Administrator's Guide
SAP Business One Cloud 1.1
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INTERNAL: SAP PARTNERS

SAP Business One Cloud Administrator's Guide

All Countries

Typographic Conventions

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

Document History

Version	Date	Change
1.0	2012-11-16	First version.
1.1	2013-01-29	Add information about monitoring components, managing license allocations, assigning operational authorization to resellers, and managing reseller requests. Minor changes to extensions chapter to support more lightweight add-ons.
1.2	2013-04-11	Add information about working with dynamic keys and troubleshooting problems using partner support user accounts.
1.3	2013-05-20	Replace on-demand terminology with cloud.
1.4	2013-10-12	Add information about working with SAP HANA and analytics services. Add chapter about managing security.
1.5	2014-07-02	Provide more details about the power user
1.6	2014-08-13	Update for SAP Business One Cloud 1.1 PL02: • Support Windows Server 2012 • Enable SAP HANA tenant upgrade • Tenant Upgrade Simulation • Domain Groups Management
1.7	2015-03-31	Update for SAP Business One Cloud 1.1 PL04
1.8	2015-07-23	Update for SAP Business One Cloud 1.1 PL05:Support Browser Access
1.9	2016-06-16	Update for SAP Business One Cloud 1.1 PL06: Support SAP HANA high availability (HA) solution
1.10	2016-10-28	Update for SAP Business One Cloud 1.1 PL07: • New UAP installer • Linux installer for SLD and SLD Agent • SLD Agent task distribution • Google Chrome support • View login SBO users
1.11	2017-01-13	Update for SAP Business One Cloud 1.1 PL08: SLQ 2016 support; UAP password change
1.12	2017-09-04	Section 2 - Prerequisites: o SUSE Linux Enterprise Server 11 SP3/SP4, 12 SP1 supported o Windows Server 2016 supported Section 3.3 - Configuring Database Instances:

Version	Date	Change
		○ CCC supports MSSQL and SAP HANA Database Server on one landscape Section 3.3.1. - Backing up Databases: ○ Updated content and added section 3.3.1.1 Backing Up SQL Databases and 3.3.1.2 Backing Up SAP HANA Databases Section 3.5 - Installing the License Server: ○ Added procedure to install the license server using the Server Tools installer Section 3.8 - Configuring Mailer: ○ Changed to "Job Service" and new sections added Section 4.1.2 - Installing the SLD and Cloud Control Center on Linux: ○ Updated screenshots for Linux installation of SLD and SLD Agent for 1.1 PL09 Section 4.4 - Installing the User Access Portal for Browser Access: ○ Edited introduction and note, updated screenshots of the B1 Cloud Setup Wizard for installing UAP for 1.1 PL09. Section 5.2 - Working with Microsoft Windows: ○ Windows Terminal Services Plugin no longer supported; rewrote section Section 6.5.5 - Registering Tenant Storage: ○ Step 3: Clarified the mount command use. Section 8.2.1.3 - Creating Tenants from Backups: ○ Added caution note and reference to SAP Note 2159531 Section 9 - Managing Extensions: ○ Removed bullet on extensible fields and objects ○ Removed ELSTERLW from list Section 10.3 - Upgrading License Servers: ○ Added Step 4: Enter credentials in *Configuration* window Section 16.2 - Uploading Content to SAP: ○ Updated Prerequisites Section 16.3 - Troubleshooting Problems Using a Partner Support User Account ○ Updated button name and added description of new *Expired In* field
1.13	2018-03-19	Section 4.4 - Installing the User Access Portal for Browser Access: ○ Updated screenshots of the B1 Cloud Setup Wizard for installing UAP for 1.1 PL10. Section 10.1 - Upgrading System Landscape Directory and Cloud Control Center ○ Updated screenshot of setup wizard for SLD service with new *Database backup* checkbox.

Version	Date	Change
		Section 10.5.1 - Performing Pre-Upgrade Tests and 10.5.2 Performing Tenant Upgrades: o Added the prerequisite that the source and target service unit are connected to the same license server Section 17.2.3 (new) - Setting New User Passwords: o Added procedure for setting new passwords for users in CCC. Section 17.2.3.1 (new) - Password Requirements Hint: o Added procedure for entering a description of password requirements in CCC *Global Settings*. Section 17.2.3 (new) - Database Privileges for Installing, Upgrading, and Using SAP Business One Cloud: o Roles and privileges to be granted to SAP HANA database user Section 17.3.3.1 (new) - Database Role `PAL_ROLE` for Pervasive Analytics Section 17.4 (new) - Database User Management: o Described database user and database privilege functions in CCC: o 17.4.1 (new) - Granting Privileges to Database Users o 17.4.2 (new) - Creating Database Users
1.14	2018-06-08	Section 2 - Prerequisites: o SUSE Linux Enterprise Server 12 SP2 and SP3 supported. o SUSE Linux Enterprise Server 12 SP1, SP2, or SP3 for SAP Application supported. Section 4.1.2 - Installing the SLD and Cloud Control Center on Linux o Updated screenshot in Step 10 with new checkbox and added step in text. Section 6.5.4 - Registering Company Template Repositories o Added procedure for SAP HANA mount point Section 8.2.1.3 - Creating Tenants from Backups o Added prerequisites and updated procedure for SAP HANA service units Section 8.2.2 - Duplicating Tenants o Added Step 5: New *Duplicate Tenant Level Database Users* window and updated all screenshots. Section 9.4 - Deploying Extensions o Added Step 4: New *Set Upgrade Time* field in the extension deployment wizard. Section 11 - Managing Domain Groups o Removed reference to ON option in *Global Settings → Domain Groups Management*. Section 13.2 - Registering External Address Mapping o Added note that the internal URL is editable when registering mapping for SLD. The field value is displayed in Global Settings.

Version	Date	Change
		Section 14 - Message Service o Added new section on message service feature in CCC
1.15	2018-09-17	Section 2 - Prerequisites o Microsoft SQL Server 2017 is supported from SAP Business One Cloud 1.1 PL12 (with SAP Business One 9.3 PL05) or later. Section 3.5 - Installing the License Server; 10.5.1 - Performing Pre-Upgrade Tests; 10.5.2 - Performing Tenant Upgrades o Added prerequisite to use one license server for Microsoft SQL and one for SAP HANA installed on a separate machine on the latest version and patch level Section 4.1.1. - Installing the SLD and Cloud Control Center on Windows o Updated screenshots for PL12. Added notes describing *SLD installation mode* window options. Section 6.1 - Registering Database Instances o In Step 2, added screenshot and note if a SAP HANA database instance is selected as the server type to describe the *Connect Using SSL* option. Section 6.3 - Registering Presentation Servers o As of PL11, presentation server is selected using a dropdown list. Updated screenshot. Section 6.5.4 - Registering Company Template Repositories and 6.5.5 - Registering Tenant Storage: o Updated Step 3 - only first level shares are supported, and the mount point can only be created by adding a new line to the configuration file /etc/fstab. Section 8.1 - Creating Customers o In Step 2, added *UPN Suffix f*ield. Section 8.2 - Adding Domain Users to Customers o Updated steps related to UPN/ SAM account name in *Add User* and *Confirmation* window Section 8.3.1 - Modifying Domain User Data o Added new section to describe new *Modify* button on *User Management* tab Section 8.2.2 - Registering Tenants o Added new section to describe tenant registration wizard o Added note that user codes increased from 8 to 25 characters Section 9.4 - Deploying Extensions o Added prerequisites for deploying extensions based on SAP HANA XS Section 10.1 - Upgrading SLD and CCC o Added note and screenshot if using SAP HANA database

Version	Date	Change
		Section 11 - Managing Global Settings (previously Domain Groups Management) o 11.1 Managing Domain Groups (edited existing content) o 11.2 Managing System Users (new) Section 17.11 - Cleaning Up Audit Logs o Added description of new clean up audit logs function
1.16	2019-01-18	Section 4.4.3 - Reconfigure User Access Portal Web App o Updated steps to reconfigure the User Access Portal web app using the setup wizard for SAP Business One Cloud in reconfiguration mode, which allows you to change the certificate for the User Access Portal. Section 6.1 - Registering Database Instances o In Step 2, added note with steps on how to enable secure communication between the SLD and SAP HANA database using the Secure Sockets Layer (SSL) protocol. Section 8.2.1.3 - Creating Tenants from Backup o Updated prerequisites and procedure for creating tenants from schema exports as the SLD Agent now supports backup/export functions. Section 8.2.4 - Exporting Tenants (new) o Describes new *Export* button on *Tenants* page that allows exporting SAP HANA schemas or backing up MS SQL tenant databases. Section 8.5.3 - Removing License Files (new) o Added procedure for removing a license file using the new *Remove License File* button. Section 11 - Global Settings o Deleted "System User Management" section. Section 11.1 - Managing Domain Groups o *Impersonate* option removed and replaced by *On* option. Section 11.2 - Controlling Permission to Add Domain Administrators to Customers (new) o Describes new *Enable Add Domain Administrators to Customers* option in global settings, which allows you to control permission for adding domain administrators to customers. Section 15.1 - Adding Cloud Operators o Added Step 6 to describe *Read-Only Operator* checkbox option when adding a new cloud operator. Section 18.2.4 - Managing Account for Active Directory Operations o Added section to describe how to set the account used to perform operations in the Cloud Control Center that require Active Directory access.

Version	Date	Change
1.17	2019-04-26	- Removed references to SUSE Linux Enterprise Server 11 SP3 (no longer supported) Section 2 - Prerequisites o Windows Server 2019 supported Section 3.5 - Installing the License Server o Added note about unsafe changes to license server computer that can change the hardware key. 3.8.4 - Configuring Mailer and Mail Scheduling Settings o Added procedure to enable Mailer for each company directly in SAP Business One. 3.8.5 -Configuring Alert Service and Scheduling Settings o Added procedure to enable the alert service for each company directly in SAP Business One. 3.8.6 - Monitoring and Controlling Deployment Status of Mailer and Job Service in the Cloud Control Center (new) o Added procedure to monitor and change the deployment status of Mailer service and job service in the CCC. Section 8.2.1.2 - Creating Tenants from Solution Packages o Added note about access permissions of cloud operators and resellers to Implementation Repositories. Section 8.2.1.3 - Creating Tenants from Backups o Added note about access permissions of cloud operators and resellers to Company Template Repositories. Section 8.3 - Adding Domain Users to Customers o Updated description of inactive user to indicate that other users can see this user as active in SAP Business One. Section 8.3.1 - Synchronizing Domain Users (new) o Added description how to synch domain users. Section 8.3.3 - Removing Domain Users (new) o Added description how to remove domain users from customers. Section 8.4 - Adding and Removing SAP Business One Users (renamed) o Added section 8.4.2 Removing SAP Business One Users to describe how to remove users in the CCC Section 9 - Managing Extensions o 9.6 - Controlling Reseller Access to Extensions (new) o Added section 9.6.1 - Managing Reseller Access to describe the options in the *Reseller Access* field, which can be used to control reseller access to the extension (*All, None,* or *Custom*). o Added section 9.6.2 - Assigning Resellers to Extensions to describe the process of assigning resellers to extensions using the *Assign* button on the *Assigned to Reseller* tab.

Version	Date	Change
		○ Added section 9.6.2 - Unassigning Resellers from Extensions to describe the process of removing resellers from extensions using the *Unassign* or *Remove All* button on the *Assigned to Reseller* tab. Section 11 - Managing Global Settings ○ Added section 11.3 - Controlling Reseller Permission to Deploy Extensions to describe the new *Enable Extension Deployment by Resellers* option that allows operators to control if resellers can deploy extensions in SAP Business One Cloud. ○ Added section 11.4 - Enabling Two-Factor Authentication to describe how to enable 2FA for cloud operators, reseller operators, and customers. Section 15.2.6 - Assigning Storage to Resellers ○ Added note about access permissions of cloud operators and resellers to repositories.
1.18	2019-08-01	Section 2 - Prerequisites ○ Support for SLES 12 SP4. ○ Support for SLES 15 SP1 and SLES 15 for SAP Application. Section 4.1 - Installing the SLD and Cloud Control Center ○ Added note that if you are using SAP HANA 2.0, follow procedure in SAP Note 2799556. Section 8.3.3 - Removing Domain Users ○ Added description of "Disable domain user in Active Directory" checkbox Section 6.1 - Registering Database Instances Divided original section into two: ○ 6.1.1 Registering Microsoft SQL Server Database Instances ○ Added note that as of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available for new database instances. ○ 6.1.2 Registering SAP HANA Server Database Instances Described new fields in *Database Instance Registration* window. Section 8.2.1 - Creating Tenants ○ Added note that as of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available. Section 11.1 - Controlling DI API Access to the Common Database ○ Added description of new global setting "*Enable DI API to Access the Common Database"* Section 11.6 - Controlling Reseller Permission to Register Tenants ○ Added description of new global setting "*Enable Tenant Registration by Resellers"* Section 18.2.4 Managing Account for Active Directory Operations

Version	Date	Change
		○ Added note that as of SAP Business One Cloud 1.1 PL15, you cannot use the built-in administrator account as the account for AD operations.
1.19	2020-05-25	Section 2 - Prerequisites ○ Added note that SAP HANA 2.0 is supported as of SAP Business One Cloud 1.1 PL16 and later. 4.1 - Installing System Landscape Directory and Cloud Control Center ○ Added note that the SLD and Active Directory controller should not be installed on the same machine. Section 4.1.1 - Installing SLD and Cloud Control Center on Windows ○ Added note that SAP Business One uses information including system number and hardware key from the SAP Business One landscape for statistical purposes. ○ Step 9: Described steps for specifying database information for MSSQL and SAP HANA separately. Described new fields for SAP HANA database. Section 4.1.2 - Installing SLD and Cloud Control Center on Linux ○ Step 11: Added note to describe new fields in the *Database Server Connection* window. ○ Added description of new *SLD Hostname* window. Section 4.6 - Installing the Web Client for SAP Business One (new) ○ Added descriptions of: Section 4.6.1 - Installing the Web Client on Windows Section 4.6.2 - Installing the Web Client on Linux 7.1 - Creating Service Units ○ Added description of *Tenant Limit* field and updated screenshot. ○ Added Web Client and Electronic Document Service to list of components and procedure (Step 3). 7.2 - Registering Software Components or Storage to Existing Service Units ○ Added Web Client and Electronic Document Service as new software components 8.2.1.3 Creating Tenants from Backup ○ Added additional supported formats for export files (.tar and .tar.gz) 8.2.2 - Registering Tenants ○ Added description of tenant limit for cloud operators and reseller operators 8.3 Adding Domain Users to Customers ○ Added description how CCC identifies users created in Active Directory (Step 4) 8.4.3 Importing SAP Business One Users (new)

Version	Date	Change
		○ Added description of import users function on the *User Management* tab 9 - Managing Extensions ○ Updated table of automatically registered add-ons with Datev2LW and EFMLW and removed automatic registration for Screen Painter and SBO Script. 11.5 - Enabling the Launch Application Option in SAP Business One ○ Added description of new global setting *Enable Launch Application Option in SAP Business One.* 11.8 - Controlling the Execution of Heavy Tasks on Presentation Servers ○ Added description of new global setting *Allow Heavy Tasks to Run on Presentation Servers* 15.2.1 - Creating Resellers ○ Added description of *Tenant Limit* field in tenant creation wizard and updated screenshot. 15.2.5 - Setting Tenant Limits for Resellers (new) ○ Added description and procedure for cloud operators on setting tenant limits for resellers 17.3 - Troubleshooting Problems Using a Partner Support User Account ○ Support user session extended to 4 hours. 18.2.4 - Managing Account for Active Directory Operations ○ Added description of LDAP over SSL option. 18.4.3 - Creating Database Users ○ Added note that only cloud operators can create, edit, and delete database users.
1.20	2021-01-18	○ Updated menu item paths and names due to menu item reorganization in the Cloud Control Center. ○ Changed all "Country" field names to "Country/Region" 3.8.1 - Installing Job Service on Windows ○ Specified that only if you are using SAP Business One 9.3 or earlier, you need perform step 11. 4.7 - Installing the Integration Component for SAP Business One (new) ○ Inserted reference to *Working with the Integration Framework of SAP Business One in Cloud Environments* for instructions on prerequisites, installation, and configuration ○ Added note the if you are using B1i to connect to the DI API, you must enter the database user and database password in B1i each time. 4.8 - Installing the Tenant Configurator for SAP Business One Cloud (new) ○ Added a description of the new solution and a link to the how-to guide.

Version	Date	Change
		6.1.2.1 - Configuring SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers (new) o Added procedure for configuring SAP HANA 2.0 in a cloud environment and using multiple database containers 6.1.2.2 - Setting Up Multiple Database Containers in SAP HANA 2.0 Environments (new) o Added procedure for setting up multiple database containers in an existing SAP HANA 2.0 environment 6.1.2.3 - Deleting SAP HANA Tenant Databases (new) o Added procedure to delete an existing tenant database in an SAP HANA 2.0 environment 8.1 - Creating Customers and 15.2.1 Creating Resellers o Added description of new *External ID* field and link to global settings. 8.4.1 - Adding SAP Business One Users; 8.5.5 - Assigning Licenses to Users o Added note in Step 3 that the license server is case sensitive; enter the user code for each SAP Business One company user in the exact same format for each tenant; otherwise, you will need to assign more than one license. 9.7 - Managing Extension Security (new) o Added description of how to add and remove trusted certificates to enhance extensions security. 11.4 - Enable Security Certificates for Extensions(new) o Added description of how to activate the new option *Enable Security Certificates for Extensions.* 11.5 - Allow Resellers to Edit External IDs (new) o Added description of the new global settings option *Allow Resellers to Edit External IDs*, which allows cloud operators to control whether resellers can edit the *External ID* field.
1.21	2021-23-04	Appendix 1 (new) o Added a list of the paths to installation and runtime log files for SAP Business One Cloud components and services 5.2.3 - SAP Business One Microsoft 365 Integration o Added description of SAP Business One Microsoft 365 integration feature and link to how-to guide. 6.4 - Registering Browser Access Servers o Added more details about the configuration of Browser Access servers in the Cloud Control Center. 8.3 - Adding Domain Users to Customers o Added a note that the system enters domain user names in lower case.

Version	Date	Change
1.22	2021-30-07	Section 2 - Prerequisites o Support for SLES 15 SP2 4.3.1 - Creating Software Repositories o In Step 3, added a note that only the `UpgradeCD` folder is mandatory. 7.1 - Creating Service Units o In Step 3, added the option to select Web Client for SAP Business One in Step 2 of the Service Unit Creation Wizard. o Removed the Browser Access Server selection from the wizard steps. 8.2.1.1 - Creating Default Tenants o In Step 3, added a note that support users cannot be added to tenants. 8.4.1 Adding SAP Business One Users o In Step 3, added a note that support users cannot be assigned to tenants. o In Step 3, added a note that the *Assignment Reason* field in the *Assign Users* window must be specified if the *Operators* area is active and a cloud operator or reseller operator is selected. 10.1 - Upgrading the System Landscape Directory and Cloud Control Center o Added description of support user detection window. 11.15 - Allow Operators to Assign Themselves as Users on Customer Tenants (new) o Described new global setting *Allow Operators to Assign Themselves as Users on Customer Tenants.*
1.23	2022-06-05	1.2 Glossary o Updated description of power user authorizations 2 - Prerequisites o Support for SLES 15 SP3 3.5 - Installing the License Server o Updated procedure for installing the license server using the 64-bit SAP Business One Components Wizard. 3.5.1 - Uninstalling the License Server on Windows (new) o Added procedure for uninstalling the license server on Windows using the SAP Business One Components Wizard. 3.8.1 - Installing Job Service on Windows o Updated procedure for installing job service using the 64-bit SAP Business One Components Wizard. 3.8.1.1 - Uninstalling Job Service on Windows o Updated procedure for uninstalling job service on Windows using the SAP Business One Components Wizard

Version	Date	Change
		6.4 - Registering Browser Access Servers o Enhanced Step 5 to describe the configuration of Browser Access servers in the Cloud Control Center 7.2 - Registering Software Components to Existing Service Units o Listed software components that can only be registered once on a SU and those that can be registered multiple times. 8.2.1 - Creating Tenants o Added a note to define the tenant shared folder structure 9.4- Deploying Extensions o *Enabled* and *Startup Mode* field values can be found on the *Extensions* page, in the *Extension Details* area, on the *Assigned to Tenant* field.

Table of Contents

1 Introduction

The SAP Business One Cloud Administrator's Guide provides a central resource for the technical implementation of SAP Business One in a cloud landscape.

> **Note**
>
> For the latest information about installation and configuration issues that may not appear in this guide, see SAP Note 1923349.

With SAP Business One Cloud, customers can access SAP Business One remotely, centrally hosted in data centers. Partners and customers benefit from the sharing of common resources, lower maintenance requirements, and ability to scale elastically as companies grow and the number of users increases.

SAP's certified infrastructure and hosting partners provide a hosting infrastructure, typically a certified data center, and perform centralized management and maintenance of SAP Business One Cloud software components. Infrastructure partners can provide hosting services across several countries and industries.

Resellers, also known as Value Added Resellers (VARs,) are companies that sell SAP software and provide first-level support to their customers. Resellers market, sell, and implement customized SAP Business One Cloud solutions and provide ongoing support, consulting, and education services to customers.

The SAP Business One Cloud Administrator's Guide consists of the following main sections:

- **Prerequisites**

  This section outlines the prerequisite steps you must complete before you can proceed with the installation and configuration of SAP Business One Cloud components.
- **Configuring the Server Landscape**

  This section provides instructions for preparing the server landscape. In addition to SAP Business One components, you are required to install and configure several third-party components to provide remote access to SAP Business One.
- **Installing SAP Business One Cloud Components**

  This section provides instructions for installing SAP Business One Cloud components, which include the following:
  - System Landscape Directory (SLD)
  - Cloud Control Center
  - SLD Agent Service
  - User Access Portal
- **Managing Remote Access**

  This section assists you with configuring your remote access solution, for example Microsoft Remote Desktop Services or Citrix.
- **Registering Components Using the Cloud Control Center**

  This section assists you with using the Cloud Control Center to register components in the SLD. After completing the registration process, you can group registered components together into service units.

- **Managing Service Units**

  This section assists you with grouping registered components together into service units to provide users with full access to an SAP Business One installation. This section also includes information about monitoring components.
- **Managing Customer Components**

  This section provides instructions for creating customers and provisioning tenants. The activities include the following:
  - Creating customers
  - Creating tenants
  - Creating company databases
  - Adding SAP Business One Users
  - Removing SAP Business One Users
  - Managing licenses
- **Managing Extensions**

  This section assists you with using the Cloud Control Center to deploy, assign, and manage extensions for SAP Business One.
- **Upgrading SAP Business One Cloud**

  This section provides instructions for upgrading an SAP Business One Cloud landscape and upgrading tenants to later versions of SAP Business One.
- **Managing Access**

  This section assists you with using the Cloud Control Center to manage cloud operators, SLD clients, and resellers. Resellers are companies that market, sell, and implement customized SAP Business One Cloud solutions to customers.
- **Managing Global Settings**

  This section assists you with performing various security and system configuration settings using the *Global Settings* window in the Cloud Control Center.
- **Managing Requests**

  This section provides instructions for approving and rejecting requests for trials of SAP Business One Cloud from customers and requests from resellers.
- **Managing Support**

  This section assists you with using the audit log (a time stamped list of all changes to System Landscape Directory resources) and uploading content to SAP Support.
- **Managing Security**

  Explains how to implement a security policy and provides recommendations for meeting the security demands of the application.

1.1 Components Overview

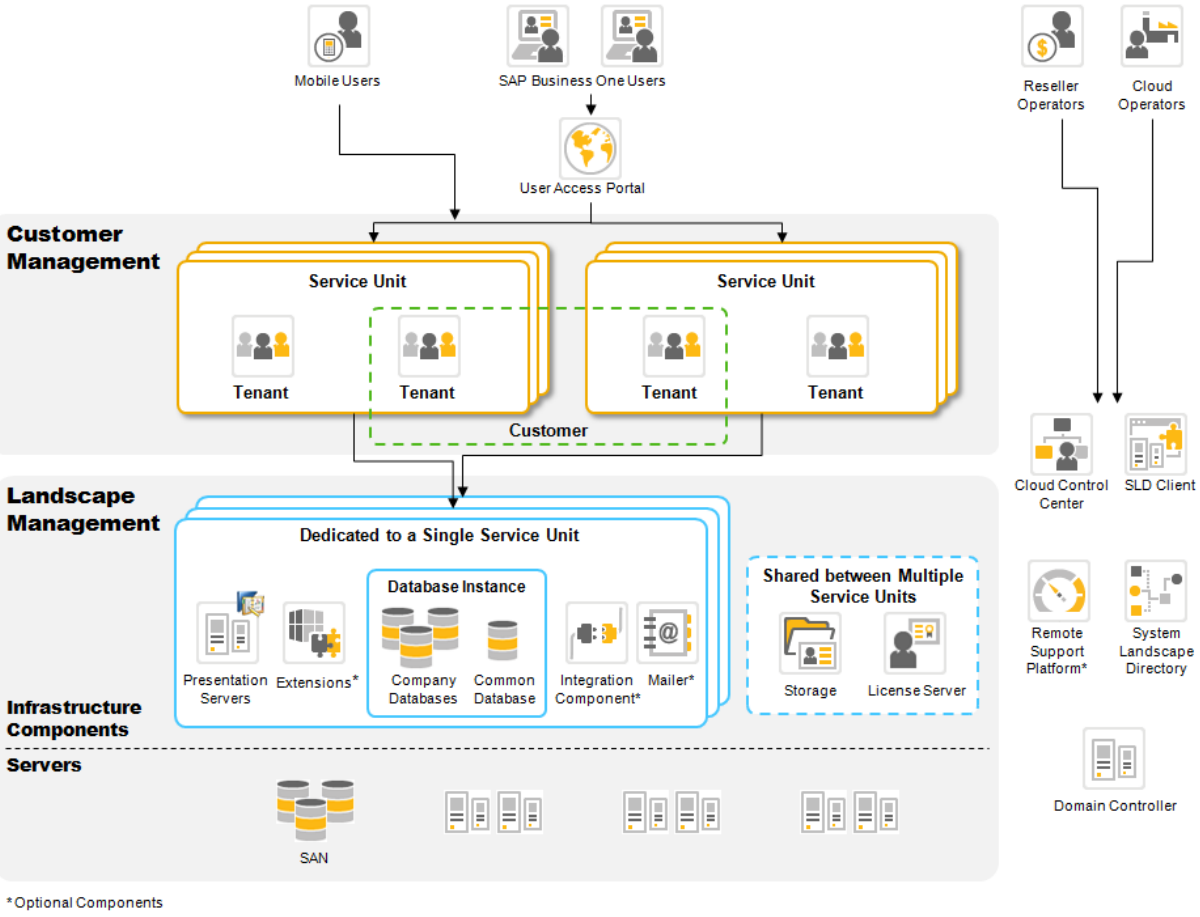
This section provides a description of the important components of an SAP Business One Cloud landscape. Before you begin installing and configuring components, it is important to analyze the requirements of your business and customers to carefully plan the number and type of components required.

An SAP Business One Cloud landscape contains multiple physical or virtual machines. For the purposes of this document, it is not important whether a machine is physical or virtual.

Recommendation

Use virtualization as this option offers numerous benefits, including performance improvements, easier manageability, and a lower total cost of ownership.

The following figure shows the typical architecture of an SAP Business One Cloud landscape.



Unlike an on-premise installation, in cloud deployments, the SAP Business One client application is not installed on end-user workstations. Instead, customers can access the SAP Business One application through one of the following approaches:

- Use remote desktop connections to access the SAP Business One application, centrally hosted on **presentation servers** in a data center.

  SAP Business One users can enter their logon credentials on a secure Remote Desktop Web Access using a Web browser, which initiates a remote application instance.

- Use a Web browser to access the SAP Business One application, centrally hosted on **Browser Access servers** in a data center.

  SAP Business One users can enter their logon credentials on a secure **user access portal**, which initiates an application instance in a Web browser.

Application data is stored and executed in the data center rather than locally, with only high-level graphical information delivered to client machines over the network.

Central software components are shared across an entire cloud landscape. A **System Landscape Directory** (SLD) service maintains a registry of all components and how they are allocated to customers. The **Cloud Control Center** is an interface for the SLD service that operators can use to manage an SAP Business One Cloud landscape. You can register landscape components, add users, and create service units and tenants.

The resources in an SAP Business One Cloud landscape are divided into **service units** to improve the overall manageability. A service unit is a collection of the software components, servers, and storage required to provide access to a full SAP Business One installation. All SAP Business One components in a single service unit are of the same version, and extensions are available to tenants of the service unit should they choose to use them. A single service unit can contain multiple tenants with similar requirements.

A **tenant** represents a company database, storage, and licenses allocated to a customer to provide business functionality. A **customer** is an organization that has purchased a subscription to remotely access SAP Business One for a predefined period of time and specific number of named users, according to contractual conditions.

Customers may have multiple tenants across different service units, with each tenant having a different application version or purpose, such as productive, demonstration, or testing instances.

Customers' data is stored in secure **company databases** and several files in dedicated directories, with access permissions granted on a per-user or per-tenant basis. SAP Business One Cloud landscapes can use either Microsoft SQL Server or SAP HANA as the database layer. Individual customers cannot see or access the data of other customers. An SAP Business One Cloud landscape requires the following shared folders for storing files:

- Software Repository – The software repository is a shared folder accessible by all service units, containing SAP Business One installation packages, upgrade packages, and add-on installers.
- Shared Folder – A folder assigned to a service unit that contains sub-folders dedicated to individual tenants, in which attachments, images, and document templates required to use SAP Business One are stored.
- Implementation Repository – A global folder that stores SAP Business One solution package (.PAK) files, which you can use to create company databases.
- Company Template Repository – A global folder that stores database backup files, which you can use to create company databases.
- Tenant Storage – A folder assigned to a service unit that contains sub-folders dedicated to individual tenants, in which logs and company database backup files, used during tenant upgrades, are stored.
- User Storage – A global folder that contains sub-folders dedicated to individual users, in which user-sensitive data and documents are stored.

1.2 Glossary

Term	Description
Analytics Service	SAP Business One analytics powered by SAP HANA provides various analytical features, including enterprise search, real-time dashboards, Microsoft Excel interactive analysis, and predefined Crystal reports.
Backup Service	Enables you to export and import company schemas, as well as back up and recover SAP HANA database instances.

Term	Description
Cloud Control Center	An interface for the SLD service that cloud operators can use to manage an SAP Business One Cloud landscape. You can register infrastructure components, add users, and create service units and tenants.
Cloud Operator	An authorized Cloud Control Center user responsible for managing an SAP Business One Cloud landscape. Cloud Operators can belong only to a single customer, but can be reassigned to other customers.
Common Database	A central database containing system data, update packages, and add-ons. Multiple tenants in the same service unit share a single common database.
Company Database	A database that stores all business and transaction data. A single customer may require several company databases.
Company Template Repository	A global folder that stores database backup files, which you can use to create tenants.
Customer	A client organization that has purchased a subscription to remotely access SAP Business One for a pre-defined period of time and specific number of named users, according to contractual conditions.
Extension	An additional component for SAP Business One, developed by SAP or a third-party, to meet specific industry or niche business requirements.
Implementation Repository	
Partner Support User	An SAP Business One user account that is automatically created by the application during installation. Partners can use this account to access a customer's SAP Business One to troubleshoot problems for a limited amount of time.
Power User	In SAP Business One On Premise, the superuser can manage licenses, users, and add-ons. However, in SAP Business One Cloud, the user and license management is centralized and managed by the cloud operator through the Cloud Control Center. To prevent a reseller from interfering with the centralized management, the SAP Business One client functionality must be restricted. Therefore, the superuser status is no longer available for resellers; the power user status has been introduced instead. When adding power users to the Cloud Control Center, if the user code does not exist in the company database, the new power user should have the same authorizations as superusers, except for the following: • Power users cannot manage licenses. • Power users cannot create new users in the SAP Business One client. • Power users cannot install add-ons. When adding power users to the Cloud Control Center that already exist in the company database (in other words, the user has *Full Authorization* for *Power User* in the *Authorizations* window in SAP Business One client), the Cloud Control Center inherits the user's current authorization.
Presentation Server	A server that provides tenants with remote access to the SAP Business One client application.

Term	Description
Presentation Server Farm	A collection of presentation servers that provide remote access to the SAP Business One client application for a single service unit.
Reseller	A company that sells SAP software and provides first-level support to their customers. Resellers market, sell, and implement customized SAP Business One Cloud solutions and provide ongoing support, consulting, and education services to customers.
Reseller Operator	An authorized Cloud Control Center user, employed by a reseller, responsible for managing an SAP Business One landscape on behalf of their customers. Reseller Operators can have multiple assigned customers.
Resource	A service unit, customer, or license file assigned to a reseller.
SAP Business One User	A licensed SAP Business One user, who is a member of a customer that has purchased a subscription to remotely access SAP Business One Cloud. An SAP Business One User can belong only to a single customer, and cannot be reassigned to other customers.
Service Unit	A collection of the software components, servers, and storage required to provide access to a full SAP Business One installation. All SAP Business One components in a single service unit have the same version. A single service unit can contain multiple tenants with similar requirements.
Shared Folder	A folder assigned to a service unit that contains sub-folders dedicated to individual tenants, in which attachments, images, and document templates required to use SAP Business One are stored.
SLD Agent Service	An agent service that executes tasks on behalf of the SLD, such as performing database upgrades.
SLD Client	A client that can communicate with the System Landscape Directory using the SAP Business One Cloud API.
Software Repository	A shared folder accessible by all service units, containing SAP Business One installation packages, upgrade packages, and add-on installers.
Storage	A collective term for software repositories, shared folders, implementation repositories, and company template repositories.
Superuser	An SAP Business One User with additional permissions. In SAP Business One, superusers can do the following: • Access all windows and perform all functions • Limit the authorizations of users that are not superusers Caution In a cloud environment, you can assign superuser permissions only to Cloud Operators.
System Landscape Directory (SLD)	A central directory of all SAP Business One components in a cloud landscape. A service provides information about software components and their settings, how resources are grouped into service units, and registered customers, tenants, and users.
Tenant	A company database, storage, and licenses allocated to a customer to provide business functionality. A customer may have multiple tenants across different service units, with

Term	Description
	each tenant having a different application version or purpose, such as productive, demonstration, or testing instances.
Tenant Configurator for SAP Business One Cloud	A solution that allows you to automate the tenant configuration and creation process in the cloud.
User Access Portal	A web site where users can enter their logon credentials to remotely access the SAP Business One application in the Browser Access mode.
Browser Access Server	A server that provides tenants with Web browser access to the SAP Business One client application.
Web Client for SAP Business One	A component that offers the SAP Business One core business logic and processes provided in the new SAP Fiori user experience.

2 Prerequisites

- For information on hardware and software requirements, see the following:
  - SAP Business One Cloud Platform Support Matrix on SAP Help Portal.
  - Compatibility with the SAP Business One client application, which you can find in the patch overview note for the relevant version/patch in the SAP Business One Notes Knowledge Base. The central note for SAP Business One Cloud 1.0 (1791202) and central note for SAP Business One 1.1 (1923349) list all patch overview notes.
  - *System Requirement Sizing Tool for SAP Business One Terminal Server and Browser Access*, which you can search on SAPPartnerEdge.com.
- You have configured the required number of machines, which have one of the following Windows Server editions installed:
  - Microsoft Windows Server 2019 Standard edition or Datacenter edition
  - Microsoft Windows Server 2008 R2 Standard edition or Enterprise edition
  - Microsoft Windows Server 2012 Essentials, Standard, or Datacenter edition
  - Microsoft Windows Server 2012 R2 Essentials, Standard, or Datacenter edition
  - Microsoft Windows Server 2016 Essentials, Standard, or Datacenter edition
  - Microsoft Windows Server Essentials, Standard, or Datacenter edition
- If you are using Microsoft SQL Server for the database layer, you have installed one of the following on the landscape server and database servers:
  - Microsoft SQL Server 2019 Standard or Enterprise edition
  - Microsoft SQL Server 2017 Standard or Enterprise edition
  - Microsoft SQL Server 2016 Standard or Enterprise edition
  - Microsoft SQL Server 2014 Standard, Business Intelligence, or Enterprise edition
  - Microsoft SQL Server 2012 Standard, Business Intelligence, or Enterprise edition
  - Microsoft SQL Server 2014 Standard, Business Intelligence, or Enterprise edition
  - Microsoft SQL Server 2016 Standard or Enterprise edition
  - Microsoft SQL Server 2017 Standard or Enterprise edition
  - Microsoft SQL Server 2019 Standard or Enterprise edition

    Note
  - Microsoft SQL Server 2012 is supported from SAP Business One Cloud 1.0 SP01 (with SAP Business One 8.82 PL11) or later.
  - Microsoft SQL Server 2014 is supported from SAP Business One Cloud 1.1 PL06 (with SAP Business One 9.1 PL12) or later.
  - Microsoft SQL Server 2016 is supported from SAP Business One Cloud 1.1 PL08 (with SAP Business One 9.2 PL06) or later.
  - Microsoft SQL Server 2017 is supported from SAP Business One Cloud 1.1 PL12 (with SAP Business One 9.3 PL05) or later.

- Microsoft SQL Server 2019 is supported from SAP Business One Cloud 1.1 PL16 (with SAP Business One 9.3 PL13) or later.

- If you are using SAP HANA for the database layer, you have installed one of the following:
  - SAP HANA Platform Edition 1.0 (supported as of SAP Business One 9.1 PL00, version for SAP HANA and SAP Business One 9.2 PL00, version for SAP HANA)
  - SAP HANA Platform Edition 2.0 (supported as of SAP Business One Cloud PL16)

  For more information about the prerequisites for SAP HANA, see *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.
- If you are using SAP HANA for the database layer, you have installed one of the following server platforms:
  - SUSE Linux Enterprise Server 11 SP2, SP3, or SP4 (x86_64) (compatible with SAP Business One 9.x versions).
  - SUSE Linux Enterprise Server 12 SP1, SP2, SP3, or SP4 (x86_64) (compatible with SAP Business One 9.x versions).
  - SUSE Linux Enterprise Server 15 SP1, SP2, or SP3 (x86_64) (compatible with SAP Business One version 10.0).
- If you want to enable SAP HANA high availability solution, you must install SUSE Linux Enterprise Server 11 SP4 for SAP Application (x86_64), SUSE Linux Enterprise Server 12 SP1, SP2, SP3, or SP4 for SAP Application (x86_64), or SUSE Linux Enterprise Server 15 SP1, SP2, or SP3 for SAP Application (x86_64) and SAP HANA. For more information about the prerequisites for SAP HANA high availability solution, see *Setting Up SAP HANA Database High Availability for SAP Business One for Manual Failover* or *Setting Up SAP HANA Database High Availability for SAP Business One for Automatic Failover* on SAP Help Portal.

  
  Caution

  SUSE Linux Enterprise Server for SAP Application is different from SUSE Linux Enterprise server.
- You have installed Adobe Reader on all presentation servers.
- If you want to access the Web client for SAP Business One, be sure to use one of the following Web browsers:
  - Mozilla Firefox
  - Google Chrome
  - Apple Safari (Mac and IPad)

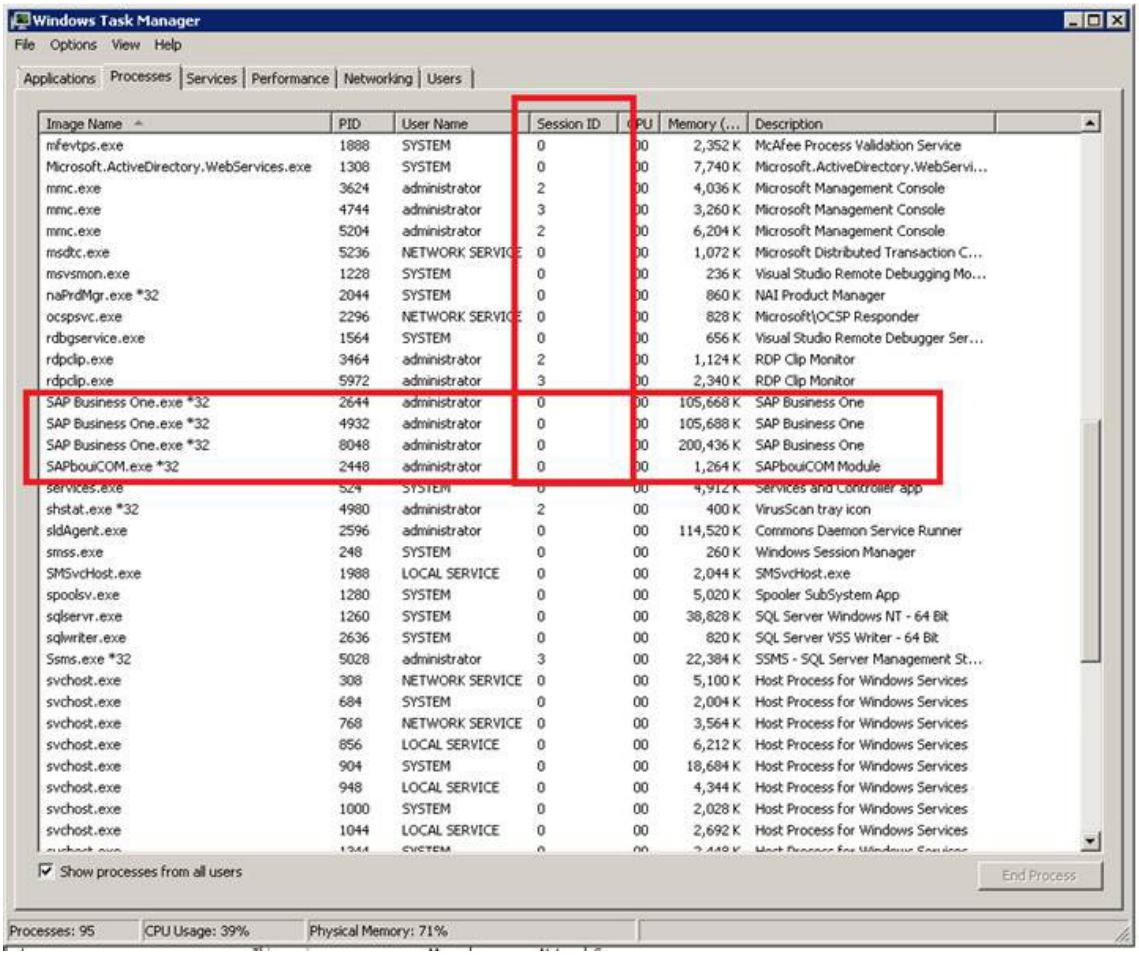
2.1 Installation Checklist

To perform a correct and complete installation and provide browser access to SAP Business One, do the following:

1. Configure the server landscape
   1. Configure a Windows time server
   2. Configure the domain controller
   3. Configure database instances
   4. Install certificates
   5. Install the license server
   6. Configure the Remote Desktop Web Access
   7. Install job service

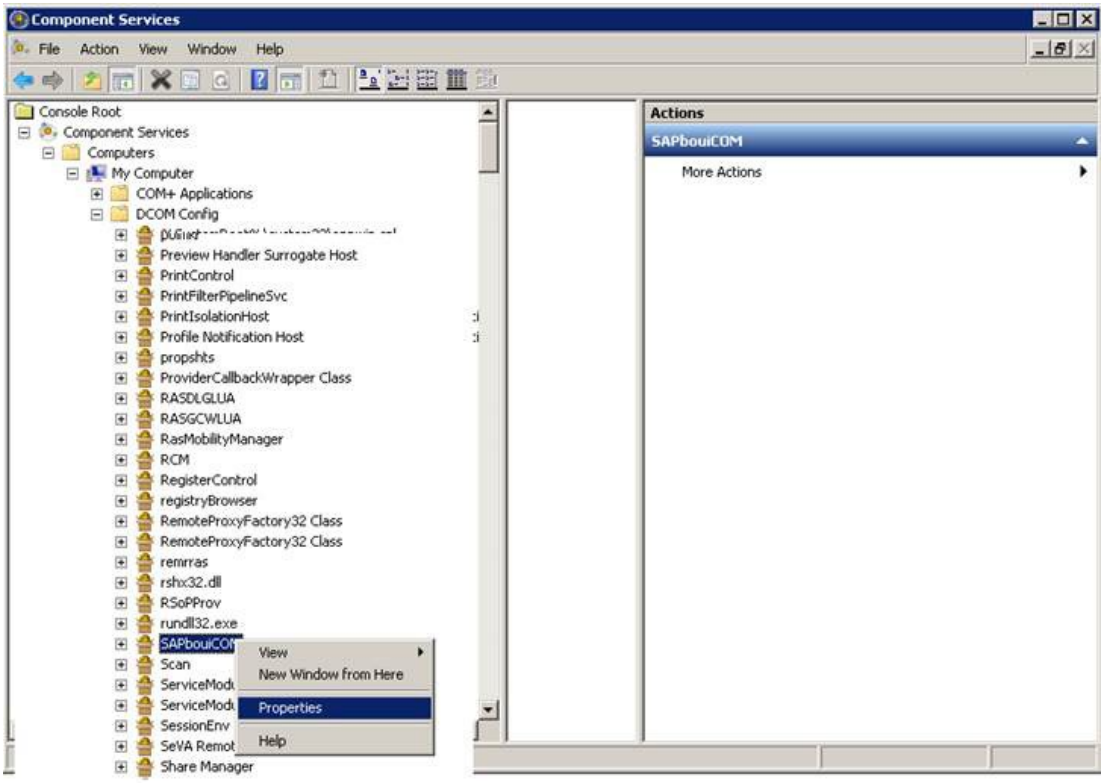
2. Install SAP Business One Cloud components
    1. Install the System Landscape Directory and Cloud Control Center
    2. Install the SLD Agent Service
    3. Create storage
    4. Install the User Access Portal
3. Add optional cloud operators and optional resellers
4. Register components using the Cloud Control Center
    1. Register database instances
    2. Register license servers
    3. Register storage
    4. Register and create common databases
    5. Register Browser Access servers
5. Create the required service units
6. Create customer components
    1. Create customers
    2. Create tenants
    3. Add users
    4. Assign licenses
7. Deploy and assign extensions

    > **Note**
    >
    > To run your extensions successfully, you must ensure that the Session ID of SAPbouiCOM.exe is the same as that of SAP Business One.exe.



If the Session IDs are not the same, you need to perform the following steps to change the identity to the launching user in the DCOM configuration of SAPbouiCOM.exe:

1. Stop the *SAP Business One Browser Access Server Gatekeeper* service.
2. In *Windows Task Manager*, end the *SAPbouiCOM.exe* process, if it exists.
3. Open *Control Panel* -> *All Control Panel Items* -> *Administrative Tools* -> *Component Services*, find SAPbouiCOM, right-click and choose *Properties*.



4. On the *Identity* tab of the *SAPbouiCOM Properties* window, select *The launching user*, and choose the *Apply* button.
5. Start the *SAP Business One Browser Access Server Gatekeeper* service.

SAPBouiCOM.exe will be started with the same session ID as SAP Business One.exe.

Note

Since SAP Business One Browser Access is simulating the SAP Business One Windows desktop application, to fully display the screen elements, we recommend that you use a high resolution (1280×800 minimum), and maximize the Firefox window.

3 Configuring the Server Landscape

This section provides instructions for configuring the server landscape in a cloud environment. An SAP Business One Cloud landscape contains multiple physical or virtual machines. For more information, see SAP Business One Cloud Platform Support Matrix.

In addition to SAP Business One components, you are required to install and configure several third-party components to provide remote access or Web browser access to SAP Business One.

Configuring the server landscape consists of the following main steps:

- Configuring a Windows time server
- Configuring the domain controller
- Configuring database instances
- Installing certificates
- Installing the license server
- Installing the remote support platform for SAP Business One
- Configuring the presentation server farm
- Configuring job service

When configuring SAP Business One Cloud and third-party components, you can specify which TCP/IP ports to use. The following table lists the default ports:

Component	Port
SLD	80 (HTTP), 443 (HTTPS)
User Access Portal	443 (HTTPS)
License Server for Windows (prior to SAP Business One 9.2 PL05)	30000 (TCP), 30001 (TCP)
License Server for Linux (any version) and for Windows (SAP Business One 9.2 PL05 and later)	40000 (TCP)
Integration Component	8080 (HTTP), 8433 (HTTPS)
Database Instance	1433 (TCP), 1434 (UDP)
SAP Business One Analytics	1433
Service Layer	50000
App Framework	4300, 8000

3.1 Configuring Windows Time Server

You must configure a Windows time server to ensure that all machines in an SAP Business One Cloud landscape use a common time. If the time is not synchronized across all machines, errors will occur during authentication processes. For more information about configuring a Windows time server, see www.microsoft.com.

3.2 Configuring the Domain Controller

The domain controller runs Active Directory and is responsible for the administration and security management of the entire network. The domain controller authenticates and authorizes domain users and resources, assigns and manages certificates, and enforces security policies.

Prerequisites

- You have installed Windows Active Directory Service. For more information, see www.microsoft.com.
- You have configured the server role as Domain Controller.
- You have created a new domain for the SAP Business One Cloud landscape.

Procedure

To configure the domain controller, do the following:

1. Configure the required domain user accounts and groups:
   1. In the *Active Directory Users and Computers* console, create a service account named `SAPServiceB1C` in the new domain.
   2. Create the required domain user accounts for all cloud operators and SAP Business One Users.
   3. Create a domain group for each tenant and service unit.
      Each tenant group is a child group of its respective service unit group.
   4. Add domain users to their respective tenant groups.
   5. Enable personal folder roaming for all domain user accounts.
   6. Use a group policy object to configure permissions.
2. Use a group policy object to configure registry key values for *Hosting* and *SLDAddress* on all machines. For the *Hosting* registry key, the type must be `dword` and the value `00000001`. You must ensure all the required registry keys exist on all machines in `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\SAP\SAP Manage`.

3.2.1 Configuring the Domain Controller with Multiple Domain Controllers

If your setup includes more than one domain controller, you must perform additional configuration steps in order for all components to functional properly. These are as follows:

- Configure the domain controller's priority and weight value: By default, the primary domain controller (PDC) and secondary domain controller (SDC) have the same weight and priority, so load balancing applies. Change the priority and weight so that PDC has the highest priority.

3.3 Configuring Database Instances

A database instance runs either Microsoft SQL Server or SAP HANA and includes all company databases and common databases for a single service unit. Note that as of SAP Business One Cloud 1.1 PL04, the Cloud Control Center supports both Microsoft SQL Server and SAP HANA database servers on one landscape.

> **Note**
>
> If you use SAP HANA, the license server and mailer components run on Linux and not Microsoft Windows.
>
> SAP Business Cloud landscapes based on SAP HANA do not support the following:
>
> - Duplicating tenants
> - Creating tenants from software packages
> - Duplicating service units

Prerequisites

- If using Microsoft SQL Server, you have installed Microsoft SQL Server 2008 R2, 2012, 2014, 2016, 2019 Standard or Enterprise edition on all database servers.
- If using SAP HANA, you have installed SUSE Linux Enterprise Server 11 SP4 (x86_64), SUSE Linux Enterprise Server 12 SP1, SP2, SP3, or SP4 (x86_64), or SUSE Linux Enterprise Server 15 SP1, SP2, or SP3 (x86_64) and SAP HANA . For more information about the prerequisites for SAP HANA, see *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.

Procedure

To configure the required database instances using **Microsoft SQL Server**, do the following:

1. Change the logon account for the SQL Server service to `Network Service`.
2. In Microsoft SQL Server Management Studio, grant `sysadmin` security privileges for each partner domain group.
3. Enable the SQL Server Browser service:
   1. In Windows, choose *Start* → *Control Panel* → *Administrative Tools* → *Services*.
   2. Right-click *SQL Server Browser* and choose *Properties*.

3. From the *Startup* type dropdown list, select *Automatic*.

4. Grant Microsoft SQL Server security privileges to cloud operators:
   1. In Microsoft SQL Server Management Studio, add the corresponding domain groups or domain user accounts for cloud operators as SQL Server logins.
   2. For each account, set the server roles as `public` and `sysadmin`.
5. Grant local administrator privileges to the `SAPServiceB1C` account for each database instance:
   3. In Windows, choose *Start* → *Control Panel* → *Administrative Tools* → *Computer Management*.
   4. In the *Computer Management* window, expand *Local Users and Groups* → *Groups*.
   5. Right-click the *Administrators* group and choose *Add to Group*.
   6. In the *Administrator's Properties* window, add the `SAPServiceB1C` account.

To configure the required database instances using **SAP HANA**, do the following:

1. Install and configure SAP HANA. For more information, see *SAP Business One Administrator's Guide, version for SAP HANA*. For information about installing SAP HANA Platform Edition 2.0, see Installing SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers.
2. After installing and configuring SAP HANA, ensure that you disable the SAP HANA password policy by setting `force_first_password_change` to `FALSE` in the SAP HANA configuration settings.

3.3.1 Backing Up Databases

Databases are always at risk of damage and it is vital to implement a security strategy. To keep the risk of data loss low, ensure that you develop a backup strategy that suits your business and the requirements of your customers. An important factor to consider is the volume of data that you process each day. In case of data loss, you are required to retrieve this data manually, back to the time of your last backup.

Recommendation

Test your backup and recovery procedures thoroughly. Testing helps to ensure that you have the required backups to recover from various failures, and that your procedures can be executed smoothly and quickly if a failure occurs.

The frequency of the backups depends on the following factors:

- Processed data volume
- Customer requirements
- Number of users

To avoid data loss, you must also regularly back up the following directories and storage:

- Software repositories
- Shared folders
- Implementation repositories
- Company Template Repositories
- Tenant storage
- User storage

3.3.1.1 Backing Up SQL Databases

You can back up your SQL databases using SQL Server Management Studio or the backup functionality of remote support platform for SAP Business One. For information about backing up SQL databases, see the *SAP Business One Administrator's Guide*.

3.3.1.2 Backing Up SAP HANA Databases

You can back up SAP HANA databases using SAP HANA studio or the backup service component of the remote support platform available for SAP Business One, version for SAP HANA (available as of SAP Business One Cloud 1.1 PL06). For more information about backup service support for SAP HANA databases in SAP Business One Cloud, see SAP Note 2297466.

> **Note**
>
> The backup service component can be installed on a different machine from the SAP HANA machine and can be configured to back up multiple remote SAP HANA servers.

Procedure:

1. To configure the backup service of the remote support platform for SAP Business One, see *Configuring Backups* in the online help for the remote support platform for SAP Business One.

   > **Note**
   >
   > As of the remote support platform for SAP Business One version 3.2 PL02, you can perform the following backup service tasks for SAP HANA:
   >
   > - Export SAP HANA company schemas
   > - Back up SAP HANA server instances
   > - Upload an SAP HANA backup to SAP Business One

2. To install the backup service component on an SAP HANA server, see *Wizard Installation* in the *Administrator's Guide for SAP Business One, version for SAP HANA*.

   > **Note**
   >
   > If you need to add a new SAP HANA database to the backup service, see *Reconfiguring the System* in *Administrator's Guide for SAP Business One, version for SAP HANA*.

3.4 Installing Certificates

The following certificates are required for an SAP Business One Cloud landscape:

- Certificates for Remote Desktop Services

Remote Desktop Services components require certificates for authentication. For more information, see www.microsoft.com.

- Certificates for the System Landscape Directory

  If you select Hypertext Transfer Protocol Secure (HTTPS) as the web protocol the SLD uses for connections, a certificate is required for authentication. For more information, see *Installing System Landscape Directory and Cloud Control Center*.

You can acquire the necessary certificates using either 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.

- Certificate Authority Server

  You can configure a Certificate Authority (CA) server in the SAP Business One Cloud landscape to issue certificates. If you choose this method, you must configure all servers in the landscape to trust the CA's root certificate.

3.5 Installing the License Server

A license server is a central component that manages the application license mechanism. Since the license server is compatible with all versions of SAP Business One, multiple service units can share a single license server.

For more information about installing and configuring a license server, see the *SAP Business One Administrator's Guide*.

> **Note**
>
> For the integration component and job service to function correctly in cloud environments, in the SAP Business One License Manager, register any common databases and ensure you select the *Use Trusted Connection* checkbox.

To avoid accidentally changing the hardware key, do not perform the following actions on the license server computer:

Windows:

- Changing the security identifier (SID)
- Changing the computer name
- Changing the virtual machine identifier

Linux:

- Changing the virtual machine identifier

You can check the hardware key of the license server in the Cloud Control Center. To do so, choose *Central Components → License Servers.* In the *License Server Details* area, on the *Configuration* tab, check the value in the *Hardware Key* field.

The following procedure describes how to install the license server by using the SAP Business One Components Wizard.

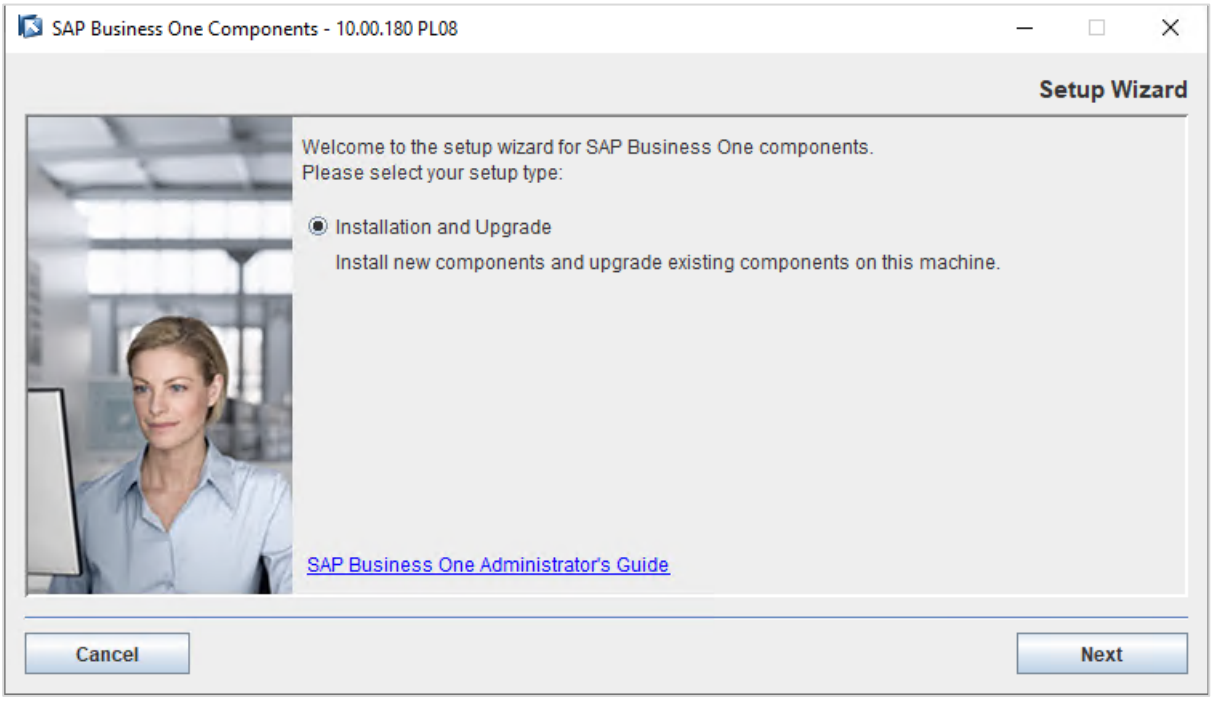
Prerequisite

- You have installed the SLD Agent Service. For more information about installing the SLD Agent, see section *4.2. Installing SLD Agent Service*.
- If you are using both Microsoft SQL and SAP HANA databases, ensure that you have one license server for each product version (in other words, one license server for Microsoft SQL and one for SAP HANA) installed on a separate machine on the latest version and patch level of SAP Business One and SAP Business One, version for SAP HANA.

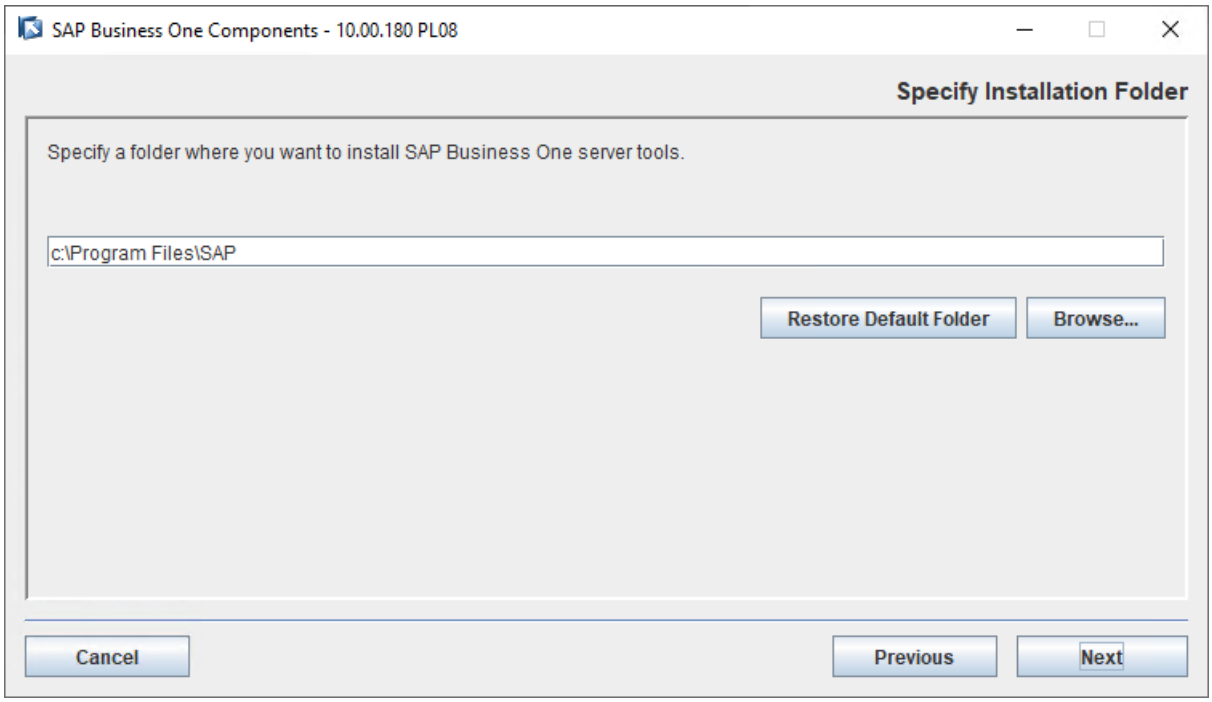
Procedure

[On Windows]

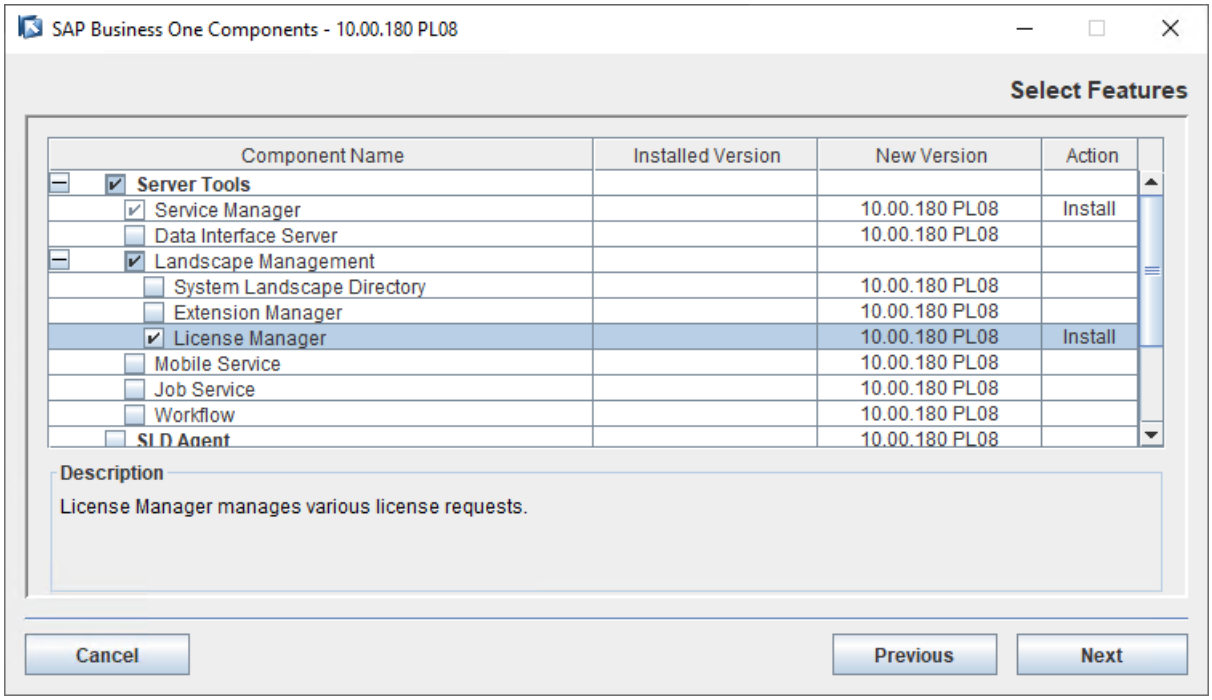
1. In the SAP Business One installation folder, navigate to the directory ...`\Packages.x64\ComponentsWizard.`
2. Run the *install.exe* file.
3. In the welcome window of the wizard, choose *Next*.



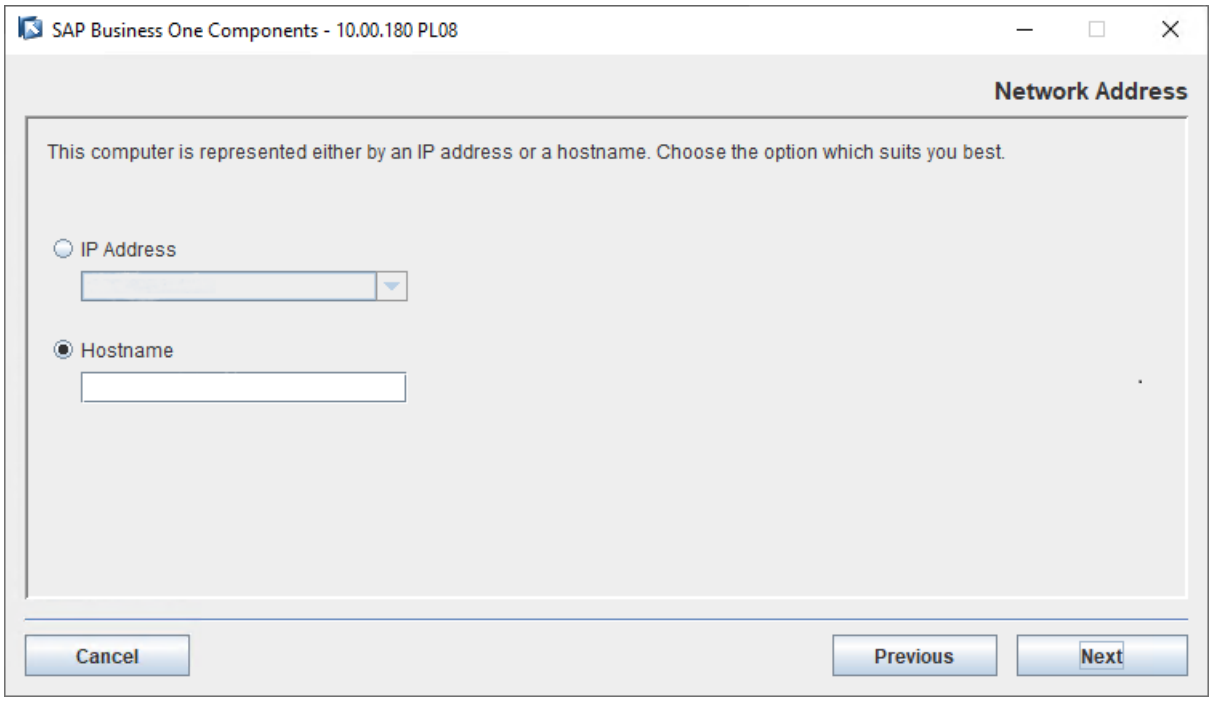
4. In the *Specify Installation Folder* window, specify a folder in which you want to install the license server and choose the *Next* button.



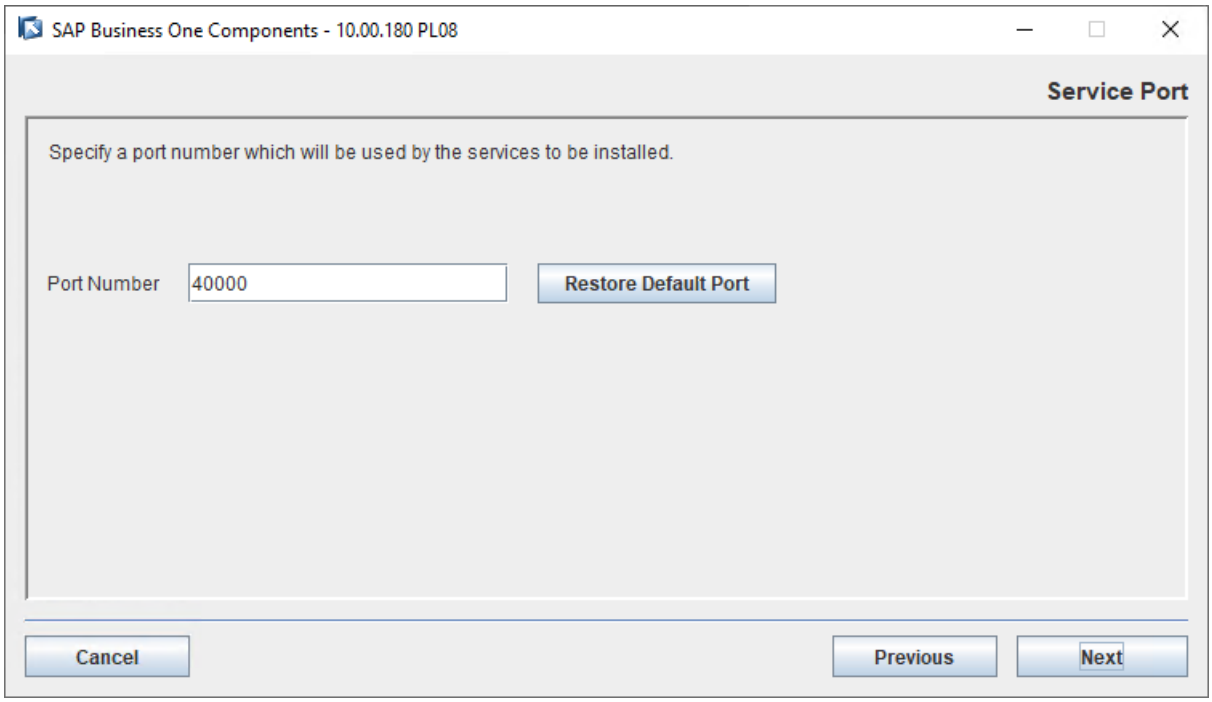
5. In the *Select Features* window, select the *License Manager* checkbox. Ensure that the *System Landscape Directory* checkbox is deselected and choose the *Next* button.



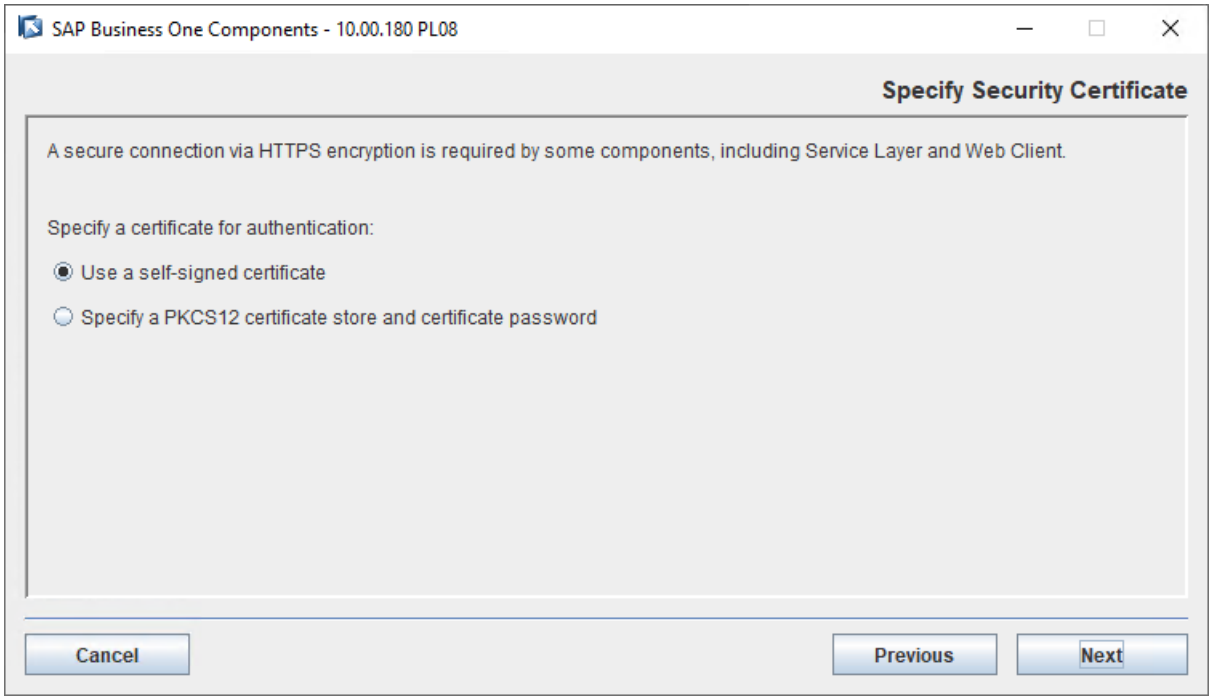
6. In the *Network Address* window, select the IP address, or use the hostname, of the license server for SAP Business One Cloud and choose *Next*. The hostname is automatically populated with the fully qualified domain name (FQDN).



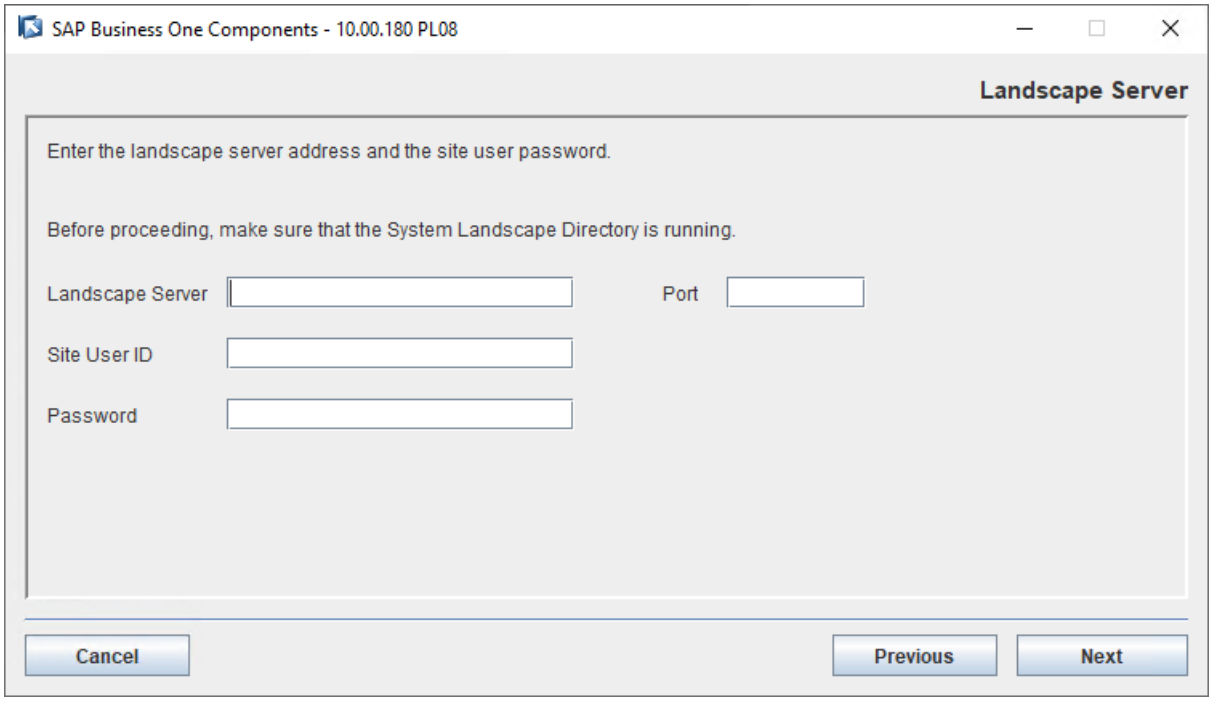
7. In the *Service Port* window, specify a port number that is to be used by the license server for single single-on (SSO) and choose *Next*. The default port number is `40000`.



8. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*. You can also choose to use a self-signed certificate. For information about obtaining a certificate, see the *Administrator's Guide for SAP Business One*.

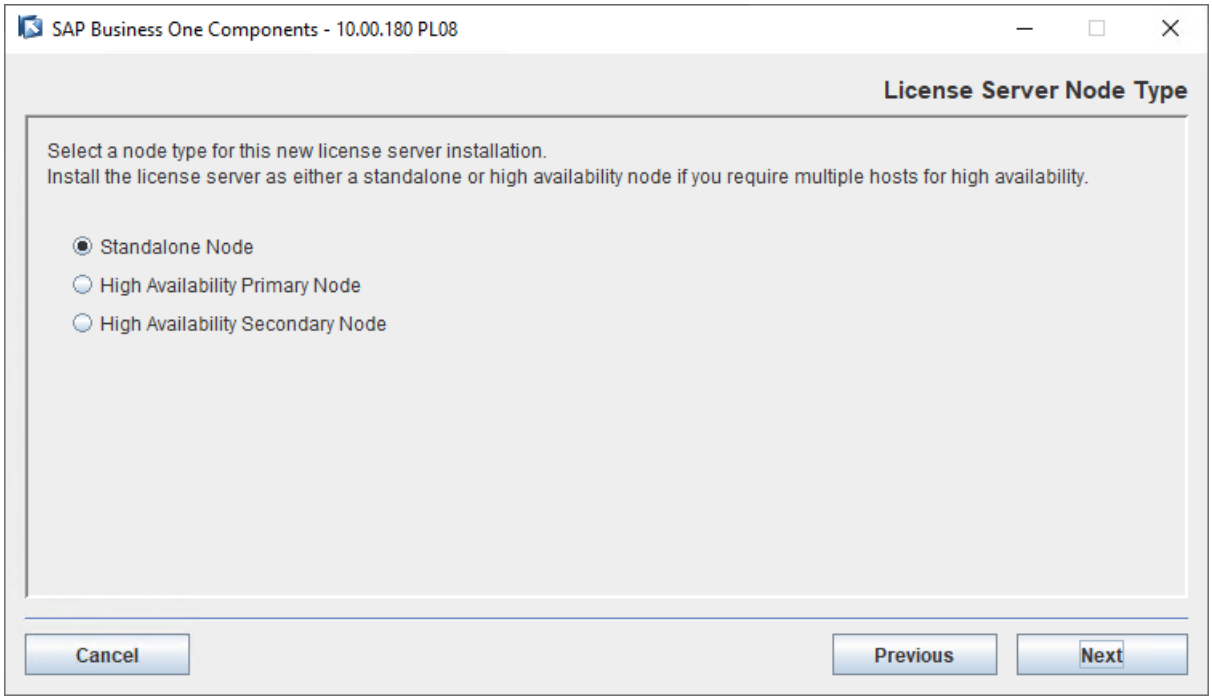


9. In the *Landscape Server* window, enter the SLD server address and port, site user ID and password for SAP Business One Cloud, and then choose *Next*.

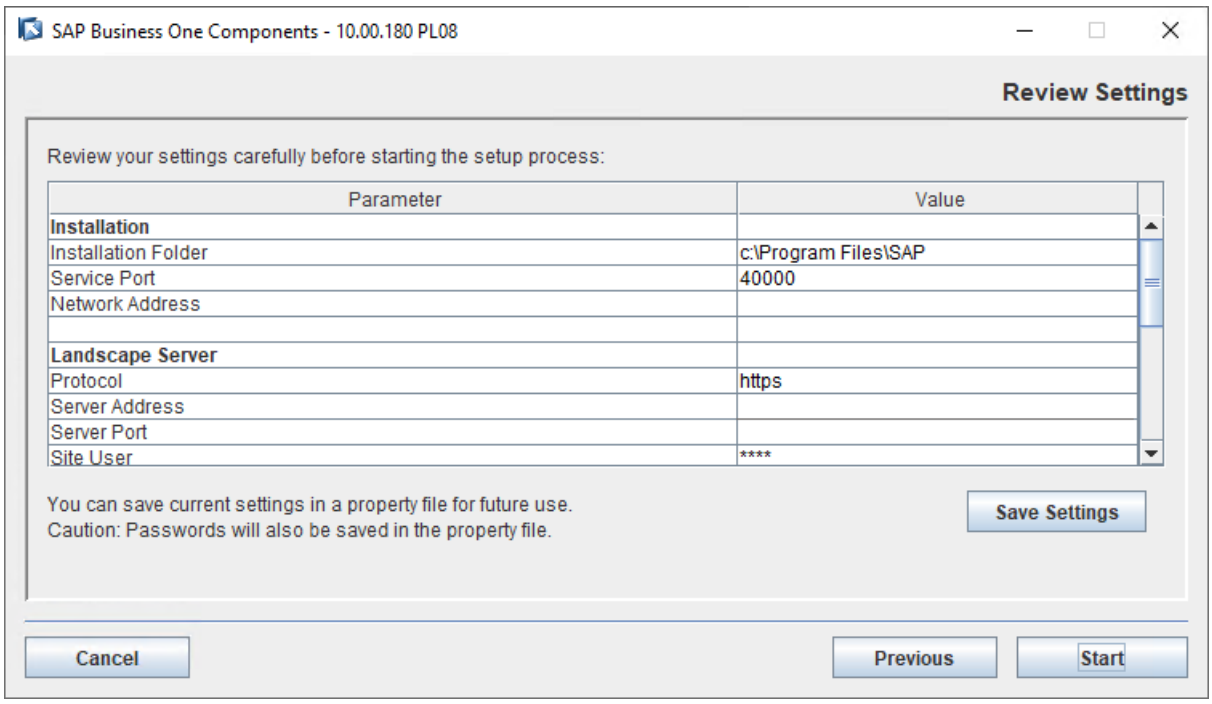


> **Note**
>
> For the site user ID and password, use credentials for a domain account that is a cloud operator with local administrative privileges.

10. In the *License Server Node Type* window, choose to install the license server as either a standalone node or high availability primary or secondary node. If you are using high availability, in the *License Server Node Type* window, enter the virtual address URL. If you chose *High Availability Secondary Node*, enter the address and port of the primary node.



11. In the *Review Settings* window, review your settings and then choose *Start* to start the installation.



12. In the *Setup Progress* window, when the progress bar displays 100%, choose *Next* to finish the installation.
13. In the *Setup Process Completed* window, review the installation results, and then choose *Finish* to exit the wizard.

> **Note**
>
> To upgrade the license server to a higher version, run the SAP Business One Component Wizard. The SAP Business One Component Wizard detects previous versions of the license server and performs an upgrade to the latest version.

[On Linux]

If you use a service unit with the SAP HANA database platform, you must install the license server (version for SAP HANA) on a Linux machine. For more information about installing and configuring a license server (version for SAP HANA), see the *SAP Business One Administrator's Guide, version for SAP HANA*.

