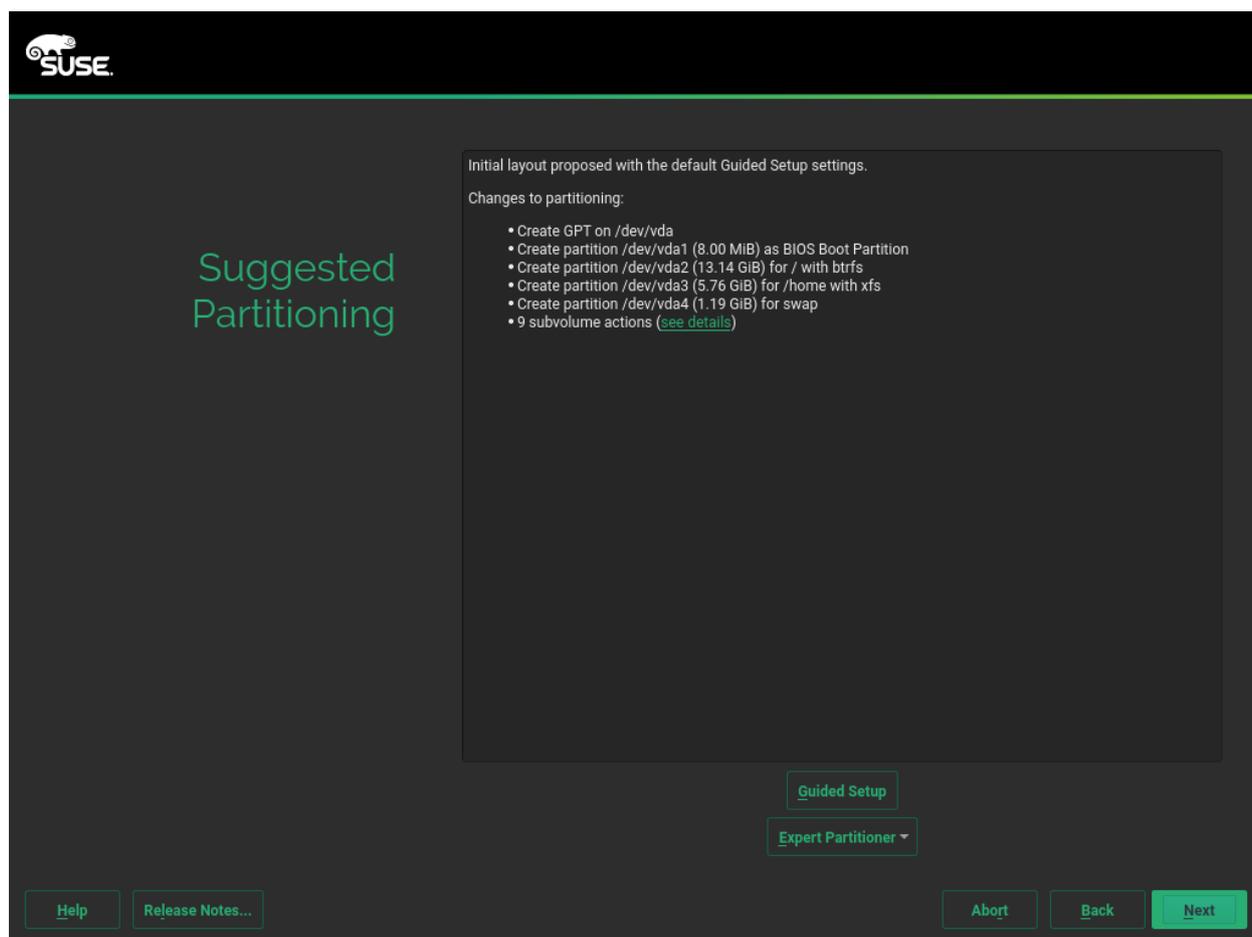
Review the partition setup proposed by the system. If necessary, change it. You have the following options:

Guided Setup

Starts a wizard which lets you refine the partitioning proposal. Options available here depend on your system setup. In case it contains more than a single hard disk, you may choose which disk(s) to use and where to place the root partition. If the disk(s) already contain partitions, decide whether to remove or resize them.

In subsequent steps you may also add LVM support and disk encryption. You can change the file system for the root partition and decide whether to have a separate home partition or not.

Expert Partitioner

Opens the *Expert Partitioner* described in *Book "*Deployment Guide*", Chapter 6 "Expert Partitioner", Section 6.1 "Using the Expert Partitioner"*. This gives you full control over the partitioning setup and lets you create a custom setup. This option is intended for experts.

To accept the proposed setup without any changes, choose *Next* to proceed.

💡 Tip: Release Notes

From this point on, the Release Notes can be viewed from any screen during the installation process by selecting *Release Notes*.

1.1.9 Clock and Time Zone
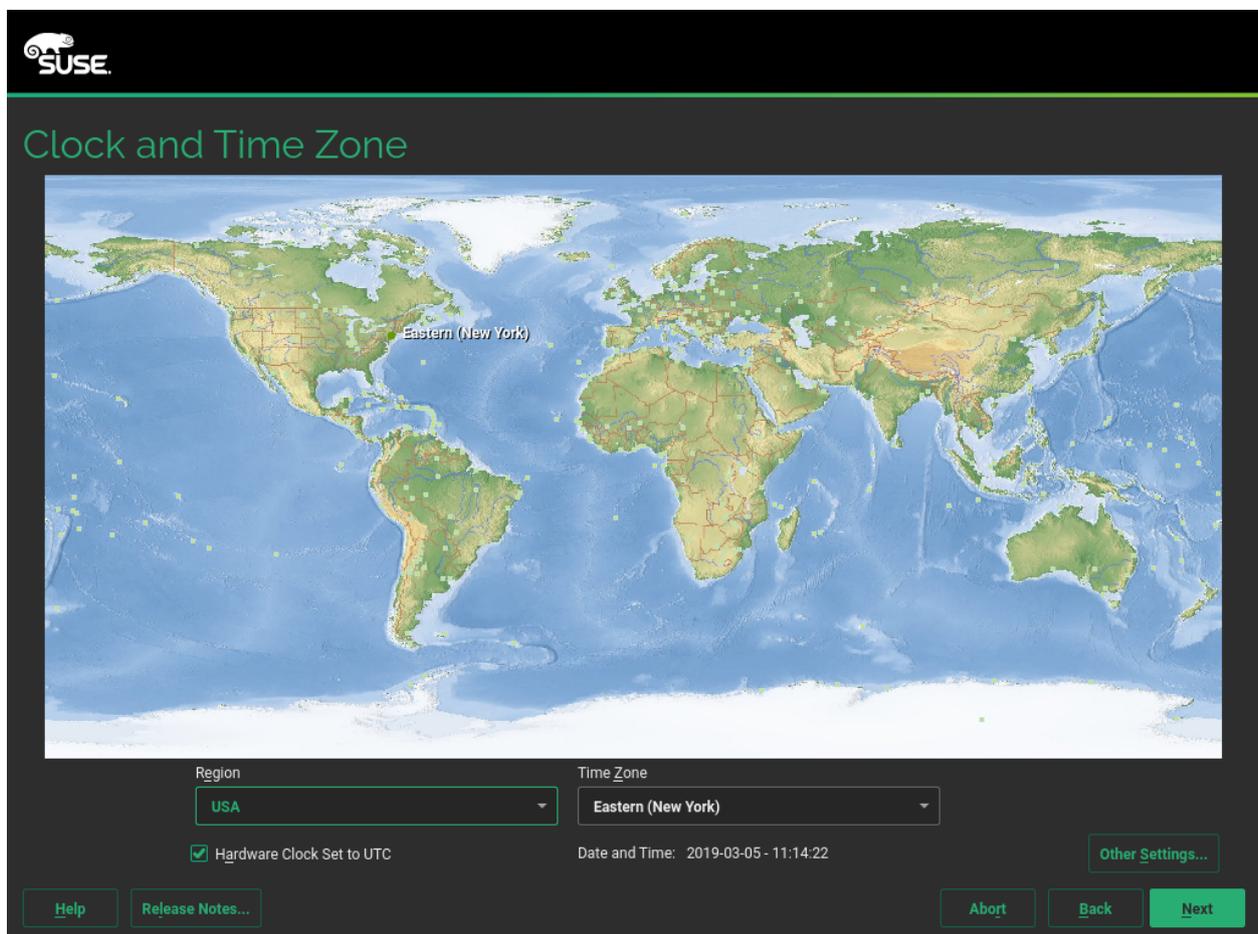
Select the clock and time zone to use in your system. To manually adjust the time or to configure an NTP server for time synchronization, choose *Other Settings*. See *Book "Deployment Guide", Chapter 4 "Installation Steps", Section 4.11 "Clock and Time Zone"* for detailed information. Proceed with *Next*.

