PUBLIC
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Installation Guide for Windows

THE BEST RUN SAP

Content

1 Introduction to SAP Data Services

SAP Data Services delivers a single enterprise-class solution for data integration, data quality, data profiling, and text data processing.

Businesses can use Data Services to integrate, transform, improve, and deliver trusted data to critical business processes. IT organizations can depend on Data Services for maximum operational efficiency to improve data quality and gain access to heterogeneous sources and applications. Data Services provides all of these features using:

- Single development user interface
- Metadata repository
- Data connectivity layer
- Runtime environment
- Management Console

1.1 Naming conventions and variables

This documentation uses specific terminology, location variables, and environment variables that describe various features, processes, and locations in SAP Data Services.

Terminology

SAP Data Services documentation uses the following terminology:

- The terms **Data Services system** and **SAP Data Services** mean the same thing.
- The term **BI platform** refers to **SAP BusinessObjects Business Intelligence platform**.
- The term **IPS** refers to **SAP BusinessObjects Information platform services**.

  > **i** Note
  >
  > Data Services requires BI platform components. However, when you don't use other SAP applications, IPS, a scaled back version of BI, also provides these components for Data Services.

- **CMC** refers to the Central Management Console provided by the BI or IPS platform.
- **CMS** refers to the Central Management Server provided by the BI or IPS platform.

Variables

The following table describes the location variables and environment variables that are necessary when you install and configure Data Services and required components.

Variables	Description
`INSTALL_DIR`	The installation directory for SAP applications such as Data Services. Default location: • For Windows: `C:\Program Files (x86)\SAP BusinessObjects` • For UNIX: `$HOME/sap businessobjects` **Note** `INSTALL_DIR` isn't an environment variable. The installation location of SAP software can be different than what we list for `INSTALL_DIR` based on the location that your administrator sets during installation.
`BIP_INSTALL_DIR`	The directory for the BI or IPS platform. Default location: • For Windows: `<INSTALL_DIR>\SAP BusinessObjects Enterprise XI 4.0` **Example** `C:\Program Files (x86)\SAP BusinessObjects\SAP BusinessObjects Enterprise XI 4.0` • For UNIX: `<INSTALL_DIR>/enterprise_xi40` **Note** These paths are the same for both BI and IPS. **Note** `BIP_INSTALL_DIR` isn't an environment variable. The installation location of SAP software can be different than what we list for `BIP_INSTALL_DIR` based on the location that your administrator sets during installation.

Variables	Description
<LINK_DIR>	An environment variable for the root directory of the Data Services system. Default location: • All platforms <LINK_DIR>\Data Services **Example** C:\Program Files (x86)\SAP BusinessObjects\Data Services

Variables	Description
<DS_COMMON_DIR>	An environment variable for the common configuration directory for the Data Services system. Default location: • If your system is on Windows (Vista and newer): <AllUsersProfile>\SAP BusinessObjects\Data Services **Note** The default value of <AllUsersProfile> environment variable for Windows Vista and newer is C:\ProgramData. **Example** C:\ProgramData\SAP BusinessObjects\Data Services • If your system is on Windows (Older versions such as XP) <AllUsersProfile>\Application Data\SAP BusinessObjects\Data Services **Note** The default value of <AllUsersProfile> environment variable for Windows older versions is C:\Documents and Settings\All Users. **Example** C:\Documents and Settings\All Users\Application Data\SAP BusinessObjects\Data Services • UNIX systems (for compatibility) <LINK_DIR> The installer automatically creates this system environment variable during installation. **Note** Starting with Data Services 4.2 SP6, users can designate a different default location for

Variables	Description
	<DS_COMMON_DIR> during installation. If you can't find the <DS_COMMON_DIR> in the listed default location, ask your System Administrator to find out where your default location is for <DS_COMMON_DIR>.
<DS_USER_DIR>	The environment variable for the user-specific configuration directory for the Data Services system. Default location: • If you're on Windows (Vista and newer): <UserProfile>\AppData\Local\SAP BusinessObjects\Data Services **Note** The default value of <UserProfile> environment variable for Windows Vista and newer versions is C:\Users\{username}. • If you're on Windows (Older versions such as XP): <UserProfile>\Local Settings\Application Data\SAP BusinessObjects\Data Services **Note** The default value of <UserProfile> environment variable for Windows older versions is C:\Documents and Settings\{username}. **Note** The system uses <DS_USER_DIR> only for Data Services client applications on Windows. UNIX platforms don't use <DS_USER_DIR>. The installer automatically creates this system environment variable during installation.

2 Planning

You can install SAP Data Services on Windows, UNIX, or Linux platforms, with a combination of supported web servers, web application servers, database servers, and web technologies.

Carefully review deployment and architecture information in the *Data Services Master Guide* and consider the following points when you decide how the components that comprise Data Services are distributed:

- For a small development deployment, consider using the installation program's default options to install Data Services, SAP BusinessObjects Information platform services (IPS), and a web application server on a single host system.
- For a larger scale deployment, consider installing individual system components on dedicated host systems to host individual server functions over a network.
  For example: a single host dedicated to a web application server; a single host dedicated to the Data Services core system; and a single host dedicated to the SAP BusinessObjects IPS.

For more information on the compatibility of Data Services with BI platform or IPS versions, see KBA 3197694.

For information about BI Platform user licenses, see SAP Note 2176896.

> **i Note**
>
> When you install Data Services (DS) on top of Business Intelligence platform (BI platform), the BI licensing model is used when connecting to the Central Management Server (CMS). For example, if you have ten BI named user licenses, these named user licenses are also shared with DS. This means you can create only ten users in the CMS and at any point in time have ten CMS sessions. To take advantage of unlimited user licenses when connecting to the CMS, install DS on top of SAP BusinessObjects Information platform services (IPS).

Before you install Data Services:

- Review your host systems to ensure that they meet the basic requirements.
  Consult the Product Availability Matrix (PAM) for a detailed list of supported environments and hardware requirements. The PAM includes information such as specific version and patch-level requirements for web application servers, web browsers, databases, and operating systems.
- Ensure that the host systems in your deployment can communicate with each other across the network when you set up a deployment comprised of two or more host systems networked together.
- Determine the location of the components to be installed. This includes the specific subnet, machines, database, security, or cluster systems that will be used.

Related Information

Process flow [page 11]
Central Management Server (CMS) [page 17]

2.1 Process flow

Steps you need to perform to ensure that you meet system requirements and have the proper permissions to install Data Services.

1. Determine system requirements [page 11].
2. Learn about software dependencies [page 11].
3. Set up account permissions [page 14].
4. Determine network permissions [page 14].
5. Choose a web application server [page 18].
6. Choose a database server [page 19].

2.2 System requirements

Guidelines for installing SAP Data Services on a local drive.

- Before you run the installation program, ensure that the destination partition has enough room for the deployment to expand (when updates and new features are added in the future).
- If you want to install the deployment on the operating system partition, ensure that there is enough room for the deployment and the operating system.
- If you have previously installed any SAP products, the installation program will use the existing directory.

For a complete list of supported operating systems and hardware requirements, see the Product Availability Matrix (PAM).

2.3 Software dependencies

Before you install SAP Data Services, ensure that your host systems meet all software dependency requirements.

For complete information about software environment requirements, see the Product Availability Matrix (PAM).

2.3.1 IPS installation

To install Information platform services (IPS), run an interactive installation of IPS.

> **i** Note
>
> Use the latest IPS installation package that has been certified per KBA 3197694. For information about obtaining a license key for running a full or fresh installation of Information platform services (IPS), see KBA 3208592.

To install Information platform services (IPS), locate and run `InstallIPS.exe` to run an interactive installation of IPS.

If you are an OEM customer, locate and run `InstallIPSOEM.exe`.

The license key is embedded to run an interactive installation from the same location as the default installation program `setup.exe`.

2.3.2 Microsoft compatibility

The 64-bit Designer and Job Server can't coexist with Microsoft Office products earlier than Microsoft Office 2010.

Windows 64-bit server or client installation [page 12]
To use Microsoft Excel functionality in Data Services, you must perform manual steps if the installer is not able to install Microsoft Access Database Engine 2010 Redistributable on the 64-bit platform.

Windows 32-bit client installation [page 13]
On 32-bit Windows platforms, Microsoft Office 2007 can co-exist with Microsoft Access Database Engine 2010.

2.3.2.1 Windows 64-bit server or client installation

To use Microsoft Excel functionality in Data Services, you must perform manual steps if the installer is not able to install Microsoft Access Database Engine 2010 Redistributable on the 64-bit platform.

If the Access Database Engine 2010 cannot be installed because of the presence of earlier versions of Microsoft Office, the software issues the following warning message:

“A 32-bit Microsoft Office product is installed on this machine. Data Services requires the 64-bit Microsoft Access database engine to use the Excel data format as a reader or loader. Please uninstall the 32-bit Microsoft Office component.”

The software issues the warning message because earlier versions (pre-2010) of Microsoft Office software are 32-bit and incompatible with the Access Database Engine 2010 on the Windows 64-bit platform. If you need to use the Microsoft Excel functionality in Data Services, perform one of the following two options after installation:

- Option 1:

1. Uninstall Microsoft Office.
2. Install the Microsoft Access Database Engine 2010 redistributable from the Data Services installed location. By default, the installation program is located at `<LINK_DIR>\ext\microsoft\AccessDatabaseEngine_X64.exe`.

- Option 2: Upgrade Microsoft Office to Microsoft Office 2010 64-bit.

Parent topic: Microsoft compatibility [page 12]

Related Information

Windows 32-bit client installation [page 13]

2.3.2.2 Windows 32-bit client installation

On 32-bit Windows platforms, Microsoft Office 2007 can co-exist with Microsoft Access Database Engine 2010.

If it does not already exist on the system, the installer always installs the 2010 engine. If Microsoft Office 2010 64-bit already exists on the system, but you install the Data Services 32-bit package, the configuration is not supported because it is not a valid Microsoft configuration.

Parent topic: Microsoft compatibility [page 12]

Related Information

Windows 64-bit server or client installation [page 12]

2.4 Account permissions

To install SAP Data Services, a user must have specific system permissions.

Required permissions

Category	Required permissions
Operating system	Local administrator privileges. **i Note** If you are installing Data Services on a Windows 7 host system that has User Account Control (UAC) enabled, run the installation program with the host system built-in administrator account. If you use a normal account, a UAC prompt appears.
Network	• Network connectivity through appropriate ports to all host systems in the deployment. • Access to shared file system directories for users of the deployment. • Appropriate network authentication privileges.
Database	Permission for the SAP user account to: • Create and drop tables. • Read, write, and edit table rows.

→ Recommendation

Use the same user account for installing Data Services and your Web application server.

Additional notes

You cannot install the deployment on a domain controller or on a Windows host where the default local Administrator group security settings have been modified.

2.5 Network permissions

When you install SAP Data Services across multiple host systems, ensure your network functions properly by following certain guidelines:

Use the following guidelines to ensure your network functions properly:

- Each host system must be able to communicate with the Central Management Server (CMS). The CMS coordinates the functioning of all the servers in the deployment.
- Each host system must be able to communicate with the host that runs the repository database.

- Each client, such as the Designer, must be able to communicate with the Job Server or servers.
- Each host system must use a fixed hostname. Fully qualified hostnames are supported.

> **Note**
>
> Ensure that deployment hostnames do not include any of the following characters: underscore (_), period (.), backslash (\), or forward-slash (/).

> **Note**
>
> If your servers are protected by a firewall, you may need to open the necessary ports to allow the client components to communicate with the servers.

2.5.1 Port assignments

For each of your host systems, verify that all ports to be used by SAP Data Services components are available and not in use by other programs.

For a development system, you can install many components on the same host. Installing on a single host simplifies many connections between components (the host name is always the same), but you must still define connections based on the TCP/IP protocol.

Related Information

Port requirements for Data Services server components [page 15]
Port requirements for Data Services client applications [page 16]

2.5.1.1 Port requirements for Data Services server components

There are specific communication ports that are used by Data Services server components.

If you deploy Data Services with firewalls, use this information to open the minimum number of ports in those firewalls.

Server component default ports

Component	Description	Default port
Job Server	Communication port Receives commands from Designers, Access Servers, and schedulers.	3500

Component	Description	Default port
	Request port Communicates with the Designer for the notification server feature.	Dynamic
	Adapter communication port (optional) Receives commands and sends data to adapters. Required only if you are using adapters.	4001
	Debugger port (optional) Supports communication for the Designer interactive debugging feature.	5001
Access Server	Communication port Receives and sends messages from clients and services.	4000
EIM Adaptive Processing Server	Metadata Browsing Service listener port Communicates with the Data Services backend engine.	4010
	Metadata Browsing Service JMX Connector communication port	4011
	View Data Service listener port Communicates with the Data Services backend engine.	4012
	View Data Service JMX Connector communication port	4013

> **i** Note
>
> Use the Data Services Designer to configure fixed debugger and Job Server request ports.

Related Information

2.5.1.2 Port requirements for Data Services client applications

Communication ports that are used by Data Services client applications and web applications.

If you deploy Data Services with firewalls, you can use this information to open the minimum number of ports in those firewalls.

Designer port requirements

Associated server	Port requirements	Default port
BI platform Central Management Server (CMS)	Name server port	6400

Associated server	Port requirements	Default port
	Request port	Dynamic
Data Services Job Server	Communication port	3500
	Request port	Dynamic
	Debugger port (optional)	5001
Repository database server	Connection port	Varies

Workbench port requirements

Associated server	Port requirements	Default port
BI platform Central Management Server (CMS)	Name server port	6400
	Request port	Dynamic

Management Console port requirements

Associated server	Port requirements	Default port
Web application server	Communication port	8080

> **i** Note
>
> Use the Central Management Console (CMC) to configure a fixed CMS request port.
>
> For more information, see "Server Administration, Configuring server network settings, Configuring port numbers" the *BI platform Administrator Guide* or the *Information platform services Administrator Guide*.

> **i** Note
>
> Use the Designer to configure fixed debugger and Job Server request ports.

Related Information

Port requirements for Data Services server components [page 15]

2.6 Central Management Server (CMS)

Before you can install SAP Data Services, you must have a working SAP BusinessObjects BI platform Central Management Server (CMS).

The installation program creates Data Services InfoObjects in the CMS. Data Services relies on the CMS for:

- Centralized user and group management
- Flexible authentication methods
- Password enforcement policies

- Administrative housekeeping services
- RFC Server hosting
- Services for integrating other SAP software

> **Note**
>
> If you do not have a SAP BusinessObjects BI platform installation, the basic CMS functions required by Data Services can be provided by SAP BusinessObjects Information platform services (IPS).
>
> If you choose to use IPS, use `InstallIPS.exe` instead of `setup.exe` to launch the Information platform services installation program.
>
> If you are an OEM customer, locate and run `InstallIPSOEM.exe`.

For information about installing SAP BusinessObjects IPS, see the *SAP BusinessObjects Information Platform Services Installation Guide*.

Other related installation notes:

- During the Data Services installation, you are required to provide CMS login information. If you do not have this information available, you will not be able to proceed with the installation.
- If you are using a distributed environment, the installation will be blocked if both of the following are true:
  - The Data Services Administrator service (part of EIM APS) doesn't exist in the landscape.
  - The Data Services Administrator service (part of EIM APS) cannot be installed because there is no local SIA node pointing to the master CMS.

2.7 Web application servers

Integrate SAP Data Services with a Java Web application server.

The SAP BusinessObjects BI platform and Information Platform Service provides Apache Tomcat as the default Java Web application server. The Web application server must be operational and available when you run the installation program.

For a complete list of supported Web application servers, consult the Product Availability Matrix (PAM) on the SAP Support Portal.

> **Note**
>
> The “Management Console” option installs only Web applications to a supported Java Web application server. This option is useful for deploying Web applications to nodes in a Web application server cluster.

2.8 Database servers

To configure the SAP Data Services repository during installation, set up a database server that is operational and available when you install Data Services.

The database server hosts the SAP Data Services repository.

SAP bundles the SAP Sybase SQL Anywhere database server with the SAP BusinessObjects BI platform and Information Platform Services (IPS) installation. To use the bundled database, select the option during BI or IPS installation.

Data Services also supports the following database servers:

- IBM DB2
- Microsoft SQL Server
- MySQL
- Oracle
- SAP HANA
- SAP SQL Anywhere (bundled with BI or IPS)
- SAP Sybase Adaptive Server Enterprise

> **Note**
>
> The database client and server must use the Unicode character set.

For a detailed list of supported database versions, revision levels, and requirements, consult the Product Availability Matrix (PAM) on the SAP Support Portal.

Related Information

Prepare the repository database [page 21]
Requirements for third-party databases [page 22]

3 Preparation

This topic contains information about how to prepare for installing SAP Data Services.

The following process flow outlines the steps involved in preparing for Data Services installation.

1. Gather the installation media or download the latest release and any patches or service packs from the SAP Support Portal Software Downloads page.
2. Ensure that your system has sufficient disk space for the installation. Include space for future growth for both your operating system and the software, as patches and new features become available. For more information about determining sufficient disk space, see the *Sizing Guide*.
3. Decide what options to change during the installation process. In most cases, you can accept the default values. More advanced installations require that you plan the installation process. The installer prompts you for the following information:
   - License information (the name of the user and company associated with your software).
   - Administrator-level connection information for the Central Management Server (CMS).
   - Repository database connection information, including type, connection, and authentication details.
4. Obtain a new 4.3 product key the first time you install, upgrade, or update Data Services 4.3. You will not be asked to enter the new product key for future 4.3 upgrades or updates.

   > **i** Note
   >
   > The 4.3 product keys are not backwards compatible and do not work with older versions of Data Services.

3.1 Install GDB for troubleshooting

The GNU Project Debugger (GDP) helps SAP support staff investigate software crashes without the need for you to send the entire core dump file.

You are not required to install GDB, but it is helpful for solving installation and software issues. The GDP is primarily for Linux platforms, but it can be helpful in many other installation situations. The GDB package installs GDB and GStack.

Obtain a GDB installation, and read more about how the GNU Project Debugger can help you at their official Web site: https://www.gnu.org/software/gdb/ .

3.2 Prepare the repository database

Before you install SAP Data Services, create a database for the repository using a database server that is approved to use with Data Services.

If you plan to create and configure the Data Services repository during installation, prepare a database in your preferred database manager type. If you plan to use DSN or TNS connections, skip the repository creation steps during installation.

When you install Business Intelligence (BI) platform or Information Platform Service (IPS), you can choose to install SAP SQL Anywhere, which is bundled with the software. Prepare a database in SQL Anywhere for the Data Services repository.

For all supported third party database servers, create a database, tablespace, or schema for the Data Services repository. Make sure that you include the following settings in the database:

- Unicode character encoding, such as UTF-8
- Privileges to create, modify, and delete tables and to create stored procedures.

In addition, install applicable client drivers for using the database server on a network. Ensure that the drivers work. Contact your administrator if you don't know the correct driver to install.

Record the database account information, such as server name, user name, and password, so that you can enter the details when prompted by the Data Services installer.

See the Product Availability Matrix (PAM) for a list of approved repository databases and versions for the Data Services repository database. The PAM is located at https://apps.support.sap.com/sap/support/pam.

During Data Services installation, enter a unique Central Management Server (CMS) registration name for the repository, repository connection information, and authentication credentials. The installer uses this information to initialize the repository database.

> **i Note**
>
> The CMS registration name determines how the repository appears in the Central Management Console (CMC).

Related Information

Requirements for third-party databases [page 22]
Running an interactive installation with default configuration [page 37]

3.2.1 Requirements for third-party databases

Gather the required information for your database type before you install SAP Data Services.

Third-party databases are those that are approved for the version of SAP Data Services that you install. For an up to date list of supported third-party databases and versions, see the Product Availability Matrix (PAM) on the SAP Support Portal..

Third-party database required information

Database	Information required
Microsoft SQL Server	• CMS registration name • Database name • Server name • Port number (default is 1433) • Login credentials used to access the database
MySQL	• CMS registration name • Database name • Database server version • Server name • Port number (default is 3306) • Login credentials used to access the database **Note** If you want to use DSN connections, defer repository creation to after installation and follow the steps in Preparing a DSN database connection [page 65].
SAP HANA	• CMS registration name • Server name • Database server version • Port number (default is 30015) • Login credentials used to access the database **Note** If you want to use DSN connections, defer repository creation to after installation and follow the steps in Preparing a DSN database connection [page 65].
SAP ASE	• CMS registration name • Database name • Server name • Sybase connection string • Port number • Login credentials used to access the database

Database	Information required
DB2	• CMS registration name • Database name • Server name: DB2 database alias • Database server version • Port number • Login credentials used to access the database **i Note** If you want to use DSN connections, defer repository creation to after installation and follow the steps in Preparing a DSN database connection [page 65].
Oracle	• CMS registration name • Server: `tnsnames` connect identifier • Database server version • Port number • SID (system identification number) • Login credentials used to access the database **i Note** TCPS protocol is supported for Oracle repositories. If you want to use TNS connections or use TCPS protocol, defer repository creation to after installation and follow the steps in the *Administrator Guide*.
SAP SQL Anywhere	Database server that is bundled with the BI or IPS installation. • CMS registration name • Database name • Database server version • SQL Anywhere ODBC driver file • Server name • Port number • Login credentials used to access the database **⚠ Caution** If you use the bundled database as your Data Services repository host, you must use the database client tools to manage database backup and restore. Be sure to back up your repository before uninstalling the BI platform or IPS.

Related Information

Prepare the bundled database [page 26]

3.2.2 JDBC and ODBC drivers

SAP Data Services and its system and service components use drivers, such as the JDBC and ODBC drivers, for communication.

Before installation or upgrade, check the Product Availability Matrix (PAM) to view driver requirements for the database type and version that you use for your local repository. After installation, when you configure datastores and other connections to databases, ensure that you meet the driver requirements for the databases that you use as sources, targets, and other types of repositories.

Find additional driver information for the specific database that you use for datastores, adapters, or repositories in the applicable guide:

- **Datastores:** *Designer Guide* or applicable supplement
- **Adapters:** *Supplement for Adapters*
- **Repositories:** *Administrator Guide*

Also consult the *Installation Guide* and the *Upgrade Guide* for other special driver instructions.