3.5.1 Uninstalling the License Server on Windows

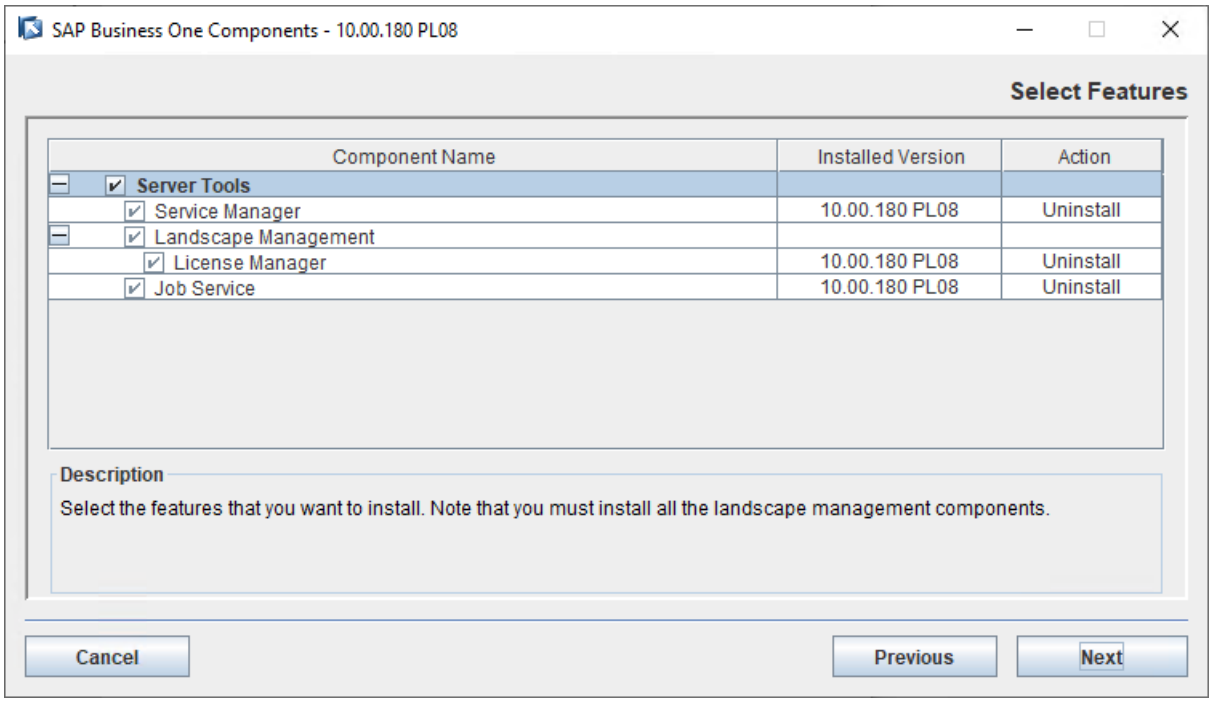
The following procedure describes how to uninstall the license server on a Microsoft Windows machine.

Procedure

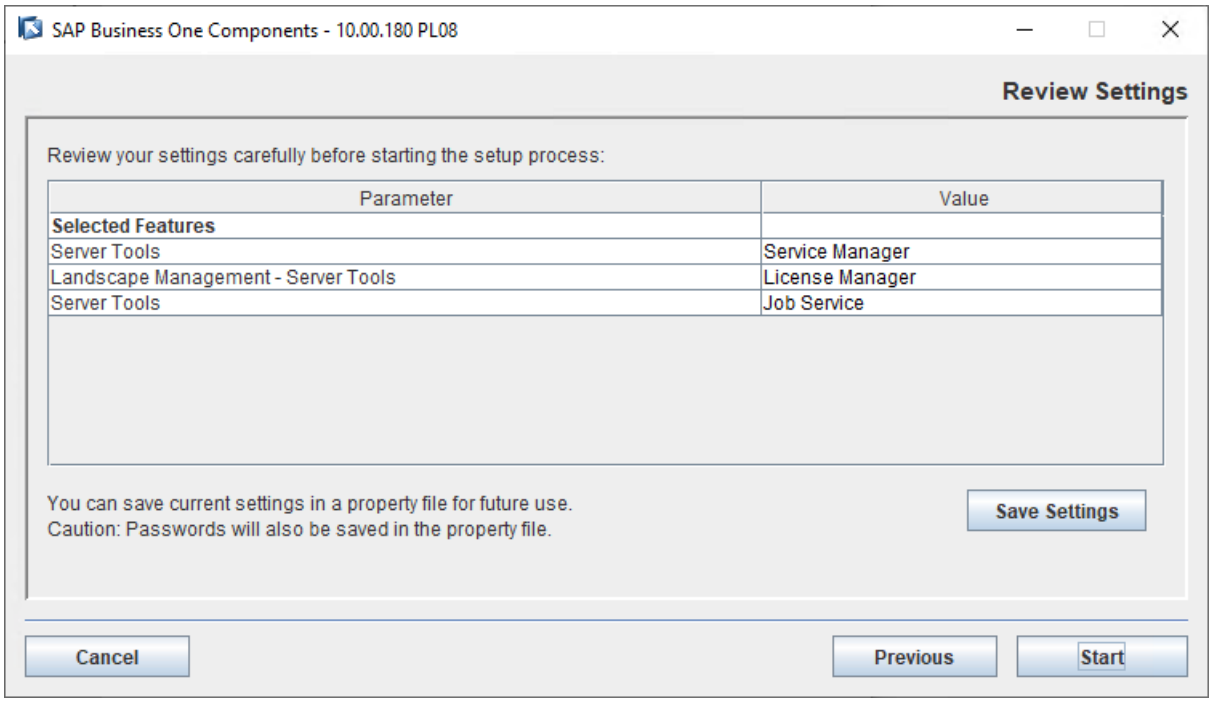
1. Navigate to the SAP Business One installation folder `(C:\Program Files\SAP\SAP Business One SetupFiles\)` and run the *setup.exe* file.

   Alternatively, on your workstation, in the *Programs and Features* window, select SAP Business One Components Wizard and then choose *Uninstall.*

2. In the welcome window of the wizard, select *Uninstallation*.
3. In the *Select Features* window, select the *License Manager* checkbox and choose *Next*.



4. In the *Review Settings* window, review your settings and then choose *Start* to start the uninstallation



3.6 Installing the Remote Support Platform for SAP Business One

You can optionally install the remote support platform for SAP Business One. After installing the remote support platform, change the logon account for the corresponding Windows service to the `SAPServiceB1C` account.

> **Note**
>
> In cloud environments, you can optionally configure the remote support platform to use the HTTPS protocol for connections. To do so, a certificate is required for authentication. You can use the same certificate as the one you use for the System Landscape Directory. For more information, see *Installing Certificates*.

For more information about installing the remote support platform, see the *Administrator's Guide to Remote Support Platform and Remote Support Platform Studio for SAP Business One*.

3.7 Configuring the Presentation Server Farm

A presentation server farm is a collection of presentation servers that provide remote access to the SAP Business One client application for a single service unit. The domain controller, connection broker, and gateway server facilitate connections to presentation servers.

Note

This section assumes that you are using Microsoft Remote Desktop Services to provide remote access to SAP Business One. If you are using a different remote access solution, such as Citrix, see the appropriate third-party documentation.

Caution

Using dashboard widgets with animations may cause performance issues when accessing SAP Business One remotely.

Procedure

To configure the presentation server farm, do the following:

1. Install and configure Remote Desktop Services on the following machines:
   - Remote Desktop Web Access server – Configure the server roles as Remote Desktop Gateway and Remote Desktop Web Access.

     Note

     You must configure the Web Portal Server to use a certificate for authentication. For more information, see *Installing Certificates*.
   - Connection Broker – Configure the server role as Remote Desktop Connection Broker.
   - Presentation Servers –Configure the server role as Remote Desktop Session Host.
2. On the connection broker, add the presentation servers to the Session Broker Computers group.
3. On each presentation server, configure the server to participate in connection broker load-balancing using the connection broker you previously configured.
4. Install the required version of the SAP Business One client application on each presentation server. The client application must have the same version as the other SAP Business One components in the service unit.

   Alternatively, you can use the Cloud Control Center to deploy the client application to a presentation server.

   For more information about installing the SAP Business One client application, see *SAP Business One Administrator's Guide*.

   Caution

   Cloud environments support only SAP Business One 8.82 PL03 and later.

   Note

   During the installation process, you are required to enter the name of an RD Licensing Server. You must ensure that you enter the name of an RD Licensing Server that you configured in the RDS infrastructure.
5. Configure SAP Business One as a RemoteApp:
   1. On the connection broker, add the presentation server farm as a RemoteApp source.

      Caution

      Ensure you do not enter the name of each presentation server in the presentation server farm as a RemoteApp source, otherwise users see multiple instances of RemoteApp icons.
   2. On each presentation server, do the following:

- Use the RemoteApp wizard to configure SAP Business One as a RemoteApp.
- Specify the tenant domain groups for which you want to enable connections to SAP Business One.

6. [Optional] Configure mobile device access:
   1. Use an account with power user or superuser privileges to log on to SAP Business One.
   2. From the SAP Business One *Main Menu*, choose *Administration* → *License* → *License Administration*.

      Assign B1i licenses to users for whom you want to enable mobile device access.
   3. From the SAP Business One *Main Menu*, choose *Administration* → *Setup* → *General* → *Users*.
   4. In the *Users – Setup* window, do the following on behalf of each user for whom you want to enable mobile device access:
      - Select the *Mobile User* checkbox.
      - Specify values for the *Mobile Phone* and *Mobile Device ID* fields.
   5. For more information, see *Setting Up the Mobile Scenario in Integration Component* in the `…\Documentation\B1 Integration Component` folder.
7. [Optional] Install Data Transfer Workbench (DTW):
   1. Install DTW on each presentation server. DTW must have the same version as the other SAP Business One components in the service unit.

      Caution

      Cloud environments support only Data Transfer Workbench 8.82 PL08 and later.

      For more information about installing DTW, see the *SAP Business One Administrator's Guide*.
   2. Configure DTW as a RemoteApp. On each presentation server, do the following:
      - Use the RemoteApp wizard to configure DTW as a RemoteApp.
      - Specify the tenant domain groups for which you want to enable connections to DTW.

3.8 Configuring Job Service

The job service manages the following settings on the server side:

- Mailer settings: allows you to send documents directly from SAP Business One through e-mail.
- Alert and scheduling settings: use this function to have SAP Business One send automatic alerts to selected users whenever certain events occur or to automatically run previously scheduled tasks.

  Note

  As of SAP Business One 9.3, the scheduling function is available in addition to the alert function. The scheduling function allows you to have SAP Business One automatically run previously scheduled tasks.

  Note

  Note that each service unit requires a dedicated job service instance.

3.8.1 Installing Job Service on Windows

The following procedure describes how to install the job service on Windows using the SAP Business One Components Wizard.

Prerequisite

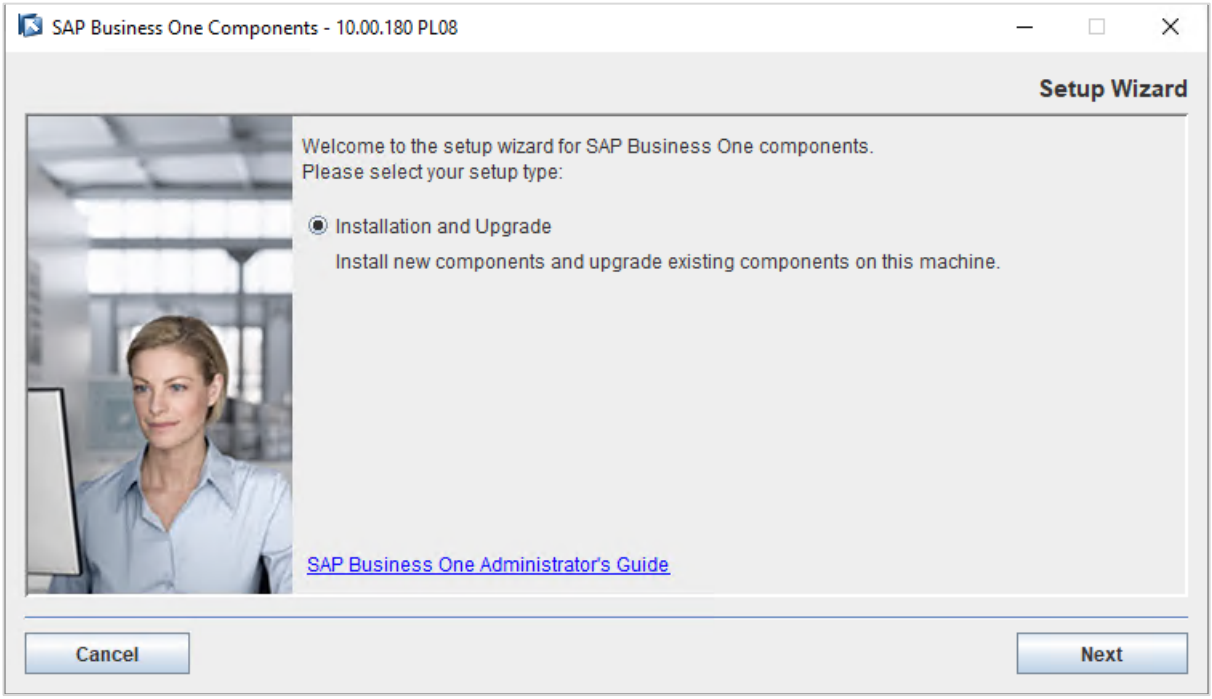
You have installed the SLD Agent Service. For more information about installing the SLD Agent, see *Installing the SLD Agent* Service.

Procedure

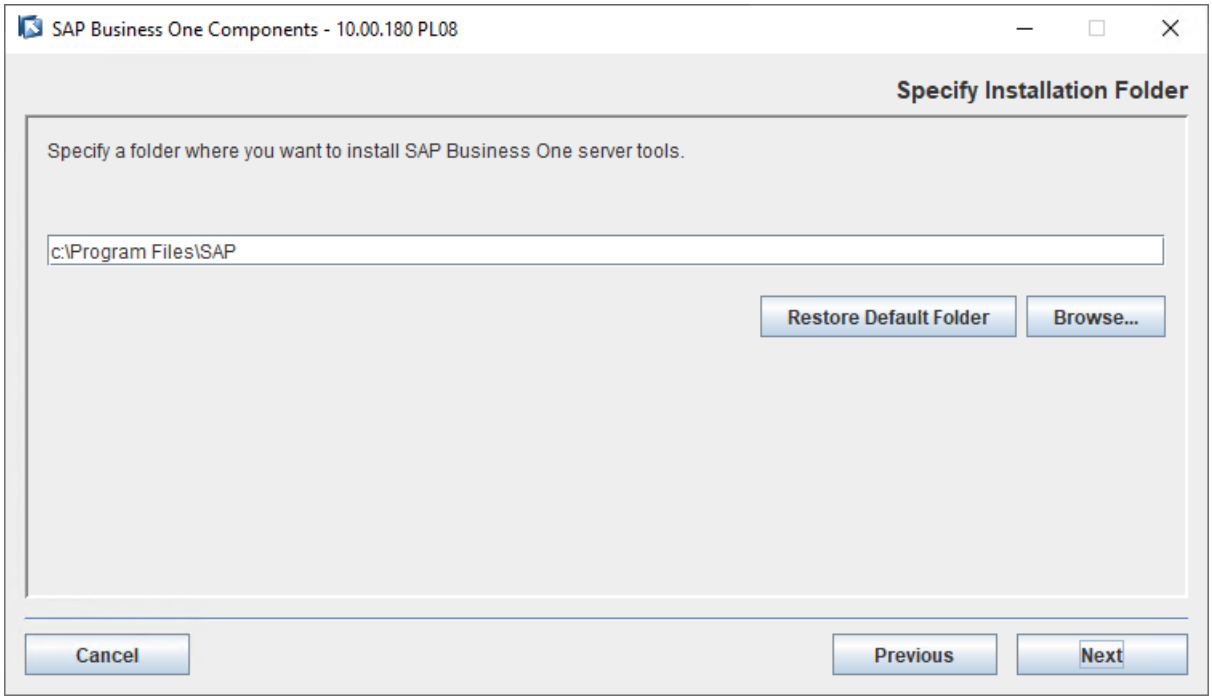
To install the job service for **SAP Business One version 10.0 FP 2111 or higher**, do the following:

> **Note**
>
> If you are using **SAP Business One version 9.3** or **SAP Business One version 10.0 FP 2108 or lower**, to install the job service on Windows, please refer to a previous version of this administrator's guide that corresponds to your version and patch/feature package.

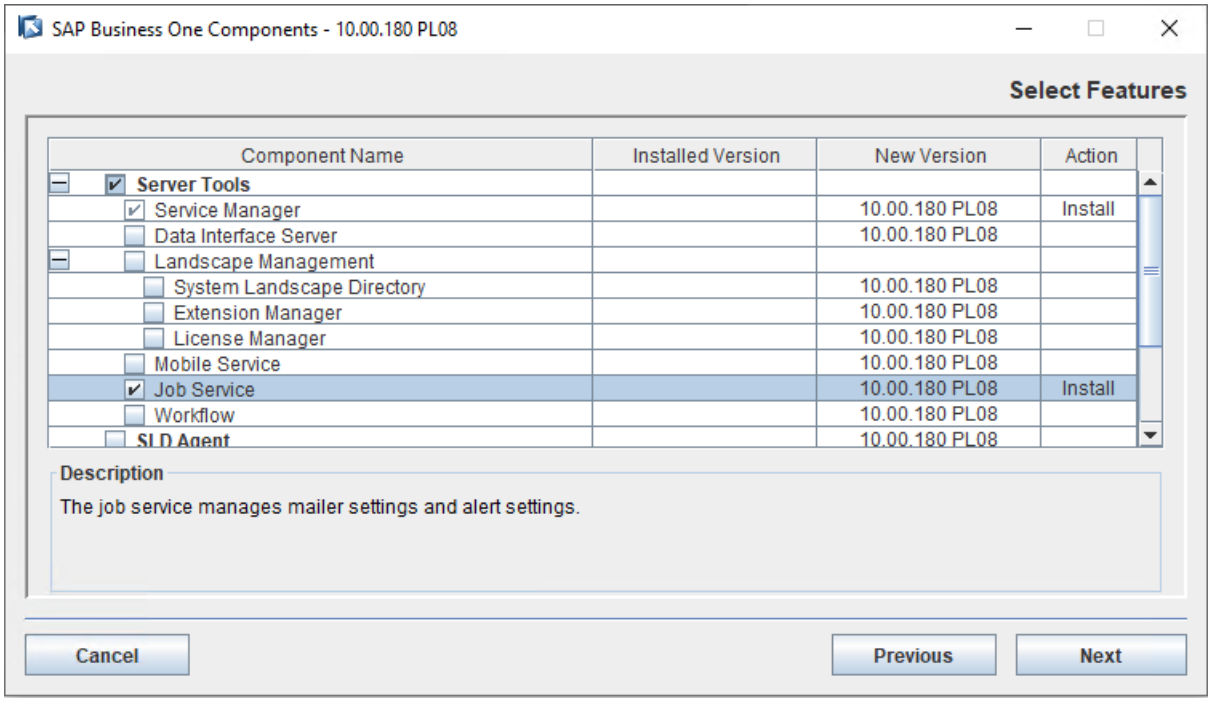
1. In the SAP Business One installation package, navigate to the directory …`/Packages.x64/ComponentsWizard`.
2. Run the *install.exe* file.
3. In the welcome window of the wizard, choose *Next*.



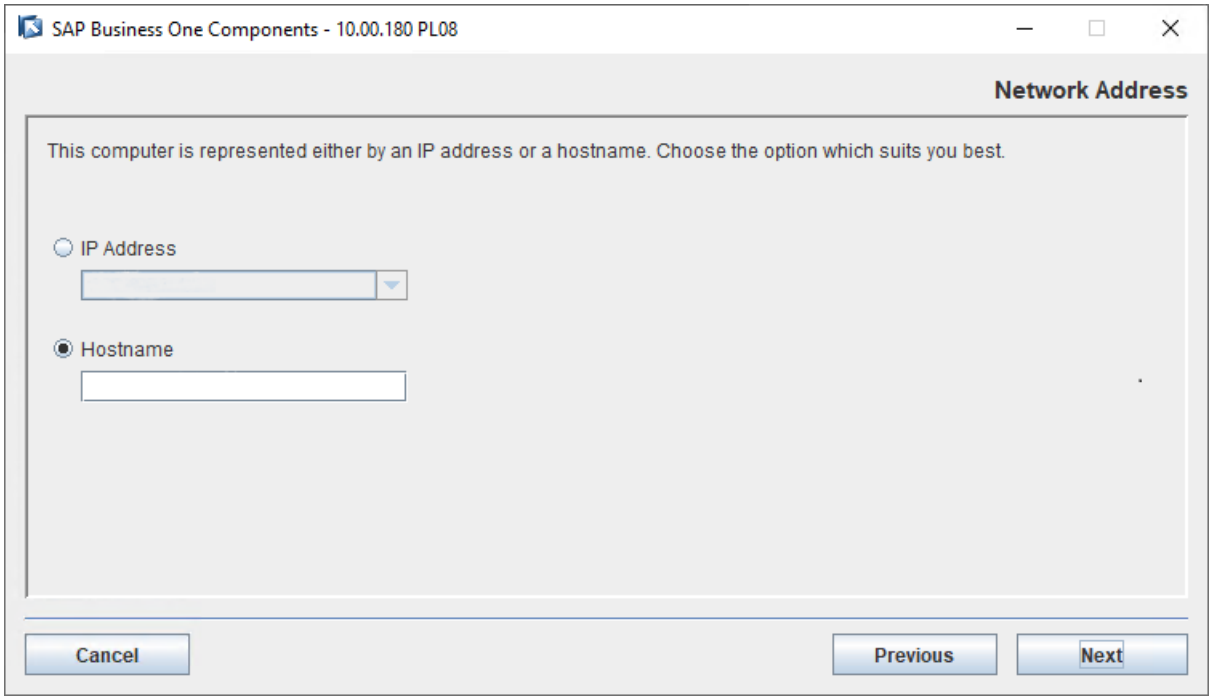
4. In the *Specify Installation Folder* window, specify a folder in which you want to install the job service and choose the *Next* button.



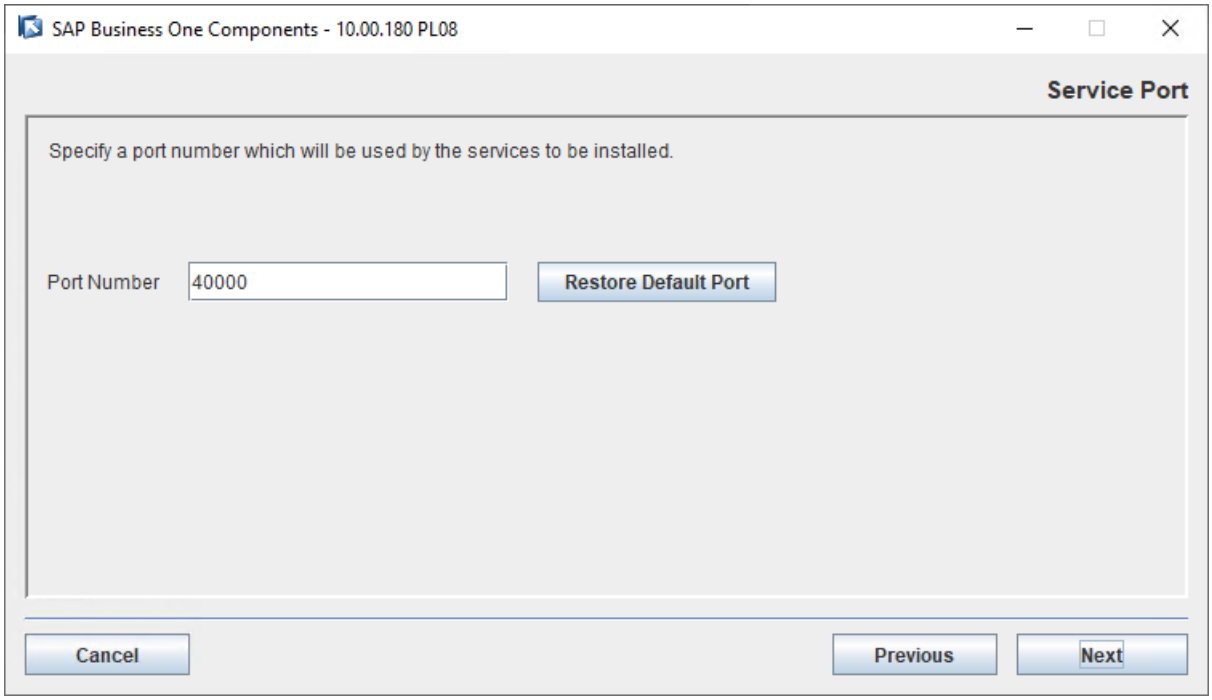
5. In the *Select Features* window, select the *Job Service* checkbox. Ensure that the *System Landscape Directory* checkbox is deselected and choose the *Next* button.



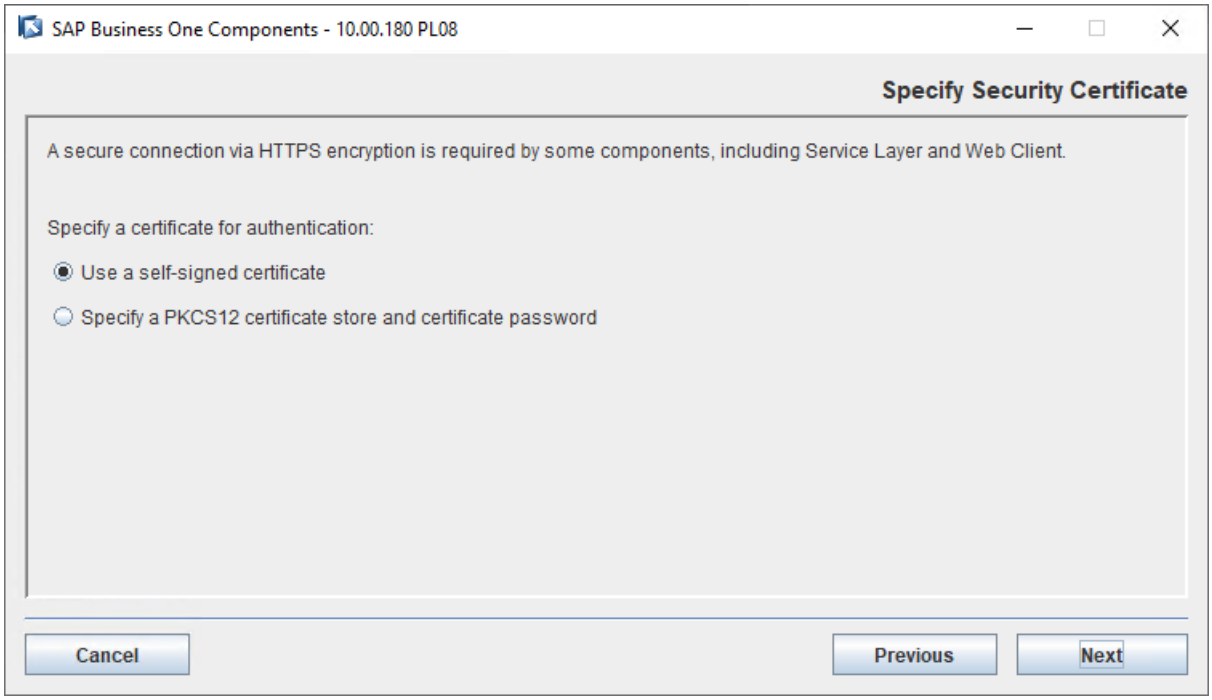
6. In the *Network Address* window, select the IP address, or use the hostname, of the job service server and choose *Next*. The hostname is automatically populated with the fully qualified domain name (FQDN).



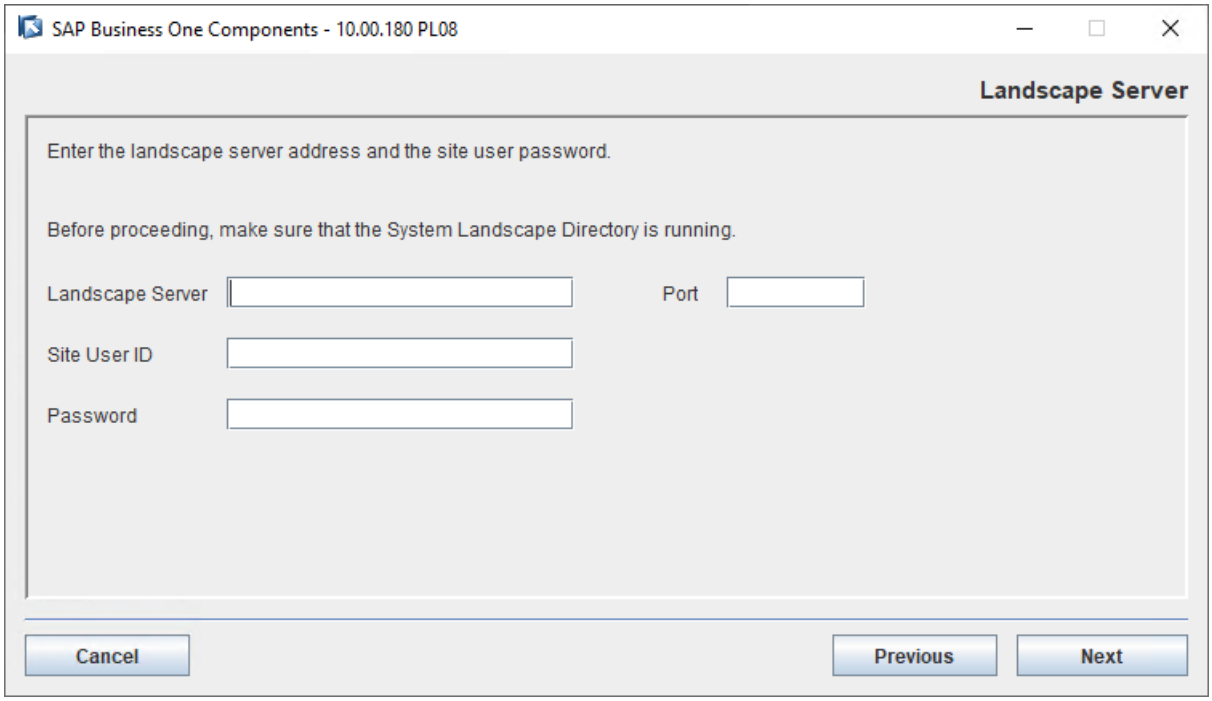
7. In the *Service Port* window, specify a port number that is to be used by the job service for single single-on (SSO) and choose *Next*. The default port number is `40000`.



8. In the *Specify Security Certificate* window, specify a security certificate and choose *Next*. You can also choose to use a self-signed certificate. For information about obtaining a certificate, see the *Administrator's Guide for SAP Business One*.

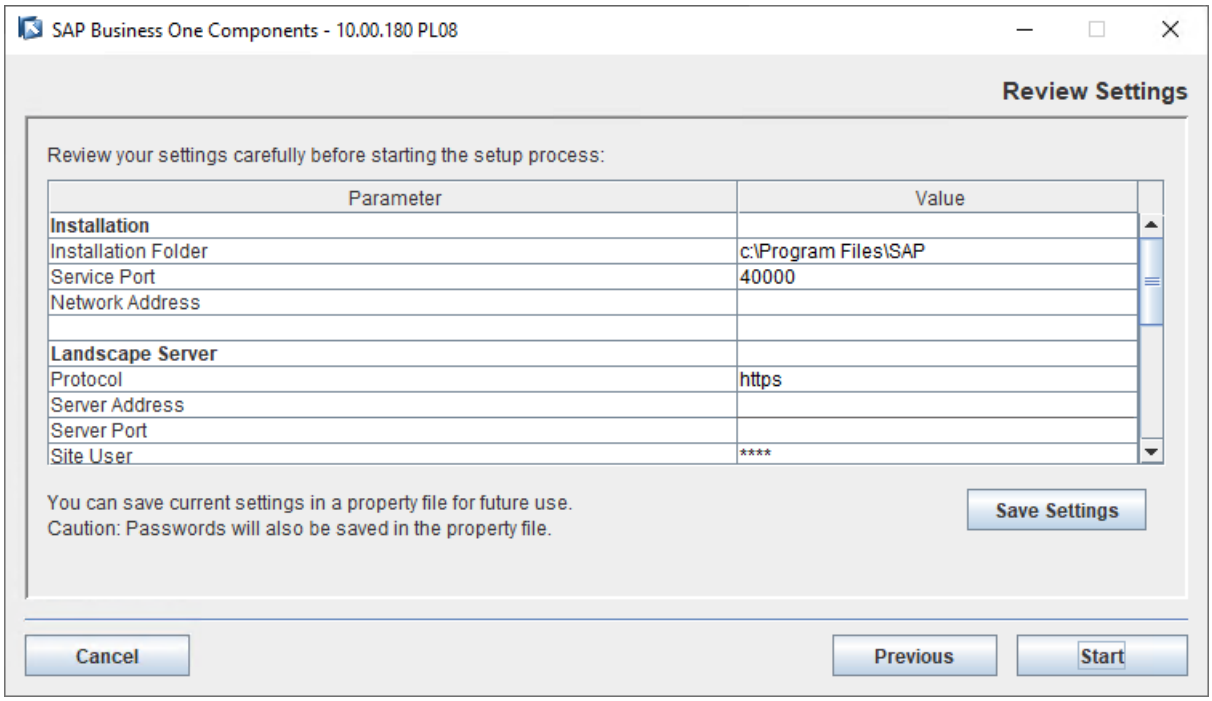


9. In the *Landscape Server* window, enter the SLD server address and port for SAP Business One Cloud, site user ID and password, and then choose *Next*.



> **Note**
>
> For the site user ID and password, use credentials for a domain account that is a cloud operator with local administrative privileges.

10. In the *Review Settings* window, review your settings and then choose *Start* to start the installation.



11. In the *Setup Progress* window, when the progress bar displays 100%, choose *Next* to finish the installation.
12. In the *Setup Process Completed* window, review the installation results, and then choose *Finish* to exit the wizard.
13. Navigate to `C:\Program Files (x86)\SAP\SAP Business One ServerTools\Job Service\Tools\` and run the `CloudEnablement.bat` file.
14. Specify the following information:
    1. Enter the hostname of the current Microsoft Windows server (or press enter to retrieve the hostname from the system).
    2. If the job service is on the same sever as the SLD, enter Y. If the job service is on a different sever as the SLD, accept the default value of N.
    3. Enter the address of the SLD (for example, `http://hostname:port`).
    4. Enter the account service username (for example, `domain\SAPServiceB1C`).

       > **Note**
       >
       > This user must have the sysadmin role in the database instance being used by the common database and company database.

    5. Enter the password for the account service user.

Note

To upgrade the job service to a higher version, run the SAP Business One Component Wizard. The SAP Business One Component Wizard detects previous versions of job service and performs an upgrade to the latest version.

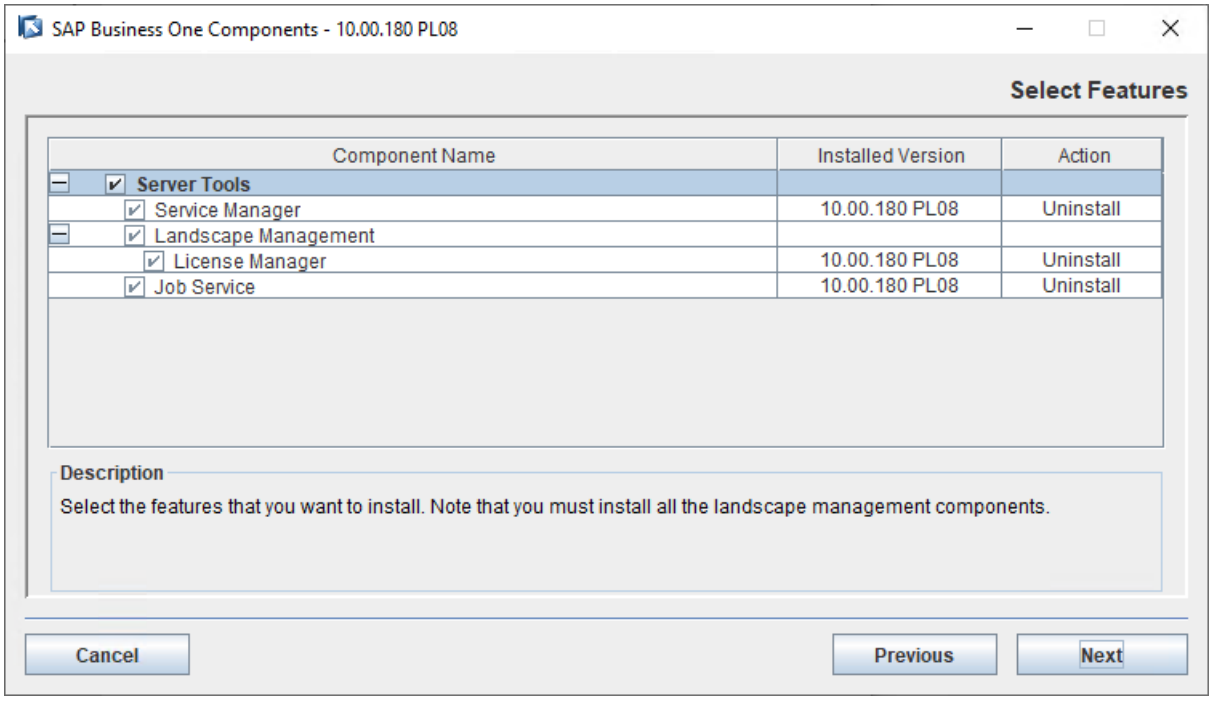
3.8.1.1 Uninstalling Job Service on Windows

The following procedure describes how to uninstall the job service on a Microsoft Windows machine.

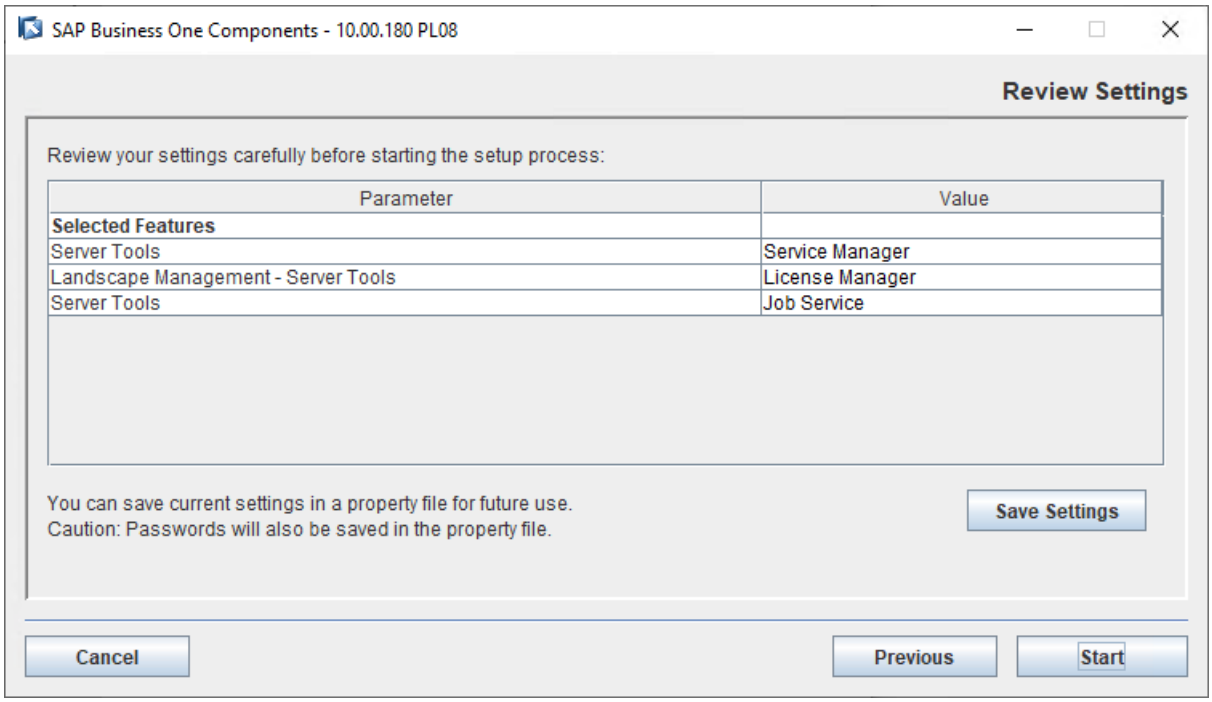
Procedure

1. Navigate to the SAP Business One installation folder `(C:\Program Files\SAP\SAP Business One SetupFiles\)` and run the *setup.exe* file.

   Alternatively, on your workstation, in the *Programs and Features* window, select SAP Business One Components Wizard and then choose *Uninstall.*
2. In the welcome window of the wizard, select *Uninstallation*.
3. In the *Select Features* window, select the *Job Service* checkbox and choose *Next*.



4. In the *Review Settings* window, review your settings and then choose *Start* to start the uninstallation



If you are using **SAP Business One version 9.3 or earlier**, to uninstall the job service on a Windows machine, perform the following:

Before uninstalling the job service, you need to perform the following:

1. Navigate to `C:\Program Files (x86)\SAP\SAP Business One ServerTools\Job Service\Tools` and run the `CloudUninstall.bat` file.
2. Specify the following information:
   1. Enter the hostname of the current Microsoft Windows Server (or press `enter` to retrieve the hostname from the system).
   2. Enter the address of the SLD (for example, `http://hostname:port`)
   3. Enter the account service username (for example, `domain\SAPServiceB1C`)
   4. Enter the password for the account service user.

3.8.2 Installing Job Service on Linux

If you use a service unit with the SAP HANA database platform, you must install the job service (version for SAP HANA) on a Linux machine. For more information about installing and configuring job service (version for SAP HANA), see the *SAP Business One Administrator's Guide, version for SAP HANA*.

> **Note**
>
> The job service depends on the existence of the Service Layer if you want to use the alert function. Make sure that the Service Layer exists in the same landscape and is bound with the database server where alert service works.

3.8.3 Registering Job Service to Service Units

After you install the job service, a list of registered job services is displayed in the Cloud Control Center, which you can then assign to service units. For more information about assigning job services while creating service units, see *Creating Service Units*. For more information about assigning job services to existing service units, see *Registering Software Components or Storage to Existing Service Units.*

> **Note**
>
> After assigning a job service to a service unit, it is automatically assigned to all tenants registered to the service unit.

3.8.4 Configuring Mailer and Mail Scheduling Settings

> **Note**
>
> As of SAP Business One 9.3 PL09, superusers and power users can enable Mailer for each company directly in SAP Business One. Additionally, cloud operators and reseller operators can monitor and change the deployment status of Mailer in the Cloud Control Center. For more information, see Monitoring and Controlling Deployment Status of Mailer and Job Service in the Cloud Control Center.

Prerequisites

You have installed the job service.

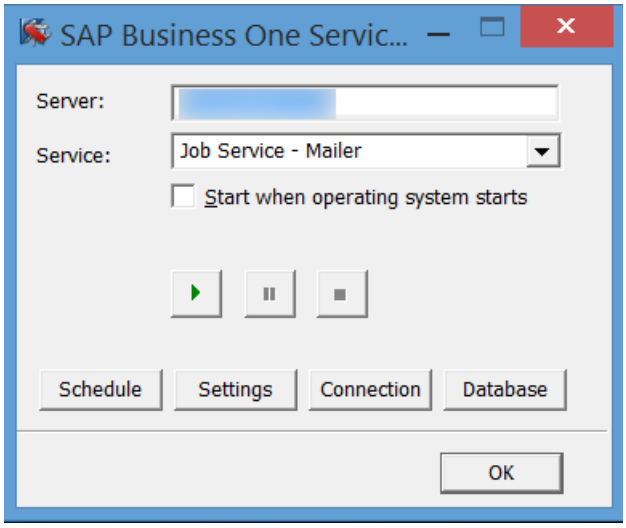
Procedure

[On Windows]

To configure Mailer and mail schedule settings, perform the following:

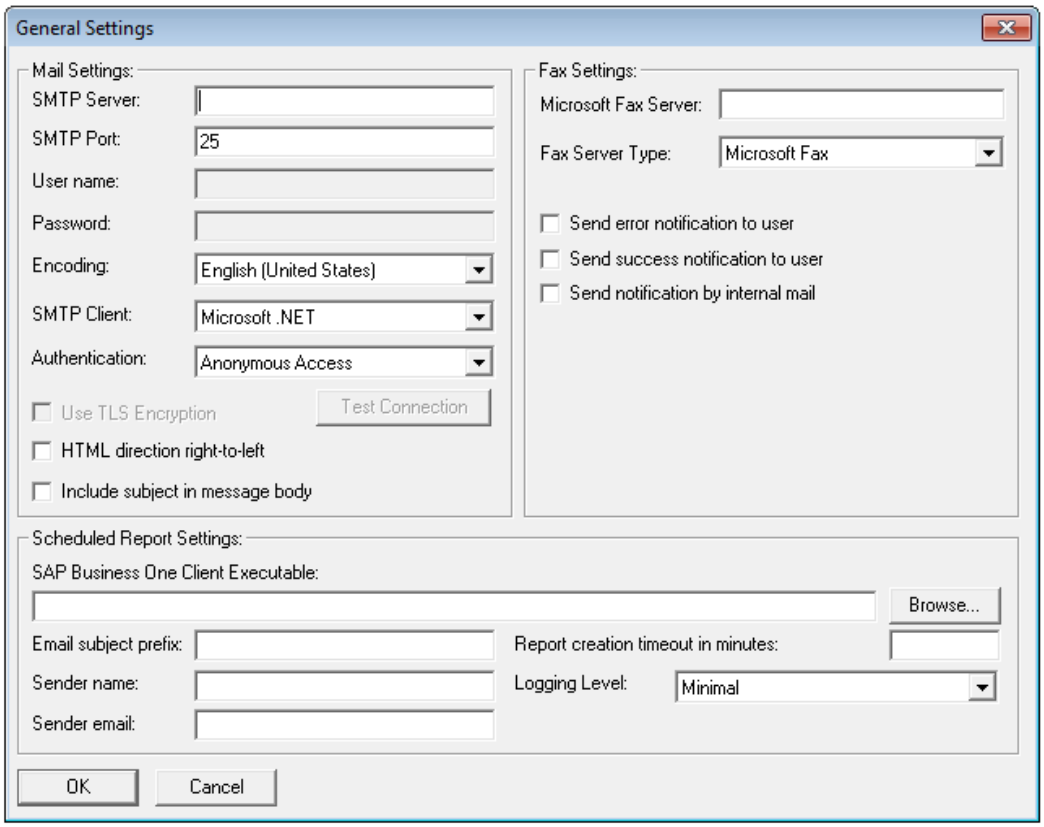
1. To open the *SAP Business One Service Manager* window, in the Microsoft Windows task bar, double-click  (SAP Business One Service Manager).

   Alternatively, in Windows, choose *Start* → *All Programs* → *SAP Business One* → *Server Tools* → *Service Manager*.
2. From the *Service* dropdown list, select *Job Service - Mailer*.



3. Choose (Play) and select the *Start when operating system starts* checkbox.
4. Define mail settings for the SAP Business One landscape:
   1. In the *SAP Business One Service Manager* window, choose *Settings*.

      The *General Settings* window appears.



   2. In the *General Settings* window, specify the following:
      - *SMTP Server* — Enter the name or IP address of your outgoing mail server. To make changes in this field later, you must stop the *Job Service - Mailer*.

- *SMTP Port* — Specify the port number for mail services.
- *Encoding* — Select the language for email text.
- *HTML direction right-to-left* — Select this checkbox if you are using a right-to-left language to define the direction of the email text.
- *Include Subject in Message Body* — Select this checkbox to include the subject line in the body of the message.
- *Fax Settings* — Select the required fax service.
- *Scheduled Report Settings* - Specify the required information for configuring SBO Mailer for report scheduling and mailing. For more information, see Configuring Report Scheduling.

  Caution

  After you choose the *OK* button in the *General Settings* window and return to the *SAP Business One Service Manager* window, **do not** choose the *Connection* or *Database* buttons.

5. To enable mailing services for companies, log on to the SAP Business One client and do the following:
   1. Select the company for which you want to enable the Mailer service.
   2. On the *Service* tab of the *General Settings* window (*Main Menu → Administration → System Initialization → General Settings*), select the *Enable Mailer* checkbox.

      Note

      As of SAP Business One 9.3, PL09, you cannot enable databases for the mailing services or modify the configuration in the *SAP Business One Service Manager* window.

      Note

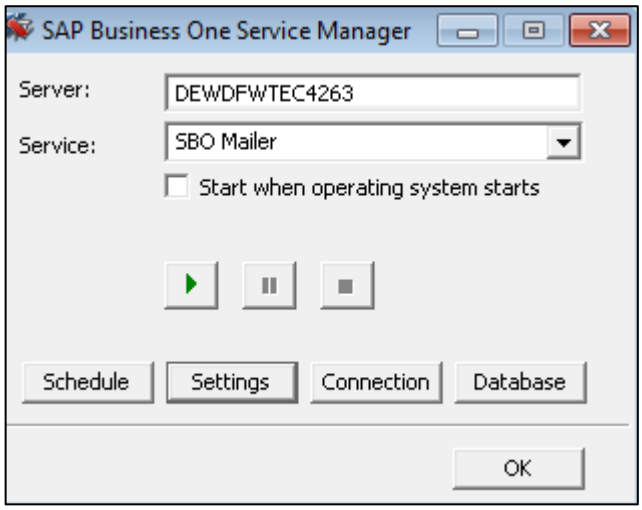
      If you upgrade the SAP Business One job service from a lower version to SAP Business One 9.3 PL09, the original enabled databases for mailing services will be disabled. You must reset the databases for which you want to enable mailing services in SAP Business One client.

   3. To configure a company-specific SMTP server, *select the Enable Company Specific Mailer Configuration* checkbox, and specify the required settings:
      - *SMTP Server* – Enter the name or IP address of your outgoing mail server.
      - *SMTP Port* – Specify the port number for mail services.
      - *Authentication* – Specify the authentication method you want to use: No Authentication, Login Authentication, or Plain Password, and enter the required User Name and Password.
      - *Encoding* – Select the language for email text.
      - *Use TLS Encryption* – Select this checkbox to use Transport Layer Security (TLS) encryption.
      - *HTML direction right-to-left* – Select this checkbox to define the direction of the email text if you are using a right-to-left language.
      - *Include Subject in Message Body* – Select this checkbox to include the subject line in the body of the message.

      Note

      This checkbox is not selected by default. If you don't select this checkbox, only one SMTP server can be configured for the entire SAP Business One landscape from the Job Service - Mailer in the SAP Business One Service Manager.

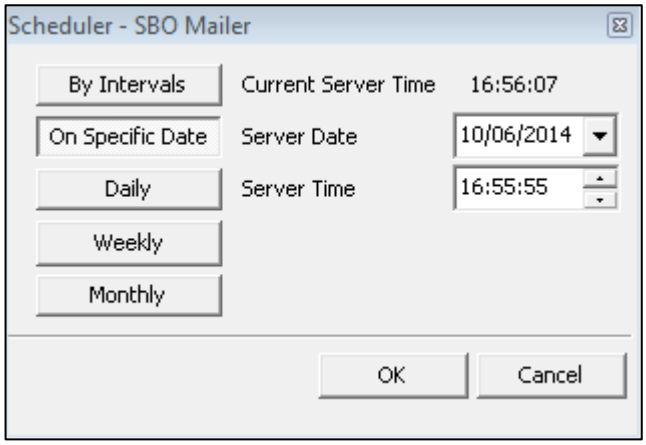
6. Set the mail processing schedules:
    1. In the *SAP Business One Service Manager* window, from the *Service* dropdown list, select *SBO Mailer*, and then choose *Schedule*.



    2. In the *Scheduler – SBO Mailer* window, select one of the following options:
        - *By Intervals* — Sets mail and fax processing to start regularly every x hours and y minutes.
        - *On Specific Date* — Defines mail and fax processing for a specific date and time.
        - *Daily* — Sets mail and fax processing for a fixed hour of each day.
        - *Weekly* — Sets mail and fax processing for a fixed hour on a fixed day of each week.
        - *Monthly* — Sets mail and fax processing for a fixed hour on a fixed day of each month.

        Recommendation

        If you choose the *By Intervals* option, set the interval to a minimum of 5 minutes.



7. Choose *OK* to return to the *SAP Business One Service Manager* window.
8. In the *SAP Business One Service Manager* window, choose (Play), and select the *Start when operating system starts checkbox*.
9. To close the *SAP Business One Service Manager* window, choose *OK*.

Result

You can now proceed to define the email signature settings. To access the email signature settings, from the SAP Business One *Main Menu*, choose *Administration → System Initialization → E-Mail Settings*.

[On Linux]

The process of configuring job service comprises the following steps:

1. Define the mail settings
2. Assign job services to service units
3. Connect to the SMTP server

> **Note**
>
> The job service configuration web page does not provide access to mailer e-mail signature settings.
>
> To access these settings, from the SAP Business One *Main Menu*, choose *Administration → System Initialization → E-Mail Settings*.

Procedure

To configure Mailer and job service (including alert service and scheduling job function), perform the following:

1. In the Cloud Control Center, from the *Service Unit Components* menu, choose *Job Services*.
2. In the *Job Services* window, select the job service you want to configure and click the link in the *Access URL* field to access the job service configuration web page.

   > **Note**
   >
   > - If you use a proxy for your Internet connection, you must add the full hostname or IP address of any Web server (for example, SLD) to the proxy exception list of your Web browser; in other words, do not use a proxy for these addresses.
   > - The URL of the service is case-sensitive.

3. If you have not logged on to the SLD service, in the logon window, enter the user name and password of the cloud operator and then choose *Log On*.

   > **Note**
   >
   > The site user name is case sensitive.

4. On the *Mailer Settings* tab, specify the following mandatory mail settings information and choose *Save*:
   - *SMTP Server*: Name or IP address of your outgoing mail server.
   - *SMTP Port*: Port number for the SMTP server.

     > **Note**
     >
     > If your SMTP server does not allow anonymous connection, specify a user name and password; otherwise, select the *Anonymous* checkbox.

   - In the *Language* dropdown list, select the language for email text.
   - If your SMTP server requires TLS encryption, make sure the *Use TLS Encryption* checkbox is selected.
   - If you are using a right-to-left language, select the *Right-to-Left* checkbox.

- To include the subject line in the body of the message, select the *Include Subject in Message Body* checkbox.

5. To connect to the SMTP server, choose *Start*.

   The status changes to `RUNNING` and the button changes to *Stop*.

   > **Note**
   >
   > To change the SMTP server, you must first stop the connection by choosing *Stop*.

Result

You can now proceed to create a mount point for your shared folder on your Linux server. For more information, see SAP Note 2478013.

3.8.5 Configuring Alert Service and Scheduling Settings

To use the alert service and scheduling job to have SAP Business One automatically notify selected users whenever certain system events occur or have SAP Business One automatically run previously scheduled tasks, you must first start the alert service for the companies on the server side.

> **Note**
>
> As of SAP Business One 9.3 PL09, superusers and power users can enable the alert service for each company directly in SAP Business One. Additionally, cloud operators and reseller operators can monitor and change the deployment status of alert in the Cloud Control Center.

> **Note**
>
> If the password for the user who is running the alert service is expired, the alert will not be sent.

Procedure

To configure the alert service and scheduling job, perform the following:

1. In a Web browser, navigate to the following URL:

   `https://<Server Address>:<Port>/job`

   Alternatively, on the *Services* tab in the System Landscape Directory, you can click the *Job Service* link to access the settings.

   > **Notes**
   >
   > - If you use a proxy for your Internet connection, you must add the full hostname or IP address of any Web server (for example, SLD) to the proxy exception list of your Web browser; in other words, do not use a proxy for these addresses.
   > - The URL of the service is case-sensitive.

2. If you have not logged on to the SLD service, in the logon page, enter the user name and password of the cloud operator and choose *Log On*.

> **Note**
>
> The site user name is case sensitive.

3. On the *Alert Settings* tab, if you want to change the technical user used to execute the alerts, enter the user code for an SAP Business One user and then choose *Save*.

   > **Note**
   >
   > If you want to use a user different from the default user `AlertSvc`, you must ensure the user is created in all the companies. Otherwise, all the alert settings are ineffective for the companies missing this user.
   >
   > This technical user is used for database connection and not intended for any business transactions. You do not have to assign a license to this technical user and we recommend that you do not.

4. To start the alert service, choose *Start*.

   The status changes to `RUNNING` and the button changes to *Stop*.

   > **Note**
   >
   > To change the technical user or change the company selection, you must first stop the connection by choosing *Stop*.

5. To enable the alert and scheduling function for companies, log on to the SAP Business One client and do the following:
   1. Select the company for which you want to enable the alert service.
   2. On the *Service* tab of the *General Settings* window (*Main Menu → Administration → System Initialization → General Settings*), select the *Enable Alert Service* checkbox.

Result

You can now log on to each of your companies in the SAP Business One client and define the alert settings on the client side. For more information, see the online help.

3.8.6 Monitoring and Controlling Deployment Status of Mailer and Job Service in the Cloud Control Center

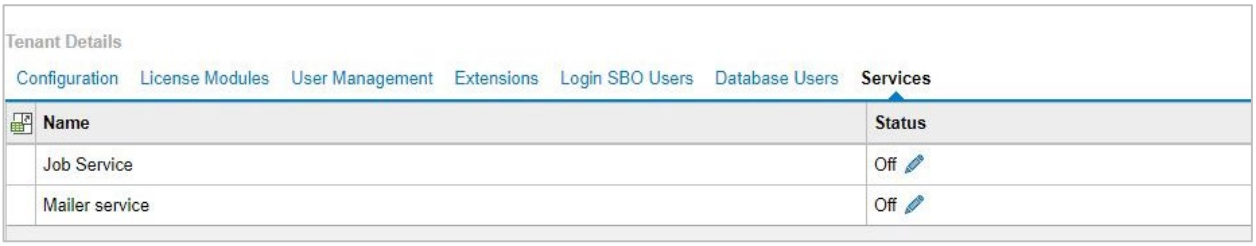
As of SAP Business One Cloud PL14, cloud operators and resellers can monitor and change the deployment status of Mailer service and job service (including alert service and scheduling function), directly in the Cloud Control Center.

Prerequisites:

- You have installed job service.
- You have configured the Mailer service and job service.

To monitor and change the deployment status of Mailer service and job service in the Cloud Control Center, perform the following:

1. In the Cloud Control Center, choose *Customer Management → Tenants* and select a tenant.
2. In the *Tenant Details* area, on the *Services* tab, you can check or change the deployment status of the job service and Mailer service.



4 Installing SAP Business One Cloud

Depending on the solution you use to provide remote access to the SAP Business One application, there are different installation and configuration scenarios.

The following steps are mandatory:

- Installing the System Landscape Directory and the Cloud Control Center
- Installing the SLD Agent Service
- Creating the software repository
- Creating storage

The following steps are optional and apply only if you are using SAP Business One Browser Access:

- Installing SAP User Access Portal

4.1 Installing System Landscape Directory and Cloud Control Center

To configure an SAP Business One Cloud landscape, you must install the following components:

- System Landscape Directory (SLD) – Installs a service that provides information about landscape components and their settings and the accompanying database.
- Cloud Control Center – Installs an interface for the SLD service that you can use to manage an SAP Business One Cloud landscape.

> **Note**
>
> You can choose to install the SLD and Cloud Control Center either on Windows or on Linux. The SAP Business One Cloud setup wizard for Linux is available as of SAP Business One Cloud 1.1 PL07 (path: `\Linux\install`).
>
> You can install the Linux-based server components in GUI mode or in silent mode. For more information on the silent mode, see *SAP Business One Administrator's Guide, version for SAP HANA*.

> **Note**
>
> The SLD and Active Directory controller should not be installed on the same machine.

Prerequisites

- You have installed the database server on the landscape server:
  - If using Microsoft SQL Server, you have installed Microsoft SQL Server 2008 R2, 2012, 2014 or 2016 Standard or Enterprise edition.

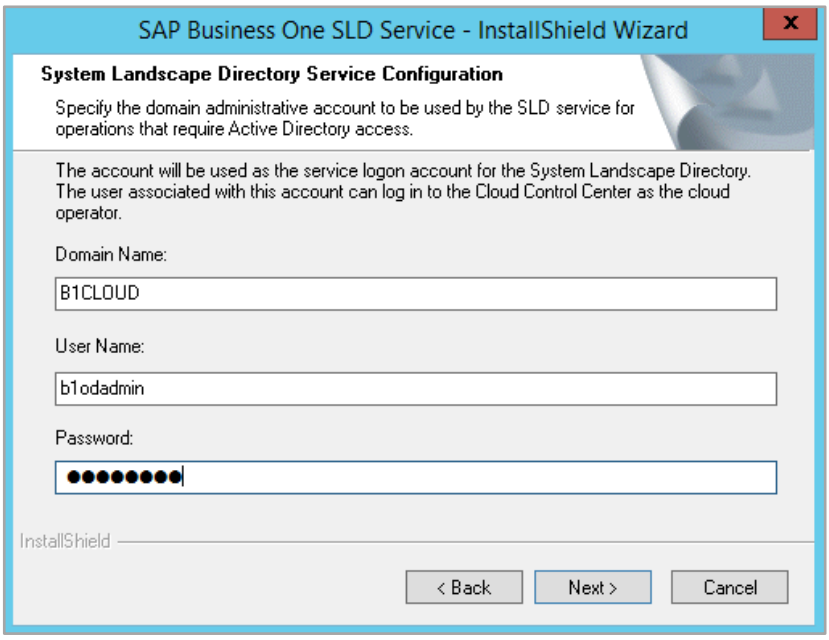
- If using SAP HANA, you have installed SUSE Linux Enterprise Server 11 SP4 (x86_64), SUSE Linux Enterprise Server 12 SP1, SP2, SP3, or SP4 (x86_64), or SUSE Linux Enterprise Server 15 SP1 (x86_64) and SAP HANA.
- You have installed Google Chrome (recommended) or Mozilla Firefox on the machine you want to use to access the SLD and Cloud Control Center.

4.1.1 Installing the SLD and Cloud Control Center on Windows

> **Note**
>
> For statistics (SAP Business One usage frequency) used internally by SAP only, we use information including system number and hardware key from your SAP Business One landscape.

Procedure

1. Navigate to the root folder of the installation package, right-click the *SLD_x64.exe* file, and choose *Run as administrator*.
2. In the *SAP Business One SLD Service – InstallShield Wizard* window that appears, choose the *Next* button.
3. In the *Choose Destination Location* window, specify the installation destination folder.
4. In the *System Landscape Directory Service Configuration* window, specify the following logon credentials:
   - *Domain Name* – Enter the domain name.
   - *User Name* – Enter the user name for the domain account that has local administrative permissions and is the `sysadmin` role on the database server.
   - *Password* – Specify the password for the domain account.



Note

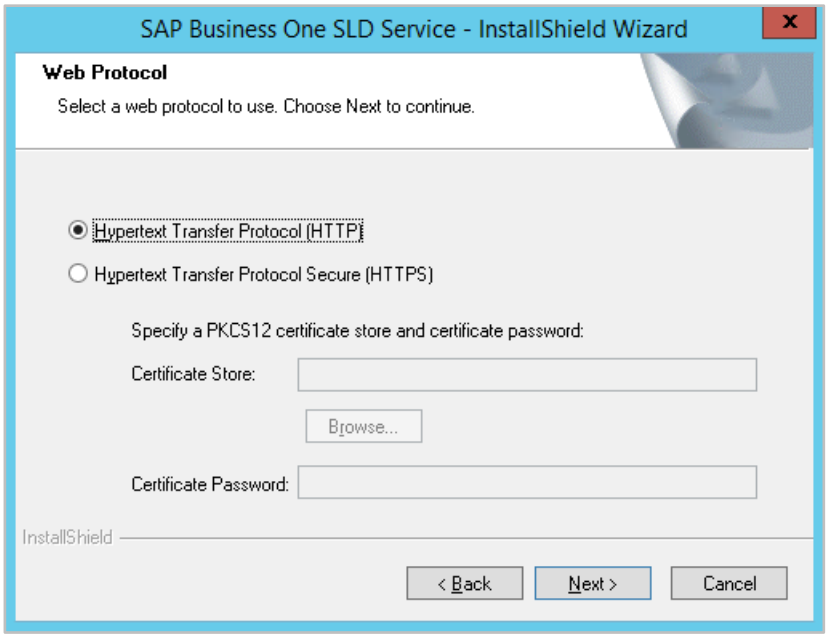
The domain administrative account you have defined to be used by the SLD service for operations that require Active Directory access can be later changed in the Cloud Control Center (*System Configuration → Account for AD Operations*).

5. In the *Specify SLD Hostname* window, specify the hostname or IP address for SLD under which the instance will be registered.
6. In the *Web Protocol* window, select the radio button of the web protocol you want the SLD to use for connections.

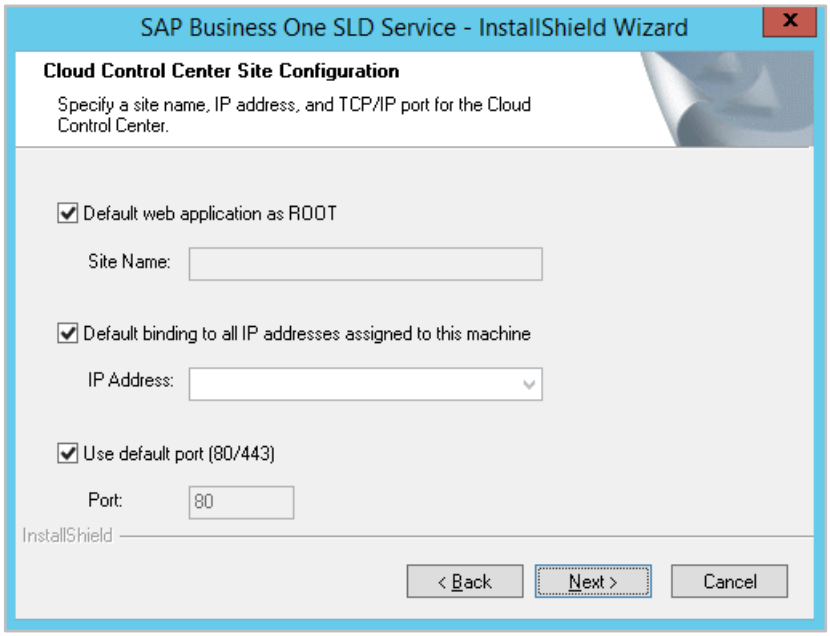
Recommendation

For security reasons, select the *Hypertext Transfer Protocol Secure (HTTPS)* option. If you choose this option, a certificate is required for authentication. For more information, see *Installing Certificates*.

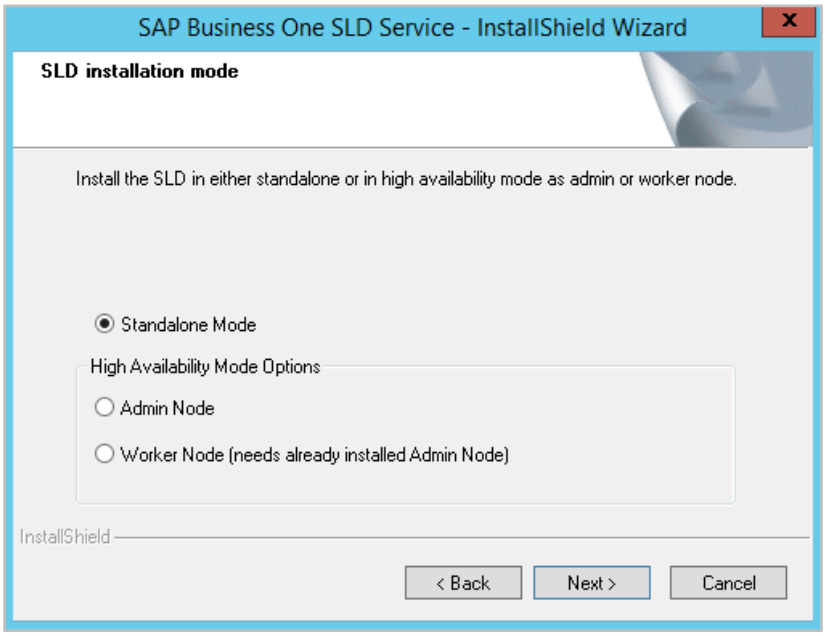
If you select the *Hypertext Transfer Protocol Secure (HTTPS)* option, enter a valid PKCS12 certificate store and password.



7. In the *Cloud Control Center Site Configuration* window, specify the site name, IP address, and TCP/IP port of the Cloud Control Center. To use the default values, select the corresponding checkboxes.



8. In the *SLD installation mode* window, choose to install the System Landscape Directory in either standalone mode or in high availability mode. If you choose the high availability option, specify whether you want to use an admin or worker node.



Note

- If you chose the *Standalone Mode* option, proceeding with the installation will delete any high availability (cluster) node entries in the existing SLD database.
- If you choose high availability mode and the *Admin Node* option, proceeding with the installation will delete any high availability (cluster) node entries in the existing SLD database. As a result, you will have to reinstall all worker nodes.

- If you choose high availability mode and the *Worker Node* option, ensure that you have an admin node entry in the SLD database.

9. In the next window, perform the following:
   1. Specify the database type (Microsoft SQL database or SAP HANA database) and information for the database on which you want the SLD to store data.
      - If you chose *MSSQL*, specify the following fields:
        - *Database Server* – Enter the database server.
        - *Database Name* – Enter the database name.

> **Note**
>
> If the SLD database name that you specified already exists, you must confirm that you want to use the database.

      - If you chose *HANA*, specify the following fields:
        - *Database Server* – Specify the database server.

> **Note**
>
> If you are deploying SAP HANA High Availability solution, in the *Database Server* field, enter a virtual IP address.

        - *Instance* – Enter the database instance.
        - *Tenant Name:* If you are using SAP HANA 1.0, ensure you leave this field empty for the connection to be identified by the wizard. If you are using SAP HANA 2.0, enter the container name in the *Tenant Name* field.

> **Note**
>
> For more information about installing SAP HANA 2.0, see Installing SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers.

        - *Database Name* – Enter the database name.

Recommendation

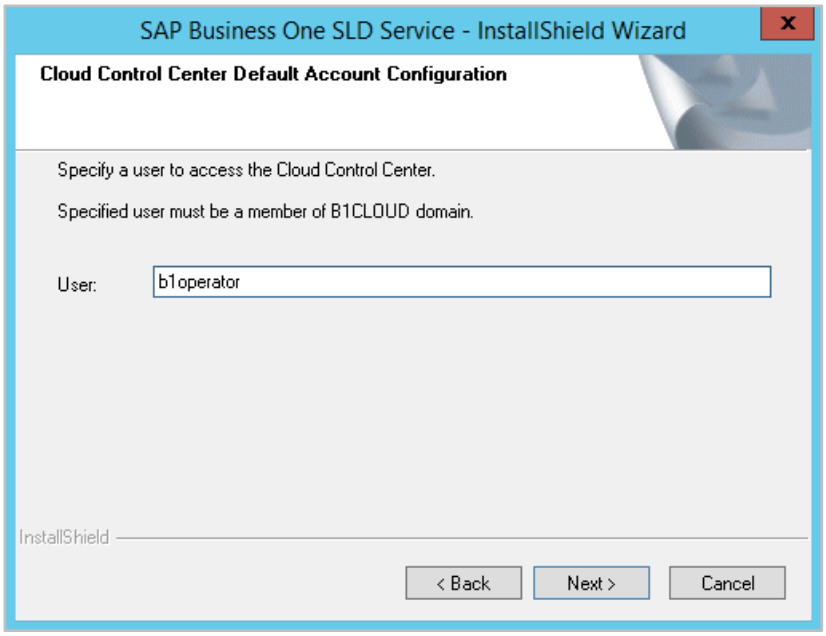
We recommend that you do not use the `SYSTEM` user account. Instead, use the database user account that you created as a substitute for the SYSTEM user. For more information, see Database Privileges for Installing, Upgrading and Using SAP Business One Cloud.

2. In the *Server Authentication* area, select an authentication mode.

   ### Note

   For SAP HANA Server, you must use the *Database Server Authentication* option, as the *Windows Authentication* option is not supported.

10. In the *Cloud Control Center Default Account Configuration* window, enter the user name of the domain account you want to use as the default account for accessing the Cloud Control Center.



11. In the *Ready to Install Components* window, do the following:
    - To install the selected components, choose the *Install* button.
    - To change the settings, choose the *Back* button to return to the previous steps.
12. In the *Complete* window, choose the *Finish* button.

    Recommendation

    After completing the installation process, backup the `keytools.dat` and `SLD.KEYSTORE` files located in `<INSTALLDIR>\apache-tomcat-6.0.35\work\Catalina\localhost\sld\WEB-INF\classes\META-INF\`.

    SAP provides you with a useful command utility for updating the `KEYSTORE` of tomcat. After the completion of the installation process, the utility is installed under `tomcat\bin`. To update the https certificate in `tomcat\conf\server.xml`, run the command:

    `updateKeystore.bat pk12keystore pk12keypass`.

4.1.2 Installing the SLD and Cloud Control Center on Linux

Note

For statistics (SAP Business One usage frequency) used internally by SAP only, we use information including system number and hardware key from your SAP Business One landscape.

Procedure

1. Log on to the Linux server as `root`.
2. In a command line terminal, navigate to the directory …`/Linux` where the install utility is located.

Start the installer from the command line by entering the following command:

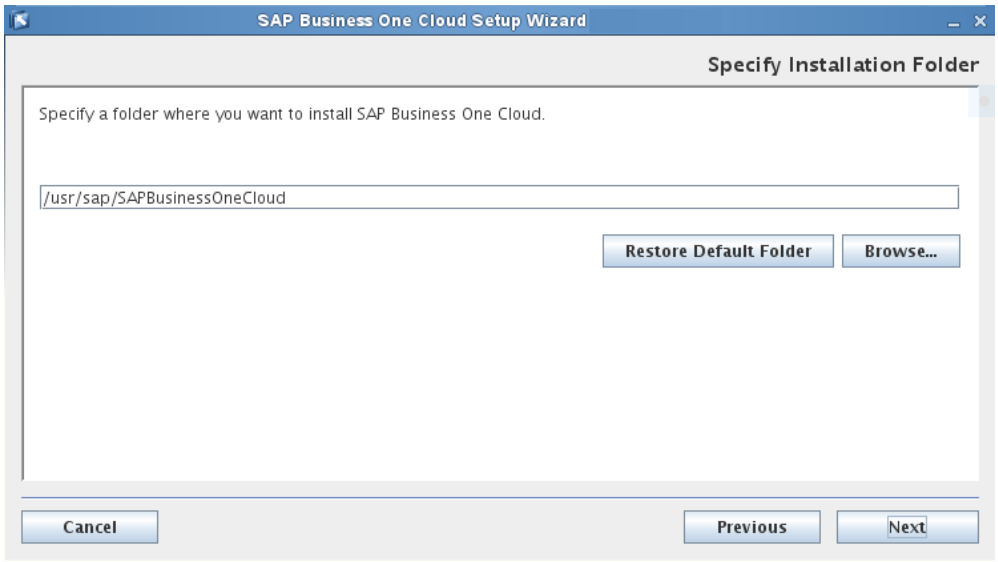
```
./install
```

The installation process begins.

> **Note**
>
> If you receive an 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
> ```

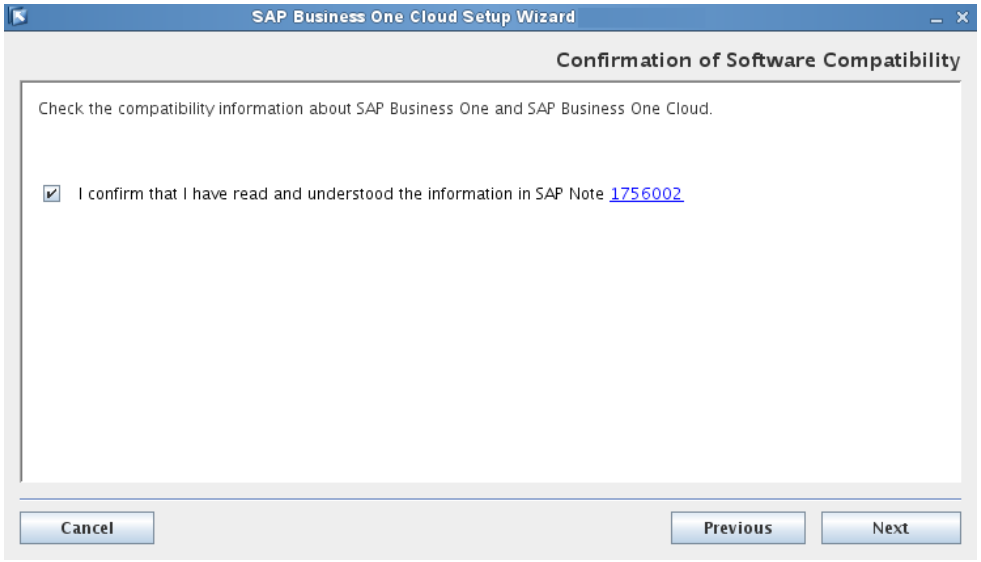
3. In the *Welcome* window of the setup wizard, choose the *Next* button.

4. In the *Specify Installation Folder* window, specify a folder in which you want to install the Cloud components and choose the *Next* button.

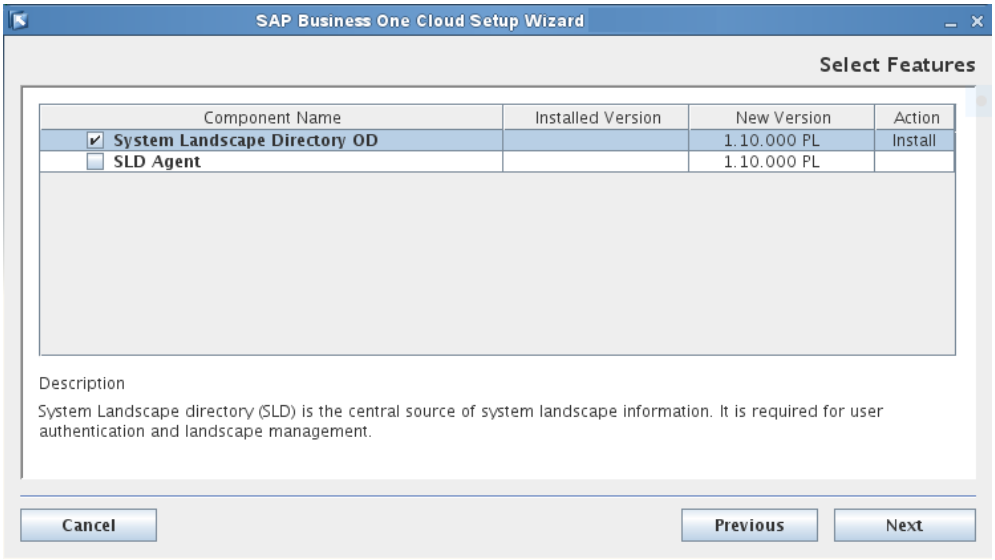


5. In the *Select Features* window, select the *System Landscape Directory OD* checkbox and choose the *Next* button.

6. Check the compatibility information and choose the *Next* button.



7. In the *Network Address* window, select an IP address or use the hostname as the network address for the selected components.

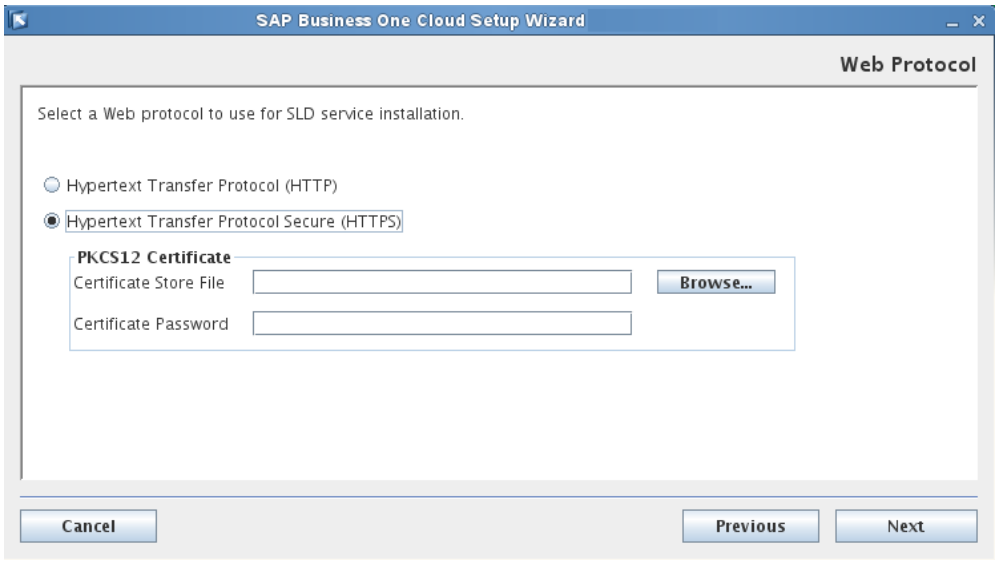


8. In the *Web Protocol* window, specify a Web protocol to use for SLD service installation and choose the *Next* button.

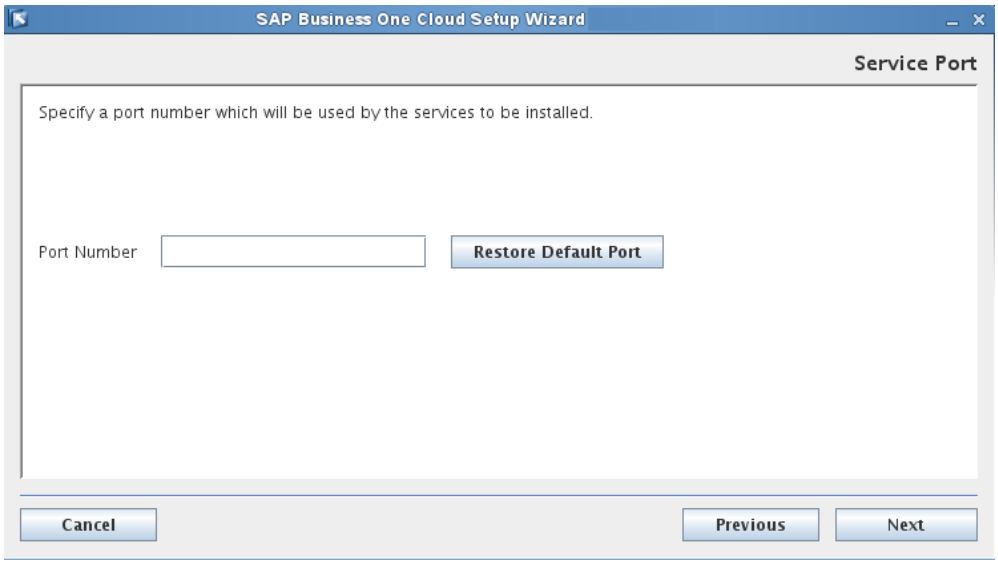
   Recommendation

   For security reasons, select the *Hypertext Transfer Protocol Secure (HTTPS)* option. If you choose this option, a certificate is required for authentication. For more information, see *Installing Certificates*.

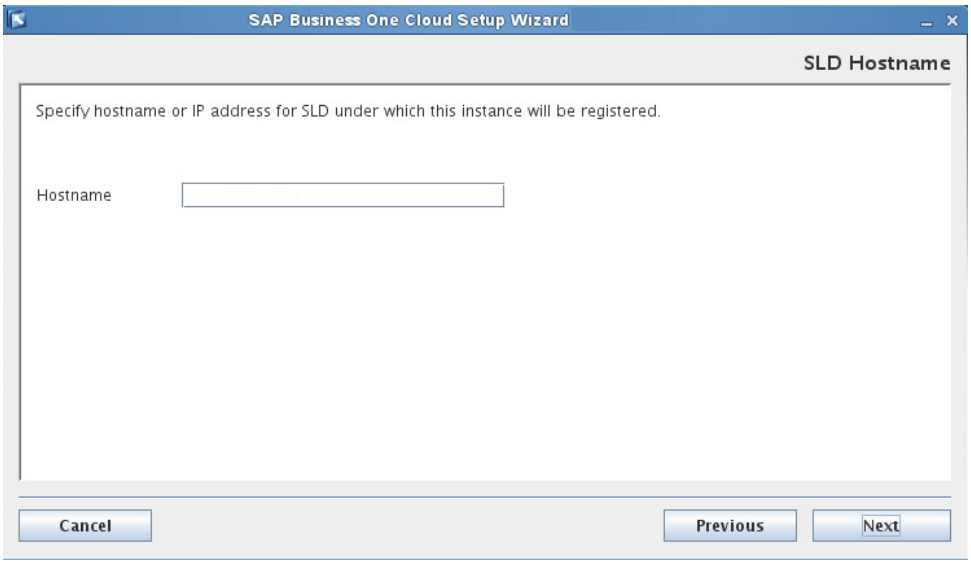
   If you select the *Hypertext Transfer Protocol Secure (HTTPS)* option, enter a valid PKCS12 certificate store and password.



9. In the *Service Port* window, specify a port number, and choose the *Next* button.
   The default port depends on the Web protocol; it is `80` or `443`.



10. In the *SLD Hostname* window, specify the hostname or IP address for the SLD under which this instance will be registered.