1.1.10   Local User
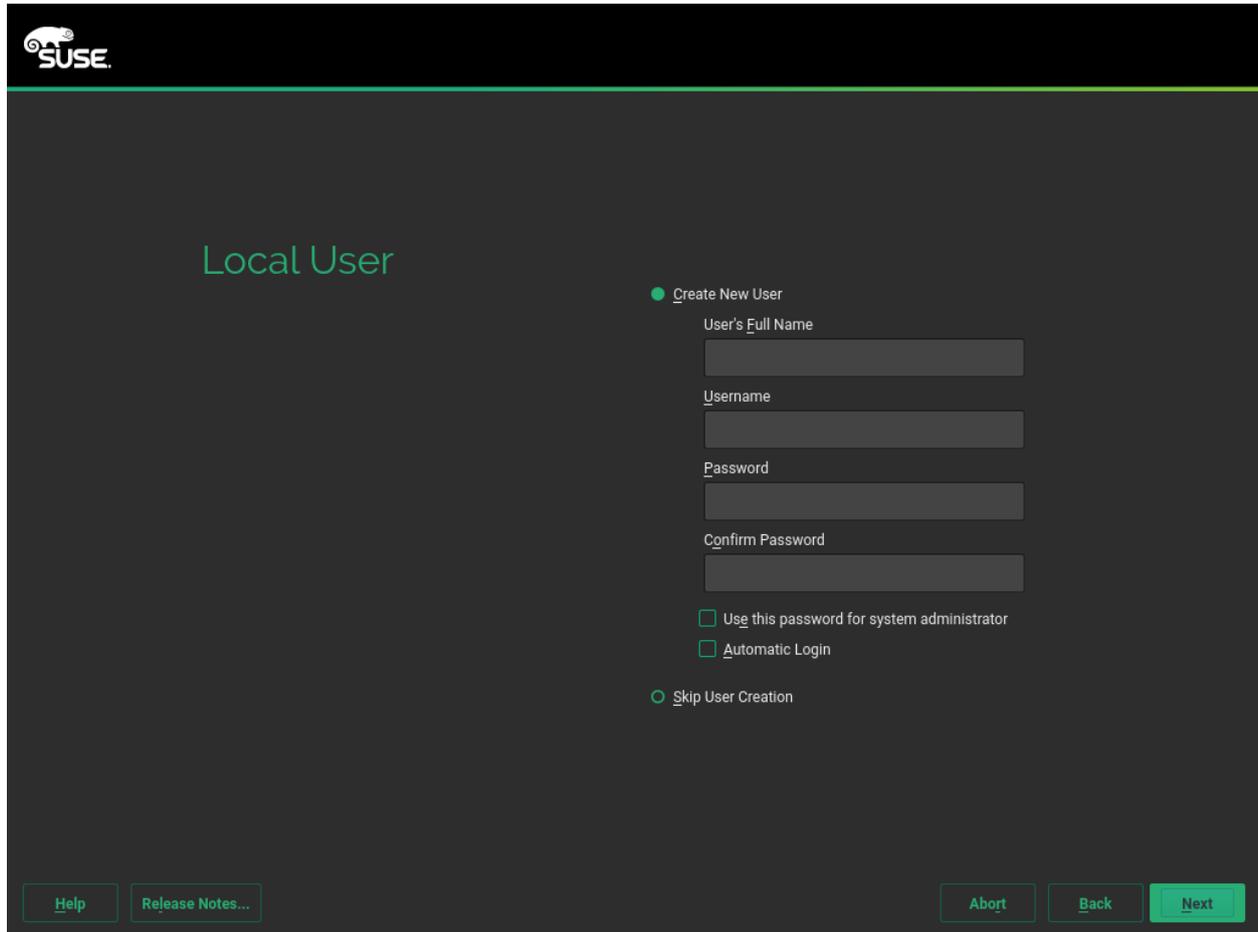
To create a local user, type the first and last name in the *User's Full Name* field, the login name in the *Username* field, and the password in the *Password* field.

The password should be at least eight characters long and should contain both uppercase and lowercase letters and numbers. The maximum length for passwords is 72 characters, and passwords are case-sensitive.

For security reasons it is also strongly recommended *not* to enable the *Automatic Login*. You should also *not Use this Password for the System Administrator* but rather provide a separate `root` password in the next installation step.

If you install on a system where a previous Linux installation was found, you may *Import User Data from a Previous Installation.* Click *Choose User* for a list of available user accounts. Select one or more user.

In an environment where users are centrally managed (for example by NIS or LDAP) you may want to skip the creation of local users. Select *Skip User Creation* in this case.

