Installation Guide Document Version: 1.5.5 – 2019-04-18

# How to Install SUSE Linux Enterprise Server 12 SP3 for SAP Business One, Version for SAP HANA

All Countries



CUSTOMER

# Typographic Conventions

Type Style	Description
Example	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.
Example	Emphasized words or expressions.
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
Example	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<example></example>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE	Keys on the keyboard, for example, F2 or ENTER.

# Table of Contents

1	Introduction	.4
1.1	Restrictions	.4
2	Prerequisites	.6
2.1	Hardware	.6
2.2	Software	.6
2.3	Information	.6
3	Obtaining the Software	. 7
3.1	Downloading Installation and Upgrade Packages for SAP Products	. 7
3.2	Extracting the SAP Software Packages	.8
3.3	Updating the SAP HANA Hardware Check	.9
3.4	Obtaining the SLES Installation Image	.9
4	Installing the Operating System and SAP Products	11
4.1	Installing and Configuring the Operating System	12
4.2	Installing SAP HANA	28
4.3	Installing SAP Business One, version for SAP HANA	39
5	Registering the Linux Operating System	15
6	Updating SAP HANA	50
7	Troubleshooting	51
7.1	Operating system installation fails after choosing the installation disk	51

# 1 Introduction

This guide will walk you through how to install SUSE Linux Enterprise Server (SLES) 12, the SAP HANA® database and the SAP Business One, version for SAP HANA application with a SLES image specifically designed for SAP HANA and SAP Business One, version for SAP HANA. With this image, you can install the operating system, SAP HANA and SAP Business One, version for SAP HANA in one go.

### 1 Note

This guide and the image are designed for SAP Business One appliances that are not factory-preloaded with an OS and SAP software by the hardware vendor. If an appliance has been preloaded already by the hardware vendor, the installation process described here does not apply. In this case, please refer to the instructions of the respective hardware vendor.

Chapter 5 also explains how to register your system with SUSE to get timely updates and support.

For documentation about SUSE products, see https://www.suse.com/documentation.

### 1.1 Restrictions

There are certain restrictions with the special image. Make sure you have read and understood the restrictions before you decide to install SLES using this image.

### Shared Password

4

If you install SAP HANA and SAP Business One using the SUSE installation wizard, you can specify a password only for the operating system user <sid>adm, which is created specifically for SAP HANA. This password will be shared by the following users:

• SAP HANA database administrator user SYSTEM.

You cannot change the password for SYSTEM after installing SAP Business One; otherwise, you will have to reinstall the System Landscape Directory (SLD). Therefore, we recommend the following:

- If you want to define a new password for SYSTEM after the installation of SAP HANA, do it before you install SAP Business One.
- If you want to change the password for SYSTEM after you have installed SAP Business One, do it only if you are going to upgrade SAP Business One immediately after the change. During the upgrade process, you will be able to enter the new password.
- SAP Business One site user B1SiteUser if you install SAP Business One, version for SAP HANA using the default installation method.

If you install SAP Business One using the custom installation method, you can define a different password. For both default and custom installation methods, you can change the password for BlSiteUser later in the System Landscape Directory.

### Operating System Upgrade and Uninstallation

This special image is not designed for upgrade from or uninstallation of earlier operating system versions.

For example, if you have installed SLES with a standard installation (for example, SLES 12 SP3) and now want to take advantage of the optimized configurations with this special image, you must remove the old installation and then do a fresh deployment with the special image.

Nevertheless, you can upgrade your operating system (special image) using standard SLES media kits or the respective online repositories.

#### Prerequisites 2

Before performing the actual installation, ensure that you have fulfilled the prerequisites listed in the following sections.

#### 2.1 Hardware

Your hardware platform must be validated for SAP Business One products powered by SAP HANA. For a list of validated hardware platforms, see SAP Note 2382775 and http://www.sap.com/certifiedsaphanahardware (choose View Listings, open Appliance Type and select SAP Business One).

You must set up your hardware platform according to the hardware configuration guide in the Attachments section of SAP Note 1944415.

#### 2.2 Software

The following software must be available for installation:

- SLES 12 SP3 Installer for SAP Business One •
- ٠ SAP HANA (platform edition)
- SAP Business One, version for SAP HANA ٠

For more information, see Obtaining the Software.

#### 2.3 Information

You have the following information about the machine on which you intend to perform the installation:

- IP address of the machine •
- Host name of the machine
- Subnet mask •
- Domain name •

6

- IP address of the name servers •
- Gateway IP address
- Valid subscription: SUSE Customer Center (SCC) account and registration code •
- Password for the root user •
- SAP master password (<sid>adm password)

Prerequisites

# 3 Obtaining the Software

### 3.1 Downloading Installation and Upgrade Packages for SAP Products

To download the installation packages of SAP HANA and SAP Business One, version for SAP HANA, go to the SAP Business One Software Download Center at https://launchpad.support.sap.com/#/softwarecenter. The following instructions are for the latest version of each product.

### Installation Packages

### SAP HANA

1. Find the software available for download.

To download $\rightarrow$ SAP Busin	the installation package of SAP HANA for SAP Business One 9.3, choose Installations & Updates $P_{AB} = P_{AB} = P_{AB$
SAP HANA –	$\rightarrow$ HANA PLATFORM EDIT. 1.0 FOR B1 $\rightarrow$ Installation $\rightarrow$ Downloads.
51052924	SAP HANA Platform Edition 1.0 SPS 12 Rev 122.16 for B1
51051945	SAP HANA Platform Edition 1.0 SPS 12 Rev 122.05 for B1
51051215	SAP HANA Platform Edition 1.0 SPS 12 Rev 122.04 for B1
51050929	SAP HANA Platform Edition 1.0 SPS 12 Rev 122.03 for B1
51050934	SAP HANA Platform Edition 1.0 SPS 11 Rev 122.03 for B1
51050933	SAP HANA Platform Edition 1.0 SPS 10 Rev 102.05 for B1
51050890	SAP HANA Platform Edition 1.0 SPS 9 Rev 97.00 for B1
51049186	SAP HANA Platform Edition 1.0 SPS 08 Rev 85.03 for B1
51049880	SAP HANA Platform Edition 1.0 SPS 07 Rev 74.03 for B1

