**Administrator's Guide** **PUBLIC**
SAP Business One 10.0
Document Version: 1.0 – 2019-10-30

# SAP Business One 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.<br>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`. |


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# Document History

| Version | Date | Change |
| --- | --- | --- |
| 1.0 | 2019-10-30 | First version. |


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# 1 Introduction

The SAP Business One Administrator's Guide provides a central point of guidance for the technical implementation of SAP Business One. Use this guide for reference and instructions before and during the implementation project.

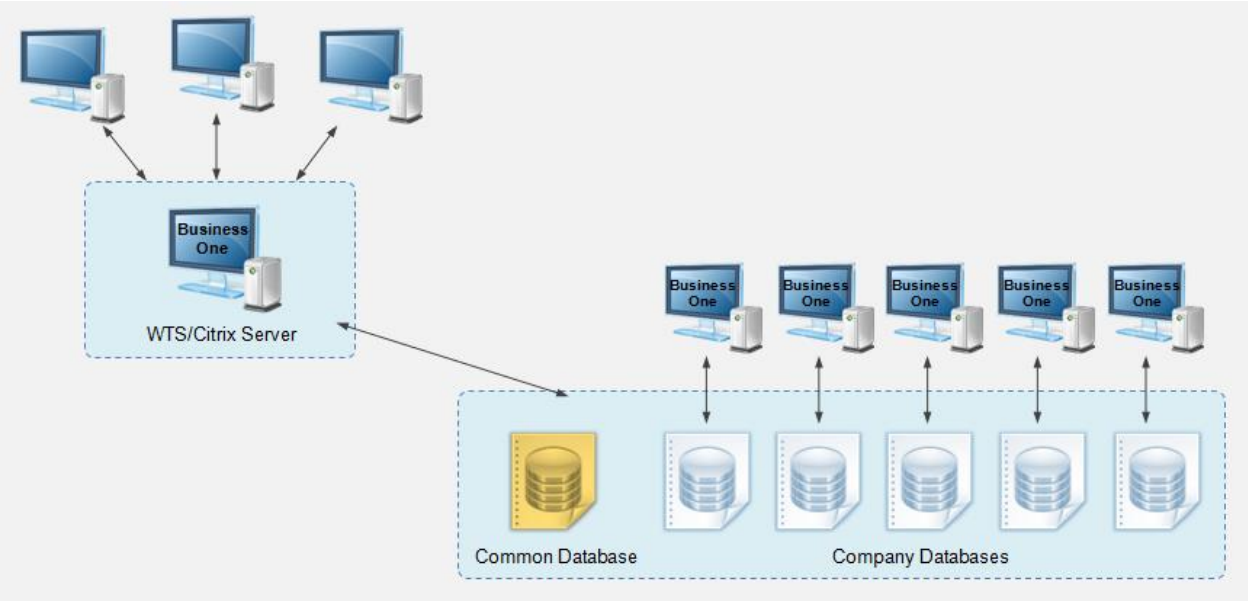
For the latest information that may not appear in this guide, see the following SAP Notes:

- SAP Note 2826255 (Central Note for SAP Business One 10.0)
- SAP Note 2830129 (Release Update Note for SAP Business One 10.0)
- SAP Note 2830158 (Collective Note for SAP Business One 10.0 Upgrade issues)
- SAP Note 2830193 (Collective Note for SAP Business One 10.0 General issues)

## 1.1 Application Architecture

SAP Business One is a client-server application consisting of a fat client, a database server, and various services. The database stores only data and does not use triggers. However, the database does use views, especially for reporting and upgrade purposes.

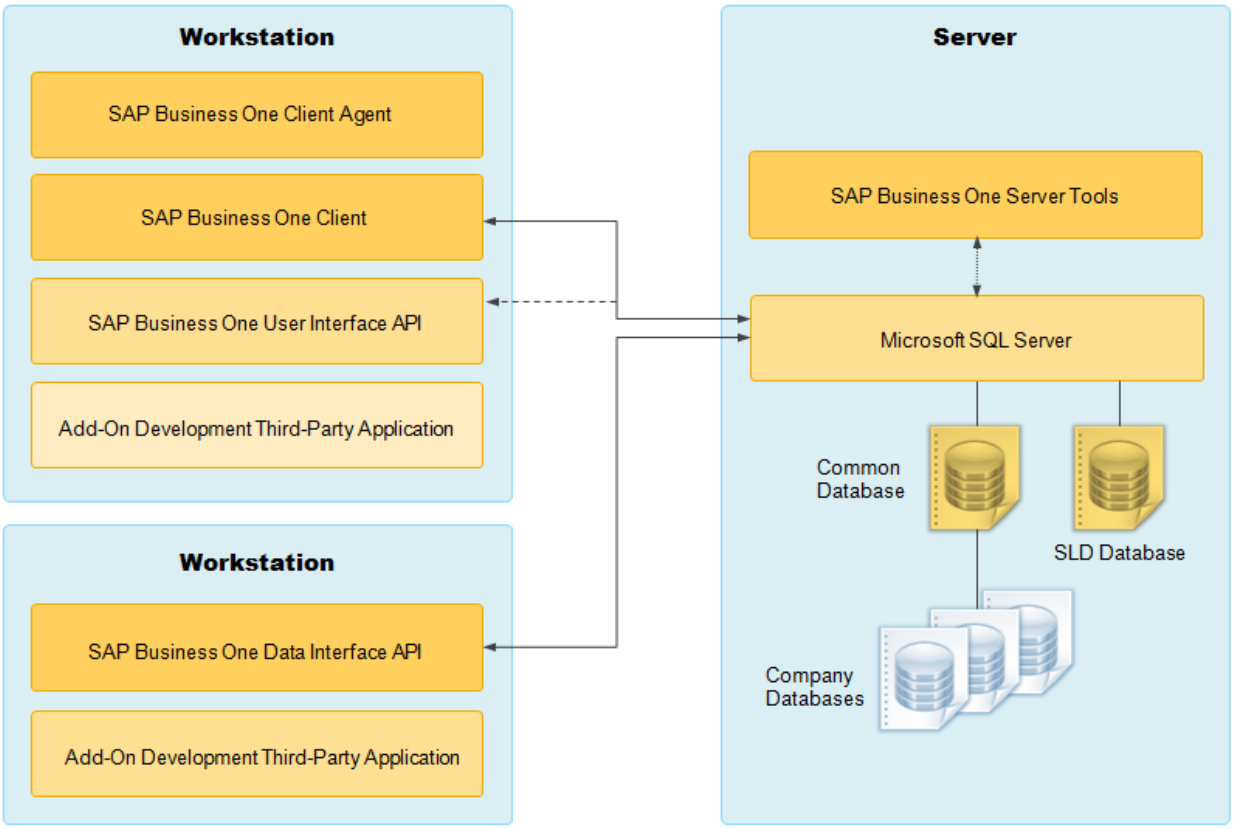
The following figure provides an overview of the server architecture of SAP Business One:




SAP Business One Server Architecture

The following figure provides an overview of the client architecture of SAP Business One:


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SAP Business One Architecture

## 1.2 Application Components Overview

This section provides a description of the software components of SAP Business One and how they are used by the business processes of SAP Business One.

### 1.2.1 Server Components

Some server components are essential to the system landscape and are thus mandatory, while the others are optional, and you can install them if there's a business need.

| Component | Description | Type | Mandatory? |
|---|---|---|---|
| SLD (System Landscape Directory) | Authenticates users and manages an entire SAP Business One landscape. Precondition for all other components. | 32-bit | Yes |
| License Service | Manages license requests. | 32-bit | Yes |
| Extension Manager | Manages deployment of lightweight add-ons. | 32-bit | No |


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| Component | Description | Type | Mandatory? |
| --- | --- | --- | --- |
| Job Service | Manages alert settings and SBO Mailer settings on the server side.<br>The SBO Mailer allows you to send documents directly from the client application through email. | 32-bit | No |
| Workflow Service | Enables you to implement user-defined business processes. | 32-bit | No |
| Data Interface Server (DI Server) | Supports high-volume data integration and enables multiple clients to access and manipulate SAP Business One company schemas. | 32-bit | No |
| Repository | Includes:<br>• System database `SBOCOMMON` that holds system data, version information, and upgrade information.<br>Unlike company databases, `SBOCOMMON` does not store any business or transactional data.<br>• Shared folder `B1_SHR` that contains central configuration data as well as installation files for various client components. | 32-bit | Yes |
| Remote Support Platform (RSP) | Proactively monitors the health of an SAP Business One installation and provides automated healing, backup support, and download of software patches. | 32-bit | Yes |
| Integration Framework | A set of business scenarios that enable integration of the SAP Business One application with third-party software and mobile devices.<br>The integration packages include:<br>• Mobile Solution<br>For more information about mobile scenarios, search for the user guide for the SAP Business Mobile app on SAP Help Portal. Note that there are different user guides for the iOS and the Android versions.<br>• DATEV HR (Germany only)<br>For more information about DATEV HR, see *Leitfaden zur Personalabrechnung mit DATEV HR (German only)* on SAP Help Portal.<br>• Electronic Invoices (Mexico only)<br>• Support for Document Approval (Portugal only)<br>• Support for SAP Customer Checkout<br>For more information, see the *Integration with SAP Customer Checkout* guide. To display the guide in the integration framework, choose *Scenarios* → | 32-bit | No |


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| Component | Description | Type | Mandatory? |
| --- | --- | --- | --- |
| | *Control* and for `sap.CustomerCheckout`, choose *Docu*. | | |
| Add-Ons | Add-ons are additional components or extensions for SAP Business One.<br>SAP Business One provides the 64-bit add-ons as follows:<br>Electronic File Manager Format Definition<br>Microsoft Outlook Integration<br>Payment Engine | 64-bit | No |
| Outlook Integration Server | Includes Microsoft Office templates required for the Microsoft Outlook integration add-on. | 64-bit | No |
| Outlook Integration Standalone | Standalone installer that allows you to install the Microsoft Outlook integration add-on without installing the SAP Business One client on your PC. | 64-bit | No |

## 1.2.2 Client Components

| Component | Description | Type | Mandatory? |
| --- | --- | --- | --- |
| SAP Business One Client | The application executable. You can also install the client application on a terminal server or in a Citrix environment. | 64-bit | Yes |
| SAP Business One Client Agent | • Performs actions that require administrator rights on the local system (for example, upgrading the SAP Business One client and add-ons).<br>• Moves SAP Business One log files to the central log folder in the shared folder.<br>**Note**<br>The client agent is part of the client installation process and is installed by default. | 32-bit | Yes |
| DI API | Data interface API, a COM-based API and an applicative DLL file `(OBSever.dll)` that enables add-ons to access and use SAP Business One business objects. | 64-bit | Yes |
| UI API | User interface API, a COM-based API that is connected to the running application and which enables add-ons to perform runtime manipulation | 64-bit | Yes |


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| Component | Description | Type | Mandatory? |
|---|---|---|---|
| | and enhancement of the SAP Business One GUI and its flow. | | |
| Software Development Kit | Documentation and samples for the SAP Business One SDK. | 32-bit | No |
| DTW | Data transfer workbench which enables importing and updating data in large volumes. | 64-bit | No |
| SAP Business One Studio Suite | An integrated development environment based on the Microsoft .NET Framework, which supports you in developing extensions on top of SAP Business One. | 64-bit | No |
| Solution Packager | A tool for packaging your industry solutions for fast deployment. For example, you can package your user-defined tables and fields, queries, reports, and configurations, and then use the package to create new, but pre-configured, companies in SAP Business One. | 64-bit | No |

> **Note**
>
> If you intend to install the SLD Agent on the server or workstations, you need to run the **Components Setup Wizard**. For more information, see *Manually Installing SLD Agent Service*.

## 1.3 Downloading Software

Download the SAP Business One product package (installation package or upgrade package) from the SAP Support Portal, as follows:

1. Go to the SAP Business One Software Download Center on the SAP Support Portal at https://support.sap.com/en/my-support/software-downloads.html.
2. Do one of the following:
   1. To download an installation package, click *Installations & Upgrades*.
   2. To download an upgrade package, click *Support Packages & Patches*.
3. Navigate to and select the relevant download objects.

   > **Note**
   >
   > The package may be divided into several download objects. In this case, select and download all objects under the same patch level designation.
4. Add the selected objects to the download basket.

   We recommend that you read the Info file for the selected download objects.
5. Download the selected objects from your download basket.
6. Extract files from the downloaded objects (archives) to your computer.

If you experience problems when downloading software, send a message to SAP as follows:

1. Go to the Support Launchpad for SAP Business One on apps.support.sap.com/B1support/index.html.


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2. In the left *Customer/partner result list*, select your company.
3. In the right navigation panel, click *Incidents Create*.
4. On the *Report an Incident* page, write the message and assign it to component `SBO-CRO-SUP`.

## 1.4 Related Websites

| Website Name | Website Address | Access Permission |
|---|---|---|
| SAP Help Portal | • Generic address:<br>https://help.sap.com/viewer/index<br>You can search across all SAP products on this web page.<br>• Address for SAP Business One product line:<br>https://help.sap.com/viewer/p/SAP_BUSINESS_ONE_PRODUCT_LINE<br>You can find all products that belong to the SAP Business One product line on this web page.<br>**Note**<br>Through selecting the product page, you can get an overview of all available documentations for a specific product. You. You may then filter by version and language. | Access to SAP Help Portal is free.<br>You can log on to SAP Help Portal with your S-user account to access documents that are not available to the public. If you do not have an S-user account, contact your SAP Business One partner. Partners can request S-user accounts for their customers via Support Launchpad for SAP Business One. |
| SAP Partner Edge | • Generic address:<br>• https://partneredge.sap.com<br>• Address for SAP Business One product line:<br>https://partneredge.sap.com/en/products/business-one/about.html | Only an SAP partner can access the SAP Business One area on the SAP Partner Edge web page.<br>SAP partners need to register on the home page when logging in for the first time; and need to select SAP Business One in their profile to ensure they can get the latest information about SAP Business One on their home page. |
| Support Launchpad for SAP Business One | https://apps.support.sap.com/B1support<br>Easy access to SAP Business One support applications, such as incident creation, SAP Note search, user and system management or license key requests. | To gain access to the Support Launchpad for SAP Business One, you must be an SAP Business One customer or partner, and you need an S-user account. If you do not have an S-user account, contact your SAP Business One partner. |


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# 2 Prerequisites

- For information on hardware requirements, see the *SAP Business One Hardware Requirements Guide* on SAP Help Portal.
- For an overview of support platforms for SAP Business One and related products, see the *SAP Business One Platform Support Matrix* on SAP Help Portal.
- For information about platform availability, including database platforms and operating systems, see the *Product Availability Matrix* on SAP Help Portal.
- For compatibility information regarding SAP Business One and SAP Business One Cloud, see SAP Note 1756002.
- You have installed one of the following Microsoft operating system versions:
  - Windows 10
  - Windows Server 2016
  - Windows Server 2019
- You have installed Microsoft SQL Server 2017.
- You have installed Microsoft ODBC Driver 13.1 on the server as well as on the client workstations:

  **Note**

  Workstations that have Microsoft SQL Server installed have already had the SQL Server drivers installed automatically. However, you should manually install the SQL Server drivers on workstations that do not have Microsoft SQL Server installed.
- You have installed Microsoft .NET Framework 4.5.2 or the higher version in CLR4 on the server as well as on the client workstations.

  **Note**

  If you do not have Microsoft .NET Framework 4.5.2 (or the higher version in CLR4) installed, it is installed during the SAP Business One installation process. However, you will have to restart your machine. To avoid a restart, you may choose to install the framework before starting the SAP Business One installation.
- If you want to access the System Landscape Directory service, be sure to use one of the following Web browsers:
  - Microsoft Internet Explorer 9 or later
  - Mozilla Firefox 9 or later
  - Google Chrome 12 or later
- If you want to access SAP Business One in a Web browser, be sure to use one of the following Web browsers:
  - Mozilla Firefox
  - Google Chrome
  - Microsoft Edge
  - Apple Safari (Mac)


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- To display dashboards in the SAP Business One client application, ensure you have installed Adobe Flash Player for the embedded browser Google Chrome on each of your workstations. You can download Adobe Flash Player at http://www.adobe.com.

  > **Note**
  >
  > The download link provided by Adobe is by default for Microsoft Internet Explorer. To download Adobe Flash Player for other browsers, choose to download for a different computer, and then select the correct operating system and a Flash Player version for other browsers.

- You have ensured that the names of the machines on which you want to install SAP Business One do not contain one or more non-standard characters (standard characters are letters, digits, and hyphens).

  Using non-standard characters in the name of a machine prevents it from being found on networks and causes the installation of SAP Business One to fail.

## 2.1 Constraints

You can run the SAP Business One for 31 days without a license. To continue working with the application after 31 days, you must install a valid license key assigned by SAP.

> **Note**
>
> If you are a partner, for more information about installing the license key, see *SAP Business One License Guide* on sappartneredge.com.

The demonstration databases provided are not for productive use. The application supports 40 localizations in the demonstration databases.

## 2.2 User Privileges

The following table summarizes the requirements and recommendations for the group setup of the displayed operating system:

| Operation | Operating System | User Group | |
|---|---|---|---|
| | | **Recommended** | **Minimum** |
| Client installation | Microsoft® Windows operating systems | Administrator | Administrator |
| Client upgrade | | Administrator | Administrator |
| Runtime | | Users | Users |

> **Note**
>
> For more information about possible installer issues related to the user account control (UAC) in Microsoft Windows operating systems, see SAP Note 1492196.


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# 3 Installing SAP Business One

The overall installation procedure of SAP Business One is as follows:

1. On a Windows server, install server components.
2. On each workstation, install client components.

> **Note**
>
> All SAP Business One components must be installed in the same LAN (local area network). For users outside the LAN of the server (for example, those using VPN connection), we recommend that you use a remote desktop to access the SAP Business One client instead of installing the SAP Business One client directly.

For demonstration or testing purposes, you can install all components on the same Windows computer. You can also install the SAP Business One client on a terminal server or in a Citrix environment.

## 3.1 Installing Server Components

You need to install the following components on the server:

- Server tools, including the following:
  - SLD, license manager, extension manager
  - Data interface server
  - Job service
  - Workflow service
- Repository

  It includes the shared folder `B1_SHR`, the system database `SBOCOMMON`, and online help files in all supported languages
- Demo databases

  > **Note**
  >
  > Only the installation package provides the option to install demo databases; the upgrade package does not.

  > **Note**
  >
  > The system database `SBOCOMMON` and demo databases can be installed also from the System Landscape (SLD) control center. For more information, see *Performing Centralized Deployment.*
- Microsoft Outlook integration server
- Remote support platform
- Integration framework

  If you want to install the integration framework separately, navigate to the *...\Packages.x64\B1 Integration Component\Technology* folder and run the **`setup.exe`** file.


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- Add-ons

  By installing the SAP add-ons as part of the server installation process, you register them to all companies on the server. If you do not install them now, you will have to register the add-ons manually later in the SAP Business One client.

  **Caution**

  The SAP Business One installation creates a new SQL user and password. Do not modify or delete this user ID or password. They are essential for the correct operation of the SAP Business One application.

## Prerequisites

- The installation computer complies with all hardware and software requirements. For information on hardware and software requirements, search for related information on SAP Help Portal.
- You have administrator rights on the machine on which you are performing the installation.

  **Note**

  For more information about possible installer issues related to the user account control (UAC) in Microsoft Windows operating systems, see SAP Note 1492196.
- The host name of the Microsoft SQL Server does not contain any special characters, such as: & (ampersand), < (left angle bracket), > (right angle bracket), " (double quotation mark), ' (single quotation mark), or _ (underscore).
- Your Microsoft SQL Server has been installed with the following settings:

| Setting | Description |
|---|---|
| TCP/IP | Enabled |
| Service Account | Use the built-in system account – Local System |
| Authentication Mode | Mixed mode (Windows authentication and SQL Server authentication) |
| Collation Settings | SQL collations – *Dictionary order case-insensitive, for use with 1252 Character set, Accent - Sensitive (SQL_Latin1_General_CP1_CI_AS)*.<br>**Note**<br>In some versions of Microsoft SQL Server, this collation may be available only for backward compatibility. |

- You have installed the Microsoft SQL Server database client on the machine on which you are performing the installation.
- [For the Integration Framework] You have not yet configured a default Tomcat installation on your machine; otherwise, you cannot proceed with the installation. During the installation process, the setup checks for the following registry entry for 64-bit system, and if found, the setup terminates:

  `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Apache Software Foundation\Procrun2.0\Tomcat<version>`


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## Procedure

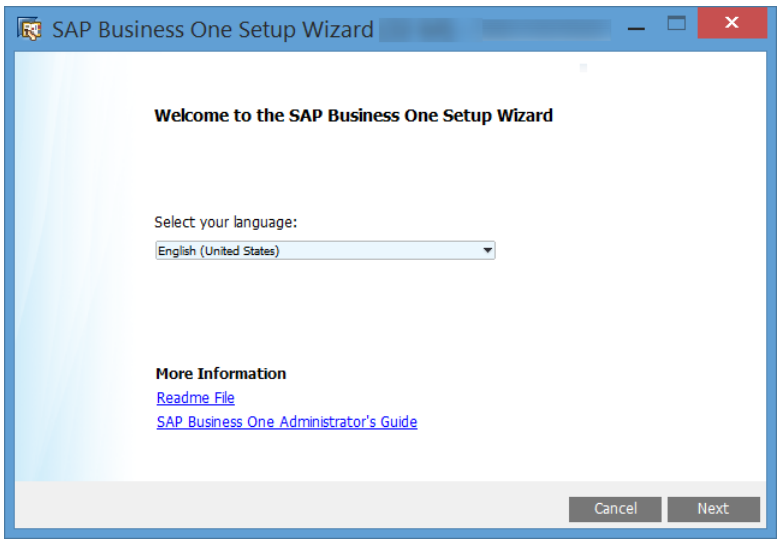
A setup wizard is used for installation as well as for upgrade. The following procedure describes how to install **all** server components (except for the remote support platform) in a clean environment where no SAP Business One components exist.

> **Note**
>
> The installation of remote support platform is performed by a separate installation wizard. For more information, see *Administrator's Guide to the Remote Support Platform for SAP Business One.* You can find the guide (*RSP_AdministratorGuide.pdf*) under *...\Documentation\Remote Support Platform\System Setup* on the SAP Business One product DVD, or search for related information on SAP Help Portal.

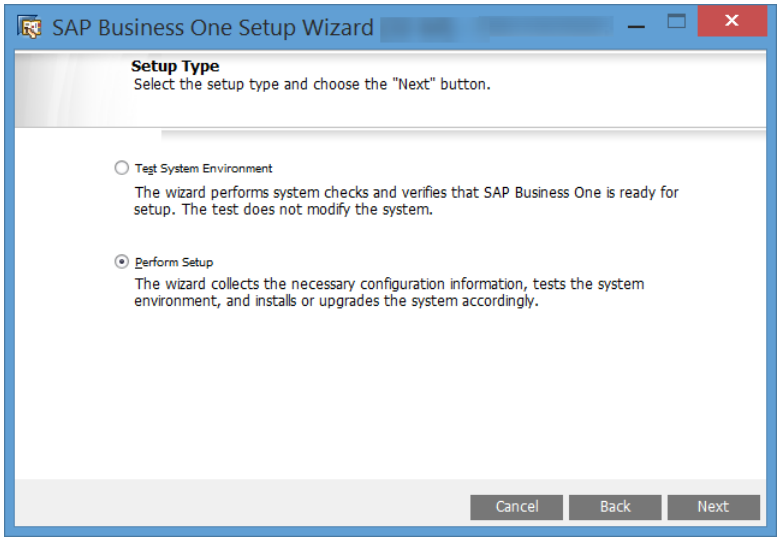
1. Navigate to the root folder of the product package and run the *setup.exe* file.

   If you are using Windows 10, right-click the *setup.exe* file and choose *Run as administrator*.

2. In the welcome window, select your setup language and choose *Next*.



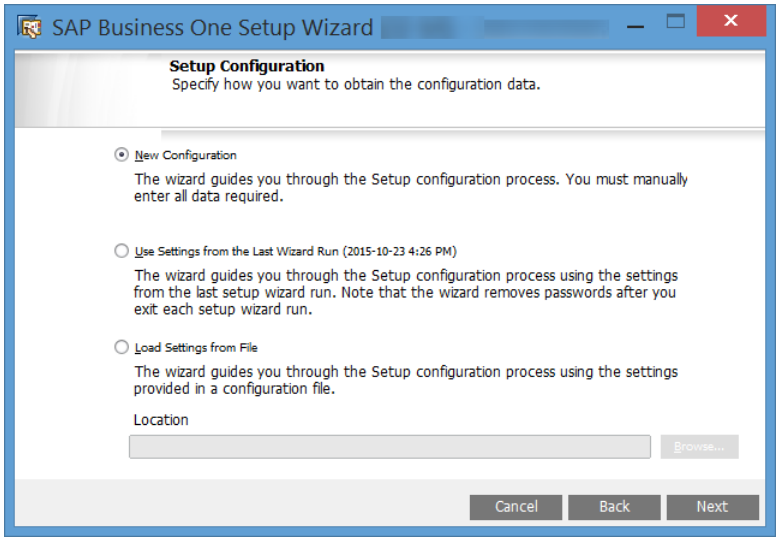

3. In the *Setup Type* window, select *Perform Setup* and choose *Next*.



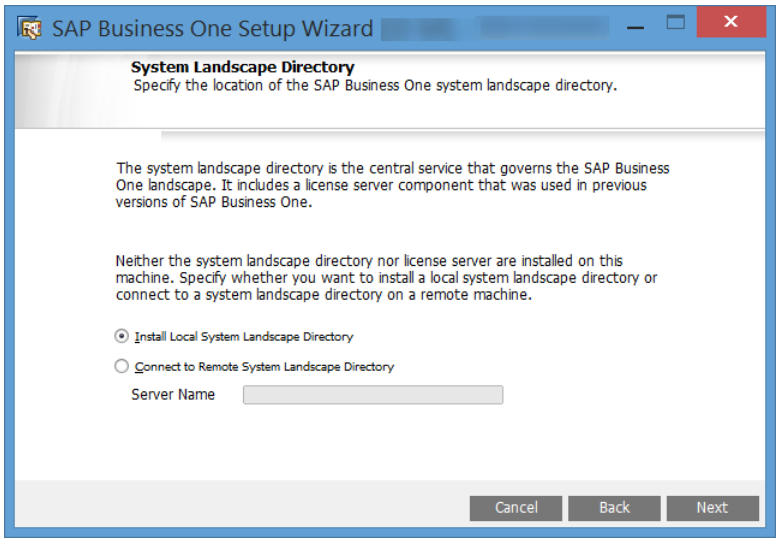


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4. In the *Setup Configuration* window, select *New Configuration* and choose *Next*.




5. In the *System Landscape Directory* window, select *Install Local System Landscape Directory* and choose *Next*.




6. In the *New System Landscape Directory* window, specify a password for the site super user `B1SiteUser`, confirm the password, and then choose *Next*.

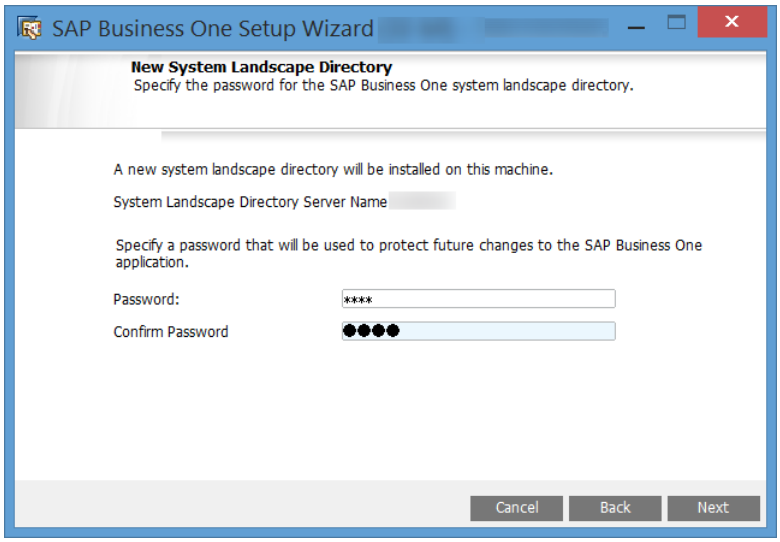
   For details on which special characters are not allowed for a site user password, see SAP Note 2330114.

   ### Recommendation

   For security reasons, you should set a strong site user password, at least as strong as that defined in your company's password policy and change it frequently. For more information, see Managing Security in SAP Business One.

   For more information about site users, see User Types.


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7. In the *Database Server Registration* window, enter the database server information as follows:
   1. Specify the Microsoft SQL Server version.
   2. In the *Server Name* field, enter the hostname or the IP address of the database server.

      To specify a local machine, enter **`localhost`**. Do not enter **`local`**.

      If your database server does not use the default TCP port "1433", you must add the alternative port (for example, 9033) to the server name as follows: **`SERVER_NAME,9033`**.
   3. Do one of the following:
      - To use database authentication to validate access to the Microsoft SQL server instance, deselect *Use Trusted Connection* and then specify the database user name and password.
      - To use Windows authentication to validate access to the Microsoft SQL server instance, select *Use Trusted Connection*.

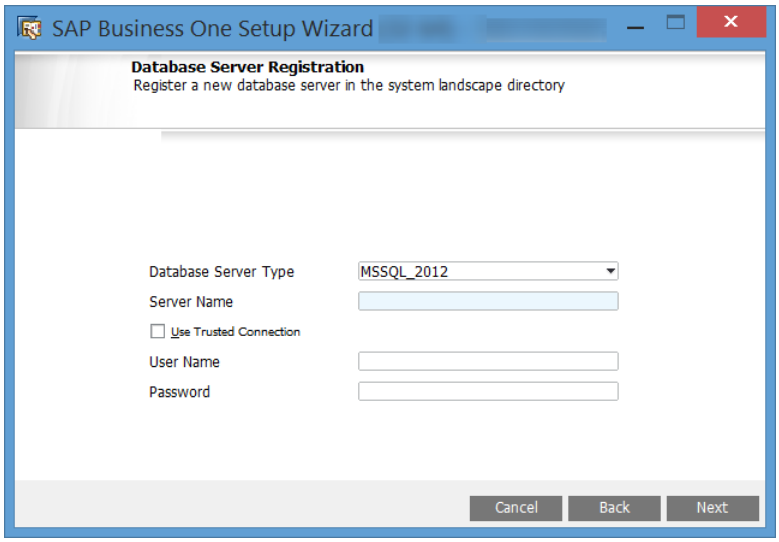
      **Recommendation**

      Do not use a trusted connection unless for test or development purposes, as Windows authentication has the following limitations:
      - Windows authentication in SAP Business One is a server level configuration. All users on the same SAP Business One server can use Windows authentication to connect to Microsoft SQL Server.
      - Windows authentication requires you to maintain each computer added to the domain, while SQL Server authentication shares database users (such as `sa`) on the same SAP Business One server.
      - Windows authentication requires the Microsoft Windows account on which the SLD service runs to have administrative permissions on the database.

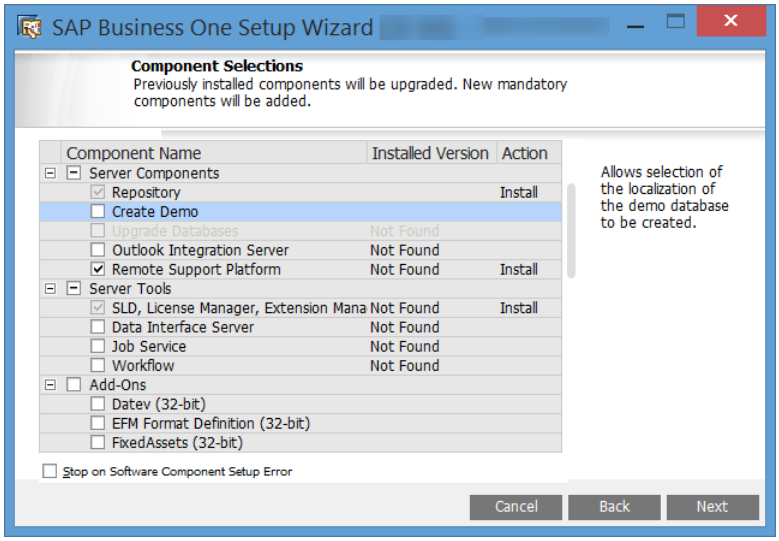
      **Note:**

      If you later change the password of the database user used to install the System Landscape Directory (SLD), the SLD will stop working. For more information, see the section *Cannot change database user password for System Landscape Directory* in Troubleshooting Security.
   4. Choose *Next*.


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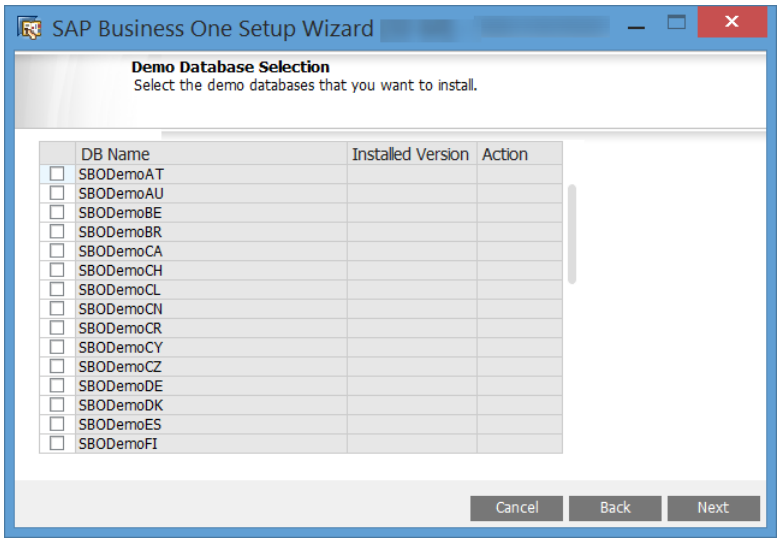

8. In the *Component Selections* window, select the appropriate components and choose *Next*.




9. In the *Demo Database Selection* window, select the required demo databases and choose *Next*.

   Note that demo databases are available only for installation packages, but not for upgrade packages.

