

SAPSetup Guide 9.0

Target Audience

- Consultants
- Administrators
- Others

Public
Document version 9.0 – 2014-09-16

THE BEST-RUN BUSINESSES RUN SAP

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help* → *General Information Classes and Information Classes for Business Information Warehouse* on the first page of any version of *SAP Library*.

Contents

1. INTRODUCTION 2
1.1. Overview 2
1.2. SAP Notes for the Installation 3
1.3. Glossary 3
1.4. Information Available on SAP Service Marketplace 4

2. PLANNING 4
2.1. Installation Scenarios 4
2.2. Hardware and Software Requirements 6
2.3. Installation and Maintenance Use Case 6

3. INSTALLATION SERVER 8
3.1. Setting Up an Installation Server 8
3.2. Administering an Installation Server 11
3.3. Adding New SAP Front End Components to an Existing Installation Server 12
3.4. Updating Products on the Installation Server with a Newer Version 13
3.5. Deleting Products from the Installation Server 14
3.6. Creating and Maintaining Installation Packages 14
3.6.1. Creating a New Installation Package 14
3.6.2. Configuring Packages and Event Scripts 15
3.6.3. Changing the Package Content 20
3.6.4. Deleting an Installation Package 21
3.6.5. Creating and Deploying a Single-File Installer for Packages 21
3.6.6. Creating a Package Definition File (PDF) 22
3.7. Patching the Installation Server 22
3.8. Configuring the Local Security Handling (LSH) 23
3.9. Configuring the Automatic Workstation Update Service (AWUS) 24
3.10. Controlling Remote Workstations 26
3.10.1. Collecting Log Files 26
3.10.2. Executing a Process Remotely 26
3.10.3. Listing Remote Processes 27
3.11. Removing an Installation Server 27
3.12. Command Line Parameters for Installation Servers 27
3.13. Troubleshooting on the Installation Server 28

4. INSTALLATION PROCESS 28
4.1. Installing SAP Front End Components 29
4.1.1. Installing SAP Front End Components from an Installation Server 29
4.1.2. Installing Packages Configured by the Administrator 32
4.1.3. Installing Packages Using the Logon Script 34
4.1.4. Installing Components Locally from a Distribution Medium 34
4.2. Updating SAP Front End Components 36
4.2.1. Updating a Workstation from an Installation Server 37
4.2.2. Updating a Standalone Workstation 37
4.3. Uninstalling SAP Front End Components 38
4.4. Repairing Installed SAP Front End Components 39
4.5. Command Line Parameters on the Workstation 39
4.6. Troubleshooting on the Workstation 42

5. ADDITIONAL INFORMATION 42
5.1. Viewing Log and Error Files 42
5.2. Return Codes 43

6. APPENDIX 44
6.1. Terms for Included Open Source Software 44

SAPSetup Guide

Purpose

This document describes how to install and distribute SAP front end components on Windows using SAPSetup.

1. Introduction

This section contains information about the features and the SAP Notes that are relevant for installing and distributing SAP front end components.

1.1. Overview

This section describes the general features of SAPSetup:

- Fully-featured installation, uninstallation, update, repair, and patch functions for SAP front end components:
  - Front end components are available from an installation server or a distribution medium such as a DVD.
  - Install new SAP front end components, uninstall existing ones, and update the remaining components in one cycle.
- Easier and more reliable handling of SAP front end components by using installation servers:
  - Maintain nearly all Windows-based SAP front end components on a single installation server.
  - Integrate additional SAP front end components into an existing installation server, such as *Import Product*.
  - Deploy multiple SAP front end components on workstations using a single command.
  - Easily manage the installation server with wizard-driven user interfaces.
  - Local Security Handling (LSH), when configured, lets you deploy SAP front end components on workstations without requiring administrator privileges on all machines.
  - Whenever installed SAP front end components or packages change on the installation server, the automatic workstation update service (AWUS) will, once configured, automatically update the workstations and reboot them if necessary.
  - Easier handling of multiple SAP front end components by configuration of installation packages – by implementing script events, you can customize and extend the installation of such packages.
  - Controlling workstations remotely helps you to remotely access and control workstations on which you have administrator privileges. You can collect remote log files, execute processes remotely, and list remote processes.
  - The directory for the creation of the installation server is configured automatically. By default, it is made NULL-session accessible. It can be shared automatically on the network for everyone to read.
  - If `NwSapSetup.exe` is started from a batch file, the return code can be caught by the environment variable `%ErrorLevel%`.