Proceed with *Next.*

1.1.11 Authentication for the System Administrator "root"
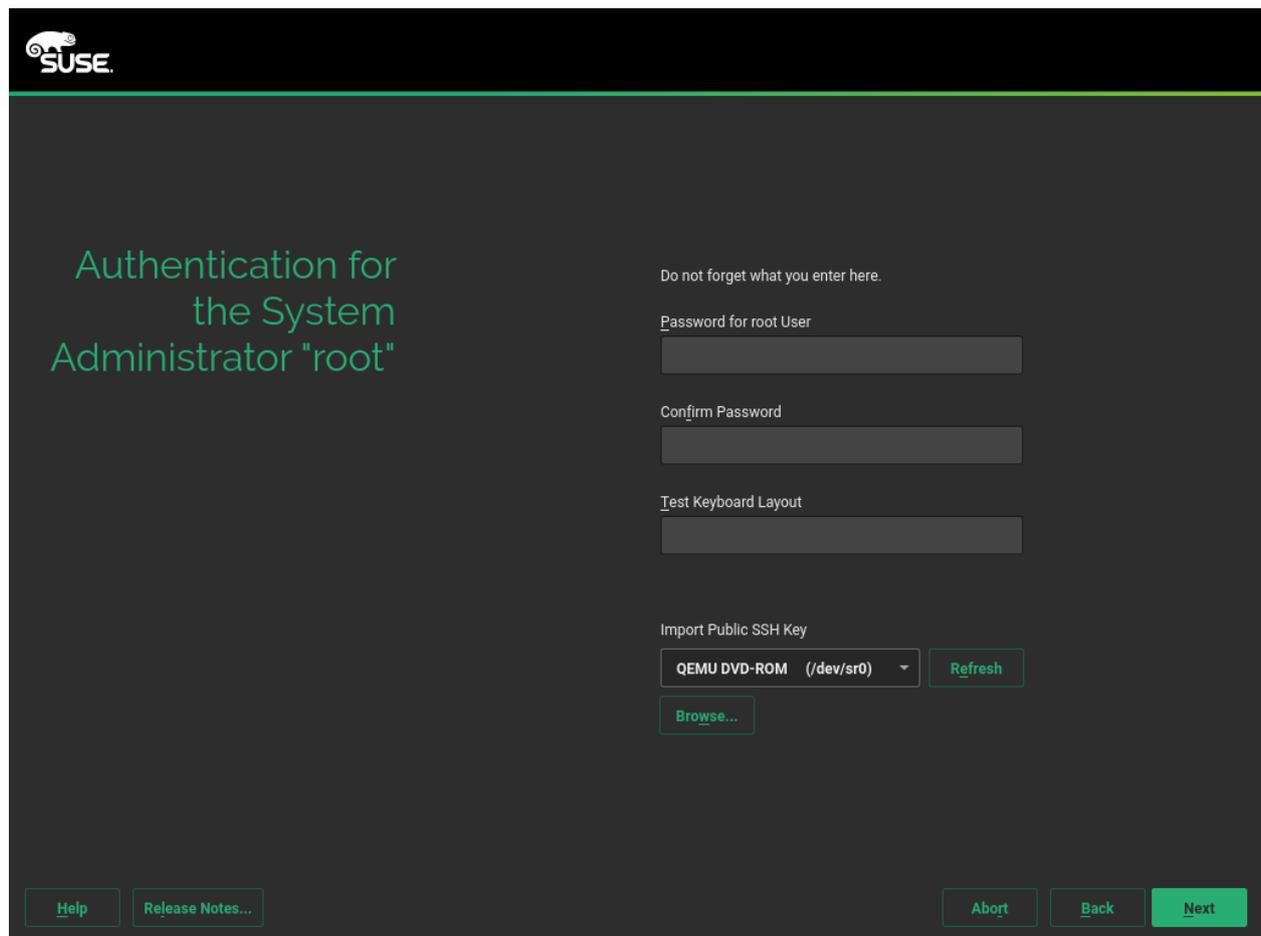
Type a password for the system administrator (called the `root` user) or provide a public SSH key. If you want, you can use both.

Because the `root` user is equipped with extensive permissions, the password should be chosen carefully. You should never forget the `root` password! After you entered it here, the password cannot be retrieved.

💡 Tip: Passwords and Keyboard Layout

It is recommended to only use characters that are available on an English keyboard. In case of a system error or when you need to start your system in rescue mode a localized keyboard might not be available.

In some situations it is preferred to access the system remotely via SSH using a public key. This screen allows you to select a public key (file extension `.pub`) from a USB stick, a CD/DVD, or even from an existing partition. See *Book "*Deployment Guide*", Chapter 4 "Installation Steps", Section 4.13 "Authentication for the System Administrator "root""* for more information. You can also add the public SSH key later (see *Book "*Deployment Guide*", Chapter 4 "Installation Steps", Section 4.13 "Authentication for the System Administrator "root"", Adding a Public SSH Key for User* `root`). Proceed with *Next*.

1.1.12   Installation Settings
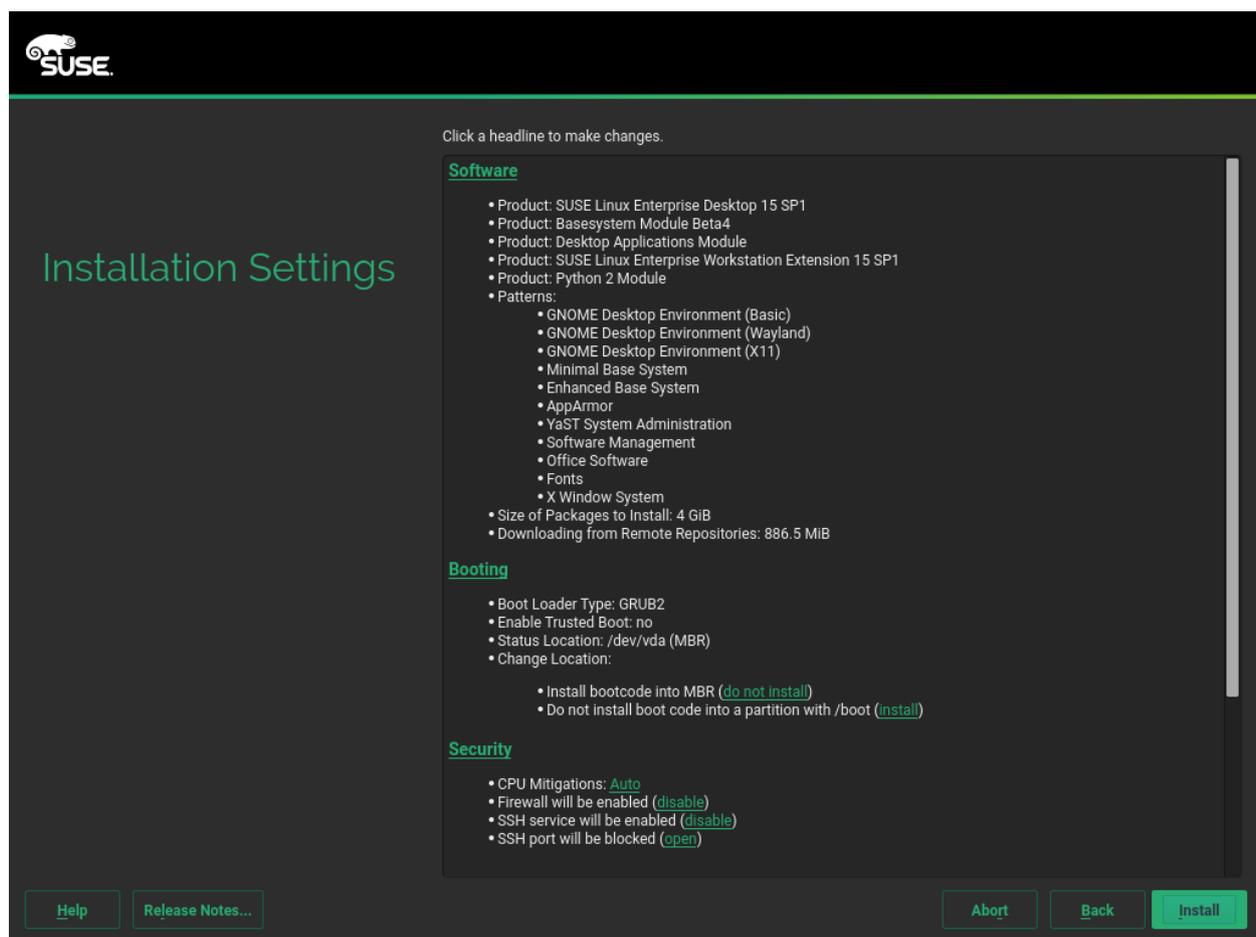
Use the *Installation Settings* screen to review and—if necessary—change several proposed installation settings. The current configuration is listed for each setting. To change it, click the headline. Some settings, such as firewall or SSH can directly be changed by clicking the respective links.