JDBC drivers

The Central Management Server uses the JDBC driver for installation of the default (local) repository. The Central Management Console (CMC) also requires the driver when you register the repository.

Data Services Management Console uses JDBC drivers to communicate with the repository for processes with data.

ODBC drivers

For most database types, the Repository Manager uses the ODBC driver for creating and upgrading the repository.

> **i** Note
>
> Some database types require a different driver type. For example, Oracle uses Oracle client. Therefore, it is important that you consult the PAM for the supported driver and version for the database that you select for your repository.

Data Services Management Console uses the ODBC driver for communication with certain types of repositories. Management Console also uses the ODBC driver for communication with certain types of database datastores.

Repository driver source

The following table describes whether Data Services bundles the repository driver with your installation and upgrade, or whether you download and install the driver.

Driver	Database	Access
JDBC	• DB2 • SAP ASE • SAP HANA • SQL Server • SAP SQL Anywhere	Bundled with Data Services installer. For upgrade, the installer replaces the old driver with the new driver as necessary. There are no additional actions required by you.
JDBC	• Oracle • MySQL	Download and install the driver that exactly matches the driver name and version listed in the PAM. Data Services doesn't recognize the driver if you enter an inexact driver name and version. If the supported JDBC driver version has changed, and you upgrade to a new version of Data Services, the repository is listed as "inactive" in the Central Management Console (CMC). If after upgrade your repository is listed as inactive, perform the following steps: 1. Download the driver that exactly matches the driver name and version listed in the PAM. 2. Place the new JDBC driver into the applicable directory or directories, such as `%BIP_INSTALL_DIR%\java\lib\im\MySQL`. 3. Restart the EIM Adaptive Processing Server in the CMC.
ODBC	All	Download and install the correct version of the driver from your database management system. Consult the PAM for correct versions.

3.2.3 Prepare the bundled database

Prepare the SAP SQL Anywhere database server before you install SAP Data Services so that it is ready for the repository set up steps during installation.

The bundled database is installed when your administrator installs either Business Intelligence (BI) Platform or Information Platform Services (IPS). Use the bundled database when you don't have a database installed, or when you prefer to use SAP SQL Anywhere.

If you are the administrator who installs BI or IPS, make sure that you select *Configure and install a Sybase SQL Anywhere database* during installation. See the *Business Intelligence Platform Installation Guide* for details.

See the complete documentation set for SAP SQL Anywhere on the SAP Help Portal: https://help.sap.com/viewer/p/SAP_SQL_Anywhere.

During BI or IPS installation, you set a password for the SQL Anywhere account named "dba". Remember the password because you use it during Data Services installation to set up the repository.

To prepare the bundled SQL Anywhere database server for the Data Services repository, perform the following tasks:

1. Download and install the latest version of SQL Central, a plug-in tool for SQL Anywhere client.
2. Use SQL Central to create the DS_REPO database.
3. Follow post installation instructions for using a DSN-less connection.

Bundled SQL Anywhere `ODBC.ini` settings

When the BI or IPS installation program installs SQL Anywhere, it attempts to find an existing `ODBC.ini` file. This file is the ODBC system information file. If the installation program finds an existing `ODBC.ini` file, it adds the new DSN entries to it. If the installer does not find an existing `ODBC.ini` file, it creates a file for the new DSN entries at `C:/Windows/`.

Related Information

Installing SQL Central [page 26]
Creating the repository database [page 27]

3.2.3.1 Installing SQL Central

SQL Central is a SQL Anywhere administrative tool that you use to create an SAP Data Services repository database.

The BI or IPS installer includes SQL Central with the SQL Anywhere database installation. However, to avoid forward compatibility issues, download and install a newer version of SQL Anywhere from the SAP Software Downloads page at https://launchpad.support.sap.com/#/softwarecenter. Choose the alphabetical search and search for SQL Anywhere.

The following is an overview of the steps to install SQL Central:

1. Start the SQL Anywhere installer and select a language as applicable.
2. Go through the installer following the on-screen prompts.
3. Make sure that you select *Administration Tools (64-bit)* in the *Custom Setup* dialog box.

   Choose 64-bit even if you are using a 32-bit system.
4. Click *Install*.

Open SQL Central through your Windows *Start* menu.

Check the SQL Anywhere driver to make sure the applicable driver version is installed. Use the ODBC Drivers Selector utility located in `<LINK_DIR>/bin/ODBCDriversSelector.exe`.

Related Information

Creating the repository database [page 27]
Prepare the bundled database [page 26]

3.2.3.2 Creating the repository database

To prepare the SQL Anywhere database server for the Data Services repository, first connect to the BI4 server and then create a repository database.

> **i Note**
>
> BI4 and the BI4_CMS are for the Central Management Server (CMS) system database. The BI Platform or IPS installation automatically creates them when your administrator selects to use the bundled database server.

1. Open SQL Central and select *Connections* > *Connect with SQL Anywhere*`<version>` >.

   The *Connect* dialog box opens.
2. Make the following entries:

Option	Setting
Authentication	Select *Database*.
User ID	Type **dba**.
Password	Type the password that you or your administrator used to set up the user “dba” during BI or IPS installation.
Action	Select *Connect to a running database on this computer*.
Server name	Type **BI4**.

Option	Setting
Database name	Type **BI4_CMS**.

3. Click *Connect*.

   If the connection is not successful, read the error message and remedy the problem. When the connection is successful, the *Connect* dialog box closes. The BI4_CMS database opens in the main pane.
4. In SQL Central, click the *Context* dropdown arrow under the tool bar and click *BI4 on* `<computer name>`. The *Context* text box now contains *Sybase Central/SQL Anywhere/BI4 on* `<computer name>`. The program opens BI4 in the main pane.
5. Select *Tools* > *SQL Anywhere*`<version>` > *Create Database.*

   The *Create database Wizard* dialog box opens.
6. Read the message on the first page of the Wizard and click *Next*.

   Optional. Check the box to disable the message page so it won't appear when you create another database.
7. In the *Select a Location* dialog box, select *Create a database on the following server computer* and select *BI4* from the table. Click *Next*.
8. In the *Specify a Database File* dialog box, click *Browse* next to the *Save the main database file to the following file* text box.
9. Browse to `<INSTALL_DIR>\sqlanywhere\database\`. Enter `DS_REPO` in *File Name* and click *Save*.
10. Click *Next*. Continue through the Wizard as instructed in the following table. Each step contains information about the option that helps you make your settings.

Dialog box	Action
Specify the Transaction Log File	Accept the default or make applicable settings and click *Next*.
Specify the Transaction Log File Mirror File	Accept the default or make applicable settings and click *Next*.
Specify DBA User and Password	The DBA is the user that logs into the database after creation. It does not have to be the same user name and password that you use to access the BI4_CMS database. Note this information because you need it during SAP Data Services installation for the repository database connection dialog. • Enter a user name and password. • Enter the password again to confirm. • Click *Next*.
Install jConnect Support	Accept the default or make applicable settings and click *Next*.
Encryption Settings	Accept the default or make applicable settings and click *Next*.

Dialog box	Action
Specify the Page Size	Select a page size based on how much disk space you plan to use. Click *Next*.
Specify Additional Settings	• Accept the default or make applicable settings. • If you select the default, also select accent options as applicable. • Click *Next*.
Specify a Collation Sequence	This selection is required for the repository. • Select *Use the following supplied collation*. • Select *UTF8BIN* for multibyte characters. • Click *Next*.
Specify a Collation Sequence for NCHAR data	This selection is required for the repository. • Select *Use the following supplied collation*. • Select *UTF8BIN*. • Click *Next*.
Specify Collation Tailoring Options	Accept the defaults or: • Select an option from the *Case sensitivity* dropdown list for CHA collation. • Select options for NCHAR collation. • Click *Next*.
Choose the Security Model for the System Procedures	Accept the default or make applicable settings. Click *Next*.
Connect to the Database	• Select *Connect to the new database*. • Review the database information for correctness. • Uncheck the option *Stop database after last disconnect*. If you don't uncheck this option and you disconnect from the server, you have to reconnect to the repository database before you log into Data Services. • Click *Next*.
Summary	• Review your settings. • Click *Back* to change any settings. • Click *Finish* to complete the *Create Database Wizard*. • Click *Close* to close the Wizard.

The program creates the `DS_REPO` database and displays it in the main pane of SQL Central.

When you have completed all other preparation tasks, continue with installing SAP Data Services.

Related Information

Preparation [page 20]
Prepare the bundled database [page 26]

3.2.4 Extra requirements for DB2

Extra requirements if you use DB2 for your repository database.

Extra requirements for DB2

Requirement	More information
Install the DB2 Application Enabler software	Use DB2 Control Center and DB2 Script Center to verify the connection between the Designer host system and the repository host system.
Ensure that the software has a temporary table space	Page size must be 32K.

3.2.5 Extra requirements for Microsoft SQL Server

If you are using Microsoft SQL Server for the repository database, you need to choose between Windows authentication and Microsoft SQL Server authentication.

- Windows authentication
  Microsoft SQL Server validates the login account name and password using information from the Windows operating system.
- Microsoft SQL Server authentication
  Microsoft SQL Server authenticates the existing Microsoft SQL Server login account name and password.

3.2.6 Extra requirements for MySQL and Oracle

If you're using MySQL or Oracle for the repository database, the JDBC driver isn't bundled with the SAP Data Services installation. Therefore, perform the following additional steps:

- Download the JDBC driver for the database.
  The Data Services installation program will ask you to provide its location during the installation process.

> **i Note**
>
> Ensure that the JDBC driver name and version matches exactly what is listed in the PAM for your version of the database. If the driver name and version are different than what is listed in the Product Availability Matrix (PAM) on the SAP Support Portal, Data Services doesn't recognize the driver.

> **Note**
>
> If you do not configure the repository during installation, you need to manually copy the JDBC driver to the correct location. For more information, see Configuring JDBC drivers for Oracle and MySQL [page 61].

3.2.7 Extra requirements for Oracle

Extra requirements if you use Oracle for the repository database.

If you are using Oracle for the repository database:

Extra requirements for Oracle

Requirement	More information
Grant the database account the connect and resource roles, and grant the create any sequence privilege.	For Oracle 10G/R2, also grant the create view privilege.
Install the Oracle client software.	Use SQL*Plus to verify the connection between the Designer machine and the repository.
Download the JDBC driver for the database.	The Data Services installation program will ask you to provide its location during the installation process.

> **Note**
>
> To store multi-byte characters in a repository table when the repository is on an Oracle database, you must change the Oracle database character set to a code page that supports the multi-byte language that you plan to use, or you risk corrupting the metadata. For example, to store Japanese characters, change the Oracle database character set to either `SHIFT_JIS` or `UTF8`.

3.2.8 Extra requirements for Sybase

Extra requirements if you use Sybase for the repository database.

Extra requirements for Sybase

Requirement	More information
Select the SAP ASE database properties option named *ddl in tran*.	You must select this option before you install Data Services to successfully create and validate the repository.
You may use both Sybase and Microsoft SQL Server on a Windows host system.	Ensure that the Sybase path precedes the Microsoft SQL Server path in the environment variable's **%PATH%** statement

Requirement	More information
SAP ASE database page.	Size should be 4K or more.

3.2.9 Extra requirements for SAP HANA

To use SAP HANA for the repository database, make sure to prepare for extra requirements before you install the software.

The following table contains descriptions of extra requirements when you use SAP HANA as your repository database.

Extra requirements for SAP HANA

Requirement	More information
Select to install the bundled SQL Anywhere database.	The installation program uses the ODBC system information file in the SQL Anywhere bundle for writing new data source name (DSN) entries. The installation program attempts to find and write new DSN entries to an existing ODBC system information file. If it does not detect an existing file, the installation program creates a file in `<BIP_INSTALL_DIR>\odbc.ini` and adds the new entries to it. If you introduce new ODBC entries for reporting and analytic purposes, consolidate these entries into the same `.ini` file as the CMS and auditing database. For more information, see the *Information platform services Installation Guide for Unix* or *Information platform services Installation Guide for Windows*.
Before installation, choose to use the bundled JDBC driver or download a newer JDBC driver for the database.	Data Services includes a bundled JDBC driver for SAP HANA, however, you can also use a newer driver version, if available. The Data Services installation program asks you to provide the driver location during the installation process. You can defer driver configuration for after installation.

Related Information

Configuring JDBC drivers for Oracle and MySQL [page 61]
Configuring repositories [page 62]

3.3 DSN-less and TNS-less connections

DSN-less and TNS-less (Oracle) connections are also known as server name connections.

If you configure a repository during installation, SAP Data Services creates a DSN-less or TNS-less (Oracle) connection to the repository database by default.

Server name connections eliminate the need to configure the same DSN (Data Source Name) or TNS (Oracle Transparent Network Substrate) entries on every machine in a distributed environment.

> **!** Restriction
>
> To configure the repository using a DSN or TNS connection, skip the repository creation during installation and create the repository after installation.

The following table lists all eligible database types for the Data Services repository, and the supported connection types.

Repository database types and supported connection types

Database	DSN	DSN-less
DB2	Yes	Yes
Microsoft SQL Server	No	Yes
My SQL	Yes	Yes
Oracle	Yes: TNS	Yes: TNS-less
SAP HANA	Yes	Yes
SQL Anywhere	Yes	Yes
Sybase ASE	No	Yes

For databases that you use as sources and targets in Data Services, the database type determines the type of connection you can create. Some databases support both types of connections while other support one or the other.

The following table lists all eligible source and target databases and the connection types they support.

Source and target databases and supported connections

Database	DSN	DSN-less
Amazon Redshift	Yes	Yes
Attunity Connector	No	Yes
Data Federator	No	Yes
DB2 (Linux, UNIX, Windows)	Yes	Yes

Database	DSN	DSN-less
Hive	Yes	Yes
HP Vertica	Yes	No
Informix	Yes	Yes
Microsoft SQL Server	No	Yes
My SQL	Yes	Yes
Netezza	Yes	Yes
ODBC	Yes	No
Oracle	Yes: TNS	Yes: TNS-less
PostgreSQL	Yes	Yes
SAP HANA	Yes	Yes
Snowflake	Yes	Yes
SQL Anywhere	Yes	Yes
Sybase ASE	No	Yes
SAP IQ (Sybase IQ)	Yes	Yes
Teradata	Yes	Yes

The information in the database tables is subject to change and may not reflect the most up-to-date information. For current lists of supported databases and versions for repository or sources and targets, see the Product Availability Matrix (PAM) on the SAP Support Portal.

3.4 Creating a Windows cluster

If you want to take advantage of fail-over support for SAP Data Services in a Windows Clustering Environment, you must create a Windows cluster before you install the software.

If you choose this option, in the event of a hardware failure or Windows software failure, the Windows Cluster Manager will attempt to restart your services.

To use Data Services in a Windows Clustering Environment:

1. Create a Windows cluster.

   For details, see your Microsoft documentation.
2. Install the software on a shared drive from the first cluster host system.

3. Configure the Windows cluster.

Related Information

Configuring a Windows cluster [page 61]

3.5 Disable SSL on the Central Management Server (CMS)

The Data Services installation program does not support the SSL protocol during the installation process.

Before installing Data Services, check if your Central Management Server (CMS) has SSL enabled. If so, disable the SSL protocol on your CMS while you install Data Services. For Information Platform Services (IPS), check the SSL protocol by following these steps:

1. Open the SAP Central Configuration Manager as an administrator. For example, select *Start* > *SAP Business Intelligence* > *Central Configuration Manager* > *More* > *Run as administrator*.
2. Open the *Protocol* tab.
3. Make sure *Enable SSL* is not checked.

For more information about the SSL protocol, see the appropriate section in your CMS documentation:

- "Securing Information platform services, Configuring servers for SSL" in the *SAP BusinessObjects Information platform services Administrator Guide*
- "Securing the BI platform, Configuring servers for SSL" in the *SAP BusinessObjects BI platform Administrator Guide*

> **i Note**
>
> Topic titles are subject to change.

4 Installation

Information about how to install the SAP system.

You can run the installation program several ways:

- Interactive installation
  An interactive wizard prompts for all information related to the installation. Use this option to select individual options from a series of screens. This is the default installation method. You have the option of running the installation using default configuration settings or without configuration.
- Silent installation
  Installation options are given on the command-line, which override the installation program's default values. The command-line can be used to give some or all installation options. When an installation option is not given on the command-line, the installation program uses a default value.
  Installation options can be given in a response file rather than directly on the command-line. This type of silent installation uses the `-r` command-line parameter to read installation options from the response file. Use this option if you want to install multiple machines with the same configuration. Installation options stored in the response file can be overridden by giving them on the command-line.
  When the `-q` (quiet mode) switch is used, the installation program does not prompt for any user input during the installation.

If the installation program encounters an unexpected condition and is unable to continue, it will undo any work completed up to that point and return the system to the state that it was in before the installation started.

When the installation program detects an identical previously-installed version, it will enter maintenance mode, allowing you to remove, repair, or modify the software.

4.1 Interactive installation using default configuration

During installation, you can choose the *Install with default configuration* option in the installation type screen to set up the Data Services repository and Job Server.

The installer performs the following tasks during installation:

- Creates the repository tables in the repository database.
- Associates the repository with a Job Server, if you create one later in the installation.
- Registers the repository in the BI platform Central Management Console (CMC).

Choosing to install Data Services using the default configuration enables you to log in to the Designer and execute jobs immediately after installing.

Related Information

Interactive installation without configuration [page 45]

4.1.1 Running an interactive installation with default configuration

When you install Data Services using the default configuration, you can accept the default settings for most options. (Windows).

To install the Data Services system, use an account with administrative privileges. When the installation program starts, the software performs a series of prerequisite checks. The results of these checks are displayed for your information. The installer does not install Data Services if your host system does not meet the minimum requirements.

If the installation program does not find Microsoft C++ redistributable components, it automatically installs them.

Access the installation program by logging in to the console or use a Microsoft Remote Desktop connection (minimum dialog box resolution of 1024 x 768).

- If you are installing from physical media, look for `setup.exe` in the top-level folder.
- If you are installing from a compressed download, extract it and locate `setup.exe`.

> **i Note**
>
> If you are running the installation program from a network location, use a mapped drive and not an UNC path.

1. Double-click `setup.exe` in Windows Explorer or call it from the command-line.
2. The launch overview information dialog box appears. Make a selection and click *Next*.
   - *Yes*: Opens the SAP Help Portal and the SAP Data Services documentation page. Continues with the installation
   - *No*: Skips opening the SAP Help Portal and continues with the installation.
3. Review the items in the *Check Prerequisites* dialog box. If there are no critical conditions, click *Next*.

   If a dependency prerequisite condition is critical, the installation program stops and cancels the installation. If the missing or unsupported component is optional, you may continue with the installation or stop and correct the condition. The installation program provides information about how to correct the condition at the bottom of the dialog box.
4. Review the recommendations made by the installation program in the welcome dialog box. Click *Next*.
5. Read and accept the license agreement.
   The *Configure Product Registration* dialog box appears.
6. Enter your product keycode that you received when you purchased the software and click *Next*.

   > **→ Tip**
   >
   > Store the keycode and registration information in a safe place in case you have to reinstall the software.
7. Specify the installation location and click *Next*.

   > **i Note**
   >
   > If you have other SAP products already installed on the host system, you cannot change the destination folder.

The *Configure Data Services Common Directory* dialog box appears.

8. Accept the default location. Optionally, select *Change DS_COMMON_DIR Location*, and enter or browse for a new location. Click *Next*.

   The DS_COMMON_DIR contains Data Services configuration files and log files. The installer uses the Windows default location. To conserve disk space on certain fixed drives, you may change the location. The new directory that you choose must be a fixed, local directory that has sufficient disk space and permissions for all users.

   > **i Note**
   >
   > For important information about changing the common directory location, see Change DS_COMMON_DIR location [page 44].

   The *Select Language Packages* dialog box appears.

9. Select a language from the list to install support for that language.

   The installation program automatically selects the current language used by the operating system. You cannot deselect the English language because the software uses English when a problem is detected with an individual language.

   The *Specify CMS Connection Information* dialog box appears.

10. Choose whether to specify the CMS administrator logon information or to skip CMS setup.

    - Choose *Specify CMS*: Complete the options based on the descriptions in Specify CMS [page 40].
    - Choose *Skip CMS*: The installation program continues without presenting the options to create a CMS. If you select to skip CMS, continue with the installation following the steps in Running an interactive installation without configuration [page 45].

    > **i Note**
    >
    > Do not choose to skip CMS set up if:
    > - The system is the only system where Data Services is installed
    > - The system is the only system that hosts Information Steward

    For important information about choosing the option to skip CMS, see Skip CMS [page 41].

    If you select *Specify CMS*, the installer checks the information that you entered.

11. If you chose to specify CMS, the installer issues a message stating that it has to stop and restart the server intelligence agent (SIA). Select *Yes* to continue.
12. If you chose to specify CMS, select *Install with default configuration*.
    The *Select Features* dialog box appears.
13. Select the Data Services components that you want to install. Click *Next*.
    The *Specify Local Repository Database Type* dialog box appears.
14. Select the repository database type from the Database type dropdown list. If you are using the bundled database server, select *SQL Anywhere*.

    The *Repository Database Connection* dialog box appears.
15. Complete the options to create the local repository. Use the information that you saved when you created the database for the repository. Click *Next*.

    When you create a local repository during installation, the installation program performs the following tasks:

- Creates the repository tables in the repository database.
- Associates the repository with the Job Server (if you selected Job Server in the feature selection dialog box).
- Registers the repository in the Central Management Console (CMC).

By performing these tasks, you (the administrator) can log in to the Designer and execute jobs immediately following installation.

> **i Note**
>
> You can optionally skip the repository configuration and configure repositories after installation using the Repository Manager.

The logon information dialog box appears.

16. Specify the user account to run the Data Services system services.

    Select *Use this account*. The *User name* is automatically completed with the system services administrator name. Enter the Password.

    > **i Note**
    >
    > You can also choose to use the system account. However, specify a regular user account if you access certain resources such as shared folders on other systems.

    The start installation confirmation dialog box appears.

17. Click *Next* to begin the installation process.

    During the installation process, the installation program saves your installation selections in a cache, transfers files, and performs additional configuration actions.