1.2. SAP Notes for the Installation

It is important that you read the following SAP Notes before you start the installation. These SAP Notes contain the most recent information about the installation, as well as corrections to the installation documentation.

Make sure that you have the latest version of each SAP Note. You can find them on the SAP Service Marketplace at **`https://service.sap.com/notes`**.

SAP Notes for the Installation

SAP Note Number	Description
1587566	Installation problems with NwSapSetup Version 9.0
1583967	Release Information Note for SAPSetup 9.0

1.3. Glossary

The following list describes the terms and abbreviations used in this guide.

Term	Description
AWUS	*Automatic workstation update service*. For further information, see section Configuring the Automatic Workstation Update Service (AWUS).
distribution medium	Contains the installer for a *SAP front end component*. It is either a directory in the file system or a *single-file installer*
installation server	Central installation repository for distributing *SAP front end components* to many *workstations*. Prerequisite for *packages*, *AWUS* and *LSH*.
LSH	*Local security handling*. See section Configuring the Local Security Handling (LSH).
package	Selection of *SAP front end components* defined by the administrator of an *installation server*. Optionally contains configuration of installation parameters and event scripts.
patch	*Single-file installer* that contains only the parts of a *SAP front end component* that changed between two versions. A *patch* can be applied to a *workstation* or an *installation server* on which the base version of the *SAP front end component* is already present.
product	Synonym for *SAP front end component*
SAP front end component	SAP software that runs on a *workstation* and is installed and maintained with *SAPSetup*
SAPSetup	Tool suite for maintaining and distributing software on Windows
single-file installer	Self-extracting executable that contains a *package,* a *patch,* or an installer for a *SAP front end component*
update	Process of installing a newer version of a *SAP front end component*
upgrade	Synonym for *update*

workstation	Computer on which a *SAP front end component* is installed. The computer containing the *installation server* is not considered a *workstation*.

1.4. Information Available on SAP Service Marketplace

Latest version of this document: SAP Service Marketplace at http://service.sap.com/sltoolset → Software Logistics Toolset 1.0 → SAPSetup.

2. Planning

Purpose

This section describes how to plan the installation of SAP front end components.

Procedure

1. Plan an installation scenario
2. Meet the hardware and software requirements
3. Review the installation and maintenance flow

2.1. Installation Scenarios

You can install SAP front end components for Windows in the following ways:

- Installation from a distribution medium

  The administrator takes the distribution medium from workstation to workstation. This is mainly for testing or for standalone workstations.

- Installation from an installation server

  The administrator sets up an installation server from which the installation of the SAP front end components is run on many different clients.

  All necessary files are copied from the server to the client during installation.

  We recommend that you use an **installation server** to install on workstations. This is due to the server's higher flexibility and efficiency, especially if many workstations are involved.

These methods are described in more detail below.

Installation on a Workstation from a Distribution Medium

Local installation on workstations with a distribution medium is useful for installing SAP front end components on single machines (for example, laptops) that are not connected to a Local Area Network (LAN). You can also use it for test purposes.

This installation type has the following disadvantages:

- No packages are available
- If patches have to be applied, you have to patch each workstation separately
- No automatic workstation updates
- No LSH

