



Administration Guide | PUBLIC

SAP Business One, version for SAP HANA

Document Version: 2.1 – 2026-01-05

SAP Business One Components High Availability Guide, version for SAP HANA

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Document History

Document History

Version	Date	Change
1.0	2019-11-11	First version.
1.1	2020-06-22	Updates to upgrade procedure for high availability-enabled environment.
1.2	2020-12-11	Updates for SAP Business One 10.0 FP 2011, version for SAP HANA.
1.3	2022-03-21	Updates for SAP Business One 10.0 FP 2202, version for SAP HANA.
1.4	2022-11-25	Updated diagrams and screenshots. Added two new sections for installing SAP Business One 10.0 FP 2208 or later, version for SAP HANA, and for upgrading a highly available environment to 10.0 FP 2208 or later.
1.5	2023-02-06	Added configuration steps for high availability of SAP Business One, version for SAP HANA, Web client.
1.6	2023-06-15	This guide is available in HTML format, in addition to PDF.
1.7	2024-05-08	Updated sample codes for installing nginx 1.26.0 on Linux servers in the installation procedure for SAP Business One 10.0 FP 2208 or later, version for SAP HANA. For more information, see Configuring an nginx Reverse Proxy [page 30] .

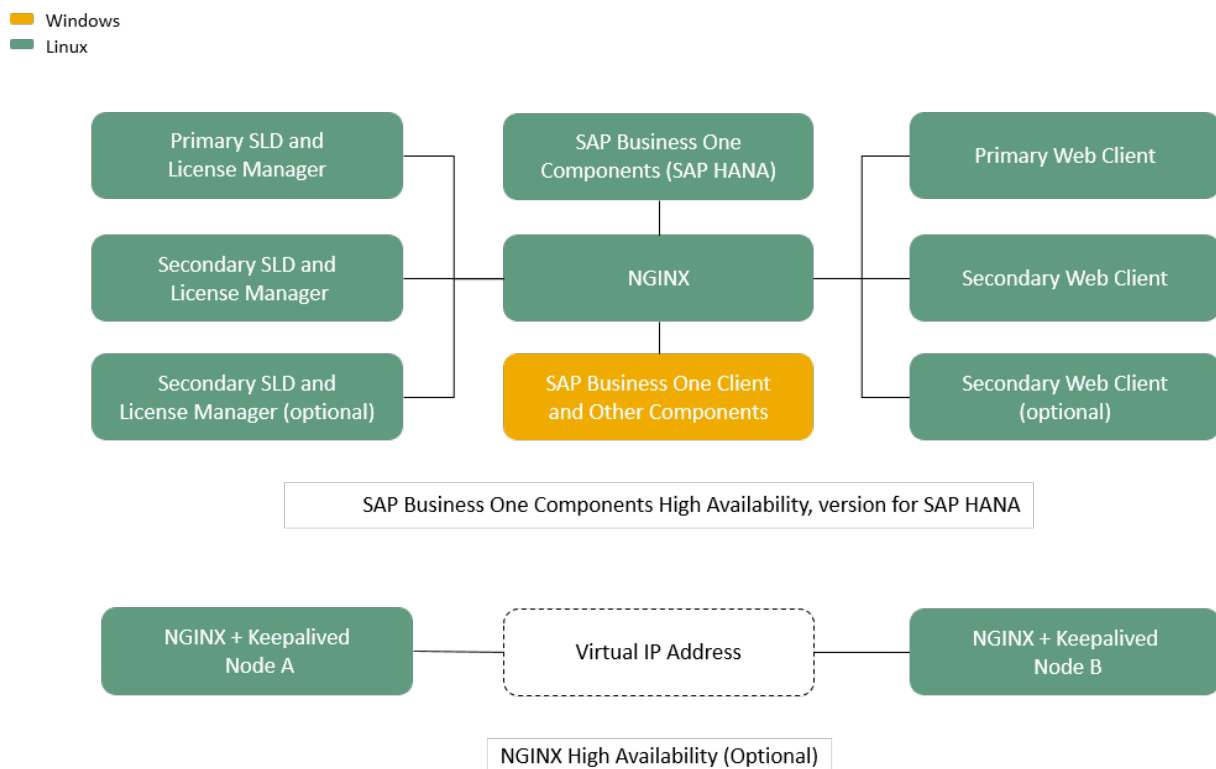
Version	Date	Change
1.8	2025-05-13	- Updated Configuring an nginx Reverse Proxy [page 30] and Configuring nginx [page 140] with a simpler nginx installation procedure for SAP Business One 10.0 FP 2208 or later, version for SAP HANA. The configuration file is updated accordingly. - Updated Reconfiguring nginx Reverse Proxy [page 70] for the Web client with the affected changes.
1.9	2025-07-02	Added a Certificate Verification Settings window to the installation and upgrade procedures for System Landscape Directory when you install or upgrade to SAP Business One 10.0 SP 2411 or later, version for SAP HANA, for components high availability.
2.0	2025-10-26	As of SAP Business One 10.0 SP 2511, version for SAP HANA, the key components are separated from the Server Tools service. The default port for License Manager and License Control Center is updated from 40000 to 40002. Both the installation and upgrade procedures are updated to accommodate these changes.
2.1	2026-01-05	Updated the restart command for License Manager.

1 Introduction

High availability refers to a system which is continuously operational for a desirably long period of time. You can increase the availability of a server by using multiple components on different servers. With high availability, you are able to avoid or reduce unplanned downtime, and protect databases against failures.

SAP Business One 10.0, version for SAP HANA supports high availability. High availability of SAP Business One components, version for SAP HANA, is achieved by using a virtual IP (VIP) address and the nginx reverse proxy server. A VIP address is an address that is shared by both the primary and secondary nodes. If one node fails, the VIP address is automatically reassigned to another node.

The following figure illustrates the landscape of the high availability environment.



This guide will walk you through how to set up a high availability environment for SAP Business One 10.0 components, version for SAP HANA, specifically for System Landscape Directory (SLD) and License Manager.

- If you want to install SAP Business One 10.0 PL00 or higher, version for SAP HANA, for high availability, see [Installation \[page 6\]](#).
- If you want to upgrade your existing SAP Business One, version for SAP HANA, **without** high availability capabilities, to 10.0 PL00 or higher for high availability, see [Upgrade \[page 114\]](#).
- If you want to upgrade your existing SAP Business One, version for SAP HANA, **with** high availability capabilities, to 10.0 PL00 or higher with high availability, see [Upgrade \[page 114\]](#).
- If you want to uninstall the solution, see [Uninstallation \[page 189\]](#).

2 Installation

To set up a high availability environment for SAP Business One components, version for SAP HANA, we recommend that you prepare at least four Linux servers and one Windows server.

In the case of four Linux servers, we recommend that you use two for the primary and the secondary SLD and License Manager, one for nginx, and one for other components (including but not limited to an SAP HANA database instance, the System Components, and the System Database). We assume the server for the primary SLD and License Manager is Server A, and the server for the secondary SLD and License Manager is Server B.

Note

Before the installation, make sure that all the prerequisites for installing SAP Business One, version for SAP HANA, have been met. For more information, see SAP Note [1944415](#) and the *SAP Business One Administrator's Guide, Version for SAP HANA* on [SAP Help Portal](#).

In addition, you should install the SAP HANA database client on both Server A and Server B.

Follow the procedures below for different versions:

[Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

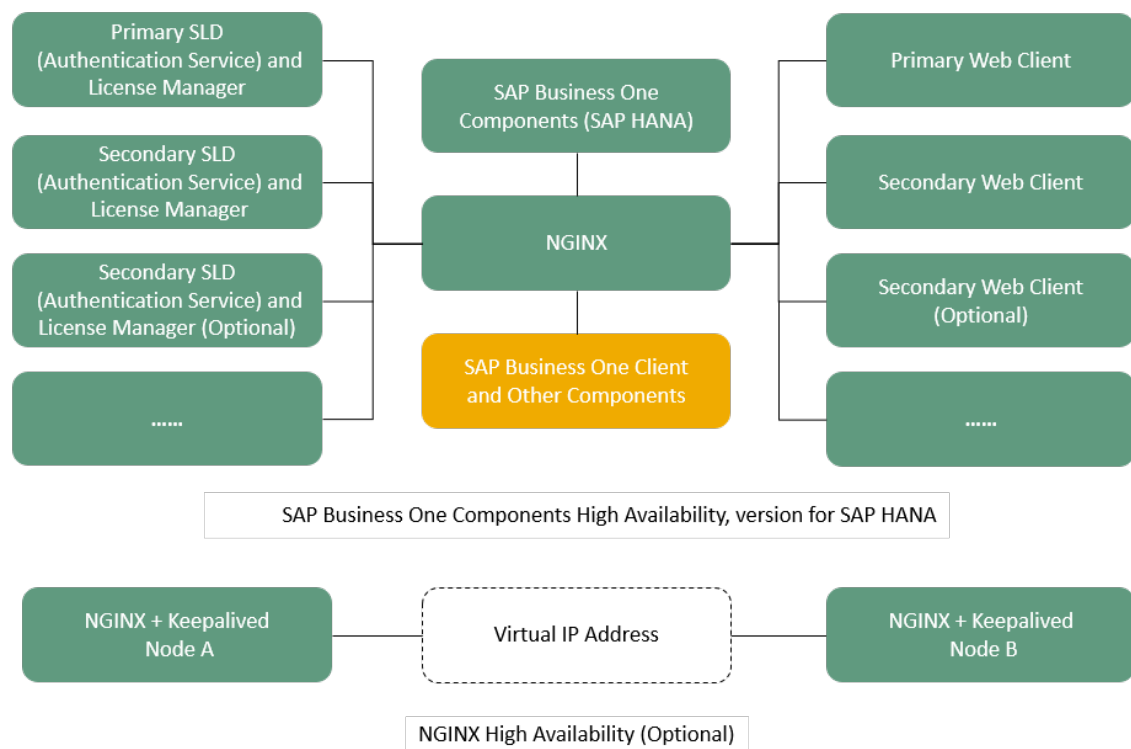
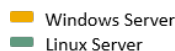
[Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

2.1 Installing Version 10.0 FP 2208 or Later

As of SAP Business One 10.0 FP 2208, version for SAP Business One, version for SAP HANA, the Identity and Authentication Management (IAM) service is available. With the IAM, you can use a single set of login credentials across multiple platforms, applications and networks. The SAP Business One Authentication Service is delivered with the System Landscape Directory as a built-in service for the IAM. As a result, the configuration procedure for high availability of SAP Business One components is slightly different from previous versions.

In addition, as of 10.0 FP 2208, you can optionally configure high availability for SAP Business One, version for SAP HANA, Web client. The Web client runs on both MS SQL Server database and SAP HANA database technology. It offers the SAP Business One core business logic and processes provided in a new user experience based on the SAP Fiori design concept.

The following figure illustrates the landscape of the high availability environment.



For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

For more information about the Web client, see *SAP Business One Administrator's Guide, version for SAP HANA* and the [User Guide for SAP Business One, Web Client](#).

To install SAP Business One 10.0 FP 2208 or later, version for SAP Business One, version for SAP HANA, for high availability, proceed as follows:

Note

Please make sure that the date and time are the same on all servers. If the date and time are not synchronized across all machines, errors will occur during authentication.

1. [Installing Primary SLD on Server A \[page 8\]](#)
2. [Installing Secondary SLD on Server B \[page 19\]](#)
3. [Configuring a Virtual IP Address for SLD \[page 29\]](#)
4. [Installing Primary License Manager on Server A \[page 41\]](#)
5. [Installing Secondary License Manager on Server B \[page 50\]](#)
6. [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 60\]](#)
7. [Installing Web Client \[page 61\]](#)

2.1.1 Installing Primary SLD on Server A

Procedure

1. Copy the product package to Server A.
2. In a command line terminal, log on to Server A as root
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

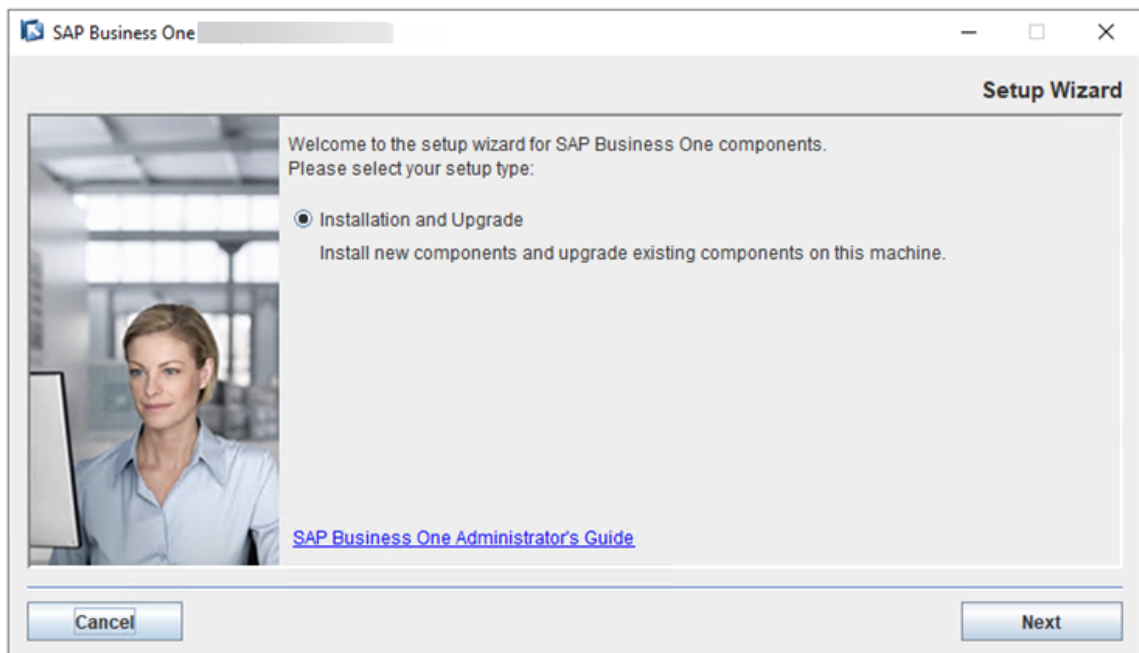
```
./install
```

The installation process begins.

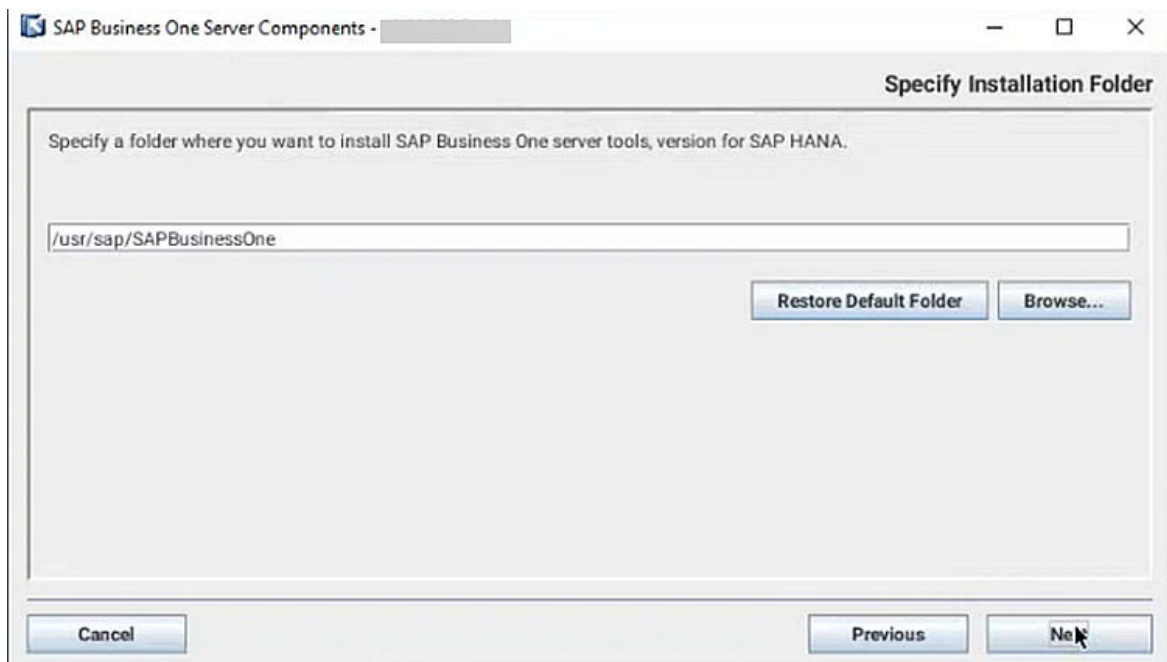
Note

If you receive the error message: "Permission denied", please set execution permission for the installer utility to make it executable. To do so, run the following command: **chmod +x install**.

4. In the *Welcome* page of the setup wizard, choose *Next*.

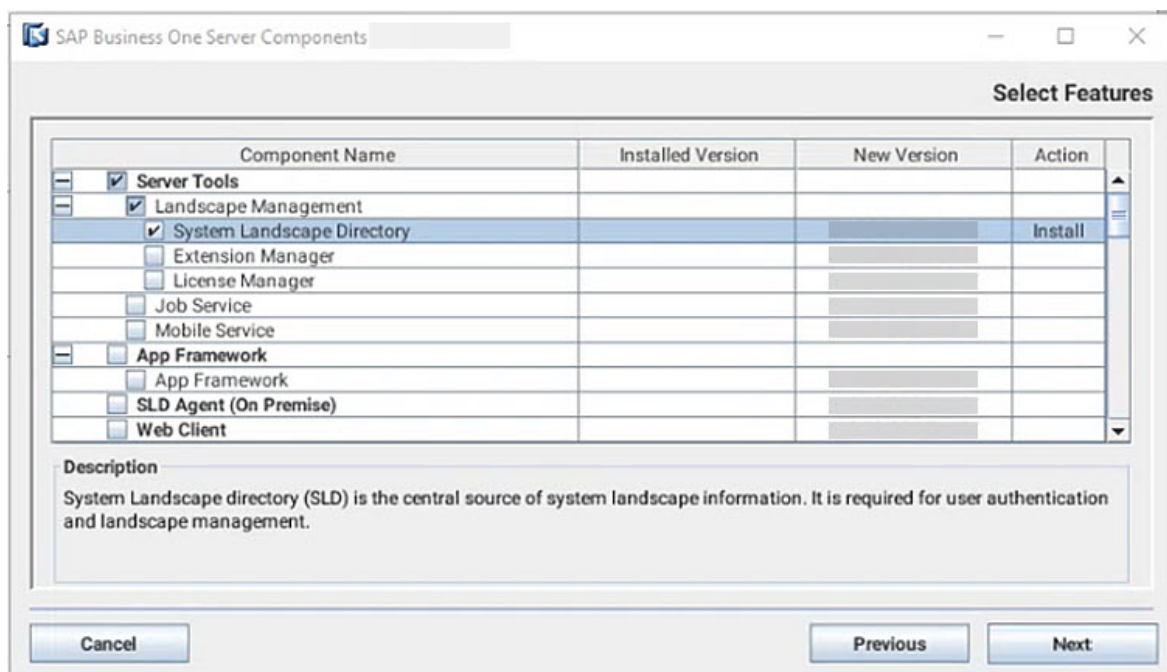


5. In the *Specify Installation Folder* window, specify where you want to install the server components and choose *Next*.



6. In the [Select Features](#) window, select only [System Landscape Directory](#) and keep other features deselected. Choose [Next](#).

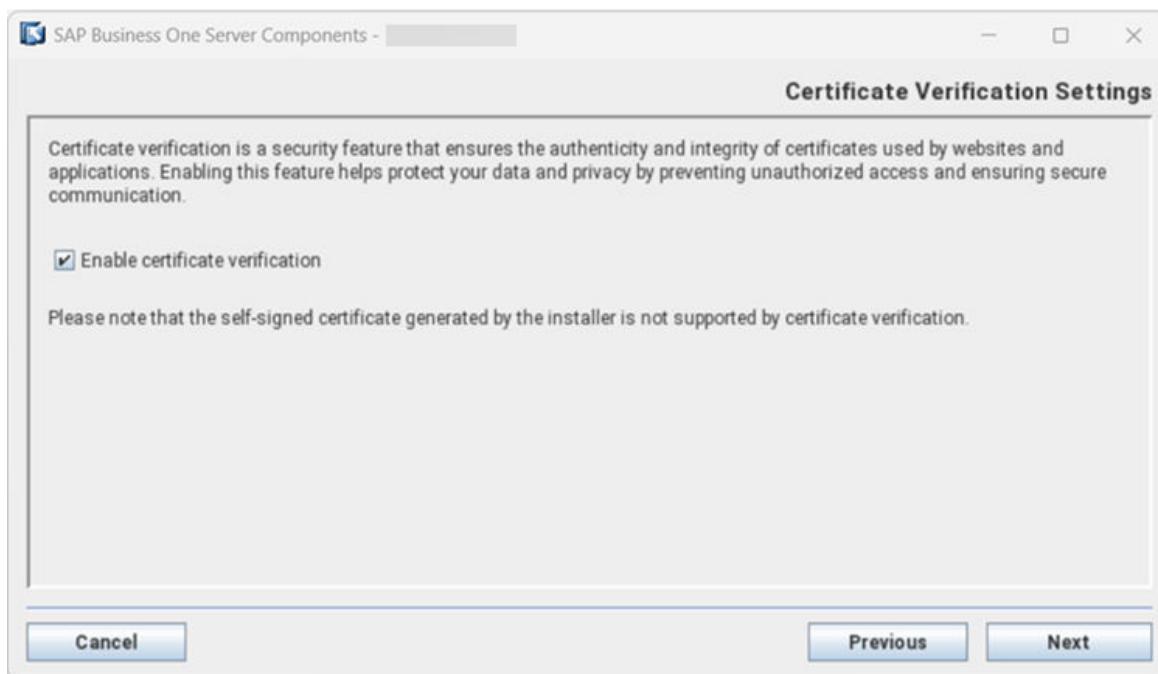
Choose [Yes](#) when you see the message: System Landscape Directory will be installed without the License Server component; License Server can be installed later. Make sure that you install at least one license server on some machine of your landscape. Do you want to continue without selecting the License Server?



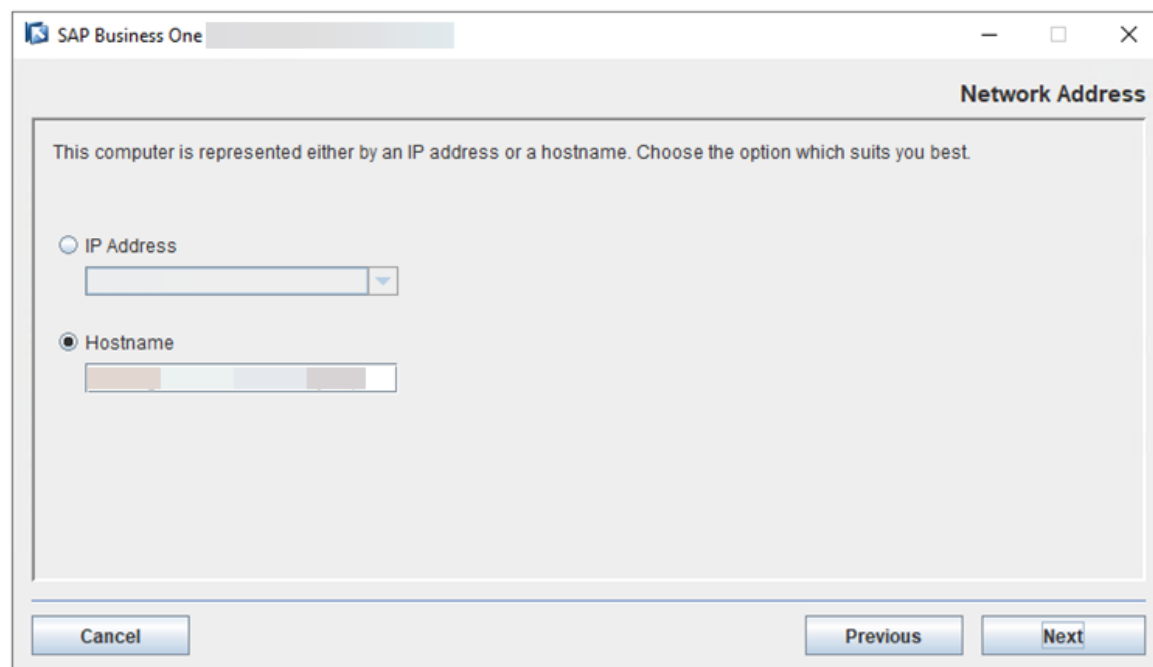
7. If you are installing SAP Business One version 10.0 SP 2408 or earlier, skip this step.
If you are installing version 10.0 SP 2411 or later, you will enter the [Certificate Verification Settings](#) window.

In the [Certificate Verification Settings](#) window, enable or disable certificate verification. The [Enable certificate verification](#) checkbox is selected by default.

If you choose to enable certificate verification, make sure that you obtain a valid certificate and don't use a self-signed certificate. For more information about the necessary prerequisites, see SAP Note [3520401](#).



8. In the [Network Address](#) window, select the IP address of Server A, or use the hostname.



9. Specify a port number for the [System Landscape Directory](#) and choose [Next](#).
- If you are installing SAP Business One version 10.0 SP 2511 or later, you will enter the [Server Tools Service Port](#) window.

- If you are installing SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, you will enter the [Service Port](#) window.

The default port number is 40000.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#) in the [Server Tools Service Port](#) window or [Restore Default Port](#) in the [Service Port](#) window.

SAP Business One

Server Tools Service Port

Specify a port number which will be used by the Server Tools group of services:

- System Landscape Directory
- Extension Manager
- Backup Service

Port Number 40000 Reset

Cancel Previous Next

Server Tools Service Port Window

SAP Business One

Service Port

Specify a port number which will be used by the services to be installed.

Port Number 40000 Restore Default Port

Cancel Previous Next

Service Port Window

10. In the [Authentication Service Ports](#) window, specify a port number for SAP Business One Authentication Service. Choose [Next](#).

The default port number is 40020.

The management port number is calculated and filled in automatically by adding 1 to the port number.

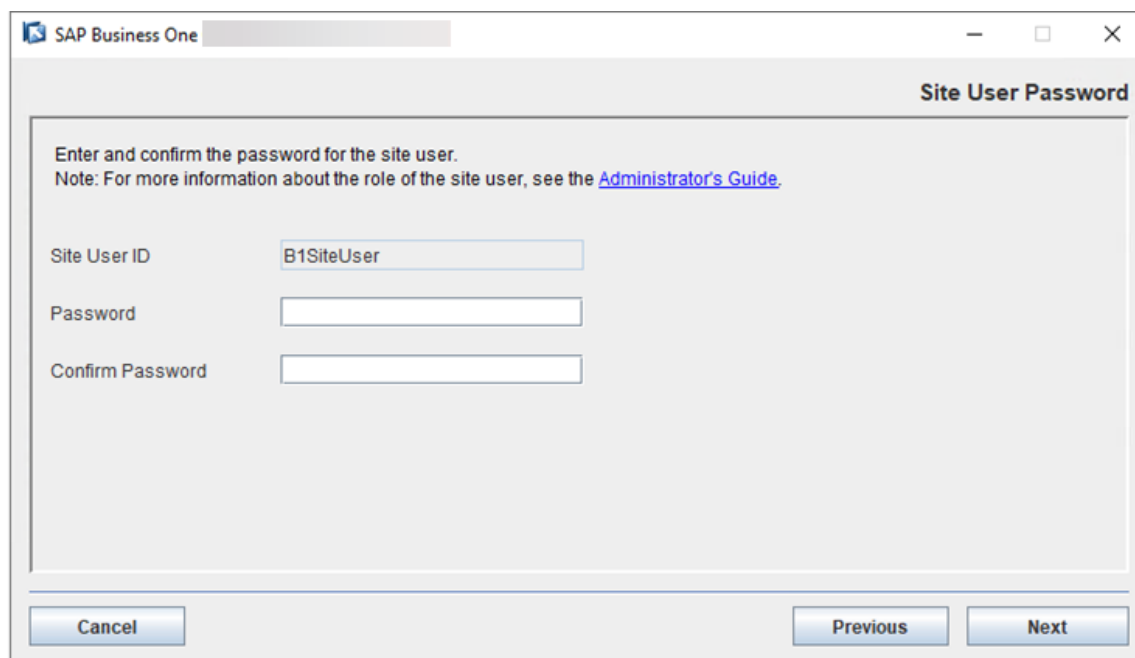
You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#).

The screenshot shows the 'Authentication Service Ports' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Authentication Service Ports'. The main text says 'Specify port numbers which will be used by the SAP Business One Authentication Service.' Below this, there is a section titled 'Socket Port Bindings' containing two input fields: 'Port (HTTPS)' with the value '40020' and 'Management Port (HTTP)' with the value '40021'. A 'Reset' button is located next to the 'Port (HTTPS)' field. At the bottom of the window, there are three buttons: 'Cancel', 'Previous', and 'Next'.

11. In the [Landscape Selection](#) window, select [New landscape](#).

The screenshot shows the 'Landscape Selection' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Landscape Selection'. The main text says 'Specify a landscape for this new System Landscape Directory installation.' Below this, there are two radio button options: 'New landscape' (which is selected) and 'Existing landscape'. At the bottom of the window, there are three buttons: 'Cancel', 'Previous', and 'Next'.

12. In the *Site User Password* window, create a password for the landscape administrator B1SiteUser and confirm the password. Then choose *Next*.



SAP Business One

Site User Password

Enter and confirm the password for the site user.
Note: For more information about the role of the site user, see the [Administrator's Guide](#).

Site User ID: B1SiteUser

Password:

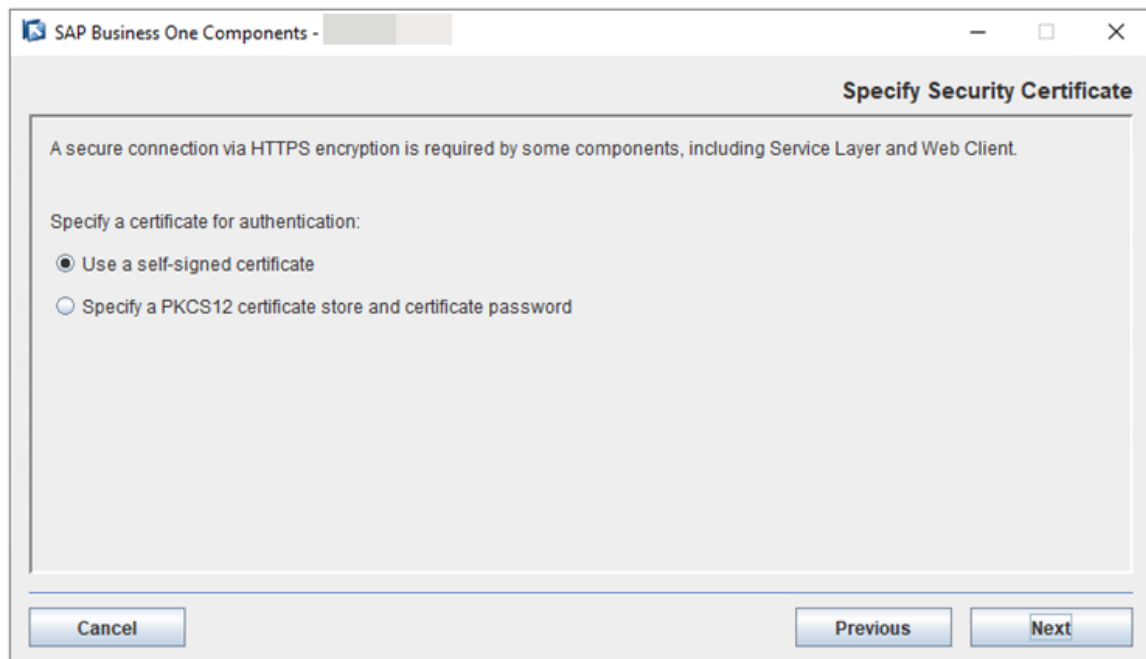
Confirm Password:

Cancel Previous Next

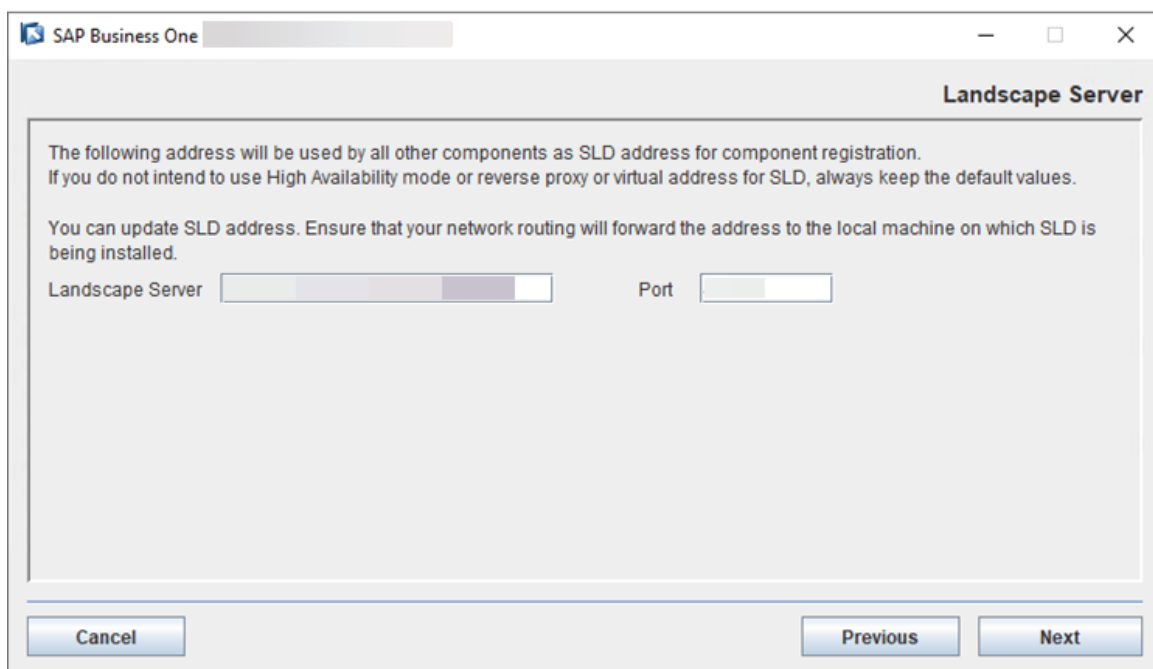
13. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate using one of the following methods:

- Third-party certificate authority
You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- Certificate authority server
You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- (Not recommended) Generate a self-signed certificate
You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select *Use a self-signed certificate*.



14. In the *Landscape Server* window, keep the default values of the *Landscape Server* address and port number. Choose *Next*.



15. In the *Shared Folders for System Landscape Directory* window, select both checkboxes: *Create a default CD repository based on the installation media currently running* and *Create a central log directory under the installation folder on the local machine*. Choose *Next*.

SAP Business One Server Components

Shared folders for System Landscape Directory

You can remotely perform the administrative tasks from the System Landscape Directory (SLD) control center, such as the remote deployment of the system database. To use this functionality, you must create both the CD repository and central log directory. You can create and register these folders in the SLD control center later manually, or create the default instances now by selecting the following settings.

☐ Create a default CD repository based on the installation media currently running.

☐ Create a central log directory under the installation folder on the local machine.

CD Repository	
Local Path	
Network Path	
User	

Central Log	
Local Path	
Network Path	
User	

Cancel Previous Next

16. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of your SAP HANA server.
- *Instance Number*: Enter the instance number of your SAP HANA database.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the name of the tenant database that you want to use.

Credentials

- *User Name*: Enter your tenant database user name.
- *Password*: Enter the password for your user name.

SAP Business One Server Components -

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

User Name

Password

The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

17. In the *Service Database* window, choose to create a new database schema for SAP Business One Authentication Service and enter a name.

The default schema name is B1AS.

SAP Business One

Service Databases

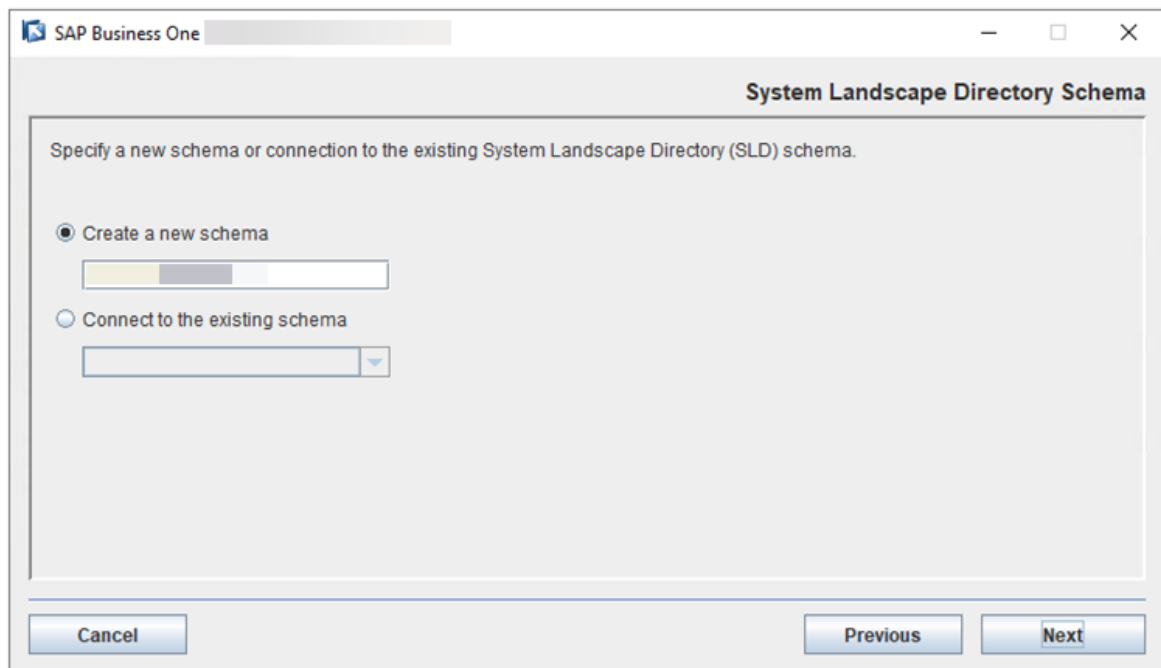
Specify a new database or connection to the existing SAP Business One Authentication Service schema.

☒ Create a new schema

☐ Connect to the existing schema

Cancel Previous Next

18. In the *System Landscape Directory Schema* window, enter a database schema name for the SLD.



19. In the *Windows Domain User Authentication (Single Sign-On)* window, do one of the following:

- If you want to use the single sign-on (SSO) function for SAP Business One, version for SAP HANA, select *Use domain user authentication*, specify all required information, and choose *Next*.

Note

A fully qualified domain name must be a full name in **UPPER** case.

The domain user name is case-sensitive.

Make sure that the UTC time on your Linux server is the same as that on your Windows domain controller; otherwise, you can't proceed with the installation.

- If you haven't registered a domain user account with the Service Principal Name (SPN), make sure that the domain user account specified here is the one that you intend to use for SPN registration.

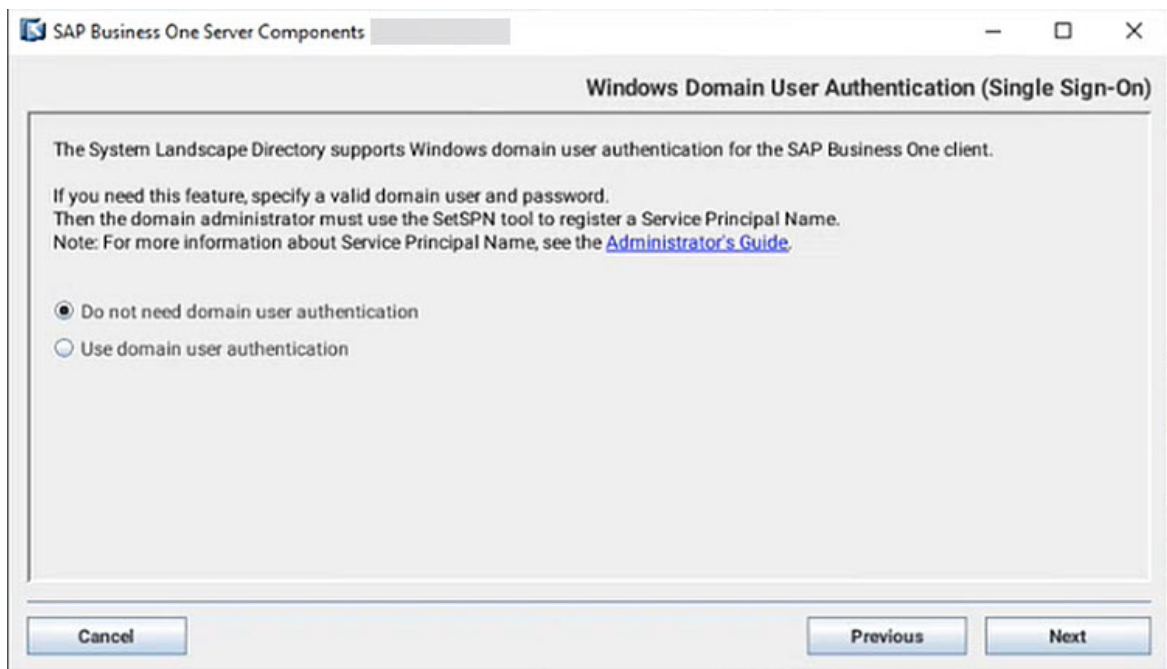
→ Recommendation

As this domain user is a service user that functions purely new domain service user and for the purpose of setting up SSO, we highly recommend that you create a new domain service user and not assign any privileges to the user other than the logon privilege. In addition, keep the user's password unchanged after enabling SSO; otherwise, SSO may stop working.

- If you do not want to use the SSO function, select *Do not need domain user authentication* and choose *Next*.

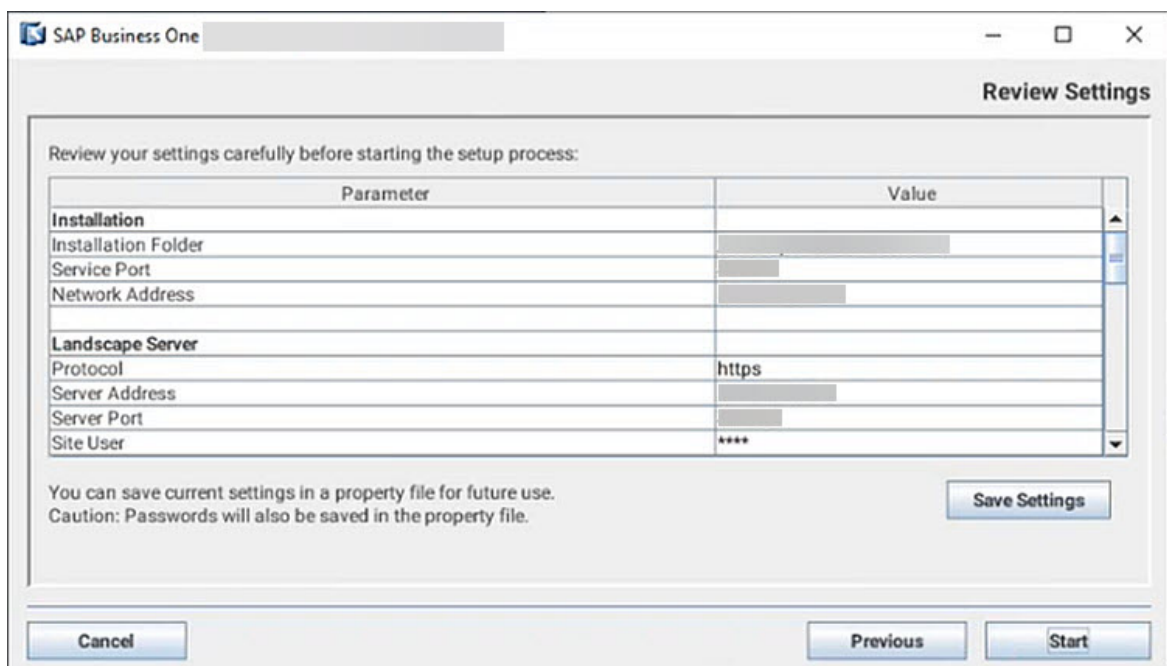
⚠ Caution

If you do not specify the domain user information during the installation of server components, you will not be able to activate the SSO function after the installation.



20. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that Network Address and Server Address are the same for all installations without proxy SLD IP or hostname.



21. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
- If the SLD is installed successfully, choose [Next](#) to finish the installation.
 - If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.

22. In the *Setup Process Completed* window, review the installation.
23. Choose *Finish* to exit the wizard.

Task overview: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Next task: [Installing Secondary SLD on Server B \[page 19\]](#)

2.1.2 Installing Secondary SLD on Server B

Procedure

1. Copy the product package to Server B.
2. In a command line terminal, log on to Server B as root.
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

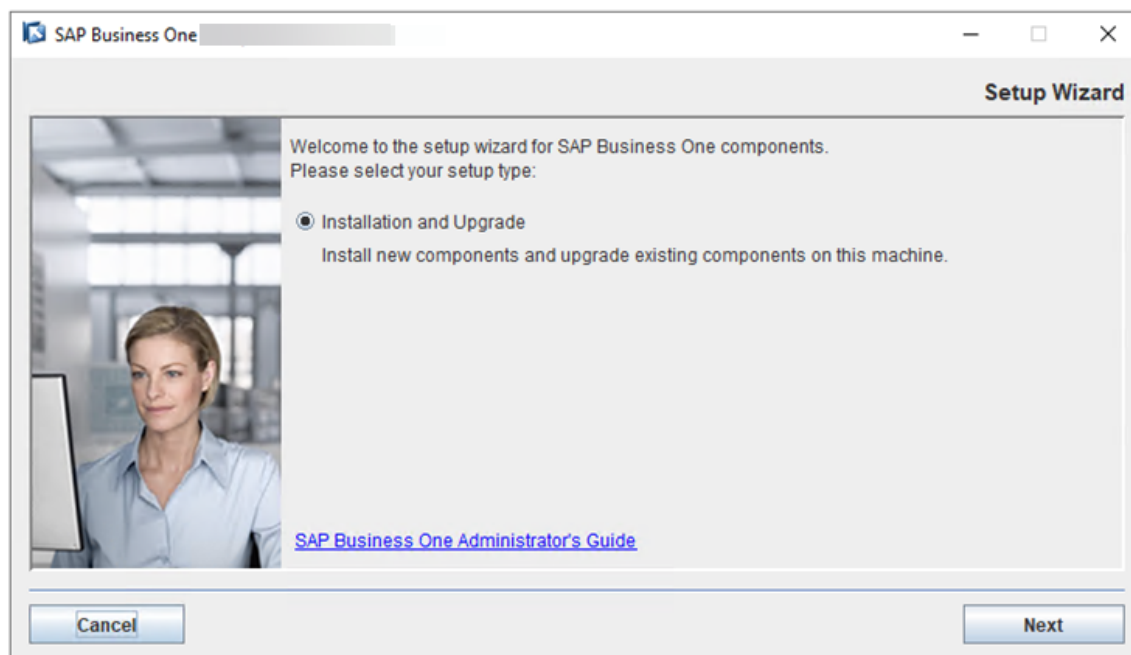
```
./install
```

The installation process begins.

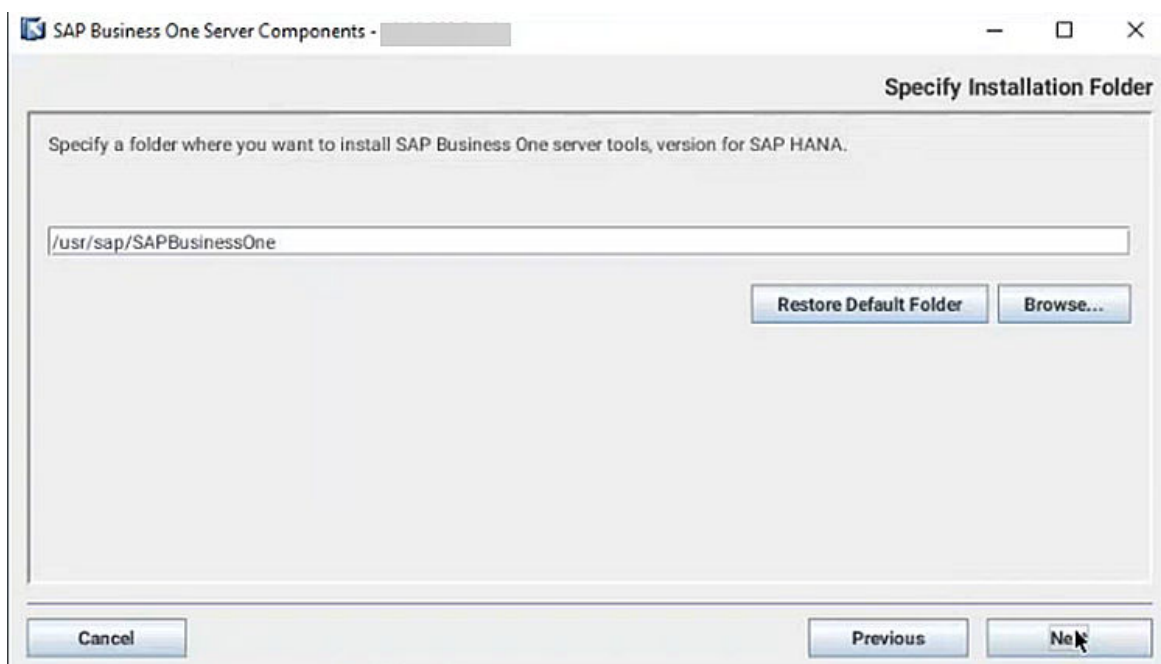
Note

If you receive the error message: "Permission denied", please set execution permission on the installer utility to make it executable. To do so, run the following command: `chmod +x install`.

4. In the *Welcome* page of the setup wizard, choose *Next*.

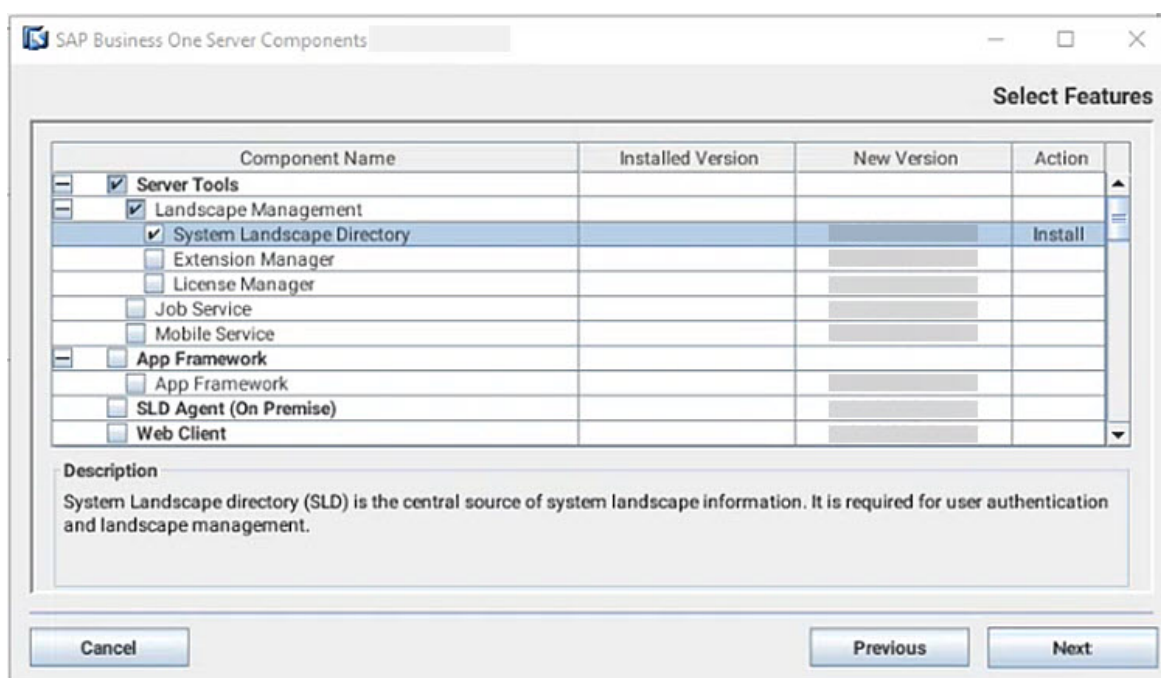


- In the *Specify Installation Folder* window, specify where you want to install the server components and choose *Next*.



- In the *Select Features* window, select only *System Landscape Directory* and keep other features deselected. Choose *Next*.

Choose *Yes* when you see the message: System Landscape Directory will be installed without the License Server component; License Server can be installed later. Make sure that you install at least one license server on some machine of your landscape. Do you want to continue without selecting the License Server?

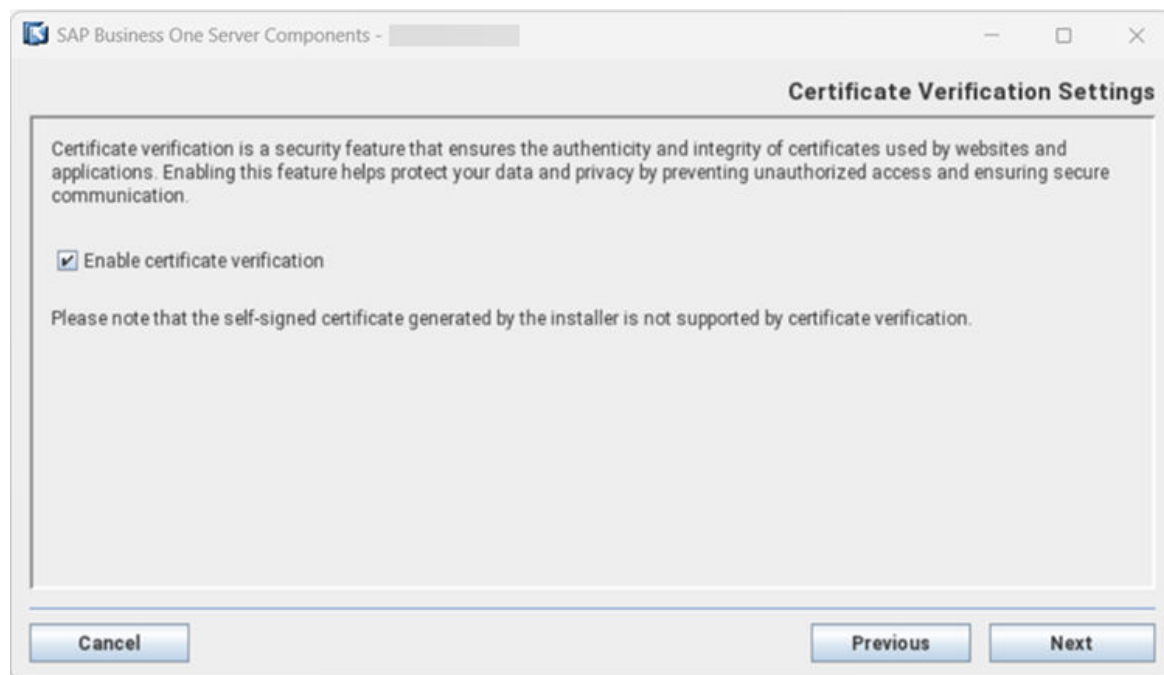


- If you are installing SAP Business One version 10.0 SP 2408 or earlier, skip this step.

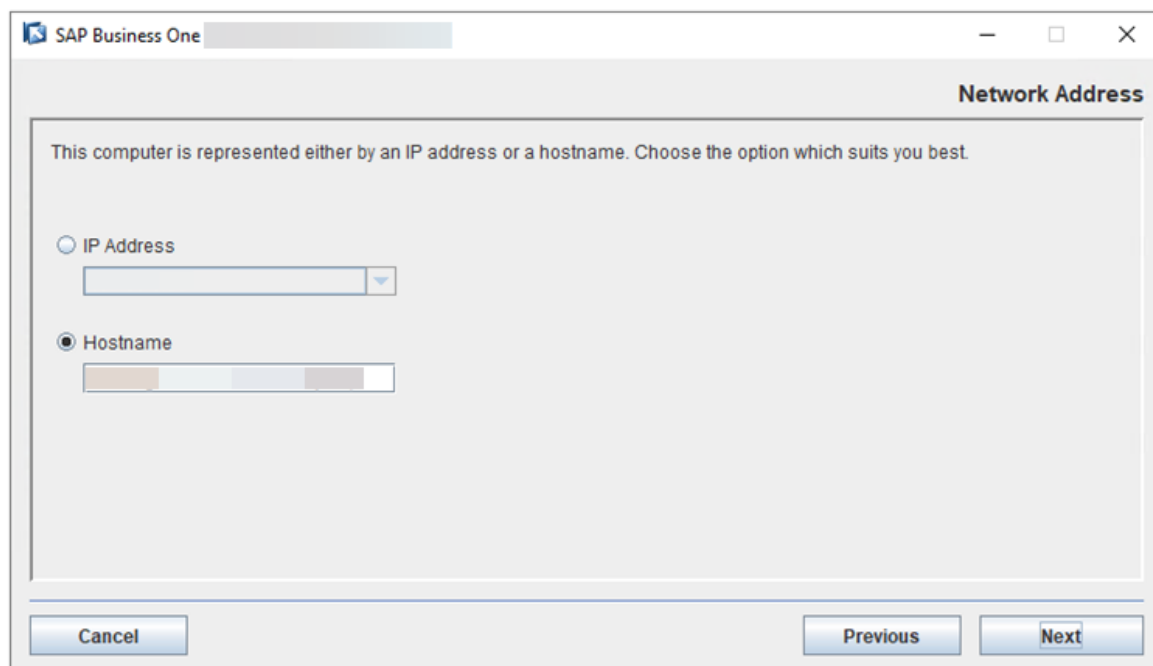
If you are installing version 10.0 SP 2411 or later, you will enter the [Certificate Verification Settings](#) window.

In the [Certificate Verification Settings](#) window, enable or disable certificate verification. The [Enable certificate verification](#) checkbox is selected by default.

If you choose to enable certificate verification, make sure that you obtain a valid certificate and don't use a self-signed certificate. For more information about the necessary prerequisites, see SAP Note [3520401](#).



8. In the [Network Address](#) window, select the IP address of Server B or use the hostname.

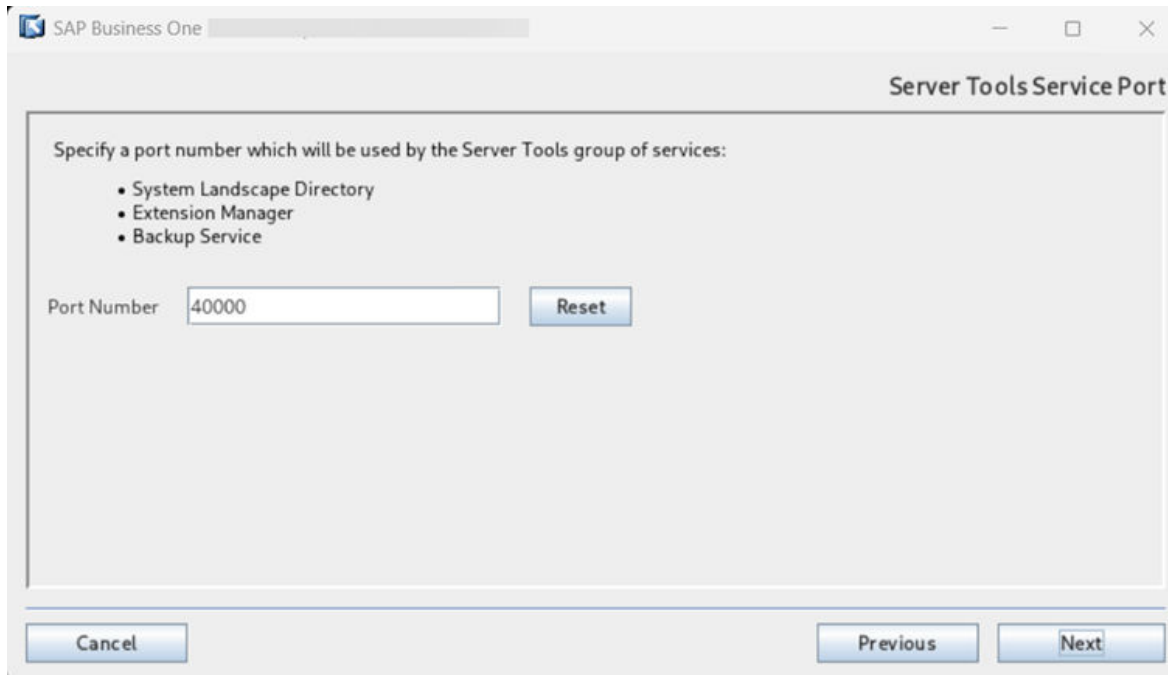


9. Specify a port number for the [System Landscape Directory](#) and choose [Next](#).

- If you are installing SAP Business One version 10.0 SP 2511 or later, you will enter the [Server Tools Service Port](#) window.
- If you are installing SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, you will enter the [Service Port](#) window.

The default port number is 40000.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#) in the [Server Tools Service Port](#) window or [Restore Default Port](#) in the [Service Port](#) window.



SAP Business One

Server Tools Service Port

Specify a port number which will be used by the Server Tools group of services:

- System Landscape Directory
- Extension Manager
- Backup Service

Port Number 40000 Reset

Cancel Previous Next

Server Tools Service Port Window

SAP Business One

Service Port

Specify a port number which will be used by the services to be installed.

Port Number

Service Port Window

10. In the [Authentication Service Ports](#) window, specify a port number for SAP Business One Authentication Service. Choose [Next](#).

The default port number is 40020.

The default management port number, 40021, is calculated automatically by adding 1 to the default port number.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#).

