



Installation Quick Start

SUSE Linux Enterprise Server for SAP
Applications 15 SP1



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SUSE Linux Enterprise Server for SAP Applications 15 SP1


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<https://www.suse.com/documentation> 

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About This Guide

SUSE® Linux Enterprise Server for SAP Applications is the reference platform for the software development of SAP. It is optimized for SAP applications. This document guides you through the installation of SUSE Linux Enterprise Server for SAP Applications.

SUSE Linux Enterprise High Availability Extension is also part of SUSE Linux Enterprise Server for SAP Applications.

1 Additional Documentation and Resources

Chapters in this manual contain links to additional documentation resources that are either available on the system or on the Internet.

- This is an abridged version of the *SUSE Linux Enterprise Server for SAP Applications Guide*. For the latest version of the full *SUSE Linux Enterprise Server for SAP Applications Guide*, see https://www.suse.com/documentation/sles_for_sap/.
- You can find numerous whitepapers, a best-practices guide, and other resources at the SUSE Linux Enterprise Server for SAP Applications resource library: <https://www.suse.com/products/sles-for-sap/resource-library/>.
- For documentation on SUSE Linux Enterprise Server, see <https://www.suse.com/documentation/sles-15/>.
- For documentation on SUSE Linux Enterprise High Availability Extension, see <https://www.suse.com/documentation/sle-ha-15/>.

1 What Is SUSE Linux Enterprise Server for SAP Applications?

SUSE® Linux Enterprise Server for SAP Applications is a bundle of software and services that addresses the specific needs of SAP users. It is the only operating system that is optimized for all SAP software solutions.

Target use cases include:

- Unix to Linux migrations and replatforming
- SAP appliances
- SAP cloud deployments

SUSE Linux Enterprise Server for SAP Applications consists of software components and service offerings which are described in the following sections. The figure *Offerings of SUSE Linux Enterprise Server for SAP Applications* shows an overview of which software components and services are also available with other products from SUSE (green) and which are exclusively available with SUSE Linux Enterprise Server for SAP Applications (blue).

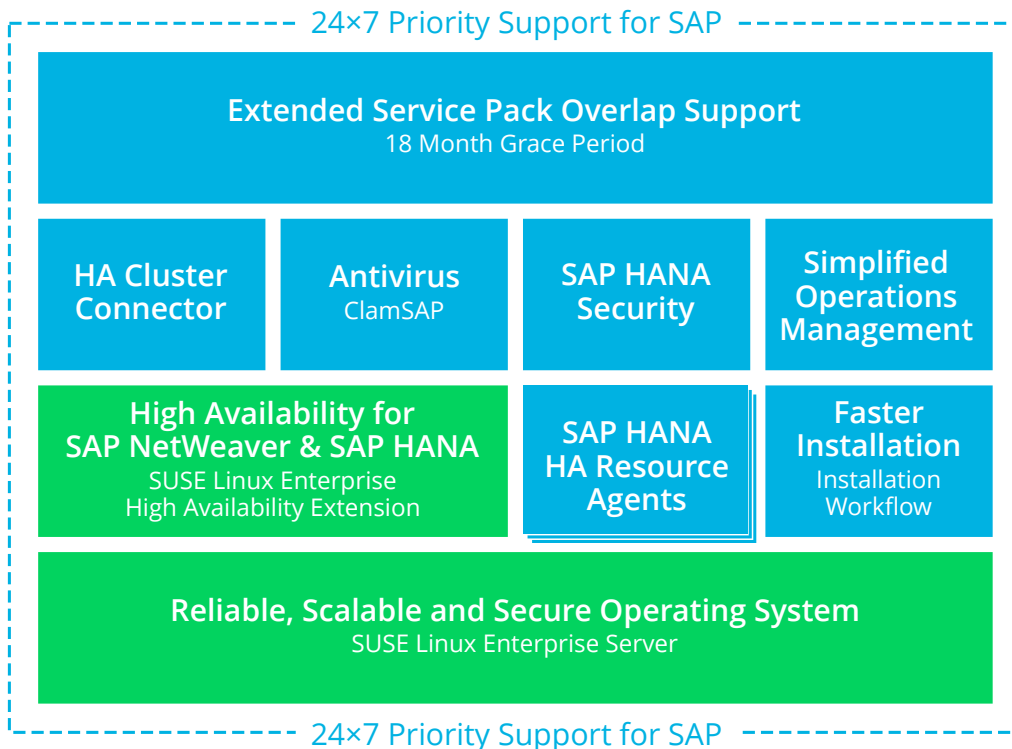


FIGURE 1.1: OFFERINGS OF SUSE LINUX ENTERPRISE SERVER FOR SAP APPLICATIONS

1.1 Software Components

As depicted in *Figure 1.1, "Offerings of SUSE Linux Enterprise Server for SAP Applications"*, SUSE Linux Enterprise Server for SAP Applications is based on SUSE Linux Enterprise Server but contains several additional software components such as SUSE Linux Enterprise High Availability Extension, and the installation workflow. These software components are briefly explained below:

SUSE Linux Enterprise Server

The current release is based on SUSE Linux Enterprise Server 15 SP1. SUSE Linux Enterprise Server is the most interoperable platform for mission-critical computing, both physical and virtual.

SUSE Linux Enterprise High Availability Extension

SUSE Linux Enterprise High Availability Extension provides tools for flexible, policy-driven clustering and includes resource agents for managing SAP instances and SAP database back-ends.

Simplified SAP HANA System Replication Setup

SUSE Linux Enterprise Server for SAP Applications supports SAP HANA System Replication using components of SUSE Linux Enterprise High Availability Extension and additional resource agents for SAP HANA Scale-Up, Scale-Out, and for managing topology. Additionally, SUSE Linux Enterprise Server for SAP Applications ships with a YaST wizard that simplifies the cluster setup.

Installation Workflow

The installation workflow offers a guided installation path for both the SUSE Linux Enterprise Server operating system and the SAP application. This workflow can be extended by third-party vendors using Supplementary Media. For more information, see *Section 2.3, "Overview of the Installation Workflow"*.

Malware Protection with ClamSAP

ClamSAP integrates the ClamAV anti-malware toolkit into SAP NetWeaver and SAP Mobile Platform applications to enable cross-platform threat detection.

SAP HANA Firewall and SAP HANA Hardening Guide

SUSE Linux Enterprise Server for SAP Applications additionally provides the package `HANA-Firewall` which integrates with `firewalld` to provide preconfigured zone setups and rules to make securing SAP HANA as simple as possible.

For information on hardening the underlying operating system, see the SUSE Linux Enterprise Server for SAP Applications resource library: <https://www.suse.com/products/sles-for-sap/resource-library/>. There, find the document *OS Security Hardening for SAP HANA*.