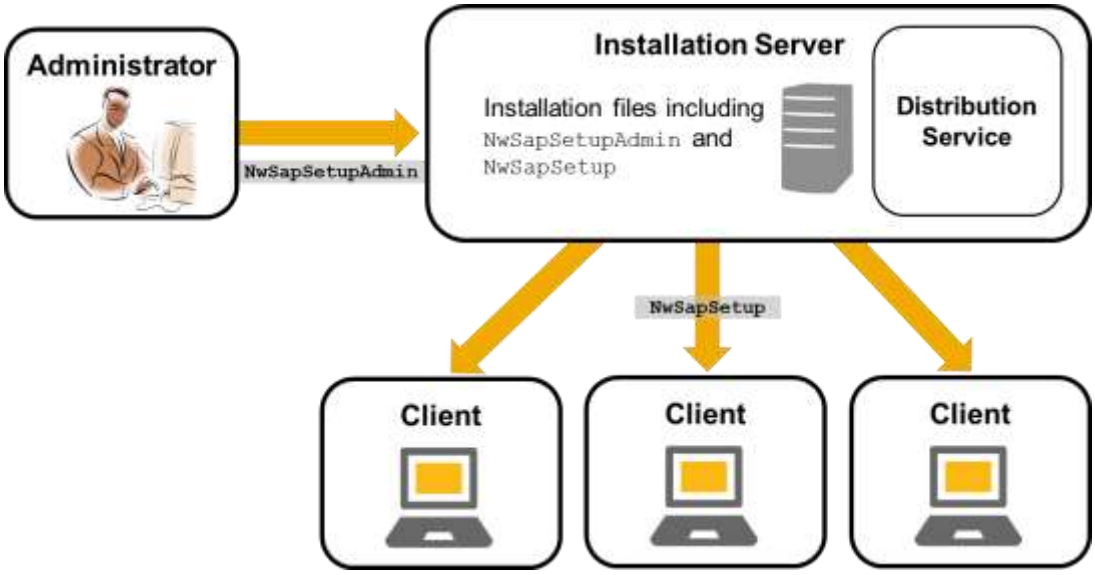
Installation on a Workstation from an Installation Server

The installation process from an installation server is flexible, easy, and customizable. It makes maintenance easier in any phase of the distribution process, for example, when applying patches.

When installing SAP front end components with server-based workstation installation, the following options are available:

- Without user interaction (unattended)
- With user interaction (attended), where the user has the following options:
  - Select from installation packages that the administrator has configured
  - Select from a complete list of SAP front end components available on the installation server

The following figure shows how the installation with an installation server works.



With an installation server, the administrator can group various SAP front end components together as installation packages relevant for certain employee roles. The administrator can also specify which package particular users should receive, or offer a variety of packages and allow the user to choose the most appropriate one.

In addition, you can configure the distribution service to add LSH functions to the installation server. With LSH, the installation can be started even by a user who is not a member of the local group of administrators. The distribution service then installs a service process on the client and starts `NwSapSetup.exe` in the context of this service. The user privileges are not altered. The installed service does not start other processes except `NwSapSetup.exe` from configured installation servers. Afterwards, the service removes itself from the workstation again.

The hard disk requirement on the installation server depends on the type and number of SAP front end components that are added to an installation server. For example, SAP GUI for Windows requires approximately 800 MB with all SAP front end components installed.

As administrator, you can configure your own installation packages on the installation server with `NwSapSetupAdmin.exe`.

To keep workstations up to date automatically, use the automatic workstation update service (AWUS). Whenever the installation server is patched, or packages are updated on the installation server, this service will update the workstation(s) and reboot them, if necessary. The AWUS works regardless of whether a user is logged on or not:

- If a user is logged on, the user is notified about the available update, and the update starts upon confirmation by the user. The user is also notified about whether a reboot is required, and the reboot is executed only upon confirmation by the user.
- If no user is logged on, the update and the reboot (if required) are started automatically.

For detailed information, see section Configuring the Automatic Workstation Update Service (AWUS).

Alternatively, you can apply patches on the installation server and then start the installation on your workstation to apply the patch on the workstation. You can control the installation using the command line. You can perform unattended installations with automatic patch installation on the workstation. To do so, insert the appropriate command line in the logon script of the user. The logon script is a program that is executed when a user logs on.

2.2. Hardware and Software Requirements

Make sure in advance that your system meets the following requirements:

- Front end workstations:
  - Hard drive clones only:

    If the operating systems of your workstations were generated by hard drive cloning, make sure that the domain is set correctly. To do so, take the workstations out of the domain and then put them back in. This is especially important if you intend to use LSH.
- The host for server-based installations must meet the following conditions:
  - Accessible to all users at all times, even after the installation is complete.

    This is required for maintenance purposes such as the distribution of patches.
  - Have broadband network connection for high throughput
  - Have sufficiently free disk space for all SAP front end components
  - Use a Windows server as operating system

2.3. Installation and Maintenance Use Case

Use

This section describes a typical installation and maintenance use case for installing SAP frontend components on a workstation using an installation server.

Procedure

1. Set up an installation server and, if required, LSH.

   The installation server contains:
   - Installation programs
   - Configuration information (for example, packages)
   - Service files (for LSH)
   - Front end components to be installed
2. Maintain installation packages for different user groups.