Choose the SAP HANA revision supported by the particular version of the SAP Business One product. To verify which SAP HANA revision is supported, check the following SAP Overview Note: 2483613 - Central Note for SAP Business One 9.3, version for SAP HANA

SAP Business One, version for SAP HANA

- 1. Find the software available for download by clicking Installations  $\rightarrow$  SAP B1 VERSION FOR SAP HANA  $\rightarrow$  SAP B1 9.3 FOR SAP HANA  $\rightarrow$  Installation  $\rightarrow$  Downloads.
- 2. Download all listed objects.

#### Extracting the SAP Software Packages 3.2

The SAP products are downloaded as archived files. You must extract the archives so that the installation wizard can recognize them as SAP HANA or SAP Business One software packages.



Extract the files directly on a Linux server or a Linux virtual machine. File transfer is more reliable between Linux machines than between Windows and Linux machines.

### **Extraction Methods**

For EXE and RAR objects: Use a RAR, WinRAR, or UnRAR utility on Windows or Linux to extract EXE and RAR archives into a directory located on a USB stick, an NFS share, a Windows share, or a burned DVD.

🚏 Example

Example unpacking command on Linux: unrar x 51043617\_part1.exe

For ZIP objects: Use a Zip, 7-Zip, or UnZip utility on Windows or Linux to extract ZIP archives.

Example

Example unpacking command on Linux: unzip 51042150.ZIP

For more details, see SAP Note 886535 (Downloading multi-spanning archives).

### Result

After the extraction, the high-level folder and file structure looks like this this (only required files displayed):

### SAP HANA

51050933/

DATA\_UNITS/

SAP HANA AFL 1.0 FOR B1

- SAP HANA CLIENT 1.0 FOR B1
- SAP HANA DATABASE 1.0 FOR B1
- SAP HANA STUDIO 1.0 FOR B1

LABEL.ASC

SAP Business One, version for SAP HANA

51050324

AUTORUN.ico

AUTORUN.INF

Copyright.pdf

CR\_license\_cs.pdf

Documentation

Customer

EasyStart\_EN.pdf info.txt Migrate.exe Packages.Linux Packages.x64 Prerequisites ReadMe.pdf SAP\_Software\_Use\_Rights.pdf Setup.exe

### 3.3 Updating the SAP HANA Hardware Check

### i Note

This is not required for SAP HANA 1.0 revision 102 or higher.

During installation of the SAP HANA database, a check is performed to determine if the hardware is available. You must use the latest hardware check to make sure that recently certified hardware is recognized. To do so, proceed as follows:

- 1. Open SAP Note 1658845.
- 2. Download the attached HanaHwCheck.zip file and unzip it.
- 3. Replace the HanaHwCheck.py file in the extracted SAP HANA package. You can find the file on either of the following paths:
  - o Installation package: .../DATA\_UNITS/HDB\_SERVER\_LINUX\_X86\_64/server/
  - o Upgrade package: .../DATA\_UNITS/SAP\_HANA\_DATABASE/server

## 3.4 Obtaining the SLES Installation Image

You can obtain the tailored installation image of SLES in one of the following methods:

- DVD-based installation:
  - 1. Download the image from https://www.suse.com/slesb1hana.

1 Note

This link directs you to the latest available image.

- 2. Burn the downloaded file (SLES12-SP3-SAPBOne-Installer.x86\_64-GM.iso) to a DVD ROM with a DVD-burning tool of your choice.
- USB stick-based installation:
  - 1. Download the image from https://www.suse.com/slesb1hana.
  - 2. Follow the steps below to write the image to a USB device:

o On Linux:

10

Use the "dd" command to copy the ISO file to a connected unmounted USB stick. Note that all the data on the USB stick will be overwritten.



### # dd if=/path/to/downloaded.iso of=/dev/sdX bs=4M status=progress && sync

You can find more instructions at: https://en.opensuse.org/SDB:Live\_USB\_stick.

- o On Microsoft Windows:
  - 1. Download the image from https://www.suse.com/slesb1hana.
  - 2. Install a public image writer application of your choice. The commonly used tools are Rufus (https://rufus.akeo.ie/) and Etcher (https://etcher.io/).
  - 3. Run the image writer tool and write the image to a USB device.

You can find more instructions at: https://en.opensuse.org/SDB:Create\_a\_Live\_USB\_stick\_using\_Windows.

# 4 Installing the Operating System and SAP Products

### Prerequisites

- You have prepared the installation packages as described in Obtaining the Software.
- You have configured your hardware platform according to the instructions provided in the configuration guide in the Attachments section of SAP Note 1944415.

### Procedure

- 1. Install the Linux operating system (SUSE installation wizard).
- 2. Install SAP HANA Platform Edition (SUSE installation wizard or SAP Product Installer).

### 1 Note

For Fujitsu servers RX2540, RX2560, and TX2560, before proceeding to install SAP software, you must download and install network drivers and RAID utilities as described in these SAP Notes:

RX2540 M1, RX2560 M1, TX2560 M1: SAP Note 2184438

RX2540M2, RX2560M2, TX2560M2: SAP Note 2339449

Therefore, after the operating system is installed, you cannot continue using the SUSE installation wizard for SAP software installation; please use the SAP Product Installer to install SAP HANA and SAP Business One, version for SAP HANA.

- 3. Install the base version of SAP Business One, version for SAP HANA (SUSE installation wizard or SAP Product Installer).
- 4. If needed, upgrade the SAP Business One product through its own upgrade method. For example, use the server components setup wizard to upgrade SAP Business One, version for SAP HANA.