SAP Business One

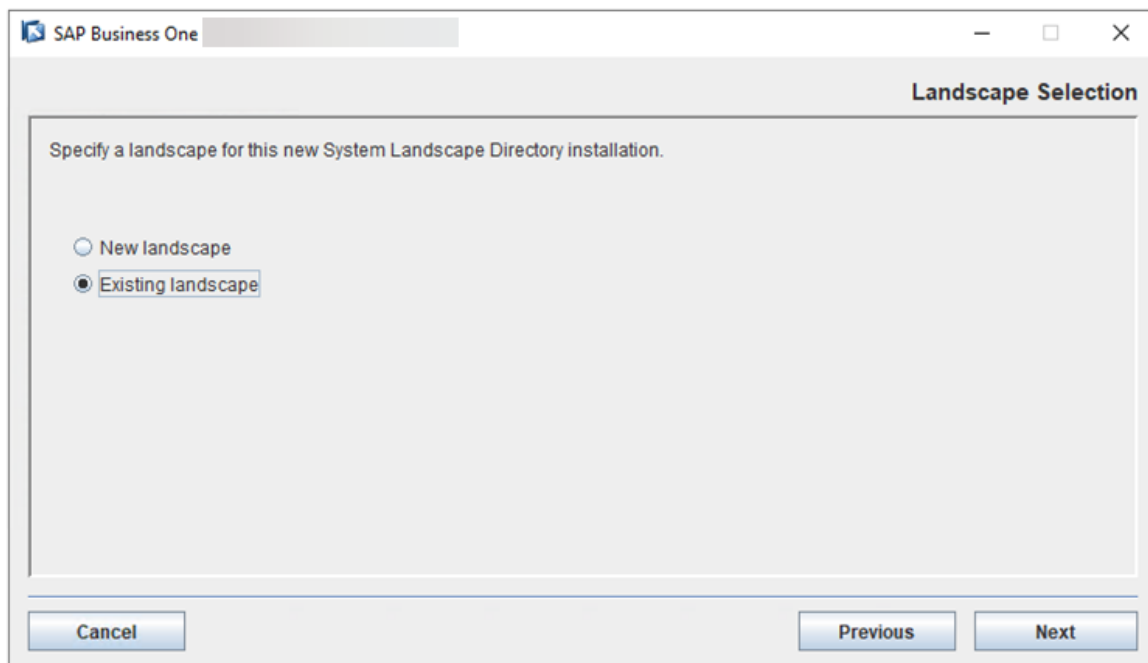
Authentication Service Ports

Specify port numbers which will be used by the SAP Business One Authentication Service.

Socket Port Bindings

Port (HTTPS)	40020	Reset
Management Port (HTTP)	40021	

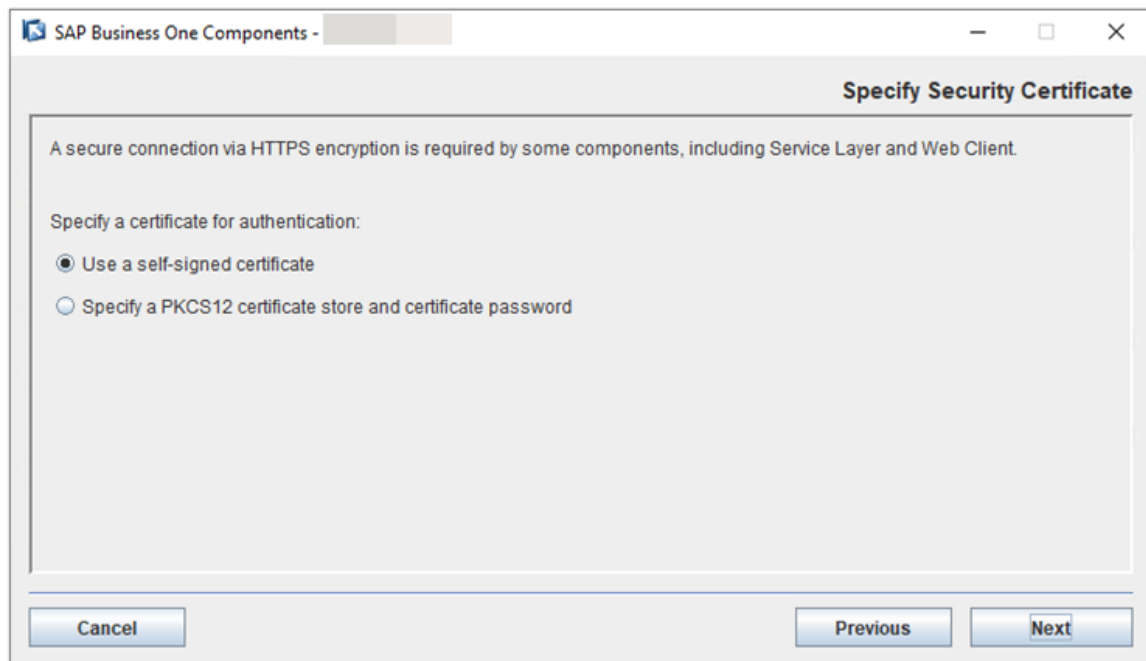
11. In the *Landscape Selection* window, select *Existing landscape*.



12. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate using one of the following methods:

- Third-party certificate authority
You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- Certificate authority server
You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- (Not recommended) Generate a self-signed certificate
You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select *Use a self-signed certificate*.

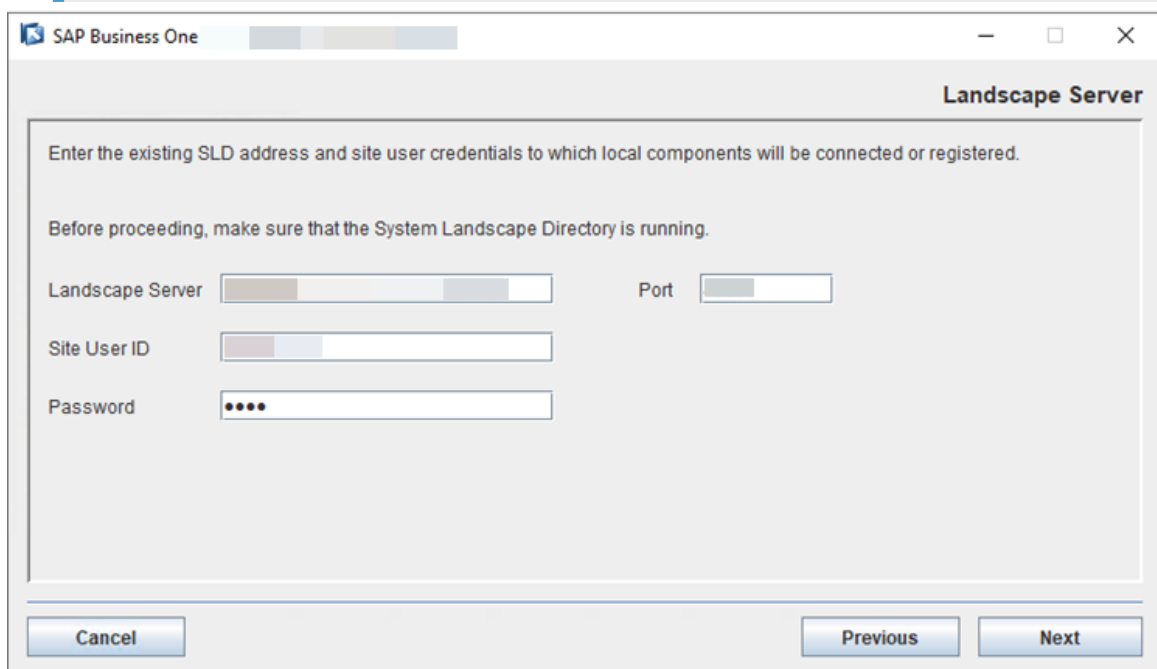


13. In the *Landscape Server* window, specify the following information:

- *Landscape Server*: Enter the IP address/hostname of the primary SLD on Server A.
- *Port*: Enter the port number of the primary SLD on Server A. The default port number is 40000.
- *Site User ID* and *Password*: Enter **B1SiteUser** and the password.

Note

The user name (**B1SiteUser**) and the password are the same as those entered during the installation of the primary SLD on Server A.



14. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

SAP Business One Server Components -

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

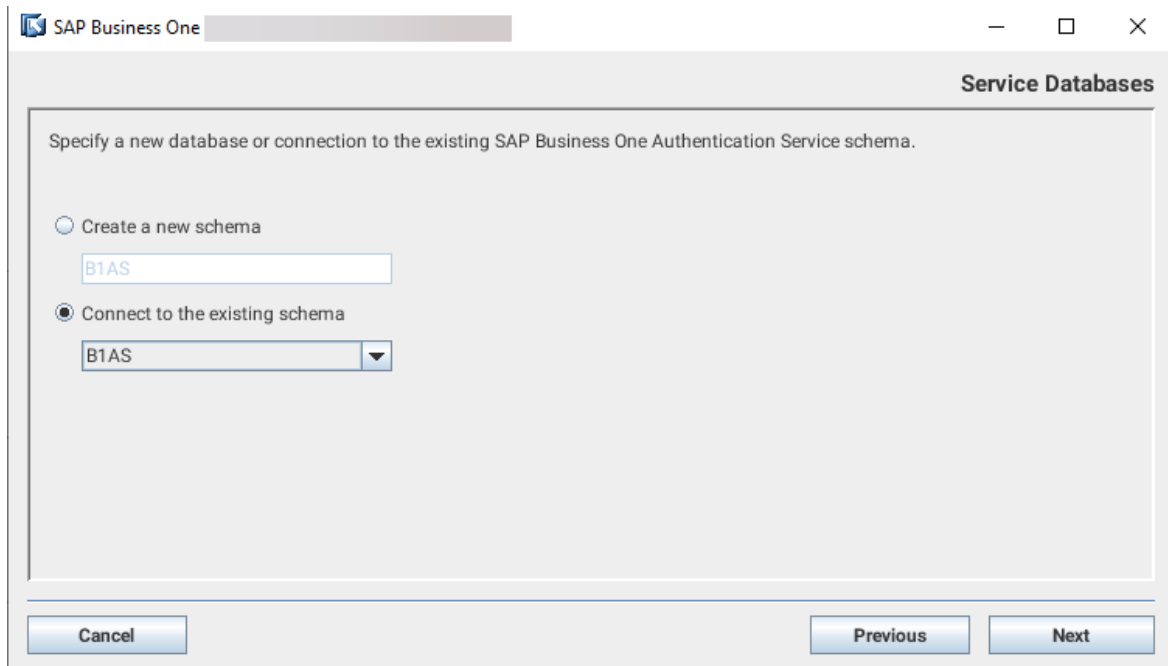
User Name

Password

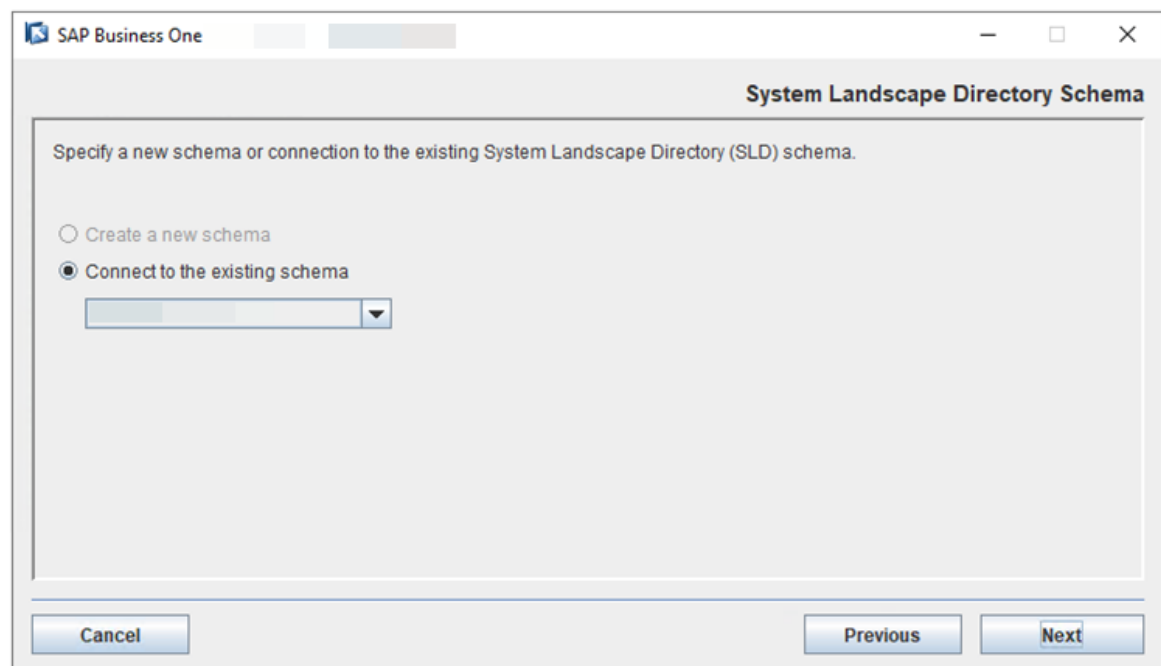
The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

15. In the *Service Database* window, choose to connect to the existing database schema that you created for SAP Business One Authentication Service when you deployed the primary SLD. Choose *Next*.



16. In the *System Landscape Directory Schema* window, choose to connect to the existing SLD schema that you created when you deployed the primary SLD.



17. In the *Windows Domain User Authentication* (Single Sign-On) window, do one of the following:
- If you want to use the SSO function for SAP Business One, version for SAP HANA, select *Use domain user authentication*, specify all required information, and choose *Next*.

Note

A fully qualified domain name must be a full name in **UPPER** case.

The domain user name is case-sensitive.

Make sure that the UTC time on your Linux server is the same as that on your Windows domain controller; otherwise, you cannot proceed with the installation.

- If you have not registered a domain user account with the Service Principal Name (SPN), make sure that the domain user account specified here is the one that you intend to use for SPN registration.

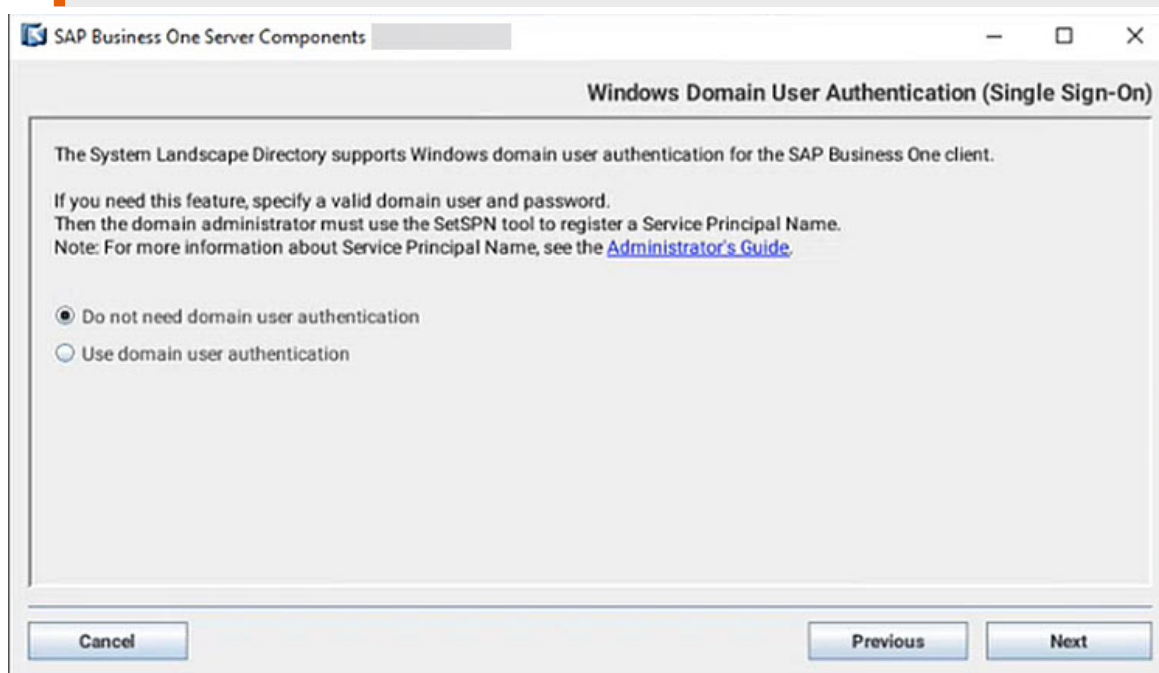
→ Recommendation

As this domain user is a service user that functions purely for the purpose of setting up SSO, we highly recommend that you create a new domain service user and not assign any privileges to the user other than the logon privilege. In addition, keep the user's password unchanged after enabling SSO; otherwise, SSO may stop working.

- If you do not want to use the SSO function, select *Do not need domain user authentication* and choose *Next*.

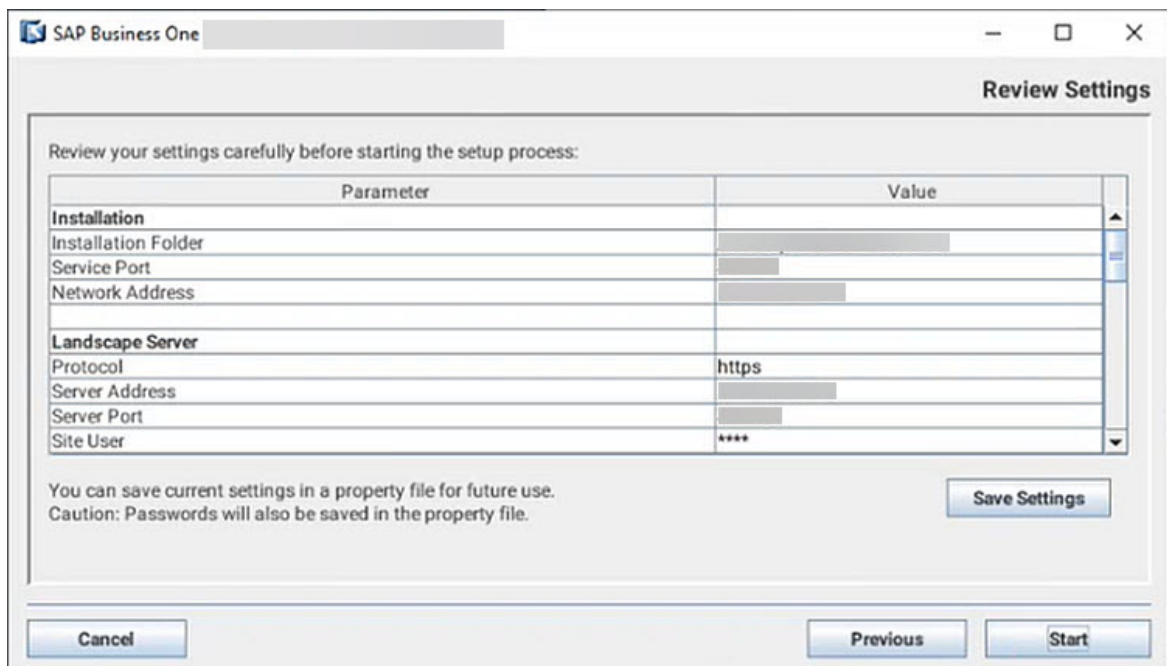
⚠ Caution

If you do not specify the domain user information during the installation of server components, you will not be able to activate the SSO function after the installation.



18. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to start the installation.

Note that the value of *Network Address* is the address of the secondary SLD on Server B, while the value of *Server Address* is the address of the primary SLD on Server A.



19. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If the SLD is installed successfully, choose [Next](#) to finish the installation.
 - If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
20. In the [Setup Process Completed](#) window, review the installation results.
21. Choose [Finish](#) to exit the wizard.

Task overview: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous task: [Installing Primary SLD on Server A \[page 8\]](#)

Next: [Configuring a Virtual IP Address for SLD \[page 29\]](#)

2.1.3 Configuring a Virtual IP Address for SLD

A virtual IP address (VIP) is an address that is shared among multiple servers. It is commonly used to enable database high availability on various nodes. If one node fails, the VIP address is automatically reassigned to another node.

To enable the VIP address, you need to configure an nginx server and then configure the primary and secondary SLD with the built-in SAP Business One Authentication Service.

1. [Configuring an nginx Reverse Proxy \[page 30\]](#)
2. [Configuring SAP Business One Authentication Service \[page 33\]](#)

3. [Configuring SLD \[page 35\]](#)

Parent topic: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous task: [Installing Secondary SLD on Server B \[page 19\]](#)

Next task: [Installing Primary License Manager on Server A \[page 41\]](#)

2.1.3.1 Configuring an nginx Reverse Proxy

Prerequisites

- You have prepared a Linux server.
- You have predefined a domain name for the SLD and other SAP Business One components, for example, `nginxserverhostname.def.com`, and the domain name is bound to this Linux server.

→ Recommendation

We recommend that you use a domain name instead of the IP address.

- You have prepared a domain name certificate.
- You have prepared a port for the SLD, License Manager, and SAP Business One Authentication Service. If you want to set up high availability for the Web client, you need to prepare an additional, dedicated port.
- You have obtained the nginx configuration file:
 - If you are configuring SAP Business One version 10.0 SP 2511 or later, download the HA configuration file [HA_Conf_for_OP_2511_or_Later.zip](#) and unzip it to obtain the nginx configuration file "SLD HA Nginx Conf for OP 2511 or Later.zip".
 - If you are configuring SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, download the HA configuration file [HA_Conf_for_OP_from_2208_until_2508.zip](#) and unzip it to obtain the nginx configuration file "SLD HA Nginx Conf for OP 2208 until 2508.zip".

Procedure

1. Go to [nginx: Linux packages](#)  and follow the instructions in the *SLES* section to install nginx on your Linux server.
2. Copy the SLD files to the nginx server.
 1. On the nginx server, navigate to `/usr/share/nginx/html`, and create a folder named `ControlCenter`.
 2. On either one of the SLD servers, navigate to `<SLDInstallationFolder>/ServerTools/SLD/webapps` (by default, `.../usr/sap/SAPBusinessOne/ServerTools/SLD/webapps`) and get the `SLDControlCenter.war` file.
 3. Copy and unzip the `SLDControlCenter.war` file to the folder `/usr/share/nginx/html/ControlCenter` on the nginx server. Overwrite the existing content, if any.

/usr/share/nginx/html/ControlCenter/				
Name	Size	Changed	Rights	Ow
..		5/7/2025 5:37:30 PM	rw-r--r--	root
css		5/7/2025 5:38:08 PM	rw-r--r--	root
html		5/7/2025 5:38:08 PM	rw-r--r--	root
images		5/7/2025 5:38:09 PM	rw-r--r--	root
js		5/7/2025 5:38:10 PM	rw-r--r--	root
META-INF		5/7/2025 5:38:10 PM	rw-r--r--	root
OpenSource		5/7/2025 5:38:10 PM	rw-r--r--	root
saml		5/7/2025 5:38:07 PM	rw-r--r--	root
WEB-INF		5/7/2025 5:38:07 PM	rw-r--r--	root
bind-user.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
companySelection.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
index.html	10 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fiori.html	5 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fioriForB1Client.html	5 KB	7/9/2024 2:05:52 PM	rw-r--r--	root
login-fioriForChoose.html	8 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fioriForCreateCompany.html	8 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
sbo.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
test.html	18 KB	7/9/2024 2:05:52 PM	rw-r--r--	root

3. Prepare certificates:
 1. Use the OpenSSL library to generate the server .cer and server .key files from your PKCS12 (.pfx) file, which is used to install the SLD.
 2. Copy both files to the folder /etc/nginx/cert.
If the cert folder does not exist, create it manually.
4. Go to /etc/nginx and delete the conf.d folder.

/etc/nginx/		
Name	Size	Changed
..		5/8/2025 10:08:34 AM
modules		2/5/2025 11:18:25 PM
conf.d		5/7/2025 5:41:58 PM
cert		4/14/2025 4:17:52 PM
uwsgi_params	1 KB	2/5/2025 11:18:25 PM
scgi_params	1 KB	2/5/2025 11:18:25 PM
nginx.conf.bak	1 KB	2/5/2025 11:17:18 PM
nginx.conf	2 KB	4/16/2025 10:48:35 AM
mime.types	6 KB	2/5/2025 11:18:25 PM
fastcgi_params	1 KB	2/5/2025 11:18:25 PM

Figure 2: Contents at /etc/nginx

5. Copy the nginx configuration file, "SLD HA Nginx Conf for OP 2511 or Later.zip" or "SLD HA Nginx Conf for OP 2208 until 2508.zip" (depending on your SAP Business One version), to the folder /etc/nginx and extract the content. Override the existing content, if any.
6. In the etc/nginx/conf.d folder, open the HA configuration template file b1c_sldCluster.conf and edit the service addresses:

/etc/nginx/conf.d/		
Name	Size	Changed
..		5/8/2025 10:08:34 AM
nginx_check.sh	1 KB	8/28/2018 4:48:34 PM
keepalived.conf	1 KB	8/28/2018 4:48:34 PM
default.conf.bak	2 KB	2/5/2025 11:17:18 PM
b1c_sldCluster.conf	3 KB	5/8/2025 9:32:07 AM
b1c_proxy_common_ext.conf	1 KB	8/28/2018 4:48:34 PM
b1c_proxy_common.conf	1 KB	8/28/2018 4:48:34 PM

- In the *upstream sldService* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SLD.
- In the *upstream licenseService* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary License Manager.
- In the *upstream licenseControlCenter* section, replace the sample values with the IP address and port number of your primary License Manager.
- In the *upstream extManager* section, replace the sample values with the IP address and port number of your primary Extension Manager.
- In the *upstream BIAS* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SAP Business One Authentication Service. The port numbers should be the same as those in the *Authentication Service Ports* window when you install the primary and secondary SLD.

```

upstream sldService{
    ip_hash;
    server [redacted]:40000;
    server [redacted]:40000;
    keepalive 300;
}

upstream licenseService{
    ip_hash;
    server [redacted]:[redacted];
    server [redacted]:[redacted];
}
upstream licenseControlCenter{
    server [redacted]:[redacted];
}
upstream extManager{
    server [redacted]:40000;
}

upstream BIAS{
    ip_hash;
    server [redacted]:40020 ;
    server [redacted]:40020 ;
}

```

- In the [server](#) section, replace the sample port number with the listening port number for the SLD, for example, 7777.
For the server name, replace the sample name with the domain name which is bound to the IP address of the nginx server.

```
server
{
    listen       ssl;
    server_name ;

    #===== SLD HA configuration(Internal address mapping) begins =====
    location /sld/saml2 {
        include b1c_proxy_common.conf;
        proxy_set_header HOST $server_name:$server_port;

        proxy_pass https://sldService;
```

7. Restart the nginx server with the following command: `systemctl restart nginx.service`.

Task overview: [Configuring a Virtual IP Address for SLD \[page 29\]](#)

Next task: [Configuring SAP Business One Authentication Service \[page 33\]](#)

2.1.3.2 Configuring SAP Business One Authentication Service

Procedure

1. On the primary server, proceed as follows:
 1. Go to the directory `/usr/sap/SAPBusinessOne/Common/keycloak/tools`.
 2. Use the following command with the IP address of the currently running server to run the script `authentication_ha_start.sh`:
`./authentication_ha_start.sh install <IP Address of Server>`
 3. Run the command `systemctl restart sapb1servertools-authentication.service` to restart SAP Business One Authentication Service.
2. Repeat the steps above on the secondary server.
3. Check if the configuration is successful.
 1. On the server that you install SAP HANA, open SAP HANA Studio.
 2. Find the database instance that you use for the SLD. Find and expand the schema that you created for the Authentication Service.
The default schema name is **B1AS**.

- Find the table **JGROUPSPING** in the **Tables** folder.
- You can see that two new records are generated in this table, one for the primary node, the other for the secondary node.

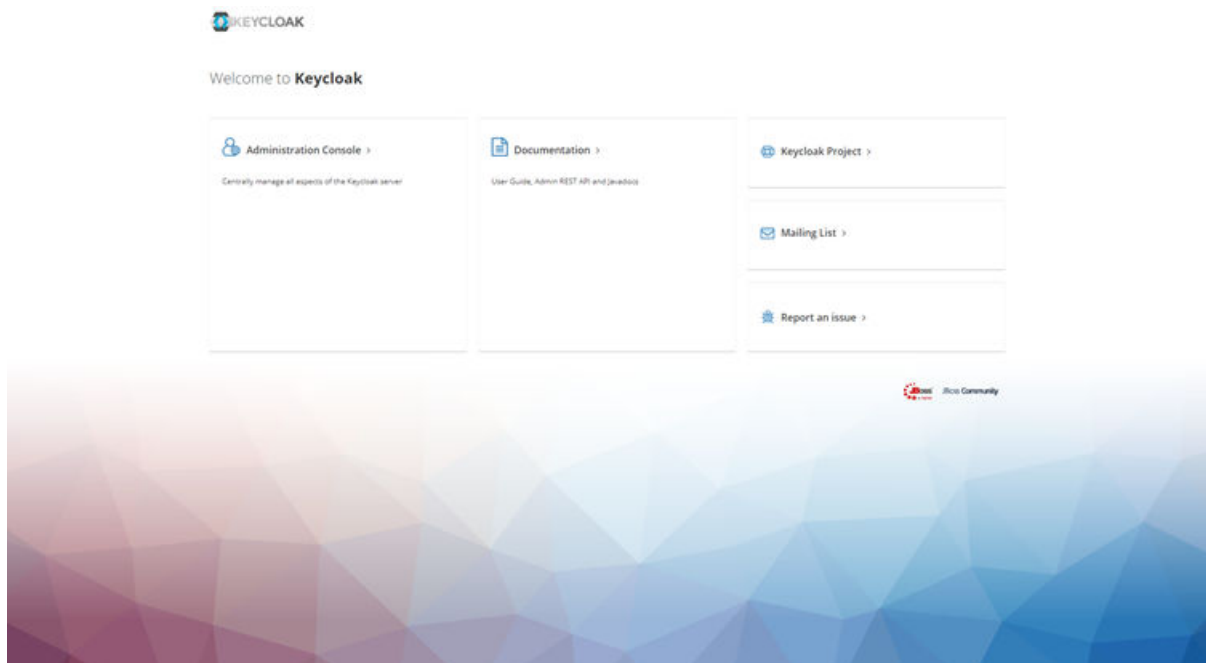
NDB@NDB (NONSYSTEM)

SELECT TOP 1000 * FROM "BIAS"."JGROUPSPING"

	OWN_ADDR	CLUSTER_NAME	UPDATED	PING_DATA
1	4025a555-071c-4170-b889-927b905a5e24	qjh	Sep 22, 2022 11:31:45.685 AM	62B889327B905A5E244025A555071C41700100056E6F64653210040A3A6D611D80FFFF
2	d9be7b2d-4068-43a6-afad-92fe206a36d3	qjh	Sep 22, 2022 11:31:45.69 AM	02AFAD92FE206A36D309BE182D406A3A6030100056E6F64653210040A3A6D7A1D80FFFF

Results

Now you can access the Authentication Service with the virtual web address: <https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/auth>. In this example, <https://nginxserverhostname.def.com:7777/auth>.



Task overview: [Configuring a Virtual IP Address for SLD \[page 29\]](#)

Previous task: [Configuring an nginx Reverse Proxy \[page 30\]](#)

Next task: [Configuring SLD \[page 35\]](#)

2.1.3.3 Configuring SLD

Procedure

1. Store the SLD memory in one of the following ways:

- Using database persistence.
It is a built-in solution.
- Using Redis persistence.
Redis customers need to set up a working Redis instance.

By default, we suggest using database persistence. In case of huge performance pressure, we suggest using Redis persistence.

- For database persistence:
 1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. Find and edit the configuration file `sld.xml` from both Server A and Server B.
 - If your SAP Business One version is 10.0 SP 2511 or later, go to the folder `<SLD Installation Folder>/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/ServerTools/SLD/conf`).
 - If your SAP Business One version is 10.0 FP 2508 or earlier, go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/Common/SLD/conf`).

Edit the configuration file `sld.xml` as follows:

```
Update <Manager pathname="" /> into <Manager  
className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager"  
password=" " pathname="" url=" " username=" " />
```

You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.

3. Start nginx and the SLD.
 1. Go to `<nginx Installation Folder>/sbin` (by default, `/usr/local/nginx/sbin`) and start nginx.
 2. Start the SLD service on both Server A and Server B.
- For Redis persistence:

📌 Note

Please install Redis on a separate Linux server, and make sure Redis can be accessed remotely.

Here are the general steps for installing Redis:

1. Download `redis-3.x.x.tar.gz`, and unzip it to `/home`.
2. Execute the `Make` file.
3. Go to the `redis-3.x.x/src` folder, and execute `.../redis-server/redis.conf`.

1. Stop the SAP Business One Server Tools Service on both Server A and Server B.

2. Obtain and unzip the file Redis related jar.zip from the HA configuration file ([HA_Conf_for_OP_2511_or_Later.zip](#) or [HA_Conf_for_OP_from_2208_until_2508.zip](#)) that you downloaded from the previous task. Copy the files, commons-pool2-2.4.2.jar and jedis-2.8.0.jar, from the Redis related jar.zip folder to .../usr/sap/SAPBusinessOne/Common/tomcat/lib.

Note

You can enter the following commands to give full permissions to the Redis files if your access is denied:

```
Chmod 777 -R commons-pool2-2.4.2.jar
```

```
Chmod 777 -R jedis-2.8.0.jar
```

3. Go to the folder <SLD Installation Folder>/Common/tomcat/conf (by default, .../usr/sap/SAPBusinessOne/Common/tomcat/conf) and edit sld.xml as follows: Update <Manager pathname="">/ to <Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="\${Redis Server IP}" port="\${Redis Server Port}" database="0" maxInactiveInterval="60" />

Note

The default port number for the Redis server is 6379.

4. Start nginx and the primary and secondary SLD service.
 1. Go to <nginx Installation Folder>/sbin (by default, /usr/local/nginx/sbin), and start nginx
 2. Start the SLD service on both Server A and Server B.
2. Run a connection test for the SLD by visiting the address <https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/sld/sld0100.svc>, for example, <https://nginxserverhostname.def.com:7777/sld/sld0100.svc>.

If the configuration is successful, you will see the following page:

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<service xmlns="http://www.w3.org/2007/app" xmlns:atom="http://www.w3.org/2005/Atom" xmlns:app="http://www.w3.org/2007/app" xmlns:base="https://nginxserverhostname.def.com:7777/sld/sld0100.svc/">
  <workspace>
    <atom:title>Default</atom:title>
    <collection href="ApplicationIdentifiers">
      <atom:title>ApplicationIdentifiers</atom:title>
    </collection>
    <collection href="ArchivedComponentDetectionLog">
      <atom:title>ArchivedComponentDetectionLog</atom:title>
    </collection>
    <collection href="AssignmentProperties">
      <atom:title>AssignmentProperties</atom:title>
    </collection>
    <collection href="AffinityGroups">
      <atom:title>AffinityGroups</atom:title>
    </collection>
    <collection href="BackupServices">
      <atom:title>BackupServices</atom:title>
    </collection>
    <collection href="BICentralLogRepositories">
      <atom:title>BICentralLogRepositories</atom:title>
    </collection>
    <collection href="SBOClients">
      <atom:title>SBOClients</atom:title>
    </collection>
    <collection href="SBOSharedFolders">
      <atom:title>SBOSharedFolders</atom:title>
    </collection>
    <collection href="SoftwareRepositories">
      <atom:title>SoftwareRepositories</atom:title>
    </collection>
    <collection href="APIGatewayServices">
      <atom:title>APIGatewayServices</atom:title>
    </collection>
    <collection href="AnalyticsServices">
      <atom:title>AnalyticsServices</atom:title>
    </collection>
    <collection href="BIAServerDetails">
      <atom:title>BIAServerDetails</atom:title>
    </collection>
  </workspace>
</service>
```

3. Check if your configurations for the primary SLD and the secondary SLD are successful.

If they are properly configured, you can log in to the SLD control center through the following virtual web addresses with your **B1SiteUser** account:

- `https://<IP Address of Primary SLD>:<Port Number>/ControlCenter`
- `https://<IP Address of Secondary SLD>:<Port Number>/ControlCenter`

The login procedures and required credentials may vary according to how the Identity and Authentication Management (IAM) service is configured. For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

4. Keep the primary SLD control center page open. Go to the [Security](#) tab.
5. In the [SAP Business One Authentication Service](#) section, choose [Edit](#) and make the following changes:
 - Change the existing authentication server address and port number to `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>`, in this example, `https://nginxserverhostname.def.com:7777`.
 - Change the existing SLD address and port number to `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>`, in this example, `https://nginxserverhostname.def.com:7777`.
6. Choose [Update](#).

Choose [Yes](#) when you see this message:

Caution: Make sure that you define a correct address for the SLD and authentication server.
The whole SAP Business One landscape does not work if the address is not accessible.
Do you want to continue?

7. Choose [Update](#) again.

Choose [OK](#) when you see this message:

The authentication server address was updated successfully.
The SLD address was updated successfully.

Results

Now you can access the SLD control center with your **B1SiteUser** account through the virtual web address `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/ControlCenter`, in this example, `https://nginxserverhostname.def.com:7777/ControlCenter`.

The login procedures and required credentials may vary according to how the Identity and Authentication Management (IAM) service is configured. For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

You should always use the virtual SLD address (`<Nginx Server Domain Name>:<Listening Port Number of SLD>`) for installation of other SAP Business One components.

Task overview: [Configuring a Virtual IP Address for SLD \[page 29\]](#)

Previous task: [Configuring SAP Business One Authentication Service \[page 33\]](#)

Optional: Configuring High Availability for nginx Server

Context

If you want to set up high availability for the nginx server, you should prepare a secondary nginx server and a virtual hostname (for example, `virtualhostname.mocca.com`).

In such a case, do as follows:

Procedure

1. Install and configure a new nginx server on the secondary server.
2. Install Keepalived on both the primary and secondary servers.
 1. Download the source file from <http://www.keepalived.org/download.html>.
 2. Copy `keepalived-*.tar.gz` to `/home`.
 3. Open the Linux terminal and enter, for example, the following commands to install Keepalived.

```
# tar -zxvf keepalived-*.tar.gz
# cd /home/keepalived-1.2.18
# ./configure --prefix=/usr/local/keepalived --disable-lvs
# make && make install
...
```

Note

- Make sure that the Keepalived servers are connected to the same subnet.
- During the configuration of Keepalived, disable LVS.
- If you encounter the following error when running `./configure`, proceed as follows:

```
configure: error:
  !!! OpenSSL is not properly installed on your system. !!!
  !!! Can not include OpenSSL MD5 headers files.          !!!
```

- If you are running SLES 11 SP4, install `openssl-devel`.
- If you are running SLES 12 SP1, install `libopenssl-devel` and `libopenssl-devel-32bit`.
- Otherwise, use a search engine to find the solutions.
- Make sure that Autoconf and Automake are up to date.
For more information about Autoconf and Automake, visit <http://www.gnu.org/software/autoconf/autoconf.html> and <http://www.gnu.org/software/automake/#downloading>.

Example

Below is an example of how to install Autoconf and Automake:

1. Install `autoconf-2.69`

```
./configure
make&&make install
```

2. Install automake-1.15

```
./bootstrap.sh  
./configure  
make&&make install
```

3. Copy the `nginx_check.sh` file from the nginx configuration file ("SLD HA Nginx Conf for OP 2511 or Later.zip" or "SLD HA Nginx Conf for OP 2208 until 2508.zip") to `.../usr/local/keepalived`.

 Note

Make sure the execution permission has been assigned to this utility.

4. Copy the Keepalived configuration template `keepalived.conf` from the nginx configuration file ("SLD HA Nginx Conf for OP 2511 or Later.zip" or "SLD HA Nginx Conf for OP 2208 until 2508.zip") to `etc/keepalived`, and update `keepalived.conf`.
5. Open `nginx_check.sh` and update the path, priority and virtual IP address.

You can see the screenshot below for reference.

 Note

Set the priority for the primary node to 100, and for the secondary node to 90.

The virtual IP address is bound to the virtual hostname.

```

1 ! Configuration File for keepalived
2
3 global_defs {
4
5     router_id LVS_DEVEL
6 }
7
8 vrrp_script chk_nginx_service {
9     script "/usr/local/keepalived/nginx_check.sh"
10    #script "/tcp/127.0.0.1/8888"
11    #script "killall -0 nginx"
12    interval 3
13    weight -20
14    fail      2
15    rise      1
16 }
17 #vrrp_sync_group VG1 {
18 #     group {
19 #         VI_1
20 #     }
21 # }
22
23 vrrp_instance VI_1 {
24     state BACKUP
25     interface eth0
26     virtual_router_id 51
27     priority 100
28     advert_int 1
29     nopreempt
30     authentication {
31         auth_type PASS
32         auth_pass 1111
33     }
34     virtual_ipaddress {
35         [REDACTED]
36     }
37     track_script {
38         chk_nginx_service
39     }
40 }

```

6. Edit the `b1c_sldCluster.conf` file on both the primary and secondary nginx servers.

In the `server` section, add the listening port number and server name.

For the server name, enter the virtual domain name which is bound to the virtual IP address.

7. Start nginx and Keepalived on the primary node and the secondary node, respectively.
 - The default file path for starting nginx: `.../usr/local/nginx/sbin/nginx`

- The default file path for starting Keepalived: `.../usr/local/keepalived/sbin/keepalived`

ⓘ Note

You must start nginx before you start Keepalived due to the latter's reliance on nginx.

Results

Now you can access the SLD with this virtual address: `https://virtualhostname.mocca.com:<Port Number>/ControlCenter`.

You should always use the SLD virtual IP address for installation of other SAP Business One components.

2.1.4 Installing Primary License Manager on Server A

Procedure

1. Log on to the primary server as root.
2. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

```
./install
```

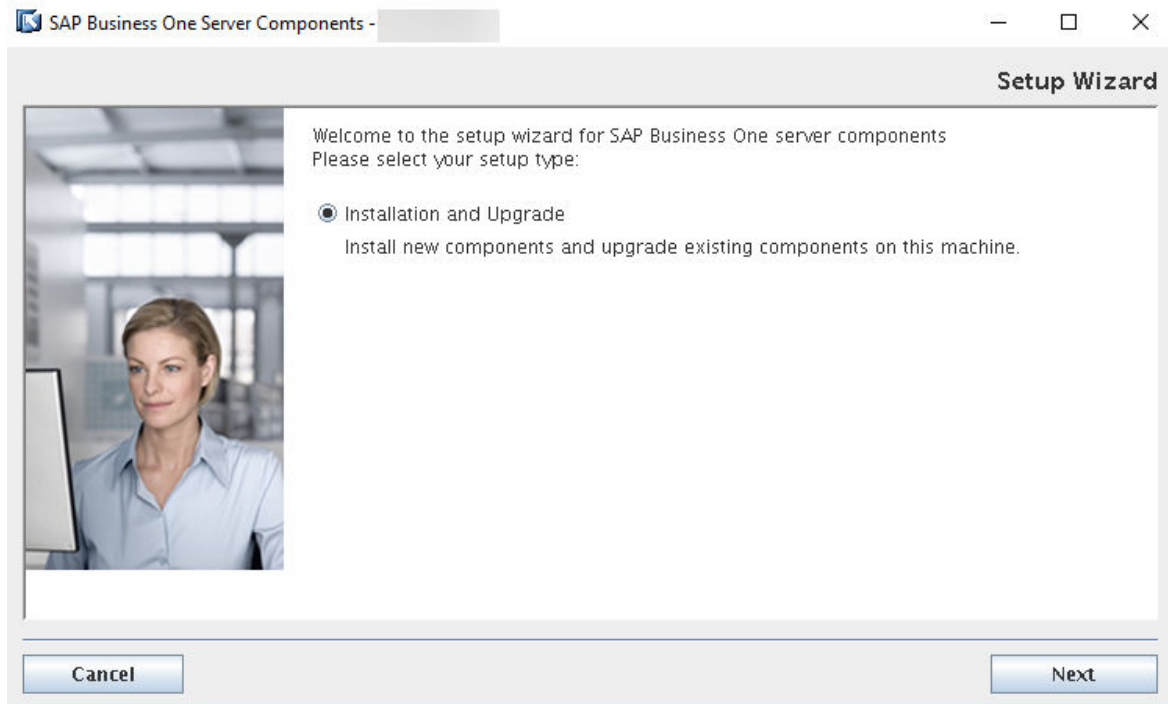
The installation process begins.

ⓘ Note

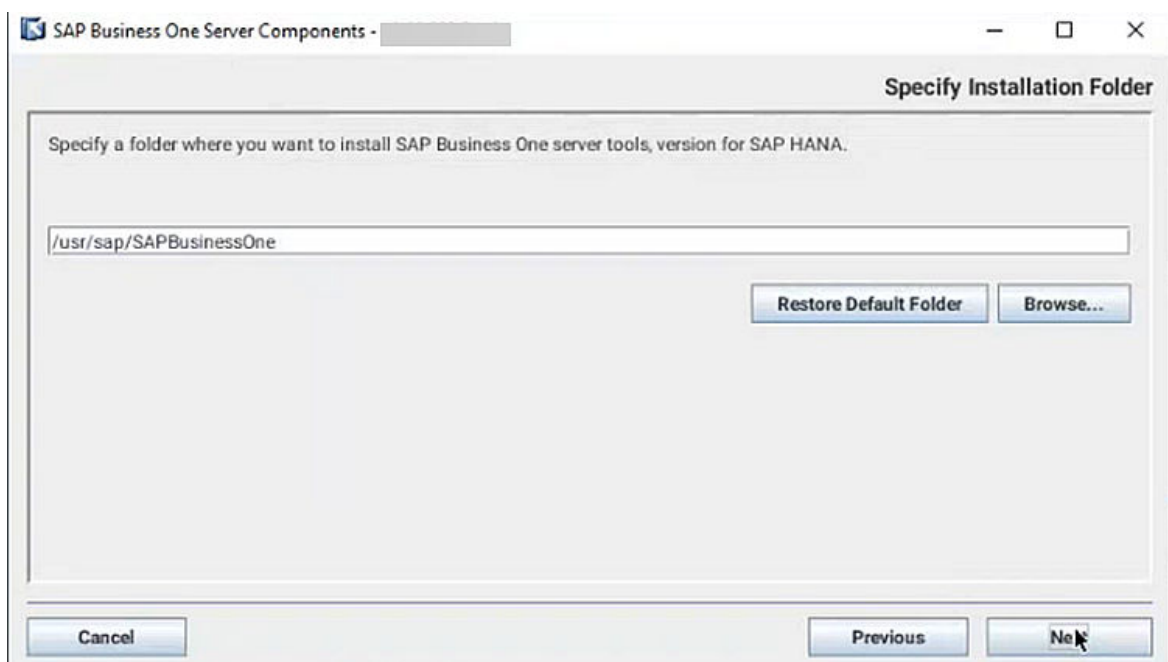
If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command:

```
chmod +x install
```

3. In the *Welcome* page of the setup wizard, choose *Next*.



4. In the *Specify Installation Folder* window, specify where you want to install the License Manager and choose *Next*.



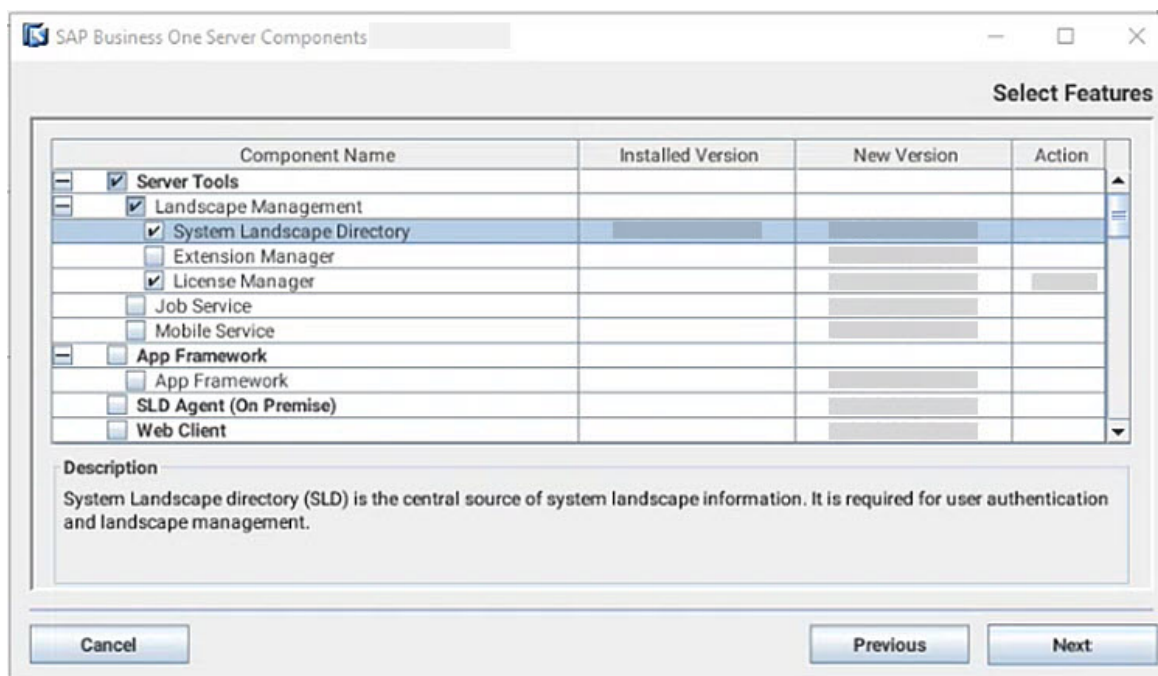
5. In the *Select Features* window, select *License Manager* and choose *Next*.

Note

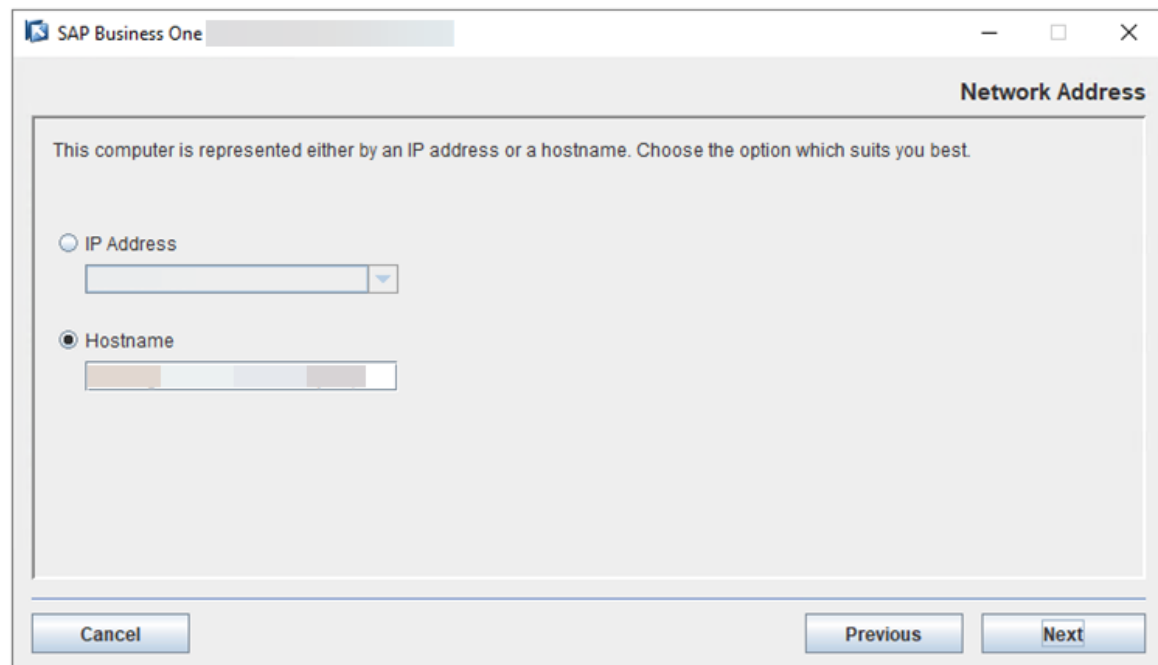
Apart from the SLD and License Manager, other components can be installed with the primary/secondary node or on other servers.

We recommend that you install other components on other servers.

If you install other components with the primary/secondary node, when the primary/secondary node server is down, the components will also be down.



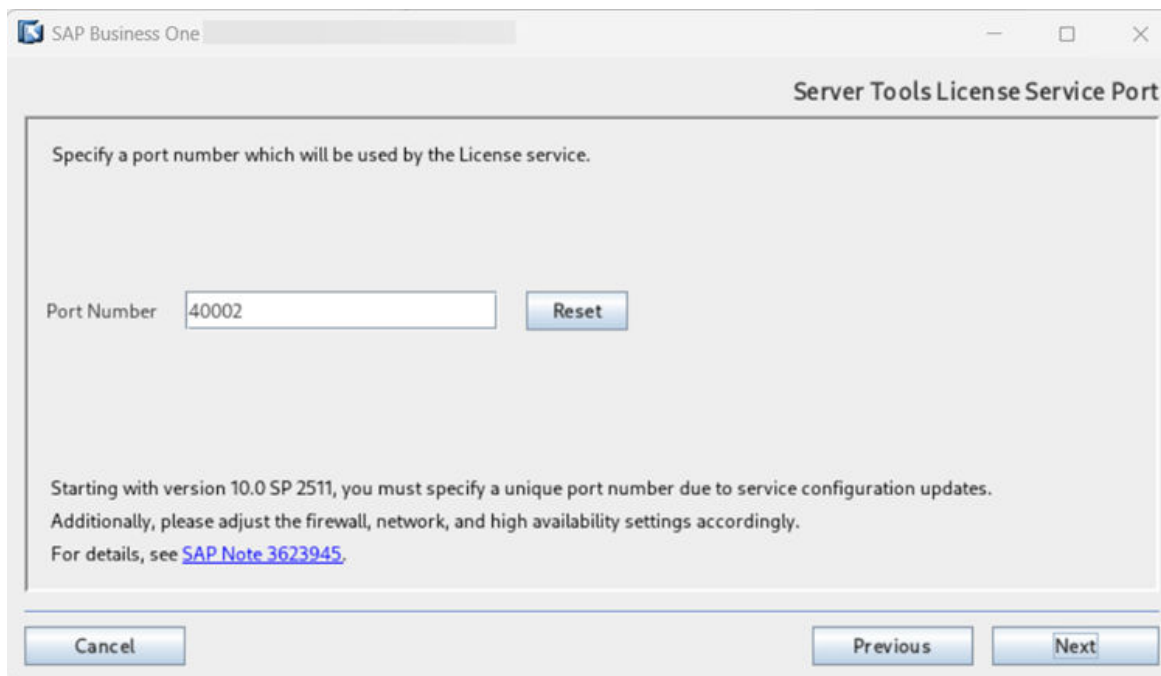
6. In the [Network Address](#) window, select the IP address of the primary server, or use the hostname.



7. Specify a port number for the [License Manager](#) and choose [Next](#).

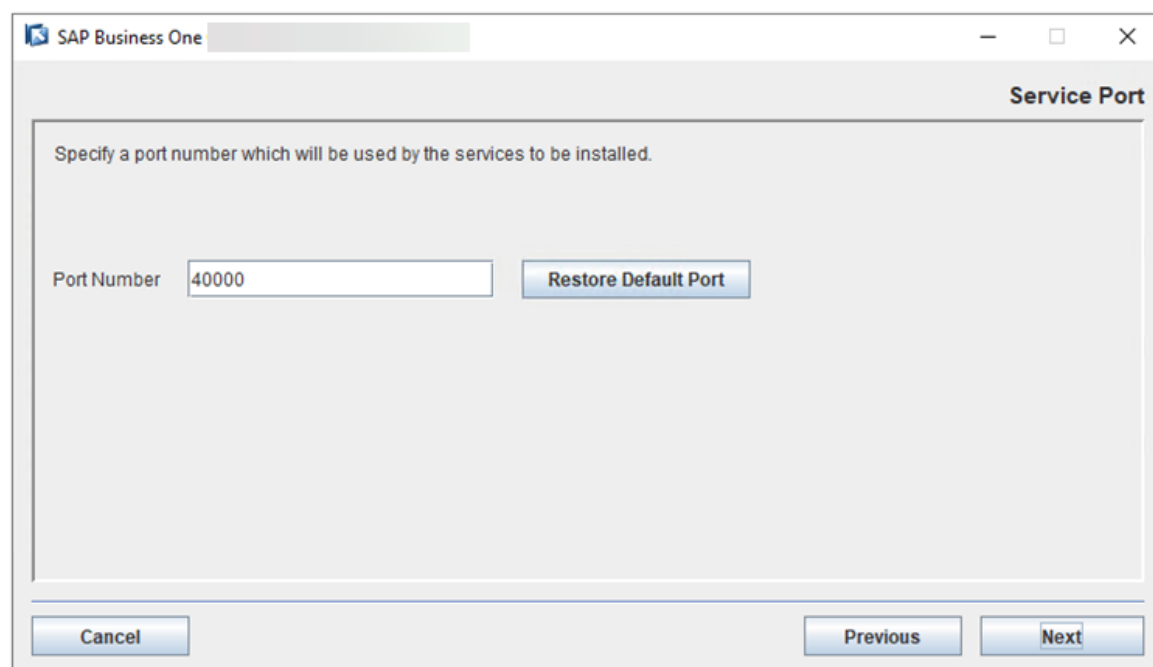
- If you are installing SAP Business One version 10.0 SP 2511 or later, you will enter the [Server Tools License Service Port](#) window. The default port number is 40002.
- If you are installing SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, you will enter the [Service Port](#) window. The default port number is 40000.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#) in the [Server Tools License Service Port](#) window or [Restore Default Port](#) in the [Service Port](#) window.



The screenshot shows the 'Server Tools License Service Port' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Server Tools License Service Port'. The main text says 'Specify a port number which will be used by the License service.' Below this, there is a 'Port Number' label followed by a text box containing '40002' and a 'Reset' button. At the bottom, there are three buttons: 'Cancel', 'Previous', and 'Next'. A note at the bottom states: 'Starting with version 10.0 SP 2511, you must specify a unique port number due to service configuration updates. Additionally, please adjust the firewall, network, and high availability settings accordingly. For details, see [SAP Note 3623945](#).'

Server Tools License Service Port Window



The screenshot shows the 'Service Port' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Service Port'. The main text says 'Specify a port number which will be used by the services to be installed.' Below this, there is a 'Port Number' label followed by a text box containing '40000' and a 'Restore Default Port' button. At the bottom, there are three buttons: 'Cancel', 'Previous', and 'Next'.

Service Port Window

8. In the [Specify Security Certificate](#) window, specify a security certificate and choose [Next](#).

You can obtain a certificate using one of the following methods:

- Third-party certificate authority

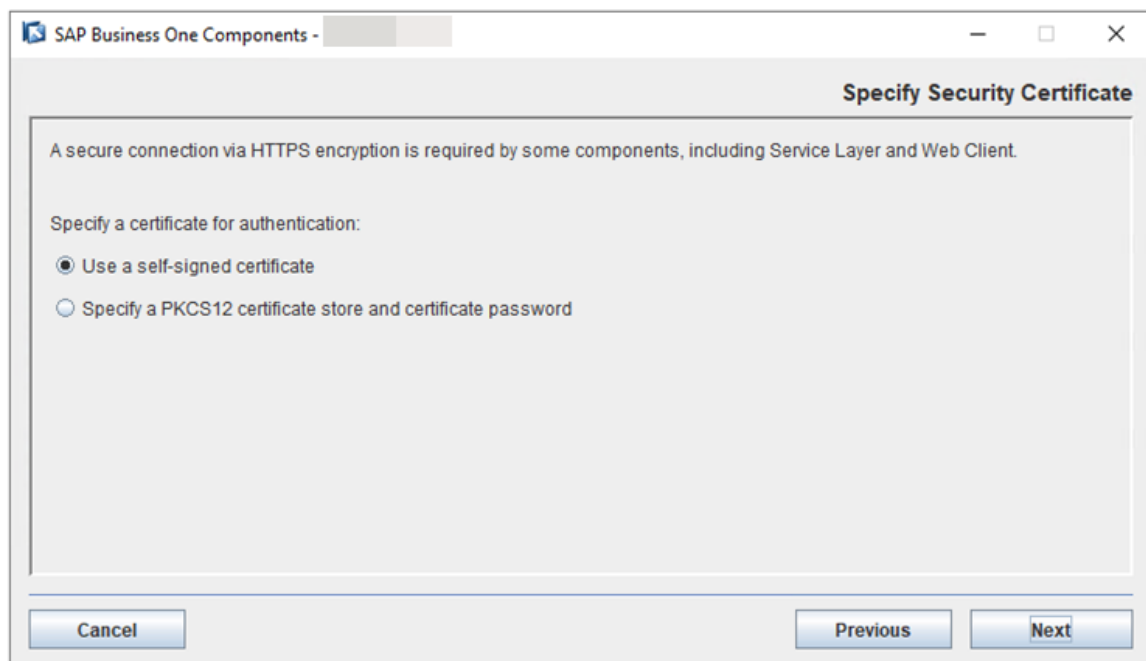
You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.

- Certificate authority server

You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.

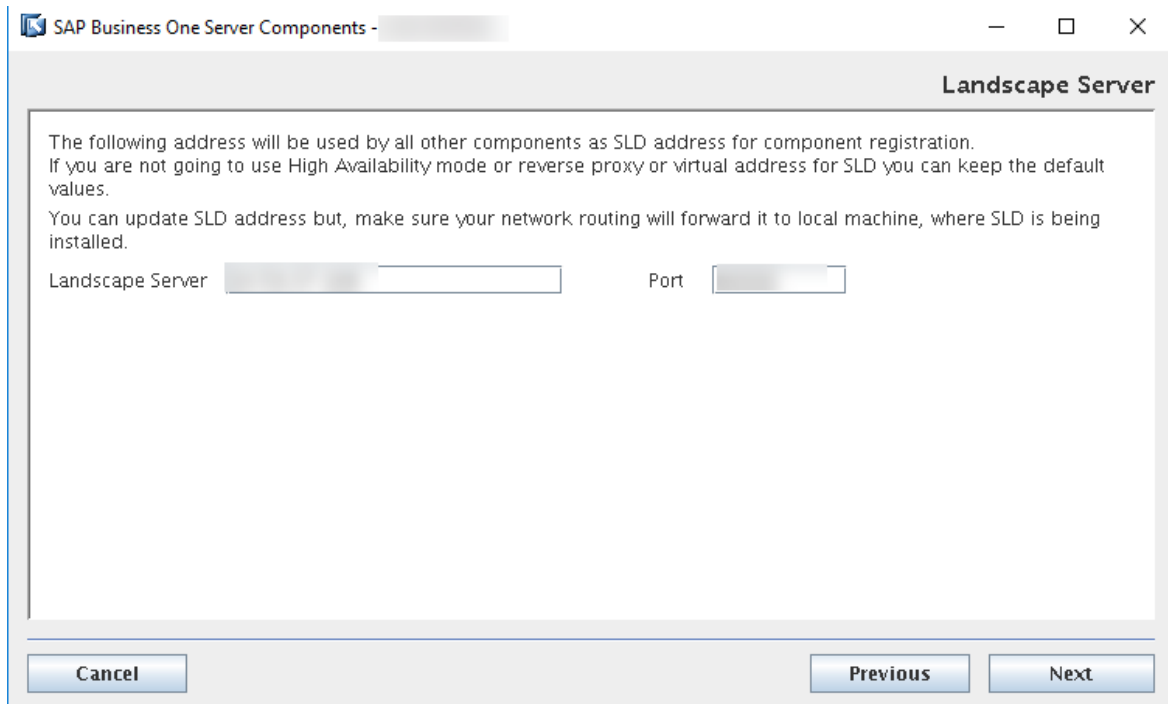
- (Not recommended) Generate a self-signed certificate

You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).

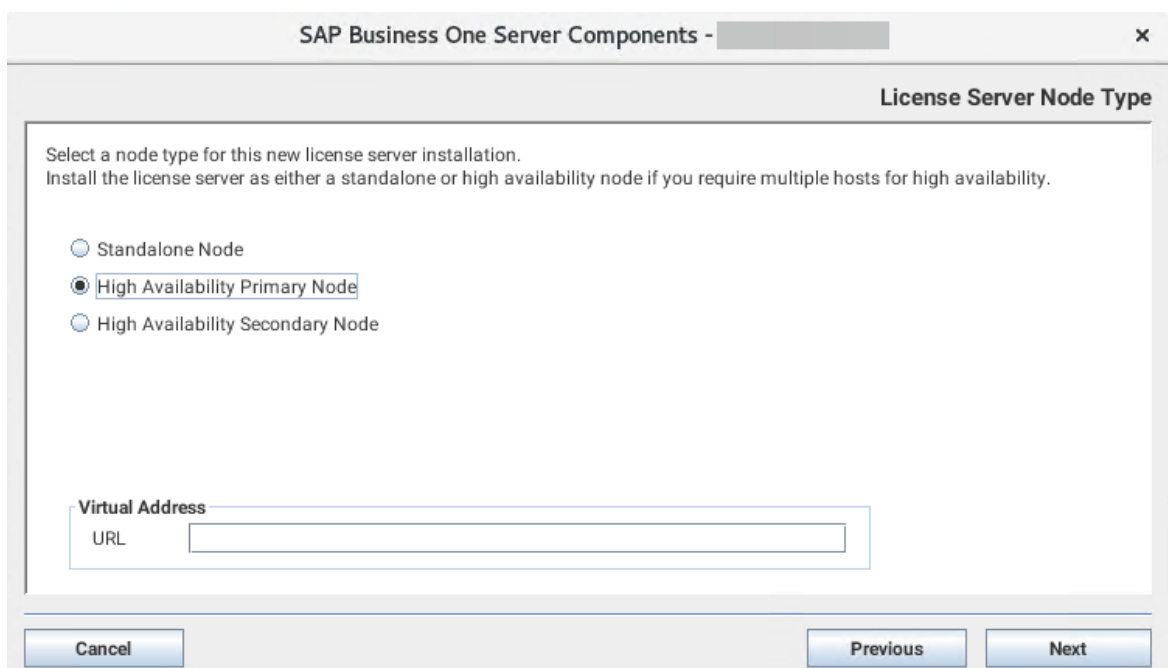


9. In the [Landscape Server](#) window, enter the following:

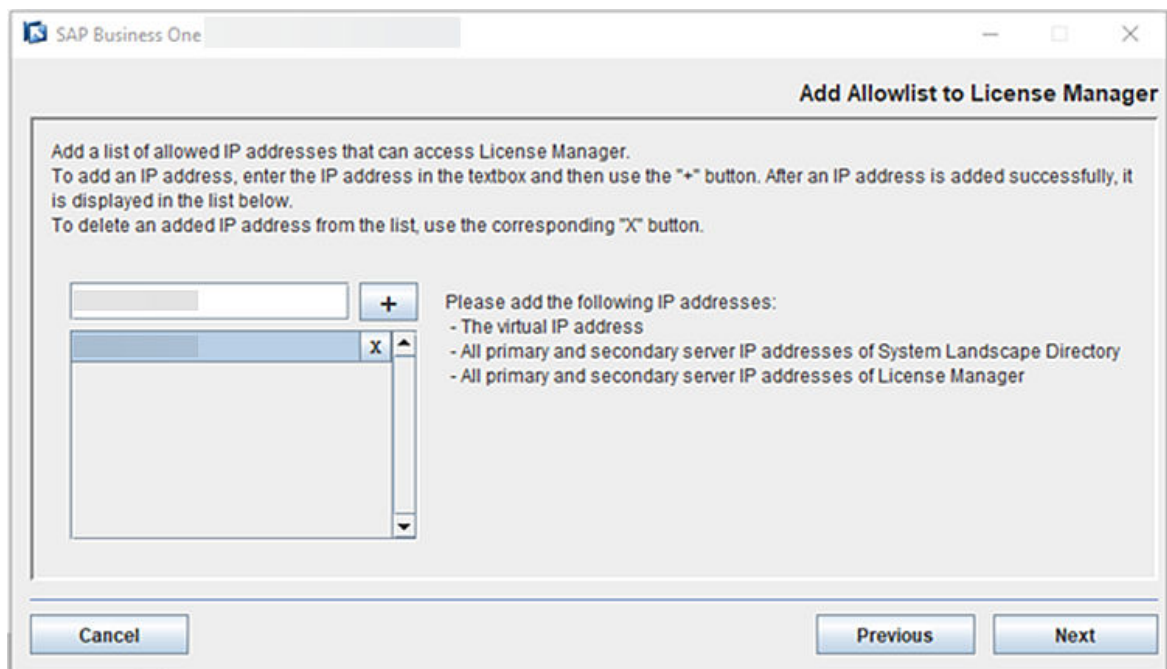
- [Landscape Server](#): Enter the SLD virtual IP address.
- [Port](#): Enter the nginx proxy port number.



10. In the *License Server Node Type* window, select *High Availability Primary Node* and enter the virtual address and port number. License Manager is registered into the SLD automatically.



11. In the *Add Allowlist to License Manager* window, add the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.



Alternatively, you can follow the steps below to add the allowlist manually after the installation:

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

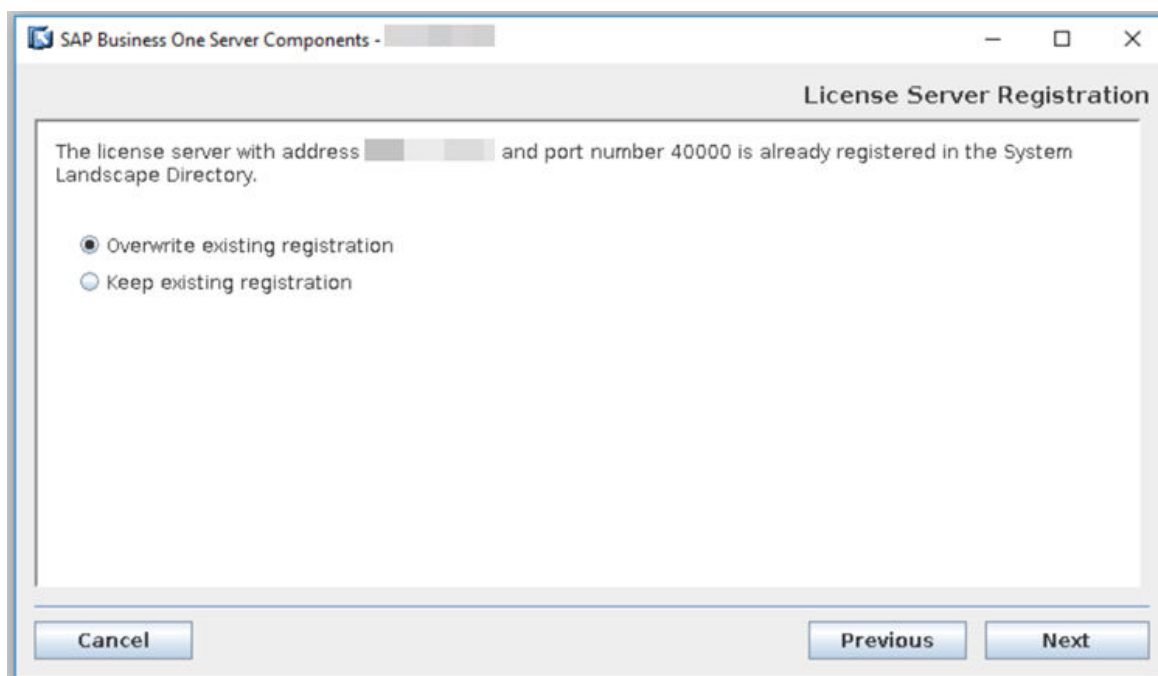
Sample Code

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to the directory `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on your primary License Manager server.
3. On your primary server, restart *License Manager*.
 - If your SAP Business One version is 10.0 FP 2508 or earlier, run the following command: `systemctl restart sapb1servertools.service`.
 - If your SAP Business One version is 10.0 FP 2511 or later, run the following command: `systemctl restart sapb1servertools-license.service`.
12. If the network address of License Manager has already been registered into the SLD, the *License Server Registration* window appears with the following options:
 - *Overwrite existing registration*
 - *Keep existing registration*

If both the IP address and port number are registered, you can choose to overwrite the existing registration data or reuse them.

If the IP address is registered but the port number isn't, you can only overwrite the existing registration data.



13. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

SAP Business One Server Components -

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

User Name

Password

The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

14. In the [System Landscape Directory Schema](#) window, choose to connect to the existing database schema that you use for the primary SLD.

SAP Business One

System Landscape Directory Schema

Specify a new schema or connection to the existing System Landscape Directory (SLD) schema.

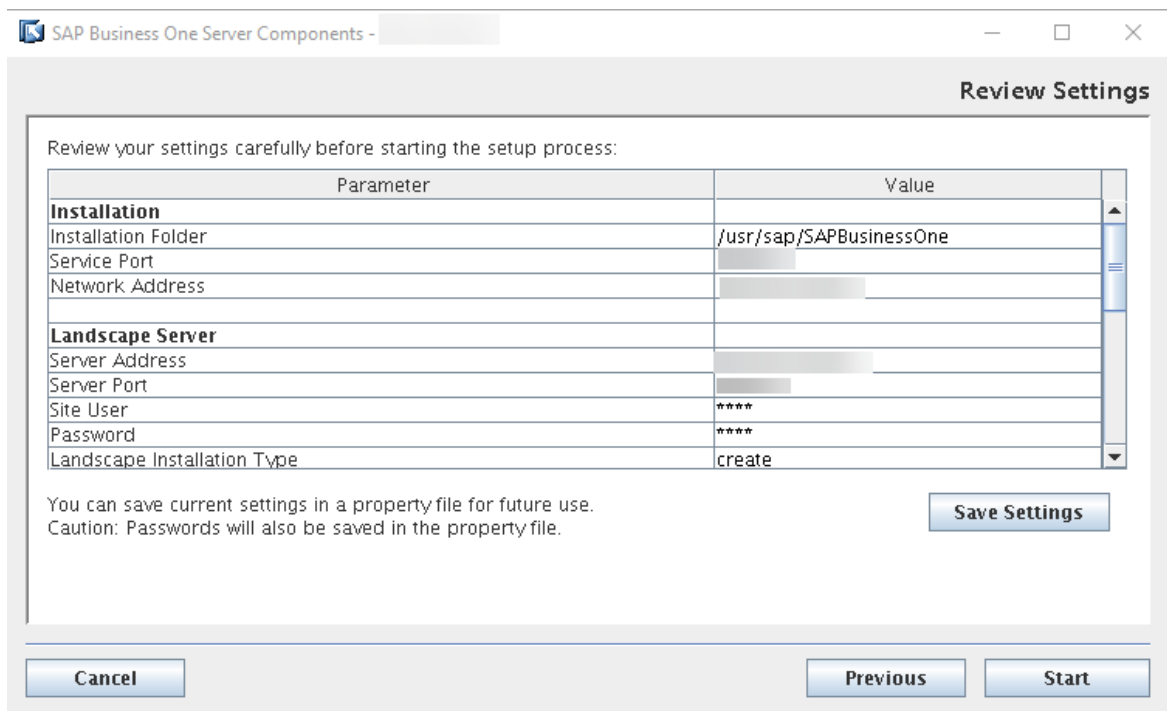
☐ Create a new schema

☒ Connect to the existing schema

Cancel Previous Next

15. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of the [Network Address](#) is the address of the primary SLD on the primary server, while the value of the [Server Address](#) is the SLD virtual address.



16. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
 - If License Manager is installed successfully, choose *Next* to finish the installation.
 - If the installation fails, choose *Roll Back* to restore the system. When the rollback progress is completed, in the *Rollback Progress* window, choose *Next* to finish the installation.
17. In the *Setup Process Completed* window, review the installation results.
18. Choose *Finish* to exit the wizard.

Task overview: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous: [Configuring a Virtual IP Address for SLD \[page 29\]](#)

Next task: [Installing Secondary License Manager on Server B \[page 50\]](#)

2.1.5 Installing Secondary License Manager on Server B

Procedure

1. Log on to the secondary server as `root`.
2. Navigate to the directory `.../Packages . Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

`./install`

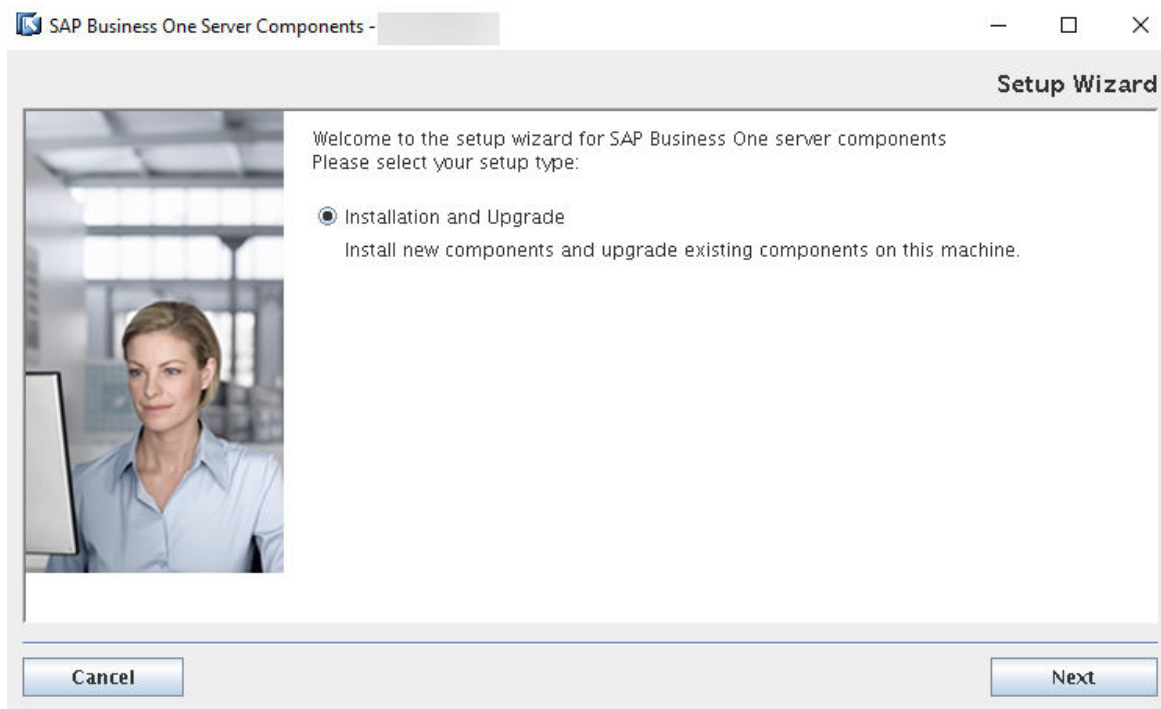
The installation process begins.

Note

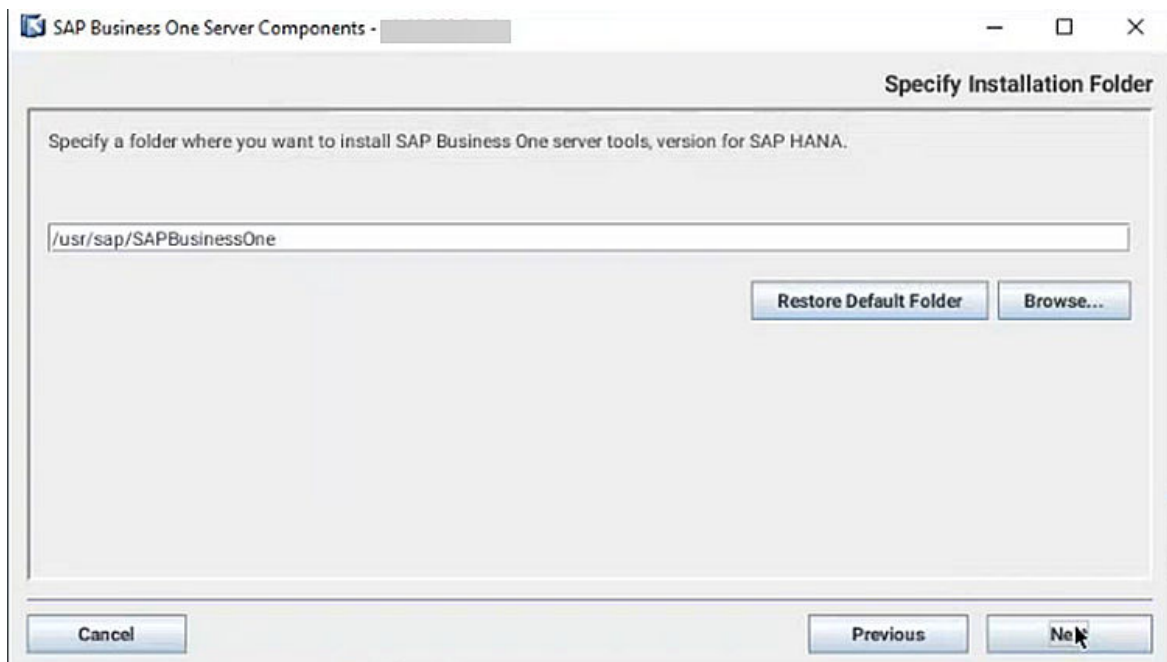
If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command:

```
chmod +x install
```

3. In the *Welcome* page of the setup wizard, choose *Next*.



4. In the *Specify Installation Folder* window, specify where you want to install the License Manager and choose *Next*.



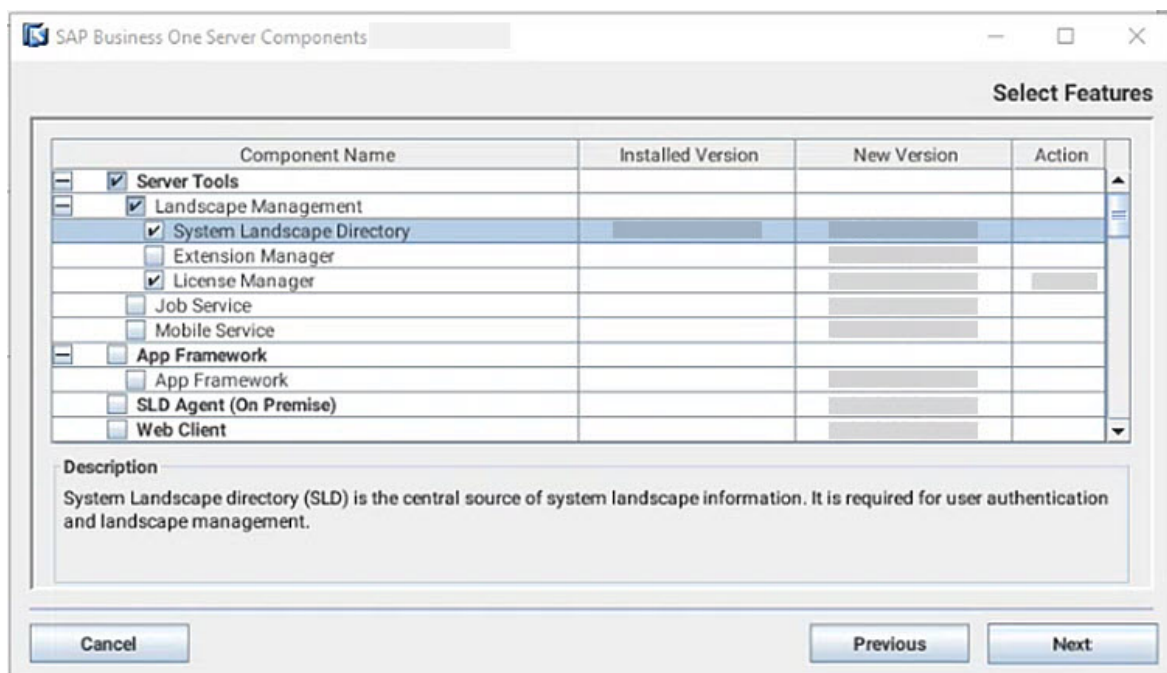
5. In the *Select Features* window, select *License Manager* and choose *Next*.

Note

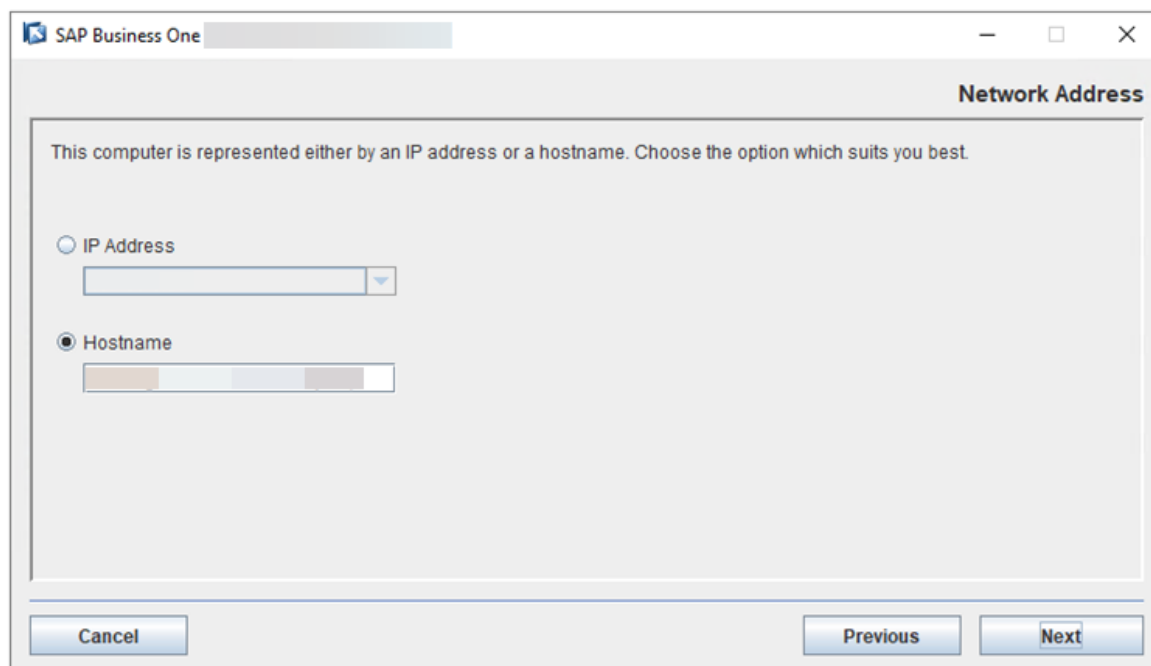
Apart from the SLD and License Manager, other components can be installed with the primary/secondary node or on other servers.

We recommend that you install other components on other servers.

If you install other components with the primary/secondary node, when the primary/secondary node server is down, the components will also be down.



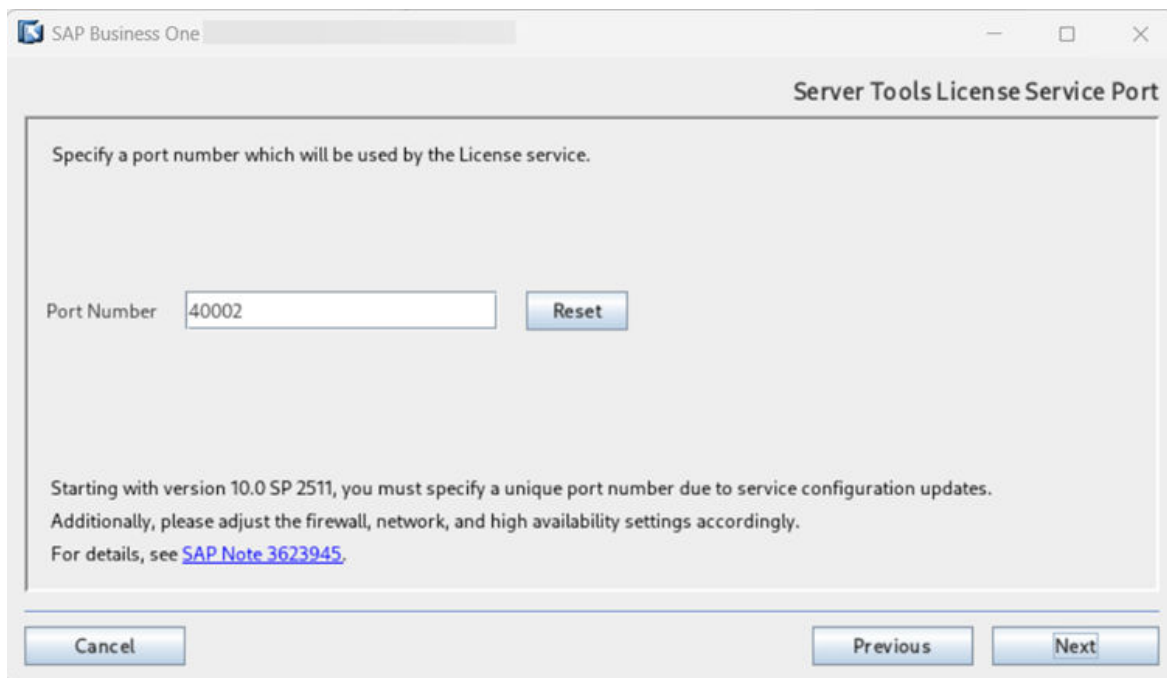
6. In the [Network Address](#) window, select the IP address of the secondary server, or use the hostname.



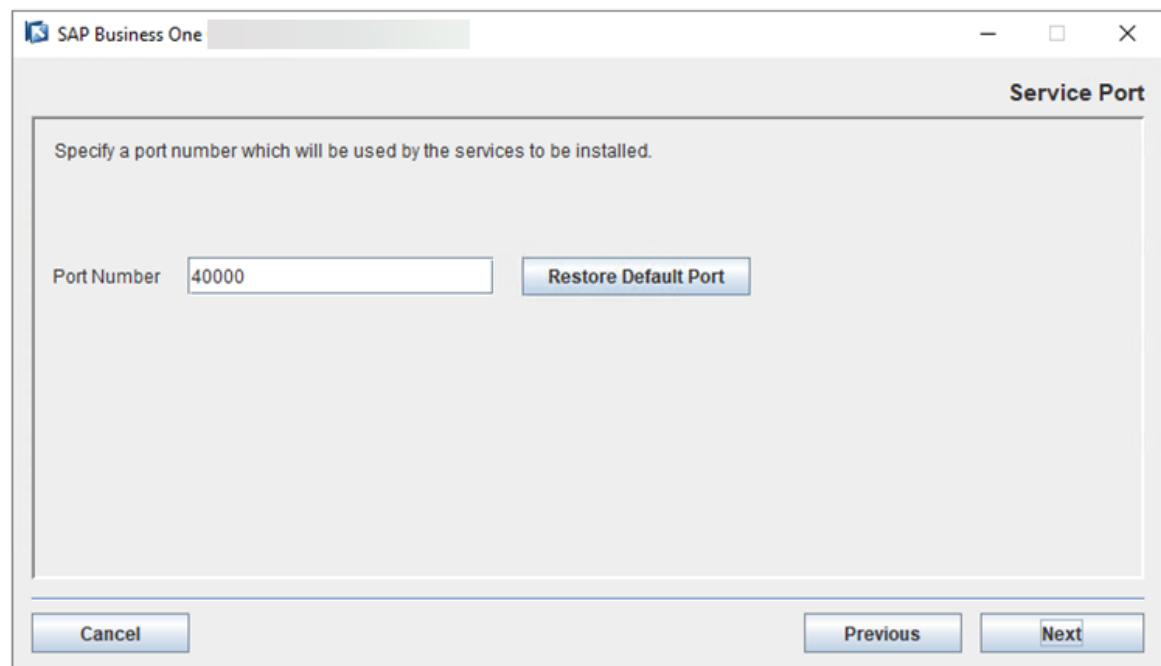
The screenshot shows the 'Network Address' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Network Address'. The main text reads: 'This computer is represented either by an IP address or a hostname. Choose the option which suits you best.' There are two radio buttons: 'IP Address' (unselected) and 'Hostname' (selected). Below 'IP Address' is a text input field with a dropdown arrow. Below 'Hostname' is a text input field. At the bottom, there are three buttons: 'Cancel', 'Previous', and 'Next'.

7. Specify a port number for the [License Manager](#) and choose [Next](#).
- If you are installing SAP Business One version 10.0 SP 2511 or later, you will enter the [Server Tools License Service Port](#) window. The default port number is 40002.
 - If you are installing SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, you will enter the [Service Port](#) window. The default port number is 40000.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#) in the [Server Tools License Service Port](#) window or [Restore Default Port](#) in the [Service Port](#) window.



Server Tools License Service Port Window



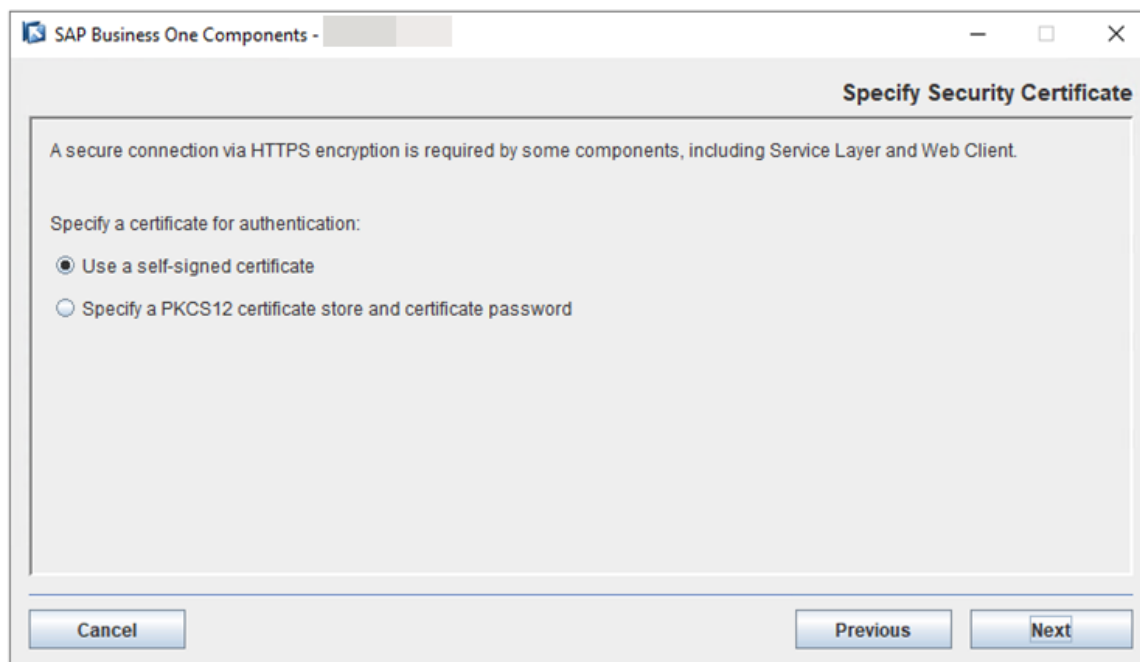
Service Port Window

8. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate using one of the following methods:

- Third-party certificate authority
You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.

- **Certificate authority server**
You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- **(Not recommended) Generate a self-signed certificate**
You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).



9. In the [Landscape Server](#) window, enter the following:
 - [Landscape Server](#): Enter the SLD virtual IP address.
 - [Port](#): Enter the nginx proxy port number.
 - [Site User ID](#) and [Password](#): Enter the site user as **B1SiteUser** and the password.

SAP Business One Server Components - Landscape Server

Enter the landscape server address and the site user password.

Make sure that the System Landscape Directory is running before proceeding.

Landscape Server Port

Site User ID

Password

10. In the *License Server Node Type* window, select *High Availability Secondary Node* and enter the IP address and port number of the primary License Manager node to connect to the remote license service. In the *Virtual Address* section, enter the virtual URL that contains the virtual IP address and port number.

SAP Business One Server Components - License Server Node Type

Select a node type for this new license server installation.
Install the license server as either a standalone or high availability node if you require multiple hosts for high availability.

☐ Standalone Node
☐ High Availability Primary Node
☒ High Availability Secondary Node

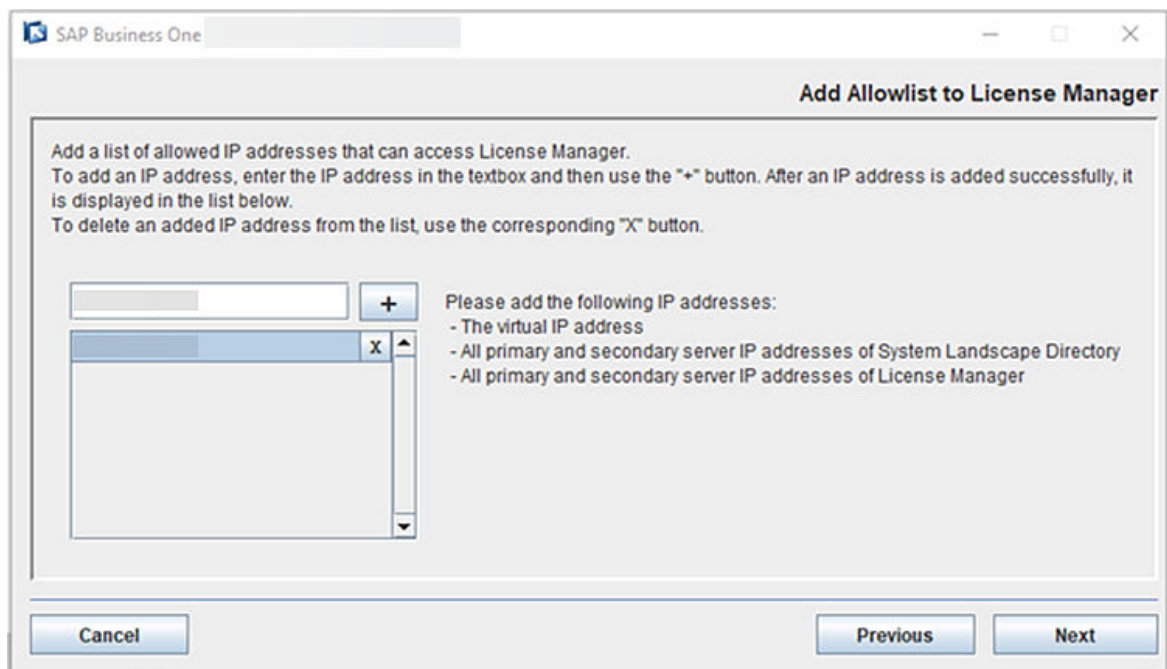
Primary Node

Address Port

Virtual Address

URL

11. In the *Add Allowlist to License Manager* window, add the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.



Alternatively, you can follow the steps below to add the allowlist manually after the installation:

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

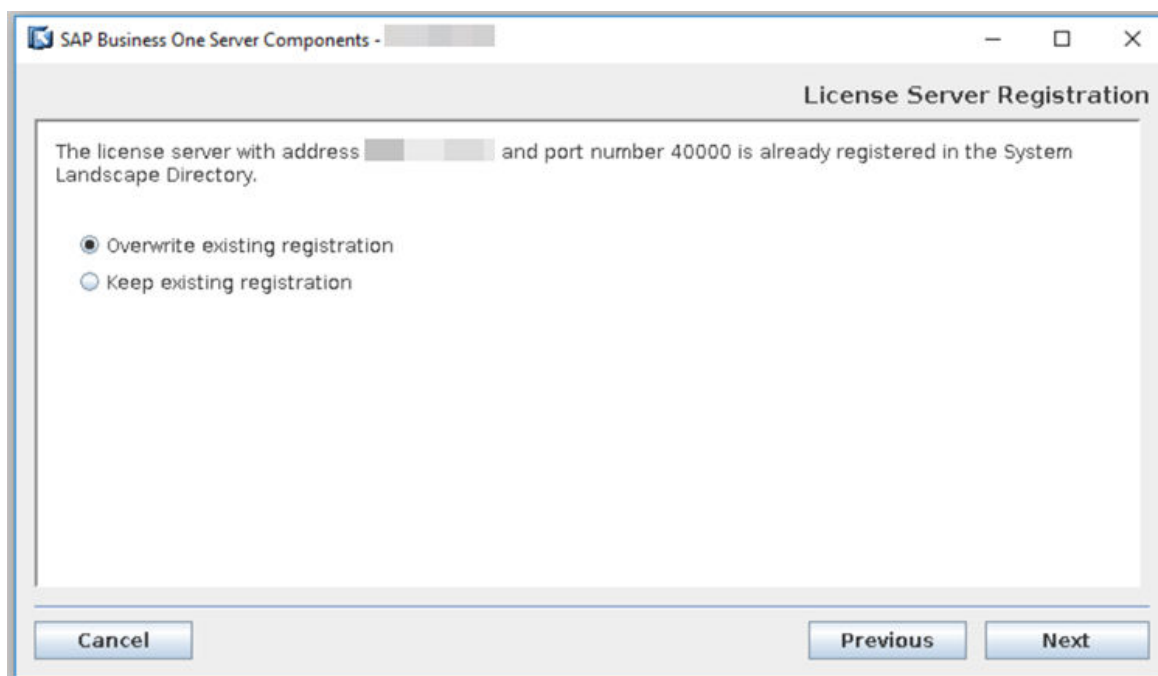
Sample Code

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to the directory `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on your primary License Manager server.
3. On your primary server, restart *License Manager*.
 - If your SAP Business One version is 10.0 FP 2508 or earlier, run the following command: `systemctl restart sapb1servertools.service`.
 - If your SAP Business One version is 10.0 FP 2511 or later, run the following command: `systemctl restart sapb1servertools-license.service`.
12. If the network address of the license server has already been registered into the SLD, the *License Server Registration* window appears with the following options:
 - *Overwrite existing registration*
 - *Keep existing registration*

If both the IP address and port number are registered, you can choose to overwrite the existing registration data or reuse them.

If the IP address is registered but the port number isn't, you can only overwrite the existing registration data.



13. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

SAP Business One Server Components -

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

User Name

Password

The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

14. In the [System Landscape Directory Schema](#) window, choose to connect to the existing database schema that you use for the primary SLD.

SAP Business One

System Landscape Directory Schema

Specify a new schema or connection to the existing System Landscape Directory (SLD) schema.

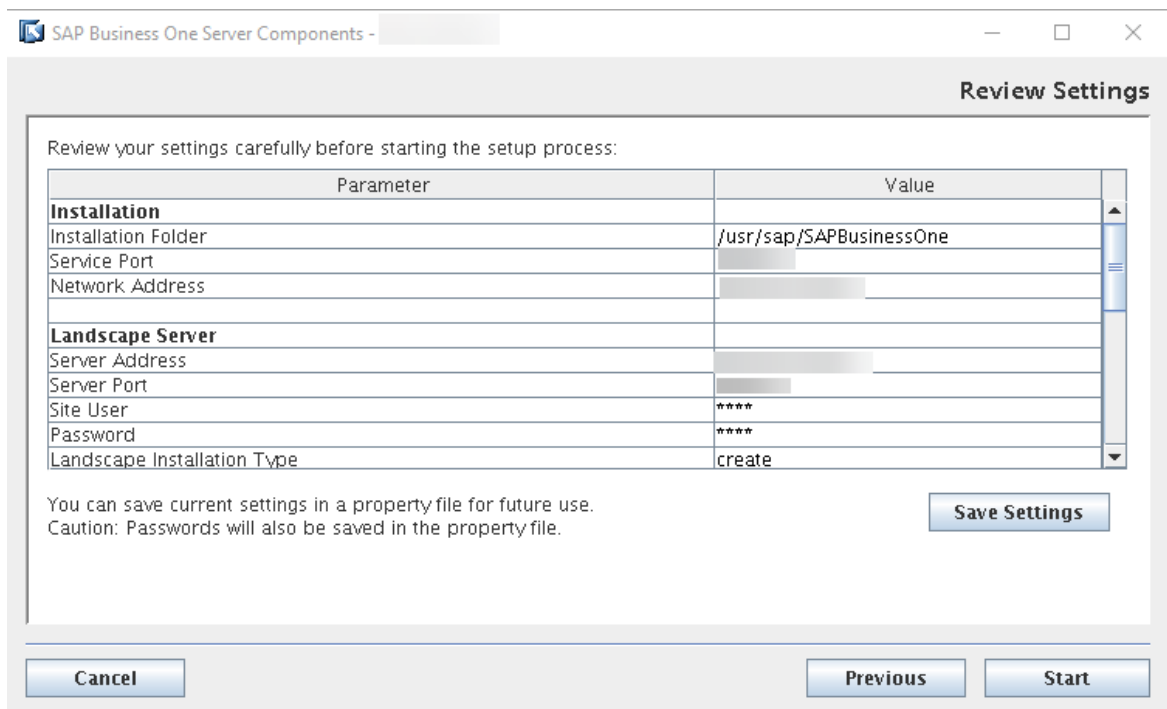
☐ Create a new schema

☒ Connect to the existing schema

Cancel Previous Next

15. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of the [Network Address](#) is the address of the secondary SLD on the secondary server, while the value of the [Server Address](#) is the SLD virtual IP address.



16. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
 - If License Manager is installed successfully, choose *Next* to finish the installation.
 - If the installation fails, choose *Roll Back* to restore the system. When the rollback progress is completed, in the *Rollback Progress* window, choose *Next* to finish the installation.
17. In the *Setup Process Completed* window, review the installation results.
18. Choose *Finish* to exit the wizard.

Task overview: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous task: [Installing Primary License Manager on Server A \[page 41\]](#)

Next: [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 60\]](#)

2.1.6 Installing SAP Business One Client and Other Components, version for SAP HANA

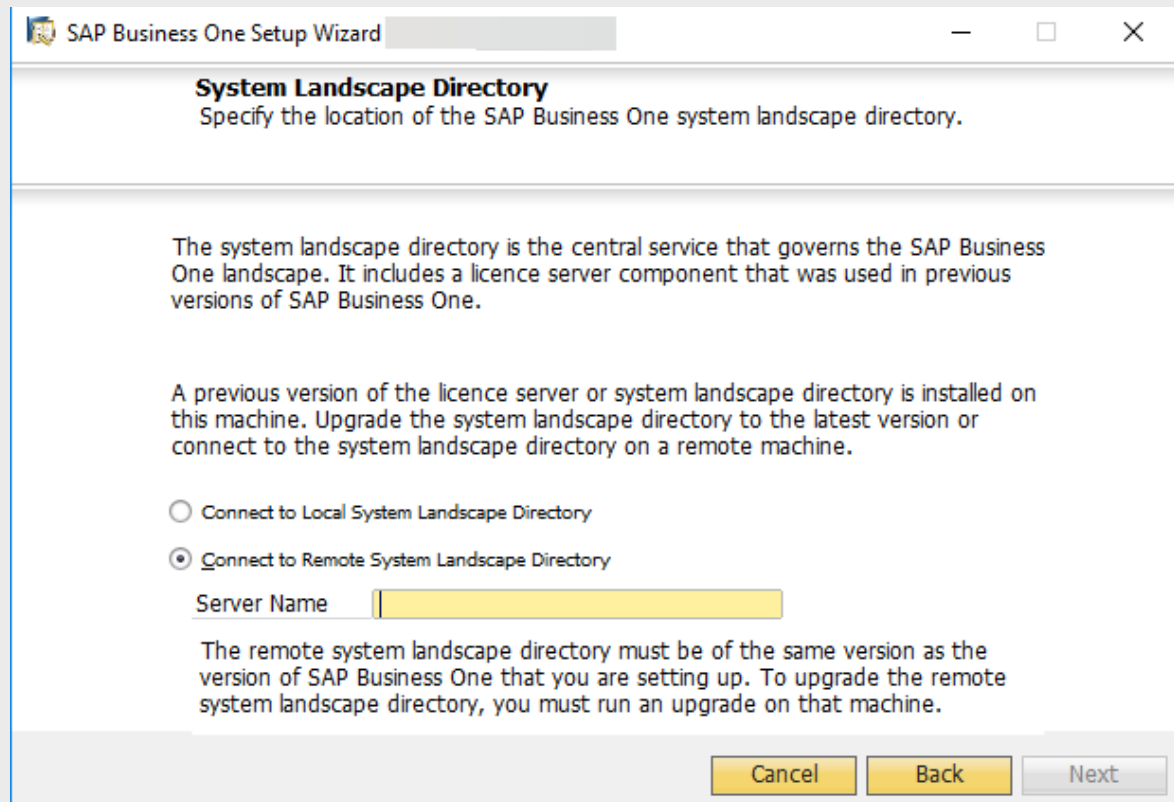
Before you install the SAP Business One client and other components on a Windows server, please first install other necessary components on a Linux server, including but not limited to the system components and the system database.

The SAP Business One client and other components, version for SAP HANA, can be installed with the setup wizard.

For more information about how to install SAP Business One components, version for SAP HANA, see the *SAP Business One Administrator's Guide*, version for SAP HANA on [SAP Help Portal](#).

→ Recommendation

During the installation, we recommend that you use the virtual domain name and listening port number, instead of the IP address, for the SLD server address. For example, in the [System Landscape Directory](#) connection window, enter **nginxserverhostname.def.com:7777**.



Parent topic: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous task: [Installing Secondary License Manager on Server B \[page 50\]](#)

Next task: [Installing Web Client \[page 61\]](#)

2.1.7 Installing Web Client

Prerequisites

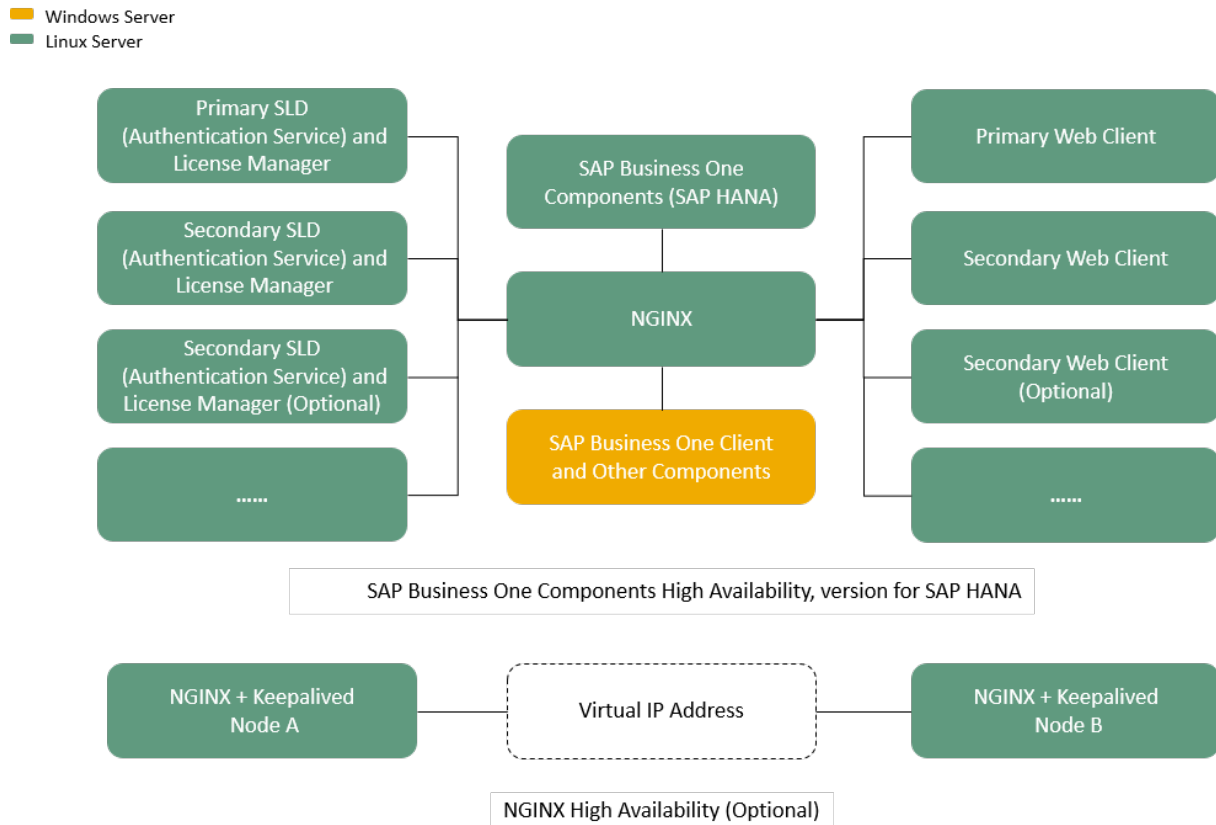
You have installed SAP Business One Service Layer when you perform the previous task [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 60\]](#).

❗ Note

High availability of the Service Layer is currently not supported. Even though the Service Layer is by default configured as a load-balancing cluster so as to reduce the risk of failure, it is still a single point of failure.

Context

The following figure illustrates the landscape of the high availability environment of Web client.



Note

High availability of the Job Service component is currently not supported. If you have configured the SAP Business One Microsoft 365 integration feature, when the Job Service is down, the functionality of the integration feature cannot be guaranteed.

To set up a highly available environment for Web client, we recommend that you prepare at least two dedicated Linux servers .

In the case of two Linux servers, we assume the primary server is Server C and the secondary server is Server D. You need to install Web client on both Server C and Server D. We assume the Web client on Server C is the primary Web client, and the Web client on Server D is the secondary Web client.

To install the Web client for high availability, follow the steps below:

1. [Installing Primary Web Client on Server C \[page 63\]](#)
2. [Installing Secondary Web Client on Server D \[page 66\]](#)
3. [Configuring a Virtual Address for Web Client \[page 70\]](#)

Task overview: [Installing Version 10.0 FP 2208 or Later \[page 6\]](#)

Previous: [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 60\]](#)

2.1.7.1 Installing Primary Web Client on Server C

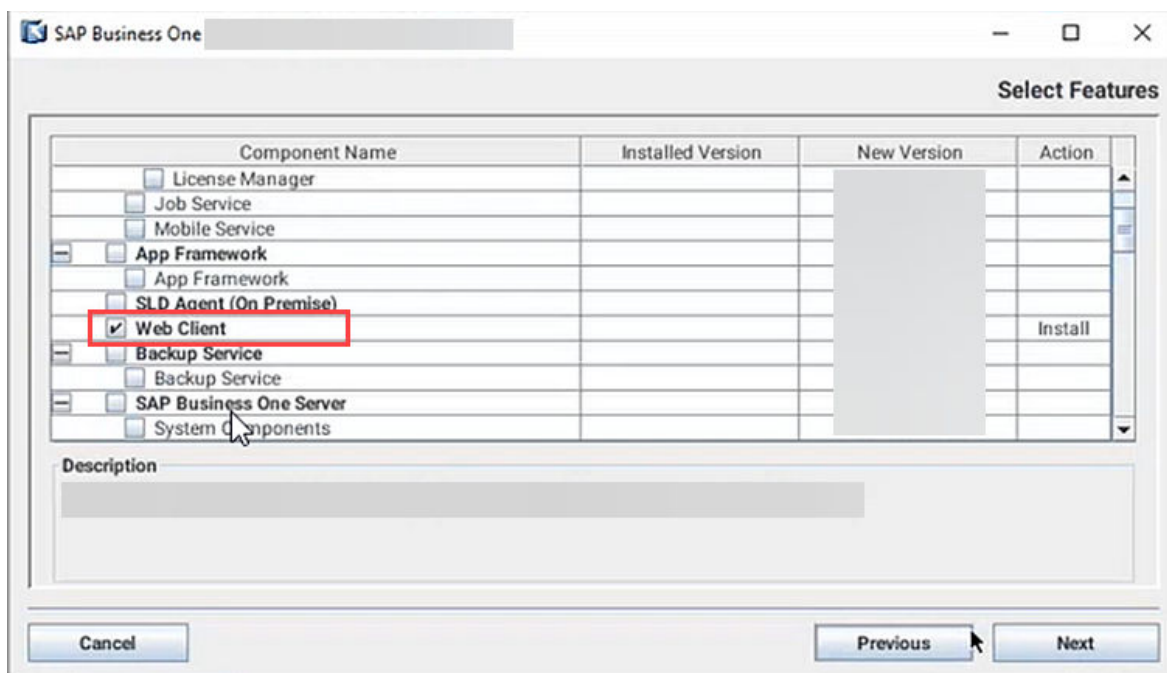
Procedure

1. Copy the upgrade package to the primary server.
2. Log on to the primary server as root.
3. Navigate to the directory `.../Packages . Linux/ServerComponents` of the **upgrade** folder, where the `install` script is located.
4. Start the upgrader by entering the following command:

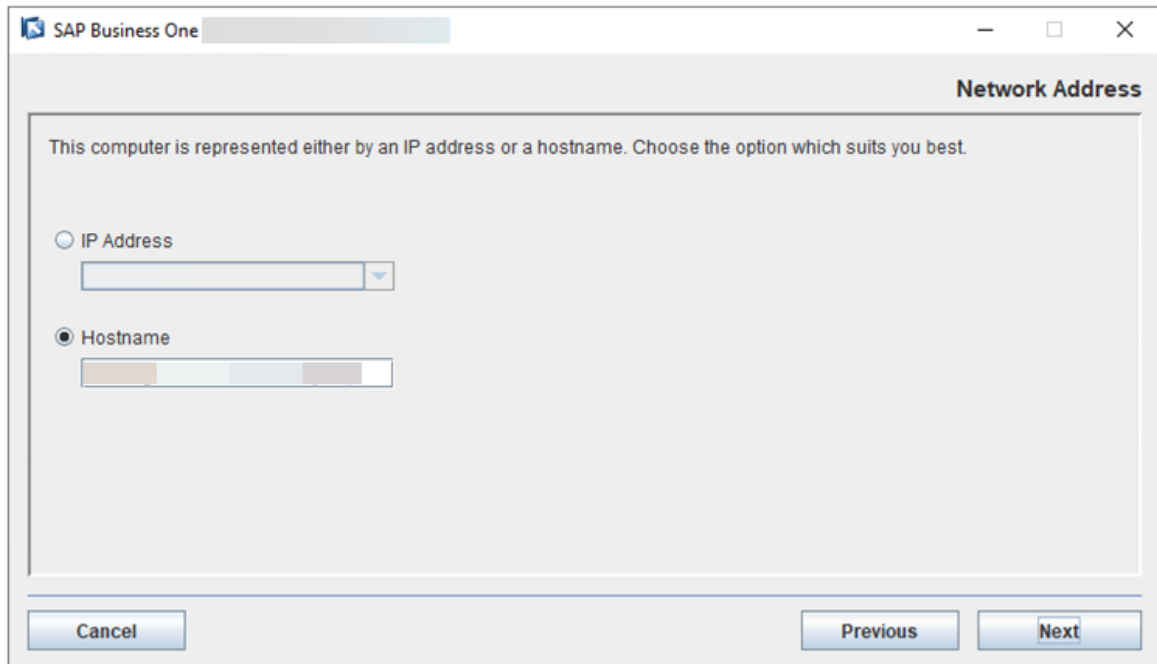
```
./install
```

The upgrade process begins.

5. In the *Welcome* page of the setup wizard, choose *Next*.
6. In the *Specify Installation Folder* window, specify where you want to install your primary Web client and choose *Next*.
7. In the *Select Features* window, select *Web Client* only and choose *Next*.



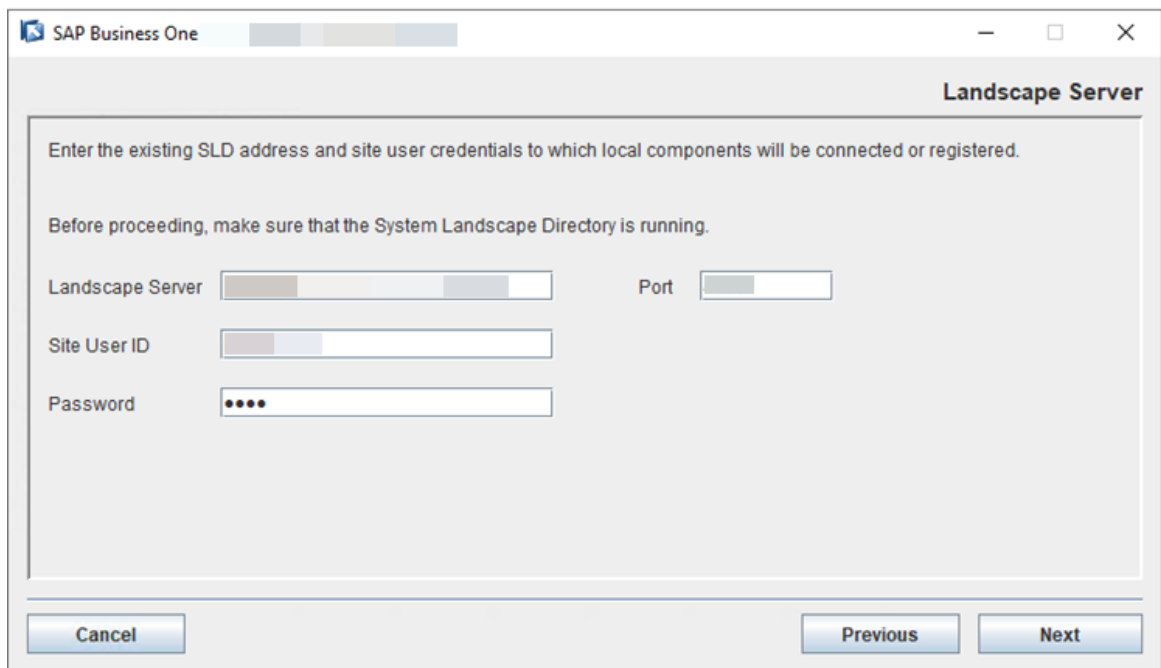
8. In the *Network Address* window, select the IP address of the primary server, or use the hostname.



9. In the [Specify Security Certificate](#) window, specify a security certificate and choose [Next](#).

You can obtain a certificate using one of the following methods:

- Third-party certificate authority - You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
 - Certificate authority server - You can configure a Certificate Authority (CA) server in the landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
 - [Not recommended] Generate a self-signed certificate - You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).
10. In the [Landscape Server](#) window, enter the VIP address and port number of the nginx server for the SLD. Enter the password for `B1SiteUser`. Choose [Next](#).



SAP Business One

Landscape Server

Enter the existing SLD address and site user credentials to which local components will be connected or registered.

Before proceeding, make sure that the System Landscape Directory is running.

Landscape Server Port

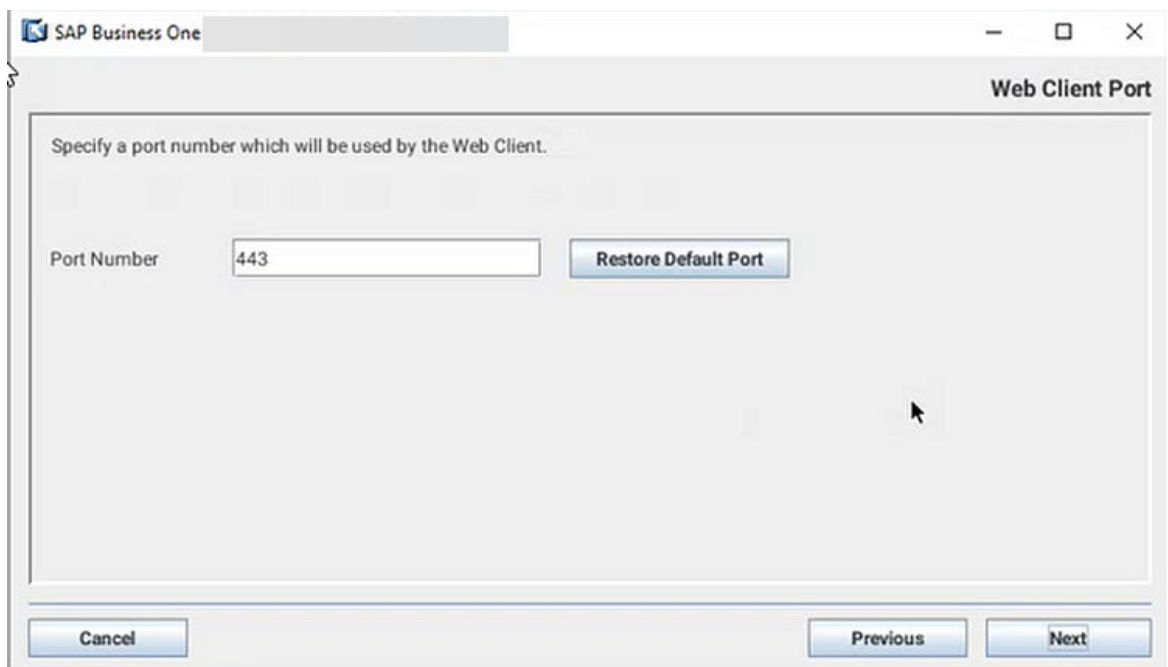
Site User ID

Password

11. In the [Web Client Port](#) window, specify a port number for your primary Web client and choose [Next](#).

The default port number is 443.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Restore Default Port](#).



SAP Business One

Web Client Port

Specify a port number which will be used by the Web Client.

Port Number

12. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to begin the installation.
13. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:

- If the Web client is installed successfully, choose [Next](#) to finish the installation.
 - If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
14. In the [Setup Process Completed](#) window, review the installation.
 15. Choose [Finish](#) to exit the wizard.

Results

Go to the SLD Control Center with your B1SiteUser account through the virtual web address `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/ControlCenter`, in this example, `https://nginxserverhostname.def.com:7777/ControlCenter`.

Go to the [Services](#) tab. You can see that a new service is registered for your primary Web client. In the [Link](#) column, you can see the URL which includes your primary Web client server name and port number.

Task overview: [Installing Web Client \[page 61\]](#)

Next task: [Installing Secondary Web Client on Server D \[page 66\]](#)

2.1.7.2 Installing Secondary Web Client on Server D

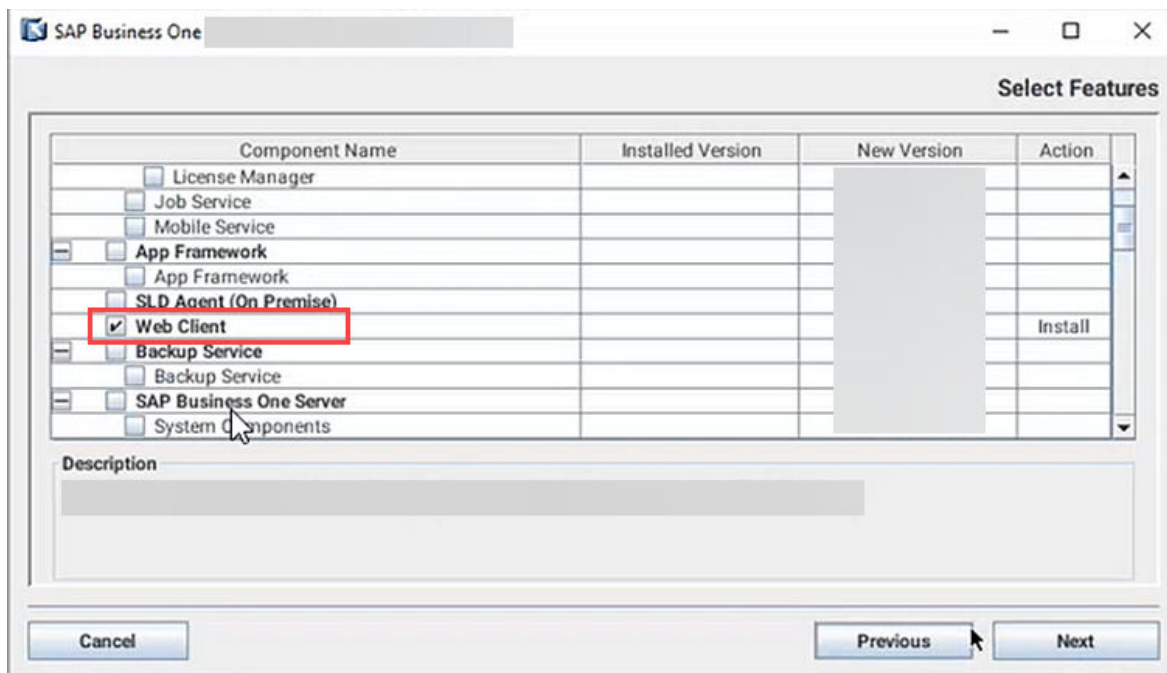
Procedure

1. Copy the upgrade package to the secondary server.
2. Log on to the secondary server as `root`.
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the **upgrade** folder, where the `install` script is located.
4. Start the upgrader by entering the following command:

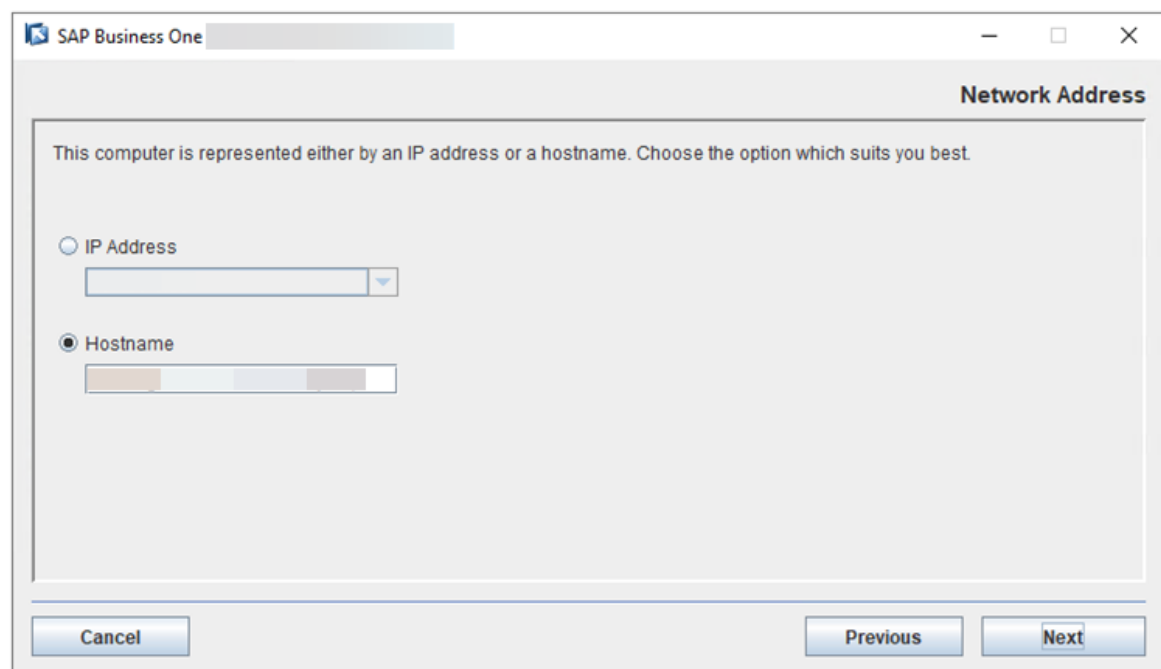
```
./install
```

The upgrade process begins.

5. In the [Welcome](#) page of the setup wizard, choose [Next](#).
6. In the [Specify Installation Folder](#) window, specify where you want to install your secondary Web client and choose [Next](#).
7. In the [Select Features](#) window, select [Web Client](#) only and choose [Next](#).



8. In the [Network Address](#) window, select the IP address of the secondary server, or use the hostname.



9. In the [Specify Security Certificate](#) window, specify a security certificate and choose [Next](#).

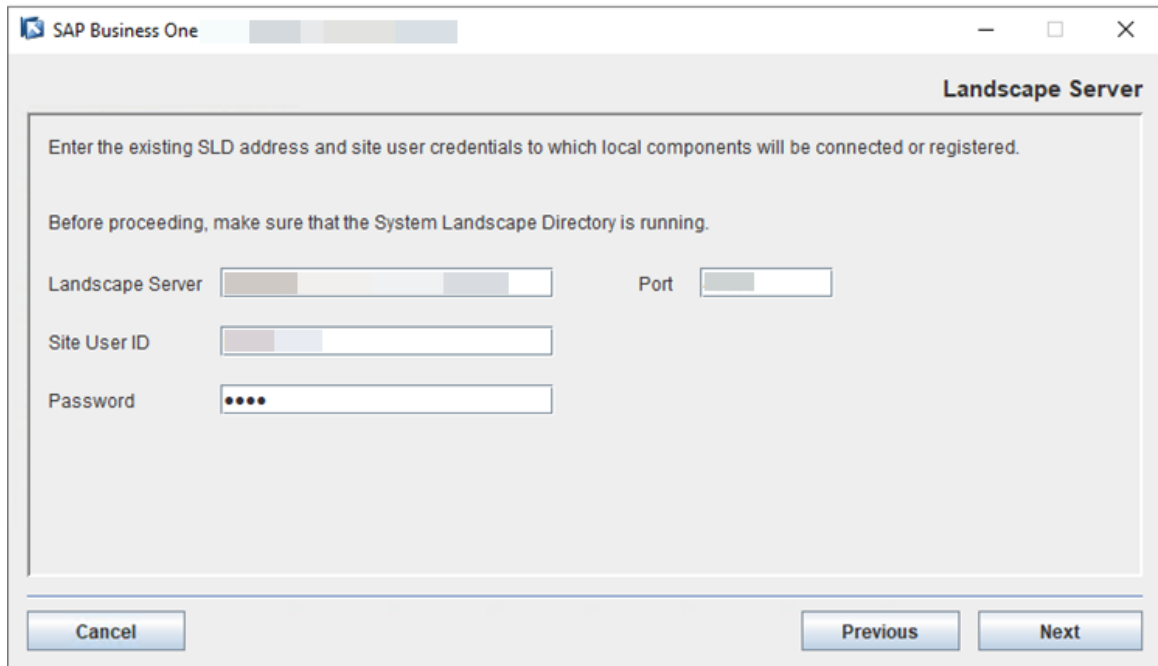
You can obtain a certificate using one of the following methods:

- Third-party certificate authority - You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- Certificate authority server - You can configure a Certificate Authority (CA) server in the landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If

you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.

- [Not recommended] Generate a self-signed certificate - You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).

10. In the [Landscape Server](#) window, enter the VIP address and port number of the nginx server for the SLD. Enter the password for **B1SiteUser**. Choose [Next](#).

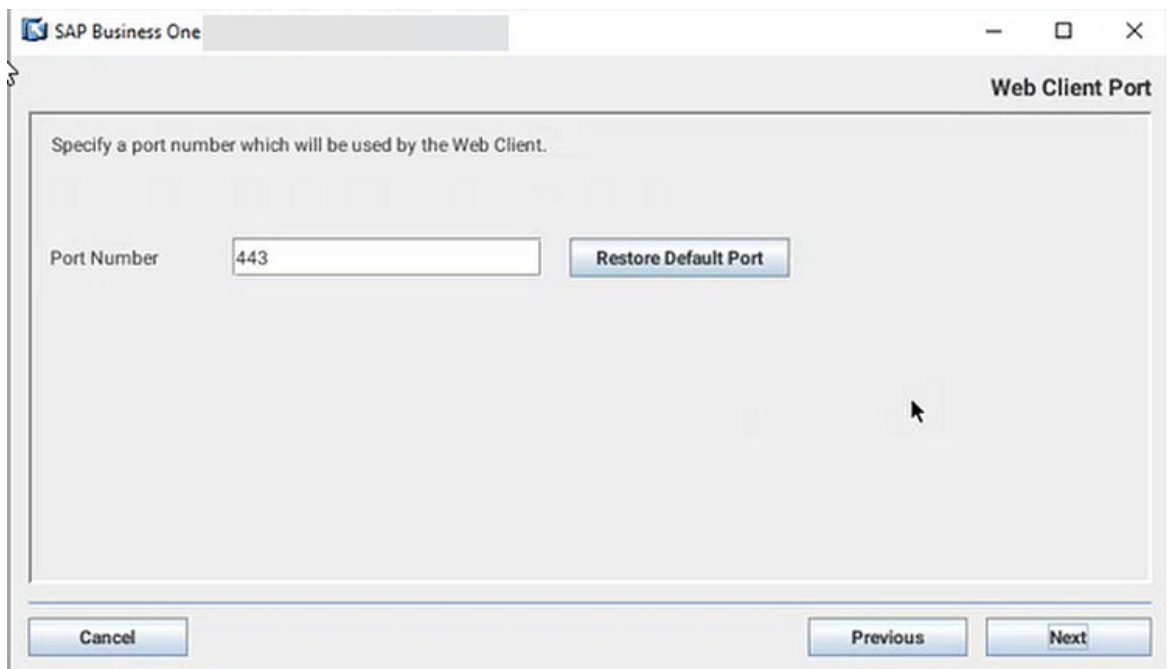


The screenshot shows the 'Landscape Server' window within the SAP Business One installer. The window title is 'SAP Business One' and the subtitle is 'Landscape Server'. The main text area contains the following instructions: 'Enter the existing SLD address and site user credentials to which local components will be connected or registered.' and 'Before proceeding, make sure that the System Landscape Directory is running.' Below the text are four input fields: 'Landscape Server' (a long text box), 'Port' (a short text box), 'Site User ID' (a text box), and 'Password' (a text box with masked characters '••••'). At the bottom of the window are three buttons: 'Cancel', 'Previous', and 'Next'.

11. In the [Web Client Port](#) window, specify a port number for your secondary Web client and choose [Next](#).

The default port number is 443.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Restore Default Port](#).



12. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to begin the installation.
13. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If the Web client is installed successfully, choose [Next](#) to finish the installation.
 - If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
14. In the [Setup Process Completed](#) window, review the installation.
15. Choose [Finish](#) to exit the wizard.

Results

Go to the SLD Control Center with your B1SiteUser account through the virtual web address `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/ControlCenter`, in this example, `https://nginxserverhostname.def.com:7777/ControlCenter`.

Go to the [Services](#) tab. You can see that a new service is registered for your secondary Web client. In the [Link](#) column, you can see the URL which includes your secondary Web client server name and port number.

Task overview: [Installing Web Client \[page 61\]](#)

Previous task: [Installing Primary Web Client on Server C \[page 63\]](#)

Next: [Configuring a Virtual Address for Web Client \[page 70\]](#)

2.1.7.3 Configuring a Virtual Address for Web Client

To enable high availability of the Web client, follow the procedure in this section to configure and enable a virtual address for the Web client.

1. [Reconfiguring nginx Reverse Proxy \[page 70\]](#)
2. [Enabling Virtual Address \[page 71\]](#)

Parent topic: [Installing Web Client \[page 61\]](#)

Previous task: [Installing Secondary Web Client on Server D \[page 66\]](#)

2.1.7.3.1 Reconfiguring nginx Reverse Proxy

Procedure

1. Open the file `b1c_s1dCluster.conf`, which was extracted to the folder `etc/nginx/conf.d` when you performed the previous task [Configuring an nginx Reverse Proxy \[page 30\]](#).
2. In the *upstream webClient* section, add the IP addresses and port numbers of all your primary and secondary Web client.
3. In the *server* section in the *Webclient HA configuration (Internal address mapping begins)* part, add a dedicated listening port number for the Web client, for example, 8989.

For the server name, enter the domain name which is bound to the IP address of the nginx server.

4. Save your changes to the file.
5. Restart nginx.

Results

The virtual web address for the Web client is created: `https://<Nginx Server Domain Name>:<Listening Port Number of Web Client>`. In this example, `https://nginxserverhostname.def.com:8989`.

Task overview: [Configuring a Virtual Address for Web Client \[page 70\]](#)

Next task: [Enabling Virtual Address \[page 71\]](#)

2.1.7.3.2 Enabling Virtual Address

Procedure

1. On Server C, go to the installation directory that you specified when you installed your primary Web client (by default, /usr/sap/SAPBusinessOne/WebClient).

2. Enter `./WebclientHA.sh` to run the script.

Enter your B1SiteUser password.

Enter your Web client virtual address `https://<Nginx Server Domain Name>:<Listening Port Number of Web Client>`. In this example, `https://nginxserverhostname.def.com:8989`.

Wait until you see the message Executed successfully.

Note

If you are installing version 10.0 FP 2208 or 10.0 FP 2208 HF1, please proceed as follows:

1. Download the file [Web Client HA Script SAP HANA.zip](#) and unzip to get the script `webclientHA.sh`.
2. Copy the file `webclientHA.sh` to the Web client installation folder and then run the following commands:

Sample Code