Simplified Operations Management

The system tuning profile provided by **sapconf** allows you to automatically and comprehensively tune your system as recommended by SAP.

cryptctl allows encrypting sensitive directories using LUKS. Encryption keys are located on a central server which can be located on customer premises. Encrypted partitions are automatically remounted after an unplanned reboot.

To simplify working with software dependencies of SAP applications, SUSE has created patterns that combine relevant dependency RPM packages for specific applications.

ClusterTools2 provides tools that help set up and manage a Corosync/**pacemaker** cluster.



1.2 Included Services

Extended Service Pack Overlap Support (ESPOS)

Subscriptions for SUSE Linux Enterprise Server for SAP Applications include Extended Service Pack Overlap Support, which extends the overlap between the support periods of two consecutive service packs by three years. During this period, you receive support and all relevant maintenance updates under the terms of Long Term Service Pack Support (LTSS). This feature is only available with SUSE Linux Enterprise Server for SAP Applications.


Extended Service Pack Overlap Support allows you to perform service pack migrations within three and a half (3½) years instead of only six months. This enables you to schedule migrations more easily and perform testing before a migration under less restrictive time constraints.

At an additional cost, SUSE also offers Long Term Service Pack Support (LTSS). With LTSS, you receive support for a particular service pack after the ESPOS period ends. Since SUSE Linux Enterprise Server for SAP Applications includes one and a half (1½) years of general support and three years of ESPOS for each service pack, LTSS may only be offered for the last service pack. For more information about the life cycle of SUSE products, see:

- General explanation: *Deployment Guide, Part “Updating and Upgrading SUSE Linux Enterprise”, Chapter “Life Cycle and Support”* (<https://www.suse.com/documentation/sles-15/> )
- Exact dates: <https://www.suse.com/lifecycle/> 

SUSE Linux Enterprise Server Priority Support for SAP Applications

Subscriptions for SUSE Linux Enterprise Server for SAP Applications include SUSE Linux Enterprise Server Priority Support for SAP Applications, which offers technical support for SUSE Linux Enterprise Server for SAP Applications directly from SAP. The joint support infrastructure, provided by support engineers from SUSE Technical Support and SAP, is based upon SAP Resolve and offers seamless communication with both SAP and SUSE. This “One Face to the Customer” support model reduces complexity and lowers the total cost of ownership.

For more information, see *SAP Note 1056161: SUSE Priority Support for SAP Applications* (<https://launchpad.support.sap.com/#/notes/1056161> )

2 Planning the Installation

Read this chapter carefully, as it helps you plan the installation: It lists requirements and helps you collect data about your system.

2.1 Hardware Requirements

This section lists minimum hardware requirements for the installation of SUSE Linux Enterprise Server for SAP Applications and gives basic guidance on the expected hardware requirements of certain SAP software. For the most up-to-date information about the hardware requirements of SAP software, see the official sizing guidelines at <https://service.sap.com/sizing>.

CPU

Intel 64/AMD64

IBM POWER servers with PowerKVM compatibility

Hard Disk

SUSE Linux Enterprise Server for SAP Applications requires at least 41 GB (without swap) of hard disk space for the system volume. In addition to that, reserve an appropriate amount of hard disk space for the swap partition.

To install an SAP application such as SAP NetWeaver, you need at least 200 GB of free disk space in addition to the required space for the operating system for the application's /data partition.

To install SAP HANA, you need either:

- An SAP BusinessOne-certified machine
- A compatible machine that meets the requirements for SAP HANA TDI (Tailored Datacenter Integration). That is, you need the following amounts of free disk space in addition to the required space for the operating system:
 - 52 GB of free disk space for the partition /usr/sap
 - Space for three partitions for SAP HANA data: /hana/data (same size as RAM), /hana/log (same size as RAM up to a maximum of 512 GB), and /hana/shared (same size as RAM up to a maximum of 1 TB).

For more information about SAP HANA TDI storage requirements, see:

<https://www.sap.com/docs/download/2015/03/74cdb554-5a7c-0010-82c7-eda71af511fa.pdf>

RAM

The SUSE Linux Enterprise Server operating system itself requires a minimum of 1024 MB of total RAM or a minimum of 512 MB of RAM per CPU core (choose whichever is higher). Any SAP software you install will require additional RAM.

To install SAP HANA, your machine needs a minimum of 24 GB of RAM.

For more information about configuring hardware for SAP HANA, see *SAP Note 1944415: Hardware Configuration Guide and Software Installation Guide for SUSE Linux Enterprise Server with SAP HANA and SAP Business One* (<https://launchpad.support.sap.com/#/notes/1944415>).

For more information about partitioning, see *Section 2.5, "Partitioning"*.

2.2 Downloading the Installation Image

1. Unlike previous SLE products, the entire SLE 15 SP1 product line can be installed using the same ISO image: The SLE 15 SP1 Installer DVD 1. If you want to install without network access, additionally download the ISO image of SLE 15 SP1 Packages DVD 1. Both ISO images are available from <https://download.suse.com/>.
2. Burn the image/images onto a physical DVD and ensure that it is/they are bootable. Alternatively, use a virtual DVD-ROM device for installation in a virtual machine.

2.3 Overview of the Installation Workflow

The installation workflow of SUSE Linux Enterprise Server for SAP Applications consists of the following steps:

1. Installation of the operating system (SUSE Linux Enterprise Server). See *Section 3.1, "Using the Installation Workflow"*.
2. SAP Installation Wizard, part 1: Copying all required SAP media to the local disk or selecting a shared storage medium to use. See *Section 4.2, "Using the SAP Installation Wizard"*, in particular *Step 1*.

3. SAP Installation Wizard, part 2: Collecting all parameters for the actual installation by querying the user interactively. See *Section 4.2, "Using the SAP Installation Wizard"*, in particular *Step 10*.
4. SAP Installation Wizard, part 3: Running the SAP Installer. See *Section 4.2, "Using the SAP Installation Wizard"*, in particular *Step 13*.

Important: Installation of Only SUSE Linux Enterprise Server

You can choose to only install a base SUSE Linux Enterprise Server system. In that case, only the first step of the installation workflow is executed.

This can be necessary when you want to install an Oracle database on a SUSE Linux Enterprise Server for SAP Applications machine. To do so, install the base product SUSE Linux Enterprise Server first, then install the Oracle database and later convert your installation to SLES for SAP. This is necessary because the installer of Oracle databases queries for the existence of certain files, not all of which are included in a SLES for SAP installation.

Most of these steps do not need to be run immediately after each other, which allows for flexibility in how you install systems. This means that you can prepare a single installation as a first step and then continue from there. For example:

- Install the operating system (SUSE Linux Enterprise Server) only.
or
- Install the operating system (SUSE Linux Enterprise Server), copy SAP media, and collect SAP installation parameters.

Then, create disk images, copy them to other systems, and adjust SAP installation parameters. Finally, finish the installation on each machine individually.