# 4.1 Installing and Configuring the Operating System

1. Boot from the DVDROM (or USB stick or remotely connected ISO image) that you have prepared.

1 Note

You may need to temporarily change the BIOS boot order as described in the hardware configuration guide attached to SAP Note 1944415.

2. Choose Install and press ENTER.

1 Note

Depending on the version, the text on the screenshots may vary.

SUSE.
Boot from Hard Disk
Install SLES12-SP3-Installer-for-SAP-Business-One
Failsafe Install SLES12-SP3-Installer-for-SAP-Business-One

3. If the machine has more than one disk, choose the smaller one with approximately 53 GB for installing the operating system, confirm your choice by pressing SPACE, and then choose OK.

Note that the drive names, sizes, and numbers may differ on your machine from the example screenshot. Example: IBM setup

Select di	isk for installation	1:			1
	v/disk/by-id/scsi-36 v/disk/by-id/scsi-36	500605b005839bb	)1af65a8119d11 )1af65ac42298c	[ <mark>53247 MB</mark> ] [794564 MB]	
	K OK )	a (Car	ncel)		

4. Choose Yes to confirm to format the selected disk.



All data is lost and you cannot abort your installation after the confirmation.

Destroying ALL data on scsi-3600605b005839bb01af65a3119d11d15, continue ? ▲ Yes > 〈 No 〉

- 5. Wait for the system to complete the following operations:
  - 1. The operating system is copied to the selected disk.



- 2. The system checks for any errors during the image-writing process.
- 3. After verification, the disk is repartitioned and the system is ready for the installation.



4. The system is being booted and is starting some services.

```
rdex.dis.bp.14.xsii.400510_0FD1_UMMED18K_drive.scsi0-0-d-spart3: LABLE_"INCOV" UUID="cc:R0df_Seb_446690_Creating hoot loader configuration
JUE="Tocot411-554-5484-5543-5543-56474" TMPE-"hirt;" PARTLABLE="Incov" PARTUUID="Cc:R0df_Seb_14.cd=2.cd=2.4fZ3-bcet-0413343351b"
IS5.5958041 Activating Inage: Createshed:SLSI2-SP3-SAPBOne-Installer.x86_64-1.1.0.raw1
IS5.5958041 Activating Inage: Createshed:SLSI2-SP3-SAPBOne-Installer.x86_64-1.1.0.raw1
IS5.5958041 Colling System:
0.0237471 Colling pre-init stage in system inage
IS5.555461 Systemd-udcwdIG5451: starting version 228
IS5.555461 Systemd-udcwdIG5451: starting version 228
IS5.555461 Systemd-udcwdIG5457: Network Interface NamePolicy= disabled by default.
0.0812251 Creating dracut based initrd
172.505231 device-mapper: version 1.0.3
IS7.2575561 device-mapper: version 1.0.3
IS7.2575561 device-mapper: version 1.0.3
IS7.2575561 device-mapper: version 1.0.3
IS7.2575561 device-mapper: version 1.0.3
IS7.25755761 device-mapper: version 1.0.3
IS7.25755761 device-mapper: version 1.0.3
IS7.25755781 systemdIII: systemd-udce (PMT +00017 SELINUX -NMA -NMA APARHOM -SMACK +SYSUINIT +UTMP +LIBC
IS7.5775571 SystemdIII: Detected verbualtaction was -Evolution SHADE None -SMACK +SYSUINIT +UTMP +LIBC
IS7.5775571 SystemdIII: Detected verbualtaction was -Evolution SHADE None -SMACK +SYSUINIT +UTMP +LIBC
IS7.5775571 SystemdIII: Detected verbualtaction was -Evolution SHADE None -SMACK +SYSUINIT +UTMP +LIBC
IS7.575551 SystemdIII: Nontrane to chamabone>.
IS7.575551 SystemdIII: Nontrane to this bound to inactive unit dev-disk-by-x2duuid-ecc780df-x2d58eb-x2d4dec-x2d9ce9-x2d74
dfree25278.device. Stopping, too.
IS7.515751 SystemIII: Nontrane: No
```

- 6. The installation wizard starts YaST2:
- 7. On the Language and Keyboard Layout page, choose your language and keyboard layout and then press ALT+N or click Next.

Configuration	Language and	Ko	vhoard Lavout		
<ul> <li>Language and Keyboard</li> <li>Welcome</li> <li>License Agreements</li> <li>Host Name</li> <li>Root Password</li> <li>Network</li> <li>Customer Center</li> <li>Setup SAP Product</li> <li>Finish Setup</li> </ul>	Language anu	Re	yboard Layout		
		Ø	Language		
		~	Keyboard Layout		
			English (US)		
					Next

8. Read the information on the Welcome page and then press ALT+M or click Next.



 Read the license agreement. If you accept it, scroll down to select I Agree to the License Terms and then press
 <u>ALT</u> + <u>A</u>/<u>N</u> or click Next.



10. Enter the hostname and the domain name, then press ALT + N or click Next.

# **i** Note

You must set Set Hostname via DHCP to no.

Configuration	Hostname and Domain Name		
🛷 Language and Keyboard	Hostilattie and Domain Name		
🖌 Welcome			
<ul> <li>License Agreements</li> </ul>			
<ul> <li>Host Name</li> </ul>			
<ul> <li>Root Password</li> </ul>			
<ul> <li>Network</li> </ul>			
<ul> <li>Customer Center</li> </ul>			
<ul> <li>Setup SAP Product</li> </ul>			
<ul> <li>Finish Setup</li> </ul>			
	Hostname and Domain Name		
	Hostname Domain Name		
	tanakan liki sa		
	bonelinux		
	Set Hostname via DHCP 🔹 🔹		
	Assign Hostname to Loopback IP		
			Next

12. On the Password for the System Administrator "root" page, enter and confirm the password for the root user, then enter text in the Test Keyboard Layout field to check your keyboard layout.