💡 Tip: Remote Access

Changes you can make here, can also be made later at any time from the installed system. However, if you need remote access directly after the installation, you should check the *Security* settings.

Software

The scope of the installation is defined by the modules and extensions you have chosen for this installation. However, depending on your selection, not all packages available in a module are selected for installation.

Clicking *Software* opens the *Software Selection and System Tasks* screen, where you can change the software selection by selecting or deselecting patterns. Each pattern contains several software packages needed for specific functions (for example, *KVM Host Server*). For a more detailed selection based on software packages to install, select *Details* to switch to the YaST *Software Manager*. See *Book "*Deployment Guide*", Chapter 13 "Installing or Removing Software"* for more information.

Booting

This section shows the boot loader configuration. Changing the defaults is only recommended if really needed. Refer to *Book "*Administration Guide*", Chapter 12 "The Boot Loader GRUB 2"* for details.

Security

The *CPU Mitigations* refer to kernel boot command line parameters for software mitigations that have been deployed to prevent CPU side-channel attacks. Click the highlighted entry to choose a different option. For details, see *Book "*Administration Guide*", Chapter 12 "The Boot Loader GRUB 2" CPU Mitigations*.

By default, the Firewall is enabled with all network interfaces configured for the public zone. See *Book "*Security Guide*", Chapter 16 "Masquerading and Firewalls", Section 16.4* "firewalld" for configuration details.

The SSH service is enabled by default, its port (22) is open. Click *enable and open* to toggle these settings. Note that if SSH is disabled, logging in from remote will not be possible.

Network Configuration

Displays the current network configuration. Click *Network Configuration* to change the settings. For details, see *Book "*Administration Guide*", Chapter 17 "Basic Networking", Section 17.4 "Configuring a Network Connection with YaST"*.

Kdump

Kdump saves the memory image ("core dump") to the file system in case the kernel crashes. This enables you to find the cause of the crash by debugging the dump file. Kdump is preconfigured and enabled by default. See *Book "*System Analysis and Tuning Guide*", Chapter 17 "Kexec and Kdump", Section 17.7 "Basic Kdump Configuration"* for more information.

Default Systemd Target

SUSE Linux Enterprise Desktop boots into a graphical desktop by default. Since it does not make much sense to run a desktop system from the command line, it is recommended to not change this setting.

System

View detailed hardware information by clicking *System*. In the resulting screen you can also change *Kernel Settings*—see *Book "*Deployment Guide*", Chapter 4 "Installation Steps", Section 4.14.6 "System"* for more information.

1.1.13 Start the Installation
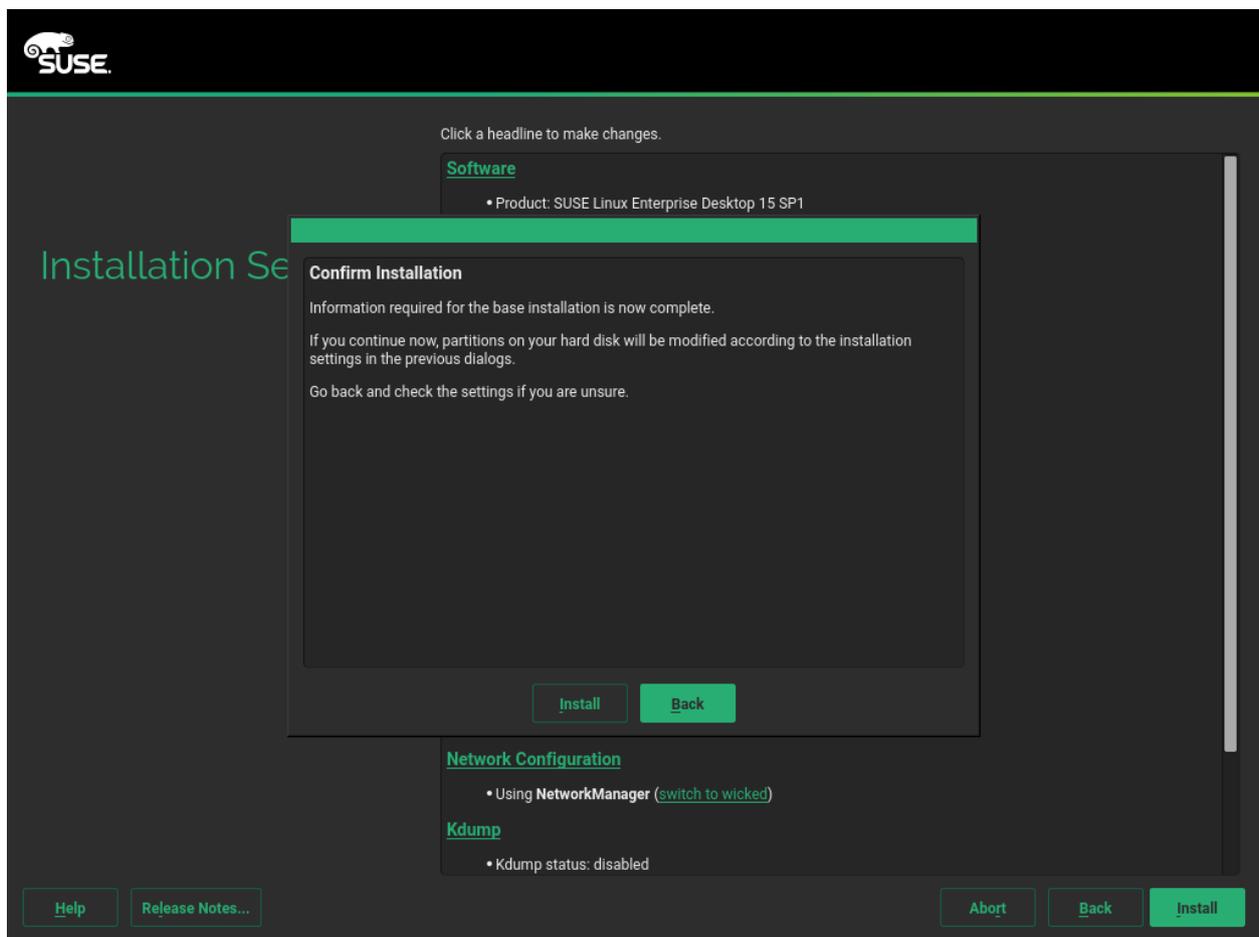
After you have finalized the system configuration on the *Installation Settings* screen, click *Install*. Depending on your software selection you may need to agree to license agreements before the installation confirmation screen pops up. Up to this point no changes have been made to your system. After you click *Install* a second time, the installation process starts.