2.4 Required Data for Installing

Operating System

The SUSE Linux Enterprise Server installation requires the following data for every physical server:

- Network configuration parameters, such as host name, domain, IP address, subnet mask, domain searchlist (DNS), IP for name server, IP for gateway
- Administrator (root) password for the SUSE Linux Enterprise Server installation

SAP Application

The installation of an SAP application generally requires specifying:

- SAP SID
- SAP Instance Number
- A password for the SAP application

Depending on the SAP application you are installing, more parameters may be necessary, such as T-Shirt Sizing or parameters for virtual networking.

SAP HANA Database

The installation of SAP HANA requires specifying:

- SAP SID
- SAP Instance Number
- Whether to enable Multitenant Database Containers (MDC). The multi-tenant support of SAP HANA allows having multiple databases that run as one SAP HANA installation. (To use SAP HANA MDC, you need SAP HANA Life Cycle Manager.)
For a single-tenant installation, choose *No*.
For a multi-tenant instance administrated by one SIDadm user, choose *Yes with low isolation*.
For a multi-tenant instance administrated in which each database has its own SIDadm user, choose *Yes with high isolation*.
- A password for the SAP HANA database

For more information about installing SAP software, see the SAP documentation at <https://help.sap.com> and <https://support.sap.com>.

2.5 Partitioning

SUSE Linux Enterprise Server for SAP Applications creates the partitioning table in two stages:

1. *Partitioning for the Operating System (stage 1)* (during the installation of the operating system)
2. *Partitioning for the SAP System (stage 2)* (during the installation of the SAP product)

2.5.1 Partitioning for the Operating System (stage 1)

During the installation of the operating system, partitions for the operating system are created. A logical volume group (LVG) named `/dev/system` will be created. This LVG contains two logical volumes (LVs):

- `/dev/system/root`: by default 60 GB to account for the operating system and SAP media
- `/dev/system/swap`: by default 2 GB, avoid setting a smaller size. See also *SAP Note 1984787: SUSE Linux Enterprise Server 12: Installation notes* (<https://launchpad.support.sap.com/#/notes/1984787>).

Additionally, a `boot` or UEFI partition will be created as necessary.

2.5.2 Partitioning for the SAP System (stage 2)

This part of the partitioning can only be created after the operating system has been installed. That means the partitions are created either in the installation workflow after the reboot or in the running system.

Depending on the product you are installing and your particular use case, the amount of hard disk space necessary can vary.

3 Installing the Operating System

The following section provides instructions for installing the base operating system. Using the installation workflow, you can install either using a local installation medium or over the network. Alternatively, you can install using AutoYaST.

3.1 Using the Installation Workflow


The installation workflow is a guided installation of the operating system with optimized settings for SAP applications. During the installation workflow, you can choose whether you want to install an SAP application. If so, you will be asked to provide SAP installation media when the SUSE Linux Enterprise Server installation is finished. You can also choose whether to install third-party extensions.

This section assumes that you are starting the installation from a local medium.

For more information, see *Section 2.3, “Overview of the Installation Workflow”*.

This section guides you through the installation of the SUSE Linux Enterprise Server for SAP Applications operating system.

PROCEDURE 3.1: STARTING THE OS INSTALLATION

1.
 - On Intel 64/AMD64, boot from the DVD. From the DVD boot menu, select *Installation*.
 - On POWER, follow the instructions in the SUSE Linux Enterprise Server documentation, see *Deployment Guide, Part “Installation Preparation”, Chapter “Installation on IBM POWER”* (<https://www.suse.com/documentation/sles-15/> )

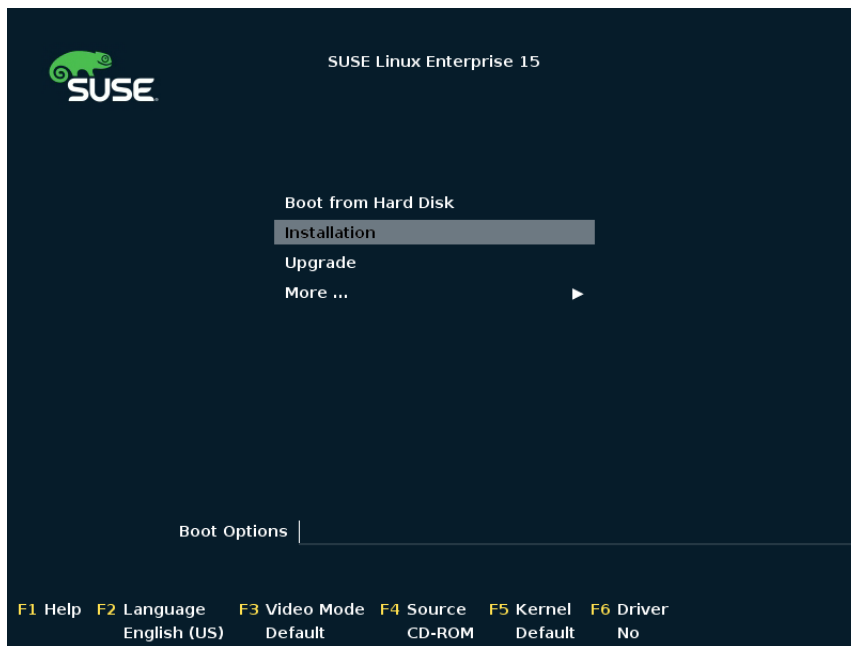


FIGURE 3.1: DVD BOOT MENU

While the initial operating system is starting, you can view boot messages by pressing `[Esc]`. When this process has completed, the graphical installation workflow will start. As the first step, the installation workflow will check for updates for itself. After that, it will be ready to start the installation.