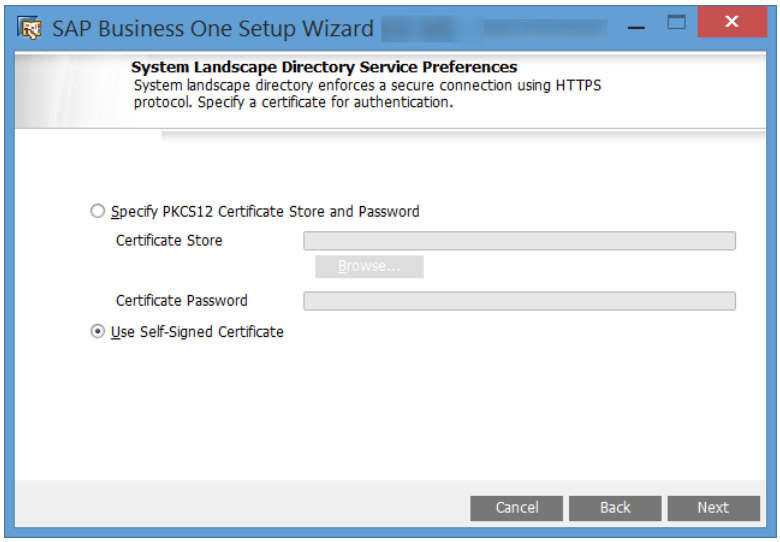

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10. In the *System Landscape Directory Service Preferences* window, enter a valid PKCS12 certificate store and password, or select the *Use Self-Signed Certificate* radio button.

    Communication between the SLD and SAP Business One clients or DI API is encrypted using the HTTPS protocol, so a certificate is required for authentication. You can obtain a certificate using the following methods:

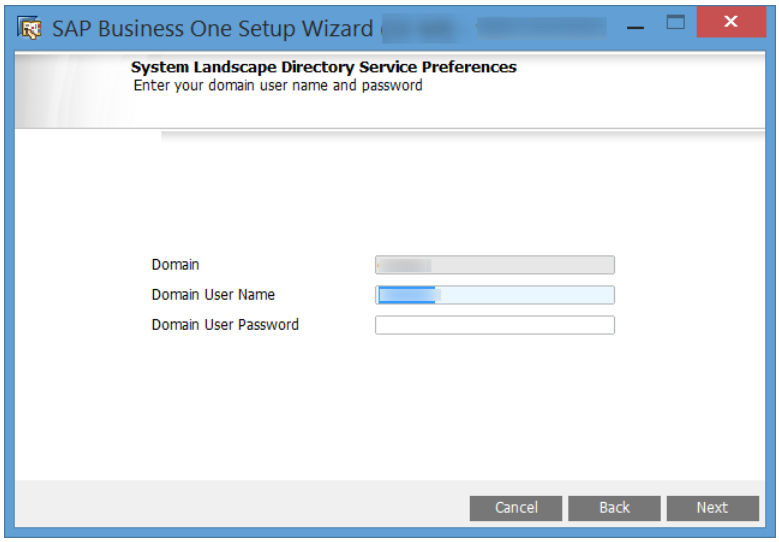
    - Third-party certificate authority – You can purchase certificates from a third-party global Certificate Authority that Microsoft Windows trusts by default. If you use this method, select the *Specify PKCS12 Certificate Store and Password* radio button and enter the required information.
    - Certificate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





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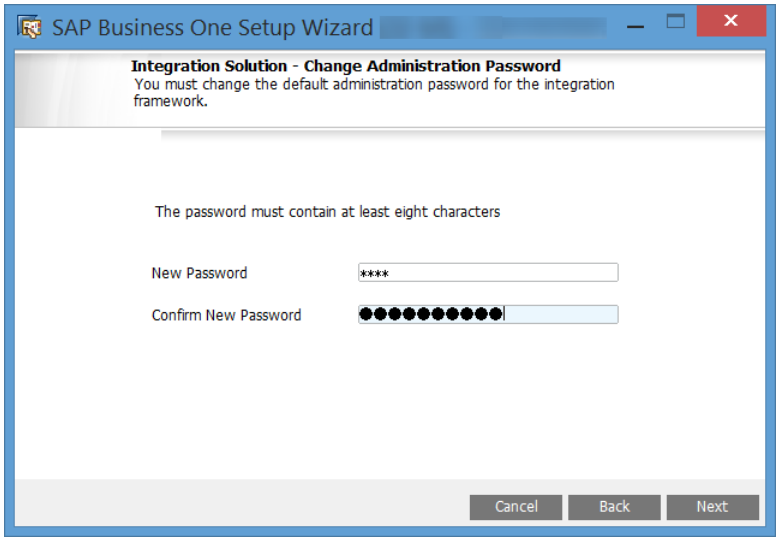
11. If you selected to use trusted connection, another *System Landscape Directory Service Preferences* window appears. In this window, enter the credentials for a domain user.




12. For the integration framework, perform the following steps:
    1. In the *Integration Solution - Change Administration Password* window, enter and confirm a new password for the integration server administrator account (`B1iadmin`).

       **Note**

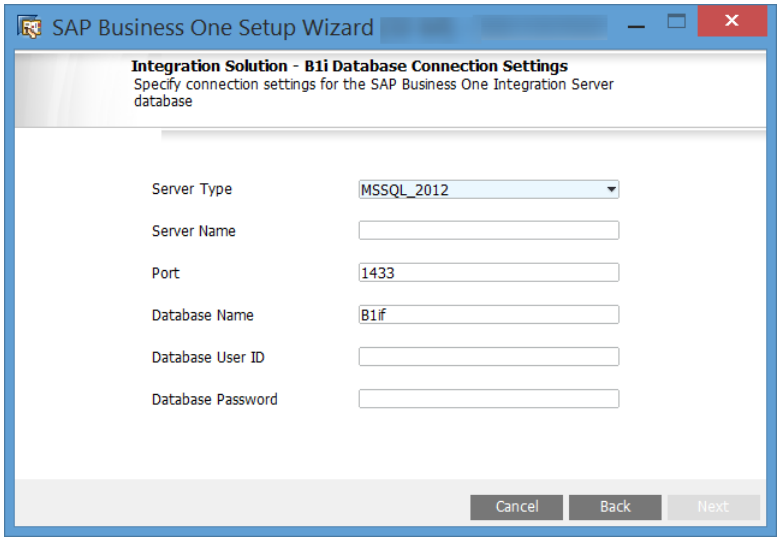
       For security reasons, we recommend that you provide the integration server administrator account (`B1iadmin`) to the system administrator only.




    2. In the *Integration Solution - B1i Database Connection Settings* window, specify the following:
       - *Server Type*: Specify the Microsoft SQL Server version.
       - *Server Name*: Enter the hostname or the IP address of the database server. To specify a named instance, enter **<hostname\<instance name>** and leave the *Database Port* field empty.

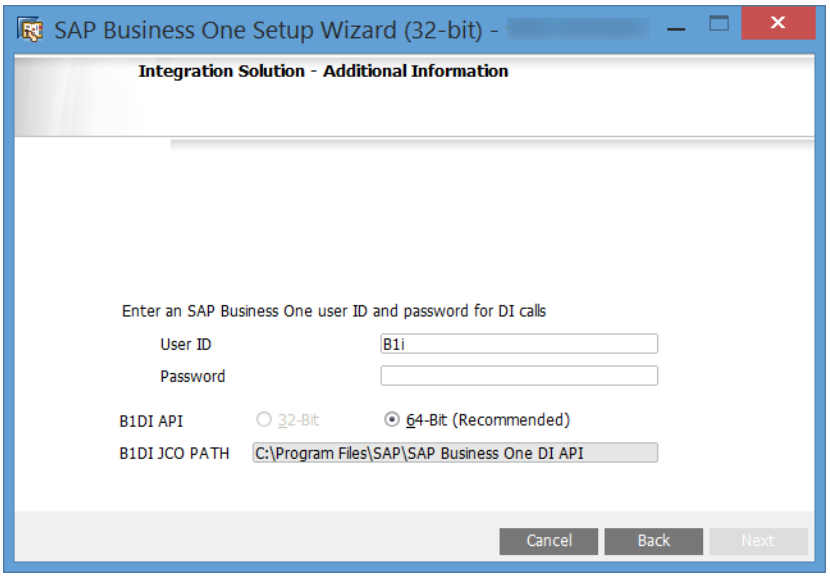

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- *Port*: Specify the port for the database server.
- *Database Name*: Specify a name for the integration framework database. The default database name is `IFSERV`.
- *Database User ID*: Enter the user name of a database administrator account (role: **`PUBLIC`**; system privilege: **`CREATE SCHEMA`**).
- *Database Password*: Enter the password for the database administrator account.




3. In the *Integration Solution - Additional Information* window, do the following:
   - Enter the connection credentials.

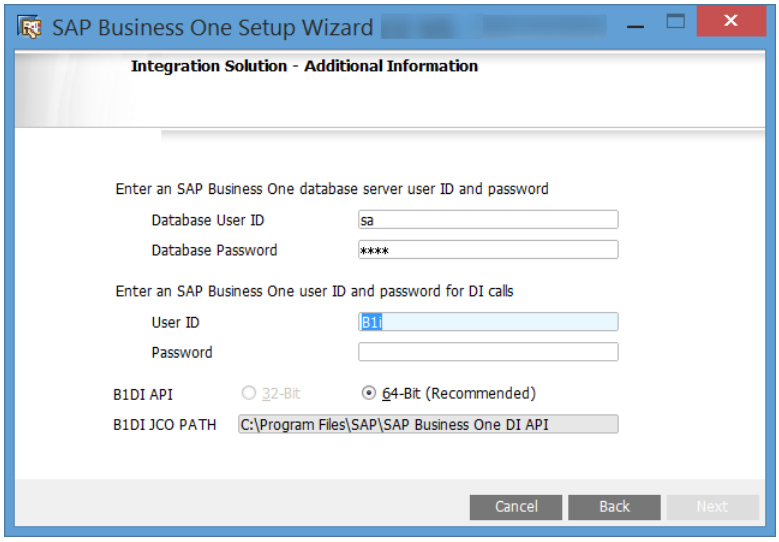
     If you did not select to use a trusted connection (Windows authentication) for connections to the database server instance, specify an SAP Business One user account (`B1i` by default) and a password. This user account will be used for DI calls.





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If you selected to use a trusted connection (Windows authentication) for connections to the database server instance, in addition to specifying an SAP Business One user account for DI calls and a password, enter also the user name and password of a database server administrator account.

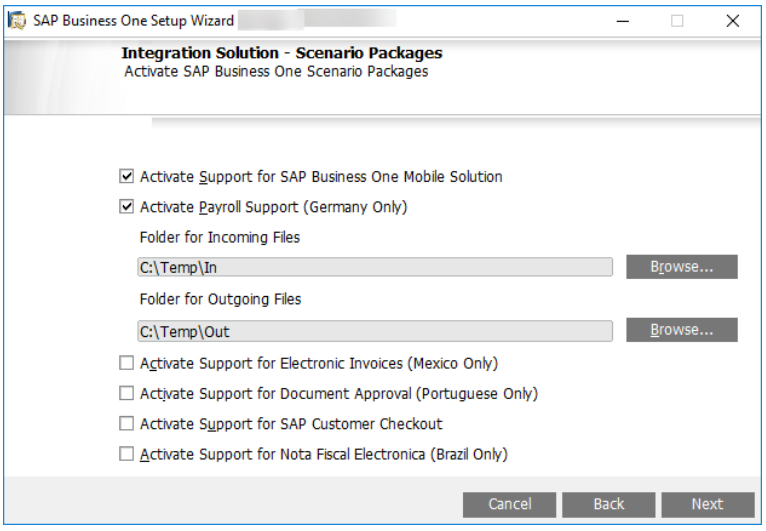



- Select the version of SAP Business One DI API to use.

  We recommend using the 64-bit SAP Business One DI API. For more information, see SAP Note 2066060.

  If a version of DI API is not installed or is not selected for installation, that version of DI API is not available for selection. If no DI API is selected or installed, you cannot proceed with the installation of the integration framework.

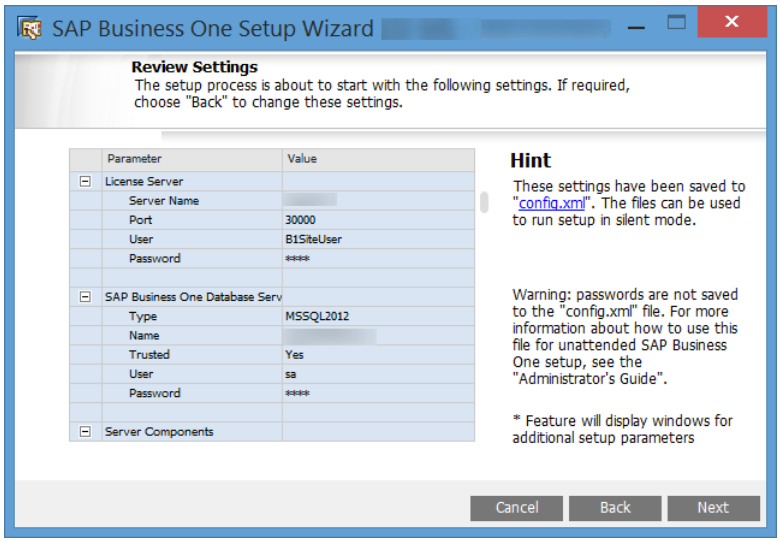
4. In the *Integration Solution - Scenario Packages* window, select the corresponding checkboxes to activate required scenario packages.



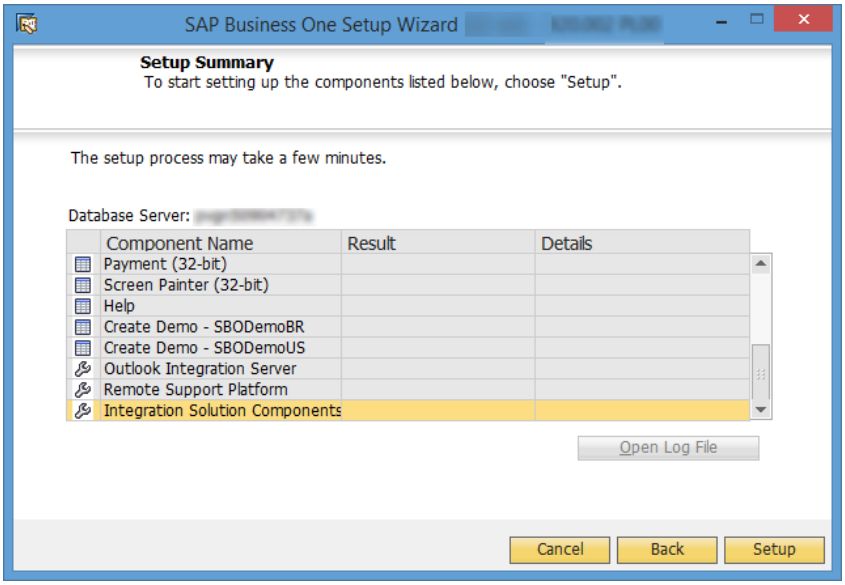

13. In the *Review Settings* window, review the settings you have made and choose *Next*.

    This window provides an overview of the settings that you have configured for the setup process. To modify any of the settings, edit the values in the table.


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14. In the *Setup Summary* window, review the component list and choose *Setup* to start the setup process.




15. In the *Setup in Process* window, wait for the setup to finish.
16. Depending on the results of the setup, one of the following windows is displayed:
    - *Setup Result: Successful* window: The wizard opens this window if the setup of all components was successful. To continue, choose *Next*.
    - *Setup Result: Errors* window: The wizard opens this window if the setup of one or more components failed. To continue, choose *Next* and then in the *Restoration* window, do either of the following:
        - Select the failed component and proceed to start the restoration process.
        - Choose *Next* to skip the restoration.

        **Note**

        If the installation of remote support platform for SAP Business One fails, it does not affect the successful installation of SAP Business One.


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17. In the *Congratulations* window, choose *Finish* to close the wizard.

### Results

You can now proceed to install client components on all workstations.

An operating system user `B1_Tech_User` (repository access user) is created and used to move log files from client machines to a central log folder in the shared folder `B1_SHR`. You may change the user in the SLD by editing the server information. The user must be either a local user or a domain user that has write permissions to the central log folder (`\B1_SHR\Log`) and read permissions to the entire shared folder.

The installation of remote support platform does not impact SAP Business One business processes. There is no technical dependency between SAP Business One and the remote support platform.

## 3.2 Installing Client Components

You can install the following client components on every workstation:

- SAP Business One client application (together with SAP Business One client agent and DI API)
- Software development kit (SDK)
- Data transfer workbench
- Solution packager
- SAP Business One studio

If you want to use the Microsoft Outlook integration features on a workstation without the SAP Business One client application, install the Microsoft Outlook integration component (standalone version). For more information, see *Installing the Microsoft Outlook Integration Component (Standalone Version)*.

> **Note**
>
> SAP Business One client components can be installed also from the System Landscape Directory (SLD) control center. For more information, see *Performing Centralized Deployment*.

### Prerequisites

- The installation computer complies with all hardware and software requirements. For information on hardware and software requirements, search for relevant information on SAP Help Portal.
- You have installed Microsoft .NET Framework 4.5.2 or higher version in CLR4.

  > **Note**
  >
  > If you do not have Microsoft .NET Framework 4.5.2 (or higher version in CLR4) installed, it is installed during the SAP Business One installation process. However, you must restart your machine. To avoid a restart, you may choose to install the framework before starting the SAP Business One installation.
- You have installed Microsoft Visual C++ 2005 SP1 Redistributable Package. If it is not installed yet, you can install it during client installation.
- You have installed Microsoft Excel.


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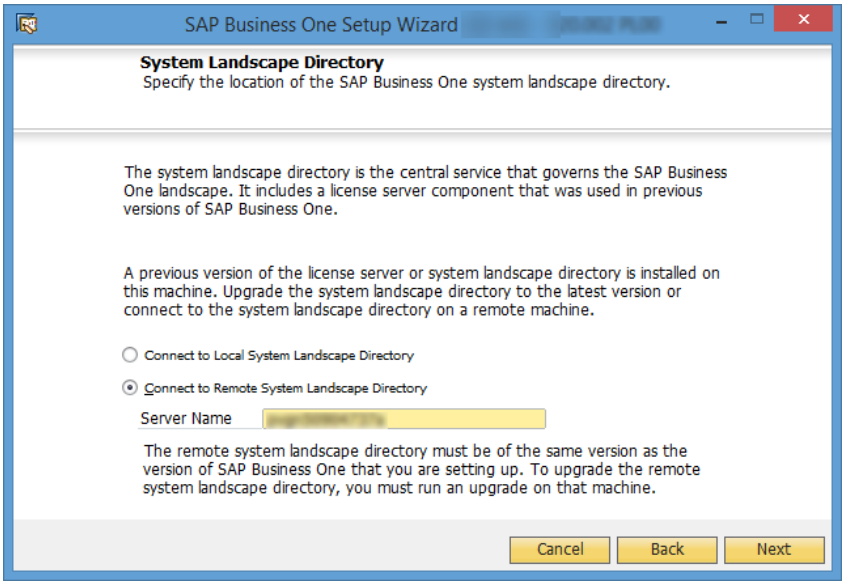
- If the machines on which the SAP Business One client and DI API run use an HTTP proxy for network access, you have added the System Landscape Directory server to the list of proxy exceptions.

## Procedure

A setup wizard is used for installation as well as for upgrade. The following procedure describes how to install **all** client components in a clean environment where no SAP Business One components exist.

1. Navigate to the root folder of the product package and run the *setup.exe* file.

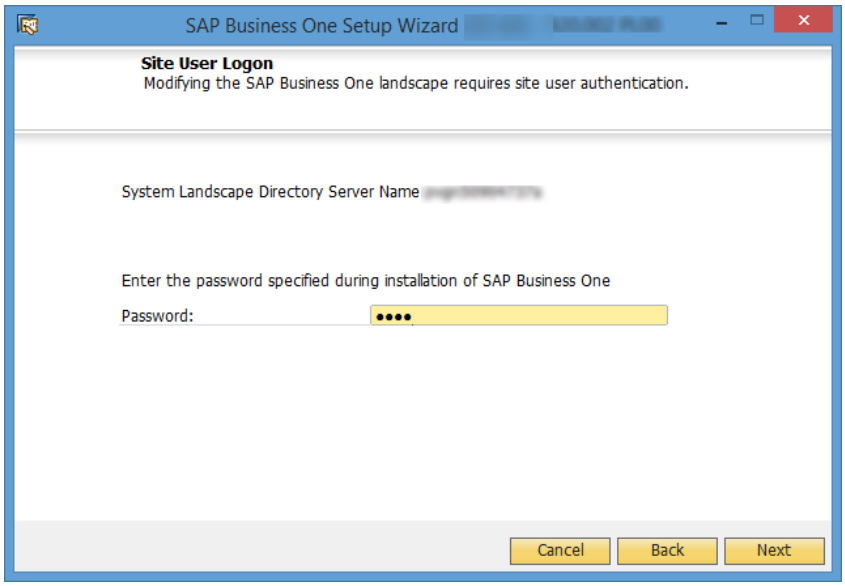
   If you are using Windows 10, right-click the *setup.exe* file and choose *Run as administrator*.
2. In the welcome window, select your setup language and choose *Next*.
3. In the *Setup Type* window, select *Perform Setup* and choose *Next*.
4. In the *Setup Configuration* window, select *New Configuration* and choose *Next*.
5. In the *System Landscape Directory* window, do the following:
   1. Select *Connect to Remote System Landscape Directory*.
   2. Specify the hostname or the IP address of the server where the SLD is installed.
   3. Choose *Next*.



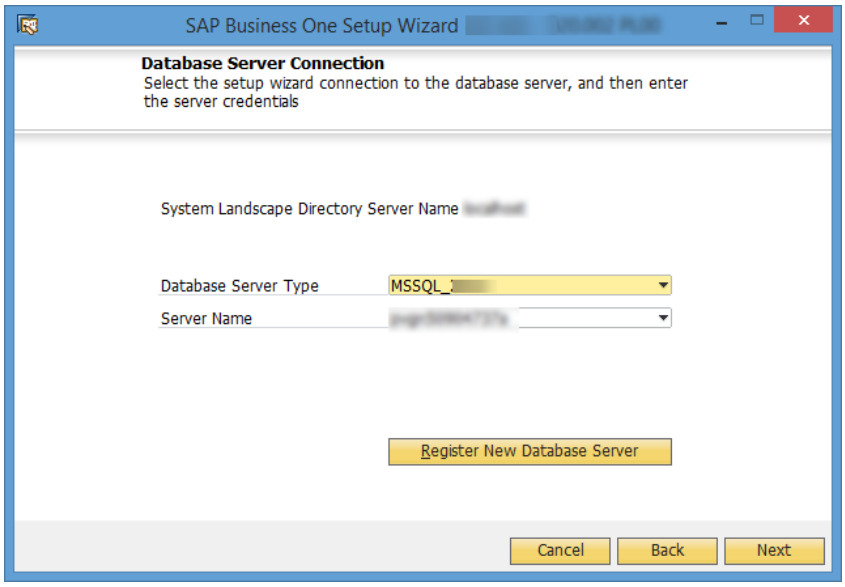

6. In the *Site User Logon* window, enter the password for the site super user `B1SiteUser`.

   This site user was created during the installation of the SLD.


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7. In the *Database Server Connection* window, enter the database server information as follows:
   1. Specify the database server type.
   2. In the *Server Name* field, enter the hostname or the IP address of the database server.
   3. Choose *Next*.




8. In the *Component Selections* window, select the required client components and choose *Next*.
9. In the *Review Settings* window, review the settings you have made and choose *Next*.
10. In the *Setup Summary* window, review the component list and then choose *Setup* to start the setup process.
11. In the *Setup in Process* window, wait for the setup to finish.

    In the course of the setup, some additional wizards are displayed to guide you through the setup of corresponding components.
12. Depending on the results of the setup, one of the following windows is displayed:


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- *Setup Result: Successful* window: The wizard opens this window if the setup of all components was successful. To continue, choose *Next*.
- *Setup Result: Errors* window: The wizard opens this window if the setup of one or more components failed. To continue, choose *Next,* and then in the *Restoration* window, do either of the following:
  - Select the failed component and proceed to start the restoration process.
  - Choose *Next* to skip the restoration.

13. In the *Congratulations* window, choose *Finish* to close the wizard.

### Post-requisites for Excel Report and Interactive Analysis

To use Excel Report and Interactive Analysis, you must do the following after the installation:

- In Microsoft Excel, enable all macros and select to trust access to the VBA project object model.

  For instructions, see the Microsoft online help.
- If the user who installs Excel Report and Interactive Analysis (user A) is different from the user who uses Excel Report and Interactive Analysis (user B), user B must start Excel Report and Interactive Analysis from the Windows menu the first time. After having done so, user B can start Excel Report and Interactive Analysis directly from within the SAP Business One client or from the Windows menu.

If you have installed Excel Report and Interactive Analysis to a folder that is not in the `ProgramFiles` directory (default installation folder), you must perform some additional steps before using the function.

## 3.3 Installing the Microsoft Outlook Integration Component (Standalone Version)

The Microsoft Outlook integration component enables you to exchange and share data between SAP Business One and Microsoft Outlook. This component is a standalone version that does not require the SAP Business One client to be installed on the same computer.

If you want to use the Outlook integration features on a computer on which you have installed the SAP Business One client, you can install either the Outlook integration add-on or the standalone version. For more information, see *Assigning SAP Business One Add-Ons*.

> **Caution**
>
> The Microsoft Outlook integration component is a standalone version of the Outlook integration add-on and they cannot coexist.
>
> If you install the add-on while you have the standalone version installed on the same computer, a subsequent upgrade of the standalone version will be prevented; if you install the standalone version while you have the add-on installed on the same computer, the installation fails.

> **Note**
>
> Only the 64-bit version of the Microsoft Outlook integration component is available.


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## Prerequisites

- You have installed the 64-bit SAP Business One DI API.
- You have installed the 64-bit Microsoft Outlook.
- You have assigned the following to the SAP Business One user account which is used for the connection:
  - The Microsoft Outlook integration add-on in the SAP Business One client
  - The SAP AddOns license
- You have started the Microsoft Outlook integration add-on in the company at least once. This ensures the necessary user-defined tables are added to the company database.

## Procedure

1. Navigate to the root folder of the product package and run the *setup.exe* file.

   If you are using Windows 10, right-click the *setup.exe* file and choose *Run as administrator*.
2. In the welcome window, select your setup language and choose *Next*.
3. In the *Setup Type* window, select *Perform Setup* and choose *Next*.
4. In the *Setup Configuration* window, select *New Configuration* and choose *Next*.
5. In the *System Landscape Directory* window, do the following:
   1. Select *Connect to Remote System Landscape Directory*.
   2. Specify the hostname or the IP address of the server where the SLD is installed.
   3. Choose *Next*.
6. In the *Site User Logon* window, enter the password for the site super user `B1SiteUser`.

   This site user was created during the installation of the SLD.
7. In the *Database Server Connection* window, enter the database server information as follows:
   1. Specify the database server type.
   2. In the *Server Name* field, enter the hostname or the IP address of the database server.
   3. Choose *Next*.
8. In the *Component Selections* window, select Outlook Integration Standalone and choose *Next*.
9. In the *Review Settings* window, review your settings and proceed as follows:
   - To continue, choose *Next*.
   - To change the settings, choose *Back*.
10. In the *Setup Summary* window, choose *Next*.
11. In the *Setup Status* window, wait for the system to perform the required actions.
12. In the *Complete* window, choose *Finish*.


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# 4 Installing SAP Crystal Reports, version for the SAP Business One Application

SAP Crystal Reports, version for the SAP Business One application provides integration with the SAP Crystal Reports software, which allows you to create, view, and manage reports and layouts.

SAP Business One 10.0 supports SAP Crystal Reports 2016 SP5, version for the SAP Business One application.

To use SAP Crystal Reports, version for the SAP Business One application, perform the following operations:

1. Install SAP Crystal Reports 2016 SP5, version for the SAP Business One application
2. Run the SAP Crystal Reports integration script. This step ensures that SAP Business One data sources are available in the application.

   **Note**

   To use SAP Crystal Reports, version for the SAP Business One application, you must install Microsoft .NET Framework 3.5 and 4.5 on the server as well as on the client workstations.

For more information about working with SAP Crystal Reports, version for the SAP Business One application, see *How to Work with SAP Crystal Reports in SAP Business One* in the documentation area of SAP Help Portal.

## 4.1 Installing SAP Crystal Reports, version for the SAP Business One application

### Prerequisite

- You have downloaded the installation package of SAP Crystal Reports, version for the SAP Business One application from the SAP Business One Software Download Center on SAP Support Portal at https://support.sap.com/b1software.
- The operating system of the computer on which you want to install SAP Crystal Reports for SAP Business One is Windows 7 SP1 or higher.
- If you already have SAP Crystal Reports installed on your computer, uninstall this software.

  You will also be prompted to uninstall it during the installation procedure.

### Procedure

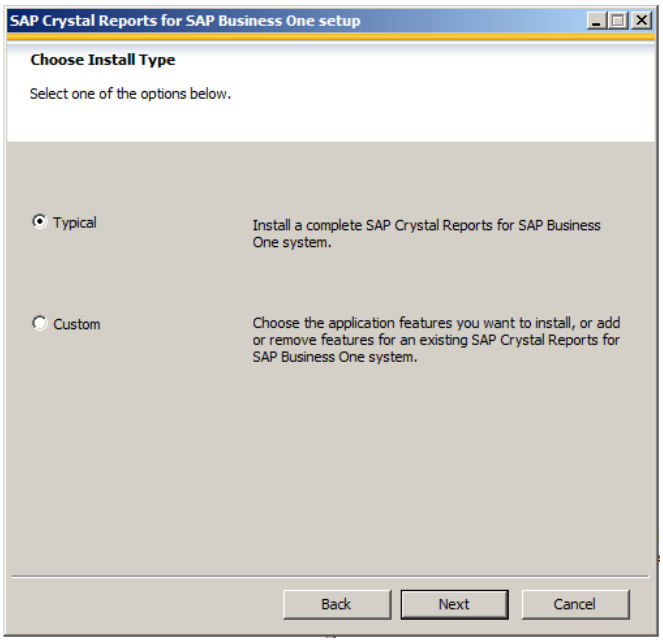
1. Navigate to the root folder of the product package and run the `setup.exe` file.

   If you are using Windows 10, right-click the `setup.exe` file and choose *Run as administrator*.
2. In the *SAP Crystal Reports for SAP Business One setup* window, select a setup language and choose *OK*.
3. The *Prerequisites check* window appears. If you have fulfilled all critical prerequisites, you can continue with the installation; otherwise, follow the instructions in the wizard to resolve any issues before proceeding.


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4. In the welcome window, choose *Next*.
5. In the *License Agreement* window, read the software license agreement, select the radio button *I accept the License Agreement*, and then choose *Next*.
6. In the *Specify the Destination Folder* window, specify a folder where you want to install the software.
7. In the *Choose Language Packs* window, select the checkboxes of the languages you want to install and choose *Next*.
8. In the *Choose Install Type* window, select one of the following installation types and choose *Next*:
   - *Typical:* Installs all application features. For a typical installation, proceed to step 9.
   - *Custom:* Allows you to do the following:
     - Select features that you want to install.

       If you have installed SAP Crystal Reports, version for the SAP Business One application, you can select the Custom install type to add or remove features.
     - Select whether or not you want to receive the web update service
     - Check the disk cost of the installation




> **Note**
>
> If you have done one of the following, the *Browse* button is inactive because a destination folder already exists:
>
> - You have already installed SAP Business One; that is, before installing SAP Crystal Reports, version for the SAP Business One application.
> - You have already installed the SAP Crystal Reports viewer. For example, this may be installed automatically when you install the SAP Business One client.

9. In the *Select Features* window, select the features you would like to install and choose *Next*.

   The icons in the feature tree indicate whether the feature and its sub-features will be installed, as follows:
   - A white icon means that the feature and all its sub-features will be installed.
   - A shaded icon means that the feature and some of its sub-features will be installed.


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- A yellow 1 means that the feature will be installed when required (installed on demand).
- A red X means that the feature or sub-feature is either unavailable or will not be installed.

SAP Crystal Reports, version for the SAP Business One application uses an "install on-demand" technology for some of its features. As a result, the first time a particular feature is used after being installed, there may be an extra wait for the "install on-demand" to complete. This behavior will affect new installations only once and will not occur when features are restarted.

To check how much disk space is required for the installation of selected features, choose *Disk Cost*.

10. In the *Web Update Service Option* window, you can disable the web update service by selecting the *Disable Web Update Service* checkbox. We recommend, however, that you enable the update service to stay aware of updates that can help you enhance your SAP Crystal Reports.

    Choose *Next* to proceed.

11. In the *Start Installation* window, choose *Next*.

    The *Crystal Reports for SAP Business One Setup* window appears.

12. When the installation is complete, the *Success* window appears. To exit the installation wizard, choose *Finish*.

### Next Steps

Ensure that you also have the 32-bit DI API Legacy Package installed on your workstation; otherwise, you cannot connect to SAP Business One data sources or use the *Add-ins* menu to connect to SAP Business One.

## 4.2 Running the Integration Package Script

To make the SAP Business One data sources and the *Add-ins* menu available in the SAP Crystal Reports designer, run the SAP Business One Crystal Reports integration script. The SAP Business One tables are organized according to the modules in the SAP Business One *Main Menu*.

### Procedure

1. In the SAP Business One product or upgrade package, locate the `…Packages.x64\SAP CRAddin Installation` folder and double-click the `SAP Business One Crystal Report Integration Package.exe` file. If you are using Windows 10, right-click the `setup.exe` file and choose *Run as administrator*.
2. After the installation is complete, choose *Finish* to exit the wizard.