```
chmod 777 -R WebclientHA.sh
./WebclientHA.sh
```

3. Sign in to the SLD Control Center `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/ControlCenter` (in this example, `https://nginxserverhostname.def.com:7777/ControlCenter`).
4. Switch to the [Services](#) tab. You can see that a new service is registered for the Web client with a virtual URL. You can see the virtual URL in the [Link](#) column.
5. On Server D, repeat the steps above.

Go to the [Services](#) tab in the SLD Control Center. Your primary and secondary Web client services are now registered as a single shared record with the virtual URL.

6. In the SLD Control Center, keep the Web client virtual service record **deselected**. Select the other Web client service records that were generated when you installed your primary and secondary Web client on the primary and secondary servers. Choose [Delete](#) [Yes](#) to delete the additional service records.
7. Select the virtual service record of the Web client. Choose [Edit](#).
8. In the [Service Name](#) dropdown list in the [Edit Service](#) window, choose the automatically generated service name.

Choose [OK](#).

9. On Server C, restart your primary Web client.

1. Go to the installation directory that you specified when you installed your primary Web client (by default, `/usr/sap/SAPBusinessOne/WebClient`).
 2. Run the command `./startup.sh restart`.
10. On Server D, restart your secondary Web client.
1. Go to the installation directory that you specified when you installed your primary Web client (by default, `/usr/sap/SAPBusinessOne/WebClient`).
 2. Run the command `./startup.sh restart`.

Results

Now you can access the Web client through its virtual web address: `https://<Nginx Server Domain Name>:<Listening Port Number of Web Client>`. In this example, `https://nginxserverhostname.def.com:8989`.

You need to sign in to the SLD first, and then you will be directed to the Web client.

The login procedures and required credentials may vary according to how the Identity and Authentication Management (IAM) service is configured. For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

Task overview: [Configuring a Virtual Address for Web Client \[page 70\]](#)

Previous task: [Reconfiguring nginx Reverse Proxy \[page 70\]](#)

2.2 Installing Version 10.0 FP 2202 or Earlier

To install SAP Business One 10.0 FP 2202 or earlier, version for SAP HANA, for high availability, proceed as follows:

1. [Installing Primary SLD on Server A \[page 73\]](#)
2. [Installing Secondary SLD on Server B \[page 81\]](#)
3. [Configuring a Virtual IP Address for SLD \[page 89\]](#)
4. [Installing Primary License Manager on Server A \[page 98\]](#)
5. [Installing Secondary License Manager on Server B \[page 104\]](#)
6. [Editing License Manager Address \[page 110\]](#)
7. [Adding Allowlist to License Manager \[page 111\]](#)
8. [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 112\]](#)

2.2.1 Installing Primary SLD on Server A

Procedure

1. Copy the product package to Server A.
2. In a command line terminal, log on to Server A as root
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

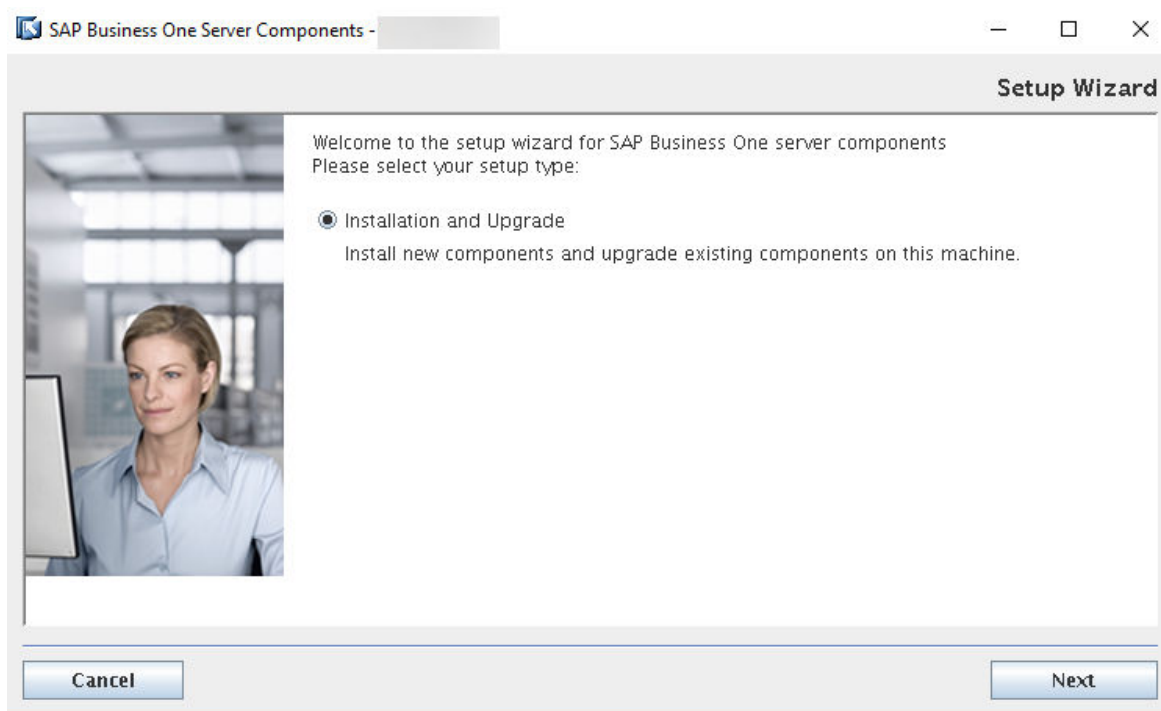
```
./install
```

The installation process begins.

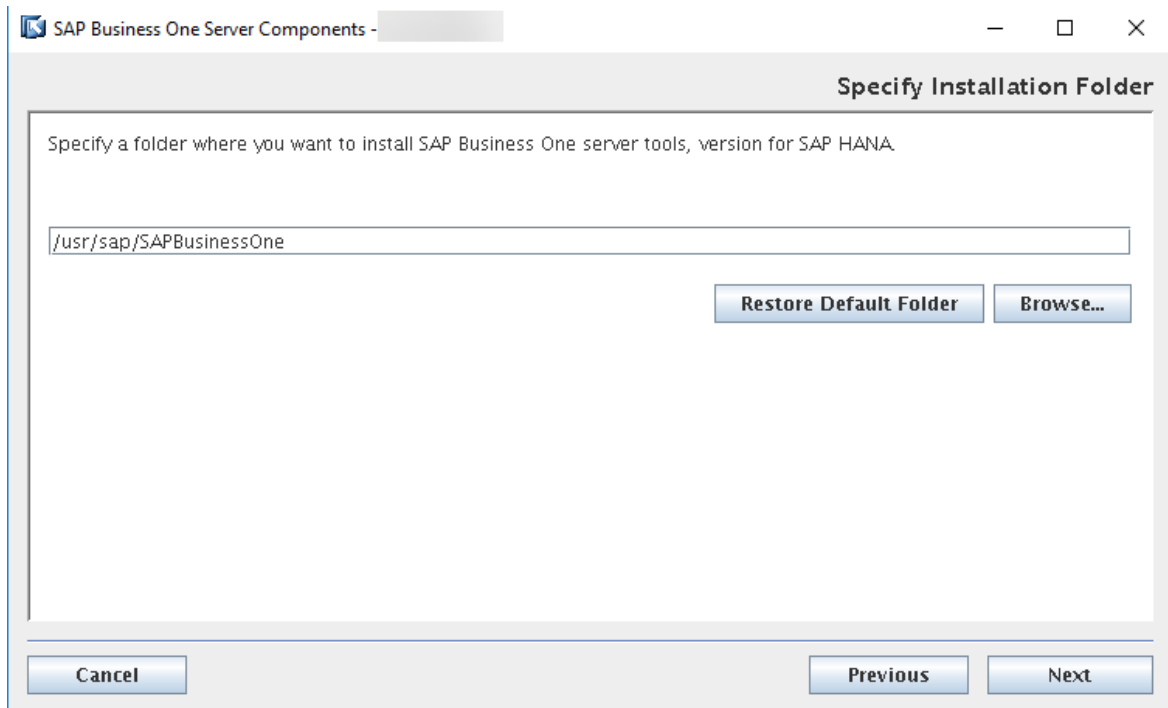
Note

If you receive the error message: "Permission denied", you must set execution permission for the installer utility to make it executable. To do so, run the following command: **chmod +x install**

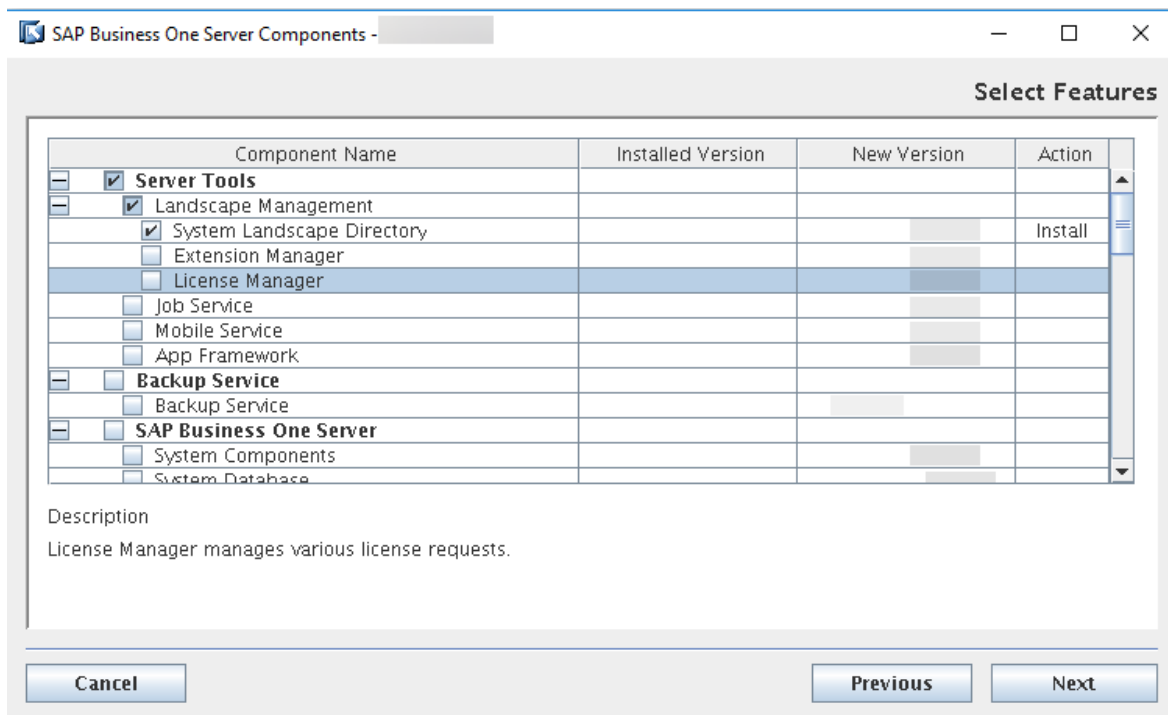
4. In the *Welcome* page of the setup wizard, choose *Next*.



5. In the *Specify Installation Folder* window, specify where you want to install the server components and choose *Next*.



6. In the *Select Features* window, select *System Landscape Directory* and choose *Next*.



7. In the *Network Address* window, select the IP address of Server A, or use the hostname.

SAP Business One Server Components - [redacted]

Network Address

This computer is represented either by an IP address or a hostname. Choose the option which suits you best.

☒ IP Address

▼

☐ Hostname

Cancel **Previous** **Next**

8. In the *Service Port* window, specify a port number and choose *Next*.

The default port number is 40000.

SAP Business One Server Components - [redacted]

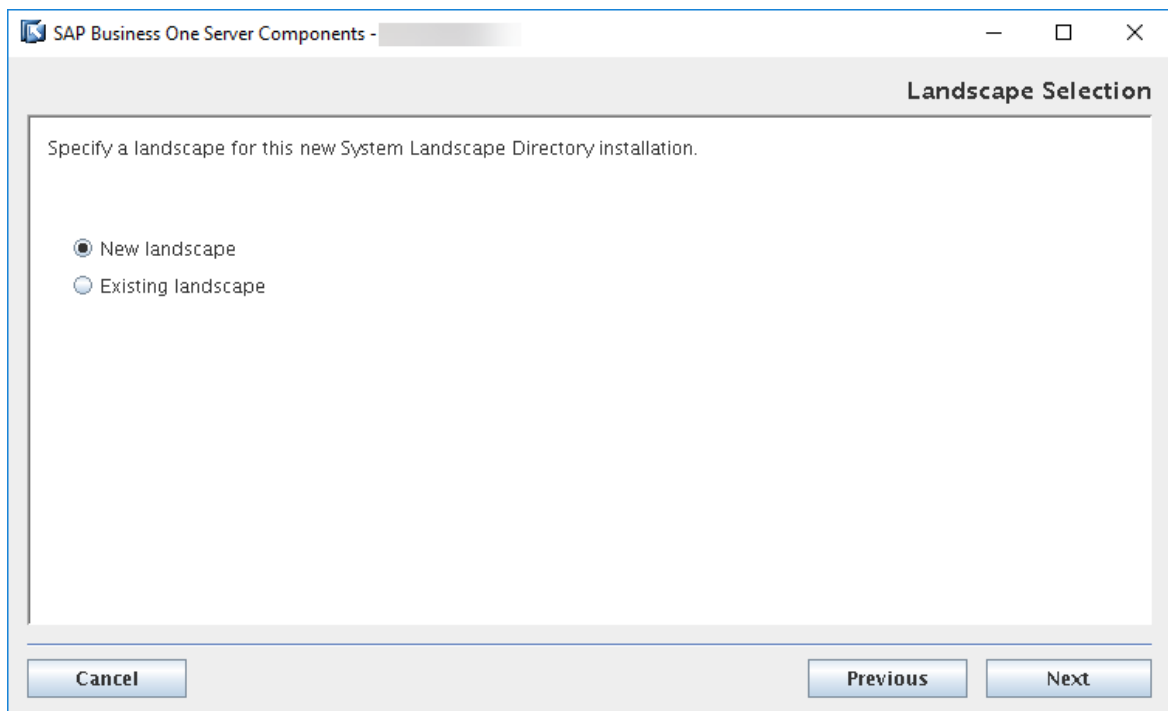
Service Port

Specify a port number which will be used by the services to be installed.

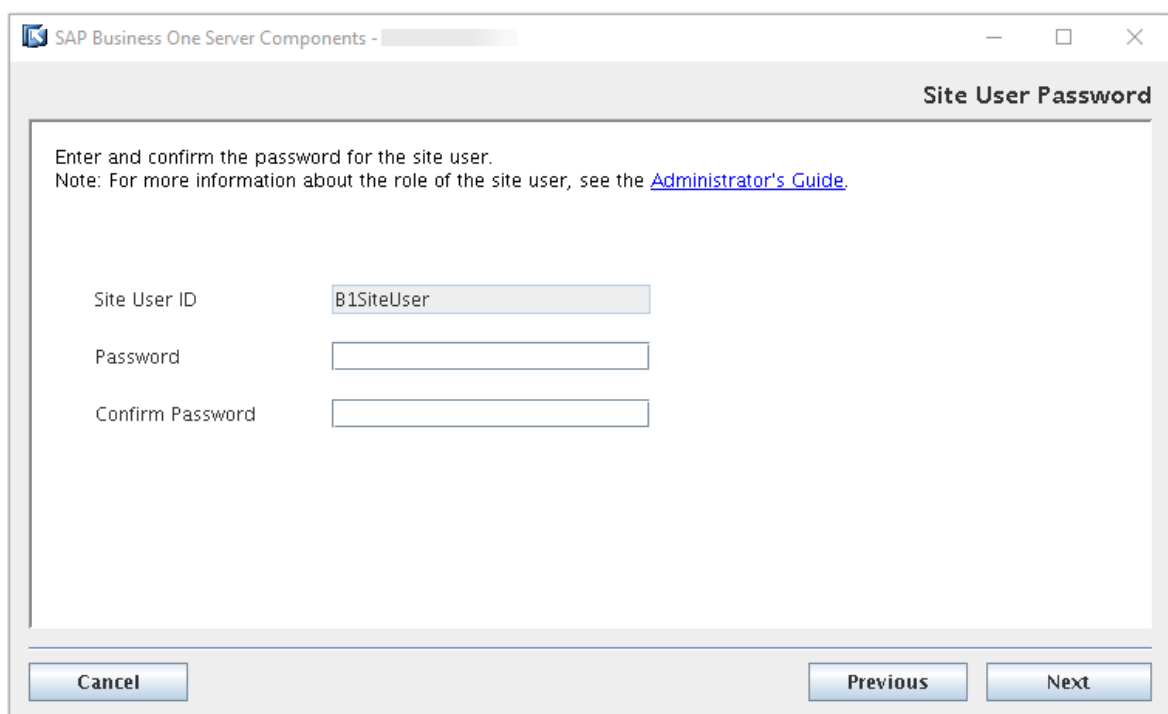
Port Number

Cancel **Previous** **Next**

9. In the *Landscape Selection* window, select *New landscape*.



10. In the *Site User Password* window, create a password for the site user (B1SiteUser) and confirm the password. Then choose *Next*.



11. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate with one of the following methods:

- Third-party certificate authority - You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- Certificate authority server - You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- [Not recommended] Generate a self-signed certificate - You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).

Specify Security Certificate

Some components enforce secure connection via HTTPS encryption, including the System Landscape Directory and the Service Layer.

Specify a certificate for authentication:

☐ Use a self-signed certificate

☒ Specify a PKCS12 certificate store and certificate password

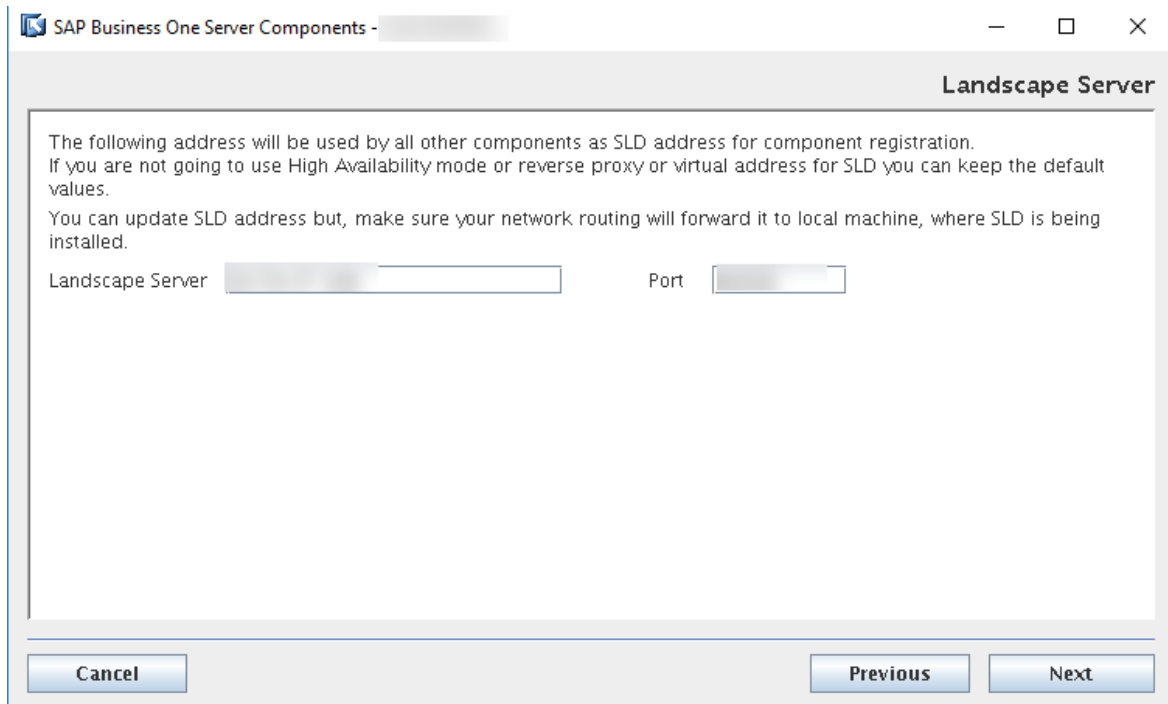
PKCS12 Certificate

Certificate Store File **Browse...**

Certificate Password

Cancel **Previous** **Next**

12. In the [Landscape Server](#) window, keep the default values of the [Landscape Server](#) address and port number. Choose [Next](#).



13. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of your SAP HANA server.
- *Instance Number*: Enter the instance number of your SAP HANA database.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the name of the tenant database that you want to use.

Credentials

- *User Name*: Enter your tenant database user name.
- *Password*: Enter the password for your user name.

14. In the *System Landscape Directory Schema* window, enter a database schema name for the SLD.

15. In the *Windows Domain User Authentication (Single Sign-On)* window, do one of the following:
- If you want to use the single sign-on (SSO) function for SAP Business One, version for SAP HANA, select *Use domain user authentication*, specify all required information, and choose *Next*.

Note

A fully qualified domain name must be a full name in **UPPER** case.

The domain user name is case-sensitive.

Make sure that the UTC time on your Linux server is the same as that on your Windows domain controller; otherwise, you can't proceed with the installation.

- If you haven't registered a domain user account with the Service Principal Name (SPN), make sure that the domain user account specified here is the one that you intend to use for SPN registration.

→ Recommendation

As this domain user is a service user that functions purely new domain service user and for the purpose of setting up SSO, we highly recommend that you create a new domain service user and not assign any privileges to the user other than the logon privilege. In addition, keep the user's password unchanged after enabling SSO; otherwise, SSO may stop working.

- If you do not want to use the SSO function, select *Do not need domain user authentication* and choose *Next*.

⚠ Caution

If you do not specify the domain user information during the installation of server components, you will not be able to activate the SSO function after the installation.

SAP Business One Server Components - [Title Bar]

Windows Domain User Authentication (Single Sign-On)

The System Landscape Directory supports Windows domain user authentication for the SAP Business One client.

If you need this feature, specify a valid domain user and password.
Then the domain administrator must use the SetSPN tool to register a Service Principal Name.
Note: For more information about Service Principal Name, see the [Administrator's Guide](#).

☐ Do not need domain user authentication

☒ Use domain user authentication

Fully-Qualified Domain Name

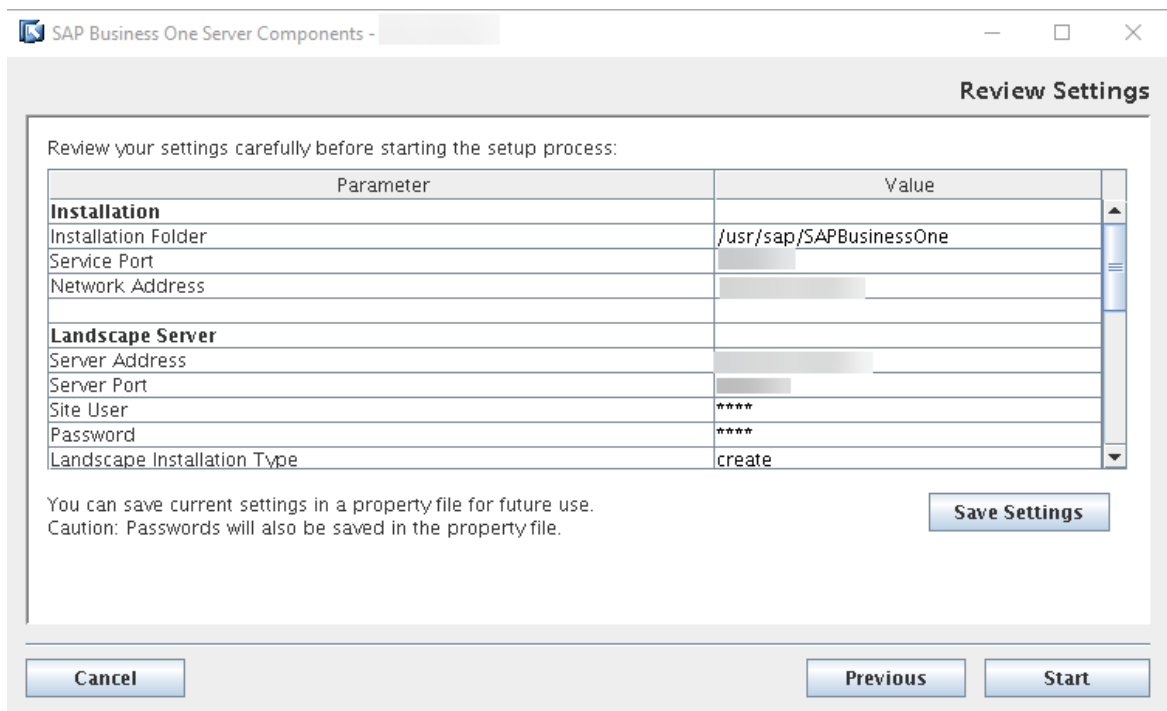
Domain Controller

Domain User Name

Password

16. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to start the installation.

Note that Network Address and Server Address are the same for all installations without proxy SLD IP or hostname.



17. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
 - If the SLD is installed successfully, choose *Next* to finish the installation.
 - If the installation fails, choose *Roll Back* to restore the system. When the rollback progress is completed, in the *Rollback Progress* window, choose *Next* to finish the installation.
18. In the *Setup Process Completed* window, review the installation.
19. Choose *Finish* to exit the wizard.

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Next task: [Installing Secondary SLD on Server B \[page 81\]](#)

2.2.2 Installing Secondary SLD on Server B

Procedure

1. Copy the product package to Server B.
2. In a command line terminal, log on to Server B as root.
3. Navigate to the directory `.../Packages . Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

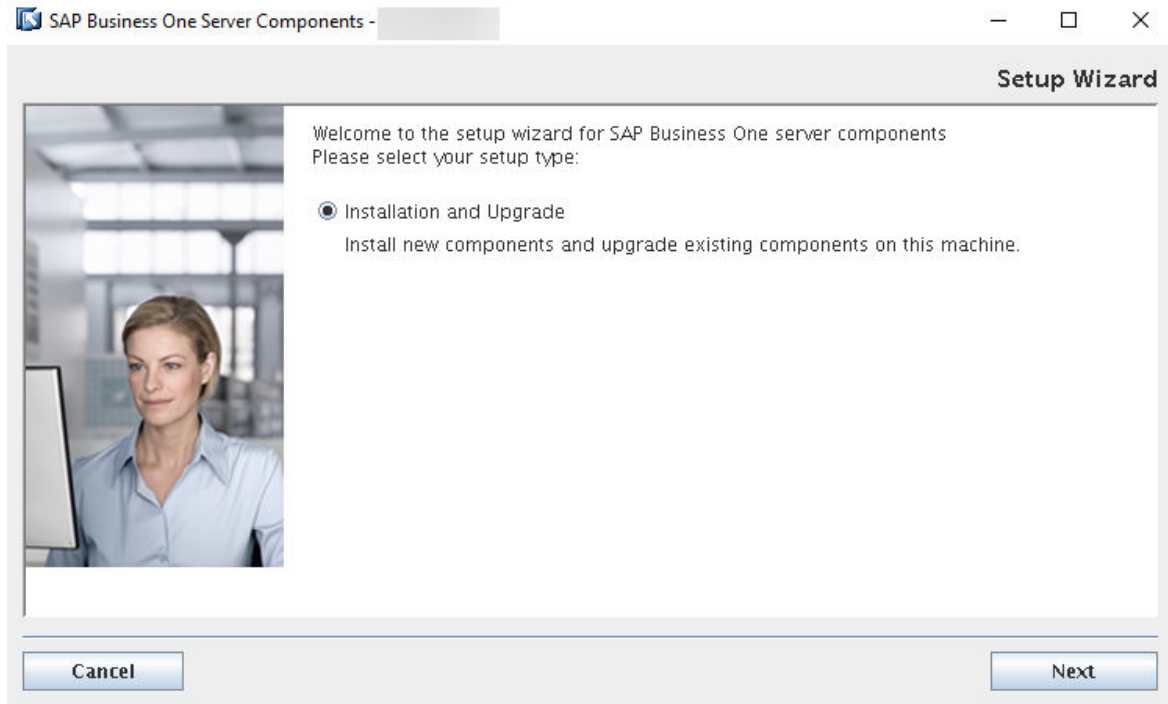
`./install`

The installation process begins.

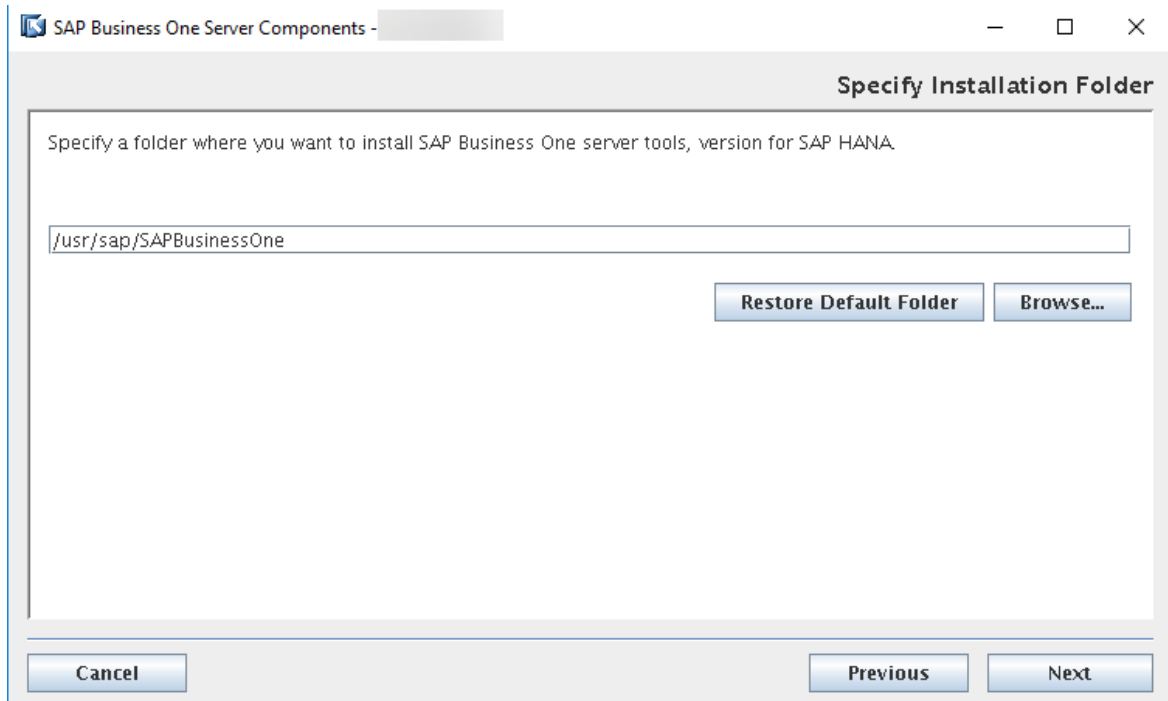
Note

If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command: **chmod +x install**

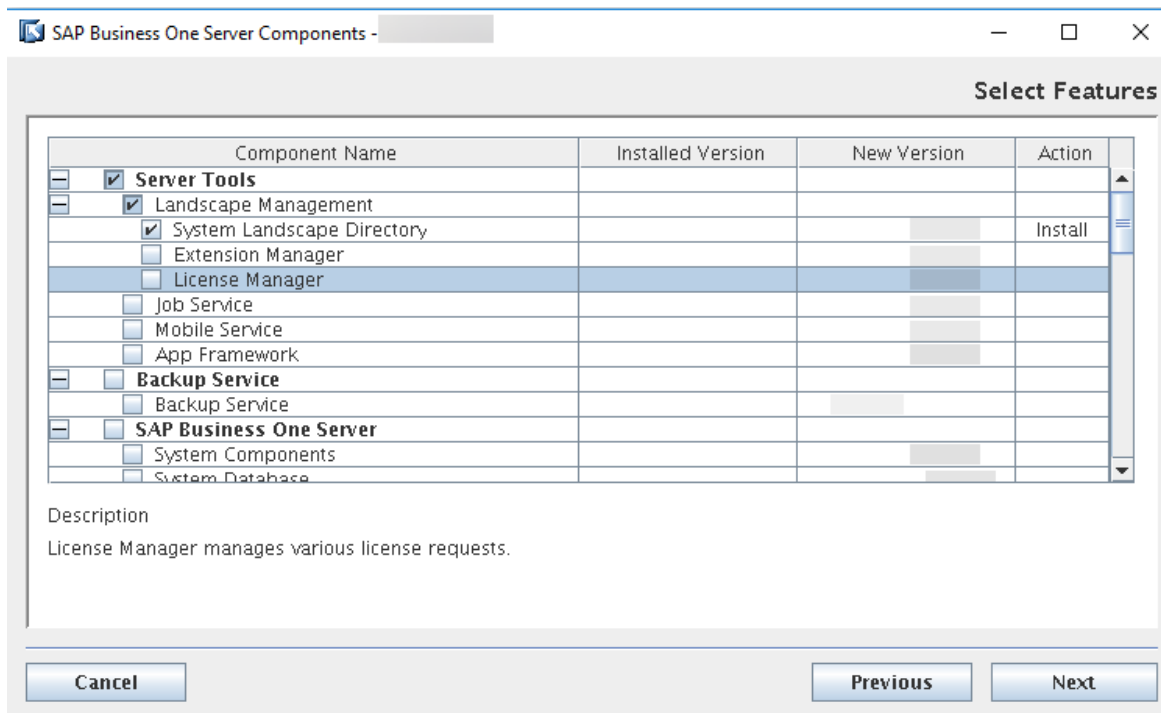
4. In the *Welcome* page of the setup wizard, choose *Next*.



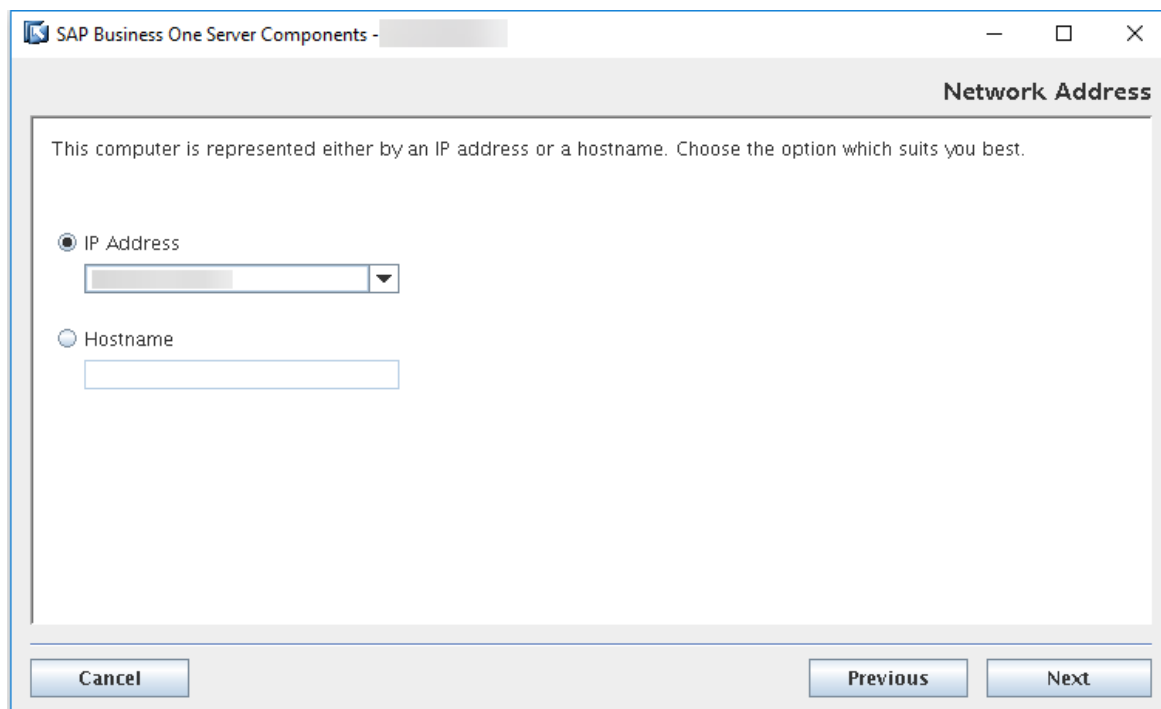
5. In the *Specify Installation Folder* window, specify where you want to install the server components and choose *Next*.



6. In the *Select Features* window, select *System Landscape Directory* and choose *Next*.

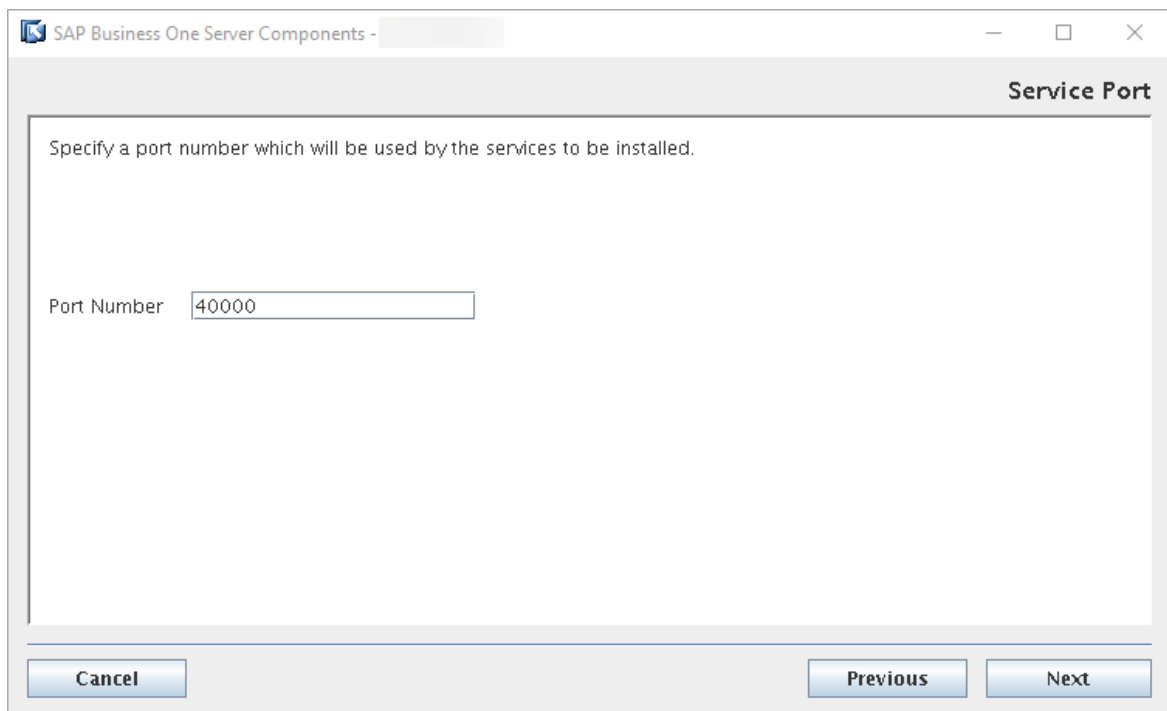


7. In the *Network Address* window, select the IP address of Server B or use the hostname.

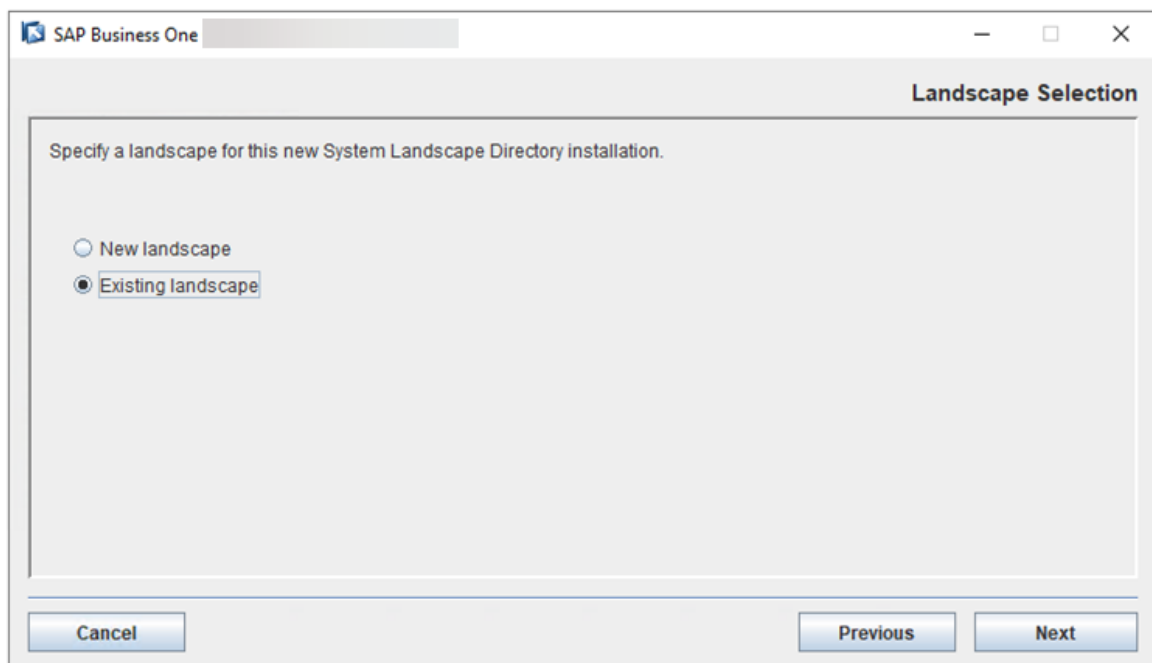


8. In the *Service Port* window, specify a port number and choose *Next*.

The default port number is 40000.



9. In the *Landscape Selection* window, select *Existing landscape*.



10. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate with one of the following methods:

- Third-party certificate authority - You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.

- Certificate authority server - You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- [Not recommended] Generate a self-signed certificate - You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).

Specify Security Certificate

Some components enforce secure connection via HTTPS encryption, including the System Landscape Directory and the Service Layer.

Specify a certificate for authentication:

☐ Use a self-signed certificate

☒ Specify a PKCS12 certificate store and certificate password

PKCS12 Certificate

Certificate Store File

Certificate Password

11. In the [Landscape Server](#) window, specify the following information:

- [Landscape Server](#): Enter the IP address/hostname of the primary SLD on Server A.
- [Port](#): Enter the port number of the primary SLD on Server A. The default port number is 40000.
- [Site User ID](#) and the [Password](#): Enter the site user (B1SiteUser) and the password.

Note

The user name (B1SiteUser) and the password are the same as those entered during the installation of the primary SLD on Server A.

SAP Business One Server Components - Landscape Server

Enter the existing SLD address and site user credentials, to which local components will be connected or registered.

Make sure that the System Landscape Directory is running before proceeding.

Landscape Server Port

Site User ID

Password

12. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

13. In the *Windows Domain User Authentication* (Single Sign-On) window, do one of the following:

- If you want to use the SSO function for SAP Business One, version for SAP HANA, select *Use domain user authentication*, specify all required information, and choose *Next*.

Note

A fully qualified domain name must be a full name in **UPPER** case.

The domain user name is case-sensitive.

Make sure that the UTC time on your Linux server is the same as that on your Windows domain controller; otherwise, you cannot proceed with the installation.

- If you have not registered a domain user account with the Service Principal Name (SPN), make sure that the domain user account specified here is the one that you intend to use for SPN registration.

→ Recommendation

As this domain user is a service user that functions purely for the purpose of setting up SSO, we highly recommend that you create a new domain service user and not assign any privileges to the user other than the logon privilege. In addition, keep the user's password unchanged after enabling SSO; otherwise, SSO may stop working.

- If you do not want to use the SSO function, select *Do not need domain user authentication* and choose *Next*.

⚠ Caution

If you do not specify the domain user information during the installation of server components, you will not be able to activate the SSO function after the installation.

SAP Business One Server Components - Windows Domain User Authentication (Single Sign-On)

The System Landscape Directory supports Windows domain user authentication for the SAP Business One client.

If you need this feature, specify a valid domain user and password.
Then the domain administrator must use the SetSPN tool to register a Service Principal Name.
Note: For more information about Service Principal Name, see the [Administrator's Guide](#).

☐ Do not need domain user authentication
☒ Use domain user authentication

Fully-Qualified Domain Name
 Domain Controller
 Domain User Name
 Password

14. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to start the installation.

Note that the value of *Network Address* is the address of the secondary SLD on Server B, while the value of *Server Address* is the address of the primary SLD on Server A.

SAP Business One Server Components - Review Settings

Review your settings carefully before starting the setup process:

Parameter	Value
Installation	
Installation Folder	/usr/sap/SAPBusinessOne
Service Port	
Network Address	
Landscape Server	
Server Address	
Server Port	
Site User	****
Password	****
Landscape Installation Type	create

You can save current settings in a property file for future use.
Caution: Passwords will also be saved in the property file.

15. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
- If the SLD is installed successfully, choose *Next* to finish the installation.

- If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
16. In the [Setup Process Completed](#) window, review the installation results.
 17. Choose [Finish](#) to exit the wizard.

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous task: [Installing Primary SLD on Server A \[page 73\]](#)

Next: [Configuring a Virtual IP Address for SLD \[page 89\]](#)

2.2.3 Configuring a Virtual IP Address for SLD

A virtual IP address (VIP) is an address that is shared among multiple servers. It is commonly used to enable database high availability on various nodes. If one node fails, the VIP address is automatically reassigned to another node.

To enable the VIP address, you need to configure an nginx server and the primary and secondary SLD.

1. [Configuring an nginx Reverse Proxy \[page 89\]](#)
2. [Configuring SLD \[page 93\]](#)

Parent topic: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous task: [Installing Secondary SLD on Server B \[page 81\]](#)

Next task: [Installing Primary License Manager on Server A \[page 98\]](#)

2.2.3.1 Configuring an nginx Reverse Proxy

Prerequisites

- You have prepared a Linux server.
- You have predefined a domain name for the SLD and other SAP Business One components, for example, `nginxserverhostname.def.com`, and the domain name is bound to this Linux server.
- You have prepared a domain name certificate.
- You have downloaded and unzipped the HA configuration file [HA_Conf_for_OP.zip](#) to get the nginx configuration file `SLD HA Nginx Conf for OP.zip`.

Procedure

1. From <http://nginx.org/>, download the nginx binary file according to your target operating system and extract the binary file to a local folder.

→ Recommendation

The recommended nginx version is 1.8.0 or higher.

2. Install nginx on the Linux server that you prepared.

For instructions on installing nginx on Linux, see <http://nginx.org/en/docs/configure.html>.

❖ Example

Below are examples of installing some of the nginx dependencies (PCRE 8.41, zlib 1.2.11 and OpenSSL library 1.0.2k) and nginx 1.12.2 on Linux.

- Installing the PCRE library, which is required by the NGINX Core and Rewrite modules and which provides support for regular expressions.

```
$ cd /home
$ wget ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/
pcre-8.41.tar.gz
$ tar -zxf pcre-8.41.tar.gz
$ cd pcre-8.41
$ ./configure
$ make
$ sudo make install
```

- Installing the zlib library, which is required by the NGINX Gzip module for header compression.

```
$ wget http://zlib.net/zlib-1.2.11.tar.gz
$ tar -zxf zlib-1.2.11.tar.gz
$ cd zlib-1.2.11
$ ./configure
$ make
$ sudo make install
```

- Unpacking the OpenSSL library, which is required by the NGINX SSL modules to support the HTTPS protocol.

```
$ wget http://www.openssl.org/source/openssl-1.0.2k.tar.gz
$ tar -zxf openssl-1.0.2k.tar.gz
```

- Installing and configuring nginx.
 1. Download the nginx source file.
 2. Nginx provides source files for both stable and mainline versions. To download and unpack the source file for the latest mainline version, type-in the following commands:

```
$ wget http://nginx.org/download/nginx-1.12.2.tar.gz
$ tar zxf nginx-1.12.2.tar.gz
$ cd nginx-1.12.2
```

3. Configure the Build Options.