2. Select the default system language under *Language*.

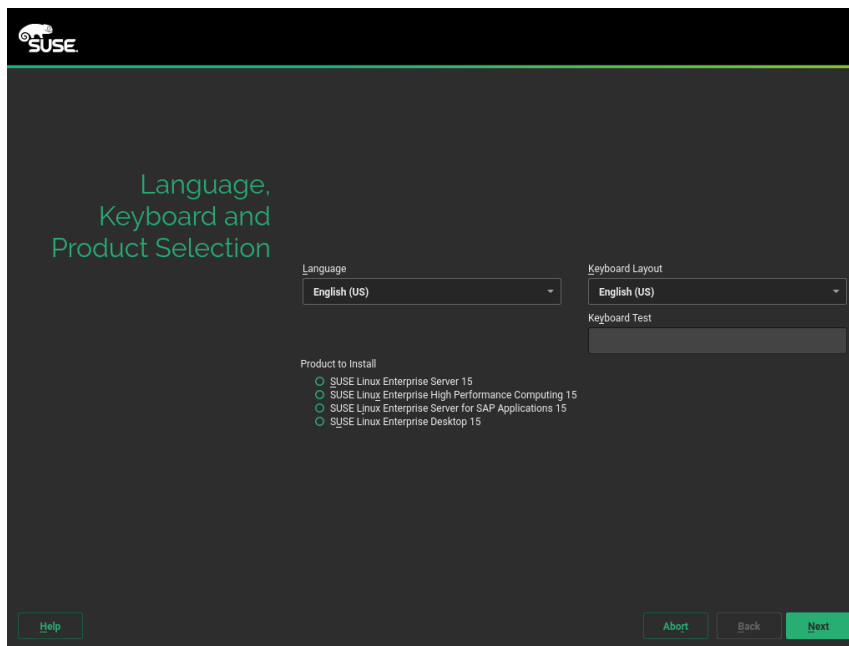


FIGURE 3.2: LANGUAGE, KEYBOARD AND PRODUCT SELECTION

3. Select the appropriate keyboard layout under *Keyboard Layout*. To test whether the selected layout matches your physical keyboard, use the text box *Keyboard Test*.
4. SLE 15 SP1 provides a single installation ISO for the entire product line. Therefore, you need to select the product to install on this page.
Under *Product to install*, choose *SUSE Linux Enterprise Server for SAP Applications 15 SP1*.
5. Read the license agreement. If you agree, select *I Agree to the License Terms*. Proceed with *Next*.
Otherwise, cancel the installation with *Abort* > *Abort Installation*.
6. (Optional) If automatic network configuration via DHCP fails, the screen *Network Settings* will open.
If instead the screen *Registration* appears, your network connection works. To change network settings anyway, click *Network Configuration*.
When you are finished configuring networking, proceed with *Next*.

! Important: Configure Networking as Recommended by SAP

Make sure to configure the network connection as recommended in the documentation provided to you by SAP.

For information about configuring networking, see *Administration Guide, Chapter “Basic Networking”, Section “Configuring a Network Connection with YaST”* (<https://www.suse.com/documentation/sles-15/>).

7. On the screen *Registration*, enter your *E-mail Address* and *Registration Code*. Successful registration is a prerequisite for receiving product updates and the entitlement to technical support.

Proceed with *Next*.

! Important: Register at This Step

Make sure to register your system at this step in the installation. Otherwise, you can only install a minimal SLE system and will not receive updates.

To install a full (but not updated) SLES for SAP system without network access during the installation, use the SLE 15 SP1 Packages ISO image from <https://download.suse.com/>. You can then choose *Skip registration* on this page and select the SLE 15 SP1 Packages ISO image as an add-on product on the next page.

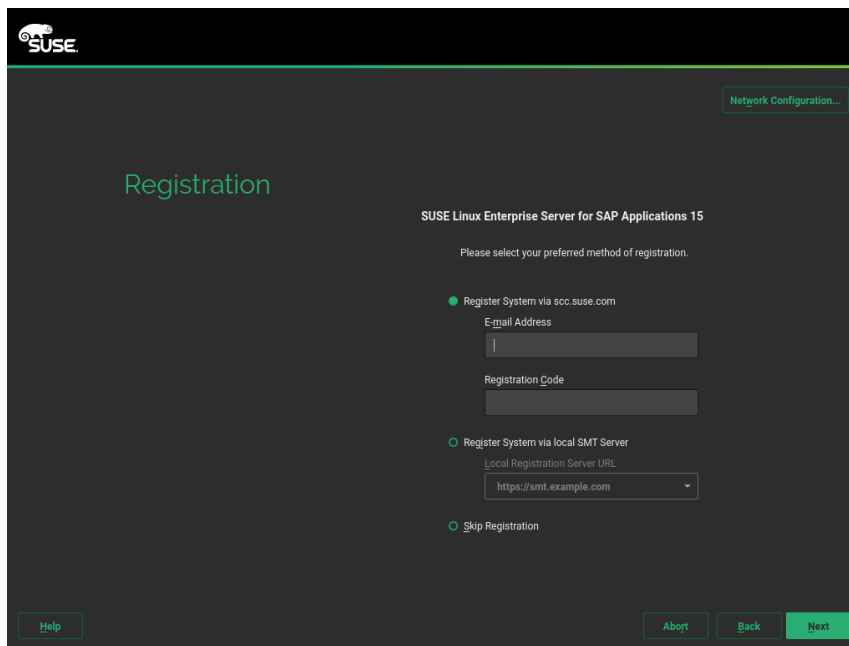


FIGURE 3.3: REGISTRATION

8. When asked whether to enable update repositories, choose *Yes*.
9. After the system is successfully registered, YaST lists available modules for SUSE Linux Enterprise Server for SAP Applications from the SUSE Customer Center. The default selection covers the most common cases. To enable an additional module, activate its entry. Proceed with *Next*.



Note: Release Notes

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

10. The following screen allows you to choose the *System Role*. You can choose between:
 - *SLES for SAP*: Recommended for most situations.
 - *SLES with GNOME*: Can be necessary in specific cases. This installation path is not covered in this document. For more information about this installation path, see *Installation Quick Start*, Section “Installing SUSE Linux Enterprise Server” (<https://www.suse.com/documentation/sles-15/>).

! Important: Installing Oracle Databases

To be able to install an Oracle database later, choose *SLES* and later convert your installation to SLES for SAP.

This is necessary because the installer for Oracle databases queries for the existence of certain files, not all of which are included in a SLES for SAP installation.

Proceed with *Next*.

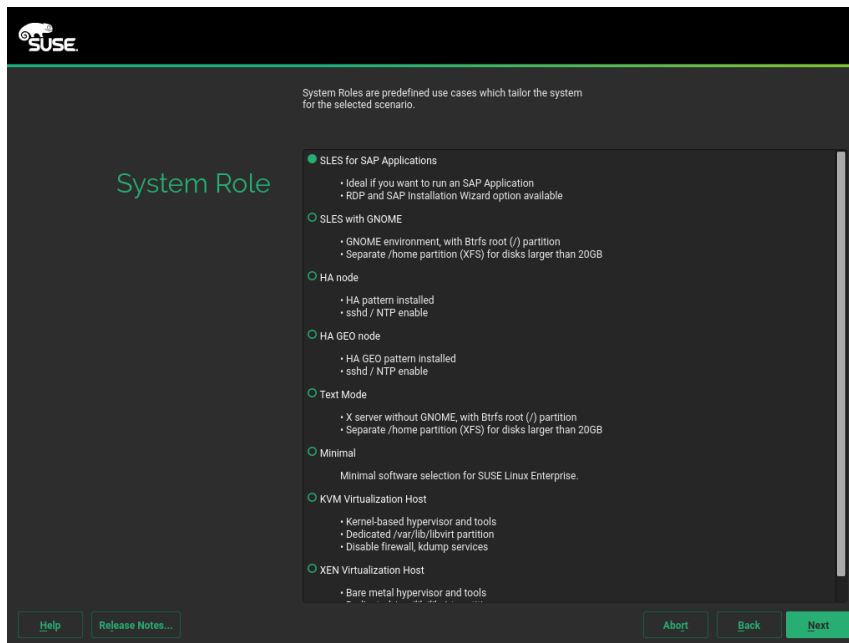


FIGURE 3.4: SYSTEM ROLE

PROCEDURE 3.2: FINISHING THE OS INSTALLATION

1. Choose whether to enable the following options:

- To install an SAP Application along with the system, activate *Launch the SAP Installation Wizard right after the operating system is installed*.
- To enable RDP access (Remote Desktop Protocol) to this machine, activate *Enable RDP service and open port in firewall*.