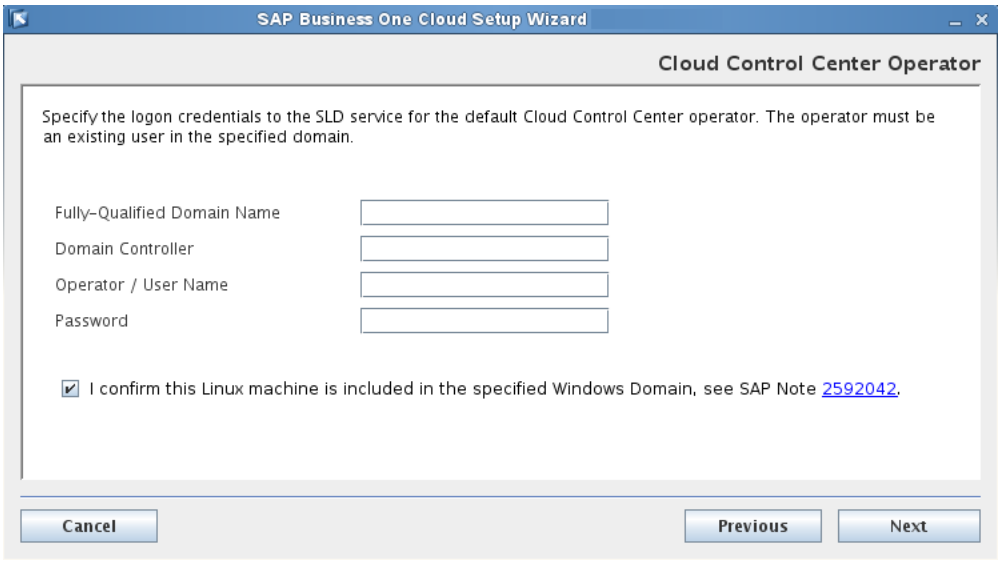


11. In the *Cloud Control Center Operator* window, specify the following logon credentials:
    - *Fully-Qualified Domain Name* – The fully-qualified domain name must be the full name in **upper** case.
    - *Domain Controller* – Enter the domain controller IP address.
    - *Operator/User Name* – Enter the user name for the domain account you want to use as the default account for accessing the Cloud Control Center. This account should have local administrative permissions. The domain user name is case-sensitive.
    - *Password* – Specify the password for the domain account.

      Note:

      - Ensure 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.
      - Ensure that you have registered a service principal name (SPN) for this domain user. For more information on registering a SPN, see the *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.
      - Ensure that

    Select the checkbox to indicate that you have included the Linux machine in the specified Windows domain, and then choose the *Next* button.



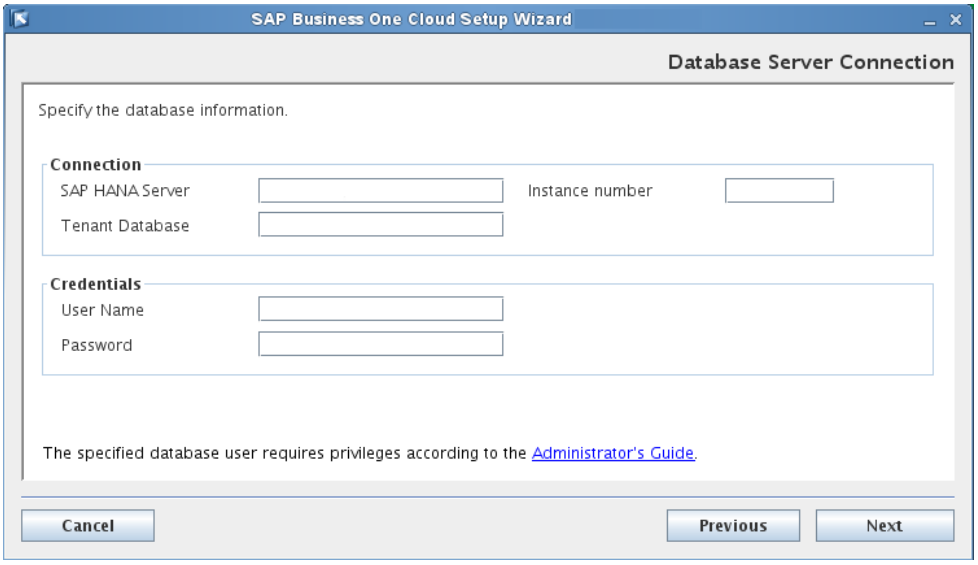
12. In the *Database Server Connection* window, specify the database server on which you want the SLD to store data.

    Note:

    If you are using SAP HANA 1.0, ensure you leave the *Tenant Database* field empty for the connection to be identified by the wizard. If you are using SAP HANA 2.0, enter the container name in the *Tenant Database* field.

    Note

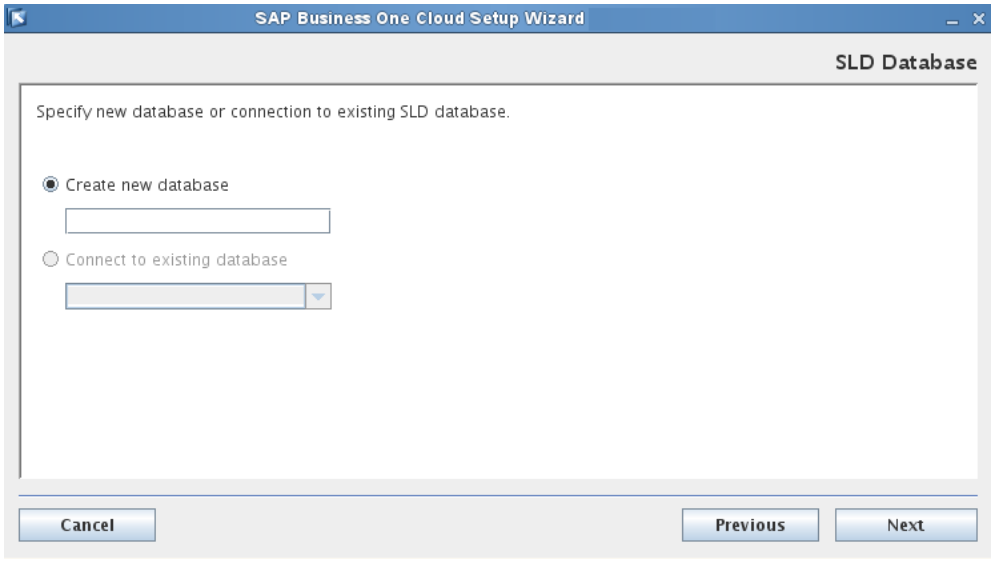
    For more information about installing SAP HANA 2.0, see Installing SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers.



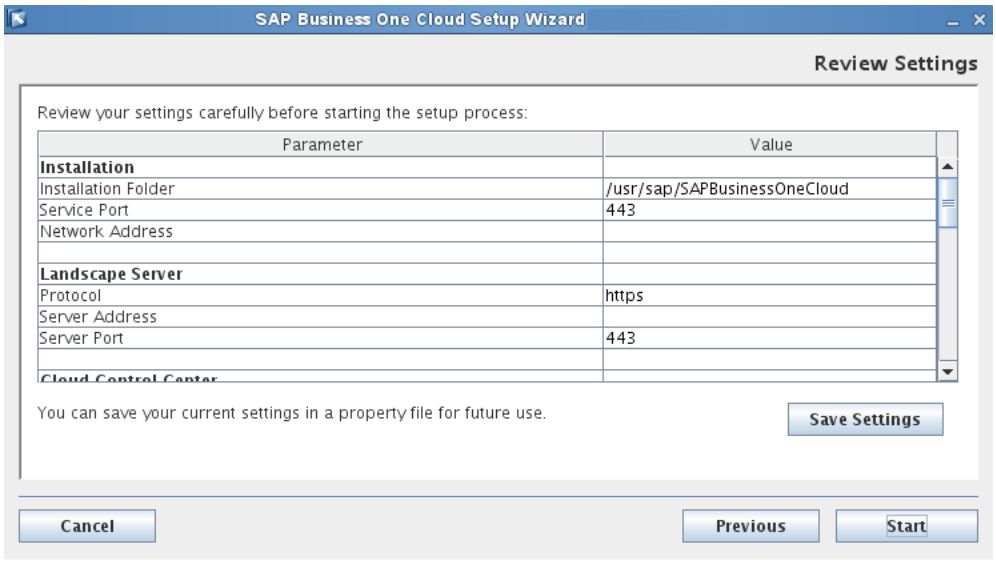
Recommendation

For SAP HANA DB, do not use the `SYSTEM` user account. Instead use the database user account that you created as a substitute for the `SYSTEM` user. For more information, see Database Privileges for Installing, Upgrading and Using SAP Business One Cloud.

13. In the *SLD Database* window, enter the name for the System Landscape Directory schema.

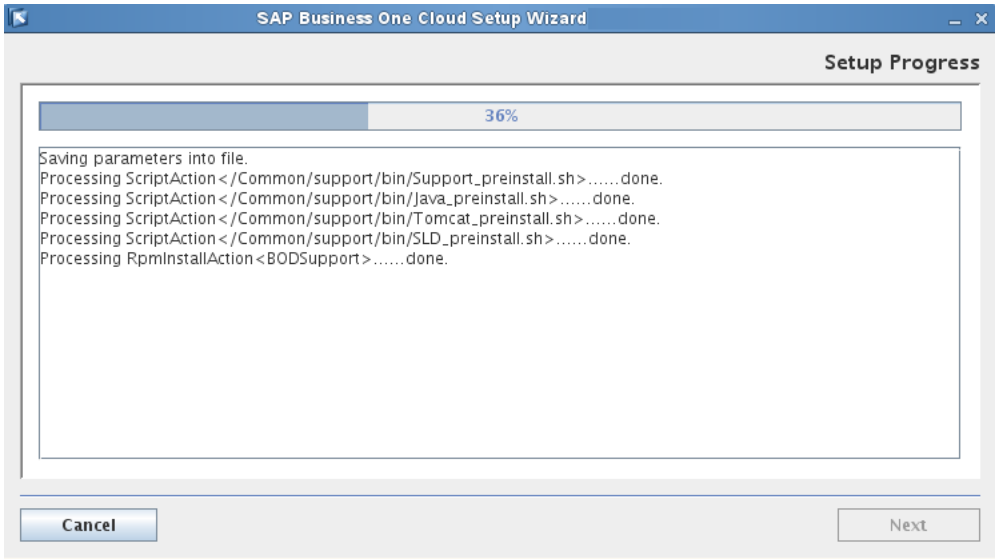


14. In the *Review Settings* window, review your settings carefully before proceeding to execute the installation. If you need to change your settings, choose the *Previous* button to return to relevant windows; otherwise, choose the *Start* button to start the installation.

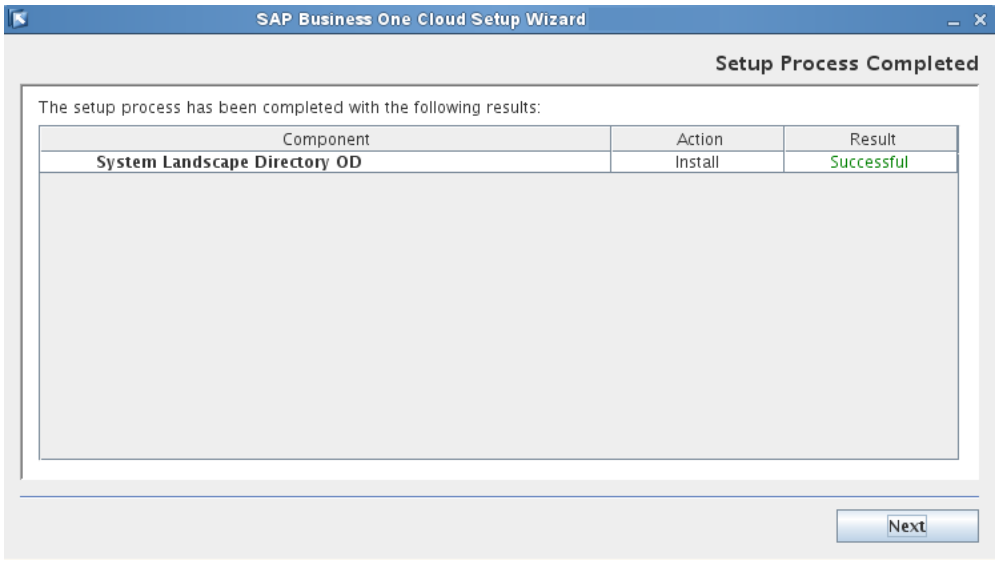


15. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
    - If all of the selected components were installed successfully, choose the *Next* button to finish the installation.

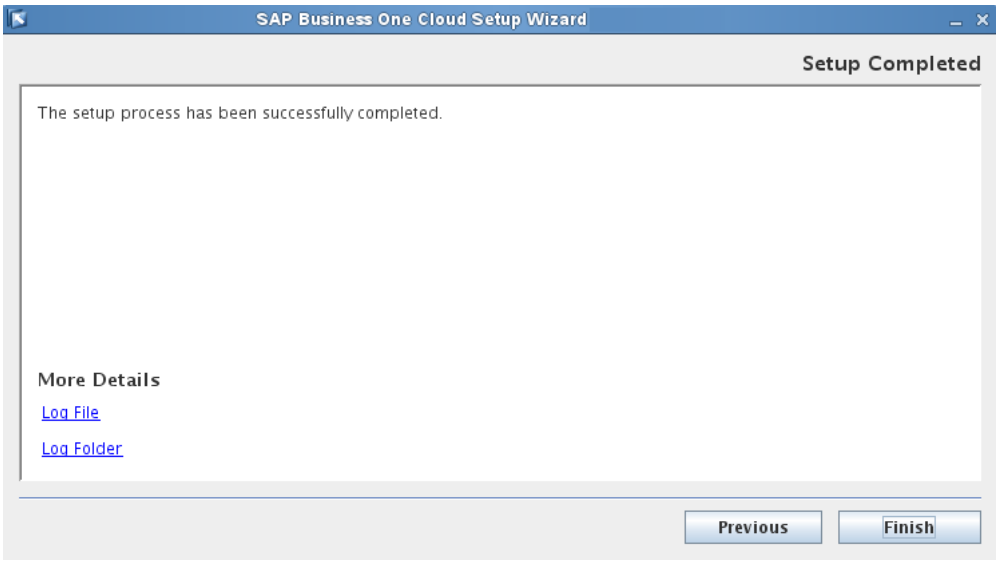
- If one or more components failed to be installed, choose the *Roll Back* button to restore the system. After the rollback progress is complete, in the *Rollback Progress* window, choose the *Next* button to finish the installation.



16. In the *Setup Process Completed* window, review the installation results showing which components were successfully installed and which were not.



17. To exit the wizard, choose the *Finish* button.



4.2 Installing the SLD Agent Service

In addition to the SLD and Cloud Control Center, you must install the SLD Agent Service. This agent service executes tasks on behalf of the SLD, such as performing database upgrades.

4.2.1 Manually Installing the SLD Agent Service

You can manually install the SLD Agent Service on servers individually using an installer provided by SAP.

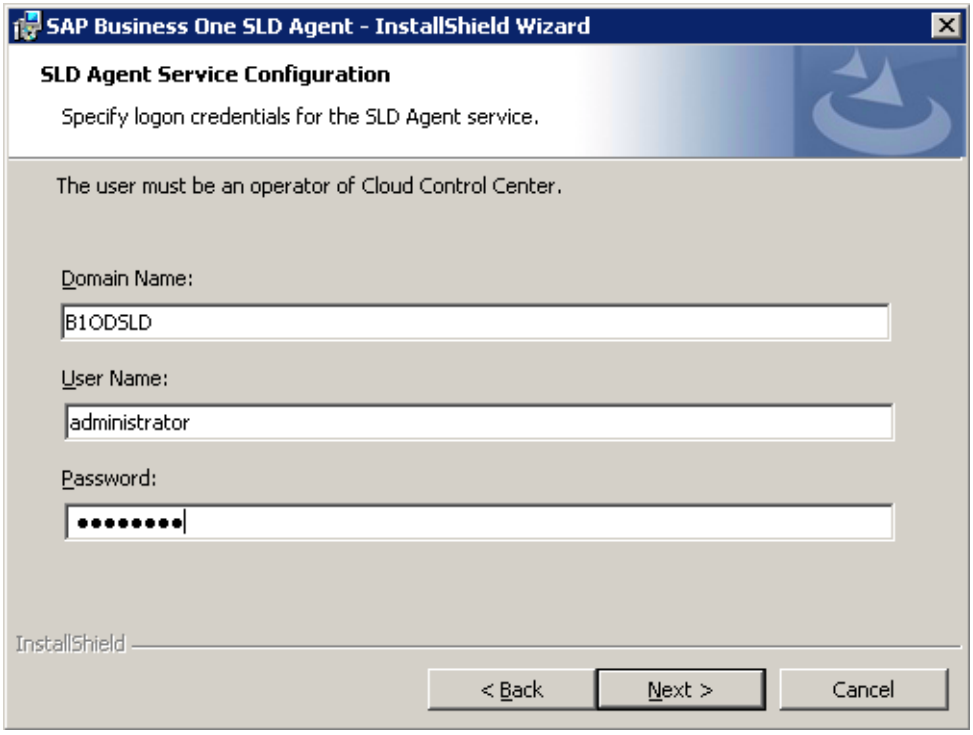
> **Note**
>
> You must install the SLD Agent Service on each Windows or Linux machine actively in use on your landscape. The SAP Business One Cloud setup wizard for Linux is available as of SAP Business One Cloud 1.1 PL07 (path: `\Linux\install`).
>
> You can install the Linux-based server components in GUI mode or in silent mode. For more information on the silent mode, see *SAP Business One Administrator's Guide, version for SAP HANA*.

Procedure

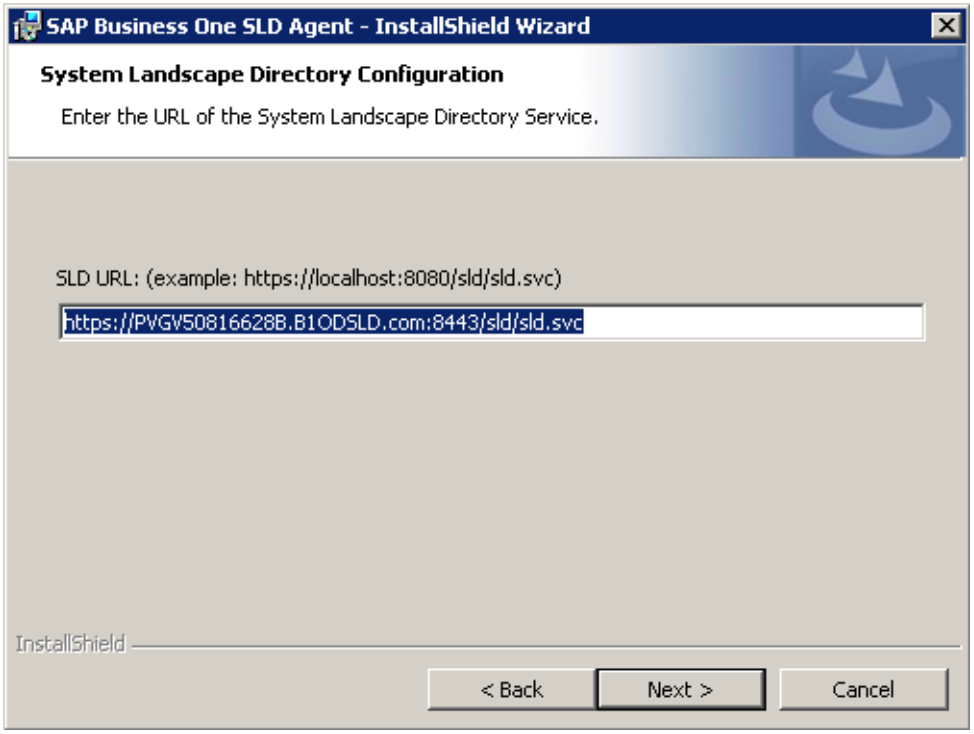
[On Windows] To install the SLD Agent Service, do the following:

1. Navigate to the root folder of the SAP Business One Cloud installation package. In the *SLDAgentMSI_x64* folder, right-click the *SLDAgent_x64.exe* file, and the choose *Run as administrator*.
2. In the *SAP Business One SLD Agent – InstallShield Wizard* window that appears, choose the *Next* button.
3. In the *Destination Folder* window, specify where to install the SLD agent.
4. In the *SLD Agent Service Configuration* window, specify the following logon credentials:
   - *Domain Name* – Specify the domain name for the SAP Business One Cloud landscape.

- *User Name* – Enter the user name of an existing domain account that is a cloud operator with local administrative privileges.
- *Password* – Specify the password for the domain account.



5. In the *System Landscape Directory Configuration* window, enter the URL of the System Landscape Directory.



6. In the *Ready to Install Components* window, do the following:
   - To install the selected components, choose the *Install* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
7. In the *Complete* window, choose the *Finish* button.

[On Linux] To install the SLD Agent Service, do the following:

1. Log on to the Linux server as `root`.
2. In a command line terminal, navigate to the directory …`/Linux` where the install utility is located.

   Start the installer from the command line by entering the following command:

   ```
   ./install
   ```

   The installation process begins.

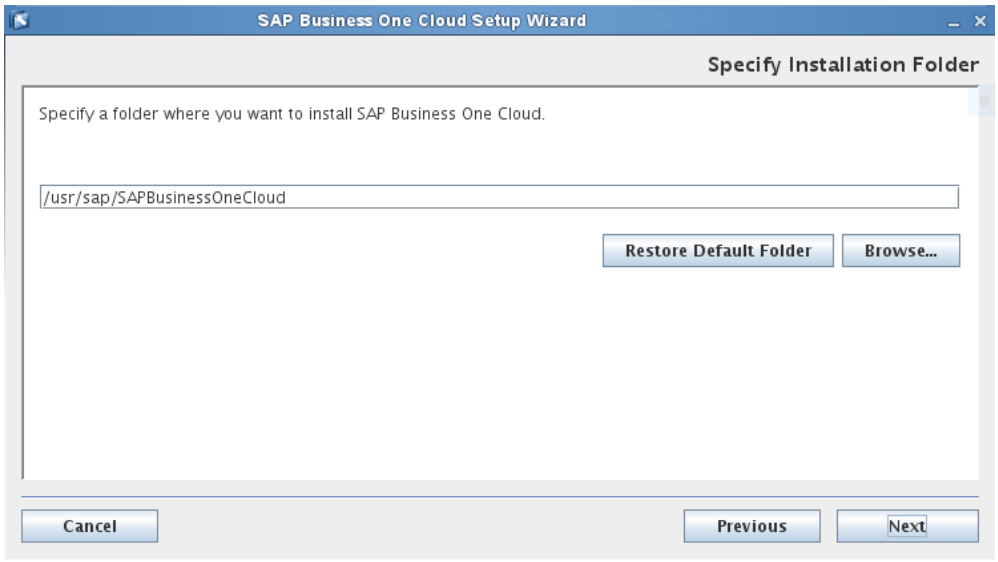
   1 Note

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

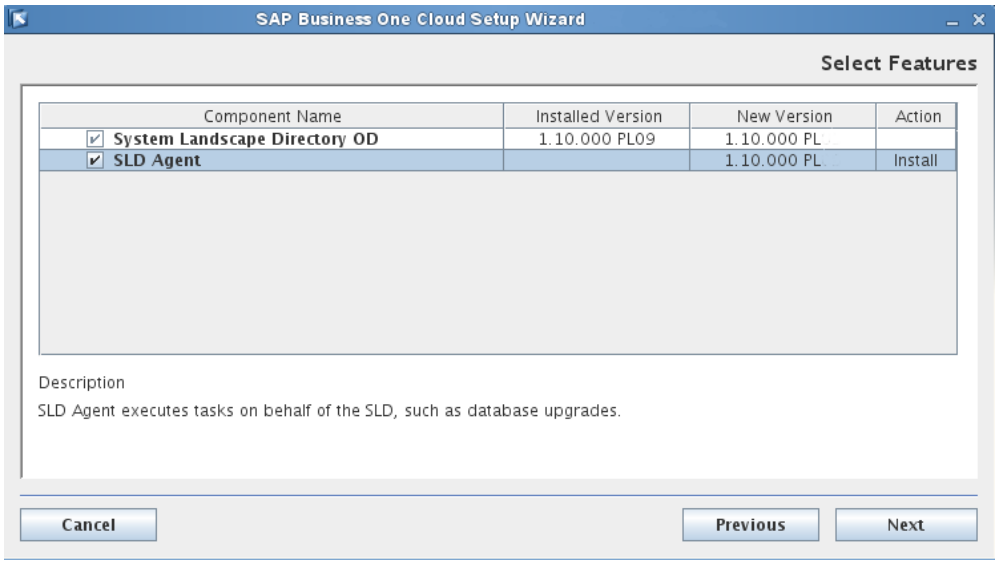
   ```
   chmod +x install
   ```

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

4. In the *Specify Installation Folder* window, specify a folder in which you want to install the Cloud components and choose the *Next* button.



5. In the *Select Features* window, select the *SLD Agent*, and choose the *Next* button.



6. In the *Landscape Server* window, specify the following logon credentials:
   - *SLD URL* – Enter the URL of the System Landscape Directory.
   - *Site User ID* – Enter the user name of an existing domain account that is a cloud operator with local administrative privileges.
   - *Password* – Specify the password for the domain account.
   - On the Installed components for reconfiguration screen, choose Next.
   - On the Specify Security Certificate screen, specify a path to Certificate Store File and enter a Certificate Password; choose Next. In the *Review Settings* window, review your settings carefully before proceeding to execute the installation. If you need to change your settings, choose the *Previous* button to return to relevant windows; otherwise, choose the *Start* button to start the installation.
7. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:

- If all of the selected components were installed successfully, choose the *Next* button to finish the installation.
- If one or more components failed to be installed, choose the *Roll Back* button to restore the system. After the rollback progress is complete, in the *Rollback Progress* window, choose the *Next* button to finish the installation.

8. In the *Setup Process Completed* window, review the installation results showing which components were successfully installed and which were not.
9. To exit the wizard, choose the *Finish* button.

4.2.2 Automatic Installation Using a Group Policy Object

You can automatically install the SLD Agent Service on all servers using a Group Policy Object (GPO).

Procedure

To install the SLD Agent Service using a GPO, do the following:

1. Navigate to the root folder of the SAP Business One Cloud installation package. In the *SLDAgentMSI_x64* folder, locate the *SLDAgent_x64.msi* file.
2. The *SetupPrerequisites* folder contains the setup prerequisites.
3. Create a transform file with the following properties:
   - `SLD_AGENT_SERVICE_USER` – Specify the user name of the domain user account that is the logon user for the SLD agent service and is a cloud operator.
   - `SLD_AGENT_SERVICE_PASS` – Specify the password for the domain user account.
   - `SLD_URL` – Specify the base URL of the SLD service.
   - `SLD_AGENT_DOMAIN_NAME` – Specify the domain name.

   Recommendation

   To create the transform file, use ORCA.EXE, a database table editor for creating and editing Windows Installer packages and merge modules that is available in the Microsoft Windows SDK Components for Windows Installer Developers. For more information, see www.microsoft.com.
4. Install all setup prerequisites.
5. Install the provided MSI installation packages to the GPO.

   Note

   To retrieve the MSI package from the *vcredist_x64.exe* setup prerequisite, extract the contents of the file and locate the *vc_red.msi* file.
6. Configure any advanced options and apply the transform file to *SLDAgent_x64.msi*.

4.2.3 Silent Installation of SLD Agent Service (on Windows)

You can perform a silent installation of the SLD Agent Service on a Windows machine using one of the following commands:

- Install by single .exe using Basic MSI:

  ```
  SLDAgent_x64.exe /s /v"/qn SLD_AGENT_DOMAIN_NAME=<domain name>
  SLD_URL=\"https://xx.xx.xx.xx/sld/sld0100.svc\" SLD_AGENT_SERVICE_USER=<service
  user name>
  SLD_AGENT_SERVICE_PASS=<service pass>"
  ```

- Install using the msiexec command:

  ```
  msiexec /i SLDAgent_x64.msi /qn SLD_AGENT_DOMAIN_NAME=<domain name>
  SLD_AGENT_SERVICE_USER=<service user name> SLD_AGENT_SERVICE_PASS=<service pass>"
  SLD_URL="https://xx.xx.xx.xx/sld/sld0100.svc"
  ```

- Uninstall:

  ```
  msiexec /x SLDAgent_x64.msi /qn
  ```

4.3 Creating Storage

An SAP Business One Cloud landscape requires the following shared folders for storing files:

- Software Repositories

  A shared folder accessible by all service units, containing SAP Business One installation packages, upgrade packages, and add-on installers.

- Shared Folders

  A folder assigned to a service unit that contains sub-folders dedicated to individual tenants, in which attachments, images, and document templates required to use SAP Business One are stored.

- Implementation Repositories

  One or more folders shared by the entire cloud landscape that store SAP Business One solution package (.PAK) files, which you can use to create company databases.

- Company Template Repositories

  One or more folders shared by the entire cloud landscape folder that stores database backup files. You can use the Company Template Repository to backup company databases and to create company databases from backup files. Company Template Repositories can be assigned to service units or reseller operators, depending on how you choose to control backup file access on the file system.

- Tenant Storage

  A folder assigned to a service unit that contains sub-folders dedicated to individual tenants, in which logs and company database backup files, used during tenant upgrades, are stored.

- User Storage

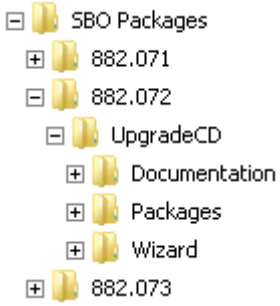
  A global folder that contains sub-folders dedicated to individual users, in which user-sensitive data and documents are stored.

4.3.1 Creating Software Repositories

To create a software repository, do the following:

1. Create a Windows shared folder for each major release of SAP Business One that you want to provide.

   Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.
2. For each folder, assign read, write, and execute permissions to the `SAPServiceB1C` account.
3. Extract the contents of the required SAP Business One upgrade packages to each folder. The following figure shows the directory structure.



> **Note**
>
> Only the `UpgradeCD` folder is mandatory. For each new patch or feature package of SAP Business One, extract the upgrade package to this folder. Then, register the web path of the `UpgradeCD` parent folder to the Cloud Control Center as a software repository.

> **Note**
>
> For Browser Access, make sure that you have granted domain computers the full authorization to access the software repository folder. To do so, perform the following steps:

3. Right-click the software repository folder and choose *Properties*.
   1. On the *Security* tab, in the *Group or user names* area, choose *Edit*.
   2. In the *Permissions* window, choose *Add*.
   3. In the *Select Users, Computers, Service Accounts, or Groups* window, choose *Object Types*.

      Ensure that the *Computers* checkbox is selected.
   4. Enter **`Domain Computers`** and check names.
   5. Make sure that the domain computers have *Full control* permission.

4.3.2 Creating Shared Folders

To create a Shared Folder for each service unit, do the following:

1. Create a Windows shared folder for each service unit.

   Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.

2. For each sub-folder dedicated to a tenant, assign read and write permissions to the following:
    - The `SAPServiceB1C` account.
    - The corresponding tenant's domain group. For more information about domain groups, see *Enable DI API* to Access the Common Database

The *Enable DI API to Access the Common Database* option allows you to control whether the DI API has permission to access the common database, for instance when performing user queries.

Procedure

To activate *the Enable DI API to Access the Common* Database option, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable DI API to Access the Common Database* field, choose the *On* option and then choose *Save*.

    > **Note**
    >
    > If the *Enable DI API to Access the Common Database* option is set to *Off*, the DI API does not have permission to access the common database. The default value for new installations and upgrades is *Off*.

    - Disable UDO Business Logic Implementation DLL

When you create a user-defined object (UDO) in SAP Business One, you can add a business logic implementation (DLL). The *Disable UDO Business Logic Implementation DLL* option in global settings allows you to control if the UDO business logic implementation is enabled or not. By default, the option is *On*, meaning that UDO business logic implementation is disabled.

Procedure

To enable UDO business logic implementation, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Disable UDO Business Logic Implementation DLL* field, choose the *Off* option and then choose *Save*.
    - Domain Groups.

4.3.3 Creating Implementation Repositories

To create implementation repositories, do the following:

1. Create one or more Windows shared folders.

    Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.
2. For each folder, assign read and write permissions to the `SAPServiceB1C` account.

4.3.4 Creating Company Template Repositories

To create company template repositories, do the following:

1. Create one or more Windows shared folders.

   Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.
2. For each folder, assign the following permissions:

   Read and write permissions to the `SAPServiceB1C` account.

   Read permission to all database instances in the corresponding service unit.

4.3.5 Creating Tenant Storage

To create tenant storage, do the following:

1. Create one or more Windows shared folders.

   Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.
2. For each folder, read and write permissions to the following:
   - The `SAPServiceB1C` account.
   - All database instances.

   Note

   When you create a new tenant in the Cloud Control Center, the application automatically creates a sub-folder with the required permissions in the tenant storage dedicated to that tenant.

4.3.6 Creating User Storage

To create user storage, do the following:

1. Create one or more Windows shared folders.

   Keep a record of the full UNC path to each folder, as you are required to enter these in the Cloud Control Center during the registration process.
2. For each folder, assign read and write permissions to the `SAPServiceB1C` account.

   Note

   When you create a new user in the Cloud Control Center, the application automatically creates a sub-folder with the required permissions in the user storage dedicated to that user.

4.4 Installing the User Access Portal for Browser Access

The User Access Portal allows you to remotely access the SAP Business One application in Browser Access mode. You can install the User Access Portal (UAP) for SAP Business One Browser Access using the SAP Business One Cloud Setup Wizard.

Note

As of SAP Business One Cloud 1.1 PL07, the User Access Portal installer was removed from the installation package and replaced with the new SAP Business One Cloud Setup Wizard (path: `\User Access Portal\install.exe`). The SAP Business One Cloud Setup Wizard provides the only option to install the UAP for Browser Access. The SAP Business One Cloud User Access Portal for RDS and Citrix are no longer supported. Partners will need to customize Remote Desktop Web Access and Citrix Web portals by their own means. The new UAP does not require IIS. For more information about other functional improvements, see SAP Note 2373769.

Caution

The SAP Business One Cloud Setup Wizard is installed as a new application; it does not upgrade or uninstall the previous version of the UAP. As both versions of UAP can coexist on the same machine, you may need to use a different port for the UAP when using the setup wizard . Although a previous version of UAP may still work with the System Landscape Directory for some time, we recommend installing the new UAP for Browser Access using the setup wizard. Also note that the previous version of the UAP is not supported.

Prerequisites

You have configured the SLD service.

Note

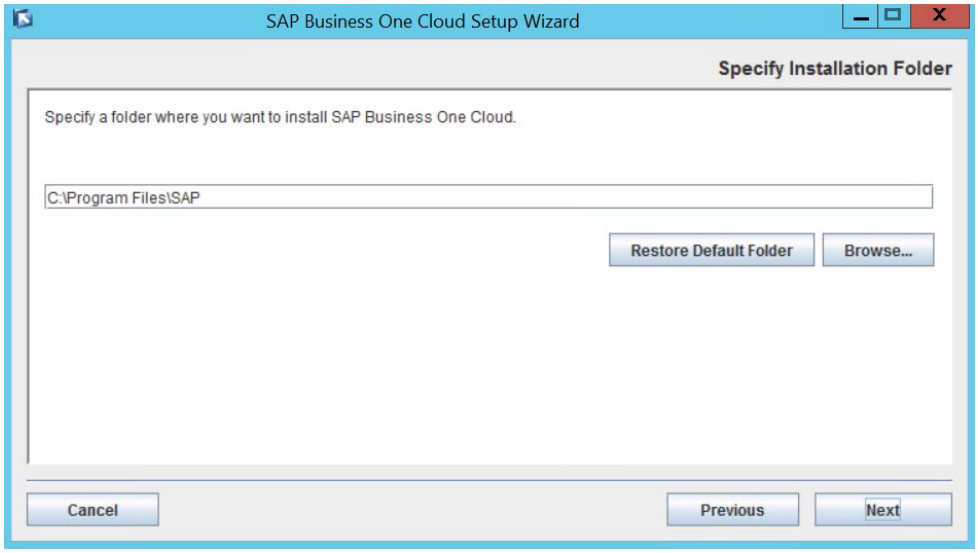
When you run the installer for the first time, you are asked to set PowerShell execution policy to **`RemoteSigned`**. For more information on how to set the proper execution policy, see https://technet.microsoft.com/en-us/library/ee176961.aspx.

Procedure

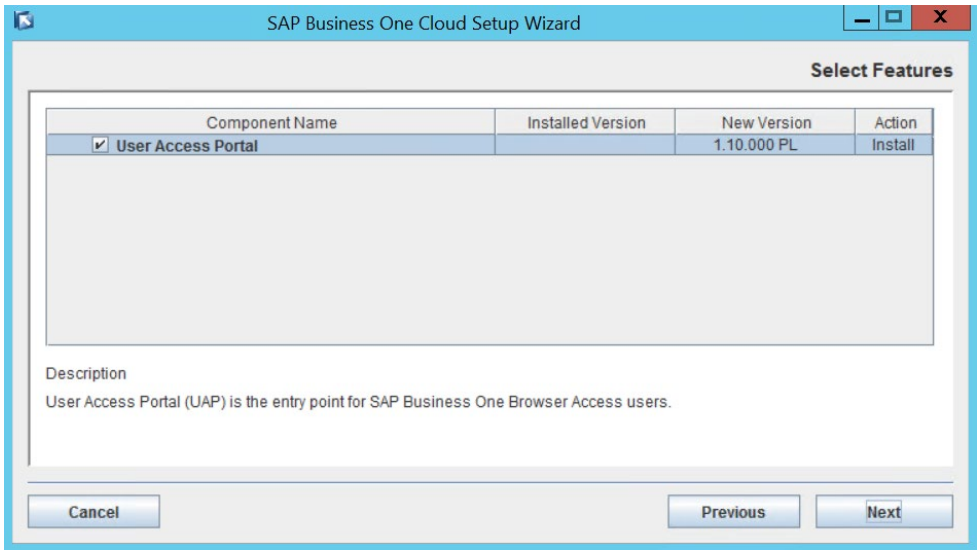
To install the User Access Portal, do the following:

1. Navigate to the root folder of the SAP Business One Cloud installation package. In the *User Access Portal* folder, right-click the *install.exe* file, and choose *Run as administrator*.
2. In the welcome window of the *SAP Business One Cloud Setup Wizard*, choose the *Next* button.

3. In the *Specify Installation Folder* window, specify a destination folder in which you want to install the Cloud components and choose the *Next* button.



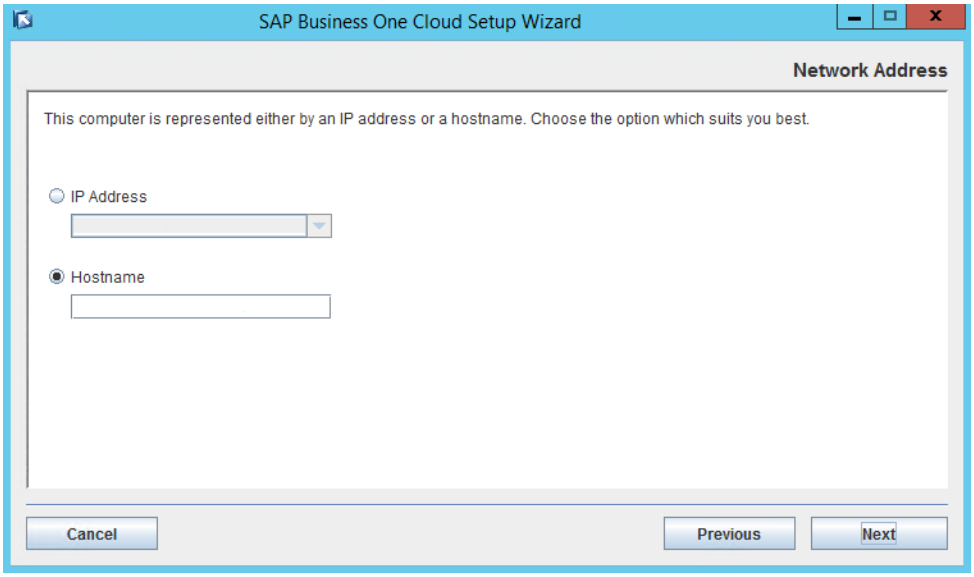
4. In the *Select Features* window, select the *User Access Portal*, and choose the *Next* button.



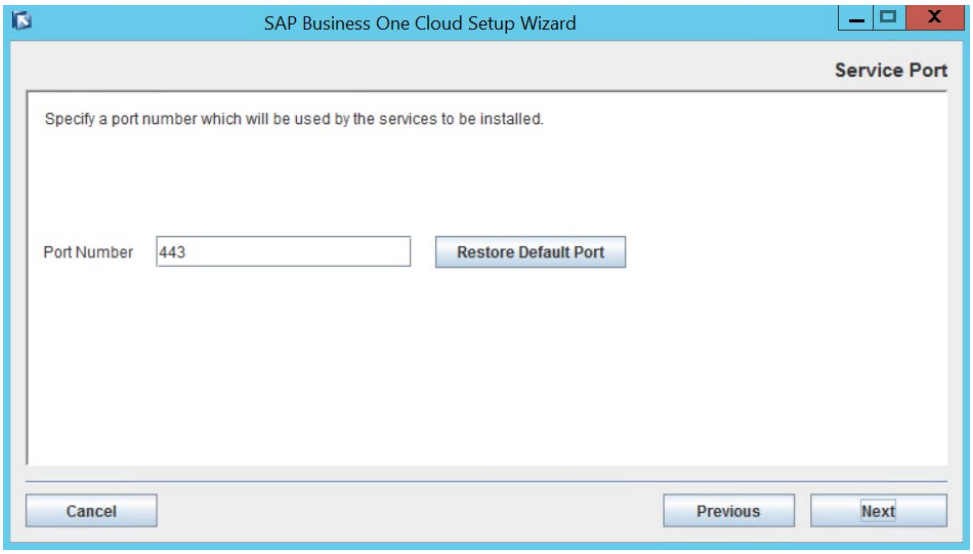
5. In the *Network Address* window, either accept the prepopulated hostname as the network address for the selected component, or manually enter the IP address.

   Note

   This determines how the internal address of the UAP component will be registered in the SLD Cloud Control Center.



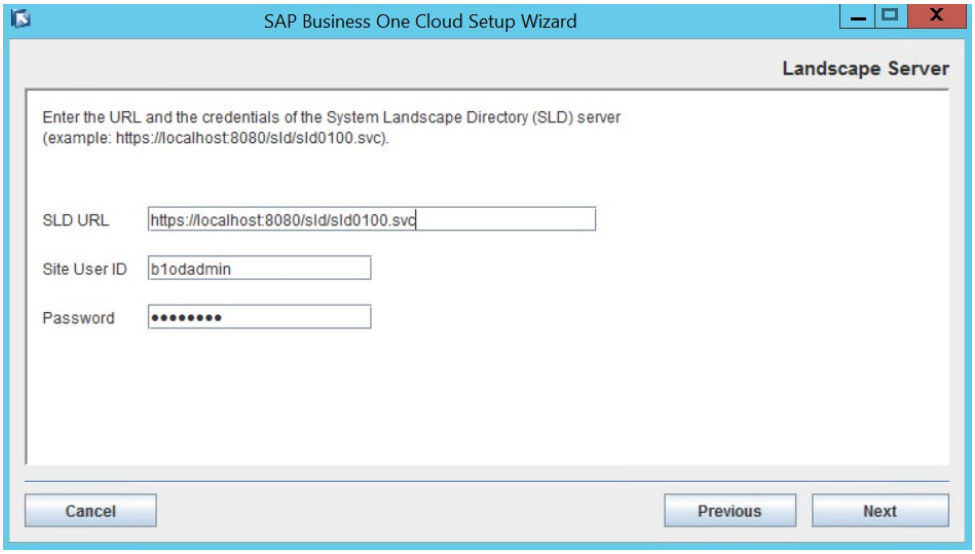
6. In the *Service Port* window, specify a port number that is to be used by the UAP and choose the *Next* button.



Note

If the default port is occupied, one of the reason may be that you have the old UAP (prior to Cloud 1.1 PL07) running. You can either uninstall the old UAP, or consider changing its port if you decide to keep it.

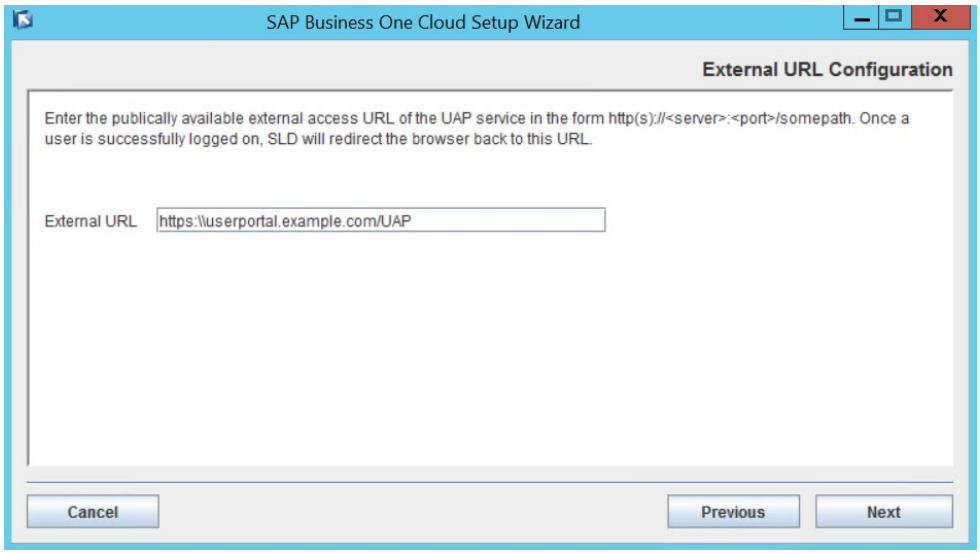
7. In the *Landscape Server* window, enter the **internal** URL of the SLD server, and specify the site user credentials. Then choose the *Next* button.



Note

If you have configured an **external** SLD address in the Cloud Control Center, the UAP will be configured to use this external address. Otherwise, the UAP is configured to use the SLD address you entered in this step.

8. In the *External URL Configuration* window, enter the publicly available external access URL of the UAP service.



Note

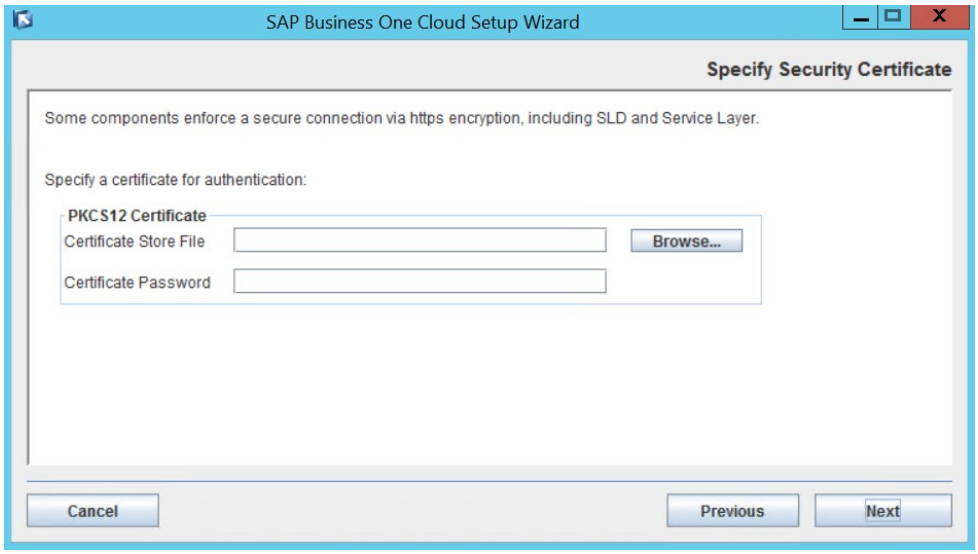
The URL is automatically registered in the SLD. To change the URL after installation, you can configure it in using the SLD external address mapping feature. For more information, see Mapping Internal and External URLs.

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

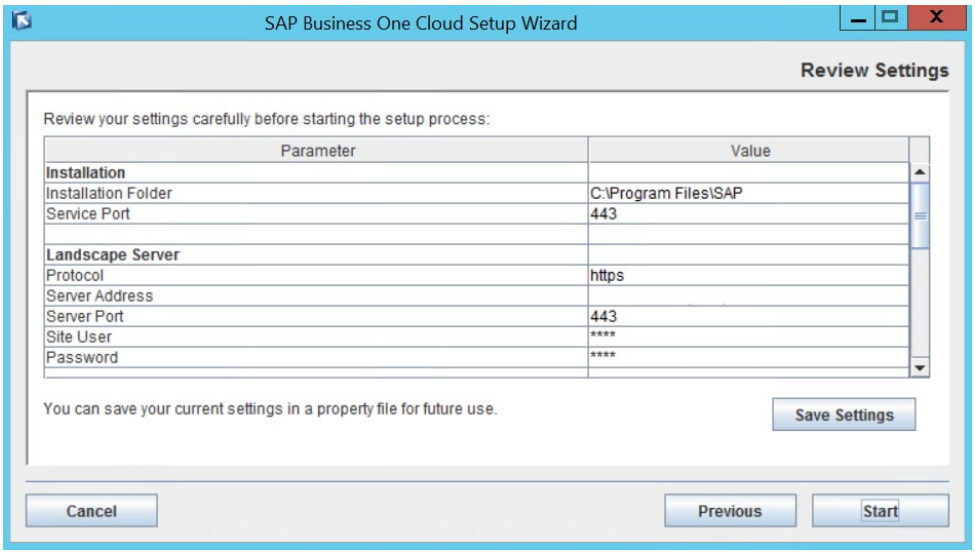
   The way you expose your services to the Internet determines which certificates you import:

   - Reverse proxy mode: Import the internal certificate.

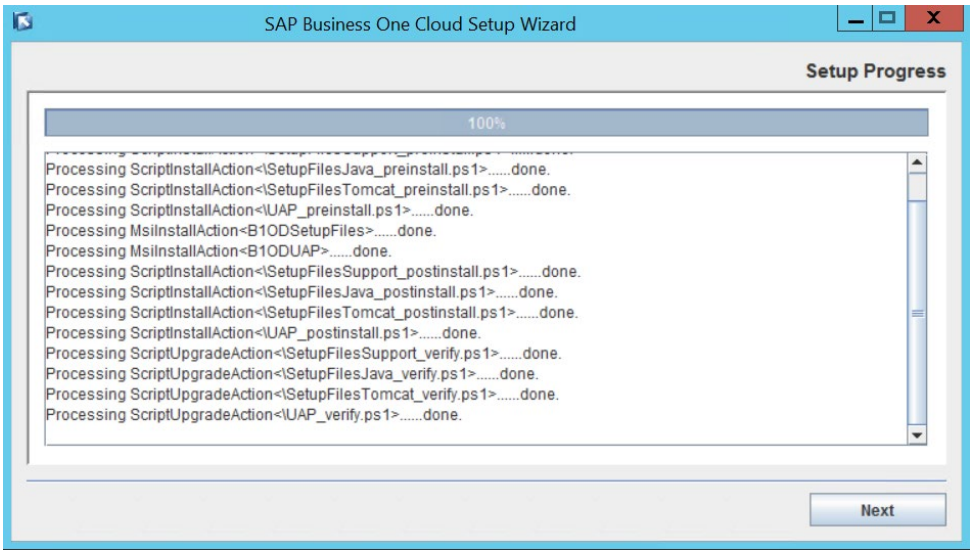
     Note that the external certificate is for the reverse proxy server.
   - NAT/PAT mode: Import the purchased certificate for both internal and external domains.



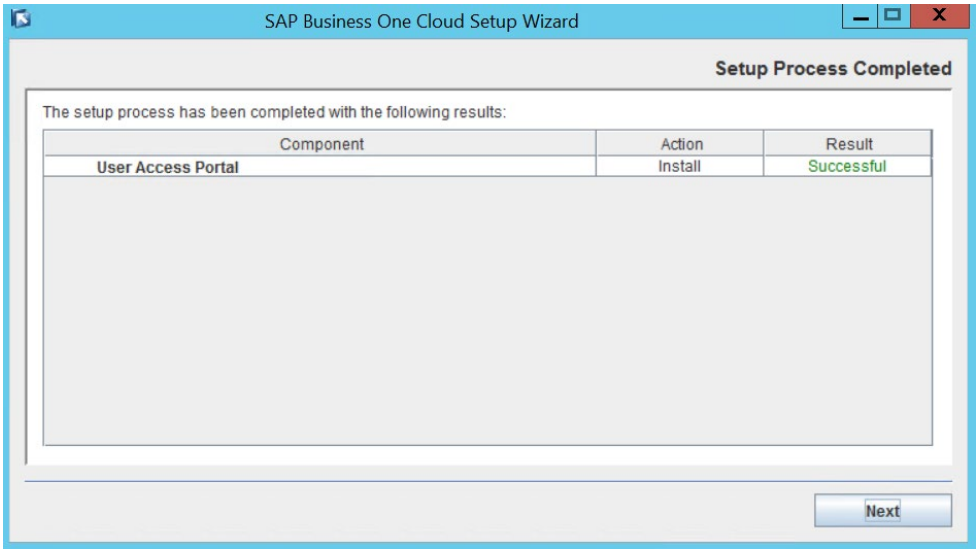
10. In the *Review Settings* window, review your settings carefully before proceeding to execute the installation. If you need to change your settings, choose the *Back* button to return to the relevant windows; otherwise, choose the *Start* button to start the installation.



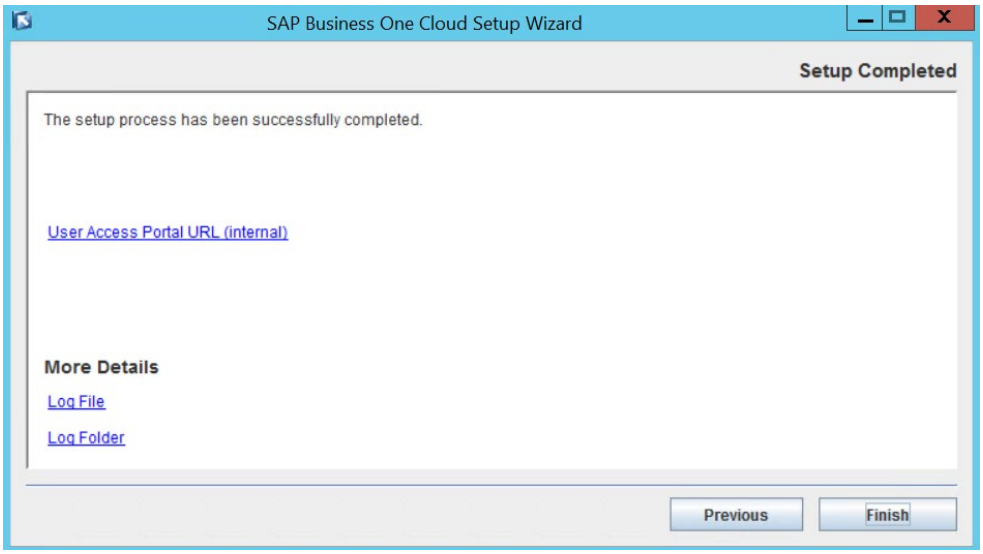
11. In the *Setup Progress* window, when the progress bar displays 100%, proceed with one of the following options:
    - If all of the selected components installed successfully, choose the *Next* button to finish the installation.
    - If one or more components failed to be installed, choose the *Roll Back* button to restore the system. After the rollback progress is complete, in the *Rollback Progress* window, choose the *Next* button to finish the installation.



12. In the *Setup Process Completed* window, review the installation results.



13. In the *Setup Completed* window, choose the *Finish* button.



Note

In runtime, if there are external addresses for the Browser Access Service configured in the SLD address mappings in the Cloud Control Center, the UAP will use these external addresses. Otherwise, UAP will use the addresses specified when BAS is registered (see Registering Browser Access Servers).

Note

You can install the UAP in silent mode. To do so, enter the following command line:

`install -i silent -f <Property File Path>` (for example, **`install.exe –i silent –f "C:\InstFolder\instaler.properties"`**)

In the property file, separate parameter values by a comma. The format is as below:

- Single value: **`Parameter=Value`**
- Multiple values: **`Parameter=Value, Value`**

The table below lists all parameters that are required or supported:

Parameter	Description
`CLOUD_UAP_PUBLIC_URL`	Public external access URL of the UAP service.
`INSTALLATION_FOLDER`	Installation folder of the Cloud components.
`SELECTED_FEATURES`	List of features that you want to install or upgrade. Separate feature names with a comma; the order of the features does not matter. If you do not specify a feature, all features will be installed. Value option: **`BODUAP`** - User Access Portal
`SERVICE_PORT`	Port number for the User Access Portal (for example, **`4430`**).
`SITE_USER_ID`	Site user name that will be used to access SLD (for example, **`B1SiteUser`**).

Parameter	Description
SITE_USER_PASSWORD	Password for the specified site user.
SLD_CERTIFICATE_ACTION	Certificate for HTTPS encryption. Value option: **p12** - PKCS12 certificate
SLD_CERTIFICATE_FILE_PATH	Path to the PKCS12 certificate file.
SLD_CERTIFICATE_PASSWORD	Password for the PKCS12 certificate file.
SLD_SERVER_ADDR	SLD server address.
SLD_SERVER_PORT	SLD server port number.
SLD_SERVER_PROTOCOL	SLD communications protocol. Value options: • **none**: **Do no use this option**; for internal use only • **http**: Allowed for Cloud solutions only, not recommended • **https**: **Recommended**
SLD_SERVER_TYPE	System Landscape Directory type. Value options: • **none**: **Do no use this option**. • **od**: Cloud solution
SLD_SERVICE_URL	The internal URL of the SLD service (for example, **https://10.55.179.208/sld/sld0100.svc**).

Note

If a component has already been installed and is up-to-date, the installer ignores the component even if you include it in the selected features.

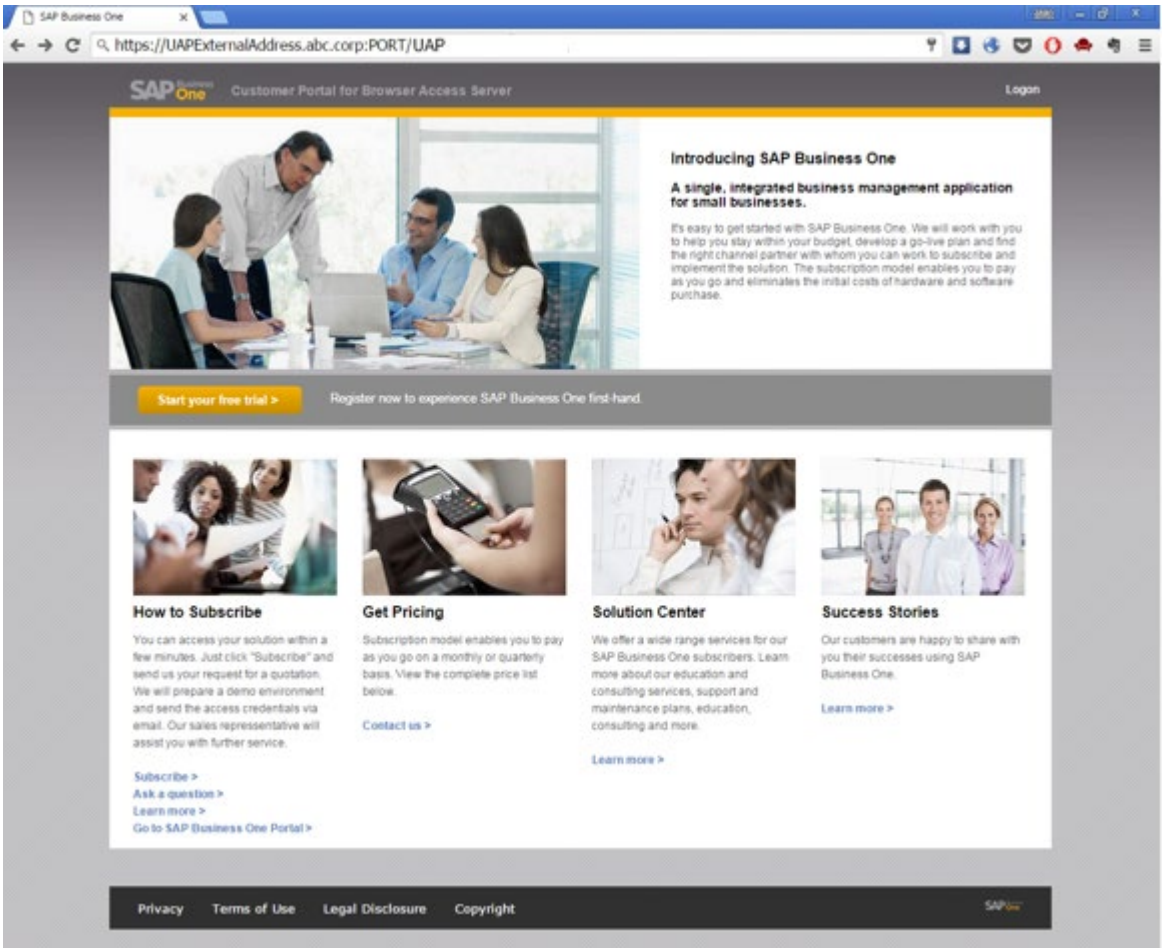
4.4.1 Access SAP Business One Browser Access via User Access Portal

Prerequisite

You have ensured that you can log on to the SAP Business One client installed on the Browser Access server.

Procedure

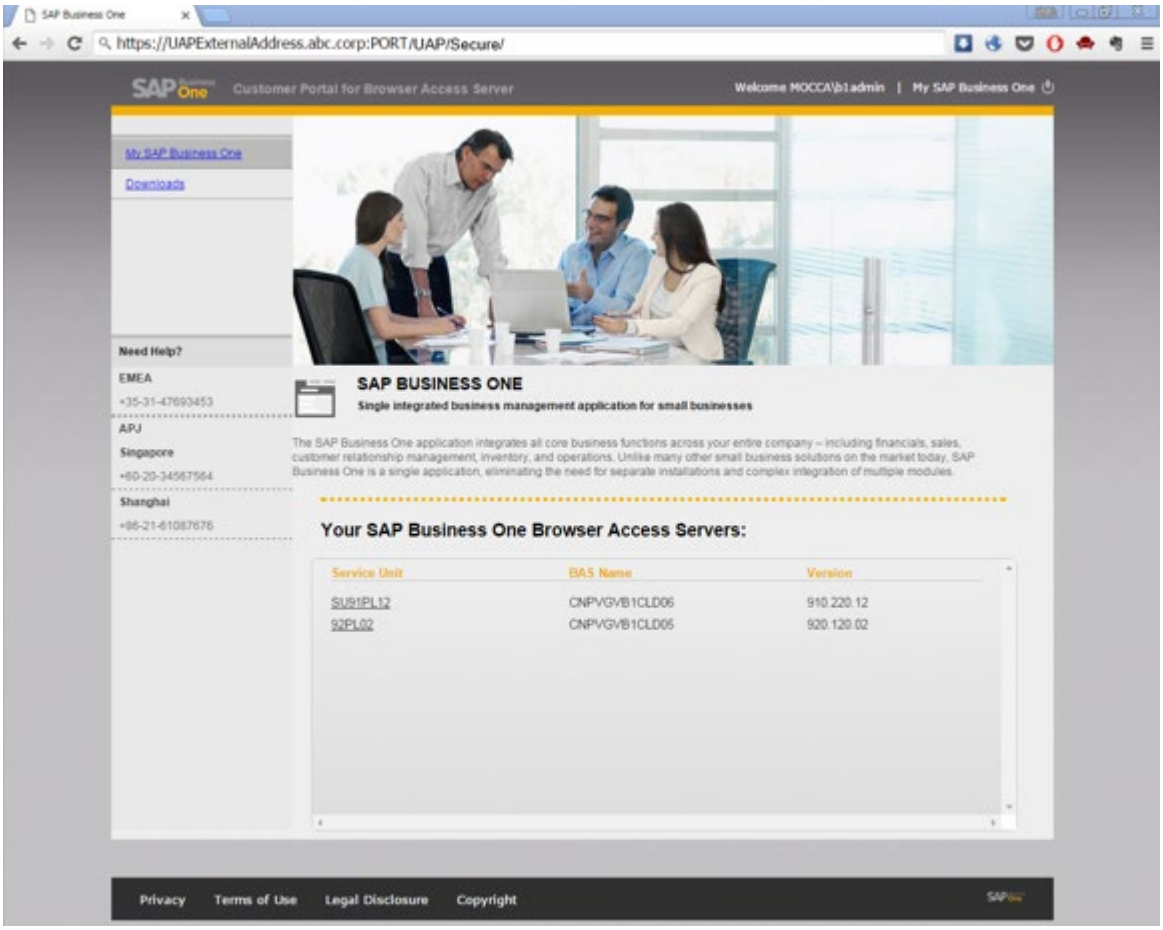
1. In a Web browser, navigate to the User Access Portal for Browser Access using its URL (https://servertool.def.com:Port/UAP or https://UAPExternalAddress.abc.com:Port/UAP).



2. Log on to the User Access Portal.

   One Browser Access server link is displayed for each service unit.

   > **Note**
   >
   > Even though more than one Browser Access service is registered with a service unit, only one Browser Access service link is displayed. The particular service is picked up randomly to achieve load balancing.



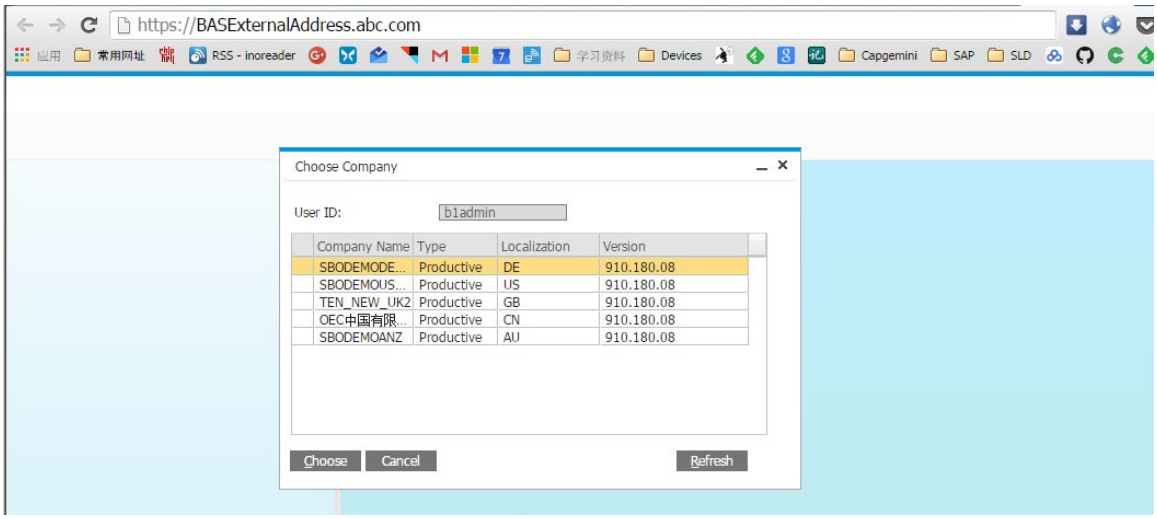
Note

As of SAP Business One Cloud 1.1 PL08, you can change the Windows user password via UAP.

You can change the password before or after you log on to the UAP by clicking the *Change Password* link in the top-right corner of the UAP landing page.

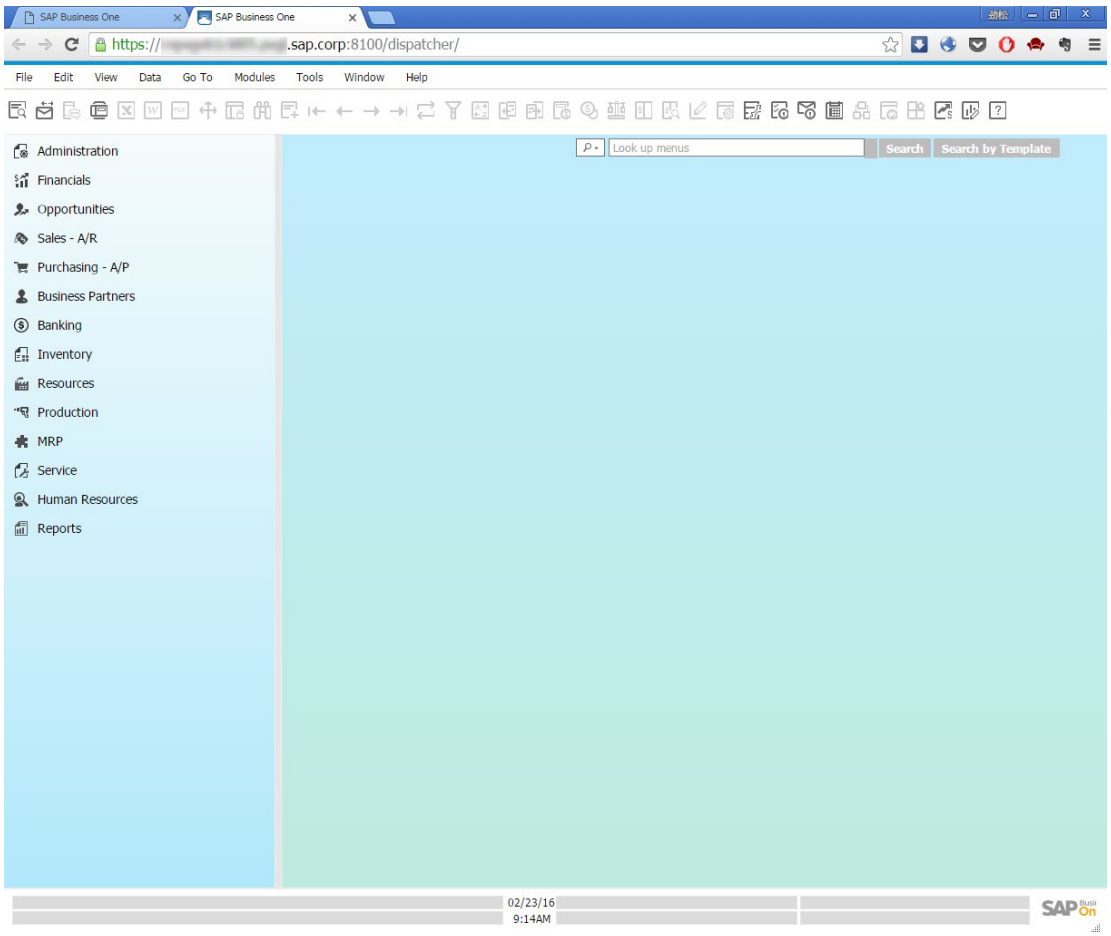
3. Click one of the Browser Access server links.

The Browser Access page is opened.



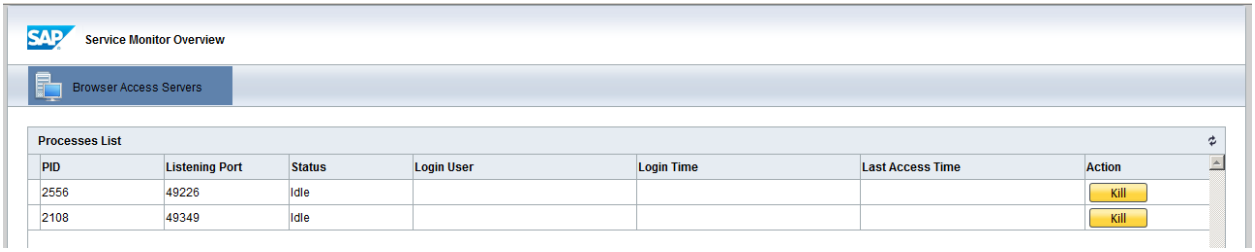
4. Choose the company and log on.

Now you can work with SAP Business One in your web browser.



4.4.2 Monitor Browser Access Processes

As of SAP Business One 9.2 PL02, you can monitor the Browser Access processes in a Web page using this URL: https://dispatcherHostname:port/dispatcher/serviceMonitor/.



If a process hangs for a long time, you can kill it directly.

4.4.3 Reconfigure User Access Portal Web App

You need to reconfigure the User Access Portal Web app in the following cases:

- The SLD service address (**internal** address) has changed.
- The configured SLD external address has changed.
- The SLD has been reinstalled, which means the security token has changed.
- You want to change the address of the User Access Portal server (for example, use the fully qualified domain name instead of a simple hostname or the IP address).
- You want to change the certificate for the User Access Portal server.

Prerequisites:

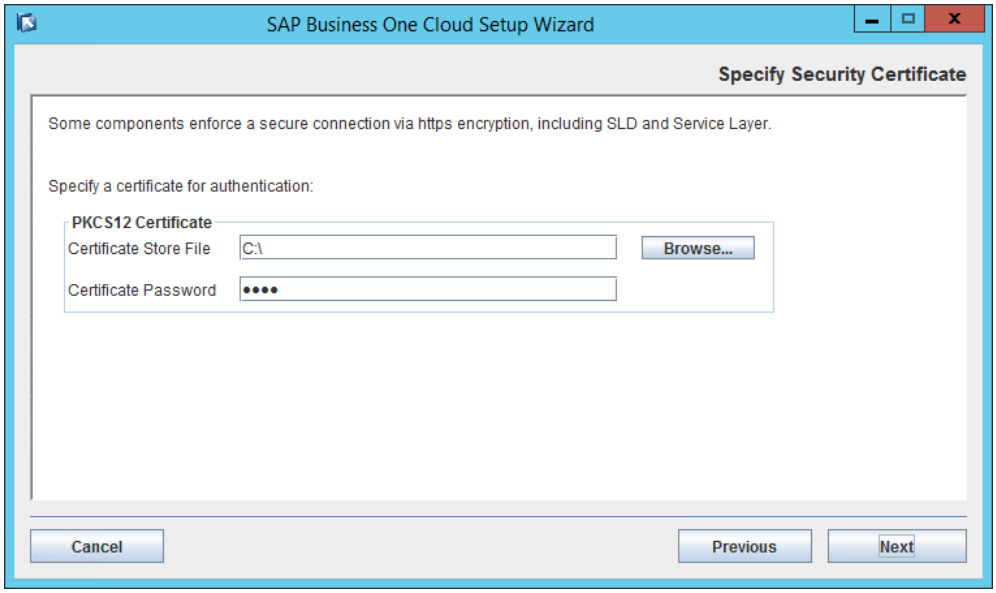
- You are using SAP Business One Cloud 1.1 PL07 or higher.
- You have installed the User Access Portal.

Procedure:

To reconfigure the User Access Portal web app, you can run the setup wizard for SAP Business One Cloud in reconfiguration mode and change the certificate for the User Access Portal. To do so, perform the following:

1. In the SAP Business One product or upgrade package, navigate to the directory `.../ Program Files/SAP/SAP Business One Cloud Setup Files` and run the *setup.exe* file. If you are using Windows Server 2008 or Windows 7, right-click the *setup.exe file* and choose *Run as administrator*.
2. In the *Setup Wizard* window, select the *Reconfiguration* option and choose *Next*.

3. In the *Installed components for reconfiguration* window, choose *Next*.
4. In the *Specify Security Certificate* window, specify a path to the certificate store file, enter a certificate password, and choose *Next*.



5. In the *Review Reconfigured Settings* window, choose *Next* and wait for the reconfiguration to finish.
6. In the *Reconfiguration Progress* window, choose *Next*.
7. In the *Reconfiguration Status* window, choose *Next*.
8. In the *Reconfiguration Completed* window, choose *Finish*.

4.5 Enabling Analytics Services and apps for the version for SAP HANA

SAP Business One analytics powered by SAP HANA provides various analytical features, including enterprise search, real-time dashboards, Microsoft Excel interactive analysis, and predefined Crystal reports. The application also includes a Web-based Administration Console for performing administrative tasks related to the analytical features.

> **Note**
>
> Analytical features and apps for the version for SAP HANA are available only in SAP Business One Cloud environments using SAP HANA. Cloud environments that use Microsoft SQL Server do not support analytical features.

Prerequisites

You have installed SAP Business One, analytics powered by SAP HANA, initialized corresponding company databases in the Administration Console, and logged on to SAP Business One, version for SAP HANA again.

For information about installing the application and initializing company databases on an SAP HANA database server, see *SAP Business One Administrator's Guide, version for SAP HANA*.

For information about working with the analytical features in SAP Business One, see the SAP Business One *Online Help*.

> **Note**
>
> Analytics Services and apps for the version for SAP HANA in SAP Business One Cloud is different from that in SAP Business One on premise. Analytics Service and apps can be installed in SAP HANA server only.

If you want to enable Analytics Services and apps in SAP HANA high availability mode, perform the following steps:

1. Stop cluster resource manager.

   You must stop it one by one.

   1. Stop cluster resource manager in secondary server via `root`:

      ```
      rcopenais stop
      ```

   2. Stop cluster resource manager in primary server via `root`:

      ```
      rcopenais stop
      ```

2. Start primary SAP HANA instance.

   Stopping cluster resource manager leads to a stopped SAP HANA instance. You must start the SAP HANA instance manually.

3. Unregister the secondary SAP HANA instance.

   In the secondary SAP HANA server, execute the following command via `<SID>adm`:

   ```
   hdbnsutil -sr_unregister
   ```

4. Start the secondary SAP HANA instance.

After you have the secondary instance unregistered, start SAP HANA instance in the secondary server manually.

5. Install Analytics service and app Framework in both SAP HANA servers.

   > **Note**
   >
   > Enter **localhost** for SAP HANA address.

6. Stop Analytics Service and app Framework in the secondary server.

   Execute the following command via `root`:

   ```
   /etc/init.d/sapb1servertools stop
   ```

7. Stop SAP HANA instance in the secondary SAP HANA server.
8. Register the SAP HANA instance in the secondary server again.

   Execute the following command via `<SID>adm`:

   ```
   hdbnsutil -sr_register --remoteHost=<Remote Host Name> --remoteInstance=<HANA Instance Number> --mode=syncmem --name=<Local Host Name>
   ```

9. Start cluster resource manager.

   You must start it one by one, and the order of starting is opposite to that of stopping.

   1. Start cluster resource manager in primary server via `root`:

      ```
      rcopenais start
      ```

   2. Start cluster resource manager in secondary server via `root`:

      ```
      rcopenais start
      ```

10. Add resource control script.

    1. Upload `crm_b1.txt` into SAP HANA server.
    2. Execute the following command via `root`:

       ```
       crm resource load update crm_b1.txt
       ```

11. Unregister Analytics Service and app that are not using virtual IP address.

4.6 Installing the Web Client for SAP Business One

The Web Client for SAP Business One offers the SAP Business One core business logic and processes provided in the new SAP Fiori user experience. For more information about using the Web Client, see the *Web Client for SAP Business One User Guide on* SAP Help Portal

4.6.1 Installing the Web Client on Windows

Prerequisites

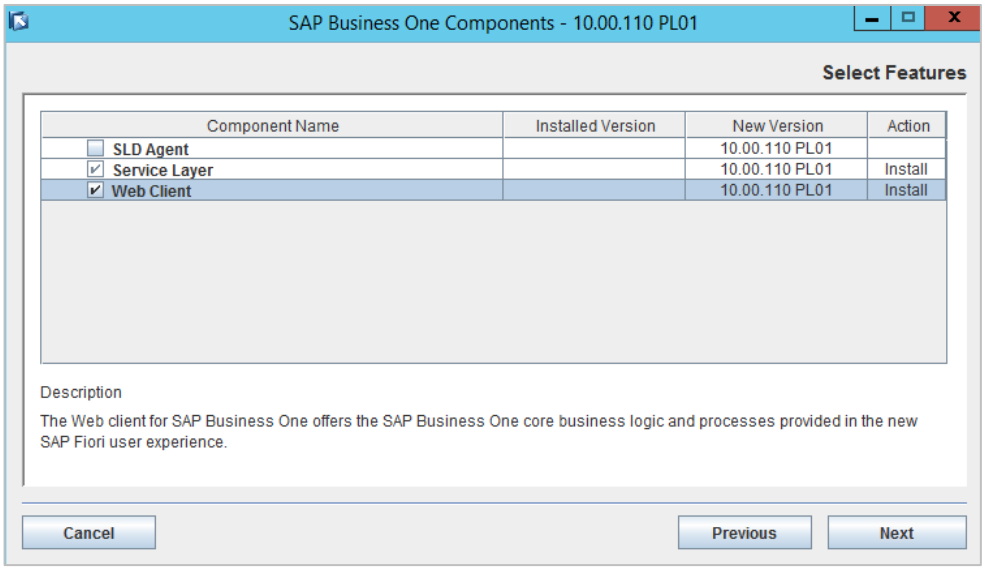
The Web Client for SAP Business One depends on the existence of the Service Layer, which is preselected for installation when you choose to install the Web Client.

Procedure

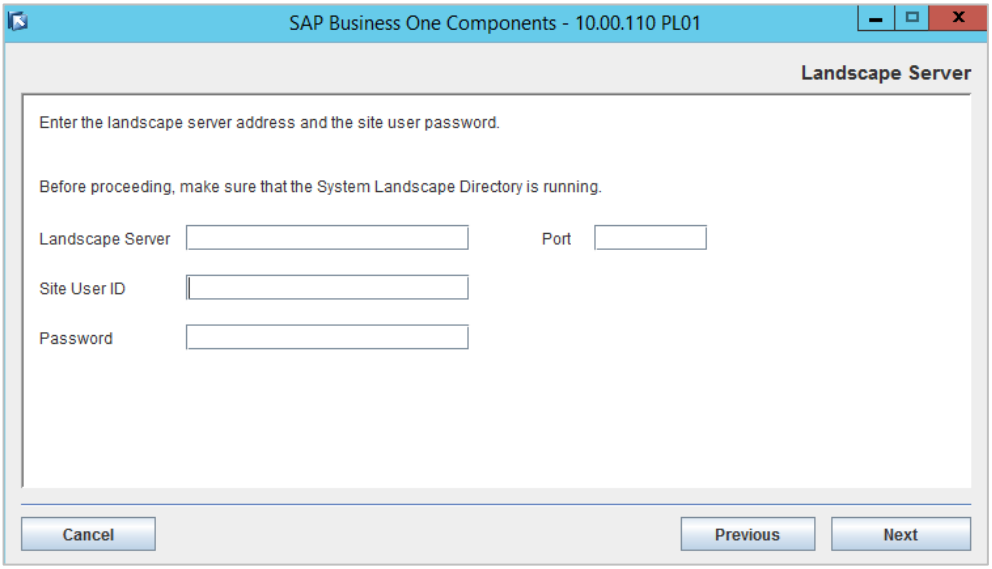
To install the Web Client on a Microsoft Windows machine, follow the procedure in the section *Installing the Web Client* in the *Administrator's Guide for SAP Business One* on SAP Help Portal with the following exceptions:

- In the *Select Features* window, select the *Web Client* and choose *Next*.

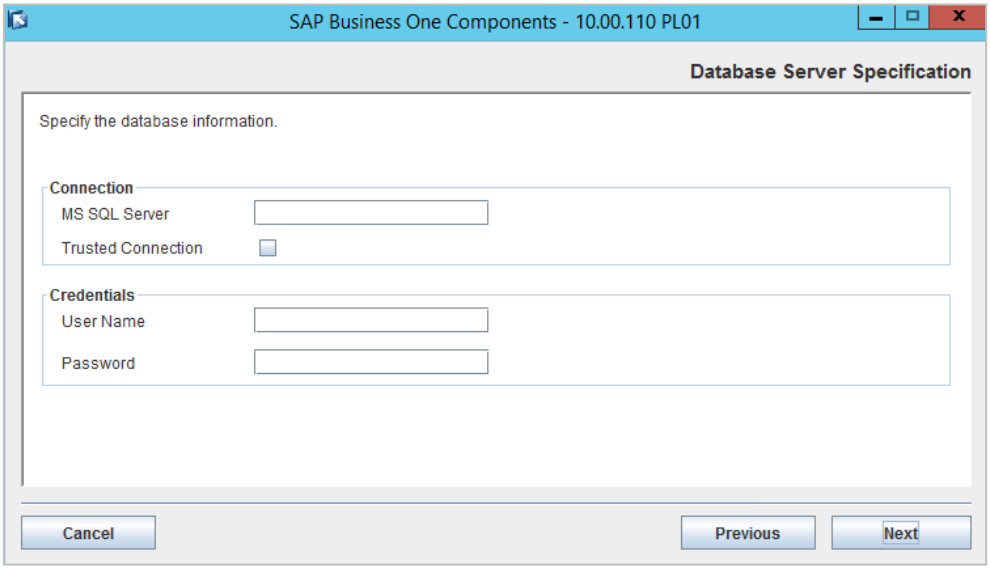
  > **Note**
  >
  > The Service Layer is automatically selected as it is a required component for deployment of the Web Client.



- In the *Landscape Server* window, enter the server address and port of the System Landscape Directory installed in SAP Business One Cloud and choose *Next*.



- In the *Database Server Specification* window, specify the database information of your Microsoft SQL database server and choose *Next*.