Press ALT + N or click Next to go to the next step.

Configuration	Password for the System Administrator "root"
<ul> <li>Language and Keyboard</li> <li>Welcome</li> </ul>	- assiver for the System Automost deer root
<ul> <li>Weicome</li> <li>License Agreements</li> </ul>	
✓ Host Name	
Root Password	
Network     Sustemer Center	
Customer Center     Setup SAP Product	
<ul> <li>Finish Setup</li> </ul>	
	Do not forget what you enter here.
	Password for root User
	•••••
	Confirm Password
	Iest Keyboard Layout
	yz+
	Help Abort Back Next

- 13. Change the network interfaces as follows:
  - 1. On the Overview tab, select the device ethO and then choose Edit or press ALT+I.

Welcome	<u>O</u> verview	Hestname/DMC		
		HOS INAME/DNS	Routing	
<ul> <li>Clearbe Agreements</li> <li>Host Name</li> <li>Root Password</li> <li>Network</li> <li>Customer Center</li> <li>Setup SAP Product</li> <li>Finish Setup</li> </ul>	Name	P Address Device Note PDHCP eth0		
	S2540EM Gigabit Ethernet Contro MAC : 52:54:00:dd:5d:45 BusID : 0000:00:03:0 • Device Name: eth0 • Started automatically at bool • IP address assigned using D Add Edit D	ller t tHCP Jelețe	Abo	t Back Next

2. On the Network Card Setup page → Address tab, select Statically Assigned IP Address and enter your IP address, subnet mask, and hostname. Then choose Next to return to the Network Settings page.

Configuration	Network Card	Setup		
✓ Welcome	<u>G</u> eneral	Address	Ha <u>r</u> dware	
<ul> <li>License Agreements</li> <li>Host Name</li> </ul>				
Root Password		▼ eth0		
<ul> <li>Network</li> <li>Customer Center</li> </ul>	O No Link and IP Setup (Bonding Slav	res) 🗌 Use iBFT Values		
Setup SAP Product	O Dynamic Address DHCP	▼ DHCP both vers		
<ul> <li>Finish Setup</li> </ul>	Statically Assigned IP Address IP Address	Subnot Mack	Hostnamo	
	1.2.3.4	Jubliet Mask	bonelinux.lab.org	
	Additional Addresses			
	IPv4 Address Labela IP Add	drace Natmack		
			<u>C</u> ancel	Back Next

3. On the Hostname/DNS tab, enter the hostname, domain name, and the DNS servers.

Configuration	Network Setti	nas		
Language and Keyboard     Welcome     License Agreements     Host Name     Root Password	<u>O</u> verview Hostname and Domain Name Hostname	Ho <u>s</u> tname/DNS	Ro <u>u</u> ting Domain Name	
<ul> <li>Notification</li> <li>Network</li> <li>Customer Center</li> <li>Setup SAP Product</li> <li>Finish Setup</li> </ul>	bonelinux  Assign Hostname to Loopback I Set Hostname via DHCP  Modify DNS Configuration  Use Default Policy  Name Servers and Domain Search Li Name Server 1  Name Server 2	P stom Policy Rule *	lab.org Domain Search lab.org	
	Name Server <u>3</u>			yt Back Next

4. On the Routing tab, enter the default gateway and then choose Next.

Configuration	Network Setti	ngs			
✓ Welcome	<u>O</u> verview	Ho <u>s</u> tname/DNS	Ro <u>u</u> ting		
License Agreements     Host Name     Root Password     Network     Customer Center					
<ul> <li>Finish Setup</li> </ul>	Default IPv4 <u>G</u> ateway			Device	
	4.4.4			eth0	
	Default IPv6 Gateway			Device	
	Routing Table				
:	Destination- Gateway	Netmask Device Options			
	<ul> <li>Enable JPv4 Forwarding</li> <li>Enable IPv6 Forwarding</li> </ul>				
					<u>N</u> ext

14. Choose to register the operating system in the SUSE Customer Center for updates now or later. For instructions on how to register, see Registering the Linux Operating System.

Configuration ✓ Language and Keyboard ✓ Welcome ✓ License Agreements ✓ Host Name ✓ Root Password ✓ Network ► Customer Center	Registration
<ul> <li>Setup SAP Product</li> <li>Finish Setup</li> </ul>	SUSE Linux Enterprise Server 12 SP3
	Please select your preferred method of registration.
	Register System via scc.suse.com
	E-mail Address
	Registration Code
	Register System via local SMT Server
	https://smt.example.com 👻
	O Skip Registration
	Help Abort Back Next

#### 15. In the Product Installation Mode window, choose one of the following options to continue:

o Create SAP file systems and start SAP product installation.

Create SAP -related partitions, logical volumes and file systems, such as /usr/sap, /hana/shared, /hana/data, /hana/log, and proceed to install SAP HANA, as described in Installing SAP HANA. If you choose this option, select the disks; the wizard will then automatically create the related partitions.

Only create SAP HANA file systems, do not install SAP products now.
 Create SAP -related partitions, logical volumes and file systems only; install SAP products manually later.

If you choose this option, select the disks; the wizard will then automatically create the related partitions.

o Finish wizard and proceed to OS login (see Registering the Linux Operating System).

Exit the wizard; manually create SAP file systems and start SAP product installation later.

Note that the default file system of SLES 12, btrfs, is not supported by SAP HANA. The supported file systems are: XFS, EXT3, GPFS, NFS, and OCFS2. It's highly recommended that you use the XFS file system as the default. For more information, see SAP Note 405827.

# i Note

The example below does not match a certified server setup and sizing.