2. Review the proposed partition setup for the volumes `/dev/system/root` and `/dev/system/swap`. The volume `/dev/system/data` will be created later, as described in [Section 2.5, “Partitioning”](#).

To accept the proposed setup without changes, proceed with *Next*.

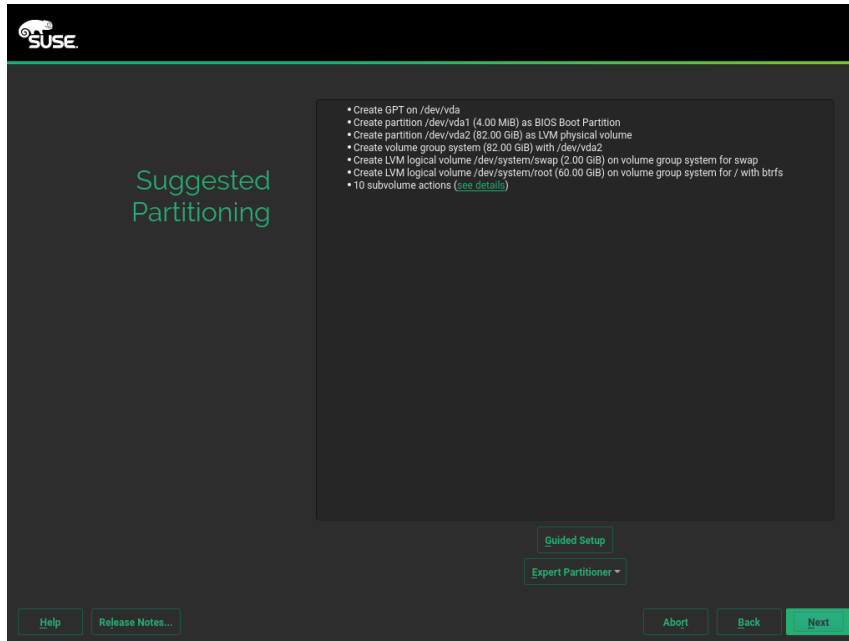


FIGURE 3.5: SUGGESTED PARTITIONING

3. Select the clock and time zone to use on your system. To manually adjust the time or to configure an NTP server for time synchronization, choose *Other Settings*. For detailed information, see *Deployment Guide, Chapter “Installation with YaST”, Section “Clock and Time Zone”* (<https://www.suse.com/documentation/sles-15/>).

Proceed with *Next*.

4. Type a password for the system administrator account (called `root`) and repeat the password under *Confirm Password*. You can use the text box *Test Keyboard Layout* to make sure that all special characters appear correctly.

For more information, see *Deployment Guide, Chapter “Installation with YaST”, Section “Password for the System Administrator root”* (<https://www.suse.com/documentation/sles-15/>).

Proceed with *Next*.

! Important: Do Not Forget the root Password

The user `root` has the permission to carry out all administrative tasks. Without this password, you cannot log in to the system as `root`. The password entered here cannot be retrieved later.

5. On the screen *Installation Settings*, you can review and, if necessary, change several proposed installation settings. Each setting is shown alongside its current configuration. To change parts of the configuration, click the appropriate headline or other underlined items.

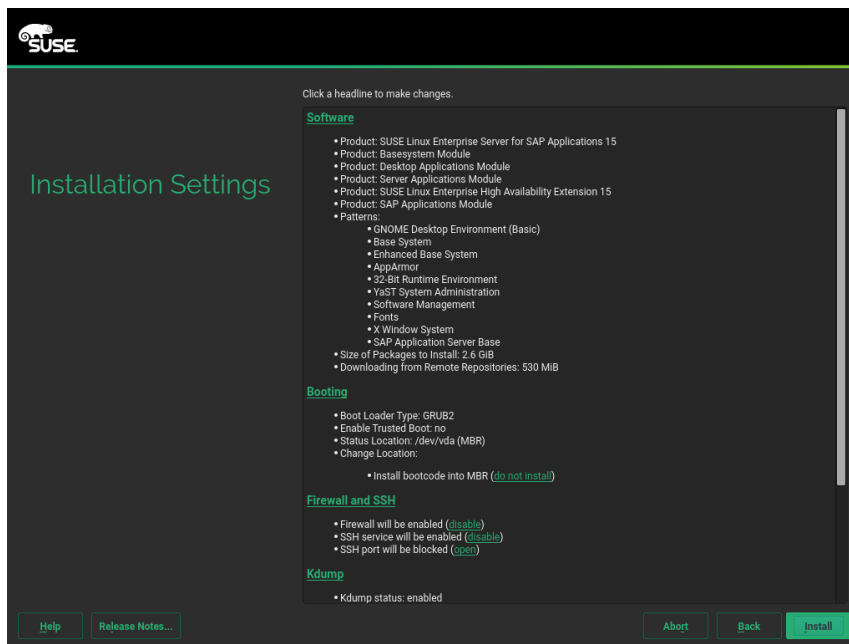


FIGURE 3.6: INSTALLATION SETTINGS

6. When you are satisfied with the system configuration, click *Install*.

⚠ Warning: Deletion of Data

The installation process fully or partially overwrites existing data on the disk.

In the installation confirmation box, click *Install*.

When the installation of the operating system is finished, the system will reboot automatically:

- If you chose to only prepare the system for installation, the system will boot to a desktop login screen.
- If you chose to install an SAP application now, the installation will continue after a reboot. Continue with *Chapter 4, Installing SAP Applications*.

4 Installing SAP Applications

This section guides you through the installation of SAP media sets you received from SAP.

4.1 First Steps

These first steps are only relevant during the installation workflow.

1. When the system is booted, it displays the screen *Welcome*. Proceed with *Next*.
2. The screen *Network Settings* will now open. This gives you an opportunity to change the network settings.

When you are finished configuring networking, proceed with *Next*.

Important: Configure Networking as Recommended by SAP

Make sure to configure the network connection according to the documentation of your SAP application.

For information about configuring networking, see *Administration Guide, Chapter “Basic Networking”, Section “Configuring a Network Connection with YaST”* (<https://www.suse.com/documentation/sles-15/>).

(While the next screen loads, the *Welcome* screen may appear again for a few seconds.)

3. Choose one of the following options:

Create SAP file systems and start SAP product installation

Allows installing an SAP application and setting up the system as a server providing SAP installation routines to other systems.