   Users can install multiple packages, and packages can share SAP front end components. You can configure installation parameters, such as installation directories, for the components that a package contains.
3. We recommend that you configure LSH.

Test the LSH by logging on to a user workstation as a user without local administrator privileges, and then running `NwSapSetup.exe` from the installation server.



Windows has local security mechanisms. Only users with local administrator privileges have write access to parts of the system database and the file system.

SAPSetup solves this problem with the distribution service (DS) that resides on the server, and with the installation service (IS) that is installed on the workstation temporarily. The IS starts a new instance of `NwSapSetup.exe` that runs with sufficient privileges.

SAP Notes for LSH

SAP Note	Description
1583295	LSH broken on patch level 6

4. Install packages using the logon script of your workstation or using other distribution mechanisms.
5. Patch the installation server.
6. Update SAP front end components on a workstation when a new release is available on the installation server.

3. Installation Server

Use

This section describes how to set up and maintain an installation server for the efficient distribution of SAP front end components across workstations.

Procedure

1. Set up an installation server
2. If required, administer your installation server
3. If required, add new SAP front end components to an existing installation
4. If required, update products on the installation server with a newer version using a patch
5. If required, create and maintain installation packages
6. If required, patch the installation server
7. If required, configure LSH

3.1. Setting Up an Installation Server

Use

This procedure helps you distribute SAP front end software on multiple workstations across the network.

`NwCreateInstServer` is a wizard-driven tool that helps the administrator to create a new installation server. After the server is set up, `NwUpdateInstServer` imports SAP front end components from the source into the newly created installation server.

Prerequisites

You must have local administrator privileges.

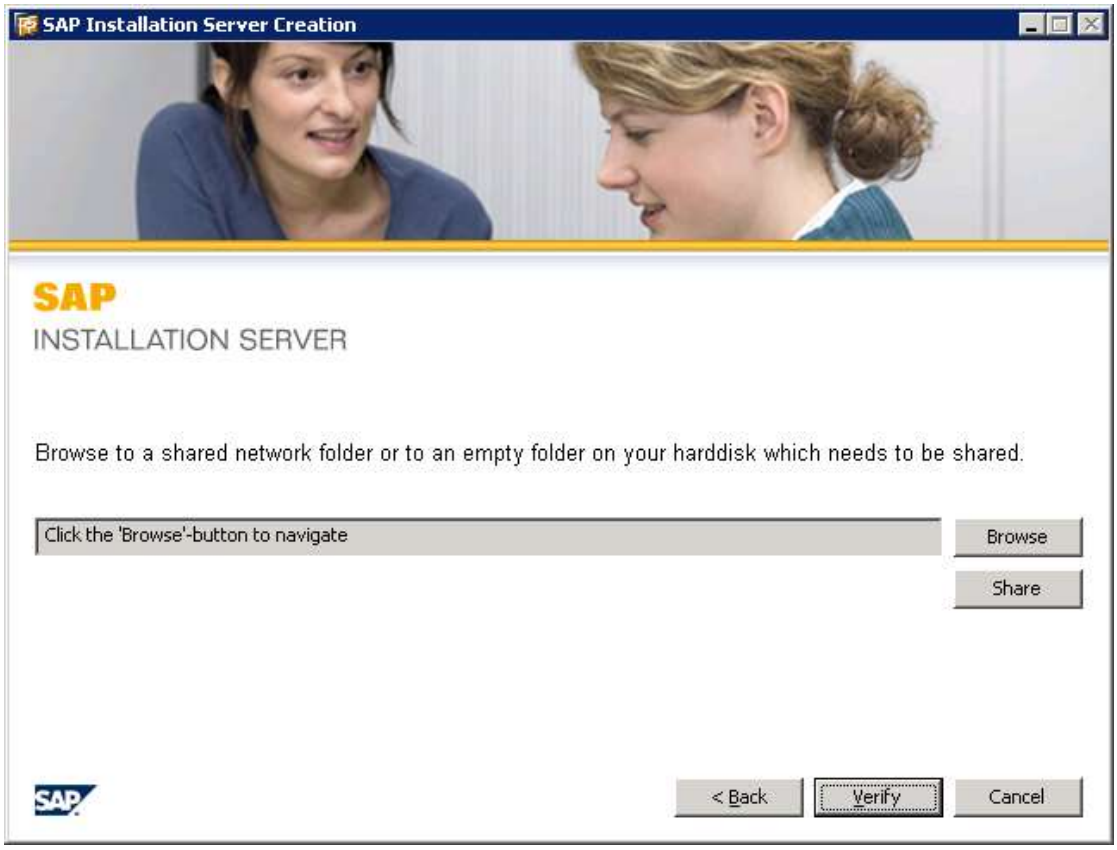
Procedure

1. Start `NwCreateInstServer`.exe from the `Setup` directory.
2. Choose *Next* to continue.

   You can choose *Cancel* at any stage to abort the process.