Configuration  Canguage and Keyboard  Canguage and Keyboard  Canguage and Keyboard  Canguage and Keyboard  Canguage Agreements  Construct  Canguage Agreements  Canguage Agreemen	Process The LVM vg_hana w	Hild be created. Depending on you	system this ma	iy take son t @ hana	bone		
<ul> <li>Setup SAP Product</li> <li>Finish Setup</li> </ul>		device   Idevisda1  (devisda2  (devisda3  (devisda3  (devisdb3  (devisdb1  (d	/boot/efi / swap /hana/data /hana/log /hana/shared /usr/sap	fs type unknown vfat btrfs swap unknown xfs xfs xfs xfs xfs	size 0 G 53 G 0 G 49 G 2 G 500 G 500 G 500 G 8 G 8 G 8 G 50 G		
							Next

For more information about SUSE logical volume manager (LVM), please read the SUSE Storage Administration Guide, section LVM Configuration.

### 1 Note

You can achieve the same result and automatically create HANA partitions from the installed OS by opening a terminal and running the following command as user **root**:

yast2 sap-installation-wizard hana\_partitioning

## 1 Note

For FUJITSU servers, before proceeding to install SAP software, you must download and install network drivers and RAID utilities as described in the following SAP Notes:

RX2540 M1, RX2560 M1, TX2560 M1: SAP Note 2184438.

RX2540M2, RX2560M2, TX2560M2: SAP Note 2339449.

# 🛕 Caution

After the initial OS installation, a reboot is required so that these OS performance settings get activated: CPU C-states configured for lower latency in Linux (SAP Note 2240716) CPU governor set to 'performance' (SAP Note 1890444)

# 4.2 Installing SAP HANA

After installing the operating system, continue with the installation of SAP HANA.

### 1 Note

You must install SAP HANA before you install any other SAP Business One components, version for SAP HANA.

In addition, you can also use SAP Installation Wizard to install SAP HANA using a similar procedure.

For instructions on how to launch SAP Installation Wizard, see Installing SAP Business One, version for SAP HANA or use the link on the desktop of your freshly installed OS.



### Prerequisite

The unpacked SAP installation packages are available on one of the following types of device:

- NFS
- CIFS
  - 1 Note

The CIFS mount command varies according to your Windows environment:



WOrkgroupS:<UserName>:<Password>@<ServerName>/share/<Path>/on/the/share?workgroup =<GroupName>

If you do not use workgroups:

<UserName>:<Password>@<ServerName>/share/<Path>/on/the/share

If you have anonymous access without a user account and password:

<ServerName>/share/<Path>/on/the/share

- USB device
- DVD

🔔 Caution

Do not store the packages on a local directory.

### Procedure

1. Provide the location of the unpacked package of SAP HANA and then choose Next.

You must provide the full path, including the directory with the SAP material number (for example, <path>/51043617). This directory contains the LABEL.ASC file that the wizard reads to recognize the SAP HANA product.

	YaST2 - Module _ 🗖	×	
St Wir Rec	YaS12 - Module       -	×	SUSE.
		-	
Applicat	tions Places 🕅 xdg-su: /sbin/yast2 sap-installation 🏹 YaST2 - Module	1	Wed 02:52 🖒

The SAP HANA installation files are copied to a temporary location on the installation disk.



2. After the copy process, select No for the following question.

Si Wir	Copying Media	YaST	2 - Module		- 1	x 1	SUSE	
Rec Ins		Do you use a Supplement/	YaST2 Brd-Party SAP softv	x vare medium? Yes	_			
	Help			Abort	Back Ne	ext		
Applicatio	ons Places 💹 xdg-su	/sbin/yast2 sap-installation	YaST2 - Module			1	Mon 08:23	Ċ

3. Choose Next.



4. Enter the SAP HANA installation parameters and choose OK.

## **i** Note

You can keep the default SID NDB or enter a different SID. The system ID must be exactly three alphanumeric characters, starting with a letter A-Z.

You should avoid using B01 as the system ID, as this is reserved for SAP Business One systems. For a list of more reserved SIDs, see SAP Note 1979280.

			VaST2		
Home	Duananina		YaST2	×	
Home Cheat Sheet for Windows Product Registration SAP Installation Wizard	Preparing → Install req Checking for re Help	SAP HANA Master Password Enter and repeat the master password for the SAP system. The system uses this master password for all accounts created by the installer and for the secure store key phrase. The password must fulfill the following requirements: - Consists of 8 or more characters - Contains at least one digit, one lowercase and one uppercase character - It can contain only these 3 special characters: \$ _ #	YaST2  SAP HANA System  SID (SAP HANA System ID) PR1  SAP HANA Instance Number 09  No Yes with Low Isolation Yes with High Isolation SAP HANA Master Password	Parameters       Parameters	SE.
Applications Pla	ices 🛛 🔛 root@be	rnd:~/Desktop	🌌 xdg-su: /sbin/yast2 sap-inst ) 🏠 Y	aST2	1 Mon 07:57 🖒

5. When prompted for other SAP products, choose Yes to install SAP HANA and SAP Business One in one go.

**i** Note

Do not choose No.

You must ensure that the version of the installed SAP HANA is compatible with the SAP Business One product (base version) to be installed. Please check SAP Note 2483613 - Central Note for SAP Business One 9.3, version for SAP HANA

Home Execution Cheat Sheet for	Collecting installa Please follow the on-scre	YaST2 Ition profile for SAP product en instructions of SAP installer (external program).	se.
Product Registration SAP Installation Wizard		YaST2 × Installation profile is ready. Are there more SAP products to be prepared for installation? No Yes	
	Help	Abort	Back Next
Applications Pla	ces III root@bernd:~/Desk	top 🛛 🕅 xdg-su: /sbin/yast2 sap-inst 🏻 🏠 YaST2	1 Mon 07:59 🖒

6. Modify the path and start the copy process.

	YaST2 - Module _ 🛛	×	
SAF	Installation Wizard  Prepare SAP installation master  Ig2.168.210.1/var/lib/Landscape/media/b1/51053060  ed Options lect installation profiles for SAP products but do not execute installation. ve all installation mediums (including master) to local network via NFS.  Abort Back Next		SUSE.
Applications	/laces 🔟 xdg-su: /sbin/yast2 sap-installation 🏹 YaST2 - Module	1	Wed 02:53

7. Follow the steps as described before. After the copy process, you can start the installation. Choose No when you are asked for more SAP products to be prepared for installation.