1.1.14 The Installation Process
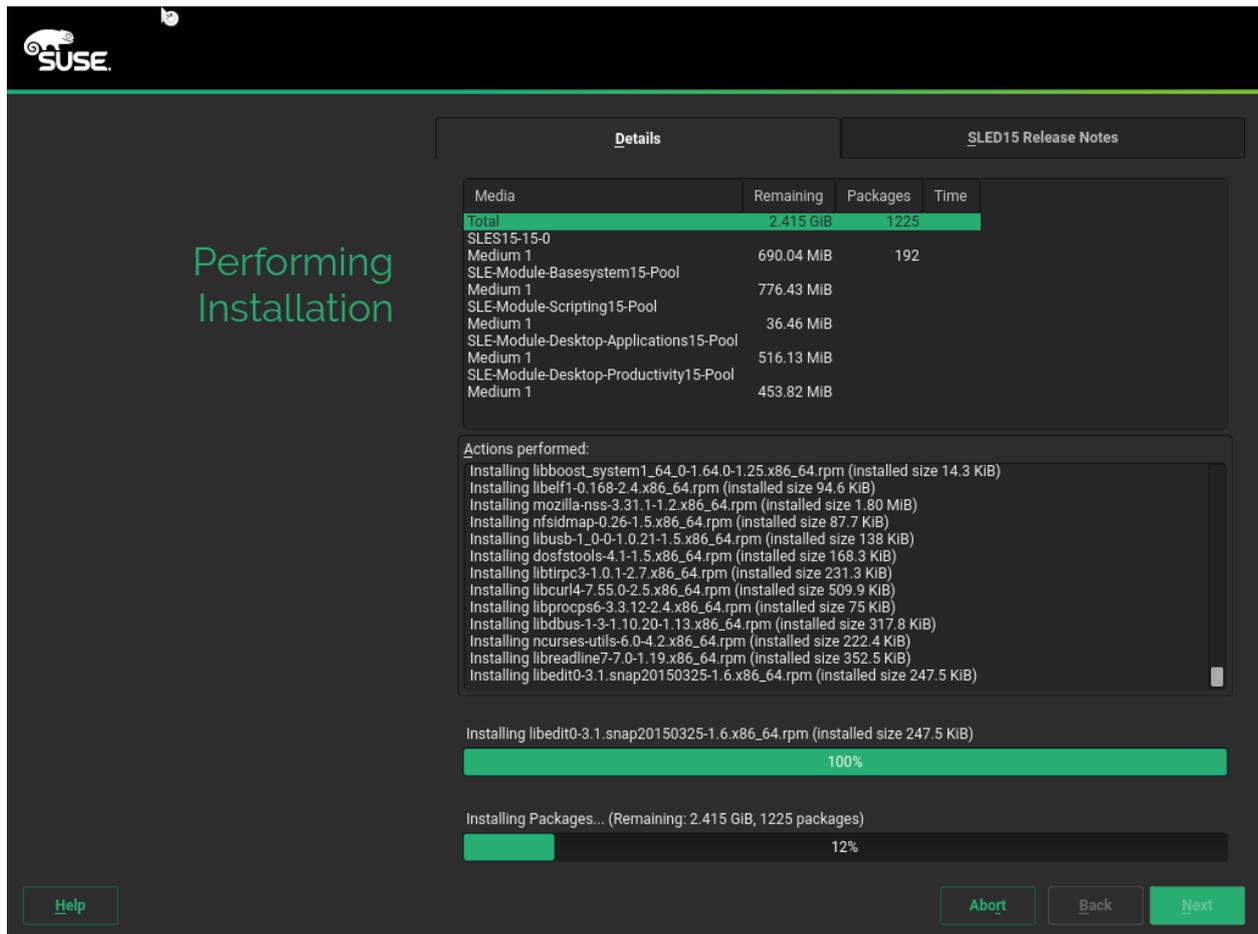
During the installation, the progress is shown in detail on the *Details* tab. The *SUSE Linux Enterprise Desktop Release Notes* tab shows important information; reading them is recommended.

After the installation routine has finished, the computer is rebooted into the installed system. Log in and start YaST to fine-tune the system. If you are not using a graphical desktop or are working from remote, refer to *Book "Administration Guide", Chapter 5 "YaST in Text Mode"* for information on using YaST from a terminal.

1.2 Installing without Registration

If you perform an installation without connecting to a registration server, you cannot register your system during the installation. Therefore you will not be able to receive the repository configuration for modules and extensions from the registration server. To enable a regular installation, SUSE offers a second installation medium, the SLE-15-SP1-Packages image.

Note: Registering SUSE Linux Enterprise Desktop

Your system and extensions need to be registered in order to retrieve updates and to be eligible for support. If you do not register during the installation, you can do so at any time later from the running system. To do so, run *YaST › Product Registration*.

To perform the installation without registration, make sure the contents of the SLE-15-SP1-Packages image can be accessed during the installation. This can be achieved by copying it to a local hard disk or a removable flash disk or by making it available in the local network. Choose a method that is supported by your hardware.