```
./configure --with-http_ssl_module --with-http_realip_module
--with-http_addition_module --with-http_sub_module --with-
http_dav_module --with-http_flv_module --with-http_mp4_module
--with-http_gunzip_module --with-http_gzip_static_module --with-
```

```
http_random_index_module --with-http_secure_link_module --with-
http_stub_status_module --with-http_auth_request_module --with-file-
aio --with-ipv6 --with-pcre=/home/pcre-8.41 --with-openssl=/home/
openssl-1.0.2k
$ make
$ sudo make install
```

Note

- If you encounter any error when running the commands `configure`, `make` or `make install`, please see the error log and use a search engine to find the solution. Most errors are caused by missing dependencies, such as `gcc`, `gcc-c++`, `texinfo`, `autoconf` or `automake`.
- Make sure that OpenSSL is enabled with nginx.

3. Copy the SLD files to the nginx server.
 1. On the nginx server, navigate to `<nginxInstallationFolder>\html\` (by default, `/usr/local/nginx/html`), and create a folder named `ControlCenter`.
 2. On either one of the SLD servers, navigate to `<SLDInstallationFolder>/ServerTools/SLD/webapps`, (by default, `.../usr/sap/SAPBusinessOne/ServerTools/SLD/webapps`) and get the `SLDControlCenter.war` file.
 3. Copy and unzip the `SLDControlCenter.war` file to `<nginxInstallationFolder>\html\ControlCenter` on the nginx server. Overwrite the existing content, if any.
4. Prepare certificates:
 1. Use the OpenSSL library to generate the `server.cer` and `server.key` files from your PKCS12 (`.pfx`) file, which is used to install the SLD.
 2. Copy both files to the folder `<nginxInstallationFolder>/cert/` (by default, `/usr/local/nginx/cert`).
If the `cert` folder does not exist, create it manually.
5. Copy the file `SLD HA Nginx Conf for OP.zip` to the folder `<nginxInstallationFolder>/conf` (by default, `/usr/local/nginx/conf`) and extract the content. Override the existing content, if any.
6. In the `conf` folder, open the HA configuration template file `b1c_sldCluster.conf` and edit the service addresses:
 - In the `upstream sldService` section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SLD.
 - In the `upstream licenseService` section, replace the sample values with the IP addresses and port numbers of all your primary and secondary License Manager.
 - In the `upstream licenseControlCenter` section, replace the sample values with the IP address and port number of your primary License Manager.
 - In the `upstream extManager` section, replace the sample values with the IP address and port number of your primary Extension Manager.

```

1 upstream sldService{
2
3     server [REDACTED]
4     server [REDACTED]
5     keepalive [REDACTED];
6 }
7
8 upstream licenseService{
9
10    server [REDACTED];
11    server [REDACTED];
12 }
13 upstream licenseControlCenter{
14     server [REDACTED];
15 }
16 upstream extManager{
17     server [REDACTED];
18 }
19

```

- In the `server` section, replace the sample port number with the listening port number and the server name.
For the server name, replace the sample name with the domain name which is bound to the IP address of the nginx server.

```

server
{
    listen [REDACTED] ssl;
    server_name [REDACTED];

    #===== SLD HA configuration (Internal address mapping) begins =====
    location /sld/saml2 {
        include b1c_proxy_common.conf;
        proxy_set_header HOST $server_name:$server_port;

        proxy_pass https://sldService;
    }
}

```

- If you are deploying SAP Business One 10.0 FP 2202, version for SAP HANA, add the tag `ip_hash` to both the `upstream sldService` section and the `upstream licenseService` section. Otherwise, skip this step.

```

upstream sldService{
    ip_hash;
    server ;
    server ;
    keepalive ;
}

upstream licenseService{
    ip_hash;
    server ;
    server ;
}

upstream licenseControlCenter{
    server ;
}

upstream extManager{
    server ;
}

```

Task overview: [Configuring a Virtual IP Address for SLD \[page 89\]](#)

Next task: [Configuring SLD \[page 93\]](#)

2.2.3.2 Configuring SLD

Context

Before you can enable high availability for the SLD, you need to store the SLD memory in one of the following ways:

- Using database persistence.
It is a built-in solution.
- Using Redis persistence.
Redis customers need to set up a working Redis instance.

By default, we suggest using database persistence. In case of huge performance pressure, we suggest using Redis persistence.

Procedure

- For database persistence:
 1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. From both Server A and Server B, go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Update `<Manager pathname="" />` into `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname="" url=" " username=" " />`.
You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.
 3. Start nginx and the SLD.
 1. Go to **<nginx Installation Folder>/sbin** (by default, `/usr/local/nginx/sbin`) and start nginx.
 2. Start the SLD service on both Server A and Server B.
- For Redis persistence:

ⓘ Note

Please install Redis on a separate Linux server, and make sure Redis can be accessed remotely.

Here are the general steps for installing Redis:

1. Download `redis-3.x.x.tar.gz`, and unzip it to `/home`.
2. Execute the `Make` file.
3. Go to the `redis-3.x.x/src` folder, and execute `.../redis-server/redis.conf`.

1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
2. Download and unzip the file [HA_Conf_for_OP.zip](#) to obtain the file `Redis_related.jar.zip`. Copy the files `commons-pool2-2.4.2.jar` and `jedis-2.8.0.jar` in the `Redis_related.jar.zip` folder to `.../usr/sap/SAPBusinessOne/Common/tomcat/lib`.

ⓘ Note

You can enter the following commands to give permissions:

```
Chmod 777 -R commons-pool2-2.4.2.jar
```

```
Chmod 777 -R jedis-2.8.0.jar
```

3. Go to the folder **<SLD Installation Folder>/Common/tomcat/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/tomcat/conf`) and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="${Redis Server IP}" port="${Redis Server Port}" database="0" maxInactiveInterval="60" />`

ⓘ Note

The default port number for the Redis server is 6379.

4. Start nginx and the SLD.
 1. Go to **<nginx Installation Folder>/sbin** (by default, `/usr/local/nginx/sbin`), and start nginx
 2. Start the SLD service on both Server A and Server B.

Results

Now you can access the SLD with your user name (B1SiteUser) and password through this virtual web address: `https://nginxserverhostname.def.com:<Port Number>/ControlCenter` .

You should always use the SLD VIP address for installation of other SAP Business One components, version for SAP HANA.

Troubleshooting

If you can't access the SLD virtual web address, you can visit `https://<IP Address of Primary SLD>:<Port Number>/ControlCenter` or `https://<IP Address of Secondary SLD>:<Port Number>/ControlCenter` to check if the problem is with the primary SLD or the secondary SLD.

Task overview: [Configuring a Virtual IP Address for SLD \[page 89\]](#)

Previous task: [Configuring an nginx Reverse Proxy \[page 89\]](#)

Optional: Configuring High Availability for nginx Server

Context

If you want to set up high availability for the nginx server, you should prepare a secondary nginx server and a virtual hostname (for example, `virtualhostname.mocca.com`).

In such a case, do as follows:

Procedure

1. Install and configure a new nginx server on the secondary server.
2. Install Keepalived on both the primary and the secondary servers.
 1. Download the source file from `http://www.keepalived.org/download.html`.
 2. Copy `keepalived-*.tar.gz` to `/home`.
 3. Open the Linux terminal and enter, for example, the following commands to install Keepalived.

```
# tar -zxvf keepalived-*.tar.gz
# cd /home/keepalived-1.2.18
# ./configure --prefix=/usr/local/keepalived --disable-lvs
# make && make install
...
```

Note

- Make sure that the Keepalived servers are connected to the same subnet.
- During the configuration of Keepalived, disable LVS.

- If you encounter the following error when running `./configure`, proceed as follows:

```
configure: error:
!!! OpenSSL is not properly installed on your system. !!!
!!! Can not include OpenSSL MD5 headers files.      !!!
```

- If you are running SLES 11 SP4, install `openssl-devel`.
- If you are running SLES 12 SP1, install `libopenssl-devel` and `libopenssl-devel-32bit`.
- Otherwise, use a search engine to find the solutions.
- Make sure that `Autoconf` and `Automake` are up to date.
For more information about `Autoconf` and `Automake`, visit <http://www.gnu.org/software/autoconf/autoconf.html> and <http://www.gnu.org/software/automake/#downloading>.

❖ Example

Below is an example of how to install `Autoconf` and `Automake`:

1. Install `autoconf-2.69`

```
./configure
make&&make install
```

2. Install `automake-1.15`

```
./bootstrap.sh
./configure
make&&make install
```

3. Copy `nginx_check.sh` (under `SLD HA Nginx Conf for OP.zip`) to `.../usr/local/keepalived`.

📌 Note

Make sure the execution permission has been assigned to this utility.

4. Copy the `Keepalived` configuration template `keepalived.conf` (under `SLD HA Nginx Conf for OP.zip`) to `etc/keepalived`, and update `keepalived.conf`.
5. Open `nginx_check.sh` and update the path, priority and virtual IP address.

You can see the screenshot below for reference.

📌 Note

Set the priority for the primary node to 100, and for the secondary node to 90.

The virtual IP address is bound to the virtual hostname.

```

1 ! Configuration File for keepalived
2
3 global_defs {
4
5     router_id LVS_DEVEL
6 }
7
8 vrrp_script chk_nginx_service {
9     script "/usr/local/keepalived/nginx_check.sh"
10    #script "/tcp/127.0.0.1/8888"
11    #script "killall -0 nginx"
12    interval 3
13    weight -20
14    fail      2
15    rise      1
16 }
17 #vrrp_sync_group VG1 {
18 #     group {
19 #         VI_1
20 #     }
21 # }
22
23 vrrp_instance VI_1 {
24     state BACKUP
25     interface eth0
26     virtual_router_id 51
27     priority 100
28     advert_int 1
29     nopreempt
30     authentication {
31         auth_type PASS
32         auth_pass 1111
33     }
34     virtual_ipaddress {
35         [REDACTED]
36     }
37     track_script {
38         chk_nginx_service
39     }
40 }

```

6. Edit the `b1c_sldCluster.conf` file on both the primary and secondary nginx servers.

In the `server` section, add the listening port number and server name.

For the server name, enter the virtual domain name which is bound to the virtual IP address.

7. Start nginx and Keepalived on the primary node and the secondary node, respectively.
 - The default file path for starting nginx: `.../usr/local/nginx/sbin/nginx`

- The default file path for starting Keepalived: `.../usr/local/keepalived/sbin/keepalived`

ⓘ Note

You must start nginx before you start Keepalived due to the latter's reliance on nginx.

Results

Now you can access the SLD with this virtual address: `https://virtualhostname.mocca.com:<Port Number>/ControlCenter`.

You should always use the SLD virtual IP address for installation of other SAP Business One components, version for SAP HANA.

2.2.4 Installing Primary License Manager on Server A

Procedure

1. Log on to Server A as root.
2. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

```
./install
```

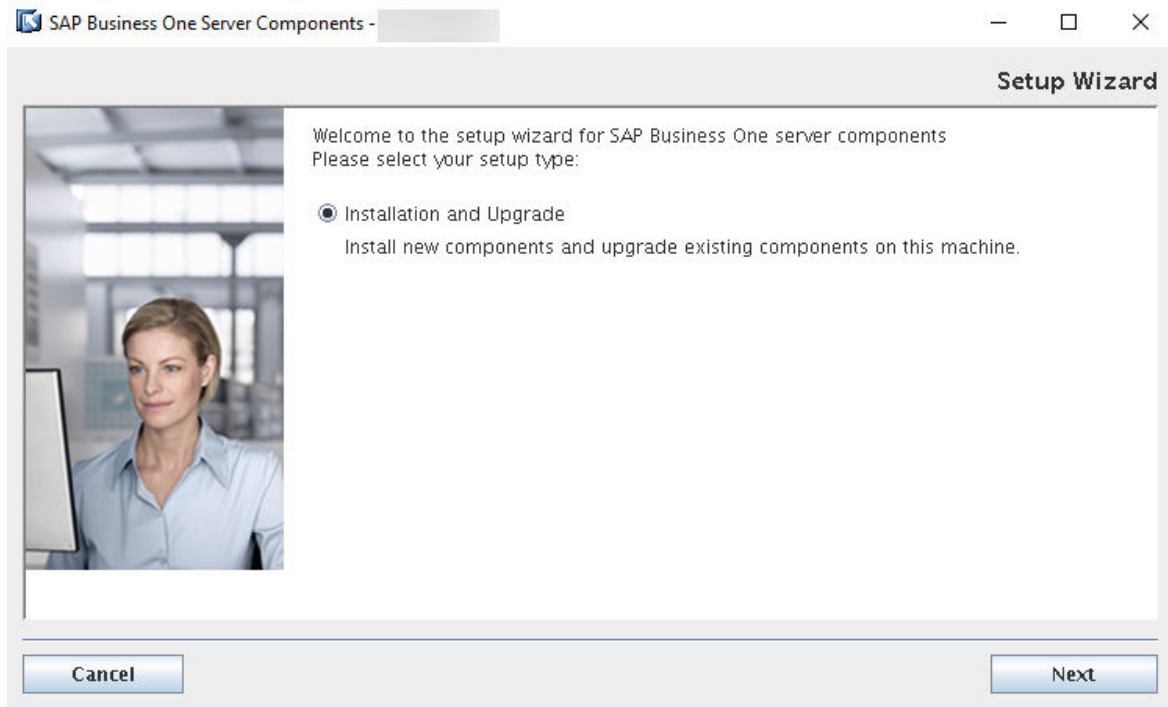
The installation process begins.

ⓘ Note

If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command:

```
chmod +x install
```

3. In the *Welcome* page of the setup wizard, choose *Next*.



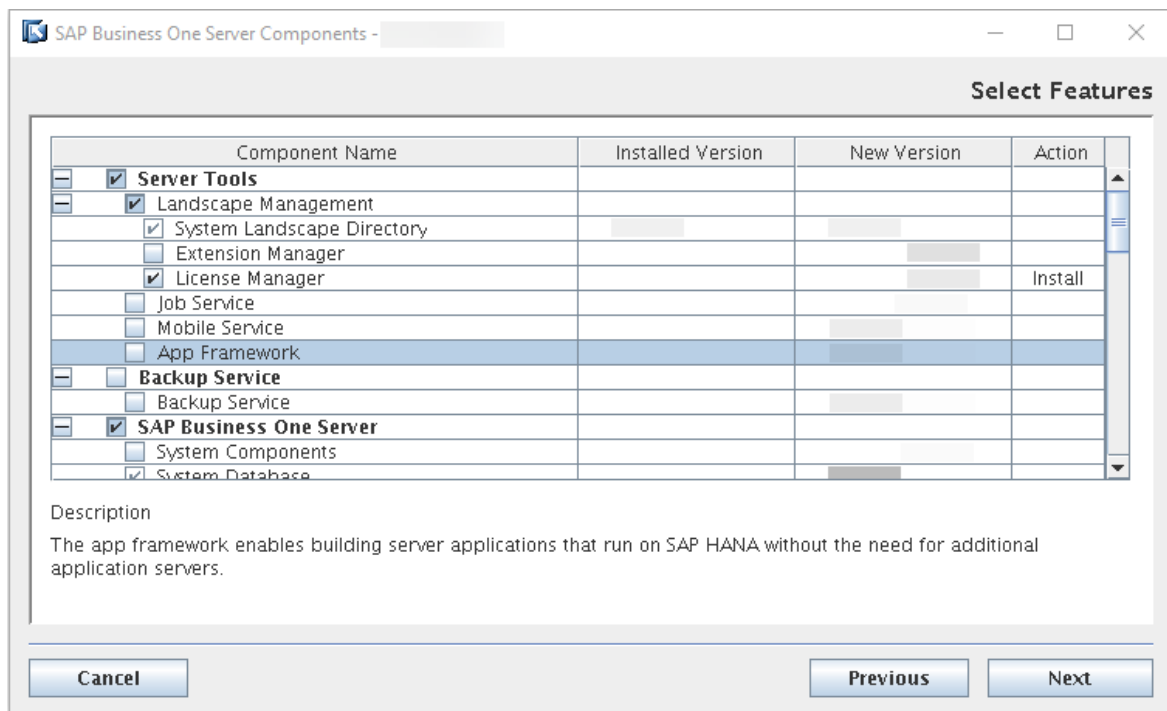
4. In the *Select Features* window, select *License Manager* and choose *Next*.

Note

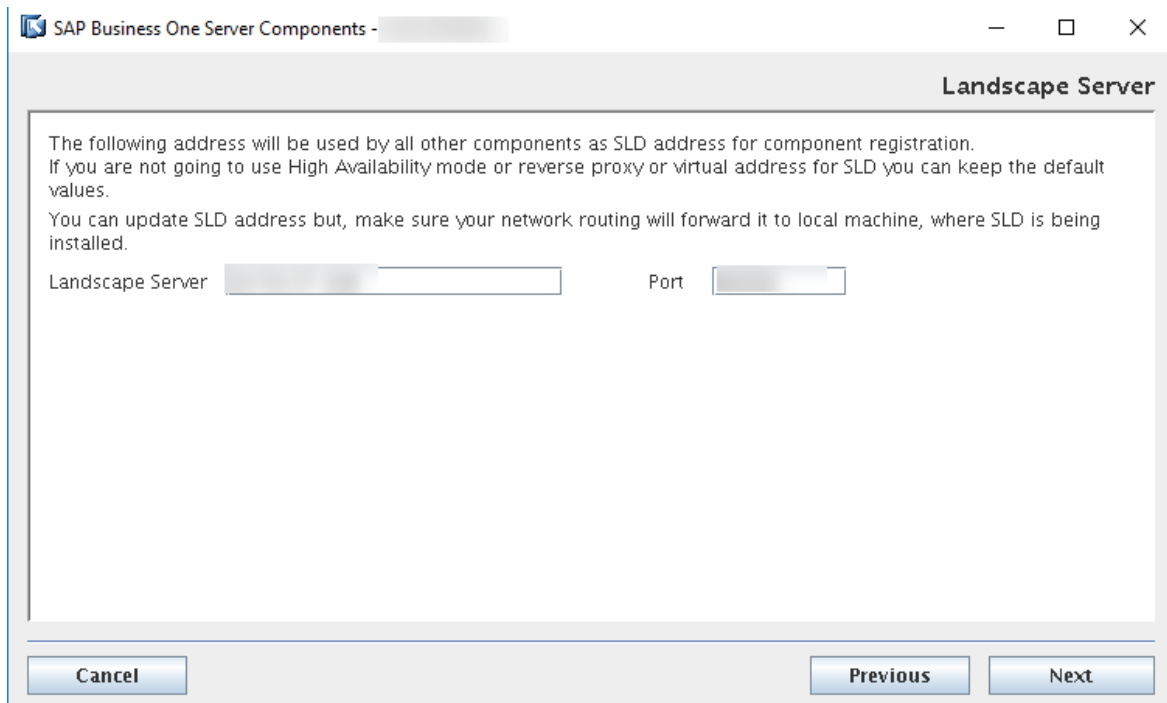
Apart from the SLD and License Manager, other components can be installed with the primary/secondary node or on other servers.

We recommend that you install other components on other servers.

If you install other components with the primary/secondary node, when the primary/secondary node server is down, the components will also be down.



5. In the *Landscape Server* window, enter the following:
 - *Landscape Server*: Enter the SLD virtual IP address.
 - *Port*: Enter the nginx proxy port number.



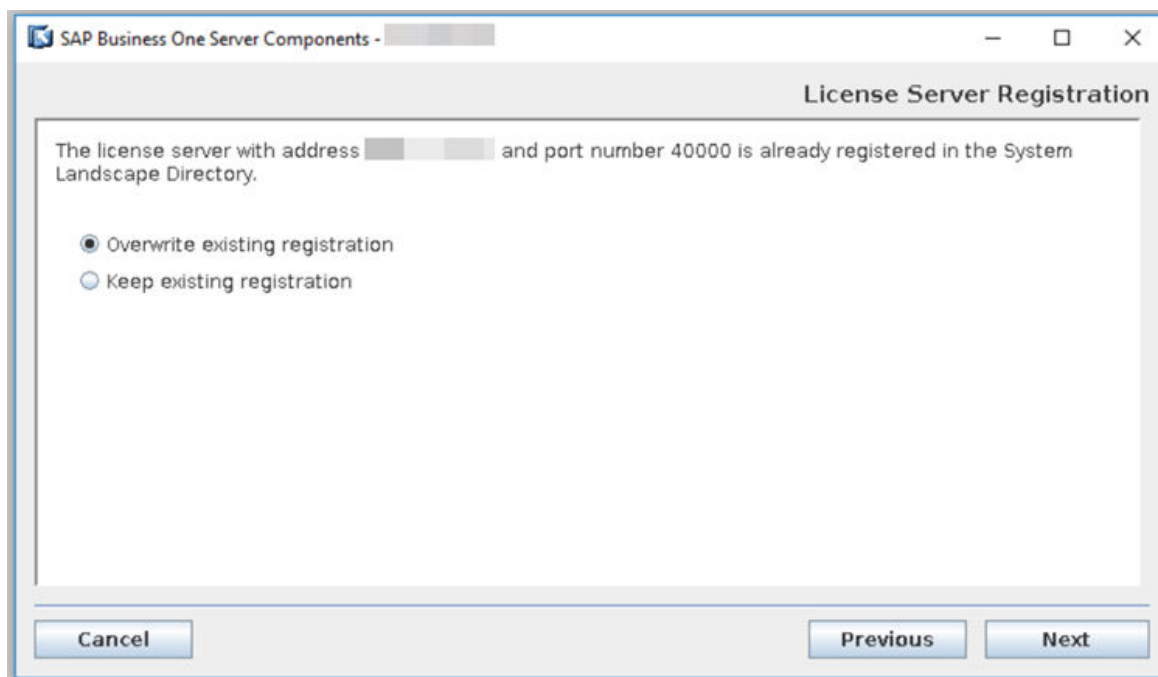
6. For SAP Business One 10.0 FP 2011 or higher, in the *License Server Node Type* window, select *High Availability Primary Node* and enter the virtual URL that contains the virtual IP address and port number. License Manager is registered into the SLD automatically.

For a version lower than 10.0 FP 2011, in the *License Server Node Type* window, select *High Availability Primary Node* and choose if you want to register License Manager into the SLD automatically or manually.

7. If the network address of the license server has already been registered into the SLD, the *License Server Registration* window appears with the following options:
 - *Overwrite existing registration*
 - *Keep existing registration*

If both the IP address and port number are registered, you can choose to overwrite the existing registration data or reuse them.

If the IP address is registered but the port number isn't, you can only overwrite the existing registration data.



8. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of your SAP HANA server.
- *Instance Number*: Enter the instance number of your SAP HANA database.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the name of the tenant database that you want to use.

Credentials

- *User Name*: Enter your tenant database user name.
- *Password*: Enter the password for your user name.

9. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of the [Network Address](#) is the address of the primary SLD on Server A, while the value of the [Server Address](#) is the SLD virtual address.

Parameter	Value
Installation	
Installation Folder	/usr/sap/SAPBusinessOne
Service Port	3000
Network Address	192.168.1.100
Landscape Server	
Server Address	192.168.1.100
Server Port	3000
Site User	****
Password	****

10. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If License Manager is installed successfully, choose [Next](#) to finish the installation.

- If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
11. In the [Setup Process Completed](#) window, review the installation results.
 12. Choose [Finish](#) to exit the wizard.

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous: [Configuring a Virtual IP Address for SLD \[page 89\]](#)

Next task: [Installing Secondary License Manager on Server B \[page 104\]](#)

2.2.5 Installing Secondary License Manager on Server B

Procedure

1. Log on to Server B as root.
2. Navigate to the directory `.../Packages . Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

```
./install
```

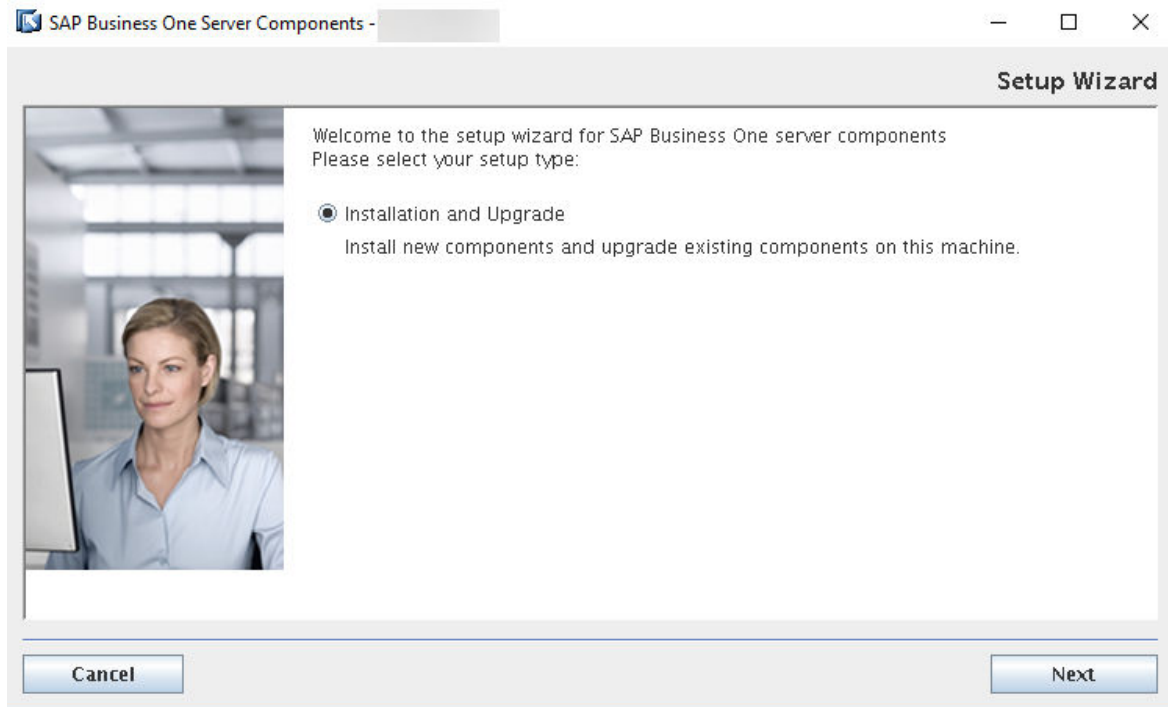
The installation process begins.

Note

If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command:

```
chmod +x install
```

3. In the [Welcome](#) page of the setup wizard, choose [Next](#).



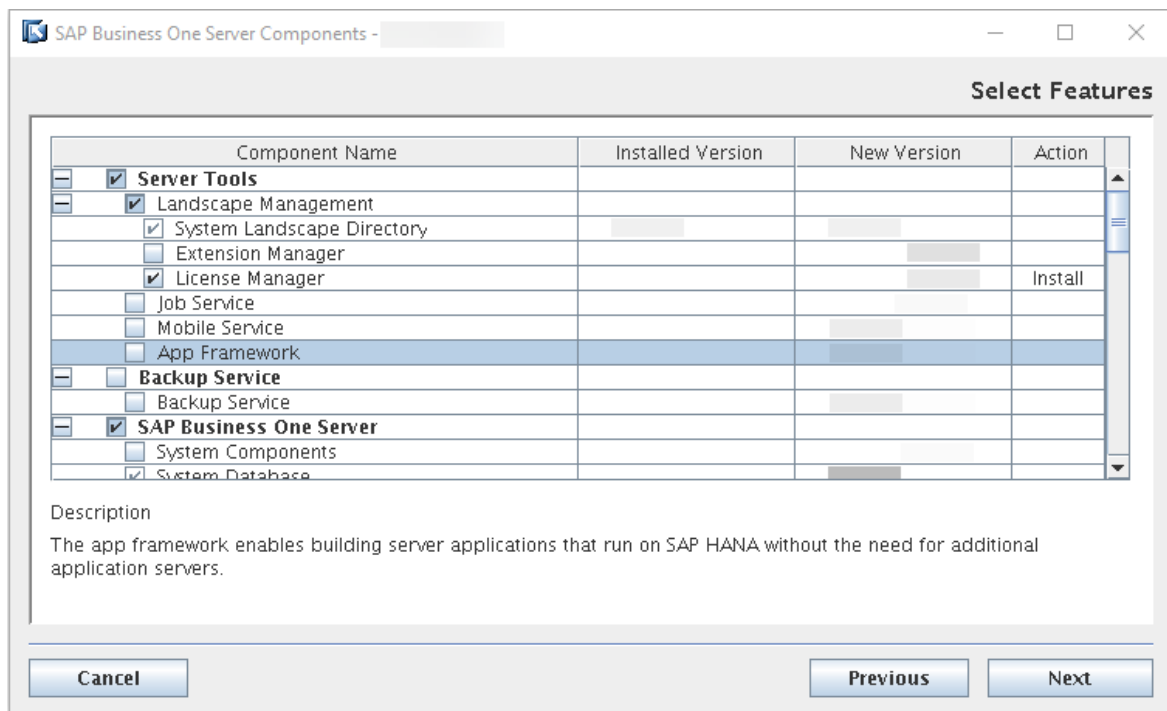
4. In the *Select Features* window, select *License Manager* and choose *Next*.

Note

Apart from the SLD and License Manager, other components can be installed with the primary/secondary node or on other servers.

We recommend that you install other components on other servers.

If you install other components with the primary/secondary node, when the primary/secondary node server is down, the components will also be down.



5. In the *Landscape Server* window, enter the following:
 - *Landscape Server*: Enter the SLD virtual IP address.
 - *Port*: Enter the nginx proxy port number.
 - *Site User ID* and *Password*: Enter the site user as B1SiteUser and the password.

Enter the landscape server address and the site user password.

Make sure that the System Landscape Directory is running before proceeding.

Landscape Server: Port:

Site User ID:

Password:

Buttons: Cancel, Previous, Next

6. For SAP Business One 10.0 FP 2011 or higher, in the *License Server Node Type* window, select *High Availability Secondary Node*, enter the IP address and port number of the primary SLD to connect to the remote SLD, and then enter the virtual URL that contains the virtual IP address and port number.

SAP Business One Server Components

License Server Node Type

Select a node type for this new license server installation.
Install the license server as either a standalone or high availability node if you require multiple hosts for high availability.

☐ Standalone Node
☐ High Availability Primary Node
☒ High Availability Secondary Node

Primary Node

Address Port

Virtual Address

URL

For a version lower than 10.0 FP 2011, in the *License Server Node Type* window, select *High Availability Secondary Node*, and enter the IP address and port number of the primary SLD to connect to the remote SLD.

SAP Business One Server Components -

License Server Node Type

Select a node type for this new License Server installation.
Install the License Server as either a standalone or high availability node if you require multiple hosts for high availability.

☐ Standalone Node
☐ High Availability Primary Node
☒ High Availability Secondary Node

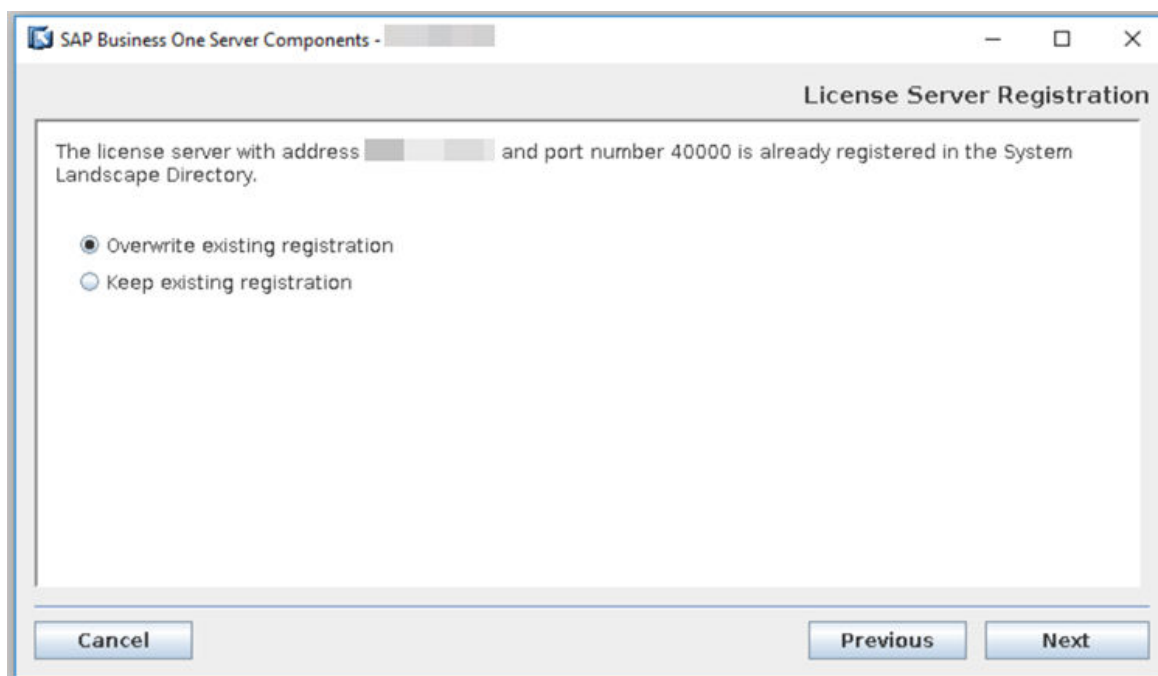
Primary Node

Address Port

7. If the network address of the license server has already been registered into the SLD, the *License Server Registration* window appears with the following options:
 - *Overwrite existing registration*
 - *Keep existing registration*

If both the IP address and port number are registered, you can choose to overwrite the existing registration data or reuse them.

If the IP address is registered but the port number isn't, you can only overwrite the existing registration data.



8. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

User Name

Password

The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

9. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of the [Network Address](#) is the address of the secondary SLD on Server B, while the value of the [Server Address](#) is the SLD virtual address.

Review Settings

Review your settings carefully before starting the setup process:

Parameter	Value
Installation	
Installation Folder	/usr/sap/SAPBusinessOne
Service Port	3000
Network Address	192.168.1.100
Landscape Server	
Server Address	192.168.1.100
Server Port	3000
Site User	****
Password	****

You can save current settings in a property file for future use.
Caution: Passwords will also be saved in the property file.

Save Settings

Cancel Previous Start

10. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If License Manager is installed successfully, choose [Next](#) to finish the installation.

- If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
11. In the [Setup Process Completed](#) window, review the installation results.
 12. Choose [Finish](#) to exit the wizard.

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous task: [Installing Primary License Manager on Server A \[page 98\]](#)

Next task: [Editing License Manager Address \[page 110\]](#)

2.2.6 Editing License Manager Address

Prerequisites

This task is required only if you are deploying a version that is lower than SAP Business One 10.0 2011, version for SAP HANA. For 10.0 FP 2011 or higher, skip this task and go to the next one.

Context

After you have configured nginx and installed License Manager, update the License Manager address in System Landscape Directory into its virtual address.

Procedure

1. Connect to `https://<VIP Address>:<Port Number>/ControlCenter/` using the user name (B1SiteUser) and password.
2. On the [Services](#) tab, proceed as follows:
 - If you have chosen to register the license server into the SLD automatically, choose to edit [License Manager](#).
 - If you have chosen to register the license server into the SLD manually, choose [Add](#) [License Manager](#).
3. In the [Service URL](#) field, enter the virtual address (`https://<VIP Address>:<Port Number>/LicenseControlCenter`), and choose [OK](#).

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous task: [Installing Secondary License Manager on Server B \[page 104\]](#)

Next task: [Adding Allowlist to License Manager \[page 111\]](#)

2.2.7 Adding Allowlist to License Manager

Prerequisites

This task is required only if you are deploying SAP Business One 10.0 FP 2202, version for SAP HANA. If you are deploying other versions, skip this task and go to the next one.

Context

Add a cluster of the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.

Procedure

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

1. **Sample Code**

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on all of your primary and secondary License Manager servers.
3. Run the command `/etc/init.d/sapb1servertools restart` to restart License Manager on all of your primary and secondary servers.

Task overview: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

Previous task: [Editing License Manager Address \[page 110\]](#)

Next: [Installing SAP Business One Client and Other Components, version for SAP HANA \[page 112\]](#)

2.2.8 Installing SAP Business One Client and Other Components, version for SAP HANA

Before you can install the SAP Business One client and other components on a Windows server, you should install other necessary components on a Linux server (including but not limited to the System Components and the System Database).

The SAP Business One client and other components, version for SAP HANA, can be installed with the setup wizard.

For more information about how to install SAP Business One components, version for SAP HANA, see the *SAP Business One Administrator's Guide*, version for SAP HANA on [SAP Help Portal](#).

Note

During the installation, please use the virtual IP address and port number for the SLD server address. For example, in the *System Landscape Directory* connection window, enter **<VIP Address>:<Port Number>**.

SAP Business One Setup Wizard

System Landscape Directory
Specify the location of the SAP Business One system landscape directory.

The system landscape directory is the central service that governs the SAP Business One landscape. It includes a licence server component that was used in previous versions of SAP Business One.

A previous version of the licence server or system landscape directory is installed on this machine. Upgrade the system landscape directory to the latest version or connect to the system landscape directory on a remote machine.

☐ Connect to Local System Landscape Directory

☒ Connect to Remote System Landscape Directory

Server Name

The remote system landscape directory must be of the same version as the version of SAP Business One that you are setting up. To upgrade the remote system landscape directory, you must run an upgrade on that machine.

Cancel Back Next

Parent topic: [Installing Version 10.0 FP 2202 or Earlier \[page 72\]](#)

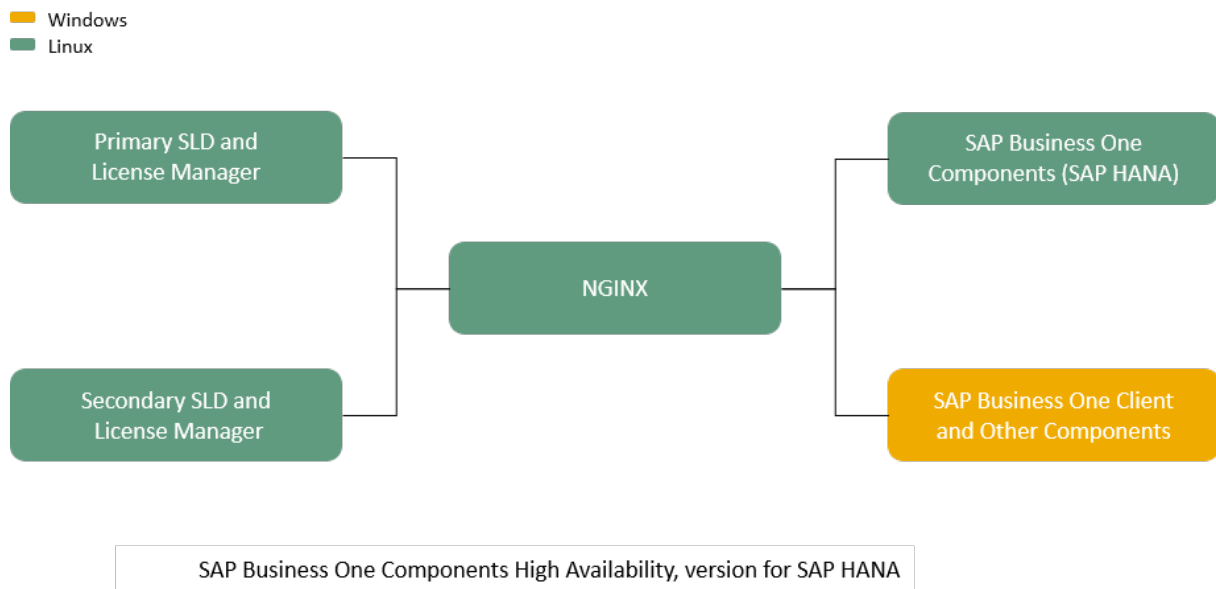
Previous task: [Adding Allowlist to License Manager \[page 111\]](#)

3 Upgrade

- If you want to upgrade your existing SAP Business One, version for SAP HANA, **with** high availability capabilities, to 10.0 PL00 or higher with high availability, see [Upgrading Highly Available SAP Business One, version for SAP HANA \[page 114\]](#).
- If you want to upgrade your existing SAP Business One, version for SAP HANA, **without** high availability capabilities, to 10.0 PL00 or higher for high availability, see [Upgrading SAP Business One, version for SAP HANA, for High Availability \[page 158\]](#)

3.1 Upgrading Highly Available SAP Business One, version for SAP HANA

If you have built the following high availability environment for your SAP Business One components, version for SAP HANA, and want to upgrade to 10.0 PL00 or higher with high availability capabilities, follow the instruction in this chapter.



We provide well-defined upgrade paths for the SAP Business One product line. Direct upgrades from an SAP Business One release to another SAP Business One release are supported as described in the guide [SAP Business One Upgrade Strategy Overview](#) and in SAP Notes that describe the target release.

However, depending on technical constraints for starting and target releases in upgrades, upgrades may have to be performed in several steps. For example, the recommended upgrade path from SAP Business One 9.3 to 10.0 FP2305 includes an intermediate upgrade step to 10.0 PL02.

For more details on supported platform versions and supported releases, refer to the following documents on the SAP Help Portal:

- [SAP Product Availability Matrix](#)
- [SAP Business One, version for SAP HANA Platform Support Matrix](#)
- [SAP Business One Administrator's Guide, version for SAP HANA](#)

Note

Before the upgrade, make sure that all the prerequisites for upgrading the relevant SAP Business One components have been met. For more information, see [SAP Business One Administrator's Guide, version for SAP HANA](#).

Follow the procedure below for the version that you want to upgrade to:

[Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

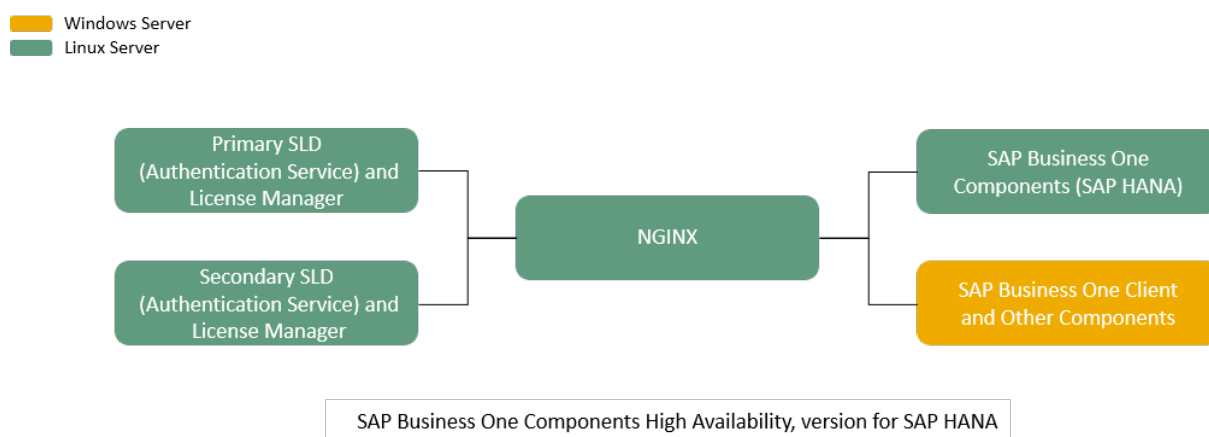
[Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

3.1.1 Upgrading to Version 10.0 FP 2208 or Later

As of SAP Business One 10.0 FP 2208, version for SAP HANA, the Identity and Authentication Management (IAM) service is available. With the IAM, you can use a single set of login credentials across multiple platforms, applications and networks. The SAP Business One Authentication Service is delivered with the System Landscape Directory as a built-in service for the IAM.

For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

The following figure illustrates the landscape of the high availability environment.



Note

Please make sure that the date and time are the same on all servers. If the date and time are not synchronized across all machines, errors will occur during authentication.

To upgrade your existing SAP Business One, version for SAP HANA, **with** high availability capabilities, to 10.0 FP 2208 or later for high availability, proceed as follows:

1. [Upgrading Primary SLD and License Manager on Server A \[page 116\]](#)
2. [Upgrading Secondary SLD and License Manager on Server B \[page 128\]](#)
3. [Configuring nginx \[page 140\]](#)
4. [Configuring SAP Business One Authentication Service \[page 144\]](#)
5. [Configuring SLD \[page 145\]](#)
6. [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 148\]](#)

3.1.1.1 Upgrading Primary SLD and License Manager on Server A

Procedure

1. Revert the configuration change made for high availability in the `sld.xml` file during your previous setup:
 - If you have used database persistence to store the SLD memory, proceed as follows:
 1. Edit the configuration file `sld.xml`.
 - If your existing SAP Business One version is 10.0 SP 2511 or later, go to the folder **<SLD Installation Folder>/SLD/conf** (by default, `/usr/sap/SAPBusinessOne/ServerTools/SLD/conf`), open the file `sld.xml`, and revert `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname=" " url=" " username=" " />` to `<Manager pathname=" " />`.
 - If your existing SAP Business One version is between 9.3 PL09 and 10.0 FP 2508, go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), open the file `sld.xml`, and revert `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname=" " url=" " username=" " />` to `<Manager pathname=" " />`.
 - If your existing SAP Business One version is 9.3 PL08 or lower, go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), open the file `sld.xml`, and revert `<Valve className="com.sap.b1.sld.catalina.session.SessionHandlerValve" /><Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" />` to `<Manager pathname=" " />`.
 2. Restart the SAP Business One Server Tools Service.
 - If you have used Redis persistence, proceed as follows:
 1. Edit the configuration file `sld.xml`.
 - If your existing SAP Business One version is 9.3 PL09 or higher, go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), open the file `sld.xml`, and revert `<Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager"`