- In the *Service Layer* window, specify the following information for the Service Layer and then choose *Next*:
  - *Install Service Layer Load Balancer* and *Port*: Select the checkbox to install the load balancer and specify the port for the load balancer.

    When installing the load balancer, you need to specify the following information:
    - Port for the load balancer. The default port for the load balancer is `50000`.
    - Server name or IP address of all load balancer members, as well as their ports.

    Note that the load balancer and load balancer members must use a different port for each if installed on the same machine.

    Note

    The port number must be within the 0-65535 range.
  - *Service Layer Load Balancer Members*: Specify the server address and port for each load balancer member.

    If you have selected the *Install Service Layer Load Balancer* checkbox, you can specify load balancer members either on local (current) or remote (different) machines. If on the local machine, the installer will create a local load balancer member; if on a remote machine, the load balancer member will be added to the pool (cluster) of load balancer members, but you need to install the specific load balancer member on its own server.
    - *Starting Port*: The port for the first balancer member. The default starting port is `50001`.
    - *Node Count*: The total number of the load balance members.

    Example

    If you specify 5 load balancer members on a local machine and the starting port is `50001`, the corresponding ports for the other 4 load members as follows:
    - `50002`
    - `50003`

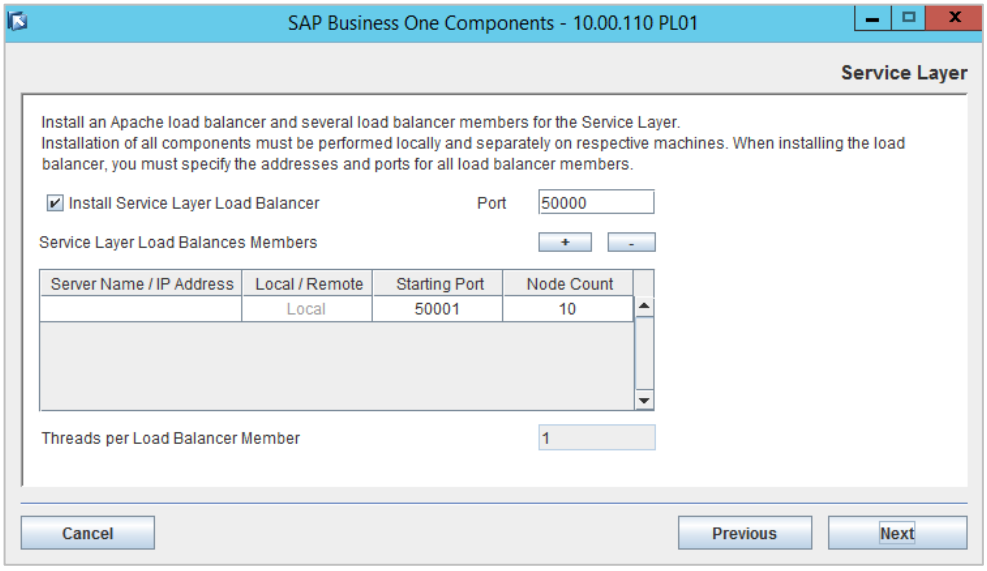
- `50004`
- `50005`

The node count is 5.

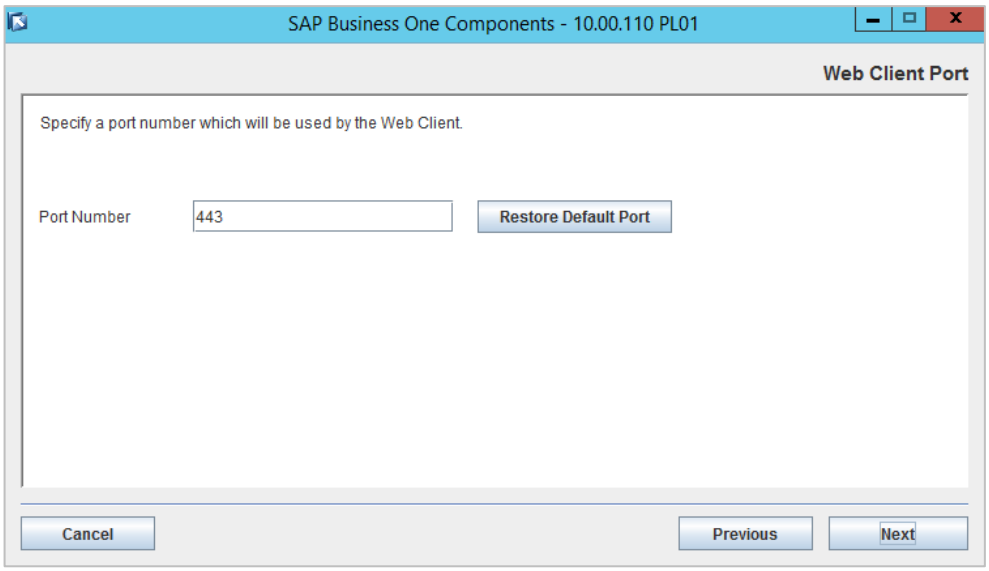
If you have not selected the checkbox, you cannot edit the server address, which is automatically set to **`127.0.0.1`** (`localhost`). All specified load balancer members will be created.

> **Note**
>
> Ipv6 addresses are not allowed.

- *Threads per Load Balancer Member*: The number of threads to be run for each load balancer member.



- In the *Web Client Port* window, specify a port number that is to be used by the Web Client and choose *Next*. The default port number is `443`. The port number must be within the 0-65536 range.



Note

After the installation, to start working with the Web Client on Windows, ensure that you set Google Chrome or Mozilla Firefox as your default Web browser. If your devices are Windows domain-joined, we recommend that the administrator centrally set the default browser using Group Policy. For more information, see the section *Web Client* in the *Administrator's Guide for SAP Business One* on SAP Help Portal.

Note

Due to a limitation in SAP Business One 10.0 PL00 and PL01, after you install the Web Client and subsequentially register the Web Client on a service unit in the Cloud Control Center (see *Registering Software Components or Storage to Existing Service Units*), you need to restart the Web Client by completing the steps described in SAP Note 2875511.

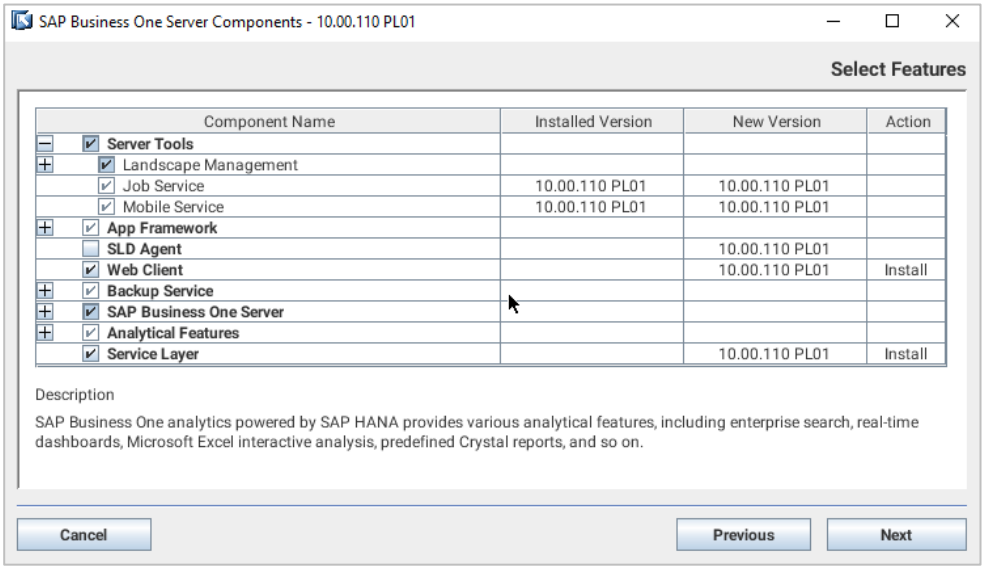
4.6.2 Installing the Web Client on Linux

The Web Client for SAP Business One depends on the existence of the Service Layer and analytical features, both of which can be installed during installation of the Web Client as described below.

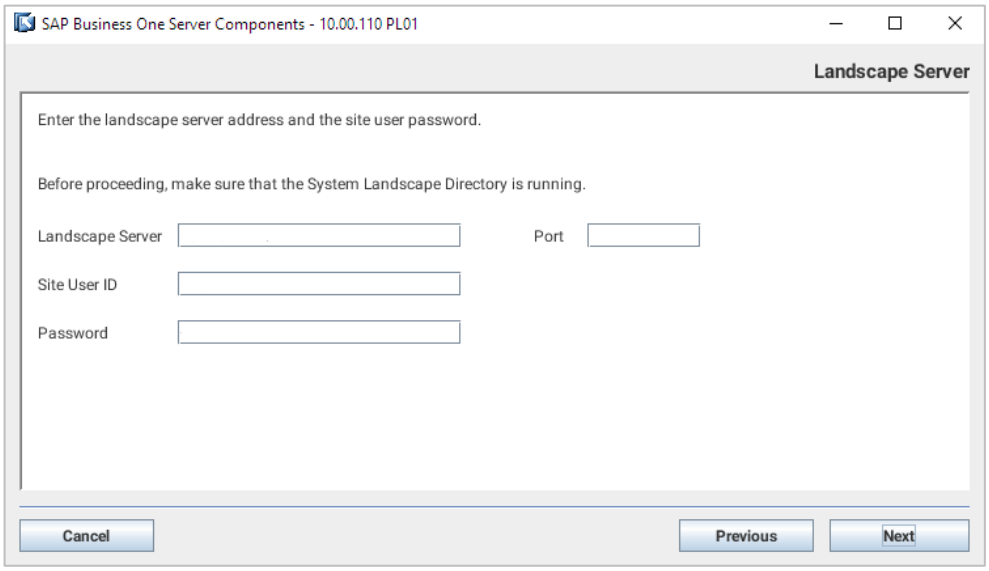
Procedure

To install the Web Client on a Linux machine, follow the procedure in the section *Wizard Installation* in the *Administrator's Guide for SAP Business One, version for SAP HANA* on SAP Help Portal with the following exceptions:

- In the *Select Features* window, select the *Web Client*, *Analytical Features*, and *Service Layer Components.* Ensure that the *System Landscape Directory* is unselected and choose *Next*.



- In the *Landscape Server* window, enter the server address and port for the System Landscape Directory installed in SAP Business One Cloud and choose *Next*.



- In the *Service Layer* window, specify the following information for the Service Layer and then choose *Next*:
  - *Install Service Layer Load Balancer* and *Port*: Select the checkbox to install the load balancer and specify the port for the load balancer.

    When installing the load balancer, you need to specify the following information:
    - Port for the load balancer. The default port for the load balancer is `50000`.
    - Server name or IP address of all load balancer members, as well as their ports.

    Note that the load balancer and load balancer members must use a different port for each if installed on the same machine.

    Note

    The port number must be within the 0-65535 range.
  - *Service Layer Load Balancer Members*: Specify the server address and port for each load balancer member.

    If you have selected the *Install Service Layer Load Balancer* checkbox, you can specify load balancer members either on local (current) or remote (different) machines. If on the local machine, the installer will create a local load balancer member; if on a remote machine, the load balancer member will be added to the pool (cluster) of load balancer members, but you need to install the specific load balancer member on its own server.
    - *Starting Port*: The port for the first balancer member. The default starting port is `50001`.
    - *Node Count*: The total number of the load balance members.

    Example

    If you specify 5 load balancer members on a local machine and the starting port is `50001`, the corresponding ports for the other 4 load members as follows:
    - `50002`
    - `50003`

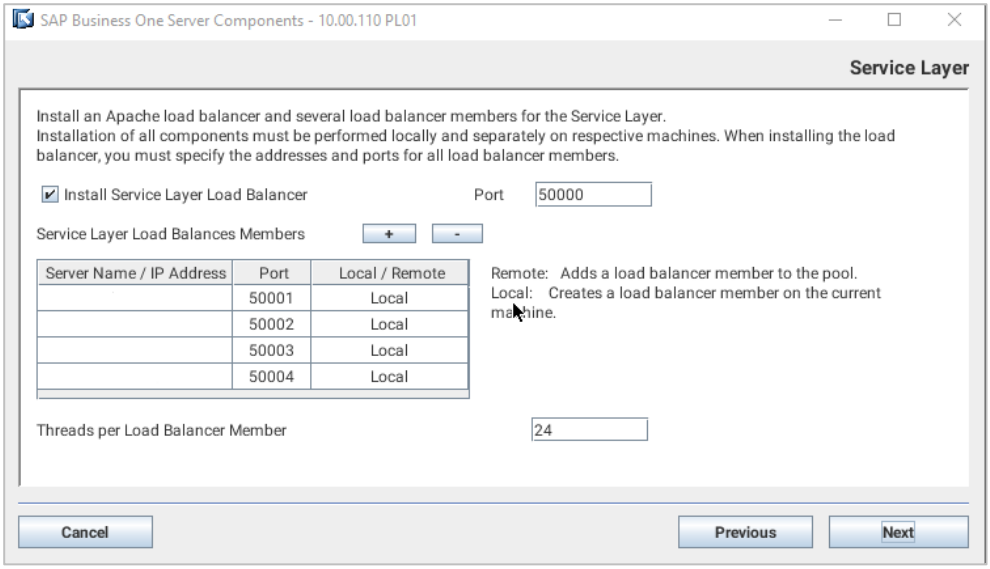
- `50004`
- `50005`

The node count is 5.

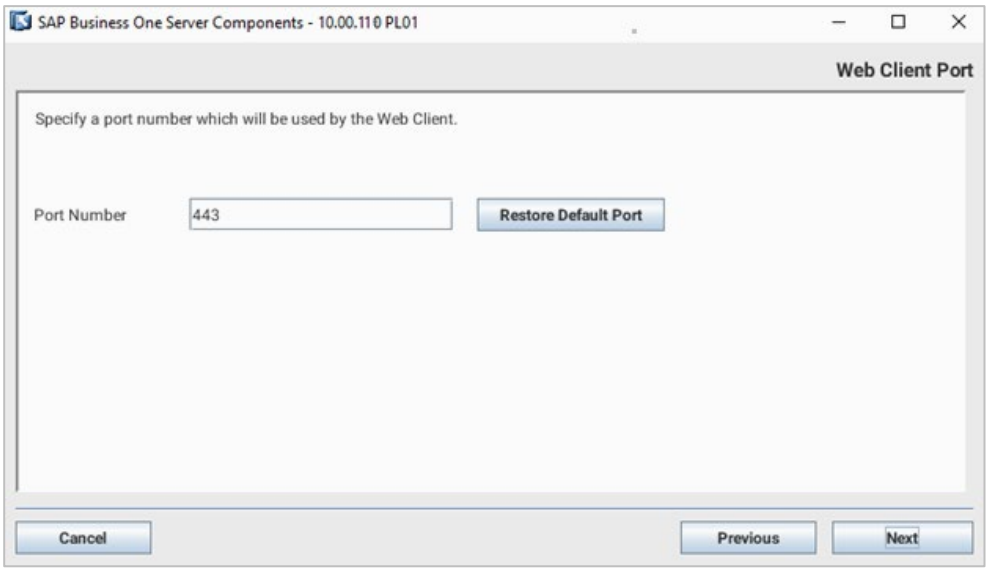
If you have not selected the checkbox, you cannot edit the server address, which is automatically set to **`127.0.0.1`** (`localhost`). All specified load balancer members will be created.

> **Note**
>
> Ipv6 addresses are not allowed.

- *Threads per Load Balancer Member*: The number of threads to be run for each load balancer member.



- In the *Web Client Port* window, specify a port number that is to be used by the Web client and choose *Next*. The default port number is `443`. The port number must be within the 0-65536 range.



Note

Due to a limitation in SAP Business One 10.0 PL00 and PL01, after you install the Web Client and subsequentially register the Web Client on a service unit in the Cloud Control Center (see *Registering Software Components or Storage to Existing Service Units*), you need to restart the service by performing the following steps:

1. Log on to the Linux server as `root`.
2. In a command line terminal, navigate to the directory

   `…/user/sap/SAPBusinessOne/WebClient` where the `startup.sh` script is located.
3. Restart the program from the command line by entering the following command:

   ```
   sh startup.sh restart
   ```

   The restart process begins.

4.7 Installing the Integration Component for SAP Business One

The integration component for SAP Business One is an optional component that enables users to use dashboards, work with mobile devices, and integrate with third-party services. Each service unit requires a dedicated integration component instance.

For more information about installing and configuring the integration component, see *Working with the Integration Framework of SAP Business One in Cloud Environments* on SAP Help Portal.

Recommendation

Install the integration component to provide users with full SAP Business One functionality and mobile device access. You should install the integration component on the same server as the database instance that contains common databases.

Note

As a security enhancement as of SAP Business One version 10.0, when you use the integration framework to connect to the DI API, you must enter the database user and database password each time. This is the case for both B1DI (*dbUser*, *dbPassword*) and JDBC (*username*, *password*) connection details.

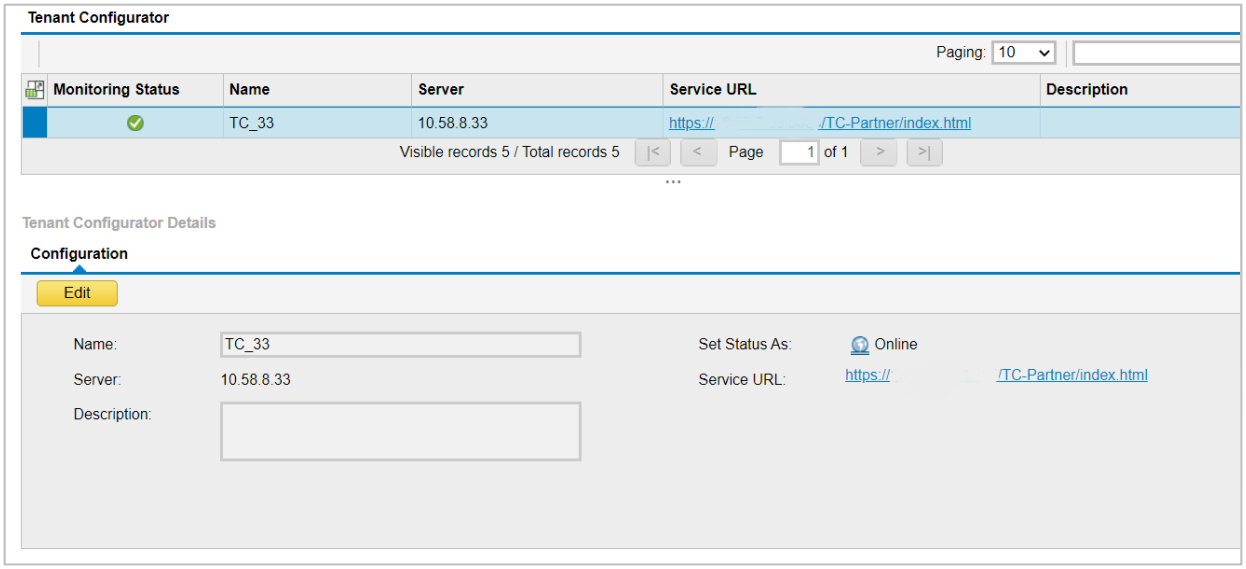
For more information about database user management in SAP Business One Cloud, see the section Database User Management in the *Administrator's Guide for SAP Business One Cloud* on SAP Help Portal.

4.8 Installing the Tenant Configurator for SAP Business One Cloud

The Tenant Configurator for SAP Business One Cloud is a solution that allows you to automate the tenant configuration and creation process in the cloud so that you can focus on accelerating the volume of your business.

By using a preconfigured solution prepared in advance for your target customer groups, you can minimize the effort in configuring and creating tenants each time customers of the same group make a request. The solution is integrated into the partner's onboarding process and is suitable for partners using business models with preconfigured solutions for a specific target group of customers, such as OEM agreements, packaged solutions, and vertical and micro-vertical solutions.

After installing the solution on your machine, the installed Tenant Configurator for SAP Business One Cloud is displayed In the Cloud Control Center, on the *Tenant Configurator* page (*Service Unit Components* → *Tenant Configurator*). To access the Tenant Configurator for SAP Business One Cloud, use the link in the *Service URL* field.



For more information on installing, configuring, and working with the Tenant Configurator for SAP Business One Cloud, see *How to Work with the Tenant Configurator for SAP Business One Cloud* on SAP Help Portal or in the *TenantConfigurator* folder in the root folder of the SAP Business One Cloud installation package.

You can also find training sessions on the Tenant Configurator for SAP Business One Cloud at the following link: https://businessone.litmos.com/self-signup/ (you must enter registration code **2104111**).

5 Managing Remote Access

You can use a variety of remote access solutions to provide remote access to SAP Business One, for example Microsoft Remote Desktop Services (RDS) or Citrix.

A typical Microsoft RDS landscape includes the following components:

- User Access Portal – A web server that hosts a customized landing page where registered SAP Business One Users can enter their logon credentials to remotely access the SAP Business One client application.
- Remote Desktop Gateway – Creates secure, encrypted connections across firewalls and network address translators. The remote desktop gateway enables users to connect to remote machines in the network from any location, without the need for a virtual private network (VPN) connection.
- Connection Broker – Responsible for connecting users to virtual desktops on presentation servers with sufficient available capacity.
- RD Licensing Server – Manages RDS client access licenses that are required for remote connections.

5.1 Customizing the User Access Portal

The user access portal (UAP) is a landing page on which users can enter their logon credentials to remotely access the SAP Business One application. For more information, see *Installing the User Access Portal*.

UAP is a simple HTML page. Administrators are free to modify the visual aspects according to their company's visual needs. For example, they can add URLs or specify company logos, texts, and so on.

For more information about customizing the user access portal, see www.microsoft.com.

5.2 Working with Microsoft Office

SAP Business One enables users to export reports and documents to Microsoft Excel and Microsoft Word. You can enable users to work with Microsoft Office using a number of methods, including those listed below.

> **Note**
>
> As of SAP Business One 1 Cloud 1.1, the SAP Business One Cloud Terminal Service Plugin (B1ODTS) is no longer supported.

5.2.1 Disk Sharing

For more information about mapping client drives, see *Client Drive Mapping*.

5.2.2 Local Drive Mapping

You can use local drive mapping to enable users to access documents on the cloud side, for example using one of the following methods:

1. Virtual storage through WebDAV
2. Automatic mapping of user storage

5.2.2.1 Setting Up Virtual Storage Using WebDAV

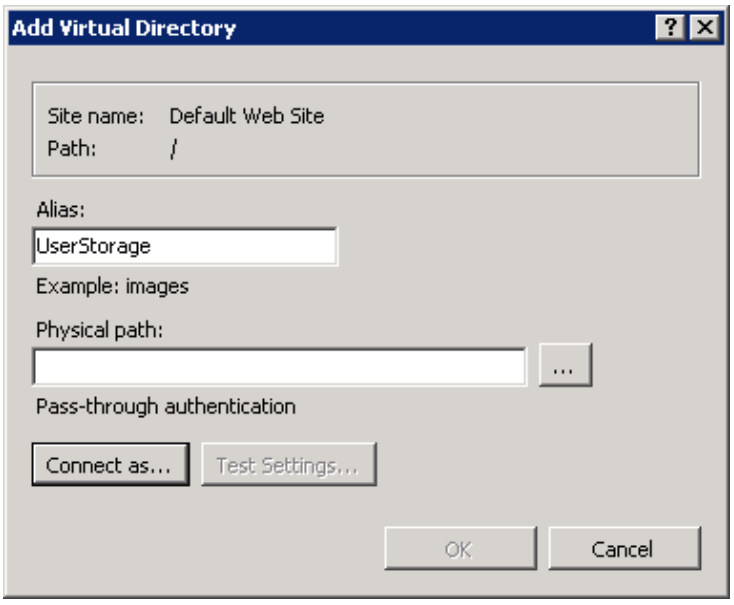
Prerequisites

- You have installed Microsoft Internet Information Services (IIS) on the machine on which the user storage is located. For more information about installing and configuring IIS, see www.microsoft.com.
- You have enabled WebDAV for IIS.
- You have enabled Digest Authentication for IIS.

Procedure

To enable users to access their personal subfolders in the user storage using the WebDAV protocol, perform the following:

1. In Windows, choose *Start* → *Administrative Tools* → *Server Manager*.
2. In the *Console Tree*, expand *Roles* → *Web Server (IIS)* → *Internet Information Services (IIS) Manager*.
3. In the *Connections* pane, expand the *Sites* node in the tree, right click *Default Web Site*, and then select *Add Virtual Directory* from the context menu.
4. In the *Add Virtual Directory* window, specify the following:
   - *Alias* – Enter **`UserStorage`**.
   - *Physical path* – Enter the full UNC path to the Windows shared folder that you have configured as user storage.



5. To close the window, choose the *OK* button.
6. Configure the WebDAV authoring rules:
    1. In the *Connections* pane, expand *Sites* → *Default Web Site* → *User Storage*.
    2. In the *IIS* area, double-click *WebDAV Authoring Rules*.
    3. In the *Actions* pane, choose *Add Authoring Rule*.
    4. In the *Add Authoring Rule* window, do the following:
        - In the *Allow access to* area, select the *All Content* radio button.
        - In the *Allow access to this content to* area, select the *All users* radio button,
        - In the *Permissions* area, select the *Read*, *Source*, and *Write* checkboxes.

5.2.2.2 Setting Up Automatic Mapping of User Storage

Prerequisites

You have created user storage. For more information, see *Creating User Storage*

Procedure

To enable the automatic mapping of user storage to the `Z` drive on presentation servers when users log on to SAP Business One Cloud, use a group policy object to configure the following logon script for each domain user:

```
net use Z: \\<StorageServer>\UserStorage\%USERNAME%
```

5.2.3 SAP Business One Microsoft 365 Integration

With the SAP Business One Microsoft 365 integration feature, you can use Microsoft Office Word and Excel, Outlook, storage space, and other components in the cloud. The SAP Business One Microsoft 365 integration feature is available as of SAP Busines One Cloud 1.1 PL17. To use SAP Business One Microsoft 365 integration in SAP Business One Cloud, make sure you have registered the job service component in your service unit.

For more information, see *How to Work with SAP Business One Microsoft 365 Integration* on SAP Help Portal.

5.3 Supporting Local Printing

Both Microsoft RDS and Citrix support redirecting print jobs to client machines, and can provision locally attached and network printers.

For more information about printing, see the corresponding documentation for your remote access solution.

5.4 Client Drive Mapping

Both Microsoft RDS and Citrix support mapping client drives, which enables users to access their locally stored files during remote sessions to, for example, attach files in SAP Business One.

For information about mapping client drives, see the corresponding documentation for your remote access solution.

6 Registering Components Using the Cloud Control Center

This section describes how to use the Cloud Control Center to register the components you previously configured in the System Landscape Directory (SLD). Once components are registered, you can use the Cloud Control Center to group components into service units to provide tenants with access to SAP Business One.

To access the Cloud Control Center, in a web browser, enter the machine name or IP address of the landscape server on which you have installed the SAP Business One Cloud components.

Example

```
https://landscapeservername/
```

In the Cloud Control Center, you can register the following components:

- License servers
- Database instances
- Storage (see Registering Storage)
- Presentation servers
- Web Client for SAP Business One
- Browser Access Servers
- Integration framework for SAP Business One
- Job service
- Analytics services
- App frameworks
- Service Layers
- Mobile services
- Electronic Documents Services

When registering these components, you can register multiple components of the same type in the corresponding window one after the other. After completing the registration process, you can create common databases. Alternatively, if you have already created a common database, you can register existing databases.

Caution

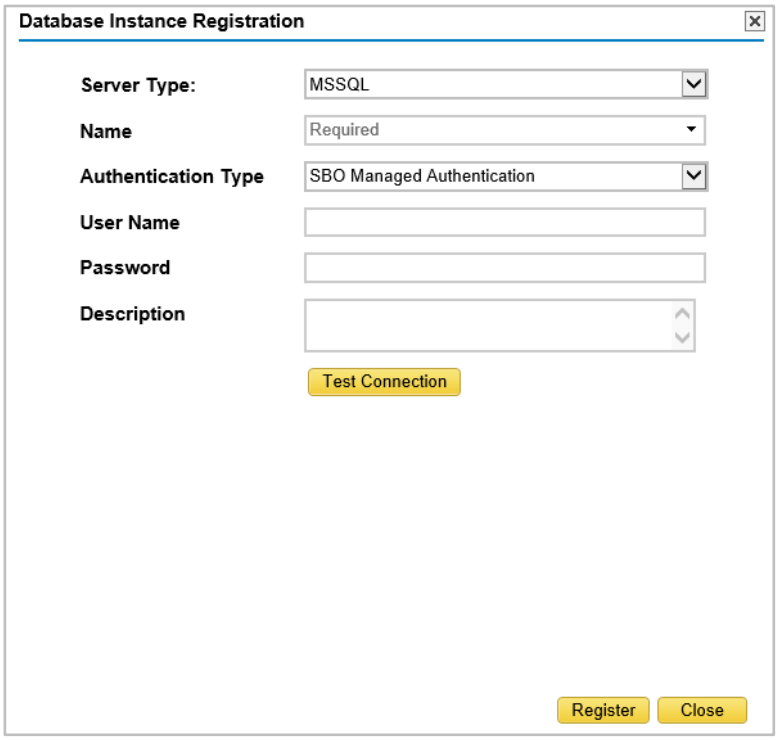
In order to register components in the Cloud Control Center, you must first configure the server landscape. For more information, see *Configuring the Server Landscape*.

6.1 Registering Database Instances

6.1.1 Registering Microsoft SQL Server Database Instances

1. In the Cloud Control Center, choose *Service Unit Components* → *Database Instances*, and then choose the *Register* button.

   The *Database Instance Registration* window appears.



2. In the *Database Instance Registration* window, specify the following:
   - *Server Type* – From the dropdown list, select the *MSSQL* option to register a Microsoft SQL Server database instance.
   - *Name* – Enter the database instance you want to register or select a database instance from the dropdown list.
   - *Authentication Type* – From the dropdown list, select the type of authentication used for connections between the SAP Business One client and the tenant's company database. For a Microsoft SQL Server database instance, select the authentication method used by the database. If you choose *SBO Managed Authentication*, specify the user name and password to authenticate the database.

     Note

     As of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available as an authentication type option when registering new database instances. By default, *SBO Managed Authentication* is displayed in the *Authentication Type* field. Existing database instances with Windows Authentication will not be changed after upgrading. If you choose to change the authentication type of an

existing database instance to SBO Managed Authentication *(Service Unit Components → Database Instances → Database Instance Details → Configuration →* *Edit* button *→ Authentication Type* field), note that this is an irreversible change.

- *Description* – Enter an optional description for this database instance.

3. To verify the database instance exists and is available, choose the *Test Connection* button.
4. To complete the registration process, choose the *Register* button.

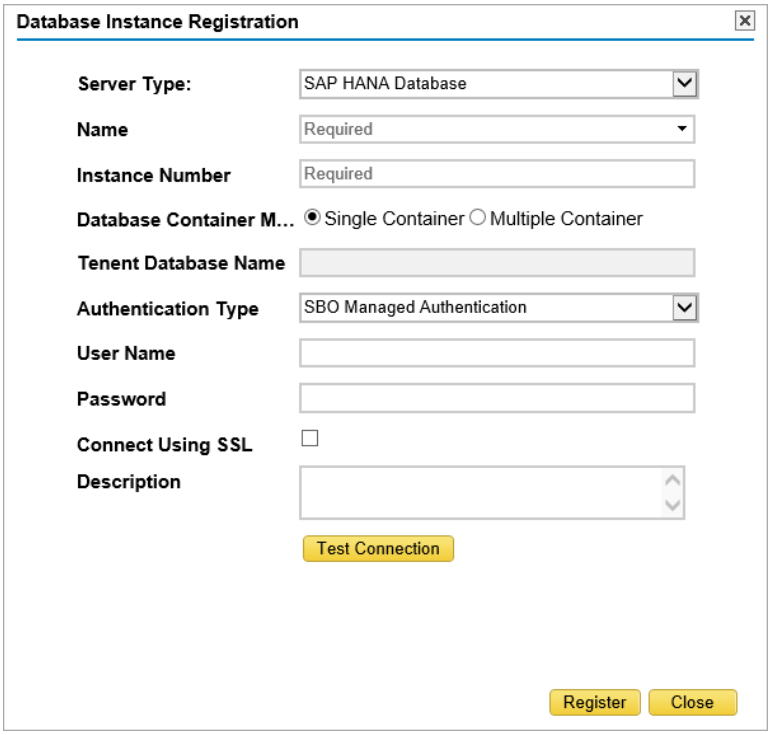
6.1.2 Registering SAP HANA Server Database Instances

1. In the Cloud Control Center, choose *Service Unit Components* → *Database Instances*, and then choose the *Register* button.

   The *Database Instance Registration* window appears.
2. In the *Database Instance Registration* window, specify the following:
   - *Server Type* – From the dropdown list, select the *SAP HANA Database* option to register an SAP HANA database instance.
   - *Server Name* – Enter the database instance you want to register or select a database instance from the dropdown list.
   - *Instance Number* – Enter database instance number (for example: 00).
   - *Database Container Mode* – Specify the database container mode by selecting the *Single Container* or *Multiple Container* radio button.

     Note

     To use multiple database containers, before proceeding with these steps, you need to follow the procedure specified in Installing SAP HANA 2.0 in a Cloud Environment to Enable Multiple Database Containers or Setting Up Multiple Database Containers in an Existing SAP HANA 2.0 Environment.
   - *Tenant Database Name* – If you chose *Multiple Container* as the database container mode, enter the tenant database name.



- *Authentication Type* – From the dropdown list, select the type of authentication used for connections between the SAP Business One client and the tenant's company database. When using SBO Managed Authentication, specify the user name and password to authenticate the database.

  Note

  For the server authentication, note that you must use the *SBO Managed Authentication* option, as the Windows Authentication option is not supported.

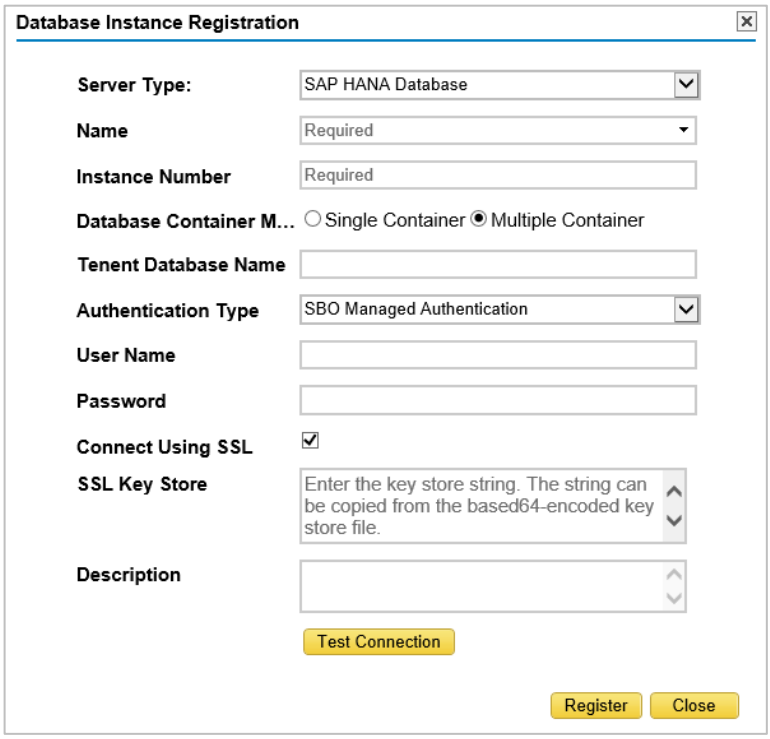
- *Connect Using SSL* – You may choose to enable secure communication between the SLD and SAP HANA database using the Secure Sockets Layer (SSL) protocol. To do so, perform the following:

  1. Navigate to a SSL keystore file in a local user directory in which the Cloud Control Center is installed. For more information about keystore, see *SAP HANA Administration Guide* at http://help.sap.com/hana_platform.
  2. Transfer the file to your Linux machine.
  3. Convert the format of the keystore file from binary data into base64 encoding.

     You can use the following Linux server command (or a third-party tool) to convert the keystore file:

     ```
     base64 -w 0 .keystore >"<file-of-base64>"
     ```

     For example: `base64 -w 0 .keystore >keystore.txt`
  4. Transfer the `base64 keystore.txt` file to the Windows machine on which the Cloud Control Center is installed.
  5. Open the `base64 keystore.txt` file and copy the string.
  6. In the Cloud Control Center, in the *Database Instance Registration* window, select the *Connect Using SSL* checkbox.
  7. In the *SSL Key Store* field, paste the string you copied from the keystore file.



> **Note**
>
> After enabling the connection using SSL, you can specify only the hostname of the database server or the FQDN (fully qualified domain hostname) with the port of the SAP HANA machine (for example, `hanab1.b1c.local:30015`) in the *Name* field rather than the IP address.

- *Description* – Enter an optional description for this database instance.

3. To verify the database instance exists and is available, choose the *Test Connection* button.
4. To complete the registration process, choose the *Register* button.

6.1.2.1 Configuring SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers

This section describes how to configure SAP HANA Platform Edition 2.0 in your cloud environment to enable you to work with multiple database containers.

> **Note**
>
> You need to complete this procedure before registering the multiple container database in the Cloud Control Center.

> **Note**
>
> The SAP HANA system database is used to manage tenant databases and the default tenant database is used to install SAP Business One.

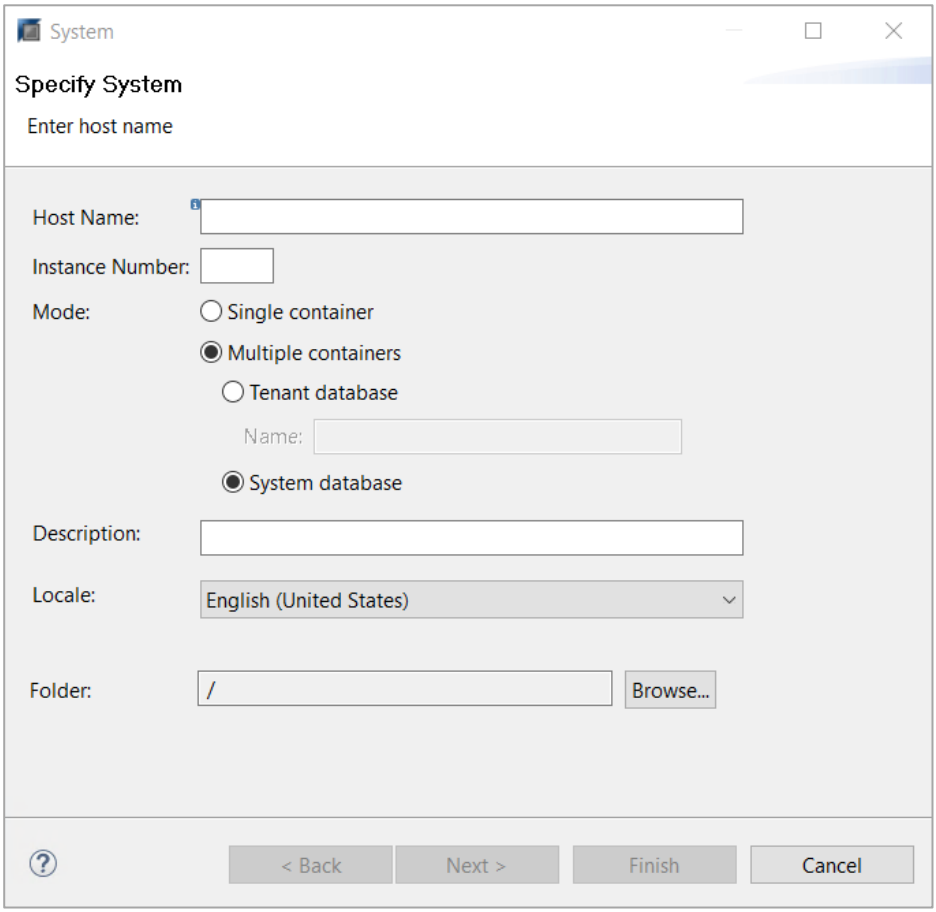
Prerequisites

- You have installed an SAP HANA Platform Edition 2.0 server. For more information, see the SAP HANA installation guides on SAP Help Portal at https://help.sap.com/hana_platform.
- You have installed the SAP HANA client on a Linux server. For more information, see the *SAP HANA Client Installation and Update Guide* on SAP Help Portal.

Procedure

As a result of the of SAP HANA 2.0 installation, two databases are created: a system database (for example, *SYSTEMDB@NBD(SYSTEM)*) and a default tenant database (for example, *DEV@NDB(SYSTEM)*). You need to connect to the system database and default tenant database in SAP HANA studio and then register the default tenant database in the Cloud Control Center. To do so, perform the following:

1. Log on to the SAP HANA studio.
2. To connect to the system database, in the *Systems* list, right-click a blank space and choose *Add System*...
3. In the *Specify System* window, in the *Mode* field, select *Multiple containers* and *System database.*



4. In the *Description* field, enter a description for the system (for example, *SYSTEMDB*) and then choose *Next*.
   The description will be displayed in the list of systems in the *Systems* panel.

5. In the *Connection Properties* window, choose *Authentication by database user*, enter your user name and password, and choose *Finish*.

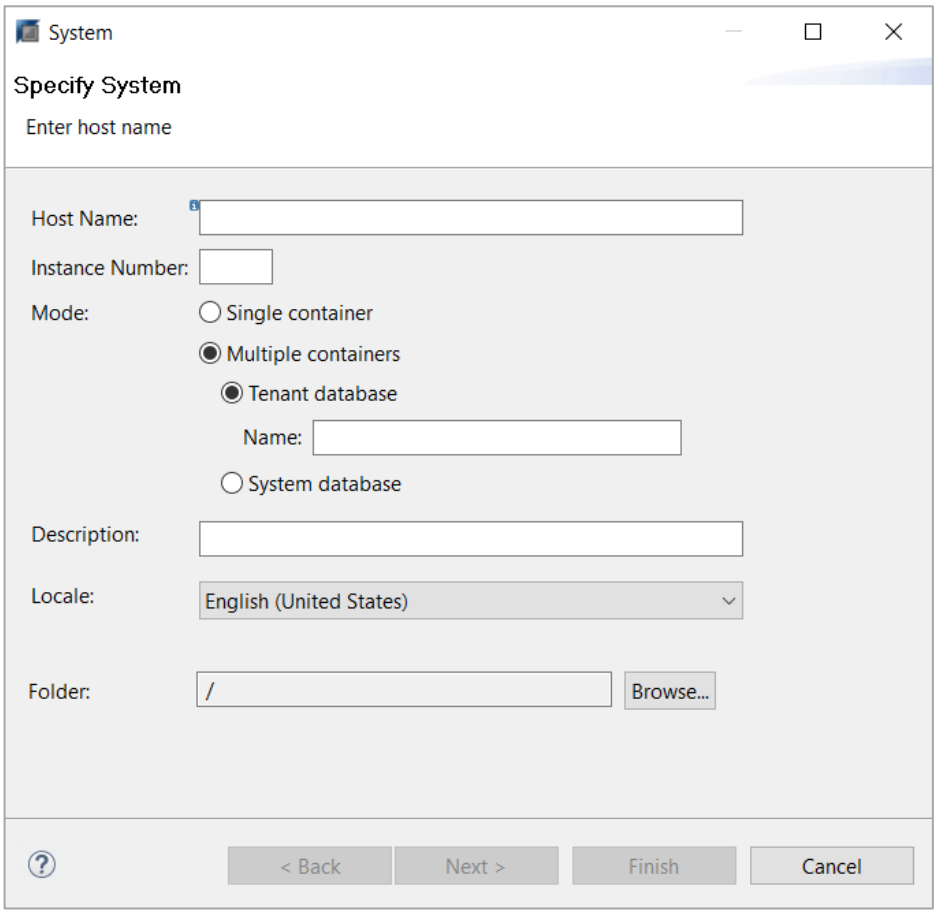
   As a result, you can see the new system database in the Systems list.

6. To check that the two databases were successfully created, right-click the system database, choose *Open an SQL Console*, and run the following SQL statement:

   ```
   SELECT * FROM "SYS_DATABASES"."M_SERVICES";
   ```

7. To connect to the default tenant database in SAP HANA studio, perform the following:

   1. In the Systems list, right-click a blank space and choose *New System*.
   2. In the *Specify System* window, in the *Mode* field, select *Multiple containers* and *Tenant database*.



   3. In the *Name* field, enter a name for the tenant (for example, *NDB*) and then choose *Next*.

8. In the Cloud Control Center, register the tenant database as a database instance and set up the service unit. For more information, see Registering SAP HANA Server Database Instances.

6.1.2.2 Setting Up Multiple Database Containers in SAP HANA 2.0 Environments

This section describes how to set up multiple database containers in an existing SAP HANA 2.0 environment.

Procedure

To create a new tenant database in an existing SAP HANA 2.0 environment, perform the following steps:

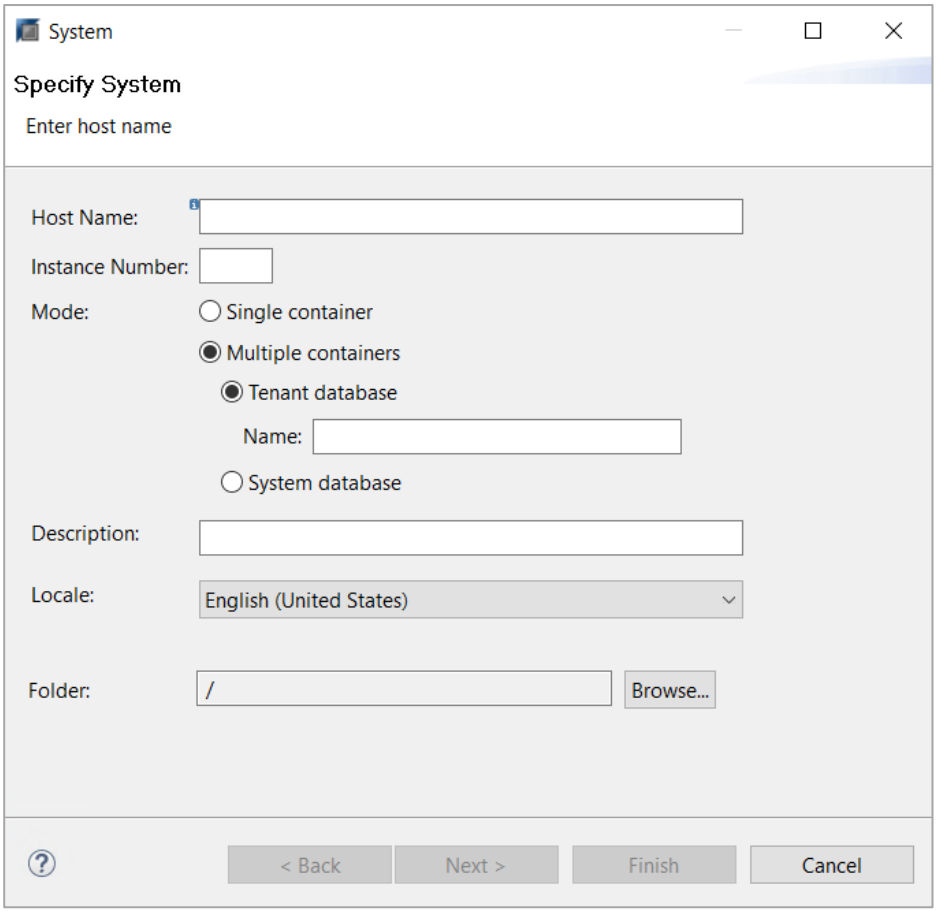
1. Log on to the SAP HANA studio.
2. Connect to the SYSTEM database (see Steps 1-5 in Installing SAP HANA 2.0 in Cloud Environments to Enable Multiple Database Containers).
3. To create a new tenant, right-click the system database, choose *Open an SQL Console*, and run the following SQL statement:

   ```
   --with script server
   create database <database name> ADD 'scriptserver' system user password <system user password>;
   ```

4. To check that the tenant database was successfully created, right-click the system database, choose *Open an SQL Console*, and run the following SQL statement:

   ```
   SELECT * FROM "SYS_DATABASES"."M_SERVICES";
   ```

5. To connect to the new tenant database in SAP HANA studio, perform the following:
   1. In the Systems list, right-click a blank space and choose *New System*.
   2. In the *Specify System* window, in the *Mode* field, select *Multiple containers*.



   3. In the *Name* field, enter a name for the tenant database and then choose *Next*.
6. In the Cloud Control Center, register the tenant database as a database instance and set up the service unit. For more information, see Registering SAP HANA Server Database Instances.

Result

In the Cloud Control Center, choose *Service Unit Components* → *Database Instances*. You will see that for one SAP HANA database instance, there are two tenant databases.

For additional SQL statements related to managing tenant databases, see the *SAP HANA SQL Reference Guide for SAP HANA Platform* on SAP Help Portal.

6.1.2.3 Deleting SAP HANA Tenant Databases

Procedure

To delete an existing tenant database in an SAP HANA 2.0 environment, perform the following:

1. Log on to the SAP HANA studio.
2. Right-click the system database, choose *Open an SQL Console*, and run the following SQL statement:

```
--Stop Manage Tenant database ;
alter system stop database <tenant database name>;
-- drop Tenant (Stop it first)
drop database <tenant database name>;
```

3. To check that the tenant database is deleted, run the following SQL statement:

```
SELECT * FROM "SYS_DATABASES"."M_SERVICES"
```

6.2 Registering License Servers

Prerequisites

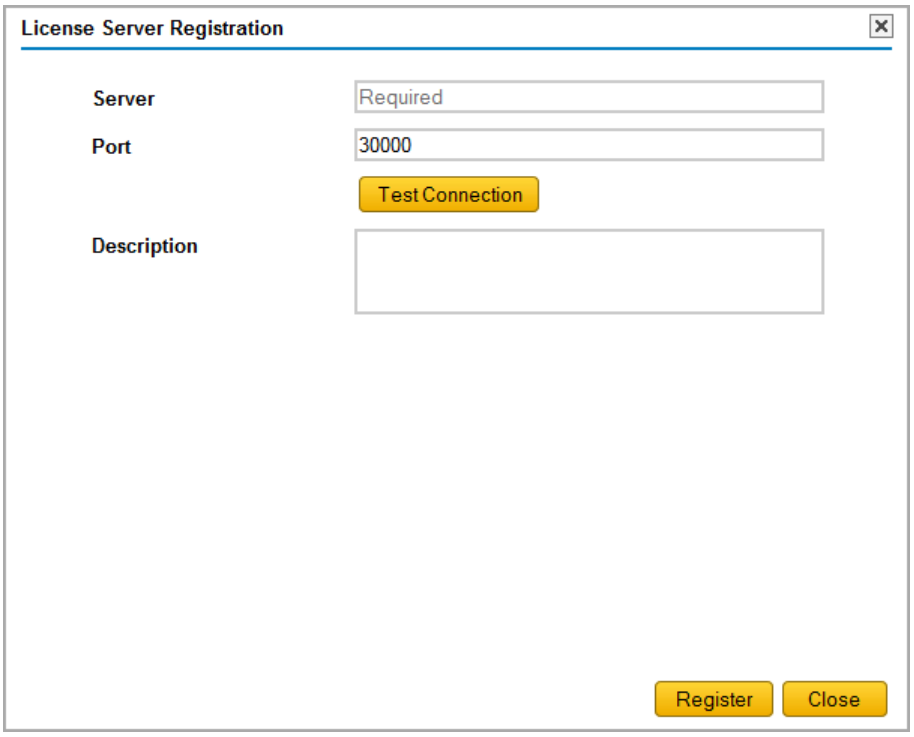
The license manager is running. For more information about the license manager, see the *SAP Business One Administrator's Guide*.

Procedure

To register an SAP Business One License Server, do the following:

1. In the Cloud Control Center, choose *Central Components* → *License Servers*, and then choose the *Register* button.

   The *License Server Registration* window appears.



2. In the *License Server Registration* window, specify the following:
   - *Server* – Enter the full UNC path or IP address of the license server.
   - *Port* – Enter the port number that you previously configured this license server to use.

     Note

     The port number is set by default to `30000`.
   - *Description* – Enter an optional description for this license server.
3. To verify the license server exists and is available, choose the *Test Connection* button.
4. To complete the registration process, choose the *Register* button.

6.3 Registering Presentation Servers

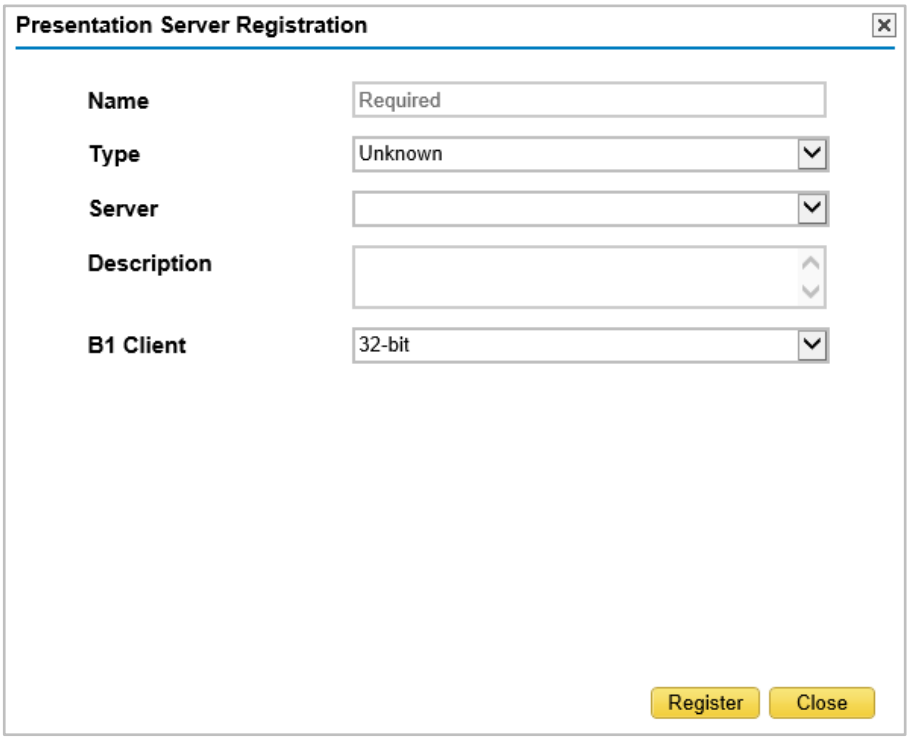
Note

In this procedure, SLD checks whether the SLD Agent is installed and is available. Nothing will be installed on the machine.

To register a presentation server, do the following:

1. In the Cloud Control Center, choose *Service Unit Components* → *Presentation Servers*, and then choose the *Register* button.

   The *Presentation Server Registration* window appears.



2. In the *Presentation Server Registration* window, specify the following:
   - *Name* – Enter the host name of this presentation server.
   - *Type* – Specify whether the server uses Microsoft Remote Desktop Services or Citrix to provide remote access to SAP Business One. If you are unsure, select *Unknown* from the dropdown list.
   - *Server* – Select the relevant presentation server from the dropdown list.

     Note

     Ensure that the version of the SLD Agent you have installed on all machines is the same as that of the Cloud Control Center.
   - *Description* – Enter an optional description for this presentation server.
3. To complete the registration process, choose the *Register* button.

6.4 Registering Browser Access Servers

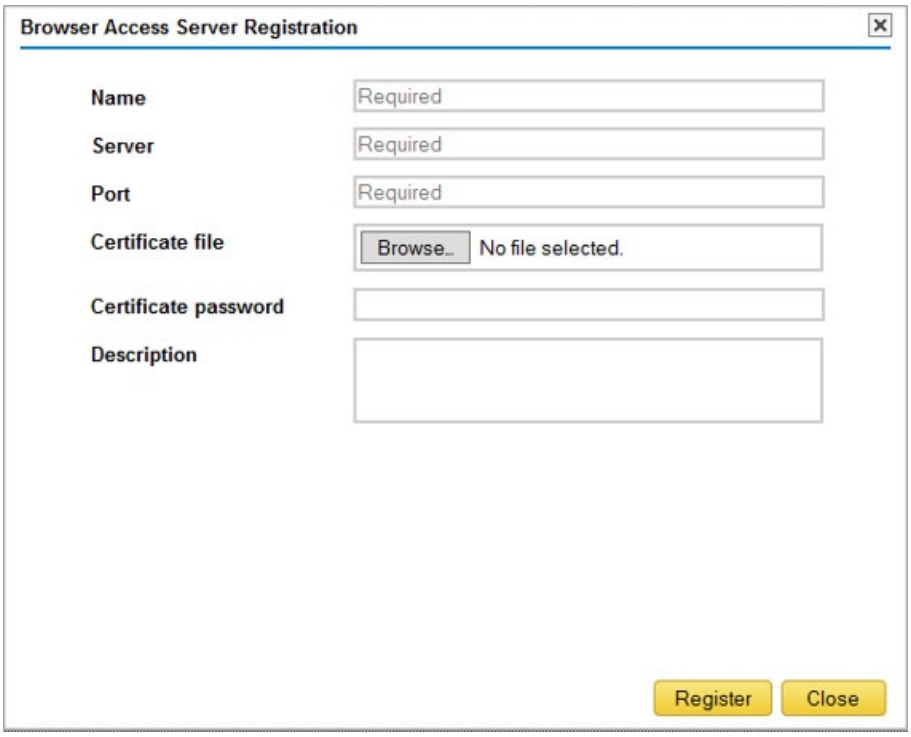
Note

In this procedure, SDL checks whether the SLD Agent is installed and is available. Nothing will be installed on the machine.

Procedure

To register a Browser Access server, do the following:

1. In the Cloud Control Center, choose *Service Unit Components* → *Browser Access Servers*, and then choose the *Register* button.
2. The *Browser Access Server Registration* window appears.



3. In the *Browser Access Server Registration* window, specify the following:
   - *Name* – Enter a name for the Browser Access server.
   - *Server* and *Port* – Enter the machine name and the port number of the Browser Access server where the *Browser Access Server Gatekeeper* service will listen. This server must have SLD Agent installed. Make sure that the port is not used by other applications.
   - *Certificate file* and *Certificate password* – Specify a certificate file and password for the Browser Access Server Gatekeeper for HTTPS. If these are not provided, a self-signed certificate will be generated automatically.
   - *Description* – Enter an optional description for the Browser Access server.
4. To complete the registration process, choose the *Register* button.
5. To set the configuration details of the Browser Access servers, in the *Browser Access Server Details* area, on the *Configuration* tab, specify the following fields:
   - *Maximum Processes* [required] – Specify the maximum number of SAP Business One client processes that the Browser Access server can host.
   - *Idle Processes* [required] – Specify the number of standby SAP Business One client processes. When a new SAP Business One user attempts to log on, an idle process is ready for use. The value can be equal or greater than 0 but no greater than the value for initial processes.
   - *Description* [optional] – Enter a description for the Browser Access server.
   - *Service URL* – If necessary, edit the URL used to access the Browser Access service.

     For example, you may want to use the IP address instead of the hostname. Or the hostname, IP address, or port has changed, and you must update the service URL to reflect the changes.

- *Initial Processes* [required] – Specify the initial number of SAP Business One client processes that the Browser Access service hosts. The value can be equal or greater than 0 but no greater than the value for maximum processes.
- *Session Timeout* [required] – Specify the number of minutes (more than 0) after which a session will time out.

  Example:

  Specify the following:

  - *Maximum Processes*: 100
  - *Initial Processes*: 20
  - *Idle Processes*: 2

  Twenty SAP Business One client processes are constantly running on the Browser Access server and allow 20 SAP Business One users to access the SAP Business One client in a Web browser at the same time.

  When the 19th SAP Business One user logs on, one more SAP Business One process is started to ensure that two idle processes are always running in the background.

  If more SAP Business One users attempt to access the SAP Business One client in a Web browser, more idle processes are started. However, a maximum of 100 users are allowed for concurrent access.

6. To save the changes, choose *OK*.
7. To apply the changes immediately, on the Browser Access server, restart the SAP Business One Browser Access Server Gatekeeper service.

6.5 Registering Storage

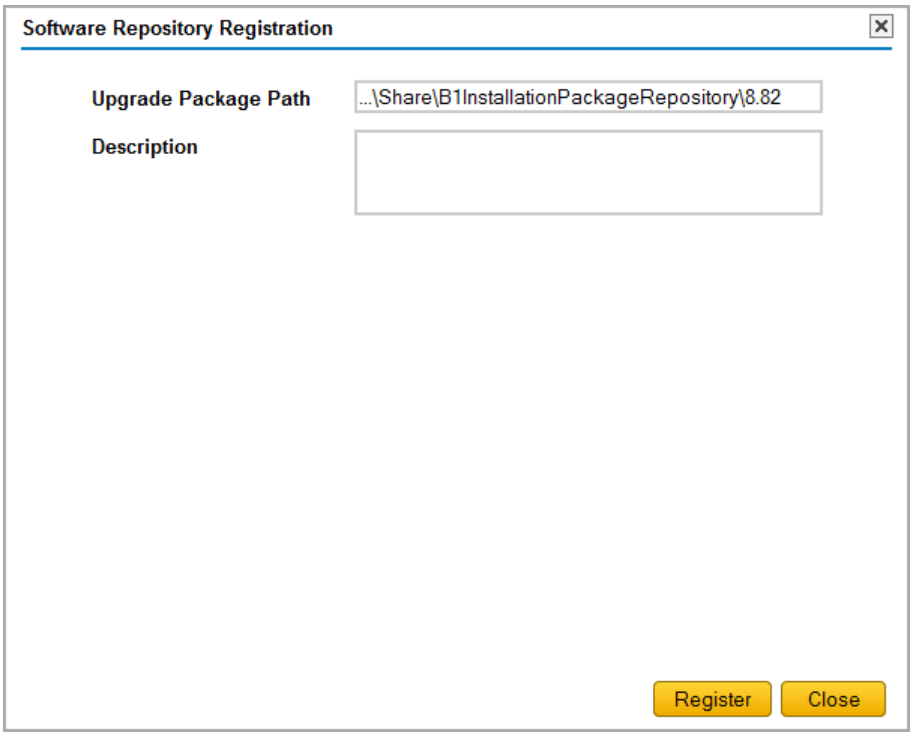
You can register software repositories, shared folders, implementation repositories, company template repositories, tenant storage, and user storage.

6.5.1 Registering Software Repositories

To register a software repository, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *Software Repositories* tab.
2. Choose the *Register* button.

   The *Software Repository Registration* window appears.



3. In the *Upgrade Package Path* field, enter the full path to a folder corresponding to a major release of SAP Business One. For more information, see *Creating Software Repositories*.

   Note

   SAP provides you with a useful command utility for updating the `KEYSTORE` of tomcat. After the completion of the installation process, the utility is installed under `tomcat\bin`. To update the https certificate in `tomcat\conf\server.xml`, run the command:

   `updateKeystore.bat pk12keystore pk12keypass`.

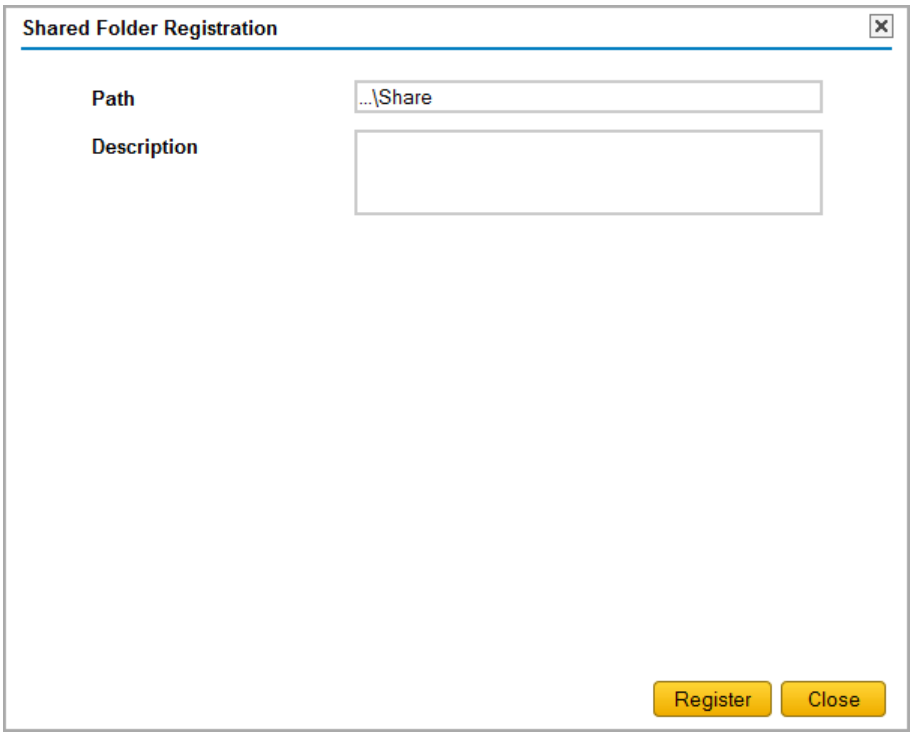
4. To complete the registration process, choose the *Register* button.

6.5.2 Registering Shared Folders

To register a shared folder, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *Shared Folders* tab.
2. Choose the *Register* button.

   The *Shared Folder Registration* window appears.



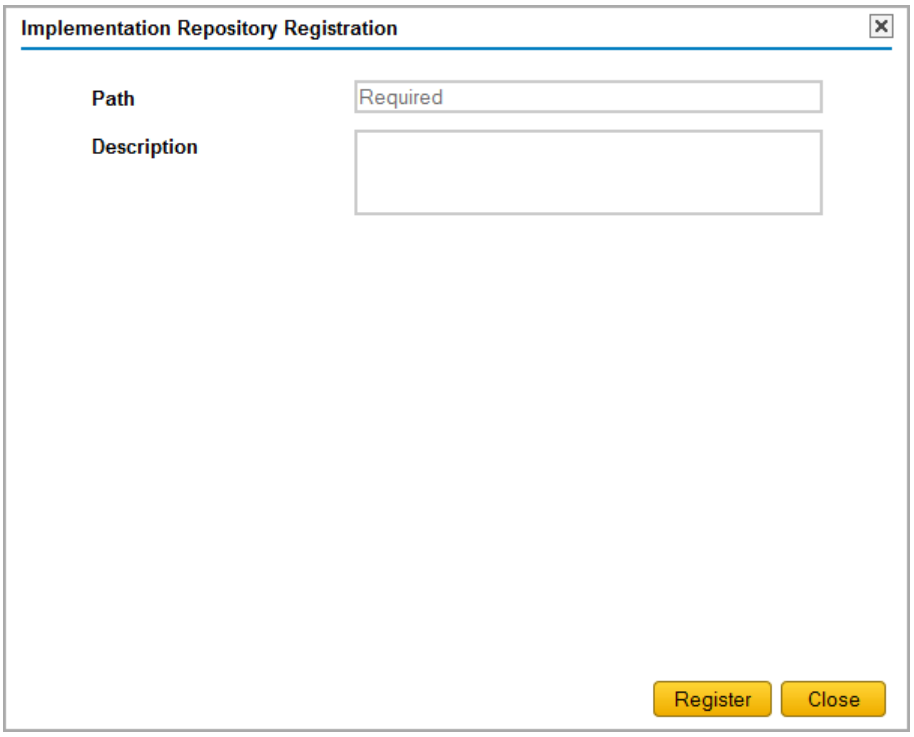
3. In the *Shared Folder Registration* window, specify the following:
   - *Path* – Enter the full UNC path to the shared folder that you want to register.
   - *Description* – Enter an optional description for this shared folder.
4. To complete the registration process, choose the *Register* button.

6.5.3 Registering Implementation Repositories

To register an Implementation Repository, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *Implementation Repositories* tab.
2. Choose the *Register* button.

   The *Implementation Repository Registration* window appears.



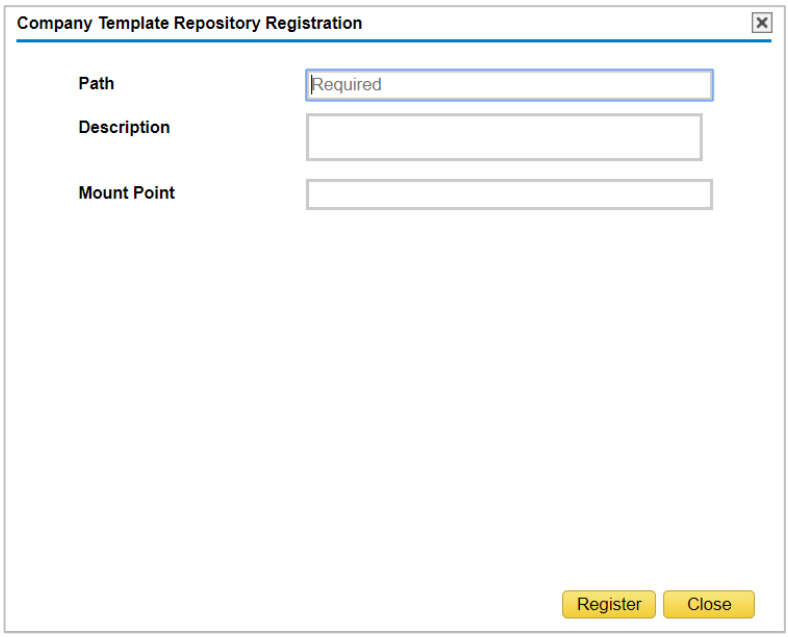
3. In the *Implementation Repository Registration* window, specify the following:
   - *Path* – Enter the full UNC path to the repository that you want to register.
   - *Description* – Enter an optional description for this shared folder.
4. To complete the registration process, choose the *Register* button.

6.5.4 Registering Company Template Repositories

To register a Company Template Repository, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *Company Template Repositories* tab.
2. Choose the *Register* button.

   The *Company Template Repository Registration* window appears.



3. In the *Company Template Repository Registration* window, specify the following:
   - *Path* – Enter the UNC path to the repository that you want to register. Note that only first level shares are supported (for example, `\\server_hostname\Storage\`) and that the terminal backslash is required (`\`).
   - *Description* – Enter an optional description for this shared folder.
   - *Mount Point* – Enter the SAP HANA server mount point directory that is mapped to the Company Template Repository.

     Note

     The mount point can be created by adding a new line to the configuration file `/etc/fstab`. To do so, perform the following:

     1. Create the credentials file: `/root/.cifs` and enter the following lines:

     ```
     username=sapserviceb1c
     password=**password**
     ```

     2. Add a new line to the configuration file `/etc/fstab`, for example:

     ```
     //server_hostname/Storage/mnt/CompanyTemplateRepo cifs
     credentials=/root/.cifs,domain=,uid=adm,forceuid,sec=ntlmssp 0 0
     ```

     3. Either run the command: **`mount -a`** or restart your system.

The `\\server_hostname\Storage` is the Company Template Repository path and `/mnt/CompanyTemplateRepo` is the mount point.

Note

If you are using SAP HANA high availability mode, you need to mount the same point and same folder for both SAP HANA servers.

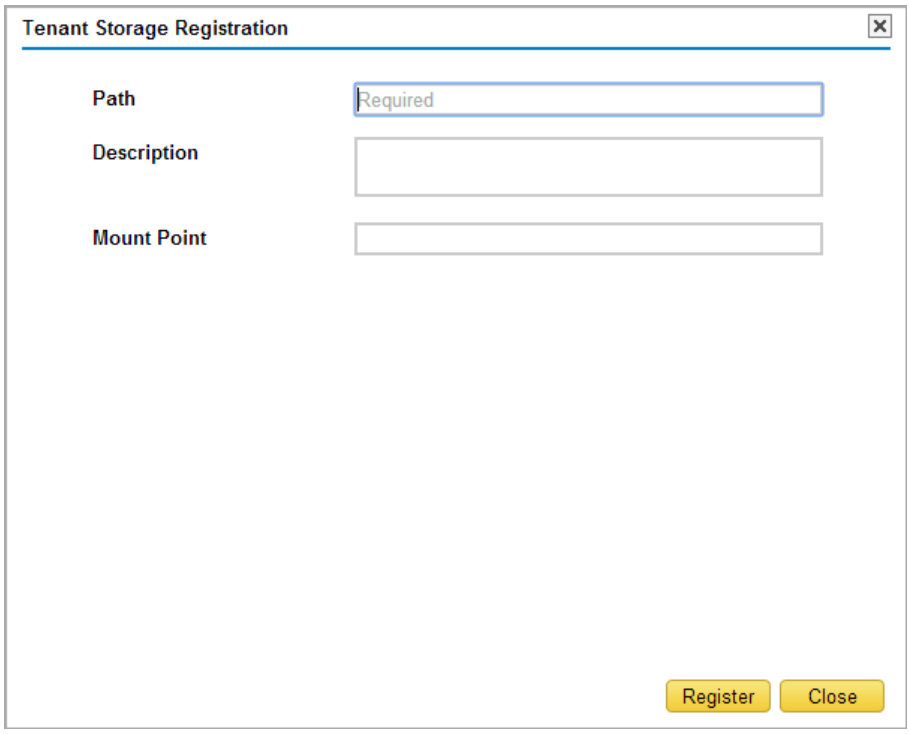
4. To complete the registration process, choose the *Register* button.

6.5.5 Registering Tenant Storage

To register tenant storage, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *Tenant Storage* tab.
2. Choose the *Register* button.

   The *Tenant Storage Registration* window appears.



3. In the *Tenant Storage Registration* window, specify the following:
   - *Path* – Enter the full UNC path to the repository that you want to register.
   - *Description* – Enter an optional description for this tenant storage.
   - *Mount Point* – Enter the SAP HANA server mount point directory that is mapped to the tenant storage path.

     Note

     The mount point can be created either by using a command or by adding a new line to the configuration file `/etc/fstab`. In either case, first create a folder for the mount point, for example: `/mnt/tenantstorage`.

     - To create the mount point temporarily using a command, enter, for example: **`mount -t cifs -o domain=<domain name>,username=sapserviceb1c,pass=**password**,uid=<sid>adm,forceuid '//server_hostname/SharedFolder/tenantstorage' /mnt/tenantstorage.`**
     - To create a permanent mount by adding a new line to the configuration file `/etc/fstab` (**recommended**), do the following:

1. Create the credentials file: `/root/.cifs` and enter the following lines:

```
username=sapserviceb1c
password=**password**
```

2. Add a new line to the configuration file `/etc/fstab`, for example:

```
//server_hostname/SharedFolder/tenantstorage /mnt/tenantstorage cifs
credentials=/root/.cifs,domain=<domain
name>,uid=<sid>adm,forceuid,sec=ntlmssp 0 0
```

3. Either run the command: `mount -a` or restart your system.

In both examples, the `//server_hostname/SharedFolder/tenantstorage` is the tenant storage path and `/mnt/tenantstorage` is the mount point.

Note

If you are using SAP HANA high availability mode, you need to mount the same point and same folder for both SAP HANA servers.

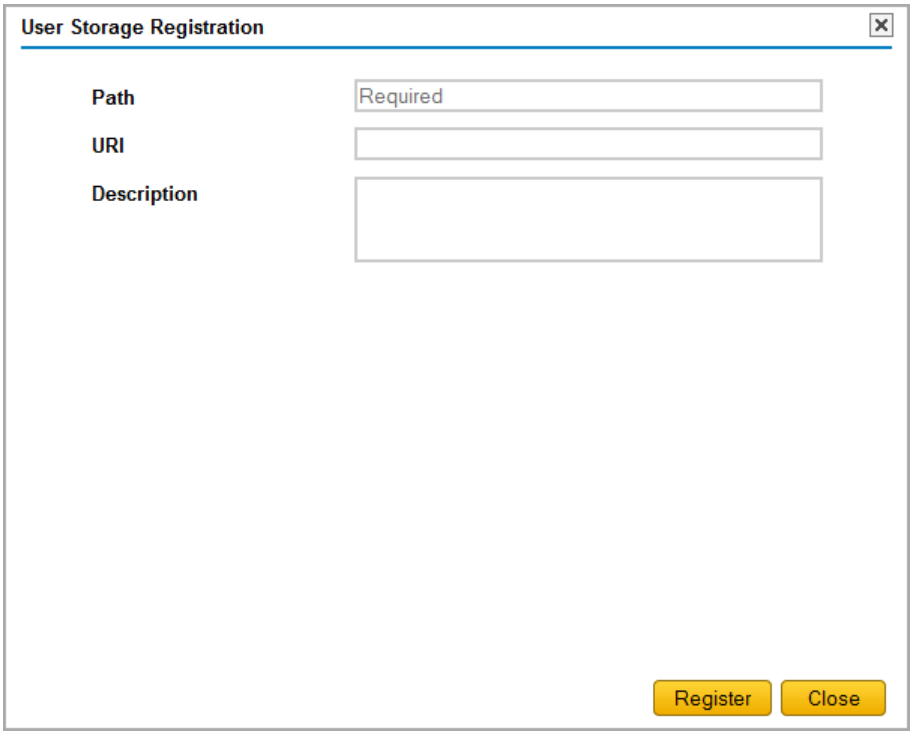
4. To complete the registration, choose the *Register* button.

6.5.6 Registering User Storage

To register user storage, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Storage*, and then select the *User Storage* tab.
2. Choose the *Register* button.

   The *User Storage Registration* window appears.



3. In the *User Storage Registration* window, specify the following:

- *Path* – Enter the full UNC path to the repository that you want to register.
- *URI* – Enter a URI to enable users to access their dedicated storage using WebDAV or FTP protocols.
- *Description* – Enter an optional description for this user storage.

4. To complete the registration, choose the *Register* button.

6.6 Registering and Creating Common Databases

A common database is a central database containing system data, client application update packages, and add-on installers. Multiple tenants in the same service unit share a single common database. You can create new common databases in the Cloud Control Center or register existing common databases.

6.6.1 Registering Common Databases

Prerequisites

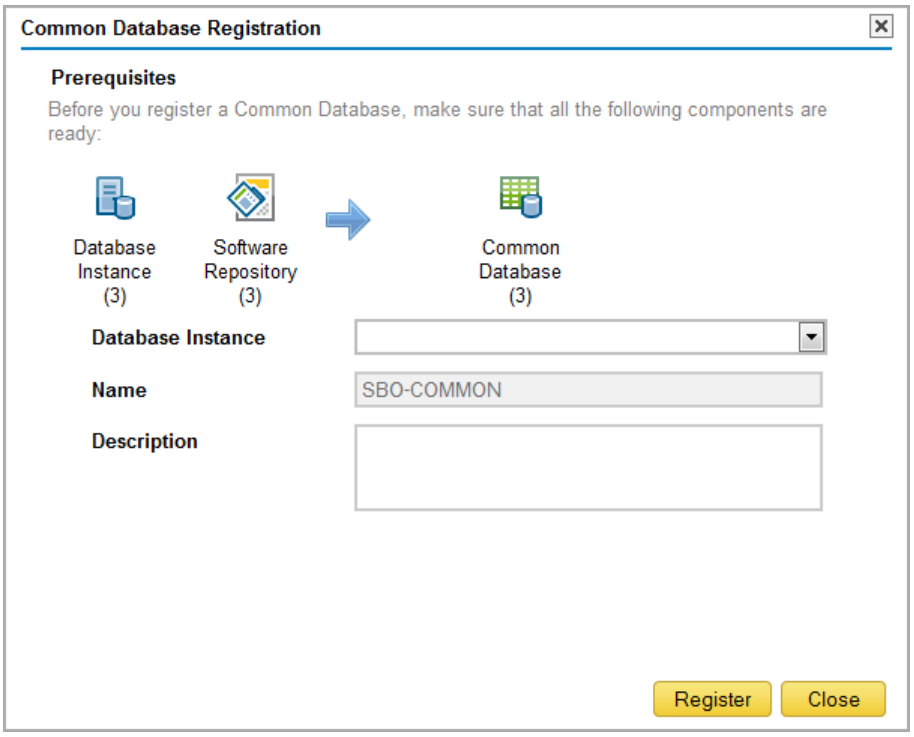
You have created a common database.

Procedure

To register a common database, do the following:

1. In the Cloud Control Center, choose *Service Unit Components*→ *Common Databases*, and then choose the *Register* button.

   The *Common Database Registration* window appears.



2. In the *Common Database Registration* window, specify the following:
   - *Database Instance* – Select the corresponding database instance from the dropdown list.
   - *Description* – Enter an optional description for this server instance.

     Note

     The name is set by default to `SBO-COMMON`.
3. To complete the registration process, choose the *Register* button.
4. Repeat the previous steps to register additional common databases.
5. Choose the *Close* button.

6.6.2 Creating Common Databases

Prerequisites

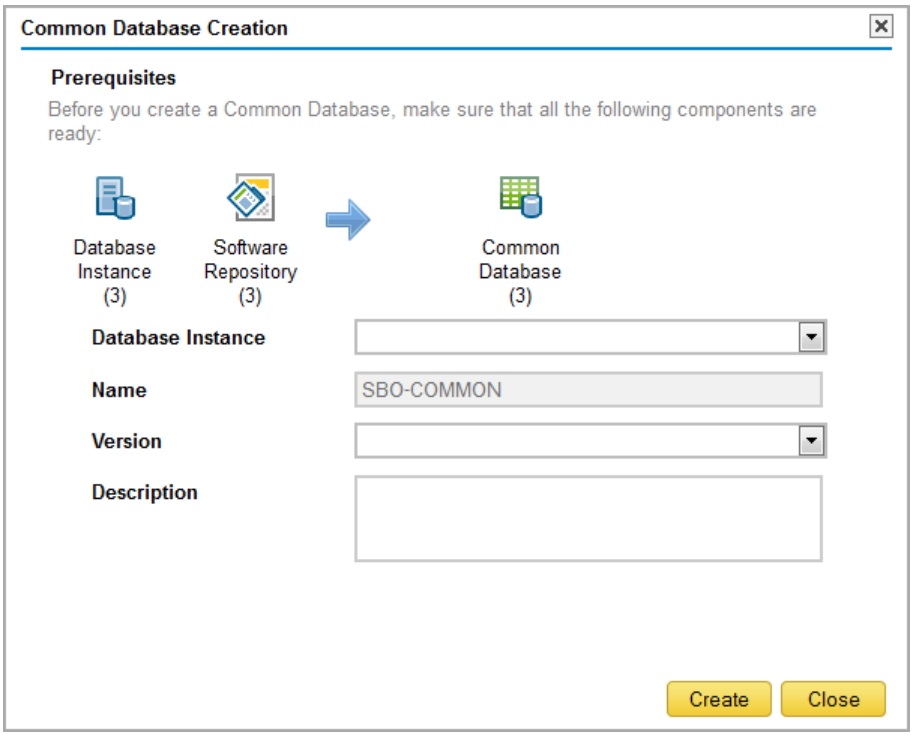
You have registered the corresponding database instance for the common database that you want to create. For more information, see *Registering Database Instances*.

Procedure

To create a common database, do the following:

1. In the Cloud Control Center, choose *Service Unit Components*→ *Common Databases*, and then choose the *Create* button.

   The *Common Database Creation* window appears.



2. In the *Common Database Creation* window, specify the following:
   - *Database Instance* – Select the corresponding database instance from the dropdown list.
   - *Version* – Select the corresponding version of SAP Business One from the dropdown list.
   - *Description* – Enter an optional description for this server instance.

     Note

     The name is set by default to `SBO-COMMON`.
3. To complete the creation process, choose the *Create* button.
4. Repeat the previous steps to create additional common databases.
5. Choose the *Close* button.

7 Managing Service Units

After registering infrastructure components in the SLD, you can group registered components together into service units. Depending on your requirements, you can create trial, staging, productive, demo, and testing service units.

A service unit is a collection of the software components, servers, and storage required to provide access to a full SAP Business One installation. All SAP Business One components in a single service unit have the same version and add-ons. A single service unit can contain multiple tenants with similar requirements.

7.1 Creating Service Units

To provide users with access to a full installation of SAP Business One, you must first create a new service unit. After creating a service unit, you can create tenants in the service unit.

As a cloud operator, you can control the maximum number of tenants that can be created on the service unit. The tenant limit can be set while creating the service unit using the Service Unit Creation Wizard (*Basic Settings*) and changed at any time in *Central Components* → *Service Units* → *Service Unit Details* area → *Configuration* tab.

Prerequisites

You have configured the following components and registered them in the SLD using the Cloud Control Center:

- Database Instance
- Software Repository
- License Server
- Presentation Server
- Shared Folder
- Tenant Storage
- (Optional) Integration Component
- (Optional) Job Service
- (Optional) Analytics Service
- (Optional) Implementation Repository
- (Optional) Company Template Repository
- (Optional) Service Layer
- (Optional) Mobile Services
- (Optional) Web Clients for SAP Business One
- Electronic Document Service

For more information, see *Registering Components Using the Cloud Control Center*.