    The feature summary dialog box appears.

18. Review the list of features installed and not installed and click *Next*.
19. If applicable, the installer presents a post installation steps dialog box.

    If there is a problem with the installation, the post installation steps dialog box appears and provides information about what to do next.

20. Make note of any post installation requirements and then click *Install*.

    During installation, the progress bar illustrates the progress of the installation as a whole. During the installation process, the installation program saves your installation selections in a cache, transfers files, and performs additional configuration actions.

21. When installation completes, click *Finish* to exit the installation.
    The reboot message dialog box appears.
22. Reboot your computer to complete the installation. Click *Yes* to restart now or click *No* to restart at a later time.

> **i Note**
>
> The installation program installs SAP activity and resource monitoring tools. These tools enable you to provide detailed technical information about your installation in the event of a problem.

Related Information

Change DS_COMMON_DIR location [page 44]
Data Services component descriptions [page 42]
Creating a local repository during installation [page 43]
Interactive installation without configuration [page 45]

4.1.2 Specify CMS

During an interactive installation, enter administrator-level connection information for your Central Management Server (CMS).

The installation program guides you through setting up Data Services InfoObjects, Adaptive Processing Server (APS) services, and Management Console features.

Enter A CMS user name that has administrative privileges to validate the CMS and perform necessary checks for deployment.

> **i Note**
>
> To use Data Services for certain administrative tasks, you must have at least one CMS in your landscape. For example, use Data Services to register a repository in CMS, or use the Designer, Workbench, or Management Console features. The landscape is where Data Services InfoObjects are deployed via EIM APS Services or Management Console feature deployment on Windows or Unix/Linux server.

CMS option descriptions

Option	Description
System	Name of the host machine where the Central Management Server (CMS) is installed.
Enable SSL	Specify whether the CMS uses Secure Socket Layer (SSL). **! Restriction** Currently, *Enable SSL* is not supported during Data Services installation.
User	User name of the administrative CMS user. The default is `Administrator`.
Password	Password for the CMS user. The password for the default Administrator account is defined during the BI platform installation process.

Option	Description
Authentication mode	Authentication mode used by the CMS. **! Restriction** Data Services only supports the Enterprise authentication method during installation.

⚠ Caution

The installation program restarts the Server Intelligence Agent (SIA) before it continues with the installation. Therefore, ensure that the SIA is not in use and that the input file repository server is enabled and can start automatically before proceeding.

Related Information

Running an interactive installation with default configuration [page 37]

4.1.3 Skip CMS

If you choose *Skip CMS* during the interactive installation, ensure that the Adaptive Processing Server (APS) services, which are required for Data Services and Information Steward product usage, are deployed to at least one CMS in your landscape.

When you choose *Skip CMS*, the installation type screen is not displayed because the installation type defaults to *Install without configuration*. For Install without configuration, the installer skips repository and Job Server configuration. Therefore, after installation, configure a repository and register it to the CMS and Job Server so that you can use Data Services.

! Restriction

If this is the only system where Data Services is installed or if this is the only system that hosts Information Steward, do not select the *Skip CMS* option.

Related Information

Running an interactive installation with default configuration [page 37]

4.1.4 Data Services component descriptions

During an interactive installation, you select the Data Services components to install. The following table provides descriptions for the Data Services components.

> **i Note**
>
> Depending on previous input to the installation program, some options may not be available (for example, if you are installing on a non-server operating system).

> **→ Tip**
>
> To verify whether you have sufficient available disk space for the selected components, click *Disk Cost*.

Component	Description
Job Server	The Job Server starts engine processes to perform data extraction, transformation, and movement. **i Note** You can also configure the Job Server after installation.
Designer	The Designer is a graphical development tool that enables developers to define data management applications that consist of data mappings, transformations, and control logic.
Management Console	The Management Console includes web applications that provide browser-based administration, analysis, and reporting capabilities for Data Services.
APS Services	The Adaptive Processing Server (APS) services are deployed on the BI (or IPS) platform and provide Data Services with basic administration, metadata browsing, view data, data quality, and RFC server capabilities. These services are used by Data Services and other applications such as SAP Information Steward.
Message Client	The Message Client API provides C++ and Java APIs that allow you to connect to Data Services real-time services with external applications.
Text Data Processing Languages	Supports processing of unstructured text in multiple languages. **i Note** Text Data Processing support for English is installed by default and cannot be uninstalled. Select additional languages if you want to process unstructured text in other languages.
Cleansing Package	The SAP-supplied person and firm cleansing package is used by SAP Information Steward and the Data Cleanse transform in Data Services.
DataDirect ODBC Drivers	The DataDirect drivers allow Data Services to connect to ODBC data sources on UNIX and Windows platforms.
Documentation	Installs the Data Services documentation. Documentation is also available on the Help Portal at https://help.sap.com/viewer/p/SAP_DATA_SERVICES.

Related Information

Running an interactive installation with default configuration [page 37]

4.1.5 Creating a local repository during installation

During an interactive installation with default configuration, the installer has you create a local repository for SAP Data Services.

If you plan to create the local repository using the installer, create a database in your database management system for the repository. The installer requires the connection information, user name, and password information to configure the repository.

> ⚠ Caution
>
> The installer doesn't allow you to upgrade an existing repository during the installation process. If you specify an existing repository, the installation program asks if you want to overwrite the repository. If you choose to overwrite the repository, the installation program replaces existing content, which becomes lost.
>
> To upgrade an existing repository, use the Repository Manager after installing Data Services. For more information, see the *Administrator Guide*.

Perform the steps in Running an interactive installation with default configuration [page 37] until you reach the step to create a local repository.

1. In the *Repository Database Connection* dialog box, enter the registration name for the Central Management Sever (CMS)

   The software automatically completes this option. You can change it.

   > → Tip
   >
   > The repository registration name is the logical name for the repository. The name appears in the Central Management Console (CMC) and in the client logon screens, such as for Designer, where the repository is selected.

2. Confirm that the database type is correct.

   The software automatically completes this option based on the database type you chose in the previous dialog box. Click *Back* to change the database type.

3. Select the repository database management system version for *Server version*.
4. Enter the repository database server name.
5. Optional. Edit the database port number.

   The software automatically completes the port number based on the database type you choose. You can change it if the port number is already being used for something else.

6. Enter the name of the database that you created for the repository.
7. Enter the user name.
8. Enter the password.

> **Note**
>
> The *Get Version* button does not work for SAP Data Services.

9. Click *Next*.

The software creates the new repository and the logon information screen appears. Continue with the steps in Running an interactive installation with default configuration [page 37].

> **Note**
>
> If you receive error messages that the software could not connect to the database, check that the server name, user name, and password entries are correct. Also make sure that the database exists and that you can connect to it.

4.1.6 Change DS_COMMON_DIR location

When you perform a fresh installation, or an upgrade from a previous version to Data Services 4.2 SP6 (or higher) on Windows, you can change the DS_COMMON_DIR location.

The DS_COMMON_DIR directory contains configuration files and log files that Data Services components read from and write to during installation, upgrade, and runtime. The common directory includes the following folders:

- adapters
- conf
- dataquality
- ext
- log
- workspace
- wsstatus

The new directory that you choose must be a fixed, local directory, have sufficient disk space for the configuration files and log files, and must be available to all users. After you specify a new location, subsequent installations will point to this new location as your default location, and all log files generated after installation go to the new location.

The installer transfers all folders from the previous location to the new location except for the log files. The installer creates a log folder in the new location but it does not move the log files from the previous log folder to the new location.

As a post installation option, you can manually move the old log files to the new location by following the steps in SAP Note 2224008.

As with all Data Services directories, you must make sure that the new common directory location and folders are properly administered so that they are not accidentally deleted or moved. We also suggest that you create a local copy of the log folder from the current DS_COMMON_DIR before you run subsequent upgrade installations. This will ensure that you do not lose important log files during an upgrade. You may need these log files later. For example, if you generate monthly reports, you may lose information from previous months if you perform an upgrade mid month.

Related Information

Errors when changing DS_COMMON_DIR location [page 76]

4.2 Interactive installation without configuration

During installation, you can choose to install Data Services without configuration, meaning you install without configuring the Data Services InfoObjects, Adaptive Processing Server (APS) and Management Console.

Typically, you would choose to install Data Services without configuration to install the Data Services client feature on Windows or to install the Job Server standalone feature on a Windows or Unix/Linux server.

After installing without configuration, you must ensure that the Adaptive Processing Server (APS) Services, which are required for Data Services and Information Steward product usage, are deployed to at least one CMS in your landscape.

During this type of installation, the installation program does not present the screens to create a local repository or set up the repository database connection.

Related Information

Running an interactive installation without configuration [page 45]

4.2.1 Running an interactive installation without configuration

Instructions to run an interactive installation without configuring the repository and Job Server.

Follow the steps in Running an interactive installation with default configuration [page 37], however, choose *Skip CMS* when the Central Management Server (CMS) connection screen appears.

> **i** Note
>
> If you select *Specify CMS* in the CMS connection screen and continue, the installation type screen appears, where you choose to install with or without configuration. However, when you select *skip CMS*, the installation program automatically chooses the option to *Install without configuration*, and skips to the feature selection screen.

> **i** Note
>
> For important information about choosing the option to skip CMS, see Skip CMS [page 41].

1. In the feature selection screen, select the Data Services components that you want to install. See Data Services component descriptions [page 42].

The merge existing configuration screen appears.

2. To reuse configurations from a previous installation, select *Reuse an existing configuration* and navigate to the location of the `DSConfig.txt` from the previous installation. To skip configuration, select *Skip configuration*.

   > **Note**
   >
   > If you are reusing configurations from a previous installation of Data Services 14.x or higher, `DSConfig.key` must also be in the same folder. Previous versions do not require `DSConfig.key`.

   The login information screen appears.

3. Specify the user account that will be used to run the Data Services system services.

   > **Note**
   >
   > You can also choose to use the system account. However, it is recommended that you specify a regular user account because the system account will not have access to certain resources such as shared folders on other systems.

   The start installation confirmation screen appears.

4. Click *Next* to begin the installation process.

   During the installation process, the installation program saves your installation selections in a cache, transfers files, and performs additional configuration actions.

   The feature summary screen appears.

5. Review the list of features installed and not installed and click *Next*.
   If there is a problem with the installation, the post installation steps screen appears and provides information about what to do next.

6. Click *Finish* to exit the installation.
   The reboot message screen appears.

7. To complete the installation, you must reboot your computer. Click *Yes* to restart now or click *No* to restart at a later time.

4.3 Running a silent installation

A silent installation is when you install Data Services by entering commands into a command-line. Every option in the installation wizard can be given from the command-line.

Installation options can be given directly on the command-line as a parameter, or can be stored in a response file.

Related Information

Installation option parameters [page 50]
Response file example [page 57]

4.3.1 Installation options on command-line

Installation options can be passed directly to the installation program from the command-line as a parameter.

For example, the installation option `DSConfigJSPort=3501` can be given on the command-line as a parameter when running the installation program to set the Job Server port number to 3501, instead of the default value of 3500.

In the following example of giving the `DSConfigJSPort` parameter on the command-line, ellipses (`[...]`) indicate where other installation options would normally be present:

```
setup.exe [...] DSConfigJSPort=3501 [...]
```

4.3.2 Installation options in a response file

Installation options can be stored in a response file, which is a text file containing installation option parameters in key-value format.

When using a response file to give installation options, the installation program is run from the command-line with the `-r <RESPONSE_FILE>` parameter, where `<RESPONSE_FILE>` is the name of the response file.

The response file contains multiple installation options, with one installation option per line. In the following example, the response file is given as a parameter:

```
setup.exe [...] -r C:\response.ini [...]
```

For example, the installation option `DSConfigJSPort=3501` can be given on a line in the response file to set the Job Server port number to 3501, instead of the default value of 3500.

In the following example of giving the `DSConfigJSPort` parameter in a response file, ellipses (`[...]`) indicate where other installation options would normally be present:

```
[...]
DSConfigJSPort=3501
[...]
```

> **i** Note
>
> The installation program returns the cursor to the command-line prompt when it starts. To run the installation program from a script, or force the installation program to wait until it has completed before returning to the command-line, use the Windows Command Interpreter `start /wait` command to invoke `setup.exe`.
>
> For example:
>
> ```
> start /wait setup.exe [<COMMAND_LINE_OPTIONS>]
> ```

4.3.3 Command-line switch parameters

A list of the switch parameters that can be given to the installation program on the command-line to perform a silent installation.

Switch parameter	Description	Example
`-w <FILENAME>`	Writes a response file to `<FILENAME>`, containing the options selected from the installation wizard.	`setup.exe -w "C:\response.ini"`
`-r <FILENAME>`	Reads installation options from a response file named `<FILENAME>`.	`setup.exe -r "C:\response.ini"`
`-q`	Installs with no console output or prompting. If a problem is encountered, the installation program will write a message to the installation log file and exit.	`setup.exe -q -r "C:\response.ini"`

4.3.3.1 Using a response file

To use a response file, run the installation program with the `-r <RESPONSE_FILE>` parameter.

The installation program reads all installation options from the response file, and no further input is required.

For example, the following command reads installation options from the response file `C:\response.ini`:

```
setup.exe -r C:\response.ini
```

To override an installation option in a response file, give that option on the command-line. Installation options given on the command-line take precedence over the options in the response file. For a complete list of installation options, see “Installation option parameters”.

If an unexpected condition is encountered, the installation program writes an error message to the installation log file and exits. Installation activity, warnings, and errors are written to the installation log file in the folder:

`<INSTALL_DIR>\InstallData\logs\<DATE>\InstallDU<COMPONENT>.log`

If the `<INSTALL_DIR>` folder has not been created by the time the installation program exits, look for `install.log` in the temporary folder specified by the system `<TEMP>` environment variable.

Related Information

Installation option parameters [page 50]

4.3.3.1.1 Writing a response file

To create a response file, run the installation program with the `-w <RESPONSE_FILE>` parameter and select the desired installation options with the installation wizard.

When the wizard completes, the installation program exits and the response file is created. The response file can then be used for future installations.

For example, the following command creates the response file `C:\response.ini`:

```
setup.exe -w C:\response.ini
```

Once created, the response file can be updated with a text editor.

> **Note**
>
> When you specify passwords in the installation program, they are stored in the response file as `******` for security reasons. You will need to specify the parameters on the command-line.
>
> For example, specify the `DSCMSPassword=<password>` on the command-line:
>
> ```
> setup.exe -r C:\response.ini DSCMSPassword=<password>
> ```

4.3.3.1.2 Reading a response file

A response file installation is started on the command-line, but installation options are read from an ASCII text file with the options stored in key-value format.

A response file installation is useful when setting up a cluster, or for creating development or test environments with standardized options.

When an option is given both on the command-line and in a response file, the command-line options take precedence over the response file options. This feature allows an administrator to override an option in a response file when required, and provides three levels of precedence for installation options:

1. Installation options given on the command-line take highest precedence, and will always override response file and default values.
2. Installation options given in a response file are used when not given on the command-line, and override default values.
3. Installation option default values are used when not given on the command-line or in a response file.

For example, the following command reads installation options from the response file `C:\response.ini`, but overrides the response file's setting for the installation destination folder:

```
setup.exe -r C:\response.ini InstallDir="C:\Program Files\SAP
BusinessObjects\Data Services\"
```

4.3.3.2 Quiet mode installations

A quiet mode installation is a command-line installation that does not prompt for installation options.

Installation options must be provided on the command-line or in a response file. Any installation options not provided on the command-line or in a response file will be left at their default values.

The `-q` switch bypasses the installation program's installation wizard, and allows an installation to be performed with no human input and no console output.

For example, the following command uses the responses in `D:\response.ini` and overrides the installation destination folder (set to `C:\SAP\DataServices\` instead of the default folder).

```
setup.exe -q -r D:\response.ini InstallDir="C:\Program Files (x86)\SAP
BusinessObjects\DataServices\"
```

If an unexpected condition is encountered, an error message is written to the installation log file and the installation program exits. Installation activity, warnings, and errors are written to the installation log file in the folder:

`<INSTALL_DIR>\InstallData\logs\<DATE>\InstallDU<COMPONENT>.log`

If the `<INSTALL_DIR>` folder has not been created by the time the installation program exits, look for `install.log` in the temporary folder specified by the system `<TEMP>` environment variable.

> **Note**
>
> If you are installing SAP Data Services on a Windows system that has User Account Control (UAC) enabled, you should run the installation program with the system's built-in administrator account. If you use a normal account, a UAC prompt will appear.

4.3.4 Installation option parameters

The following table lists the parameters that can be used to select installation options both on the command-line and in response files.

Installation option parameters

Parameter	Description
`SetupUILanguage=<CODE>`	Determines the language for the installation program to use during the installation. Substitute the language code where `<CODE>` is: • English: `EN`
`InstallDir=<PATH>`	Destination folder into which the installation program will install the software. When installing to a host that already has an installation of SAP Data Services, SAP BusinessObjects BI platform, or SAP BusinessObjects Information platform services, the value of `InstallDir` will be automatically set to the same path as the existing installation.

Parameter	Description
`SelectedLanguagePacks=<CODE>`	Installs language support for users and administrators to interact with SAP Data Services in a supported language. If more than one language pack is to be installed, use a semi-colon delimited list without spaces, within quotes, to separate each code. In the following example, language support for English will be installed: `SelectedLanguagePacks="en"` Substitute the following language codes where `<CODE>` is: • English: `EN` • Japanese: `JA` • Turkish:`TR`
`ProductKey=<KEY>`	Product license key issued when you purchased the software. Substitute `<KEY>` with the product key in the format `XXXXX-XXXXXX-XXXXXX-XXXX`.
`ChooseSLDIntegration=<VALUE>`	Determines whether SAP System Landscape Directory (SLD) support will be enabled or not. To enable SLD integration, set `<VALUE>` to `integrate`. To disable SLD integration, set `<VALUE>` to `nointegrate`.
`DSCMSAuth=<TYPE>`	Authentication type used by the Central Management Server (CMS). Susbstitute the authentication type where `<TYPE>` is: • Enterprise authentication: `secEnterprise` **! Restriction** Data Services supports only the Enterprise authentication method during installation.
`DSCMSEnableSSL=<SWITCH>`	Specifies whether the Central Management Server (CMS) uses SSL security. If the CMS is configured for SSL support, set `<SWITCH>` to `1`. If the CMS is not configured for SSL support, set `<SWITCH>` to `0`.
`DSCMSNode=<NODE>`	Specifies the node name for the Central Management Server (CMS). Substitute `<NODE>` with the CMS node name.
`DSCMSSystem=<HOST>`	Hostname of the Central Management Server (CMS). Substitute `<HOST>` with the CMS hostname.
`DSCMSUser=<USER>`	User name for the CMS administrator account. Substitute `<USER>` with the user name.
`DSCMSPassword=<PASSWORD>`	Password for the CMS administrator account. Substitute `<PASSWORD>` with the password.
`DSConfigASSelection=<SKIP>`	Determines whether to configure a new Access Server during installation. This option is no longer set during installation. Set this option `<VALUE>` to `skip`.
`DSConfigCMSSelection=<VALUE>`	Determines whether to configure InfoObjects and the Management Console on a CMS during installation. To configure CMS-hosted components, set `<VALUE>` to `install`. To not configure CMS-hosted components, set `<VALUE>` to `skip`.

Parameter	Description
DSConfigJSSelection=<VALUE>	Determines whether to configure a new Job Server during installation. To configure a new Job Server, set <VALUE> to new. To not configure a new Job Server, set <VALUE> to skip.
DSConfigJSServerName=<NAME>	Server name for the Job Server to create during the installation process. Substitute <NAME> with the Job Server name.
DSConfigJSServerPort=<PORT>	Network TCP listening port number used by the Job Server. Substitute <PORT> with the port number.
DSConfigMergeSelection=<VALUE>	Determines whether the installation program will merge an existing DSConfig.txt configuration file with the new installation configuration. To merge an existing configuration file, set <VALUE> to install. To not merge an existing configuration file, set <VALUE> to skip.
DSExistingDSConfigFile=<PATH>	Existing DSConfig.txt configuration file to merge with the new installation configuration. Substitute <PATH> with the full path of the existing configuration file.
DSInstallInfoObjects=<VALUE>	Determines whether or not the installation program will configure the Data Services InfoObjects on the Central Management Server (CMS) during the installation process. To configure the InfoObjects during installation, set <VALUE> to true. To not configure the InfoObjects, set <VALUE> to false.
DSInstallTypeSelection = <VALUE>	Determines the type of installation to run. To run the installation with default configuration, set <VALUE> to EXPRESS. To run the installation without configuration, set <VALUE> to CUSTOM.
DSJSDetailCacheDirectory=<DIRECTORY>	Directory where the Job Server pageable cache should be configured. Substitute <DIRECTORY> with the full directory path.
DSJSDetailCommPort=<PORT>	Network TCP listening port number used by the Job Server for adapter and message broker communication. Substitute <PORT> with the port number.
DSJSDetailEnableSSL=<SWITCH>	Determines whether SSL support will be enabled on the Job Server. To enable SSL on the Job Server, set <SWITCH> to 1. To not enable SSL support, set <SWITCH> to 0.
DSJSDetailEndPort=<PORT>	Ending network TCP listening port number used by the Job Server when sending data between data flows or sub data flows. Substitute <PORT> with the port number.
DSJSDetailStartPort=<PORT>	Starting network TCP listening port number used by the Job Server when sending data between data flows or sub data flows. Substitute <PORT> with the port number.
DSJSDetailSupportComm=<SWITCH>	Determines whether or not the Job Server will support adapter or message broker communication. To enable communication support on the Job Server, set <SWITCH> to 1. To not enable communication support, set <SWITCH> to 0.
DSJSPCacheEnableSSL=<SWITCH>	Determines whether or not SSL support will be enabled for pageable cache on the Job Server. To enable SSL support, set <SWITCH> to 1. To not enable SSL support, set <SWITCH> to 0.