Continue with [Section 4.2, “Using the SAP Installation Wizard”](#).

Only create SAP HANA file systems, do not install SAP products now

Create an SAP HANA file system on SAP BusinessOne-certified hardware.

Important: Hardware Requirements

Make sure your machine fulfills the hardware requirements for SAP HANA detailed in [Section 2.1, "Hardware Requirements"](#). Otherwise, this option will not create a new file system and the installation workflow ends at this point.

Finish wizard and proceed to OS login

Do not install an SAP application and continue to the login screen of SUSE Linux Enterprise Server for SAP Applications.

Proceed with *Next*.

4.2 Using the SAP Installation Wizard

Use the SAP Installation Wizard to install an SAP NetWeaver system (including database) or an SAP HANA system.

To install other SAP applications or to create a more advanced SAP HANA setup, directly use one of the installation methods provided by SAP instead of this wizard.



Tip: Installing an SAP Application in a Fully Installed System

This process is documented as it appears during the installation workflow. However, it also applies to the YaST module *SAP Installation Wizard* which is available in the installed system.

To start the SAP Installer, from the desktop, choose *Applications > System > YaST*, continue in the YaST control center by choosing *Miscellaneous > SAP Installation Wizard*.



Tip: SAP Installation Wizard Configuration

The SAP Installation Wizard configuration is specified and documented in [/etc/sysconfig/sap-installation-wizard](#). You can change it according to your needs.

1. In the screen *SAP Installation Wizard*, provide the *Location of the SAP Installation Master* (Figure 4.1, “*Location of SAP Installation Master*”). The location can either be a local, removable, or remote installation source.

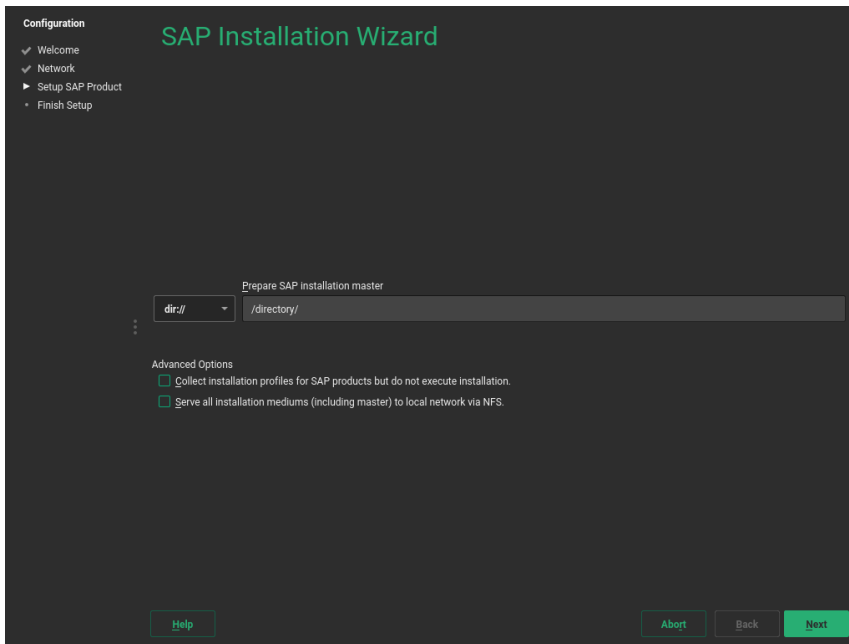


FIGURE 4.1: LOCATION OF SAP INSTALLATION MASTER

Select the appropriate option from the drop-down box. In the text box, specify the path to your source according to the format given in the following table.

TABLE 4.1: MEDIA SOURCE PATH

Option	Description	Format of Path
Local Sources		
<i>dir://</i>	a local directory	<u><i>/path/to/dir/</i></u>
Removable Sources		
<i>device://</i>	a locally connected hard disk	<u><i>devicename/path/to/dir/on/device</i></u>
<i>usb://</i>	a USB mass storage device	<u><i>/path/to/dir/on/USB</i></u>
<i>cdrom://</i>	a CD or DVD	<u><i>//</i></u>

Option	Description	Format of Path
Remote Sources		
<i>nfs://</i>	an NFS share	<u><i>server_name/path/to/dir/on/device</i></u>
<i>smb://</i>	an SMB share	<u><i>[user_name:password@]server_name//path/to/dir/on/server[?workgroup=work-group_name]</i></u>

If you have installed an SAP application from an installation server before or set up your system to be an installation server, you can also directly choose that server as the provider of the Installation Master. To do so, use the drop-down box below *Choose an installation master*.

2. Under *Advanced Options*, choose from the following options:

Collect installation profiles for SAP products but do not execute installation

Use this option to set the installation parameters, but not perform the actual installation. With this option, the SAP Installer (SAPinst) will stop without performing the actual SAP product installation. However, the steps that follow fully apply.

Serve all installation media (including master) to local network via NFS

Set up this system as an installation server for other SUSE Linux Enterprise Server for SAP Applications systems. The media copied to this installation server will be offered through NFS and can be discovered via Service Location Protocol (SLP).

Proceed with *Next*.

The SAP Installation Wizard will now copy the Installation Master to your local disk. Depending on the type of Installation Master you selected, the installation will continue differently:

- If you are installing an SAP HANA database, skip ahead to *Step 8*.
- If you are installing an SAP NetWeaver application, continue with the next step.

3. On the screen *SAP Installation Wizard*, provide the location of additional Installation Media you want to install. This can include an SAP kernel, a database, and database exports.

Copy a medium

Specify a path to additional Installation Media. For more information about specifying the path, see [Table 4.1, “Media Source Path”](#).

Skip copying of medium

Do not copy additional Installation Media. Choose this option if you do not need additional Installation Media or to install additional Installation Media directly from their source, for example CDs/DVDs or flash disks.

When choosing this option despite your SAP product requiring additional Installation Media, you will later need to provide the SAP Installer (SAPinst) with the relevant paths.

Proceed with *Next*.

If you chose to copy Installation Media, the SAP Installation Wizard will copy the relevant files to your local hard disk.