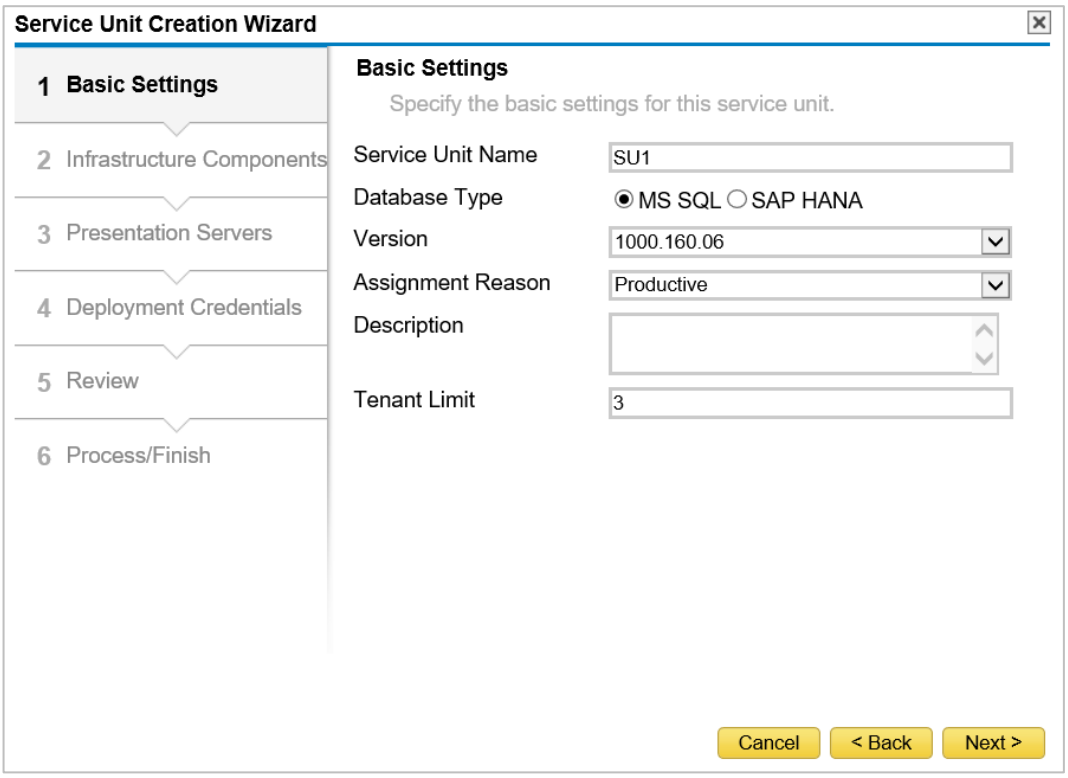
Procedure

To create a service unit, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and then choose the *New* button to run the Service Unit Creation Wizard.
2. In the *Basic Settings* window, specify the following:
   - *Service Unit Name* – Enter a unique name of up to 128 characters for this service unit.
   - *Database Type* - Select the database type of the SAP Business One that you want to run.
   - *Version* – From the dropdown list, select the version of SAP Business One that you want to run.
   - *Purpose* – From the dropdown list, select the type of service unit you want to create. The following table provides an overview of the possible types.

Purpose	Description
Staging	You can use this service unit as an intermediary during tenant upgrades to minimize the impact on system resources.
Trial	Customers can evaluate a dedicated SAP Business One implementation for a limited period.
Productive	Customers can use this service unit to access SAP Business One and perform business operations.
Demo	Potential customers can use this service unit to try SAP Business One before purchasing subscriptions.
Testing	Cloud operators can use this service unit to test new functionality and software versions before customer deployment.

   - *Description* – Enter an optional description for this service unit.
   - *Tenant Limit* – Enter a positive integer to set the maximum number of tenants allowed on the service unit. The default value is 0, which indicates no limit. You can change the tenant limit at any time in *Central Components* → *Service Units* → *Service Unit Details* area → *Configuration* tab.



3. In the *Infrastructure Components* window, specify the following:
   - *License Server* – From the dropdown list, select a license server that is compatible with the service unit.
   - *Database Instance* – From the dropdown list, select an available database instance.
   - *Common Database* – Specify the available common database.
   - *Shared Folder* – From the dropdown list, select a location to store attachments, images, and document templates.
   - *Tenant Storage* – From the dropdown list, select a location to store logs and company database backup files used during tenant upgrades.
   - *Integration Component* – From the dropdown list, select a B1i instance.
   - *Job Service* – From the dropdown list, select a job service.
   - *Implementation Repository* – From the dropdown list, select a location to store solution packages.
   - *Analytics Service* – From the dropdown list, select an analytics service to provide various analytical features to users, including enterprise search, real-time dashboards, Microsoft Excel interactive analysis, and predefined Crystal reports.

     Note

     Analytical features are available only in SAP Business One Cloud environments using SAP HANA. Cloud environments that use Microsoft SQL Server do not support analytics services.
   - *App Framework*
   - *Service Layer* – From the dropdown list, select a Service Layer to provide Web access to SAP Business One services and objects.

Note

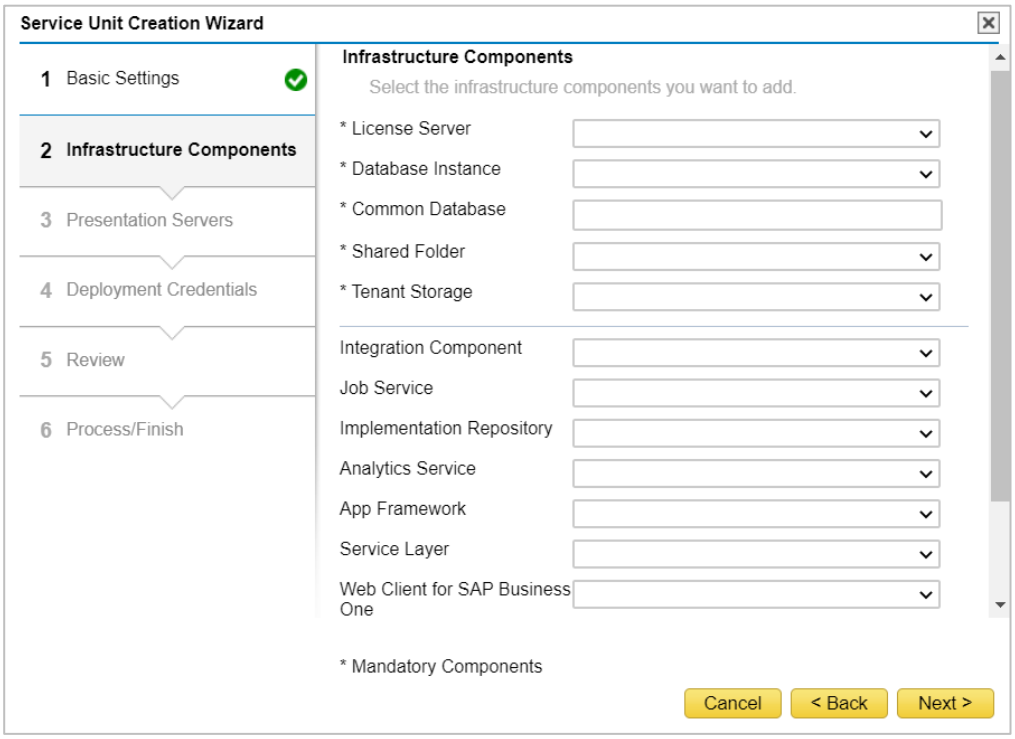
- If you want to specify Web Client for SAP Business One or mobile service, you must also select the Service Layer.

- *Web Client for SAP Business One* - From the dropdown list, select an available Web Client for SAP Business One environment.
- *Mobile Service* – From the dropdown list, select a mobile service.
- *Company Template Repository* – From the dropdown list, select a location to store backup files containing template company databases.

Note

If you select a database instance that already contains a common database, the system automatically populates the *Common Database* field. If you select a database instance that does not yet contain a common database, the wizard creates a new common database for the selected database instance.

- *Electronic Document Service* - From the dropdown list, select an available Electronic Document Service.



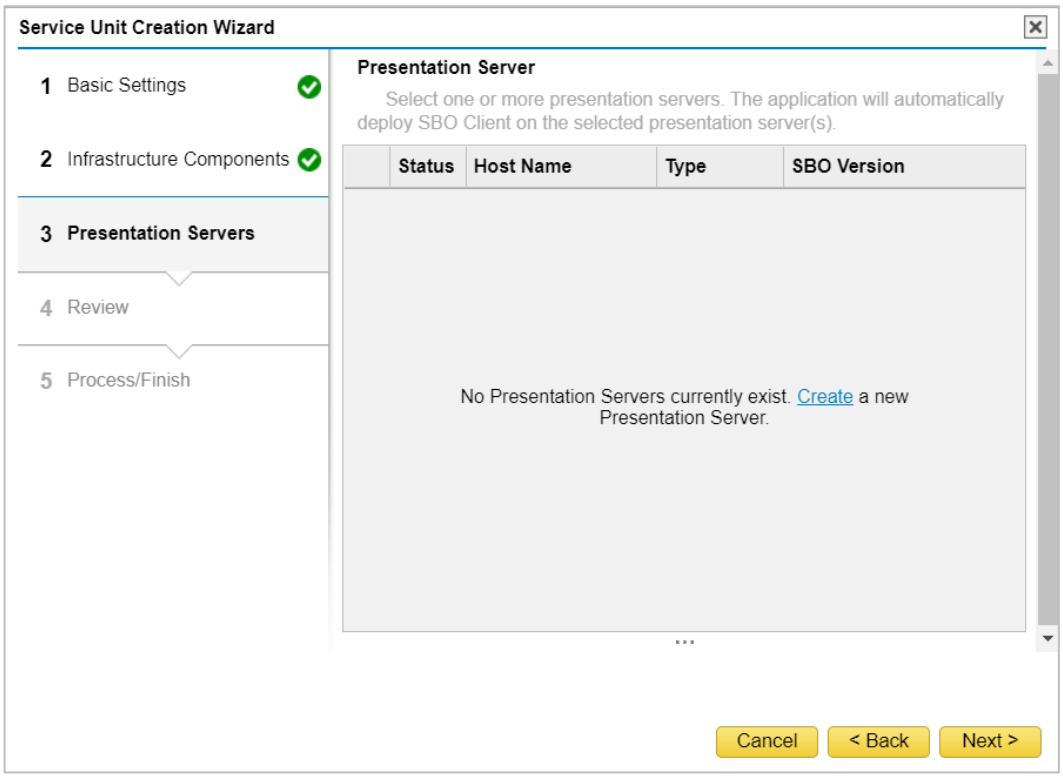
4. In the *Presentation Servers* window, select one or more presentation servers to assign to the service unit.

Note

The wizard automatically deploys the SAP Business One client and SAP Business One Client Agent to the selected presentation servers, according to the service unit version that you previously specified. To correctly configure the SAP Business One Client Agent, the wizard prompts you to enter the credentials of a domain account that is a cloud operator with local administrative privileges on the selected presentation servers.

If you are using Microsoft RDS, you must configure SAP Business One as a RemoteApp. On each presentation server, do the following:

- Use the RemoteApp wizard to configure SAP Business One as a RemoteApp.
- Specify the tenant domain groups for which you want to enable connections to SAP Business One.



5. In the *Review* window, review the settings you have made:
   - To create the service unit, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
6. The *Progress/Finish* window displays an overview of the main results of the creation process.

   To complete the process, choose the *Finish* button.

7.2 Registering Software Components to Existing Service Units

After creating a service unit, you can still register new software components to it at a later stage.

The following software components can only be registered once to a particular service unit:

- Analytics service
- App frameworks
- Service Layer
- Mobile service
- Electronic Documents Service

- Integration framework for SAP Business One
- Job service

> **Note**
>
> For the integration framework for SAP Business One and job service, you can register a new component to replace the previous one.

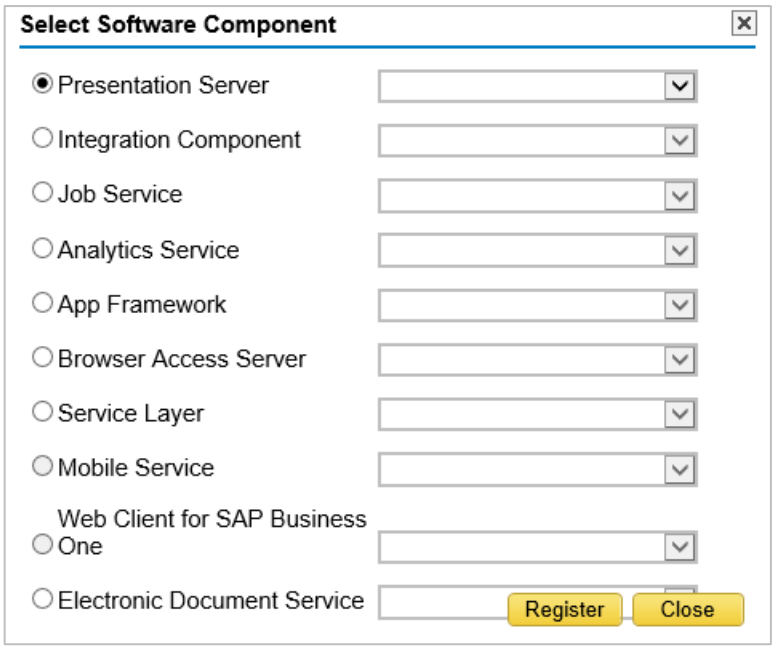
The exceptions are the following software components, which can be registered to a service unit more than once:

- Presentation servers
- Web Client for SAP Business One
- Browser Access Servers

Procedure

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and select an existing service unit.
2. In the *Service Unit Details* area, on the *Software Components* tab, choose the *Register* button.
3. In the *Select Software Component* window, select the component you want to register, and then choose the *Register* button.
   - For registering an additional presentation server, the application automatically deploys the SAP Business One client with the same version as the selected service unit.
   - When registering a Browser Access server, the *Register* button will trigger installation or re-installation (if an old version component already exists) of the component. However, the *Un-Register* button will not uninstall components.

     > **Note**
     >
     > If you register a server both as a presentation server and a Browser Access server, you must register the presentation server and Browser Access server on the same service unit.

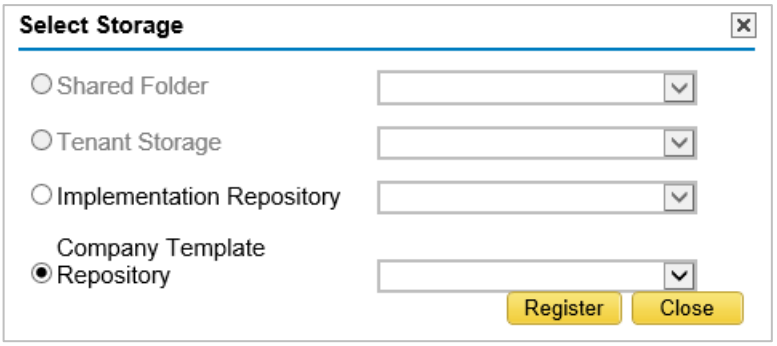


7.3 Registering Storage to Existing Service Units

After creating a service unit, you can still register storage to it at a later stage.

Procedure

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and select an existing service unit.
2. In the *Service Unit Details* area, on the *Storage* tab, choose the *Register* button.
3. In the *Select Storage* window, select the type of storage you want to register, and then choose the *Register* button.



7.4 Duplicating Service Units

To streamline the process of creating multiple service units for the same customer, you can use the service unit duplication wizard to duplicate an existing service unit. The target service unit has the same version as or higher version than the source target unit that contains the tenant you want to duplicate. You can add different users and assign different extensions to the duplicated tenant.

Prerequisites

You have created a source service unit. For more information, see Creating Service Units.

Procedure

To duplicate a service unit, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, select the source service unit that you want to duplicate, and then choose the *Duplicate* button to run the service unit duplication wizard.
2. In the *Basic Settings* window, specify the following settings for the target service unit:
   - *Service Unit Name* – Enter a unique name of up to 128 characters for this service unit.
   - *Version* – From the dropdown list, select the version of SAP Business One that you want to run.
   - *Purpose* – From the dropdown list, select the type of service unit you want to create. The following table provides an overview of the possible types.

Purpose	Description
Staging	You can use this service unit as an intermediary during tenant upgrades to minimize the impact on system resources.
Trial	Customers can evaluate a dedicated SAP Business One implementation for a limited period.
Productive	Customers can use this service unit to access SAP Business One and perform business operations.
Demo	Potential customers can use this service unit to try SAP Business One before purchasing subscriptions.
Testing	Cloud operators can use this service unit to test new functionality and software versions before customer deployment.

   - *Description* – Enter an optional description for this service unit.
3. In the *Infrastructure Components* window, specify the following:

   Note

   The application automatically specifies the license server according to that of the source service unit.
   - *Database Instance* – From the dropdown list, select an available database instance.

- *Shared Folder* – From the dropdown list, select a location to store attachments, images, and document templates.
- *Tenant Storage* – From the dropdown list, select a location to store logs and company database backup files used during tenant upgrades.
- *Integration Component* – From the dropdown list, select a B1i instance.
- *Implementation Repository* – From the dropdown list, select a location to store solution packages.
- *Company Template Repository* – From the dropdown list, select a location to store backup files containing template company databases.

4. In the *Presentation Servers* window, select one or more presentation servers to assign to the target service unit.

   > **Note**
   >
   > The wizard automatically deploys the SAP Business One client to the selected presentation servers, according to the target service unit version that you previously specified.
   >
   > If the SAP Business One client is already installed on a presentation server, the wizard installs a new client, according to the specified target service unit version. However, there may extensions installed on the presentation server that are no longer required. Ensure you manually remove any redundant extensions.

5. In the *Browser Access Servers* window, select one or more Browser Access servers to assign to the service unit.

   The wizard automatically deploys the SAP Business One client, SAP Business One Client Agent, and Browser Access Server Gatekeeper to the selected Browser Access servers, according to the service unit version that you previously specified.

6. The *Extensions* window displays a list of the extensions deployed to the source service unit. Select the extensions that you also want to deploy to the target service unit.

   > **Note**
   >
   > The wizard automatically selects all the extensions that are compatible with the target service unit. You may deploy incompatible extensions; however, users may encounter errors when working with these extensions.

7. In the *Review* window, review the settings you have made:
   - To create the service unit, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
8. The *Progress/Finish* window displays an overview of the main results of the creation process.

   To complete the process, choose the *Finish* button.

7.5 Monitoring Components

In the Cloud Control Center, you can monitor the status of service units and their components, as well as monitoring the status of the SLD and SLD Agents.

You can monitor the status of components by selecting the corresponding item under the *Central Components* section in the main menu of the Cloud Control Center. You can also view limited monitoring information on the *Home* page of the Cloud Control Center.

To view detailed monitoring information for the components of a service unit, in the Cloud Control Center, choose *Central Components* → *Service Units*, select the service for which you want to view monitoring information, and then select the *Monitoring* tab in the *Service Unit Details* area.

The following table provides an overview of the different monitoring statuses for each component in a cloud landscape.

Component	Available	Warning	Service Error	Service Not Reachable	Machine Not Reachable	Unknown
SLD	Available and working correctly	N/A	Cannot connect to SLD database	N/A	N/A	Cannot determine status
SLD Agent	Available and working correctly	N/A	N/A	SLD Agent service not reachable via notification channel	Machine running SLD Agent is not reachable	Cannot determine status
License Server	Available and working correctly	Offline or under maintenance, or no license files found	N/A	Cannot connect to license server service	Machine running license server is not reachable	Cannot determine status
Database Instance	Available and working correctly	Offline	N/A	Cannot connect to database instance	Machine running database instance is not reachable	Cannot determine status
Common Database	Available and working correctly	Offline	Cannot retrieve version information	Cannot connect to database instance, common database does not exist, or an error occurred while connecting	Machine running common database is not reachable	Cannot determine status
Mailer	Available and working correctly	Offline, or SMTP server not configured, or logon credentials for	Cannot connect to SMTP server or an error occurred	Mailer service not reachable using notification channel	Machine running mailer service is not reachable	Cannot determine status

Component	Available	Warning	Service Error	Service Not Reachable	Machine Not Reachable	Unknown
		SMTP server are incorrect	during logon authentication			
Integration Component	Available and working correctly	Offline or version information is not registered	Integration component is not available.	Integration component is not reachable	Machine running integration component is not reachable	Cannot determine status
Storage	Available and working correctly	N/A	N/A	Storage path does not exist	N/A	Cannot determine status
Presentation Server	Available and working correctly	Offline or under maintenance	Cannot connect to RDS or Citrix services	SLD Agent of presentation server is not reachable	Machine running presentation server is not reachable	Cannot determine status
Service Unit	All components are available and working correctly	Offline or one or more components have warnings	One or more components report errors	One or more components are not reachable	One or more machines running components are not reachable	Cannot determine status

8 Managing Customer Components

After creating productive service units, you can perform the following tasks to provide customers with remote access to SAP Business One:

- Create customers
- Create tenants
- Create company databases
- Add SAP Business One Users to a tenant
- Assign and manage licenses

8.1 Creating Customers

A customer is a client organization that has purchased a subscription to remotely access SAP Business One for a pre-defined period of time and specific number of named users, according to contractual conditions.

Prerequisite

You have obtained a valid SAP Business One license file. For more information, see *Importing License Files*.

Procedure

To create a customer, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then choose the *New* button to run the customer creation wizard.
2. In the *Customer Profile* window, specify the following:
    - *Customer Name* [required] – Enter the name of the customer or select an existing customer from the dropdown list.
    - *Contact Person* – Enter the name of the customer's contact person.
    - *Phone* – Enter the telephone number of the customer's contact person.
    - *E-Mail* – Enter the e-mail address of the customer's contact person.
    - *Employee Count* – Enter the number of employees in the customer's organization.
    - *Country/Region* – Enter the country or region in which the customer is located.
    - *Location* – Enter the address of the customer.
    - *Industry* – Enter the industry in which the customer operates.
    - *Description* – Enter an optional description for this customer.
    - *UPN Suffix* – Specify the User Principal Name (UPN) suffix.

Note

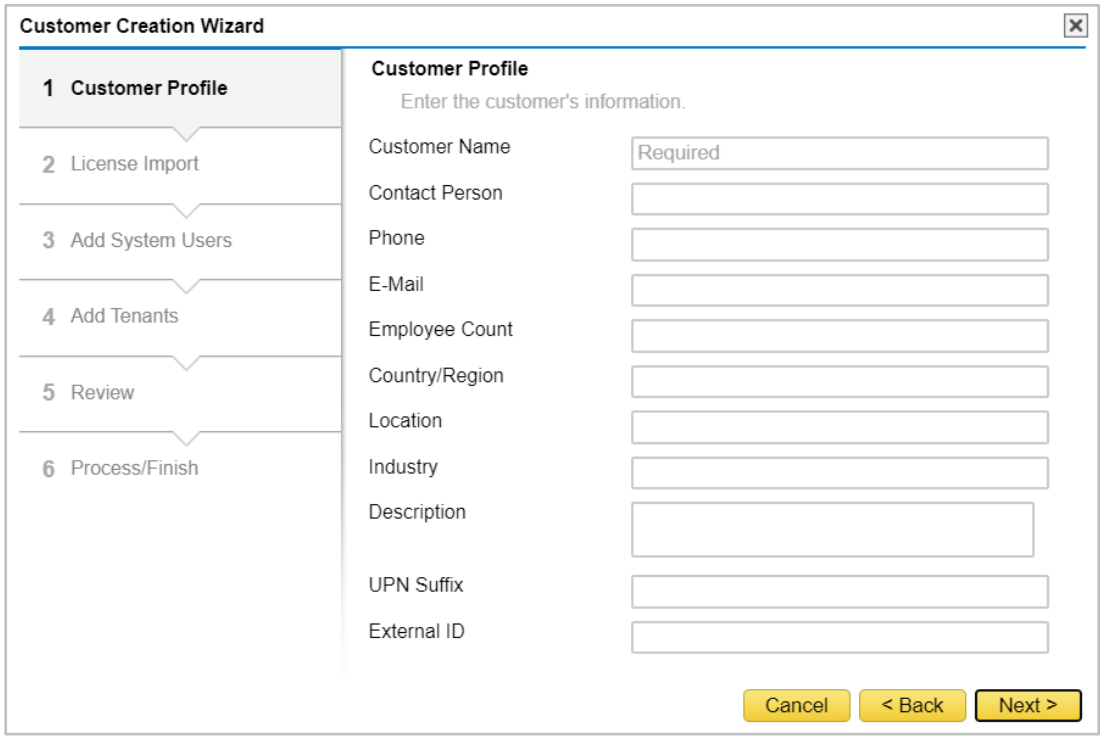
If a UPN suffix is already assigned to the user's UPN, you cannot change the UPN suffix.

Several customers can use the same suffix; however, you can set only one suffix for each customer.

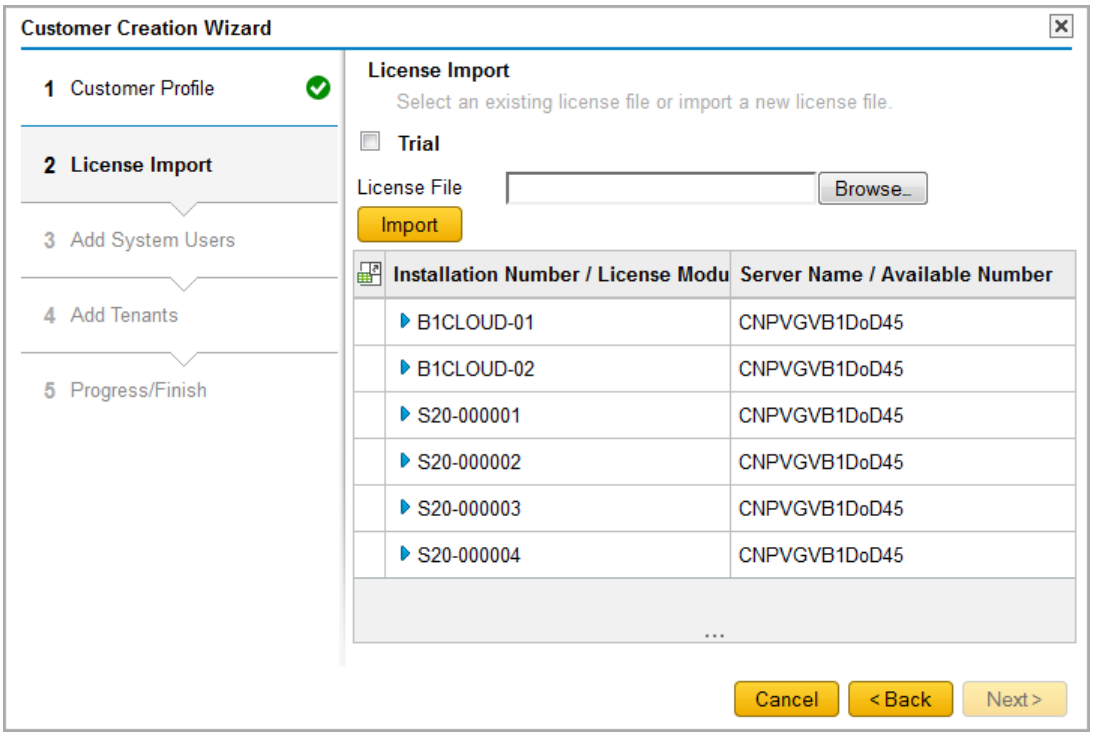
- *External ID* – Enter an external reference ID to help associate the customer with other SAP systems.

Note

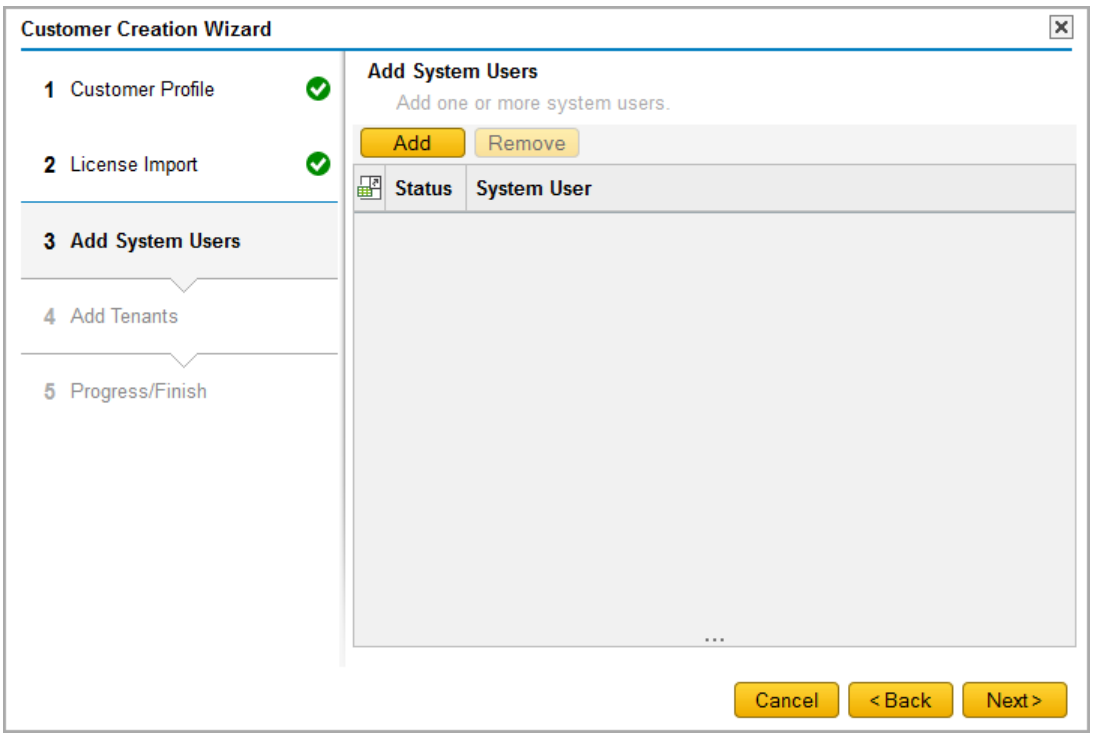
By default, reseller operators do not have permission to edit the *External ID* field. If you want to allow resellers to edit external IDs, see Allow Resellers to Edit the External IDs.



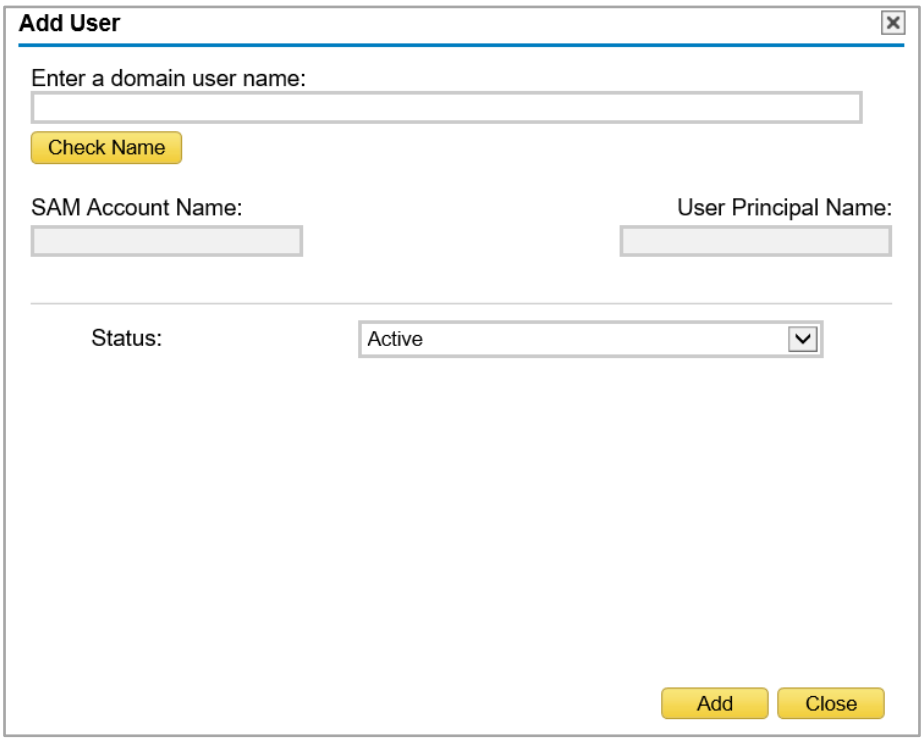
3. In the *License Import* window, do one of the following:
   - Select a valid license file from the list.
   - Select the *Trial* checkbox.
4. Alternatively, to import a new license file, do the following:
   1. Choose the *Browse* button.
   2. In the *File Upload* window, locate the license file you want to use and choose the *Open* button.
   3. Choose the *Import* button to import the license file.



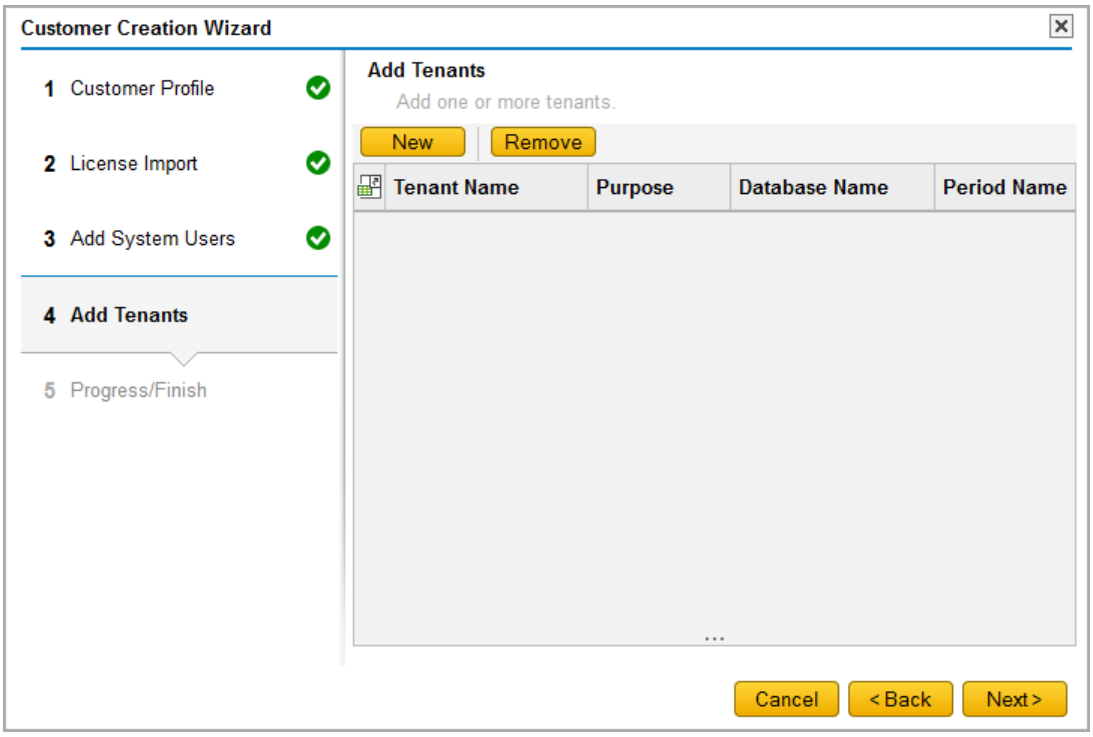
5. In the *Add System Users* window, choose the *Add* button to add Microsoft Windows domain user accounts to the customer.



6. In the *Add User* window, perform the following:
    - If a domain user account exists for the user, enter the domain user name, and then choose the *Check Name* button to verify that the domain user name you entered exists. The *SAM Account Name* and *User Principal Name* fields are displayed automatically.
    - To create a new domain user, see Adding Domain Users to Customers (Step 4).



7. In the *Add Tenants* window, select the tenants you want to assign to the customer. To create a new tenant, choose the *New* button. For more information about creating tenants, see *Creating Tenants*.
    - To register the customer, choose the *Next* button.
    - To change the settings, choose the *Back* button to return to the previous steps.



8. The *Progress/Finish* window displays an overview of the main results of the customer creation process.
   To complete the process, choose the *Finish* button.

8.2 Managing Tenants

A tenant is a company database, storage, and licenses allocated to a customer to provide business functionality. A customer may have multiple tenants across different service units, with each tenant having a different application version or purpose, such as trial, productive, demonstration, or testing instances.

Multiple tenants may share a single service unit, with tenants' data and configuration partitioned across multiple company databases and file repositories.

8.2.1 Creating Tenants

You can create tenants by completing the steps in the tenant creation wizard.

> **Note**
>
> Cloud operators can set the maximum number of tenants allowed on each service unit. Resellers must ensure that the cumulative number of their customer's tenants does not exceed the tenant limit. For more information, see Creating Service Units.

Note

The tenant shared folder structure consists of *<Shared folder path>\<Database Name>\<B1 default structure>*. The *<B1 default structure>* consists of the following subfolders: *Attachments, WordDocs, ExclDocs, Bitmaps*, and so on.

Prerequisites

- You have created a customer. For more information, see *Creating Customers*.
- You have created a service unit with the version of SAP Business One that the customer wants to run in this tenant. For more information, see *Creating Service Units*.

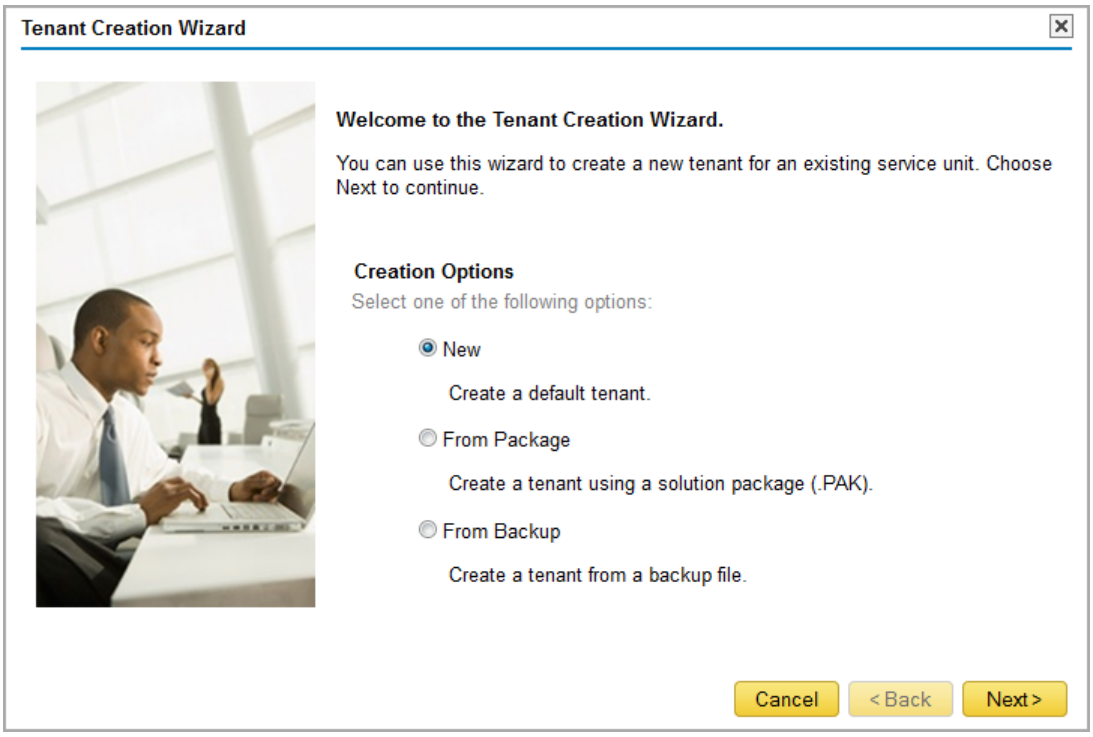
Procedure

To create a tenant, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the *New* button to run the tenant creation wizard.
2. In the *Tenant Creation Wizard* window, select one of the following options:
   - *New* – Creates a new default tenant. For more information, see *Creating Default Tenants*.
   - *From Package* – Creates a tenant from an existing solution package. For more information, see *Creating Tenants from Solution Packages*.

     Caution

     Creating tenants from solution packages is not supported in SAP Business One Cloud landscapes that use SAP HANA.
   - *From Backup* – Creates a tenant from an existing backup file. For more information, see *Creating Tenants from Backups*.



8.2.1.1 Creating Default Tenants

If you select the *New* radio button in the *Tenant Creation Wizard* window, you create a default tenant that does not contain any business or transaction data. You must configure all required settings, including local settings, language, and chart of accounts.

Procedure

To create a default tenant, after completing steps 1 and 2 in *Creating Tenants*, do the following:

1. In the *Select Customer* window, select the customer to which you want to assign the tenant.
2. In the *Select Service Unit* window, select the service unit in which you want to create a tenant.
3. In the *Tenant Information* window, specify the following:

Field	Description
Tenant Name	Enter the name of the tenant. This name appears: • At the top of the SAP Business One *Main Menu* • In reports and on printed documents
Database Name	Enter a name for the company database that stores all business and transaction data.
Purpose	Select one of the following options:

Field	Description
	• *Trial* – Customers can evaluate a dedicated SAP Business One implementation for a limited period. • *Productive* – Customers can use this database to store company information and perform business operations. • *Demo* – Potential customers can use this database to try SAP Business One before purchasing subscriptions. • *Testing* – Cloud operators can use this database to test new functionality and software versions before customer deployment.
Trial Period	This field is visible only when you select *Trial* as the tenant purpose. Enter the number of days for which the trial period is valid. The maximum allowed value is 93 days.
Authentication Type	From the dropdown list, select the type of authentication used for connections between the SAP Business One client and the tenant's company database. The available options are: • *Windows Authentication* – Each SAP Business One User is granted access to the database. An additional read-only domain account is created for some database operations. • *SBO Managed Authentication* – The client connects to the database using SQL Server Authentication. SAP Business One Users do not connect directly to the database, but receive access credentials from the SLD. Two domain accounts are created for database access: a read-only account and a read write account. This option is recommended. **Note** For service units running SAP Business One 882.072 and earlier, you can select only Windows Authentication. **Note** As of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available when creating new tenants; you must use SBO Managed Authentication. Existing tenant registrations with Windows Authentication will not be changed after upgrading. If you choose to change the authentication type of an existing tenant to SBO Managed Authentication *(Customer Management → Tenants → Tenant Details → Configuration → Edit* button → *Authentication Type* field), note that this is an irreversible change.
Contact Person	Enter the name of a contact person for this tenant.
Phone	Enter the telephone number of the contact person.
E-Mail	Enter the e-mail address of the contact person.
Local Settings	From the dropdown list, select the required country/region. Your selection determines accounting related parameters, such as tax definitions, tax reports, available chart of accounts templates, and availability of country-specific features.

Field	Description
Chart of Accounts	From the dropdown list, select the required chart of accounts template. The available options are derived from the country/region selected in the *Localization* field. These options represent common chart of accounts structures in the selected country.
Base Language	From the dropdown list, select the language you want to use for displaying default values, such as document series, payment terms, and property descriptions. **Note** This option does not define the default display language of the SAP Business One user interface. You can configure this option in the SAP Business One client after installation.
Description	Enter an optional description for this tenant.

4. In the *Posting Periods* window, specify the following:

Field	Description
Period Code	Specify a code of up to 20 characters for the posting period.
Period Name	Specify a name of up to 20 characters for the posting period.
Sub Periods	This setting determines the number of additional posting periods that SAP Business One creates automatically. Select one of the following options: • *Year* – Choose this option to manage a single period during a fiscal year. SAP Business One will not create additional posting periods automatically when you choose this option. • *Quarters* – Choose this option to manage four posting periods during a fiscal year. When you choose *Quarters*, the number `4` is entered automatically in the *No. of Periods* field and SAP Business One creates four new posting periods respectively. • *Months* – Choose this option to manage twelve posting periods during a fiscal year. When you choose *Months*, the number `12` is entered automatically in the *No. of Periods* field and SAP Business One creates 12 new posting periods respectively. • *Days* – When you choose this option, the *No. of Periods* field becomes active. Enter the number of required posting periods. SAP Business One will then create the respective periods. For example, if you need to manage one posting period per week, enter **52** in the *No. of Periods* field. SAP Business One creates fifty-two periods; one for each week. When you select an entry that consists of more than one posting period, the value entered in the *Period Code* field is used as the base code for creating the codes of the additional posting periods. For example, if **2006** is entered as the *Period Code* and the value *Quarters* is selected in the *Sub-Periods* field, the codes of the four new posting periods would be 2006-1, 2006-2, and so on.

Field	Description
Number of Periods	Displays the number of posting periods according to the option selected in the Sub-Periods field. This field is active only when *Days* is chosen in the *Sub-Periods* field.
Period Posting Date	Specify the posting date range for the new period.

5. In the *Users & Licenses* window, choose the *Assign b*utton to optionally add SAP Business One Users to the tenant. After adding a user, select the license you want to assign to this user from the list.

   For more information about adding users, see *Adding, Removing, and Importing* SAP Business One Users.

   Recommendation

   You should add at least one SAP Business One User with power user or superuser permissions to the tenant. After you complete the tenant creation process, this user can remotely access the SAP Business One client application and configure settings.

   Note

   `Support` users cannot be assigned to a tenant. SAP Business One Support user accounts are automatically created in SAP Business One (on premise) for support activities and their usage is not allowed in SAP Business One Cloud.

   - To register the tenant, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.

6. The *Progress/Finish* window displays an overview of the main results of the tenant creation process.

   To complete the process, choose the *Finish* button.

8.2.1.2 Creating Tenants from Solution Packages

A solution package is a preconfigured industry-specific solution containing SAP Business One core configurations such as user-defined tables (UDTs) and user-defined fields (UDFs), print layouts, and so on. You can create solution packages using the Solution Packager for SAP Business One.

For more information about working with solution packages, see *Solution Packager online help*.

Caution

Creating tenants from solution packages is not supported in SAP Business One Cloud landscapes that use SAP HANA.

Prerequisites

- The required solution package exists in an Implementation Repository. For more information, see *Creating Implementation Repositories*.
- The service unit in which you want to create a new tenant is version 8.82 PL06 or later.

Procedure

To create a new company database from a solution package, after completing steps 1 and 2 in *Creating Tenants*, do the following:

1. In the *Select Customer* window, select the customer to which you want to assign the tenant.
2. In the *Select Service Unit* window, select the service unit in which you want to create a tenant.
3. In the *Select Solution Package* window, select the solution package (.PAK) file you want to use to create a tenant.

   Caution

   You can only create tenants with versions equal to or later than the SAP Business One version you used to create the solution package. For example, if you create a solution package using SAP Business One 8.82 PL06, you can create a tenant that can be used only with SAP Business One 8.82 PL06 or later.

   Note

   For cloud operators, the wizard displays a list of the solution packages available in the Implementation Repositories that are registered to the service unit. For reseller operators, the wizard displays a list of the solution packages available in the Implementation Repositories that are assigned to the specific reseller.
4. In the *Package Information* window, verify the solution package information is correct.
5. In the *Tenant Information* window, specify the following:

Field	Description
Tenant Name	Enter the name of the tenant. This name appears: • At the top of the SAP Business One Main Menu • In reports and on printed documents
Database Name	Enter a name for the company database that stores all business and transaction data.
Purpose	Select one of the following options: • *Trial* – Customers can evaluate a dedicated SAP Business One implementation for a limited period. • *Productive* – Customers can use this database to store company information and perform business operations. • *Demo* – Potential customers can use this database to try SAP Business One before purchasing subscriptions. • *Testing* – Cloud operators can use this database to test new functionality and software versions before customer deployment.
Trial Period	This field is visible only when you select *Trial* as the tenant purpose. Enter the number of days for which the trial period is valid. The maximum allowed value is 93 days.
Authentication Type	From the dropdown list, select the type of authentication used for connections between the SAP Business One client and the tenant's company database. The available options are:

Field	Description
	• *Windows Authentication* – Each SAP Business One User is granted access to the database. An additional read-only domain account is created for some database operations. • *SBO Managed Authentication* – The client connects to the database using SQL Server Authentication. SAP Business One Users do not connect directly to the database, but receive access credentials from the SLD. Two domain accounts are created for database access: a read-only account and a read write account. This option is recommended. **Note** For service units running SAP Business One 882.072 and earlier, you can select only Windows Authentication. **Note** As of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available; you must use SBO Managed Authentication. Existing tenant registrations with Windows Authentication will not be changed after upgrading. If you choose to change the authentication type of an existing tenant to SBO Managed Authentication *(Customer Management → Tenants → Tenant Details → Configuration → Edit* button → *Authentication Type* field), note that this is an irreversible change.
Contact Person	Enter the name of a contact person for this tenant.
Phone	Enter the telephone number of the contact person.
E-Mail	Enter the e-mail address of the contact person.
Local Settings	From the dropdown list, select the required country/region. Your selection determines accounting related parameters, such as tax definitions, tax reports, available chart of accounts templates, and availability of country-specific features.
Base Language	From the dropdown list, select the language you want to use for displaying default values, such as document series, payment terms, and property descriptions. **Note** This option does not define the default display language of the SAP Business One user interface. You can configure this option in the SAP Business One client after installation.
Description	Enter an optional description for this tenant.

6. From the dropdown list in the *Chart of Accounts* window, select one of the following options:
   - *Pre-Defined* – Configures the chart of accounts according to the exact chart of accounts structure in the solution package.

- *User-Defined* – Users can configure the chart of accounts in the SAP Business One client application after the provisioning process is complete.
- *Default* – Configures a default chart of accounts structure according to the local settings of the solution package.

7. In the *Posting Periods* window, specify the following:

Field	Description
Period Code	Specify a code of up to 20 characters for the posting period.
Period Name	Specify a name of up to 20 characters for the posting period.
Sub Periods	This setting determines the number of additional posting periods that SAP Business One creates automatically. Select one of the following options: • *Year* – Choose this option to manage a single period during a fiscal year. SAP Business One will not create additional posting periods automatically when you choose this option. • *Quarters* – Choose this option to manage four posting periods during a fiscal year. When you choose *Quarters*, the number `4` is entered automatically in the *No. of Periods* field and SAP Business One creates four new posting periods respectively. • *Months* – Choose this option to manage twelve posting periods during a fiscal year. When you choose *Months*, the number `12` is entered automatically in the No. of Periods field and SAP Business One creates 12 new posting periods respectively. • *Days* – When you choose this option, the *No. of Periods* field becomes active. Enter the number of required posting periods. SAP Business One will then create the respective periods. For example, if you need to manage one posting period per week, enter **52** in the *No. of Periods* field. SAP Business One creates fifty-two periods; one for each week. When you select an entry that consists of more than one posting period, the value entered in the *Period Code* field is used as the base code for creating the codes of the additional posting periods. For example, if **2006** is entered as the *Period Code* and the value *Quarters* is selected in the *Sub-Periods* field, the codes of the four new posting periods would be 2006-1, 2006-2, and so on.
Number of Periods	Displays the number of posting periods according to the option selected in the *Sub-Periods* field. This field is active only when *Days* is chosen in the *Sub-Periods* field.
Period Posting Date	Specify the posting date range for the new period.

8. In the *Users & Licenses* window, choose the *Assign* button to optionally add SAP Business One Users to the tenant. After adding a user, select the license you want to assign to this user from the list.

   For more information about adding users, see *Adding, Removing, and Importing* SAP Business One Users.

   Recommendation

   You should add at least one SAP Business One User with power user or superuser permissions to the tenant. After you complete the tenant creation process, this user can remotely access the SAP Business One client application and configure settings.

- To register the tenant, choose the *Next* button.
- To change the settings, choose the *Back* button to return to the previous steps.

9. The *Progress/Finish* window displays an overview of the main results of the tenant creation process.

   To complete the process, choose the *Finish* button.

8.2.1.3 Creating Tenants from Backups

If you are using a Microsoft SQL Server, you can create new tenants from the backup files of existing tenants.

If you are using an SAP HANA instance, you can create new tenants from export files of existing tenant schemas. The new tenant contains all the settings and business and transaction data of the original tenant. You are required to specify only the name and purpose of the new company database.

Prerequisites

For service units based on a **Microsoft SQL Server**, ensure the following:

- The required database backup file exists in a Company Template Repository. For more information, see *Creating Company Template Repositories*.

For service units based on an **SAP HANA instance,** ensure the following

- You have installed the SLD Agent on the SUSE Linux Enterprise server hosting the relevant SAP HANA database instance. For more information, see SAP Note 2714103.
  Alternatively, you have installed the backup service on your Linux machine and configured it to control the particular SAP HANA instance. (Note that this does not apply for the SAP-hosted option). For more information, see *Installing Linux-Based Server Components* in the *SAP Business One Administrator's Guide, version for SAP HANA*.

  > **Note**
  >
  > To check the backup service assigned to your database instances, in the Cloud Control Center, choose *Service Unit Components → Backup Services*. Note that if the backup service does not support the schema import, the *Version* field will be empty.

- You have exported the schema and packaged it as a single file (.zip, .tar, or .tar.gz).

  For more information about exporting schemas, see SAP Note 2134959.

- In the Cloud Control Center, you have performed the following:

1. Defined a Company Template Repository to be used as the import location. For more information, see *Creating Company Template Repositories*.
2. Registered the Company Template Repository to one of the following:
   - To the service unit, which allows the cloud operator to import databases under the cloud operator account.
   - To a reseller, which allows the reseller to import databases under the reseller operator account.

   For more information, see *Registering Company Template Repositories.*
3. Copied the zipped schema export files to the relevant Company Template Repository from which they are to be imported.

Procedure

To create a new tenant from a backup file, after completing steps 1 and 2 in *Creating Tenants*, do the following:

1. In the *Select Customer* window, select the customer to which you want to assign the tenant.
2. In the *Select Service Unit* window, select the service unit in which you want to create a tenant.
3. In the *Select Backup* window, select the backup file you want to use to create a tenant.

   > **Note**
   >
   > For cloud operators, the wizard displays a list of backup files available in the Company Template Repositories that are registered to the service unit. For reseller operators, the wizard displays a list of the backup files available in the Company Template Repositories that are assigned to the specific reseller.

4. In the *Tenant Information* window, specify the following:

Field	Description
Tenant Name	Enter the name of the tenant. This name appears: • At the top of the SAP Business One Main Menu • In reports and on printed documents
Database Name	Enter a name for the company database that stores all business and transaction data.
Purpose	Select one of the following options: • *Trial* – Customers can evaluate a dedicated SAP Business One implementation for a limited period. • *Productive* – Customers can use this database to store company information and perform business operations. • *Demo* – Potential customers can use this database to try SAP Business One before purchasing subscriptions. • *Testing* – Cloud operators can use this database to test new functionality and software versions before customer deployment.
Trial Period	This field is visible only when you select *Trial* as the tenant purpose. Enter the number of days for which the trial period is valid. The maximum allowed value is 93 days.
Authentication Type	From the dropdown list, select the type of authentication used for connections between the SAP Business One client and the tenant's company database. The available options are: • *Windows Authentication* – Each SAP Business One User is granted access to the database. An additional read-only domain account is created for some database operations. • *SBO Managed Authentication* – The client connects to the database using SQL Server Authentication. SAP Business One Users do not connect directly to the database, but receive access credentials from the SLD. Two domain accounts are created for database access: a read-only account and a read write account. This option is recommended.

Field	Description
	Note For service units running SAP Business One 882.072 and earlier, you can select only Windows Authentication. Note As of SAP Business One Cloud 1.1 PL15, Windows Authentication is no longer available; you must use SBO Managed Authentication. Existing tenant registrations with Windows Authentication will not be changed after upgrading. If you choose to change the authentication type of an existing tenant to SBO Managed Authentication *(Customer Management → Tenants → Tenant Details → Configuration → Edit* button → *Authentication Type* field), note that this is an irreversible change.
Contact Person	Enter the name of a contact person for this tenant.
Phone	Enter the telephone number of the contact person.
E-Mail	Enter the e-mail address of the contact person.
Description	Enter an optional description for this tenant.

5. In the *Users & Licenses* window, choose the *Assign* button to optionally add SAP Business One Users to the tenant. After adding a user, select the license you want to assign to this user from the list.

   For more information about adding users, see *Adding, Removing, and Importing* SAP Business One Users.

   Recommendation

   You should add at least one SAP Business One User with power user or superuser permissions to the tenant. After you complete the tenant creation process, this user can remotely access the SAP Business One client application and configure settings.

   - To register the tenant, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.

6. The *Progress/Finish* window displays an overview of the main results of the tenant creation process.

   To complete the process, choose the *Finish* button.

8.2.2 Registering Tenants

The tenant registration wizard allows you to register a new tenant based on an existing company database on an existing service unit.

As a cloud operator, you can control the number of tenants that a reseller can register on each service unit. For more information, see Setting Tenant Limits for Resellers.

As a reseller operator, the *Number of Tenants* field (*Central Components → Service Units)* displays the number of tenants you have registered on each service unit, and the *Tenant Limit* field (*System Configuration → My Details → Basic Information* tab), displays the maximum number of tenants you can register on each service unit.

To register a tenant, perform the following:

1. In the Cloud Control Center, choose *Customer Management → Tenants*, and then select the *Register* button to run the tenant registration wizard.
2. In the *Select Customer* window, select the customer for whom you want to create the tenant.
3. In the *Select Service Unit* window, select the service unit on which you want to register the tenant.
4. In the *Tenant Information* window, specify the following information:
   - *Database Name* – Select the relevant database.
   - *Tenant Name* – Specify a new name for the tenant.
   - *Tenant Version* – Displays the tenant version (non-editable).
   - *Upgrade* – Displays the upgrade required to be performed (non-editable).

     Note:

     If the tenant version is lower than the version of the service unit, a company database upgrade will be performed during the tenant registration process.
5. In the *Users & Licenses* window, choose the *Assign* button to optionally assign SAP Business One Users to the tenant. After adding a user, select the license you want to assign to this user from the list.

   For more information about adding users, see *Adding, Removing, and Importing* SAP Business One Users.

   Recommendation

   You should add at least one SAP Business One User with power user or superuser permissions to the tenant. After you complete the tenant registration process, this user can remotely access the SAP Business One client application and configure settings.

   Note

   As of SAP Business One Cloud 1.1 PL11, user codes have been increased from 8 to 25 characters. This means that existing user codes that may have previously been truncated are now shown in full. To ensure old user code values are retained, either manually change the user code in the *User Code* field, or use the import users function, which displays the user codes directly from the database.
6. The *Review* window displays an overview of the main results of the tenant registration process.
   - To register the tenant, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
7. In the *Process/Finish* window, to complete the process, choose the *Finish* button.

8.2.3 Duplicating Tenants

To streamline the process of creating multiple tenants for the same customer, you can use the tenant duplication wizard to duplicate an existing tenant to a target service unit. The target service unit has the same version as or

higher version than the source target unit that contains the tenant you want to duplicate. You can add different users and assign different extensions to the duplicated tenant.

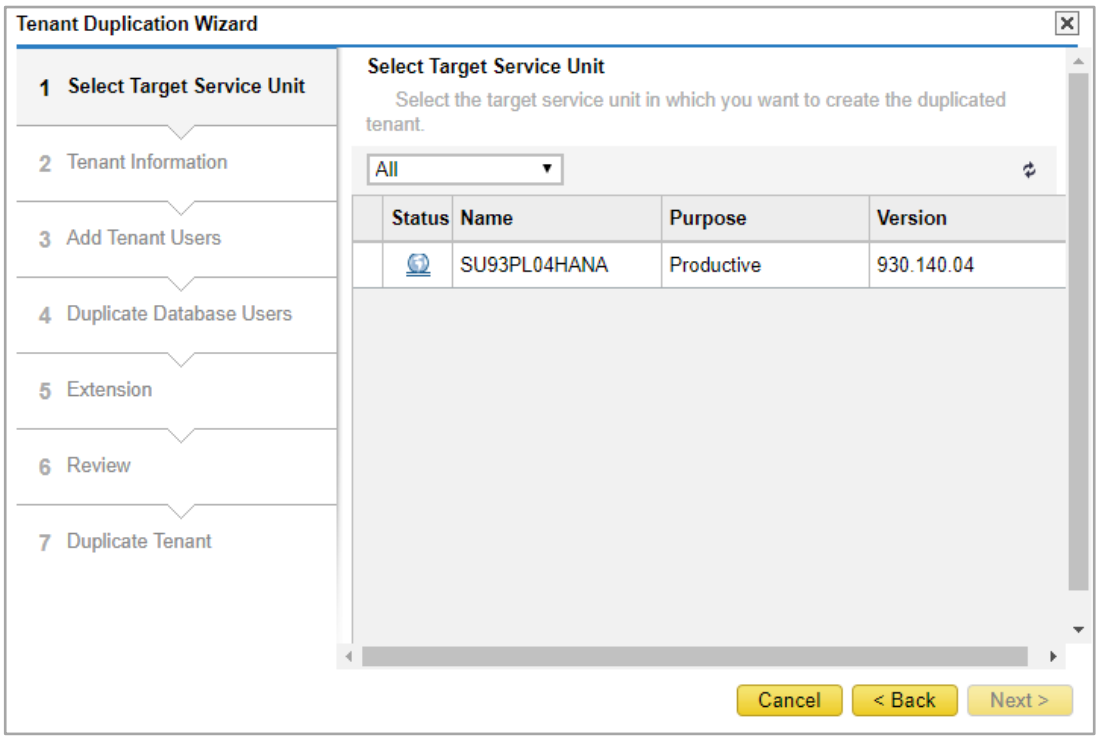
Prerequisite

You have created a source tenant. For more information, see *Creating Tenants*.

Procedure

To duplicate a tenant, do the following:

1. Choose *Customer Management* → *Tenants*, and then choose the *Duplicate* button to run the tenant duplication wizard.
2. In the *Select Target Service Unit* window, select the service unit in which you want to create the duplicated tenant. The target service unit must:
   - Have the same license server as the source service unit that contains the tenant that you want to duplicate.
   - Run the same as or a later version of SAP Business One than the source service unit.



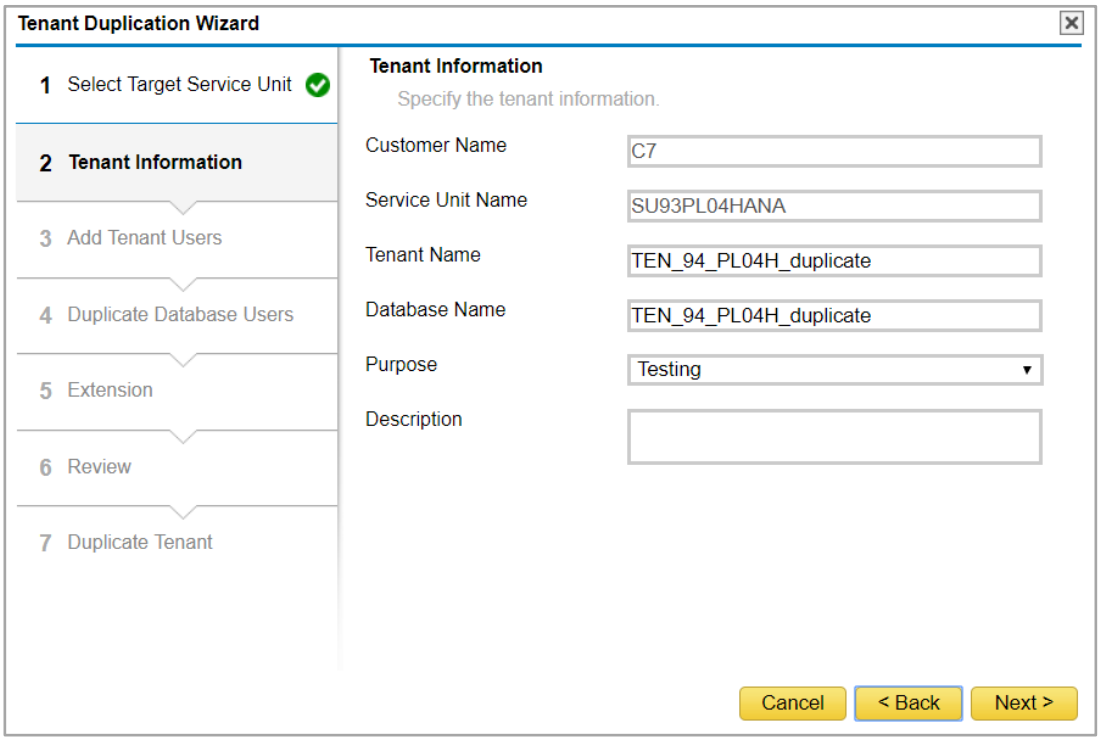
Note

If you select a target service unit running a later version of SAP Business One than the source service unit, the wizard will automatically upgrade the duplicated tenant, and the *Tenant Duplication Method* window appears. In the *Tenant Duplication Method* window, specify whether to upgrade the tenant using the target service unit or a staging service unit. For more information, see *Upgrading Tenants*.

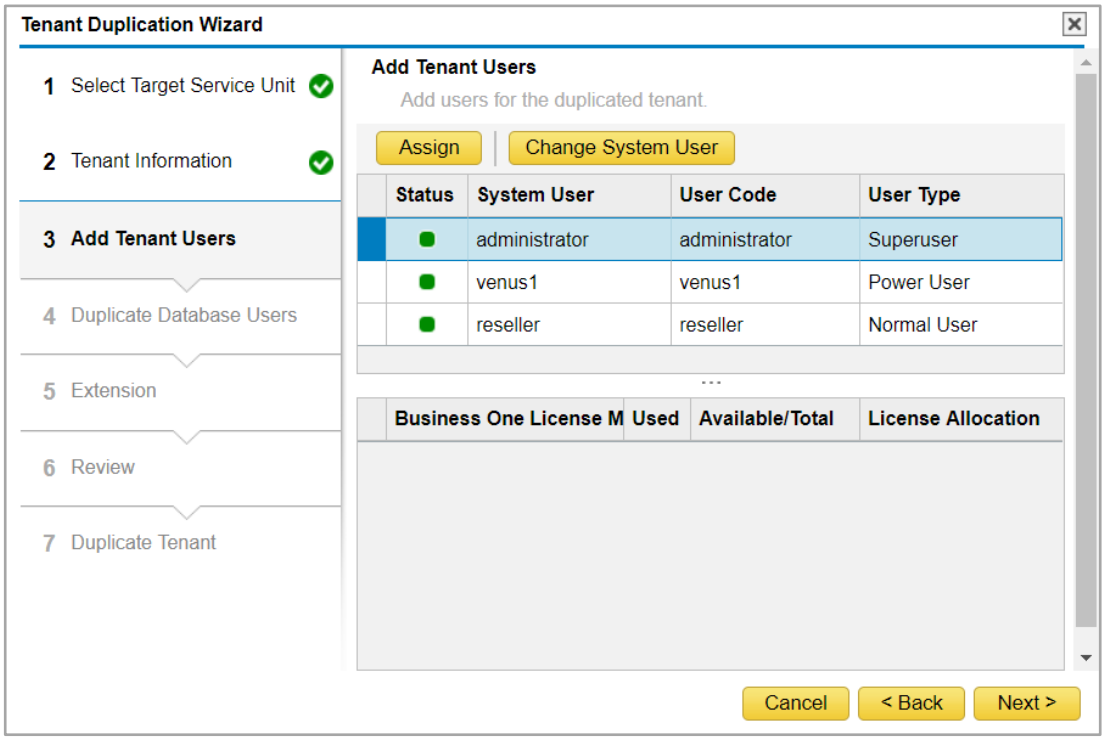
3. In the *Tenant Information* window, enter the following:
   - *Tenant Name* – Enter the name of the tenant. This name appears:
     - At the top of the SAP Business One *Main Menu*
     - In reports and on printed documents
   - *Database Name* – Enter a name for the company database that stores all business and transaction data.

     Note

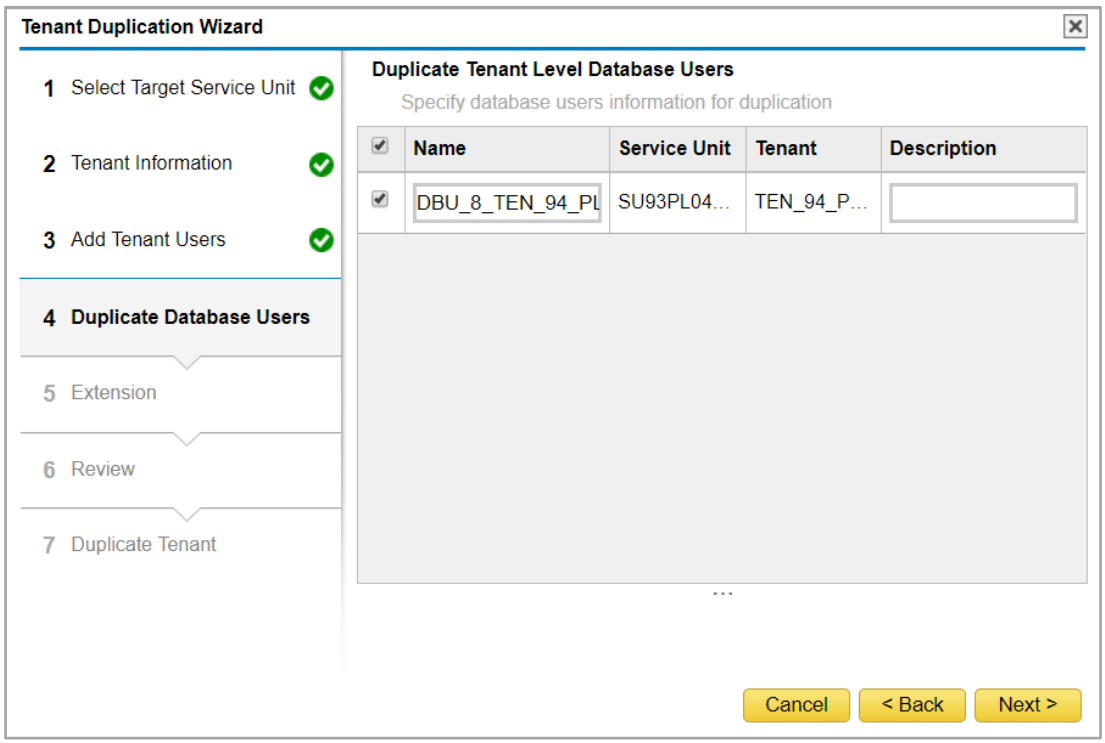
     The application automatically specifies the customer and service unit names, and the purpose of the tenant, according to those of the source tenant.



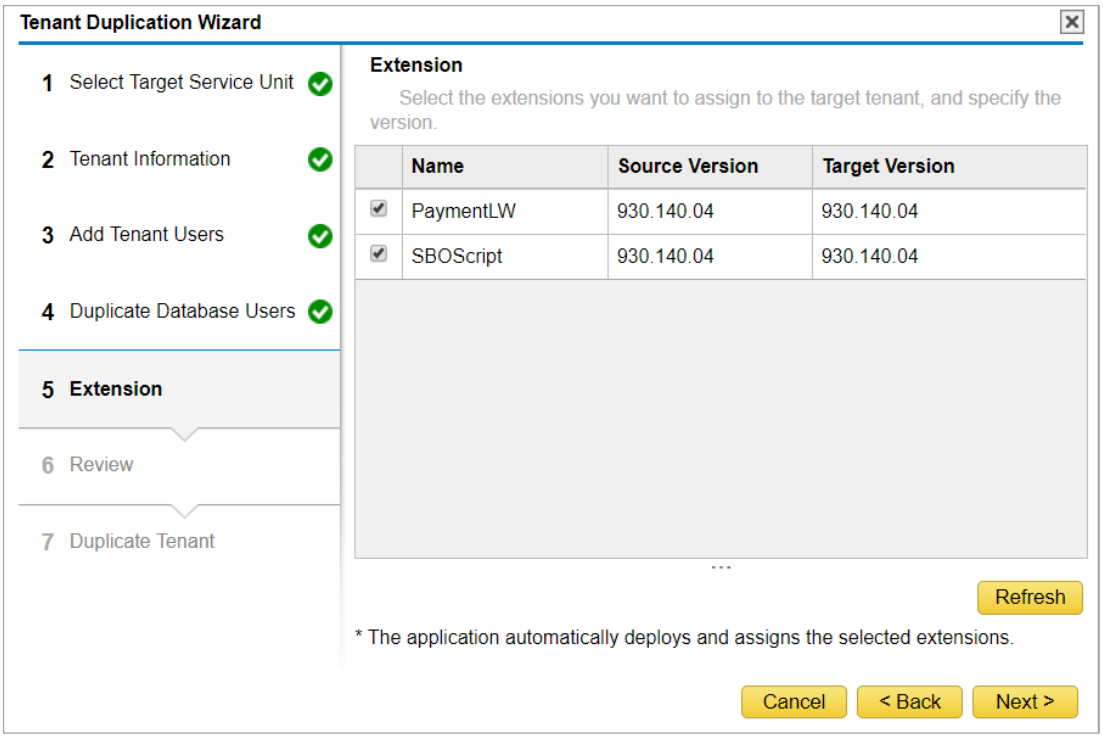
4. In the *Add Tenant Users* window, do the following:
   - To optionally add SAP Business One Users to the duplicated tenant, choose the *Assign* button. After adding a user, select the license you want to assign to this user from the list. For more information about adding users, see *Adding, Removing, and Importing* SAP Business One Users.
   - To change the system user for an SAP Business One User already added to the tenant without changing the SAP Business One user code, choose the *Change System User* button.



5. In the *Duplicate Database Users* window, select the corresponding checkbox for the database users that you want to add to the duplicated tenant.



6. In the *Extension* window, select the corresponding checkboxes for the add-ons that you want to assign to the duplicated tenant. If one or more selected add-ons are not already deployed to the target service unit, the wizard automatically deploys them.



   - To duplicate the tenant, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
7. The *Duplicate Tenant* window displays an overview of the main results of the tenant duplication process.

   To complete the process, choose the *Finish* button.

8.2.4 Exporting Tenants

As of SAP Business One Cloud 1.1 PL13, you can export SAP HANA schemas and backup Microsoft SQL tenant databases directly from the Cloud Control Center.

Prerequisite

- You have registered a Company Template Repository.
- You have registered the Company Template Repository to the service unit.
- For reseller operators, the Company Template Repository has been registered to the relevant reseller.

Procedure

To export a tenant, do the following:

1. Choose *Customer Management* → *Tenants*.
2. Choose the *Export* button.

> **Note**
>
> To export a tenant registered to a SAP HANA service unit, you must ensure that the SLD Agent is installed on the Linux machine hosting the database server instance of the given service unit.

8.2.5 Working with Dynamic Keys

To ensure that customer's data is secure, the SAP Business One company databases of tenants are encrypted using dynamic keys. When you create a new tenant in a cloud environment, the company database of the tenant is automatically encrypted using a dynamic key generated by the SLD service. You can generate a new dynamic key for a tenant at any time.

> **Caution**
>
> To ensure that you can decrypt databases in the future and provide customers with access to their data, it is important to export a file containing all your dynamic keys on a regular basis. For more information, see *Exporting Dynamic Keys*.

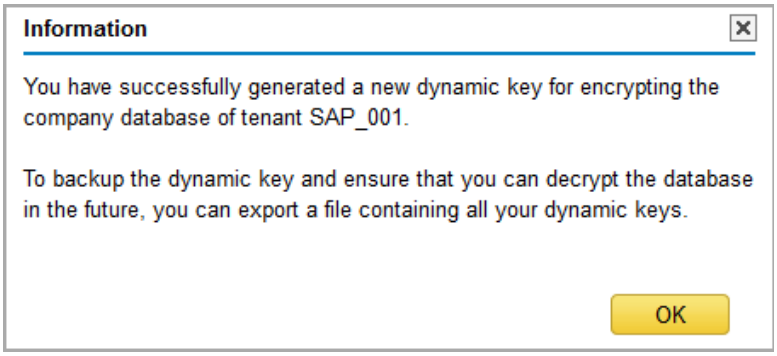
8.2.5.1 Generating Dynamic Keys

Procedure

To generate a new dynamic key for a tenant, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant for which you want to generate a new dynamic key.
2. On the *Configuration* tab in the *Tenant Details* area, choose the *Generate Dynamic Key* button.

   If you successfully generate a new dynamic key, the application displays a confirmation message.



Recommendation

To back up the dynamic key and ensure that you can decrypt the database in the future, export a file containing all your dynamic keys. For more information, see *Exporting Dynamic Keys*.

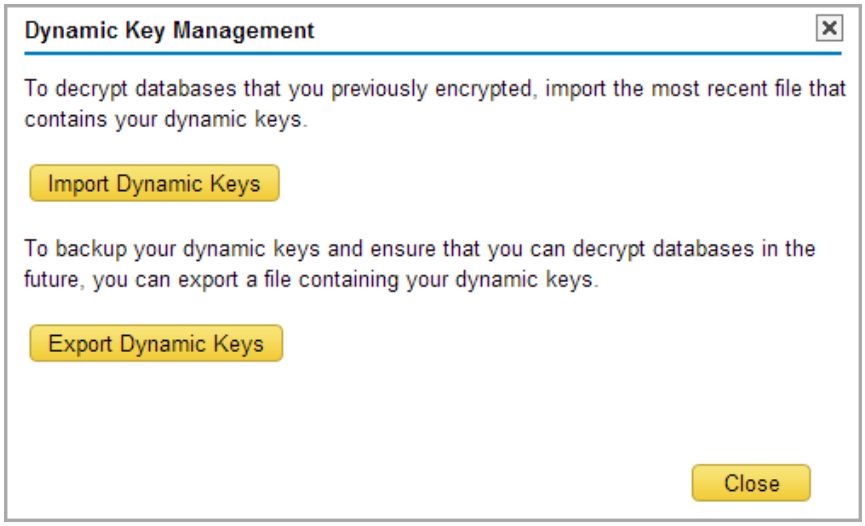
8.2.5.2 Exporting Dynamic Keys

To back up your dynamic keys and ensure that you can decrypt databases in the future, you can export a file containing all your dynamic keys. This file is encrypted using TDEA and a specified password.

Procedure

To export a file containing all your dynamic keys, do the following:

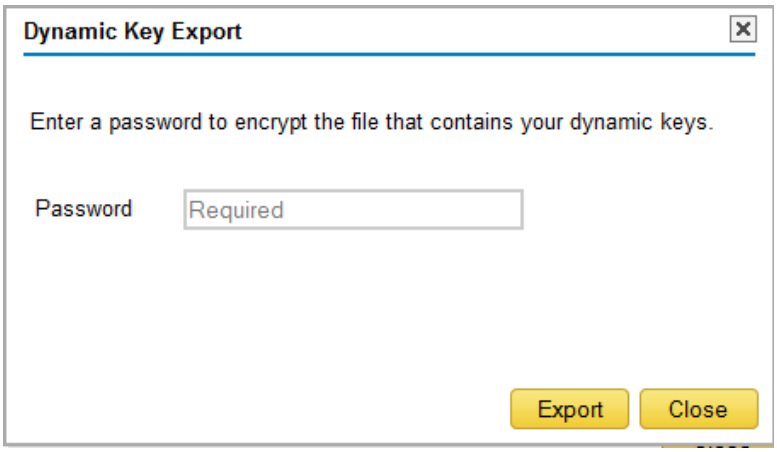
1. In the Cloud Control Center, choose *Customer Management* → *Tenants*.
2. To open the *Dynamic Key Management* window, click the icon.
3. In the *Dynamic Key Management* window, choose the *Export Dynamic Keys* button.



4. In the *Dynamic Key Export* window, enter a password to encrypt the file that contains your dynamic keys, and then choose the *Export* button.

Caution

There are no restrictions on the length or characters that you can use when specifying a password to encrypt the dynamic key file. However, it is recommended that you choose a strong password, which consists of eight or more characters and a combination of letters, numbers, and special characters.



Your browser saves a CFG file containing your dynamic keys.

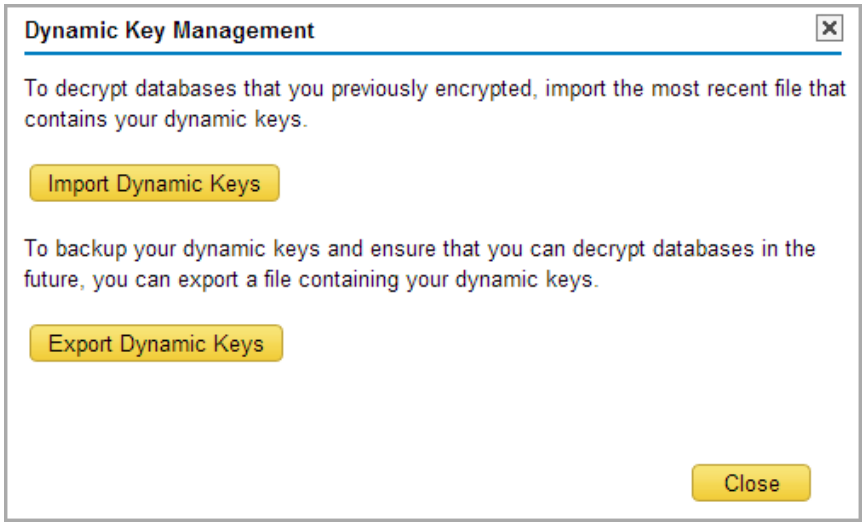
8.2.5.3 Importing Dynamic Keys

To decrypt databases that you previously encrypted, you can import a file that contains your dynamic keys.

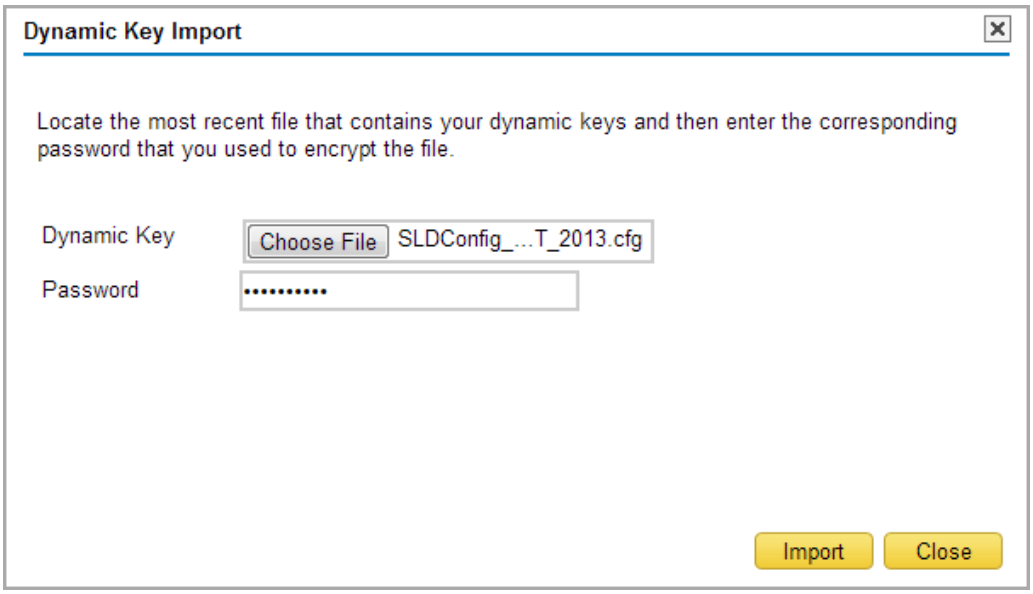
Procedure

To import a file containing all your dynamic keys, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*.
2. To open the *Dynamic Key Management* window, click the icon.
3. In the *Dynamic Key Management* window, choose the *Import Dynamic Keys* button.



4. In the *Dynamic Key Import* window, specify the location of the most recent file that contains your dynamic keys, enter the password that you previously used to encrypt the file, and then choose the *Import* button.



8.2.6 Viewing the Logged-on SAP Business One Users

You can view the SAP Business One users who are currently logged on to the company.

Procedure

To view the logged on SAP Business One users, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*.
2. Choose a tenant.
3. On the *Login SBO Users* tab, view the user, the login time and the duration (in minutes).