   `NwCreateInstServer.exe` prompts you to supply the path to the directory in which you want to create the installation server.



3. Choose *Browse* to navigate to the directory in which you want to create the installation server. Ensure that the directory is empty.
4. Choose *Verify* to ensure that the chosen directory meets the following prerequisites:
   - It must exist.
   - It must be accessible to the administrator with full access.
5. Choose *Share* to maintain the file-sharing properties of the selected directory, if you want to use one of the following features:
   - AWUS
   - LSH
   - Distribution using logon scripts
   - Installation and update on workstations using the network share

     If you run `NwCreateInstServer.exe` with parameter `/silent`, the directory is automatically configured as a NULL-session share and is accessible on the network for everyone to read. If you do not require this automatic configuration, add the parameter `/DontConfigureServerPath` to the command line.
6. Choose *Next* to continue.

   The wizard displays the progress of the server creation process.

   Processing is recorded in the file `NwCreateInstServer.log` located in the SAPSetup log file directory.

   If an error occurs, see section Troubleshooting on the Installation Server.

   The wizard confirms the successful installation of the installation server.

   You now have a valid but empty SAPSetup installation server.

If you want to set up an empty installation server, you can skip the update by calling `NwCreateInstServer.exe` with the parameter `/NoServerUpdate` on the command line. In this case, the procedure ends here.

7. To update the installation server, choose *Next.*

   `NwCreateInstServer.exe` automatically calls `NwUpdateInstServer.exe` to transfer SAP front end components to your installation server.

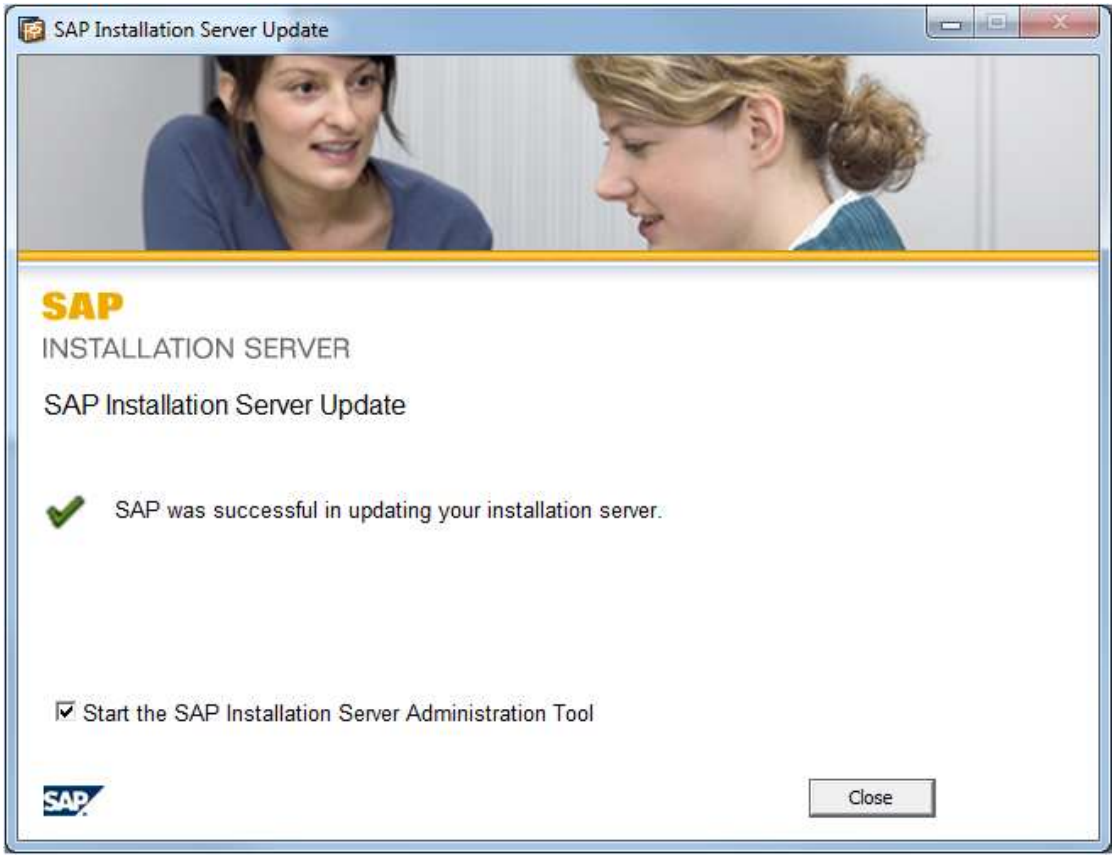
   The wizard displays the progress of the installation server update.