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## 4.3 Updates and Patches for SAP Crystal Reports, version for the SAP Business One application



Caution

Since you are using SAP Business One together with an Original Equipment Manufacturer (OEM) version of SAP Crystal Reports, do not apply standard SAP Crystal Reports file or product updates (including Hot Fixes and Service Packs) as they are not designed to work with OEM versions of SAP Crystal Reports.

File or product updates are provided in the following ways:

- Integrated runtime version: distributed together with SAP Business One
- Designer: provided separately via a dedicated folder location in the SAP Business One Software Download Center on SAP Support Portal at https://support.sap.com/b1software.



Note

If you are using both the integrated runtime version and the designer, make sure that they are either on the same patch or Service Pack level or that the Report Designer is on an earlier patch or Service Pack level than the Runtime version. If not, inconsistencies may occur.

To find out if you are using a version of SAP Crystal Reports, start the designer and look for either of these two indicators:

- The title bar of the designer indicates SAP Crystal Reports for a certain product (such as *SAP Crystal Reports for SAP Business One*).
- In the *Help* menu, choose *About* (for example, *About Crystal Reports*). The technical support phone number in the *About Crystal Reports* box is not listed as *(604) 669 8379*.

If either of these indicators exists in your product, you are using an OEM version of SAP Crystal Reports.


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# 5 Uninstalling SAP Business One

When you uninstall SAP Business One, you remove the application and all its components.

## Procedure

1. Remove the add-ons:
   1. From the SAP Business One *Main Menu*, choose *Administration* → *Add-Ons* → *Add-On Administration*. The *Add-On Administration* window appears.
   2. On the *Company Preferences* tab, under *Company Assigned Add-Ons*, select the add-ons.
   3. Choose the left arrow between the two panels.
   4. In the *Available Add-Ons* list, select the add-ons you want to remove.
   5. Choose *Remove Add-On*, and then choose *Update*.

   SAP Business One automatically removes the add-ons that you have uninstalled the next time you start the SAP Business One application from any workstation that is connected to the server.

   > **Note**
   >
   > You can move XL Reporter to the *Available Add-Ons* panel but you cannot remove XL Reporter in the *Add-On Administration* window. The *Remove Add-On* button is disabled for XL Reporter.

   6. Log on again to SAP Business One. SAP Business One automatically uninstalls the SAP Business One add-ons that you have removed. This is applicable to all companies on the same server.

   Note that for third-party add-ons, you may need to uninstall them from the Windows Control Panel.
2. Uninstall the server and client components:
   1. On your server or client workstation, choose *Start* → *Control Panel* → *Programs and Features*.
   2. In the *Programs and Features* window, select the following items one at a time, and choose *Uninstall/Change* after each selection:
      - SAP Business One Server Tools
      - SAP Business One Client
      - SAP Business One Server
      - Data Transfer Workbench
      - SAP Business One Studio
      - SAP Business One SDK
      - SAP Business One Components Wizard

      > **Note**
      >
      > On Windows machines, you can also uninstall SLD Agent by running the `setup.exe` file in the path `C:\Program Files (x86)\SAP\SAP Business One SetupFiles\setup.exe`.
3. Remove DI API:


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- If you installed the DI API as part of the client installation of SAP Business One, the system automatically removes the DI API when you uninstall the SAP Business One client.
- If you installed DI API using the manual setup program in the `b1_shf/B1DIAPI` folder, you must remove it by choosing *Control Panel* -> *Programs* -> *Programs and Features* and selecting *SAP Business One DI API*.

### Result

SAP Business One entries no longer appear in the Programs menu and any shortcuts that you may have on the Microsoft Windows desktop are removed.

You can now do the following:

- Manually delete the SAP Business One folders in Microsoft Windows Explorer.
- Remove SAP Business One databases using your database management application.

## 5.1 Uninstalling SAP Business One Client Agent

The SAP Business One client agent is automatically uninstalled when you uninstall SAP Business One client. However, if the client agent cannot be uninstalled successfully, you also can uninstall it manually.

To uninstall SAP Business One client agent, in the *Programs and Features* window, select SAP Business One Client Agent and choose *Uninstall/Change*.

## 5.2 Uninstalling the Integration Framework

To uninstall the integration framework, use the *Change SAP Business One Integration* program. With this program you can add or remove features, repair the installation or uninstall the integration framework.

### Prerequisites

- To disable further event creation for the company databases in SAP Business One, run the event sender setup and in step 4, deselect the company databases.
- You have administrative rights on the PC where you uninstall the integration framework.
- You have made a backup of the database of the integration framework.
- You have made a backup of the *B1iXcellerator* folder.

  To find the folder select *IntegrationServer* → *Tomcat* → *webapps* → *B1iXcellerator*.

### Procedure

1. Choose *Start* → *All programs* → *Integration Framework for SAP Business One* → *Change SAP Business One Integration*.


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The *SAP Business One Integration Wizard Introduction* window opens.

2. In the *Maintenance Mode* window select *Uninstall Product* and choose *Next*.
   The system notifies you that it uninstalls the integration framework.
3. Choose *Uninstall*.
   The system uninstalls your installation.
4. To finish the procedure, choose *Done*.

## Result

The program uninstalls the integration framework, but it does not remove the database. Remove it separately.


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# 6 Upgrading SAP Business One

To upgrade your SAP Business One application to a new minor or major release and run it successfully, you must do the following:

1. Upgrade your SAP Business One successfully.
2. Import the license file for the new release.

If you are using the intercompany integration solution for SAP Business One, make sure the intercompany version is compatible with this SAP Business One patch level as specified in SAP Note 2194233. You may need to upgrade the intercompany version as well.

> **Note**
>
> If your SAP Business One is of a hotfix version, we strongly recommend that you upgrade to the next regular patch once it is available, as hotfixes are intended only as temporary solutions.
>
> To upgrade to a new minor or major release, you must upgrade to a regular patch first, and then you can proceed with the upgrade to the new release.

## 6.1 Upgrade Methods

You can use either of the following upgrade methods to upgrade a previous SAP Business One version:

- Using the SAP Business One setup wizard in the upgrade package

  You can use the setup wizard to guide you through the process of upgrading SAP Business One to a higher major release, a higher minor release, a support package, or a new patch level.

  If any of the upgrade steps fail, you can use the restoration mechanism to reverse all the database changes made to your SAP Business One landscape by the wizard and return to the SAP Business One version before the upgrade.

  > **Caution**
  >
  > To detect any errors or warnings that may arise in the SAP Business One upgrade process, it is mandatory that you perform a trial run. The results of the pre-upgrade tests indicate where you may need to correct any errors before performing the actual upgrade. If no issues are found, you may continue with the upgrade procedure.

- Silent upgrade

  You can upgrade SAP Business One in a silent mode using command line arguments.

- Directly from the upgrade package folders

  You can use the upgrade files in the upgrade package to upgrade the individual SAP Business One components, although this method is not recommended and only for advanced users.


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## 6.2 Supported Releases

The following major or minor releases are currently supported for upgrade to SAP Business One 10.0:

- SAP Business One 9.2
- SAP Business One 9.3

> **Note**
>
> If your SAP Business One version is lower than 9.2 PL00, the direct upgrade to 10.0 is not supported. You must first upgrade your system to SAP Business One 9.3 and then upgrade to version 10.0.

For more information about upgrading from specific patches of supported releases, see the Readme or Patch Readme file for the respective SAP Business One version.

## 6.3 Upgrade Process

### Prerequisites

- You have downloaded the upgrade package from the SAP Support Portal.
- You have ensured that company databases are not connected to any SAP Business One clients, SQL Server clients, or other applications.
- You have the SAP Business One 10.0 license file available. You need this license file for connecting your company after the upgrade process is finished. If you do not import a valid license file after the upgrade process, you cannot work with your company.
- You have administrator rights on the computer that runs the SAP Business One setup wizard.
- If the machines on which the SAP Business One client and DI API run use an HTTP proxy for network access, you have added the System Landscape Directory server to the list of proxy exceptions.
- The SBO-COMMON database that you have installed on your computer is not a later release than the upgrade package.
- If any components of SAP Business One integration for SAP NetWeaver (B1iSN) were previously installed on your server, you have uninstalled them manually before installing any integration solutions delivered with SAP Business One. This step is required due to compatibility reasons. For more information about uninstalling components of B1iSN, see the *SAP Business One integration for SAP NetWeaver Installation and Upgrade Guide*.
- If you have installed the integration framework, you stopped the following services (in the order given below):
  1. SAP Business One integration Event Sender
  2. SAP Business One integration DI Proxy Monitor
  3. SAP Business One integration DI Proxy
  4. Integration Server Service

  > **Note**
  >
  > After you have completed the upgrade process, check whether you must restart the services in reverse order.


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To upgrade only the integration framework, run the `setup.exe` file under `\Packages.x64\B1 Integration Component\Technology\` in the product package.

During the upgrade of SAP Business One, you have the option of installing remote support platform for SAP Business One. For more information about installing remote support platform for SAP Business One, see *Administrator's Guide to Remote Support Platform for SAP Business One*. You can find the guide (`RSP_AdministratorGuide.pdf`) under `…\Documentation\Remote Support Platform\System Setup\`on the SAP Business One product DVD, or on SAP Help Portal.

### Procedure

To upgrade SAP Business One, do the following:

1. To determine the upgrade path, read the Overview Note for the required version.

   For example, check which versions are supported for upgrade to the required higher version. If direct upgrade is not supported, you first need to upgrade your system to a supported version and perform the server upgrade operation for more than one time.
2. On your server, upgrade your operating system to the required version. For more information, see Prerequisites.
3. On your server, upgrade Microsoft SQL Server to the required version. For more information, see Prerequisites.
4. On your server, run the setup wizard for the required version to upgrade the common database, company databases, and all server components.

   **Recommendation**

   Upgrade all the server components at one time, and not separately. Otherwise you may have problems fixing certain errors in the pre-upgrade test.

   **Note**

   On your server machine, if you need to upgrade SAP Business One SLD Agent, you must upgrade it separately using the **Components Setup Wizard**. For more information, see *Manually Installing SLD Agent Service*.
5. On each workstation, do the following:
   - If you have installed such client components as the DTW, run the setup wizard to upgrade these client components. For more information, see Upgrading SAP Business One Databases and Components.
   - Upgrade the SAP Business One client application. For more information, see *Upgrading the SAP Business One Client*.
   - Upgrade SAP Business One SLD Agent using the **Components Setup Wizard**. For more information, see *Manually Installing SLD Agent Service*.

## 6.3.1 Upgrading SAP Business One Databases and Components

A setup wizard is used for installation as well as for upgrade. The following procedure describes how to upgrade the common database, the company databases, server components, and client components. If any of the upgrade steps fail, you can use the restoration mechanism to reverse all changes made by the wizard.


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> **Note**
>
> For security reasons, we recommend that you run the SAP Business One setup wizard to upgrade your company schemas on a backend server which is well protected.

Note that **the setup wizard does not support remote upgrade and can upgrade only local components**. To upgrade components on other machines, you must run the setup wizard repetitively.

In addition, for upgrade of the SAP Business One client within a release family, you can perform silent upgrade instead of using the setup wizard. For more information, see *Upgrading the SAP Business One Client*.

## Prerequisites

- You have ensured that all SAP Business One clients are closed.

  > **Recommendation**
  >
  > - Complete or terminate all workflow instances before closing SAP Business One client.
  > - Lock the company whose database you will upgrade from the SLD control center. For more information, see Upgrading Databases.

## Procedure

1. Navigate to the root folder of the upgrade package and run the *setup.exe* file.

   If you are using Windows 10, right-click the *setup.exe* file and choose *Run as administrator*.
2. In the welcome window, select your setup language, and choose *Next*.
3. In the *Setup Type* window, select the *Perform Setup* checkbox, and choose *Next*.

   The option *Test System Environment* verifies if the system environment and the company databases are ready for an upgrade. The existing installation and data are not changed. For each company database that passes the test, you can generate a passcode, which allows you to bypass the pre-upgrade test when upgrading the database later. The passcode is in the form of an XML file that contains details on the tested company databases. It is valid for three days, and any changes to the company configuration render the passcode invalid.

   The *Perform Setup* option both performs the pre-upgrade tests and upgrades selected components and databases. If you carried out a pre-upgrade test for a company database earlier, you can enter the passcode to bypass the pre-upgrade tests for this company database.
4. In the *Setup Configuration* window, select one of the following options and choose *Next*:
   - *New Configuration*: Select this radio button to manually enter all the required settings. Go directly to step 6.
   - *Use Settings from the Last Wizard Run* – Select this radio button to use the settings from the last wizard run, which are stored in the configuration file generated during that run.
   - *Load Settings from File* – Select this radio button to use the settings stored in a configuration file generated during a previous wizard run, and then specify the location of the file you want to use.

     To obtain the required `Config.XML` file, first run the setup wizard and select the *New Configuration* option. After generating this file, you can make a copy and use a text editor to modify the values for future use as required.


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5. If you selected to use the settings from the previous wizard run or a file, the *Review Settings* window appears.

   This window provides an overview of the settings that you have configured for the upgrade process. To modify any of the settings, edit the values in the table. Otherwise, choose *Next* to proceed with the upgrade.

   > **Note**
   >
   > If you are sure that all the settings are correct, you can select the checkbox *Skip Remaining Steps and Automatically Start Pre-Upgrade Test and Upgrade* to bypass the remaining wizard steps and begin the process immediately.

6. In the *System Landscape Directory* window, do either of the following:
   - If you are upgrading the System Landscape Directory and other components that are installed on the same machine, select *Connect to Local System Landscape Directory* and choose *Next*.

     Note that the local System Landscape Directory will be upgraded forcibly if it is not already upgraded to the required version.
   - If you are upgrading components that are installed on a different machine from that of the System Landscape Directory, select *Connect to Remote System Landscape Directory*, specify the server, and then choose *Next*.

     Note that the remote System Landscape Directory must have already been upgraded to the required version.

7. In the *Site User Logon* window, enter the password for the site super user `B1SiteUser`.

   > **Note**
   >
   > If you chose to perform only the pre-upgrade test, you also have the option to connect to a database server. In this case, you need to specify the information for a database user instead of the site user.

8. In the *Database Server Connection* window, specify the Microsoft SQL Server version and select the database server instance. Then choose *Next* to proceed.

   If you do not find the database server you want to upgrade in the server list, you can register it in the System Landscape Directory. To do so, choose *Register New Database Server*, specify the relevant information, and then choose *Back* to continue with the upgrade.

   > **Note**
   >
   > If you intend to upgrade the components from a lower version to SAP Business One 10.0 and upgrade the database server from a lower version to Microsoft SQL Server 2017 simultaneously, we recommend that you perform the following steps:
   >
   > 1. Upgrade the Microsoft SQL Server from the lower version to Microsoft SQL Server 2017.
   > 2. Upgrade the SAP Business One Server Tools by running the `setup.exe` file in the path `…\Packages\Server Tools\seup.exe` from the upgrade package.
   > 3. Upgrade SAP Business One Components from the lower version to SAP Business One 10.0 by the setup Wizard.

9. In the *Unsupported 32-bit Components* window, you can see the 32-bit components installed previously. We recommend that you manually uninstall these components. For more information about uninstalling SAP Business One, see Uninstalling SAP Business One.

   > **Note**
   >
   > Add-ons cannot be uninstalled from the SAP Business One Server by the setup wizard


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10. In the *Component Selections* window, select the corresponding checkboxes of the components that you want to upgrade.

    If a component has already been upgraded to the current version, its checkbox is enabled but not selected. If you select an already upgraded component, the wizard overwrites all instances of installed components.

    The wizard also lists all third-party add-ons present in the `\Packages.x64\Add-Ons Autoreg` folders, which you can select to upgrade.

    > **Note**
    >
    > Upgrading the repository is a prerequisite for upgrading other components or company databases. If there are no installed versions of the `SBO-COMMON`, *Upgrade Database is not allowed.*
    >
    > If a component is indicated as *Not Found*, you can select the corresponding checkbox to install the component.

11. In the *Database Selection* window, select the checkboxes of the databases that you want to upgrade.
12. To view additional options and information, select the row of a company database, select the *Advanced Settings* checkbox, and then specify the following:
    - *Backup* – From the dropdown lists in the *Backup* column, select whether to back up each database before the upgrade.

      > **Caution**
      >
      > If you select not to back up a database before upgrade, you cannot restore the database should the upgrade fail. SAP does not provide support for such databases in the case of an upgrade failure; a backup of the pre-upgrade database is required to qualify for SAP support.

    - *Upgrade By* – From the dropdown list, select the SAP Business One superuser that you want to use to perform the upgrade. By default, the wizard uses the `manager` account.
    - *Stop on Test Error* – Select this checkbox to force the wizard to stop the entire upgrade process if it encounters an error during a pre-upgrade test.
    - *Stop on Upgrade Error* – Select this checkbox to force the wizard to stop the entire upgrade process if it encounters an error while upgrading the database.
13. If errors occur which are preventing you from upgrading the company databases, do the following:
    1. In the *Status* column, click the *Not Ready* link.

       Details about the errors are displayed.

    2. Do either of the following:
       - Fix the errors and choose *Refresh*.

         Such errors are as follows:

         * The wizard finds more than one connection to the company database.

         * The database user registered with the server is either locked or is not a database admin user.

       - If the errors cannot be fixed and you must contact SAP Support, deselect the checkbox.

         Such errors are as follows:

         * The wizard does not support the company database version.

         * The wizard cannot find the localization for the company database from the locale list in the common database.

14. When all the selected databases have the status *Ready*, choose *Next*.


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Note

- If any of the selected databases has the status *Not Ready*, the wizard disables the *Next* button. You cannot proceed to the next step until you have fixed the problem.
- The database statistics on Microsoft SQL Server will not be updated after the company database upgrade.

15. In the *Upgrade - Backup Settings* window, specify the location where you want to store the backup files created before upgrading the selected components.
    - To use the default backup path configured in SQL Server, choose *Use the Default SQL Server Backup Location*.
    - To use another location on the database server, choose *Browse directories on database server* and click *Browse* to choose a directory.
    - To use a network drive, choose *Enter a network path* and specify the path.

    After you specify a location for the backup, the wizard displays the amount of space required for database backups and the available space on the corresponding drives.
16. If you previously selected the integration framework for upgrade, do the following:
    1. In the *Integration Solution - B1i Database Connection Settings* window, enter the database password.
    2. In the subsequent *Integration Solution - Scenario Packages* windows, if you want to activate any new scenarios, select the corresponding checkboxes and specify the necessary information.
17. In the *Review Settings* window, review your configuration setting. To modify any of the settings, choose *Back* to return to the relevant window; otherwise, choose *Next* .
18. In the *Pre-Upgrade Test* window, do the following:
    - To bypass the tests for a database, choose *Enter Passcodes* and upload one or more of the passcode files you saved earlier. After uploading the files, choose *Next* and proceed to step 23.

      Note

      A passcode file is only valid for three days. Any changes to the company configuration render the passcode file invalid.
    - To perform pre-upgrade tests on each database to ensure its readiness for the upgrade and to reduce the possibility of upgrade failure, choose *Start*.

      Note

      For the latest information about pre-upgrade tests, see SAP Note 1357462.
19. In the *Pre-Upgrade Testing In Progress* window, the wizard first checks the common database and then checks the company databases one by one.

    Note

    If the common database does not pass the checks, the wizard does not continue with the rest of the checks.
20. The *Pre-Upgrade Test* window provides a detailed overview of the results of the pre-upgrade tests. You can view information about individual checks, possible solutions to errors, and recommendations for dealing with warnings by clicking the links to the corresponding notes in the *SAP Note* column.

    Depending on the results of the pre-upgrade tests, one of the following windows appears:
    - *Pre-Upgrade Test: Passed* – All components and databases successfully passed the pre-upgrade tests. Proceed to the next step.


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- *Pre-Upgrade Test: Errors Detected* – One or more components or databases contain errors. You cannot continue upgrading. You must fix the reported errors or contact SAP for support, and then start the setup wizard again.
- *Pre-Upgrade Test: Warnings Detected* – One or more components or databases contain warnings. It is strongly recommended that you first fix the issues, and then continue the upgrade:
    1. For each component or database that contains warnings, click the corresponding link in the *Details* column.
    2. The *Pre-Upgrade Test Result* window appears.
    3. In the *Pre-Upgrade Test Result* window, click the corresponding hyperlink in the *SAP Note* column and follow the recommendations. After fixing the issue, select the checkbox in the *Confirmation* column.
    4. After confirming all the warnings, choose *Back* to return to the *Pre-Upgrade Test* window.
    5. After you have confirmed all warnings for all components and databases, choose *Next* to open the *Pre-Upgrade Test: Warnings Confirmed* window, and then proceed to the next step.

21. The *Setup Summary* window displays an overview of the components and databases that you have selected to upgrade (or install if some selected components are not installed). Do either of the following:
    - To begin the upgrade process, choose *Upgrade*.
    - To change the settings, choose *Back* to return to the previous steps.

    The *Upgrade in Process* window displays the upgrade progress of each component and database.
22. According to the upgrade results, one of the following windows appears:
    - *Upgrade Result: Upgraded* window: This window appears if the upgrade of all components and databases was successful. To continue, choose *Next*.
    - *Upgrade Result: Errors* window: This window appears if the upgrade of any component or database fails. To continue restoring the failed components and databases, choose *Next* and then proceed to the Restoring Components and Databases section.
23. In the *Congratulations* window, choose *Finish* to close the wizard.

    To view a summary report of the various upgrade steps, such as company databases and pre-upgrade test results, click the *Upgrade Summary* link.

### Post-requisites

1. Import the license file for the new release.
2. On each client workstation, upgrade the SAP Business One client.

## 6.3.1.1 Restoring Components and Databases

If the upgrade process fails, the SAP Business One setup wizard restores the databases and certain components. The other components must be restored manually.

> **Note**
>
> The procedure below continues from the penultimate step of upgrading databases and components. It is relevant for situations only where the upgrade has failed.


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### Procedure

To restore components and databases, do the following:

1. In the *Restoration* window, select the checkboxes of the components and databases that you want to restore, and choose *Restore*.
2. Depending on the results of the restoration process, one of the following windows appears:
   - If the restoration is successful, the *Restoration Result: Restored* window appears. To complete the restoration, do the following:
     1. In the *Restoration Result: Restored* window, choose *Next*.
     2. In the *Congratulations* window, choose *Finish* to complete the restoration process.
   - If the restoration fails, the *Restoration Result: Failed* window appears. To complete the restoration, do the following:
     1. In the *Restoration Result: Failed* window, choose *Next*.
     2. In the displayed window, choose *Finish* to exit.

     **Note**

     If the restoration fails, to roll back SAP Business One to the version before the upgrade, you must do a manual restoration.

## 6.3.1.2 Troubleshooting Upgrades

- The root user that runs the setup wizard has read, write, and execute permissions to the shared folder `B1_SHR` on the SAP Business One server computer.
- If you cannot connect to the System Landscape Directory using the server name, use the IP address of the server computer.
- To have SBO Mailer's signature copied after upgrade, do the following:
  1. To open the *SAP Business One Service Manager* window, in Windows, choose *Start* → *All Programs* → *SAP Business One* → *Server Tools* → *Service Manager*.
  2. In the *SAP Business One Manager* window, from the *Service* dropdown list, select *SBO Mailer*, and then choose *Connection*.
  3. In the *Connection Settings* window, specify values in the *DB Type* and *DB Server* fields, and then choose *OK*.
  4. Log off SAP Business One and log on to SAP Business One again. You will find that the signature was copied.

## 6.3.2 Upgrading the SAP Business One Client

After the server upgrade, you must upgrade the SAP Business One client on all your workstations.

For an upgrade from a previous release family (for example, from the 9.3 release to the 10.0 release), run the setup wizard on each workstation to upgrade the SAP Business One client.


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Alternatively, you can uninstall the old client and then install the new client using the client installation program. The client installation package is available in the entire product package as well as in the shared folder `B1_SHR`.

> **Note**
>
> SAP Business One 10.0 supports only the 64-bit SAP Business One client. So if you have installed a 32-bit SAP Business One client on a client workstation, you must manually uninstall the 32-bit client first, and then install or upgrade to the 64-bit client.

### Prerequisites

For the SAP Business One client agent to upgrade third-party add-ons in a silent mode, you must recreate the ARD file of the add-on using the latest version of the Add-On Registration Data Generator. For more information, see *Enabling Silent Upgrades for Third-Party Add-Ons*.

### Procedure

1. Run the client as the administrator.
2. Log on to a company.

   A system message appears to inform you that the client is not updated.
3. In the system message window, choose *OK* to upgrade the client.

## 6.3.3 Upgrading SAP Business One Add-Ons

When you select the *Add-On* checkbox in the *Component Selections* window of the setup wizard, the following occurs:

- New versions of all SAP add-ons are automatically registered on the SAP Business One server.
- New installers are uploaded to the server during the upgrade of the common database.

Add-ons that were already installed and assigned to a company are reregistered with new releases and assigned to the same company.

On a client computer, upon the next logon to a company assigned with add-ons, installers for the new add-on releases run automatically.

### 6.3.3.1 Troubleshooting Add-On Upgrades

When upgrading add-ons in an upgraded company for which the server name was previously something like `(local)`, you may encounter a message about installation failure.

SAP Business One has introduced a license security mechanism, and we do not recommend that you specify a server name such as `(local)`. In this case, during an upgrade, the user defines the server name as an IP address or a computer name. The application does not find the previous, `(local)`, name of the upgraded company, which prevents the previous add-ons from being upgraded.

To solve this problem, do the following:

1. Go to the `…\SAP Business One\` folder and locate the `AddonsLocalRegistration.sbo` file.
2. Change the server name of each related add-on to the new name specified in the license server.


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Example

- Old name: `<Common ID="1" Name="(local)"/>`
- New name: `<Common ID="1" Name="MyServerName"/>`

### 6.3.3.2 Enabling Silent Upgrades for Third-Party Add-Ons

To enable the SAP Business One client agent to upgrade a third-party add-on in silent mode, do either of the following:

- If your add-on needs to be installed, you must recreate the add-on's ARD file using the latest version of the Add-On Registration Data Generator to enable silent upgrades (and installations).

  Note

  You may be required to rebuild the installation package of the add-on and redesign the installation and configuration process. For example, if the add-on uses an installation wizard that requires the user to specify some information, then you can perform the configuration steps in the SAP Business One client after installing the add-on instead. Alternatively, you can provide the required information as command line arguments in the ARD file.
- If your add-on does not need to be installed, you can use the Extension Manager to manage its upgrade. For more information, see the guide *How to Package and Deploy Lightweight Extensions for SAP Business One* on SAP Help Portal.

The following procedure describes how to enable silent upgrades using the Add-On Registration Data Generator.

#### Procedure

1. To start the Add-On Registration Data Generator, run the `AddOnRegDataGen.exe` file, which is typically located in the `...\SAP Business One SDK\Tools\AddOnRegDataGen` folder.
2. Load an existing file, or enter the mandatory information.

   For more information, see the *Create a Registration Data File* chapter in the SDK help file.
3. Select the *Silent Mode* checkbox.
4. If necessary, in the *Installer/Uninstaller/Upgrade Command Line* field, enter any required command line arguments.
5. Choose *Generate File*.

## 6.4 Performing Silent Upgrades

You can upgrade SAP Business One using a silent mode by calling `…\Setup.exe` from the upgrade package.

You can use the silent mode to upgrade the following components:

- Repository
- All packages of Server Tools, including:


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    - System Landscape Directory
    - License Manager
    - Extension Manager
    - Data Interface Server
    - Job Service
    - Workflow
- Databases
- Integration Solution Components
- DI API
- SAP Business One Client
- All Add-Ons

To upgrade SAP Business One, provide the following argument:

```
setup.exe <Config.XML> <parameter> <value>
```

To obtain the required `Config.XML` file, first run the setup wizard in the interactive mode. After generating this file, you can make a copy and use a text editor to modify the values for future use as required.

You can find the configuration file in the …`\%PROGRAMDATA%>\SAP\SAP Business One\Log\SAP Business One\SetupWizard\Config` folder.

You can provide several different parameters, or multiple parameters, as shown in the following table.

| Type | Parameter | Value |
|---|---|---|
| Database Server and License Server authentication | **-DbPassword** | Database server password |
| | **-SitePassword** | Site user password |
| SLD configuration | **-SLDCertPassword** | SLD certificate password |
| | **-SLDDomainPassword** | SLD domain user password |
| Integration Solution Components | **-B1iDBPassword** | Integration framework database server password |
| | **-B1iAdminPassword** | Integration framework Tomcat server administrator password |
| | **-B1iDIPassword** | Company password for DI calls |

Example

```
Setup.exe "C:\my_config\Config.XML" -DbPassword x1Y3s -SitePassword pO3kAnk3
```


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# 7 Performing Post-Installation Activities

Immediately after installing SAP Business One, you are required to perform the following activities:

- Configure services
- Install the license key
- Assign add-ons
- Perform post-installation activities for the integration framework

> **Recommendation**
>
> We also recommend you configure a backup strategy for databases and application folders. For more information, see *Backing Up Databases*.
>
> You can use the remote support platform for SAP Business One to automatically backup data according to a defined strategy. For more information, see the Online Help for the remote support platform.

> **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.

## 7.1 Working with the System Landscape Directory

The System Landscape Directory (SLD) control center is a central workplace where you perform various administrative tasks.

You can access the SLD control center in a Web browser for the following:

- Enabling the Single Sign-on Function
- Managing Site Users
- Enabling Dynamic Encryption Keys
- Exporting and Importing Configuration File
- Adding Services in the System Landscape Directory
- Mapping External Addresses to Internal Addresses

### 7.1.1 Logging on to the System Landscape Directory Control Center

After the installation, the SLD service starts automatically. You can then access the SLD control center in a Web browser.


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### Procedure

1. In a Web browser, navigate to the following URL: **`https://<Server Address>:<Port>/ControlCenter`**

   > **Note**
   >
   > The URL address is case-sensitive.

   The default port number is 40000.
2. In the logon page, enter the name and password for a site user (for example, `B1SiteUser`).

   > **Note**
   >
   > The site user name is case-sensitive.
3. Choose *Log On*.

## 7.1.2 Enabling the Single Sign-on Function

SAP Business One supports single sign-on (SSO) functionality. You can bind an SAP Business One user account to a Microsoft Windows domain account.

After binding SAP Business One users to Microsoft Windows accounts, you can enable the SSO function in the SLD. For more information, see Enabling Single Sign-On.

## 7.1.3 Managing Site Users

The site user account serves as site-level authentication for performing various administrative tasks, as listed in the table below:

| Site Users | Function |
|---|---|
| `B1SiteUser` | Life cycle management : installation, upgrade, uninstallation |
| | Configuring services installed on Windows (for example, Workflow service) |
| | Company creation |
| All | All operations performed in the System Landscape Directory |
| | Accessing and performing operations in Web-based service control centers (for example, job service, Administration Console of the analytics platform) |

### B1SiteUser

The site super user, whose account information should only be known to a few selected system administrators, is `B1SiteUser`. You can update the password of `B1SiteUser` in the System Landscape Directory, on the *Security Settings* tab, by choosing *Change B1SiteUser Password*. You will need to provide the old password to make the change.


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The `B1SiteUser` account cannot be removed.

> **Note**
>
> If you forget the password of the site user and want to reset it, you must log on to the local machine on which the System Landscape Directory is installed and on the SLD logon page, click *Forgot password?* .
>
> You will need to provide the server name and database user credentials to make the change.

### Domain Users as Less-Privileged Site Users

You can assign appropriate Windows domain users as site users to perform administrative tasks that require fewer privileges in the System Landscape Directory.

#### Prerequisite

You have entered Windows domain user authentication information during the installation of the System Landscape Directory. For more information, see *Installing SAP Business One*.

#### Procedure

To assign a Windows domain user as a less-privileged site user, do the following:

1. In a Web browser, log on to the System Landscape Directory.
2. On the *Security Settings* tab, choose *Manage Site Users*.
3. In the *Manage Site Users* window, in the edit box at the top, enter a domain user account in the format of **`Domain\User`**.
4. To assign the domain user as a site user, choose *Add*.

#### Result

You can delete domain-user site users at any time. Additionally, a domain user can even remove himself or herself as a site user. After the removal, the domain user can no longer log on to the System Landscape Directory.

## 7.1.4 Enabling Dynamic Encryption Keys

You can encrypt data in SAP Business One company databases using a static key or a dynamic key.

> **Recommendation**
>
> We strongly recommend that you use a dynamic key to encrypt your company schemas.

> **Caution**
>
> Enabling the use of dynamic keys is an irreversible process.

### Procedure

1. Log on to the SLD control center.


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2. On the *Security & Logging* tab, in the *Encryption Key Management* area, choose *Enable Dynamic Key*.

   > **Note**
   >
   > After enabling the use of dynamic keys, you can generate a new dynamic key at any time. To do so, choose *Enable Dynamic Key* again.

3. Open the SAP Business One client application, log on to each of your companies, and accept to update the company schema.

   Note that you must perform this for all company schemas on the servers registered in the System Landscape Directory.

## 7.1.5 Exporting and Importing Configuration File

To secure your data, we recommend that you export your security configuration file right after you finish installing the license server and the SAP Business One server. For more information, see Exporting Configuration Files.

If the server on which you install the SLD service crashes or is corrupted, you must restore all the security settings after the new license server is started. For more information, see Importing Configuration Files.

## 7.1.6 Adding Services in the System Landscape Directory

The *Services* tab of the SLD displays all SAP Business One services that have been installed and registered on the license server. The services include the following:

- License manager
- Job service
- Workflow service

If you accidentally delete a service from the SLD, you must add the service again; otherwise, you cannot use the service.