```
host="${Redis Server IP}" port="${Redis Server Port}" database="0"
maxInactiveInterval="60" />to<Manager pathname=""/>.
```

- If your existing SAP Business One version is 9.3 PLO8 or lower, go to the folder **<SLD Installation Folder>**/Common/SLD/conf (by default, .../usr/sap/SAPBusinessOne/Common/SLD/conf), open the file sld.xml, and revert <Valve className="com.sap.b1.sld.catalina.session.SessionHandlerValve"/> <Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="\${Redis Server IP}" port="\${Redis Server Port}" database="0" maxInactiveInterval="60" />to<Manager pathname=""/>.

2. Restart the SAP Business One Server Tools Service.

2. Copy the upgrade package to the primary server.

3. Log on to the primary server as root.

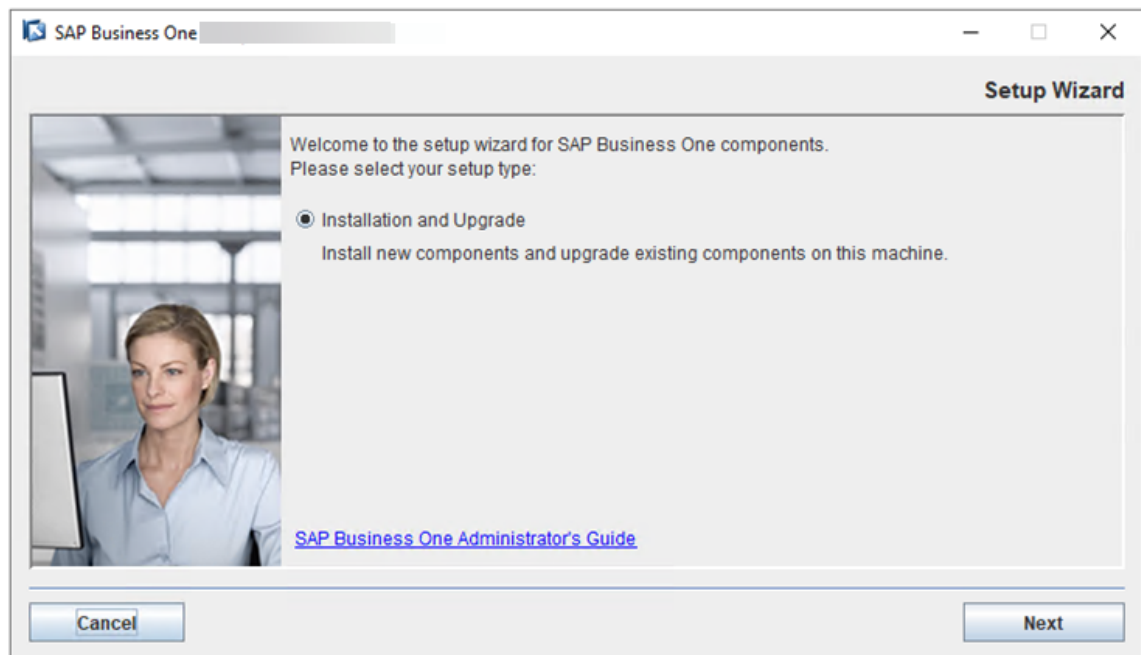
4. Navigate to the directory .../Packages.Linux/ServerComponents of the upgrade folder, where the install script is located.

5. Start the upgrader by entering the following command:

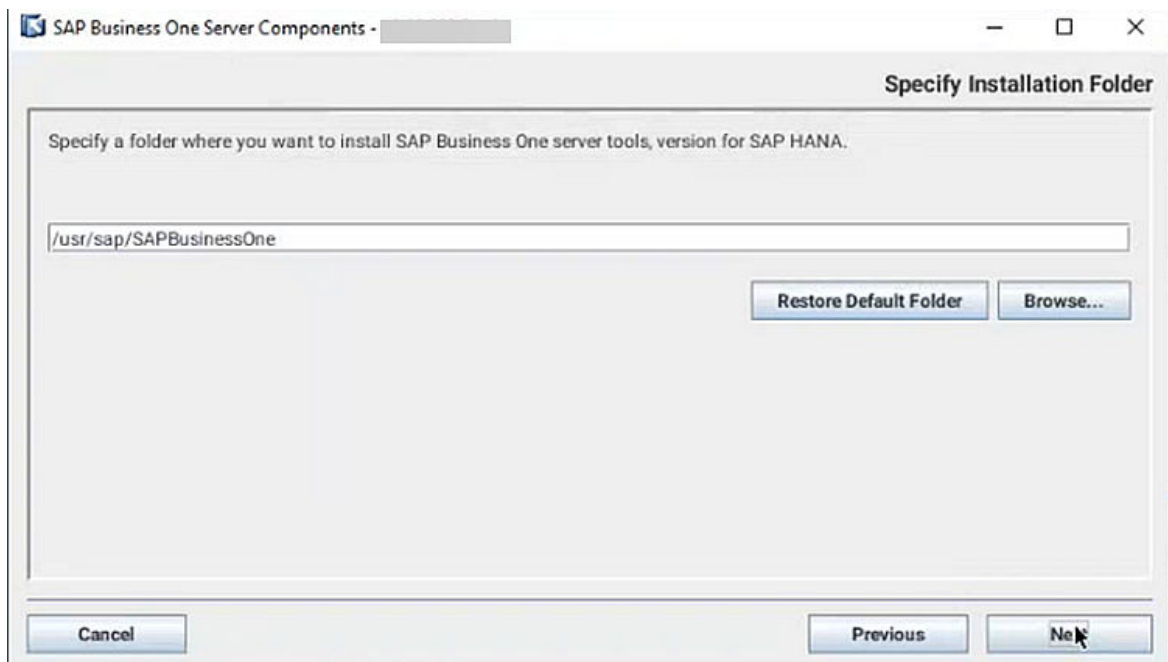
```
./install
```

The upgrade process begins.

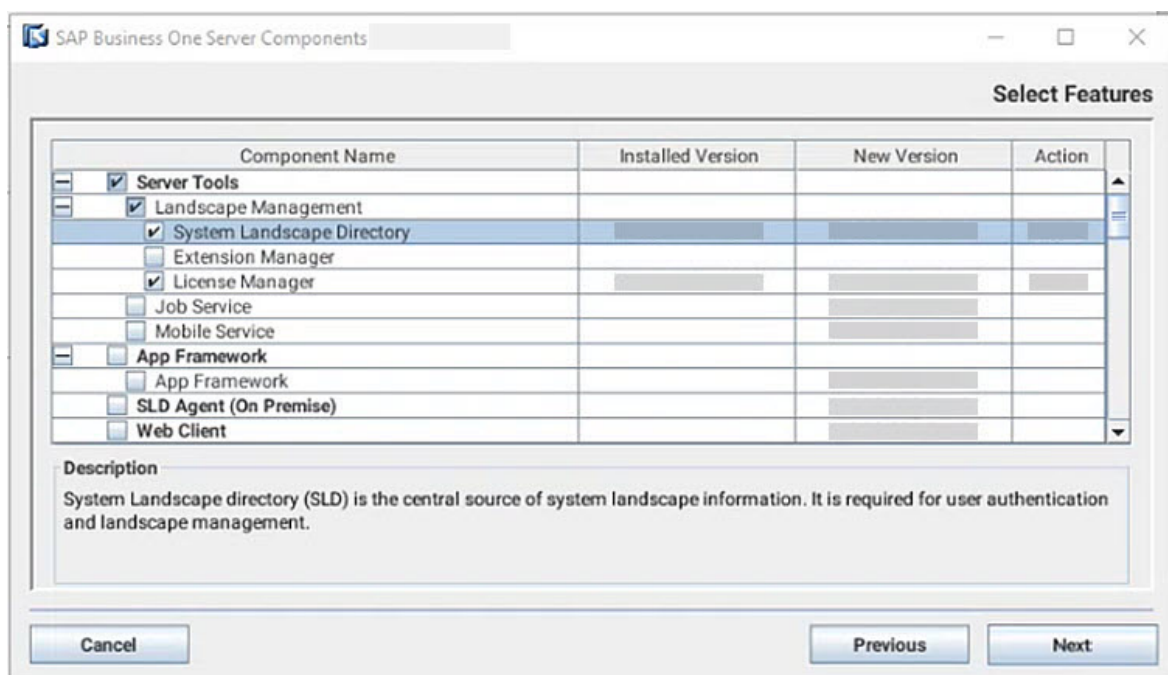
6. In the *Welcome* window, choose *Next*.



7. In the *Specify Installation Folder* window, specify where you want to install the upgraded server components and choose *Next*.



8. In the *Select Features* window, select both *System Landscape Directory* and *License Manager*. Choose *Next*.

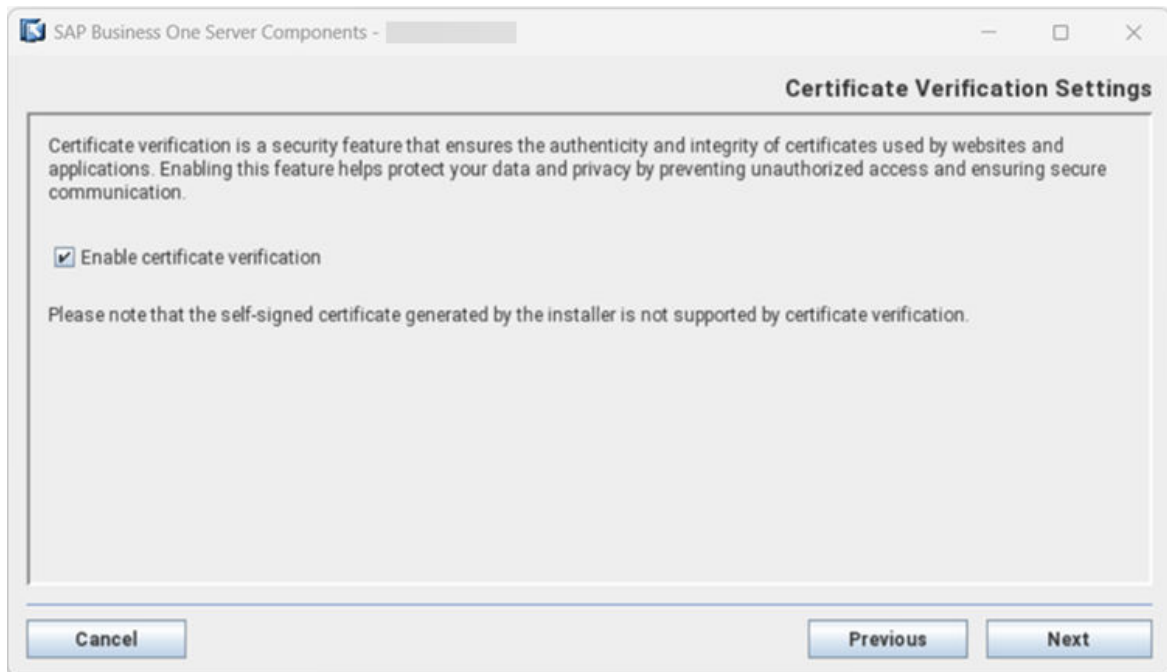


9. If you are installing SAP Business One version 10.0 SP 2408 or earlier, skip this step.

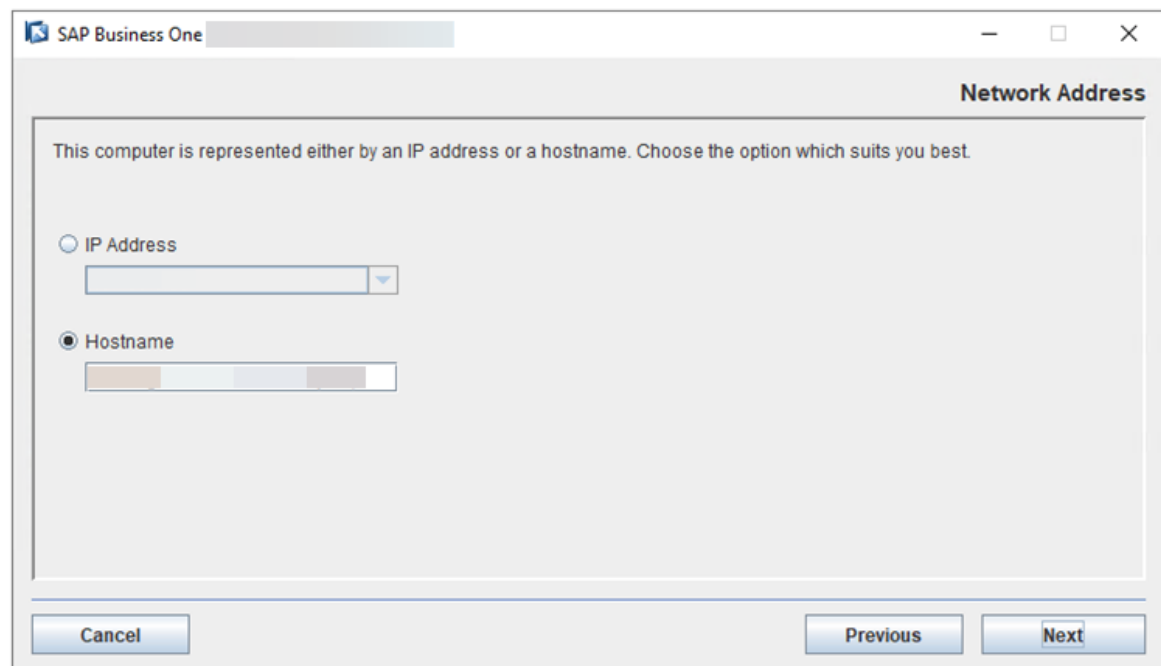
If you are installing version 10.0 SP 2411 or later, you will enter the *Certificate Verification Settings* window.

In the *Certificate Verification Settings* window, enable or disable certificate verification. The *Enable certificate verification* checkbox is selected by default.

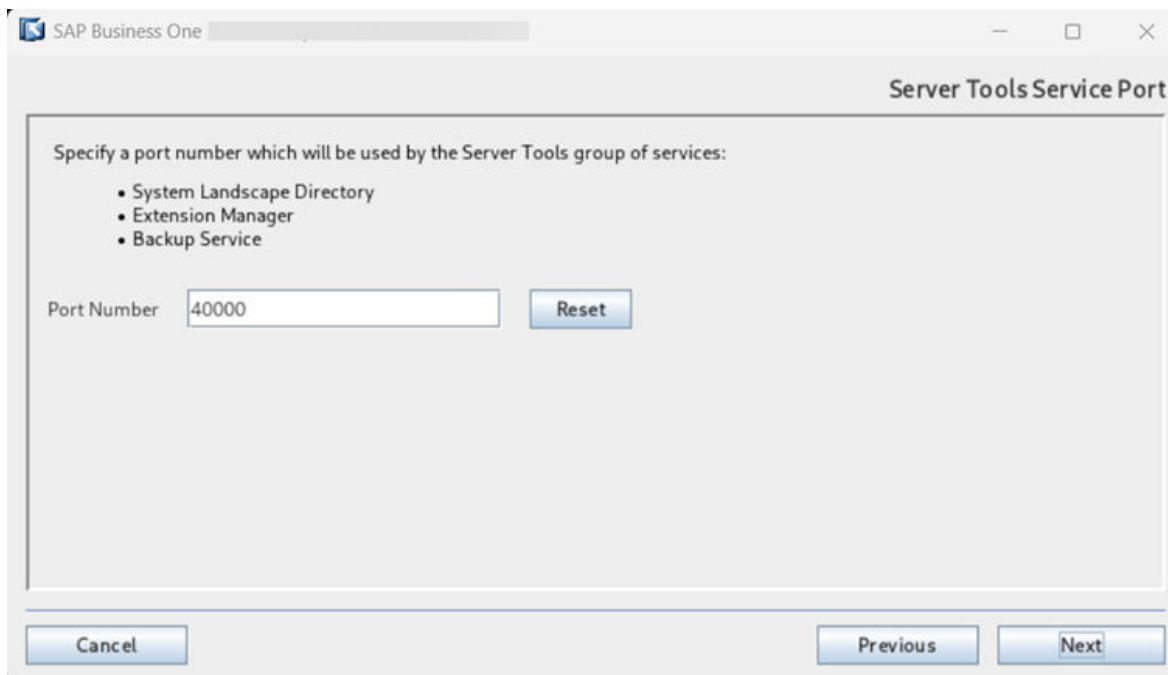
If you choose to enable certificate verification, make sure that you obtain a valid certificate and don't use a self-signed certificate. For more information about the necessary prerequisites, see SAP Note [3520401](#).



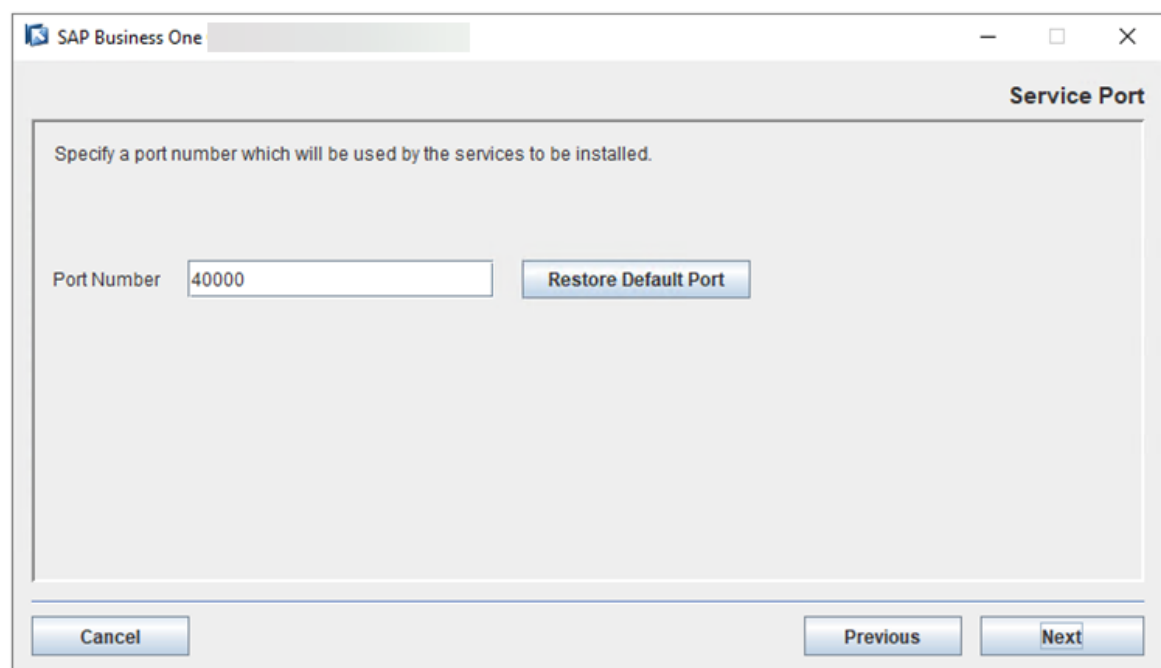
10. In the [Network Address](#) window, confirm the IP address or hostname of Server A. Choose [Next](#).



11. Keep the existing port number that was used for the primary System Landscape Directory during the previous installation and choose [Next](#).
- If you are upgrading your SAP Business One to version 10.0 SP 2511, you will enter the [Server Tools Service Port](#) window.
 - If you are upgrading your SAP Business One to any version from 10.0 FP 2208 through to and including 10.0 FP 2508, you will enter the [Service Port](#) window.



Server Tools Service Port Window



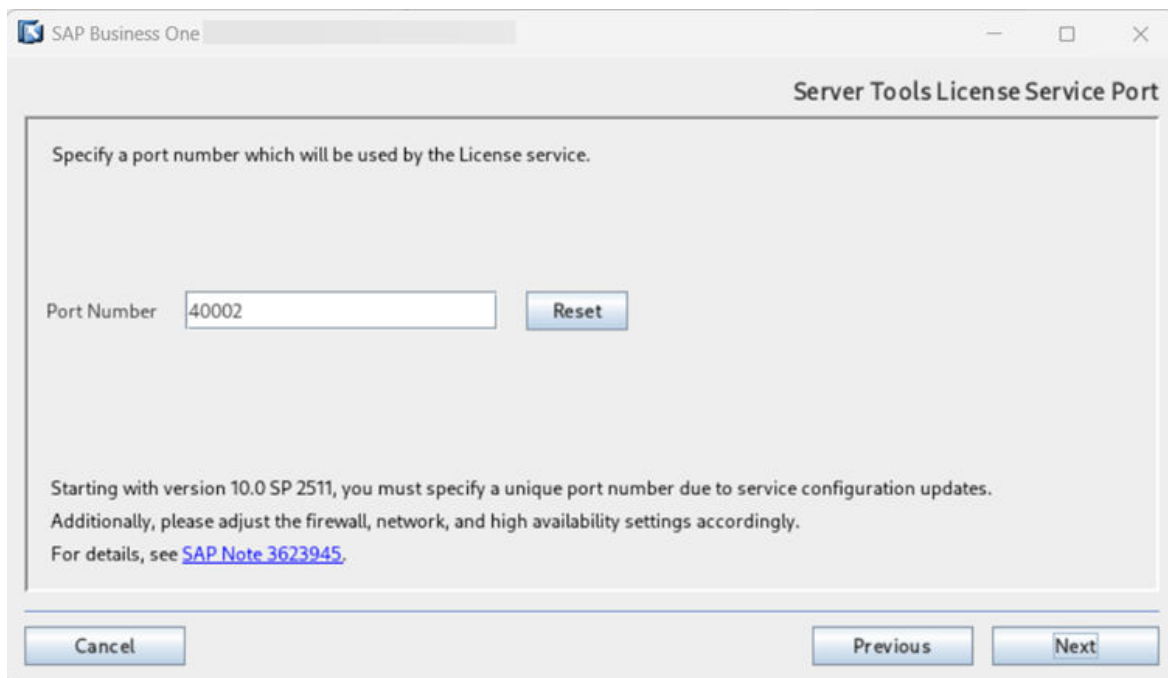
Service Port Window

12. If you are upgrading your SAP Business One to version 10.0 FP 2508 or earlier, skip this step.

If you are upgrading your SAP Business One to version 10.0 SP 2511, you will enter the [Server Tools License Service Port](#) window.

Specify a port number for the [License Manager](#) and choose [Next](#). The default port number is 40002.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#).



SAP Business One

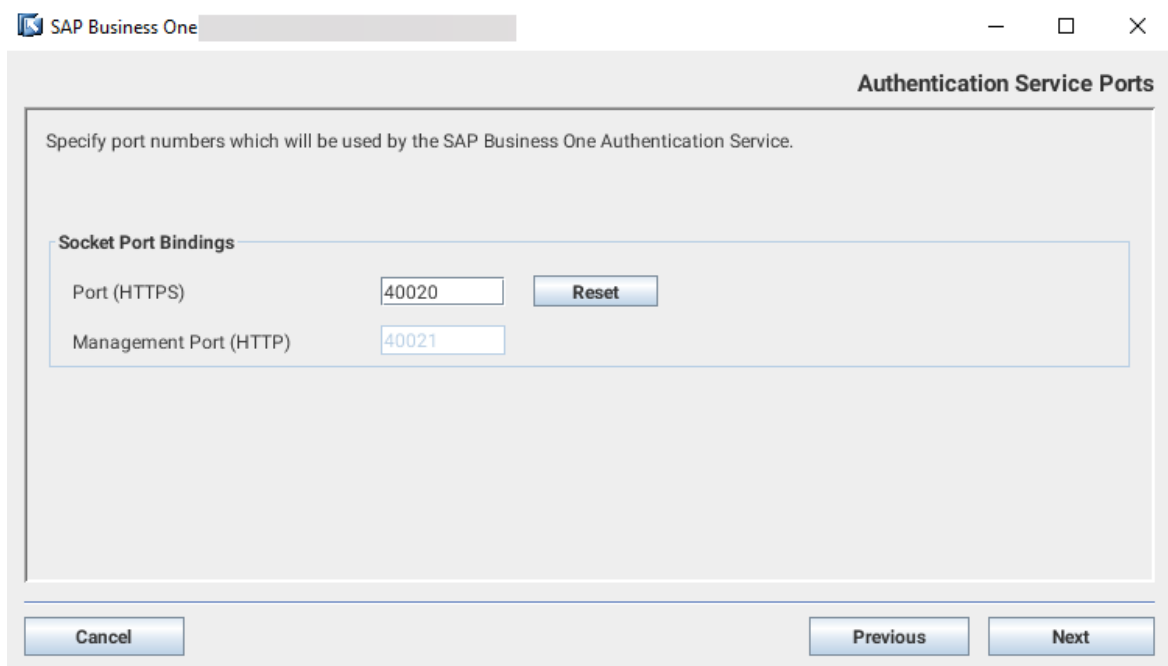
Server Tools License Service Port

Specify a port number which will be used by the License service.

Port Number

Starting with version 10.0 SP 2511, you must specify a unique port number due to service configuration updates. Additionally, please adjust the firewall, network, and high availability settings accordingly. For details, see [SAP Note 3623945](#).

13. In the *Authentication Service Ports* window, keep the existing port numbers that were used for SAP Business One Authentication Service during the previous installation. Choose *Next*.



SAP Business One

Authentication Service Ports

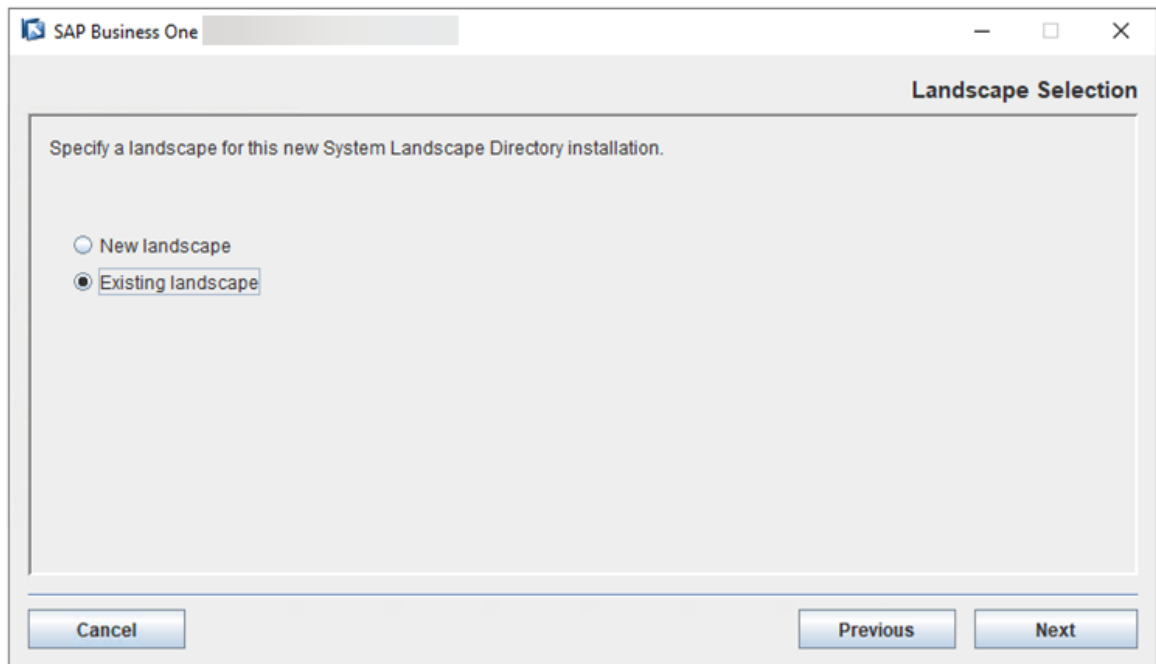
Specify port numbers which will be used by the SAP Business One Authentication Service.

Socket Port Bindings

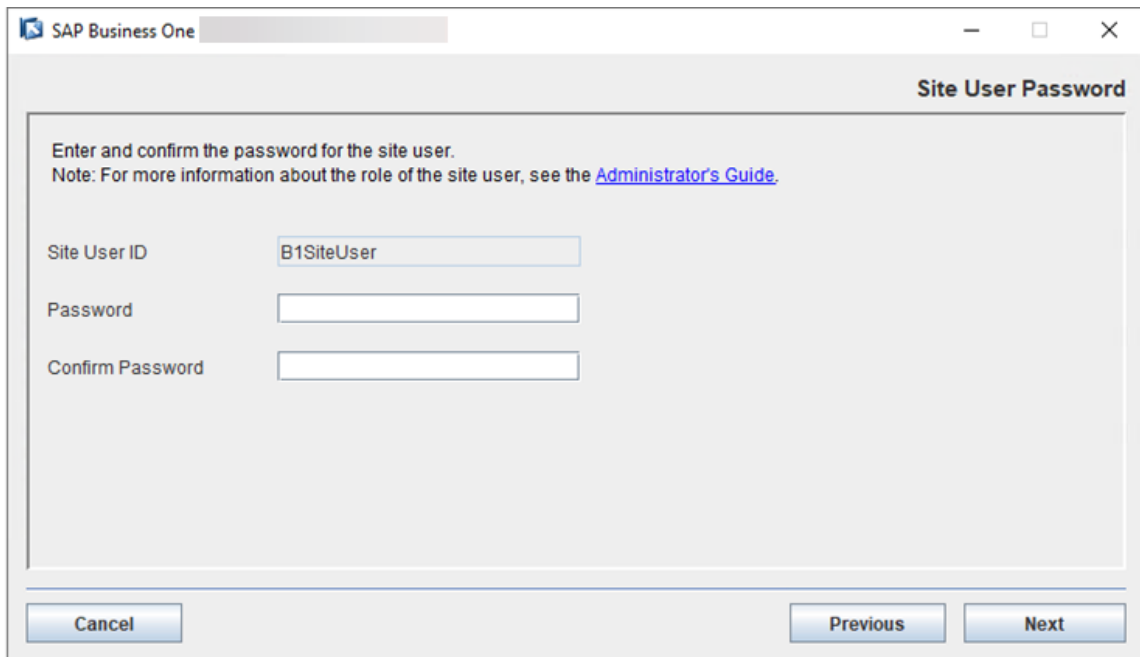
Port (HTTPS)

Management Port (HTTP)

14. In the *Landscape Selection* window, select *Existing landscape*.



15. In the *Site User Password* window, enter the password created for the landscape administrator B1SiteUser and confirm the password. Then choose *Next*.



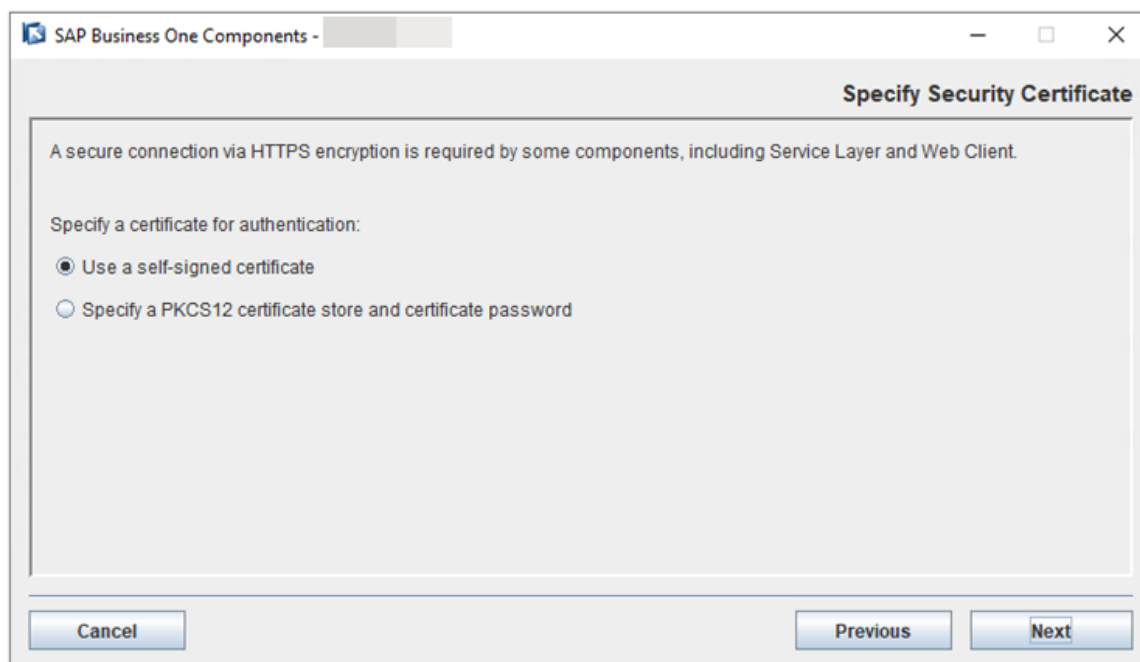
16. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate using one of the following methods:

- Third-party certificate authority
You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- Certificate authority server

You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.

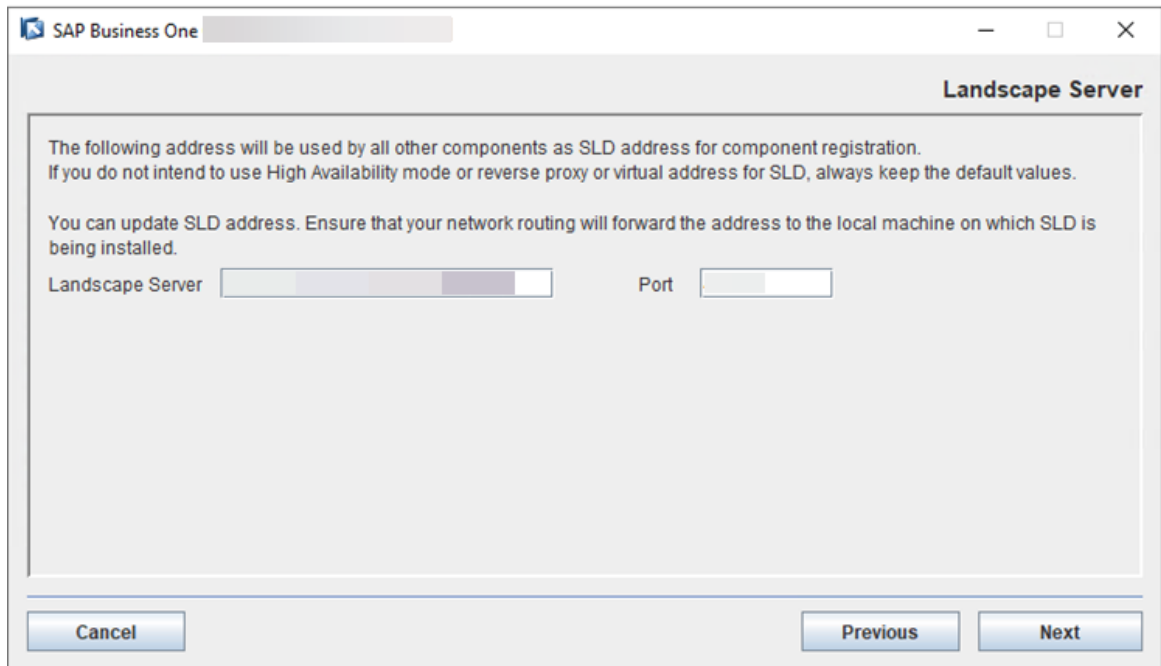
- (Not recommended) Generate a self-signed certificate
You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).



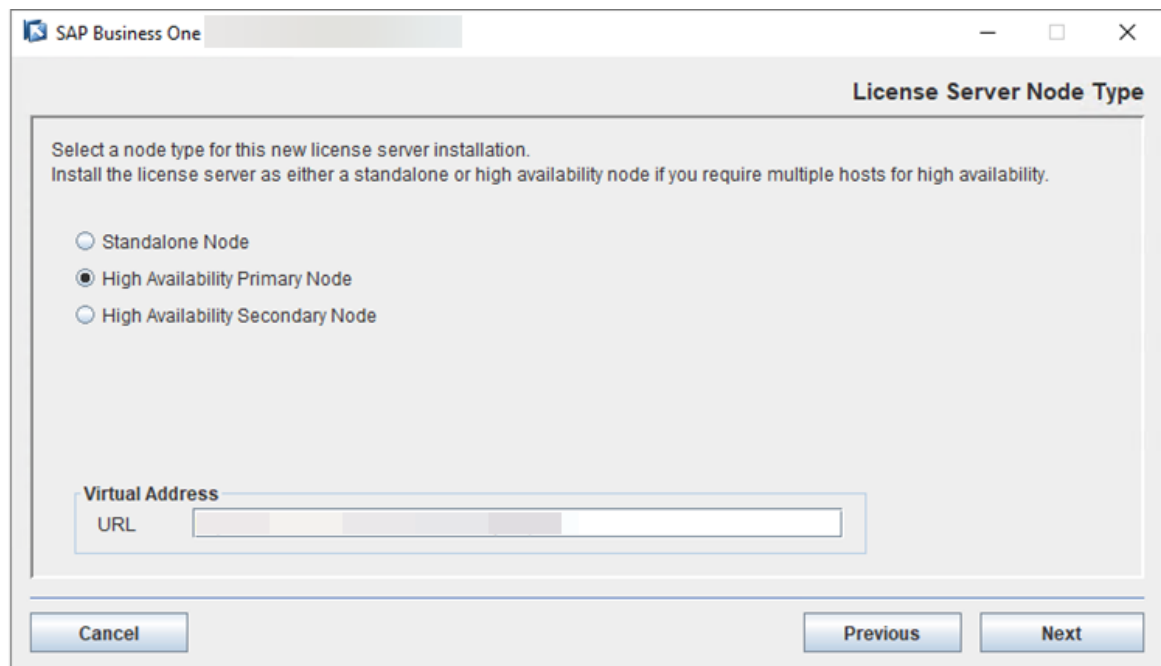
17. In the [Landscape Server](#) window, keep the existing values of the [Landscape Server](#) address and port number. Choose [Next](#).

Note

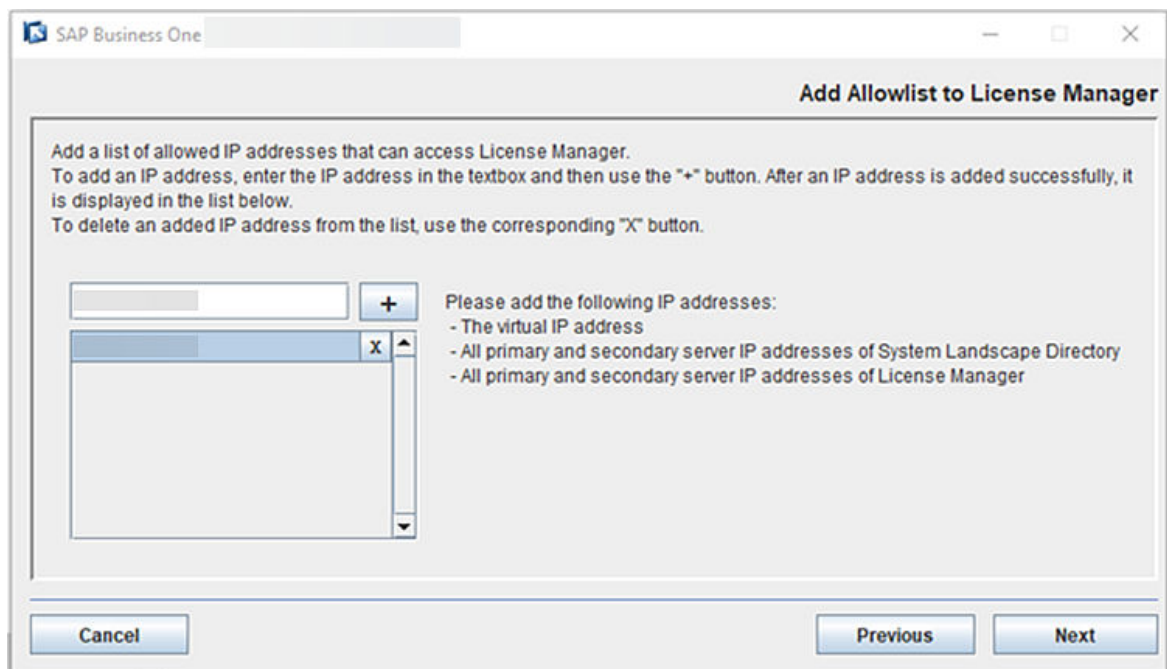
If you are upgrading to any version from SAP Business One 10.0 SP 2311 up to and including 10.0 SP 2411, enter the local IP address or hostname and port number (by default, 40000) of Server A instead. Do not use the virtual IP address.



18. In the *License Server Node Type* window, select *High Availability Primary Node* and enter the virtual URL that contains the virtual IP address and port number.



19. In the *Add Allowlist to License Manager* window, add the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.



Alternatively, you can follow the steps below to add the allowlist manually after the installation:

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

Sample Code

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to the directory `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on your primary License Manager server.
3. On your primary server, restart *License Manager*.
 - If your SAP Business One version is 10.0 FP 2508 or earlier, run the following command: `systemctl restart sapb1servertools.service`.
 - If your SAP Business One version is 10.0 FP 2511 or later, run the following command: `systemctl restart sapb1servertools-license.service`.

20. In the *Database Server Connection* window, keep the previous settings and then choose *Next*.

Connection

- *SAP HANA Server*: The hostname or IP address of your SAP HANA server.
- *Instance Number*: The instance number of your SAP HANA database.

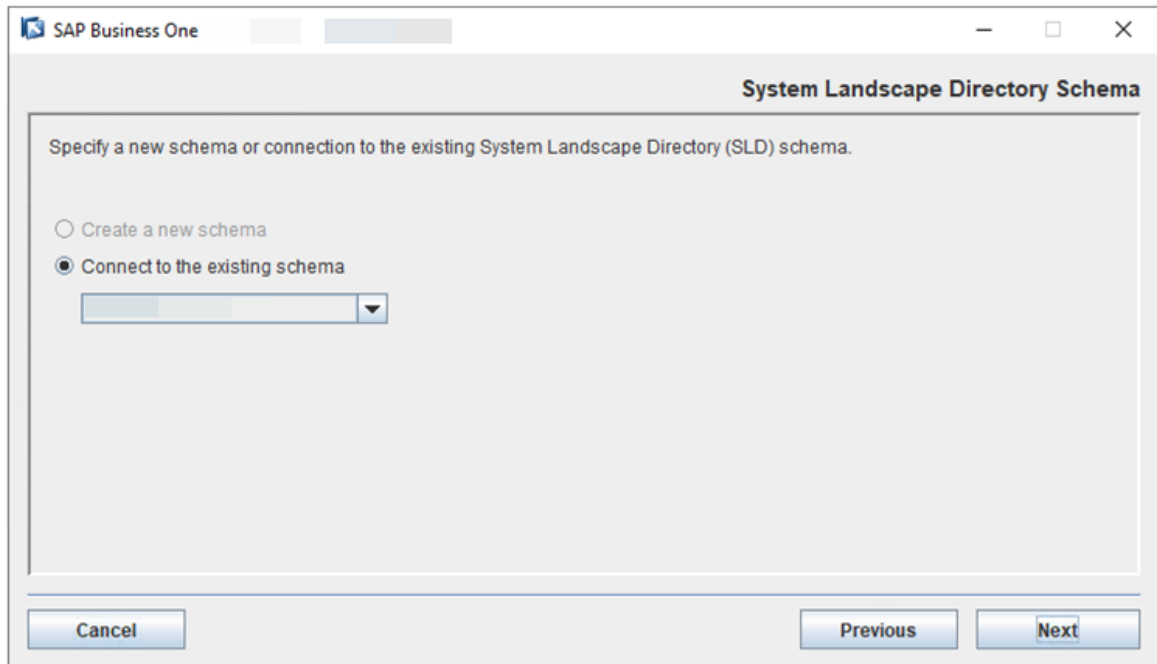
- *Tenant Database*: The name of the tenant database that you use.

Credentials

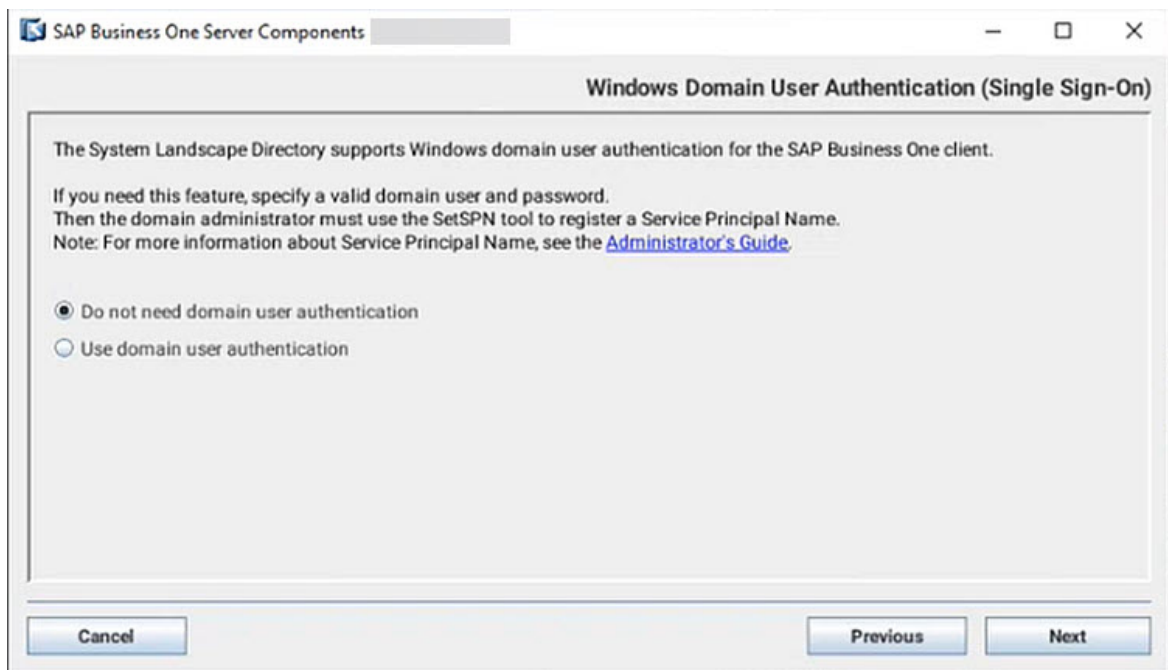
- *User Name*: Your tenant database user name.
- *Password*: The password for your user name.

21. In the *Service Database* window, choose to connect to the existing database schema that you created for SAP Business One Authentication Service when you deployed the primary SLD. Choose *Next*.

22. In the *System Landscape Directory Schema* window, choose to connect to the existing SLD schema that you created when you deployed the primary SLD.

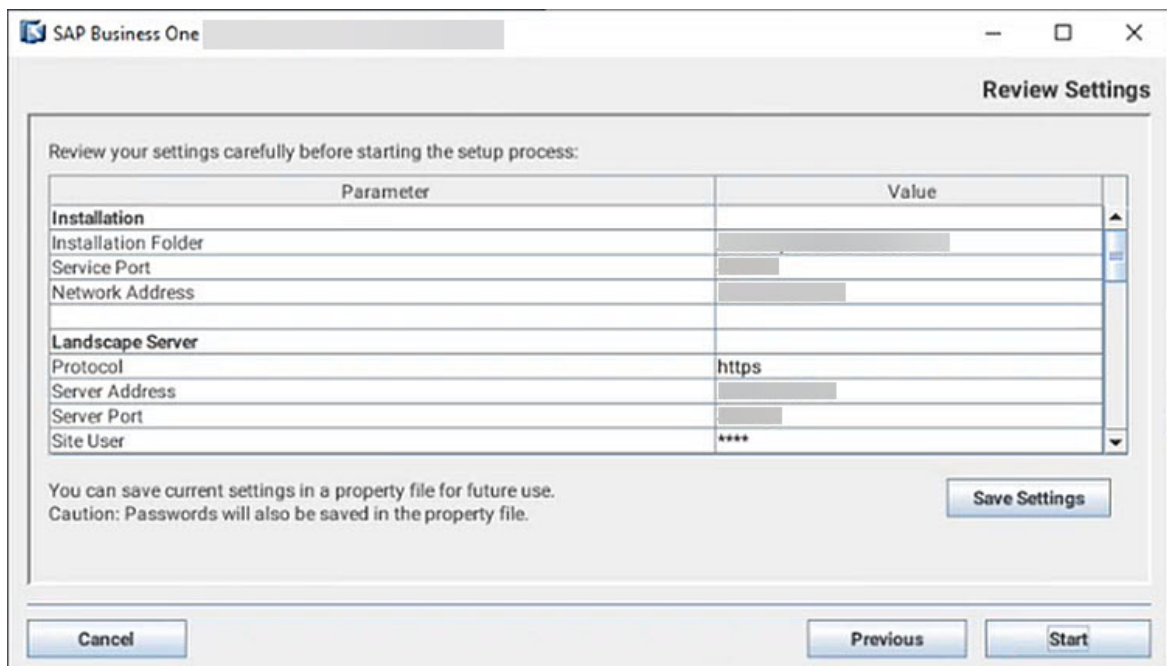


23. In the *Windows Domain User Authentication (Single Sign-On)* window, specify all required information and choose *Next*.



24. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to begin the installation.

Note that *Network Address* and *Server Address* are the same for all installations without a proxy SLD IP or hostname.



25. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If the upgrade succeeds, choose [Next](#) to finish the installation.
 - If the upgrade fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
26. In the [Setup Process Completed](#) window, review the installation.
27. Choose [Finish](#) to exit the wizard.

Task overview: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

Next task: [Upgrading Secondary SLD and License Manager on Server B \[page 128\]](#)

3.1.1.2 Upgrading Secondary SLD and License Manager on Server B

Procedure

1. Revert the configuration change made for high availability in the `sld.xml` file during your previous setup:
 - If you have used database persistence to store the SLD memory, proceed as follows:
 1. Edit the configuration file `sld.xml`.
 - If your existing SAP Business One version is 10.0 SP 2511 or later, go to the folder **<SLD Installation Folder>/SLD/conf** (by default, `/usr/sap/SAPBusinessOne/ServerTools/SLD/conf`), open the file `sld.xml`, and revert `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager`

```
" password=" " pathname="" url=" " username=" " /> to <Manager  
pathname="" />.
```

- If your existing SAP Business One version is between 9.3 PL09 and 10.0 FP 2508, go to the folder **<SLD Installation Folder>**/Common/SLD/conf (by default, .../usr/sap/SAPBusinessOne/Common/SLD/conf), open the file sld.xml, and revert <Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname="" url=" " username=" " /> to <Manager pathname="" />.
- If your existing SAP Business One version is 9.3 PL08 or lower, go to the folder **<SLD Installation Folder>**/Common/SLD/conf (by default, .../usr/sap/SAPBusinessOne/Common/SLD/conf), open the file sld.xml, and revert <Valve className="com.sap.b1.sld.catalina.session.SessionHandlerValve" /> <Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" /> to <Manager pathname="" />.

2. Restart the SAP Business One Server Tools Service.

- If you have used Redis persistence, proceed as follows:

1. Edit the configuration file sld.xml.

- If your existing SAP Business One version is 9.3 PL09 or higher, go to the folder **<SLD Installation Folder>**/Common/SLD/conf (by default, .../usr/sap/SAPBusinessOne/Common/SLD/conf), open the file sld.xml, and revert <Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="\${Redis Server IP}" port="\${Redis Server Port}" database="0" maxInactiveInterval="60" /> to <Manager pathname="" />.
- If your existing SAP Business One version is 9.3 PL08 or lower, go to the folder **<SLD Installation Folder>**/Common/SLD/conf (by default, .../usr/sap/SAPBusinessOne/Common/SLD/conf), open the file sld.xml, and revert <Valve className="com.sap.b1.sld.catalina.session.SessionHandlerValve" /> <Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="\${Redis Server IP}" port="\${Redis Server Port}" database="0" maxInactiveInterval="60" /> to <Manager pathname="" />.

2. Restart the SAP Business One Server Tools Service.

2. Copy the upgrade package to the secondary server.

3. Log on to the secondary server as root.

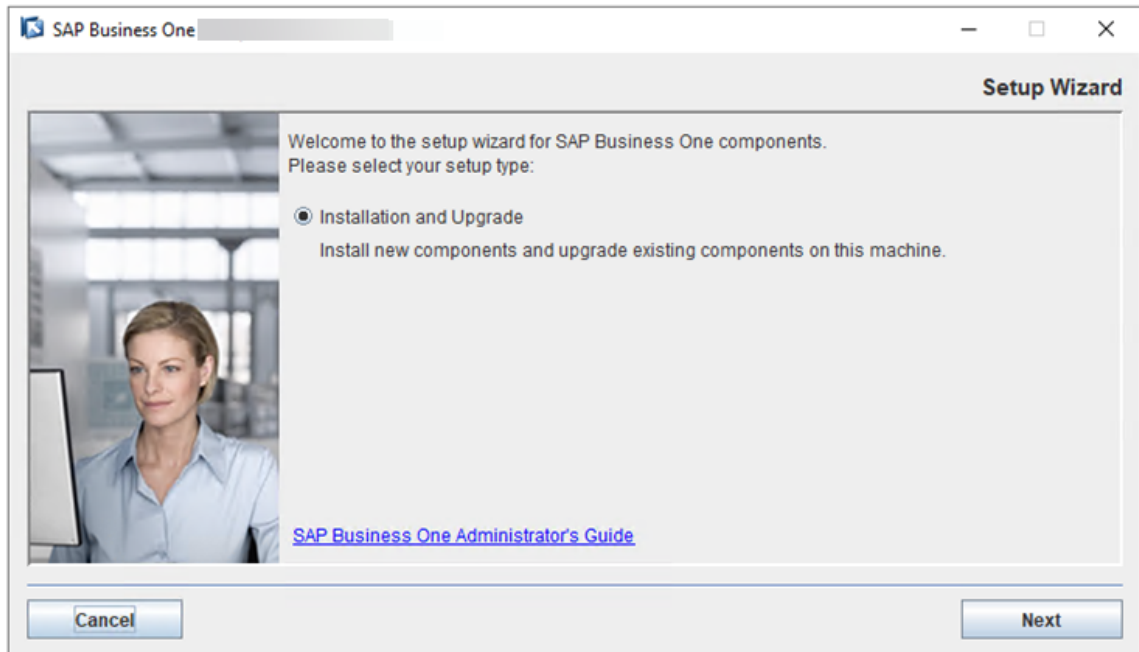
4. Navigate to the directory .../Packages.Linux/ServerComponents of the upgrade folder, where the install script is located.

5. Start the upgrader by entering the following command:

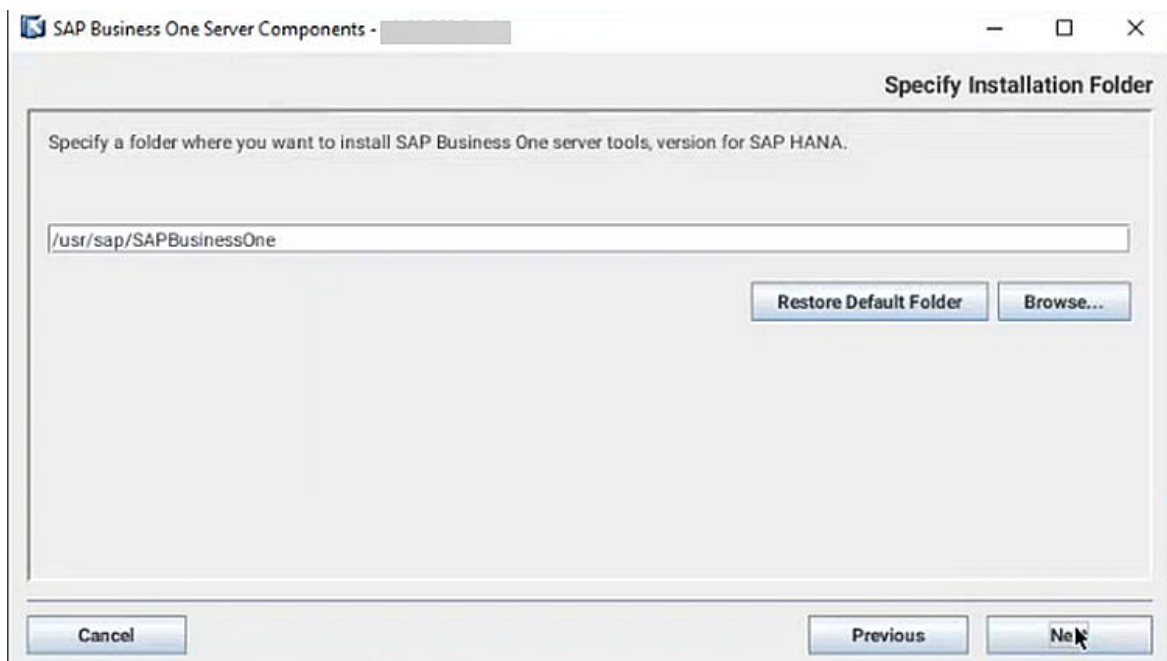
```
./install
```

The upgrade process begins.

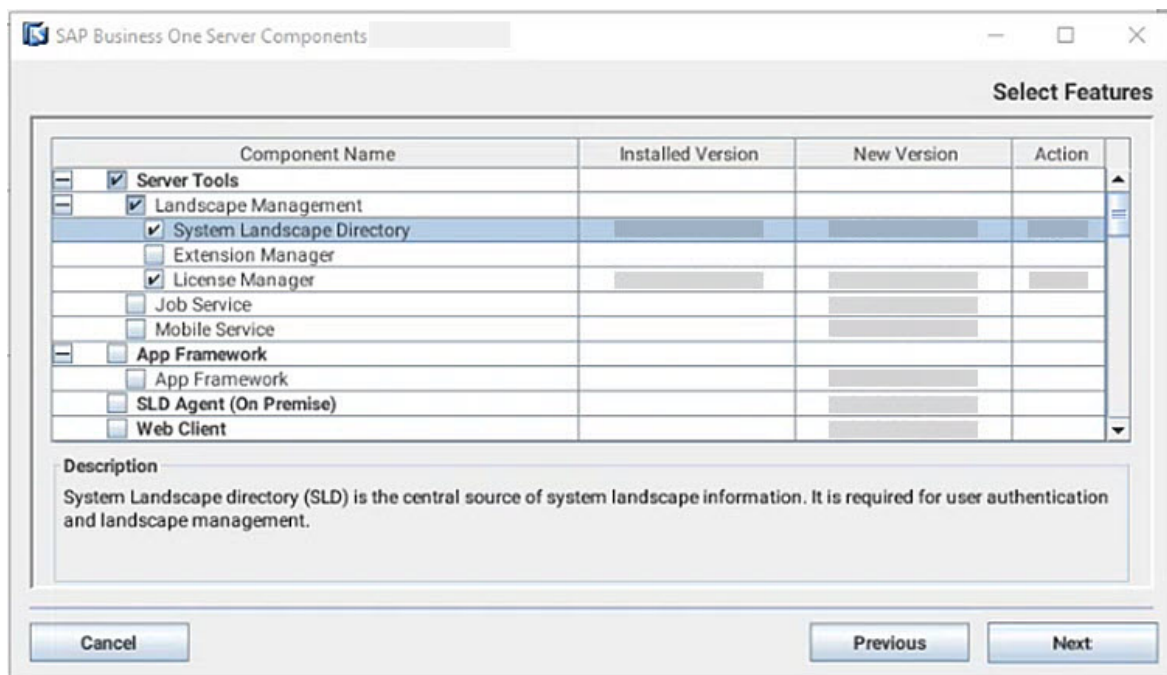
6. In the *Welcome* window, choose *Next*.



7. In the *Specify Installation Folder* window, specify where you want to install the upgraded server components and choose *Next*.



8. In the *Select Features* window, select *System Landscape Directory* and *License Manager*. Choose *Next*.

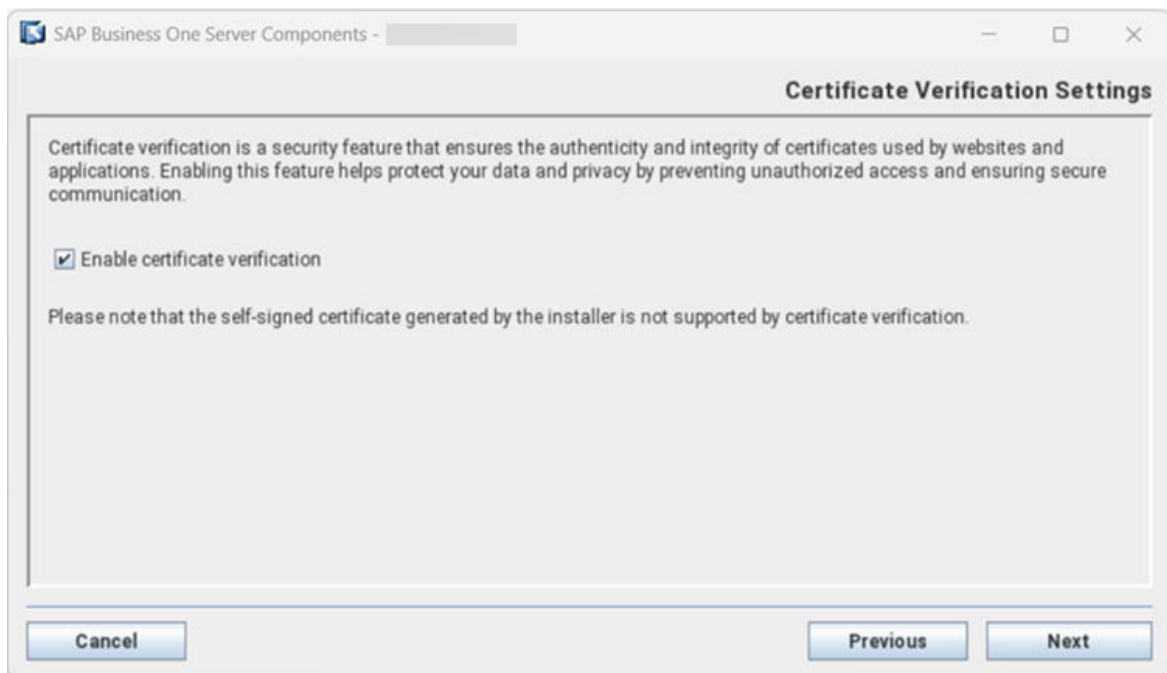


9. If you are installing SAP Business One version 10.0 SP 2408 or earlier, skip this step.

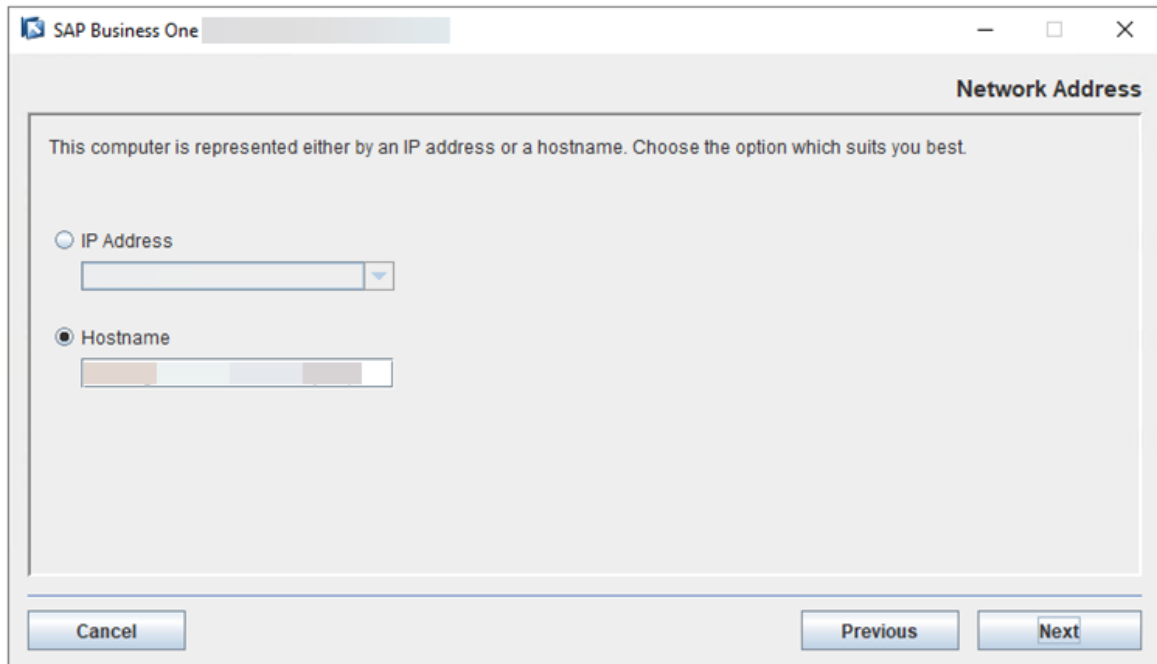
If you are installing version 10.0 SP 2411 or later, you will enter the [Certificate Verification Settings](#) window.

In the [Certificate Verification Settings](#) window, enable or disable certificate verification. The [Enable certificate verification](#) checkbox is selected by default.

If you choose to enable certificate verification, make sure that you obtain a valid certificate and don't use a self-signed certificate. For more information about the necessary prerequisites, see SAP Note [3520401](#).



10. In the [Network Address](#) window, confirm the IP address or hostname of Server B. Choose [Next](#).



SAP Business One

Network Address

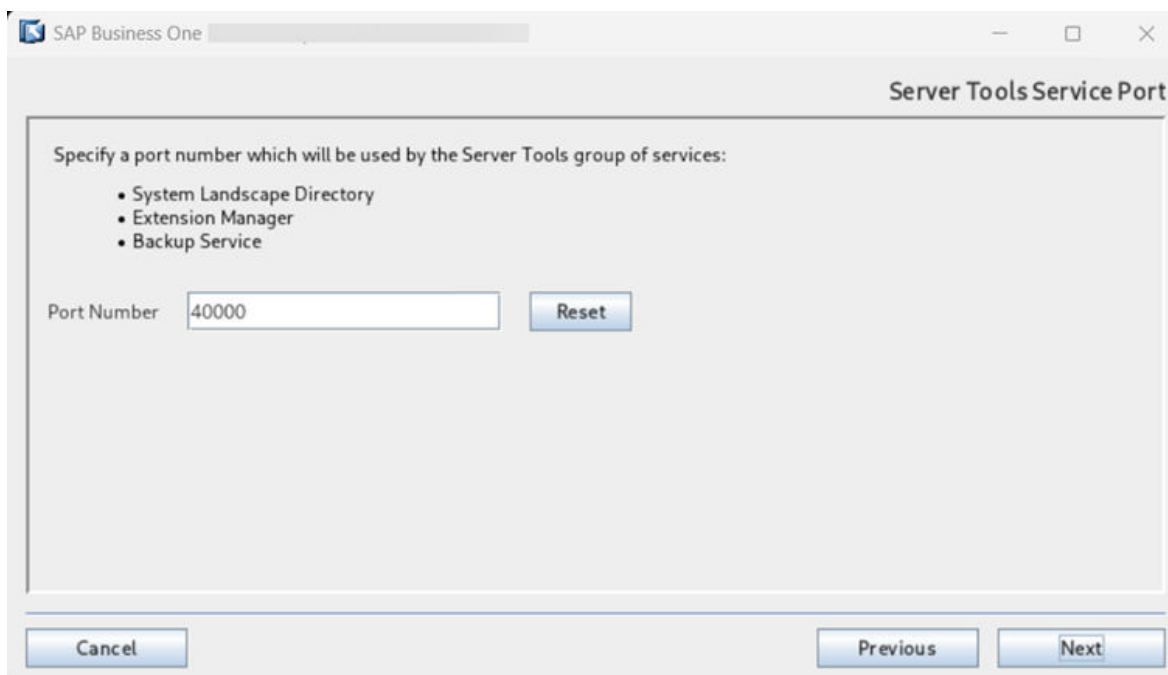
This computer is represented either by an IP address or a hostname. Choose the option which suits you best.

☐ IP Address

☒ Hostname

Cancel **Previous** **Next**

11. Keep the existing port number that was used for the secondary System Landscape Directory during the previous installation and choose [Next](#).
 - If you are upgrading your SAP Business One to version 10.0 SP 2511, you will enter the [Server Tools Service Port](#) window.
 - If you are upgrading your SAP Business One to any version from 10.0 FP 2208 through to and including 10.0 FP 2508, you will enter the [Service Port](#) window.



SAP Business One

Server Tools Service Port

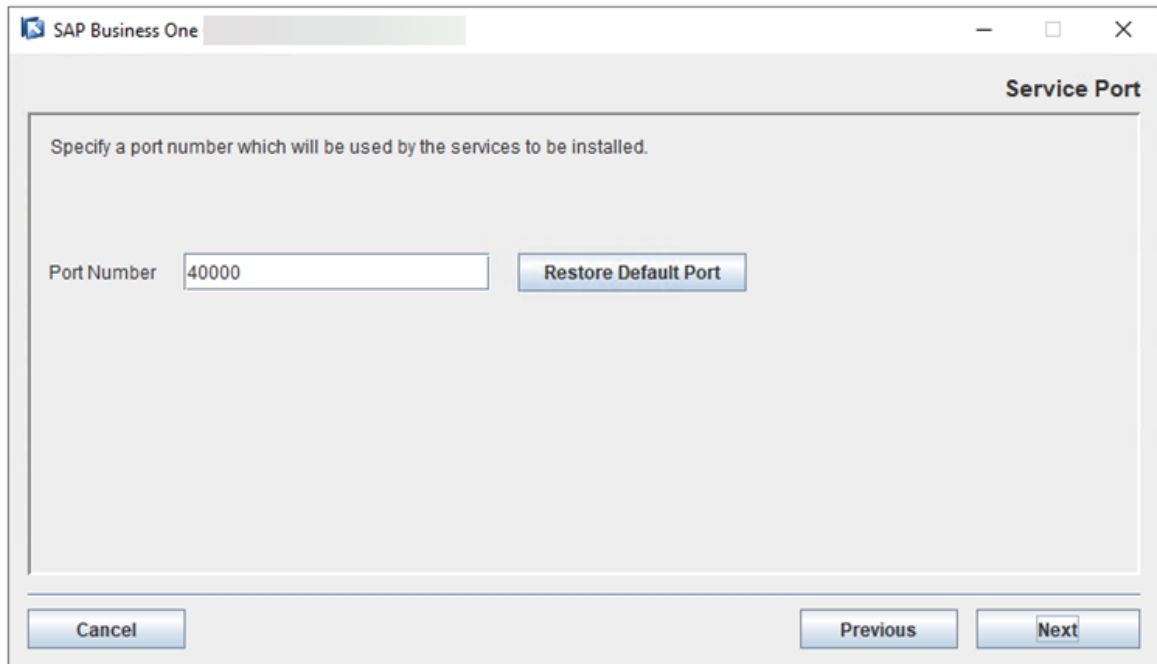
Specify a port number which will be used by the Server Tools group of services:

- System Landscape Directory
- Extension Manager
- Backup Service

Port Number **Reset**

Cancel **Previous** **Next**

Server Tools Service Port Window



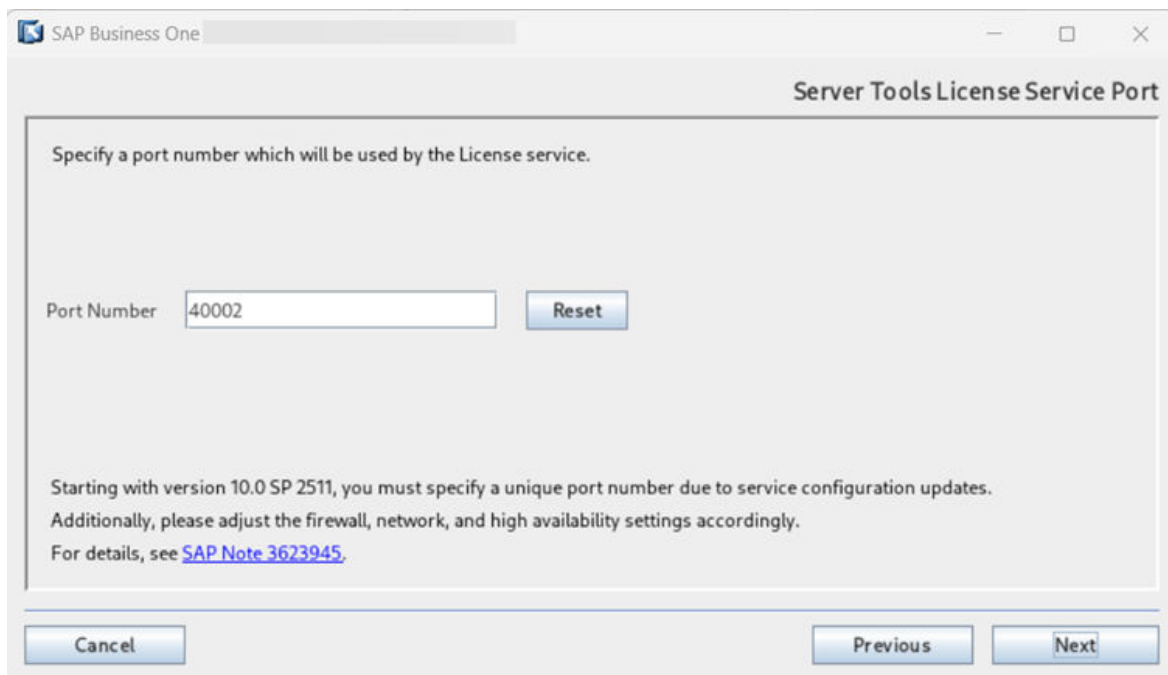
Service Port Window

12. If you are upgrading your SAP Business One to version 10.0 FP 2508 or earlier, skip this step.

If you are upgrading your SAP Business One to version 10.0 SP 2511, you will enter the [Server Tools License Service Port](#) window.

Specify a port number for the [License Manager](#) and choose [Next](#). The default port number is 40002.

You can change the port number as needed. To discard your changes and revert to the default port number, choose [Reset](#).



13. In the *Authentication Service Ports* window, keep the existing port numbers that were used for SAP Business One Authentication Service during the previous installation. Choose *Next*.

The screenshot shows the 'Authentication Service Ports' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Authentication Service Ports'. The main text says 'Specify port numbers which will be used by the SAP Business One Authentication Service.' Below this, there is a section titled 'Socket Port Bindings' containing two input fields: 'Port (HTTPS)' with the value '40020' and 'Management Port (HTTP)' with the value '40021'. A 'Reset' button is located next to the 'Port (HTTPS)' field. At the bottom of the window, there are three buttons: 'Cancel', 'Previous', and 'Next'.

14. In the *Landscape Selection* window, select *Existing landscape*.

The screenshot shows the 'Landscape Selection' window in SAP Business One. The window title is 'SAP Business One' and the subtitle is 'Landscape Selection'. The main text says 'Specify a landscape for this new System Landscape Directory installation.' Below this, there are two radio button options: 'New landscape' and 'Existing landscape'. The 'Existing landscape' option is selected. At the bottom of the window, there are three buttons: 'Cancel', 'Previous', and 'Next'.

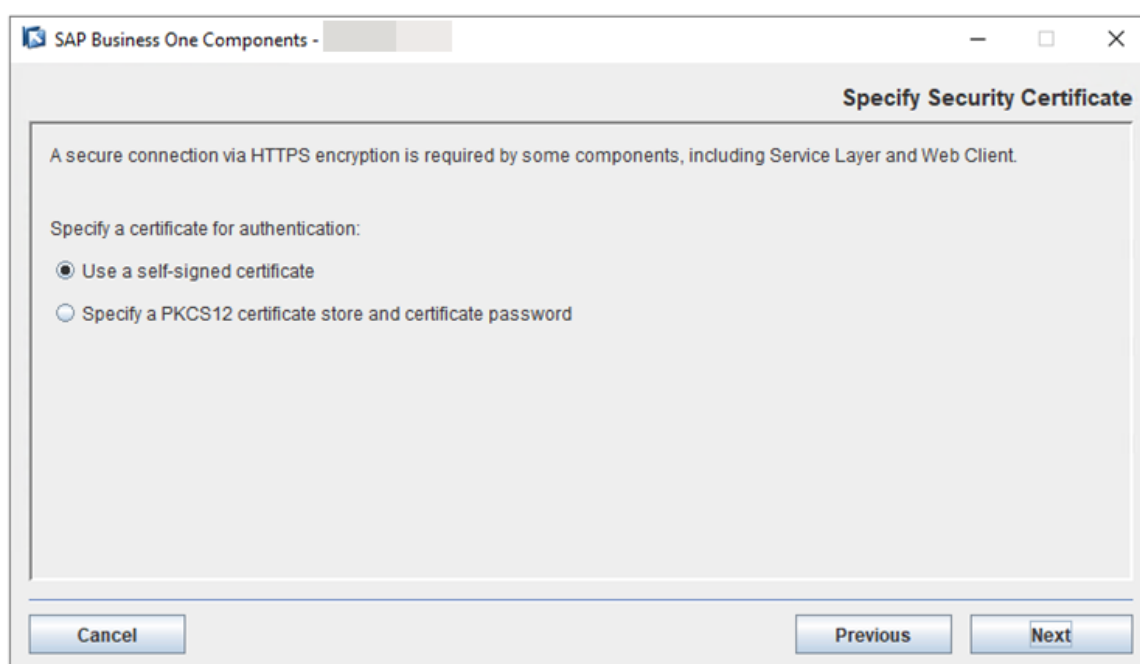
15. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate using one of the following methods:

- Third-party certificate authority

You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.

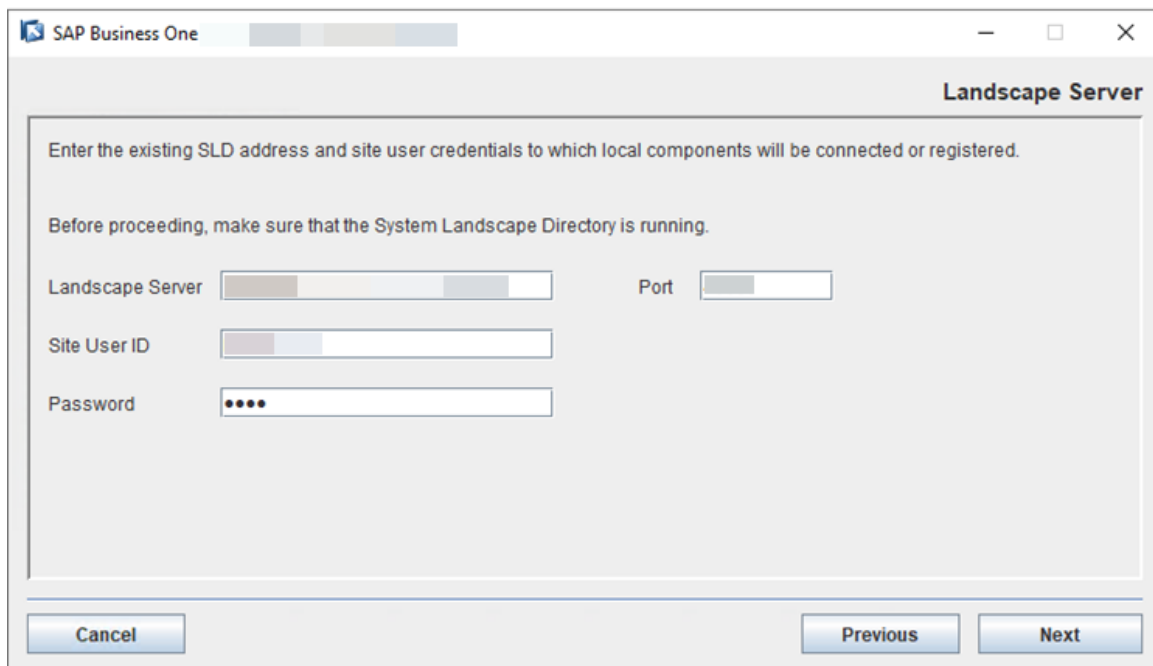
- **Certificate authority server**
You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select [Specify a PKCS12 certificate store and certificate password](#) and enter the required information.
- **(Not recommended) Generate a self-signed certificate**
You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select [Use a self-signed certificate](#).



16. In the [Landscape Server](#) window, keep the previous settings and choose [Next](#).

Note

If you are upgrading to any version from SAP Business One 10.0 SP 2311 through to and including 10.0 SP 2411, enter the local IP address or hostname and port number (by default, 40000) of Server B instead. Do not use the virtual IP address.



SAP Business One

Landscape Server

Enter the existing SLD address and site user credentials to which local components will be connected or registered.

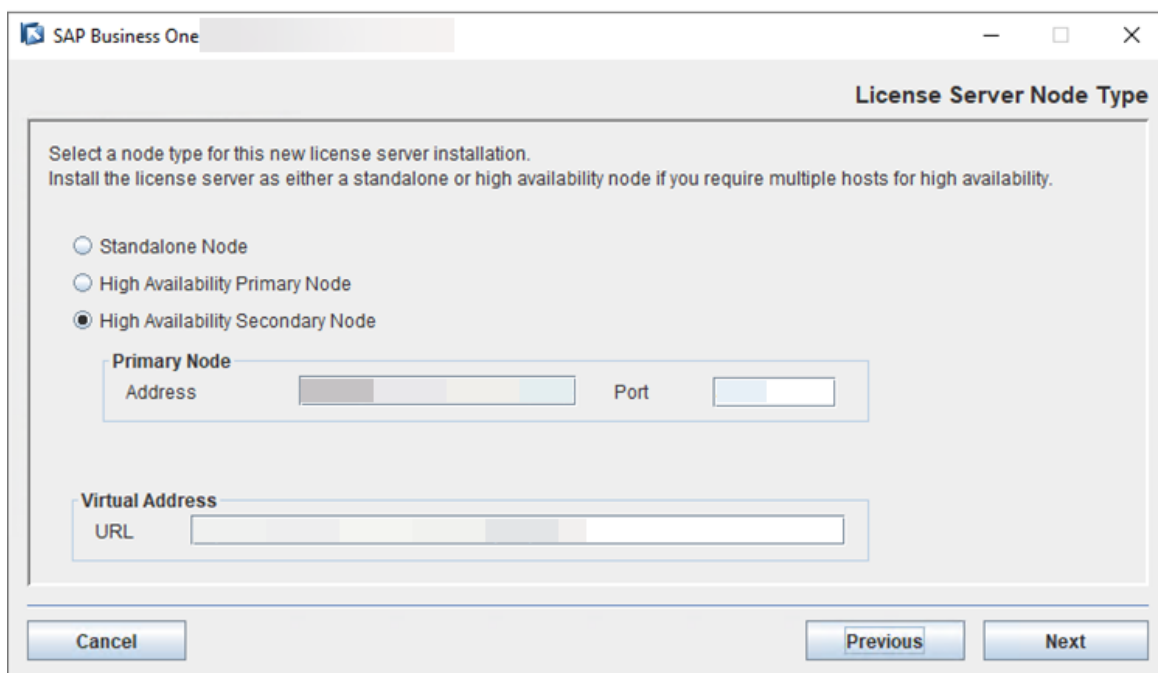
Before proceeding, make sure that the System Landscape Directory is running.

Landscape Server Port

Site User ID

Password

17. In the *License Server Node Type* window, select *High Availability Secondary Node* and enter the IP address and port number of the primary License Manager node to connect to the remote license service. In the *Virtual Address* section, enter the virtual URL that contains the virtual IP address and port number.



SAP Business One

License Server Node Type

Select a node type for this new license server installation.
Install the license server as either a standalone or high availability node if you require multiple hosts for high availability.

☐ Standalone Node

☐ High Availability Primary Node

☒ High Availability Secondary Node

Primary Node

Address Port

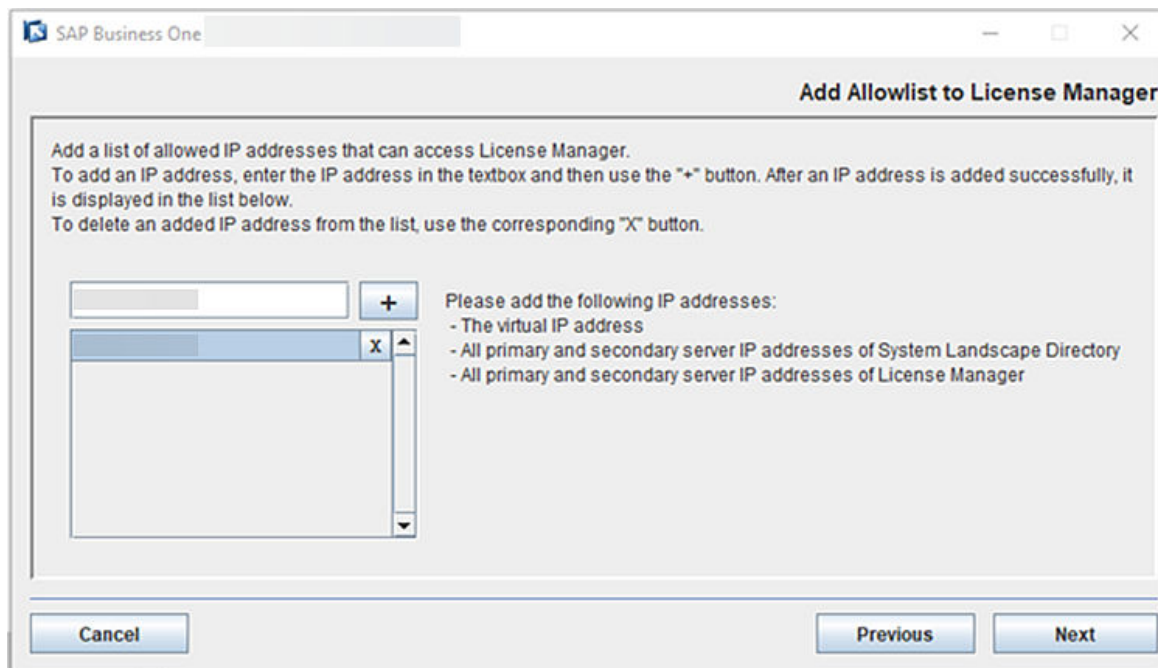
Virtual Address

URL

Note

If you see the error message `Address of primary node is not reachable`, you can check whether the SAP Business One Server Tools service on Server A is running or not.

18. In the [Add Allowlist to License Manager](#) window, add the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.



Alternatively, you can follow the steps below to add the allowlist manually after the installation:

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

Sample Code

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to the directory `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on your primary License Manager server.
 3. On your primary server, restart [License Manager](#).
 - If your SAP Business One version is 10.0 FP 2508 or earlier, run the following command:
`systemctl restart sapb1servertools.service.`
 - If your SAP Business One version is 10.0 FP 2511 or later, run the following command: `systemctl restart sapb1servertools-license.service.`
19. In the [Database Server Connection](#) window, keep the previous settings and then choose [Next](#).

[Connection](#)

- *SAP HANA Server*: The hostname or IP address of your SAP HANA server.
- *Instance Number*: The instance number of your SAP HANA database.
- *Tenant Database*: The name of the tenant database that you use.

Credentials

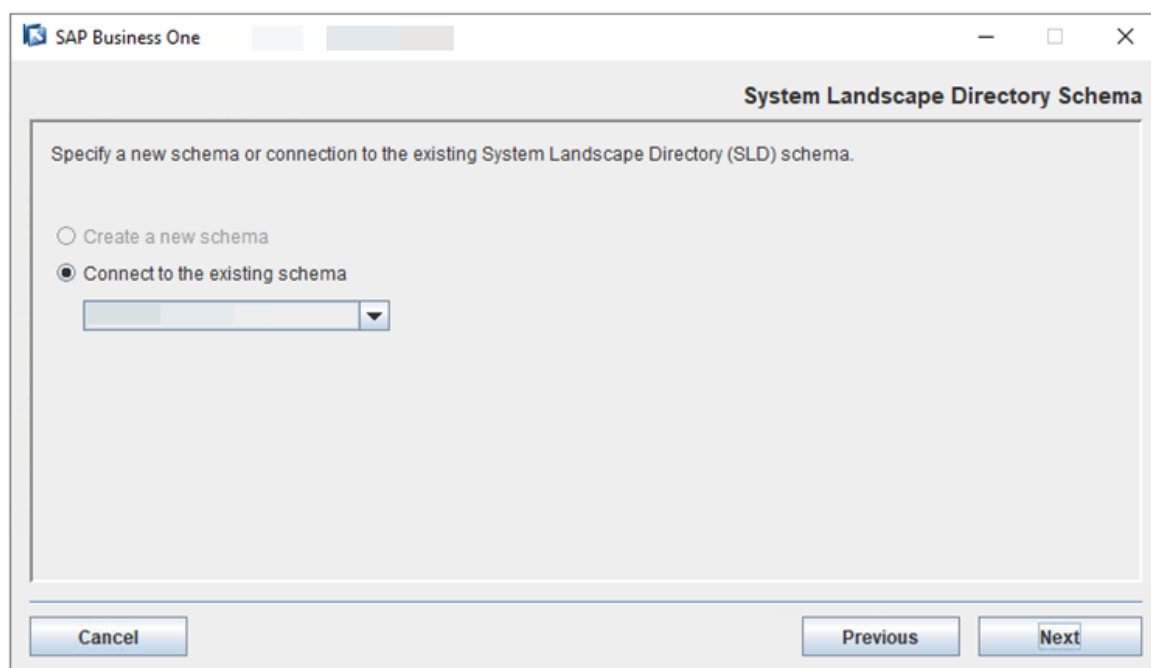
- *User Name*: Your tenant database user name.
- *Password*: The password for your user name.

The screenshot shows a window titled 'SAP Business One Server Components - Database Server Connection'. The main area is titled 'Specify the database information.' and contains two sections: 'Connection' and 'Credentials'. In the 'Connection' section, there are input fields for 'SAP HANA Server', 'Instance Number' (with '00' entered), and 'Tenant Database'. In the 'Credentials' section, there are input fields for 'User Name' and 'Password'. At the bottom, there is a note: 'The specified database user requires privileges according to the [Administrator's Guide](#).' Below the note are three buttons: 'Cancel', 'Previous', and 'Next'.

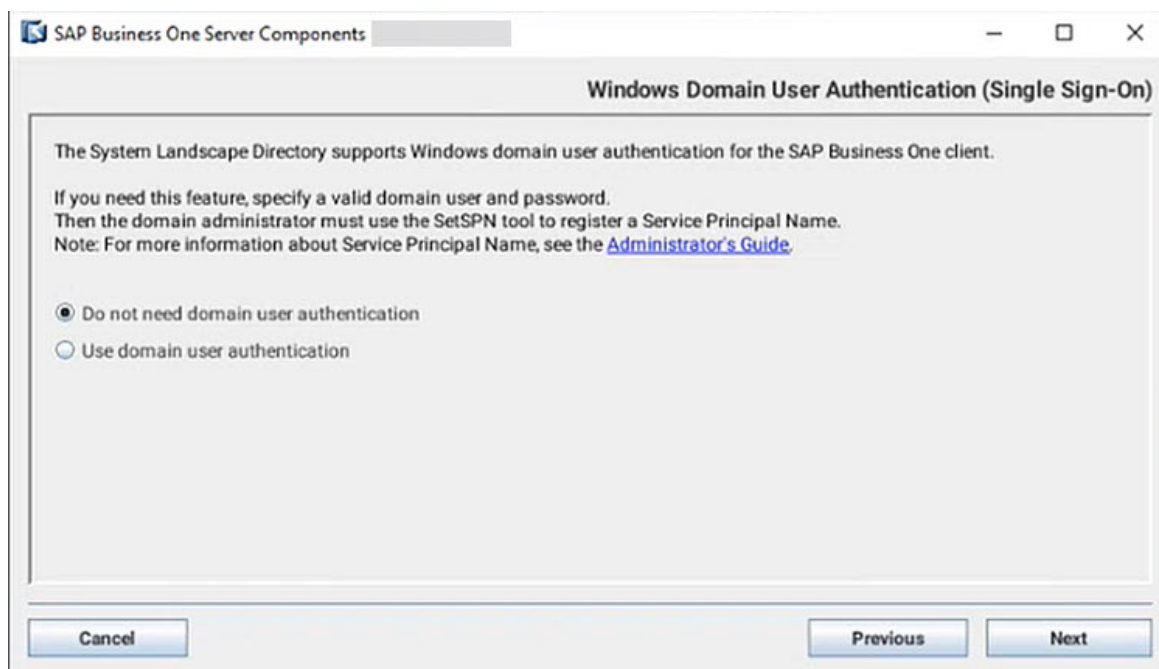
20. In the *Service Database* window, choose to connect to the existing database schema that you created for SAP Business One Authentication Service when you deployed the primary SLD. Choose *Next*.

The screenshot shows a window titled 'SAP Business One Service Databases'. The main area is titled 'Specify a new database or connection to the existing SAP Business One Authentication Service schema.' and contains two radio button options. The first option is 'Create a new schema' with a text input field containing 'B1AS'. The second option is 'Connect to the existing schema' (which is selected) with a dropdown menu showing 'B1AS'. At the bottom, there are three buttons: 'Cancel', 'Previous', and 'Next'.

21. In the *System Landscape Directory Schema* window, choose to connect to the existing SLD schema that you created when you deployed the primary SLD.

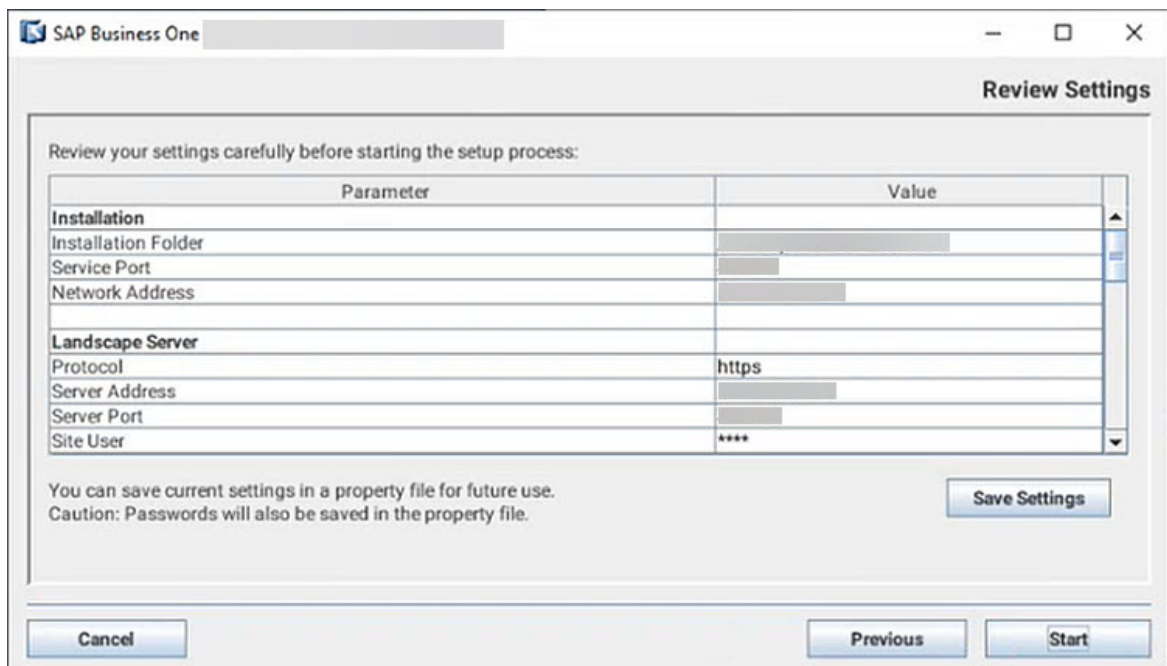


22. In the *Windows Domain User Authentication (Single Sign-On)* window, specify all required information and choose *Next*.



23. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to begin the installation.

Note that *Network Address* and *Server Address* are the same for all installations without a proxy SLD IP or hostname.



24. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
- If the upgrade succeeds, choose [Next](#) to finish the installation.
 - If the upgrade fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
25. In the [Setup Process Completed](#) window, review the installation.
26. Choose [Finish](#) to exit the wizard.

Task overview: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

Previous task: [Upgrading Primary SLD and License Manager on Server A \[page 116\]](#)

Next task: [Configuring nginx \[page 140\]](#)

3.1.1.3 Configuring nginx

Prerequisites

- You have obtained the nginx configuration file:
 - If you are upgrading to SAP Business One version 10.0 SP 2511 or later, download the HA configuration file [HA_Conf_for_OP_2511_or_Later.zip](#) and unzip it to obtain the nginx configuration file "SLD HA Nginx Conf for OP 2511 or Later.zip".

- If you are upgrading to SAP Business One from version 10.0 FP 2208 up to and including 10.0 FP 2508, download the HA configuration file [HA_Conf_for_OP_from_2208_until_2508.zip](#) and unzip it to obtain the nginx configuration file "SLD HA Nginx Conf for OP 2208 until 2508.zip".

Procedure

1. Go to [nginx: Linux packages](#) and follow the instructions in the *SLES* section to install nginx on your Linux server.
2. Copy the SLD files to the nginx server.
 1. On the nginx server, navigate to `/usr/share/nginx/html`, and create a folder named `ControlCenter`.
 2. On either one of the SLD servers, navigate to `<SLDInstallationFolder>/ServerTools/SLD/webapps` (by default, `.../usr/sap/SAPBusinessOne/ServerTools/SLD/webapps`) and get the `SLDControlCenter.war` file.
 3. Copy and unzip the `SLDControlCenter.war` file to the folder `/usr/share/nginx/html/ControlCenter` on the nginx server. Overwrite the existing content, if any.

/usr/share/nginx/html/ControlCenter/				
Name	Size	Changed	Rights	Ow
..		5/7/2025 5:37:30 PM	rw-r--r--	root
css		5/7/2025 5:38:08 PM	rw-r--r--	root
html		5/7/2025 5:38:08 PM	rw-r--r--	root
images		5/7/2025 5:38:09 PM	rw-r--r--	root
js		5/7/2025 5:38:10 PM	rw-r--r--	root
META-INF		5/7/2025 5:38:10 PM	rw-r--r--	root
OpenSource		5/7/2025 5:38:10 PM	rw-r--r--	root
saml		5/7/2025 5:38:07 PM	rw-r--r--	root
WEB-INF		5/7/2025 5:38:07 PM	rw-r--r--	root
bind-user.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
companySelection.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
index.html	10 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fiori.html	5 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fioriForB1Client.html	5 KB	7/9/2024 2:05:52 PM	rw-r--r--	root
login-fioriForChoose.html	8 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
login-fioriForCreateCompany.html	8 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
sbo.html	6 KB	4/30/2025 11:07:12 AM	rw-r--r--	root
test.html	18 KB	7/9/2024 2:05:52 PM	rw-r--r--	root

3. Prepare certificates:
 1. Use the OpenSSL library to generate the `server.cer` and `server.key` files from your PKCS12 (`.pfx`) file, which is used to install the SLD.
 2. Copy both files to the folder `/etc/nginx/cert`.
If the `cert` folder does not exist, create it manually.
4. Go to `/etc/nginx` and delete the `conf.d` folder.

/etc/nginx/		
Name	Size	Changed
..		5/8/2025 10:08:34 AM
modules		2/5/2025 11:18:25 PM
conf.d		5/7/2025 5:41:58 PM
cert		4/14/2025 4:17:52 PM
uwsgi_params	1 KB	2/5/2025 11:18:25 PM
scgi_params	1 KB	2/5/2025 11:18:25 PM
nginx.conf.bak	1 KB	2/5/2025 11:17:18 PM
nginx.conf	2 KB	4/16/2025 10:48:35 AM
mime.types	6 KB	2/5/2025 11:18:25 PM
fastcgi_params	1 KB	2/5/2025 11:18:25 PM

Figure 2: Contents at /etc/nginx

- Copy the nginx configuration file, "SLD HA Nginx Conf for OP 2511 or Later.zip" or "SLD HA Nginx Conf for OP 2208 until 2508.zip" (depending on your SAP Business One version), to the folder /etc/nginx and extract the content. Override the existing content, if any.
- In the etc/nginx/conf.d folder, open the HA configuration template file b1c_sldCluster.conf and edit the service addresses:

/etc/nginx/conf.d/		
Name	Size	Changed
..		5/8/2025 10:08:34 AM
nginx_check.sh	1 KB	8/28/2018 4:48:34 PM
keepalived.conf	1 KB	8/28/2018 4:48:34 PM
default.conf.bak	2 KB	2/5/2025 11:17:18 PM
b1c_sldCluster.conf	3 KB	5/8/2025 9:32:07 AM
b1c_proxy_common_ext.conf	1 KB	8/28/2018 4:48:34 PM
b1c_proxy_common.conf	1 KB	8/28/2018 4:48:34 PM

- In the *upstream sldService* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SLD.
- In the *upstream licenseService* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary License Manager.
- In the *upstream licenseControlCenter* section, replace the sample values with the IP address and port number of your primary License Manager.
- In the *upstream extManager* section, replace the sample values with the IP address and port number of your primary Extension Manager.
- In the *upstream BIAS* section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SAP Business One Authentication Service. The port numbers should be the same as those in the *Authentication Service Ports* window when you install the primary and secondary SLD.