8. The installation of HANA is running. Wait for the system to finish the installation.

YaST2	-	•	×	SUSE
SAP F HOULCT INStallation         SAP HANA Database         Install version 1.00.122.13.1507793622         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_SERVER_LINUX_X86_64/server         SAP HANA AFL (incl.PAL,BFL_OFL_HIE)         Install version 1.00.122.1300.1507802736         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_AFL_LINUX_X86_64/packages         SAP HANA AFL (incl.PAL,BFL_OFL_HIE)         Install version 1.00.120.071.1505318954         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_CLIENT_LINUX_X86_64/client         SAP HANA Studio         Install version 2.3.28.00000         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_STUDIO_LINUX_X86_64/studio         SAP HANA Studio         Install version 2.3.28.00000         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_STUDIO_LINUX_X86_64/studio         SAP HANA Studio         Install version 2.3.28.00000         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_STUDIO_LINUX_X86_64/studio         SAP HANA Studio         Install         Install         SAP HANA Studio         Install version 2.3.28.00000         Location: /data/SAP_INST/0/Instmaster/DATA_UNITS/HDB_STUDIO_LINUX_X86_64/studio         SAP HANA Studio         Installing SAP HANA Database         Preparing package 'Saphostagent Setup'<		- ext		
pplications Places 🔤 xdg-su: /sbin/yast2 sap-installation 🖓 🏠 YaST2			1	Tue 08:36 🖒

9. After SAP HANA is installed, a summary window for the SAP HANA installation is displayed (timeout after 90 seconds). The content shown is also available in a log file /root/installation0\_summary\_<SID>.txt.



10. The installation of SAP Business One runs immediately after SAP HANA.



### Post-installation Steps

For optimal storage performance of the SAP HANA data and log volumes, it is required to set the hdbparam parameter vector in the HANA database server configuration. These hardware-dependent settings were determined during hardware certification and may differ between hardware vendor models. If a certified hardware vendor model is not listed below, the default parameters apply.

Fujitsu RX2540 M2, RX2560 M2, TX2560 M2

Parameter value	data volumes	log volumes
async_read_submit	on	on
async_write_submit_active	auto	auto
async_write_submit_blocks	all	all
size_kernel_io_queue	1024	1024
<pre>max_parallel_io_requests</pre>	512	128

#### Parameter Configuration

To set the parameters you can run these commands in a terminal as user <sid>adm (example values for Fujitsu):

```
hdbsql -i 00 -u system -p <password> -jaxC "select FILE_NAME from M_VOLUME_FILES
where FILE_TYPE = 'DATA'" | while read fname; do
  dn=$(dirname $fname)
  echo $dn
done | sort | uniq | while read hdir; do
  hdbparam - - paramset "fileio[$hdir].async_read_submit=on"
 hdbparam - - paramset "fileio[$hdir].async_write_submit_active=auto"
 hdbparam - - paramset "fileio[$hdir].async_write_submit_blocks=all"
 hdbparam - - paramset "fileio[$hdir].size_kernel_io_queue=1024"
 hdbparam - - paramset "fileio[$hdir].max_parallel_io_requests=512"
done
hdbsql -i 00 -u system -p <password> -jaxC "select FILE_NAME from M_VOLUME_FILES where
FILE_TYPE = 'LOG'" | while read fname; do
  dn=$(dirname $fname)
  echo $dn
done | sort | uniq | while read hdir; do
 hdbparam - - paramset "fileio[$hdir].async_read_submit=on"
 hdbparam - - paramset "fileio[$hdir].async_write_submit_active=auto"
 hdbparam - - paramset "fileio[$hdir].async_write_submit_blocks=all"
 hdbparam - - paramset "fileio[$hdir].size_kernel_io_queue=1024"
 hdbparam - - paramset "fileio[$hdir].max_parallel_io_requests=128"
done
```

### Result

You can now proceed to install the SAP Business One product. For more information, see Updating SAP HANA.

#### Installing SAP Business One, version for SAP HANA 4.3

This section describes the SAP Business One installation using the SUSE SAP Installation Wizard as a wrapper. If you want to install SAP Business One directly, run the script in the ServerComponents directory as described in the SAP Business One Administrator's Guide available at https://help.sap.com/viewer/p/SAP\_BUSINESS\_ONE\_VERSION\_FOR\_SAP\_HANA.

### Prerequisite

- You have installed SAP HANA and updated SAP HANA to a revision that is compatible with the SAP Business One product version you intend to install.
- SAP HANA is running.
- The unpacked SAP Business One, version for SAP HANA installation packages are available on one of the following types of device:
  - o NFS
  - o CIFS

1 Note

The CIFS mount command varies according to your Windows environment:

If you use

WOrkgroupS:<UserName>:<Password>@<ServerName>/share/<Path>/on/the/share?workgroup =<GroupName>

If you do not use workgroups:

<UserName>:<Password>@<ServerName>/share/<Path>/on/the/share

If you have anonymous access without a user account and password:

<ServerName>/share/<Path>/on/the/share

- o USB device
- o DVD

Caution

Do not store the packages on a local directory.

### Procedure

1. Log on to the Linux server as user root and launch the SAP Installation Wizard in either of the following ways:

#### o Menu installation

From the Linux desktop, choose SAP Installation Wizard.

o Command installation

Open a terminal or ssh session, log on as the root user, and then run the command: **yast2** sapinstallation-wizard.