Tip: Copying Data from the SLE-15-SP1-Packages Image to a Removable Flash Disk

To copy the contents of the image to a removable flash disk, use the following command.

```
tux > sudo dd if=PATH_TO_IMAGE
    of=FLASH_STORAGE_PARTITION bs=4M && sync
```

PATH_TO_IMAGE needs to be replaced with the relative or absolute path to this image file. *FLASH_STORAGE_PARTITION* needs to be replaced with the path to a partition on the flash device (usually there is just one). To identify the device, and its partition(s), insert it and use the commands shown in the example below:

```
root # grep -Ff <(hwinfo --disk --short) <(hwinfo --usb --short)
disk:
  /dev/sdc              General USB Flash Disk
root # fdisk -l /dev/sdc | grep -e "^/dev"
/dev/sdc1  *    2048 31490047 31488000  15G 83 Linux
```

In this case the command to use would be for example:

```
dd if=/tmp/SLE-15-SP1-Packages-x86_64-DVD1.iso \
 of=/dev/sdc1 bs=4M && sync
```

Make sure a partition with sufficient size (6 GB or more) exists on the device. It also must not be mounted when running the **dd** command. Note that all data on the partition will be erased!

1.2.1 Starting the Installation without Registration

The installation follows the same workflow as outlined in *Section 1.1, "The Default Installation Procedure"*, only the steps for registering the system and adding modules/extensions differ. To start the installation, perform the steps *Section 1.1.1, "Language, Keyboard, and Product Selection"* to *Section 1.1.3, "Network Settings"* from *Section 1.1, "The Default Installation Procedure"*.

1.2.2 Skipping Registration

On the *Registration* screen activate *Skip Registration.* Accept the warning with *OK* and proceed with *Next.*
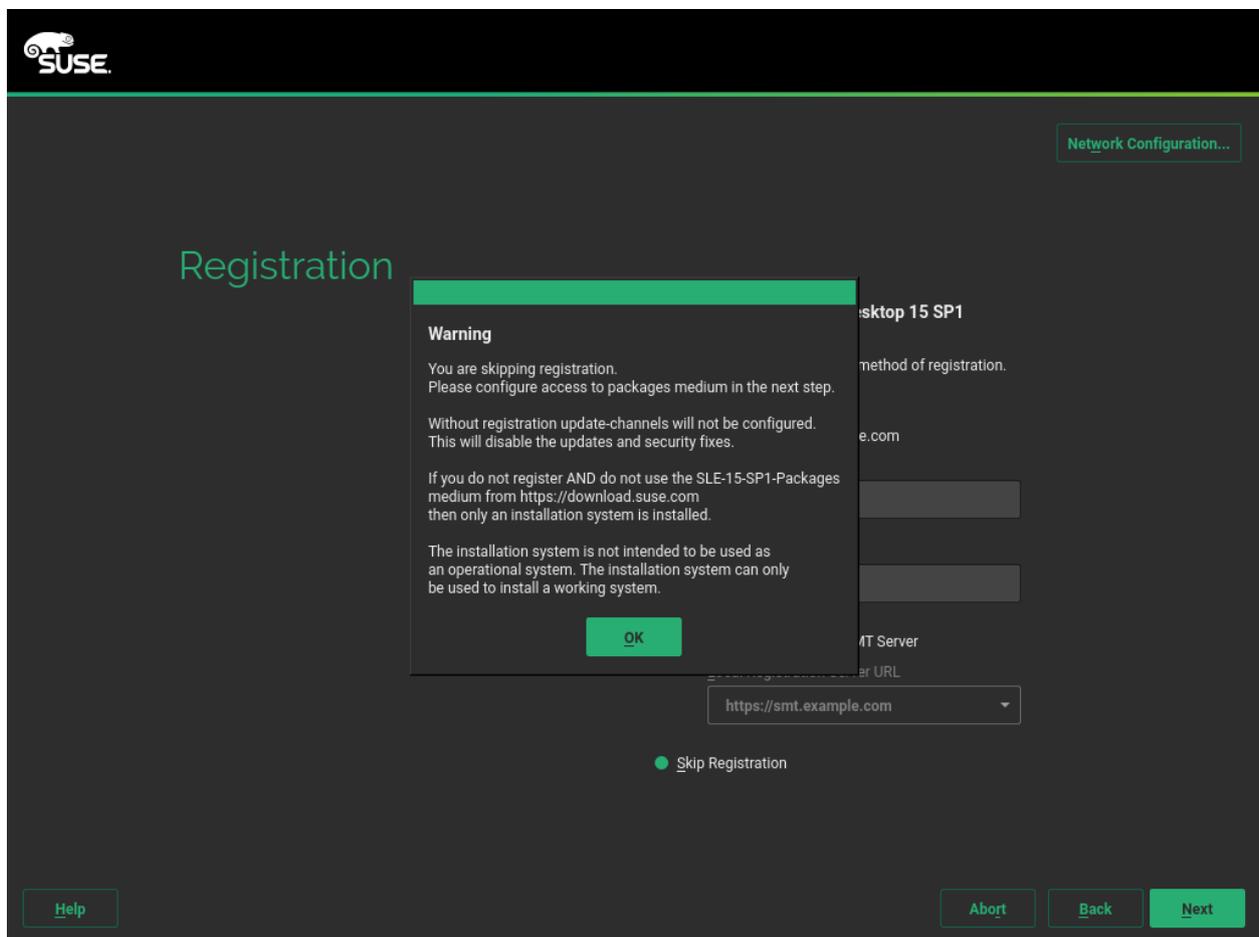
1.2.3 Accessing the SLE-15-SP1-Packages Image
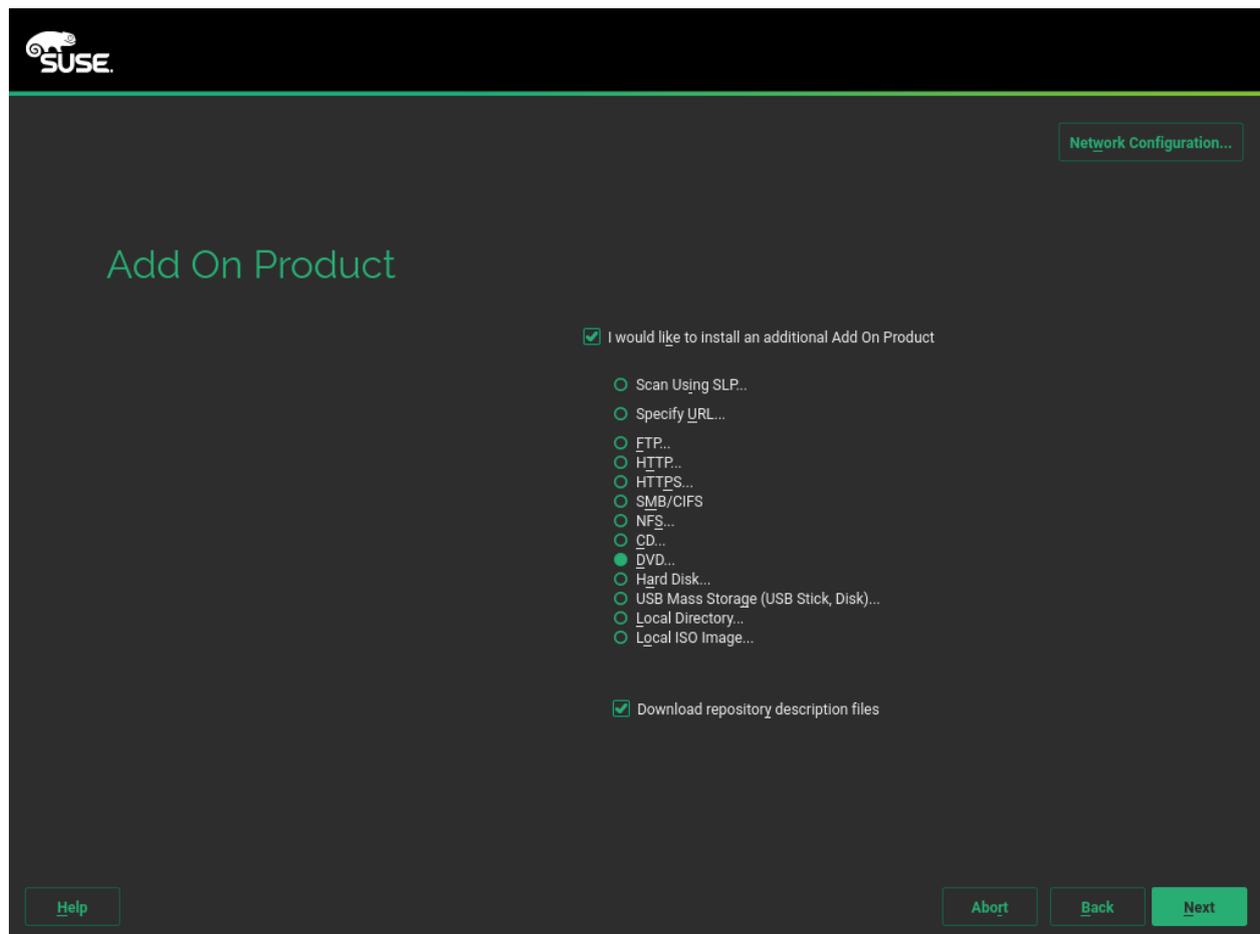
On the *Add On Product* dialog, activate *I would like to install an additional Add On Product* and specify the source for the SLE-15-SP1-Packages image. Check *Download repository description files* to download the files describing the repository now. If deactivated, they will be downloaded after the installation starts. Proceed with *Next*. If you chose *DVD* as the data source, you will be prompted to insert the media.