### Procedure

1. Log on to the SLD control center.
2. On the *Services* tab, choose *Add*.
3. In the *Add Service* window, specify the following information:
   - Service type: Only installed service types are available.
   - Service name: Enter a name for the service

     Service Unit: For Job Service, you must make sure to select a database instance which is already registered in the SLD control center.
   - Service URL: Specify the service URLs as below:
     - License: `https://<Server Name/IP>:<port>/LicenseControlCenter`
     - Job service: `https://<Server Name/IP>:<port>/job`


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- Workflow: `https://<Server Name/IP>:<port>/workflow`

## 7.1.7 Mapping External Addresses to Internal Addresses

To enable access from outside the local network, you must map an external access URL to each required component.

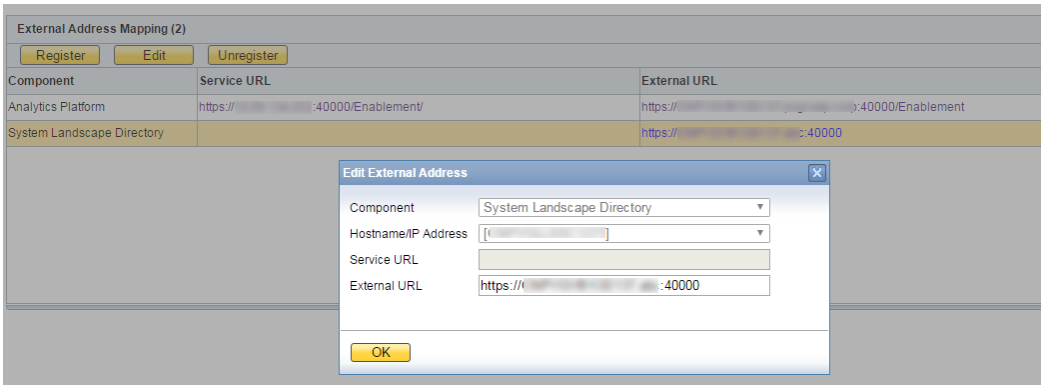
### Procedure

1. Log on to the SLD control center.
2. On the *External Address Mapping* tab, choose *Register*.
3. In the *Register External Address* window, specify the following information:
   1. Component
   2. Hostname or IP address of the machine on which the component is installed
   3. External URL

      The external access URL must have the format `<protocol>://<Path>:<Port>`.

      Example

      `http://<IP address>:8080`




   The *Hostname/IP Address* field for the SLD may display the hostname rather than the FQDN of the SLD server, or it may be empty; either is fine and can be ignored.
4. Choose *OK*.

### Post-requisites

After finishing mapping the addresses for all required components, you must restart the services on the machines on which they're installed.


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## 7.2 Configuring Services

You must configure the services you have installed if they are to operate properly.

> **Note**
>
> The first time you configure any service in the service manager, you must enter the site user password. This is not for authentication purposes, but to obtain the database password. After entering the site user password once, you do not have to enter it again when configuring other services.

### 7.2.1 License Control Center

> **Caution**
>
> If you have installed a firewall on the license server, make sure that the firewall is not blocking the port number you use for the license service; otherwise, the license service and SLD cannot work.
>
> In addition, if you are using port X, make sure that you open both port X and port (X+1) in the firewall. For example, if you are using port `40000`, make sure to also open port `40001`.

The license service is a mandatory service that manages the application license mechanism according to the license key issued by SAP. Web access to the license service enables you to do the following:

- Find and copy the hardware key to run your SAP Business One application and apply for SAP licenses
- Import the license file
- View the basic license information

For new installations, you can use the application for a period of 31 days without a license key. After that period, the SAP Business One application needs a license key to run. We strongly recommend that you request a license key immediately after installing the application.

You also must install a new license key whenever any of the following occurs:

- You have additional users or components.
- The hardware key changes.
- The current license expires.
- You installed a new version of SAP Business One.

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

- Formatting the computer and reinstalling Microsoft Windows.
- Changing the computer name.

The following actions are safe and do not change the hardware key:

- Adding a new user logon.
- Changing the computer date or time.
- Changing the hardware configuration.


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### Procedure

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

   **`https://<Server Address>:<Port>/LicenseControlCenter`**

   Alternatively, on the *Services* tab in the System Landscape Directory, you can click the license manager link to access the license control center.

   > **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 site user name and password, and then choose *Log On*.

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

3. The *General Information* area displays the details of the license server.

   If you have not yet obtained a license key, apply to SAP for a license key using the hardware key. If you are a partner, for more information, see *License Guide for SAP Business One 10.0* on SAP Help Portal.

4. To install the license key, choose *Browse*, select the TXT file you received from SAP, and then choose *Import License File*.

   > **Note**
   >
   > - CORBA license server now is only the proxy of HTTPS license server for compatibility purposes and may be removed in future patches. We do not recommend you use SAP Business One Service Manager to configure the license service.
   > - *SAP Business One SLD Service* is changed to *SAP Business One Server Tools Service* that runs both SLD and license web services. If you intend to reboot the license server, restart *SAP Business One Server Tools Service* instead of *SAP Business One License Manager*.

## 7.2.2 Job Service

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

- SBO Mailer settings
- Alert and scheduling settings


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## 7.2.2.1 SBO Mailer

### Prerequisites

You have installed the SBO Mailer service.

### Procedure

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, choose *Job Service - Mailer*.
3. Choose  (Play) and select the *Start when operating system starts* checkbox.
4. Define mail settings:
   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 Mailer service.
      - *SMTP Port* — Specify the port number for mail services.
      - *Encoding* — Select the language for email text.
      - *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.
      - *Fax Settings* — Select the required fax service. For more information, see *Fax Services*.
      - *Scheduled Report Settings* - Specify the required information for configuring SBO Mailer for report scheduling and mailing. For more information, see *Report Scheduling*.
5. Log on to the SAP Business One client as a superuser or a power user and do the following to enable mailing services for databases.
   1. Select the database for which you want to enable the mailing service.
   2. On the *Service* tab of the *General Settings* window (*Main Menu* → *Administration* → *System Initialization* → *General Settings*), select the *Enable Mailer* checkbox.

      > **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.

   Alternatively, you can also enable mailing services for databases from the System Landscape Directory control center as follows:

   1. Log on to the SLD control center.


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2. On the *DB Instances and Companies* tab, in the *Companies* area, select the databases on which you intend to enable the mailing services and choose *Enable Mailer*.

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.
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*.

## 7.2.2.1.1 Troubleshooting

The following troubleshooting information may be helpful when configuring the mail services:

- Ensure that you have already set up an email account for the SAP Business One users on your mail server.
- To verify the connection with the mail server, choose *Test Connection*.
- The mail service checks the connection with the specified mail server and email account and displays an appropriate message.
- If the SMTP server requires authentication, for example, if the SMTP server is configured to accept only logon-authenticated mails, you must not select the *Anonymous Access* option in the *Mail Settings* area.
- To check whether the connection to the SMTP server works, send a test email. If the connection fails, ensure that you have done the following:
  - Entered the correct name of your mail server
  - Entered the correct user ID and password
  - Restarted the SBO-Mailer service after changing any of the settings


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## 7.2.2.2 Alert and Scheduling Settings

To use the alert and scheduling function 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.

### Procedure

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.
   > - On the *Services* tab in the system landscape directory, make sure that the job service is already bound to a database instance which is registered in the SLD control center.

2. If you have not logged on to the SLD service, in the logon page, enter the site user name (`B1SiteUser`) and password, and then choose *Log On*.

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

3. On the *Alert and Scheduling 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 don't.

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. Log on to the SAP Business One client as a superuser or a power user and do the following to enable the alert and scheduling services for databases.
   1. Select the database for which you want to enable the alert and scheduling service.


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2. On the *Service* tab of the *General Settings* window (*Main Menu* → *Administration* → *System Initialization* → *General Settings*), select the *Enable Alert Service* checkbox.

Alternatively, you can also enable the alert and scheduling services for databases from the System Landscape Directory control center as following:

1. Log on to the SLD control center.
2. On the *DB Instances and Companies* tab, in the *Companies* area, select the databases on which you intend to enable the alert and scheduling services and choose *Enable Alert*.

### 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.

## 7.2.3 Pictures Folder

To display pictures which are stored in the pictures folder in the SAP Business One client, such as company logos, you must perform some additional configurations.

### Procedure

1. Create a folder on a Windows machine and grant full permission to the folder, for example: `\\server\folder\shared_folder`.
2. Log on to the SAP Business One client. On the *Path* tab of the *General Settings* window (*Main Menu* → *Administration* → *System Initialization* → *General Settings*), specify **`\\server>\folder\shared_folder`** as the picture folder.
3. In the SQL Server Management Studio , execute the following query against the company schema in question:

   ```
   select "BitmapPath"from OADP
   ```

   The result looks like the following: "`\\server\folder\shared_folder` ".
4. Copy the query result to a text editor, remove the file name, and replace the backslash (\) with the forward slash (/).

   The result is the shared folder path saved in the database, for example: **`//server/folder/shared_folder`**.
5. Log on to the Linux server where SBO mailer is deployed as `root` and do the following:
   3. Create an empty folder, for example: **`/mnt/sharedpicture`**.

      **Caution**

      The name of the mount point must not contain underscores (_).
      - Correct example: **`/mnt/sharedpicture`**
      - Incorrect example: **`/mnt/shared_picture`**
   4. Mount the folder in step 4 to the empty folder, using the following command:


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```
mount -t cifs -o user=b1service0,pass=b1service0
'//server/folder/shared_folder' /mnt/sharedpicture
```

**Note**

The user (`b1service0`) and the relevant password in the command are for a Windows machine user in step 1.

## 7.2.4 SBO DI Server

This optional service enables multiple clients to access and manipulate the SAP Business One company database. To use it, you are required to have a special license.

For more information, see the SDK Help Center.

## 7.2.5 Fax Services

SAP Business One offers fax services through Microsoft Fax Services. For more information, see *How To Install and Configure Microsoft Fax Services* on SAP Help Portal.

This service can send several attachments as separate fax messages, added to a fax message. For supported file types, see the Microsoft documentation at www.msdn.microsoft.com.

## 7.2.6 Report Scheduling

The report scheduling function of SAP Business One allows you to schedule report execution and send generated reports via email. To do so, you must first define the mail settings and scheduled report settings. For more information, see *How to Schedule Report Execution and Mailing* on sapparteredge.com.

## 7.2.7 SAP Business One Workflow

The workflow service enables you to standardize your business operations to increase overall efficiency. With predefined conditions, the system automatically executes various tasks, liberating labor resources for more creative activities.

For more information, see *How to Configure the Workflow Service and Design the Workflow Process Templates* at SAP Help Portal. The guide includes samples and additional reference materials.


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## 7.3 Configuring the SAP Business One Client

After you have installed SAP Business One and logged on to the application for the first time, you must provide the System Landscape Directory address and port number in the *System Landscape Directory Server Selection* window.

To start the SAP Business One client, choose *Start* → *All Programs* → *SAP Business One* → *SAP Business One Client*. To start the SAP Business One Client using the command line, enter the following command:

```
"SAP Business One.exe" -DbServerType <Microsoft SQL Server version> -Server <Microsoft SQL Server instance name> -CompanyDB <Company Database> -UserName <User ID> -Password <Password> -SLDServiceAddress <SLD address:port>
```

For the `DbServerType` parameter, the value depends on the version of Microsoft SQL Server you are using. For Microsoft SQL Server 2017, enter `11`.

> **Note**
>
> Command line parameters are case-sensitive.

> **Caution**
>
> For security reasons, do not start the SAP Business One client using the command line in productive environments. You should use this method only for testing.

In the SAP Business One toolbar, you can check the log configurations by choosing *Help* → *Support Desk* → *Logger Setting*. You can see the relevant configuration log file under …`\SAP\SAP Business One\Conf\B1logconfig.xml`.

## 7.4 Assigning SAP Business One Add-Ons

Add-ons are additional components or extensions for SAP Business One. Installing the server and client applications automatically registers the SAP add-ons and makes them available for installation from the SAP Business One application. For more information about assigning SAP add-ons to your companies, see the *Assigning Add-Ons* section in the online help document.

The add-ons run under the SAP Add-Ons license, which is included in the Professional User license.

SAP Business One provides the 64-bit add-ons as follows:

- Electronic File Manager
- Microsoft Outlook integration
- Payment Engine

> **Note**
>
> The ELSTER Electronic Tax Return add-on is available for download in the SAP Business One Software Download Center and is no longer included in the SAP Business One download package. For more information, see SAP Note 2064562.


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### Prerequisites

- You have a Professional license from SAP.
- You have installed Microsoft XML 3.0 Service Pack 4 on your workstation. To ensure that this software is installed on the hard drive of the workstation, check that the msxml3.dll file is saved in the system32 directory in the main Windows directory.
- If you chose Custom for the installation of server components, ensure that SAP Add-ons is selected in the Select Features window.
- You must have Power User or Administrator rights, especially in the terminal server environment.

The following table displays the SAP Business One add-ons and their prerequisites.

| Add-On | Prerequisites |
|---|---|
| Payment Engine | Inbound Functionality is activated only when the Bank Statement Processing checkbox is deselected. |
| Microsoft Outlook integration | • You have installed the 64-bit Microsoft Outlook on your workstation.<br>Supported versions: 2000 SR1 (and higher), 2002, 2003, 2007, 2010, 2013, and 2016<br>• After installing Microsoft Outlook, you created an email account for sending and receiving emails.<br>• Microsoft Outlook is set as your default mail client.<br>After installing the Microsoft Outlook integration add-on, the *SAP Business One* entry appears in the *Add-Ins* menu of the following Microsoft Office applications:<br>• Microsoft Outlook<br>• Microsoft Word<br>• Microsoft Excel<br>For more information about how to use the feature, see the Microsoft Outlook integration online help. The help is available in the *Add-Ins* menu of the above Microsoft Office applications and from within the relevant windows in the SAP Business One client application (by pressing F1 in the windows). |
| Datev FI Interface | You have created a new company to work with the DATEV add-on and deselected the checkboxes: Copy User-Defined Fields and Tables and Copy User-Defined Objects.<br>The DATEV add-on may not work with demo databases. |

## 7.5 Performing Post-Installation Activities for the Integration Framework

After installation is complete, you can begin using the integration framework. No mandatory post-installation activities are necessary.

However, for certain use cases, you need additional settings in the integration framework. The following sections provide information about additional configuration options and settings you can check to ensure a correct setup.


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> **Note**
>
> The integration framework is implemented as a Microsoft Windows service with the *SAP Business One Integration Service* identifier. The service starts automatically after successful installation.
>
> If you cannot start the integration framework, stop and restart the service.
>
> You can locate the service by choosing *Start* → *Control Panel* → *Administrative Tools* → *Services*.

## 7.5.1 Maintaining Technical Settings in the Integration Framework

The integration framework is available as version 1 and version 2. When entering the IP address or host name and the port in the Web browser, a Web page opens and offers you to either call framework version 1 or 2.

The integration framework version 2 offers an *Integrated Development Environment* (IDE) for integration scenario design and enables you to deploy integration scenarios for more than one customer in cloud environments.

### Procedure

1. In the Web browser, enter the IP address or host name and the port of the integration framework on the Web page, click the integration framework version link.

   The *Logon* user interface opens.
2. In the *Username* field, enter **`B1iadmin`** and in the *Password* field, enter the password that has been provided during installation.

   Note that entries in the *Username* field are case-sensitive.
3. To add or change integration framework technical settings, in the integration framework, choose *Maintenance*.
   - To define proxy settings for your network and provide connection information for your email server, in framework version 1, choose *Cfg Connectivity*.

     In framework version 2, choose *Configuration*.
   - To get an overview about configuration information for message exchange between SAP Business One and the integration framework and about integration packages setup, choose *Tools* → *Troubleshooting*, and in the *Functional Group* field, choose *B1 Setup*.

   For more information about maintenance functions, in the integration framework choose *Help* → *Documents* → *Operations Part 2*, section *Framework Administration* and *Tools*

   In framework version 2, choose *Help* → *Documents* → *Operations*


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## 7.5.2 Maintenance, Monitoring and Security

### Monitoring

For technical monitoring purposes in framework version 1, enter the IP address or host name and the port, choose the framework version link.

- For framework version 1, choose *Monitoring*.

  You can use the message log, access the error inbox, display SAP Business One (B1) events and use other monitoring functions.

  By default, the message log is active after installation. We recommend deactivating the message log in a productive environment.

  For additional documentation, choose *Help* → *Documents* → *Operations Part 1* and *Operations Part 2*.

- For framework version 2, choose *Monitoring*.

  You can use the transaction monitor, access the error inbox, the service monitor, scenario queue monitor, and so on.

  For additional documentation, choose *Help* → *Documents* → *Operations*

### System Landscape Directory (SLD)

> **Note**
>
> Do not confuse the SLD for the integration framework with the SLD for the SAP Business One landscape, which you access from a Web browser.

Integration framework version 1 and 2 share the SLD. To maintain systems connecting to the integration framework, choose *Start* → *All programs* → *Integration Framework for SAP Business One* → *Integration Framework*, and then choose *SLD*.

For all integration packages, SAP delivers the necessary system entries in SLD.

In SLD, make sure that you keep the entry in the *b1Server* field for the SAP Business One system in sync with the entry in the *associatedSrvIP* field for the *WSforMobile* system.

### Integration with SAP Business One integration for SAP NetWeaver

If your SAP Business One is connected as a subsidiary to the SAP Business One integration for SAP NetWeaver server, it is necessary to add entries to the event subscriber manually.

To configure the SAP Business One event subscriber to send events to a remote integration framework server, choose *Start* → *All programs* → *Integration Framework for SAP Business One* → *Integration Framework*, and then choose *Maintenance* → *Cfg B1 Event Subscriber*.

For more information, click the documentation (Book) icon in the function.


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### Security Information

The integration framework security guide gives you information that explains how to implement a security policy and provides recommendations for meeting security demands for the integration framework.

For more information in framework version 1, enter the IP address or host name and the port, choose the framework version link, and choose *Help → Documents → Operations: Performance, Security, Sizing* section *Security*.

For framework version 2, choose *Help → Documents → Operations: Performance and Security*

## 7.5.3 Technical B1i User

SAP Business One creates a user with the `B1i` user code for each company database. The default process requires that you set the same password for each company database. The integration framework uses the `B1i` user to connect to SAP Business One (for example, to check authentication when using the mobile solution). Ensure that the password that you provided during installation of the integration framework is the same you set in SAP Business One.

## 7.5.4 Licensing

Ensure that the SAP Business One `B1i` user has been assigned with the following two free licenses:

- B1iINDIRECT_MSS
- B1i

No additional licenses are required for the `B1i` user.

Mobile users must be licensed to access the SAP Business One system through the mobile channel. License administration is integrated with the SAP Business One user and license.

## 7.5.5 Assigning More Random-Access Memory (RAM)

We recommend checking the performance aspects in the related documentation.

Choose *Start → All programs → Integration Framework for SAP Business One → Integration Framework*, and then choose *Help → Documents → Operations: Performance and Security*.

If you expect your system to run under very high load and to process a high number of messages, you can assign more random-access memory (RAM) to the integration framework server to improve performance.

### Procedure

1. On your local drive `C:\Program Files\SAP\SAP Business One Integration\IntegrationServer\tomcat\bin\` double-click *tomcat<version>.exe*.


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If the system denies access, select *tomcat<version>.exe*, open the context menu and select the *Run as Administrator* option.

2. In a 64-bit operating system, the default is 2048 MB for the maximum memory pool amount for Tomcat. Select the *Java* tab and increase the maximum memory pool amount.

## 7.5.6 Changing Integration Framework Server Ports

By default, the integration framework server uses port `8080` for http and `8443` for https. If another application is already using one of these ports, change the integration framework ports.

### Procedure

1. If *SAP Business One Event Sender Service* is already running, stop the service.
2. In the …`\Program Files (x86)\SAP\ Integration Framework for SAP Business One\IntegrationServer\Tomcat\conf` folder, double-click the `server.xml` Tomcat file and in the `connector port` tag, change the settings as necessary. Do not change any other settings in the file.
3. Log on to the integration framework.
4. For framework version 1, choose *Maintenance* → *Cfg Runtime* and change the port or ports.

   For framework version 2, choose *Maintenance* → *Configuration* and change the port or ports.

   The integration framework also updates the setting in the `SLSPP` table in SAP Business One.
5. Restart the *SAP Business One Integration Service*.
6. Choose *Start* → *All Programs* → *Integration Framework for SAP Business One* → *Integration Framework* → *Tools* → *Event Sender*, click *Setup Wizard*, and follow the steps of the wizard. In the *Configure Integration Framework Parameters* section, change the *Framework Server Port* entry, and then test the connection.
7. Restart the *SAP Business One Event Sender Service*.
8. To change the properties for the menu entry of version 1, choose *Start* → *All programs* → *Integration Framework for SAP Business One* → *Integration Framework*. Be sure to use the correct port number.

## 7.5.7 Changing Event Sender Settings

SAP Business One writes events for new data, changes and deletions to the `SEVT` table. Based on filter settings, the event sender accesses the table, retrieves data and hands over the events to the integration framework for further processing.

The installation program installs and sets up the event sender on the SAP Business One server. The SAP Business One Event Sender setup is available as an external tool and as of SAP Business One 9.2 PL10, also in the integration framework. If you run the event sender on the same machine as the integration framework, we recommend using the setup that is part of the integration framework.

The following section describes event sender settings, although usually no further changes are required.


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### Note

Only call the event sender setup in the following cases:

- You must change the password for database access.
- You have changed the B1iadmin password for the runtime user.
- You have moved to another server.
- To reduce the message load, you want to include or exclude some objects.
- You want to exclude users.

To check the settings for the event sender, use the integration framework troubleshooting function. In the integration framework version 1, choose *Tools → Troubleshooting*, and in the *Functional Group* field, choose *Event Sender*.

## Procedure

1. To call the event sender setup, choose *Start → All Programs → Integration Framework for SAP Business One → Integration Framework*.

   The *Logon* user interface opens.
2. In the *Username* field, enter **`B1iadmin`** and in the *Password* field, enter the password that was provided during installation.
3. To open the event sender setup, choose *Tools → Event Sender* and click the *Setup Wizard* button.
4. In step 1, in the *Choose Database Type* field, select the SAP Business One database type.
5. In the *DB Connection Settings* section, you can set the following:
   - In the *DB Server Name* field, enter the computer name or IP address of the machine, where the database of the SAP Business One server is installed. Do not use **`localhost`**.

     ### Recommendation

     Use the hostname of the server. Only if you have problems specifying the hostname, use the IP address instead.

     ### Caution

     In the SAP Business One integration for SAP NetWeaver installation, this setting must be identical with the value in the *b1Server* field. If the values are not identical, they appear in the `Filtered` section.
   - In the *Port* field, enter the port number of the database server, where the SAP Business One server is installed.
   - In the *Setup DB Account* and *Password* fields, the installation has set the database user name and password for database access during setup.

     This user must have access rights to create tables and store procedures.
   - In the *Running DB Account* and *Password* fields the installation has set the database user name and password for database access at runtime.

     This user must have access rights to the event log and event lock tables.
   - Click *Test Connection* to test the connection to the SAP Business One database.
6. In step 2, the following settings are available in the *Monitor Settings* section.


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- In the *Idle Time (millisecond)* field, you can change the time period the event sender waits until it polls events from SAP Business One.

  The default is 3000 milliseconds.
- In the *Batch Count* field, you can set the number of events the event sender polls each time.

  The default is 10.

7. In step 3, you can change general settings for the integration framework.

   By default, the installation program sets the *Sending Method to* **`Distributed`**.

   The event sender sends all events to the local server address and the event dispatcher takes over the task of distributing the events to other systems.

   For more information, see the *Operations Guide Part 2*, section *Configuring the B1 Event Subscriber*
8. In the *General Integration Framework Settings*, you can configure the following:
   - In the *Protocol Type* field, select the protocol for the connection between the event sender and the integration framework. To enable https, make settings in the Tomcat administration.
   - In the *Authentication* field, always use the **`Basic`** option. This is the default.
   - In the *Framework Server Host* field, enter the name or IP address of your integration framework or the SAP Business One integration for SAP NetWeaver server.
   - In the *Framework Server Port* field, enter the port number of your integration framework or the SAP Business One integration for SAP NetWeaver server.
   - In the *User Name* field, enter the user name for accessing the integration framework or SAP Business One integration for SAP NetWeaver server. The default is **`B1iadmin`**.
   - In the *Password* field, enter the password for accessing the integration framework or SAP Business One integration for SAP NetWeaver server.
   - To test the connection, choose *Test Connection*.
9. In step 4, choose the company databases.

   The setup program displays the company databases in your SAP Business One system. For each company database, you can set up the following:

   1. Deselect the checkbox in front of the SAP Business One company database, if the company does not use the integration framework. If you deselect the checkbox, SAP Business One does not create events for the company database in the `SEVT` table.
   2. To define the *Include List B1 Object(s)* settings based on active scenario packages, click *Generate*.

      The SAP Business One event filter generator opens.
      - Determine the objects for the include list and click *Apply*. The wizard displays the list of company databases.
      - Select the databases for which you want to set the include filter. Note that for databases with defined exclude filter settings, the checkbox is disabled.
      - Click *OK* and the wizard writes the include filter settings to the selected databases.
      - Alternatively:

        In the *Include List B1 Object(s)* field, enter the object identifier of the SAP Business One object or objects. Separate entries by comma.

        If you enter, for example **`22,17`**, the event sender sends events for purchase orders and orders to the integration framework or the SAP Business One integration for SAP NetWeaver server.

        If you leave the field empty, the event sender sends events for all SAP Business One objects to the integration framework or the SAP Business One integration for SAP NetWeaver server.


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In the *Exclude List B1 Object(s)* field, enter the object identifier of the SAP Business One object or objects. Separate entries by comma.

If you enter for example **85** the event sender excludes events for special prices for groups.

If you leave the field empty, the event sender sends events for all SAP Business One objects to the integration framework or the SAP Business One integration for SAP NetWeaver server.

> **Note**
>
> Use either the *Include B1 Object(s)* or the *Exclude List B1 Object(s)* function. Do not use the functions together.

- In the *Exclude List B1 User* field, enter SAP Business One users for which the event sender does not send events to the integration framework. Enter the SAP Business One user name, not the user code. Separate entries by comma.
- If you want the company database to create events based on indirect journal entries, select the *Create Complete Journal Entry Events* checkbox. Standard SAP Business One processing does not create events for indirect journal entries.

10. Step 5 gives you a summary of the event sender settings. To save the settings, choose *Deploy*.
11. Restart the *SAP Business One Event Sender* service and the *SAP Business One* client.

### Result

The setup program stores the settings in the `datasource.properties` and `eventsenderconfig.properties` configuration files.

## 7.5.8 Changing SAP Business One DI Proxy Settings

SAP Business One DI Proxy is the SAP Business One-related component that enables data exchange with SAP Business One using the DI API. No additional steps are required to set up the SAP Business One DI Proxy service.

To influence the behavior of the SAP Business One DI Proxy service, parameters are available in the `diproxyserver.properties` file.

### Procedure

1. To change parameters, access the `diproxyserver.properties` file in the …`SAP\SAP Business One Integration\DIProxy` path.

| Property | Description |
|---|---|
| RMI_PORT | The parameter is obsolete. |
| HTTPS_PORT | DI Proxy TCP port for HTTPS. |
| MAXDIERRORS | If this property exists and has a value greater than 0, the value defines the number of DI errors that may occur before the DI Proxy restarts. The default is 50. |


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| Property | Description |
| --- | --- |
| RESTARTPERIOD | If this property exists and has a value greater than 0, the value determines the time in minutes after which the DI Proxy restarts. The default is 60. |
| ORPHANED | This property defines the value in minutes after which the system defines a pending and not yet completed DI transaction as orphaned. The DI Proxy removes the transaction from the internal transaction list. If this property does not exist or does not have a positive value, the default is 10. If it exists, the default is 30. |
| JCOPATH | If this property exists and is not empty, it defines the path the DI Proxy uses to search for the JCo installation. In this case the system ignores any value coming from B1iP requested by an adapter.<br>If the property does not exist, the system uses any value coming from B1iP requested by an adapter. In this case the setting is probably not definite.<br>SAP recommends setting the JCo path in the `diproxyserver.properties` file.<br>If you want to change a JCo path that someone has already maintained and that the system has used for connection, you can apply this change only after you have restarted the SAP Business One DI Proxy Service.<br>Use / or \\ instead of \ as a separator in the JCOPATH value. Use for example C:\\Program Files\\SAP\\SAP Business One DI API\\JCO\\LIB |
| JCOVERSION | If this property exists and is not empty, it defines the version the DI Proxy uses to search for the JCo installation. |
| restartAttemptDelay | As of DI Proxy version 30002211, you can overlay the default for a restart delay (500 milliseconds).<br>Provide a value in milliseconds. |
| restartAttemptCap | As of DI Proxy version 30002211, you can overlay the default number of restart attempts (10). |

2. If you change any settings, restart the *SAP Business One DI Proxy Service*.

## 7.5.9 Using Proxy Groups

The DI adapter allows defining multiple proxy groups in the global adapter configuration properties. This allows load balancing by processing requests to multiple proxies. Requests can come from IPO steps that are independent of each other. If you process a step using a certain proxy, the step uses the proxy during the complete step processing.

You can find the following information in the proxy log file:

- The proxy logs the processing start and stop time and describes how the proxy was stopped.


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- Find a usage statistics summary, which lets you decide whether the proxy suits the processing requirements or whether it should be enhanced to a proxy group to fulfill the overall requests.

### 7.5.9.1 Providing Further Proxies

To use proxy groups, provide several DI proxies.

#### Procedure

1. To enable a configuration set for a second *DIProxy* instance, copy the `DIProxy` folder and paste it.
   The system creates the `DIProxy - Copy` folder.
2. Rename the folder to `DIProxy2`.
3. In the `...\DIProxy2` folder, open the `service.ini` file and change the following entries:
   - **`ServiceName = SAPB1iDIProxy2`**
   - **`DisplayName = SAP Business One DI Proxy 2 Service`**
4. In the `...\DIProxy2` folder, open the `diproxyserver.properties` file.
5. Change the `HTTPS_PORT` parameter to **`2098`**, if port **`2098`** is available on your machine.

   **`HTTPS_PORT=2098`**
6. Choose *Start*, right-click *Command Prompt* and choose the *Run as administrator* option.
7. Run `service.exe` with the `-install` parameter in the `...\DIProxy2` folder.
8. Start the *SAP Business One DI Proxy 2 Service Monitor* service.
9. Repeat the steps above for the number of DI Proxies you want to use.

### 7.5.9.2 Adding Proxy Groups to the DI Adapter Global Configuration

In the integration framework, you have the option of defining proxy groups with proxies. Define the proxy groups and proxies in the DI adapter global configuration.

#### Procedure

1. In the integration framework, choose *Tools* → *Control Center* → *Configuration* → *Global Adapter Config*.
2. In the *Global Adapter Configuration Properties* user interface, for the *B1DI* adapter, click the *Edit Global Configuration Properties* link.
3. For the *diProxyGroupList* property, define the proxy groups in the following way:
   - `[<groupname1> <hostname1>:<port1>,<port2>][<groupname2> <hostname2>:<port1>,<port2>]`
     - `<groupname1,2>` are the proxy group names


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- `<hostname1,2>` are the host names or IP addresses of the proxies
- `port1,2` are the port numbers

### Example

You want to provide the following proxy groups:

- `alpha` and `beta`
- Each group has two proxies