   Processing is recorded in the file `NwUpdateInstServer.log` located in the SAPSetup log file directory.

   If an error occurs, see section Troubleshooting on the Installation Server.

   `NwUpdateInstServer.exe` transfers all SAP front end components available on the distribution medium to the installation server.

   After completing the update, the wizard confirms that you can use the installation server for installing SAP front end component on workstations.



8. If you have .NET Framework version 4 installed, choosing *Close* automatically starts `NwSapSetupAdmin.exe` from the recently updated installation server.

   `NwSapSetupAdmin.exe` is the administration tool for the installation server.

   For further information, see section Administering an Installation Server.

   If you require a copy of an installation server, you can replicate the server by entering the following command:

   ```
   \\InstallationServerShare\Setup\NwCreateInstServer.exe
   /Dest=<ReplicationPath> /Nodlg
   ```



If you want to copy the SAP front end components and packages of one installation server to another one, enter the following command:

```
\\InstallationServerShare\Setup\NwUpdateInstServer.exe
/Dest=<DestinationServer>\Setup /Nodlg
```

The settings for AWUS, LSH and share permissions are not copied.

After setting up your installation server, we recommend that you look for the latest patches. For further information, see section Patching the Installation Server.

3.2. Administering an Installation Server

Use

After you have successfully set up the installation server, you can find `NwSapSetupAdmin.exe` in the installation server's `Setup` directory.

`NwSapSetupAdmin.exe` is the tool for administering the installation server. It has the following features:

- Import Products

  Use this feature to add new SAP front end components to an existing installation server for distribution over the network.

- Export Products

  Use this feature to export SAP front end components available on one installation server to another.

- Delete Product

  Use this feature to delete a SAP front end component from an installation server.

- Create New Package

  Use this feature to create packages for deployment. Packages can contain multiple SAP front end components, and their installation parameters can be customized.

- You can create single-file installers.

- Create Package Definition File (PDF)

  You can create a package definition file (PDF) for an installation server package. PDF is a package description format that simplifies the interoperability and information exchange between SAPSetup and system management products such as Microsoft's System Management Server.

- Package Configuration

  Use this feature to change the attributes or the content of your packages.

- Patch Server

  Use this feature to patch SAP front end components that are available on the installation server.

- Configure Local Security Handling

  This feature allows workstation users to install SAP front end components from the installation server without requiring administrator privileges.

  `NwSapSetupAdmin.exe` requires *.NET Framework 4*, which you can download from

  http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=17718.

- Configure Automatic Workstation Update

Whenever the installation server is patched or the installed packages are updated, this service updates the workstations and reboots them, if required. AWUS works regardless of whether a user is logged on.

- If a user is logged on, he is informed of the availability of updates and the update is started upon confirmation by the user. The user is also informed about whether a reboot is required. The reboot is also executed only upon confirmation by user.
- If no user is logged on, the system performs the update and the reboot (if required) automatically.

- Control Remote Workstations

  This function uses the Windows Management Instrumentation (WMI) to help you remotely access and control workstations on which you have administrator privileges. You access this feature via the *Remote* menu, where you find the following options:

  - Collect Log Files
  - Execute Process Remotely
  - Remote Task Manager

For further information, see section Controlling Remote Workstations.

3.3. Adding New SAP Front End Components to an Existing Installation Server

Use

This procedure describes how to transfer new SAP front end components on a distribution medium to your installation server. From here, you can deploy the components to workstations on the network.