1.2.4 Selecting Extensions and Modules
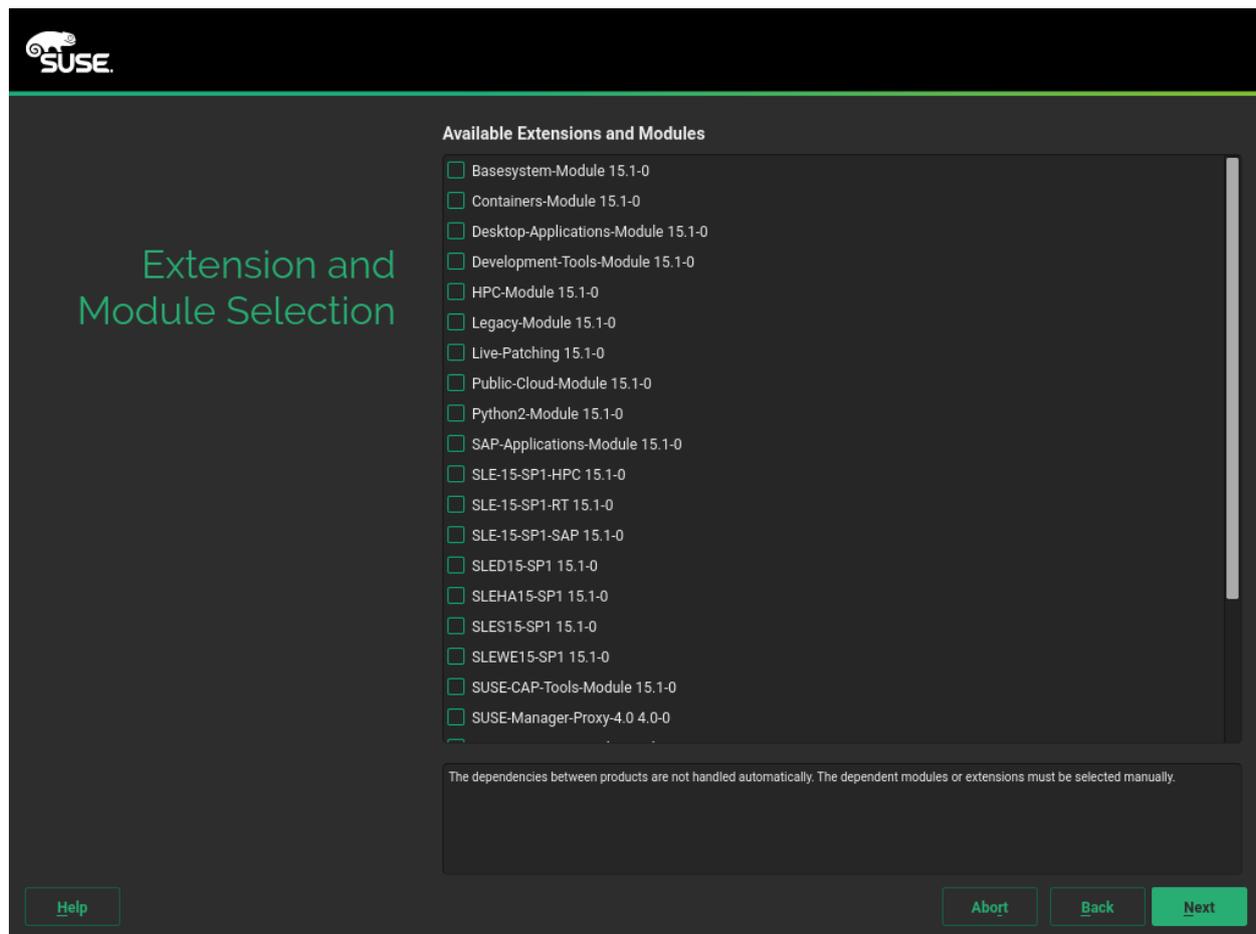
On the *Extension and Module Selection* dialog you need to select a product, at least one module, and optionally, one or more extensions.