8.3 Adding Domain Users to Customers

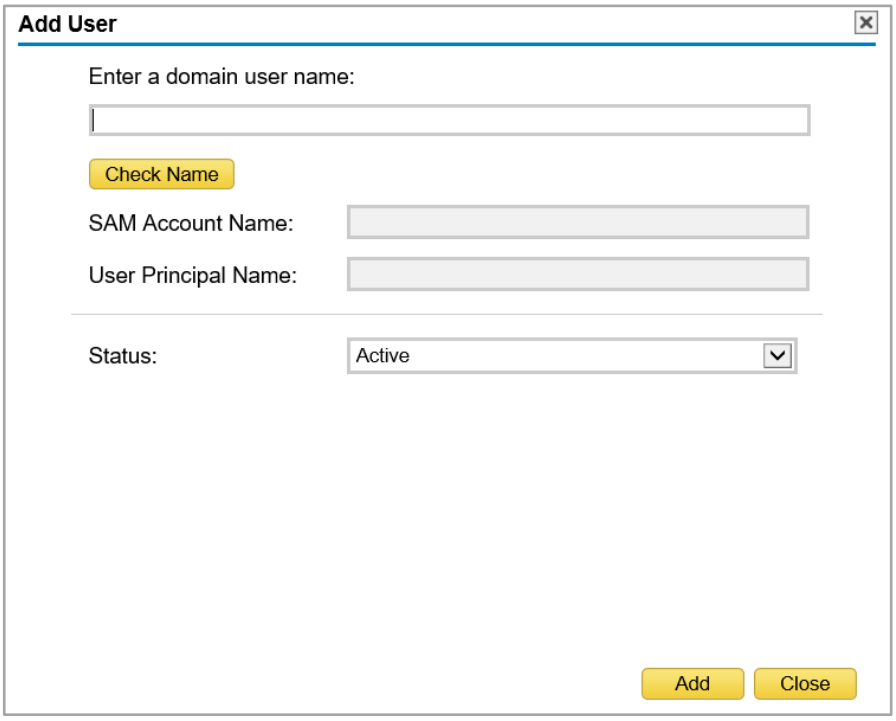
To provide access to SAP Business One, you first must add Microsoft Windows domain accounts to customers for all SAP Business One Users that you want to create.

Procedure

To add domain users to customers, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer to which you want to add a domain user.
2. On the *User Management* tab in the *Customer Details* area, choose the *Add* button.

   The *Add User* window appears.



3. Enter a valid domain user name for the user you want to add.

   Note

   We recommend that you enter the domain user name in lower case. If you enter upper case letters, the system adds the domain user name into the Active Directory as you have entered it, but it will be changed to lower case in the Cloud Control Center.

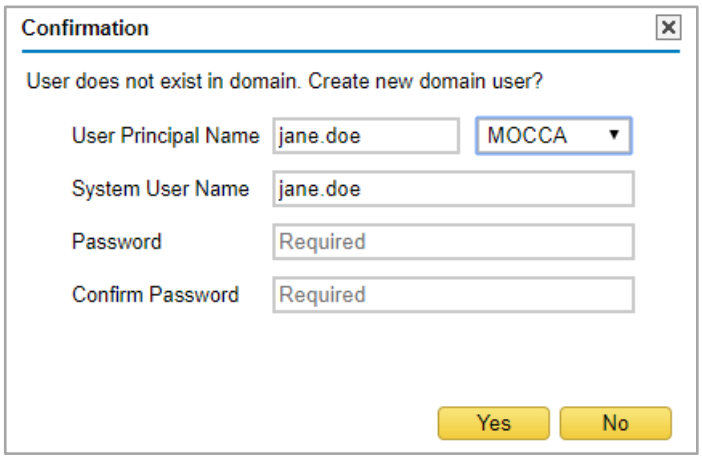
4. To verify that the domain user name you entered exists, choose the *Check Names* button.

   Note

   The Cloud Control Center can find users created in the Active Directly in the following cases:

   - The UPN assigned to the user in the Active Directory is same as that assigned to the corresponding customer in the Cloud Control Center.
   - The user has the same UPN in the Active Directory as the default UPN set in the Active Directory.
   - The user has no UPN assigned in the Active Directory.

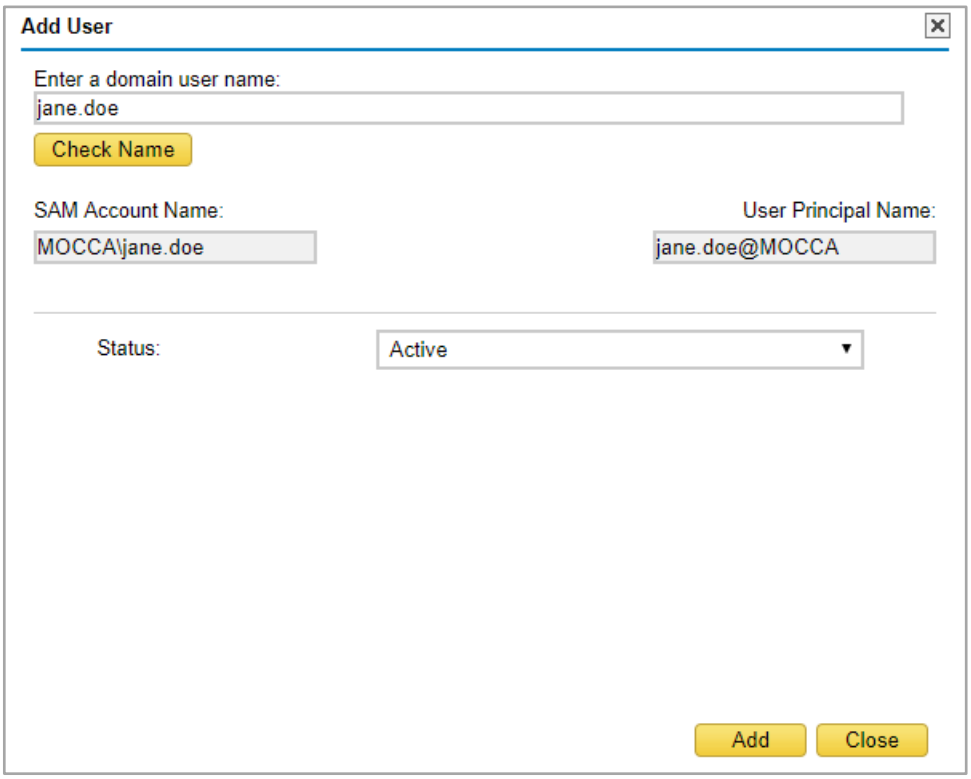
5. If the domain user name does not exist, the *Confirmation* window appears.



To create a new domain user, in the *Confirmation* window, do the following:

- *User Principle Name* – Enter the User Principle Name (UPN) [optional]. Next, from the dropdown list, choose either the AD DNS (Active Directory Domain Name Service) or UPN suffix (if defined for the selected customer). By default, the UPN suffix is displayed.
- *System User Name* – Displays the system user name. However, if you entered a User Principal Name, this value is displayed in the *System User Name* field.
- *Password* – Enter a valid initial password for the user.
- *Confirm Password* –Confirm the password you entered in the previous step and choose the *Yes* button.

6. In the *Add User* window, after the user is found in the active directory, or after you have successfully added a new domain user, both the *SAM Account Name (*Security Accounts Manager) and *User Principal Name* values are displayed.



7. From the *Status* dropdown list, select one of the following statuses for the user:
   - *Active* – The user can log on to SAP Business One and has full access to all functionality.
   - *Inactive* – The user cannot log on to SAP Business One, but other users can see this user as active in SAP Business One. You can set a user's status to active later.
8. Choose the *Add* button.

8.3.1 Synchronizing Domain Users

To synchronize domain user data with the active directory, perform the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer for which you want to synchronize domain users.
2. On the *User Management* tab in the *Customer Details* area, choose the *Synchronize All* button.

8.3.2 Modifying Domain User Data

To modify the User Principal Name (UPN) or status of a user, perform the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer for which you want to modify a user.
2. On the *User Management* tab in the *Customer Details* area, choose the *Modify* button.

   The *Add User* window appears.

3. If you want to change the UPN of the user, in the *User Principal Name* field, enter a new UPN name.
4. If you want to change the UPN suffix of the user, in dropdown box in the *User Principal Name* field, select another option for the suffix (if available).
5. If you want to change the status of the user, from the *Status* dropdown list, select a new status for the user.

8.3.3 Removing Domain Users

To remove domain users from customers, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer to which you want to remove a domain user.
2. On the *User Management* tab in the *Customer Details* area, choose the *Remove* button.
3. In the *Confirmation* window, if you want to also disable the domain user in the Active Directory, select the *Disable the user in Active Directory* checkbox.
4. Choose the *OK* button.

8.4 Adding, Removing, and Importing SAP Business One Users

To provide access to SAP Business One, you must add SAP Business One Users to a tenant and assign a valid license. You can add a single user to multiple tenants but only one customer.

After adding SAP Business One Users, in the SAP Business One client application, you can assign power user permissions as required.

> **Note**
>
> Cloud operators and reseller operators can receive superuser privileges when opening a partner support user (PSU) connection.

In SAP Business One (on premise), the superuser can manage licenses, users, and add-ons. However, in SAP Business One Cloud, the user and license management is centralized and managed by the cloud operator through the Cloud Control Center. To prevent a reseller from interfering with the centralized management, the SAP Business One client functionality must be restricted. Therefore, the superuser status is no longer available for resellers; the power user status has been introduced instead.

Power users should have the same authorizations as superusers, except for the following:

- Power users cannot manage licenses.
- Power users cannot create new users in the SAP Business One client.
- Power users cannot install add-ons.

> **Note**
>
> Only superusers can add and delete users and assign power user permissions in the SAP Business One application. In an SAP Business One Cloud environment, you cannot assign superuser permissions in the SAP Business One client application. To assign superuser permissions, use the Cloud Control Center.

8.4.1 Adding SAP Business One Users

Prerequisites

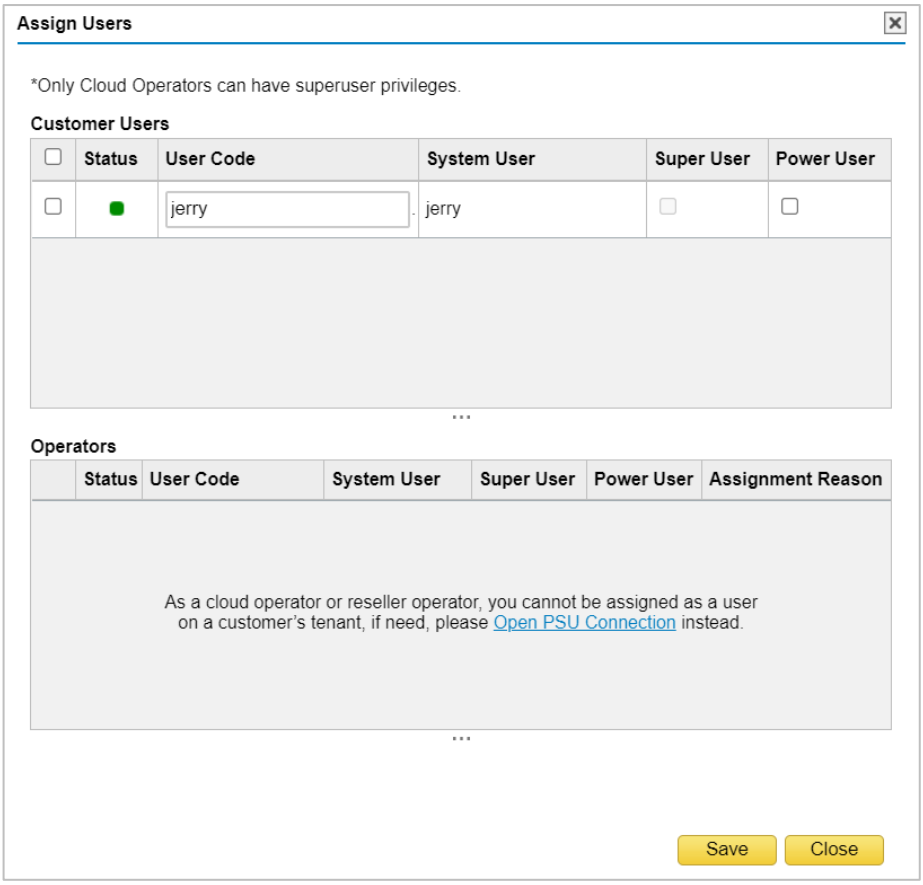
- You have created a customer. For more information, see *Creating Customers*.
- You have created a tenant. For more information, see *Creating Tenants*.
- You have configured Microsoft Windows domain user accounts for the users that you want to add.
- You have added the system users to a customer.

Procedure

To add SAP Business One Users, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant to which you want to add users.
2. On the *User Management* tab in the *Tenant Details* area, choose the *Add* button.

   The *Assign Users* window appears.



3. In the *Assign Users* window, select the corresponding checkboxes for the system users that you want to assign to the tenant. Selecting the first checkbox assigns normal user permission to the user. To select all

system users at once, select the checkbox in the left corner of the header row. To assign additional permissions to the user, see the *Superuser* and *Power User* field descriptions below.

> **Note**
>
> `Support` users are displayed as blocked technical users and cannot be assigned to a tenant.

For each user, specify the following:

- *User Code* – Enter the SAP Business One user code that will be bound to the Windows domain user. This is a unique code of up to 25 characters with which a user logs on to the SAP Business One client application.

  > **Note**
  >
  > The user code is case sensitive and, once saved, cannot be changed. Make sure you enter the user code for each SAP Business One company user in the exact same format for each tenant. For example, if you use "Administrator" in tenant A but "administrator" in tenant B, you need to assign two different licenses to this user.

  > **Note**
  >
  > As of SAP Business One Cloud 1.1 PL11, user codes have been increased from 8 to 25 characters. This means that existing user codes that may have previously been truncated are now shown in full. To ensure old user code values are retained, either manually change the user code in the *User Code* field, or use the import users function, which displays the user codes directly from the database.

- *Superuser* – Select this checkbox to assign superuser permissions to the user. In SAP Business One, superusers can do the following:
  - Access all windows and perform all functions
  - Limit the authorizations of users that are not superusers

  > **Caution**
  >
  > You can only assign superuser permissions to cloud operators, to allow them to configure SAP Business One company databases on behalf of customers. This checkbox is inactive for reseller operators as reseller operators are not authorized to assign superuser permission.

  > **Note**
  >
  > If you select the *Superuser* checkbox, the *Power User* checkbox is automatically selected and non-editable.

- *Power User* – Select this checkbox to assign power user permissions to the user.
  In SAP Business One on-premise, the superuser can manage licenses, users, and add-ons. However, in SAP Business One Cloud, the user and license management is centralized and managed by the cloud operator through the Cloud Control Center. To prevent a reseller from interfering with the centralized management, the SAP Business One client functionality must be restricted. Therefore, the superuser status is no longer available for resellers; the power user status has been introduced instead.

  Power users should have the same authorizations as superusers, except for the following:
  - Power users cannot manage licenses.
  - Power users cannot create new users in the SAP Business One client.
  - Power users cannot install add-ons.

- *Status* – A green status indicates that the user is active in the Cloud Control Center; a red status indicates that the user is inactive in the Cloud Control Center.

  > **Note**
  >
  > If the *Allow Operators to Assign Themselves as Users on Customer Tenants* global setting is set to *ON*, the *Operators* area is active. If you select a cloud operator or reseller operator, in the *Assignment Reason* field, you must specify the reason for the assignment before proceeding with the wizard.

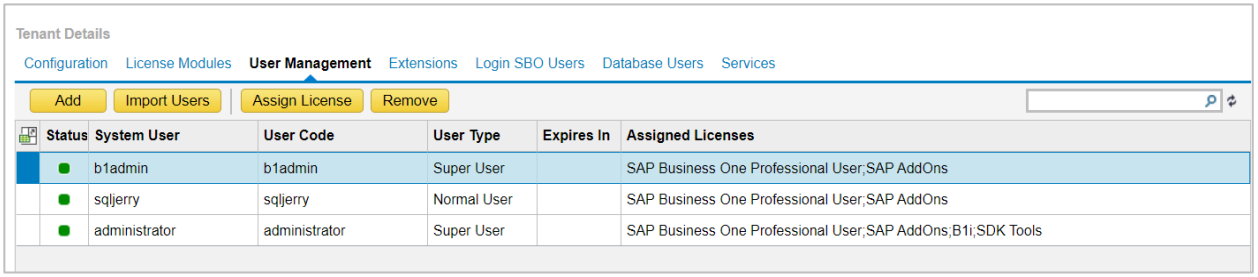
4. Choose the *Save* button.

   > **Note**
   >
   > After adding an SAP Business One User, you must assign a valid license in order for the user to access SAP Business One. For more information about assigning licenses, see *Assigning Licenses*.

5. Repeat the previous steps to add additional users.
6. Choose the *Close* button.

Result

After defining the user type and user code for the system user in the Cloud Control Center, a corresponding user is created in the SAP Business One application with the corresponding settings. On the *User Management* tab (*Customer Management* → *Tenants* → *Tenant Details* area → *User Management*), you can view the details for the added user.



8.4.2 Removing SAP Business One Users

To remove an SAP Business One User, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant to which you want to remove a user.
2. On the *User Management* tab in the *Tenant Details* area, select the user you want to remove, and choose the *Remove* button.
3. In the *Confirmation* window, choose the *Yes* button.

Result

After removing the user binding to the tenant in the Cloud Control Center, the user is marked as removed in SAP Business One and no longer appears in user lists.

8.4.3 Importing SAP Business One Users

You can import SAP Business One users that have been created on a tenant from an on-premise SAP Business One database backup file into the Cloud Control Center. The import users functionality allows you to perform the following:

- View a list of SAP Business One users that already exist on the tenant
- Automatically map system users to SAP Business One users, in the case that such assignment already exists in another tenant of the same customer
- Assign or unassign an SAP Business One user to (or from) a system user.

Procedure

To use the import users functionality, perform the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant to which you want to import a user.
2. On the *User Management* tab in the *Tenant Details* area, choose the *Import Users* button.

   The *Import Users from Tenant* window is displayed. The *Status* field indicates which users are available to import, which already exist, and which are blocked technical users.
3. Click the corresponding row for the user you would like to import.
4. From the dropdown list in the *System User* field, select a system user or create a new system user by choosing the *Create New* option.
5. If relevant, select the *Superuser* or *Power User* checkboxes to apply superuser or power user privileges to the user.
6. Choose the *Save* button.

Result

The user is imported into the Cloud Control Center. On the *User Management* tab (*Customer Management* → *Tenants* → *Tenant Details* area → *User Management*), you can view the details of the imported user or perform additional operations.

8.5 Managing Licenses

SAP Business One is based on a named user licensing model, in which each license is granted to a specific user name. A named user is an employee of a customer, a subsidiary, or a third party business, who is authorized to access, directly or indirectly, the licensed SAP Business One software.

To provide access to the SAP Business One application, in the Cloud Control Center, you are required to install license files generated by SAP on request, which contain the licenses that you have purchased plus other relevant information. You can also install license files during the customer creation process. All license information is maintained by a license server.

A license file can contain more than one purchased license for SAP Business One. Multiple customers and tenants can share a single license file, but a single customer or tenant may be assigned to only one license file. However, SAP recommends that you use one license file per customer where possible. Each license within the license file is assigned to a named SAP Business One User or cloud operator.

For more information about licenses, see the *SAP Business One License Guide*.

8.5.1 Importing License Files

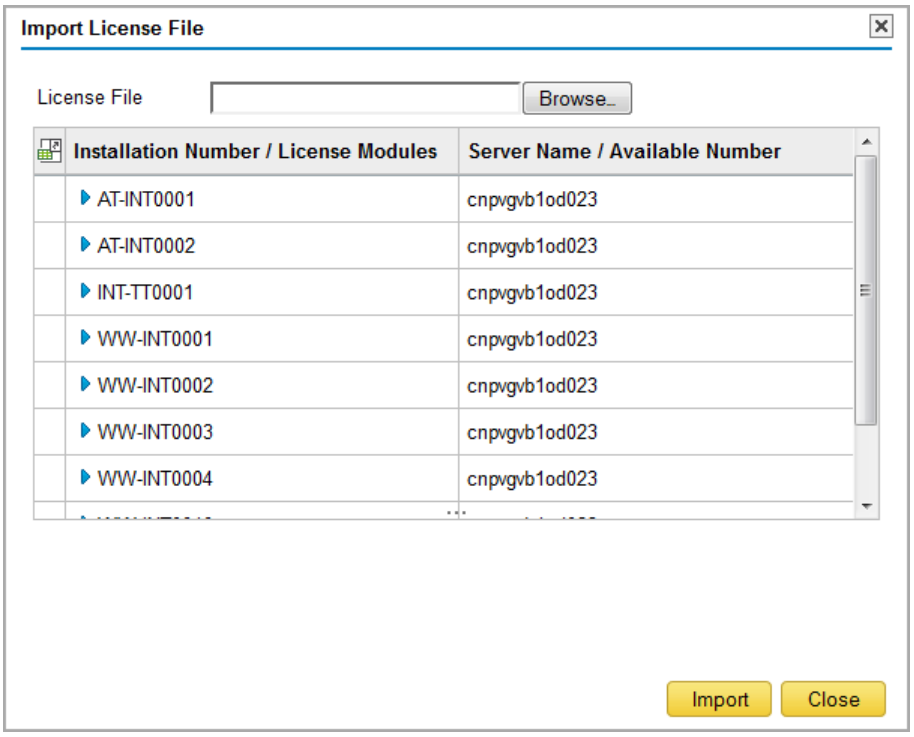
After registering a license server, you can import a valid license file to the license server.

Procedure

To import a new license file to a license server, do the following:

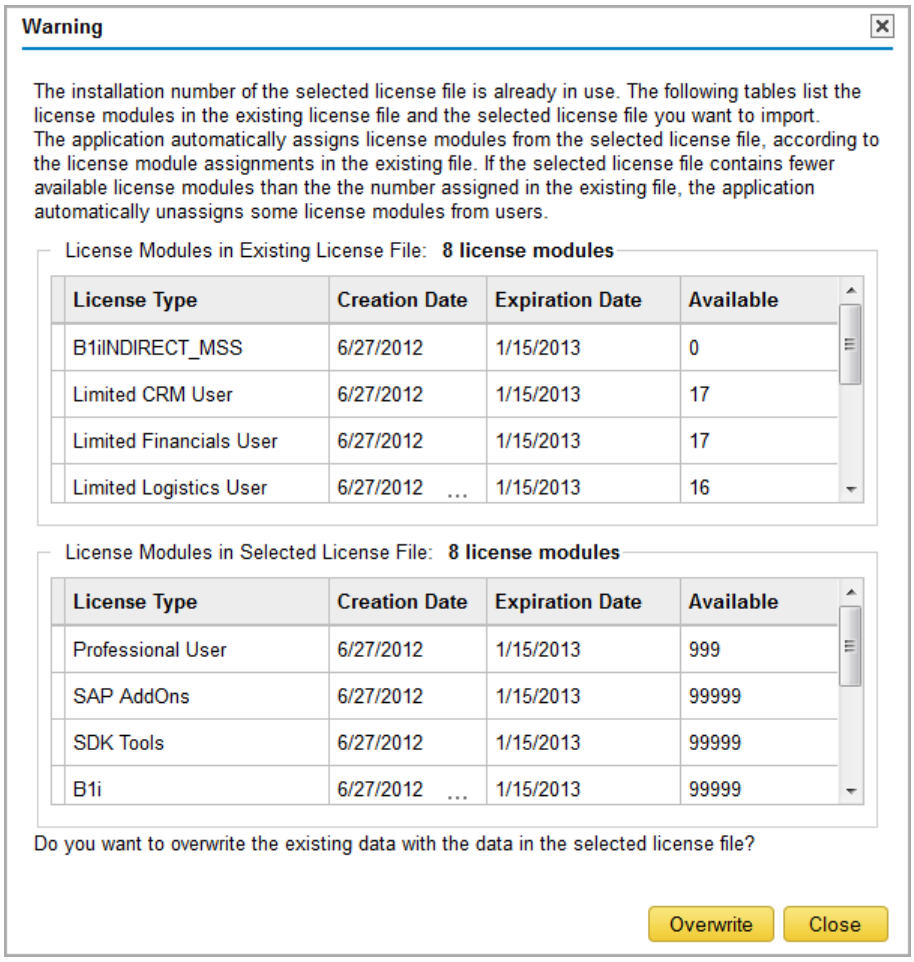
1. In the Cloud Control Center, choose *Customer Management* → *License Files*.
2. Choose the *Import License File* button.

   The *Import License File* window appears, displaying a list of license files you have already imported.



3. Choose the *Browse* button and select the license file you want to import.
4. To import the selected file, choose the *Import* button.

> **Note**
>
> If the installation number of the selected license file is the same as that of an existing license file, a warning window appears. To import the selected license file and overwrite the existing data with the data in the selected file, choose the *OK* button.



The application automatically assigns license modules from the selected license file, according to the license module assignments in the existing file. However, if the selected license file contains fewer available license modules than the number assigned in the existing file, the application automatically unassigns some license modules from users.

8.5.2 Viewing Imported License Files

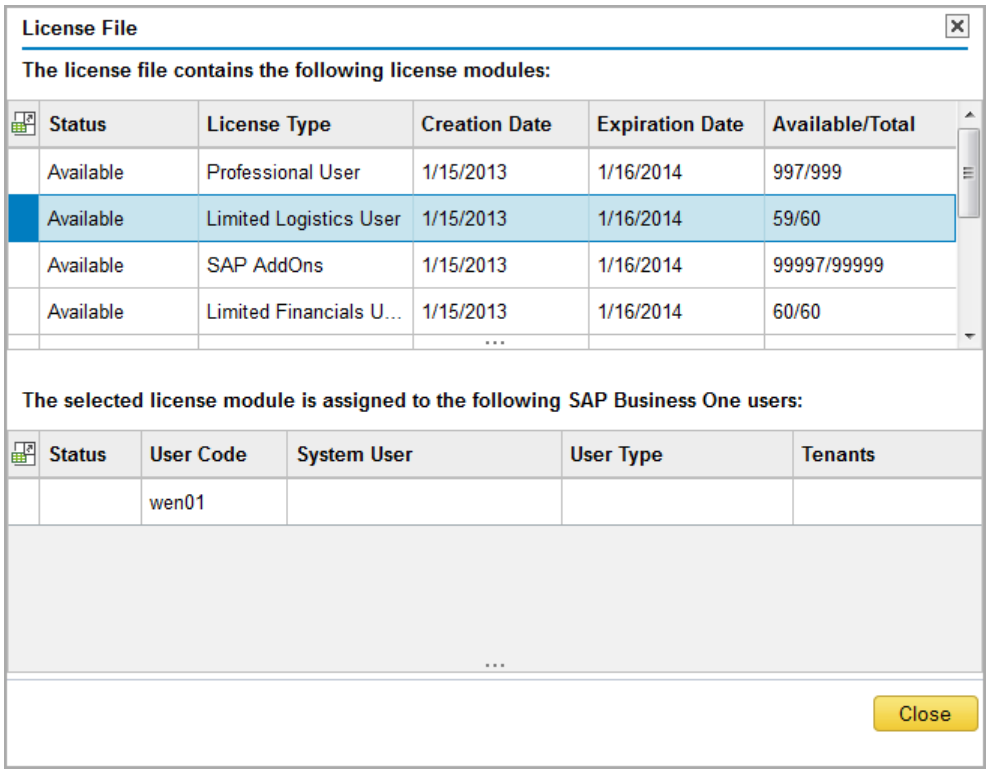
In the Cloud Control Center, you can view detailed information about imported license files, including the license types, expiration dates, and available number of licenses.

Procedure

To view detailed information about a license file, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *License Files,* and then select the license file for which you want to view information.
2. Choose the *View License File* button.

   The *License File* window appears.



Note

You can view the hardware key of the license file in the *License File Details* area, on the *Configuration* tab.

8.5.3 Changing License Files

You can change the installation number of a license file that is already assigned to a customer.

Note

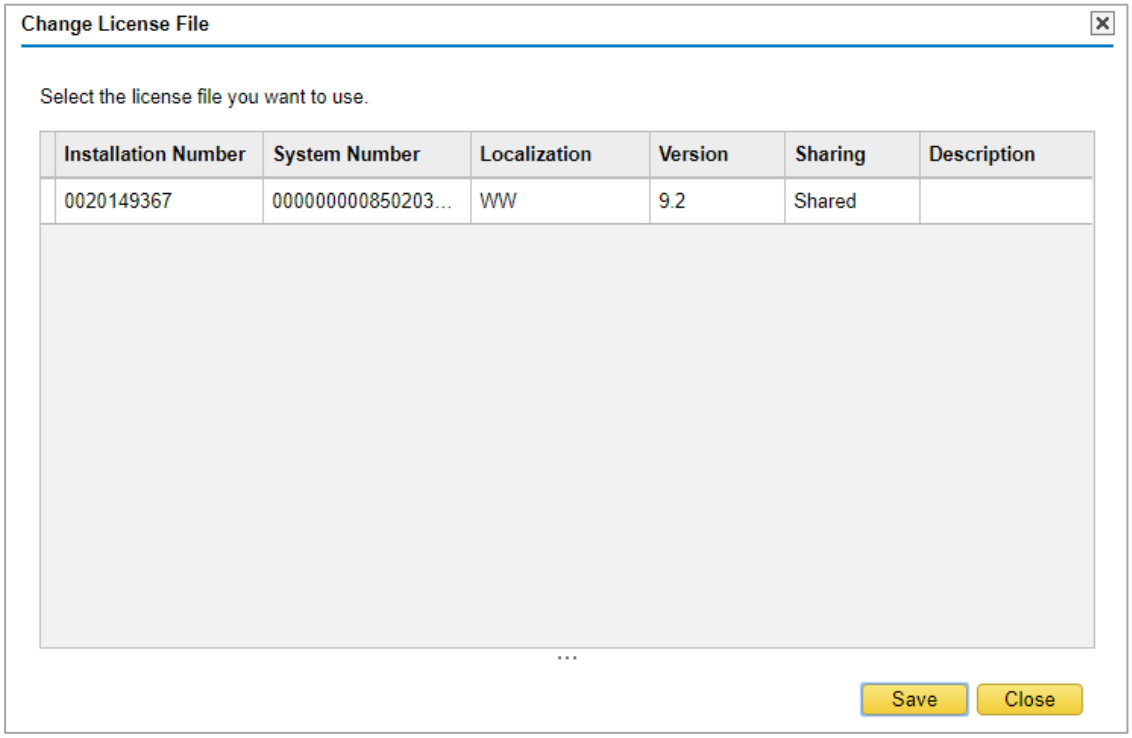
After changing the license file, the application maintains common license module assignments. However, you may need to manually reassign license modules to some users.

Procedure

To change a license file for a customer, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer for which you want to change the license file.
2. On the *Configuration* tab in the *Customer Details* area, choose the *Change License File* button.

3. In the *Change License File* window, select the license file you want to use, and then choose the *Save* button.



Note

You can select only valid license files with the same localization as the original license file that you are replacing, or license files with a worldwide localization.

8.5.4 Removing License Files

As of SAP Business One 9.3 PL08, you can remove license files in the Cloud Control Center. Removing a license file removes the binding between the license file and any customers, tenants, and resellers which have been assigned the license file.

Procedure

To remove a license file, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *License Files*.
2. Choose the *Remove License File* button.
3. In the *Confirmation* window, choose *Yes*.

8.5.5 Managing License Allocations

Although SAP recommends you use one license file per customer where possible, in certain scenarios it may be necessary for multiple customers to share a single license file, which can contain more than one purchased license for SAP Business One. You can allocate a specific number of licenses from a shared license file to individual customers.

> **Note**
>
> License allocation is managed by hosting partners. Resellers can only view license information for the licenses that are assigned to their customers.
>
> For more information about assigning licenses to resellers, see *Assigning License Files to Resellers*.

Procedure

To allocate licenses to a customer, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Customers*, and then select the customer for which you want to manage the license allocation.

   > **Note**
   >
   > You cannot modify the license allocation for trial customers.

2. In the *Customer Details* area, select the *License Allocation Management* tab, and then select the license type for which you want to adjust the allocation.
3. In the *License Allocation* column, click the (*Edit*) icon, and then enter the number of licenses that you want to allocate to the customer.
   - If you enter **0**, then the customer cannot use the license module.
   - If you set the value as *Dynamic*, then the application automatically calculates the number of available licenses, which changes dynamically according to how many licenses are allocated or consumed by other customers that share the same license file.
4. Click the *Save* icon.

8.5.6 Assigning Licenses to Users

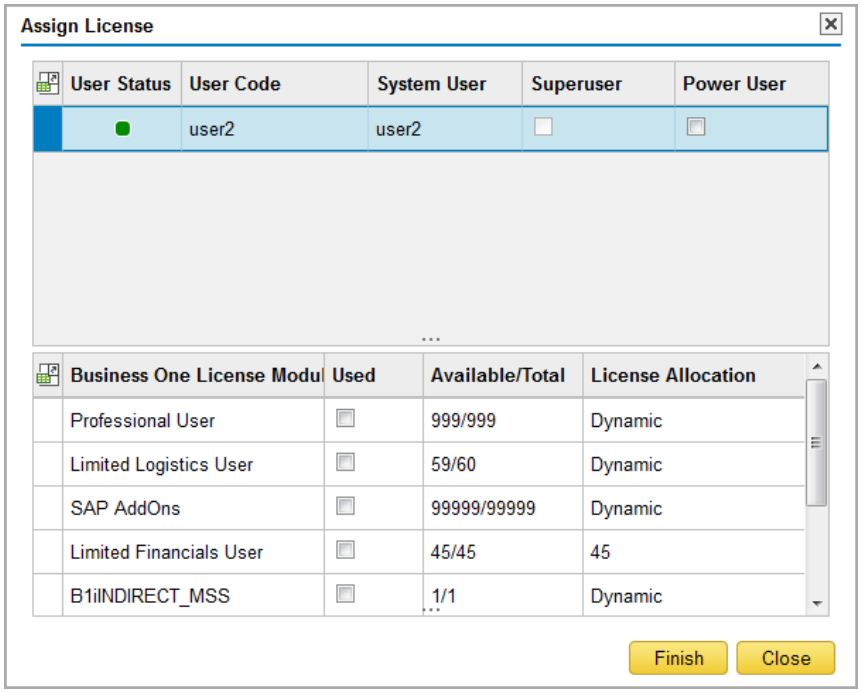
After adding an SAP Business One User, you must assign a valid license in order for the user to access SAP Business One.

Procedure

To assign a license to an SAP Business One User, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant containing the user to whom you want to assign a license.
2. On the *User Management* tab in the *Tenant Details* area, choose the *Assign License* button.

The *Assign License* window appears.



3. In the *Assign License* window, select the user to whom you want to assign a license.

   Note

   When you assign a license to an SAP Business One company user, the name of the company user is case sensitive. This means, for example, that you need to assign two different licenses if you have "user2" on one tenant and "User2" on another tenant.

4. Select the checkbox that corresponds to the type of license you want to assign. The *Available* column displays the number of remaining licenses available.
5. Repeat the previous steps to assign licenses to additional users.
6. Choose the *Finish* button.

9 Managing Extensions

Extensions for SAP Business One Cloud are additional components that meet specific industry or niche business requirements. SAP Business One Cloud includes several default add-ons provided by SAP and provides support for the lifecycle management of the following types of third-party extensions:

- SAP Business One Script

  A lightweight, JavaScript-based extension system that you can use to quickly adapt SAP Business One to business-specific processes in cloud environments.

  Unlike traditional SAP Business One add-ons, these extensions are "sandboxed", with managed access to system functionality. SAP Business One Script enables you to quickly and cheaply develop solutions that address last-mile extensibility, without the need for certification. In addition, users can modify scripts on-the-fly according to immediate business requirements.

  For more information, see *Working with SAP Business One Script*.

- Add-ons enabled for lightweight deployment

  Add-ons for which the lifecycle management is fully automated in cloud environments, without the need for any manual installations or configuration on the server. These add-ons have access to the full functionality of SAP Business One. You can completely configure add-ons enabled for lightweight deployment using the Cloud Control Center. Depending on requirements, the types of add-ons enabled for lightweight deployment are as follows:

  - Fully compliant add-on certified by SAP

    Typically developed by software solution providers (SSPs) to address broad industry needs. These add-ons are certified by SAP to ensure that they run reliably and securely in cloud environments, and are marketed and sold to a wide audience.

  - Fully compliant add-on not certified by SAP

    Typically developed by value-added resellers (VARs) to meet the specific business requirements of a few individual customers. Although these add-ons still meet the requirements for lightweight deployment, they do not receive certification by SAP since they are not marketed and sold to a wide audience.

- Compatible add-ons

  Add-ons for which the lifecycle management is not fully automated in cloud environments, with the need for manual installations or configuration on the server. These add-ons have access to the full functionality of SAP Business One. You can partially configure these add-ons using the Cloud Control Center.

The following table provides an overview of the default SAP add-ons, which are registered automatically.

Add-On	Type	Compatibility
PaymentLW	Add-on for lightweight deployment	SAP Business One 8.82 PL11 and later
Datev2LW	Add-on for lightweight deployment	SAP Business One 9.2 PL10 and later

Add-On	Type	Compatibility
EFMLW (Electronic File Manager:Format Definition)	Add-on for lightweight deployment	SAP Business One 9.3 PL06 and later
Screen Painter	Compatible add-on	SAP Business One 8.82 PL08 to SAP Business One 9.3 PL14
SBO Script	Compatible add-on	SAP Business One 8.82 PL09 to SAP Business One 9.3 PL14

Extracting the contents of an SAP Business One upgrade package to a software repository makes SAP add-ons available for deployment and assignment from the Cloud Control Center.

> **Note**
>
> To run add-ons, SAP Business One Users require an SAP Add-Ons license, which is included in the Professional User license.

> **Note**
>
> As of SAP Business One 9.1 PL03 and SAP Business One 9.0 PL14, the ELSTER add-on is no longer included in the SAP Business One upgrade or installation packages.

9.1 Enabling Add-Ons for Lightweight Deployment

The lifecycle management of add-ons enabled for lightweight deployment is fully automated in cloud environments, without the need for any manual installations or configuration on the server. Add-ons that are enabled for lightweight deployment do not have dedicated installers. Instead, the required files are located within a single folder or ZIP archive, and installation is performed by the application.

When enabling add-ons for lightweight deployment, you can specify support for multiple versions of an add-on. In this case, you can deploy multiple different versions of the same add-on to a single presentation server.

Add-ons enabled for lightweight deployment must contain the following components in a folder or ZIP archive:

- Application executable
- Add-on registration data (ARD) file
- COM-based DLLs
- Other required files or sub-folders

Add-on registration data (ARD) files contain the following add-on registration data in Extensible Markup Language (XML) format:

- Basic Information – Specifies the name and contact information of the SAP partner that creates the add-on, and the name, version, and basic properties of the add-on.
- SBO Compatibility – Specifies the versions of SAP Business One with which the add-on is compatible.
- Configuration – Specifies landscape, deployment, and assignment values for the add-on, and information required for installation and uninstallation.

You can use the Extension Package tool to package the add-ons enabled for lightweight deployment into a ZIP archive. The tool is located at …`\SAP\SAP Business One SDK\Tools\ExtensionPackage\ExtensionPackage.exe`.

For more information, see *How to Package and Deploy SAP Business One Extensions for Lightweight Deployment*.

Add-ons enabled for lightweight deployment can store data in the following locations:

- Company databases and user-defined tables (UDTs)
- Dedicated add-on folders in the tenant storage using the `GetExtensionSharedFolderPath` or `GetExtensionSharedFolderPathEx` functions of UI API
- User storage using the `GetUserStorage` function of UI API
- SAP Business One Users' roaming profile folders (not recommended)
- Web services using HTTP/HTTPS

For more information about working with UI API, see the *Online Help* for the SAP Business One Software Development Kit (SDK).

9.2 Configuring Extension Repositories

The extension repository stores extension files. After you create an extension repository, the application automatically creates two sub-folders named `Incoming` and `Repository`. The `Repository` folder stores synchronized extensions that you can deploy to service units and assign to tenants. The `Incoming` folder provides a location for add-on providers to upload third-party extensions that you can then synchronize.

> **Recommendation**
>
> Allow add-on providers to upload third-party extensions using FTP or WebDAV protocols, or both, and implement automatic virus and malware scanning.

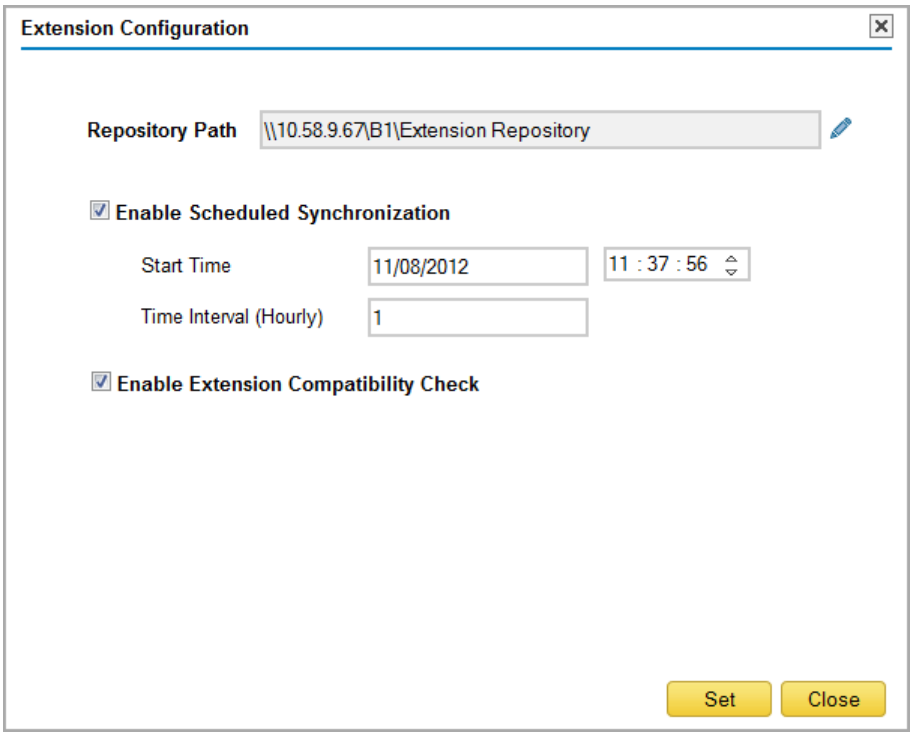
Procedure

To configure the extension repository, do the following:

1. Create a Windows shared folder.

   Keep a record of the full UNC path to the folder, as you are required to enter this in the Cloud Control Center during the registration process.
2. Assign read and write permissions to the `SAPServiceB1C` account.
3. In the Cloud Control Center, choose *Central Components* → *Extensions*.
4. To open the *Extension Configuration* window, click the (*Extension Configuration*) icon.
5. In the *Path* field, enter the full UNC path to the extension repository.
6. To configure the application to automatically synchronize add-ons according to a specified schedule, select the *Enabled Scheduled Synchronization* checkbox.

   Specify a start time and interval between synchronizations.
7. To prevent operators from deploying and running extensions that are incompatible with the relevant service units, select the *Enable Extension Compatibility Check* checkbox. This option is recommended.



8. To complete the process, choose the *Set* button.
9. The application creates two sub-folders named `Incoming` and `Repository` in the specified extension repository. To allow add-on providers to upload extensions, do the following:
    - In the *Incoming* folder, manually create sub-folder for each add-on provider that you want to allow to upload third-party extensions.
    - Grant the appropriate permissions to each add-on provider.

      Caution

      Add-on providers must upload extensions to only their dedicated folders using FTP or WebDAV protocols. Add-on providers must place an extension in a folder or ZIP archive dedicated to that specific extension. For example, the structure of the `Incoming` folder is as follows:

- `Incoming`
    - `Add-On_Provider_1`
        - `Add-On_1`
        - `Add-On_2.zip`
    - `Add-On_Provider_2`
        - `Add-On_1.zip`
        - `Add-On_2`
        - `Add-On_3.zip`

9.3 Synchronizing Extensions

To allow users to run third-party add-ons uploaded by add-on providers to the Incoming folder, you first must synchronize the extension. Synchronization copies add-ons from the Incoming folder to the `Repository` folder of the extension repository.

Procedure

To synchronize add-ons, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Extensions*.
2. To synchronize all add-ons, choose the *Synchronize All* button.

9.3.1 Viewing Synchronization History

In the Cloud Control Center, you can view reports of all manual and automatic synchronizations.

Procedure

To view the synchronization history, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Extensions*.
2. To open the *Synchronization History* window, click the  (*Synchronization History Report*) icon.

9.3.2 Troubleshooting Synchronization Errors

If the application fails to copy add-ons from an add-on provider's sub-folder in the `Incoming` folder to the `Repository` folder during the synchronization process, the application moves the add-on to a sub-folder named `Failed`.

To help you troubleshoot synchronization errors, the application creates a `Logs` folder for each add-on provider in their respective sub-folders in the `Incoming` folder, in which you can access log files.

9.4 Deploying Extensions

After synchronizing an extension, you can deploy the extension to a service unit. You can deploy a single extension to multiple service units.

Note

After creating a service unit, the application automatically deploys add-ons provided by SAP to the service unit; you are not required to manually deploy them.

Recommendation

If you need to redeploy all extensions on a particular service unit, you can easily find the required extension configuration settings (*Enabled* and *Startup Mode* field values for each tenant) on the *Extensions* page, in the *Extension Details* area, on the *Assigned to Tenant* tab. The table displayed on the *Assigned to Tenant* tab allows you to view the extension configurations for all relevant tenants for each extension type. You can also export a CSV file of the table data. For more information, see SAP Note 3134898.

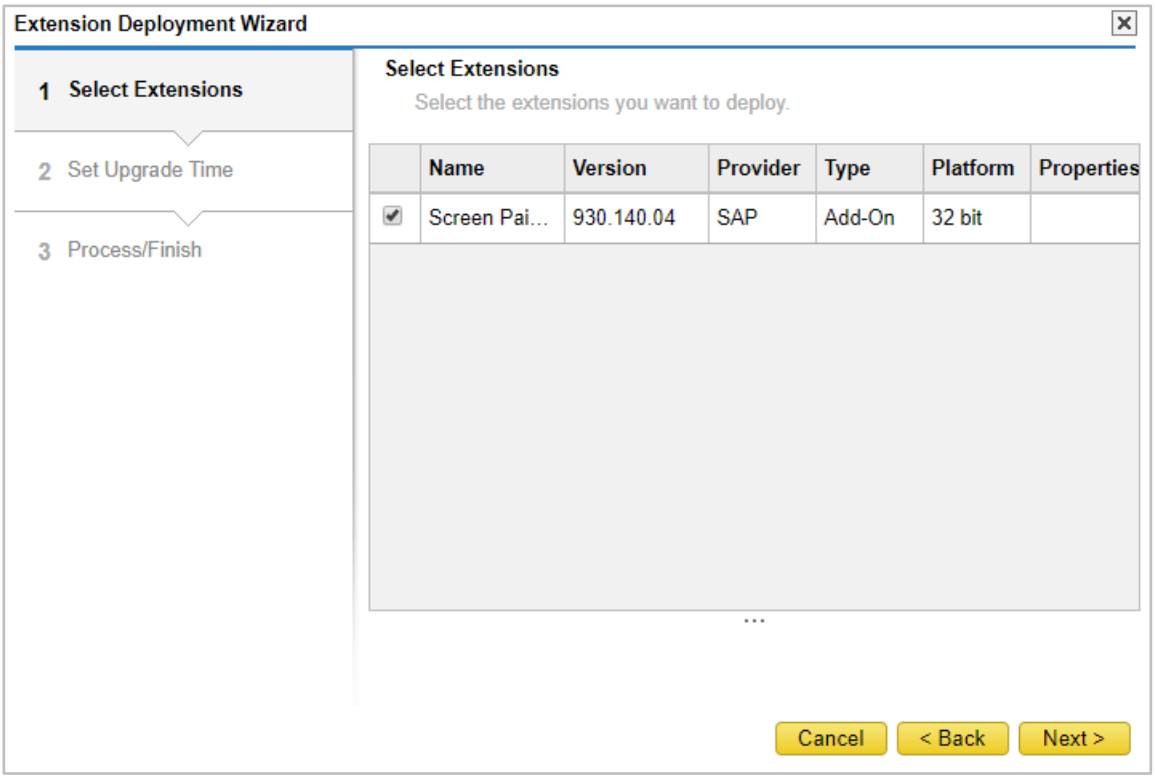
Prerequisites

- You have synchronized the add-ons you want to deploy. For more information, see *Synchronizing Extensions*.
- You have created a service unit. For more information, see *Creating Service Units*.
- You have set the logon account of the SAP Business One Client Agent service to a cloud operator account with local administrator privileges. For more information, see SAP Note 1764311.
- If you are deploying an extension based on **SAP HANA XS**, you have performed the following:
  - Ensured that the SAP HANA database client is installed on the SLD service machine.
  - On the SLD service machine, you have specified the value of the PATH environment variable as the SAP HANA database client path.

Procedure

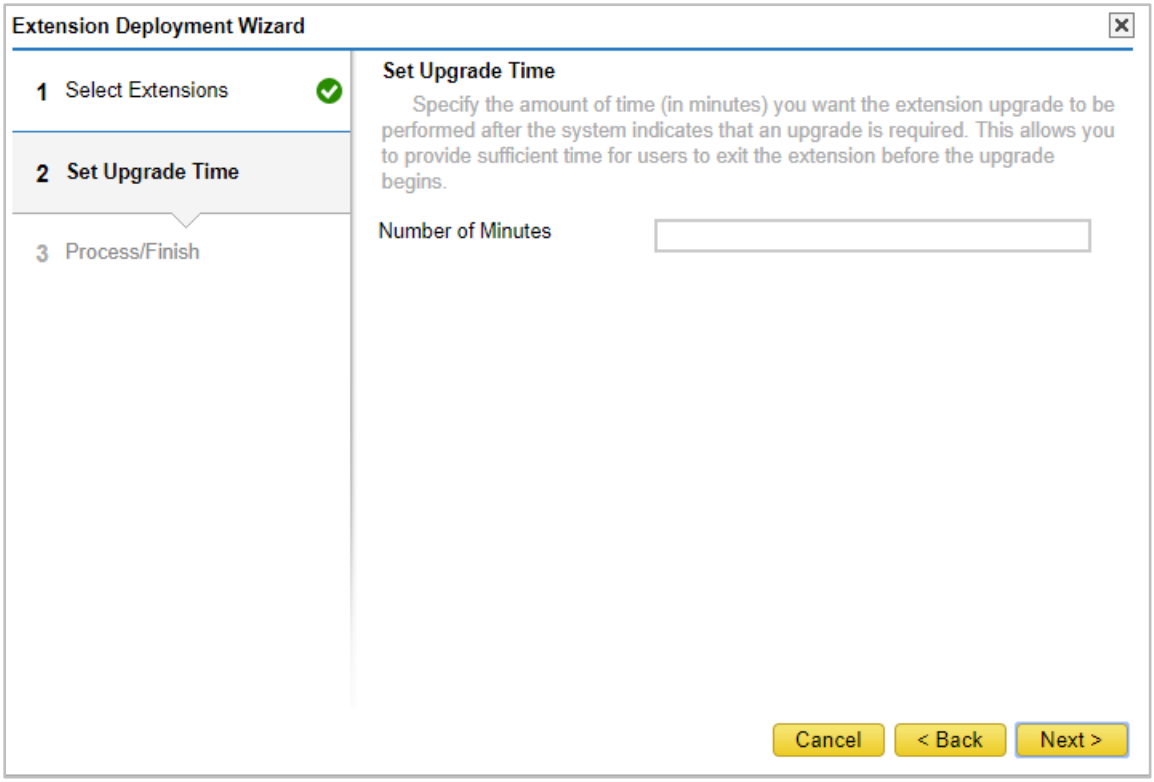
To deploy an extension, do the following:

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and then select the service unit to which you want to deploy an extension.
2. In the *Service Unit Details* area, select the *Extensions* tab.
   To run the extension deployment wizard, choose the *Deploy* button.
3. In the *Select Extensions* window, select the extensions you want to deploy to the service unit.



- To configure the properties of an extension, click the corresponding hyperlink in the *Properties* column.
- To deploy the extensions, choose the *Next* button.
- To change the settings, choose the *Back* button to return to the previous steps.

> **Note**
>
> If you have selected an extension with a higher version, an extension upgrade will be required. You can set the amount of time before users need to exit the extension before the upgrade begins. In the *Set Upgrade Time* window, in the *Number of Minutes* field, specify the number of minutes after the system notifies you that an upgrade is required that you want the extension upgrade to be performed.



Recommendation

We recommend that you specify at least a 5-minute period to allow users sufficient time to exit the extension before the upgrade begins. This allows you to provide sufficient time for users to exit the extension before the upgrade begins.

4. The *Progress/Finish* window displays an overview of the main results of the extension deployment process.

   To complete the process, choose the *Finish* button.

   Note

   After completing the deployment process, the application automatically installs any add-ons that are enabled for lightweight deployment on the presentation servers that are registered to the service unit.

   To view detailed information about the installation status, in the *Service Unit Details* area, ensure you have selected the *Extensions* tab, and then click the *Details* link in the *Installation Status* column to open the *Extension Installation Status* window. If an installation fails, you can manually start the installation again by clicking the retry icon in this window.

9.5 Assigning Extensions

After deploying an extension to a service unit, you can assign the extension to tenants. After assigning an add-on to a tenant, users of that tenant can run the add-on in SAP Business One.

Prerequisites

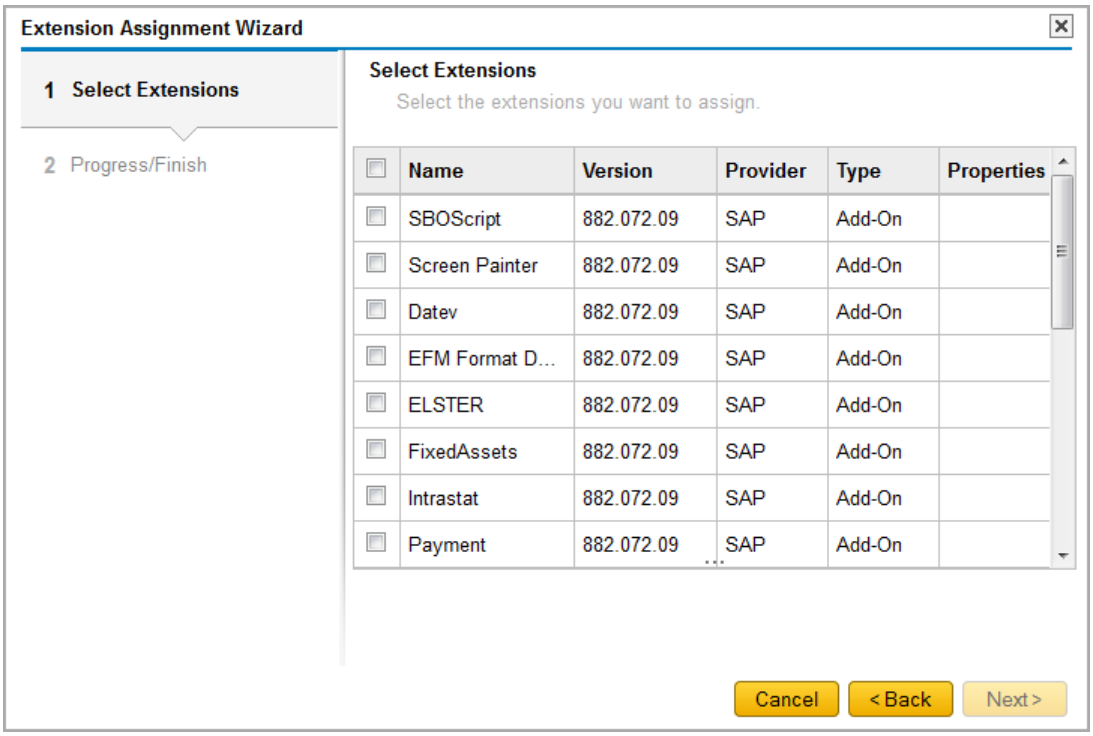
- You have created a tenant. For more information, see *Creating Tenants*.
- You have deployed the add-ons to the service unit containing the tenant to which you want to assign the add-ons. For more information, see *Deploying Extensions*.

Procedure

To assign an extension, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select the tenant to which you want to assign an extension.
2. In the *Tenant Details* area, select the *Extensions* tab.

   To run the extension assignment wizard, choose the *Assign* button.
3. In the *Select Extensions* window, select the extensions you want to assign to the tenant.



   - To configure the properties of an extension, click the corresponding hyperlink in the *Properties* column.
   - To assign the extensions, choose the *Next* button.
   - To change the settings, choose the *Back* button to return to the previous steps.
4. The *Progress/Finish* window displays an overview of the main results of the extension assignment process.

   To complete the process, choose the *Finish* button.

   > **Note**
   >
   > After completing the assignment process, to begin the associated installation process, use an administrator account to log on to relevant presentation servers, right-click `SAP Business One.exe`

and choose *Run as administrator*, and then log on to the SAP Business One client using an account with superuser permissions.

Add-ons enabled for lightweight deployment are installed automatically; however, you must manually install compatible add-ons using the associated installers.

After all installations are complete, you can log off the presentation servers. Customers can now log on to SAP Business One and use their assigned extensions.

9.6 Controlling Reseller Access to Extensions

As a cloud operator, for each extension on a service unit, you can control whether reseller operators have permission to access the extension. If you choose to allow reseller operators to access an extension, you can either allow all resellers access or specify which resellers can assess the particular extension.

> **Note**
>
> To globally manage whether reseller operators can deploy extensions, see Controlling Reseller Permission to Deploy Extensions.

9.6.1 Managing Reseller Access to Extensions

Prerequisites

- You have synchronized the relevant extensions. For more information, see Synchronizing Extensions.
- You have created resellers. For more information, see Creating Resellers.

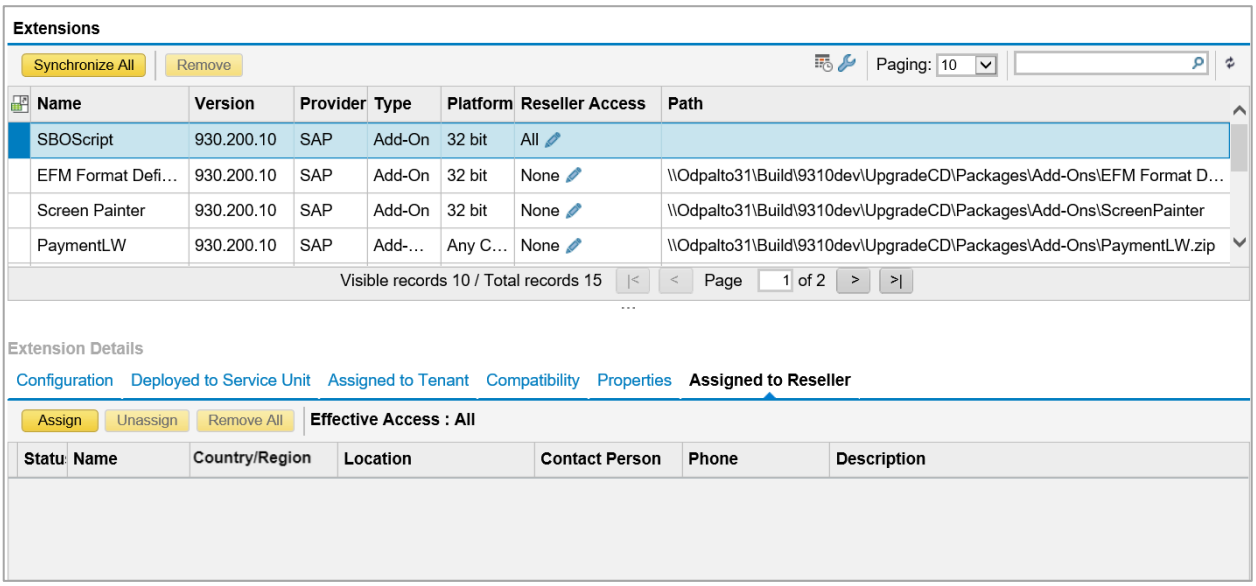
Procedure

To control whether reseller operators can access extensions, perform the following:

1. In the Cloud Control Center, choose *Central Components → Extensions*.
2. Select the extension to which you want to set reseller access for, and from the dropdown list in the *Reseller Access* field, select one of the following options:
   - *All*– All resellers can access the extension.
   - *None* (default) – No resellers can access the extension.

     > **Note**
     >
     > If the *All* or *None* option is selected in the *Reseller Access* field, note that the access type is displayed next to the buttons on the *Assigned to Reseller* tab (for example, **Effective Access: All**). In this case, if a custom list of resellers is displayed, it is not applied.

   -
   -



- *Custom* – Only specific resellers that you assign to the extension and are displayed on the *Assigned to Reseller* tab in the *Extension Details* section can access the extension. For more information, see Assigning Resellers to Extensions.

9.6.2 Assigning Resellers to Extensions

Prerequisites

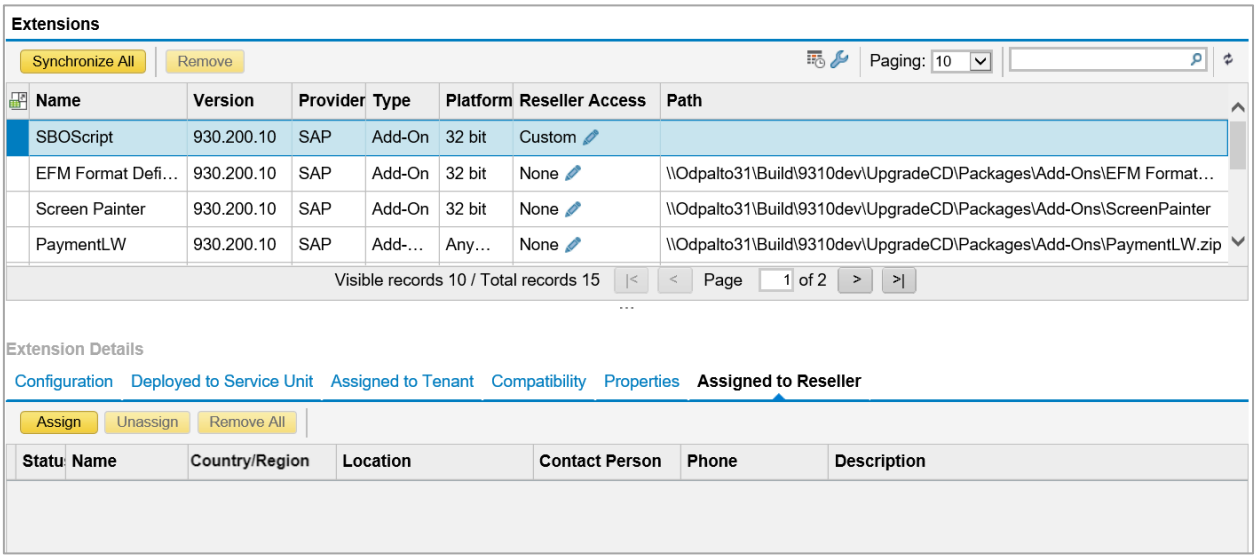
In *Central Components* → *Extensions*, in the *Reseller Access* field, the *Custom* option is selected for the relevant extension.

Procedure

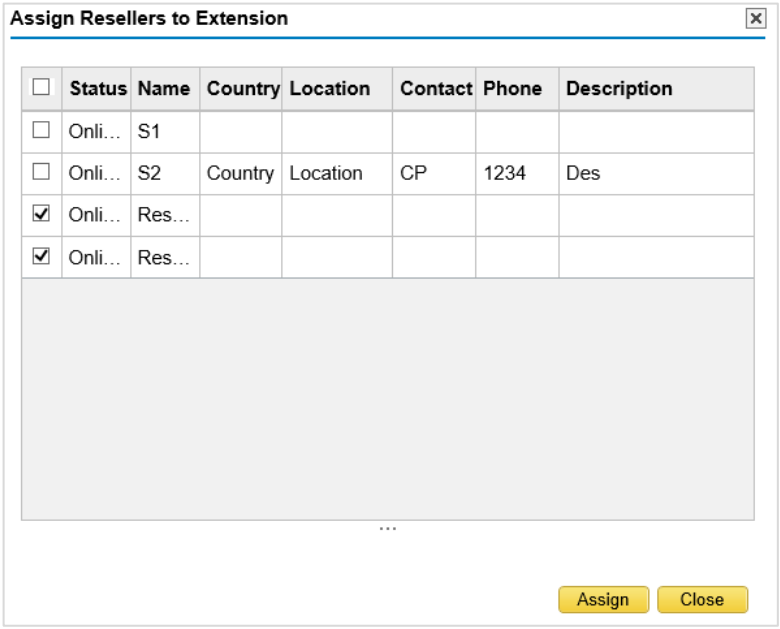
To assign specific resellers to an extension, perform the following:

1. In the Cloud Control Center, choose *Central Components* → *Extensions*.
2. Select the extension to which you want to assign resellers to.

3. In the *Extension Details* area, on the *Assigned to Reseller* tab, choose the *Assign* button.



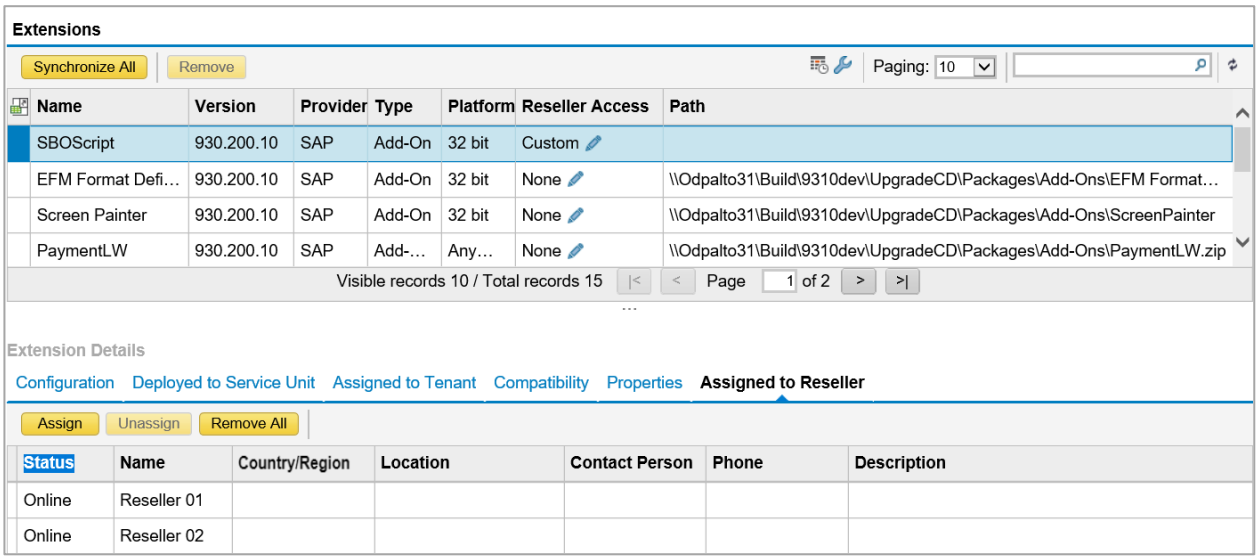
4. In the *Assign Resellers to Extension* window, select the checkbox next to the resellers you want to assign to the extension.



5. Choose the *Assign* button.

Result

The custom list of resellers assigned to the extension is displayed on the *Assigned to Reseller* tab.



Note

If the *All* or *None* option is selected in the *Reseller Access* field, note that the custom list may be displayed but is not applied. The *All* or *None* access type is simply displayed next to the buttons on the *Assigned to Reseller* tab (for example, **Effective Access: None**).

9.6.3 Unassigning Resellers from Extensions

Prerequisites

In *Central Components* → *Extensions*, on the *Assigned to Reseller* tab, you have assigned specific resellers to an extension.

Procedure

1. To remove specific resellers assigned to an extension, perform the following:
2. In the Cloud Control Center, choose *Central Components* → *Extensions.*
3. Select the extension to which you want to unassign resellers from.
4. In the *Extension Details* area, on the *Assigned to Reseller* tab, select the resellers you want to remove.
5. Choose the *Unassign* button.
6. In the confirmation window, choose *Yes*.

Note

If you want to remove all resellers assigned to an extension, on the *Assigned to Reseller* tab, choose the *Remove All* button.

9.7 Managing Extension Security

As of SAP Business One 10.0 FP 2011, you can enhance the security of extensions by issuing trusted certificates to your extensions in the Cloud Control Center. If this option is enabled, SAP Business One will check if the certificate for each add-on is trusted in the SLD to ensure that the connection is secure. The supported certificates are base64-encoded, standard x.509 certificates, with the filename extension .crt or .cer. The certificate can be issued by a third-party certification authority (CA) or a local enterprise CA. Add-ons provided by SAP use an SAP certificate that is automatically imported and cannot be removed.

9.7.1 Adding Extension Certificates

Procedure

To add a trusted certificate to an extension, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Security Certificates for Extensions* field, choose the *On* option.
3. Choose *Central Components* → *Extensions.*
4. On the *Extensions* page, select the extension for which you want to add a certificate.
5. On the *Certificates* tab, choose the *Import Certificate File* button.
6. In the *Import Certificate File* window, perform the following:
    1. In the *Certificate File* field, choose the *Browse* button and choose the relevant certificate.
    2. In the *Description* field, you can enter a description of the certificate (optional).
    3. Choose the *Import* button.

9.7.2 Removing Extension Certificates

Procedure

To remove a trusted certificate from an extension, perform the following:

1. In the Cloud Control Center, choose *Central Components* → *Extensions.*
2. On the *Extensions* page, select the extension for which you want to remove a certificate.
3. On the *Certificates* tab, select the certificate you would like to remove.
4. Choose the *Remove Certificate File* button.
5. In the *Remove Certificate File* window, choose the *Browse* button and choose the relevant certificate.
6. In the confirmation window, confirm whether or not you want to remove the selected certificate.

Note

You cannot remove default SAP certificates.

9.8 Upgrading Extensions

When new versions of extensions are available, you can upgrade extensions deployed to service units individually. Note that all tenants in the same service unit must run the same version of an extension, unless it is an add-on enabled for lightweight deployment with multiple version support. In this scenario, you can deploy multiple versions of the same add-on to a single service unit.

Procedure

To upgrade an extension, do the following:

1. Unassign the extension from all tenants in the same service unit:
   1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then select a tenant from which you want to unassign the extension.
   2. In the *Tenant Details* area, select the *Extensions* tab.
   3. Select the extension that you want to upgrade, and then choose the *Unassign* button.
   4. Repeat the previous steps for all tenants in the service unit.
2. Undeploy the extension from the service unit:
   1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and then select the service unit from which you want to undeploy the extension.
   2. In the *Service Unit Details* area, select the *Extensions* tab.
   3. Select the extension that you want to upgrade, and then choose the *Undeploy* button.

      Note

      After completing the undeployment process, to begin the associated uninstallation process, use an administrator account to log on to relevant presentation servers, right-click `SAP Business One.exe`, and then choose *Run as administrator*. Log on to the SAP Business One client using an account with superuser permissions.

      Add-ons enabled for lightweight deployment are uninstalled automatically; however, you must manually uninstall compatible add-ons using the associated uninstallers.
3. Deploy the new version of the extension to the service unit. For more information, see *Deploying Extensions*.
4. Assign the new version of the extension to all tenants in the service unit. For more information, see *Assigning Extensions*.

   Note

   After completing the assignment process, to begin the associated installation process, use an administrator account to log on to relevant presentation servers, right-click `SAP Business One.exe`, and then choose *Run as administrator*. Log on to the SAP Business One client using an account with superuser permissions.

Add-ons enabled for lightweight deployment are installed automatically; however, you must manually install compatible add-ons using the associated installers.

After all installations are complete, you can log off the presentation servers. Customers can now log on to SAP Business One and use their assigned extensions.

10 Upgrading SAP Business One Cloud

This section assists you with the following:

- Upgrading SAP Business One Cloud components
- To upgrade SAP Business One Cloud to later versions, you must upgrade the SLD, Cloud Control Center, and SLD Agent Service. Depending on the supported releases, this does not typically affect customers.
- Upgrading customers to later versions of SAP Business One
- To upgrade a customer's SAP Business One application and enable them to run it successfully, you must do the following:

1. Register a new software repository with the version of SAP Business One to which you want to upgrade
2. Upgrade the license server using the Cloud Control Center
3. Create a target service unit with the version of SAP Business One to which you want to upgrade
4. Upgrade tenants using the tenant upgrade wizard in the Cloud Control Center
5. Manually upgrade other SAP Business One components

10.1 Upgrading System Landscape Directory and Cloud Control Center

Only SAP Business One Cloud 1.0 SP02 is supported for **direct** upgrade to SAP Business One Cloud 1.1. To upgrade an SAP Business One Cloud version that is lower than 1.0 SP02 to version 1.1, first upgrade your current version to 1.0 SP02, and then perform the upgrade to version 1.1.

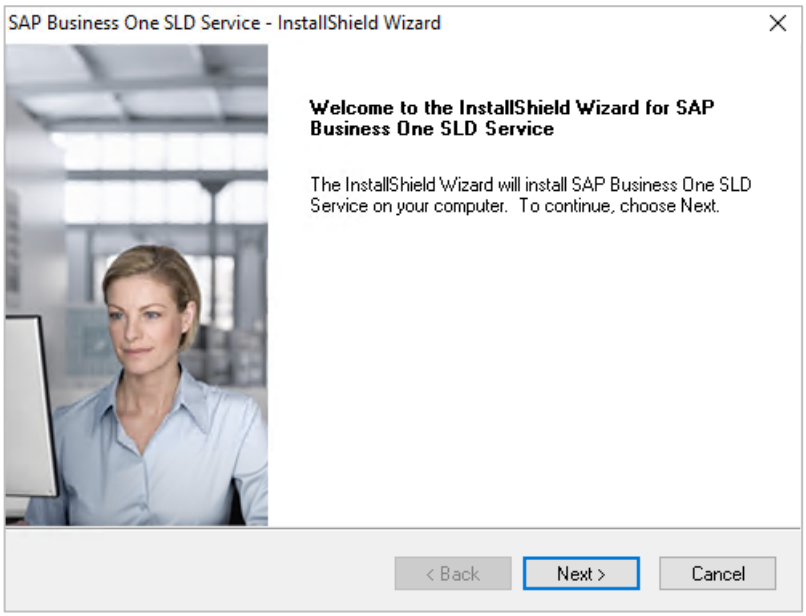
> **Recommendation**
>
> Before upgrading, backup the SLD database or create a restore point or snapshot for the SLD server, in case any errors occur during the upgrade.

Procedure

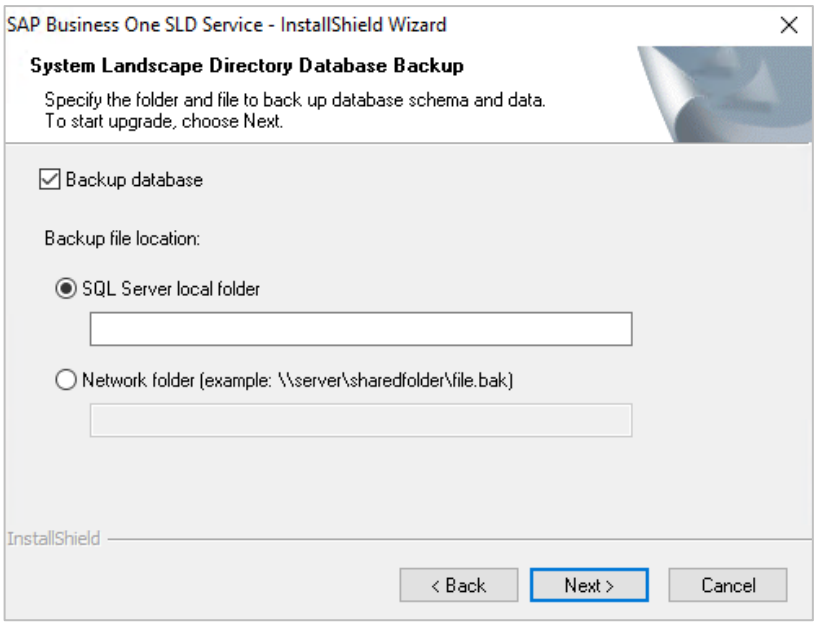
To upgrade the SLD and Cloud Control Center, do the following:

1. Navigate to the root folder of the SAP Business One Cloud 1.1 installation package, right-click the *SLD_x64.exe* file, and choose *Run as administrator*.
2. The *SAP Business One SLD Service - InstallShield Wizard* appears, indicating that the wizard will upgrade the SLD and Cloud Control Center.

   To continue, choose the *Yes* button.
3. In the welcome window, choose *Next* to start the installation of SAP Business One SLD Service.



4. In the *Confirmation of Software Compatibility Information* window, confirm that you have read the information in SAP Note 1756002 - *Verified Combinations of SAP Business One Cloud and SAP Business One*.
5. In the *System Landscape Directory Database Backup* window, specify a location where you want to back up the SLD database.



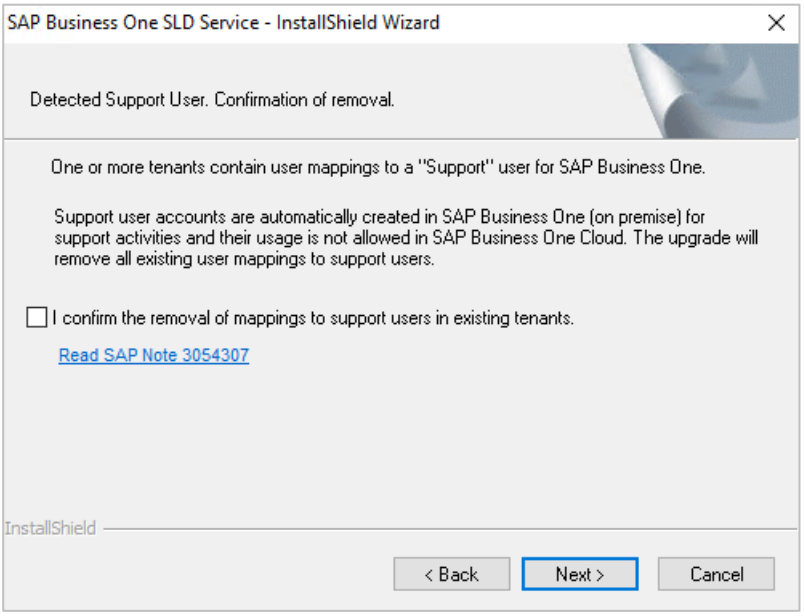
Note

If you want to skip the database backup, deselect the *Backup database* checkbox, choose the *Next* button, and confirm the warning message.

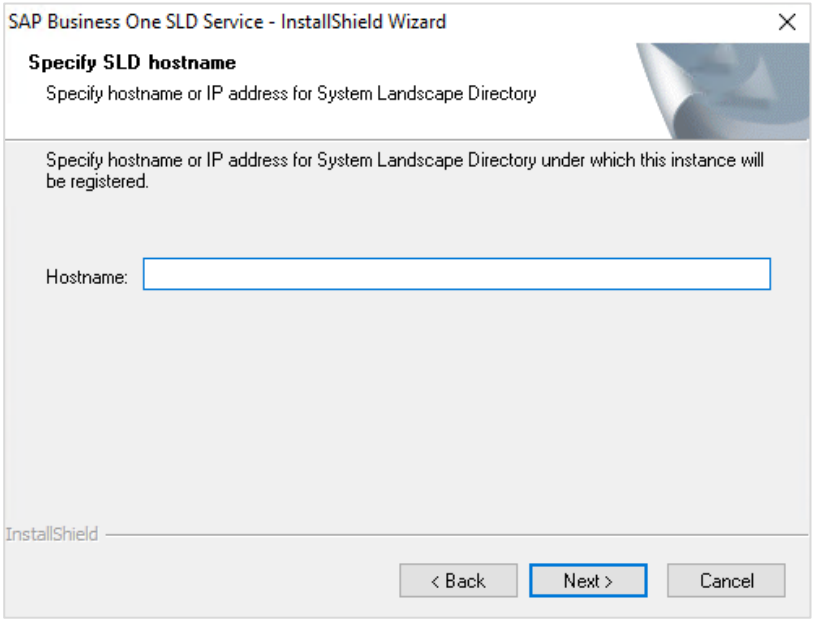
Note

If you are using an SAP HANA database, the location you specify to back up the database schema and data must exist on the SAP HANA server and have write permission.

6. If the wizard detects one or more tenants containing user mappings to a `Support` user for SAP Business One, a window is displayed in which you can agree to remove the user mappings. Support user accounts are automatically created in SAP Business One (on premise) for support activities and their usage is not allowed in SAP Business One Cloud. If you provide your consent, the upgrade will remove all existing user mappings to support users.



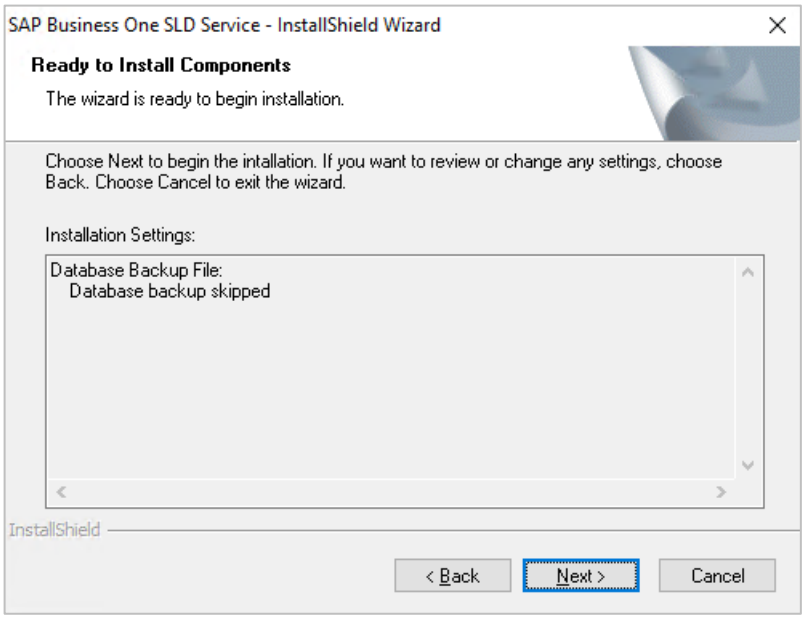
7. In the *Specify SLD hostname* window, specify the hostname or IP address for the System Landscape Directory under which you want the instance to be registered.



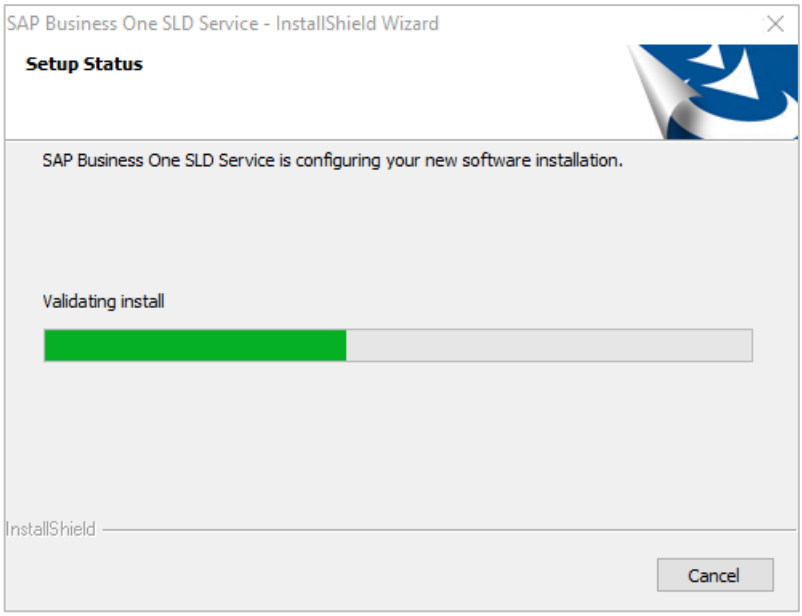
8. In the *Ready to Install Components* window, do the following:
   - To upgrade the components, choose the *Next* button.

     Note

     If the SLD Service is running, the wizard prompts you to stop the service before performing the upgrade.
   - To change the settings, choose the *Back* button to return to the previous steps.



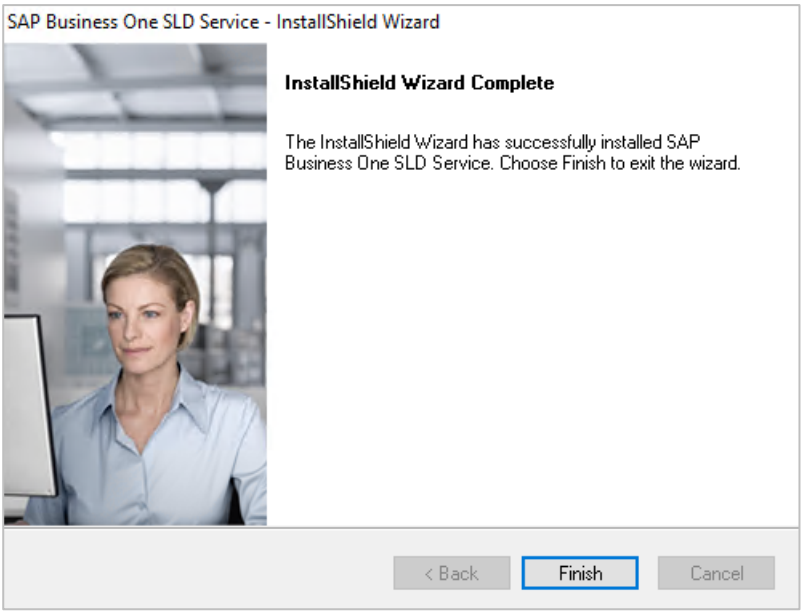
9. The *Setup Status* window displays the progress of the installation.