Parameter	Description
DSLoginInfoAccountSelection=<VALUE>	Determines whether the Data Services service will log onto the host system using the system account or a specific user account. To log onto the host system using the system account, set <VALUE> to system. To log onto the host system using a specific user account, set <VALUE> to this.
DSLoginInfoThisPassword=<PASSWORD>	Password for the account that the Data Services service should use to log onto the host system. Substitute <PASSWORD> with the password.
DSLoginInfoThisUser=<USER>	User name for the account that the Data Services service should use to log onto the host system. Substitute <USER> with the user name.
DSMDSJMXPort=<PORT>	Network TCP listening port number used by the Metadata Browsing Service for the JMX connector. Substitute <PORT> with the port number.
DSMDSPort=<PORT>	Network TCP listening port number used by the Metadata Browsing Service. Substitute <PORT> with the port number.
DSRepoCreateUpgrade=<VALUE>	Determines whether to create or upgrade a Data Services local repository during the installation process. To create a new local repository, set <VALUE> to Create.
DSRepoDBDataSource=<blank>	Stores the ODBC System DSN. This option no longer used.
DSRepoDBHost=<HOST>	Hostname for the database server that will contain the Data Services repository. Substitute <HOST> with the hostname.
DSRepoDBName=<NAME>	Database name for the database that will contain the Data Services repository. Substitute <NAME> with the database name.
DSRepoDBPasswd=<PASSWORD>	Password for the database account that will be used to access the repository database. Substitute <PASSWORD> with the account password.
DSRepoDBPort=<PORT>	Network TCP listening port number used by the database that will host the Data Services repository. Substitute <PORT> with the port number.
DSRepoDBType=<TYPE>	Type of database that will host the Data Services repository. Substitute the database type where <TYPE> is: • Microsoft SQL Server: Microsoft_SQL_Server • MySQL: MySQL • Oracle: Oracle • DB2: DB2 • SAP HANA: HANA • SAP Sybase SQL Anywhere: SQL_Anywhere • SAP ASE: Sybase
DSRepoDBUser=<USER>	User name for the database account that will be used to access the repository database. Substitute <USER> with the account user name.

Parameter	Description
`DSRepoDBVersion=<VALUE>`	The version of the database that will host the Data Services repository. Substitute the database version where `<VALUE>` is: • Oracle 10g: `ORACLE10` • Oracle 11g: `ORACLE11` • DB2 UDB 9.x: `DB2V9` • DB2 UDB 10.x: `DB2V10` • DB2 UDB 11.x: `DB2V11` • MySQL 5.0: `MYSQL5v1` • MySQL 5.1: `MYSQL5v2` • MySQL 5.5: `MYSQL5v5` • HANA 1.x: `HANA` • SQL Anywhere 12.x: `SQLANYWHERE12` • SQL Anywhere 16.x: `SQLANYWHERE16`
`DSRepoNameForCMS=<NAME>`	Name that will be used to register the Data Services repository in the Central Management Server (CMS). Substitute `<NAME>` with the repository name.
`DSRepoOracleSID=<VALUE>`	User-specific Oracle SID required to use Oracle as the repository database.
`DSRepoSelection=<VALUE>`	Determines whether or not to configure a new repository during the installation process. To configure a new repository, set `<VALUE>` to `new`. To not configure a new repository, set `<VALUE>` to `existing`.
`DSRepoWindowsAuth=<SWITCH>`	Specifies whether or not the repository database uses Windows authentication. If the database uses Windows authentication, set `<SWITCH>` to `1`. If the database uses a different authentication method, set `<SWITCH>` to `0`.
`DSVDSJMXPort=<PORT>`	Network TCP listening port number used by the Viewdata Service for the JMX connector. Substitute `<PORT>` with the port number.
`DSVDSPort=<PORT>`	Network TCP listening port number used by the Viewdata Service. Substitute `<PORT>` with the port number.
`Features=<CODE>`	List of components to install. To select multiple features, use a comma-delimited list without spaces to give each code. In the following example, the Job Server and Access Server will be selected for install: `Features=DataServicesJobServer,DataServicesAccessServer` For a complete list of feature codes, see Feature codes [page 55].

Parameter	Description
`DSNewCommonDir=<new_location>`	Enter a new location for the Data Services common directory. Windows only. Use for an upgrade installation when you want to change the location of the DS_COMMON_DIR. The new location must have access rights for all users, must be a fixed local drive, and must have sufficient disk space to contain the configuration and log files. The common directory contains configuration files and log files that the software components read from and write to during installation, upgrade, and runtime. The software moves all folders and sub folders to the new location from the existing location except for the files in the log folder (and sub folders). The installer creates a log folder in the new location, but does not automatically move the files. The new log folder is empty except for log files from the installation/update that you just performed. You can move the contents of the previous log folder to the new log folder.
`ISCommonDirChanged=0 or 1`	Enter 0 or 1. Windows only. Use only during a new or an upgrade installation to indicate if you changed the location of the DS_COMMON_DIR. • 0 = Did not change location • 1 = Changed location
`DSCommonDir=<default_location>` or `<new_location>`	Enter either the Data Services default location or a new location. Windows only. Use for a fresh installation of Data Services.

4.3.4.1 Feature codes

Feature codes that you can use to select features for installation.

To select multiple features, separate each feature code with a comma, without spaces. For example, the following feature list selects the Job Server and documentation files:

```
features=DataServicesJobServer,DataServicesDocumentation
```

> **i** Note
>
> English is installed automatically.

- `root`: install all features
  - `DataServicesServer`: install all server components
    - `DataServicesJobServer`
    - `DataServicesAccessServer`
  - `DataServicesClient`: install all client components
    - `DataServicesDesigner` (Designer and Workbench)

- `DataServicesManagementConsole`
- `DataServicesEIMServices`: install services to the Adaptive Processing Server (APS)
- `DataServicesMessageClient`
- `TextDataProcessingLanguages`: install all text data processing languages
  - `TextDataProcessingArabic`
  - `TextDataProcessingBokmal`
  - `TextDataProcessingCatalan`
  - `TextDataProcessingCroatian`
  - `TextDataProcessingCzech`
  - `TextDataProcessingDanish`
  - `TextDataProcessingDutch`
  - `TextDataProcessingFarsi`
  - `TextDataProcessingFrench`
  - `TextDataProcessingGerman`
  - `TextDataProcessingGreek`
  - `TextDataProcessingHebrew`
  - `TextDataProcessingHungarian`
  - `TextDataProcessingItalian`
  - `TextDataProcessingJapanese`
  - `TextDataProcessingKorean`
  - `TextDataProcessingNynorsk`
  - `TextDataProcessingPolish`
  - `TextDataProcessingPortuguese`
  - `TextDataProcessingRomanian`
  - `TextDataProcessingRussian`
  - `TextDataProcessingSerbian`
  - `TextDataProcessingChinese` (Simplified Chinese)
  - `TextDataProcessingSlovak`
  - `TextDataProcessingSlovenian`
  - `TextDataProcessingSpanish`
  - `TextDataProcessingSwedish`
  - `TextDataProcessingThai`
  - `TextDataProcessingTChinese` (Traditional Chinese)
  - `TextDataProcessingTurkish`
- `DataServicesDataDirect`: install the DataDirect ODBC driver manager library
- `DataServicesDocumentation`: install documentation files

4.3.4.2 Response file example

An example response file that contains options for installing SAP Data Services using Microsoft SQL Server as the repository database type.

Example

In this example, the response file is named `C:\response.ini`.

```
### *** property.ChooseSLDIntegration.description ***
choosesldintegration=nointegrate
### #property.CMSAUTHENTICATION.description#
cmsauthentication=secEnterprise
### CMS administrator password
cmspassword=********
### #property.CMSUSERNAME.description#
cmsusername=Administrator
### #property.CMSAuthMode.description#
dscmsauth=secEnterprise
### #property.CMSEnabledSSL.description#
dscmsenablessl=0
### #property.CMSNode.description#
dscmsnode=boenode
### #property.CMSNodeList.description#
dscmsnodelist=boenode
### CMS administrator password
dscmspassword=******
### #property.CMSServerPort.description#
dscmsport=6400
### #property.CMSServerName.description#
dscmssystem=localhost
### #property.CMSUser.description#
dscmsuser=Administrator
### #property.DSConfigCMSSelection.description#
dsconfigcmsselection=install
### #property.DSExistsOnCMS.description#
dsexistsoncms=1
### #property.DSInstallTypeSelection.description#
dsinstalltypeselection=Express
### #property.DSLocalCMS.description#
dslocalcms=true
### #property.DSInstallInfoObjects.description#
dsinstallinfoobjects=false
### #property.DSLoginInfoAccountSelection.description#
dslogininfoaccountselection=this
### #property.DSLoginInfoThisPassword.description#
dslogininfothispassword=******
### #property.DSLoginInfoThisUser.description#
dslogininfothisuser=DOMAIN\USER
### #property.DSMoreThanOneCMSNode.description#
dsmorethanonecmsnode=0
### #property.DSRepoCreateUpgrade.description#
dsrepocreateupgrade=Create
### #property.DSRepoDBDataSource.description#
dsrepodbdatasource=
### #property.DSRepoDBHost.description#
dsrepodbhost=localhost
### #property.DSRepoDBName.description#
dsrepodbname=ds_repo
### #property.DSRepoDBPasswd.description#
dsrepodbpasswd=dbpasswd
```

```
### #property.DSRepoDBPort.description#
dsrepodbport=1433
### #property.DSRepoDBType.description#
dsrepodbtype=Microsoft_SQL_Server
### #property.DSRepoDBUser.description#
dsrepodbuser=dbuser
### #property.DSRepoDBVersion.description#
dsrepodbversion=
### #property.DSRepoNameForCMS.description#
dsreponameforcms=shared_new
### #property.DSRepoOracleConnStr.description#
dsrepooracleconnstr=
### #property.DSRepoOracleRAC.description#
dsrepooraclerac=No
### #property.DSRepoOracleSID.description#
dsrepooraclesid=
### #property.DSRepoWindowsAuth.description#
dsrepowindowsauth=0
### Installation folder for SAP products
installdir=C:\Program Files (x86)\SAP BusinessObjects\
### #property.MasterCmsName.description#
mastercmsname=WIN2K8R2
### #property.MasterCmsPort.description#
mastercmsport=6400
### Keycode for the product.
productkey=XXXXX-XXXXXXX-XXXXXXX-XXXX
### #property.SelectedLanguagePack.description#
selectedlanguagepacks=en
### *** property.SetupUILanguage.description ***
setupuilanguage=en
### Available features
### ------------------
### root
###   DataServicesServer
###     DataServicesJobServer
###     DataServicesAccessServer
###   DataServicesClient
###     DataServicesDesigner
###   DataServicesManagementConsole
###   DataServicesEIMServices
###   DataServicesMessageClient
###   TextDataProcessingLanguages
###     TextDataProcessingArabic
###     TextDataProcessingBokmal
###     TextDataProcessingCatalan
###     TextDataProcessingCroatian
###     TextDataProcessingCzech
###     TextDataProcessingDanish
###     TextDataProcessingDutch
###     TextDataProcessingFarsi
###     TextDataProcessingFrench
###     TextDataProcessingGerman
###     TextDataProcessingGreek
###     TextDataProcessingHebrew
###     TextDataProcessingHungarian
###     TextDataProcessingItalian
###     TextDataProcessingJapanese
###     TextDataProcessingKorean
###     TextDataProcessingNynorsk
###     TextDataProcessingPolish
###     TextDataProcessingPortuguese
###     TextDataProcessingRomanian
###     TextDataProcessingRussian
###     TextDataProcessingSerbian
###     TextDataProcessingChinese
###     TextDataProcessingSlovak
###     TextDataProcessingSlovenian
###     TextDataProcessingSpanish
```

```
###     TextDataProcessingSwedish
###     TextDataProcessingThai
###     TextDataProcessingTChinese
###     TextDataProcessingTurkish
###   DataServicesDataDirect
###   DataServicesDocumentation
features=DataServicesJobServer,DataServicesAccessServer,DataServicesServer,DataSe
rvicesDesigner,DataServicesClient,DataServicesManagementConsole,DataServicesEIMSe
rvices,DataServicesMessageClient,DataServicesDataDirect,DataServicesDocumentation
```

5 Post-Installation

There are several tasks that you perform after the installation program has finished.

When the installation is complete, review the information in the post installation steps screen. If you are not using the bundled Tomcat web application server, you must deploy web applications with the WDeploy web application deployment tool.

During installation, you have the option to create a single repository that will be registered in the CMC, a single Job Server, and a single Access Server. For more complex configurations, or if you need to make changes, you need to perform additional configuration steps such as creating users and groups, registering repositories in the CMC, and configuring Job and Access Servers.

If you are installing to a Windows Clustering Environment, you also need to configure the Windows cluster.

For your reference, the installer saves a copy of the post installation instructions in the following location:

```
<DS_COMMON_DIR>\log\PostInstallationInstructions.txt
```

5.1 Reboot suppression

If a file is locked during the installation, you may be prompted to restart the host system after the installation. You can choose to reboot immediately, or later. However, if you choose to suppress the reboot, the Data Services system may be in an unsupported state until the host system is rebooted. The installation log will record whether the host system is rebooted at the end of the installation process.

5.2 Re-enabling SSL on the Central Management Server (CMS)

If you use the SSL protocol on your Central Management Server (CMS), and disabled it prior to installing Data Services, re-enable it, if needed.

For more information about enabling the SSL protocol, read about configuring servers for SSL in the *SAP Data Services Administrator Guide* for the platform you are using:

- *Information platform services Administrator Guide*
- *Business Intelligence Platform Administrator Guide*

5.3 Configuring a Windows cluster

Steps to configure a Windows cluster after installation.

Before following the steps below, you must first create a Windows cluster and install the software on a shared drive from the first cluster host system.

1. Create the Data Services Service as a *Generic Service* with `DI_JOBSERVICE` as the Service Name.
2. Share the registry key name `HKEY_LOCAL_MACHINE\SOFTWARE\SAP BusinessObjects`.
3. Create a folder named `All Users` under `<LINK_DIR>`.
4. Copy all folders and files under `<DS_COMMON_DIR>` and paste into the new `All Users` folder.
5. Set all permissions (read, write, and execute) needed for all users to share this folder.
6. Go to the Windows System properties and change the value of the `<DS_COMMON_DIR>` environment variable to `<LINK_DIR>\All Users`.
7. Run the cluster install utility (`js_cluster_install.exe`) on the other cluster host systems to populate them with the Data Services service-related information.

   By default, `js_cluster_install.exe` is installed in `<LINK_DIR>\bin`.

   a. Copy `js_cluster_install.exe` from `<LINK_DIR>\bin` and `bodi_cluster_conf.txt` from `<DS_COMMON_DIR>\conf` on your primary cluster computer.
   b. Paste these files to each non-primary cluster computer and run the following commands:

      If using the system account:

      ```
      js_cluster_install.exe -install
      ```

      If not using the system account on the primary node:

      ```
      js_cluster_install.exe -install -U<user> -P<password> -D<domain>
      ```

      The Data Services service is installed, and shortcuts set up on the primary cluster are replicated.

      > **i Note**
      >
      > If Job Servers are already configured before you enter the Cluster Network Name, the Server Manager will prompt you to enter a password for each currently configured repository associated with each configured Job Server.

   c. Click *Restart*.
   d. Run the cluster install utility (`js_cluster_install.exe`) on the other cluster host systems to populate them with the Data Services service-related information.
8. Run the License Manager on the other cluster host systems to enter the license key.

5.4 Configuring JDBC drivers for Oracle and MySQL

Before performing the following steps, ensure that you've the correct version of the JDBC driver. For version information, see the Product Availability Matrix (PAM) on the SAP Support Portal.

If you're using an Oracle or MySQL database as a Data Services repository, source, or target and didn't configure the JDBC driver during installation, copy the correct version JDBC driver to the locations required by Data Services.

> **i Note**
>
> Ensure that the JDBC driver name and version matches exactly what is listed in the PAM for your version of the database. If the driver name and version are different than what is listed in the PAM, Data Services doesn't recognize the driver.

1. Download the JDBC driver for your database to a location on the Data Services host system.
2. Copy the JDBC driver to all of the following locations required by Data Services.
   - `<LINK_DIR>\ext\lib`
   - `<BIP_INSTALL_DIR>\java\lib\im\<database_type>`
     Where `<database_type>` is `mysql` for MySQL, and `oracle` for Oracle.
   - `<BIP_INSTALL_DIR>\warfiles\webapps\DataServices\WEB-INF\lib`
     Required only if you're using Data Quality reports.
3. Refresh the JDBC configuration.
   - If you're using Data Quality reports, use WDeploy to re-deploy all Data Services web applications to your application server with the new JDBC driver configuration.
   - Use the Central Management Console (CMC) to restart the EIM Adaptive Processing Server.
     For more information about restarting services in the CMC, see the *SAP BusinessObjects BI Platform Administrator Guide* or the *SAP BusinessObjects Information platform services Administrator Guide*.

Related Information

WDeploy [page 100]

5.5 Configuring repositories

If you didn't configure a repository for the bundled database server, or any other supported third-party database server during installation, manually configure the repository after installation.

The SAP Data Services Designer login requires the repository name and password. Therefore, before you can use Data Services, configure the repository and register it in the Central Management Console (CMC).

During installation, you can configure a repository when you have the applicable database management system installed, a repository database created, and you want to create a server-based connection to the database. However, you can skip repository creation, for example, when you want to use a data source name (DSN) connection.

To create an Oracle repository using TCPS with SSL/TLS protocol, or to create an SAP HANA repository with SSL/TLS, see the “Repository Management” section of the *Administrator Guide*.

To manually configure a repository after you've installed Data Services, perform the following group of steps:

1. Create a database for the repository in your DBMS.

   Ensure that your DBMS is supported by Data Services.
2. Create the repository in the Data Services Repository Manager.
3. Add the repository name and connection information in the CMC.
4. Assign user access permissions to the repository in the CMC.
5. Associate the repository with a job server in the Job Server Manager.

Related Information

5.5.1 Creating a database in the Repository Manager

If you didn't configure the repository during the SAP Data Services installation, configure the repository using the Data Services Repository Manager.

Before you use the Repository Manager to create the repository, create a database in your chosen database management system. For complete information, see Prepare the repository database [page 21].

> **i Note**
>
> If you use the bundled database server, SQL Anywhere, prepare a database for the server using SQL Central. For complete information, see Prepare the bundled database [page 26].

If you use the repository with a server name (DSN-less) connection , make sure that you check the ODBC driver version using the ODBC Driver Selector tool. If you use the repository with a data source name (DSN) connection, create the DSN using the ODBC Data Source Administrator tool.

> **i Note**
>
> Oracle users can create either a TNS (Transparent Network Substrate) connection or a TNS-less connection. For more information, see the Repository section of the *Administrator Guide*.

Use the Windows ODBC Data Source Administrator for the following tasks:

- Choose the correct ODBC driver.
- Enter the DSN information, if applicable.

To create the repository using the Repository Manager, perform the following steps:

1. From the Windows Start menu, expand *SAP Data Services*, right-click *Data Services Repository Manager*, and select *more* > *Run as administrator.*

   The Repository Manager opens.
2. Choose *Local* from the *Repository type* list.
3. Choose your database server type from the *Database type* list.
4. Check *Use data source name (DSN)*, if applicable, then perform the following substeps:

a. Choose the applicable DSN from the *Data source name* list. If the DSN name isn't in the list, create the DSN in the Windows Data Source ODBC Administrator and return to these steps.
b. Enter the user name and password for the database.

5. To create a server-based connection, don't check *Use data source name (DSN)* and perform the following substeps:
   a. Choose the version for your database server from the *Database version* list.
   b. Enter the server name in *Database server name*.
   c. Enter the repository database name in *Database name*.
   d. Enter the user name and password for the repository database.
6. Select *Create*.

   A message appears in the lower text box indicating that the connection to the repository is established. If there are any connection problems, the message contains details about the problem.

After you've successfully connected using the Repository Manager, follow the steps in the *Administrator Guide* to register the repository in the Central Management Console (CMC). Also, associate a Job Server to the repository in the SAP Data Services Server Manager.

Related Information

Verifying repository connection to Job Server [page 64]

5.5.2 Verifying repository connection to Job Server

Before you can use the SQL Anywhere repository database, or any other supported third-party database, as the SAP Data Services repository, ensure that it's connected to the Job Server.

If you created the Data Services repository during installation, the installer automatically connected the repository database to the Data Services Job Server. However, check that the repository is correctly connected to the job server by performing the following steps:

1. Select *Start* > *SAP Data Services 4.3* > *Data Services Server Manager.*

   The *Server Manager* dialog box opens with the *Job Server* tab open. *JobServer_1* is listed under *Job Servers configured to run on this computer*.
2. Select *Configuration Editor*.

   The *Job Server Configuration Editor* dialog box opens.
3. Select *JobServer_1* to highlight it and select *Edit*.
4. Verify that the information in the *Associated Repositories* box is correct, and that the information in the *Repository Information* group matches the information for your database repository.
5. After you verify the correct connection, select *Cancel* to close *Job Server Properties*.
6. Select *OK* to close *Job Server Configuration Editor*.
7. Select *Close* to close the *Repository Manager*.

If the information in the Data Services Server Manager isn't correct, delete the connection and create a correct connection using the Data Services Server Manager. Find complete instructions in the *Administrator Guide*.

5.6 Preparing a DSN database connection

The SAP Data Services installer creates only a server-based connection. However, you can create a DSN (or TSN for Oracle) connection for the repository after installation.

You can skip repository creation during installation and create the repository afterwards. Alternately, create a server-based connection during installation and then create the DSN connection after installation.

> **i** Note
>
> Transparent Network Substrate (TNS) is Oracle proprietary network technology. Instead of creating a DSN, create a TNS for Oracle.

To switch a server-based repository that you created during Data Services installation to a DSN connection, perform the following steps:

1. Open the Data Services Repository Manager as an administrator.

   To open an application as an administrator: Select the Windows Start icon and expand SAP Data Services 4.3 (or 4.2 as applicable). Right-click the application name and select *More* > *Run as Administrator.*

   On Unix, invoke the Repository Manager from a command prompt.
2. Select *Use data source name (DSN)*.

   On Unix, use the s option.
3. Select the applicable DSN from the *Data source name* list.
4. Enter the applicable user name and password.
5. Select *Close*.
6. Log into the Central Management Console and select *Data Services* from the column on the left.
7. Select the *Repositories* node and highlight the applicable repository.
8. Select *Actions* > *Properties.*
9. In the *Data Services Repository Properties* page, select to enable DSN or TNS.
10. Complete all applicable options related to the DSN or TNS connection.
11. Select *Test Connection*.
12. After a successful connection, select *Save*.