¤		root@bonelinux:~/Desktop		-	
File I	Edit View Search Terminal He	lp			
Home bonel:	<pre>inux:~/Desktop # yast2 sap-</pre>	installation-wizard			
<u> </u>		YaST2 - Module		_ ¤ ×	
Cheat Sheet for Windows Product Registration SAP	SAP Installation Wizar	d Ilation master			
Installation Wizard Trash	dir://  Advanced Options Collect installation profiles fo Serve all installation medium	r SAP products but do not execute install s (including master) to local network via N	ation. NFS. <u>AbortBack</u>	Next	
Applications Places	moot@bonelinux:~/Desktop	YaST2 - Module	1	Thu 08:40	Ċ

2. Provide the location of the unpacked package of SAP Business One and then choose Next.

You must provide the full path, including the directory with the SAP material number (for example, <path>/51043617). This directory contains the info.txt file that the wizard reads to detect the SAP Business One product.

	YaST2 - Module _ 🗆 ×	
SI Wir	SAP Installation Wizard	°ŜUSE.
P Reg	Prepare SAP installation master nfs://   Ig2.168.210.1/var/lib/Landscape/media/b1/51053060	
Ins	Advanced Options  Collect installation profiles for SAP products but do not execute installation.  Serve all installation mediums (including master) to local network via NFS.	
	Help Abort Back Next	
Applica	tions Places M xdg-su: /sbin/yast2 sap-installation	Wed 02:53 ዕ

The SAP Business installation files are copied to a temporary location on the installation disk.

3. If you are prompted for the SAP HANA parameters, enter the same SID, instance number, and credentials as for the SAP HANA installation.

nterprise	→ Install n	equired packages
onliguration		
Keyboard	YaST2	
Host Name		SAP HANA System Parameters
Network	SID (SAP HANA	
Root Password	Enter the three letter	
CustomerCenter	SAP HANA System	
SAP Install	iu.	(NDB
Finish Setup	SAP HANA Instance	
	Enter the SAP HANA	SA <u>P</u> HANA Instance Number
	system's instance	00
	number.	
	SAP HANA Master	SAP HANA Master Password
	Password Enter and	
	password for the SAP	
	system. The cyctem uses this	••••••
	master password for	
	all accounts created	
	and for the secure	Back
	Checking for rev	nuied packages
		U%

4. You can choose between a default installation and a customized installation.

As opposed to the custom installation, the default installation does not require any further user input. On the other hand, it does not allow you to specify any custom values. Some examples:

- You will not be able to enable the single sign-on function (logging on to SAP Business One using Windows domain user accounts) because Windows domain user credentials must be provided during installation. If you want to use the single sign-on function later, you will have to reinstall the server tools.
- You cannot specify security certificates signed by certificate authorities, but you can provide self-signed certificates for the System Landscape Directory and the app framework

As of 9.0 PL13 and 9.1 PL02, you can update the certificate for the System Landscape Directory manually after the installation. For more information, see the SAP Business One Administrator's Guide, version for SAP HANA.

To update the certificate for the app framework (the XS Engine), see the SAP HANA Administrator's Guide.

For more information, see the Shared Password section in Restrictions.

Choose <b>Yes</b> if you want to install with the listed <b>default parameters</b> . The installation will run silently	SAP Business Or Installation with I	ne Server Components: Default Settings ?	
without further dialogs.	Install parameter	Default Value	
Choose <b>No</b> if you want to	Installation folder	/opt/sap/SAPBusinessOne	
ustomize the parameters with	Service Port	40000	
ne BusinessOne Install Wizard.	Site User ID	B1 SiteUser	
	SLD Certificate	Self-signed	
	HANA DB User ID	SYSTEM	
	Database Name	SLDData	
	Windows Domain User Authentication	Skip	
	Features selected for installation	System Landscape Directory	
		Server Tools: License Manager	*
		Server Tools: Mailer	
		Server Tools: Extreme App Framework	
		BusinessOne Server: System Components	
		BusinessOne Server: System Database	
		BusinessOne Server: Demo Database US	
		BusinessOne Server: Help EN	
		BusinessOne Server: Addons	
		Analytics Constructs SAD LANA Madela	
		Analytics Features: SAF HANA Woders	
		Analytics Features: Tomcat Search	
		Analytics Features: Tomcat Dashboard	
		Analytics Features: Tomcat Data Staging	
		Analytics realties. Torrical Admin Console	
	Yes	No	<u> </u>

- o If you choose Yes, the SAP Business One installation will run silently without need for further input.
- If you choose No, the SAP Business One server components setup wizard will guide you through the installation.
- 5. SAP Business One 9.3: the SAP HANA server is restarted to make the app framework work.
- 6. After SAP Business One is installed, a summary window for the SAP Business One installation is displayed (timeout after 90 seconds).



### 1 Note

For both customized and default installations, SAP Business One is installed under the /usr/sap/ folder, which has been sized accordingly to accommodate SAP Business One.

### Result

After installation of the base version of SAP Business One, version for SAP HANA is complete, if you need to upgrade to a higher version, run the server components setup wizard from the upgrade package. For more information, see the SAP Business One Administrator's Guide, version for SAP HANA. You can find the guide in the upgrade package along with the installation files.

# 5 Registering the Linux Operating System

You must register your SLES installation to get support from SUSE.

After installing the operating system, if you chose to continue with the installation of SAP products instead of closing the wizard and registering the system with SUSE (see page 26), you can do the registration using the administrative tool YaST after you finish all installations. You can register the system with SUSE either as a customer or as a partner on behalf of your customer.

### 1 Note

A "desktop" is an application in Linux, so you can install different desktops. The most common desktops in Linux are GNOME and KDE.

After the registration, an update source is added to the operating system at YaST2  $\rightarrow$  Software  $\rightarrow$  Software Repositories.