```

upstream sldService{
    ip_hash;
    server [REDACTED]:40000;
    server [REDACTED]:40000;
    keepalive 300;
}

upstream licenseService{
    ip_hash;
    server [REDACTED]:[REDACTED];
    server [REDACTED]:[REDACTED];
}
upstream licenseControlCenter{
    server [REDACTED]:[REDACTED];
}
upstream extManager{
    server [REDACTED]:40000;
}

upstream B1AS{
    ip_hash;
    server [REDACTED]:40020 ;
    server [REDACTED]:40020 ;
}

```

- In the [server](#) section, replace the sample port number with the listening port number for the SLD, for example, 7777.
For the server name, replace the sample name with the domain name which is bound to the IP address of the nginx server.

```

server
{
    listen [REDACTED] ssl;
    server_name [REDACTED];

    #===== SLD HA configuration (Internal address mapping) begins =====
    location /sld/saml2 {
        include b1c_proxy_common.conf;
        proxy_set_header HOST $server_name:$server_port;

        proxy_pass https://sldService;
    }
}

```

7. Restart the nginx server with the following command: `systemctl restart nginx.service`.

Task overview: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

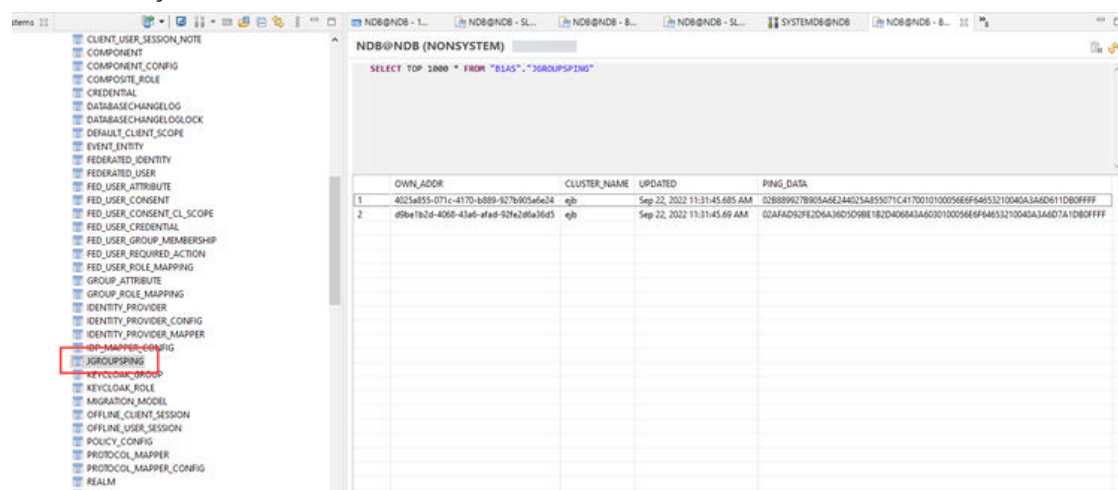
Previous task: [Upgrading Secondary SLD and License Manager on Server B \[page 128\]](#)

Next task: [Configuring SAP Business One Authentication Service \[page 144\]](#)

3.1.1.4 Configuring SAP Business One Authentication Service

Procedure

1. On the primary server, proceed as follows:
 1. Go to the directory `/usr/sap/SAPBusinessOne/Common/keycloak/tools`.
 2. Use the following command with the IP address of the currently running server to run the script `authentication_ha_start.sh`:
`./authentication_ha_start.sh install <IP Address of Server>`
 3. Run the command `systemctl restart sapb1servertools-authentication.service` to restart SAP Business One Authentication Service.
2. Repeat the steps above on the secondary server.
3. Check if the configuration is successful.
 1. On the server that you install SAP HANA, open SAP HANA Studio.
 2. Find the database instance that you use for the SLD. Find and expand the schema that you created for the Authentication Service.
The default schema name is `B1AS`.
 3. Find the table `JGROUPSPING` in the `Tables` folder.
 4. You can see that two new records are generated in this table, one for the primary node, the other for the secondary node.

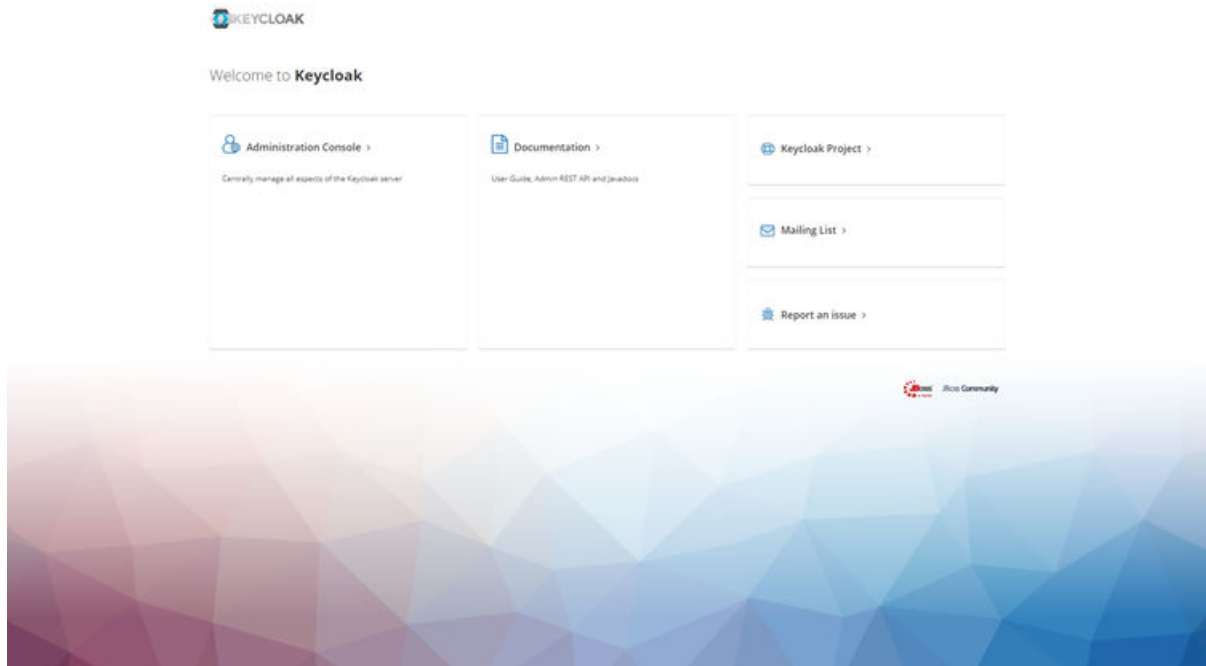


The screenshot shows the SAP HANA Studio interface. On the left, the 'Tables' folder is expanded, and the 'JGROUPSPING' table is selected. The main pane displays the table's data. The table has four columns: 'OWN_ADDR', 'CLUSTER_NAME', 'UPDATED', and 'PING_DATA'. There are two rows of data, one for each node.

	OWN_ADDR	CLUSTER_NAME	UPDATED	PING_DATA
1	4025a855-071c-4170-b889-907b905a6a34	qib	Sep 22, 2022 11:31:45.685 AM	62588993278905A8E244025A855071C417001000566F6A4532100A0A3A4ED611DB0FFFF
2	d9be1b2d-4060-43a6-afad-92a2d6a36d5	qib	Sep 22, 2022 11:31:45.69 AM	62AFAD92FED2DA36D509BE182DA068A3A60301000566F6A4532100A0A3A4ED7A1DB0FFFF

Results

Now you can access the Authentication Service with the virtual web address: `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/auth`. In this example, `https://nginxserverhostname.def.com:7777/auth`.



Task overview: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

Previous task: [Configuring nginx \[page 140\]](#)

Next task: [Configuring SLD \[page 145\]](#)

3.1.1.5 Configuring SLD

Procedure

1. Edit the configuration file `sld.xml` for your target SAP Business One version.
 - For database persistence:
 1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. Find and edit the configuration file `sld.xml` from both Server A and Server B.

- If your SAP Business One version is 10.0 SP 2511 or later, go to the folder `<SLD Installation Folder>/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/ServerTools/SLD/conf`).
- If your SAP Business One version is 10.0 FP 2508 or earlier, go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/Common/SLD/conf`).

Edit the configuration file `sld.xml` as follows:

```
Update <Manager pathname="" /> into <Manager
className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager"
password=" " pathname="" url=" " username=" " />
```

You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.

3. Start nginx and the SLD.
 1. Go to `<nginx Installation Folder>/sbin` (by default, `/usr/local/nginx/sbin`) and start nginx.
 2. Start the SLD service on both Server A and Server B.
- For Redis persistence:
 1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. Obtain and unzip the file `Redis_related_jar.zip` from the HA configuration file (`HA_Conf_for_OP_2511_or_Later.zip` or `HA_Conf_for_OP_from_2208_until_2508.zip`) that you downloaded from the previous task [Configuring nginx \[page 140\]](#). Copy the files, `commons-pool2-2.4.2.jar` and `jedis-2.8.0.jar`, from the `Redis_related_jar.zip` folder to `.../usr/sap/SAPBusinessOne/Common/tomcat/lib`.

Note

You can enter the following commands to give full permissions to the Redis files if your access is denied:

```
Chmod 777 -R commons-pool2-2.4.2.jar
```

```
Chmod 777 -R jedis-2.8.0.jar
```

3. Go to the folder `<SLD Installation Folder>/Common/tomcat/conf` (by default, `.../usr/sap/SAPBusinessOne/Common/tomcat/conf`) and edit `sld.xml` as follows:


```
Update <Manager pathname="" /> to <Manager
className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager"
host="${Redis Server IP}" port="${Redis Server Port}" database="0"
maxInactiveInterval="60" />
```

Note

The default port number for the Redis server is **6379**.

4. Start nginx and the primary and secondary SLD service.
 1. Go to `<nginx Installation Folder>/sbin` (by default, `/usr/local/nginx/sbin`), and start nginx
 2. Start the SLD service on both Server A and Server B.
2. Run a connection test for the SLD by visiting the address `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/sld/sld0100.svc`, for example, `https://nginxserverhostname.def.com:7777/sld/sld0100.svc`.

If the configuration is successful, you will see the following page:

This XML file does not appear to have any style information associated with it. The document tree is shown below:

```
<?xml version="1.0" encoding="UTF-8" ?>
<service xmlns="http://www.w3.org/2007/app" xmlns:atom="http://www.w3.org/2005/Atom" xmlns:app="http://www.w3.org/2007/app" xmlns:base="https://17777/sld/sld0100.svc/">
  <workspace>
    <atom:title>Default</atom:title>
    <collection href="ApplicationIdentifiers">
      <atom:title>ApplicationIdentifiers</atom:title>
    </collection>
    <collection href="ArchivedComponentDetectionLog">
      <atom:title>ArchivedComponentDetectionLog</atom:title>
    </collection>
    <collection href="AssignmentProperties">
      <atom:title>AssignmentProperties</atom:title>
    </collection>
    <collection href="AffinityGroups">
      <atom:title>AffinityGroups</atom:title>
    </collection>
    <collection href="BackupServices">
      <atom:title>BackupServices</atom:title>
    </collection>
    <collection href="BICentralLogRepositories">
      <atom:title>BICentralLogRepositories</atom:title>
    </collection>
    <collection href="SBOClients">
      <atom:title>SBOClients</atom:title>
    </collection>
    <collection href="SBOSharedFolders">
      <atom:title>SBOSharedFolders</atom:title>
    </collection>
    <collection href="SoftwareRepositories">
      <atom:title>SoftwareRepositories</atom:title>
    </collection>
    <collection href="APIGatewayServices">
      <atom:title>APIGatewayServices</atom:title>
    </collection>
    <collection href="AnalyticsServices">
      <atom:title>AnalyticsServices</atom:title>
    </collection>
    <collection href="B1ahServerDetails">
      <atom:title>B1ahServerDetails</atom:title>
    </collection>
  </workspace>
</service>
```

3. Check if your configurations for the primary SLD and the secondary SLD are successful.

If they are properly configured, you can log in to the SLD control center through the following virtual web addresses with your B1SiteUser account:

- <https://<IP Address of Primary SLD>:<Port Number>/ControlCenter>
- <https://<IP Address of Secondary SLD>:<Port Number>/ControlCenter>

The login procedures and required credentials may vary according to how the Identity and Authentication Management (IAM) service is configured. For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

4. Keep the primary SLD control center page open. Go to the [Security](#) tab.
5. In the [SAP Business One Authentication Service](#) section, choose [Edit](#) and make the following changes:
 - Change the existing authentication server address and port number to <https://<Nginx Server Domain Name>:<Listening Port Number of SLD>>, in this example, <https://nginxserverhostname.def.com:7777>.
 - Change the existing SLD address and port number to <https://<Nginx Server Domain Name>:<Listening Port Number of SLD>>, in this example, <https://nginxserverhostname.def.com:7777>.
6. Choose [Update](#).

Choose [Yes](#) when you see this message:

Caution: Make sure that you define a correct address for the SLD and authentication server.
The whole SAP Business One landscape does not work if the address is not accessible.
DO you want to continue?

7. Choose [Update](#) again.

Choose [OK](#) when you see this message:

The authentication server address was updated successfully.
The SLD address was updated successfully.

Results

Now you can access the SLD control center with your B1SiteUser account through the virtual web address `https://<Nginx Server Domain Name>:<Listening Port Number of SLD>/ControlCenter`, in this example, `https://nginxserverhostname.def.com:7777/ControlCenter`.

The login procedures and required credentials may vary according to how the Identity and Authentication Management (IAM) service is configured. For more information about the IAM, see the guide *Identity and Authentication Management in SAP Business One* on [SAP Help Portal](#).

You should always use the virtual SLD address (`<Nginx Server Domain Name>:<Listening Port Number of SLD>`) for installation of other SAP Business One components.

Task overview: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

Previous task: [Configuring SAP Business One Authentication Service \[page 144\]](#)

Next: [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 148\]](#)

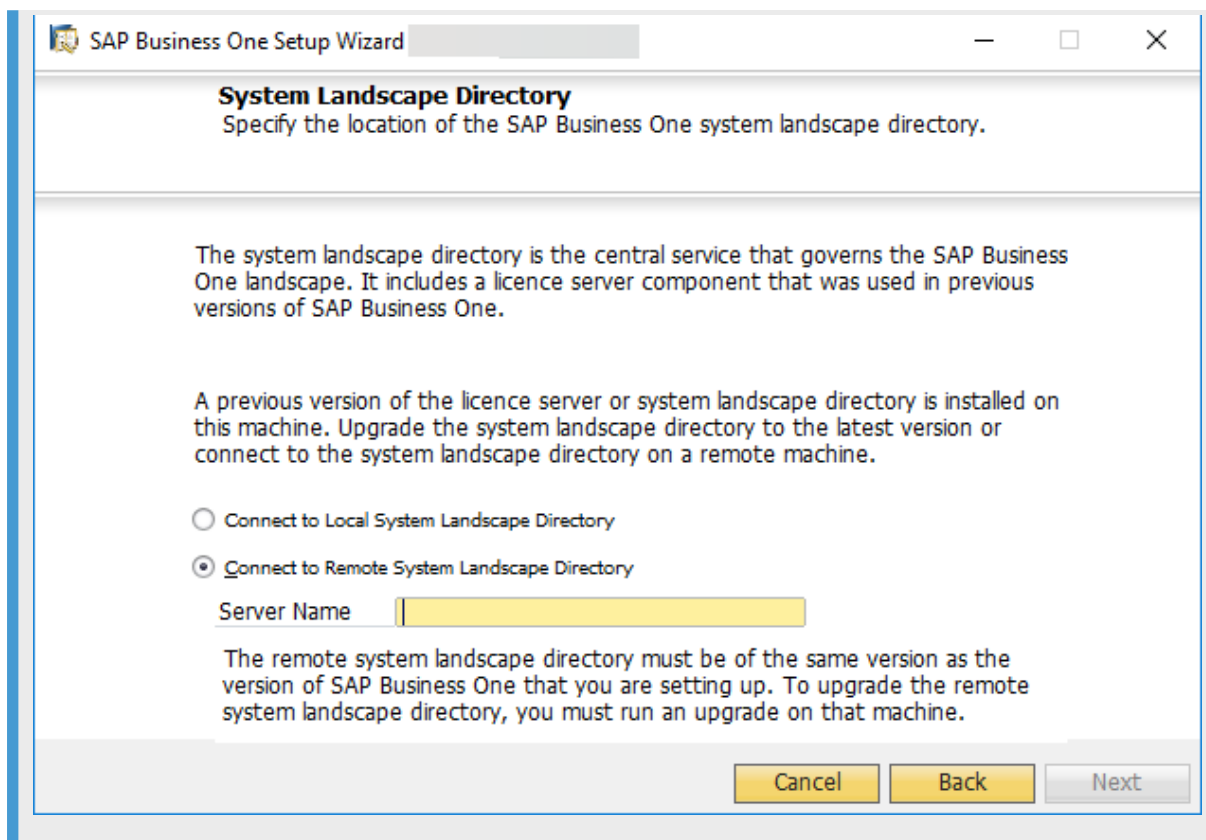
3.1.1.6 Upgrading SAP Business One Client and Other Components, version for SAP HANA

The SAP Business One client and other components, version for SAP HANA can be upgraded with the setup wizard.

For more information about how to upgrade the SAP Business One components, version for SAP HANA, see the *SAP Business One Administrator's Guide*, version for SAP HANA on [SAP Help Portal](#).

→ Recommendation

During the upgrade, we recommend that you use the virtual domain name and listening port number, instead of the IP address, for the SLD server address. For example, in the *System Landscape Directory* connection window, enter `nginxserverhostname.def.com:7777`.



Parent topic: [Upgrading to Version 10.0 FP 2208 or Later \[page 115\]](#)

Previous task: [Configuring SLD \[page 145\]](#)

3.1.2 Upgrading to Version 10.0 FP 2202 or Earlier

To upgrade your existing SAP Business One, version for SAP HANA, **with** high availability capabilities, to 10.0 FP 2202 or earlier for high availability, proceed as follows:

1. [Upgrading SLD and License Manager on Primary Server \[page 150\]](#)
2. [Upgrading SLD and License Manager on Secondary Server \[page 152\]](#)
3. [Configuring nginx \[page 154\]](#)
4. [Configuring License Control Center and License Manager \[page 155\]](#)
5. [Adding Allowlist to License Manager \[page 156\]](#)
6. [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 157\]](#)

3.1.2.1 Upgrading SLD and License Manager on Primary Server

Procedure

If you are upgrading to SAP Business One 10.0 FP 2102 or higher, start from Step 3.

If you are upgrading to a lower version, start from Step 1.

1. Revert the configuration change made for high availability in the `sld.xml` file during your previous setup:

- If you have used database persistence to store the SLD memory, proceed as follows:

1. Go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Revert `<Manager`
`className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager"`
`password=" " pathname="" url=" " username=" " />` to `<Manager pathname="" />`.
2. Restart the SAP Business One Server Tools Service.

- If you have used Redis persistence, proceed as follows:

1. Go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Revert `<Manager`
`className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager"`
`host="${Redis Server IP}" port="${Redis Server Port}" database="0"`
`maxInactiveInterval="60" />` to `<Manager pathname="" />`.
2. Restart the SAP Business One Server Tools Service.

2. Stop the SAP Business One Server Tools Service on the secondary server.
3. Copy the upgrade package to the primary server.
4. Log on to the primary server as `root`.
5. Navigate to the directory `.../Packages.Linux/ServerComponents` of the upgrade folder, where the `install` script is located.
6. Start the upgrader by entering the following command:

```
./install
```

The upgrade process begins.

7. On the *Welcome* page of the setup wizard, choose *Next*.
8. In the *Select Features* window, select *System Landscape Directory*, *License Manager*, and *System Database*, then choose *Next*.
9. In the *Site User Password* window, enter the password for the site user `B1SiteUser`.
If the password has not changed since the last installation or upgrade, choose *Next* without re-entering the password.
10. In the *Landscape Server* window, enter the virtual IP address and port number. Choose *Next*.
11. In the *Shared Folders for System Landscape Directory* window, select both *Create a default CD repository based on the installation media currently running* and *Create a central log directory under the installation folder on the local machine*. Choose *Next*.

12. In the [Database Server Connection](#) window, enter the password for the SAP HANA database user.
13. In the [Samba Service Settings](#) window, choose whether to start the Samba service automatically.
14. If you have not enabled SSO, in the [Windows Domain User Authentication \(Single Sign-On\)](#) window, choose whether to do so or not.
15. In the [Review Settings](#) window, review your settings and then choose [Start](#).

The upgrade process begins.

If your current installation has been running under a `b1serviceX` user (where X represents any integer larger than 0) instead of a `b1service0` user, the [Delete Residual Service Users and Groups](#) window will be displayed. `b1serviceX` users and user groups are usually remnants of previously failed uninstallations or rollbacks.

Although not mandatory, we recommend that you delete these users and user groups to prevent potential unnecessary future complications. To do so, select [Delete residual service users and service user groups](#) and choose [Next](#).

16. In the [Setup Progress](#) window, when the progress bar displays 100%, do one of the following:
 - If all components are upgraded successfully, choose [Next](#).
 - If any component upgrade fails, choose [Roll Back](#) to restore the system. When the rollback is completed, in the Rollback Progress window, choose [Next](#).
17. In the [Setup Process Completed](#) window, review the upgrade result and choose [Finish](#).
18. Skip this step if you are upgrading to SAP Business One 10.0 FP 2102 or higher. Otherwise, proceed to modify `sld.xml`.
 - If you have used database persistence to store the SLD memory, proceed as follows:
 1. Go to the folder [<SLD Installation Folder>/Common/SLD/conf](#) (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`) from the primary server, and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname="" url=" " username=" " />`.
You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.
 2. Restart the SAP Business One Server Tools Service.
 - If you have used Redis persistence, proceed as follows:
 1. Go to the folder [<SLD Installation Folder>/Common/tomcat/conf](#) (by default, `.../usr/sap/SAPBusinessOne/Common/tomcat/conf`) from the primary server, and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="{Redis Server IP}" port="{Redis Server Port}" database="0" maxInactiveInterval="60" />`.
The default port number for the Redis server is 6379.
 2. Restart the SAP Business One Server Tools Service.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Next task: [Upgrading SLD and License Manager on Secondary Server \[page 152\]](#)

3.1.2.2 Upgrading SLD and License Manager on Secondary Server

Procedure

If you are upgrading to SAP Business One 10.0 FP 2102 or higher, start from Step 4.

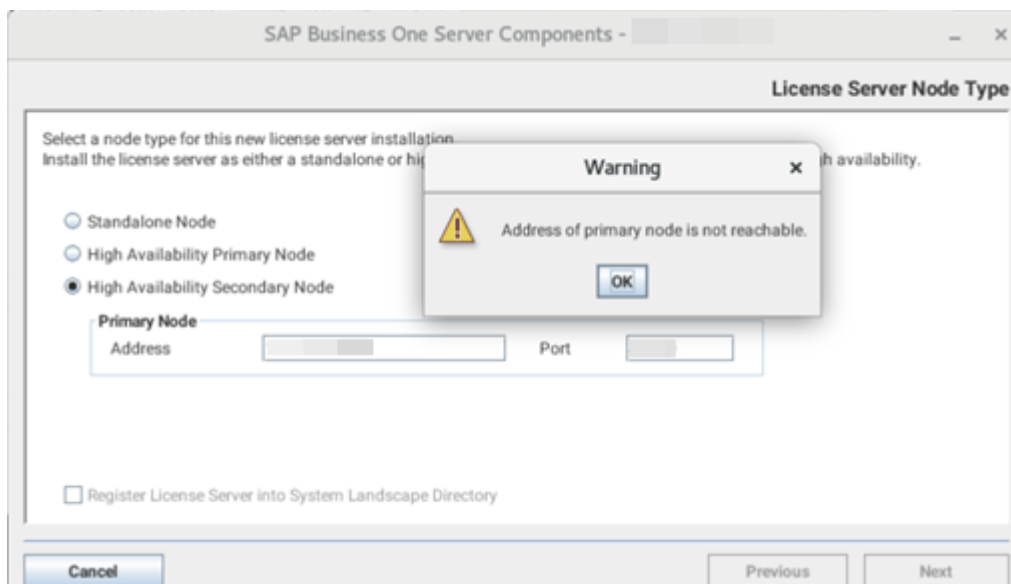
If you are upgrading to a lower version, start from Step 1.

1. Revert the configuration change made for high availability in the `sld.xml` file during your previous setup:
 - If you have used database persistence to store the SLD memory, proceed as follows:
 1. Go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `/usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Revert `<Manager`
`className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager"`
`password=" " pathname="" url=" " username=" " />` to `<Manager pathname="" />`.
 2. Restart the SAP Business One Server Tools Service.
 - If you have used Redis persistence, proceed as follows:
 1. Go to the folder `<SLD Installation Folder>/Common/SLD/conf` (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Revert `<Manager`
`className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager"`
`host="${Redis Server IP}" port="${Redis Server Port}" database="0"`
`maxInactiveInterval="60" />` to `<Manager pathname="" />`.
 2. Restart the SAP Business One Server Tools Service.
2. Stop the SAP Business One Server Tools Service on the primary server.
3. Start the SAP Business One Server Tools Service on the secondary server.
4. Copy the upgrade package to the secondary server.
5. Log on to the secondary server as `root`.
6. Navigate to the directory `.../Packages.Linux/ServerComponents` of the upgrade folder, where the `install` script is located.
7. Start the upgrader by entering the following command:

`./install`

The upgrade process begins.
8. On the [Welcome](#) page of the setup wizard, choose [Next](#).
9. In the [Select Features](#) window, select [System Landscape Directory](#), [License Manager](#), and [System Database](#), then choose [Next](#).
10. In the [Site User Password](#) window, enter the password for the site user `B1SiteUser`.
If the password has not changed since the last installation or upgrade, choose [Next](#) without re-entering the password.
11. In the [Landscape Server](#) window, enter the virtual IP address and port number. Choose [Next](#).

12. In the *Shared Folders for System Landscape Directory* window, select both *Create a default CD repository based on the installation media currently running* and *Create a central log directory under the installation folder on the local machine*. Choose *Next*.
13. If you see this message: **Address of primary node is not reachable**, choose *OK*, start the SAP Business One Server Tools Service on the primary server to connect to the primary node, then stop the Service on the primary server and continue with the upgrade process.



14. In the *Database Server Connection* window, enter the password for the SAP HANA database user.
15. In the *Samba Service Settings* window, choose whether to start the Samba service automatically.
16. If you have not enabled SSO, in the *Windows Domain User Authentication (Single Sign-On)* window, choose whether to do so or not.
17. In the *Review Settings* window, review your settings and then choose *Start*.

The upgrade process begins.

If your current installation has been running under a `b1serviceX` user (where X represents any integer larger than 0) instead of a `b1service0` user, the *Delete Residual Service Users and Groups* window will be displayed. `b1serviceX` users and user groups are usually remnants of previously failed uninstallations or rollbacks.

Although not mandatory, we recommend that you delete these users and user groups to prevent potential unnecessary future complications. To do so, select *Delete residual service users and service user groups* and choose *Next*.

18. In the *Setup Progress* window, when the progress bar displays 100%, do one of the following:
 - If all components are upgraded successfully, choose *Next*.
 - If any component upgrade fails, choose *Roll Back* to restore the system. When the rollback is completed, in the Rollback Progress window, choose *Next*.
19. In the *Setup Process Completed* window, review the upgrade result and choose *Finish*.
20. Skip this step if you are upgrading to SAP Business One 10.0 FP 2102 or higher. Otherwise, proceed to modify `sld.xml`.
 - If you have used database persistence to store the SLD memory, proceed as follows:

1. Go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`) from the primary server, and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager
className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager"
password=" " pathname="" url=" " username=" " />`.
You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.
 2. Restart the SAP Business One Server Tools Service.
- If you have used Redis persistence, proceed as follows:
 1. Go to the folder **<SLD Installation Folder>/Common/tomcat/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/tomcat/conf`) from the primary server, and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager
className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager"
host="{Redis Server IP}" port="{Redis Server Port}" database="0"
maxInactiveInterval="60" />`.
The default port number for the Redis server is 6379.
 2. Restart the SAP Business One Server Tools Service.
21. Start the SAP Business One Server Tools Service on the primary server.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Previous task: [Upgrading SLD and License Manager on Primary Server \[page 150\]](#)

Next task: [Configuring nginx \[page 154\]](#)

3.1.2.3 Configuring nginx

Procedure

1. Copy the SLD files to the nginx server.

On either one of the SLD servers, navigate to **<SLDInstallationFolder>/ServerTools/SLD/webapps** (by default, `/usr/sap/SAPBusinessOne/ServerTools/SLD/webapps`), and get the `SLDControlCenter.war` file.

Unzip the `SLDControlCenter.war` file and then copy the unzipped files to **<nginxInstallationFolder>/html/ControlCenter** (by default, `/usr/local/nginx/html/ControlCenter`). Overwrite any existing content.
2. If you are upgrading to SAP Business One 10.0 FP 2202, version for SAP HANA, go to the folder **<nginx Installation Folder>/conf** (by default, `/usr/local/nginx/conf`).

In the `conf` folder, open the HA configuration template file `b1c_sldCluster.conf` and add the tag **ip_hash** to the *upstream sldService* section and the *upstream licenseService* section.

```

upstream sldService{
    ip_hash;
    server ;
    server ;
    keepalive ;
}

upstream licenseService{
    ip_hash;
    server ;
    server ;
}

upstream licenseControlCenter{
    server ;
}

upstream extManager{
    server ;
}

```

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Previous task: [Upgrading SLD and License Manager on Secondary Server \[page 152\]](#)

Next task: [Configuring License Control Center and License Manager \[page 155\]](#)

3.1.2.4 Configuring License Control Center and License Manager

Procedure

1. Log in to the SLD Control Center with your user name (B1SiteUser) and password through your previous virtual address: `https://<VIP Address>:<Port Number>/ControlCenter`.
2. Go to the [Service](#) page, delete the [License Manager](#) service of the nginx server, select the primary [License Manager](#) service and choose [Edit](#) to change its Service URL to `https://<VIP Address>:<Port Number>/LicenseControlCenter/`, and delete the secondary [License Manager](#) service (if there exists).

→ Recommendation

- It is not recommended to use the License Control Center webpage of the secondary node because the functions of getting a Hardware Key and importing a license file are done from the primary license node.

If you want to check if the secondary License Manager is working, you can visit `https://<Secondary Server IP>:<Secondary Server Port Number>/license/GetVersion`.

- If you can't access the SLD virtual address, you can visit `https://<IP Address of Primary SLD>:<Port Number>/ControlCenter` or `https://<IP Address of Secondary SLD>:<Port Number>/ControlCenter` to check if the problem is with the primary SLD or the secondary SLD.
- You should always use the SLD VIP address for installation of other SAP Business One components, version for SAP HANA.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Previous task: [Configuring nginx \[page 154\]](#)

Next task: [Adding Allowlist to License Manager \[page 156\]](#)

3.1.2.5 Adding Allowlist to License Manager

Prerequisites

This task is required only if you are deploying SAP Business One 10.0 FP 2202, version for SAP HANA. If you are deploying other versions, skip this task and go to the next one.

Context

Add a cluster of the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.

Procedure

1. Download and edit the allowlist configuration file `b1-license-manager.xml` . Add all the IP addresses in the following format:

1. Sample Code

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape Directory</AllowOrigin>
```

```
<AllowOrigin>Secondary Server IP Address 2 of System Landscape  
Directory</AllowOrigin>  
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>  
<AllowOrigin>Secondary Server IP Address 1 of License Manager</  
AllowOrigin>  
<AllowOrigin>Secondary Server IP Address 2 of License Manager</  
AllowOrigin>  
...
```

2. Save the file to `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on all of your primary and secondary License Manager servers.
3. Run the command `/etc/init.d/sapb1servertools restart` to restart License Manager on all of your primary and secondary servers.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Previous task: [Configuring License Control Center and License Manager \[page 155\]](#)

Next: [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 157\]](#)

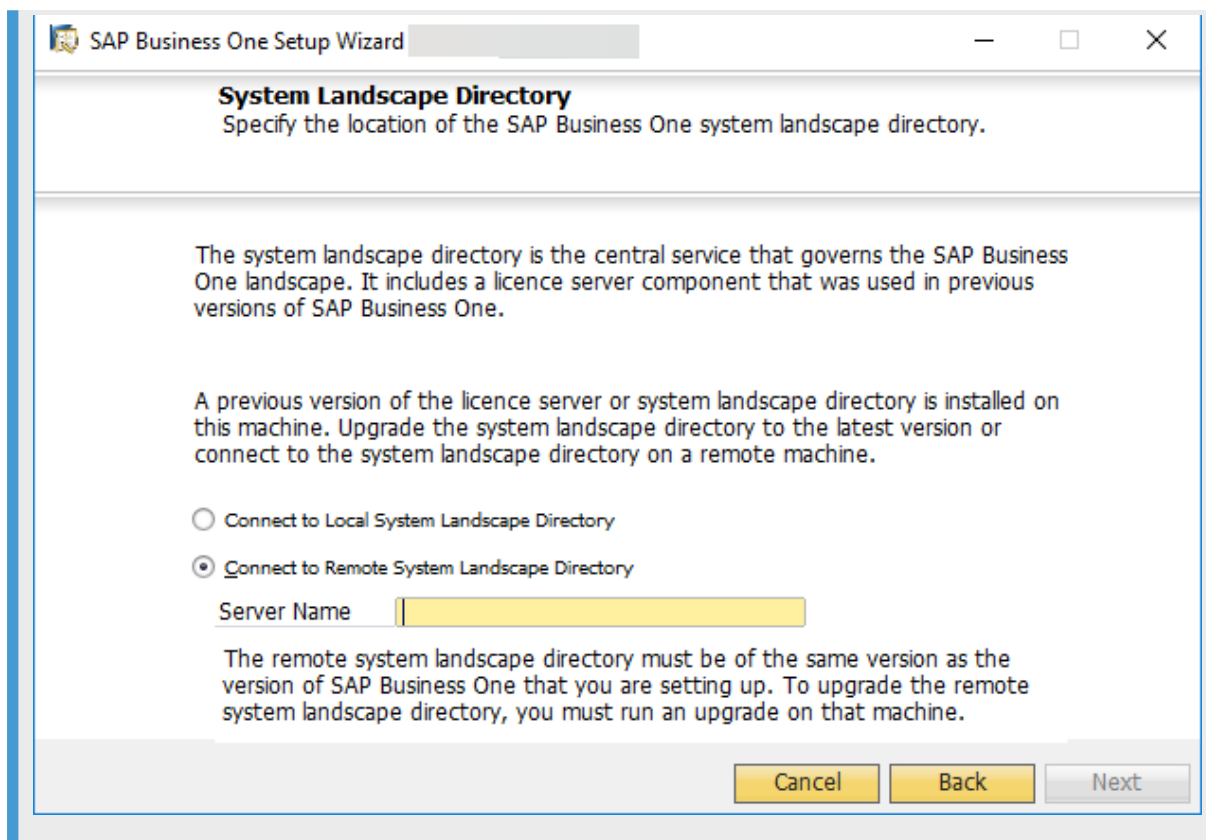
3.1.2.6 Upgrading SAP Business One Client and Other Components, version for SAP HANA

The SAP Business One client and other components, version for SAP HANA can be upgraded with the setup wizard.

For more information about how to upgrade the SAP Business One components, version for SAP HANA, see the *SAP Business One Administrator's Guide*, version for SAP HANA on [SAP Help Portal](#).

Note

During the upgrade, always use the virtual IP address and port number as the SLD server address and port number. For example, in the *System Landscape Directory* connection window, enter **<VIP Address>:<Port Number>**.



Parent topic: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 149\]](#)

Previous task: [Adding Allowlist to License Manager \[page 156\]](#)

3.2 Upgrading SAP Business One, version for SAP HANA, for High Availability

We provide well-defined upgrade paths for the SAP Business One product line. Direct upgrades from an SAP Business One release to another SAP Business One release are supported as described in the guide [SAP Business One Upgrade Strategy Overview](#) and in SAP Notes that describe the target release.

However, depending on technical constraints for starting and target releases in upgrades, upgrades may have to be performed in several steps. For example, the recommended upgrade path from SAP Business One 9.3 to 10.0 FP2305 includes an intermediate upgrade step to 10.0 PLO2.

For more details on supported platform versions and supported releases, refer to the following documents on the SAP Help Portal:

- [SAP Product Availability Matrix](#) 
- [SAP Business One, version for SAP HANA Platform Support Matrix](#)
- [SAP Business One Administrator's Guide, version for SAP HANA](#)

To upgrade to 10.0 PL00 or higher for high availability, we recommend that you prepare at least two new Linux servers.

In the case of two new servers, one of them is used for the secondary SLD and License Manager, and the other for nginx. We assume the server where your lower version of SAP Business One, version for SAP HANA, is installed as the primary server, Server A, and the new server for the secondary SLD and License Manager as the secondary server, Server B.

📘 Note

Before the upgrade, make sure that all the prerequisites for upgrading the relevant SAP Business One components have been met. For more information, see [SAP Business One Administrator's Guide, version for SAP HANA](#).

3.2.1 Upgrading to Version 10.0 FP 2202 or Earlier

To upgrade your existing SAP Business One, version for SAP HANA, **without** high availability capabilities, to 10.0 FP 2202 or earlier for high availability, proceed as follows:

1. [Upgrading Primary SAP Business One Server Components, version for SAP HANA, on Server A \[page 159\]](#)
2. [Installing Secondary SLD on Server B \[page 161\]](#)
3. [Configuring a Virtual IP Address for SLD \[page 169\]](#)
4. [Reconfiguring Primary SLD on Server A \[page 178\]](#)
5. [Installing Secondary License Manager on Server B \[page 180\]](#)
6. [Editing License Manager Address \[page 185\]](#)
7. [Adding Allowlist to License Manager \[page 186\]](#)
8. [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 187\]](#)

3.2.1.1 Upgrading Primary SAP Business One Server Components, version for SAP HANA, on Server A

Procedure

1. Copy the upgrade package to Server A.
2. Log on to Server A as `root`.
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the upgrade folder, where the `install` script is located.
4. Start the upgrader by entering the following command:

```
./install
```

The upgrade process begins.

5. In the [Welcome](#) page of the setup wizard, choose [Next](#).
6. In the [Select Features](#) window, choose [Next](#) to upgrade the installed components.
7. In the [Site User Password](#) window, enter the password for the site super user **B1SiteUser**.

If the password has not been changed since the last installation or upgrade, choose [Next](#) without re-entering the password.
8. In the [Landscape Server](#) window, keep the default values of the [Landscape Server](#) address and port number. Choose [Next](#).
9. In the [Shared Folders for System Landscape Directory](#) window, deselect both checkboxes: [Create a default CD repository based on the installation media currently running](#) and [Create a central log directory under the installation folder on the local machine](#). Choose [Next](#).
10. In the [Database Server Connection](#) window, enter the password for the SAP HANA database user.
11. If you have installed the app framework on this machine, in the [Restart Database Server](#) window, choose whether to restart the SAP HANA database server after the upgrade. Choose [Next](#).
12. In the [Shared Folders for SAP B1 Server](#) window, select [Turn on the accessibility check for the shared folder](#). Choose [Next](#).
13. The accessibility check result is displayed. Choose [Next](#).
14. If you have not enabled SSO, in the [Windows Domain User Authentication \(Single Sign-On\)](#) window, choose whether to do so.
15. In the [Review Settings](#) window, review your settings and then choose [Start](#).

The upgrade process begins.

If your current installation has been running under a **b1serviceX** user (where X represents any integer larger than 0) instead of a **b1service0** user, the [Delete Residual Service Users and Groups](#) window will be displayed. **b1serviceX** users and user groups are usually remnants of previously failed uninstallations or rollbacks.

Although not mandatory, we recommend that you delete these users and user groups to prevent potential unnecessary future complications. To do so, select [Delete residual service users and service user groups](#) and choose [Next](#).

16. In the [Setup Progress](#) window, when the progress bar displays 100%, do one of the following:
 - If all components are upgraded successfully, choose [Next](#).
 - If any component upgrade fails, choose [Roll Back](#) to restore the system. When the rollback is completed, in the Rollback Progress window, choose [Next](#).
17. In the [Setup Process Completed](#) window, review the upgrade result and choose [Finish](#). (If you chose to configure SSL for the app framework, an additional window will appear, reminding you to restart the SAP HANA database server).

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Next task: [Installing Secondary SLD on Server B \[page 161\]](#)

3.2.1.2 Installing Secondary SLD on Server B

Procedure

1. Copy the product package to Server B.
2. In a command line terminal, log on to Server B as root.
3. Navigate to the directory `.../Packages.Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

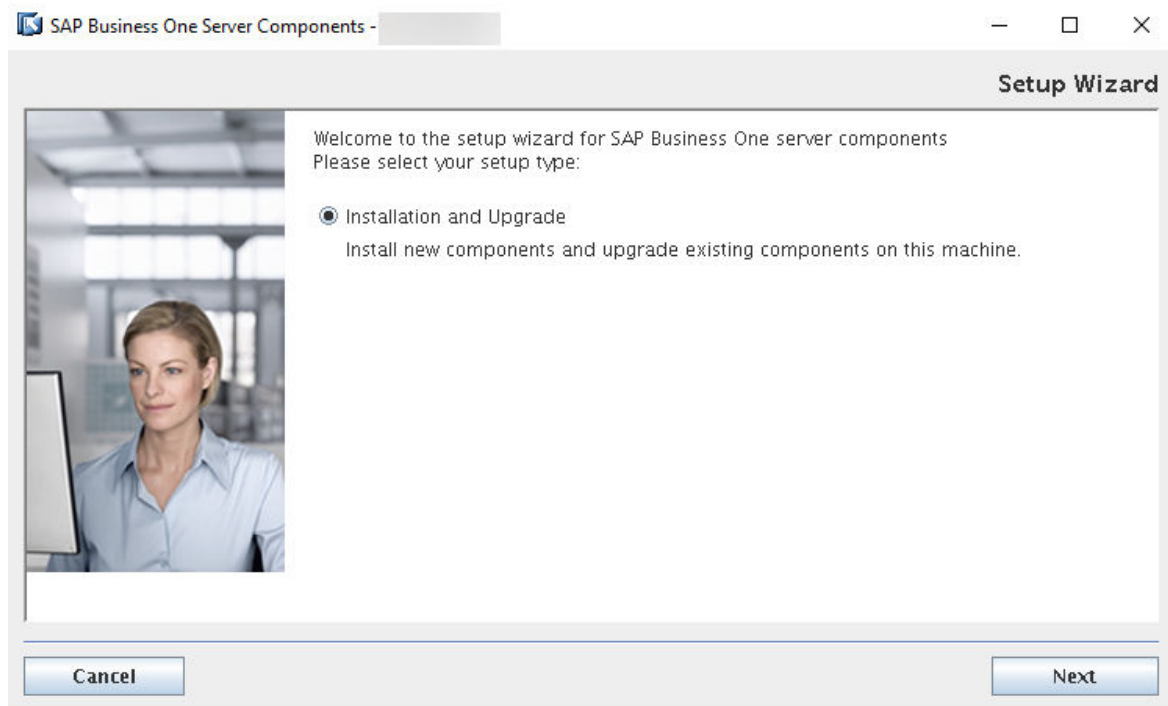
```
./install
```

The installation process begins.