Related Information

5.7 Configuring users and groups

Prior to using the Data Services system, you need to configure users and groups in the Central Management Console (CMC).

In general, the process to configure Data Services users and groups is:

1. Log into the CMC.

   To create and modify user accounts, you must log in as a user with administrative access.
2. Create user accounts and assign them to Data Services user groups with the *Users and Groups* application.
3. Assign repository access to your users and groups with the *Data Services* application.

For more information about configuring users and groups for Data Services, see the *Administrator Guide*.

5.8 Configuring Job and Access Servers

Use the Server Manager to configure Job Servers for batch jobs and the Access Servers for real-time applications.

You need to configure the Job and Access Servers before you can use the Data Services system. If you did not configure them during installation, do the following:

In general, the process to configure Data Services Job Servers and Access Servers is:

1. Add and configure Job Servers with the Server Manager.
   a. Add the Job Server configuration.
   b. Associate local and profiler repositories with the Job Server.
2. Add and configure Access Servers with the Server Manager.
3. Restart the Data Services service and verify that the Job and Access Servers are running.

For more information about using the Server Manager to configure Job and Access Servers, see the *Administrator Guide*.

5.9 Configuring profiler repository connectivity

A profiler repository stores information generated by the Data Profiler for determining the quality of your data.

Creating a profiler repository is necessary when you plan to profile your data using the Data Profiler. Connect to a profiler repository using either a server name or data source name connection:

- **Server name:** Also known as DSN-less or TNS-less for Oracle, uses the server information to connect to your database.
- **DSN connection:** Uses a data source name and related credentials to connect to the database.
- **TNS connection:** Uses Transparent Network Substrate, an Oracle proprietary protocol, to connect to an Oracle database.

For more information about profiling data, see the *Management Console Guide* and the *Designer Guide*.

For instructions to complete the following group of steps, see the "Reposotiry management" section of the *Administrator Guide*.

To configure a profiler repository with a server-named connection, perform the following group of steps:

1. Create a database in the applicable database management system.
2. If you plan to use a DSN or TNS connection, follow the instructions for your specific DBMS to create a DSN. For Oracle, create a TNS.
3. Create the profiler repository using the Data Services Repository Manager.
4. Register the profiler repository and select the connection type in the SAP Central Management Console (CMC).
5. On a Windows platform, configure the ODBC driver for the database type using the Windows ODBC Administrator.

When you use several host machines for your SAP Data Services installation, the database connectivity settings must be the same on all host machines. Without matching connectivity settings, the results of profiling tasks aren't visible in the SAP Data Services Designer.

5.10 Deploy web applications with WDeploy

Use WDeploy to deploy and undeploy web applications to your java-based web application server.

WDeploy is included with the BOE Platform or IPS installation. The Tomcat web server is also included with the installation. When you use Tomcat as your web server, SAP Data Services automatically deploys web applications during installation. If you use a different web application server, you deploy web applications to your web application server using WDeploy.

> **i Note**
>
> If you use SAP NetWeaver as your web application server, you use WDeploy for a different purpose, and you follow a different process to deploy web applications.

The WDeploy tool has two interfaces from which to choose:

- Command line WDeploy: A traditional, text-based interface that processes commands and parameters given in a command prompt.
- Graphical user interface (GUI) WDeploy: A console-based guided assistant similar to the BI Platform or IPS installation program, which prompts you to enter deployment parameters.

Use the WDeploy GUI to run `deployall` and `undeployall` commands. Use the command-line WDeploy when you have more advanced processes to perform for web applications.

For instructions about using WDeploy to deploy web applications with a web server other than Tomcat, see WDeploy in the Additional Information section.

Related Information

WDeploy [page 100]
Deploy Data Services Web applications on SAP NetWeaver 7.3 [page 113]

5.11 Verifying real-time connectivity

This section describes specific steps that you can follow to test the SAP Data Services real-time features after installation. These step-by-step procedures use sample files available in the software installation.

5.11.1 Distributing the test files

Place test files in the appropriate locations to perform connectivity tests.

The SAP Data Services installation includes test files to exercise connectivity between each component of the system. To perform the connectivity test, place test files in the appropriate locations on the various computers used in your application.

Test file	Copy from	Copy to
`ClientTest.exe`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`mny2412d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`functor2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`functor_list2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`itc2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`network1712d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`pointer2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`sync2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`thread2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`threxcept2312d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`tls7712d.dll`	`LINK_DIR\Bin`	Web client computer, `C:\temp`
`ClientTest.txt`	`LINK_DIR\ConnectivityTest`	Web client computer, `C:\temp`
`TestIn.xml`	`LINK_DIR\ConnectivityTest`	Web client computer, `C:\temp`
`TestIn.xml`	`LINK_DIR\ConnectivityTest`	Designer computer, `C:\temp`
`TestIn.dtd`	`LINK_DIR\ConnectivityTest`	Designer computer, `C:\temp`
`TestOut.dtd`	`LINK_DIR\ConnectivityTest`	Designer computer, `C:\temp`

> **Note**
>
> You must keep the DLL files specified in the preceding table with `ClientTest.exe`. To move `ClientTest.exe`, re-run the Message Client Setup and point it to the directory you want.

You need not move the `TestConnectivity.atl` file from its location on the Designer computer.

5.11.2 Testing a job

Import, display, execute, and show output for a job as a test.

When you execute a real-time job from the Designer, it always executes in test mode using a file as input and producing a file as output.

The test files include a sample job and data flow that you can use to verify that a real-time job can successfully execute from the Designer. Test files include the XML test input for the flow (the string “Hello World”) and the corresponding DTD for flow input and output.

This procedure describes how to import, display, execute, and show output for the test flow.

1. Start SAP Data Services and log into your repository.

   Choose *Start* > *Programs* > *SAP Data Services* `<x.x>` > *Data Services Designer* from the program group created by the installation. The Designer prompts you for login information associated with your repository database.
2. From the *Tools* menu, select *Import from File*.
3. Navigate in the software install directory to `\ConnectivityTest`.
4. Select the test ATL file `TestConnectivity.atl` and click *Open*.
5. In the *Project* menu, select *NewProject*.
6. Name the project **`TestConnectivity`** and click *Create*.
7. In the *Jobs* tab of the object library, expand the *Real-time Jobs* category; then click, drag, and drop Job_TestConnectivity over the TestConnectivity folder in the *Project* area.
8. In the workspace, click the name of the data flow.
9. In the project area, right-click Job_TestConnectivity and select *Execute*.
10. In the *Execution Properties* window, click *OK*.

    The software reads the sample file `C:\Temp\TestIn.xml`, inverts the order of the two words in the string, and writes the output to the `C:\Temp\TestOut.xml` file.
11. Read the information in the *Job Log* window to verify if the `TestOut.xml` file is correct. Use the job log information to troubleshoot problems.
12. If the job was successful, navigate to the `C:\Temp\` directory on the Designer's computer and open `TestOut.xml`.

    You can display the file in a browser or text editor.

5.11.3 Testing the path from client to service

When your real-time job runs in a normal production environment, you can use it to process a service request from a Web client. In production, Web clients send messages and real-time services receive and process those messages, triggering real-time jobs. Use the Management Console Administrator to set up real-time services.

5.11.3.1 Processing a service request from a Web client

Instructions for processing a service request from a Web client.

1. Add and start the service in the Administrator.

   The Access Server starts service providers which are instances of jobs associated with the listed services.
2. Send a request from your Web client to the Access Server.

The Access Server sends a request to the appropriate service provider, then the service provider sends a response to the Access Server. The Access Server returns the response to the Web client.

5.11.3.2 The Access Server

The SAP Data Services Management Console Administrator enables you to view the status of services controlled by the Access Server and to change their configuration.

After you install the Access Server, the SAP Data Services service automatically launches the Access Server when your computer restarts or when you stop and start the service.

5.11.3.2.1 Opening the Administrator

Use the Administrator application in the SAP Data Services Management Console to add, configure, and monitor an access server.

1. Click the *Data Services Management Console* link from the SAP Data Services Designer *Start Page*.

   A Web Browser window opens with the Management Console login dialog box.
2. Log into the Management Console using your user name and password.

   > **i Note**
   >
   > The user name and password must be established through your administrator. This information isn't the same as the login information you use to access Data Services, unless your administrator set it that way.
3. Click the *Administrator* icon to open the Web Administrator application.

5.11.3.2.2 Adding your repository for Administrator access

Instructions for adding a repository for Administrator access.

1. In the Administrator, select *Management* > *Repositories* > *Add*.
2. Enter your repository connection information and click *Apply*.

5.11.3.2.3 Configuring the Access Server to listen for responses from services

Instructions for configuring the Access Server to listen for responses from services.

1. In the Administrator, add a connection to an installed Access Server by selecting *Management* > *Access Servers* > *Add*.
2. Enter your Access Server's machine name and communication port, select *Ping* to test the connection, then click *Apply*.

5.11.3.2.4 Adding a service

Instructions for adding a service.

1. In the Administrator's navigation tree, select *Real-time* > *Access Server Machine Name: Port* > *Real-time Services* > *Configuration*.
2. Click *Add*.

   The Access Server adds a service to the list (NewService1) and displays the configuration boxes for the new service.
3. Enter the following sample information in the Configuration section for the service.

   Accept the default values for the service parameters.

Field	Test Values	Description
Service Name	TestConnectivity	The message type included in the call from the client.
Job Name	Job_TestConnectivity	Browse jobs.

4. Click *Apply*.

   The Administrator prompts you to assign a Job Server to the Service.
5. Under Job Servers for Service, click *Add*.
6. If you have one Job Server, the Administrator automatically selects it for you. Click *Apply*. Otherwise, select a Job Server from the list and click *Apply*.

7. Click the *Status* tab.

   The Administrator adds the new service (named after the job) and a service provider to the list for this service. In the status row for each service provider, find the computer name and Job Server port where the service provider is running. The process ID for the service provider is related to this invocation of the Job Server.
8. Verify host name and port number for the new service provider.

   In the list of service providers, verify that the host name and port for the new service provider correctly indicate the computer where the Job Server is installed and the port that the Job Server is configured to use.

   You specified the Job Server port number when you configured the Job Server at installation.
9. In the navigation tree, click *Real-Time Services* to return to the first Real-Time Service Status page.

   The name of the Service should be next to a green icon which indicates that the Service started successfully.

   When a service starts, the Administrator triggers the Access Server which triggers the Job Server to get job information from the repository. The job registers as a service with the Access Server. The Administrator displays the service status (started).

   If the service did not start, you can start it manually from the current page.

5.11.3.3 Web client to Access Server

A Web client opens a connection to the Access Server using a call in the Message Client library.

The call includes the host and port information required to make the connection.

The ClientTest executable file provided in the SAP Data Services installation incorporates the library calls so you can easily test the connection between the Web client computer and the Access Server.

5.11.3.3.1 Processing a test request

1. On the computer where your Web client application is installed, send a request for the software to process.

   Copy the command `C:\Temp\ClientTest.txt` and enter it in a command prompt:

   ```
   ClientTest -A<Host> -p<Port> -U<user> -P<password> -SserviceName
   -XC:\Temp\TestIn.xml
   ```

   If the Access Server is SSL enabled, use the following command:

   ```
   ClientTest -A<Host> -p<Port> -S<servicename> -XC:\Temp\TestIn.xml
   -useSSL<location of trusted certificates> -I1
   ```

   The location of the trusted certificates is, for example, `C:\Program Files (x86)\SAP\Data Services\ssl\trusted_certs`
2. Look for the response in the command prompt.

3. When you are ready to configure the Access Server to run your own services, first stop the Access Server, then restart it.

5.11.3.3.2 ClientTest utility options

Syntax

-A<host>	Identifies the Access Server host computer by name or IP address.
-p<portNumber>	Identifies the port on which Access Server listens for Web client requests.
-S<serviceName>	Specifies the name of the service that you want to invoke. `C:\Temp\TestIn.xml` Indicates the location of the sample XML request that will be sent to the Access Server for processing.
-X<fileName>	Indicates the file path and name for the XML file.
[-U<userName>]	Indicates the user name you specified in the Security section of the Access Server configuration file. The test configuration does not specify a user, but the Client Test utility expects some value. Enter any character. Default is "user".
[-P<password>]	Indicates the password you specified in the Security section of the Access Server configuration file. The test configuration does not specify a password, but the Client Test utility expects some value. Enter any character. Default is "password".
[-C<count>]	Number of times to connect to the Access Server. Default is 1
[-I<count>]	Number of times to invode the service per connection. Default is 1.
[-Y<count>]	Request rate in requests per hour.
[-L<count>]	Number of clients running simultaneously. Default is 1.
[-useSSL<Directory>]	Use SSL communication using the trusted certificates (*.pem) in the directory <Directory>.

5.11.4 Further connectivity tests

There are additional tests that you can run to define all the connections that you will need.

For example, you can use the existing Access Server configuration and make changes to the data flow and input files in the sample real-time job. In particular, consider making simple additions to the data flow in the real-time job to check the following connection:

- From job to ERP system
  To test this connection, add a source from the ERP system in a data flow of the real-time job and extract a single value to return as a response to the client.

5.12 Connecting to Hadoop

Data Services can connect to Apache Hadoop frameworks, including HDFS and Hive sources and targets. Data Services must be installed on Linux in order to work with Hadoop.

Data Services also supports Hadoop on the Windows platform (Hortonworks HDP 2.2.6 only).

For information about deploying SAP Data Services on a Hadoop MapR cluster machine, see SAP Note 2404486.

For more information, see the *Supplement for Hadoop*.

5.13 Troubleshooting installation problems

Errors that prevent installation progress (for example, an incorrect server name, user name, or password) result in an immediate error message describing the problem.

For some common issues, such as the service scheduler failing to launch SAP Data Services, reboot the host system after installation has finished.

5.13.1 Repository problems

Common repository-related installation errors include:

- The DBMS connection was lost while building the repository tables. If this happens, recreate the repository with the Repository Manager.
- There is not enough space available in the database for the repository tables. If this happens, use your DBMS administration tools to allocate more space for the repository and run the Repository Manager.

If you experience problems when upgrading or creating a repository, you can select the *Show Details* check box before you click *Update* or *Create* again. This option allows you to view the SQL code that SAP Data Services uses to perform these operations. The *Show Details* option can help you diagnose problems.

For more information about the Repository Manager, see the *Administrator Guide*.

5.13.2 Windows and UNIX issues

There are several small (and easily resolved) installation issues that can occur when you install Data Services on Windows or UNIX/Linux.

5.13.2.1 File or application in use

Windows 7 or Windows Server 2008.

When you install or uninstall SAP Data Services on Windows 7 or Windows Server 2008, you may receive messages about files in use or applications that should be closed. You can safely ignore these messages and continue to install or uninstall the software.

Ignoring these messages has no impact on the installation or behavior of the software.

5.13.2.2 Update to file access rights failed

Windows 7 or Windows Server 2008.

When you install Data Services on Windows 7, or Windows Server 2008, you may receive this warning if the installation setup program is unable to set file access rights.

To manually update the file access rights, you can use the `grantFileAccess.bat` batch file. This batch file is installed to the `<LINK_DIR>\bin` folder and takes one parameter as input, the software's common configuration directory (`<DS_COMMON_DIR>`).

For example, on Windows Server 2008:

```
grantFileAccess.bat "C:\ProgramData\SAP BusinessObjects\Data Services"
```

If the path contains spaces, you must enclose it in double quotes.

5.13.2.3 Windows 2012 Datacenter error

Error: SAP Data Services Designer - Cannot open trace file.

When you log in to Microsoft Window Server 2012 Datacenter as Power User, you cannot run Designer as Power User or Run as Administrator. To correct this issue, you must set the `\ProgramData` folder to shared:

1. In Explorer, locate and right click the `C:\ProgramData` folder.
2. Select *Share with > Specific people*.

3. Select *Everyone* or the specific users that should have access to the folder and click *Add*.
4. Set the *Permission Level* for each user to *Read/Write* and click *Share*.

5.13.2.4 Failure in CMS connection when installing from UNC path

Applicable when you launch Data Services setup executable from the UNC path `\\machinename\..\..\...`.

A failure might occur in the CMS connection screen when you launch the Data Services setup executable from the UNC path (`\\machinename\..\..\..`). This happens because the CLASSPATH path exceeds the operating system limitation.

To resolve the issue, copy the install package to a local file system, or map to a local drive, and launch the package from a local file system or mapped local drive.

5.13.2.5 Can't add or remove keycodes in License Manager

When using License Manager, you may not have the necessary permissions to add or remove keycodes from the Windows registry.

> **i** Note
>
> Having the UAC (User Access Control) option enabled may limit access to the registry.

To resolve this issue, launch the License Manager as an administrator (right-click on the License Manager icon and select Run as administrator) before trying to add or remove keycodes.

5.13.2.6 Errors when changing DS_COMMON_DIR location

Windows only. You may see installation errors if you change the location of the DS_COMMON_DIR during a fresh installation or an upgrade installation.

The software may find errors related to the directory you choose for the new location of the DS_COMMON_DIR. Or the software may encounter errors while running custom processes related to moving the DS_COMMON_DIR contents to the new location. The following table provides some solutions.

Potential errors and solutions

Error	Cause	Solution
A problem occurs during an upgrade installation related to moving the existing DS_COMMON_DIR to a new location.	The software needs to perform additional custom processes specific to moving the DS_COMMON_DIR to a new location. For many reasons, these custom processes may not complete correctly or completely.	Copy the folders and files (except for the log folder) from the previous DS_COMMON_DIR location and paste to the new DS_COMMON_DIR location by following the steps in SAP Note 2228358. The software includes this solution in the post installation steps.
A problem occurs during a fresh installation related to moving the directory files from the default location to the new location.	The software needs to perform additional custom processes to move the directory files to the new location. For many reasons, these custom processes may not complete correctly or completely.	Uninstall and reinstall the software. The software includes this solution in the post installation steps.
A problem occurs during an upgrade installation related to moving the directory files from the default location to the new location.	The software needs to perform additional custom processes to move the directory files to the new location. For many reasons, these custom processes may not complete correctly or completely.	Run the repair install. The software includes this solution in the post installation steps.

Related Information

Change DS_COMMON_DIR location [page 44]

5.13.2.7 Trouble with update install

You might get an error while performing an Update installation while you have SAP Data Services applications open in a current user session or in other user session.

As a result, Data Services applications may not launch correctly or you might get an error telling you that you have missing files.

To resolve this issue, you must run a Repair installation by doing the following:

1. Close all Data Services applications (for example, Designer, License Manager, and so on) in all user sessions.
2. End all Data Services jobs that are currently running.
3. Log off all user sessions that are logged into the machine (for example, remote desktop connections). To view a list of users that are logged into a machine, go to the *Task Manager* window and click the *Users* tab.
4. Go to *Start* > *Control Panel* > *Programs and Features* .
5. Right-click on the current version of SAP Data Services and click *Uninstall/Change* and select *Repair*.

5.13.2.8 Trouble with modify install

Features are not enabled or installed.

In the *Maintenance Installation* window, the feature tree selections may not be correct or a feature may show as already installed when doing the following:

1. Go to *Start* > *Control Panel* > *Programs and Features*.
2. Right-click on the current version of Data Services and click *Uninstall/Change* and select *Repair*.
3. Click *Next* and then click *Back*.
4. Click *Modify* and then click *Next*.

If you proceed with the incorrect selections, all unselected features (if previously installed) will be uninstalled and only the current features shown as selected will be kept or installed.

To resolve this issue, do the following:

1. Click *Cancel* and then *Exit Setup* to exit the current maintenance installation window.
2. Re-launch the maintenance installation.
3. Click *Modify* and then click *Next*. This refreshes the feature tree selections and correctly displays the installed features as checked.
4. Run a Modify installation by adding or removing features as needed.

5.13.2.9 Requirement to launch Install IPS executable

The Install IPS executable is generated by Visual Studio 2005, and therefore, it has a dependency on Microsoft Visual C++ 2005 Redistributable Package.

Because of this dependency, you may have a problem launching the `installIPS.exe` or `InstallIPSOEM.exe` (for OEM customers) program.

Before you launch the Install IPS program, follow these steps:

1. Download and install `vcredist_x64.exe` on your system. vcredist_x64.exe is a redistributable library from Microsoft. Get it from the Microsoft website or from the Data Services Deployment Unit at `<top package level>\dunit\tp.microsoft.vcredist-8.0-core-64\actions`.
2. Double-click on `InstallIPS.exe` to launch the package.

For more information, see the blog Microsoft Visual C++ Redistributale latest supported downloads .

5.13.2.10 Missing Data Services icon on the CMC

Applicable if the Data Services icon is missing in the Central Management Console (CMC).

Some users have noticed that the Data Services icon is missing in their CMC. This can happen if there are trailing spaces in the CMC name in the installer. You can fix this by opening the installer and removing the trailing spaces from the CMS name.

5.13.2.11 Cleansing Package installation tips

There was a change in how you install the Cleansing Package files that Data Services needs.

Previously, you had to load the predefined shipped cleansing packages into the Data Services repository to install them. Currently, the cleansing package files are installed by the SAP Data Quality Management Cleansing Packages installer. These cleansing packages are stored in the Information platform services or Business Intelligence platform as InfoObjects.

> **i** Note
>
> You need to point to your IPS instance during the cleansing package installation.

Follow the steps below to verify that you have the cleansing packages installed correctly:

1. Open the Data Cleanse transform within Data Services.
2. In the *Transform Configuration Editor* window, click the *Option* tab.
3. Expand the *Cleansing Package* option and make sure the desired cleansing packages are available.

5.13.2.12 Special character(s) in install path

If there are special characters in the installation path for Data Services, the installation pre-requisite checks will fail.

For example, the special characters in `D:\[install]\` (the brackets) will cause a check to fail.

Remove special characters from path names to resolve this issue.

5.13.2.13 Incorrect message displayed for UNIX installation

An incorrect message may appear at the end of a UNIX installation.

The message displayed at the end of a UNIX install or uninstall may be incorrect. Make sure that you press press *Enter* at the end, even if the message says to click *Finish*.