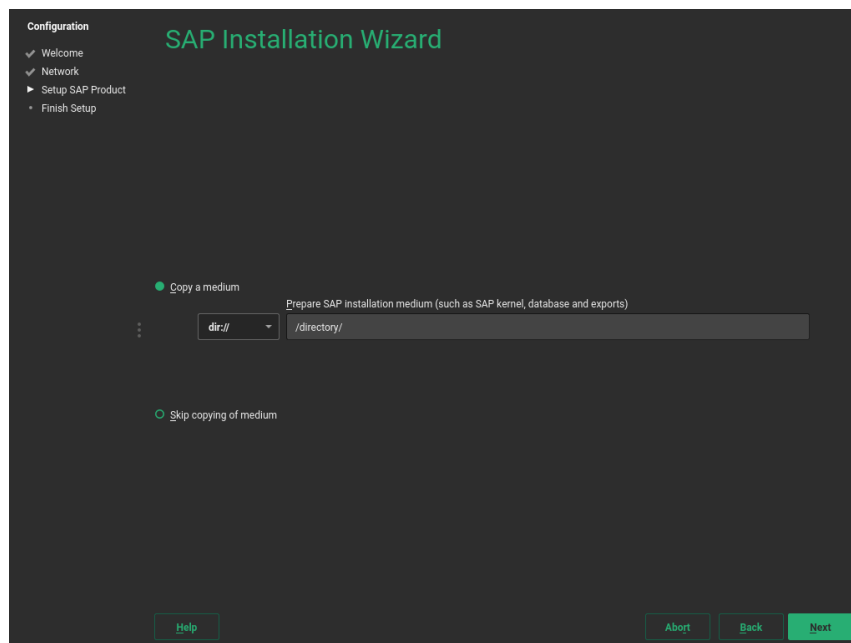


FIGURE 4.2: SAP INSTALLATION WIZARD: ADDITIONAL INSTALLATION MEDIA

4. After copying the Installation Media, you will be asked whether you want to prepare additional Installation Media. To do so, click *Yes*. Then follow the instructions in [Step 3](#). Otherwise, click *No*.
5. In the screen *What Would You Like to Install*, under *The SAP product is*, choose how you want to install the product:

SAP Standard System

Install an SAP application including its database.

SAP Standalone Engines

Engines that add functionality to a standard product: SAP TREX, SAP Gateway, and Web Dispatcher.

Distributed System

An SAP application that is separated onto multiple servers.

SAP High-Availability System

Installation of SAP NetWeaver in a high-availability setup.

System Rename

Allows changing the various system properties such as the SAP system ID, database ID, instance number, or host name. This can be used to install the same product in a very similar configuration on different systems.

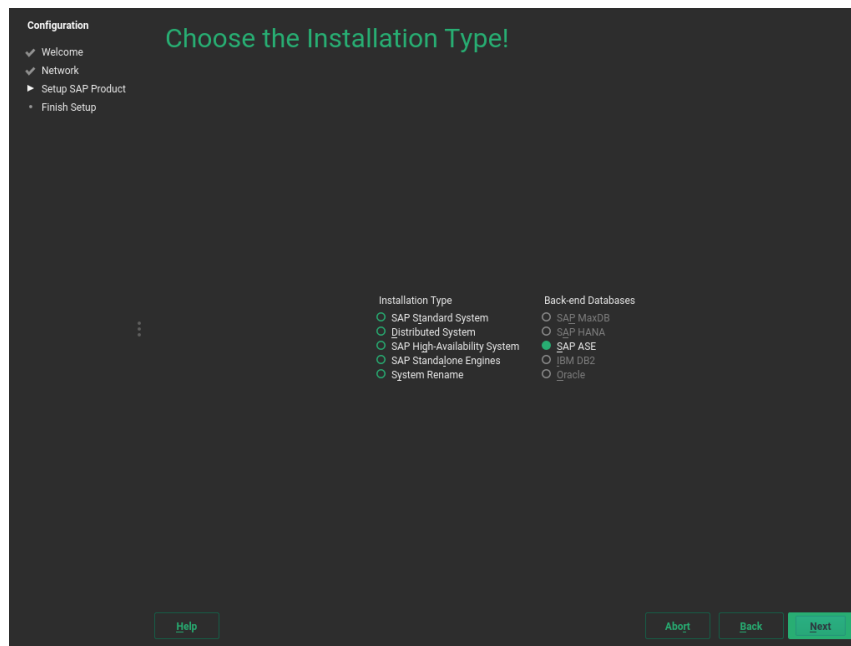


FIGURE 4.3: SAP INSTALLATION WIZARD: INSTALLATION TYPE AND DATABASE

6. If you selected *SAP Standard System*, *Distributed System*, or *SAP High-Availability System*, additionally choose a back-end database under *The back-end database system is*. Proceed with *Next*.

- You will now see the screen *Choose a Product*. The products shown depend on the Media Set and Installation Master you received from SAP. From the list, select the product you want to install.

Proceed with *Next*.

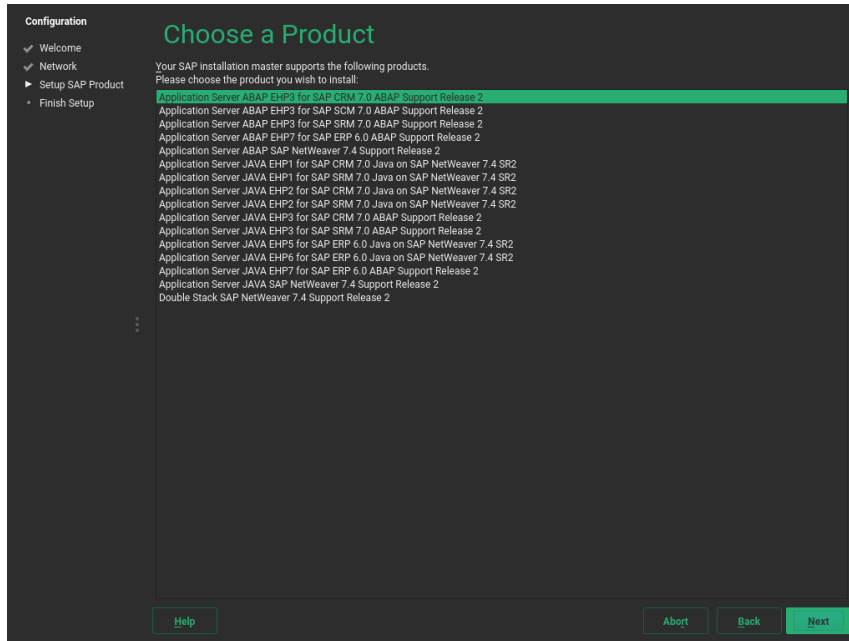


FIGURE 4.4: SAP INSTALLATION WIZARD: CHOOSE A PRODUCT

- You will be asked whether to copy Supplementary Media or Third-Party Media. To do so, click *Yes* and then follow the instructions in *Step 3*.

Otherwise, click *No*.



Note: Difference Between Supplementary Media/Third-Party Media and Additional Software Repositories

Both types of delivery mechanisms allow installing software that is neither part of the SUSE Linux Enterprise Server for SAP Applications media nor part of your Media Set from SAP. However, the delivery mechanism is different:

- Supplementary Media/Third-Party Media is installed using an AutoYaST file which allows creating an installation wizard and custom installation scripts.
- Additional software repositories are RPM package repositories that you will remain subscribed to. This means you receive updates for Third-Party Media along with your regular system updates.