10. In the *Complete* window, choose the *Finish* button.

Note

If the SLD Service is running, manually restart the SAP Business One Client Agent on each presentation server.



10.2 Upgrading SLD Agent Service

After upgrading the SLD and Cloud Control Center, you must upgrade the SLD Agent Service. You can upgrade the SLD Agent Service using the installer provided by SAP or a group policy object. The upgrade steps are the same as those in the installation procedure.

For more information, see *Installing the SLD Agent* Service.

10.3 Upgrading License Servers

Caution

Upgrading license servers is not supported in SAP Business One Cloud landscapes that use SAP HANA.

Caution

When upgrading a license server, ensure that installation path remains the same.

Prerequisites

- You have registered a license server. For more information, see *Registering License Servers*.

- You have installed the SLD Agent service on the machine on which the license server is located.
- You have registered one or more software repositories with a later version of SAP Business One. For more information, see *Registering Software Repositories*.

Procedure

To upgrade a license server, do the following:

1. In the Cloud Control Center, choose *Central Components* → *License Servers*, and then select the server that you want to upgrade.

   Caution

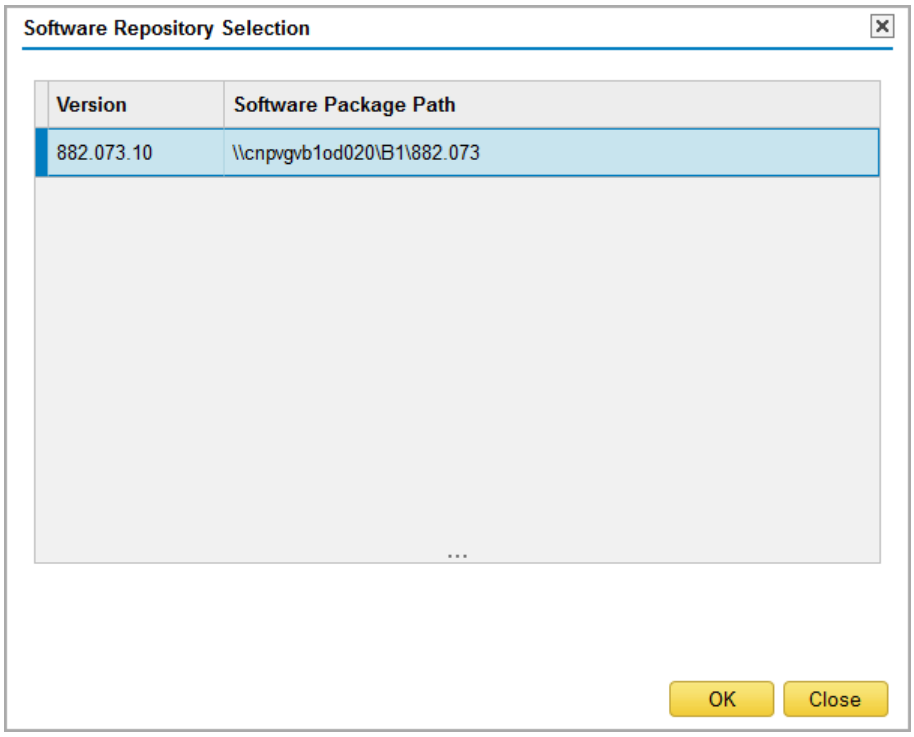
   Automatic upgrade of license servers from version 8.82 to 9.0 is not supported. You must manually perform the upgrade procedure. After upgrading license servers from version 8.82 to 9.0, ensure that you change the logon account of the license service to a service account, such as `SAPServiceB1C`.

2. On the *Configuration* tab of the *License Server Details* area, choose the *Upgrade* button and confirm any warning messages that the application displays.

   The *Software Repository Selection* window appears.

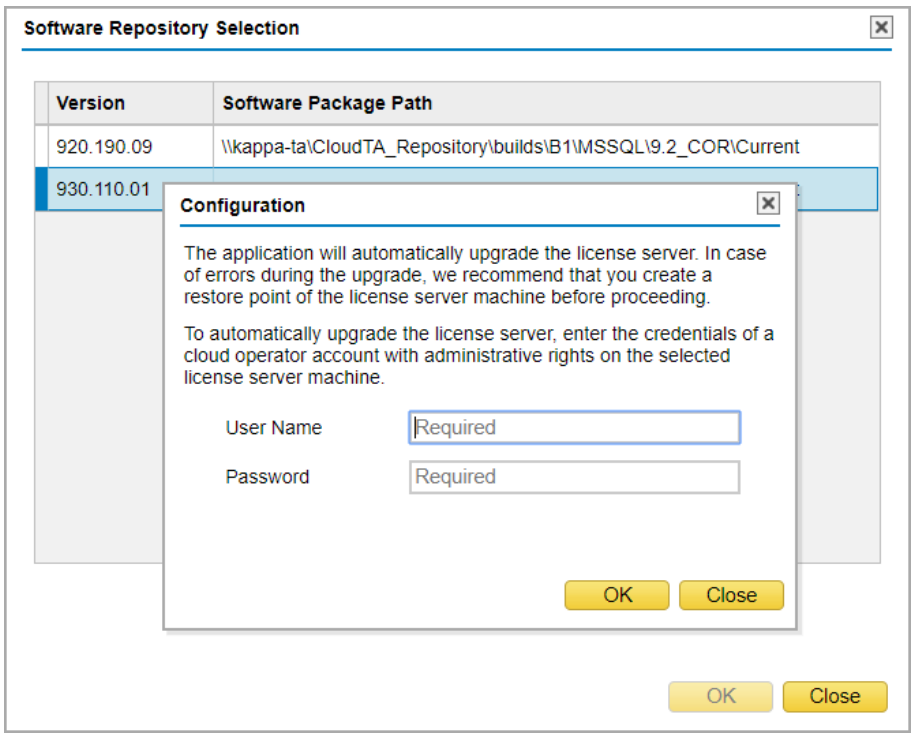
   Recommendation

   Before upgrading, create a restore point or snapshot, in case any errors occur during the upgrade.



3. In the *Software Repository Selection* window, select the software repository with the version to which you want to upgrade.

4. In the *Configuration* window, enter the credentials of the cloud operator account with administrative rights on the selected license server machine.



10.4 Upgrading Service Units

You cannot upgrade an existing service unit to run a later version of SAP Business One. Instead, you must create a new service unit with the SAP Business One version that you want to run, or duplicate an existing service unit to a later version, and then use the new service unit as a target service unit during the tenant upgrade process. For more information about upgrading tenants using target service units, see *Performing Tenant Upgrades*.

If you create a new service unit running a later version of SAP Business One, you must also do the following:

- Deploy the required extensions to the new service unit.
- Unregister the presentation servers from the original service unit and register them to the new service unit.
- [Optional] Manually install a new integration component and mailer for the new service unit.
- Manually configure the remote access solution, for example Microsoft RDS or Citrix.

For more information about creating service units, see *Creating Service Units*.

If you use the service unit duplication wizard to duplicate an existing service unit to a later version, the wizard can automatically deploy the required extensions and move the presentation servers to the new service unit. In this scenario, you must also do the following:

- [Optional] Manually install a new integration component and mailer for the new service unit.
- Manually configure the remote access solution, for example Microsoft RDS or Citrix.

For more information about duplicating existing service units, see *Duplicating Service Units*.

10.5 Upgrading Tenants

You can upgrade tenants to provide users with access to later versions of SAP Business One as new patches, minor versions, and major versions are released by SAP.

> **Note**
>
> SAP HANA tenant upgrade is supported in SAP Business One Cloud 1.1 PL02. To perform the upgrade on SAP HANA, all SAP HANA servers must have mounted tenant storage at the mount point location. For more information, see *Registering Tenant Storage*.

10.5.1 Performing Pre-Upgrade Tests

Before you can upgrade a tenant, you must perform a pre-upgrade test to ensure the tenant is ready and reduce the possibility of the upgrade process failing. The wizard performs a series of version-specific verification checks on selected databases to see if they are ready for upgrade. The existing installation and data are not changed.

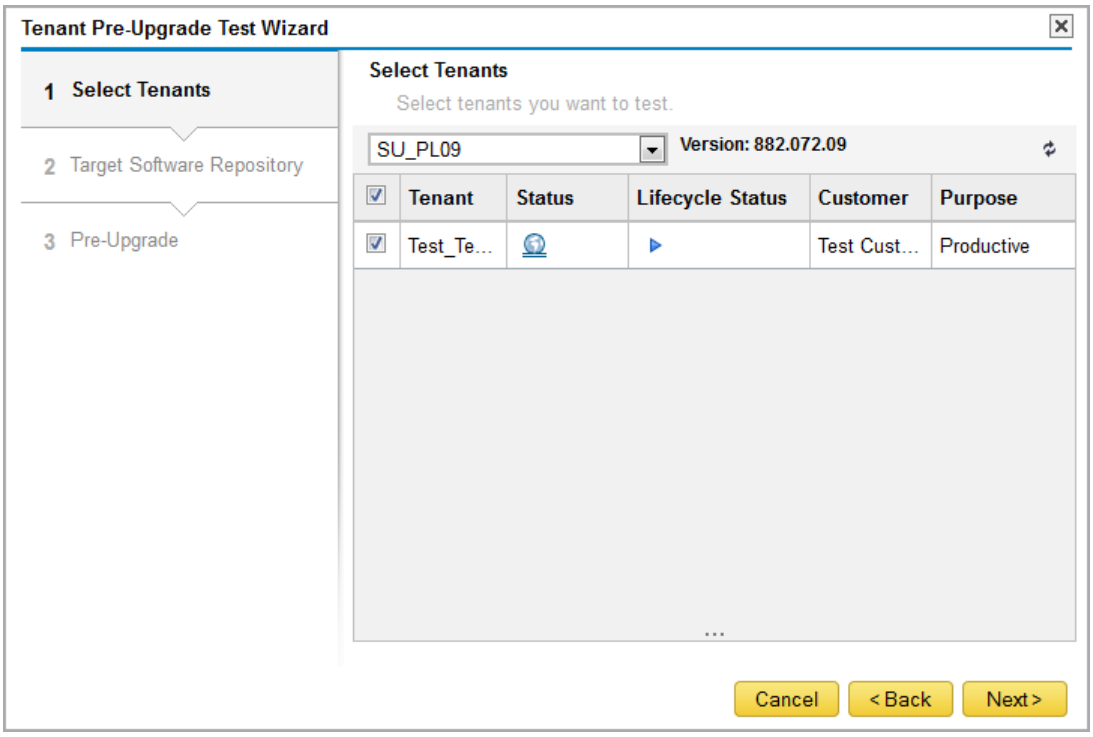
Prerequisites

- You have created a tenant. For more information, see *Creating Tenants*.
- You have created a software repository with the version of SAP Business One to which you want to upgrade the tenant. For more information, see *Creating Software Repositories*.
- You have ensured that the source service unit and target service unit are connected to the same license server.
- If you are using both Microsoft SQL and SAP HANA databases, ensure that you have one license server for each product version (in other words, one license server for Microsoft SQL and one for SAP HANA) installed on a separate machine on the latest version and patch level of SAP Business One and SAP Business One, version for SAP HANA.

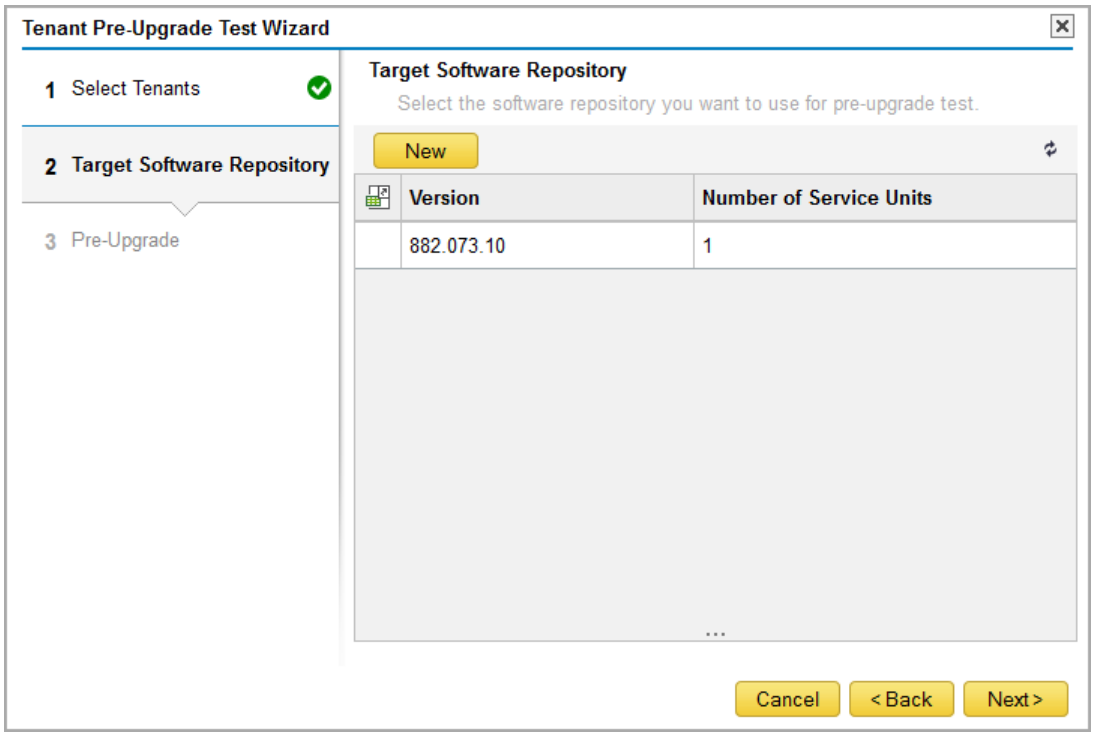
Procedure

To perform pre-upgrade tests on tenants, do the following:

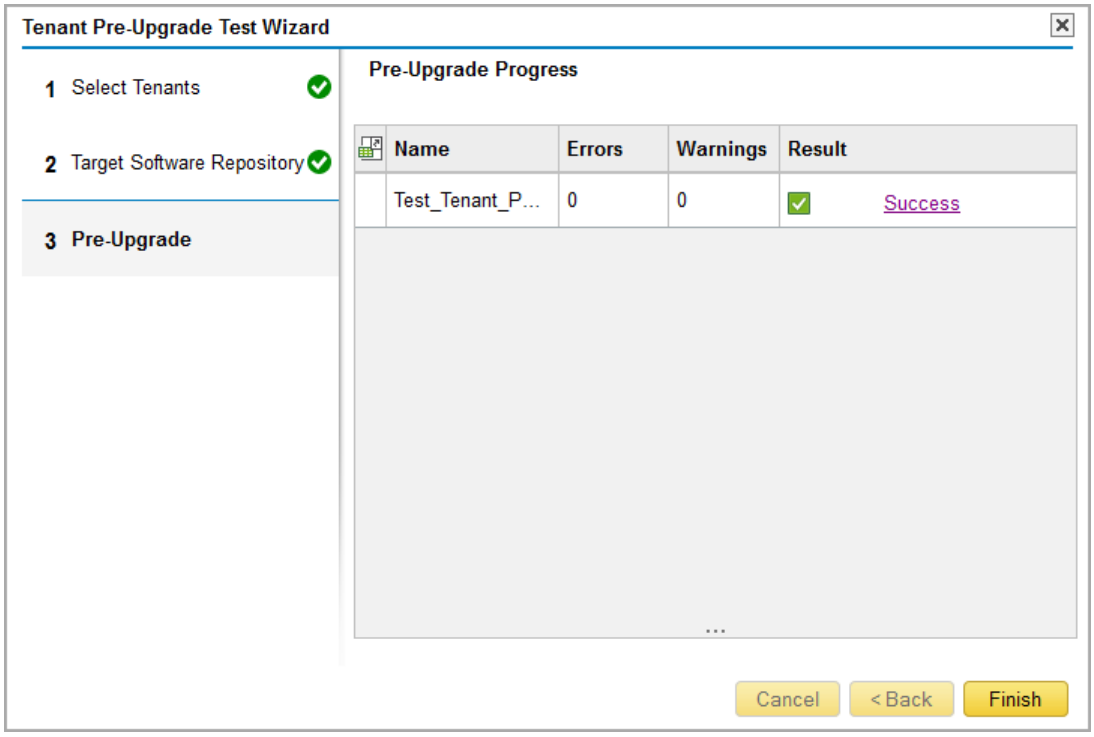
1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then choose the *Pre-Upgrade Test* button to run the tenant pre-upgrade test wizard.
2. In the *Select Tenants* window, select the service unit from the dropdown list that contains the tenants you want to test.
3. Select one or more tenants to test.



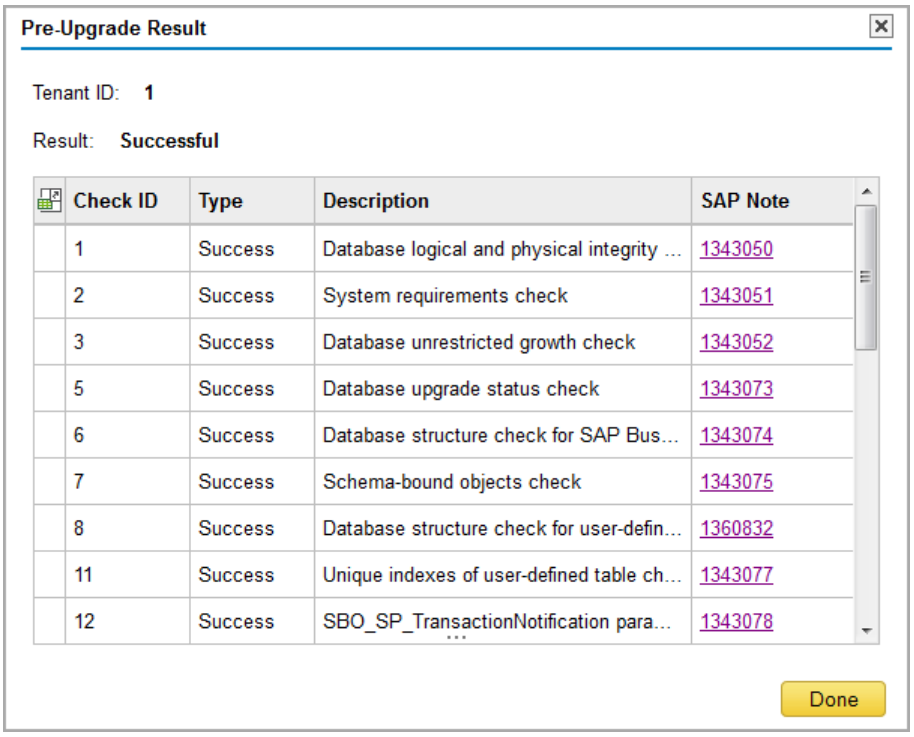
4. In the *Target Software Repository* window, select the software repository with the version of SAP Business One to which you want to upgrade the tenants.
5. If the required software repository is not in the list, choose the *New* button to register a software repository. For more information, see *Registering Software Repositories*.
    - To test the tenants, choose the *Next* button.
    - To change the settings, choose the *Back* button to return to the previous steps.



6. The *Pre-Upgrade* window displays the results of the test(s).



7. To view detailed information about a test, click the hyperlink in the *Results* column.
   The *Pre-Upgrade Result* window appears.



8. To view information about individual checks, possible solutions to errors, and recommendations for dealing with warnings, in the *SAP Note* column, click the links to the corresponding notes.

   After you have reviewed all checks, choose the *Done* button to return to the *Pre-Upgrade Test Progress* window.

9. To complete the process, choose the *Finish* button.

> **Note**
>
> The pre-upgrade test results are valid for three days. Within this period, you can perform tenant upgrade without having to pre-upgrade tests again. After three days, or if you make any changes to the company configuration, the pre-upgrade test results become invalid.

10.5.2 Performing Tenant Upgrades

After performing pre-upgrade tests, you can upgrade tenants to later versions of SAP Business One. To upgrade a tenant, you select a target service unit running the version of SAP Business One to which you want to upgrade the tenant. The application moves the tenant to the new service unit, and then upgrades the company database of the tenant. You can perform tenant upgrades in the target service unit or, alternatively, use a staging service unit as an intermediary.

> **Recommendation**
>
> Upgrading tenants is a resource-intensive process. Since a single service unit can contain multiple tenants, use a staging service unit to minimize the impact on other tenants.

Prerequisites

- You have created a tenant. For more information, see *Creating Tenants*.
- You have created a service unit with the later version of SAP Business One to which you want to upgrade the tenant. For more information, see *Creating Service Units*.
- You have ensured that the source service unit and target service unit are connected to the same license server.
- If you are using both Microsoft SQL and SAP HANA databases, ensure that you have one license server for each product version (in other words, one license server for Microsoft SQL and one for SAP HANA) installed on a separate machine on the latest version and patch level of SAP Business One and SAP Business One, version for SAP HANA.

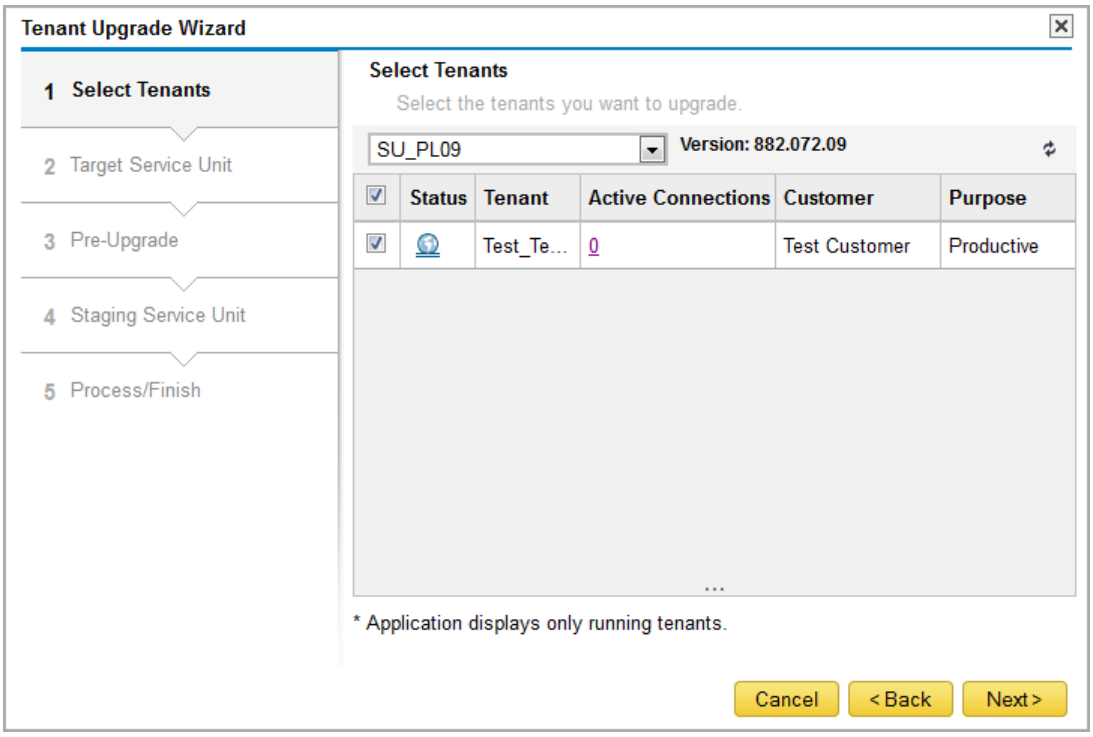
Procedure

To upgrade tenants, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then choose the *Upgrade* button to run the tenant upgrade wizard.
2. In the *Tenant Upgrade* wizard, from the *Upgrade Type* radio button, choose *Upgrade*.
3. In the *Select Tenants* window, select the service unit from the dropdown list that contains the tenants you want to upgrade.
4. Select one or more tenants to upgrade.

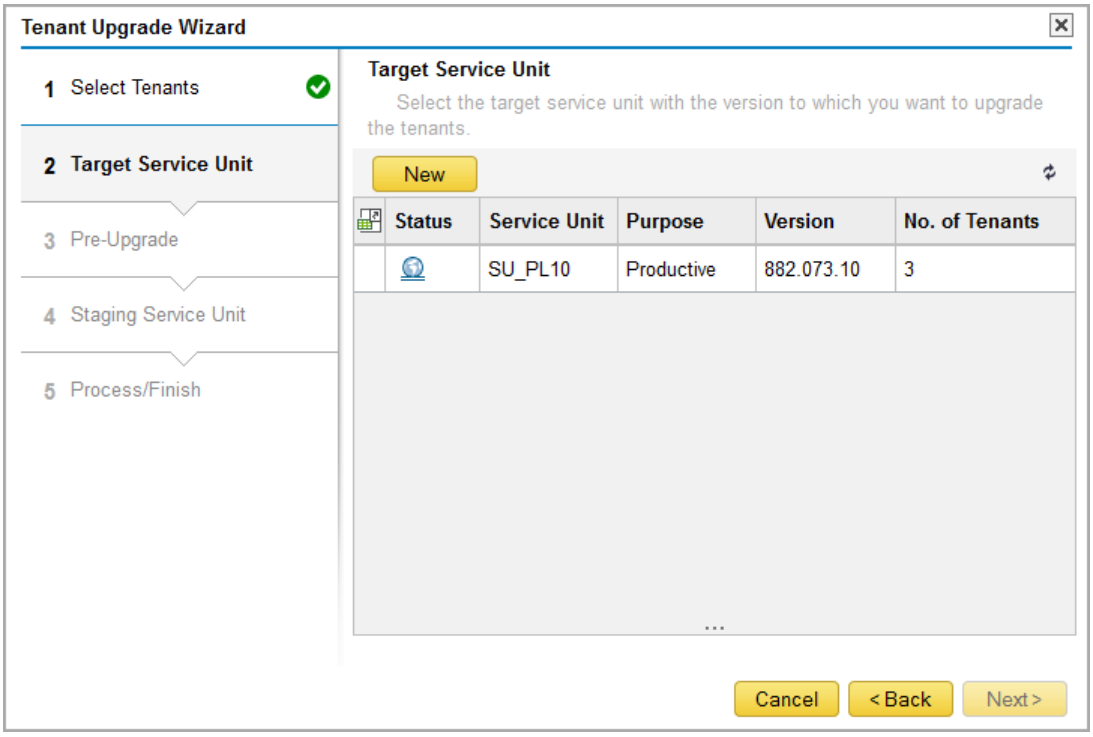
   Note

   If one or more of the selected tenants have active connections, you should manually disconnect all applications. Otherwise, the application displays a warning, which requires you to automatically disconnect all applications from the selected tenants before you can continue.



5. In the *Target Service Unit* window, select the service unit running the version of SAP Business One to which you want to upgrade the tenants.

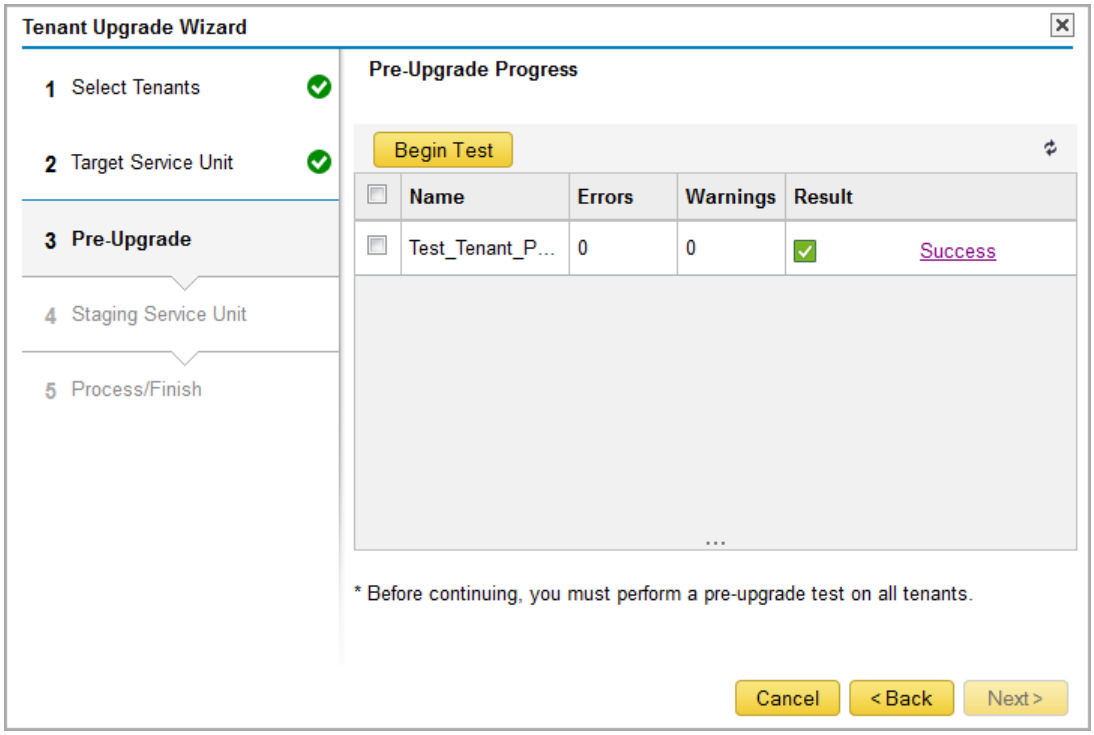
   If the required service unit is not in the list, choose the *New* button to create a new service unit. For more information, see *Creating Service Units*.



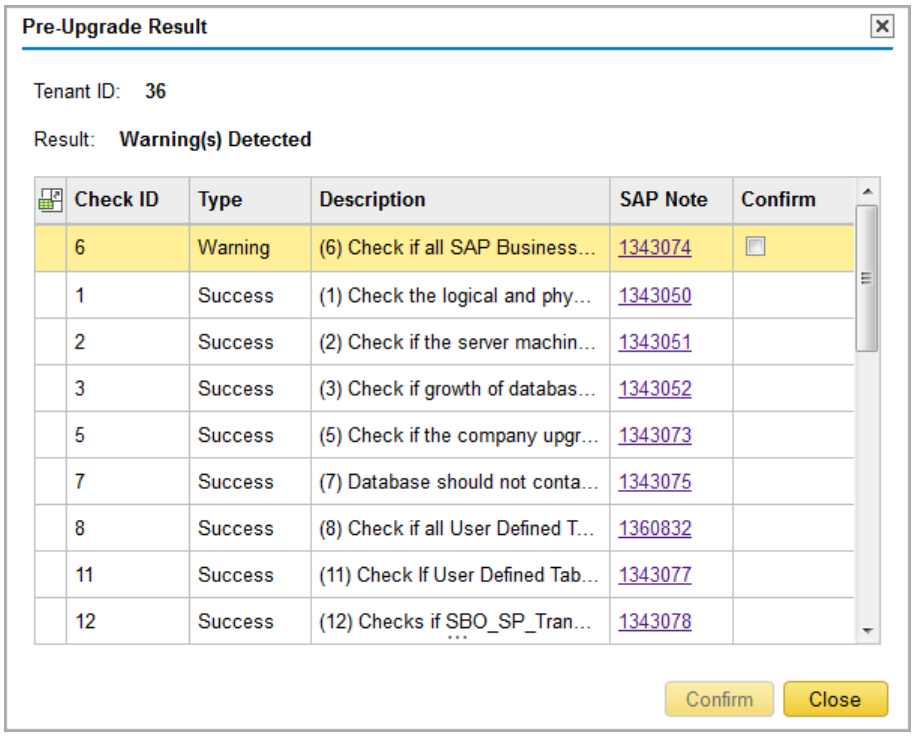
> **Note**
>
> If the target service unit already contains company databases with the same names as the company databases of the tenants that you want to upgrade, the *Change Database Name* window appears. To continue, you must change the names of these company databases in the selected tenants.

6. In the *Pre-Upgrade Test* window, you must perform pre-upgrade tests on tenants for which any of the following conditions are true:
   - You have not previously performed a pre-upgrade test.
   - You previously performed a pre-upgrade test, but it was not within the previous three days.
   - You previously performed a pre-upgrade test, but one or more errors occurred during the test.

   To perform the necessary pre-upgrade tests, select the tenants you want to test, and then choose the *Begin Test* button.



7. If any warnings occur when performing the pre-upgrade tests, to open the *Pre-Upgrade Test Results* window, click the corresponding hyperlink in the *Result* column, and do either of the following:
   - To ignore a warning, select the corresponding checkbox in the *Confirm* column.
   - To fix an issue, click the corresponding hyperlink in the *SAP Note* column and follow the recommendations. After fixing the issue, select the checkbox in the *Confirm* column.
8. After you have confirmed all warnings, choose the *Confirm* button to return to the *Pre-Upgrade Test* window. To continue, choose the *Next* button.

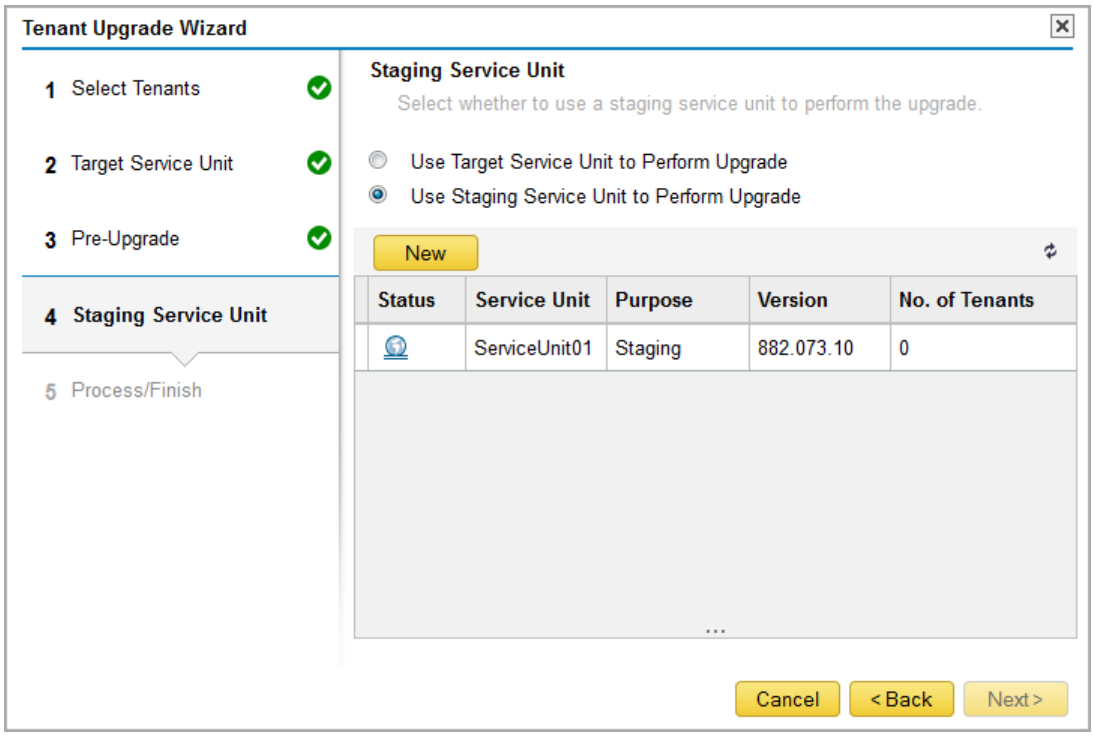


9. In the *Staging Service Unit* window, specify whether to perform the upgrades in the target service unit or use a staging service unit as an intermediary.

   Recommendation

   Upgrading tenants is a resource-intensive process. Since a single service unit can contain multiple tenants, use a staging service unit to minimize the impact on other tenants.

10. If you select the *Use Staging Service Unit to Perform Upgrade* checkbox, select the service unit running the version of SAP Business One to which you want to upgrade the tenants, to use as an intermediary for performing the upgrades.



- To upgrade the tenants, choose the *Next* button.
- To change the settings, choose the *Back* button to return to the previous steps.

11. The *Progress/Finish* window displays an overview of the main results of the tenant upgrade process.

    To complete the process, choose the *Finish* button.

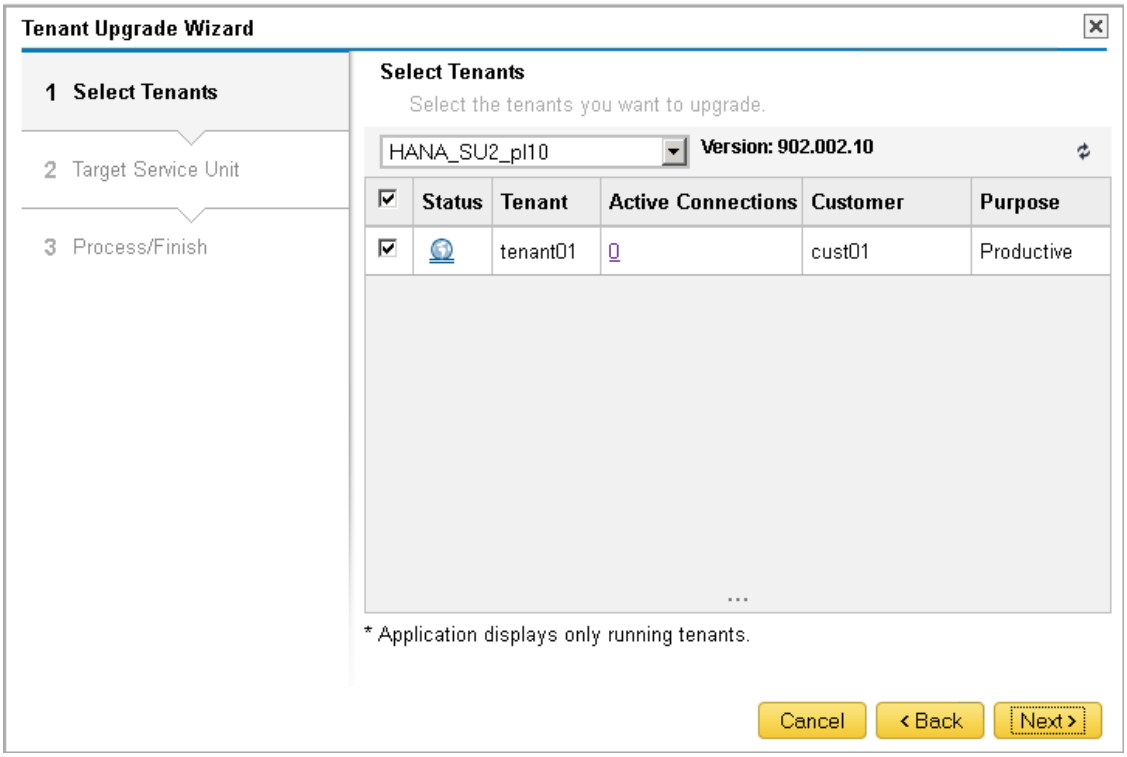
    > **Note**
    >
    > If you upgrade a presentation server from SAP Business One 8.82 to version 9.0, after the completing the upgrade process, ensure that you remove version 8.82 as a RemoteApp and then use the RemoteApp wizard to configure SAP Business One 9.0 (32-bit) as a RemoteApp.

10.5.3 Performing Tenant Upgrade Simulation

You can use the tenant upgrade simulation function after the installation of (or upgrade to) SAP Business One Cloud 1.1 PL02. The upgrade simulation follows the whole upgrade process; however, it does not prevent the end user from still using the old tenant. If the upgrade fails, the operator stores the upgrade logs and tenant backup for further analysis.

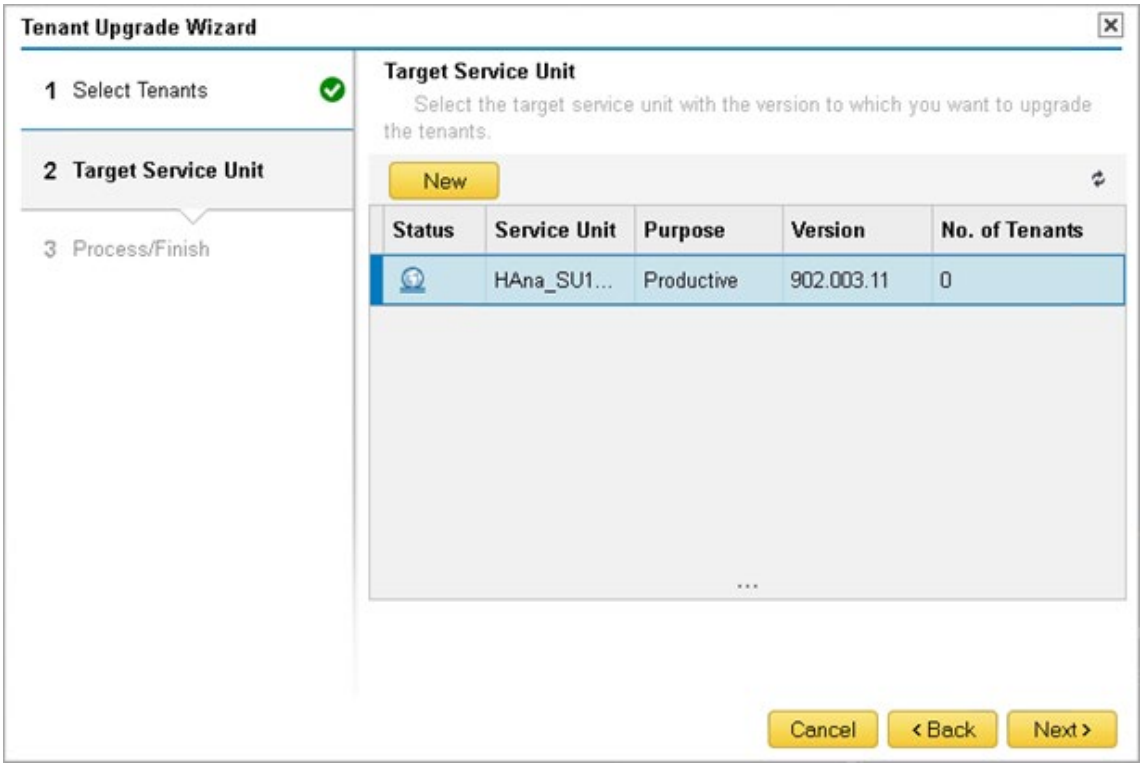
To perform the tenant upgrade simulation, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Tenants*, and then choose the *Upgrade* button to run the *Tenant Upgrade* wizard.
2. In the *Tenant Upgrade* wizard, from the *Upgrade Type* radio button, choose *Upgrade Simulation*.
3. In the *Select Tenants* window, from the dropdown list, select the service unit that contains the tenants on which you want to perform the upgrade simulation.
4. Select one or more tenants to perform the upgrade simulation.



5. In the *Target Service Unit* window, select the service unit running the version of SAP Business One on which you want to perform the upgrade simulation.

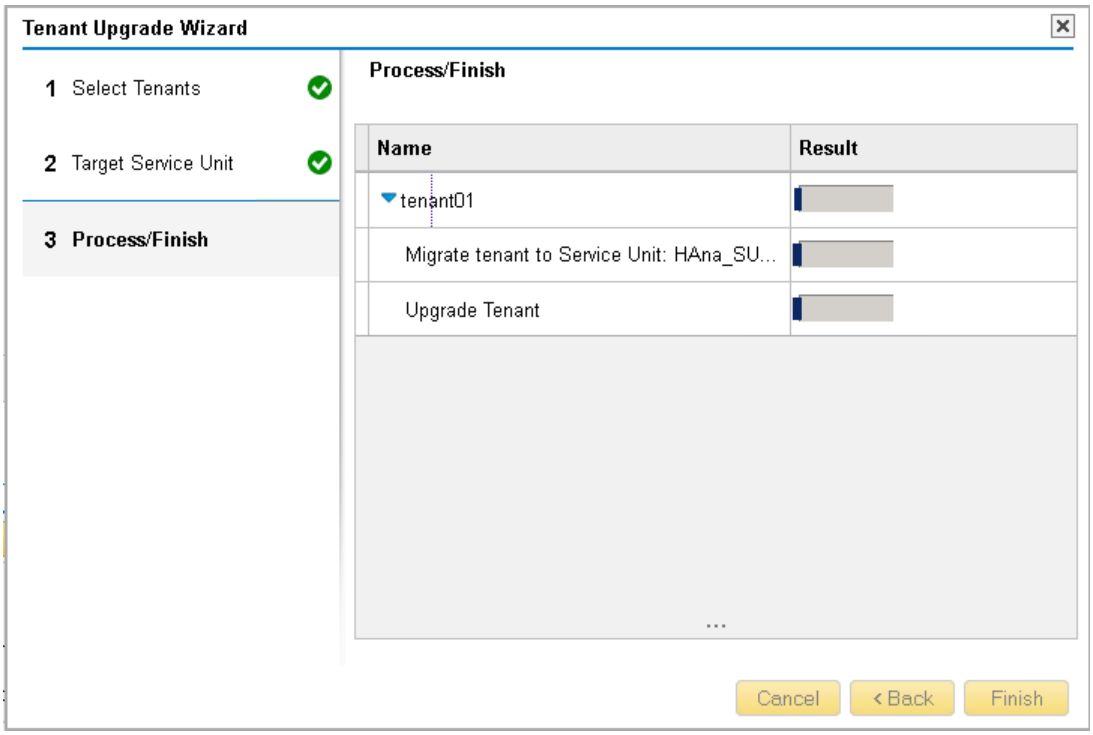
   If the required service unit is not in the list, choose the *New* button to create a new service unit. For more information, see *Creating Service Units*.



- To perform the upgrade simulation, choose the *Next* button.
- To change the settings, choose the *Back* button to return to the previous steps.

> **Note**
>
> The pre-upgrade test is run with upgrade simulation; all detected warnings are confirmed.

6. The *Progress/Finish* window displays an overview of the main results of the upgrade simulation process. To complete the process, choose the *Finish* button.



> **Note**
>
> To view the *Upgrade Simulation* in the Cloud Control Center, choose *Central Components* → *Service Units*, and then select the service unit in which you want to view the upgrade simulation. In the *Service Unit Details* area, select the *Upgrade Simulation* tab. The contents of the *Upgrade Simulation* tab include:
>
> - Tenant data: *Tenant Name*, *Tenant Database Name*, *Source Version*, *Target Version*.
> - Upgrade data: simulation *Start Time*, simulation *End Time*, *Duration*, *Last Result* (OK, Failed, Not Run). In case of fail, the description and the link to the log folder appear.

10.5.4 Upgrading Extensions

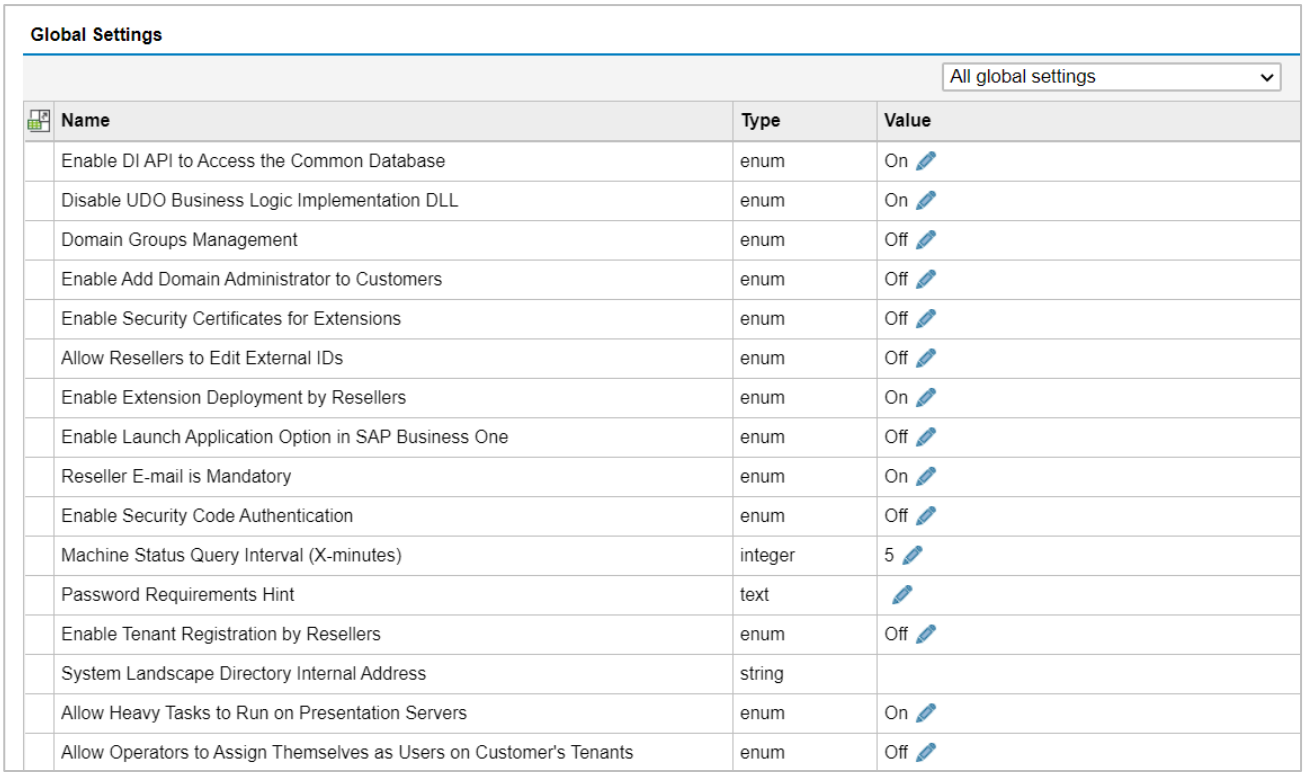
For information about upgrading extensions for SAP Business One, see *Upgrading Extensions.*

10.6 Upgrading SAP Business One Components

For information about upgrading SAP Business One components, see *SAP Business One Administrator's Guide*.

11 Managing Global Settings

The *Global Settings* window in the Cloud Control Center allows you to perform various security and system configuration settings.



11.1 Enable DI API to Access the Common Database

The *Enable DI API to Access the Common Database* option allows you to control whether the DI API has permission to access the common database, for instance when performing user queries.

Procedure

To activate the *Enable DI API to Access the Common Database* option, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable DI API to Access the Common Database* field, choose the *On* option and then choose *Save*.

Note

If the *Enable DI API to Access the Common Database* option is set to *Off*, the DI API does not have permission to access the common database. The default value for new installations and upgrades is *Off*.

11.2 Disable UDO Business Logic Implementation DLL

When you create a user-defined object (UDO) in SAP Business One, you can add a business logic implementation (DLL). The *Disable UDO Business Logic Implementation DLL* option in global settings allows you to control if the UDO business logic implementation is enabled or not. By default, the option is *On*, meaning that UDO business logic implementation is disabled.

Procedure

To enable UDO business logic implementation, perform the following:

3. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
4. From the dropdown list in the *Disable UDO Business Logic Implementation DLL* field, choose the *Off* option and then choose *Save*.

11.3 Domain Groups Management

You can use the management function of the domain groups after the installation of (or upgrade to) SAP Business One Cloud 1.1 PL02. Alternatively, you can also generate domain groups when you create, duplicate, or upgrade tenants or service units.

Activating the Domain Groups Management Function

Procedure

To activate the domain groups management function, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Domain Groups Management* field, choose the *On* option and then choose *Save*.

Note

Choosing the *On* option turns on the domain groups management function, which requires that the operator's account is a domain administrator or a user who has rights to create domain groups and users (defined in *System Configuration* → *Account for AD Operations*).

> **Note**
>
> After selecting a value and clicking the *Save* icon, you need to log off and log on to ensure the refresh of the browser session.

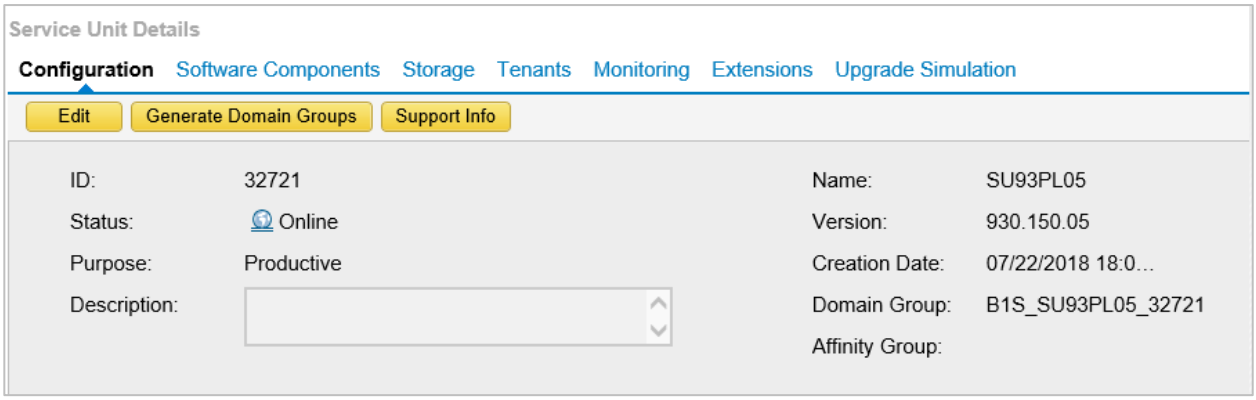
Generating Domain Groups

Procedure

To generate domain groups on a service unit, perform the following

1. In the Cloud Control Center, choose *Central Components* → *Service Units*, and then select the service unit in which you want to generate domain groups.
2. In the *Service Unit Details* area, on the *Configuration* tab, choose the *Generate Domain Groups* button.

> **Note**
>
> The *Generate Domain Groups* button is enabled only if the *Domain Group Management* value is set to *Impersonate*. You must be a domain administrator or a user with rights to create groups and users to activate the domain group management function.



Result

- The domain group for the service unit, and the domain group for each tenant on the service unit, are created in the domain controller.
- The accounts of the system users added to the tenants are updated in the domain controller such that they become members of the newly generated domain groups.
- System users will automatically have file system permissions to the tenant-related shared folder because of their membership to domain groups.

The domain group value is displayed in the following windows:

- *Central Components* → *Service Units* → *Configuration* tab → *Domain Group* field.
- *Customer Management* → *Tenants* → *Configuration* tab → *Domain Group* field.

11.4 Enable Add Domain Administrators to Customers

The *Enable Add Domain Administrator to Customers* option in global settings allows cloud operators to control permission to add a domain administrator to a customer. This can otherwise be a security issue as users who can add domain administrators to customers are able to change other user's passwords.

Procedure

To activate the *Enable Add Domain Administrator to Customers* option, which gives cloud operators and reseller operators permission to add domain administrators to customers, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Add Domain Administrator to Customers* field, choose the *On* option and then choose *Save*.

> **Note**
>
> If the *Enable Add Domain Administrator to Customers* option is set to *Off*, cloud operators and reseller operators do not have permission to add domain administrators to customers. The default value for new installations and upgrades is *Off*.

11.5 Enable Security Certificates for Extensions

The *Enable Security Certificates for Extensions* option allows you to enhance the security mechanism for extensions by allowing you to issue trusted certificates to your extensions. If the *Enable Security Certificates for Extensions* option is enabled, SAP Business One will check if the certificate for each add-on is trusted in the SLD to ensure that the connection is secure.

Procedure

To activate the *Enable Security Certificates for Extensions* option, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Security Certificates for Extensions* field, choose the *On* option and then choose *Save*.

For more information about adding trusted certificates in the Cloud Control Center, see Managing Extension Security.

11.6 Allow Resellers to Edit External IDs

The *External ID* field allows you to enter an external reference ID to help associate customers and resellers with other SAP systems. The *External ID* field can be viewed in *Customer Management* → *Customers* and *System*

Configuration → *Resellers* and edited on the *Configuration* tab in the *Customer Details* area or *Reseller Details* area. The *External ID* field is also displayed in the wizard when creating customers or resellers.

Cloud operators can use the *Allow Resellers to Edit External IDs* option in global settings to control whether or not resellers can edit the *External ID* field. By default, resellers do not have permission to edit the *External ID* field (in other words, the default value is *Off*).

Procedure

To give permission to resellers to edit the *External ID* field, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Allow Resellers to Edit External IDs* field, choose the *On* option and then choose *Save*.

11.7 Enable Extension Deployment by Resellers

The *Enable Extension Deployment by Resellers* option in global settings allows cloud operators to control if resellers can deploy extensions in SAP Business One Cloud.

Prerequisites

- You are logged on to the Cloud Control Center as a cloud operator.
- Resellers have the requirements to deploy extensions.

Procedure

To activate the *Enable Extension Deployment by Resellers* option, which allows resellers to deploy extensions, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Extension Deployment by Resellers* field, choose the *On* option and then choose *Save*.

   Note

   If the *Enable Extension Deployment by Resellers* option is set to *Off*, resellers can view the extensions assigned to their service units (*Central Components* → *Service Units* → *Service Units Details* area → *Extensions*) but cannot deploy or undeploy extensions. The default value for new installations and upgrades is *Off*.

11.8 Enable Launch Application Option in SAP Business One

The *Launch Application* option in SAP Business One (*File* → *Launch Application)* allows users to launch different applications directly from SAP Business One. In the Cloud Control Center, you can control whether the *Launch Application* option is available in SAP Business One Cloud using the *Enable Launch Application Option in SAP Business One* option in global settings. The default value for the *Enable Launch Application Option in SAP Business One* option is *Off.*

Procedure

To activate the *Enable Launch Application Option in SAP Business One* option, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Launch Application Option in SAP Business One* field, choose the *On* option and then choose *Save*.

11.9 Reseller E-mail is Mandatory

The *Reseller E-Mail is Mandatory* option allows you to set whether the *Email* field is mandatory for reseller operators. By default, the *Reseller E-Mail is Mandatory* option is set to *On*, which means that the *Email* field is required when creating resellers. You can edit the *Email* field on the *Configuration* tab in the *Reseller Details* area.

> **Note**
>
> Multiple email addresses can be used if separated by a comma.

Procedure

To activate the *Reseller E-Mail is Mandatory* option, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Reseller E-Mail is Mandatory* field, choose the *On* option and then choose *Save*.

11.10 Enable Security Code Authentication (Two-Factor)

Two-factor authentication is a method of confirming a user's claimed identity by utilizing a combination of two different components. In SAP Business One Cloud, the first authentication factor is *User ID* and *Password*, and the second authentication factor is the *Secret Key*.

You can enable two-factor authentication for cloud operators, reseller operators, and customer type domain users.

> **Note**
>
> If you are using SAP Business One client and DI API add-ons in a cloud solution, some features may require you to input the domain user and password for authentication. To ensure this feature works well, ensure your service unit (SAP Business One client and DIAPI) is 9.2 PL05 or a later version.

> **Note**
>
> As of SAP Business One Cloud 1.1 PL14, in addition to cloud operators, reseller operators can also enable the two-factor authentication feature for customer users.

Prerequisites

- On your device, you have downloaded and installed the SAP Authenticator app, a mobile app provided by SAP SE, which supports iOS and Android.
- You have configured a Windows time server and ensured that all machines in the Cloud landscape use a common time.
- You are logged on as a cloud operator user.

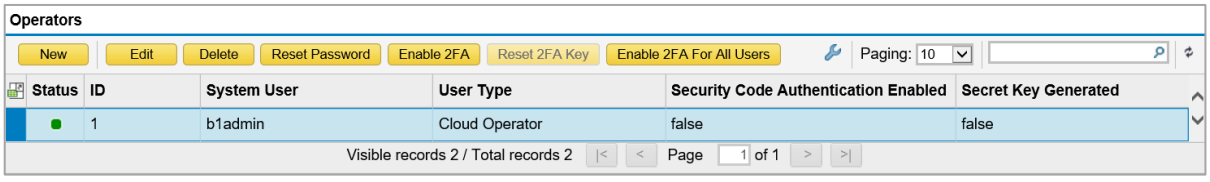
11.10.1 Enabling Two-Factor Authentication for Cloud Operators and Resellers

Procedure

To enable the two-factor authentication feature for cloud operators and reseller operators, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. In the *Global Settings* window, set the *Enable Security Code Authentication* field to *On* and then choose *Save*.
3. To enable two-factor authentication for cloud operators, in the main menu of the Cloud Control Center, choose *System Configuration* → *Operators*.
4. In the *Operators* window, select an operator and choose the *Enable 2FA* button.

   > **Note:**
   >
   > - To enable two-factor authentication for all cloud operators, in the *Operators* window, choose the *Enable 2Fa For All Users* button.

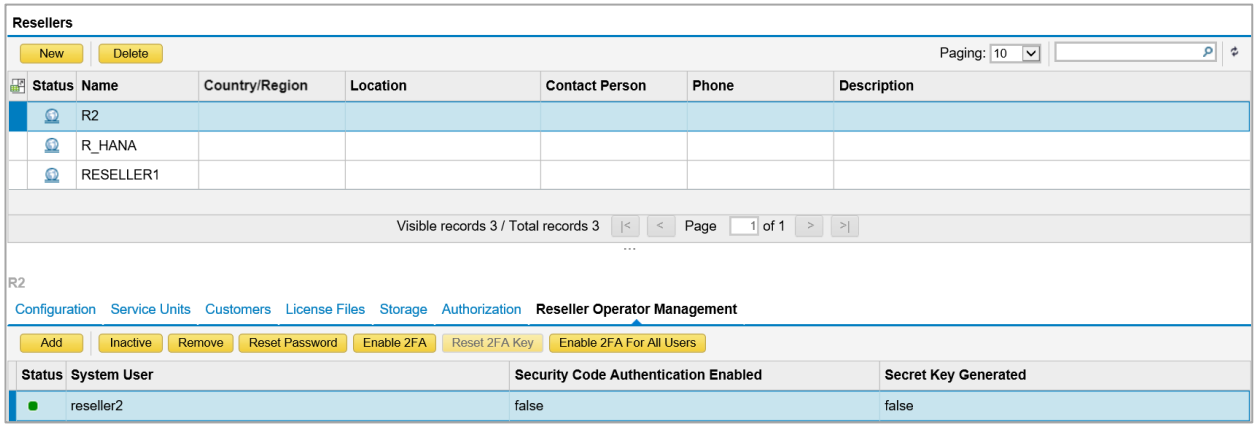


5. To enable two-factor authentication for resellers, in the main menu of the Cloud Control Center, choose *System Configuration* → *Resellers*.

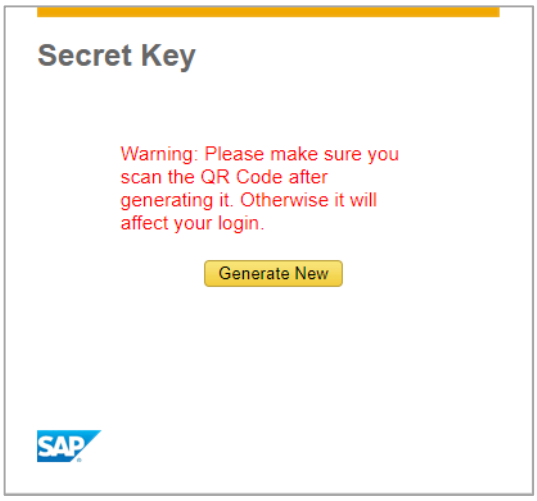
6. In the *Resellers* window, select a reseller. In the *Reseller Details* area, on the *Reseller Operator Management* tab, choose the *Enable 2FA* button.

   Note:

   - To enable two-factor authentication for all reseller operators, in the *Resellers* window, in the *Reseller Details* area, choose the *Enable 2Fa For All Users* button.

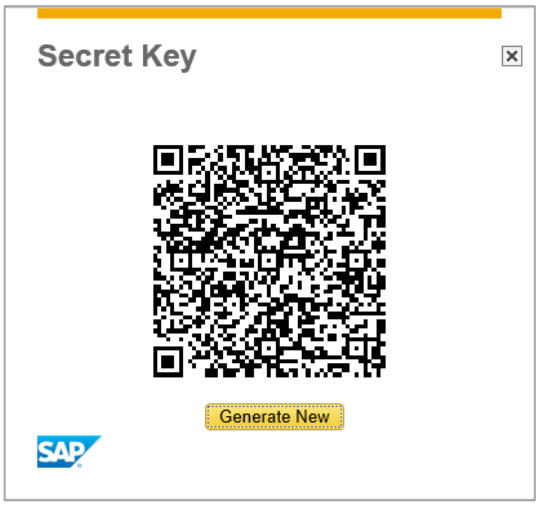


7. In the main menu of Cloud Control Center, choose *Secret Key Management*.
8. In the *Secret Key* window, choose the *Generate New* button.



9. Open the SAP Authenticator app on your device and choose *Add account.*

   Scan the QR code that is generated in the *Secret Key* window and choose *Done*.



The account is added to your app, and the *Current Passcode* is generated automatically by the SAP Authenticator app.

10. Log off from the Cloud Control Center.
11. You can now log on to the Cloud Control Center or log on to the Browser Access mode of SAP Business One using two-factor authentication.

    In the logon window, you are required to enter the *SecureCode*.

    Enter the *Current Passcode* from the app. The current passcode can be used for up to 5 minutes.

    > **Note:**
    >
    > Once you have enabled two-factor authentication and generated the security code, the *SecureCode* in the log on window is mandatory.

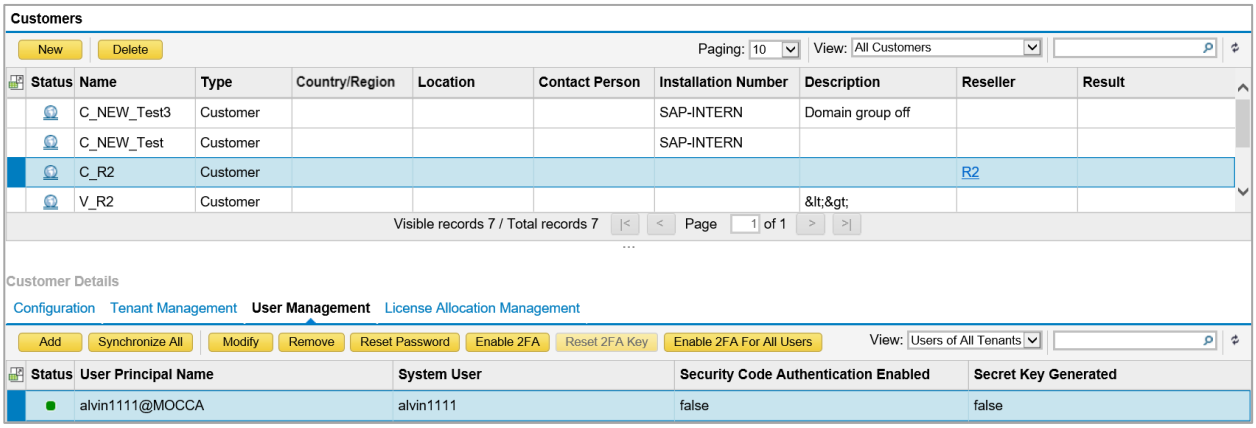
12. If you want to reset the two-factor authentication key, perform the following:
    - To reset the two-factor authentication key for a cloud operator, in the *Operators* window, select the relevant operator and choose *Reset 2FA Key*.
    - To reset the two-factor authentication key for a reseller operator, in the *Resellers* window, on the *Reseller Operator Management* tab in the *Reseller Details* area, select the relevant reseller and choose the *Reset 2FA Key* button.
13. If you want to disable two-factor authentication, perform the following
    - To disable two-factor authentication for a cloud operator, in the *Operators* window, select the relevant operator and choose the *Disable 2FA* button.
    - To disable two-factor authentication for a reseller operator, in the *Resellers* window, on the *Reseller Operator Management* tab in the *Reseller Details* area, select the relevant reseller and choose the *Disable 2FA* button.

11.10.2 Enabling Two-Factor Authentication for Customers

Procedure

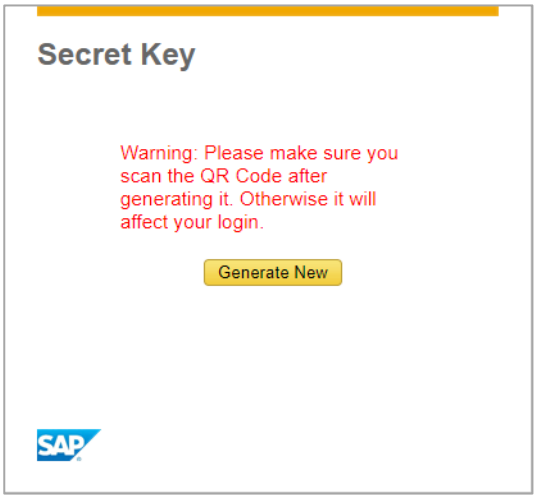
To enable the two-factor authentication feature for customers, perform the following steps:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. In the *Global Settings* window, set the *Enable Security Code Authentication* field to *On* and then choose *Save*.
3. In the main menu of Cloud Control Center, choose *Customer Management* → *Customers* and select a customer that is registered to a tenant.
4. In the *Customer Details* area, on the *User Management* tab, select the relevant user and choose the *Enable 2FA* button.



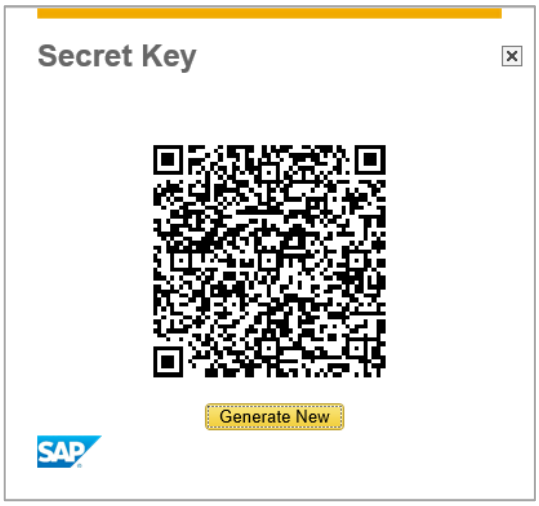
> **Note:**
>
> - To enable two-factor authentication for all users of a customer, in the *Customers* window, select the relevant customer, and on the *User Management* tab in the *Customer Details* area, choose the *Enable 2FA For All Users* button.

5. Log off from the Cloud Control Center and log on with the customer domain user.
6. In the logon window, after you enter the user name and password, the *Secret Key* window appears. Choose the *Generate New* button.



7. Open the SAP Authenticator app on your device and choose *Add account*.

   Scan the QR code that is generated in the *Secret Key* window and choose *Done*.



The account is added to your app, and the *Current Passcode* is generated automatically by the SAP Authenticator app.

> **Note:**
>
> Once you have enabled two-factor authentication and generated the security code, the *SecureCode* in the log on window is mandatory.

8. You can now log on to the Browser Access mode of SAP Business One using two-factor authentication.

   In the logon window, you are required to enter the *SecureCode*.

   Enter the *Current Passcode* from the app. The current passcode can be used for up to 5 minutes.

   > **Note:**
   >
   > If a customer that has two-factor authentication enabled wants to log on to some DI add-ons via the domain user, the add-ons must support security code logon. In SAP Business One SDK DI API, a new property, *SecurityCode*, is exposed in the *Company* object. You can adjust your DI add-on code to enable the two-factor authentication feature.

9. If you want to reset the two-factor authentication key for a user, in the *Customers* window, on the *User Management* tab in the *Customer Details* area, select the relevant user of the customer and choose the *Reset 2FA Key* button.
10. If you want to disable two-factor authentication for a user, in the *Customers* window, on the *User Management* tab in the *Customer Details* area, select the relevant user for the customer and choose the *Disable 2FA* button.

11.10.3 Disabling Two-Factor Authentication

Procedure

To disable two-factor authentication, perform the following:

1. In the Cloud Control Center, choose *System Configuration → Global Settings*.

2. In the *Global Settings* window, set the *Enable Security Code Authentication* field to *Off* and then choose *Save*.

11.11 Machine Status Query Interval (X-minutes)

You can set the frequency with which the SLD retrieves information about memory utilization and CPU utilization on your logical machines. By default, the system checks the memory and CPU utilization in 5-minute intervals. You can view the memory utilization and CPU utilization in *Central Components* → *Logical Machines*.

Procedure

To change the machine status query interval to a value other than the default value (5-minutes), perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. In the *Machine Status Query Interval (X-minutes)* field, choose *Edit* icon.
3. Enter a value (integer > 0) and choose *Save*.

11.12 Password Requirements Hint

For more information, see Password Requirements Hint.

11.13 Enable Tenant Registration by Resellers

The *Enable Tenant Registration by Resellers* option in global settings allows cloud operators to control if resellers can register tenants in SAP Business One Cloud.

Prerequisites

- You are logged on to the Cloud Control Center as a cloud operator.
- Resellers have the requirements to register tenants.

Procedure

To activate the *Enable Tenant Registration by Resellers* option, which allows resellers to register tenants, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Enable Tenant Registration by Resellers* field, choose the *On* option and then choose *Save*.

Note

The default value for the *Enable Tenant Registration by Resellers* option for new installations and upgrades is *Off*, which means that resellers do not have permission to register tenants (*Customer Management* → *Tenants*).

11.14 Allow Heavy Tasks to Run on Presentation Servers

When performing resource heavy tasks, such as creating, upgrading, or duplicating a tenant, the SLD may distribute the task to an SLD Agent on a presentation server, which can degrade the user experience of any users working on the presentation server. The *Allow Heavy Tasks to Run on Presentation Servers* option allows you to control whether such tasks can be performed on presentation servers. By default, the *Allow Heavy Tasks to Run on Presentation Servers options* is set to *On*.

Procedure

To deactivate the *Allow Heavy Tasks to Run on Presentation Servers* option (in other words, to not allow heavy tasks to run on presentation servers), perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Allow Heavy Tasks to Run on Presentation Servers* field, choose the *Off* option and then choose *Save*.

11.15 Allow Operators to Assign Themselves as Users on Customer's Tenants

By default, cloud operators and reseller operator cannot be assigned as a user on a customer's tenant. If an operator needs to access the customer's tenant as a user for troubleshooting purposes, the partner support user (PSU) connection can be used. If, however, a cloud operator or reseller operator needs to be assigned to a customer's tenant for some other reason, you may deactivate this global setting (in other words, the *Allow Operators to Assign Themselves as Users on Customer Tenants* option is switched to *ON)*.

Procedure

To activate the *Allow Operators to Assign Themselves as Users on Customer Tenants* option (in other words, to allow cloud operators and reseller operators to assign themselves as users on customers' tenants), perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. From the dropdown list in the *Allow Operators to Assign Themselves as Users on Customer Tenants* field, choose the *ON* option and then choose *Save*.

Note

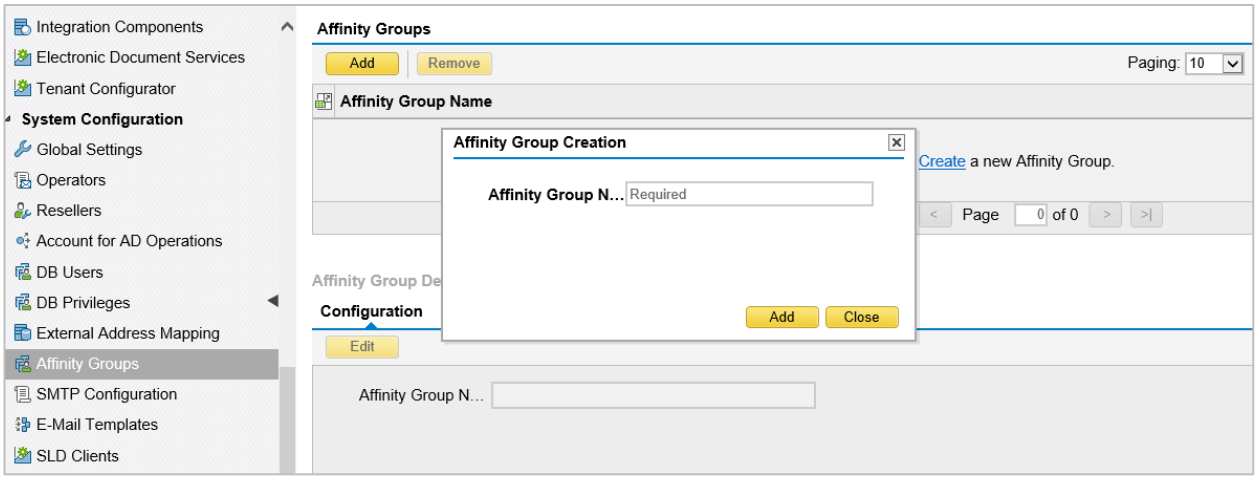
If the *Allow Operators to Assign Themselves as Users on Customer's Tenants* global setting is set to *ON*, you need to provide a reason for the assignment in the *Assign Users* window when creating tenants, registering, tenants, or duplicating tenants.

12 Managing SLD Agent Task Distribution

As of SAP Business One Cloud 1.1 PL06, operators can select which Task Executors are selected for respective tasks. For example, if you want to create SBO-Common or upgrade tenants, before PL06, these operations are executed by any available Task Executor (SLD Agent). As of PL06, operators can define Affinity Groups and assign selected computers to respective Affinity Groups. Thus, operations on a Database Server that is in a certain Affinity Group will be served by the Task Executor of the same Affinity Group.

Procedure

1. In the Cloud Control Center, choose *System Configuration* → *Affinity Groups*.
2. Add an affinity group.



3. Go to the *Logical Machines* window (*Central Components* → *Logical Machines*), select the machine that hosts your Database Server instance.

   To verify which components are installed on a selected machine, check the *Software Component* tab in the *Logical Machine Details* area.
4. To assign the affinity group to a selected machine, press the *Edit* button on the *Configuration* tab and select a value from the Affinity Group selection box. Choose *Save*.
5. Go to the *Service Units* window (*Central Components* → *Service Units*), verify that the Affinity Group setting for the Database Server instance is also displayed on the *Configuration* tab in the *Service Unit Details* area.
6. Repeat steps 3-4 for machines that host SLD Agents.

13 Mapping Internal and External URLs

You can use the external address mapping function after the installation of (or upgrade to) SAP Business One Cloud 1.1 PL05. Some components can have public addresses configured here. These addresses are used for accessing components from public Internet.

13.1 Preparing External Addresses

To expose your SAP Business One services to the Internet (external networks), you must prepare external addresses for relevant components.

> **Note**
>
> The Service Layer is for internal component calls only and you do not need to expose it to the Internet.

Please note the following:

- The external address and the internal address of each component must be different; otherwise, the external networks cannot be distinguished from the internal network, which makes browser access not possible.
- Only one set of external addresses is supported. Communication through the DNS alias of an external address will lead to error.
- While the User Access Portal is installed later, we recommend that you prepare an address for it in advance at the same time as other components. It will save you some configuration efforts.

Reverse Proxy Mode

If you intend to handle client requests using a reverse proxy, we recommend that you use different domain names for internal and external domains. For example, the internal domain is **abc.corp** and the external domain is **def.com**.

Prepare the external addresses as follows:

- Prepare one external address for both the System Landscape Directory and the User Access Portal.

  In addition, the internal and external ports must use the same number for the User Access Portal.
- One external address for **each** service unit, which will be shared by the Browser Access service, the analytics service, the integration framework within the service unit, and the mobile service if you are using SAP Business One Sales app.
- The internal address of each component must match the common name of the certificate for the internal domain; the external address of each component must match the common name of the purchased certificate for the external domain.

  > **Example**
  >
  > The internal URLs of the components are as follows:
  >
  > - System Landscape Directory: https://SLDInternalAddress.abc.corp:Port

- Browser Access service: https://BASInternalAddress.abc.corp:Port/dispatcher
- Analytics service: https://B1AInternalAddress.abc.corp:Port/Enablement
- Integration framework: https://B1iInternalAddress.abc.corp:Port/B1iXcellerator
- Mobile Service: https://MobileServiceInternalAddress.abc.corp:Port/mobileservice

The external URLs are as follows:

- System Landscape Directory: https://servertool.def.com:Port
- UAP: https://servertool.def.com:Port/BrowserAccess
- Browser Access service: https://su01.def.com:Port/dispatcher
- Analytics service: https://su01.def.com:Port/Enablement
- Integration framework: https://su01.def.com:Port/B1iXcellerator
- Mobile Service: https://MobileServiceExternalAddress.def.com:Port/mobileservice

NAT/PAT

If you intend to handle client requests using NAT/PAT, we recommend that you use the same domain name across internal and external networks. For example, both the internal and external domains are **abc.com**.

Prepare the external addresses as follows:

- Prepare one external address (hostname or IP address) for each of these components:
  - System Landscape Directory (SLD)
  - Browser Access service
  - [SAP Business One, version for SAP HANA only] Analytics service
  - User Access Portal (UAP)
  - Integration framework (if you use the SAP Business One mobile solution)
  - Mobile service (if you are using SAP Business One Sales app)
- The combination of external address and port must be different for these components. In other words, if two components have the same external address, the ports they listen on must be different; and vice versa.
- The internal address and external address of each component must match the common name of the certificate purchased for both the internal and external domains.

  Example

  The internal URLs of the components are as follows:

  - System Landscape Directory: https://SLDInternalAddress.abc.com:Port
  - Browser Access service: https://BASInternalAddress.abc.com:Port/dispatcher
  - Analytics service: https://B1AInternalAddress.abc.com:Port/Enablement
  - Integration framework: https://B1iInternalAddress.abc.com:Port/B1iXcellerator
  - Mobile Service: https://MobileServiceInternalAddress.abc.com:Port/mobileservice

  The external URLs are as follows:

  - System Landscape Directory: https://SLDExternalAddress.abc.com:Port
  - User Access Portal: https://UAPExternalAddress.abc.com:Port/BrowserAccess
  - Browser Access service: https://BASExternalAddress.abc.com:Port/dispatcher
  - Analytics service: https://B1AExternalAddress.abc.com:Port/Enablement

- Integration framework: https://B1iExternalAddress.abc.com:Port/B1iXcellerator
- Mobile Service: https://MobileServiceExternalAddress.def.com:Port/mobileservice

13.2 Registering External Address Mapping

In the Cloud Control Center, you must register the mapping between the external address of each of the following components and its internal address:

- System Landscape Directory (SLD)
- Browser Access service
- [SAP Business One, version for SAP HANA only] Analytics service
- Mobile service (if you are using SAP Business One Sales app)
- User Access Portal

Note that you do not need to register the mapping for the integration framework.

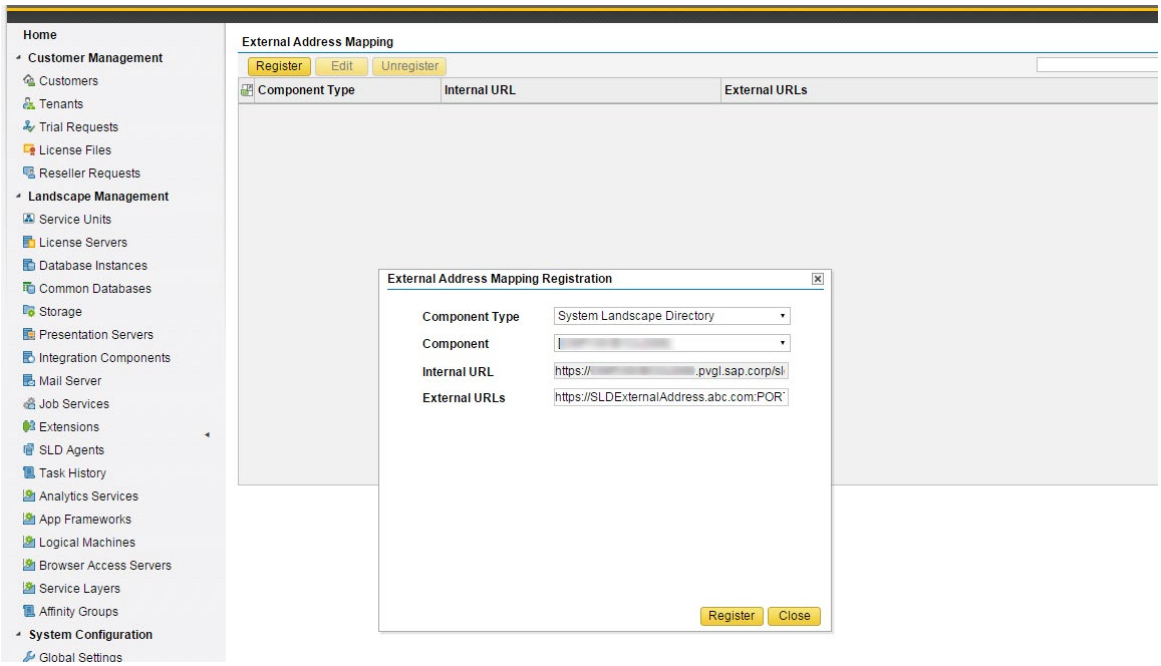
Procedure

To map an external address to an internal address, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *External Address Mapping*.
2. Choose the *Register* button.
3. In the *External Address Mapping Registration* window, select a component type.
4. Specify the component.