5.13.2.14 Error Linux/UNIX install directory on NSF file system

Run Data Services UNIX/Linux installation on a physical drive.

If you install Data Services in UNIX/Linux into a Network Shared Folder (NFS) file system, you may see an error. Resolve the error, and get better run-time performance by installing Data Services on a physical drive for UNIX/Linux.

5.14 Making changes to your Data Services system

5.14.1 Modifying your Data Services system

These instructions describe the process to modify your Data Services system by adding or removing installed components through the Windows Control Panel.

It is recommended that you back up the CMS system database and your repository databases before uninstalling Data Services.

1. If you're using a newer Windows operating system, such as Windows Server 2008, go to: *Start* > *Control Panel* > *Programs and Features*.

   If you're using an older Windows operating system, such as Windows Server 2003, go to: *Start* > *Control Panel* > *Add or Remove Programs*.
2. Select SAP Data Services <x.x> and click *Change/Remove*.
   The *Application Maintenance* screen appears.
3. Select *Modify* and click *Next*.
4. Enter the password for the Central Management Server (CMS) Administrator user and click *Next*.
5. Select any features you want to install; unselect any features you want to remove.

   > **i** Note
   >
   > The Data Services installation program will only remove the SAP-supplied person and firm cleansing package if it has not been modified. If the cleansing package has been modified, you must delete it manually using the Central Management Console (CMC).
6. Click *Next* to apply your changes.
   The setup program applies your changes and returns to the Control Panel applet.

The installation has been updated.

5.14.2 Repairing your Data Services system

These instructions describe the process to repair your Data Services system from the Windows Control Panel. This process restores the files originally installed by the installation program.

It is recommended that you back up the CMS database and your repository databases before you uninstall Data Services.

1. If you're using a newer Windows operating system, such as Windows Server 2008, go to: *Start* > *Control Panel* > *Programs and Features*.

   If you're using an older Windows operating system, such as Windows Server 2003, go to: *Start* > *Control Panel* > *Add or Remove Programs*.
2. Select SAP Data Services <x.x> and click *Change/Remove*.
   The *Application Maintenance* screen appears.

3. Select *Repair* and click *Next*.
   The software is restored to its original configuration. This may take a long time. When complete, the Control Panel appears.

The installation has been repaired, restoring your system to its original configuration.

5.14.3 Removing SAP Data Services

The process to permanently uninstall Data Services from a host system.

> **i Note**
>
> The Data Services installation program will only remove the SAP-supplied person and firm cleansing package if it has not been modified. If the cleansing package has been modified, you must delete it manually using the Central Management Console (CMC).

It is recommended that you back up the CMS database and your repository databases before uninstalling Data Services.

1. If you're using a newer Windows operating system, such as Windows Server 2008, go to: *Start* > *Control Panel* > *Programs and Features*.

   If you're using an older Windows operating system, such as Windows Server 2003, go to: *Start* > *Control Panel* > *Add or Remove Programs*.
2. Select SAP Data Services `<x.x>` .
3. On newer Windows operating systems, select *Uninstall*.

   On older Windows operating systems, select *Change/Remove*.
4. Select *Remove* and click *Next*.
5. Enter the password for the Central Management Server (CMS) Administrator user and click *Next*.
6. Click through to confirm the removal.
7. Select *Finish* to close the *System Setup* screen.

The software has been removed from the host system.

5.14.4 Running a silent uninstallation

Silent mode allows you to uninstall using the command-line, but it does not prompt you for options.

Installation options must be provided on the command-line or in a response file. Any installation options not provided on the command-line or in a response file will be left at their default values.

> **i Note**
>
> The Data Services installation program will only remove the SAP-supplied person and firm cleansing package if it has not been modified. If the cleansing package has been modified, you must delete it manually using the Central Management Console (CMC).

It is recommended that you back up the CMS database and your repository databases before uninstalling Data Services.

To run a silent uninstallation:

1. Change to the directory containing the `setup.exe` installation program, for example, `C:\Program Files (x86)\SAP BusinessObjects`.
2. To create a response file that will be used to run the uninstallation, run the command **`setup.exe -w <response file path>\<response file name> -i product.dataservices64-4.0-core-32`**

   Data Services will go into maintenance mode.
3. Select Remove from the menu and follow the options included in the wizard.
4. Open the response file and change the password from `<*****>` to your Data Services password.
5. Run the command **`setup.exe -r <response file path>\<response file name> -i product.dataservices64-4.0-core-32`**

5.14.5 Installing new or additional features (Windows)

Modify the newly-installed version of SAP Information Steward by adding or removing installed components through the Windows Control Panel.

Before performing these steps, backup your Information Steward repository before modifying or uninstalling Information Steward.

1. Find where the application is installed.
   - When using a newer Windows operating system (Windows Server 2008 or later), go to: *Start* > *Control Panel* > *Programs and Features*.
   - When using an older Windows operating system (Windows Server 2003 or earlier), go to: *Start* > *Control Panel* > *Add or Remove Programs*.
2. Select the SAP application, and then click *Change/Remove* or *Uninstall/Change*.
   The *Application Maintenance* window appears.
3. Select *Modify*, and then click *Next*.
4. Enter the password for the Central Management Server (CMS) administrator user, and then click *Next*.
5. Select any features you want to install.
6. Click *Next* to apply your changes.

The setup program applies your changes and returns to the *Control Panel* window. The installation has been updated.

6 Additional Information

6.1 Directory data

To correct addresses and assign codes with SAP Data Services, the Global Address Cleanse, USA Regulatory Address Cleanse, and Geocoder transforms rely on directories, or databases.

When transforms use the directories, it's similar to the way that you use the telephone directory. A telephone directory is a large table in which you look up something you know—someone's name—and locate something that you don't know—their phone number.

To view directory update letters for SAP Data Services address cleansing and geocoding, go to https://help.sap.com/viewer/product/ADDRESSING_DIRECTORIES/latest/en-US.

Parent topic: Additional Information [page 83]

Related Information

Citrix Support [page 93]
WDeploy [page 100]
Deploy Data Services Web applications on SAP NetWeaver 7.3 [page 113]

6.1.1 Directory listing and update schedule

Information about directories, including package names, file names, sizes, and when they are updated.

For detailed information about directories, see the latest directories update on the SAP Help Portal at https://help.sap.com/viewer/product/ADDRESSING_DIRECTORIES/latest/en-US.

For more information about the directory release schedule, see SAP Knowledge Base Article 2281775.

All World

Lastline data for over 200 countries.

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR ALL WORLD	`ga_all_world_gen.dir`	4.44 GB	Monthly

Australia

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR AUSTRALIA	`ga_au_paf.dir`	4.72 GB	Monthly

Canada

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR CANADA	*POC address data:* • `canadapoc.dir` • `cancitypoc.dir` • `canfsapoc.dir` • `canpcipoc.dir` • `canpcm.dir` *Non-POC address data:* • `canada.dir` • `cancity.dir` • `canfsa.dir` • `canpci.dir`	147.4 MB	Monthly
SAP ADDR CANADA 4.X ENH	`ga_ca_paf.dir`	2.1 GB	Monthly

Geocoder

Package name	Directory filename	Approximate size	Updated
SAP GEOPARC AUSTRALIA - HERE (Parcel)	`geo_au_nt.dir`	6.5 GB	Quarterly
SAP GEO DIR CANADA - HERE	`geo_ca_nt.dir`	5.1 GB	Quarterly

Package name	Directory filename	Approximate size	Updated
SAP GEO DIR CHINA - HERE	`geo_cn_nt.dir`	36.7 GB	Quarterly
SAP GEO DIR FRANCE - HERE	`geo_fr_nt.dir`	9.9 GB	Quarterly
SAP GEO DIR GERMANY - HERE	`geo_de_nt.dir`	5.7 GB	Quarterly
SAP GEO DIR MEXICO - HERE	`geo_mx_nt.dir`	9.8 GB	Quarterly
SAP GEO DIR RUSSIA - HERE	`geo_ru_nt.dir`	32.8 GB	Quarterly
SAP GEO DIR SWITZERLAND - HERE	`geo_ch_nt.dir`	924.4 MB	Quarterly
SAP GEO DIR UK - HERE	`geo_gb_nt.dir`	2.9 GB	Quarterly
SAP GEO DIR US - HERE	`AdvancedGeoFeatures.ZIP`	16.7 GB	Quarterly
	`geo_us_nt.dir`	568 KB	
	`ageo*.dir`	4 GB	
	`cgeo2.dir`	795 MB	
SAP GEO PARCEL US - HERE	`AdvancedGeoFeatures.ZIP` Includes: • `geo_us_nt.dir` • `basic_geo_us_nt.dir`	25 GB	Quarterly
	`geo_us_nt.dir`	568 KB	
	`ageo*.dir`	4 GB	
	`ageo*_pt.dir`	4 GB	
	`cgeo2.dir`	795 MB	
SAP GEO DIR AUSTRALIA - TOMTOM	`geo_au_tt.dir`	8.7 GB	Quarterly
SAP GEO DIR AUSTRIA - TOMTOM	`geo_at_tt.dir`	1.5 GB	Quarterly
SAP GEO DIR BELGIUM - TOMTOM	`geo_be_tt.dir`	1.3 GB	Quarterly
SAP GEO DIR BRAZIL - TOMTOM	`geo_br_tt.dir`	10.4 GB	Quarterly
SAP GEO DIR CANADA - TOMTOM	`geo_ca_tt.dir`	4 GB	Quarterly
SAP GEO DIR CZECH REPUBLIC - TOMTOM	`geo_cz_tt.dir`	1.2 GB	Quarterly

Package name	Directory filename	Approximate size	Updated
SAP GEO DIR DENMARK - TOMTOM	`geo_dk_tt.dir`	1.2 GB	Quarterly
SAP GEO DIR ESTONIA - TOMTOM	`geo_ee_tt.dir`	169.8 MB	Quarterly
SAP GEO DIR FINLAND - TOMTOM	`geo_fi_tt.dir`	2 GB	Quarterly
SAP GEO DIR FRANCE - TOMTOM	`geo_fr_tt.dir`	12.7 GB	Quarterly
SAP GEO DIR GERMANY - TOMTOM	`geo_de_tt.dir`	9.6 GB	Quarterly
SAP GEO DIR INDIA	`geo_in_mi.dir`	3.8 GB	Quarterly
SAP GEO DIR ITALY - TOMTOM	`geo_it_tt.dir`	7.1 GB	Quarterly
SAP GEO DIR LIECHTENSTEIN - TOMTOM	`geo_li_tt.dir`	6.7 MB	Quarterly
SAP GEO DIR LITHUANIA - TOMTOM	`geo_lt_tt.dir`	341.2 MB	Quarterly
SAP GEO DIR LUXEMBOURG - TOMTOM	`geo_lu_tt.dir`	75.5 MB	Quarterly
SAP GEO DIR MACAU - TOMTOM	`geo_mo_tt.dir`	12.3 MB	Quarterly
SAP GEO DIR NETHERLANDS - TOMTOM	`geo_nl_tt.dir`	1.8 GB	Quarterly
SAP GEO DIR NEW ZEALAND - TOMTOM	`geo_nz_tt.dir`	624.4 MB	Quarterly
SAP GEO DIR NORWAY - TOMTOM	`geo_no_tt.dir`	1.4 GB	Quarterly
SAP GEO DIR POLAND - TOMTOM	`geo_pl_tt.dir`	2.6 GB	Quarterly
SAP GEO DIR PORTUGAL - TOMTOM	`geo_pt_tt.dir`	1.3 GB	Quarterly
SAP GEO DIR SINGAPORE - TOMTOM	`geo_sg_tt.dir`	207.8 MB	Quarterly
SAP GEO DIR SPAIN (PARC) - TOMTOM	`geo_es_tt.dir`	11.1 GB	Quarterly
SAP GEO DIR SWEDEN - TOMTOM	`geo_se_tt.dir`	1.6 GB	Quarterly
SAP GEO DIR SWITZERLAND - TOMTOM	`geo_ch_tt.dir`	1 GB	Quarterly
SAP GEO DIR TAIWAN - TOMTOM	`geo_tw_tt.dir`	1.4 GB	Quarterly

Package name	Directory filename	Approximate size	Updated
SAP GEO DIR TURKEY - TOMTOM	`geo_tr_tt.dir`	3.5 GB	Quarterly
SAP GEO DIR UK - TOMTOM	`geo_gb_tt.dir`	5.6 GB	Quarterly
SAP GEO DIR US (PARC) - TOMTOM	`AdvancedGeoFeatures.ZIP`	24 GB	Quarterly
	`geo_us_tt.dir`	588 KB	
	`ageo*.dir`	7 GB	
	`ageo*_pt.dir`	4 GB	
	`cgeo2.dir`	795 MB	
SAP ADDR GEO US - TOMTOM	`AdvancedGeoFeatures.ZIP`	15 GB	Quarterly
	`geo_us_tt.dir`	588 KB	
	`ageo*.dir`	7 GB	
	`cgeo2.dir`	795 MB	

International

> **i Note**
>
> You will receive files only for those countries that your company has purchased.

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR AUSTRIA	`ga_at_paf.dir`	1.22 GB	Quarterly
SAP ADDR DIR BELGIUM	`ga_be_paf.dir`	210 MB	Quarterly
SAP ADDR DIR BRAZIL	`ga_br_gen.dir`	1.79 GB	Quarterly
SAP ADDR DIR BULGARIA	`ga_bg_paf.dir`	50.61 MB	Quarterly
SAP ADDR DIR CHINA	`ga_cn_nav.dir`	2.95 GB (`ga_cn_nav.dir`)	Quarterly
SAP ADDR DIR CZECH REPUBLIC	`ga_cz_paf.dir`	764 MB	Quarterly
SAP ADDR DIR DENMARK	`ga_dk_paf.dir`	213 MB	Quarterly
SAP ADDR DIR ESTONIA	`ga_ee_paf.dir`	643.5 MB	Quarterly
SAP ADDR DIR FINLAND	`ga_fi_paf.dir`	273.5 MB	Quarterly
SAP ADDR DIR FRANCE	`ga_fr_paf.dir`	9.71 GB	Quarterly
SAP ADDR DIR GERMANY	`ga_de_paf.dir`	2.49 GB	Quarterly
SAP ADDR DIR GREECE	`ga_gr_paf.dir`	94.9 MB	Quarterly
SAP ADDR HONG KONG 4.X	`ga_hk_paf.dir`	34.9 MB	Quarterly
SAP ADDR DIR HUNGARY	`ga_hu_paf.dir`	137.7 MB	Quarterly

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR INDIA	`ga_in_paf.dir`	2.45 GB	Quarterly
SAP ADDR DIR IRELAND	`ga_ie_paf.dir`	3 GB	Quarterly
SAP ADDR DIR ITALY	`ga_it_paf.dir`	1.88 GB	Quarterly
SAP ADDR DIR JAPAN	`ga_jp_ipc.dir` `ga_jp_paf.dir`	`ga_jp_ipc.dir` is approximately 36.27 GB `ga_jp_paf.dir` is 1.17 GB	Quarterly
SAP ADDR DIR LATVIA	`ga_lv_paf.dir`	9.93 MB	Quarterly
SAP ADDR DIR LITHUANIA	`ga_lt_paf.dir`	211 MB	Quarterly
SAP ADDR DIR LUXEMBURG	`ga_lu_paf.dir`	12.55 MB	Quarterly
SAP ADDR DIR MACAO	`ga_mo_paf.dir`	3.33 MB	Quarterly
SAP ADDR DIR MEXICO	`ga_mx_paf.dir`	2.37 GB	Quarterly
SAP ADDR DIR NEW ZEALAND	`ga_nz_paf.dir`	891 MB	Quarterly
SAP ADDR DIR NORWAY	`ga_no_paf.dir`	768 MB	Quarterly
SAP ADDR DIR POLAND	`ga_pl_paf.dir`	326 MB	Quarterly
SAP ADDR DIR PORTUGAL	`ga_pt_paf.dir`	383.4 MB	Quarterly
SAP ADDR DIR RUSSIA	`ga_ru_paf.dir`	105.6 GB	Quarterly
SAP ADDR DIR SINGAPORE	`ga_sg_paf.dir`	88 MB	Quarterly
SAP ADDR DIR SLOVAKIA	`ga_sk_paf.dir`	27.3 MB	Quarterly
SAP ADDR DIR SOUTH KOREA	`ga_kr_paf.dir`	12.19 GB	Quarterly
SAP ADDR DIR SPAIN	`ga_es_paf.dir`	1.30 GB	Quarterly
SAP ADDR DIR SWEDEN	`ga_se_paf.dir`	753.5 MB	Quarterly
SAP ADDR DIR SWITZERLAND	`ga_ch_paf.dir`	759.9 MB	Quarterly
SAP ADDR DIR TAIWAN	`ga_tw_paf.dir`	474.8 MB	Quarterly
SAP ADDR DIR TURKEY	`ga_tr_paf.dir`	986.5 MB	Quarterly
SAP ADDR DIR UNITED KINGDOM	`ga_gb_paf.dir`	11.71 GB	Quarterly

Netherlands

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR NETHERLANDS	`ga_nl_paf.dir`	431 MB	Monthly

U.S.

For more information about the U.S. directory release schedule, see SAP Knowledge Base Article 1639407.

Package name	Directory filename	Approximate size	Updated
SAP ADDR DIR US (US National ZIP+4 and eLOT 2009 - Current formats)	*ZIP4:* `city10.dir`	1.73 MB	Monthly
	`revzip4.dir`	978 KB	
	`zcf10.dir`	2.11 MB	
	`zip4us.dir`	795 MB	
	`zip4us.rev`	100.2 MB	
	`zip4us.shs`	3.75 MB	
	Enhanced Line of Travel (eLOT) Directory: `elot.dir`	611 MB	
SAP ADDR DIR US - DPV (Delivery Point Validation)	All files	1.16 GB	Monthly
Early Warning System (EWS) Directory	`ewyymmdd.dir`	660 KB	
SAP ADDR DIR US - LACSLINK (Locatable Address Conversion System)	All files	449.8 MB	Monthly
SAP ADDR DIR US - RDI (Residential Delivery Indicator)	`rts.hs11`	16.78 MB	Monthly
	`rts.hs9`	33.56 MB	
SAP ADDR DIR US - SUITELINK	All files	1.1 GB	Monthly
SAP ADDR DIR US - Z4CHANGE	`z4change.dir`	20.6 MB	Monthly
SAP ADDR UNITED STATES 4.X ENH	`ga_us_paf.dir`	41.9 GB	Monthly

6.1.2 Directory summary report

The directory summary report provides information about the contents of the directories.

The report is included in the directory package, if available, and has the file name `dir_summary_report_<mmmyy>.html`.

6.1.3 U.S. directory expiration

To ensure that your projects are based on up-to-date directory data, it's recommended that you install the latest directories.

We publish and distribute the ZIP4 and supporting directory files under a non-exclusive license from the USPS. The USPS requires that our software disables itself when a user attempts to use expired directories.

If you do not install new directories as you receive them, the software issues a warning in the log files when the directories are due to expire within 30 days.

> **i** Note
>
> Incompatible or out-of-date directories can render the software unusable. The directories are look-up files used by SAP software. The system administrator must install monthly or bimonthly directory updates to ensure that they are compatible with the current software.

Expiration schedule

You can choose to receive updated U.S. national directories on a monthly or bimonthly basis. Bimonthly updates are distributed during the even months. Directory expiration guidelines are:

- ZIP4 and Auxiliary, DPV, eLOT, and Z4Change Directories expire on the first day of the fourth month after directory creation. When running in non-certified mode, ZIP4 and Auxiliary, DPV, eLOT, and Z4Change directories expire on the first day of the fourteenth month after directory creation.
- LACSLink directories expire 105 days after directory creation.
- SuiteLink directories expire on the first day of the third month after directory creation.

6.1.3.1 U.S. National and Auxiliary files

Information about U.S. National and Auxiliary file self-extracting files.

The U.S. National and Auxiliary file self-extracting files are named as follows:

Directory name	Self extracting file name
2004-2008 U.S. National directory	`us_dirs_2004.exe`
U.S. Address-level GeoCensus	`us_ageo1_2.exe`
	`us_ageo3_4.exe`
	`us_ageo5_6.exe`
	`us_ageo7_8.exe`
	`us_ageo9_10.exe`

Directory name	Self extracting file name

U.S. Centroid-level GeoCensus	`us_cgeo.exe`
	`us_cgeo1.exe`
	`us_cgeo2.exe`

Related Information

Unzipping directory files [page 93]

6.1.4 International directory expiration

The system administrator must install monthly or quarterly directory updates to ensure that they are compatible with the current software.

Incompatible or out-of-date directories can render the software unusable. The directories are lookup files used by SAP software.

Expiration schedule

Directory	Directory access regulations
Australia	In certified mode, the directories expire 3 months after the directory creation date. In non-certifed mode, the directories expire 15 months after the directory creation date.
Canada	In certified mode, the POC directories are valid for 30 days. In order to qualify for the mailing discount, users must run the software with the same-month POC address directory. The POC address data can only be used in certified mode. In non-certified mode, the regular address directories do not expire.
New Zealand	In certified mode, the directories expire 6 months after the directory creation date. In non-certified mode, directory expiration is not enforced.
International	Directory files do not expire.

6.1.5 Where to copy directories

We recommend that you install the directory files in a common file system directory local to the host system on which SAP Data Services is installed. By default, the software looks for directories in

<LINK_DIR>\DataQuality\reference_data. If you place your directories in a different location, you must update your substitution file.

> **Note**
>
> If you use both HERE (formerly NAVTEQ) and TomTom directories, make sure that you install them in separate locations.

6.1.5.1 Copying international directory files to a non-default location

If you use the Global Address Cleanse transform's Global Address engine or Global Suggestion Lists' Global Address engine and store your data directories in a location other than the default (<LINK_DIR>\DataQuality\reference_data), do the following:

1. Stop any data flows that use the Global Address engine or Global Suggestion Lists.
2. Copy the following files from <LINK_DIR>\DataQuality\reference_data to the location where you store your data directories:
   - ga_directory_db.xml
   - ga_country.dir
   - ga_locality.dir
   - ga_region.dir

   > **Note**
   >
   > Every time you install an SAP Data Services software update, copy the reference files from the default location to where you store your directories.