### Prerequisites

- You can connect to the Internet from the Linux server.
- You have a valid service contract with SUSE. For more information about SUSE's subscription options, see http://www.suse.com/products/server/how-to-buy.

### Procedure

1. On the login page of the system, enter the user name **root** and the password you specified during installation.

bonelinux	Thu 08:07	<b>ଡ -</b> ୯ -
	Username:	

2. Choose the icon Product Registration on the desktop.

Home		YaST2 - scc @ hanabone	_ = ×
Cheat	Registration		SE.
Sheet for Windows		SUSE Linux Enterprise Server 12 SP3	
1		Please select your preferred method of registration.	
Product Registration	1	• Register System via scc.suse.com	
		E-mail Address	
SAP Installation Wizard		Registration <u>C</u> ode	
		O Register System via local SMT Server	
Trash		Local Registration Server URL	
		O Skip Registration	
	Help	Abort	Back Next
Applications	Places 🛛 xdg-su: /sbin/yast2 scc	a YaST2 - scc @ hanabone	1 Wed 04:21 🖒

3. Provide the registration details and choose Next.



4. Start Yast2 and choose Online Update.

			Admin	istrator Settings			-	• ×
						٩		
Software								
				<b>Q</b>				
Add-On Products	Add System Extensions or Modules	Cheat Sheet for Windows Admins	Media Check	Online Update	Product Registration	SAP Installation Wizard	Software Management	
Software Repositories								
Hardware								
Accessories	,	Network Tools						
System Tools	Ø	Package Updat	er					
Utilities	X	Settings						
Favorites	<b>1</b>	Terminal		•		A		
	6	YaST		etwork ettings	Partitioner	Services Manager		
Activities Over	view				-6-	$\bigotimes$	-	
Applications Plac	es 💹 xdg-su: /s	bin/yast2	Ac	ministrator Settings			1 Wed 04:48	Ċ

5. After you start the online update, all repositories will be refreshed. You will see a summary of packages with available updates.



### 6. Choose Accept.

If some of the patches need a reboot to activate the changes, you will see the following window:

	Administrator Settings	_ ¤ ×
>	dg-su: /sbin/yast2 online_update _	۹
Sof	YaST2 -	• ×
	Eile Package Patch Configuration Dependencies Options Extras Help	
Add-C Produc	View  Search Patterns Installation Summary Patches	oftware agement
- Contract	Summary      Security update for util-linux     Security update for the Linux Kernel     Security update for the Linux Kernel	<u>e</u>
Reposito	Securit YaST2 ×	
Hardware	Securit These patches will need rebooting after installation     Securit SUSE-SLE-SERVER-12-SP3-2018-1385: Security update for the Linux Kernel     Securit SUSE-SLE-SERVER-12-SP3-2018-1385: Security update for the Linux Kernel	
	Show Patch C	
Printe	Patch Descri Skip All Back Continue	
System	Description   Iechnical Data   Dependencies   Versions	<u>Fik </u> ◀►
Boot Loa		
Network S	Cancel A	sccept
Applications	Places 🔤 xdg-su: /sbin/yast2 🏠 Administrator Sett 🔤 xdg-su: /sbin/yast2	1 Wed 05:16 🖒

For more information about SUSE registration, see https://www.suse.com/products/register.html.

# 6 Updating SAP HANA

SAP HANA can be updated through the SAP HANA Lifecycle Manager (LCM). For more information, see the SAP HANA Master Update Guide and the SAP HANA Update and Configuration Guide at <a href="http://help.sap.com/hana\_appliance">http://help.sap.com/hana\_appliance</a>.

You can also update SAP HANA manually, as below:

- To update the SAP HANA database, run the component upgrade tool hdblcmgui.
- To update the SAP HANA database client and AFLs, run the installation tool hdbinst or hdbsetup (GUI mode).

## A Caution

AFLs must be installed after you install the SAP HANA database, but you must upgrade AFLs before you upgrade the SAP HANA database.

# 7 Troubleshooting

For some frequently asked questions and troubleshooting for common errors, refer to SAP Note 1969397.

# 7.1 Operating system installation fails after choosing the installation disk

### Problem

In step 3 of section 4.1, you are provided with a list of available devices to choose from. You pick the 52 GB device and choose OK/Enter. When the installation process starts, you may receive this error message:

- ...] System installation canceled
- ...] rebootException: error consoles at Alt-F3/F4
- ...] rebootException: reboot in 120 sec ...

### Solution

Restart the installation in debug mode. To do so, add the following parameter to the boot options at the very first boot screen:

#### kiwidebug=1

If you encounter errors again, a shell will be created, and you do not have to reboot the machine. With the shell file /var/log/boot.kiwi, you can troubleshoot your problem, as below:

- 1. Search below error lines in the file (near then end):
  - ++ setctsid /dev/tty1 fbiterm -m /usr/share/fbiterm/fonts/b16.pcf.gz -- bash -i /tmp/rid
  - +++ cat /tmp/out.exit
  - ++ code=255

2. If you find these error lines, add the following parameter to the boot options:

### vga=0

1. Press  $\mathbf{E}$  on the screen below.



2. Add "vga=0" to the boot line and press F10 or CTRL+x to boot the system.

	GNU GRUB version 2.02
set	params 'Install SLES12-SP3-Installer-for-SAP-Business-One' echo Loading linux set gfxpayload=800x600 \$linux /boot/linux ramdisk_size=512000 ramdisk_blocksize=4096 cdins\ \$ystemd.show_status=0 plymouth.enable=0 showopts vga=0_ echo Loading initrd \$initrd /boot/initrd
	Minimum Emacs-like screen editing is supported. TAB lists completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a command-line or ESC to discard edits and return to the GRUB menu.

3. If you do not find these error lines, copy the shell file, for example, to a USB stick and then provide it to SUSE for support.

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