   The *Internal URL* field is filled automatically.

   > **Note**
   >
   > If you are registering the mapping for the System Landscape Directory, the internal URL is editable. Either accept the prefilled internal URL or specify a new one.
   >
   > The internal URL is then displayed in the *System Landscape Directory Internal Address* field in the *Global Settings* window. You can check the internal URL in the global settings, and modify it at any point in the *External Address Mapping Registration* window.
5. Specify the external URL.



6. Choose *Register*.
7. To apply the changes, restart the relevant service.

   For example, if you have registered the external address mapping for a Browser Access server, you must restart the SAP Business One Browser Access Server Gatekeeper service.

   Note that the restart of SAP Business One Browser Access Server Gatekeeper service may take from 5 to 10 minutes.

14 Message Service

The message service feature allows you to use an external message service (RabbitMQ, a popular open source message broker) to receive notifications for noteworthy events performed in the Cloud Control Center. You will receive a notification for events such as CUD (create, update, and delete) behaviors related to service units, tenants, customers, resellers, SAP Business One components, user binding, trial requests, and so on.

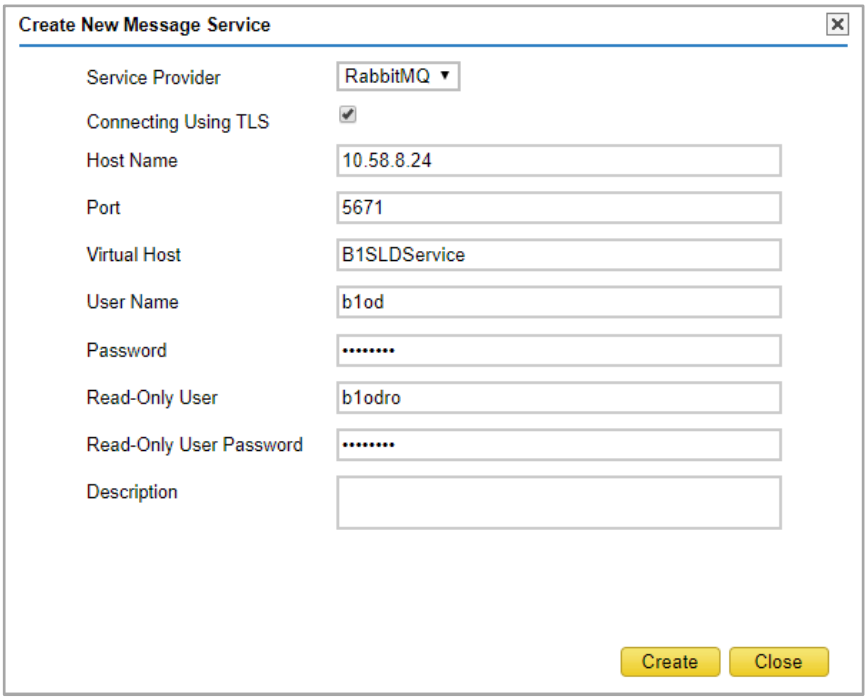
Prerequisites

- You have installed and set up RabbitMQ in your environment. For more details, see https://www.rabbitmq.com/admin-guide.html.

Procedure

To configure the message service in the Cloud Control Center, perform the following:

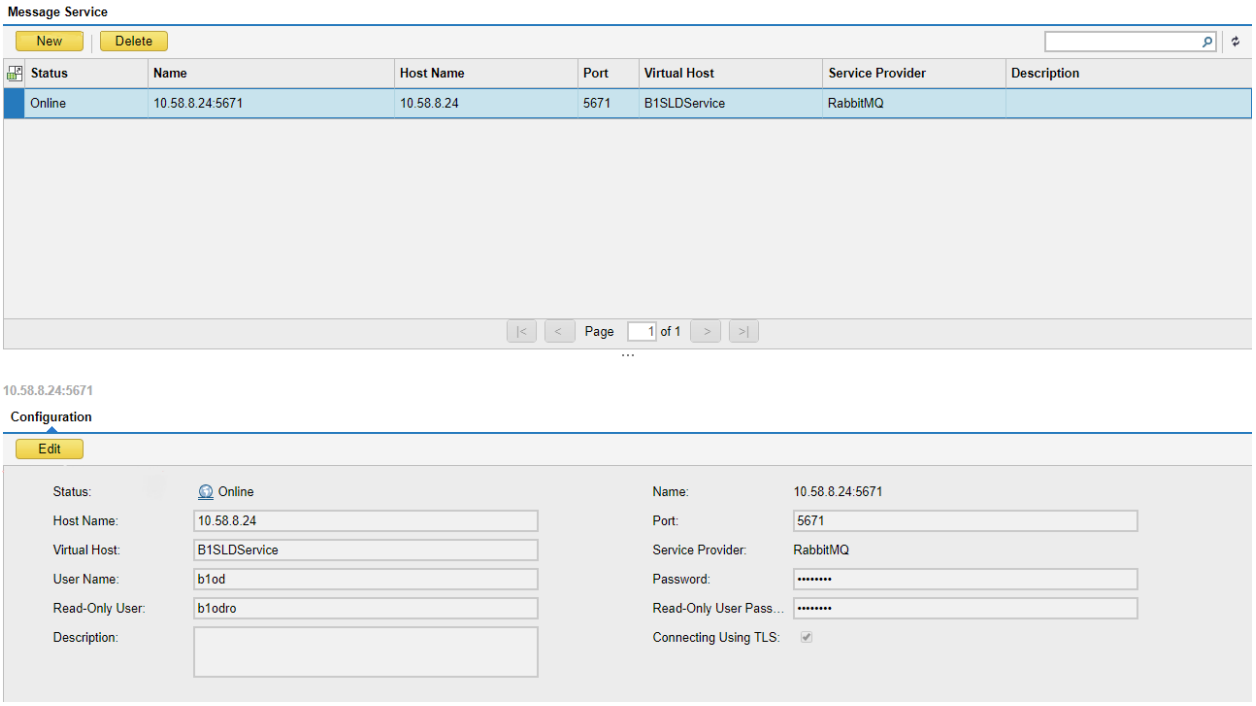
1. In the Cloud Control Center, choose *Central Components → Message Service*.
2. To create a new message service, choose the *New* button.
3. In the *Create New Message Service* window, specify the following information:
    - Host Name
    - Port
    - Virtual Host
    - User Name
    - Password
    - Read-Only User
    - Read-Only User Password



4. Choose the *Create* button.

Result

The message service is listed on the *Configuration* tab in the *Message Service Details* area.



15 Managing Access

This section assists you with using the Cloud Control Center to manage access for cloud operators, SLD clients, and resellers.

15.1 Adding Cloud Operators

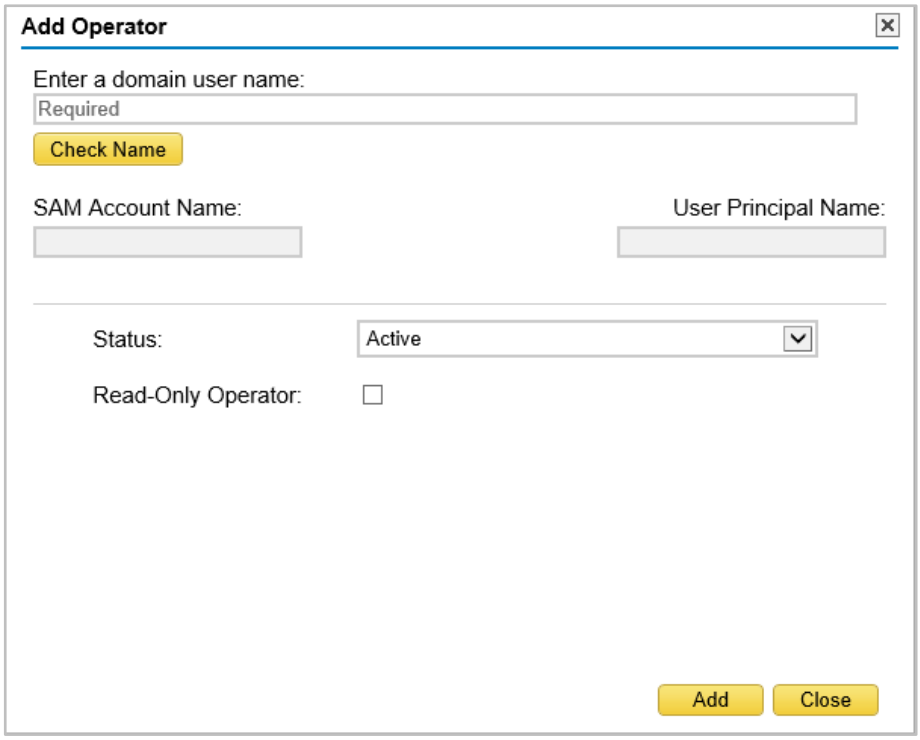
To provide access to the Cloud Control Center, you must add a cloud operator account for each user. After adding a Cloud Operator, you can add an SAP Business One User account with superuser permissions for this user.

For more information about adding user accounts, see *Adding, Removing, and Importing* SAP Business One Users.

Procedure

To add a Cloud Operator, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Operators*, and then choose the *New* button.
   The *Add Operator* window appears.



2. Enter a valid domain user name for the user you want to add.
3. To verify that the domain user name you entered exists, choose the *Check Names* button.

4. If the domain user name does not exist, the *Confirmation* window appears.

   To create a new domain user, do the following:

   1. Enter a valid initial password for the user.
   2. Confirm the password you entered in the previous step and choose the *Yes* button.
   3. The *Authorization Required* window appears.
   4. Enter the logon credentials of an account that has permission to create domain users. For more information, see *Configuring the Domain Controller*.
   5. Choose the *Add* button to return to the *Add Operator* window.
5. From the *Status* dropdown list, select a status for this user. The following table gives an overview of the possible values.
   - *Active* – The cloud operator can log on to the Cloud Control Center and has full access to all functionality.
   - *Inactive* – The cloud operator cannot log on to the Cloud Control Center. You can set a user's status to Active later.
6. If you want to restrict the authorization of the operator to read-only permission, select the *Read-Only Operator* checkbox.

   Note

   The read-only cloud operator can log on and view the data stored in the Cloud Control Center, but does not have create, edit, or delete permission.
7. Choose the *Add* button.

15.1.1 Adding Read-Only Cloud Operators

When adding a new operator, you may choose to restrict the authorization to read only permission. The read-only operator cannot create, edit, or delete entities in the Cloud Control Center.

in the Cloud Control Center,

15.2 Managing Resellers

Resellers, also known as Value Added Resellers (VARs,) are companies that sell SAP software and provide first-level support to their customers. Resellers market, sell, and implement customized SAP Business One Cloud solutions and provide ongoing support, consulting, and education services to customers.

You can provide certified resellers with limited access to the Cloud Control Center to enable them to manage their customers. Resellers can do the following:

- Create, edit, and delete customers
- Add users to and remove users from customers and tenants, and change the status of users
- Create, edit, duplicate, and delete tenants
- Assign extensions to tenants
- Import license files

- View information about assigned service units

15.2.1 Creating Resellers

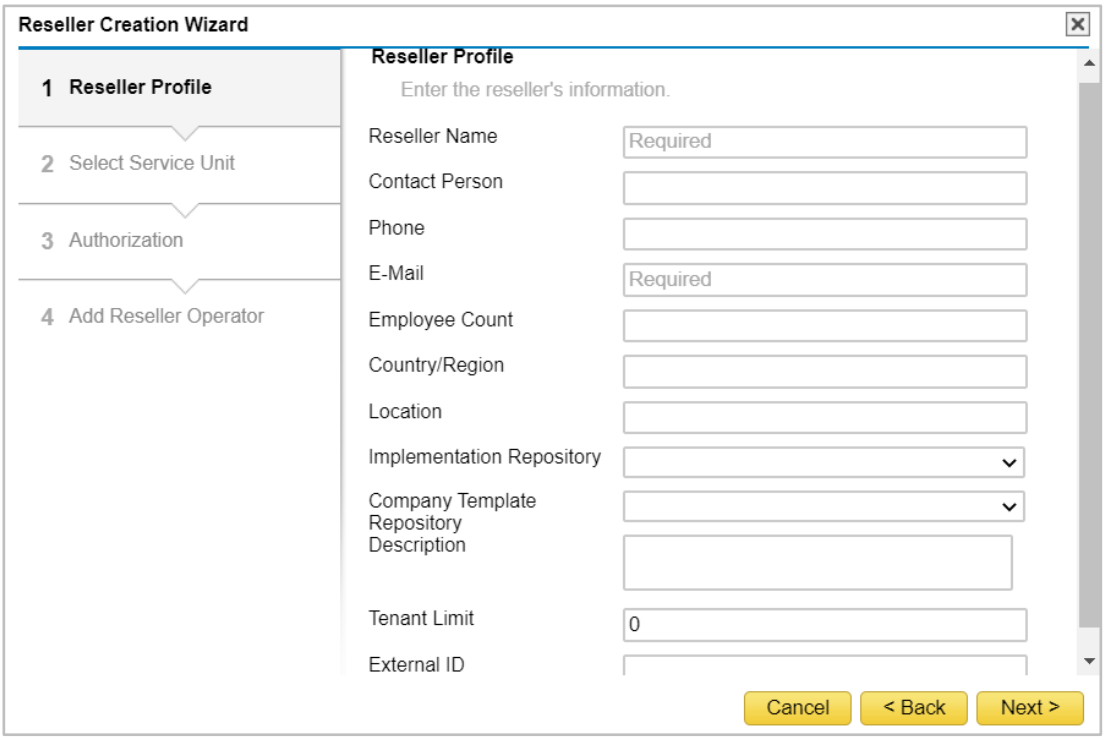
Procedure

To create a reseller, do the following:

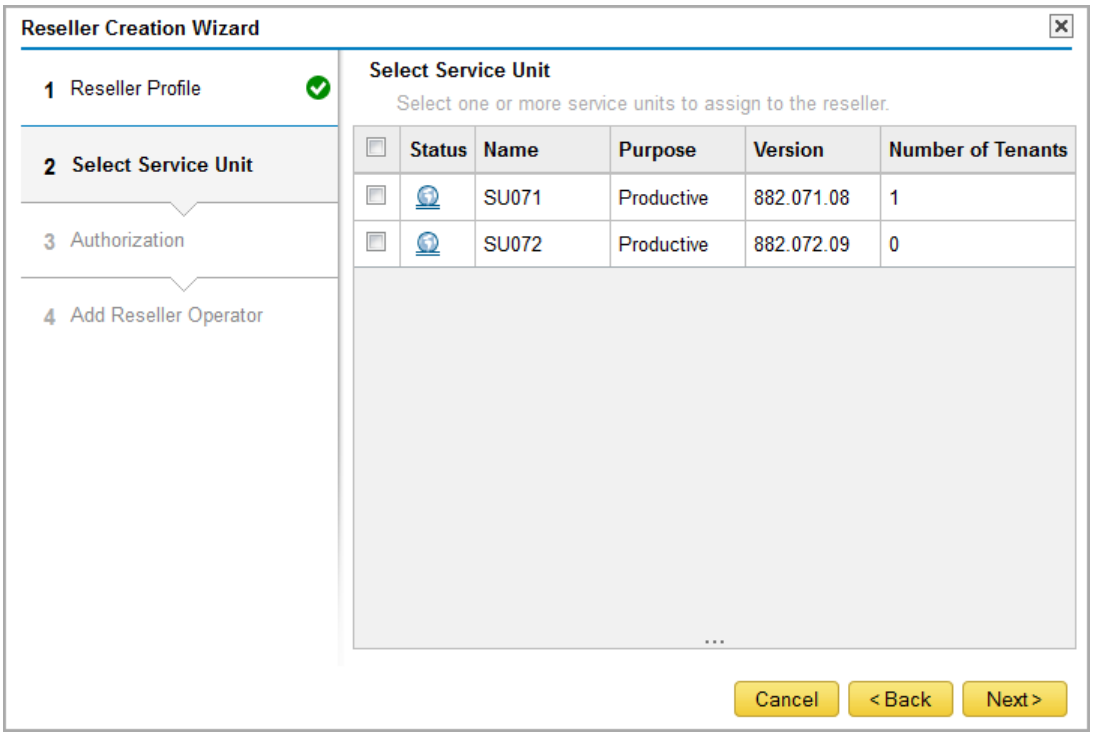
1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then choose the *New* button to run the reseller creation wizard.
2. In the *Reseller Profile* window, specify the following:
   - *Reseller Name* – Enter the name of the reseller.
   - *Contact Person* – Enter the name of the reseller's contact person.
   - *Phone* – Enter the telephone number of the reseller's contact person.
   - *E-Mail* – Enter the e-mail address of the reseller's contact person.
   - *Employee Count* – Enter the number of employees in the reseller's organization.
   - *Country/Region* – Enter the country or region in which the reseller is located.
   - *Location* – Enter the address of the reseller.
   - *Description* – Enter an optional description for this reseller.
   - *Tenant Limit* – Enter a positive integer to set the maximum number of tenants allowed by the reseller on each service unit. The default value is 0, which indicates no limit. You can change the tenant limit for the reseller at any time in *System Configuration* → *Resellers* → *Configuration* tab.
   - *External ID* – Enter an external reference ID to help associate the reseller with other SAP systems.

     Note

     By default, reseller operators do not have permission to edit the *External ID* field. If you want to allow resellers to edit external IDs, see Allow Resellers to Edit the External IDs.



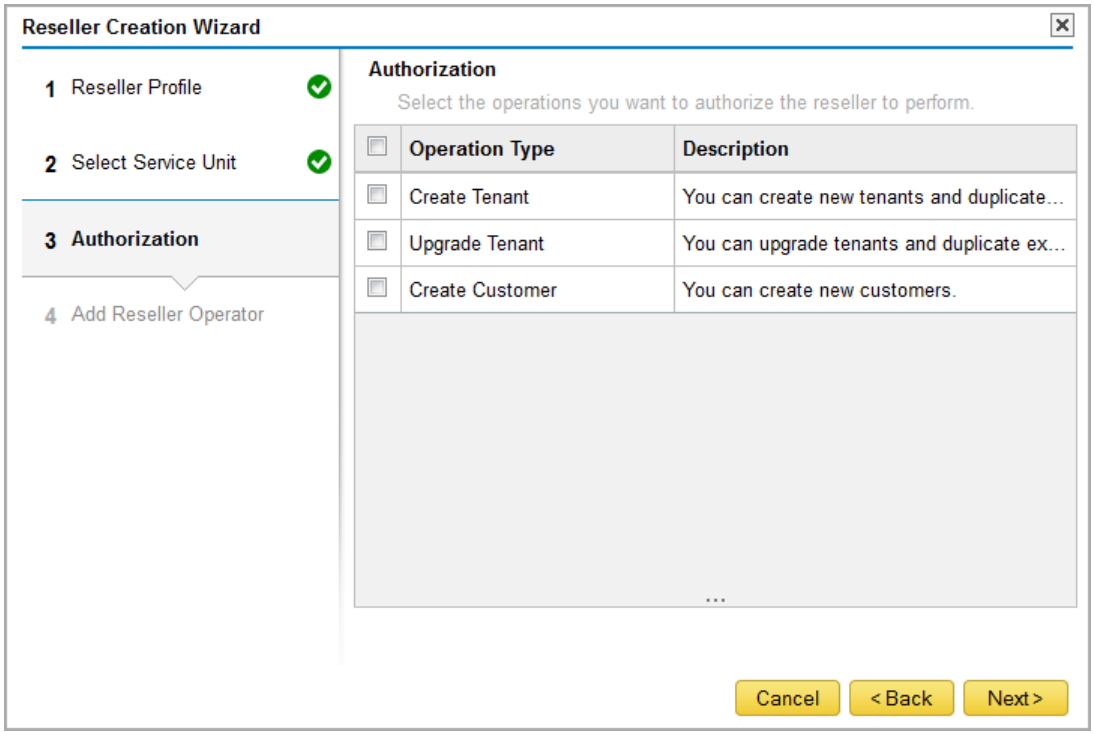
3. In the *Select Service Unit* window, select one or more service units to assign to the reseller. The reseller can use the Cloud Control Center to view information about the selected service units and assign tenants to them.



4. In the *Authorization* window, select the operations that you want to authorize the reseller to perform. For the operations that you do not select, the reseller must send a request to a cloud operator for approval.

Note

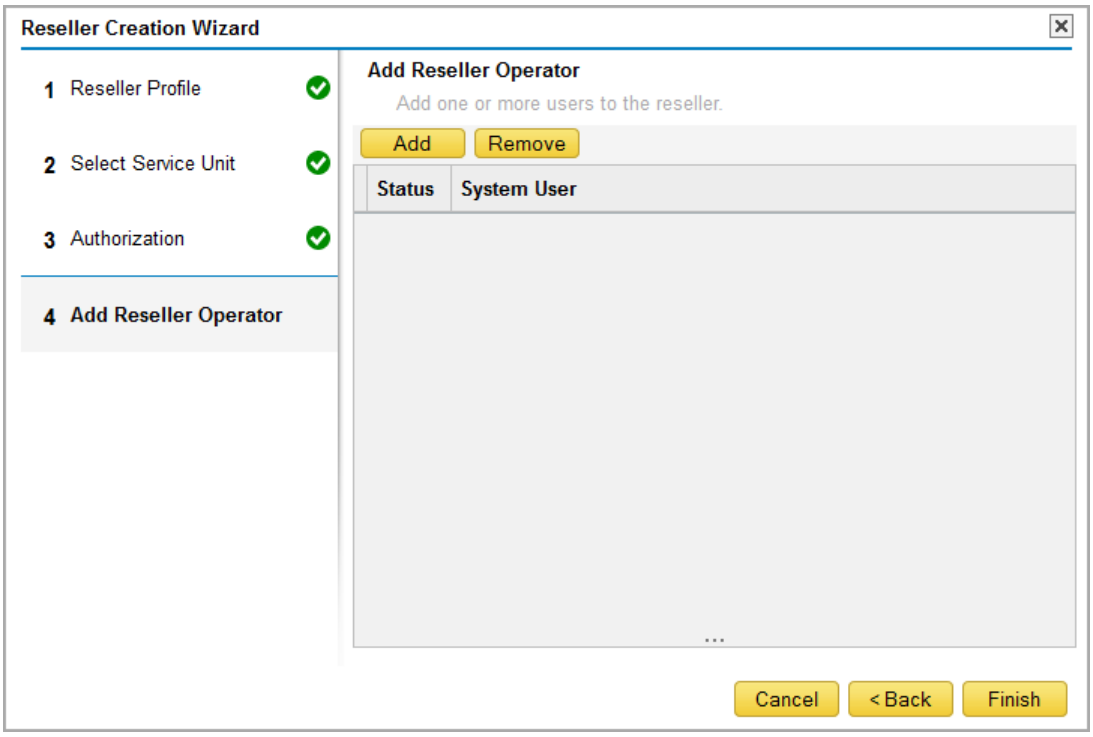
You can modify the operational authorizations for the reseller later. For more information, see *Assigning Operational Authorization to Resellers*.



5. In the *Add Reseller Operator* window, choose the *Add* button to optionally add reseller operators to the reseller.

   For more information about adding reseller operators, see *Adding Reseller Operators*.

   - To create the reseller, choose the *Finish* button.
   - To change the settings, choose the *Back* button to return to the previous steps.



15.2.2 Adding Reseller Operators

To provide a reseller with access to the Cloud Control Center, you must add a Reseller Operator account for each user. After adding a Reseller Operator, you can add an SAP Business One User account with power user permissions for this user.

For more information about adding user accounts, see *Adding, Removing, and Importing* SAP Business One Users.

Procedure

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*.
2. On the *Reseller Operator Management* tab of the *Reseller Details* area, choose the *Add* button.
   The *Add Reseller Operator* window appears.
3. Enter a valid domain user name for the user you want to add.
4. To verify that the domain user name you entered exists, choose the *Check Names* button.
5. If the domain user name does not exist, the *Confirmation* window appears.
   To create a new domain user, do the following:
   1. Enter a valid initial password for the user.
   2. Confirm the password you entered in the previous step and choose the *Yes* button.
   3. The *Authorization Required* window appears.
   4. Enter the logon credentials of an account that can create domain users. For more information, see *Configuring the Domain Controller*.

5. Choose the *Add* button to return to the *Add Reseller Operator* window.
6. From the *Status* dropdown list, select a status for this user. The following table gives an overview of the possible values.
    - *Active* – The reseller operator can log on to the Cloud Control Center and has access to the service units, customers, tenants, and licenses assigned to them.
    - *Inactive* – The reseller operator cannot log on to the Cloud Control Center. You can set a user's status to Active later.
7. Choose the *Add* button.

15.2.3 Assigning Service Units to Resellers

To enable resellers to provision tenants for their customers, you must assign service units to resellers, in which they can create tenants.

Prerequisites

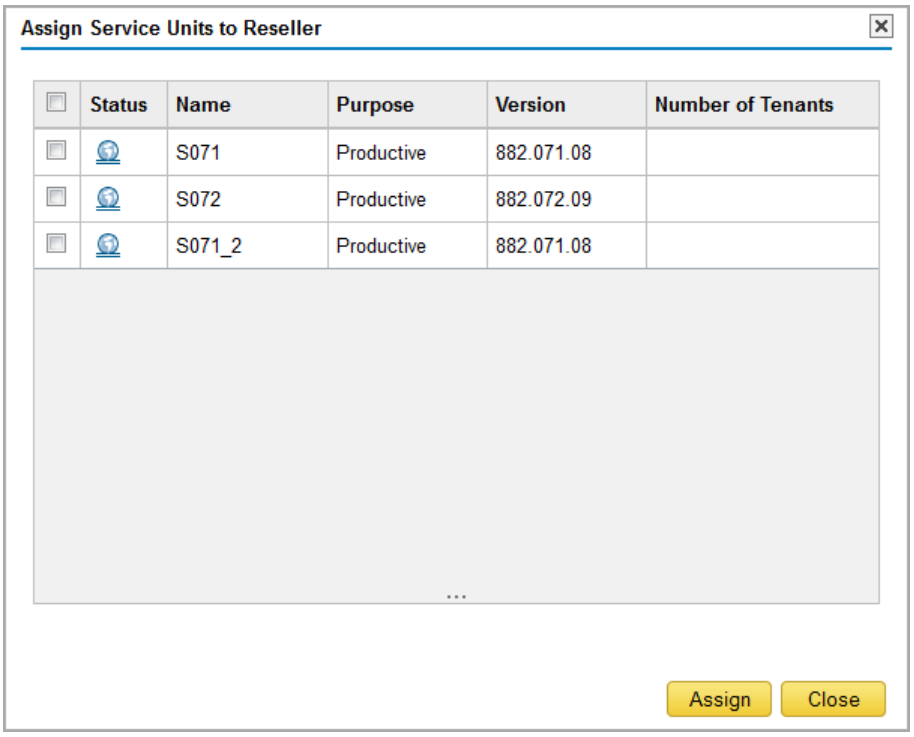
- You have created a reseller. For more information, see *Creating Resellers*.
- You have created a service unit. For more information see *Creating Service Units*.

Procedure

To assign a service unit to a reseller, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller to which you want to assign a service unit.
2. On the *Service Units* tab of the *Reseller Details* area, choose the *Assign* button.

    The *Assign Service Units to Reseller* window appears.



3. Select one or more service units to assign to the reseller.
4. Choose the *Assign* button.

15.2.4 Assigning Customers to Resellers

Although resellers can use the Cloud Control Center to create, edit, and delete customers, you can also assign existing customers to a specific reseller.

> **Caution**
>
> When you unassign a customer from a reseller, the application automatically unassigns all licenses owned by the reseller from the customer. Consequently, the customer can no longer access SAP Business One Cloud.

Prerequisites

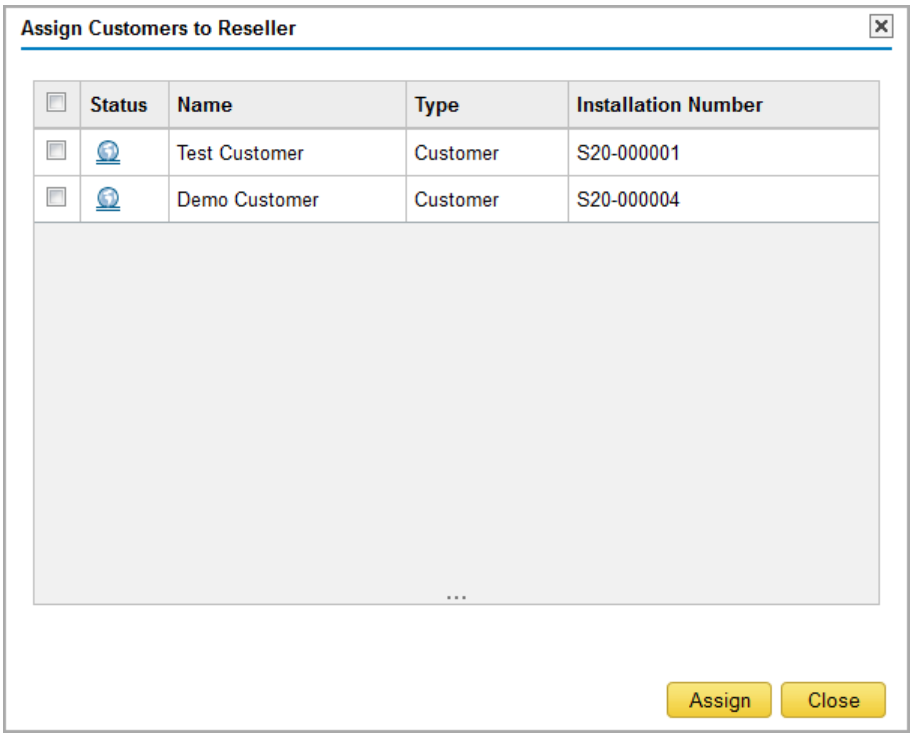
- You have created a reseller. For more information, see *Creating Resellers*.
- You have created a customer. For more information see *Creating Customers*.

Procedure

To assign a customer to a reseller, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller to which you want to assign a customer.
2. On the *Customers* tab of the *Reseller Details* area, choose the *Assign* button.

   The *Assign Customers to Reseller* window appears.



3. Select one or more customers to assign to the reseller.
4. Choose the *Assign* button.

15.2.5 Setting Tenant Limits for Resellers

As a cloud operator, you can set the maximum number of tenants that a reseller can register on each service unit.

To set a tenant limit for a reseller, perform the following;

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller for which you want to set a tenant limit.
2. In the reseller details area, choose the *Configuration* tab.
3. In the *Tenant Limit* field, enter a positive integer to set the maximum number of tenants allowed on each service unit for the reseller (the default value is 0, which indicates no limit).

In *System Configuration* → *Resellers*, the *Number of Tenants* field displays the number of tenants registered to the reseller and the *Tenant Limit* field displays the maximum number of tenants currently set for the reseller.

15.2.6 Assigning License Files to Resellers

You can assign license files to resellers, which they can then assign to their customers to provide access to SAP Business One.

> **Note**
>
> In situations where customers share license files, the hosting partner is responsible for managing licenses.

Prerequisites

- You have created a reseller. For more information, see *Creating Resellers*.
- You have imported a license file. For more information see *Importing License Files*.

Procedure

To assign a license file to a reseller, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller to which you want to assign a license file.
2. On the *License Files* tab of the *Reseller Details* area, choose the *Assign* button.

   The *Assign License Files to Reseller* window appears.
3. Select one or more license files to assign to the reseller.
4. Choose the *Assign* button.

15.2.7 Assigning Storage to Resellers

You can assign Implementation Repositories and Company Template Repositories to resellers, which enables resellers to use their own solution packages and company templates. Multiple resellers cannot share the same Implementation Repository or Company Template Repository.

When a reseller operator provisions a tenant, they can use solution packages or backup files in the repositories assigned to the reseller by cloud operators. However, when a cloud operator provisions a tenant, they can use solution packages and company templates only in the repositories assigned to the service unit, regardless of any storage assigned to resellers.

> **Note**
>
> Cloud operators cannot access the solution packages or backup files of reseller operators assigned to their resellers.
>
> Resellers can only access the solution packages and backup files in the Implementation Repositories and Company Template Repositories assigned to them.

Resellers can upload their own solution packages and company templates using FTP or WebDAV protocols.

Prerequisites

- You have created a reseller. For more information, see *Creating Resellers*.
- You have created an Implementation Repository and/or Company Template Repository. For more information, see *Creating Storage*.

Procedure

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller to which you want to assign storage.
2. On the *Storage* tab of the *Reseller Details* area, choose the *Assign* button.

   The *Assign Storage to Reseller* window appears.
3. Select the corresponding radio button for the type of storage you want to assign, and then select the repository from the dropdown list.
4. Choose the *Assign* button.

15.2.8 Assigning Operational Authorization to Resellers

By default, when a reseller uses the Cloud Control Center to perform an operation, such as creating a new tenant, a request is sent to a cloud operator, who must first approve the request before the system executes the operation. However, you can authorize certain resellers to perform some operations without requiring approval from cloud operators.

In the Cloud Control Center, you can authorize resellers to perform one or more of the following operations:

- Tenant creation
- Tenant upgrades
- Customer creation

Prerequisite

You have created a reseller. For more information, see *Creating Resellers*.

Procedure

To authorize a reseller to perform operations without requiring approval from cloud operators, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Resellers*, and then select the reseller to which you want to assign operational authorization.
2. On the *Authorization* tab of the *Reseller Details* area, choose the *Assign* button.

   The *Assign Authorization to Reseller* window appears.
3. Select the corresponding checkboxes for the operations that you want to authorize the reseller to perform.
4. Choose the *Save* button.

15.3 Adding SLD Clients

An SLD Client is a client that can communicate with the system landscape directory using the SAP Business One Cloud SLD service application programming interface (API). The SLD service API is a collection of Representational State Transfer (REST) Web service APIs that enable partners and customers to extend the functionality of SAP Business One Cloud to create industry specific functionality, develop missing functionality, and interface with third-party tools.

For a client to communicate with the SLD, you must first register the client using the Cloud Control Center. Each client is assigned a unique identifier that you must specify in the HTTP request header when calling the Web service API.

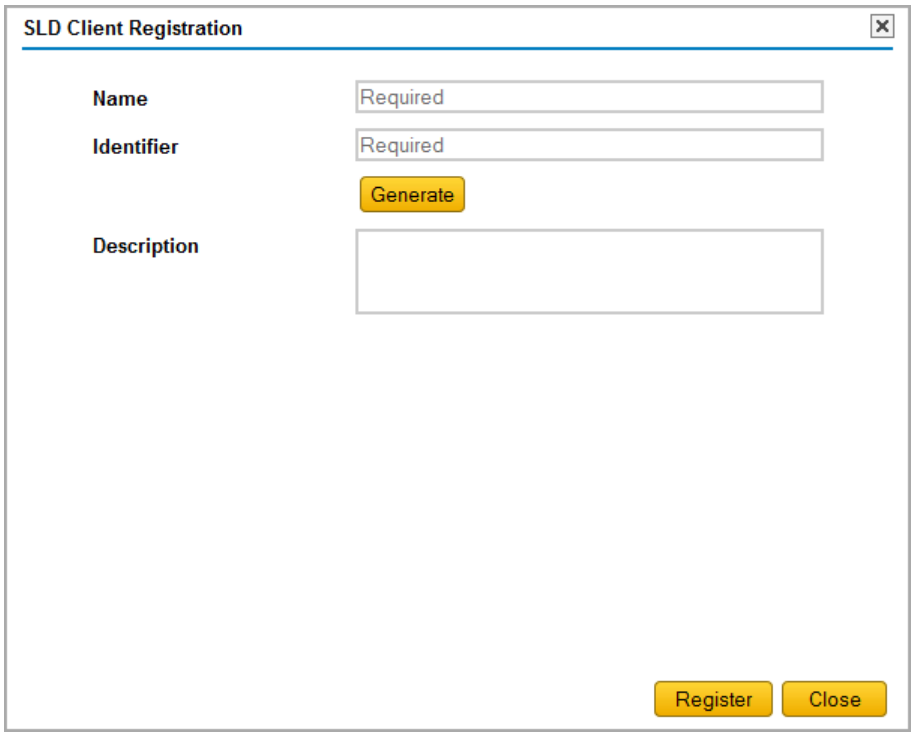
For more information about using the SLD service API, see *SAP Business One Cloud System Landscape Directory Service API*.

Procedure

To register an SLD Client, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *SLD Clients*, and then choose the *Register* button.

   The *SLD Client Registration* window appears.



2. In the *Name* field, enter the name of the client that you want to register.
3. If you already have an identifier for the client from SAP, enter it in the *Identifier* field. The SLD confirms whether the identifier is valid. Otherwise, choose the *Generate* button to create a new identifier for the client.
4. In the *Description* field, enter an optional description for the client.

5. To complete the registration process, choose the *Register* button.

16 Managing Requests

This section provides instructions for approving and rejecting requests for trials of SAP Business One Cloud from customers and requests from resellers.

16.1 Managing Trial Requests

For customers that are interested in learning more about SAP Business One Cloud, you can offer a fully functional license-free trial. During the trial period, customers can access a simple SAP Business One implementation, for a limited time and number of users.

Customers can request a trial of SAP Business One Cloud using the User Access Portal. After a customer enters the required information, the Cloud Control Center displays a trial request with the customer's information.

For more information about configuring the User Access Portal, see *Installing the User Access Portal*.

16.1.1 Approving Trial Requests

Prerequisites

- You have created a service unit with the version of SAP Business One that the customer wants to run. For more information, see *Creating Service Units*.
- You have created a Shared Folder. For more information, see *Creating Shared Folders*.

Procedure

To approve a trial request, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Trial Requests*, and then select the request you want to approve.
2. Choose the *Approve* button to run the customer creation wizard.
3. Complete the required steps in the customer creation wizard. For more information, see Creating Customers.

   Note

   When creating customers from a trial request, the following restrictions exist:
   - You can add a maximum of two users
   - You can create only a trial tenant
   - You cannot assign licenses
4. Log on to the SAP Business One client application and configure the settings on behalf of the user.

5. On the *Configuration* tab in the *Trial Request Details* area, choose the *Release* button.

> **Note**
>
> You can extend the trial period on the *Configuration* tab in the *Tenant Details* area for the corresponding tenant. To view the details for a tenant, choose *Customer Management* → *Tenants*, and then select the tenant from the list.

16.1.2 Rejecting Trial Requests

To reject a trial request, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Trial Requests*, and then select the request you want to reject.
2. Choose the *Reject* button.
3. In the *Confirmation* window, enter a reason for the rejection.
4. To complete the process, choose the *Confirm* button.

16.2 Managing Reseller Requests

When a reseller uses the Cloud Control Center to perform an operation, such as creating a new tenant, a request is sent to a cloud operator, who must first approve the request before the system executes the operation.

> **Note**
>
> You can authorize certain resellers to perform some operations without requiring approval from cloud operators. For more information, see *Assigning Operational Authorization to Resellers*.

16.2.1 Approving Reseller Requests

To approve a reseller request, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Reseller Requests*, and then select the request you want to approve.
2. Choose the *Review* button.

   The *Reseller Request Details* window appears.
3. Choose the *Approve* button,
4. In the *Approve* window, enter a reason for the approval.
5. To complete the process, choose the *OK* button,

16.2.2 Rejecting Reseller Requests

To reject a reseller request, do the following:

1. In the Cloud Control Center, choose *Customer Management* → *Reseller Requests*, and then select the request you want to reject.
2. Choose the *Review* button.

   The *Reseller Request Details* window appears.
3. Choose the *Reject* button,
4. In the *Reject* window, enter a reason for the rejection.
5. To complete the process, choose the *OK* button,

17 Managing Support

This section assists you with using the audit log (a time stamped list of all changes to System Landscape Directory resources) and uploading content to SAP Support.

17.1 Working with Audit Logs

The audit log records a time stamped list of all changes to system landscape directory resources, including the user that made the change and the request. The audit log records changes made using the Cloud Control Center as well as SLD clients via the System Landscape Directory Service API.

To access the audit log, in the Cloud Control Center, choose *System Configuration* → *Audit Logs*.

The *Audit Logs* area provides an overview of all changes to SLD resources, and displays the following information for each change:

- *Sequence Number* – Indicates the order in which the changes to SLD resources occurred.
- *Request* – The request sent to the SLD Service API. The request is either an SLD function or an SLD entity.
- *Resource* – The SLD resource that was changed and the operation that was performed.
- *User Name* – That name of the Cloud Operate or Reseller Operator who made the change.
- *Changed On* – The date and time at which the SLD resource was changed.

You can use the controls and the top of the *Audit Logs* area to filter the entries displayed in the audit log. For example, you can filter by specific users, requests, resources, and time periods.

To view detailed information about the properties that were changed for a specific resource, select the row for the corresponding request in the audit log. The *Audit Log Details* area displays the following information:

- *Property* – This column lists all the changed and unchanged properties for the selected resource. For more information about the available properties for different resources, see *SAP Business One Cloud System Landscape Directory Service API*.
- *Previous Value* – The value of the property before the change occurred.
- *New Value* – The updated value of the property after the changed occurred.

17.1.1 Cleaning Up Audit Logs

Failing to delete audit log records can cause the SLD database to become relatively large, which may result in errors during upgrade of the SLD. As of SAP Business One Cloud 1.1 PL12, the clean up audit log function allows you to clean up your audit logs.

Procedure

To clean up audit log records of changes to system landscape directory resources, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Audit Logs*.
2. Choose the *Clean Up* button.
3. In the *Clean Up Audit Log* window, in the *To Date* field, select the date to up to which you want to delete your audit logs.
4. Choose the *Clean Up* button, and then choose *Yes* in the *Confirmation* window.

17.2 Uploading Content to SAP

The Cloud Control Center provides an interface for working with content upload tasks in the remote support platform for SAP Business One, which enables you to upload company databases to SAP Support. Cloud operators can upload any company database to SAP Support; however, reseller operators can only upload the company databases of their assigned customers.

Prerequisites

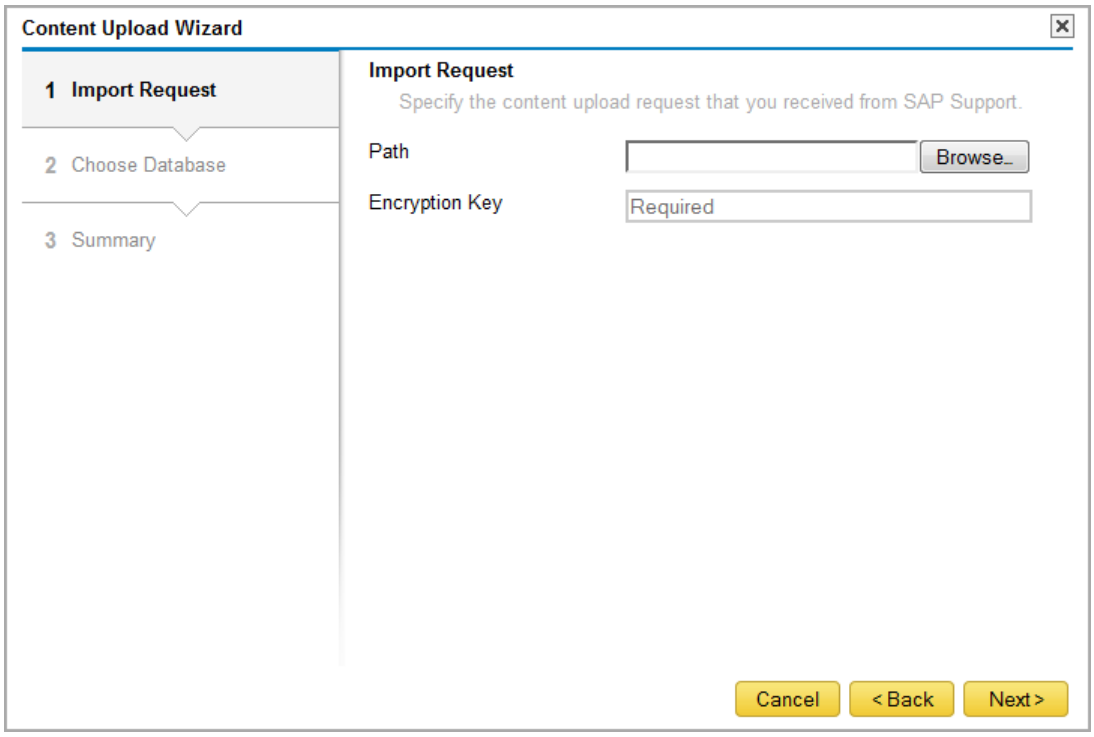
- You have installed the latest version and patch level of the remote support platform for SAP Business One in your cloud landscape.
- You have configured the remote support platform access to the System Landscape Directory, and the remote support platform user for the SLD is a cloud operator.
- You have enabled and correctly configured the SAP Channel in the remote support platform.
- You have configured a network folder in which to store database backups in the remote support platform.

For more information about working with the remote support platform, see the *Online Help* for the remote support platform for SAP Business One.

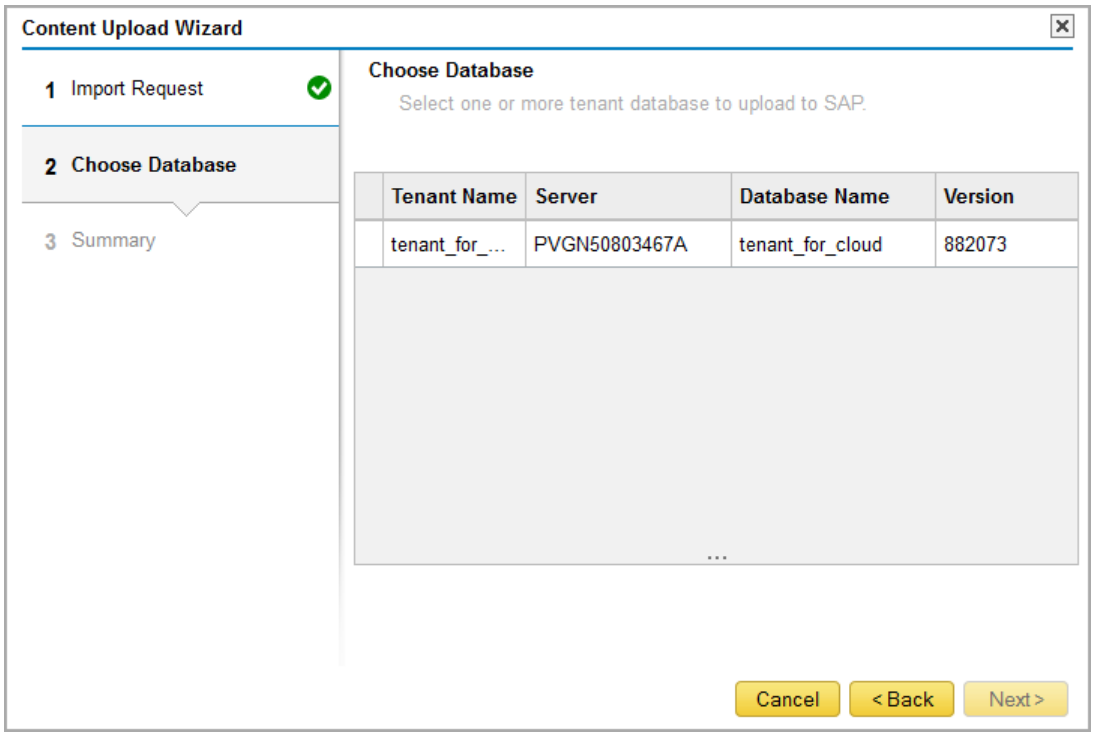
Procedure

To use the Cloud Control Center to upload company databases to SAP Support, do the following:

1. Obtain a content upload request from SAP Support, which includes an encryption key.
2. In the Cloud Control Center, choose *Support Management* → *Content Upload*.
3. To run the content upload wizard, choose the *New Content Upload* button.
4. In the *Import Request* window, enter the path to the content upload request file you received from SAP along with the corresponding encryption key.



5. In the *Choose Database* window, select the company database that you want to upload to SAP Support.



6. The *Summary* window displays an overview of the content upload settings.
   - To begin uploading content, choose the *Finish* button.

- To change the settings, choose the *Back* button to return to the previous steps.

Result

The content upload request is imported to the agent of the remote support platform. You can monitor the upload progress in the Cloud Control Center or the remote support platform console.

17.3 Troubleshooting Problems Using a Partner Support User Account

When you register a tenant to a service unit, the application automatically creates two partner support user accounts with user codes `_PSU_1` and `_PSU_2`. These accounts can be used to open a partner support user (PSU) connection to log on to the tenant and troubleshoot problems. A support user session can last for a maximum of 4 hours.

> **Note**
>
> Customers may disable access to SAP Business One for partner support user accounts in the application's help menu or by locking the accounts.

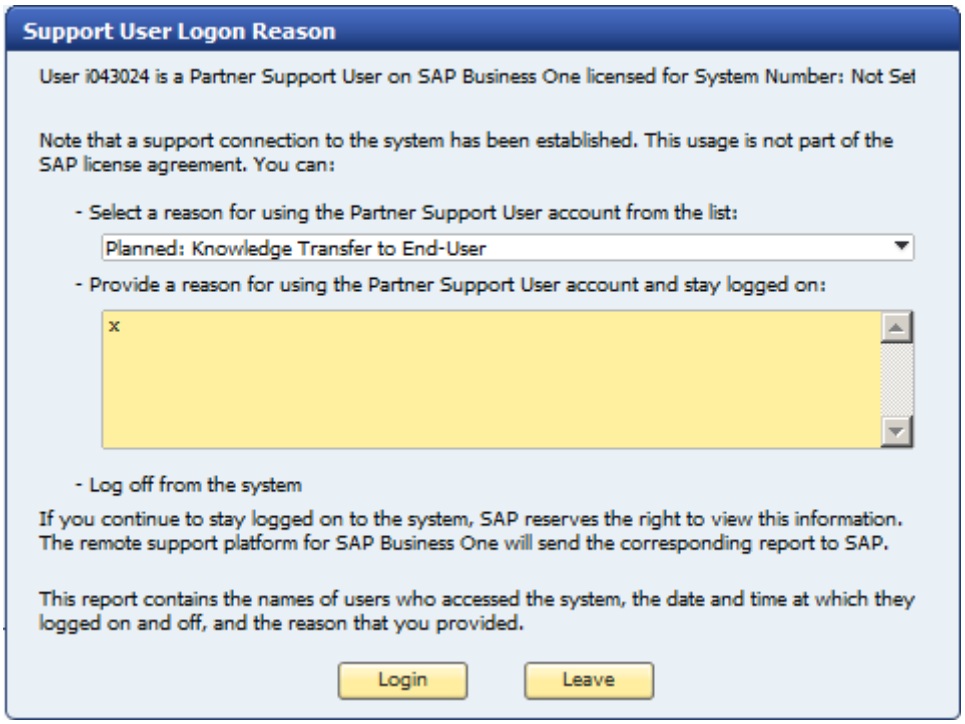
Procedure

To use a partner support user account to access a customer's SAP Business One tenants, do the following:

1. In the *Cloud Control Center*, choose *Customer Management* → *Tenants*, and then select the tenant to which you want to connect.
2. In the *Tenant Details* area, on the *Configuration* tab, choose the *Open PSU Connection* button, and then open the generated RDP file.

   SAP Business One launches and automatically logs you on using an available partner support user account.

   > **Note**
   >
   > If you are using Citrix instead of Microsoft RDS, do not open the generated RDP file. Instead, log on using the Remote Desktop Web Access.
3. In the *Support User Logon Reason* window, select a reason for using the partner support user account from the dropdown list or enter a reason in the text area, and then choose the *Login* button.



You have a maximum of 4 hours to troubleshoot the problem. You can view the time remaining in your session in the *Expires In* field (*Tenants* → *User Management*). The application will display a timeout warning 10 minutes before your session expires.

18 Managing Security

Your security requirements are not limited to SAP Business One Cloud, but apply to your entire system landscape. Therefore, we recommend establishing a security policy that addresses the security issues of the entire company. This section offers several recommendations to help you meet the security demands of SAP Business One Cloud.

Your security policy should cover the following aspects:

- **Technical Landscape** – Provides an overview of the technical components and communication paths that SAP Business One Cloud uses.
- **User Management and Authentication** – Provides system access to only legitimate users and prevents identity impersonation.
- **Database Authentication** – Introduces a strong password definition mechanism to restrict unauthorized database access.
- **Data Storage Security** – Avoid the risk of data loss by developing a comprehensive backup strategy.

Once you have established your security policy, we recommend that you dedicate sufficient time and allocate ample resources to implement it and maintain the level of security that you require.

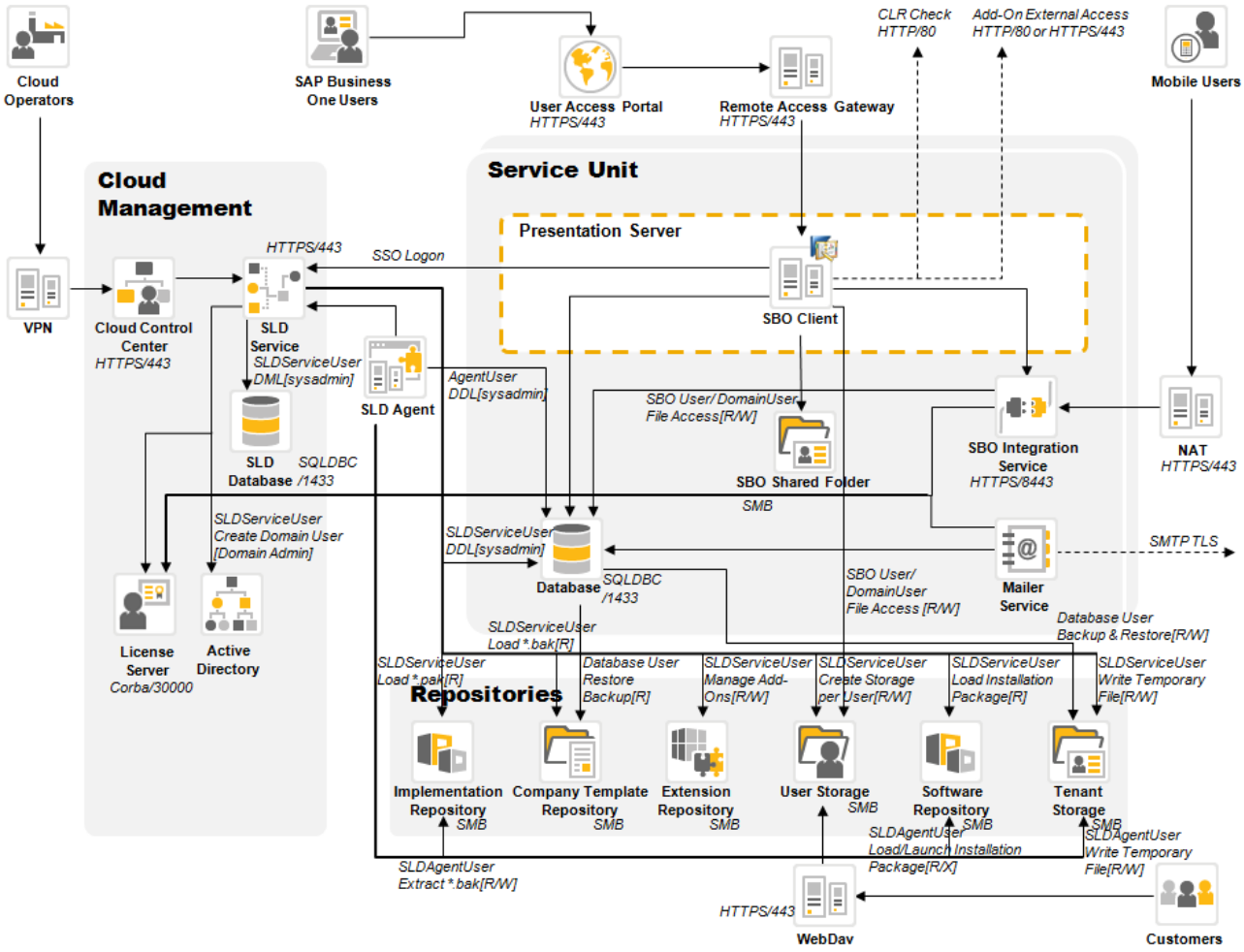
> **Note**
>
> For more information about the security considerations of SAP HANA, see the SAP HANA documentation on SAP Help Portal at http://help.sap.com/hana_appliance.
>
> For more information about the security of Microsoft SQL Server, see the Microsoft SQL Server Security Center at www.microsoft.com.

18.1 Technical Landscape

In SAP Business One Cloud, the System Landscape Directory servers as the security server, which saves database credentials in the SLD database.

Database credentials are obtained by supplying a Kerberos token to the SLD and validated against the Central Directory Server. Upon successful authentication, connections to common and company databases are established using database credentials supplied from the SLD server.

The following figure provides an overview of the security workflow for SAP Business One Cloud.



18.2 User Management and Authentication

This section provides an overview of how SAP Business One Cloud supports an integrated approach to user administration and authentication.

18.2.1 User Management

For information about managing access for the different user types in SAP Business One Cloud, see *Message Service*.

18.2.2 Password Policy

As standard practice, SAP Business One Cloud authenticates users based on their operating system authentication. The password policy of the underlying operating system should be strong enough to protect the entire landscape.

The suggested password policy is as follows:

- Minimum eight characters
- Maximum 25 characters
- Minimum one digit
- Minimum one lower case character
- Minimum one upper case character
- Cannot be the same as the five previous passwords
- Expires after 60 days
- Locks after five consequent failed validations
- Unlocks one hour after the last failed logon attempt

18.2.3 Resetting Domain User's Passwords

You can reset passwords for existing domain users in the Cloud Control Center.

Prerequisites

- As a reseller operator, you have the required authorization on the active directory to maintain passwords for your customer's system users.
- As a cloud operator, you have the required authorization on the active directory to maintain passwords for system users and reseller operators.

Procedure

To set a password for a customer user, do the following:

1. In the *Cloud Control Center*, choose *Customer Management → Customers*, and then select the relevant customer.
2. On the *User Management* tab in the *Customer Details* area, choose the user for whom you want to set the new password, and choose *Reset Password*.
3. In the *Set Password* window, enter and confirm the new password for the selected user.

   > **Note**
   >
   > Alternatively, cloud operators can set passwords for resellers by choosing *System Configuration → Operators* and *System Configuration → Resellers → Reseller Operator Management.*

18.2.3.1 Password Requirements Hint

To help operators meet the password policy set up on the domain controller, the optional *Password Requirements Hint* field in *System Configuration* → *Global Settings* allows you to provide a description of the password policy. The field text is displayed each time a new password is being set for a domain user.

Procedure

To create a password requirements hint to be displayed each time a new password is being set for a domain user, do the following:

1. In the Cloud Control Center, choose *System Configuration* → *Global Settings*.
2. In the *Password Requirements Hint* field, enter the text to be displayed when a new password is being set, and then click the *Save* icon.

Result

The text in the *Password Requirements Hint* field will be automatically displayed in the *Set Password* window.

> **Note**
>
> If any of the rules that comprise the password policy change, you need to update the text in the *Password Requirements Hint* field.

18.2.4 Managing Account for Active Directory Operations

As a cloud operator, you can set the account used to perform operations in the Cloud Control Center that require Active Directory access. To do so, you must provide the domain administrative account credentials during installation or upgrade of the SLD service. You can modify the specified account for Active Directory operations at any time in the Cloud Control Center.

> **Note**
>
> As of SAP Business One Cloud 1.1 PL15, you cannot use the built-in administrator account as the account for AD operations. To change the built-in Administrator account to another domain administrator account, see SAP Note 2815684.

Prerequisites

- You have created a domain account for Active Directory operations to perform domain information management in the Cloud Control Center.
- During installation or upgrade of the SLD service, you have entered the domain administrative account credentials.

Procedure

To set or modify the account for Active Directory operations in the Cloud Control Center, perform the following:

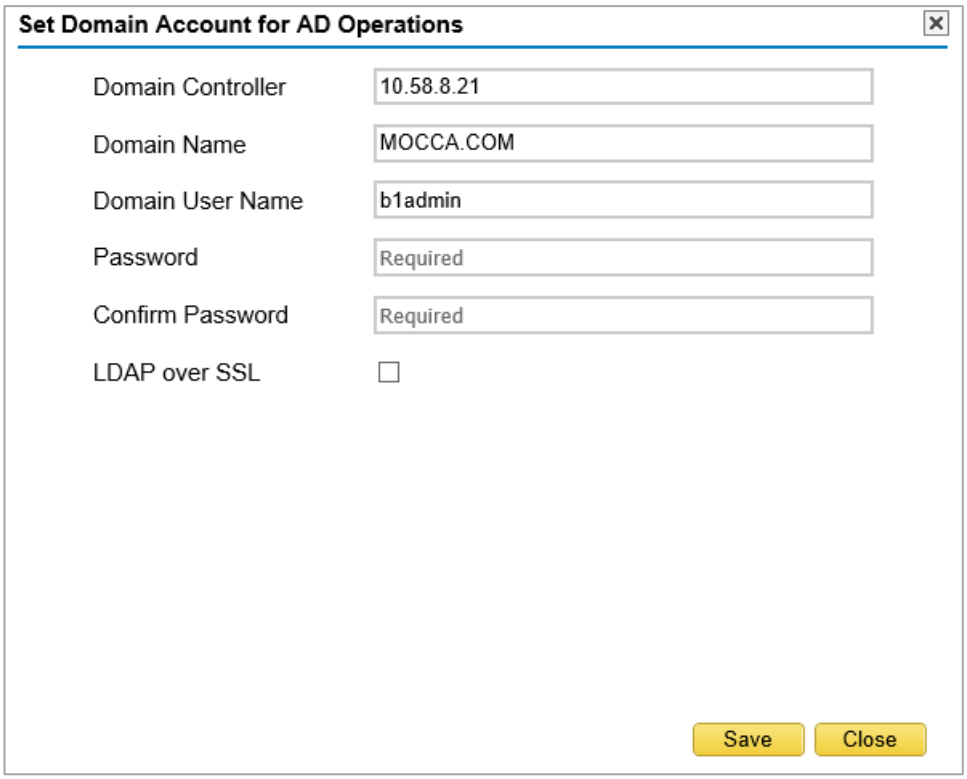
1. In the Cloud Control Center, choose *System Configuration* → *Account of AD Operations.*

   > **Note**
   >
   > Only one domain account for Active Directory operations is permitted in the Cloud Control Center.

2. Choose the *Edit* button.
3. In the *Set Domain Account for AD Operations* window, enter the required domain administrative account credentials:
   - *Domain Controller* – Enter the domain controller IP address.
   - *Domain Name* – Enter the domain name for the SAP Business One Cloud landscape.
   - *Domain User Name* – Enter the domain user name for the domain user.

     > **Note**
     >
     > The domain user name must be the same as the logon name.

   - *Password* – Enter the password for the domain user.
   - *Confirm Password* – Confirm the password you entered for the domain user.
   - *LDAP over SSL* – You can make LDAP transmission confidential and secure by selecting the *LDAP over SSL* checkbox to enable LDAPS. Data that is sent between the LDAP client and LDAP server is encrypted. To configure LDAPS, you need to install a valid certificate on the domain controller. For more information, see SAP Note 2868733.



4. To use the stored domain controller address and admin credentials to perform domain manipulation, in *System Configuration* → *Global Setting,* in the *Domain Group Management* field, choose the *ON* option.

   Note

   In *System Configuration* → *Global Settings,* the *System User Management* field is no longer displayed.

18.3 Database Authentication

The default database administrator user `SYSTEM` has full authorization. Therefore, you must assign a strong password for the `SYSTEM` account. This ensures that a blank or weak `SYSTEM` user password is not exposed. Alternatively, you can create another superuser account with the same authorization as the `SYSTEM` user.

Recommendation

For security reasons, we recommend that you change the `SYSTEM` logon password immediately after installing the SAP HANA database server. Alternatively, a safer option is to create another database user account as a substitute for the `SYSTEM` user

Note

If you change the password of the database user account (for example, `SYSTEM`) used to install the System Landscape Directory, you must reinstall the SLD.

18.3.1 Changing the SYSTEM Logon Password

A strong password is the first step to securing your system. A password that can be easily guessed or compromised using a simple dictionary attack makes system vulnerable. A strong password has the following characteristics:

- Contains alphabetic, numeric, and special characters
- Is at least seven characters in length
- Is at least seven characters in length
- Is NOT a common word or name
- Does NOT contain a name or user name
- Is significantly different from previous passwords

Procedure

To change the password for the `SYSTEM` logon, in the SAP HANA studio, do the following:

1. Log on to the SAP HANA Studio as a database administrator.
2. In the *SAP HANA Systems* list, navigate to the database instance for which you want to change the password for the `SYSTEM` user.
3. Choose *Security* → *Users* → *SYSTEM* and double click *SYSTEM*.

The *<instance name> - SYSTEM* tab appears the right.

4. Enter and confirm the password.
5. In the upper right toolbar, click the *Deploy* button to save the new password.

18.3.2 Creating a Superuser Account

Procedure

To create a superuser account for maintaining administrative tasks, in the SAP HANA studio, do the following:

1. Log on to the SAP HANA studio as a database administrator.
2. In the *SAP HANA Systems* list, navigate to the database instance for which you want to create a superuser account.
3. Choose *Security → Users*, right click *User,* and choose *New User*.

   The *<instance name> - New User* tab appears on the right.
4. On the <instance name> - New User tab, do the following:
   - In the *User Name* field, enter the name of the new user.
   - Select the *Password* checkbox, and then specify and confirm the password for the new user.
   - In the *Session client* field, do not enter anything.
   - On the *System Privilege* tab in the lower area, choose the plus button. In the *Select System Privilege* window, add all system privileges.
   - In the *System Privilege* pane on the left, select each privilege, and then select the *Grantable to other users and roles* checkbox in the *Details* pane on the right.
5. In the upper right toolbar, click the *Deploy* button to save the new user

   Note

   When the new user first logs on to the SAP HANA studio, they must change the password.

18.3.3 Database Privileges for Installing, Upgrading, and Using SAP Business One Cloud

To install, upgrade, and use SAP Business One Cloud, you must grant the following database privileges to the corresponding SAP HANA database user:

- Roles:
  - **`PUBLIC`**
  - **`CONTENT_ADMIN`**
  - **`AFLPM_CREATOR_ERASER_EXECUTE`** (grantable)
- System privileges:
  - **`CREATE SCHEMA`** (grantable)

    - **USER ADMIN** (grantable)
    - **ROLE ADMIN** (grantable)
    - **CATALOG READ** (grantable)
    - **IMPORT**
    - **EXPORT**
    - **INIFILE ADMIN**
    - **LOG ADMIN**

      This is needed if this database user is used to run the migration wizard to migrate your company databases from the Microsoft SQL Server to the SAP HANA server.
- SQL object privileges:
    - SYSTEM schema: **CREATE ANY, SELECT**
    - _SYS_REPO schema: **SELECT, EXECUTE, DELETE** (all grantable)

The SBOCOMMON schema is created during the installation of SAP Business One Server, and the COMMON schema is created during the installation of the analytics platform. If you use different SAP HANA users for installing different components, you must pay special attention to grant the following object privileges as appropriate:

- SBOCOMMON schema: **SELECT, INSERT, DELETE, UPDATE, EXECUTE, CREATE ANY, DROP** (all grantable)
- COMMON schema: **SELECT, INSERT, DELETE, UPDATE, EXECUTE** (all grantable)

Grant Roles and Privileges to Database Users

To grant roles or privileges to a database user, follow the steps below:

1. In the SAP HANA studio, connect to your system as a superuser (for example, SYSTEM).
2. In the Administration Console, under the *Security* folder of your system, under *Users*, double-click the database user.

   The details of the database user are displayed on the right.
3. In the right panel, add required roles or privileges.
4. To apply the changes, click the *Deploy* button or press F8.

18.3.3.1 Database Role PAL_ROLE for Pervasive Analytics

A database role PAL_ROLE is created during the upgrade/installation process of the app framework. All database privileges necessary for using pervasive analytics are assigned to this role on the condition that you have installed the AFLs properly (for more information, see the *Host Machine Prerequisites* section in *SAP Business One Administrator's Guide, version for SAP HANA*); AFLs being missing do not prevent the setup program from creating PAL_ROLE, but you will have to manually assign database privileges after the upgrade/installation (see the troubleshooting section below).

During the upgrade/installation process or when you change the database user for server connection in the System Landscape Directory, PAL_ROLE is automatically assigned to the database user.

Note

If you change the database user for server connection in the System Landscape Directory, PAL_ROLE is **not** automatically unassigned from the previously used database user. Similarly, if you change the security option for your company schema (for example, from using a specified database user for each SAP Business One user to using the admin user for all), PAL_ROLE is **not** automatically unassigned from the database users self-generated for the old option.

You need to release the PAL_ROLE assignments manually.

Troubleshooting Missing Database Privileges for PAL_ROLE

If required database privileges are not granted to PAL_ROLE (for example, because you install the AFLs after you install or upgrade the app framework) or PAL_ROLE is not properly assigned to the relevant database user or the required database privileges are not granted to non-SYSTEM users, you will have difficulty using pervasive analytics. To solve this issue, follow the troubleshooting instructions below.

Step 1: Ensure PAL_ROLE has all necessary database privileges

1. In the SAP HANA studio, connect to your SAP HANA database instance as the database user that was used to upgrade the app framework.
2. In the *Security* folder, under *Roles*, double-click the role PAL_ROLE.

   The details about the role are displayed in the right panel.
3. Check if PAL_ROLE has the following database privileges:
   - Granted roles:
     - AFL__SYS_AFL_AFLPAL_EXECUTE
     - AFL__SYS_AFL_AFLPAL_EXECUTE_WITH_GRANT_OPTION
     - AFLPM_CREATOR_ERASER_EXECUTE
   - Object privileges:
     - SYSTEM.afl_wrapper_generator: **EXECUTE**
     - SYSTEM.afl_wrapper_eraser: **EXECUTE**
4. If any database privileges are missing, grant the privileges to PAL_ROLE.

Step 2: Ensure PAL_ROLE is assigned to the database user being used for server connection

1. Log on to the System Landscape Directory, edit your server, and check the database user name.

   This database user is being used for server connection.
2. In the SAP HANA studio, connect to your SAP HANA database instance as the database user that was used to upgrade the app framework.
3. In the *Security* folder, under *Users*, double-click the name of the database user being used for server connection.

   The details about this database user are displayed in the right panel.
4. If the granted roles do not include PAL_ROLE, then grant PAL_ROLE (grantable) to the database user.

Note

If you intend to switch to a database user other than `SYSTEM` after installing SAP Business One Cloud with the `SYSTEM` user, you should also grant the following object privileges to the non-`SYSTEM` user before Step 1 and Step 2:

- `SYSTEM.afl_wrapper_generator`: **`EXECUTE`**
- `SYSTEM.afl_wrapper_eraser`: **`EXECUTE`**

18.3.4 Stored Procedures

You must not rename or remove any of the stored procedures in the SAP HANA database; otherwise, errors could occur when running SAP Business One Cloud.

18.4 Database User Management

As of SAP Business One Cloud 1.1 PL10, the database users and privilege function in the Cloud Control Center allows cloud operators and reseller operators to manage SAP Business One analytics, Crystal reports, and stored procedures in SAP Business One, version for SAP HANA.

18.4.1 Granting Privileges to Database Users

Before creating database users, ensure that you have all privilege types that you may need to grant to database users. The following three user privileges have been predefined in the system (*System Configuration → Database Privileges*):

- **Stored Procedures**: Grants the database user privileges to create, modify, and delete stored procedures.
- **Crystal Reports**: Grants the database user privileges to use SAP Crystal Reports, version for the SAP Business One application.
- **Analytics** (SAP HANA only): Grants the database user design-time privileges to SAP Business One analytics.

Additionally. you may define one or more **customized privileges** using the DB privilege creation wizard. For more information, see *Defining Customized Database Privileges*.

Note:

- When you create or duplicate a tenant, the database privileges are automatically granted to all database users on the tenant's company database.
- When deleting a tenant, service unit, customer, or reseller, the related database user is also deleted.

18.4.1.1 Defining Customized Database Privileges

Prerequisites

- You have checked that your privilege content can be successfully executed in the database.

Procedure

To add a customized database privilege, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Database Privileges*, and then choose the *New* button.
2. In the *Database Privilege Information* window, perform the following:
   - *Database Privilege Name*– Enter a unique name for the database user.
   - *Grant SP Name* – Enter a name for the stored procedure.
   - *Revoke SP Name* – Enter a name for the revoke stored procedure.
   - *Description* (optional) – Enter a description of the stored procedure.
3. In the *Add DB Privilege Content* window, choose the *Add* button, and in the next window, perform the following:
   1. Select whether the database type for the privilege content is a SAP HANA database or a Microsoft SQL database.
   2. In the *Grant SP Content* box, enter the stored procedure for the grant permission.

      Example

      ```
      CREATE PROCEDURE ExampleDBUser_StoredProcedures_GrantPrivilege(
                  in db_name varchar(250),
                  in db_username varchar(250)
      )
      LANGUAGE SQLSCRIPT
      AS
      sqlstr nvarchar(1024);
      BEGIN
                  sqlstr := 'GRANT ALTER, CREATE ANY, DEBUG, DELETE, DROP, EXECUTE on
      SCHEMA ' || :db_name || ' TO ' || :db_username || ' WITH GRANT OPTION';
                  EXEC sqlstr;
      END;
      ```

   3. In the *Revoke SP Content* box, enter the stored procedure for the revoke permission.

      Example

      ```
      CREATE PROCEDURE ExampleDBUser_StoredProcedures_RevokePrivilege(
                  in db_name varchar(250),
      ```

```
            in db_username varchar(250)
)
LANGUAGE SQLSCRIPT
AS
sqlstr nvarchar(1024);
dbuser_count INT;
BEGIN
            SELECT COUNT(*) INTO dbuser_count FROM PUBLIC.USERS WHERE USER_NAME
= :db_username;
            IF :dbuser_count > 0 THEN
                        sqlstr := 'REVOKE ALTER, CREATE ANY, DEBUG, DELETE,
DROP, EXECUTE on SCHEMA ' || :db_name || ' FROM ' || :db_username;
                        EXEC sqlstr;
            END IF;
END;
```

4. Choose the *Add* button to add the stored data to the *Add DB Privilege Content* table.

   Note:

   You can repeat Step 3 to add additional database privilege content for the database type.

5. In the *Review* window, check the database privilege data you have entered, and then choose the *Finish* button.

18.4.1.2 Regranting Privileges to Database Users

After upgrading to a higher SAP Business One version (Cloud 1.1 PL11 or higher), you can regrant privileges to existing database users.

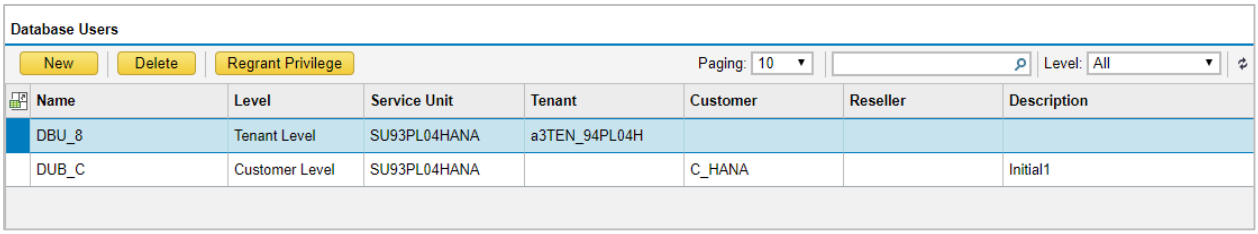
Prerequisites

- You have created a database user. For more information, see *Creating Database Users*.

Procedure

To regrant privileges to database users on all related tenants, perform the following:

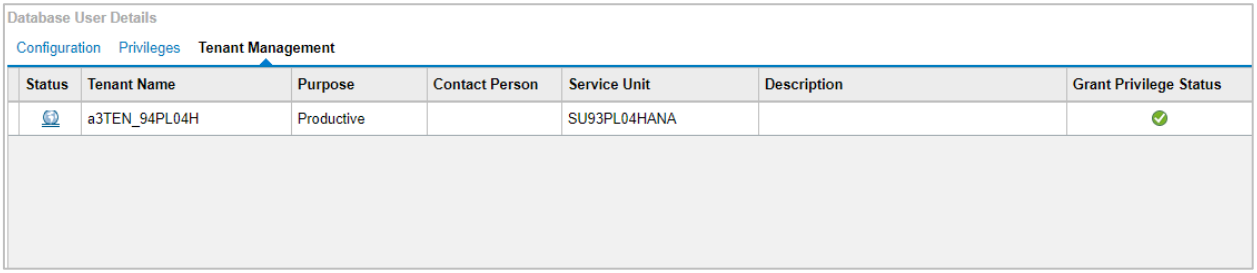
1. In the Cloud Control Center, choose *System Configuration* → *Database Users*, and then select the relevant database user.



2. Choose the *Regrant Privilege* button.
3. In the *Confirmation* window, choose *Yes*.

Result

In the *Database User Details* area in the *Database Users* window, on the *Tenant Management* tab, the *Grant Privilege Status* field indicates whether the privileges were successfully granted to the relevant tenant.



18.4.2 Creating Database Users

You can create database users at the tenant level (permissions are granted on the selected tenant), customer level (permissions are granted on the tenants associated with the selected customer and service unit), and reseller level (permissions are granted on the tenants associated with the selected reseller and service unit).

> **Note:**
>
> Only cloud operators can create, edit, and delete database users. Reseller operators have read-only permission for the database users assigned to them.

Procedure

To create a database user, perform the following:

1. In the Cloud Control Center, choose *System Configuration* → *Database Users*, and then choose the *New* button.
2. In the welcome window of the database user creation wizard, in the *Create Options* area, select one of the following options:

- *Tenant* – Create a database user with tenant privileges (proceed to Step 5).
- *Customer* – Create a database user with customer privileges (proceed to Step 3)
- *Reseller* – Create a database user with reseller privileges (proceed to Step 4).

3. In the *Select Customer* window, select the customer to whom you want to assign the database user (proceed to Step 5).
4. In the *Select Reseller* window, select the reseller to whom you want to assign the database user.
5. In the *Select Service Unit* window, select the relevant service unit on which you want to select a tenant.
6. In the *Select Tenant* window, select the tenant on which you want to assign the database user.
7. In the *Database User Profile* window, perform the following:
   - *Database User Name* – Enter a unique name for the database user.
   - *Password* – Enter a password for the database user.

     Note:

     The password must be a minimum of 8 characters, and should include at least one lowercase, uppercase, and numerical digit or other character.
   - *Confirm Password* – Confirm the password you entered for the database user.
   - *Description* (optional) – Enter a description of the database user.
8. In the *Select Privilege Type* window, choose one or more privilege type for the database user.

   Note:

   You may choose from among the predefined database privilege types and your custom privilege types. For more information, see *Granting Privileges to Database Users*.

18.5 Data Security

Databases are always at risk of damage. To keep the risk of data loss low, ensure that you develop a backup strategy that suits your business and the requirements of your customers. An important factor to consider is the volume of data that you process each day. In case of data loss, you are required to retrieve this data manually, back to the time of your last backup.

Test your backup and recovery procedures thoroughly. Testing helps to ensure that you have the required backups to recover from various failures, and that your procedures can be executed smoothly and quickly if a failure occurs.

The frequency of the backups depends on the following factors:

- Processed data volume
- Customer requirements
- Number of users

To avoid data loss, you must also back up regularly the following directories and storage:

- Software repositories
- Shared folders
- Company template repositories
- Tenant storage

Appendix 1

List of Log File Locations for SAP Business One Cloud Components

The following tables list the paths to installation and runtime log files for SAP Business One Cloud components and services (according to your operating system).

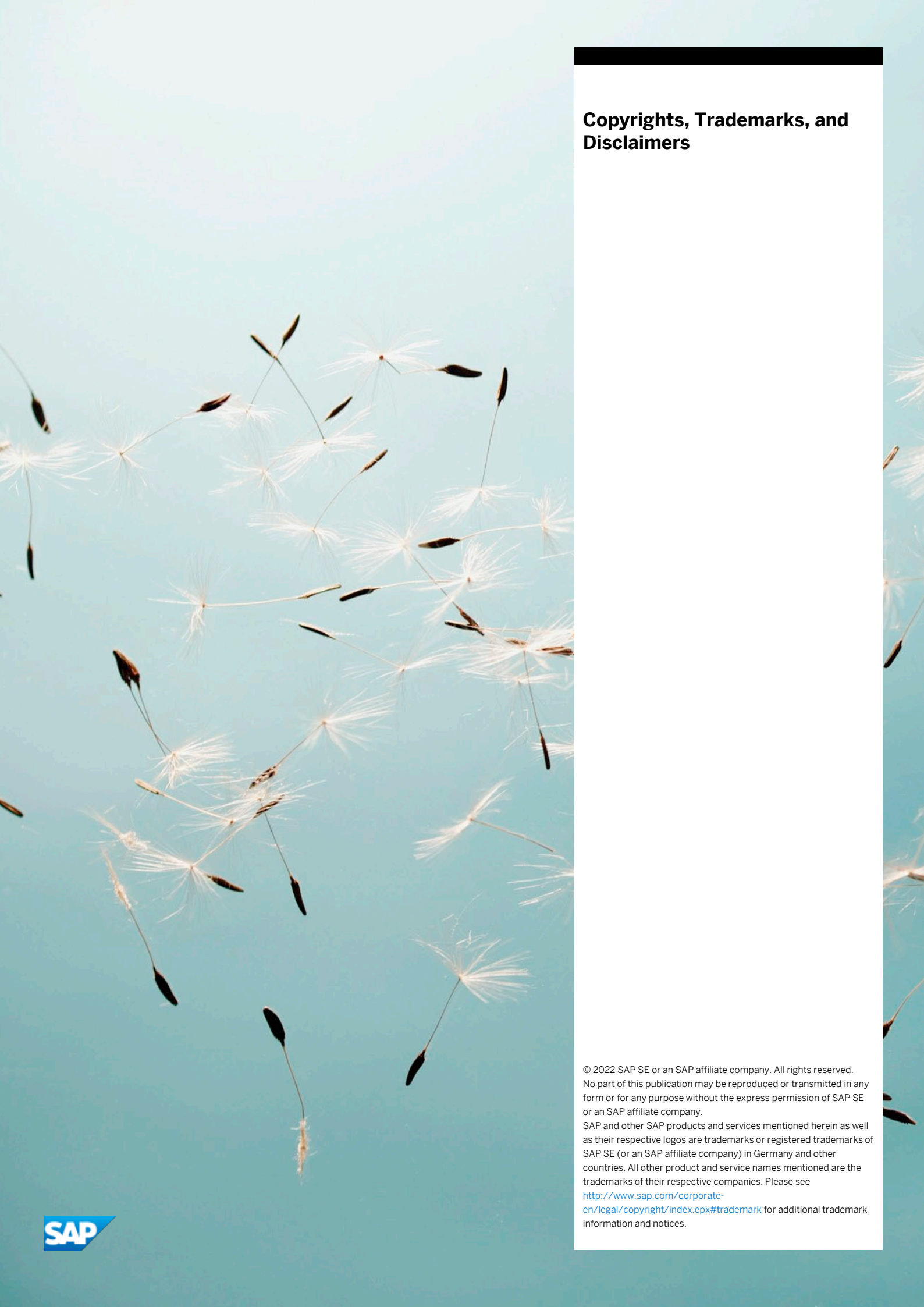
For information about log file locations for SAP Business One components and services, see the corresponding Appendix in the *SAP Business One Administrator's Guide* or *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.

Table 1: Windows

Component		Installation Log Path	Runtime Log Path
Cloud Control Center	System Landscape Directory (SLD)	%USERPROFILE%\SAP Business One SLD Service\setup.log	${user.home}/AppData/Local/SAP/SAP Business One/Log/SLD
	User Access Portal	%PROGRAMDATA%\SAP\SAP Business One\Log\SAP Business One\<Windows user>\BODWinInstaller_CurrentRun.log	%PROGRAMFILES%\SAP\SAP Business One User Access Portal\tomcat\logs\dispatcherService.log
	SLD Agent	%USERPROFILE%\SLDAgent-setup.log	${user.home}/AppData/Local/SAP/SAP Business One/Log/SLDAgent

Table 2: Linux

Component		Installation Log Path	Runtime Log Path
Cloud Control Center	System Landscape Directory (SLD)	/var/log/SAPBusinessOne	/var/log/SAPBusinessOne/CloudSLD
	User Access Portal		%PROGRAMFILES%\SAP\SAP Business One User Access Portal\tomcat\logs\dispatcherService.log
	SLD Agent	/var/log/SAPBusinessOne	${user.home}/AppData/Local/SAP/SAP Business One/Log/SLDAgent



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