   > **Note**
   >
   > Copy the reference files over to the location where you store your data directories before you install the new directories.
3. Update the RefFilesAddressCleanse substitution parameter configuration to the new reference directory location.

6.1.6 Installing and setting up SAP Download Manager

Before you can download directory files, you need to install and set up SAP Download Manager.

To install and set up SAP Download Manager:

1. Access the SAP Support Portal at https://support.sap.com/.
2. Select *Download Software*.
3. At the top of the screen, select *Downloads*, enter the search term "Download Manager", and click the search icon.

4. Select the version you want to download.
5. Follow the steps to install and set up the SAP Download Manager.

6.1.7 Downloading directory files

The address and geocoding directories are available for download from the SAP ONE Support Launchpad on the SAP Support Portal.

To download directories:

1. Access the SAP ONE Support Launchpad on the SAP Support Portal at https://launchpad.support.sap.com/#/softwarecenter and sign in with your S-User ID and password.
2. Select *Address Directories & Reference Data* > *Address Directories*.
3. On the Address Directories & Reference Data page, select *Current Directories*.

   The list of directories licensed to your company is displayed.
4. Click the check box to the left of the directory name(s) that you want to download. To select all directories, click the check box to the left of the *Name* heading.
5. Click the *Add Selected Items to Download Basket* icon.
   The selected files are placed in the Download Basket.
6. Run the Download Manager to start the download process.

6.1.8 Unzipping directory files

The steps listed here describe how to install the directory files.

1. Locate and double-click the `<filename>.zip`.
2. Browse to the folder where you want WinRAR to place the directory files and click *Install*.
3. Repeat for each required file.

6.2 Citrix Support

You can set up SAP Data Services to run under Citrix Presentation Server. Presentation Server provides an access infrastructure for enterprise applications.

Presentation Server supports many methods of running applications. This section provides information about how to install one copy of a Data Services component, run it as a Presentation Server-published application or published desktop on a server, and set client user permissions for it.

Definitions

The following definitions introduce basic Citrix concepts. To learn more about Citrix Presentation Server, see Citrix Presentation Server documentation.

Concept	Description
ICA Client	A Citrix-defined protocol/connection to a server. The ICA client connection allows Presentation Server to run any application on its server and manage how each client accesses the user interface of the application.
Program Neighborhood	The Presentation Server component installed on a client. It manages ICA client connections and published applications for a given user.
Published Application	Application software (for example, the Designer) installed on a Presentation Server server and published to users. An administrator can choose which users may run and view the application.
Application Set	A set of all published applications that a user can access. When you start your Program Neighborhood software, you see this application set, which can include multiple applications published on multiple Presentation Servers.

Parent topic: Additional Information [page 83]

Related Information

Directory data [page 83]
WDeploy [page 100]
Deploy Data Services Web applications on SAP NetWeaver 7.3 [page 113]

6.2.1 Install Citrix

User interfaces for SAP Data Services are certified to run on Citrix Presentation Server as an application set.

The application set consists of:

- Designer (includes the Metadata Reporting tool)
- Management Console
- License Manager
- Repository Manager
- Locale Selector
- Server Manager
- Documentation Components

6.2.1.1 Initial installation

The installation process for SAP Data Services on Presentation Server is slightly different from a typical installation.

The Presentation Server runs Microsoft terminal services in application mode. Therefore, you must install the software using the Add/Remove programs service in the Windows control panel.

To install the software, follow the prompts of the Add/Remove program wizard and use the file browser of the wizard to run `setup.exe` from the install CD (or network directory). It's recommended that you install the Designer and the Job Server on separate host systems.

After you install Job Servers and Access Servers, you must provide connection settings to users because their remote setups will look for the servers locally by default. Similarly, manage sources, targets, and repositories from the Presentation Server in the usual fashion. However, individual clients must use database connection names defined on the server (not the local client). The Designer defaults to looking for configuration information locally. For example, to connect to an Oracle repository, define the Oracle connection name on the Presentation Server and provide the connection information to your users.

> **i** Note
>
> Because Citrix Presentation Server is running on a server, be aware that after you install the software for the first time, you must reboot the server.

Related Information

Limitations [page 100]

6.2.2 Run components in multi-user mode

While Presentation Server allows you to publish SAP Data Services interface components to one user or multiple users at the same time, it's recommended that you run all but the Designer, Management Console, and Locale Selector in serial mode.

6.2.2.1 Serial access to the License, Server, and Repository Managers

It is safest to allow only one user at a time to access the License Manager, Repository Manager, and Server Manager.

In most cases, this restriction will not be a problem, because users typically do not access these components often. To set these components for serial access, use Presentation Server to configure their application limit to one instance per server.

6.2.2.2 Parallel access to the Management Console, Locale Selector, and Designer

Use Presentation Server to configure the Management Console, Locale Selector, and Designer to run any number of instances in parallel per server.

When you configure the Management Console, simply publish it as content. However, when you configure the Locale Selector and Designer, you also must limit the application to one instance per user and ensure that your configuration preserves user settings. A DOS shell script is provided to accomplish this for each application.

Related Information

Publishing the software [page 97]

6.2.2.3 Access Locale Selector and Designer with batch file

When you install SAP Data Services, the `LINK_DIR` environment variable is set to point to the install directory. This variable allows the software to locate settings and persistent environment information.

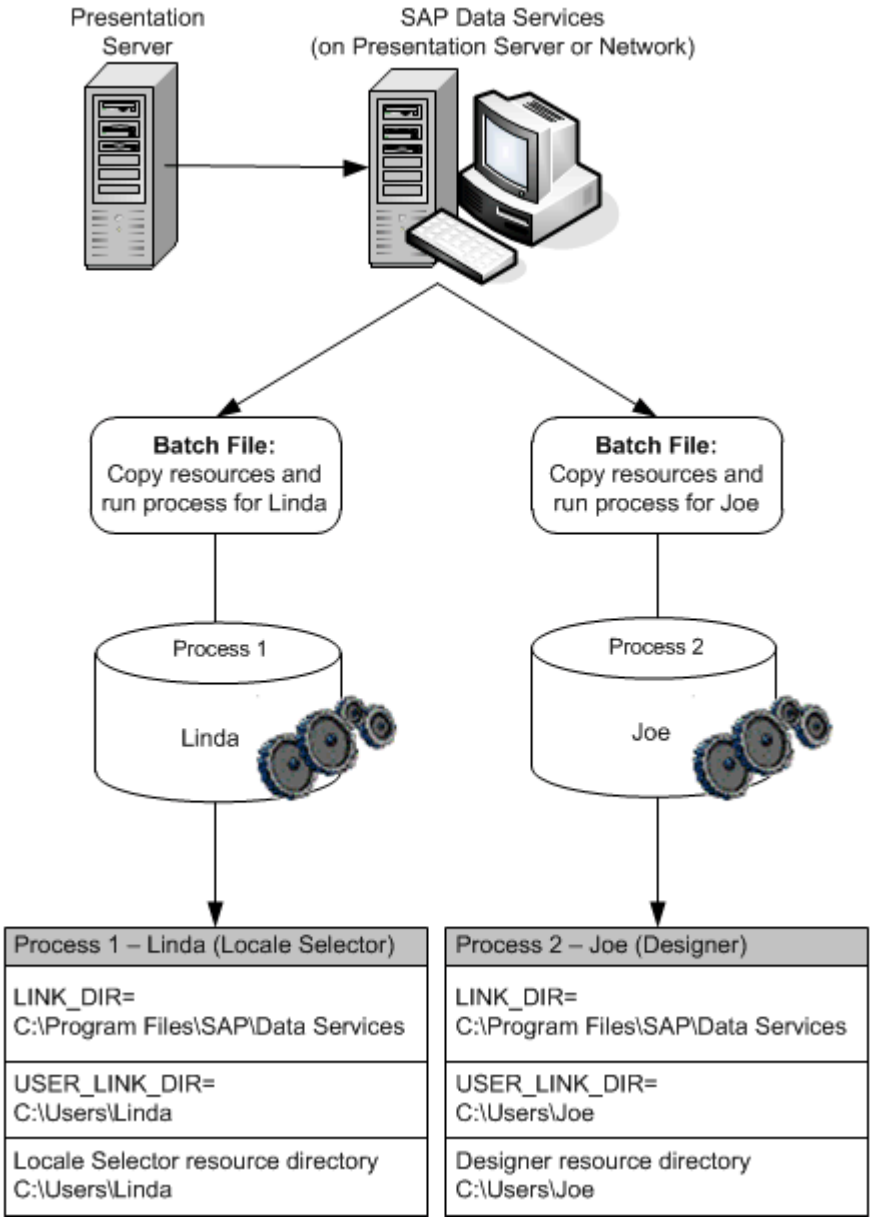
Because only one `LINK_DIR` variable exists per installation, when multiple users run a single Designer or Locale Selector installation (in serial or parallel), all instances access the same path from the `LINK_DIR` variable. The result is that the users will change each other's settings.

To solve this problem for Citrix, you can use batch scripts to provide each user with their own copy of required resource files and to create a new environment variable (`USER_LINK_DIR`) that directs the Locale Selector or Designer to the user-specific resource copy.

The batch script for the Designer is `RunDSDesignerMU.bat`, and the batch script for the Locale Selector is `RunLocaleSelectorMU.bat`. By default, both scripts are installed to the `<LINK_DIR>\bin` directory.

> **i** Note
>
> By default, the scripts create user-specific resource directories in `C:\Users`. You can specify a different path by using an argument when running the script. For example: `RunDSDesignerMU D:\UserData`

The following diagram shows how the scripts enable multiple processes to run on a single host system by creating user-specific resource directories:



! Restriction

The batch scripts enable multiple users to run the same Data Services component concurrently from a Citrix Presentation Server. However, the scripts do not allow a single user to run both the Designer and Locale Selector concurrently. The provided batch scripts do not allow a user to open one component when the other is currently running.

6.2.3 Publishing the software

After you install SAP Data Services, you can set up its user interface components as Published Applications to make them available to clients. The Presentation Server Management console includes a wizard to help you do

this. Run it once for each component (Designer, Management Console, Repository Manager, Server Manager, Locale Selector, and License Manager). You must publish each component separately.

6.2.3.1 Publishing a component

Instructions for publishing components.

1. Start the Citrix Presentation Server Management console.
2. Select *Applications* from the menu tree and choose *Publish Application* from the menu.
3. On the *Specify What to Publish* page, configure each component.
   a. Publish the Designer and Locale Selector `.bat` files instead of directly publishing the executables.
   b. To allow for spaces in the install path name, use quotes around any variable that includes a directory name.

Component	Publish as	Command line	Working directory	Content address
Designer	Application	`RunDSDesignerMU.bat`	`C:`	
Repository Manager	Application	`RepoMan.exe`	`"$LINK_DIR"\bin`	
Server Manager	Application	`AWServerConfig.exe`	`"$LINK_DIR"\bin`	
License Manager (optional)	Application	`LicenseManager.exe`	`"$LINK_DIR"\bin`	`"$LINK_DIR"/ext/DataServices.html`
Management Console	Content			
Locale Selector	Application	`RunLocaleSelectorMU.bat`	`C:`	

> **i Note**
>
> After using Presentation Server to configure the Management Console as content, share the `ext` directory with all Management Console users.

The Publish Application Wizard allows you to enter a file name for the start icon used by applications published as content. For the Management Console, enter the path to `Admin_small.ico` if you want users to have access to the icon. Note that Designer components run as a shortcut on the client desktop.

4. Define the Program Neighborhood settings:

Setting	Description
Application Appearance	Choose 256 colors at minimum. Lower resolution settings may work but will not allow users to easily distinguish icons and object bitmaps. Program Neighborhood provides an option to maximize any application at startup. It is recommended that you do not maximize the Designer at startup because older versions of the Designer might fail.

Setting	Description
ICA Client Requirements	It's recommended that you use only the basic security level option in Program Neighborhood. Higher levels of security may work but have not been tested.
Application Limits	The Designer, Locale Selector, Repository Manager, Server Manager, and License Manager were not designed to be run by multiple users at the same time. However, Citrix will allow several instances of these programs to be active at the same time on the same server. It's recommended that you set the maximum number of instances for the Repository Manager, Server Manager, and License Manager executables to 1. For the Designer and Locale Selector, you can allow multiple instances of the `.bat` file to run, but limit one instance of each `.bat` file per user. Since the Management Console is published as content, you can run multiple instances of it.
Specify Servers	You can specify which servers in a Presentation Server server farm will run an application for client users. Select the server on which you installed Data Services for this purpose. If you installed the software on several servers, publish only one.
Specify Users	You can specify which users can access a particular application. If you specify three users, the component defined by the application appears in the Program Neighborhood of each user.

6.2.3.2 Connection management

You need to assign user permissions to a connection.

After installing SAP Data Services components, give each user permission to establish an ICA connection with the Presentation Server. Run the Citrix Connection Configuration tool to assign user permissions to a connection.

6.2.3.3 Client setup

If you run SAP Data Services components from client computers, we recommend installing the Citrix Program Neighborhood software on these computers.

> **i** Note
>
> The software components were tested as a Citrix Program Neighborhood application set. These components were not tested as a Program Neighborhood agent or web interface.

Related Information

Initial installation [page 95]

6.2.4 Limitations

Known limitations to running SAP Data Services on Citrix.

- The software stores files in the Job Server's log directory when you capture sample data using the View Data feature. If the Designer runs on the same host system as the Job Server, the default location of the log directory changes each time a user logs in through Citrix. This change prevents the Designer from locating the View Data log files for a given user. To avoid this issue, it's recommended that you run the Job Server on a different host system than the Designer. This limitation does not apply to the interactive debugger.
- If the Server Manager is published to a Citrix client and you try to add a Job Server from the client, the Data Services service might not start. If this occurs, log on to the Job Server's host system and restart the service. You must have sufficient user privileges to restart a service using the host system's operating system. When the service is installed, it uses the as its default login values ID and password that belong to the user who runs the installer.
- Citrix runs the Designer process on the server and publishes only its user interface to the client. Since the Designer runs on the server, users must have sufficient read/write permissions for directories or files on the server if you want them to access a file on the server as part of a Designer job.
- If registry popup windows appear when users attempt to start the Designer, then either give user accounts authority to query registry keys on the server or give users administrator authority on the server.

6.3 WDeploy

WDeploy is installed as a part of SAP BusinessObjects Business Intelligence Platform (BI Platform) or SAP Information Platform Service (IPS) to aid in the deployment of web applications to Java-based web application servers.

There are two ways to deploy web applications after installation:

- Use the WDeploy web application deployment tool.
- Use your web application server administrator console.

Before you use your web application server administrator console, you must run the `undeploy` and `deployall` commands to modify your web application server administrator console to be deployable WAR or EAR files. See Deploy web applications with WDeploy [page 67] for details.

The WDeploy GUI defaults to an English interface, but prompts the user to choose a language if any language packs are installed and the tool is run for the first time.

Parent topic: Additional Information [page 83]

Related Information

Directory data [page 83]
Citrix Support [page 93]
Deploy Data Services Web applications on SAP NetWeaver 7.3 [page 113]

Run WDeploy from the command line [page 105]

6.3.1 WDeploy prerequisites

Ensure that you adhere to the specific WDeploy prerequisites for web application server free space, platform requirement, and so on.

Read about the WDeploy software and hardware prerequisites, and other information in the applicable guides:

- Unix: Web Application Deployment Guide for Unix
- Windows: Web Application Deployment Guide for Windows

> **i Note**
>
> Data Services version 4.3 uses SAP BusinessObjects Business Intelligence (BI) (or IPS) 4.3 SP02, which requires SAP JCE libraries for cryptographic libraries. Therefore, after deployment, the Web application server configuration requires additional steps. For more information about the additional steps, see SAP Knowledge Base Article 3112068, "How to configure SAP JCE libraries for Web application servers".

Prerequisite	Information
Perl home environment variable	For WDeploy GUI only. Set the `PERL_HOME` environment variable. If you don't already have Perl 5.8.9 installed, set `PERL_HOME` to `<BIP_INSTALL_DIR>\Installdata\setup.engine\perl` To use your own version of Perl 5.8.9, ensure that the following modules are also installed: • `Text::CharWidth` — Gets the number of occupied columns of a string on terminal. • `Text::WrapI18N` — Line wrapping module with support for multibyte, full width, and combining characters and languages without whitespaces between words. For more information about the modules, search with the CPAN search engine, meta::cpan at http://search.cpan.org .

Prerequisite	Information
WebSphere as web application server	When using WebSphere with a non-default profile name that isn't set to `AppSrv01`, manually update the `as_profile_name` parameter in the WebSphere configuration file before launching the WDeploy console-based tool. **Example** 1. Update `as_profile_name` in `<BIP_INSTALL_DIR>\wdeploy\conf\config.websphere<version>`. 2. Launch the WDeploy. 3. Select *WebSphere* `<version>` and provide all parameters. 4. Perform the deployment.

Java home environment variable	Set the `JAVA_HOME` environment variable to the desired JDK folder.
	
	Example
	`<BIP_INSTALL_DIR>\Java`
	
	Example
	`<BIP_INSTALL_DIR>\win64_x64\jdk`

Wdeploy default location and command syntax	Location: `<BIP_INSTALL_DIR>\wdeploy` Syntax of WDeploy command from the WDeploy directory is: `./wdeployGUI.sh`
Web application server	• Installed and operating before you install Data Services. • Have at least 5 GB of free disk space plus requirements by other software installed on the machine.

Prerequisite	Information
Host web application server	Must have configured the minimum heap size (-Xms), maximum heap size (-Xmx), and Permanent Generation (-XX:MaxPermSize) settings. **Example** `JAVA_OPTS=-Xms128m -Xmx1024m -XX:MaxPermSize=512` **Note** For SAP NetWeaver AS 7.3 or higher, ensure that the maximum heap size is at least 2048 megabytes: `JAVA_OPTS=-Xms128m -Xmx2048m -XX:MaxPermSize=512`
Host system	Must have a minimum of 5 GB of free space available in `\temp` for the deployment of web applications. You can't use the `TEMP` environment variable to define a location other than `\temp`.
Web application server host system	• Must have at least 15 GB of free hard disk space before attempting to deploy web applications. • Must have at least 4 GB of RAM. When using SAP NetWeaver AS Java 7.3 or higher, ensure that the host system has at least 8 GB of RAM.
Operating system	• 64-bit operating system • 64-bit web application servers • 64-bit JDK
Rights to deploy web applications	User that deploys web applications with WDeploy is the same user that installed BI Platform or IPS. If the user is different, see the *BI Web Application Deployment Guide* for details.

6.3.2 Start WDeploy

Start the WDeploy GUI tool or use a command line to start the command line WDeploy tool.

Start the WDeploy GUI tool in Windows using the *Start* menu.

To open the command line WDeploy tool, enter `<BIP_INSTALL_DIR>\wdeploy\wdeployGUI.bat`.

When the WDeploy GUI tool is run for the first time, it prompts you for the language to use for displaying information in the user interface. Select a language and continue.

6.3.3 Deploying or undeploying all using WDeploy GUI

The WDeploy GUI tool allows users to deploy and undeploy web applications to a web application server. Any web applications not deployed by the BI platform or IPS installation program or WDeploy tool will be unaffected.

Before deploying or undeploying web applications to a web application server, ensure that the WDeploy web application server configuration file, `config.<WEB_APP_SERVER>` is correctly configured. For details about your applicable web application server, see the following guide as applicable:

- Unix: Web Application Deployment Guide for Unix
- Windows: Web Application Deployment Guide for Windows

> **Note**
>
> To perform deployment operations other than deploy all and undeploy all, use the WDeploy command line tool.

1. Start WDeploy GUI.
2. Select an option from *Choose deployment Action* based on whether you are deploying or undeploying.

   Options include:

   - *Deploy all available SAP BusinessObjects Web Applications to the server*.
   - *Undeploy all SAP BusinessObjects Web Applications from the server*.

   > **Note**
   >
   > If the Information Steward web applications have previously been deployed on the web application server, the deployment operation may take several minutes.
3. Select the server type from the *Select Web Application Server* type dropdown list.
4. Complete the applicable *Web Application Server information* options applicable to the web application server type you chose.
5. Enter the path to the root directory in *Application Server Domain Root Directory*, or click *Browse* to select the root directory.
6. Click *Options* to set advanced options. Set the following options:

   - *WDeploy work directory*
   - *Web applications source locations*
   - *Web application root context*

   > **Note**
   >
   > The WDeploy GUI tool does not accept non-English characters in paths.
7. Complete any other applicable options and click *Run*.

Related Information

Advanced options [page 105]

6.3.4 Advanced options

The WDeploy GUI tool Options screen allows you to select custom folders to use for the deployment of web applications.

Option	Description
Select WDeploy work directory	Select the folder in which WDeploy manipulates the web applications WAR or EAR archives (for example, to split static and dynamic content in a web application). This folder stores the results of the wdeploy predeploy action, and stores data required to undeploy web applications. **Example** `<BIP_INSTALL_DIR>\wdeploy\workdir`
Select Source location of web applications: *Web application source tree location*	The location of source used to create WAR or EAR **Example** `<BIP_INSTALL_DIR>\warfiles\webapps`
Select Source location of web applications: *Generic WAR files location*	The location of source content used to create the generic WAR files. **Example** `<BIP_INSTALL_DIR>\java\applications`
Web applications root context	Select the web application root context path to which all web applications are deployed. **Example** `\BOE`

Note

Non-English characters in paths are not valid in the WDeploy GUI tool.

6.3.5 Run WDeploy from the command line

Use the wdeploy command line tool to deploy the Data Services web application components to a web application server and perform other advanced deployment functions unavailable in the GUI tool.