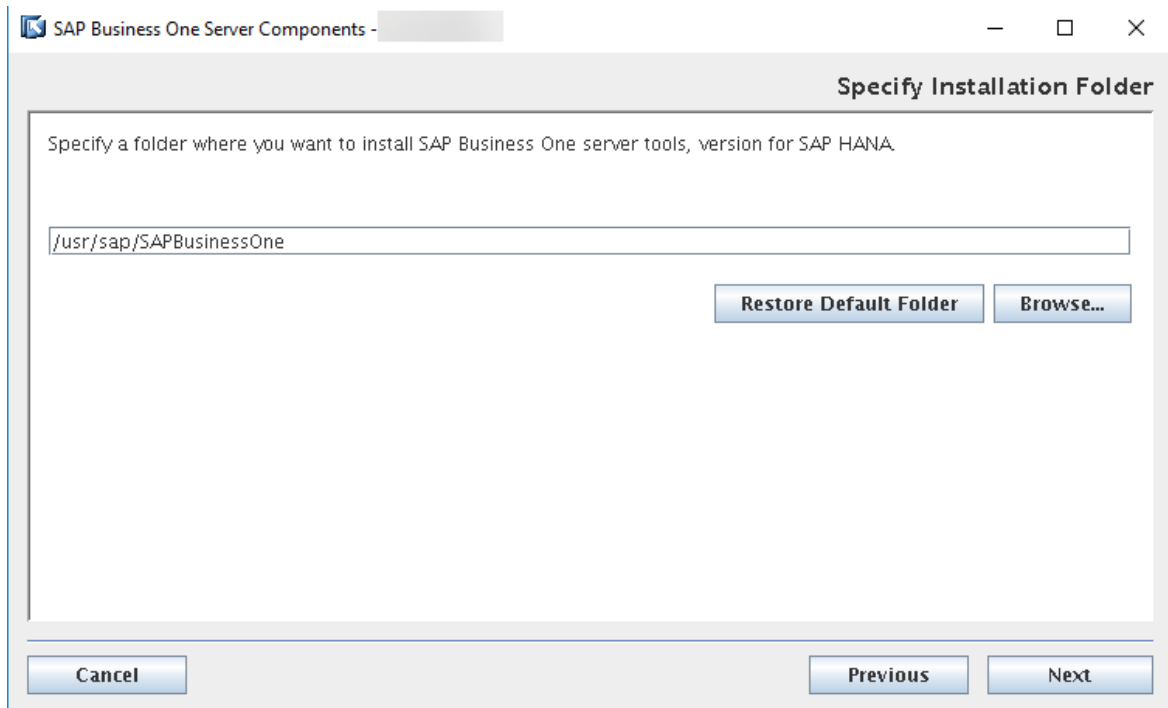
Note

If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command: **chmod +x install**

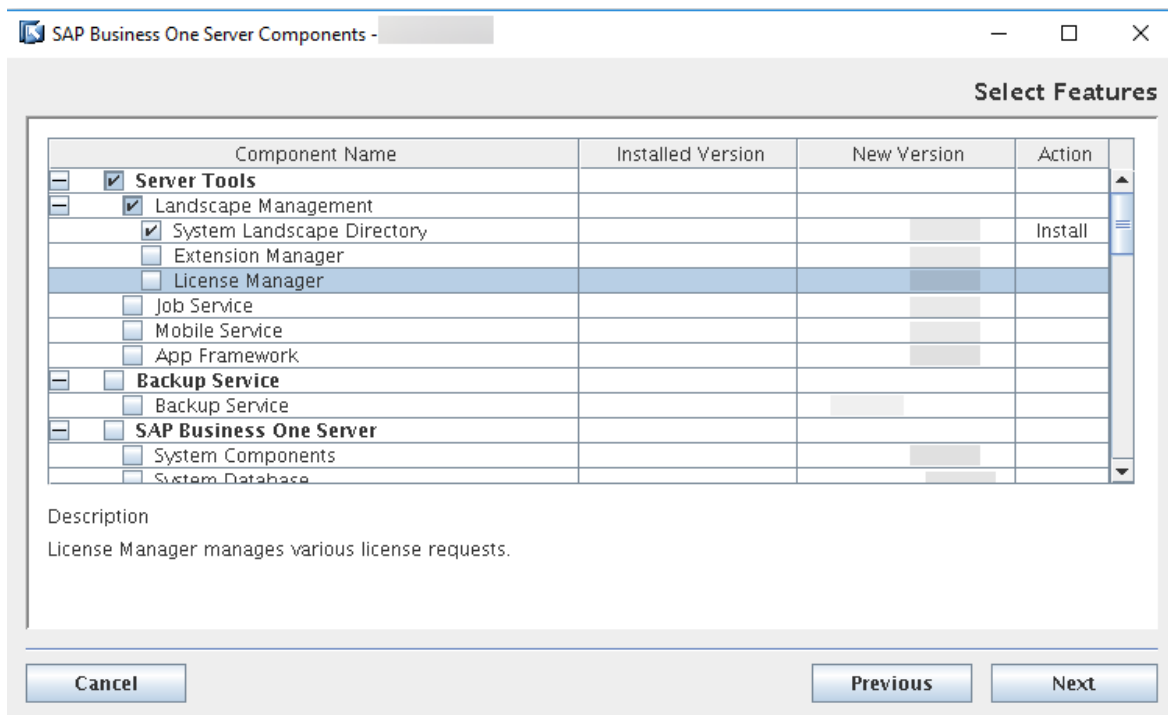
4. In the *Welcome* page of the setup wizard, choose *Next*.



5. In the *Specify Installation Folder* window, specify where you want to install the server components and choose *Next*.



6. In the *Select Features* window, select *System Landscape Directory* and choose *Next*.



7. In the *Network Address* window, select the IP address of Server B or use the hostname.

SAP Business One Server Components - [redacted]

Network Address

This computer is represented either by an IP address or a hostname. Choose the option which suits you best.

☒ IP Address

▼

☐ Hostname

Cancel **Previous** **Next**

8. In the *Service Port* window, specify a port number and choose *Next*.

The default port number is 40000.

SAP Business One Server Components - [redacted]

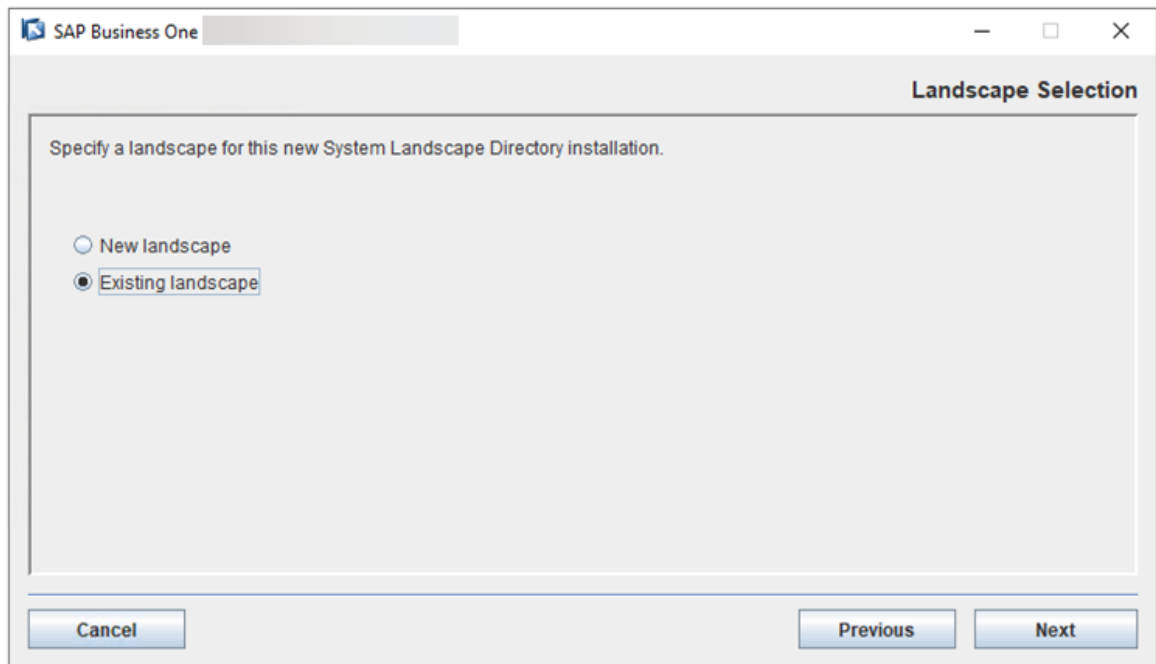
Service Port

Specify a port number which will be used by the services to be installed.

Port Number

Cancel **Previous** **Next**

9. In the *Landscape Selection* window, select *Existing landscape*.



10. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*.

You can obtain a certificate with one of the following methods:

- Third-party certificate authority - You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- Certificate authority server - You can configure a Certificate Authority (CA) server in the SAP Business One landscape to issue certificates. You must configure all servers in the landscape to trust the CA's root certificate. If you use this method, select *Specify a PKCS12 certificate store and certificate password* and enter the required information.
- [Not recommended] Generate a self-signed certificate - You can let the installer generate a self-signed certificate; however, your browser will display a certificate exception when you access various service Web pages, as the browser does not trust this certificate. To use this method, select *Use a self-signed certificate*.

SAP Business One Server Components - Specify Security Certificate

Some components enforce secure connection via HTTPS encryption, including the System Landscape Directory and the Service Layer.

Specify a certificate for authentication:

☐ Use a self-signed certificate

☒ Specify a PKCS12 certificate store and certificate password

PKCS12 Certificate

Certificate Store File

Certificate Password

11. In the *Landscape Server* window, enter the following:

- *Landscape Server*: Enter the IP address or hostname of the Landscape Server of the primary SLD on Server A.
- *Port*: Enter the port number of the Landscape Server of the primary SLD on Server A. The default port number is 40000.
- *Site User ID* and *Password*: Enter the site user (B1SiteUser) and the password.

Note

The user name (B1SiteUser) and the password are the same as those entered during the installation of the primary SLD on Server A.

SAP Business One Server Components - Landscape Server

Enter the existing SLD address and site user credentials, to which local components will be connected or registered.

Make sure that the System Landscape Directory is running before proceeding.

Landscape Server Port

Site User ID

Password

12. In the *Database Server Connection* window, specify the following information and then choose *Next*:

Connection

- *SAP HANA Server*: Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- *Instance Number*: Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- *Tenant Database*: Enter the same tenant database name that you use for the primary SLD.

Credentials

- *User Name*: Enter the same tenant database user name that you use for the primary SLD.
- *Password*: Enter the password for the user name.

13. In the *Samba Service Settings* window, choose whether to start the Samba service automatically.

14. In the *Windows Domain User Authentication* (Single Sign-On) window, do one of the following:

- If you want to use the SSO function for SAP Business One, version for SAP HANA, select *Use domain user authentication*, specify all required information, and choose *Next*.

📌 Note

A fully qualified domain name must be a full name in **UPPER** case.

The domain user name is case-sensitive.

Make sure that the UTC time on your Linux server is the same as that on your Windows domain controller; otherwise, you cannot proceed with the installation.

- If you have not registered a domain user account with the Service Principal Name (SPN), make sure that the domain user account specified here is the one that you intend to use for SPN registration.

→ Recommendation

As this domain user is a service user that functions purely for the purpose of setting up SSO, we highly recommend that you create a new domain service user and not assign any privileges to the user other than the logon privilege. In addition, keep the user's password unchanged after enabling SSO; otherwise, SSO may stop working.

- If you do not want to use the SSO function, select *Do not need domain user authentication* and choose *Next*.

⚠ Caution

If you do not specify the domain user information during the installation of server tools, you will not be able to activate the SSO function after the installation.

SAP Business One Server Components - Windows Domain User Authentication (Single Sign-On)

The System Landscape Directory supports Windows domain user authentication for the SAP Business One client.

If you need this feature, specify a valid domain user and password.
Then the domain administrator must use the SetSPN tool to register a Service Principal Name.
Note: For more information about Service Principal Name, see the [Administrator's Guide](#).

☐ Do not need domain user authentication
☒ Use domain user authentication

Fully-Qualified Domain Name
 Domain Controller
 Domain User Name
 Password

15. In the [Review Settings](#) window, review your settings carefully before proceeding to execute the installation. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of [Network Address](#) is the address of the secondary SLD on Server B, while the value of [Server Address](#) is the address of the primary SLD on Server A.

SAP Business One Server Components - Review Settings

Review your settings carefully before starting the setup process:

Parameter	Value
Installation	
Installation Folder	/usr/sap/SAPBusinessOne
Service Port	
Network Address	
Landscape Server	
Server Address	
Server Port	
Site User	****
Password	****
Landscape Installation Type	create

You can save current settings in a property file for future use.
Caution: Passwords will also be saved in the property file.

16. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:

- If the SLD is installed successfully, choose [Next](#) to finish the installation.
 - If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
17. In the [Setup Process Completed](#) window, review the installation results.
 18. Choose [Finish](#) to exit the wizard.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Upgrading Primary SAP Business One Server Components, version for SAP HANA, on Server A \[page 159\]](#)

Next: [Configuring a Virtual IP Address for SLD \[page 169\]](#)

3.2.1.3 Configuring a Virtual IP Address for SLD

A virtual IP address (VIP) is an address that is shared among multiple servers. It is commonly used to enable database high availability on various nodes. If one node fails, the VIP address is automatically reassigned to another node.

To enable the VIP address, you need to configure an nginx server and the primary and secondary SLD.

1. [Configuring an nginx Reverse Proxy \[page 169\]](#)
2. [Configuring SLD \[page 173\]](#)

Parent topic: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Installing Secondary SLD on Server B \[page 161\]](#)

Next task: [Reconfiguring Primary SLD on Server A \[page 178\]](#)

3.2.1.3.1 Configuring an nginx Reverse Proxy

Prerequisites

- You have prepared a Linux server.
- You have predefined a domain name for the SLD and other SAP Business One components, for example, `nginxserverhostname.def.com`, and the domain name is bound to this Linux server.
- You have prepared a domain name certificate.
- You have downloaded and unzipped the HA configuration file [HA_Conf_for_OP.zip](#) to get the nginx configuration file `SLD HA Nginx Conf for OP.zip`.

Procedure

1. From <http://nginx.org/>, download the nginx binary file according to your target operating system and extract the binary file to a local folder.

→ Recommendation

The recommended nginx version is 1.8.0 or higher.

2. Install nginx on the Linux server that you prepared.

For instructions on installing nginx on Linux, see <http://nginx.org/en/docs/configure.html>.

❖ Example

Below are examples of installing some of the nginx dependencies (PCRE 8.41, zlib 1.2.11 and OpenSSL library 1.0.2k) and nginx 1.12.2 on Linux.

- Installing the PCRE library, which is required by the NGINX Core and Rewrite modules and which provides support for regular expressions.

```
$ cd /home
$ wget ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/
pcre-8.41.tar.gz
$ tar -zxf pcre-8.41.tar.gz
$ cd pcre-8.41
$ ./configure
$ make
$ sudo make install
```

- Installing the zlib library, which is required by the NGINX Gzip module for header compression.

```
$ wget http://zlib.net/zlib-1.2.11.tar.gz
$ tar -zxf zlib-1.2.11.tar.gz
$ cd zlib-1.2.11
$ ./configure
$ make
$ sudo make install
```

- Unpacking the OpenSSL library, which is required by the NGINX SSL modules to support the HTTPS protocol.

```
$ wget http://www.openssl.org/source/openssl-1.0.2k.tar.gz
$ tar -zxf openssl-1.0.2k.tar.gz
```

- Installing and configuring nginx.
 1. Download the nginx source file.
 2. Nginx provides source files for both stable and mainline versions. To download and unpack the source file for the latest mainline version, type-in the following commands:

```
$ wget http://nginx.org/download/nginx-1.12.2.tar.gz
$ tar xzf nginx-1.12.2.tar.gz
$ cd nginx-1.12.2
```

3. Configure the Build Options.

```
./configure --with-http_ssl_module --with-http_realip_module
--with-http_addition_module --with-http_sub_module --with-
http_dav_module --with-http_flv_module --with-http_mp4_module
--with-http_gunzip_module --with-http_gzip_static_module --with-
```

```
http_random_index_module --with-http_secure_link_module --with-
http_stub_status_module --with-http_auth_request_module --with-file-
aio --with-ipv6 --with-pcre=/home/pcre-8.41 --with-openssl=/home/
openssl-1.0.2k
$ make
$ sudo make install
```

Note

- If you encounter any error when running the commands `configure`, `make` or `make install`, please see the error log and use a search engine to find the solution. Most errors are caused by missing dependencies, such as `gcc`, `gcc-c++`, `texinfo`, `autoconf` or `automake`.
- Make sure that OpenSSL is enabled with nginx.

3. Copy the SLD files to the nginx server.
 1. On the nginx server, navigate to `<nginxInstallationFolder>\html\` (by default, `/usr/local/nginx/html`), and create a folder named `ControlCenter`.
 2. On either one of the SLD servers, navigate to `<SLDInstallationFolder>/ServerTools/SLD/webapps`, (by default, `.../usr/sap/SAPBusinessOne/ServerTools/SLD/webapps`) and get the `SLDControlCenter.war` file.
 3. Copy and unzip the `SLDControlCenter.war` file to `<nginxInstallationFolder>\html\ControlCenter` on the nginx server. Overwrite the existing content, if any.
4. Prepare certificates:
 1. Use the OpenSSL library to generate the `server.cer` and `server.key` files from your PKCS12 (`.pfx`) file, which is used to install the SLD.
 2. Copy both files to the folder `<nginxInstallationFolder>/cert/` (by default, `/usr/local/nginx/cert`).
If the `cert` folder does not exist, create it manually.
5. Copy the file `SLD HA Nginx Conf for OP.zip` to the folder `<nginxInstallationFolder>/conf` (by default, `/usr/local/nginx/conf`) and extract the content. Override the existing content, if any.
6. In the `conf` folder, open the HA configuration template file `b1c_sldCluster.conf` and edit the service addresses:
 - In the `upstream sldService` section, replace the sample values with the IP addresses and port numbers of all your primary and secondary SLD.
 - In the `upstream licenseService` section, replace the sample values with the IP addresses and port numbers of all your primary and secondary License Manager.
 - In the `upstream licenseControlCenter` section, replace the sample values with the IP address and port number of your primary License Manager.
 - In the `upstream extManager` section, replace the sample values with the IP address and port number of your primary Extension Manager.

```

1 upstream sldService{
2
3     server [REDACTED]
4     server [REDACTED]
5     keepalive [REDACTED];
6 }
7
8 upstream licenseService{
9
10    server [REDACTED];
11    server [REDACTED];
12 }
13 upstream licenseControlCenter{
14     server [REDACTED];
15 }
16 upstream extManager{
17     server [REDACTED];
18 }
19

```

- In the `server` section, replace the sample port number with the listening port number and the server name.
For the server name, replace the sample name with the domain name which is bound to the IP address of the nginx server.

```

server
{
    listen [REDACTED] ssl;
    server_name [REDACTED];

    #===== SLD HA configuration (Internal address mapping) begins =====
    location /sld/saml2 {
        include b1c_proxy_common.conf;
        proxy_set_header HOST $server_name:$server_port;

        proxy_pass https://sldService;
    }
}

```

- If you are deploying SAP Business One 10.0 FP 2202, version for SAP HANA, add the tag `ip_hash` to both the `upstream sldService` section and the `upstream licenseService` section. Otherwise, skip this step.

```

upstream sldService{
    ip_hash;
    server     ;
    server   ;
    keepalive ;
}

upstream licenseService{
    ip_hash;
    server       ;
    server   ;
}

upstream licenseControlCenter{
    server     ;
}

upstream extManager{
    server     ;
}

```

Task overview: [Configuring a Virtual IP Address for SLD \[page 169\]](#)

Next task: [Configuring SLD \[page 173\]](#)

3.2.1.3.2 Configuring SLD

Context

Before you can enable high availability for the SLD, you need to store the SLD memory in one of the following ways:

- Using database persistence.
It is a built-in solution.
- Using Redis persistence.
Redis customers need to set up a working Redis instance.

By default, we suggest using database persistence. In case of huge performance pressure, we suggest using Redis persistence.

Procedure

- For database persistence:
 1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. From both Server A and Server B, go to the folder **<SLD Installation Folder>/Common/SLD/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/SLD/conf`), and edit `sld.xml` as follows:
Update `<Manager pathname="" />` into `<Manager className="com.sap.b1.sld.catalina.session.jdbc.DBPersistSessionManager" password=" " pathname="" url=" " username=" " />`.
You can find the values of `password`, `url` and `username` from the `Resource` node in `sld.xml`.
 3. Start nginx and the SLD.
 1. Go to **<nginx Installation Folder>/sbin** (by default, `/usr/local/nginx/sbin`) and start nginx.
 2. Start the SLD service on both Server A and Server B.
- For Redis persistence:

ⓘ Note

Please install Redis on a separate Linux server, and make sure Redis can be accessed remotely.

Here are the general steps for installing Redis:

1. Download `redis-3.x.x.tar.gz`, and unzip it to `/home`.
 2. Execute the `Make` file.
 3. Go to the `redis-3.x.x/src` folder, and execute `.../redis-server/redis.conf`.
1. Stop the SAP Business One Server Tools Service on both Server A and Server B.
 2. Download and unzip the file [HA_Conf_for_OP.zip](#) to obtain the file `Redis_related.jar.zip`. Copy the files `commons-pool2-2.4.2.jar` and `jedis-2.8.0.jar` in the `Redis_related.jar.zip` folder to `.../usr/sap/SAPBusinessOne/Common/tomcat/lib`.

ⓘ Note

You can enter the following commands to give permissions:

```
Chmod 777 -R commons-pool2-2.4.2.jar
```

```
Chmod 777 -R jedis-2.8.0.jar
```

3. Go to the folder **<SLD Installation Folder>/Common/tomcat/conf** (by default, `.../usr/sap/SAPBusinessOne/Common/tomcat/conf`) and edit `sld.xml` as follows:
Update `<Manager pathname="" />` to `<Manager className="com.sap.b1.sld.catalina.session.redis.RedisSessionManager" host="${Redis Server IP}" port="${Redis Server Port}" database="0" maxInactiveInterval="60" />`

ⓘ Note

The default port number for the Redis server is 6379.

4. Start nginx and the SLD.
 1. Go to **<nginx Installation Folder>/sbin** (by default, `/usr/local/nginx/sbin`), and start nginx
 2. Start the SLD service on both Server A and Server B.

Results

Now you can access the SLD with your user name (B1SiteUser) and password through this virtual web address: `https://nginxserverhostname.def.com:<Port Number>/ControlCenter` .

You should always use the SLD VIP address for installation of other SAP Business One components, version for SAP HANA.

Troubleshooting

If you can't access the SLD virtual web address, you can visit `https://<IP Address of Primary SLD>:<Port Number>/ControlCenter` or `https://<IP Address of Secondary SLD>:<Port Number>/ControlCenter` to check if the problem is with the primary SLD or the secondary SLD.

Task overview: [Configuring a Virtual IP Address for SLD \[page 169\]](#)

Previous task: [Configuring an nginx Reverse Proxy \[page 169\]](#)

Optional: Configuring High Availability for nginx Server

Context

If you want to set up high availability for the nginx server, you should prepare a secondary nginx server and a virtual hostname (for example, `virtualhostname.mocca.com`).

In such a case, do as follows:

Procedure

1. Install and configure a new nginx server on the secondary server.
2. Install Keepalived on both the primary and the secondary servers.
 1. Download the source file from `http://www.keepalived.org/download.html`.
 2. Copy `keepalived-*.tar.gz` to `/home`.
 3. Open the Linux terminal and enter, for example, the following commands to install Keepalived.

```
# tar -zxvf keepalived-*.tar.gz
# cd /home/keepalived-1.2.18
# ./configure --prefix=/usr/local/keepalived --disable-lvs
# make && make install
...
```

Note

- Make sure that the Keepalived servers are connected to the same subnet.
- During the configuration of Keepalived, disable LVS.

- If you encounter the following error when running `./configure`, proceed as follows:

```
configure: error:
!!! OpenSSL is not properly installed on your system. !!!
!!! Can not include OpenSSL MD5 headers files.      !!!
```

- If you are running SLES 11 SP4, install `openssl-devel`.
- If you are running SLES 12 SP1, install `libopenssl-devel` and `libopenssl-devel-32bit`.
- Otherwise, use a search engine to find the solutions.
- Make sure that `Autoconf` and `Automake` are up to date.
For more information about `Autoconf` and `Automake`, visit <http://www.gnu.org/software/autoconf/autoconf.html> and <http://www.gnu.org/software/automake/#downloading>.

❖ Example

Below is an example of how to install `Autoconf` and `Automake`:

1. Install `autoconf-2.69`

```
./configure
make&&make install
```

2. Install `automake-1.15`

```
./bootstrap.sh
./configure
make&&make install
```

3. Copy `nginx_check.sh` (under `SLD HA Nginx Conf for OP.zip`) to `.../usr/local/keepalived`.

📌 Note

Make sure the execution permission has been assigned to this utility.

4. Copy the `Keepalived` configuration template `keepalived.conf` (under `SLD HA Nginx Conf for OP.zip`) to `etc/keepalived`, and update `keepalived.conf`.
5. Open `nginx_check.sh` and update the path, priority and virtual IP address.

You can see the screenshot below for reference.

📌 Note

Set the priority for the primary node to 100, and for the secondary node to 90.

The virtual IP address is bound to the virtual hostname.

```

1 ! Configuration File for keepalived
2
3 global_defs {
4
5     router_id LVS_DEVEL
6 }
7
8 vrrp_script chk_nginx_service {
9     script "/usr/local/keepalived/nginx_check.sh"
10    #script "/tcp/127.0.0.1/8888"
11    #script "killall -0 nginx"
12    interval 3
13    weight -20
14    fail      2
15    rise      1
16 }
17 #vrrp_sync_group VG1 {
18 #     group {
19 #         VI_1
20 #     }
21 # }
22
23 vrrp_instance VI_1 {
24     state BACKUP
25     interface eth0
26     virtual_router_id 51
27     priority 100
28     advert_int 1
29     nopreempt
30     authentication {
31         auth_type PASS
32         auth_pass 1111
33     }
34     virtual_ipaddress {
35         [REDACTED]
36     }
37     track_script {
38         chk_nginx_service
39     }
40 }

```

6. Edit the `b1c_sldCluster.conf` file on both the primary and secondary nginx servers.

In the `server` section, add the listening port number and server name.

For the server name, enter the virtual domain name which is bound to the virtual IP address.

7. Start nginx and Keepalived on the primary node and the secondary node, respectively.
 - The default file path for starting nginx: `.../usr/local/nginx/sbin/nginx`

- The default file path for starting Keepalived: `.../usr/local/keepalived/sbin/keepalived`

ⓘ Note

You must start nginx before you start Keepalived due to the latter's reliance on nginx.

Results

Now you can access the SLD with this virtual address: `https://virtualhostname.mocca.com:<Port Number>/ControlCenter`.

You should always use the SLD virtual IP address for installation of other SAP Business One components, version for SAP HANA.

3.2.1.4 Reconfiguring Primary SLD on Server A

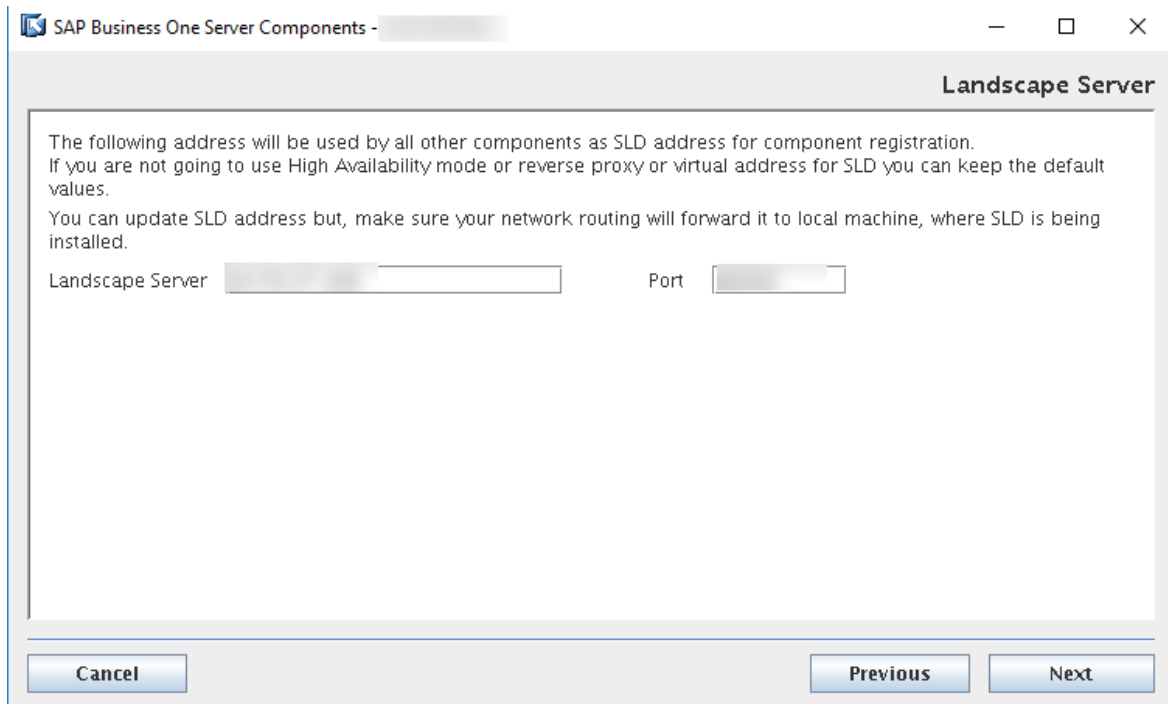
Procedure

1. Log on to Server A as root.
2. Navigate to the installation folder of the SAP Business One server components (default path: `/usr/sap/SAPBusinessOne`)

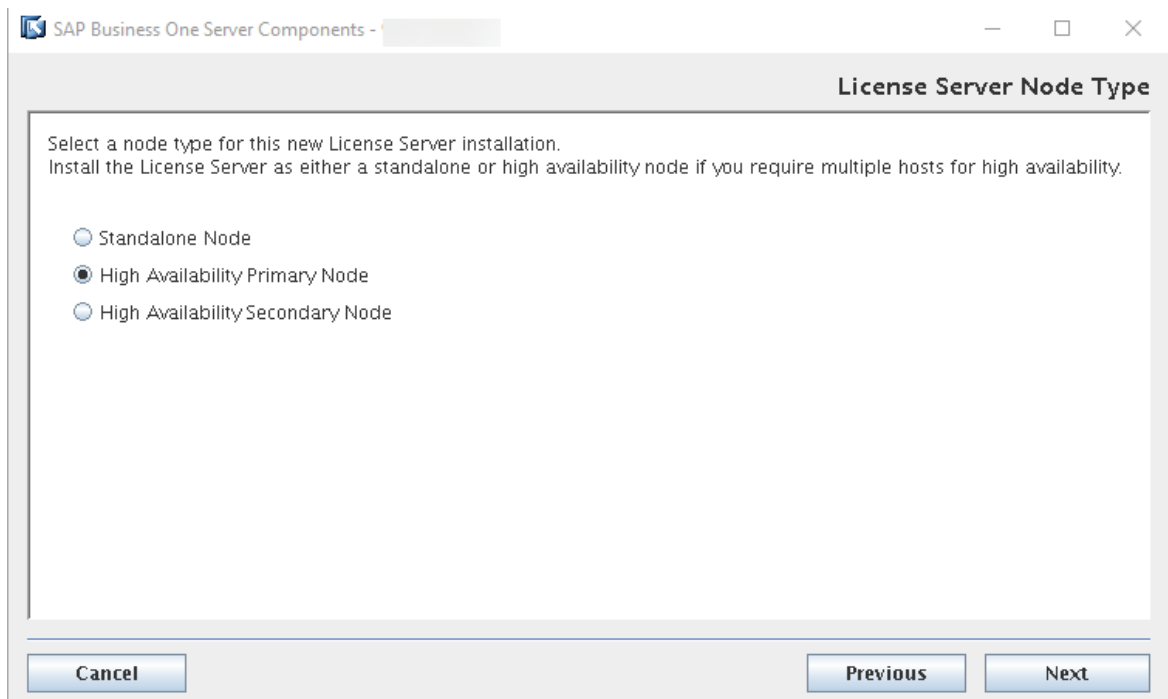
Start the setup wizard by entering `./setup`, and then follow the steps in the wizard to launch the reconfiguration.

ⓘ Note

During the reconfiguration, in the *Landscape Server* window, update the SLD address and port number to the virtual IP address and its port number.



3. In the *License Server Node Type* window, select *High Availability Primary Node*.



4. After the reconfiguration, find `SAP Business One-local-machine.xml` under `.../usr/sap/SAPBusinessOne/Common/Conf` and make sure the SLD address in the file is updated to the VIP address.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous: [Configuring a Virtual IP Address for SLD \[page 169\]](#)

Next task: [Installing Secondary License Manager on Server B \[page 180\]](#)

3.2.1.5 Installing Secondary License Manager on Server B

Procedure

1. Log on to Server B as root.
2. Navigate to the directory `.../Packages . Linux/ServerComponents` of the product folder, where the `install` script is located.

Start the installer by entering the following command:

```
./install
```

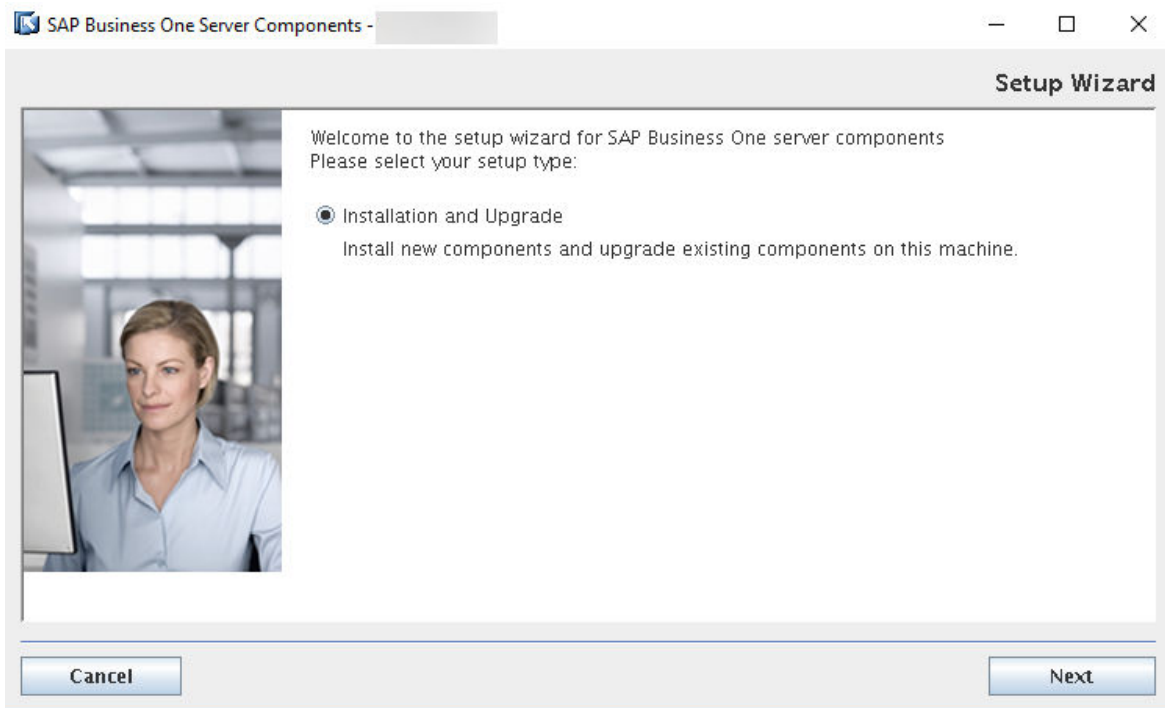
The installation process begins.

Note

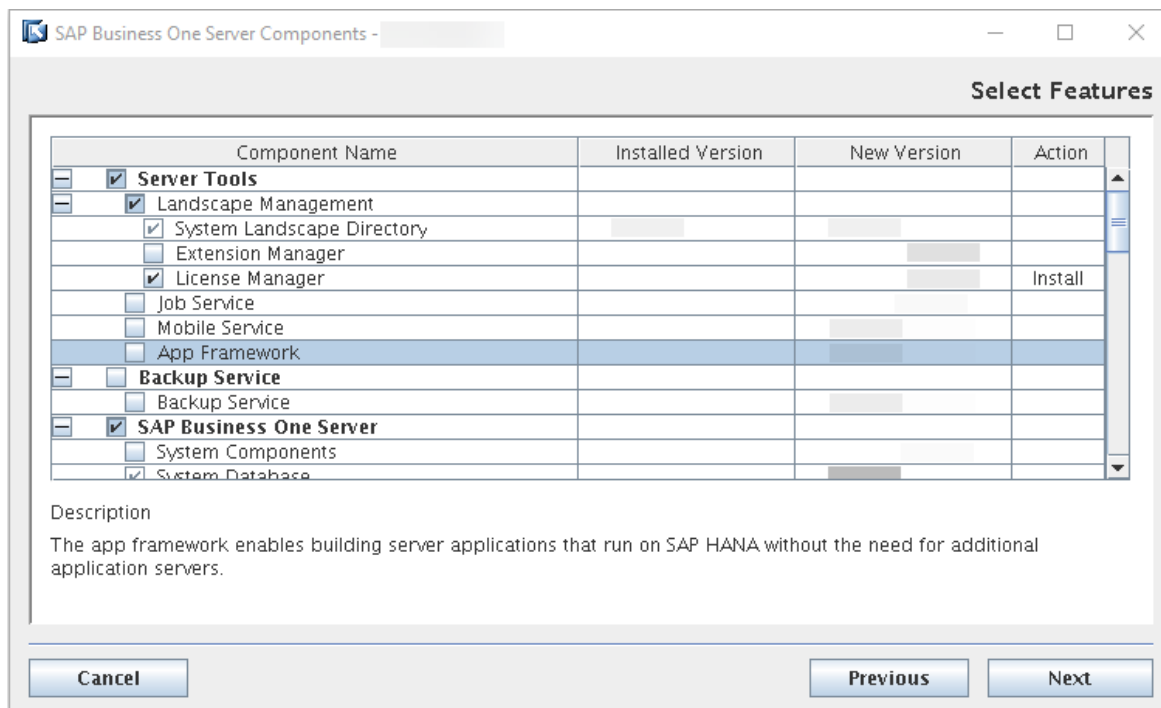
If you receive the error message: "Permission denied", you must set execution permission on the installer utility to make it executable. To do so, run the following command:

```
chmod +x install
```

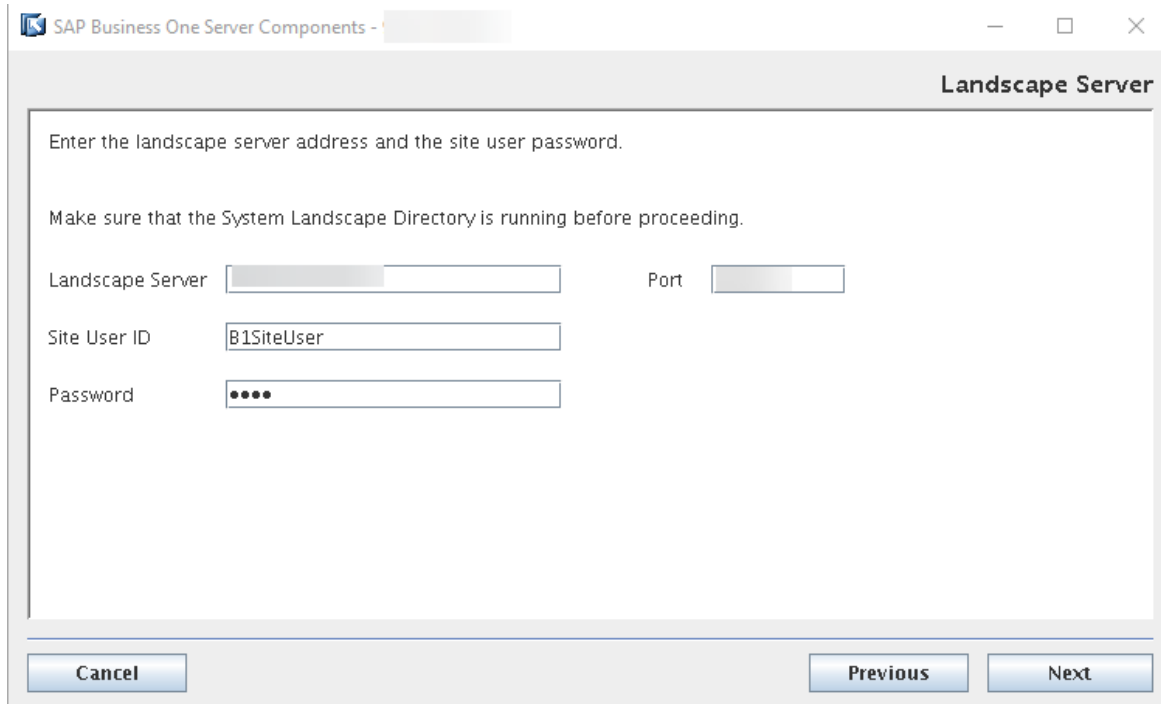
3. In the *Welcome* page of the setup wizard, choose *Next*.



4. In the *Select Features* window, select *License Manager* and choose *Next*.



5. In the *Landscape Server* window, enter the following:
 - *Landscape Server*: Enter the SLD virtual IP address.
 - *Port*: Enter the nginx proxy port number.
 - *Site User ID* and *Password*: Enter the site user B1SiteUser and the password.



6. For SAP Business One 10.0 FP 2011 or higher, in the *License Server Node Type* window, select *High Availability Secondary Node*, enter the IP address and port number of the primary SLD to connect to the remote SLD, and then enter the virtual URL that contains the virtual IP address and port number.

The screenshot shows the 'License Server Node Type' window. It contains the following elements:

- Header: SAP Business One Server Components
- Title: License Server Node Type
- Instructions: Select a node type for this new license server installation. Install the license server as either a standalone or high availability node if you require multiple hosts for high availability.
- Radio buttons:
 - ☐ Standalone Node
 - ☐ High Availability Primary Node
 - ☒ High Availability Secondary Node
- Primary Node section:
 - Address: [Text Field]
 - Port: [Text Field]
- Virtual Address section:
 - URL: [Text Field]
- Buttons: Cancel, Previous, Next

For a version lower than 10.0 FP 2011, in the *License Server Node Type* window, select *High Availability Secondary Node*, and enter the IP address and port number of the primary SLD to connect to the remote SLD.

The screenshot shows the 'License Server Node Type' window for a version lower than 10.0 FP 2011. It contains the following elements:

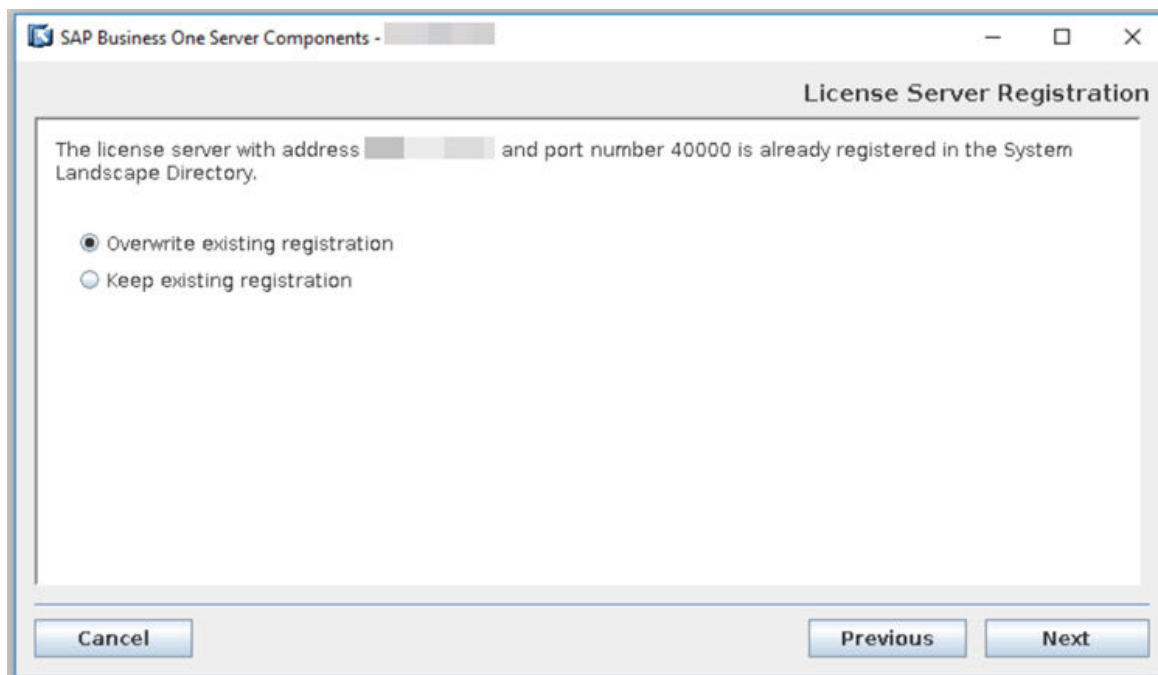
- Header: SAP Business One Server Components -
- Title: License Server Node Type
- Instructions: Select a node type for this new License Server installation. Install the License Server as either a standalone or high availability node if you require multiple hosts for high availability.
- Radio buttons:
 - ☐ Standalone Node
 - ☐ High Availability Primary Node
 - ☒ High Availability Secondary Node
- Primary Node section:
 - Address: [Text Field]
 - Port: [Text Field]
- Buttons: Cancel, Previous, Next

7. If the network address of the license server has already been registered into the SLD, the *License Server Registration* window appears with the following options:

- [Overwrite existing registration](#)
- [Keep existing registration](#)

If both the IP address and port number are registered, you can choose to overwrite the existing registration data or reuse them.

If the IP address is registered but the port number isn't, you can only overwrite the existing registration data.



8. In the [Database Server Connection](#) window, specify the following information and then choose [Next](#):

[Connection](#)

- [SAP HANA Server](#): Enter the hostname or IP address of the server of the same SAP HANA database that you use for the primary SLD.
- [Instance Number](#): Enter the same SAP HANA database instance number that you use for the primary SLD.

Note

The instance number must be a two-digit number from 00 to 97. If you use a one-digit number, it will be converted automatically. For example, 0 will be converted into 00.

- [Tenant Database](#): Enter the same tenant database name that you use for the primary SLD.

[Credentials](#)

- [User Name](#): Enter the same tenant database user name that you use for the primary SLD.
- [Password](#): Enter the password for the user name.

Database Server Connection

Specify the database information.

Connection

SAP HANA Server Instance Number

Tenant Database

Credentials

User Name

Password

The specified database user requires privileges according to the [Administrator's Guide](#).

Cancel Previous Next

9. In the [Review Settings](#) window, review your settings carefully. If you need to change your settings, choose [Previous](#) to return to the relevant windows; otherwise, choose [Start](#) to start the installation.

Note that the value of the [Network Address](#) is the address of the secondary SLD on Server B, while the value of the [Server Address](#) is the SLD virtual address.

Review Settings

Review your settings carefully before starting the setup process:

Parameter	Value
Installation	
Installation Folder	/usr/sap/SAPBusinessOne
Service Port	[redacted]
Network Address	[redacted]
Landscape Server	
Server Address	[redacted]
Server Port	[redacted]
Site User	****
Password	****
Landscape Installation Type	create

You can save current settings in a property file for future use.
Caution: Passwords will also be saved in the property file.

Save Settings

Cancel Previous Start

10. In the [Setup Progress](#) window, when the progress bar displays 100%, proceed with one of the following options:
 - If License Manager is installed successfully, choose [Next](#) to finish the installation.

- If the installation fails, choose [Roll Back](#) to restore the system. When the rollback progress is completed, in the [Rollback Progress](#) window, choose [Next](#) to finish the installation.
11. In the [Setup Process Completed](#) window, review the installation results.
 12. Choose [Finish](#) to exit the wizard.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Reconfiguring Primary SLD on Server A \[page 178\]](#)

Next task: [Editing License Manager Address \[page 185\]](#)

3.2.1.6 Editing License Manager Address

Prerequisites

This task is required only if you are deploying a version that is lower than SAP Business One 10.0 2011, version for SAP HANA. For 10.0 FP 2011 or higher, skip this task and go to the next one.

Context

After you have configured nginx and installed License Manager, update the License Manager address in System Landscape Directory into its virtual address.

Procedure

1. Connect to `https://<VIP Address>:<Port Number>/ControlCenter/` using the user name (B1SiteUser) and password.
2. On the [Services](#) tab, proceed as follows:
 - If you have chosen to register the license server into the SLD automatically, choose to edit [License Manager](#).
 - If you have chosen to register the license server into the SLD manually, choose [Add](#) [License Manager](#).
3. In the [Service URL](#) field, enter the virtual address (`https://<VIP Address>:<Port Number>/LicenseControlCenter`), and choose [OK](#).

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Installing Secondary License Manager on Server B \[page 180\]](#)

Next task: [Adding Allowlist to License Manager \[page 186\]](#)

3.2.1.7 Adding Allowlist to License Manager

Prerequisites

This task is required only if you are deploying SAP Business One 10.0 FP 2202, version for SAP HANA. If you are deploying other versions, skip this task and go to the next one.

Context

Add a cluster of the virtual IP address and all primary and secondary server IP addresses of System Landscape Directory and License Manager, to an allowlist to grant access to License Manager.

Procedure

1. Download and edit the allowlist configuration file [b1-license-manager.xml](#) . Add all the IP addresses in the following format:

1. **Sample Code**

```
<AllowOrigin>Virtual IP Address</AllowOrigin>
<AllowOrigin>Primary Server IP Address of System Landscape Directory</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of System Landscape
Directory</AllowOrigin>
<AllowOrigin>Primary Server IP Address of License Manager</AllowOrigin>
<AllowOrigin>Secondary Server IP Address 1 of License Manager</
AllowOrigin>
<AllowOrigin>Secondary Server IP Address 2 of License Manager</
AllowOrigin>
...
```

2. Save the file to `/usr/sap/SAPBusinessOne/ServerTools/License/conf` on all of your primary and secondary License Manager servers.
3. Run the command `/etc/init.d/sapb1servertools restart` to restart License Manager on all of your primary and secondary servers.

Task overview: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Editing License Manager Address \[page 185\]](#)

Next: [Upgrading SAP Business One Client and Other Components, version for SAP HANA \[page 187\]](#)

3.2.1.8 Upgrading SAP Business One Client and Other Components, version for SAP HANA

The SAP Business One client and other components, version for SAP HANA can be upgraded with the setup wizard.

For more information about how to upgrade the SAP Business One components, version for SAP HANA, see the *SAP Business One Administrator's Guide*, version for SAP HANA on [SAP Help Portal](#).

Note

During the upgrade, always use the virtual IP address and port number as the SLD server address and port number. For example, in the *System Landscape Directory* connection window, enter **<VIP Address>:<Port Number>**.

The screenshot shows the 'System Landscape Directory' window of the SAP Business One Setup Wizard. The window title is 'SAP Business One Setup Wizard'. The main heading is 'System Landscape Directory' with the instruction 'Specify the location of the SAP Business One system landscape directory.' Below this, there is explanatory text: 'The system landscape directory is the central service that governs the SAP Business One landscape. It includes a licence server component that was used in previous versions of SAP Business One.' and 'A previous version of the licence server or system landscape directory is installed on this machine. Upgrade the system landscape directory to the latest version or connect to the system landscape directory on a remote machine.' There are two radio button options: 'Connect to Local System Landscape Directory' (unselected) and 'Connect to Remote System Landscape Directory' (selected). Below the selected option is a text field labeled 'Server Name' with a yellow background. Further text states: 'The remote system landscape directory must be of the same version as the version of SAP Business One that you are setting up. To upgrade the remote system landscape directory, you must run an upgrade on that machine.' At the bottom right, there are three buttons: 'Cancel', 'Back', and 'Next'.

Parent topic: [Upgrading to Version 10.0 FP 2202 or Earlier \[page 159\]](#)

Previous task: [Adding Allowlist to License Manager \[page 186\]](#)

4 Uninstallation

Context

To uninstall SAP Business One, version for SAP HANA, follow the steps as described in *SAP Business One Administrator's Guide*, version for SAP HANA, except for the part regarding uninstalling the server components.

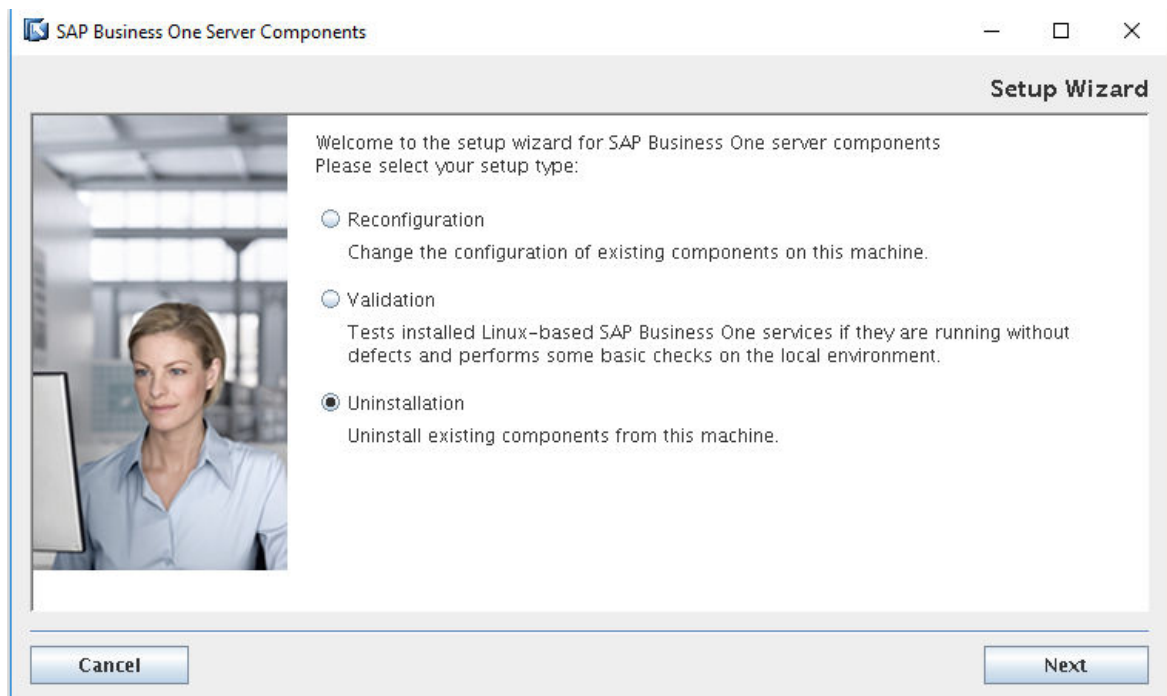
To uninstall the server components, ensure that the primary and the secondary nodes are both alive. You should first uninstall the server components on the **secondary** node and then on the primary node.

Procedure

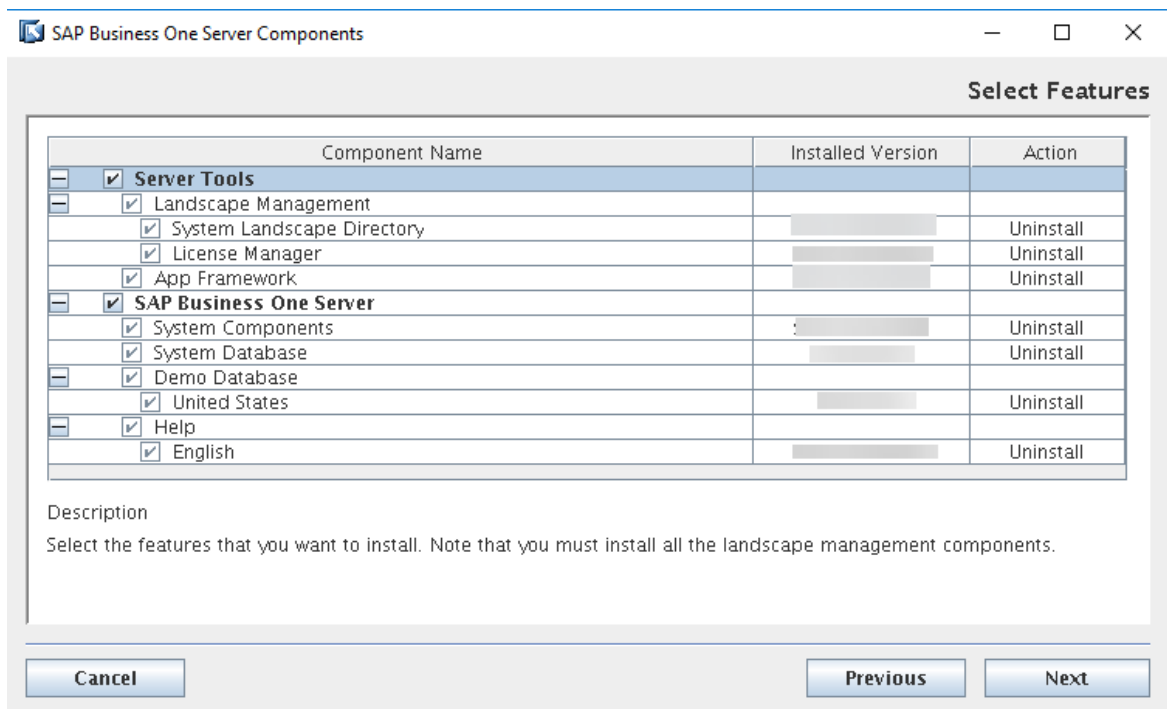
1. Navigate to the installation folder of the SAP Business One server components (default path: `/usr/sap/SAPBusinessOne`).
2. Start the uninstaller by entering `./setup`.

The uninstallation process begins

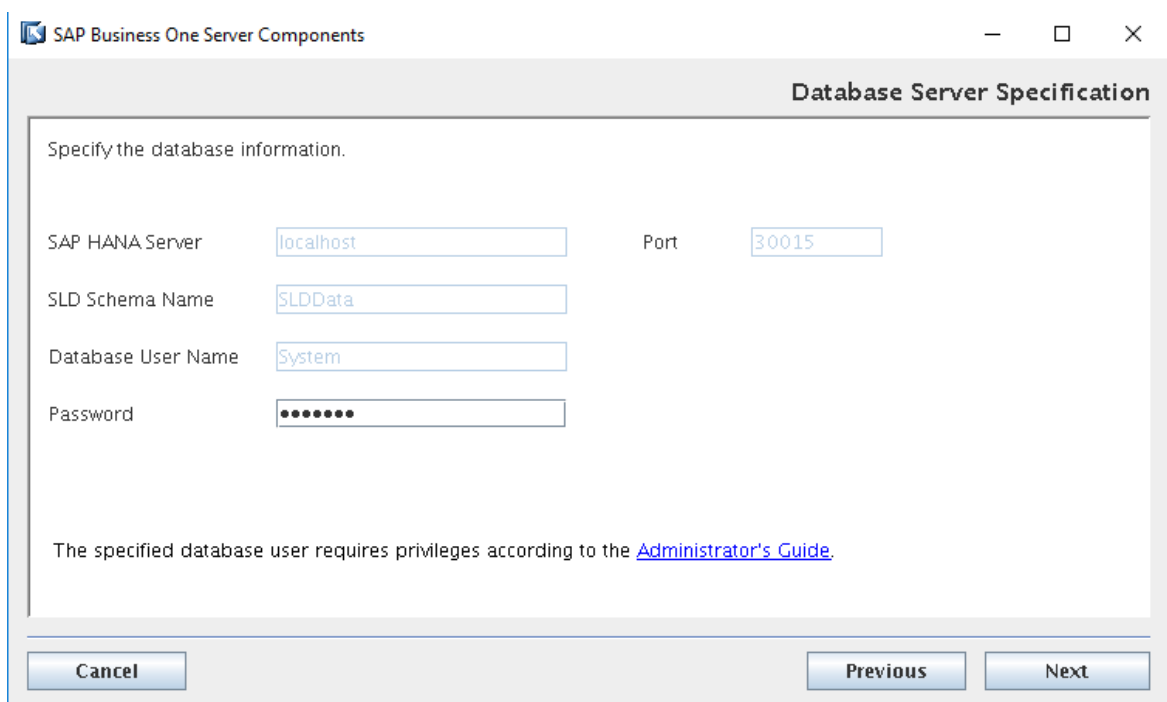
3. In the *Setup Wizard* window, select *Uninstallation*, and choose *Next*.



4. In the *Select Features* window, select the server components which you want to uninstall.



5. In the *Database Server Specification* window, enter the password for the SAP HANA database user and choose *Next*.



6. In the *Remove Schemas* window, do one of the following and choose *Next* to start the uninstallation.
 - If you are uninstalling components on the secondary nodes, deselect *SLD Schema* and *System Database*.

Caution

If you delete the database on the node which is not the last one to be uninstalled, all the remaining nodes will stop working, and all the data in the database will be deleted.

- If you are uninstalling components on the primary (last) node, select *SLD Schema* and *System Database*.
7. In the *Review Settings* window, review your settings carefully. If you need to change your settings, choose *Previous* to return to the relevant windows; otherwise, choose *Start* to start the uninstallation.
 8. In the *Uninstallation Progress* window, when the progress bar displays 100%, choose *Next*.
 9. Choose *Finish* to exit the wizard.

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