9. On the screen *Additional software repositories for your SAP installation*, you can add further software repositories. For example, for add-ons that are packaged as RPM. To do so, click *Add new software repositories*. For more information about adding repositories, see *Deployment Guide, Chapter “Installing and Removing Software”, Section “Adding Software Repositories”* (<https://www.suse.com/documentation/sles-15/>).

Proceed with *Next*.



Note: Location of Copied SAP Media

At this point, all data required for the SAP installation has been copied to `/data/SAP_CDs` (unless you chose to skip the process of copying). Each Installation Medium is copied to a separate directory. You might find the following directory structure, for example:

```
tux > ls /data/SAP_CDs
742-KERNEL-SAP-Kernel-742
742-UKERNEL-SAP-Unicode-Kernel-742
RDBMS-MAX-DB-LINUX_X86_64
SAP-NetWeaver-740-SR2-Installation-Export-CD-1-3
SAP-NetWeaver-740-SR2-Installation-Export-CD-2-3
SAP-NetWeaver-740-SR2-Installation-Export-CD-3-3
```

/data/SAP_CDs is the default directory as specified in the /etc/sysconfig/sap-installation-wizard configuration file.

10. Depending on the product you are installing, one or more dialogs will prompt you to supply values for several configuration parameters for the SAP application you are installing. Supply the values as described in the documentation provided to you by SAP. Help for the configuration parameters is also available on the left side of the dialog. For more information, see *Section 2.4, "Required Data for Installing"*. Fill out the form (or forms), then proceed with *OK*.

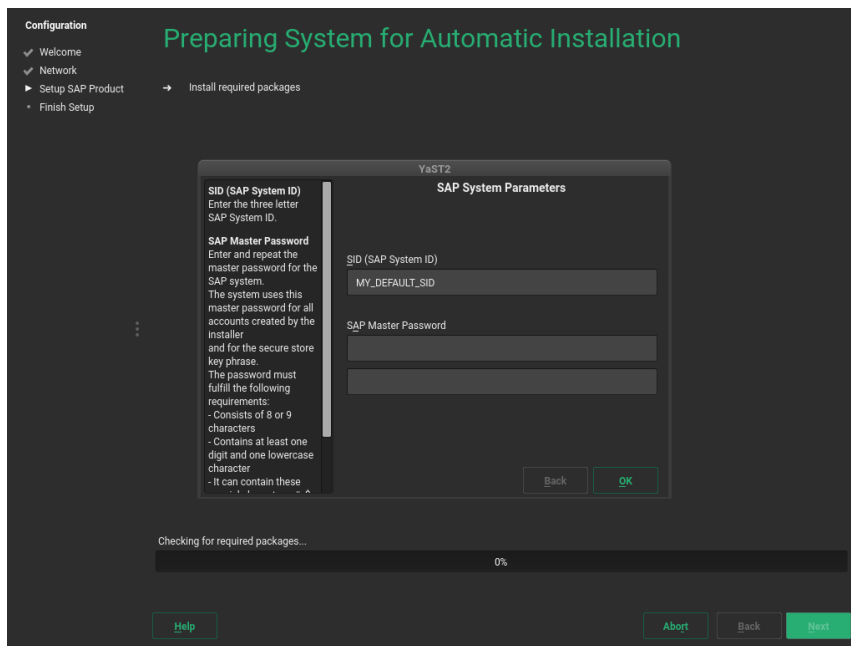


FIGURE 4.5: PRODUCT PARAMETERS

When you are done, the SAP Installation Wizard will download additional software packages.

11. You will be asked whether to continue the installation or prepare another SAP product for installation. If you choose to prepare another SAP product, start from the beginning of this procedure.

12. (Optional) When installing SAP HANA on a system that is not certified for SAP HANA and does not meet the minimum hardware requirements for SAP HANA TDI (Tailored Datacenter Integration), you will be asked whether to continue. If you receive this message unexpectedly, check [Section 2.1, "Hardware Requirements"](#) and the sizing guidelines from SAP at <https://service.sap.com/sizing>. Otherwise, continue with Yes.

13. The following steps differ depending on the type of SAP application you are installing:

- When installing an SAP HANA database, SAP HANA will now be installed without further question.
- When installing an SAP NetWeaver application, the actual installation will be performed using the SAP Installer (SAPinst). After a few seconds, SAP Installer will open automatically.

Follow the SAP Installer as described in the documentation provided by SAP. Most configuration parameters are correctly filled already.

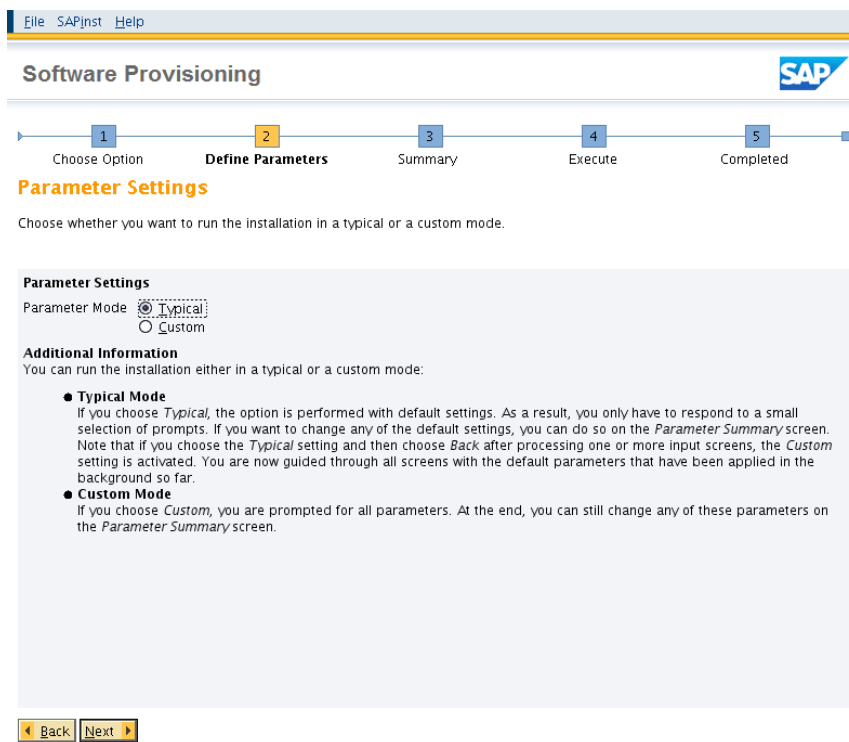


FIGURE 4.6: SAP INSTALLER: DEFINING PARAMETERS



Tip: Installation Log Files

If the installation of the SAP application fails, refer to the installation log files. They are located in /var/adm/autoinstall. Failed installations are recorded in files with names ending in .err.

14. The final screen is *Installation Completed*.

To create an AutoYaST file for this installation, activate *Clone This System for AutoYaST*.

The AutoYaST file will be placed in /root/autoinst.xml.

Click *Finish*.

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