The SLE-15-SP1-Packages images contain extensions and modules for all SUSE Linux Enterprise products. Make sure to only select modules and extensions listed below, otherwise you will end up with a system that may fail to install and is not covered by SUSE support.

Product

Selecting a product is mandatory. Choose *SLED15-SP1 15.1-0*.

Modules

Modules extend the functionality of SUSE Linux Enterprise Desktop and are free of charge. Installing the *Basesystem-Module 15.1-0* is required. It is also recommended to install the *Desktop-Applications-Module 15.1-0*.

Note that most modules depend on other modules. These dependencies cannot be resolved automatically here. Make sure to manually solve the dependencies, otherwise the installation will fail later on. Refer to the following list for details.

Basesystem-Module 15.1-0. This module adds a basic system on top of the Installer. It is required by all other modules and extensions. The scope of an installation that only contains the base system is comparable to the installation pattern *minimal system* of previous SUSE Linux Enterprise Desktop versions. *Dependencies:* None

Desktop-Applications-Module 15.1-0. Adds a graphical user interface and essential desktop applications to the system. *Dependencies:* Basesystem

Development-Tools-Module 15.1-0. Contains compilers (including `gcc`) and libraries required for compiling and debugging applications.

Python 2 Module 15.1-0. SUSE Linux Enterprise 15SP 1 uses Python version 3. This module contains the Python 2 runtime and modules. *Dependencies:* Basesystem

SUSE Linux Enterprise Workstation Extension (*SLEWE15-1 15.1-0*)

Contains additional desktop tools such as an office suite or multimedia software such as music and video players. The SUSE Linux Enterprise Workstation Extension for SUSE Linux Enterprise Desktop is free of charge and does not require an additional registration code. Installing *SLEWE15-1 15.1-0* is recommended.

✋ Warning: Forbidden Selections

Do *not* install any of the following selections on SUSE Linux Enterprise Desktop, otherwise you will end up with a system that may fail to install and is not covered by SUSE support.

- *Containers-Module 15.1-0*
- *HPC-Module 15.1-0*
- *Legacy-Module 15.1-0*
- *Live-Patching 15.1-0*
- *Public-Cloud-Module 15.1-0*
- *SAP-Applications-Module 15.1-0*
- *SLE-15-1-HPC 15.1-0*
- *SLE-15-1-RT 15.1-0*
- *SLE-15-1-SAP 15.1-0*
- *SLEHA15-1 15.1-0*

- *SLES15-1 15.1-0*
- *Server-Applications-Module 15.1-0*
- *Web-Scripting-Module 15.1-0*

When you have finished selecting modules and extensions, proceed with *Next.*

1.2.5   Confirming the Extensions and Module Selection
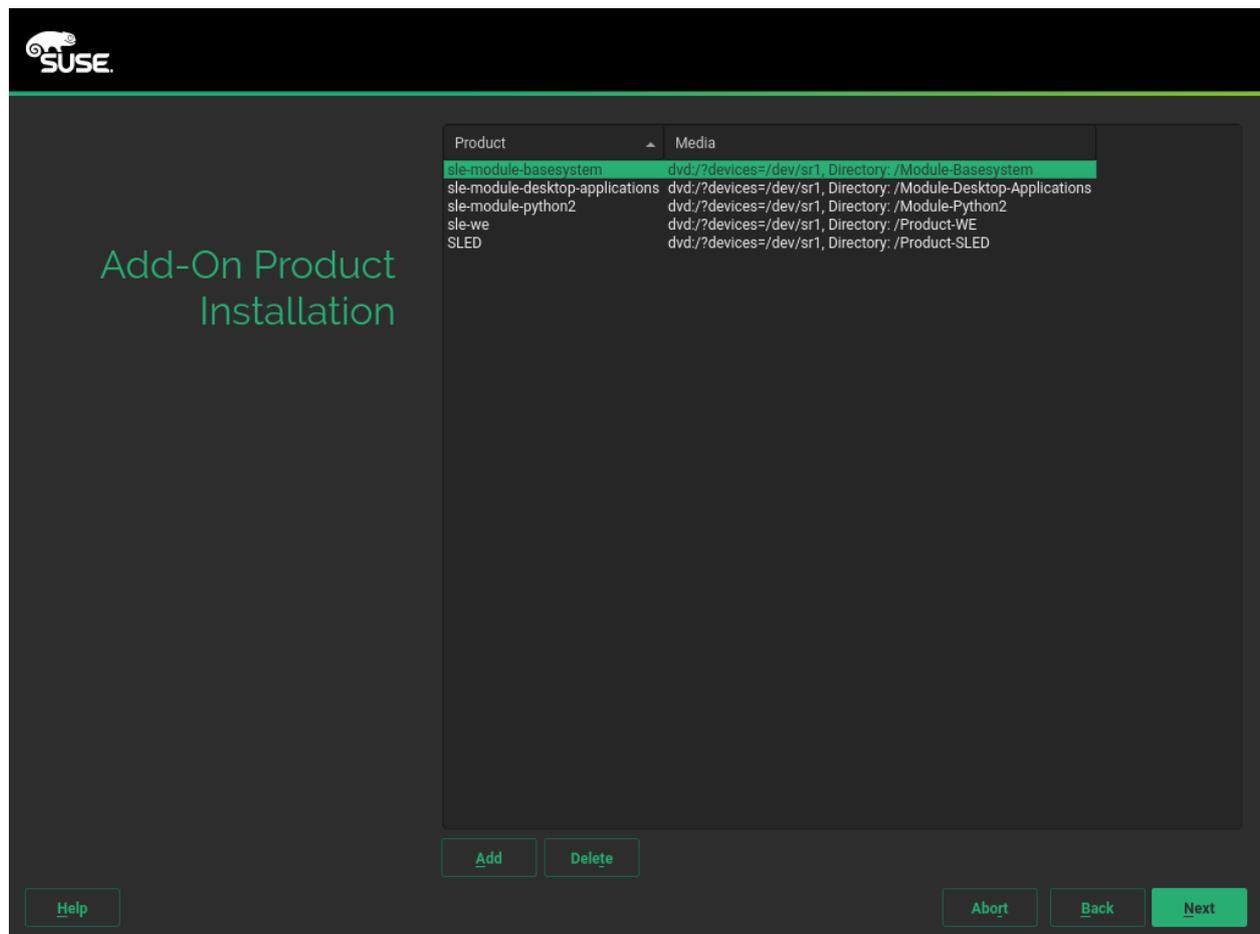
All modules selected for installation are listed on the *Add-On Product Installation* dialog. To change the list, use the *Add* or *Delete* options. Using *Add* you may optionally add other add-on products. Proceed with the installation with *Next.*

1.2.6   Finalizing the Installation

From this point on, the installation follows the same path as the default installation. Proceed with the step ＞ *Section 1.1.7, "System Role"* from *Section 1.1, "The Default Installation Procedure"*.

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0. PREAMBLE

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