The web components that are available to deploy include the following:

- `DataServices`
- `Doc`
- `Webservice`

By default, the wdeploy tool and the web components are installed to the following locations during the BOE Platform or IPS installation:

- wdeploy:
  `<BIP_INSTALL_DIR>\wdeploy`
- web components:
  `<BIP_INSTALL_DIR>\warfiles\webapps`

Use deployment commands to deploy specific web applications to a specific web application server. Deployment commands follow the format: server.properties.action. For example:

Sample Code

```
wdeploy <server_type> [-Das_admin_password=<password>] [-DAPP=<app_name>]
<command>
```

Where:

Parameter	Description
`<server_type>`	Name of the web or web application server. Must match the name of the WDeploy configuration file `<BIP_INSTALL_DIR>\wdeploy\conf\config.<WEB_APP_SERVER>`. Available values: • `jboss<version>` • `sapappsvr<version>` • `tomcat<version>` • `weblogic<version>` • `websphere<version>`
`-Das_admin_password=<password>`	Specifies the administrator password to use to deploy the application. **Note** For Tomcat web application servers, the password is not required.
`-DAPP=<app_name>`	Specifies the web application component to deploy. Available values for `<app_name>` include: • `DataServices` • `doc` • `webservice`

Parameter	Description
<command>	Specifies the command for wdeploy to execute. Available values for <command> include: • deploy Prepares and deploys a single web application component to the web application server. • deployall: Prepares and deploys all web application components to the web application server. • undeploy: Removes a single web application component from the web application server. • undeployall: Removes all web application components from the web application server.

6.3.5.1 Configuring Wdeploy

Configure WDeploy to specify the web application server settings.

1. Open the configuration file for your web application server. By default, the configuration files are installed to <BIP_INSTALL_DIR>\wdeploy\conf.

   Available configuration files include:
   - config.jboss<version>
   - config.sapappsvr<version>
   - config.tomcat<version>
   - config.weblogic<version>
   - config.websphere<version>
2. Set the parameters to match your application server settings.
3. Save and close the configuration file.

6.3.5.2 Deploying all web components

Deploying all web components deploys DataServices, Doc, and Webservice.

To deploy all web content:

1. Access <BIP_INSTALL_DIR>\wdeploy from the command prompt.
2. Run wdeploy with the deployall command:
   `wdeploy <server_type> deployall -Das_admin_password=<password>`

> **i Note**
>
> Tomcat does not require a password. When you deploy on Tomcat, exclude the -Das_admin_password=<password> parameter.

All web components are deployed to the web application server.

Example: WebSphere 9

```
wdeploy websphere9 deployall -Das_admin_password=mypass
```

> **i** Note
>
> After you deploy the web applications on Tomcat, you must restart the Tomcat application server for the changes to take effect.

6.3.5.3 Deploying one web component

Instructions for deploying one web component.

To deploy a single web application component:

1. Access `<BIP_INSTALL_DIR>\wdeploy` from the command prompt.
2. Run `wdeploy` with the `deploy` command and the `-DAPP=<app_name>` parameter:
   `wdeploy <server_type> -Das_admin_password=<password> -DAPP=<app_name> deploy`

   > **i** Note
   >
   > Tomcat does not require a password. When you deploy on Tomcat, exclude the `-Das_admin_password=<password>` parameter.

The specified web component is deployed to the web application server

Example: DataServices on WebSphere 9

```
wdeploy websphere9 -Das_admin_password=mypass -DAPP=DataServices deploy
```

> **i** Note
>
> After you deploy the web application on Tomcat, you must restart the Tomcat application server for the changes to take effect.

6.3.5.4 Undeploying all web components

Undeploying all web components undeploys `DataServices`, `Doc`, `Webservice`.

To undeploy all web components:

1. Access `<BIP_INSTALL_DIR>\wdeploy` from the command prompt.
2. Run **`wdeploy`** with the `undeployall` command:
   `wdeploy <server_type> undeployall -Das_admin_password=<password>`

> **i** Note
>
> Tomcat does not require a password. When you deploy on Tomcat, exclude the `-Das_admin_password=<password>` parameter.

All web components are removed from the web application server.

Example: WebSphere 9

```
wdeploy websphere9 undeployall -Das_admin_password=mypass
```

> **i** Note
>
> After you undeploy the web applications on Tomcat, you must restart the Tomcat application server for the changes to take effect.

6.3.5.5 Undeploy one web component

Instructions for undeploying a single web component.

1. Access `<BIP_INSTALL_DIR>\wdeploy` from the command prompt.
2. Run `wdeploy` with the `undeploy` command and the `-DAPP=<app_name>` parameter:
   `wdeploy <server_type> -Das_admin_password=<password> -DAPP=<app_name> undeploy`

> **i** Note
>
> Tomcat does not require a password. When you deploy on Tomcat, exclude the `-Das_admin_password=<password>` parameter.

The specified web component is removed from the web application server.

Example: DataServices on WebSphere 9

```
wdeploy websphere9 -Das_admin_password=mypass -DAPP=DataServices undeploy
```

> **i** Note
>
> After you undeploy the web application on Tomcat, you must restart the Tomcat application server for the changes to take effect.

6.3.6 Deploying web applications in a distributed environment

Information about manually deploying the Data Services web application and repairing a broken link.

In a distributed deployment where the Data Services web applications are deployed to a different system than the Central Management Server (CMS), a broken link may appear in a Central Management Console (CMC) that resides on the same host system as the CMS.

For example, consider the following deployment:

Host A	Host B
BI platform Central Management Server (CMS)	BI platform web tier
BI platform web tier	Data Services web applications
Data Services InfoObjects	

To manually deploy the Data Services web application and repair the broken link on Host A:

1. Copy the `BOE` directory from Host B to Host A.
   By default, the `BOE` directory is located in `<BIP_INSTALL_DIR>\warfiles\webapps\`.
2. Use `wdeploy` to deploy the BOE web application on Host A:
   - Deploy all SAP web applications from the command-line or GUI.
     Or
   - Deploy only the BOE web application from the command-line.

Related Information

WDeploy [page 100]
Deploying all web components [page 107]
Deploying one web component [page 108]

6.3.7 Deploying on WebLogic

Deploy SAP BusinessObjects BI platform (or IPS) and SAP Data Services on WebLogic using WDeploy.

Prerequisites

Ensure that you're using the correct version of WebLogic for your Data Services version, by consulting the Product Availability Matrix (PAM) on the SAP Support Portal.

> **i Note**
>
> Oracle WebLogic 10.3.x has reached end of life. For more information, see the Oracle Lifetime Support Policy at https://www.oracle.com/us/support/library/lsp-middleware-chart-069287.pdf .

For other important prerequisites, see WDeploy prerequisites [page 101].

To deploy on WebLogic, perform the following steps:

1. Clean the WebLogic environment. If there is a previous deployment, undeploy the Data Services and BI platform or IPS deployment.

   Undeploy using the WebLogic administration console.
2. Move the `<BIP_INSTALL_DIR>\warfiles\webapps\DataServices\WEB-INF\lib\wstx-asl-3.2.1.jar` file to another location, such as to the desktop or `<BIP_INSTALL_DIR>\warfiles`.
3. Run wdeploy.

   The deployment fails on Data Services, but WDeploy uploads the Data Services application to WebLogic.
4. Open the WebLogic console, and click *Deployment*.
5. If you see a warning under Change Center, click *Undo all changes*.
6. Copy and paste the `wstx-asl-3.2.1.jar` file to the Data Services WebLogic deployment area: `<Weblogic>\<domain>\servers\<instance>\upload\DataServices\app\DataServices\WEB-INF\lib\`.
7. Run wdeploy again.
8. Restart the WebLogic server.

After deployment:

Data Services version 4.3 uses SAP BusinessObjects BI platform (or IPS) 4.3 SP02, which requires SAP JCE libraries for cryptographic libraries. Therefore, the WebLogic Web application server configuration requires additional steps after deployment. For the additional steps, see SAP Knowledge Base Article 3112068, "How to configure SAP JCE libraries for Web application servers".

6.3.8 Deploying on JBoss

Deploy SAP BusinessObjects BI platform (or IPS) and SAP Data Services on JBoss using WDeploy.

Prerequisites

Ensure that you're using the correct version of JBoss for your SAP Data Services version, by consulting the Product Availability Matrix (PAM) on the SAP Support Portal.

Ensure that the Web application server is installed, configured, and running, either in standalone or domain mode, based on your environment.

For other important prerequisites, see WDeploy prerequisites [page 101].

To deploy on JBoss, perform the following steps:

1. Use the `wdeploy predeploy` command to create WAR files such as `Dataservices.war`, that you can deploy manually to JBoss.

   > Example
   >
   > ```
   > wdeploy.bat jboss7 -DAPP=DataServices predeploy
   > ```

   The `wdeploy predeploy` command creates an exploded WAR file structure for the Web Services web applications, named `DataServices.war`.

2. Data Services version 4.3 uses SAP BusinessObjects BI platform (or IPS) 4.3 SP02, which requires SAP JCE libraries for cryptographic libraries. Therefore, the JBoss Web application server configuration requires additional steps after deployment. For the additional steps, see SAP Knowledge Base Article 3112068, "How to configure SAP JCE libraries for Web application servers".
3. Create a file named jboss-deployment-structure.xml in the location <WAR File location>\WEB-INF. The file name and folder structure should be the same as described here.

   Add the below content to the jboss-deployment-structure.xml file.

```
<jboss-deployment-structure>
<deployment>
<dependencies>
<module name="com.sap.commoncryptolib.provider" export="true"/>
</dependencies>
<exclusions>
<module name="org.apache.logging.log4j.api"/>
</exclusions>
</deployment>
</jboss-deployment-structure>
```

4. From the JBoss bin directory, run the command `jboss-cli --connect` to start the JBoss CLI and connect to the application server.
5. Run the `/deployment` command on the compressed WAR file or exploded WAR folder.
6. If you are deploying to a managed domain, run the `/server-group` command.

Example

Assume for the following examples that the WAR is stored in `C:\BIPwebapps\` and the server group is named **main-server-group**.

- For compressed `.war` files, such as `DataServices.war` set the archive value to true:

  Standalone server:

```
 /deployment=DataServices.war:add(enabled="true",runtime-
name="DataServices.war",content=[{"path"=>"C:\BIPwebapps\DataServices.wa
r","archive"=>true}])
```

  Managed domain:

```
/deployment=DataServices.war:add(runtime-
name="DataServices.war",content=[{"path"=>"C:\BIPwebapps\DataServices.wa
r","archive"=>true}]) /server-group=main-server-group /
deployment=DataServices.war:add(enabled=true)
```

- For exploded `.war` files, such as `DataServices.war` set the archive value to false:

  Standalone server:

```
 /deployment=DataServices.war:add(enabled="true",runtime-
name="DataServices.war",content=[{"path"=>"C:\BIPwebapps\DataServices.wa
r","archive"=>false}])
```

  Managed domain:

```
 /deployment=DataServices.war:add(runtime-
name="DataServices.war",content=[{"path"=>"C:\BIPwebapps\DataServices.wa
r","archive"=>false}]) /server-group=main-server-group /
deployment=DataServices.war:add(enabled=true)
```

6.3.9 Deploying on WebSphere

Deploy SAP BusinessObjects BI platform (or IPS) and SAP Data Services on WebSphere using WDeploy.

Prerequisites

Ensure that you're using the correct version of WebSphere for your SAP Data Services version, by consulting the Product Availability Matrix (PAM) on the SAP Support Portal.

For other important prerequisites, see WDeploy prerequisites [page 101].

To deploy on WebSphere, perform the following steps:

1. Open the WebSphere configuration file, `<BIP_INSTALL_DIR>\wdeploy\conf\config.websphere<version>`.
2. Set the parameters in the configuration file to match the WebSphere application server settings and save.
3. Open WDeploy from the command line and deploy all Web components.

> **Example**
>
> For WebSphere 9:
>
> ```
> wdeploy websphere9 deployall -Das_admin_password=mypass
> ```

After deployment:

Data Services version 4.3 uses SAP BusinessObjects BI platform (or IPS) 4.3 SP02, which requires SAP JCE libraries for cryptographic libraries. Therefore, the WebSphere Web application server configuration requires additional steps after deployment. For the additional steps, see SAP Knowledge Base Article 3112068, "How to configure SAP JCE libraries for Web application servers".

6.4 Deploy Data Services Web applications on SAP NetWeaver 7.3

To deploy SAP Data Services Web applications to SAP NetWeaver 7.3 or higher, you must follow a different procedure than you use with other Web application servers such as WebLogic or WebSphere.

Before you can deploy Data Services Web applications to SAP NetWeaver, the following prerequisites must be met:

- You are using a Windows Server 2008 or higher or UNIX host.
- You are using SAP NetWeaver 7.3 or higher.
- You install either SAP BusinessObjects BI platform or Information Platform Services (IPS)
- You install SAP Data Services.
- You install NetWeaver 7.3 or higher using the same host agent as the SAP BusinessObjects BI platform or Information Platform Services (IPS) and Data Services.

> **Note**
>
> To ensure you use compatible versions of SAP software, consult the Product Availability Matrix (PAM) at https://apps.support.sap.com/sap/support/pam.

There are two phases involved in deploying Data Services Web applications to NetWeaver 7.3 or higher:

- Predeployment: Use the WDeploy tool to prepare the environment.
- Software Update Manager (SUM): SUM is a multi-purpose tool that supports various processes, such as performing a release upgrade, installing enhancement packages, applying support package stacks, installing add-ons, or updating single components.

> **Note**
>
> View all information for SUM in the SAP Customer Portal beginning with the *System Maintenance* section of the *Software Logistics Toolset (SL Toolset)* page at https://support.sap.com/sltoolset.

Parent topic: Additional Information [page 83]

Related Information

Directory data [page 83]
Citrix Support [page 93]
WDeploy [page 100]

6.4.1 Setting compression for HTML and HTM files

Before deploying SAP Data Services Web applications to an SAP NetWeaver Application Server component (any version), ensure that `.html` and `.htm` files are never compressed.

Use the following example to set the compression for your applicable version of SAP NetWeaver Application Server 7.3 or higher component.

1. Logon to your SAP Administrator portal.

   For example, in your browser, type `http://<servername>:<1128>/nwa`. Use port number 1128 when you use HTTP and use port 1129 when you use HTTPS.
2. Select *Configuration* > *Infrastructure* > *Java System Properties*.
3. On the *Services* tab, select *HTTP provider*.
4. Under *Extended Details*, modify the *AlwaysCompressed* and *NeverCompressed* properties as follows:
   - *AlwaysCompressed*: Remove `*.htm`, `*.html`, and `text/html` from this property. The *AlwaysCompressed* field cannot be blank. If this field is blank after you remove the listed properties, enter a space.
   - *NeverCompressed*: Add `*.htm`, `*.html`, `text/html` to this property.

5. Save your changes and exit the SAP Administrator portal.

6.4.2 Predeploying with WDeploy

Use WDeploy to generate the necessary SCA (Service Component Architect) files that you manually deploy to the SAP NetWeaver Web application server.

Prerequisites:

Undeploy any existing SAP Data Services Web applications that are currently running on the server.

Learn more about WDeploy at WDeploy [page 100].

You must have system administrator privileges to perform the following steps. You must be the same system administrator as the system administrator for SAP BusinessObjects BI platform (or IPS) installation and Data Services installation.

1. Run the WDeploy `predeploy` command or `predeployall` command to generate SCA files.

   Example

   If you use NetWeaver 7.5, use one of the following commands:

   - `wdeploy.bat sapappsvr75 -DAPP=DataServices predeploy`
   - `wdeploy.bat sapappsvr75 predeployall`

   Note

   You can't use the WDeploy GUI to run the `predeploy` or `predeployall` commands.

Command	Description
`predeploy`	Prepares a Web application for deployment to the target Web application server.
`predeployall`	Prepares all Web applications for deployment to the target Web application server.

   Example

   The WDeploy command saves the resulting SCA files to the following location: `<INSTALL_DIR>\SAP BusinessObjects Enterprise XI 4.0\wdeploy\workdir\sapappsvr75\application`

2. Continue with the deployment process by following the steps in Downloading and unpacking SUM [page 116].

6.4.3 Downloading and unpacking SUM

Before you can perform a manual deployment of Data Services Web applications to SAP NetWeaver, obtain the Software Update Manager (SUM) tool, and prepare it for deployment.

If you already have downloaded the SUM tool, make sure that you are using the most recent version.

Ensure that the Web application server is installed, configured, and running.

> **i Note**
>
> Obtain all information about SUM, including a link to the download center, and access to SUM guides, by visiting the Customer Support Portal at https://support.sap.com/sltoolset. The link takes you to the Software Logistics Toolset (SL Toolset) page. Scroll down to *System Maintenance* to see the SUM section.

You need SUM to deploy Web applications to SAP NetWeaver.

The instructions require that you be an administrator and that you enter the SAP system identification code that you used when you installed SAP NetWeaver.

1. Download SUM from the SAP Software Download Center at https://support.sap.com/swdc.
2. Unpack SUM to the same system that hosts SAP NetWeaver technology platform, with network access to the location where you deploy the SCA packages with WDeploy.
3. Unpack SUM with the following command:

   > **Code Syntax**
   >
   > ```
   > SAPCAR - xvf <download directory>\<path>\<Archive>.SAR -R
   > <SAPNW_INSTALL_DIR>:\usr\sap\<sapsid>
   > ```

   Enter `sapsid` in lower case. Enter your SAP system identification code in the command above in lower case.

   When you extract the files, the software creates a folder named SUM under the specified path.
4. Continue with the deployment following the steps in Deploying Data Services Web applications to NetWeaver with the Software Update Manager (SUM) [page 116].

6.4.4 Deploying Data Services Web applications to NetWeaver with the Software Update Manager (SUM)

If you have not deployed SAP Data Services Web applications to the SAP NetWeaver Application Server, follow this fresh deployment method.

Make sure that you meet the following requirements:

- You are an administrator user and you use the system identification code that you specified when you installed SAP NetWeaver.
- You have write permission for the `<DS_COMMON_DIR>` folder.
- The Web application server is installed, configured, and running.

- The SUM software is downloaded, unpacked, and configured.
- The SCA files are generated by WDeploy.

To manually deploy SAP Data Services Web applications to SAP NetWeaver, follow these steps:

1. Set the Data Services environment so that it is available.
   a. Set the `$LINK_DIR` environment variable to point to `<INSTALL_DIR>\dataservices`.
   b. Set `$DS_COMMON_DIR` environment variable to point to `<INSTALL_DIR>\dataservices`.

      > **Note**
      >
      > Steps a. and b. can also be done in the NetWeaver users, `.profile` or related files. By setting the Data Services environment in the `.profile` or related files, you set the environment before the NetWeaver application server daemon starts.

   c. Restart the NetWeaver application server daemon after Data Services setup.
2. Ensure that all server processes on the Java instance are started.
3. Copy all SCA files that you generated with WDeploy and place them into the following folder:

   `<SAPNW_INSTALL>\usr\sap\Trans\EPS\in`
4. Start the SUM server process:
   a. Logon as `<sid>adm` and start the SUM process from the SUM directory.
   b. Execute the following command: `STARTUP confighostagent <SAPSID>`.
5. Start the SUM graphical user interface (GUI) from a browser at `http://<host>:<port>/lmsl/sumjava/<SAPSID>/index.html`

   About port: When you use `http`, use port 1128. When you use `https`, use port 1129.
6. In the *Define Target* step, choose *Manually prepared directory* and enter the path to the SCA files in the *Stack file or Directory path* text box:

   Enter `<SAPNW_INSTALL>\usr\sap\Trans\EPS\in`
7. Click *Next*.

   The update procedure starts. When the update procedure completes, the deployment process is finished. The SUM displays a confirmation tab. If there are warnings or errors, you may be able to click *Back* to fix the errors in SUM before trying to deploy again.

   > **Note**
   >
   > For details about the deployment, open the latest `ProcessOverview.html` report, stored in `<SAPNW_INSTALL>:\usr\sap\<sapsid>\SUM\sdt\htdoc`.

   For more information about troubleshooting, see the SAP NetWeaver *Web Application Deployment Guide*.
8. After deployment, perform the following steps:
   a. Copy and paste `sapjce.jar` from `<BIP_INSTALL_DIR>\win64_x64\sapjvm\jre\lib\ext` to `<$java.home>/lib/ext`.
   b. Copy and paste the following files from `<BIP_INSTALL_DIR>\wintr_x64\sapjvm\jre\bin` to `<$java.home>/bin`:
      - `sapcrypto.dll`
      - `slcryptokernel.dll`
      - `slcryptokernel.dll.sha256`

c. Restart the NetWeaver application server.

6.4.5 Undeploying Data Services Web applications

Use the command line console to undeploy the Data Services Web applications from SAP NetWeaver.

The Software Update Manager (SUM) tool does not support an undeployment process. Therefore, perform the following steps to undeploy the Web applications:

1. On the SAP NetWeaver 7.3 or higher host system, go to `<install_dir>:\usr\sap\<AS_ID>\<instance_folder>\j2ee\console`.
2. Run `textconsole` and log on using your NetWeaver user name and password.
3. Check if the Web application is already deployed by using the `list_app` command.
4. Use the `undeploy` command to undeploy the Data Services Web applications.

   ```
   undeploy name=<web_app_name> on_deploy_error=stop
   ```

   where `<web_app_name>` is the name of the Web application that you want to undeploy.

   Data Services has two Web applications that need to be undeployed:
   - `SBOP_DS_MANAGEMENT_CONSOLE`
   - `SBOP_DS_MANAGEMENT_CONSOLE_DOC`

6.4.6 Updating an existing deployment

Update the deployed SAP Data Services Web applications to SAP NetWeaver 7.3 or higher for a support pack or patch.

> **i Note**
>
> You can alternatively choose to undeploy the existing Data Services Web applications and perform a fresh deployment with the NetWeaver support pack or patch. For undeployment steps, see Undeploying Data Services Web applications [page 118].

To update an existing Web application deployment:

1. Update the `SAP_metadata.properties` file version to the new NetWeaver version.

   By default, the properties file is located in `<BIP_INSTALL_DIR>\wdeploy\SDLDSupport\NWSLD\<warfile>`.

   > **i Note**
   >
   > Ensure that you set the support pack or patch version to a higher value than the one in the deployed version.

2. Follow the predeployment configuration steps in WDeploy to generate new SCA files.
3. Follow the deployment steps in the Software Update Manager (SUM) tool GUI.

   When you update Web applications with the SUM tool, the software displays existing versions and the target version during the process.

Related Information

Predeploying with WDeploy [page 115]
Deploying Data Services Web applications to NetWeaver with the Software Update Manager (SUM) [page 116]

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