```
[alpha abc:2099 def:3701][beta 1.2.3.4:2099,3000]
```

## 7.5.9.3 Using Proxy Groups in SLD

In SLD, enter the proxy group definition that you want to use for a certain company database in the *diProxyhost* field of the SAP Business One company database entry in the following way, for example: `[alpha]`

If you use a proxy group, leave the *diProxyport* field empty.

## 7.5.10 Integration Framework-Related Information About Dashboard Widgets for the Cockpit

This information applies to integration framework version 1.

- If the B1i user password is not correct or licenses are not properly assigned to the user, Dashboard widgets display the `401 not authorized` error.

  In the integration framework, adjust the B1i user password in SLD. Ensure that licenses are correctly assigned.

  For more information, see the *Licensing* section.
- If Dashboards have been activated, but not properly deployed in the integration framework, the `404 file not found` error mentioning `DASHBOARD` is displayed.

  Check that all services for the integration framework are running.

  Deactivate the Dashboard widgets, log off and logon again, and activate the Dashboard widgets.
- To support the display of dashboards, ensure that Adobe Flash Player 10.0 is installed on the client workstation.
- For information about creating dashboards, see *How to Develop Your Own Dashboards for SAP Business One* on SAP Help Portal.


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# 8 Performing Centralized Deployment

SAP Business One supports the central management of the SAP Business One landscape from the System Landscape Directory (SLD) control center. You can perform the following operations remotely through the SLD control center:

- Register logical machines
- Install the SAP Business One components
- Deploy and upgrade the system database `SBOCOMMON` and demo databases
- Register the database instances
- Check the installed SAP Business One components across the whole SAP Business One landscape

To implement central management, you should access the SLD control center in a Web browser and follow the steps below:

1. Configure global settings
2. Register logical machines on the SLD control center
3. Register database instances on the landscape server
4. Deploy or upgrading databases
5. Install client components

### Prerequisite

You have copied a SAP Business One product CD on some machine within the SAP Business One landscape.

## 8.1 Registering SAP Business One Installation CD

If you intend to perform remote administrative tasks from the SLD control center, you should have previously created the CD repository folder and the central log directory. The CD repository folder is the folder that contains SAP Business One product or upgrade CDs; the central log directory can be any folder within the landscape. These two folders are SLD related and you should have shared them previously. You need to define the shared folders or reconfigure them from the SLD control center.

> **Note**
>
> The CD repository folder and the central log directory are the prerequisites to all operations for landscape central management. You must create both shared folders before performing the other operations.

### Procedure

To define or reconfigure the shared folders of SAP Business One CD repository and the central log directory, perform the following steps:


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1. Log on to the SLD control center.
2. On the *Global Settings* tab, in the *Central Deployment* area, click  (*browse*) behind *CD Repository*.
3. In the *Share Settings* window, enter the following information to define or reconfigure the CD repository shared folder and choose *Save*.
   - *Share Type:* The default type is *CD Repository*.
   - *Network Path:* Enter the network path of the shared SAP Business One product CD repository. The product CD repository could be either the exact shared folder or a subfolder of a shared folder.

     Example

     If `B1_SHR` is a shared folder and `B1_DEFAULT_REPO` is a subfolder of the shared folder, you can specify either **`\\<IP address>\B1_SHR`** or **`\\<IP address>\B1_SHR\B1_DEFAULT_REPO`** as the CD repository shared folder.
   - *Access User Name:* Enter the name of a user who can access the product CD.
   - *Access User Password*
4. On the *Global Settings* tab, in the *Central Deployment* area, click  (*browse*) behind *Central Log Directory*.
5. In the *Share Settings* window, enter the following information to define or reconfigure the central log directory and choose *Save*.
   - *Share Type:* The default type is *Central Log Directory*.
   - *Network Path:* Enter the network path of the shared central log directory. The shared central log directory could be either the exact shared folder or a subfolder of a shared folder.

     Example

     If `B1_CEN` is a shared folder and `B1_LOG_DIRO` is a subfolder of the shared folder, you can specify either **`\\<IP address>\B1_CEN`** or **`\\<IP address>\B1_CEN\B1_LOG_DIRO`** as the central log directory.
   - *Access User Name:* Enter the name of a user who can access the central log directory.
   - *Access Password*
6. In the *Central Deployment* area, define the SLD Agent timeouts.
   - *SLD Agent Heartbeat Timeout*: configure the time interval of the SLD Agent response to the SLD.

     Example

     When you define the SLD Agent heartbeat timeout to 3 minutes, the SLD Agent will report the hardware utilization of the logical machine to the SLD every 3 minutes, and will report the installed SAP Business One software components on the logical machine to the SLD every 30 minutes.
   - *SLD Agent Operation Timeout*: configure the maximum time period for a SLD operation task, such as logical machines registration, client components installation.

     Note

     The SLD Agent operation timeout does not apply to the database operation tasks, such as database updates.
7. In the *Verbose Logging* area, you can choose to enable verbose logging and download log files.


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## 8.2 Registering and Unregistering Logical Machines

SAP Business One supports the central management of the complete pool of machines in the SAP Business One landscape from the System Landscape Directory (SLD) control center. To manage a machine remotely, you must register it to the SLD. A machine is registered to the System Landscape Directory (SLD) only when the SLD Agent is successfully installed on it and connected to the SLD.

> **Note**
>
> The SLD Agent is a key component of centralized deployment. The SLD Agent service executes tasks on behalf of the System Landscape Directory, such as performing database deployment and upgrades, remote installation and upgrades of SAP Business One client and DI API. The SLD Agent service is installed automatically during the logical machine registration in the System Landscape Directory control center. You can also manually install the SLD Agent service using the **Components Setup Wizard**. For more information, see *Manually Installing SLD Agent Service*.

You can also cancel the registration of logical machines from the SLD control center. When you unregister machines, you uninstall the SLD Agent from the relevant logical machines.

### 8.2.1 Registering Logical Machines

#### Prerequisite

- You have defined the SAP Business One CD repository folder and central log directory. If you have not defined the share folders, you can go to the *Global Settings* tab to configure them. For more information, see *Registering SAP Business One Installation CD*.
- If you intend to use any local account which is added into the local administration group to remotely register a logical machine from the SLD control center, you must set a registry key on the logical machine. The registry key is the `LocalAccountTokenFilterPolicy` file in the path `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System`. The value is `1`.

  > **Note**
  >
  > You do not need to set a registry key for remote registration of a local machine if you use either of the following types of account:
  >
  > - A local administration account.
  > - A domain account which is added to the local administration group.

#### Procedure

To register a Windows machine on which the SAP Business One server components or client components are installed, you should perform the following steps:

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, choose *Register*.
3. In the *Register Machine - Machine Name* window, specify the following information:


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1. Hostname or IP address of the machine

   > **Note**
   >
   > Enter the full hostname or IP address. The value of the `localhost` (**`127.0.0.1`**) is not allowed.

2. Machine description

4. In the *Register Machine - User Credentials* window, specify the following information and choose *Next*:
   - *User name*: Enter the domain and user name of a local administrator on the machine.
   - *Password:* Enter the password of the local administrator.
   - [Optional] *Enable Secure Transfer*: Select this checkbox to enable secure transfer and enter the following required information:
     - *Certificate Common Name*
     - *Absolute path to CA file*

     The certificate should be issued by a third-party certification authority (CA).
5. In the *Register Machine - Review* window, review your settings carefully before starting the machine registration process. If you need to change your settings, choose *Previous*; otherwise, choose *Start* to start the registration process.
6. In the *Register Machine - Status* window, choose *Close* to close the window. The wizard continues running in the background until the registration completes.

### Result

When a logical machine is successfully registered from the SLD control center, in the *Logical Machines* area, you can see the following information, which is not shown for machines on which the SLD Agent is installed with a separate wizard.

- *Description*: shows the description of the machine you defined during the registration process.

  There is not any description for a machine on which the SLD Agent is installed with the installation wizard.
- *Log*: shows *Successful* which links to a log folder. It records the whole operation log during the registration process.

  There is no log for a machine on which the SLD Agent is installed with the installation wizard.

## 8.2.1.1 Manually Installing SLD Agent Service

You can manually install the SLD Agent service on the logical machines by using the **Components Setup Wizard** or in silent mode.

### Prerequisites

- You have installed the SLD.
- You have administrator rights on the machine on which you are performing the installation.


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> **Note**
>
> For more information about possible installer issues related to the user account control (UAC) in Microsoft Windows operating systems, see SAP Note 1492196

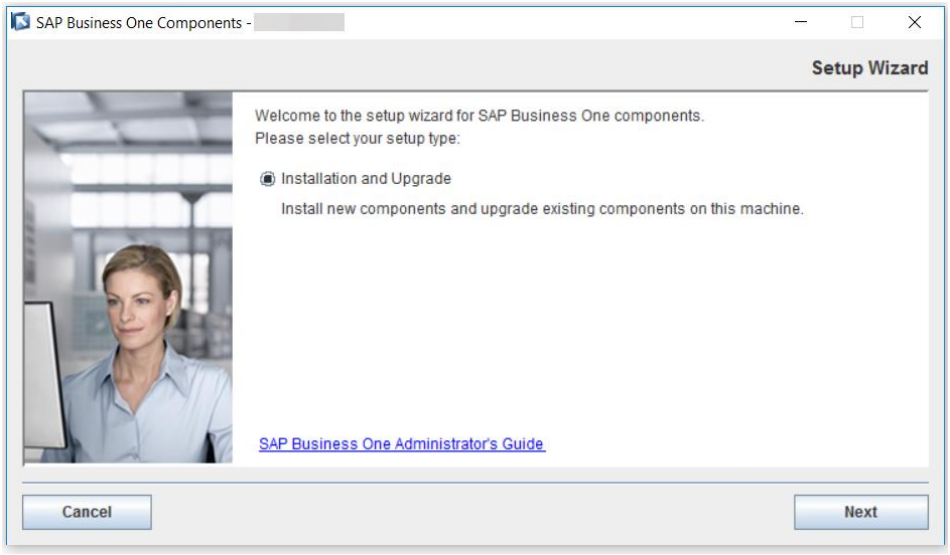
#### 8.2.1.1.1 Wizard Installation

The following procedure describes how to install the SLD Agent by using the Components Setup Wizard.

### Procedure

To manually install the SLD Agent Service, do the following:

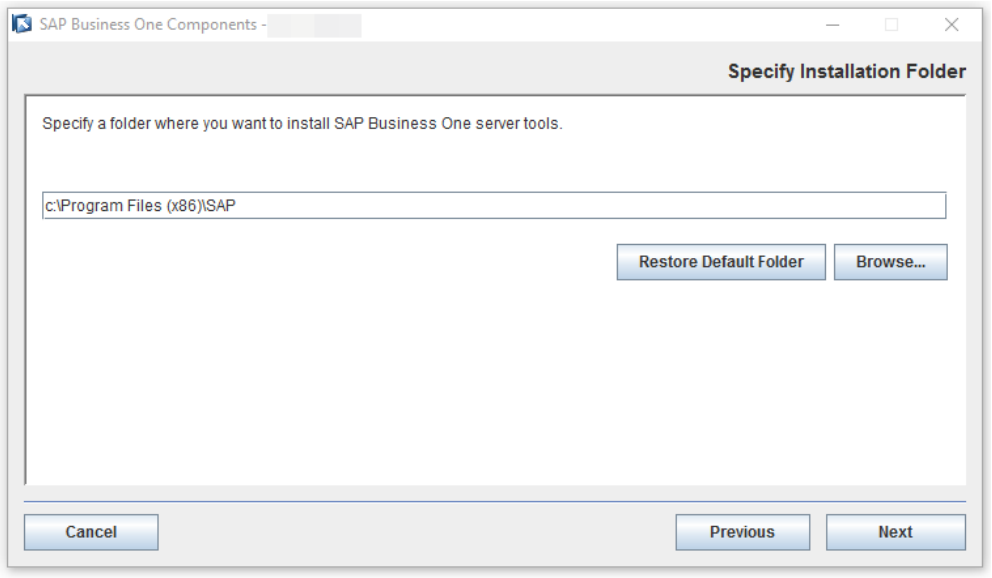
1. Navigate to the installation folder for the SLD Agent service (default path: *\Packages.x64\ComponentsWizard*)
2. Select one of the executable files to run:
   - *Install.exe*: enables only GUI mode installation
   - *Install-console.exe*: enables both GUI mode and silent mode installation. When you start running this file, both a GUI screen and a separate console window are opened. The console output contains the full file path to the actual log file.
3. In the *Setup Wizard* window, select *Installation and Upgrade* and choose *Next*.



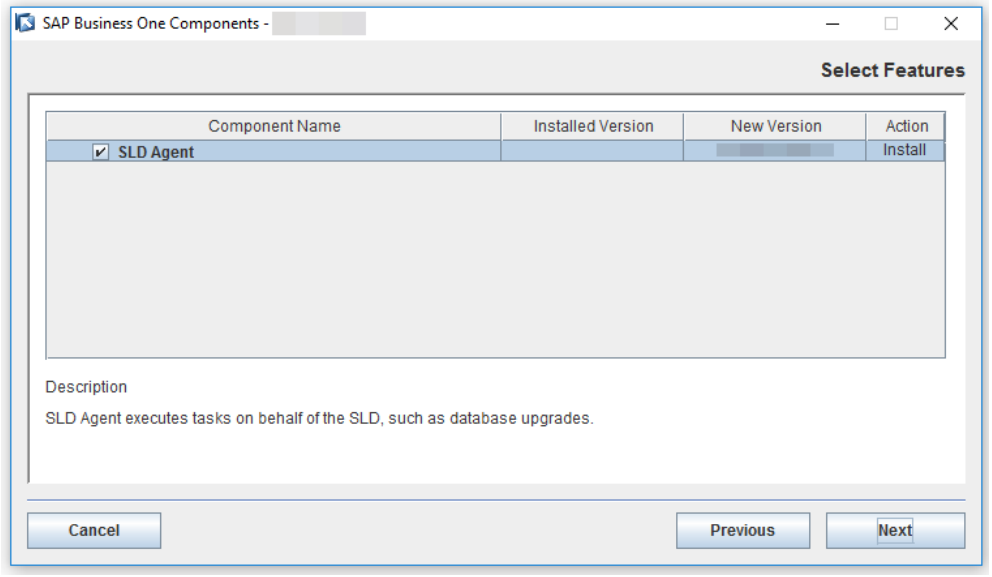

4. In the *Specify Installation Folder* window, specify a folder where you want to install the SLD Agent and choose *Next*.

> **Note**
>
> The SLD Agent is a 32-bit application so it must be installed under the default path *Program Files (x86)*.


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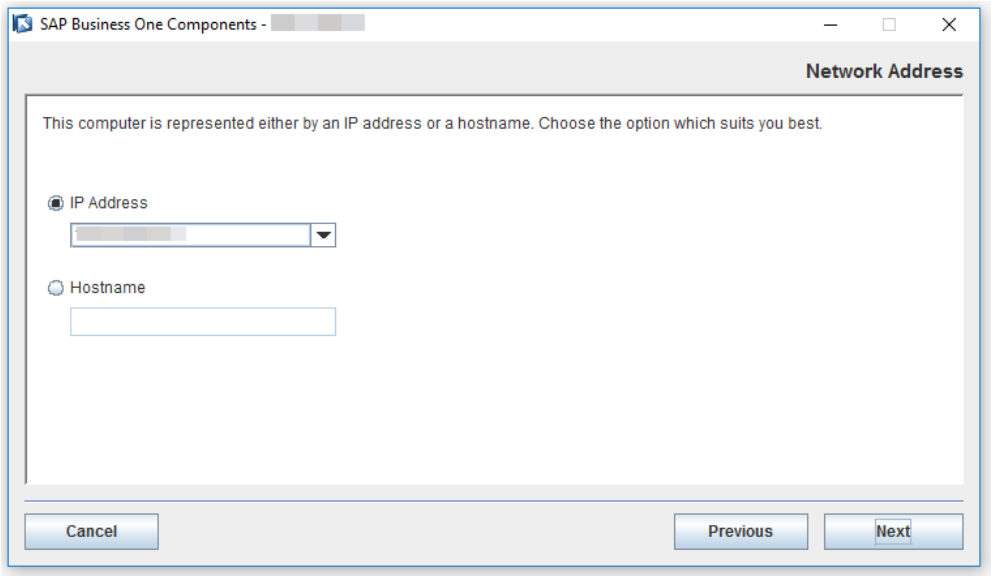



5. In the *Select Features* window, select *SLD Agent* and choose *Next*.

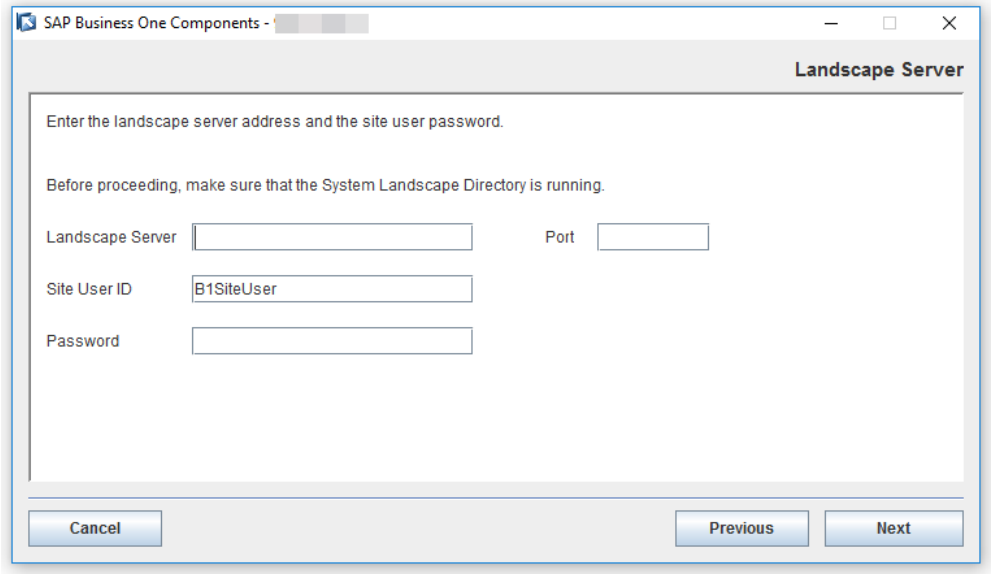



6. In the *Network Address* window, select an IP address, or use the hostname, as the network address for the selected components and choose *Next*.


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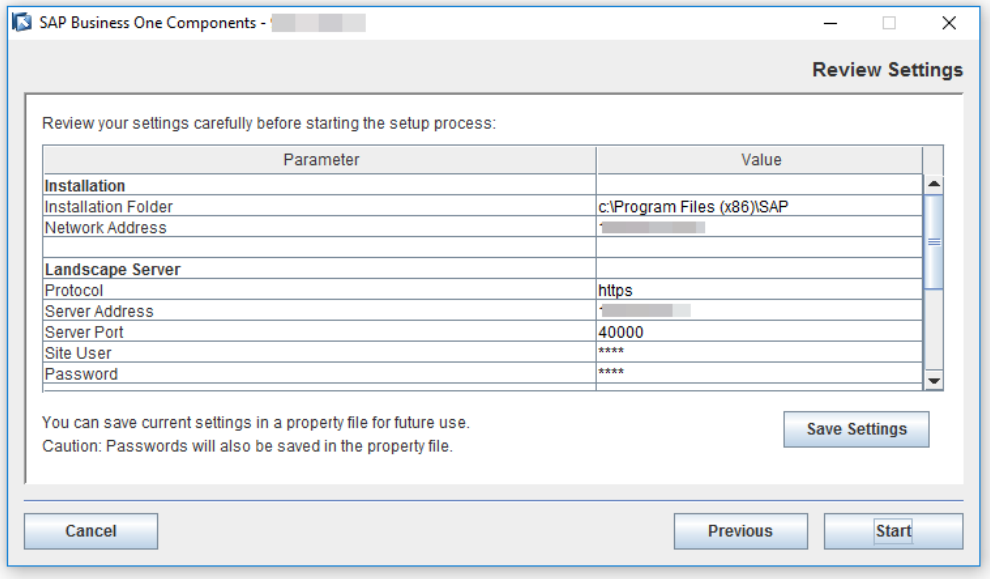



7. In the *Landscape Server* window, enter the landscape server address and the site user password and choose *Next*.

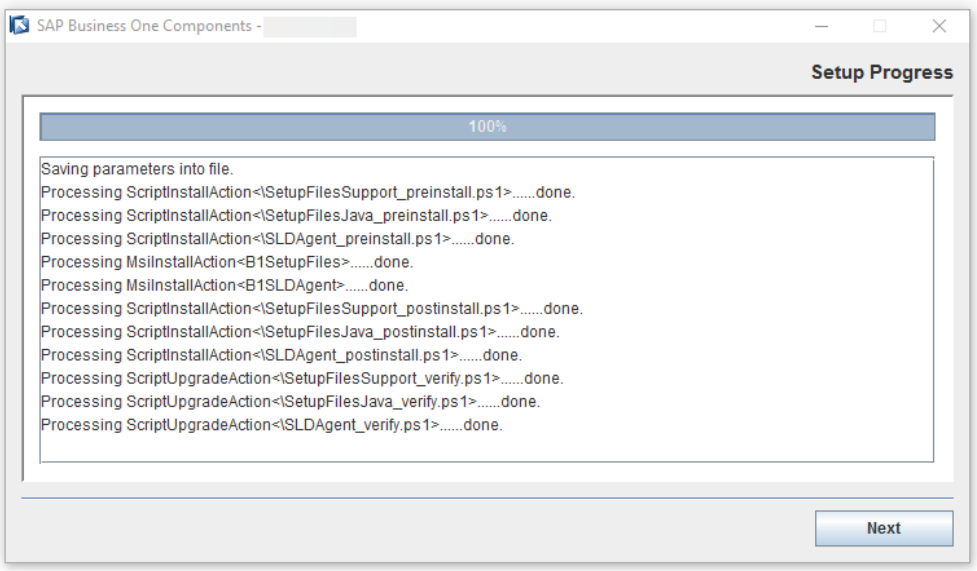



8. In the *Review Settings* window, review your settings carefully before proceeding to execute the installation. If you need to change your settings, choose *Previous* to go to the relevant windows; otherwise, choose *Start* to begin the installation.


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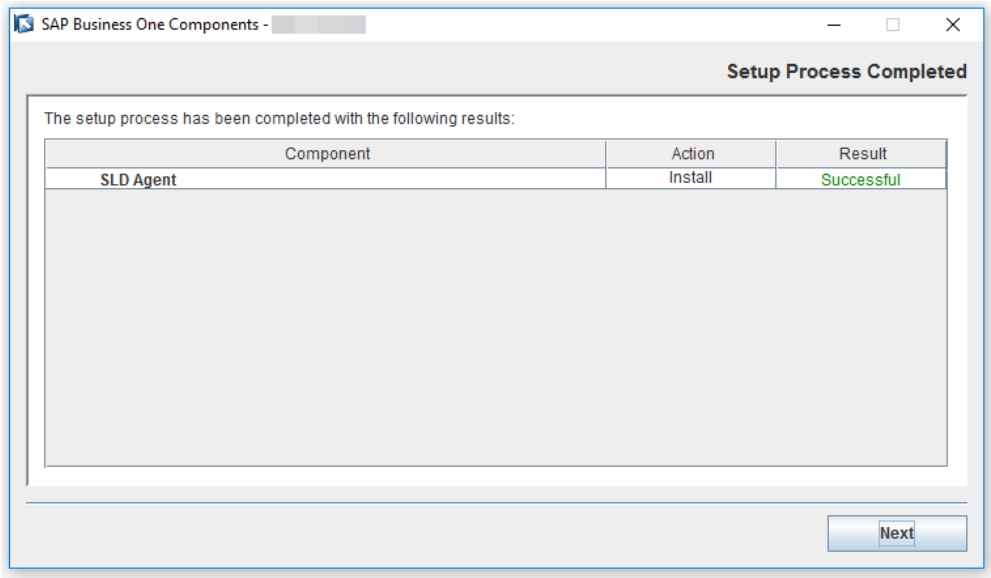



9. In the *Setup Process* window, when the progress bar displays 100%, choose *Next* to finish the installation.

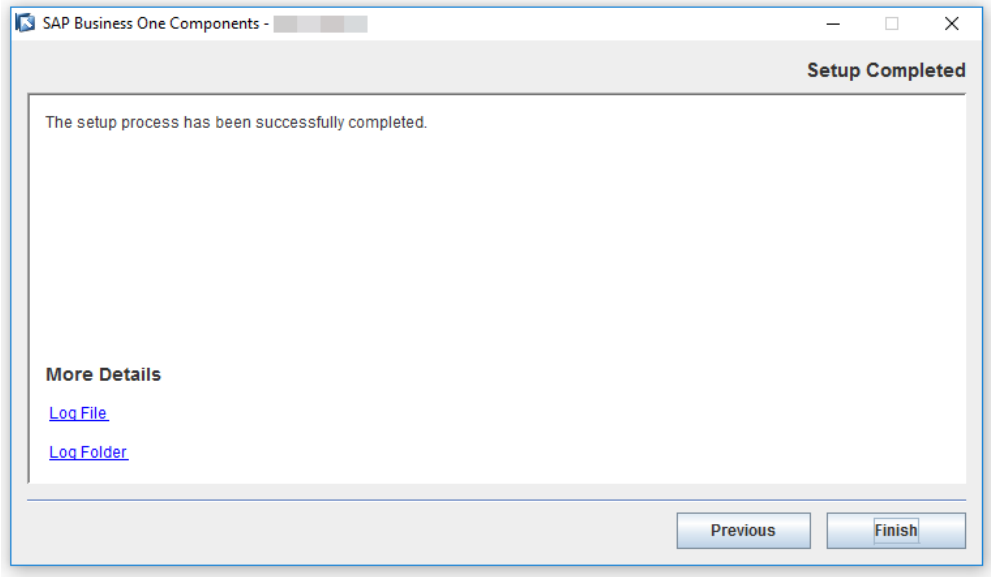



10. In the *Setup Process Completed* window, review the installation results showing *SLD Agent* has been successfully installed.


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11. To exit the wizard, choose *Finish*.




## 8.2.1.1.2 Silent Installation

You can install (or upgrade) the SLD Agent in silent mode using command-line arguments and passing parameters from a pre-filled property file. To do so, enter the following command line:

```
install-console.exe -i silent -f <property file path> [--debug]
```


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### Property File Format

The property file is a text file with a simple structure `[Parameter]=[Value].` Each parameter is in a separate line.

For multiple values, you need separate parameter values separated by a comma. The format is as below:

- `Single value: Parameter=Value`
- `Multiple values: Parameter=Value1, Value2`

Example

```
SELECTED_FEATURES=B1SLDAgent
```

### Parameters

The table below lists all the parameters that are required for SLD Agent installation.

| Parameter | Description |
|---|---|
| INSTALLATION_FOLDER | Installation path for SLD Agent installation (Default path: `C:\Program Files (x86)\SAP\SAP Business One ServerTools\`) |
| LOCAL_ADDRESS | The network address of the current machine. This address will be used for registration and identification of the logical machine in SLD. |
| SELECTED_FEATURES | The only supported value is `B1SLDAgent` |
| SLD_SERVER_ADDR | Landscape server address. |
| SLD_SERVER_PORT | Landscape server port number. |
| SITE_USER_ID | Site user name that will be used to access the System Landscape Directory (e.g. `B1SiteUser`). |
| SITE_USER_PASSWORD | Password for the specified site user. |

## 8.2.2 Unregistering Logical Machines

You can cancel the registration of logical machines from the SLD control center. When you unregister a logical machine, you uninstall the SLD Agent from the machine.

### Prerequisites

You have activated the SLD Agent on the logical machine which you intend to uninstall from the SLD control center.


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### Procedure

To unregister a logical machine, perform the following steps.

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, select the logical machine for which you want to cancel the registration, and choose *Unregister*.

   > **Note**
   >
   > You can select one or multiple logical machines to unregister.

3. In the *Machine Availability - Unregister Logical Machine* window:
   - If SLD Agent is active on a selected logical machine, the status is *Ready*.
   - If SLD Agent is not active or is unable to provide access to a selected logical machine, the status is *User Credentials Required*. You are required to enter the user name and password.

   After entering the user credentials for all required machines, choose *Start*.

   > **Note**
   >
   > Logical machines cannot be unregistered in the following status:
   > - You have selected a local machine on which the SLD is installed.

4. In the *Status* window, choose *Close* to close the window. The operation continues running in the background until it completes.

The logical machine is removed from the logical machine list and the SLD Agent on the machine is uninstalled simultaneously.

Alternatively, you can log on to the selected logical machine and manually uninstall the SLD Agent.

## 8.2.2.1 Manually uninstalling SLD Agent Service

You can log on to logical machines to manually uninstall the SLD Agent.

On your Windows machine, in the *Programs and Features* window *(Control Panel →Programs → Programs and Features)*, select *SAP Business One SLD Agent* and choose *Uninstall*. Alternatively, you can uninstall the SLD Agent by running the `setup.exe` file in the path `C:\Program Files (x86)\SAP\SAP Business One SetupFiles\setup.exe`.

## 8.2.3 Upgrading SLD Agent Service

You can upgrade SLD Agent Service from the SLD control center. The operation of upgrading SLD Agent requires access to the relevant logical machines. Therefore, you must make sure logical machines are accessible for the upgrades.

To upgrade the SLD Agent, perform the following steps:

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, select the logical machine which you want to cancel the registration, click *Upgrade SLD Agent*.


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> **Note**
>
> Upgrading SLD Agent requires access to the logical machine with the **online** SLD Agent. If SLD Agent is offline, you should first start it manually or from the SLD control center.
>
> You can select one or multiple logical machines to upgrade SLD Agent.

3. In the *Machine Availability - Upgrade SLD Agent* window:
   - If SLD Agent is active on a selected logical machine, the status is *Ready*.
   - If SLD is unable to provide access to a selected logical machine, the status is *User Credentials Required*. You are required to enter the user name and password.

   After entering the user credentials for all required machines, click *Start*.

   > **Note**
   >
   > SLD Agent cannot be upgraded in the following status:
   > - The logical machine is unreachable.
   > - SLD Agent is not running.
   > - The installed SLD Agent is already in the latest version.
   > - The installed SLD Agent is in an unknown version.
   > - You have selected a local machine on which the SLD is installed.

4. In the *Status* window, choose *Close* to close the window. The operation continues running in the background until it completes.

## 8.2.4 Starting SLD Agent Service

When SLD Agent is offline, you can invoke the SLD Agent service from the SLD control center.

### Prerequisites

You have installed the SLD Agent service in the logical machine and the agent status is *offline*.

### Procedure

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, select the logical machine for which you want to start the SLD Agent service, and choose *Start SLD Agent*.

   > **Note**
   >
   > Starting SLD Agent is performed on the logical machine with the **offline** SLD Agent. You can select one or multiple logical machines to start the SLD Agent service.

3. In the *Machine Availability - Start SLD Agent* window, provide the user credentials and choose *Start*.


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> **Note**
>
> SLD Agent cannot be started in the following status:
>
> - The logical machine is unreachable.
> - SLD Agent is not found on the logical machine.
> - SLD Agent is running.
> - You have selected a local machine on which the SLD is installed.

4. In the *Status* window, choose *Close* to close the window. The operation continues running in the background until it completes.

## 8.3 Installing and Uninstalling Client Components

After registering a logical machine to SAP Business One System Landscape Directory (SLD), you can centrally deploy SAP Business One Client and Data Interface API on the machine from the SLD control center.

You can also uninstall the client components from the SLD control center.

### 8.3.1 Installing Client Components

#### Prerequisites

- You have defined an SAP Business One CD repository folder and central log directory during the installation process. If you have not defined the share folders, you can go to the *Global Settings* tab to configure them. For more information, see *Registering SAP Business One Installation CD*.
- In the SLD control center, you have registered the logical machine on which you will deploy the client components. For more information, see Registering Logical Machines

#### Procedure

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, select the machine on which you intend to deploy components.

   > **Note**
   >
   > You can select multiple machines to install the client components on different machines simultaneously.

3. In the *SAP Business One Components* area, choose *Deploy*.
4. In the *Select Components* window, choose the required client components.

   If you have selected multiple machines to deploy client components simultaneously, in this window you can see the component installation status for each selected machine.

   - If a component has been installed on a machine, you cannot install it again.


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- If a component has not been installed on a machine, you can select the machine under the specific component and choose *Next* to continue the deployment.

  > **Note**
  >
  > You should install the *SAP Business One Client* component together with the *Data Interface API* component.

5. In the *Review* window, review the settings you have made and choose *Start*.
6. In the next *Review* window, choose *Close* to close the window. The deployment operation will continue in the background until it is completed.
7. On the *Logical Machines* tab, in the *SAP Business One Components* area, you can see the *Deployment Status* of the components is either *To be deployed* or *Deploying*. Once the deployment process completes, the status changes to *Deployed*.

   > **Note**
   >
   > If you installed components by running the setup wizard from logical machines, you can see the *Deployment Status* of the components are *Deployed Externally*.

If you want an overview of all installed components across the whole landscape, go to the *Components* tab.

## 8.3.2 Uninstalling Client Components

You can uninstall SAP Business One Client and Data Interface API which have been installed from the SLD control center.

### Procedure

1. Log on to the SLD control center.
2. On the *Logical Machines* tab, in the *Logical Machines* area, select the machine from which you intend to uninstall components.

   > **Note**
   >
   > You can select multiple machines to uninstall the client components from different machines simultaneously.

3. In the *SAP Business One Components* area, choose *Remove*.
4. In the *Remove and Uninstall Components* window, you can choose if you will simultaneously uninstall the selected SAP Business One Client and DI API components from logical machines, and then choose *Continue*.

   > **Note**
   >
   > If you do not enable the checkbox, the selected components will be only removed from the component list, but not uninstalled from the relevant logical machines.

After the uninstallation, you can reinstall SAP Business One Client and Data Interface API from the SLD control center.


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## 8.4 Registering Database Instances on the Landscape Server

For companies to appear on the application's logon screen, you must register the database instances on the landscape server using the System Landscape Directory.

### Procedure

1. To access the SLD service, in a Web browser, navigate to the following URL:

   `https://<Server Address>:<Port>/ControlCenter`
2. On the logon page, enter the site user name and password, and then choose *Log On*.

   > **Note**
   >
   > The site user name is case sensitive.
3. On the *DB Instances and Companies* tab, in the *DB Instances* area, choose *Add*.
4. In the *Add Server* window, specify the following:
   - *Server Name* — Enter the name or IP address of the database server that you want to add.

     > **Caution**
     >
     > Ensure that the name of the server on which you installed Microsoft SQL Server does not contain any special characters, such as: &, <, >, ", or '.
   - *Database User Name*: Enter the user name of the administrator account for the database.
   - *Database User Password*: Enter the password of the administrator account for the database.
5. To add the database server, choose *OK*.

## 8.4.1 Backing Up Database Instances

You can manually back up database instances from the System Landscape Directory.

### Procedure

1. Log on to the SLD control center.
2. On the *DB Instances and Companies* tab, in the *DB instances* area, select the DB instance on which you intend to perform the backup and click *Back Up*.
3. In the *Back Up Instance* window, choose *OK* to start the backup.
4. In the *DB instances* area, you can choose *Show Backup Log* to check the log of the backup operation.


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#### 8.4.1.1 Deleting Older Backups

You may want to delete older instance backups (older than the last successful backup) to save disk space. You can perform this operation via the System Landscape Directory.

### Procedure

1. Log on to the SLD control center.
2. On the *DB Instances and Companies* tab, in the *DB instances* area, select the DB instance on which you intend to delete the older instance backups and click *Delete Older Backups*.
3. In the *Delete Older Backups* window, choose *OK*.

   The data backups and log backups which are older than the last successful backup are deleted. The backup files are physically removed from the backup location.

## 8.5 Deploying and Upgrading Databases

After registering database instances on the landscape server, you can use the System Landscape Directory to remotely deploy the system database `SBOCOMMON` and demo databases, and remotely upgrade the `SBOCOMMON` schema and your company schemas.

### 8.5.1 Deploying Databases

### Prerequisites

- You have defined an SAP Business One CD repository folder and a central log repository folder during the installation process. If you have not defined the share folders, you can go to the *Global Settings* tab to configure them. For more information, see *Registering SAP Business One Installation CD*.
- In the SLD control center, you have registered the logical machines on which you will deploy databases. For more information, see *Registering and Unregistering* Logical Machines.

### Procedure

1. Log on to the SLD control center.
2. On the *DB Instances and Companies* tab, in the *DB instances* area, select the DB instance on which you intend to deploy databases.
3. In the *Companies* area, choose *Deploy*.
4. In the *Selection of Databases* window, select the system database `SBOCOMMON` or demo databases that you want to deploy.


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Note

The *Site User* and *Database Server Connection* windows may appear for SLD authentication and DB server connection in case of any connection error.

5. In the *Review* window, review your settings carefully before starting the databases deployment process. If you need to change your settings, choose *Previous*; otherwise, choose *Start* to start the deployment.
6. In the *Review* window, choose *Close* to close the window. The wizard continues running in the background and will close automatically after the deployment is finished.

## 8.5.2 Upgrading Databases

### Prerequisites

- You have ensured that all SAP Business One clients are closed.

  Recommendation

  We recommend that you complete or terminate all workflow instances before closing SAP Business One client.
- You have defined an SAP Business One CD repository folder and a central log repository folder during the installation process. If you have not defined the share folders, you can go to the *Global Settings* tab to configure them. For more information, see *Registering SAP Business One Installation CD*.
- In the SLD control center, you have registered the logical machines on which you will upgrade databases. For more information, see *Registering and Unregistering* Logical Machines.
- You have manually upgraded the System Landscape Directory (SLD) to the new version.
- You have updated the SAP Business One product CD that is used for the CD repository shared folder to the new version.

### Procedure

1. Log on to the SLD control center.
2. On the *DB Instances and Companies* tab, in the *DB instances* area, select the DB instance on which you intend to upgrade databases.
3. In the *Companies* area, select the database you intend to upgrade and choose *Upgrade*.

   Recommendation

   Before starting upgrades, you should lock the company whose database you will upgrade. To do this, you can select the company and choose *Lock*. The company status then changes from *Unlocked* to *Locked*.

   When the company is locked, none of the SAP Business One users can log on to the company from the SAP Business One application. Now you can continue the next steps to perform the upgrades from SLD control center or start the setup wizard to upgrade the company schemas on the logical machine.

   When the upgrades complete successfully, the company status is automatically changed to *Unlocked* and SAP Business One users can log on to the relevant company again.


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> **Note**
>
> - SAP Business One database users do not have the authorization to lock companies. Only SAP Business One site users can lock companies from SLD control center.
> - You can revert the company status to *Unlocked* by clicking the same button.

4. In the *Setup Type* window, select *Perform Setup* and choose *Next*.
5. In the *Selection of Databases* window, select the system database `SBOCOMMON` or the company databases that you want to upgrade and choose *Next*.

   > **Note**
   >
   > For upgrades, you can select only databases whose status is *Ready*.

6. In the *Backup Settings* window, specify the folder in which you want to store the backup files.
7. In the *Review* window, review your settings carefully before starting the databases deployment process. If you need to change your settings, choose *Previous*; otherwise, choose *Start* to start the deployment.
8. Choose *Close* to close the window. The wizard continues running in the background until the upgrades complete.


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# 9 Maintaining Databases

This section provides information about checking and maintaining your database system. Database activities depend on the nature of your organization's day-to-day work. There are many factors influencing system performance, such as disk space availability, the number of transactions occurring each day, and so on. It is essential to perform daily and regular checks to ensure the efficient operation of SAP Business One. System performance depends on the correct administration of the database.

This section also lists all the stored procedures quoted in the SAP Business One application.

## 9.1 Database Server Administration

This section provides basic information about the SQL Server environment, the way a database management system stores and accesses the data, and the database administration tool. The information comprises the following topics:

- Starting and stopping database services
- Performing weekly tasks
- Performing regular tasks
- Performing backups
- Performing restoration

### 9.1.1 Starting and Stopping Database Services

Occasionally, it is necessary to stop and start database services manually, for example, when you perform a complete backup of the database.

#### Procedure

To stop database services:

1. Verify that no clients are logged on to SAP Business One.
2. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
3. In the *Object Explorer* window, right-click the database server on which your SAP Business One database is installed and choose *Stop*.

To start database services:

1. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.


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2. In the *Object Explorer* window, right-click the database server on which your SAP Business One database is installed and choose *Start*.

   > **Note**
   >
   > If you are not able to log on to SAP Business One, and the dialog box for choosing a company contains an empty list, check whether Microsoft SQL Server is running.
   >
   > If you log off the Microsoft SQL Server services, all user processes are terminated, but the database services keep running.

## 9.1.2 Weekly Tasks

Perform the following tasks on at least a weekly basis:

- Checking database consistency
- Running the Update Statistics command

If the size of the SAP Business One database is large or your company has a large volume of daily or weekly transactions in SAP Business One, perform the previous tasks more often.

### 9.1.2.1 Checking Database Consistency

A database consistency check performs a thorough check of the entire database. It examines all tables in the database to ensure that index and data pages are linked correctly and that indexes are in the correctly sorted order. A database consistency check also ensures that all pointers are consistent and that the data information on each page and page offset is reasonable.

Performing database consistency checks enables you to recognize problems early, and prevent escalations and the possible loss of data.

When performing database consistency checks, ensure the following:

- Schedule consistency checks with the planning calendar.
- Run consistency checks outside of normal business hours, for example on the weekends.
- Do not schedule any other tasks at the same time as you run the consistency check.

  > **Note**
  >
  > On the Microsoft SQL Server level, the SAP Business One database consistency check executes the `DBCC CHECKDB` command, which locks user tables, indexes, and system tables throughout the run.
  >
  > In addition, a database consistency check is an I/O intensive process. Therefore, you should not run checks during normal business operations, but at times when the system load is low.

You can use the remote support platform for SAP Business One to automatically perform database consistency checks as part of a defined backup strategy. For more information, see the online help for the remote support platform.


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### 9.1.2.2 Running the UPDATE STATISTICS Statement

The `UPDATE STATISTICS` statement defines the storage requirements of tables and indexes as well as the value distribution of columns, and stores this information in the database catalog.

The Optimizer uses these values to determine the best strategy for executing SQL statements. Use the sp_updatestats procedure on all user-defined tables in the required database.

When the `UPDATE STATISTICS` statement is executed, the following information about the table is stored in the database catalog:

- Number of rows
- Number of pages used
- Size of indexes
- Value distribution within columns or indexes

You can use the remote support platform for SAP Business One to execute the `UPDATE STATISTICS` statement manually or as part of a scheduled task. You can also configure the remote support platform to create a job in the Microsoft SQL Server Agent, which updates statistics according to schedule.

## 9.1.3 Regular Tasks

Performing scheduled tasks is essential for ensuring database availability and minimizing the risk of data loss. Perform the following tasks on a regular basis, as determined by your database size and transaction volumes:

- Verify that the database server is running
- Verify that the backups run successfully
- Check the database
- Shrink the transaction log
- Monitor disk space

### 9.1.3.1 Verifying Database Servers Are Running

You must complete this task every morning. SAP Business One clients cannot work if the database server is not running.

#### Procedure

Run the SAP Business One client and log on to your database server. If you can log on, the database server is running.

Alternatively, you can use the System Status Report of the remote support platform for SAP Business One to automate the database verification process.


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## 9.1.3.2 Verifying Backups

Backups of your database are essential for recovering the SAP Business One system in case of failure. Use this procedure to verify that previous backups ran successfully.

Alternatively, you can use the remote support platform for SAP Business One to automate the backup verification process as part of a defined backup strategy.

### Procedure

1. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
2. Select the *Management* folder and check the SQL server logs.
3. Search for the last backup message.
4. Verify that the backup ran successfully and that the date fits the scheduled settings.

   The following is an example of a successful backup message:

   ```
   " Database backed up. Database: myDB, creation date(time): 2005/12/21(10:57:16),
   pages dumped: 502701, first LSN: 37211:18:108, last LSN: 37211:91:1, number of dump
   devices: 1, device information: (FILE=1, TYPE=DISK: {'E:\temp\bck\myDB'}). This is
   an informational message only. No user action is required."
   ```

## 9.1.3.3 Checking Databases

The SQL Server database uses disk space to store the database data files and the daily transaction log files. If you do not establish a schedule for the backup of the transaction log, the log file can grow too large, causing a decline in system performance. Ultimately, this can stop the database system.

The transaction log should not occupy more than 60–70% of the total available disk size. If it regularly exceeds this level between subsequent backups, you must save the transaction log more frequently. In SQL Server Management Studio, you can determine whether the data file and transaction log file are set to grow automatically.

In addition, check the utilization of table space and the content of error logs on a regular basis.

### Procedure

- To check the size of the data file and the transaction log file, do the following:
  1. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
  2. Select the database for which you want to check the transaction log size.
  3. Right-click the selected database and choose *Reports* → *Standard Reports* → *Disk Usage*. In the right pane, you can see the report.
  4. Verify that there is enough free space, based on your organization's needs, for both the data file and the transaction log.


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- To set grow options for database files, do the following:
  1. Open SQL Server Management Studio and select a database.
  2. Right-click the selected database and choose *Properties*.
  3. In the *Properties* window, from the menu on the left, choose *Files*.
  4. The database files appear in the right pane.
  5. In the *Autogrowth* field, set a value according to your organization's needs.
- To check error logs, do the following:
  1. Open SQL Server Management Studio.
  2. Select the *Management* folder and check the *SQL Server Logs* folder.
  3. Check for error messages and verify that no problems have occurred.

### 9.1.3.4 Shrinking Transaction Logs

Shrinking the transaction log file frees up disk space and minimizes the risk of data loss. Shrinking the transaction log does not reduce the size of a physical log file. It removes enough inactive virtual logs to reduce the log file to the requested size. Use this procedure to shrink the transaction first virtually and then physically.

In addition, you can use the remote support platform for SAP Business One to shrink the transaction log manually or as part of a scheduled task. You can also configure the remote support platform to create a job in the Microsoft SQL Server Agent, which shrinks the transaction log according to schedule.

#### Procedure

1. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
2. Select the required system database.
3. Right-click the selected database and choose *New Query*.

   The right pane displays the *Query* window.
4. In the *Query* window, enter the following command:

   ```
   BACKUP LOG <sid> WITH NO_LOG
   ```

   Where:

   **<sid>** is name of the database, for example `sbodemo_us`

   Right-click anywhere on the query tab and choose *Execute*.

   This statement reduces the size of the logical log. It removes the inactive part of the log, without making a backup copy, and truncates the log.

   Specifying a backup device is unnecessary because the log backup is not saved.

   After you back up the log using `NO_LOG`, the changes recorded in the log are not recoverable. For recovery purposes, execute a manual backup of your database. For more information, see SAP Note 557412.
5. To reduce the size of the physical log file, enter the following command:

   ```
   DBCC SHRINKFILE (<name_logfile>, <size>)
   ```


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**<name_logfile>** is the logical name of the shrunk file, for example `sbodemo_us_log`

**<size>** is the required size for the file, in megabytes, expressed as an integer. If the size is not specified, `DBCC SHRINKFILE` reduces the size to the default file size, for example 10 MB.

Right-click anywhere on the query tab and choose *Execute*.

> **Note**
>
> In SQL Server, a `DBCC SHRINKDATABASE` or `DBCCSHRINKFILE` operation attempts to shrink the physical log file to the requested size (subject to rounding).

### 9.1.3.5 Monitoring Disk Space

We recommend that you regularly check the amount of free space available on the disk. You can use the System Status Report of the remote support platform for SAP Business One to automate the process of monitoring the amount of free disk space.

## 9.1.4 Backing Up Databases

This section provides an introduction to backups and information about the necessity of a backup strategy. 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.

With SAP Business One, we recommend backing up your application database regularly.

> **Caution**
>
> SAP Business One can save the configuration data only when you have write and read access to the user profile folder.

You can use the following characters for a company database name:

- A-Z
- a-z
- 0-9
- Underscore (_)

Note that spaces are not allowed. In addition, the database name must start with A-Z or a-z.

### 9.1.4.1 Backup Strategies

To choose the appropriate backup-and-restore strategy, you need to identify the requirements for the availability of your data. Your overall backup strategy should define the type and frequency of backups and the nature and speed of the hardware.


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Consider the complexity of each strategy. Full backups are easy to implement. If you are considering backing up your transaction log as well, test all backup-and-restore procedures intensively.

When choosing your backup strategy, you can use the following methods:

- Full Backup

  In Microsoft SQL Server, a full backup is a consistent copy of your database at a certain time. Since only used objects are saved, normally the copy is smaller than the original database. Full backups should be scheduled for a time when there is a low load on the database server.

- Differential Backup

  A differential backup is a backup of all data that has changed since the last full backup was performed. Compared with full backups, differential backups consume less time and disk space, but can result in a longer amount of time required to restore data.

- Transaction Log Backup

  The Transaction Log is a serial record of all the transactions that have been performed on the database since the transaction log was last backed up. With transaction log backups, you can recover the database to a specific point in time or to the point of failure.

  The transaction log grows over time. If the transaction log exceeds a certain size, it can cause problems in Microsoft SQL Server. To prevent those problems, we recommend doing regular backups of the transaction log, which truncates the transaction log.

- Backup of SAP Business One Subdirectories

  To avoid data loss, you must back up regularly the following subdirectories of SAP Business One:

  - `...\Program Files\SAP\SAP Business One\Attachments\`
  - `...\Program Files\SAP\SAP Business One\Bitmaps\`
  - `...\Program Files\SAP\SAP Business One\ExclDocs\`
  - `...\Program Files\SAP\SAP Business One\WordDocs\`

  These directories contain Microsoft Word and Microsoft Excel documents and bitmaps. To store the backed up directories, you can use a file archiving application.

  **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

  Consider how much time you would need to invest in retrieving your data manually after a data loss. After installing or upgrading SAP Business One, perform a full backup of the SBO_DB database.

## 9.1.4.2 Backup Types

You can back up your data using the backup functionality of remote support platform for SAP Business One or SQL Server Management Studio, using one of the backup types described below:


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- Full Backup and Differential Backup and/or Transaction Log Backup Using the Remote Support Platform for SAP Business One

  This backup type saves backup data to a network folder. The setup is relatively simple, and you can configure the remote support platform to automatically perform scheduled backups according to a defined strategy. The remote support platform can also backup SAP Business One subdirectories.
- Full Backup Using Microsoft SQL Server Management Studio

  This backup type can save the backup data directly to tape. If you save the backups on disk, ensure the backup is copied to another medium, such as another hard disc, DVD, or tape.

  Do a manual backup of the files and directories of your hard disk.
- Full Backup and Transaction Log Backup Using Microsoft SQL Server Management Studio

  **Note**

  To use SQL Server Management Studio to perform transaction log backups, you should have already selected the Full recovery model option.

  The advantage of this type of backup is that the monitoring is partly automated and you can save the backups directly to a tape. You can also add alerts. Disadvantages include a relatively complicated setup and the need to manually back up the subdirectories of SAP Business One. However, SAP Business One does not fully support all of the features available with SQL Server Management Studio; therefore, if you require support from SAP in the future, your database backup may not be fully compatible.

  **Note**

  - Full Recovery — You can perform accumulated backups and move back to a specific point in time.
  - Simple Recovery — You can back up only the whole database; after the restoration, the database goes back to exactly the same point at which it was backed up.

  **Example**

  The following table summarizes the main options for each backup type:

| Backup Type | Full Backup and Differential Backup and/or Transaction Log Backup | Full Backup | Full Backup and Transaction Log Backup |
|---|---|---|---|
| Tool | Remote support platform for SAP Business One | Microsoft SQL Server Management Studio | Microsoft SQL Server Management Studio |
| Recovery model | Full | Simple | Full |
| Installation effort | Low | Medium | High |
| Monitoring effort | Low | Medium | Medium |
| Backup destination | Disk or network share | Disk or tape | Disk or tape |
| Automatic file backup | Yes | Yes | No |


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| Backup Type | Full Backup and Differential Backup and/or Transaction Log Backup | Full Backup | Full Backup and Transaction Log Backup |
|---|---|---|---|
| Complexity | Low | Medium | High |

> **Note**
>
> SAP Business One Product Support only accepts backups on destination disks. If you back up on tape, you must first restore it from there, and back it up again, using a destination disk, prior to sending it to SAP Support.

### 9.1.4.3 Troubleshooting Backups

To ensure that your database backups are successful, check your server at regular intervals. Ensure that you have enough disk space on the server on which your database is stored. If you store your backup on another server, check that there is enough free space.

The basic checks include:

- Drive space
- Disk subsystem errors
- Tape drive errors
- Event Viewer
- Regular evaluation of your recovery and restore process

#### Procedure

1. To check the disk space, do the following:
   1. In the Microsoft Windows *My Computer* window, right-click *Hard Disk Drives* and choose *Properties*. The *Properties* window appears.
   2. Check the free space on your hard disk.

      The free space you need on your hard disk depends on the volume of data you process each day.

      Depending on the disk system and the tape drive, scan for disk errors at regular intervals. For more information, see your tape drive documentation.
2. To check whether errors occurred in the operating system or on the database server, do the following:
   1. In Windows, choose *Start* → *Control Panel* → *Administrative Tools* → *Event Viewer*.
      - Events that occur in the system are stored in three different logs. Within these logs, events are classified as Information, Warning, or Error.
      - Events that occur within the database server are stored in the *Application* folder. In the *Source* column of the application log, you can see the source application for a specific event.
   2. Double-click an event to display more information.
   3. In the Application Log, look for error events that may indicate backup failures.


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If you perform network backups, look for network errors in the System and Application logs.

## 9.1.5 Restoring Databases

If a failure damages the system, restoring the database restores the integrity of the data in most cases. Ideally, the downtime of the system will be minimal and no data should be lost. Develop a restore strategy that considers the maximum downtime allowed for your system, and estimate how much time you need to react to a system failure. Analyze the problem and take appropriate measures.

You may be required to change hardware or reinstall the operating system before restoring your database.

Ensure that an employee familiar with the restore procedures is available at all times. Testing of the restore procedures improves the chances of a successful and fast recovery of your data. We recommend doing test backups and test restores at regular intervals.

Restore the database in the following situations:

- Hardware failure
- Migration to a new hardware
- Logical errors
- Virus
- Testing

### 9.1.5.1 Restore Checklist

The steps below comprise a general procedure for restoring data. You may find that you do not need to perform each step for your particular case.

1. Analyze the problem.
2. If possible, save the current active transaction log.

   **Note**

   If the database fails, but Microsoft SQL Server is still available, the transaction log contains data that has not been saved yet. You can save it only if the following are not damaged:

   - Hard disk on which the transaction log is saved
   - Hard disk on which the executable files are located

   If you cannot save the transaction log, you can only restore the changes that occurred after the backup of the last transaction log.
3. Use the necessary hardware.
4. Configure your database server.
5. Restore your last full backup.
6. Restore the transaction log.
7. Test all executed measures.
8. Release to productive operation.


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## 9.1.5.2 Saving Current Transaction Logs

> **Caution**
>
> Before you start the restore process, verify that the installed service pack has not changed since the time of the backup.

### Procedure

1. Insert a new tape and, to open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
2. Select the relevant database, right-click it, and choose the *New Query* menu.
3. In the *Query* window, run the following command:

   ```
   BACKUP LOG <sid> TO <tape> WITH NO_TRUNCATE, FORMAT
   ```

   Where:

   **<sid>** is name of the database, for example, sbodemo_us

   **<tape>** is your backup tape name (case sensitive)
4. After saving the transaction log file, you can change any damaged hardware and, if necessary, reinstall your operating system and your Microsoft SQL Server database, as described in *Installing SAP Business One*.
5. Restore your last full database backup.

   The database is now in the same condition as it was when the backup was carried out. After you restore the transaction logs, finished transactions are applied to the database again.
6. Perform a rollforward until the end of the transaction log.

   The database is now in the same condition as it was at the time of the last transaction log backup. Since this condition is not consistent, perform a rollback for all unfinished transactions.

   The <msdb> database stores the history of backups and of restore operations in the backup set and backup file of the tables. If the msdb database is available, the recovery is based on the saved history in msdb. For more information, see *Restoring Data When msdb Is Available*.

   If the system database msdb is not available, you have to restore it and reconstruct the history. For more information, see *Restoring Data When msdb Is Unavailable*.

   > **Recommendation**
   >
   > To ensure a successful restore operation, you can test the restore process against a test database. If you use the transaction log file, we recommend testing all procedures thoroughly.

## 9.1.5.3 Restoring Backup Files and Application Folders

To restore backup files and application folders, perform the following procedures:

1. Extract the files from the backup archive, including:
   - Database backup .zip file
   - Application folder backup archive files


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2. Extract the application folder backup archive files to separate folders.
3. Manually copy the extracted files back to the original shared folders.

### 9.1.5.4 Restoring Data When msdb Is Available

This procedure provides instructions for restoring your database when the database msdb is available. When you use the history function, the last backups are selected automatically.

#### Procedure

1. To enable the system to restore the database, close SAP Business One.
2. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
3. Right-click the required database and choose *Tasks* → *Restore* → *Database*.

   A list of performed backups appears. The last full backup and the subsequent transaction log backups are selected automatically.
4. In the *Restore Database* window, on the *Options* tab, select the following options:
   - *Overwrite over existing database* — To overwrite the existing database, select this option.
   - *Preserve the replication settings*
   - *Prompt before restoring each backup* — Prompt the user before restoring each backup to prevent a user from inadvertently restoring a backup.
   - *Restrict access to the restored database*
   - *Restore database file as* — In the *Restore As* column, change the path name if you are restoring the database on a different server.

     **Note**

     To specify the .bu file, do the following:

     1. In the *Microsoft SQL Server Management Studio* window, on the *General* tab, select the *From Device* radio button and choose *Browse*.
     2. In the *Specify Backup* window, choose *Add*.
     3. In the *Locate Backup File <computer_name>* window, from the *Files of Type* dropdown list, select *All Files*.
     4. In the hierarchy tree, specify the .bu file that you want to restore.
     5. Choose *OK*.
5. To confirm, choose *OK*.

   The system starts the database restore process.
6. Wait until the following message is displayed:

   ```
   Restore of Database <databasename> completed successfully.
   ```

SQL Server copies the data from the backups, restoring the database and creating all dependent files.


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## 9.1.5.5 Restoring Data When msdb Is Unavailable

This section provides instructions for restoring your database when the history in the database <msdb> is not available, for example, after you reinstall SQL Server. For this procedure, you need your last full backup and all subsequent backups of the transaction log.

### Procedure

1. To enable the system to restore the database, close SAP Business One.
2. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
3. Create a new database as follows:
   1. Right-click the *Databases* folder and choose *Tasks* → *Restore* → *Database*.

      The *Restore Database* window appears.
   2. Specify a name for your new database (the name of your company in SAP Business One).
4. Right-click the new database and choose *Tasks* → *Restore* → *Database*.
5. Select the *Restore: From Device* option and choose *Browse*.
6. In the *Specify Backup* window, choose *Add*.
7. In the *Locate Backup File* window, locate and select the file containing your last full backup.

   Choose *OK*.
8. In the *Specify Backup* window that opens, locate and select the file containing your last full backup.

   Choose *OK*.
9. In the *Restore Database* window, select the required back sets and on the *Options* tab make the following settings:
   - Select the *Overwrite the existing database* checkbox.
   - Under the *Restore As* column, change the path, if necessary, for example, if you are restoring the database on a different server where the path name does not exist.
   - In the *Recovery completion state* area, select the *Leave database non-operational but able to restore additional transaction logs* option.

     Choose *OK*.
     The system starts restoring the database.
10. Wait for the following message:

    ```
    Restore of Database <sid> completed successfully.
    ```

    Continue to the procedure for restoring transaction logs.

## 9.1.5.5.1 Restoring Transaction Logs

### Procedure

1. Right-click the database you want to restore and choose *Task* → *Restore* → *Transaction Log*.


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2. Select the *Restore: From Device* option and choose *Browse*.
3. In the *Specify Backup* window, choose *Add*.
4. In the *Locate Backup File* window that appears, locate and select the file containing your last full backup.

   Choose *OK*, and do the same in the *Specify Backup* window that appears.
5. In the *Restore Database* window, on the *Options* tab, make the following settings:
   - Select *Overwrite the existing database*.
   - Under the *Restore As* column, change the path, if necessary, for example, if you are restoring the database on a different server where the path name does not exist.
   - In the *Recovery completion state* area, select the *Leave database not operational but able to restore additional transaction logs* option.
   - Choose *OK*.

     The system starts to restore the database.
6. Repeat this procedure for all transaction logs.

When you reach the last transaction log, in the *Recovery Completion State* pane, select the *Leave database operational option*. No additional transaction logs can be restored.

### 9.1.5.6 Troubleshooting Restore

The only way to verify that you can do so is to regularly restore backups using the same medium that you would use in disaster recovery.

> **Recommendation**
>
> At regular intervals, perform the procedures that would take place in case of a disaster, including the restore process of full and transaction log backups.

## 9.2 Data Transfer Workbench for SAP Business One

SAP Business One implementations require you to move data from legacy systems to the new SAP Business One system. Business data (such as customers, vendors, and products) must be available in the new system before it goes live.

Data Transfer Workbench provides a wizard that imports new data into SAP Business One and updates existing data. To simplify the preparation of data for the import, SAP provides predefined data file templates. Data Transfer Workbench records import activities so you can track the data migration process.

For more information, see the Data Transfer Workbench online help file in the document resource center.

The data migration process consists of the following tasks:

1. Extracting data files from your legacy system
2. Cleaning data
3. Mapping data and converting data
4. Importing data into SAP Business One
5. Checking the results of the import


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## 9.3 Stored Procedures

The stored procedures listed below are all used in the SAP Business One application. The first table is for the SBO-COMMON database and the second one is for the company database.

> **Caution**
>
> You must not rename or remove any of the items in the list; otherwise, errors may occur when running SAP Business One.

### SBO-COMMON Database Procedures

| SBO- COMMON Procedures |
|---|
| ClearEnumValues |
| DeleteAllEnumsAndClasses |
| DeleteAllObjects |
| DeleteAllPropertyDefs |
| DeleteClassDef |
| DeleteDependentProperties |
| DeleteEnumType |
| DeleteMetaObject |
| DeleteMetaProperty |
| DeleteMetaRelation |
| DeletePropertyDef |
| InsertClassDef |
| InsertClassDefId |
| InsertEnumType |
| InsertEnumTypeId |
| InsertEnumValue |
| InsertMetaObject |
| InsertMetaProperty |
| InsertMetaRelation |
| InsertPropertyDef |
| InsertPropertyDefId |
| NumberPropertyDefs |


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| SBO- COMMON Procedures |
| --- |
| NumberRelations |
| OBSSp_GetNextExecFromSchedule |
| OBSSp_GetServiceRecord |
| OBSSp_UpdateScheduleRecord |
| OBSSp_UpdateServiceExec |
| RGSp_UpdateInstance |
| RGSp_UpdateLicense |
| TmSp_AliasUpdate |
| TmSP_CheckDiskSpace |
| TmSp_CopyCompany |
| TmSp_GetCompList |
| TmSP_GetDbSizeByDrives |
| TmSp_GetServerTime |
| TmSp_GetUsers |
| TmSp_Installer_CreateTmSp |
| TmSp_Installer_SetFieldValue |
| TmSp_RefreshCompList |
| TmSp_RestoreCompany |
| UpdateClassDef |
| UpdateEnumType |
| UpdateMetaObject |
| UpdateMetaProperty |
| UpdateMetaRelationSeqNo |
| UpdatePropertyDef |
| UpdatePropertyDefSeqNo |
| ClearEnumValues |
| DeleteAllEnumsAndClasses |
| DeleteAllObjects |
| DeleteAllPropertyDefs |
| DeleteClassDef |
| DeleteDependentProperties |


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| SBO- COMMON Procedures |
| --- |
| DeleteEnumType |
| DeleteMetaObject |
| DeleteMetaProperty |
| DeleteMetaRelation |
| DeletePropertyDef |
| InsertClassDef |

## Company Database Procedures

| Company Database Procedures |
| --- |
| _TmSp_AliasUpdate_OUSR |
| _TmSp_AliasUpdateAfter |
| _TmSp_AliasUpdateBefore |
| _TmSp_ControlAccountUpgrade_OCRD |
| _TmSp_ConvertGrpLine_OACT |
| _TmSp_ExpnsUpdateOnDocs |
| _TmSp_FormattedSearchUpdate |
| _TmSp_MthDate_Update_JDT1 |
| _TmSp_RestoreIsCommited_OIBT |
| _TmSp_SetCategoryAtOFPR |
| _TmSp_SetLineNumAtADO3 |
| _TmSp_SetLineNumAtDOC3 |
| _TmSp_SetLineNumAtDOC5 |
| _TmSp_SetLineSeqAtDOC4 |
| _TmSp_SetLineSeqAtPMN5 |
| _TmSp_SetUniqueDocEntryAtOCRD |
| _TmSp_ShekelUpdate |
| _TmSp_UpdateCreateDateOnOINM |
| _TmSp_UpdateDoubleName |
| _TmSp_VariableUpdate_OUQR |
| _TmSp_VatSumCalc |


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| Company Database Procedures |
| --- |
| SBO_SP_PostTransactionNotice |
| SBO_SP_PostTransactionSupport |
| SBO_SP_TransactionNotification |
| SBO_SP_TransactionSupport |
| TmSp_adding_To_OITW |
| TmSp_AddSqlUser |
| TmSp_ChooseCIN4Correction |
| TmSp_ChooseINV4Correction |
| TmSp_ConGrpLine_OACT_recurs |
| TmSp_ConvertGrpLine_OACT |
| TmSp_CorrActReport |
| TmSp_CorrActReport_BP |
| TmSp_CorrActReport_BP_Split |
| TmSp_CorrActReport_Split |
| TmSp_DragOn |
| TmSp_DragOnPk |
| TmSp_FifoGetINM_Records |
| TmSp_GetDocVatTotals |
| TmSp_GetMaxRange |
| TmSp_GetOpenRCTs |
| TmSp_GetOpenRINs |
| TmSp_GetUsers |
| TmSp_GetWDD |
| TmSp_Installer_SetFieldValue |
| TmSp_OpportAnalysis |
| TmSp_OpportAnalysis_CRD |
| TmSp_OpportAnalysis_ITM |
| TmSp_OpportAnalysis_SLP |
| TmSp_OutboxSync |
| TmSp_PicknPackCreateTempTable |
| TmSp_Purch_An_Crd_Det_Y |


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| Company Database Procedures |
| --- |
| TmSp_Purch_An_Crd_Grp_M |
| TmSp_Purch_An_Crd_Grp_Y |
| TmSp_Purch_An_Crd_Sng_M |
| TmSp_Purch_An_Crd_Sng_Y |
| TmSp_Purch_An_Itm_Det_Y |
| TmSp_Purch_An_Itm_Grp_M |
| TmSp_Purch_An_Itm_Grp_Y |
| TmSp_Purch_An_Itm_Sng_M |
| TmSp_Purch_An_Itm_Sng_Y |
| TmSp_Purch_An_Slp_Sng_M |
| TmSp_Purch_An_Slp_Sng_Y |
| TmSp_RebuildAcctMatch |
| TmSp_RebuildMatchHistory |
| TmSp_Replace_Table |
| TmSp_Sales_An_Crd_Det_Y |
| TmSp_Sales_An_Crd_Grp_M |
| TmSp_Sales_An_Crd_Grp_Y |
| TmSp_Sales_An_Crd_Sng_M |
| TmSp_Sales_An_Crd_Sng_Y |
| TmSp_Sales_An_Itm_Det_Y |
| TmSp_Sales_An_Itm_Grp_M |
| TmSp_Sales_An_Itm_Grp_Y |
| TmSp_Sales_An_Itm_Sng_M |
| TmSp_Sales_An_Itm_Sng_Y |
| TmSp_Sales_An_Slp_Sng_M |
| TmSp_Sales_An_Slp_Sng_Y |
| TmSp_SetBalanceByJdt |
| TmSp_SetBgtAccumulators_ByJdt |
| TmSp_SetGlStamp |
| TmSp_SetVendorDeductPercent |
| _TmSp_AliasUpdate_OUSR |


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| Company Database Procedures |
| --- |
| _TmSp_AliasUpdateAfter |
| _TmSp_AliasUpdateBefore |
| _TmSp_ControlAccountUpgrade_OCRD |
| _TmSp_ConvertGrpLine_OACT |
| _TmSp_ExpnsUpdateOnDocs |
| _TmSp_FormattedSearchUpdate |
| _TmSp_MthDate_Update_JDT1 |
| _TmSp_RestoreIsCommited_OIBT |
| _TmSp_SetCategoryAtOFPR |
| _TmSp_SetLineNumAtADO3 |
| _TmSp_SetLineNumAtDOC3 |
| _TmSp_SetLineNumAtDOC5 |
| _TmSp_SetLineSeqAtDOC4 |
| _TmSp_SetLineSeqAtPMN5 |
| _TmSp_SetUniqueDocEntryAtOCRD |
| _TmSp_ShekelUpdate |
| _TmSp_UpdateCreateDateOnOINM |
| _TmSp_UpdateDoubleName |
| _TmSp_VariableUpdate_OUQR |
| _TmSp_VatSumCalc |
| SBO_SP_PostTransactionNotice |
| SBO_SP_PostTransactionSupport |
| SBO_SP_TransactionNotification |
| SBO_SP_TransactionSupport |
| TmSp_adding_To_OITW |
| TmSp_AddSqlUser |
| TmSp_ChooseCIN4Correction |
| TmSp_ChooseINV4Correction |
| TmSp_ConGrpLine_OACT_recurs |
| TmSp_ConvertGrpLine_OACT |
| TmSp_CorrActReport |


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| Company Database Procedures |
| --- |
| TmSp_CorrActReport_BP |
| TmSp_CorrActReport_BP_Split |
| TmSp_CorrActReport_Split |
| TmSp_DragOn |
| TmSp_DragOnPk |
| TmSp_FifoGetINM_Records |
| TmSp_GetDocVatTotals |
| TmSp_GetMaxRange |
| TmSp_GetOpenRCTs |
| TmSp_GetOpenRINs |
| TmSp_GetUsers |
| TmSp_GetWDD |
| TmSp_Installer_SetFieldValue |
| TmSp_OpportAnalysis |
| TmSp_OpportAnalysis_CRD |
| TmSp_OpportAnalysis_ITM |
| TmSp_OpportAnalysis_SLP |
| TmSp_OutboxSync |
| TmSp_PicknPackCreateTempTable |
| TmSp_Purch_An_Crd_Det_Y |
| TmSp_Purch_An_Crd_Grp_M |
| TmSp_Purch_An_Crd_Grp_Y |
| TmSp_Purch_An_Crd_Sng_M |
| TmSp_Purch_An_Crd_Sng_Y |
| TmSp_Purch_An_Itm_Det_Y |
| TmSp_Purch_An_Itm_Grp_M |
| TmSp_Purch_An_Itm_Grp_Y |
| TmSp_Purch_An_Itm_Sng_M |
| TmSp_Purch_An_Itm_Sng_Y |
| TmSp_Purch_An_Slp_Sng_M |
| TmSp_Purch_An_Slp_Sng_Y |


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| Company Database Procedures |
| --- |
| TmSp_RebuildAcctMatch |
| TmSp_RebuildMatchHistory |
| TmSp_Replace_Table |
| TmSp_Sales_An_Crd_Det_Y |
| TmSp_Sales_An_Crd_Grp_M |
| TmSp_Sales_An_Crd_Grp_Y |
| TmSp_Sales_An_Crd_Sng_M |
| TmSp_Sales_An_Crd_Sng_Y |
| TmSp_Sales_An_Itm_Det_Y |
| TmSp_Sales_An_Itm_Grp_M |
| TmSp_Sales_An_Itm_Grp_Y |
| TmSp_Sales_An_Itm_Sng_M |
| TmSp_Sales_An_Itm_Sng_Y |
| TmSp_Sales_An_Slp_Sng_M |
| TmSp_Sales_An_Slp_Sng_Y |
| TmSp_SetBalanceByJdt |
| TmSp_SetBgtAccumulators_ByJdt |
| TmSp_SetGlStamp |
| TmSp_SetVendorDeductPercent |
| TmSp_UpdatingOIT |


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# 10 Managing Security in SAP Business One

Your security requirements are not limited to SAP Business One 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.

- Data Storage Security — Provides recommendations for secure data storage in SAP Business One.

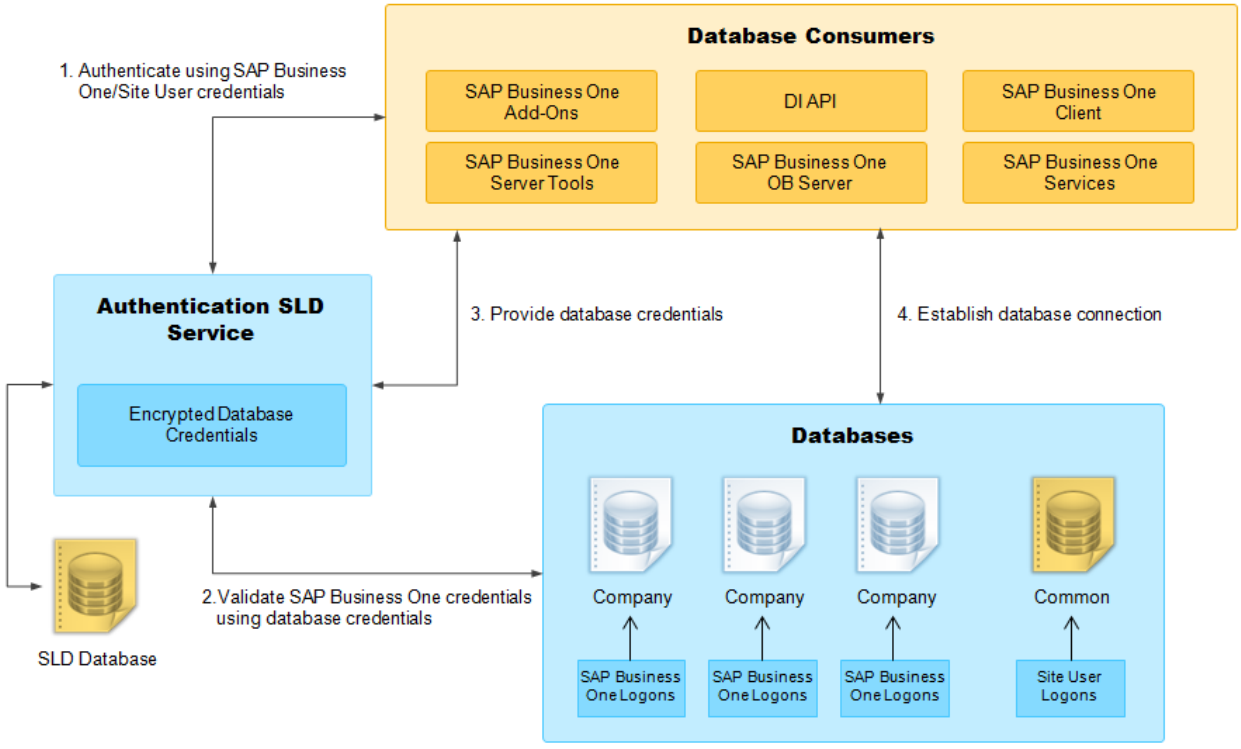
After establishing a security policy, we recommend that you dedicate sufficient time and resources to implementing and maintaining the required level of security.

## 10.1 Technical Landscape

In SAP Business One, the System Landscape Directory serves as the security server, which saves database credentials in the SLD database.

Database credentials are obtained by supplying SAP Business One logon credentials for authentication against the SLD service. Upon successful authentication, connections to common and company databases are established using database credentials from the SLD service.

The following figure provides an overview of the security workflow for SAP Business One.





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## 10.2 User Administration and Authentication

This section provides an overview of how SAP Business One supports an integrated approach to user management and authentication.

The table below shows the tools to use for user management and user administration with the SAP Business One.

**User Management Tools**

| Tool | Detailed Description | Prerequisites |
|---|---|---|
| System Landscape Directory | The System Landscape Directory (SLD) control center is a central workplace where you perform various administrative tasks. For more information, see Working with the System Landscape Directory. | You have the account information for the site super user (B1SiteUser). |
| SAP Business One Client | The application executable. For more information, see Client Components. | You have the SAP Business One user account with the user related permissions. |

### 10.2.1 User Types

It is necessary to specify different security policies for different types of users. For example, your policy may specify that individual users who perform tasks interactively have to change their passwords on a regular basis, but not users who process job runs. Therefore, SAP classifies these types of users in the application as follows:

#### 10.2.1.1 SAP Business One Site Users

The site user is not a company user type that can log on to the SAP Business One client application, but serves as site-level authentication for performing the following activities:

- Creating new companies
- Installing or upgrading SAP Business One
- Configuring security settings in the SLD service
- Registering database instances in the SLD service

For more information, see Managing Site Users.


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### 10.2.1.2 SAP Business One Company User

#### Superusers

A superuser can access all windows and perform all functions in SAP Business One, as well as limiting the authorizations of users that are not superusers. When you create a company, some predefined superusers exist in the system. For more information about superusers, see Standard Users.

#### Regular Users

You can define company regular users according to different business role requirements.

The responsibilities of a regular user are to perform the relevant business work in the SAP Business One application.

### 10.2.1.3 Microsoft Windows Domain User

You can assign appropriate Microsoft Windows domain users as SAP Business One site users to perform administrative tasks that require fewer privileges in the System Landscape Directory. One site user can be bound with more than one Windows domain account. For more information, see Managing Site Users.

You can also bind an SAP Business One company user account to a Microsoft Windows domain account. After starting the SAP Business One client, users can start using the application without being prompted to enter their SAP Business One logon credentials. One Windows domain account can be bound with more than one company. But in one company, one windows domain account can be bound with only one company user. For more information about the Microsoft Windows domain account authentication enablement, see Microsoft Windows Domain Account Authentication Enablement.

## 10.2.2 Standard Users

The table below shows the standard users that are necessary for operating SAP Business One.



Recommendation

For security reasons, we recommend that at the first logon, you create another standard user account as a substitute for the `default standard` user and disable the default user.



Recommendation

For security reasons, we recommend that at the first logon, you create another standard user account which is assigned only necessary authorizations as a substitute for the `default standard` user and disable the default user.


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| System | User ID | Type | Password | Description |
| --- | --- | --- | --- | --- |
| System Landscape Directory | `B1SiteUser` | Site user | The password defined during the SLD installation process. | It serves as site-level authentication for performing various administrative tasks with the following functions:<br>• Life cycle management: installation, upgrade, uninstallation<br>• Configuring services installed on Windows (for example, Workflow service)<br>• Company creation<br>For more information, see Managing Site Users. |
| SAP Business One Company | `manager` | Company superuser | **`manager:`** All except Hebrew<br>**`מנהל:`** Only for Hebrew | When you create a company, a predefined superuser named `manager` exists in the system. Due to the password policy, you must change the password of the `manager` user at the first logon.<br>You can also create new superusers. The responsibilities of a superuser include:<br>• Defining users in companies and setting user permissions<br>• Assigning licenses<br>• Configuring password policy at the company level<br>• Upgrading companies |
| | `AlertSvc` | Company superuser | A randomly generated password. You can change it when logging on with another superuser account. | The `AlertSvc` user is a default technical user used for the alert service. 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 don't.<br>You can change the default user to another user to execute the alerts.<br>**Note**<br>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. |


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| System | User ID | Type | Password | Description |
| --- | --- | --- | --- | --- |
| | | | | For security reasons, we recommend that at the first logon you change the default user to another user and disable the `AlertSvc` user.<br>For more information about changing the default user `AlertSvc`, see Alert and Scheduling Settings. |
| | `B1i` | Company superuser | A randomly generated password. You can change it when logging on with another superuser account. | The `B1i` user is a default technical user for the integration framework. The integration framework uses the `B1i` user to connect to SAP Business One (for example, to check authentication when using the mobile solution).<br>For more information, see Technical B1i User. |
| | `Workflow` | Company superuser | A randomly generated password. You can change it when logging on with another superuser account. | The `Workflow` user is a default technical user used for the workflow service. This technical user is used for logging in to DI and running the workflow script.<br>For more information about activating the `Workflow` user in SAP Business One Client, see *How to Configure the Workflow Service and Design the Workflow Process Templates* at SAP Help Portal. |
| | `Support` | Company superuser | A randomly generated password. You can change it when logging on with another superuser account. | A `Support` user (user code: `Support`) is created upon the installation or upgrade of SAP Business One companies. This new user is provided for support and consulting purposes.<br>The `Support` user does not require a license to access the system. This can minimize the disruption to business where a user may previously have needed to log off the system to free up a license for support.<br>**Note**<br>Certain advanced features (such as the analytics features) are not available for the `Support` user. |


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| System | User ID | Type | Password | Description |
| --- | --- | --- | --- | --- |
| | | | | While the `Support` user does not need a license, he has the same access rights as those of a user with a Professional User license. Therefore, strict usage rules are applied to the `Support` user to prevent misuse, as follows:<br>• After logging on to the company using the `Support` user account, the user must identify him/herself by entering his/her real name and selecting a login reason in the *Support User Login* window.<br>• The `Support` user account can only be used if the remote support platform (RSP) is active (an RSP system status report was uploaded within the last 7 days).<br>• The usage of the `Support` user is recorded (including the real name and the login reason). You can review the log records in the *Support User Log* window *under Administration -> License*.<br>**Note**<br>If you had already created a user account `Support` before upgrading companies, the `Support` user will have the features described above after the upgrade. The licenses assigned to the original user account, the password and all other settings for the original user account remain unchanged. You can transfer any license assignments of this account to another user because they are no longer required by the `Support` user. |


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## 10.2.3 User Management

This section provides an overview of user administration within SAP Business One.

### 10.2.3.1 Site User Management

The site user account serves as site-level authentication for performing various administrative tasks. This section provides information about how to change the site user password and how to assign a Windows domain user as a less-privileged site user.

#### 10.2.3.1.1 Password Encryption

In SAP Business One, a strong algorithm is used for data encryption and decryption. The site user ID and password are encrypted/hashed and saved in the System Landscape Directory.

For security reason, we recommend that the site user password be a strong password that has the following characteristics:

- Contains alphabetic, numeric, and special characters
- 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

> **Recommendation**
>
> If you have enabled single sign-on (SSO) functionality, we recommend that you bind the SAP Business One site user with a domain user. Then, when you start the SAP Business One System Landscape Directory control center, you can enter the control center without being prompted to enter the logon credentials.
>
> Alternatively, for security reasons, we recommend that you change the length of the site user password to a longer one (for example, twenty characters in length) since you do not need to use the site user password frequently.

You can change the site user password using the System Landscape Directory. To do so, proceed as follows:

1. To access the SLD service, in a Web browser, navigate to the following URL:

   **`https://<Server Address>:<Port>/ControlCenter`**

2. In the logon page, enter the site user name (`B1SiteUser`) and password, and then choose *Log On*.

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

3. On the *Security Settings* tab, in the *Site Password* area, choose *Change*.
4. In the *Change Site Password* window, enter the current password, and then enter and confirm the new password you want to use.


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5. To save the new password, choose *OK*.

#### 10.2.3.1.2 Domain Users as Less-Privileged Site Users

In the System Landscape Directory control center, you can assign a Windows domain user as a less-privileged site user. For more information, see Managing Site Users.

### 10.2.3.2 Company User Management

In SAP Business One, you can define, change or delete company users or change passwords according to different business role requirements.

#### 10.2.3.2.1 Defining Users

To define users, start the SAP Business One client A and navigate to the *Users-Setup* Window. For more information about defining users, see the online help of SAP Business One.

#### 10.2.3.2.2 Updating Users

**Procedure**

To update a defined user, do the following:

1. Log on to the SAP Business One client.
2. From the SAP Business One *Main Menu*, choose *Administration* → *Setup* → *General* → *Users*.
3. In the *Users-Setup* window, click the *Find* button on the toolbar and switch to *Find* mode.
4. Navigate to the user you want to update.
5. Update the user's information and click the *Update* button.

#### 10.2.3.2.3 Deleting Users

**Prerequisites**

- You have removed the licenses assigned to the user you want to delete. For more information, see the SAP Business One online help.


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- You have unbound the employee associated to the user you want to delete. For more information, see the SAP Business One online help.

### Procedure

To delete a defined user, do the following:

1. Log on to the SAP Business One client.
2. From the SAP Business One *Main Menu*, choose *Administration* → *Setup* → *General* → *Users*.
3. In the *Users-Setup* window, click the *Find* button on the toolbar to switch to *Find* mode.
4. Navigate to the user you want to delete.
5. Right-click anywhere in the *Users-Setup* window and choose *Remove*.

   The user is deleted, and it is not possible to add a new user with the same user code.

   > **Note**
   >
   > When you remove a company regular user in SAP Business One, the user is just marked as *Removed* but is not completely deleted from the database. If you have any requirement for data protection and privacy, see *How to Manage the Protection of Personal Data in SAP Business One* on SAP Help Portal.

## 10.2.3.2.4 Changing Passwords

As standard practice, SAP Business One authenticates users based on their user accounts and passwords.

You can change your password at any time. In addition, the application checks the password validity of each logon attempt according to the selected security level.

> **Note**
>
> To change your password, choose *Administration* → *Setup* → *General* → *Security* → *Change Password*.

If you are required to change your password, the application displays the *Change Password* window. You must change the password to log on.

The new password must comply with the settings of the selected security level, containing at least:

- x characters
- x lowercase
- x uppercase
- x digits
- x non-alphanumeric

The application saves passwords in the database in encrypted form. The last *n* passwords are also encrypted. When appraising a new password, the application first encrypts and then compares it with the saved ones.

The password policy defines global guidelines and rules for password settings, such as the following:

- Time interval between password changes
- Required and forbidden letters and characters
- Minimum required number of characters
- Number of logon attempts before the system locks the user account


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The password policy improves the security of SAP Business One and enables administrators to apply the required security level for their organization.

> **Note**
>
> Only a superuser can change the security level. You can use the *Password Administration* window to change the security level. To open the window, choose *Administration* → *Setup* → *General* → *Security* → *Password Administration*.

SAP Business One supports the following approaches to raising the security level of user authentication:

- Increase the complexity of the password.
- Increase the frequency of password changes.

For more information about working with passwords in SAP Business One, see SAP Note 978292.

### 10.2.3.3 Microsoft Windows Domain Account Authentication Enablement

SAP Business One supports single sign-on (SSO) functionality. You can bind an SAP Business One user account to a Microsoft Windows domain account.

> **Note**
>
> SAP Business One supports only Microsoft Windows accounts to be bound with SAP Business One user accounts.

After starting the SAP Business One client, you can start using the application without being prompted to enter your SAP Business One logon credentials.

> **Caution**
>
> To be able to use the single sign-on function, you must have specified a domain user and password during installation of the System Landscape Directory. Otherwise, even if you have performed all the following steps to set up single sign-on, you still cannot single sign-on to SAP Business One using domain user accounts.

To use the single sign-on function, you must complete the following steps:

1. Register a Service Principal Name (SPN).
2. Bind SAP Business One users to Microsoft Windows accounts.
3. Enable the single sign-on function in the SLD.

#### 10.2.3.3.1 Registering the Service Principal Name

To enable Windows domain single sign-on with SAP Business One, you must register a service principal name (SPN) for the SLD service. The SPN can be registered before or after you install the System Landscape Directory. Nevertheless, if you register the SPN after the installation, the domain user account used for installation must be used for SPN registration.


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Recommendation

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

### Prerequisites

You are a domain administrator or have been delegated the appropriate authority.

### Procedure

1. On a Windows computer, run the command prompt as an administrator.
2. Run the following `setspn` command: **`setspn -U -A <SPN> <Domain User Name>`**.

   An example of an SPN is **`SLD/Domain.com`**.

## 10.2.3.3.2 Binding SAP Business One Users to Microsoft Windows Accounts

After you bind SAP Business One users to Microsoft Windows domain accounts, the users can log on to SAP Business One without specifying their user credentials.

### Manual Binding

The following procedure describes how to bind SAP Business One users individually:

1. From the SAP Business One *Main Menu*, choose *Administration* → *Setup* → *General* → *Users*.
2. In the *Users - Setup* window, in the *User Code* field, specify the user that you want to bind.
3. In the *Bind with Microsoft Windows Account* field, enter the domain and user name of the Microsoft Windows domain account to which you want to bind the user.

   Caution

   The domain user name is case-sensitive. Therefore, you must ensure that you enter the domain user name exactly as it was created in the domain, including the letter case.
4. Choose *Update*.


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## 10.2.3.3.3 Copying User Mappings Between Companies

You can copy user mappings between two companies provided that the same user exists in both companies. Each user is identified by the user code (not the user name).

Typical scenarios for this function are as follows:

- You have moved your company schema from a test system to a productive system.
- You have moved your company schema to another server.
- You have imported and renamed your company schema (the old schema also exists on the same server).

To copy user mappings, do the following:

1. Log on to the System Landscape Directory in a Web browser.
2. On the *Security Settings* tab, in the *Authentication* section, choose *Copy User Mappings*.
3. In the *Copy User Mappings Between Companies* window, specify the source and target companies.

   > **Note**
   >
   > To be available for selection, the servers must be registered in the System Landscape Directory. However, the company schema versions do not matter.

4. To display SAP Business One users whose mappings can be copied, choose *Check*.

   If a user exists only in the source company but is bound to a domain account, the user is displayed as missing in the target company. However, if a user exists only in the target company, the user is not displayed.

5. To copy user mappings to the target company, choose *Copy*.

## 10.2.3.3.4 Enabling Single Sign-On

After you enable SSO, the *Choose Company* window displays only the companies to which your Windows account is bound.

> **Caution**
>
> Enabling SSO in the SLD activates this functionality for all companies in the landscape.

### Procedure

1. In a Web browser, navigate to the following **`URL: https://<Server Address>:<Port>/ControlCenter`**.

   A Web browser opens and displays the logon page for the SLD service.

2. In the logon page of the Web browser, enter the site user name and password, and then choose *Log On*.

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

3. On the *Security Settings* tab, select the checkbox *Enable Single Sign On (Log On Using Windows Domain Account)*.


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If you did not choose to activate the single sign-on function during installation of the System Landscape Directory, this checkbox is deselected and not editable.

4. If you want to prevent logons using SAP Business One user accounts and enforce single sign-on using domain accounts, select the checkbox *Disable logons with SAP Business One User Accounts*.

   If you keep this checkbox deselected, users can log on using both SAP Business One user accounts and Windows domain accounts.

5. Choose *Update*.

### Result

Each user must confirm the binding upon first logon. After confirmation, the user can log on to SAP Business One, using the bound Windows account.

> **Caution**
>
> The first time you single sign-on to SAP Business One using your domain user account, ensure you have logged on to the Windows system using the correct domain user name (case sensitive). If not, log off and then log on again using the correct user name; otherwise, single sign-on will not work.

If the system administrator has **not** disabled logons using SAP Business One user accounts, you can still log on with an SAP Business One user account (which does not have to be bound to a Windows account), as below:

1. In the logon window, deselect the *Logon with Windows Account* checkbox (or in the *Choose Company* window, deselect the checkbox *Log on with Current Domain User*).
2. Manually enter the company schema name.
3. Enter your SAP Business One user name and password.
4. Choose *OK*.

> **Caution**
>
> If the system administrator has disabled logons using SAP Business One user accounts, you must bind each SAP Business One user to a Windows account and each user must confirm the binding; otherwise, logon is not possible.

## 10.2.4 User Authentication

As standard practice, SAP Business One authenticates users based on their user accounts and passwords. You can change your password at any time. For more information about working with passwords in SAP Business One, see Changing Passwords.

Simultaneously, SAP Business One supports single sign-on (SSO) functionality by using the following approaches:

- On Web pages, SSO is accomplished using Security Assertion Markup Language (SAML) 2.0 and the System Landscape Directory (SLD) is the Identity Provider.

  > **Example**
  >
  > In a Web browser, when you navigate to the SAP Business One job service URL, **`http://<Server Address>:<Port>/job`**, you are redirected to the SLD logon page. After finishing the authentication on the SLD logon, you go back to the previous job service page.


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- On native applications, for example, on the SAP Business One client, if you enabled Microsoft Windows domain account authentication, SSO is accomplished using Kerberos. For more information about binding an SAP Business One user account to a Microsoft Windows domain account and enabling single sign-on, see Microsoft Windows Domain Account Authentication Enablement.

## 10.3 Authorization

Authorizations allow users to view, create, and update documents that you assign to them, according to data ownership definitions. By default, a new user has no authorizations. Each user can have only one manager who assigns permissions.

You can define users as either regular users or superusers.

- Regular Users:
  - Can perform certain actions, for example, award discounts, change prices, or access confidential accounts, with the proper authorizations.
  - Cannot assign authorizations to other users.
- Superusers:
  - Have full and unrestricted authorization to access users in the system, apart from to their own logins.
  - Automatically have full authorization to access all functions in the system.
  - Can define authorizations and permissions for other users.

For more information about SAP Business One user authorization, see the SAP Business One online help.

## 10.4 Network and Communication Security

We strongly recommend using SAP Business One in trusted environments only (corporate LAN with firewall protection).

To work with SAP Business One outside your corporate networks, you can use Citrix or similar third-party solutions.

### 10.4.1 Communication Channels

TCP/IP provides the communication channels between the following:

| Client Side | Server Side | Protocol Used |
|---|---|---|
| Agent of SAP Business One Clients | System landscape directory | HTTPS |
| Agent of SAP Business One Clients | The shared folder b1_shf | SAMBA |


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| Client Side | Server Side | Protocol Used |
|---|---|---|
| Agent of SAP Business One remote support platform | SAP Business One server | ODBC |
| IM service | Company database | JDBC |
| Integration framework | Company database | JDBC |
| Integration framework | Integration framework database | JDBC |
| Integration framework | SAP Business One license server | HTTPS |
| Job service | Company database | JDBC |
| Job service | SMTP server | SMTP |
| Job service | System landscape directory | HTTPS |
| Mobile service | System landscape directory | HTTPS |
| SAP Business One Clients | Company database | ODBC |
| SAP Business One Clients | IM service | HTTPS |
| SAP Business One Clients | System landscape directory | HTTPS |
| SAP Business One Clients | The shared folder B1_SHR | SAMBA |
| SAP Business One Clients | Workflow service | HTTPS |
| SAP Business One DI API | Company database | ODBC |
| SAP Business One DI API | System landscape directory | HTTPS |
| System landscape directory | Domain controller | LDAP, Kerberos |
| System landscape directory | Service unit database | JDBC |
| System landscape directory | System landscape directory database | JDBC<br>(can be encrypted via SSL) |
| Web browser | Integration framework | HTTP or HTTPS |
| Web browser | System landscape directory | HTTPS |
| Web browser | Workflow service | HTTPS |
| Workflow service | Company database | JDBC |

## 10.4.2 Configuring Services with Secure Network Connections

To make communication safer, we recommend that you configure the SAP Business One services with secure network connections.


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## 10.4.2.1 Server Tools

### 10.4.2.1.1 CORBA License Server

The default port for the CORBA license server is `30000` or `30001`. The CORBA license server enforces secure connection via CORBA.

The CORBA license server now is the proxy of the HTTPS license server only for compatibility purposes and may be removed in future patches. We do not recommend you use SAP Business One Service Manager to configure the license service.

### 10.4.2.1.2 Components in Shared Tomcat

In SAP Business One, the following components share the same Tomcat:

- System Landscape Directory
- License Service (HTTPS)
- Job Service
- Extension Manager
- You can configure the components with the same network security settings as follows:
- The default port is `40000`. This port should be exposed to the Internet if you need to use some SAP Business One components on Internet.
- The components enforce secure connections via HTTPS encryption with TLS version 1.0 or 1.1 or 1.2; the corresponding TLS cipher suites are listed as follows:
  - `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,`
  - `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA384,`
  - `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA,`
  - `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256,`
  - `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA384,`
  - `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA,`
  - `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA256,`
  - `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384,`
  - `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA,`
  - `TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA256,`
  - `TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384,`
  - `TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA,`
  - `TLS_RSA_WITH_AES_128_GCM_SHA256,`
  - `TLS_RSA_WITH_AES_128_GCM_SHA384,`
  - `TLS_RSA_WITH_AES_128_GCM_SHA,`
  - `TLS_RSA_WITH_AES_128_CBC_SHA256,`
  - `TLS_RSA_WITH_AES_128_CBC_SHA384,`


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- TLS_RSA_WITH_AES_128_CBC_SHA,
- TLS_RSA_WITH_AES_256_GCM_SHA256,
- TLS_RSA_WITH_AES_256_GCM_SHA384,
- TLS_RSA_WITH_AES_256_GCM_SHA,
- TLS_RSA_WITH_AES_256_CBC_SHA256,
- TLS_RSA_WITH_AES_256_CBC_SHA384,
- TLS_RSA_WITH_AES_256_CBC_SHA

The components need a valid PKCS 12 certificate to function properly. The default certificate option is a self-signed certificate. However, for security reasons, we strongly recommend that you specify a valid certificate during the installation process or change the certificate to a valid one after the installation.

### 10.4.2.1.3 Workflow

The default port for SAP Business One Workflow is 60000. The workflow enforces secure connections via HTTPS encryption with TLS version 1.1 or 1.2. The corresponding TLS cipher suites are listed as follows:

- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA384,
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA,
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256,
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA384,
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA,
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA256,
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384,
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA,
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA256,
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384,
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA,
- TLS_RSA_WITH_AES_128_GCM_SHA256,
- TLS_RSA_WITH_AES_128_GCM_SHA384,
- TLS_RSA_WITH_AES_128_GCM_SHA,
- TLS_RSA_WITH_AES_128_CBC_SHA256,
- TLS_RSA_WITH_AES_128_CBC_SHA384,
- TLS_RSA_WITH_AES_128_CBC_SHA,
- TLS_RSA_WITH_AES_256_GCM_SHA256,
- TLS_RSA_WITH_AES_256_GCM_SHA384,
- TLS_RSA_WITH_AES_256_GCM_SHA,
- TLS_RSA_WITH_AES_256_CBC_SHA256,
- TLS_RSA_WITH_AES_256_CBC_SHA384,
- TLS_RSA_WITH_AES_256_CBC_SHA


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The default certificate option is a self-signed certificate. However, for security reasons, we strongly recommend that you specify a valid certificate during the installation process or change the certificate to a valid one after the installation.

#### 10.4.2.1.4 SBO Mailer

The SBO Mailer is connected to the SMTP server. We recommend that you use SSL/TLS encryption for the SMTP server connection.

If you use SSL/TLS encryption, you must select *Microsoft .Net* for *SMTP Client* during the SBO Mailer configuration. The version of the SSL/TLS protocol depends on your operating system and the version of the installed Microsoft .Net Framework. For more information about securely configuring the SSL/TLS protocol, see Transport Layer Security (TLS) best practices with the .Net Framework.

### 10.4.2.2 Reverse Proxy

A reverse proxy works as an interchange between internal SAP Business One services and external clients. All the external clients send requests to the reverse proxy and the reverse proxy forwards their requests to the internal SAP Business One services. To handle external requests, we recommend that you deploy a reverse proxy rather than using NAT/PAT.

The default port for reverse proxy is `443`.

The reverse proxy enforces secure connection via HTTPS encryption with TLS version 1.0 or 1.1 or 1.2 and the corresponding TLS cipher suite is `ECDHE-RSA-AES256-SHA384:AES256-SHA256:RC4:HIGH:!MD5:!aNULL:!EDH:!AESGCM`

### 10.4.2.3 Integration Framework

By default, the integration framework server uses port `8080` for HTTP and `8443` for HTTPS. You do not need to expose the port to the Internet.

If you choose the HTTPS connection, use TLS version 1.0 or 1.1 or 1.2; the corresponding TLS cipher suites are listed as follows:

- `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,`
- `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA384,`
- `TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA,`
- `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256,`
- `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA384,`
- `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA,`
- `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA256,`
- `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384,`
- `TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA,`


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- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA256,
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384,
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA,
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA256,
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA384,
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA,
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256,
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA384,
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA,
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA256,
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384,
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA,
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256,
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA384,
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA,
- TLS_RSA_WITH_AES_128_GCM_SHA256,
- TLS_RSA_WITH_AES_128_GCM_SHA384,
- TLS_RSA_WITH_AES_128_GCM_SHA,
- TLS_RSA_WITH_AES_128_CBC_SHA256,
- TLS_RSA_WITH_AES_128_CBC_SHA384,
- TLS_RSA_WITH_AES_128_CBC_SHA,
- TLS_RSA_WITH_AES_256_GCM_SHA256,
- TLS_RSA_WITH_AES_256_GCM_SHA384,
- TLS_RSA_WITH_AES_256_GCM_SHA,
- TLS_RSA_WITH_AES_256_CBC_SHA256,
- TLS_RSA_WITH_AES_256_CBC_SHA384,
- TLS_RSA_WITH_AES_256_CBC_SHA

The integration framework service needs a valid JKS format certificate. The default certificate option is a self-signed certificate. However, for security reasons, we strongly recommend that you perform the following steps:

1. Disable the HTTP protocol by removing the following parameters from the Tomcat configuration file:

```
<Connector port="8080" protocol="HTTP/1.1" connectionTimeout="20000"
redirectPort="8443" enableLookups="false" server=" "/>
```

2. Restart the integration framework service
3. Change the self-signed certificate to a valid one. For more information, see SAP Note 2405043.

Note

If you already have disabled the HTTP protocol or changed the port, check the protocol and port value in the table SLSPP of database SBO-COMMON (SBOCOMMON).


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## 10.4.3 Security Certificate Verification During SSL Communication

You can configure the security certificate verification during the SSL communication between SAP Business One services.

### Prerequisites

In SAP Business One Server Tools, the hostname or FQDN must match the common name of the security certificate and the mapping must be valid.

### Procedure

1. Prepare a PKCS12 format keystore file, for example, `keytool.exe -genkey -alias b1trust -keyalg RSA -keystore tust.p12 -keysize 2048 -storetype PKCS12`.
2. Import all certificates that are used in SAP Business One Services (such as System Landscape Directory) into this keystore file, for example, `keytool.exe" -import -trustcacerts -alias <servicename> -file <service.cer> -keystore tust.p12 -storetype PKCS12`.
   - If there is a chain for the certificates, import all certificates on this chain into the keystore.
   - If you are using IP address, hostname and FQDN for server configuration, you need to issue a new certificate that includes Subject Alternative Name (SAN) for IP address/hostname/FQDN, and then import the certificate into SAP Business One Server Tools. For more information about updating the certificates, see SAP Note 2046101.
3. Log on to the Microsoft SQL server, and navigate to the folder `<server tools install folder>\Common\tomcat\bin>`.
4. Rename `tomcatw.exe` to `B1ServerToolsw.exe` and run as administrator.
5. Add the two lines below into *Java Options* on the *Java* tab.
   - **`-Dcom.sap.b1.ssl.trustStore=<path to keystore>`**
   - **`-Dcom.sap.b1.ssl.trustStorePassword=<password>`**
6. Restart SAP Business One Server Tools.

## 10.4.4 SSL Encryption

You can secure the following communication channel using SSL encryption:

- SAP Business One server ⇔ SAP Business One clients

  **Note**

  Using SSL encryption may degrade network performance. SSL encryption requires certificates, which are time limited and require annual renewal. You can acquire the necessary certificates using either of the following methods:

  - Third-party Certificate Authority


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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 to issue certificates. If you choose this method, you must configure all machines in your SAP Business One landscape to trust the CA's root certificate.

### 10.4.4.1 Encrypting Communication with Databases

To secure the TCP/IP communication channel between the database server and SAP Business One clients, you can implement SSL encryption. This prevents SAP Business One application data, including the database credentials, from being exposed.

SAP Business One fully supports SQL SSL. We recommend that you implement SSL in SAP Business One without making configuration changes in SAP Business One. For more information, see http://support.microsoft.com/kb/316898 or contact your IT administrator.

For information about Microsoft SSL encryption guidelines, see www.msdn.microsoft.com and search for the following topics:

- Net-Library Encryption
- Client Net-Libraries

## 10.5 Data Storage Security

The security of the data saved in SAP Business One is generally the responsibility of the database provider and your database administrator. As with your application infrastructure, most of the measures that you should take depend on your strategy and priorities.

There are a few general measures, as well as database-specific measures, that you can take to increase the protection of your data. Details are provided in the following sections:

- Exporting the Configuration File
- Importing the Configuration File
- Configuration Logs and User Settings

### 10.5.1 Data Storage

In SAP Business One, according to the different types and purposes, the data is stored in different databases, as follows:

- SLD Database

  The SLD database stores the SLD data and contains the persistent landscape information and security settings. The SLD database must be protected with the highest priority.
- Company Database


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Company database stores business or transactional data.

- System Database (`SBOCOMMON`)

  System database holds system data, version information, upgrade information, and shared data of each company.

- Shared Folder (`B1_SHR`)

  Shared folder contains central configuration data as well as installation files for various client components. It also stores the files used in business, for example, attachments, templates.

- Database for SAP Business One integration framework

  The default database name is `IFSERV`. You can define a new name when installing the integration framework.

## 10.5.2 Exporting Configuration Files

To secure your data, we recommend that you export your security configuration file right after you finish installing the license server and the SAP Business One server.

The configuration file contains the following important information:

- Site user password
- Database information
- Read-only database user information
- Algorithm information

### Procedure

To export the security configuration file, do the following:

1. To access the SLD service, in a Web browser, navigate to the following URL:

   **`https://<Server Address>:<Port>/ControlCenter`**

2. In the logon page, enter the site user name and password, and then choose *Log On*.

   Note

   The site user name is case sensitive.

3. On the *Security Settings* tab, in the *Encryption Key Management* area, choose *Export Dynamic Key*.

   Recommendation

   The site user password is required if you later import the security configuration file to restore the configured security settings. Thus, keep a record of the site user password when you are exporting the configuration file, especially if you want to change the site user password after the configuration file is exported.


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## 10.5.3 Importing Configuration Files

If your license server crashes or is corrupted, you must set up a new license server. After the new license server is started up, to restore all the security settings you had before, you can import the security configuration file.

### Prerequisites

- You have a record of your old security configuration file. For more information, see Exporting Configuration Files.
- You have placed the appropriate configuration file on the server under the directory: `C:\Program Files (x86)\SAP\SAP Business One ServerTools\System Landscape Directory\incoming`.

### Procedure

1. To access the SLD service, in a Web browser, navigate to the following URL:

   **`https://<Server Address>:<Port>/ControlCenter`**
2. In the logon page, enter the site user name and password, and then choose *Log On*.

   > **Note**
   >
   > The site user name is case sensitive.
3. On the *Security Settings* tab, in the *Encryption Key Management* area, choose *Import Dynamic Key*.
4. In the *Import Dynamic Key* window, do the following:
   - Select the configuration file that you want to import.
   - In the *Site User Password For Export* field, specify the site user password you had when the configuration file was exported.
   - To import the file, choose *OK*.

     > **Note**
     >
     > The exported configuration files use hardware-specific encryption. Therefore, you cannot import the configuration file to another server.

## 10.5.4 Backing Up and Restoring the License Assignment

To secure your data, we recommend that you back up your license assignment after you finish installing the server tools and the SAP Business One server.

If the server on which you install the server tools crashes or is corrupted, you must restore the license assignment after the new license server is started.


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### Procedure

### Backing up the License Assignment

1. Stop the server tools.
2. Copy the license assignment file `B1Upf.xml` in the path `C:\Program Files (x86)\SAP\SAP Business One ServerTools\LicenseHTTPS\webapps\lib` to the backup storage.
3. Copy the license files, such as `B1LicenseFile-<installation number>.txt` in the path `C:\Program Files (x86)\SAP\SAP Business One ServerTools\LicenseHTTPS\webapps\lib` to the backup storage.
4. Start the server tools

### Restoring the License Assignment

1. Stop the server tools.
2. Copy the license assignment file `B1Upf.xml` from the backup storage to the installation folder `C:\Program Files (x86)\SAP\SAP Business One ServerTools\LicenseHTTPS\webapps\lib`.
3. Copy the license files, such as `B1LicenseFile-<installation number>.txt` from the backup storage to the installation folder `C:\Program Files (x86)\SAP\SAP Business One ServerTools\LicenseHTTPS\webapps\lib`.
4. Start the server tools

## 10.5.5 Configuration Logs and User Settings

In SAP Business One, configuration changes are logged in files formatted as xxx.pidxxxxx (xxx after pid can be the date, such as 20100325, so that you can find the latest log file) under `%ProgramData%\SAP\SAP Business One\Log\SAP Business One\%USERNAME%\BusinessOne`.

The configuration changes include:

- Adding/Removing users
- Changing a user to a superuser / non superuser
- Changing user passwords
- Changing user permissions
- Changing password policy
- Changing company details

> **Note**
>
> To find the logs containing changes to company details, do the following:
>
> 1. From the SAP Business One *Main Menu*, choose *Administration* → *System Initialization* → *Company Details*.
> 2. In the menu bar, choose *Tools* → *Change Logs*.


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However, the following configurations cannot be logged:

- Changing data ownership authorizations
- Changing data ownership exceptions
- Changing license settings
- Setting Read-Only DB users

If you fail to log on to SAP Business One, the log is recorded in the Event Viewer.

As of SAP Business One 2007, any specific user settings are saved in a file named `b1-current-user.xml` under `C:\Documents and Settings\XXX(user id)\Local Settings\Application Data\SAP\SAP Business One`. In this situation, if a user changes his or her settings in SAP Business One, the changes are saved in this folder and do not affect other users' settings.

The System Landscape Directory (SLD) logs on the Windows machine: `C:\ProgramData\SAP\SAP Business One\Log\SAP Business One ServerTools\System Landscape Directory`.

## 10.6 Database Authentication

The default user name of the database administrator is `sa` and it has full authorization. Therefore, you must assign a strong `sa` password, even on servers that are configured to require Microsoft Windows Authentication. This ensures that a blank or weak `sa` password is not exposed.

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 your system vulnerable. A strong password has the following characteristics:

- Contains alphabetic, numeric, and special characters
- 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 set the password for the `sa` logon, do the following:

1. Log on to the server as a domain or local Windows Administrator.
2. In Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*. Upon first logon, in the *Connect to Server* window, enter the server name (if required) and under *Authentication*, select *Windows Authentication*.

   > **Note**
   >
   > We recommend that you create another superuser account with the same authorization as the sa user.

3. In the *Object Explorer* window, under the SQL Server instance, expand *Security* →*Logins*. Right-click *sa* and choose *Properties*.
4. On the *General* page, enter and confirm the new password for the `sa` login.
5. Choose *OK* and close the *SQL Server Management Studio* window.


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Caution

To prevent dictionary attacks, create a substitute user for `sa` that can take daily responsibility for the SQL Server database assessment. For more information, see Setting Up an Alternative Admin User.

## 10.7 SAP Business One Authentication and Authorization

SAP Business One has a mechanism to protect the database from easy changes through direct access.

The advantages of restricting access to the SAP Business One database are:

- End users are not exposed to database credentials and so cannot change the databases directly, which protects the databases from being changed or attacked.
- Database credentials are stored in the license server and end users can access the database only after the application performs a successful site user authentication through the System Landscape Directory.

### 10.7.1 Restricting Database Access

SAP Business One has a mechanism to protect the database from easy changes through direct access.

The advantages of restricting access to the SAP Business One database are:

- End users are not exposed to database credentials and so cannot change the databases directly, which protects the databases from being changed or attacked.
- Database credentials are stored in the System Landscape Directory (SLD) database and end users can access the database only after the application performs a successful site user authentication through the System Landscape Directory.

The System Landscape Directory is the central repository for credentials information, including the database user ID and password (one for all SAP Business One users).

The database credentials are stored safely in the SLD database, with additional encryption.

The security workflow is as follows:

1. Database consumers, such as the SAP Business One client, DI-API, and Services, provide their SAP Business One credentials (SAP Business One user ID and password) to authenticate against the SLD.
2. Following successful authentication, the SLD supplies its credentials and SAP Business One uses them to connect.

For more information, see Technical Landscape.

Note

You can use the SLD service to create different database user accounts for each company database. After creating accounts, SAP Business One does not access company databases using the database administrator account. Instead SAP Business One uses a different read-only account supplied by the SLD service to access each company database.


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## 10.7.2 Changing Security Levels

You can apply different security levels to database access through the SLD:

1. To access the SLD service, in a Web browser, navigate to the following URL:

   **`https://<Server Address>:<Port>/ControlCenter`**

2. In the logon page, enter the site user name (B1SiteUser) and password, and then choose *Log On*.

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

3. On the *DB Instances and Companies* tab, select the appropriate server.
4. The companies that are registered on the server are displayed in the *Companies* area.
5. In the *Companies* area, select the company for which you want to define the security level and choose *Edit*.
6. In the *Edit Company* window, select one of the following options and choose *OK*:
   - *Use Specified Database User*: The system automatically generates a set of database users without administrator privileges. SAP Business One accesses the database using one of the database users, depending on the specific database transaction.
   - *Use Specified Database User for Each Business One User*: Most secure and recommended. The system automatically generates a set of database users without administrator privileges for each SAP Business One user. SAP Business One accesses the database using one of the database users, depending on the login SAP Business One user and the specific database transaction.
   - Whenever a new SAP Business One user is added, a set of corresponding database users is added.

- For the second and third options, you do not have to manually create a read-only database user for queries.

  > **Note**
  >
  > If you select the second or the third option, the read-only database users that are automatically created by the System Landscape Directory do not have read-only authorization for the system database `SBOCOMMON`.
  >
  > But if you upgrade SAP Business One from a lower version to SAP Business One 9.3 PL00, the specific privileges for SBOCOMMON cannot be revoked automatically. For security reasons, we recommend that you delete the database user manually. Thus, the System Landscape Directory will create a new read-only database user.

  > **Caution**
  >
  > Do not change the names or system privileges of the automatically-created database users.

7. If you selected the second or third option, you can configure the SLD service to automatically change the password of the automatically-created database users on a regular basis, as follows:
   1. On the *Security Settings* tab, in the *Authentication* area, select the checkbox *Change Database User Password Every <Number> Days*.
   2. Enter the number of days between password resets.
   3. Choose *Update*.


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## 10.8 Application Security

SAP Business One provides features to ensure that unauthorized access to the application does not occur.

### 10.8.1 B1_SHR Folder Permissions

The SAP Business One server installation process creates the B1_SHR folder, which contains the SAP Business One client setup files.

| User | SBO_SHR Permission |
|---|---|
| Power User | Modify and Write |
| User | Read and execute<br>List folder contents<br>Read |

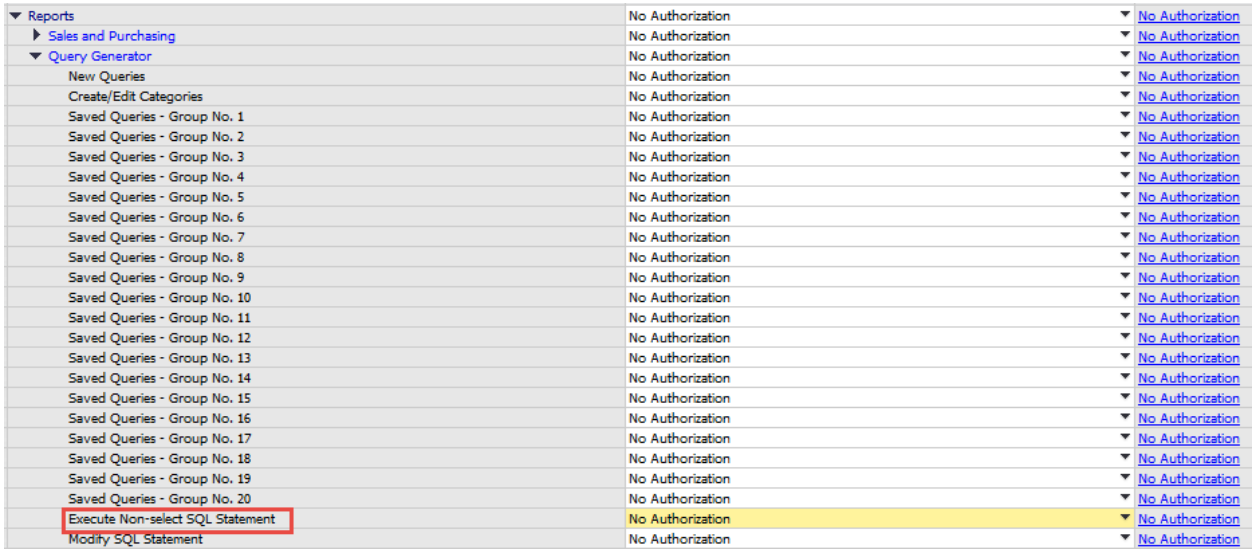
### 10.8.2 Queries

The query wizard and query generator enable you to define queries on the SAP Business One database. These tools are designated for `SELECT` sentences only and cannot be used for any kind of update operation. To protect your data, we recommend that you make sure users have the appropriate permissions. However, the data results returned are not filtered according to the user's authorization.

#### Granting Read-Only Authorization for Query Results

To enable an SAP Business One user to view the results of both system and user-defined queries, you can directly grant the user full authorization to the `Execute Non-select SQL Statement` permission item in the *General Authorizations* window in the SAP Business One client application (*Main Menu* → *System Initialization* → *Authorizations* → *General Authorizations*).


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However, we recommend that you grant read-only authorization to all non-superusers in one of the following ways:

- [**Recommended**] Do the following:
  1. Configure SAP Business One to access your company using database users without administrator privileges.
  2. Grant No authorization to all non-superusers in the *General Authorizations* window.

  This way, users with No authorization to the `Execute Non-select SQL Statement` authorization item can access the database only through a read-only database user.
- If you configure SAP Business One to access your company using a database administrator user, do the following:
  1. Apply No authorization to all users to the `Execute Non-select SQL Statement` item.
  2. Create a read-only database user and define the user password.
  3. Assign the database user to the company in the *Read-Only DB User* window in the SAP Business One client application. For more information, see the SAP Business One online help.

## 10.8.3 Add-On Access Protection

When you install an add-on, SAP Business One creates a unique digital signature using the MD5 technique (message-digest algorithm). SAP Business One identifies the add-on by validating its digital signature.

## 10.8.4 Dashboards

Dashboards are an element of the cockpit, which is delivered as part of SAP Business One. They present an easy-to-understand visualization, such as a bar or pie chart, of transactional data from the SAP Business One database. With SAP Business One, SAP delivers predefined dashboards for financials, sales, and service. In addition, SAP Business One partners and customers can create their own dashboards.


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Recommendation

When you receive dashboard content from your partner, we recommend that you copy this content to a computer that has a state-of-the-art virus scanning solution with the most current virus signature database installed and scan the file for infections before uploading it to the server.

## 10.8.5 Security Information for Integration Solutions

The subsections below outline the security aspects related to the following solutions:

- DATEV-HR solution
- Mobile solution
- Request for quotation (RFQ)

### 10.8.5.1 Security Aspects Related to the DATEV-HR Solution

This scenario requires maximum levels of data security and sensitivity, because it exports personal data. The DATEV-HR scenario generates employee data for DATEV eG using SAP Business One data. The integration framework writes the data to a specified directory in the file system. Make sure that only authorized persons have access to the folder.

Ensure that only authorized persons have access to the integration framework administration user interfaces. Alternatively, collect confirmations from all users who have access that they are aware that this data is sensitive, and that they may not distribute any data to third parties or make data accessible to non-authorized persons.

### 10.8.5.2 Security Aspects Related to the Mobile Solution

After the mobile user enters the correct user name and password, the front-end application passes the mobile phone number and mobile device ID (MAC address), together with the user name and password, to the integration framework.

After receiving the information, the integration framework verifies the following:

- Whether the user is enabled as a mobile user
- Whether the necessary license is assigned to the user
- Whether it can find the telephone number and device ID pair in the SAP Business One user administration
- Whether the user name matches the telephone number and the device ID
- Whether the user has been blocked by the SAP Business One system
- Whether the provided password is correct

Only then is the user allowed to access the system.

The password is encrypted while it is transmitted to the integration framework, which decrypts the password after receiving it.


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### Using HTTPS

To make communication safer, you have the option to use HTTPS for the sessions in the integration framework. On the server side you can configure the communication protocol (HTTP or HTTPS). On the client side, you have the option to switch to the HTTPS protocol. By default, the solution runs with HTTPS, and the integration framework allows incoming calls through HTTPS only.

SAP Business One mobile apps require a valid SSL certificate. For more information about obtaining and installing valid certificates, see SAP Note 2019275 .

### License Control

All mobile users have to be licensed before being allowed to access the SAP Business One system through the mobile channel. License administration is integrated with the SAP Business One user and license.

The mobile user also needs the assignment of the B1i license. Authorization within the SAP Business One application depends on the user's SAP Business One application license.

## 10.8.5.3 Security Aspects Related to the Integration with SAP Customer Checkout

All connections between SAP Customer Checkout and the integration framework are http connections that can be secured. The system landscape directory entries related to SAP Customer Checkout are 001sap0011 and 001sap0013, configured using basic authentication with user name and password.

The technical connection to the SAP Customer Checkout monitor (001sap0013) is an http connection using basic authentication.

## 10.8.5.4 Security Aspects Related to the RFQ Scenario with Online Quotation

> **Note**
>
> The configuration information for the RFQ integration solution is available in the integration framework. To access the documentation, log on to the integration framework, choose *Scenarios* → *Control*, and for the `sap.B1RFQ` scenario package, choose *Docu*.

You must provide vendors included in the RFQ process access to the online purchasing document on the integration framework server.

You can accomplish this by restricting access to the server to a minimum. To restrict access to the server, configure the network (NAT) firewall as shown below:

- Only allow external access to the particular hostname / IP-address
- Only allow external access to the configured server port.

  Default: port 8080 for HTTP, or port 8443 for HTTPS


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- If applicable and available for the particular firewall, configure the restricting URL: http://<hostname>:<portnumber>/B1iXcellerator/exec/ipo/vP.0010000100.in_HCSX/com.sap.b1i.vplatform.runtime/INB_HT_CALL_SYNC_XPT/INB_HT_CALL_SYNC_XPT.ipo/proc?

## 10.9 Security Solutions for Microsoft SQL Server and Database Tips

We recommend that you take the following actions to ensure the security of your Microsoft SQL Server.

### 10.9.1 Upgrading Microsoft SQL Server

We recommend upgrading the SQL server to the latest service pack. Furthermore, administrators should regularly consult the SQL Server Security Center at www.microsoft.com.

> Note
>
> If the existing version of SAP Business One does not support the newer SQL version, you must upgrade SAP Business One before upgrading the Microsoft SQL Server.
>
> For information about the upgrade sequence for Microsoft SQL Server, see the following documents:

- SAP Note 928839
- "Hardware and Software Requirements for Installing SQL Server 2014" as stipulated by Microsoft® Corp

### 10.9.2 Securing Microsoft SQL Server

Since SAP Business One is a two-tier application, much of the application security depends on the database server security and on the authorization mechanism. Be aware that users can access the database using tools other than SAP Business One and, therefore, can modify the logon information. To secure your database, we recommend adhering to Microsoft security guidelines. For more information, see the Microsoft documents at www.microsoft.com.

#### 10.9.2.1 Setting Up an Alternative Admin User

If you are using SQL authentication, when you register a database server in the SLD (9.0 and higher) or license server (release family 8.8), you need to specify a database admin user for the server. This alternative admin user can be used for creating and upgrading companies and performing other landscape management tasks in the SLD.


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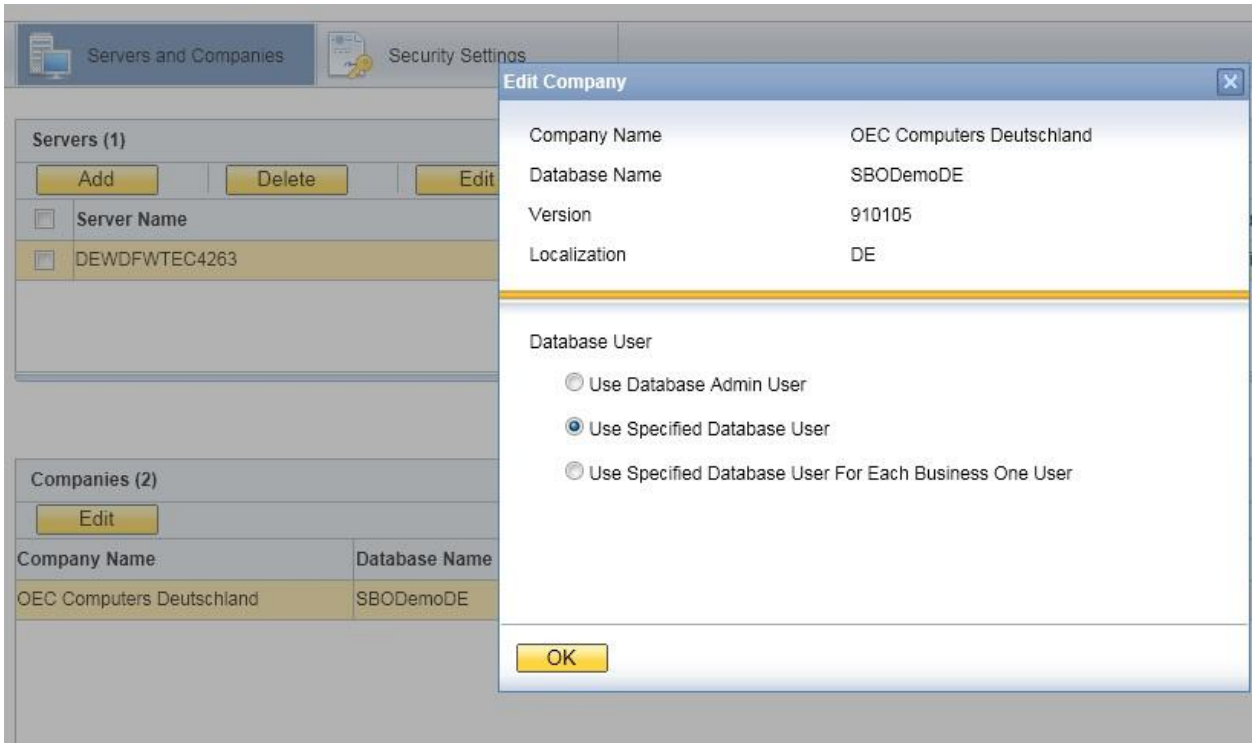
## Procedure

To create an alternative admin user account for maintaining administration tasks for SAP Business One, do the following:

1. In Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>* → *SQL Server Management Studio*.
2. In the *SQL Server Management Studio Object Explorer* window, choose *Security* → *Logins*.
3. Right-click the *Logins* folder and choose *New Login*.
   The *Login - New* window appears.
4. On the *General* tab, select *SQL Server authentication* and enter a strong password.
5. On the *Server Roles* tab, select *sysadmin*.
6. Choose *OK*.

When you create a company database, we recommend that you enable the database user per company in SLD. To do so, perform the following:

1. Log on to the SLD service. For more information, see *Logging on to the System Landscape Directory Control Center*.
2. Select the appropriate server and company and then choose *Edit*.




3. In the *Edit Company* window, select the *Use Specified Database User* radio button.
4. The SLD creates a database user for this company with the appropriate database roles, which is then used by the SAP Business One client to connect to the database.
5. Choose *OK*.


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If you are using **Microsoft Windows authentication**, you must grant SAP Business One admin users the *sysadmin* and *public* server roles. When creating or upgrade companies, you must use this admin user to launch the SAP Business One client or setup wizard.

For normal SAP Business One users, you need to grant admin users the following roles:

- For the common database: *db_datawriter* and *db_datareader*
- For the company database: *db_owner*

> **Note**
>
> You cannot set up a local user that is not in the Active Directory.

## 10.9.3 Revoking Guest Access to the msdb Database

1. To open SQL Server Management Studio, in Windows, choose *Start* → *All Programs* → *Microsoft SQL Server <Version>*.
2. In the *Connect to Server* window, specify values in the *Server name* and *Authentication* fields, and choose *Connect*.
3. In the window *SQL Server Management Studio Object Explorer*, choose *Databases* → *System Databases* → *msdb* → *Security* → *Users*.
4. In the structure, right-click the *Guest* user and choose *Delete*.

## 10.10 Data Protection and Privacy

Data protection is associated with numerous legal requirements and privacy concerns. In addition to compliance with general data protection acts, it is necessary to consider compliance with industry-specific legislation in different countries. This section describes the specific features and functions that SAP provides to support compliance with the relevant legal requirements and data privacy.

This section does not give any advice on whether these features and functions are the best method to support company, industry, regional or country-specific requirements. Furthermore, this guide does not give any advice or recommendations with regard to additional features that would be required in a particular environment; decisions related to data protection must be made on a case-by-case basis and under consideration of the given system landscape and the applicable legal requirements.

> **Note**
>
> In the majority of cases, compliance with data privacy laws is not a product feature.
>
> SAP software supports data protection by providing security features and specific data-protection-relevant functions such as functions for the simplified blocking and deletion of personal data.
>
> SAP does not provide legal advice in any form.

SAP Business One provides the related functions to ensure that all users' rights are protected and that customers are enabled to achieve data protection and privacy compliance. The following topics are related to data protection:

**Access control**: Authentication features as described in the section User Administration and Authentication.


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**Authorizations control**: As described in *How to Manage the Protection of Personal Data in SAP Business One* on SAP Help Portal.

**Communication security**: As described in the Network and Communication Security section.

**Data storage security**: We recommend that you use the high availability solution for the SQL server environment.

For more information about SAP Business One data protection and privacy, see *How to Manage the Protection of Personal Data in SAP Business One* on SAP Help Portal.

## 10.11 Other Security Recommendations

You can check the following information to identify if you securely operate the SAP Business One application.

### Demo Database

The demo databases (schemas) provided are not for productive use. Do not use the demo databases (schemas) in a productive environment.

If you install the demo databases (schemas), log on with manager account and change the default password immediately for each demo database (schema).

### Post-Uninstallation Activities

Immediately after uninstalling SAP Business One, you are required to manually delete the SAP Business One folders on Windows to avoid leaking any data.

### Operating System

- Keep the boundaries between client components. Restrict end user access to the operating system on servers.
- Protecting the high privileged accounts of the operating system is top priority.

### Log Configuration

For troubleshooting purposes, sometimes you need to turn on the detailed log or debugging log in configuration. Once the troubleshooting is completed, ensure that you change back the settings and delete the debugging logs.

### Turn off the Default UI API Connection String

In a productive environment, we strongly recommend that you turn off the default UI API connection string on presentation servers (the terminal servers installed on the SAP Business One client). For more information, see SAP Note 2755830.


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## Shared Folder

We recommend that you provide anti-virus protection for the shared folder, either at the server-level or at the company-level.


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# 11 Troubleshooting

## Delay in Establishing a Connection with the License Service

### Problem:

You have difficulty establishing a connection with the license service. This issue may lead to the workflow service not working (error message: "Failed to connect company from workflow service"). For more information, see SAP Note 1135705.

### Solution 1:

1. Change the registry entry and add the IP address of the license server computer as follows:
   - For 32-bit operating systems: *HKEY_LOCAL_MACHINE\SOFTWARE\ACE\TAO*
   - For 64-bit operating systems: *HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ACE\TAO*
2. Use the IP address instead of the computer name for the license server address where required, such as for the SAP Business One client, DI API, B1i, and so on.

### Solution 2

1. In the Control Panel, disable additional network cards.
2. Ensure there is no dial-up interface or VPN interface configured.
3. Restart the server.

Note that you can re-enable the additional network card after restart. This will resolve the issue until the next restart.


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# 12 Getting Support

We recommend that you assign a contact person who can deal with issues concerning SAP Business One. This contact person should follow the support process described below.

> **Note**
>
> Before you request support, check the version information of your SAP Business One application.
>
> To view the version number, from the SAP Business One *Help* menu, choose *About*.

As a customer, you can get support from your partner either by creating an incident on the Support Launchpad for SAP Business One or by using the support channels provided by your partner.

The partner support staff tries to solve your problem. If they are unsuccessful, they forward the incident that you have created on the Support Launchpad for SAP Business One to the SAP Support team, or create an incident for you if you used an alternative support channel.

## 12.1 Using Online Help and SAP Notes

If you have a question or problem concerning SAP Business One, check the online help by pressing `F1`. Note that the *Help* menu in the application provides more help options.

If online help does not provide an answer, search for corresponding SAP Notes, as follows:

1. Log on to the Support Launchpad for SAP Business One by any of the following options:
   - Go to the Website directly using https://apps.support.sap.com/B1support/index.html.
   - In the SAP Business One menu bar, choose *Help* →*Support Desk* → *Support Launchpad and Note Search.*

     > **Note**
     >
     > To gain access to the Support Launchpad for SAP Business One, you must be an SAP Business One customer or partner, and you need an S-user account. If you do not have an S-user account, contact your SAP Business One partner.
2. On the *What are you looking for?* area, choose *SAP Notes Search*.

   You can either display a note directly by providing the number of the note, or you can search for a note by entering key words. Think about the keywords to use and choose the application area.

   The application area for SAP Business One starts with “SBO”.

   > **Example**
   >
   > Problem Message: “The performance of the SAP Business One program is not acceptable. Executing all operations takes a long time. The problem occurs only on one front-end.”
   >
   > Use: Keywords **`Performance`** and **`SAP Business One`**. Specify the component **`SBO-BC*`**.
   >
   > Do not use: Phrases such as **`SAP Business One runs long`** or **`SAP Business One is too slow`**.


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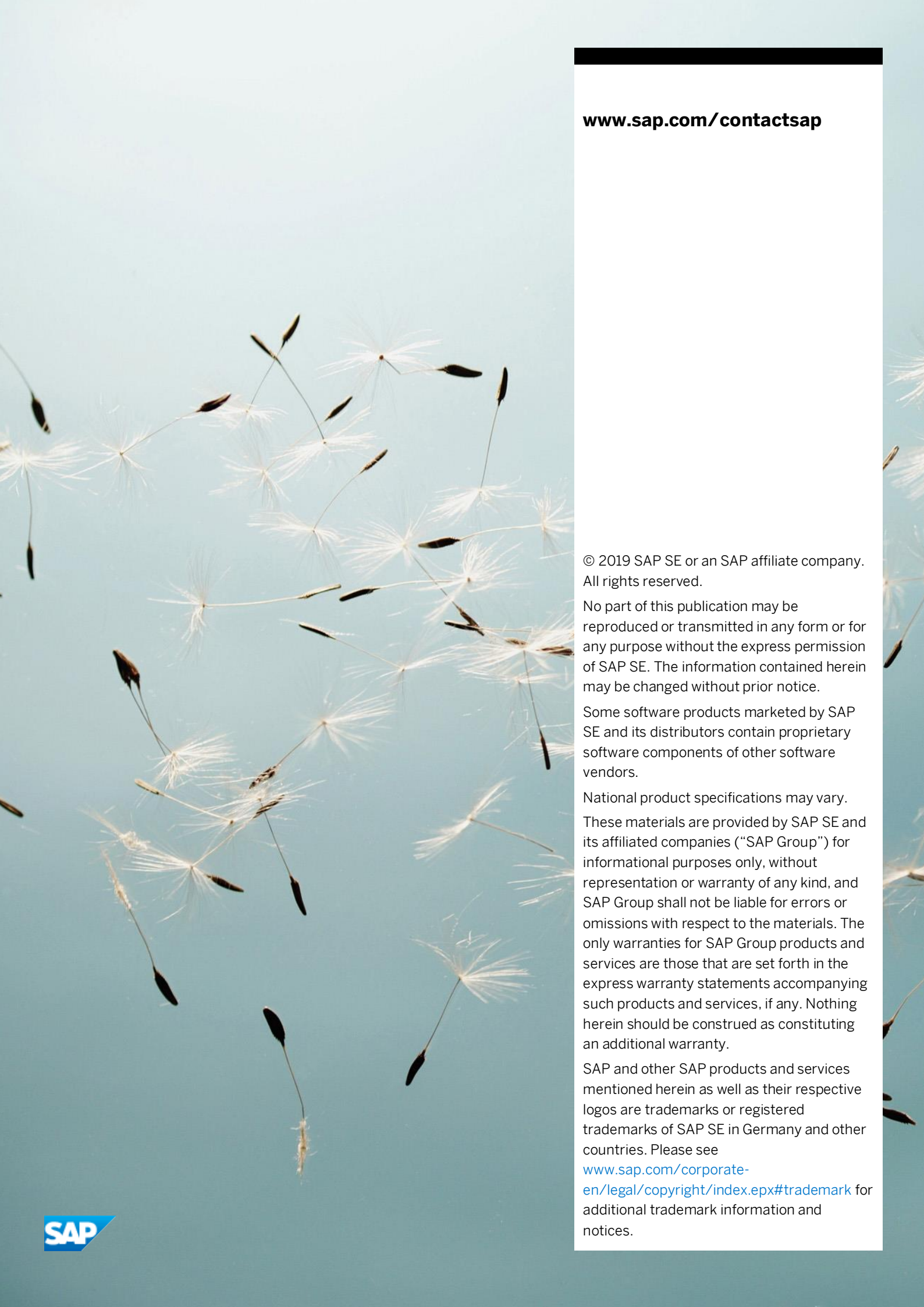
# Appendix

## Appendix 1: List of Default Ports for Different Server Components

The following table lists the default ports used for different server components. Ensure that you have kept the following ports available.

| Default Ports | Server Components | Remarks |
|---|---|---|
| 30000 or 30001 | CORBA license server | |
| 40000 | Components in shared Tomcat, including:<br>• System Landscape Directory<br>• License Service (HTTPS)<br>• Job Service<br>• Extension Manager | This port should be exposed to the Internet if you need to use some SAP Business One components on Internet. |
| 60000 | Workflow | |
| 443 | Reverse proxy | |
| 8080 (for HTTP)<br>8443 (for HTTPS) | Integration Framework | |


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