You can add SAP front end components using either `NwUpdateInstServer.exe` or `NwSapSetupAdmin.exe` (using the *Product Import* Wizard). You will find these in the `Setup` directory of the source medium.

Prerequisites

- An available installation server
- A distribution medium that contains a SAP front end component to be added to the installation server
- Sufficient disk space



Ensure that the installation server is not in use during processing. Disable the network share before starting this process, and enable it again afterwards.



A single-file installer must be extracted beforehand. Execute the single-file installer on the command line with parameter `/extract:dest_dir` in order to extract it to directory `dest_dir`. If the directory does not exist, it will be created. Then choose `dest_dir` in the product import wizard.

Procedure

To update the installation server with new SAP front end components, use one of the following methods:

- Using `NwUpdateInstServer.exe`

a. Start `NwUpdateInstServer.exe` from the `Setup` directory of the distribution medium or the installation server that contains the SAP front end component you want to add.
b. Supply the path to the installation server that you want to update.
c. Follow the wizard instructions to update the server with SAP front end components that are available on the distribution medium.

- Using `NwSapSetupAdmin.exe`

a. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server that you want to update with the new SAP front end components.
b. In the toolbar, choose *Import Products*.
c. Follow the wizard instructions and supply the path to the distribution medium or installation server containing the SAP front end component you want to add.

Example

You can add the `Adobe LiveCycle Designer` to the installation server. The `Adobe LiveCycle Designer` is delivered on the same DVD as SAP GUI for Windows. Start the program `<DVD Drive>:\ADOBE_LC_<release>\Setup\NwUpdateInstServer.exe`. After the welcome page, you are asked for the path to the installation server that you want to update. Navigate to the path of your installation server.

Choose *Next* and wait until the process is completed. Afterwards, the installation server administration tool `NwSapSetupAdmin.exe` starts. The added SAP front end component `Adobe LiveCycle Designer` is displayed on the *Products* tab.

You can now install `Adobe LiveCycle Designer` by starting `<installation_server_share>\SetupAll.exe` and selecting the SAP front end component to be installed, in this case the `Adobe LiveCycle Designer`.

3.4. Updating Products on the Installation Server with a Newer Version

Use

If you require a newer release of SAP front end components, you have to update your installation server.

Start `NwUpdateInstServer.exe` from the `Setup` directory of your distribution medium and follow the wizard instructions.

Prerequisites

- A distribution medium containing a newer release of a SAP front end component than the release on your installation server
- Sufficient disk space



Ensure that the installation server is not in use during processing. Disable the network share before starting this process, and enable it again afterwards.



A single-file installer must be extracted beforehand. Execute the single-file installer on the command line with parameter `/extract:dest_dir` in order to extract it to directory `dest_dir`. If the directory does not exist, it will be created. Then choose `dest_dir` in the product update wizard.

Procedure

1. Follow the steps as described in section Adding New SAP Front End Components to an Existing Installation Server.
2. Start `NwUpdateInstServer.exe` from the distribution medium.
3. Follow the wizard instructions.

   You can also update SAP front end components on the installation server by using the following command line:

   ```
   \\UpdateSource\Setup\NwUpdateInstServer.exe
   /dest=<installation server Setup directory> /nodlg
   ```

   or

   ```
   \\UpdateSource\Setup\NwUpdateInstServer.exe
   /dest=<installation server Setup directory> /silent
   ```

   For a description of the command line parameters, see section Installation Server Creation and Update Command Line Parameters.

3.5. Deleting Products from the Installation Server

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server from which you want to delete a SAP front end component.
2. On the *Products* tab, right-click the SAP front end component to be deleted and choose *Delete Product*.

   The SAP front end component deletion wizard is displayed.
3. Follow the deletion wizard instructions.

   At the end of the deletion process, a message informs you whether the deletion process has completed successfully.

3.6. Creating and Maintaining Installation Packages

After setting up an installation server, you can create packages using `NwSapSetupAdmin.exe` in the `Setup` directory on the installation server. A package consists of one or more SAP front end components that you want to install on the workstations. You can preconfigure the installation parameters of the package, for example the installation target directory. You can customize and extend the installation of packages by implementing script events.

3.6.1. Creating a New Installation Package

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of your installation server.
2. To start the *Package Creation Wizard*, choose *New Package* from the toolbar.
3. Choose *Next* to continue.

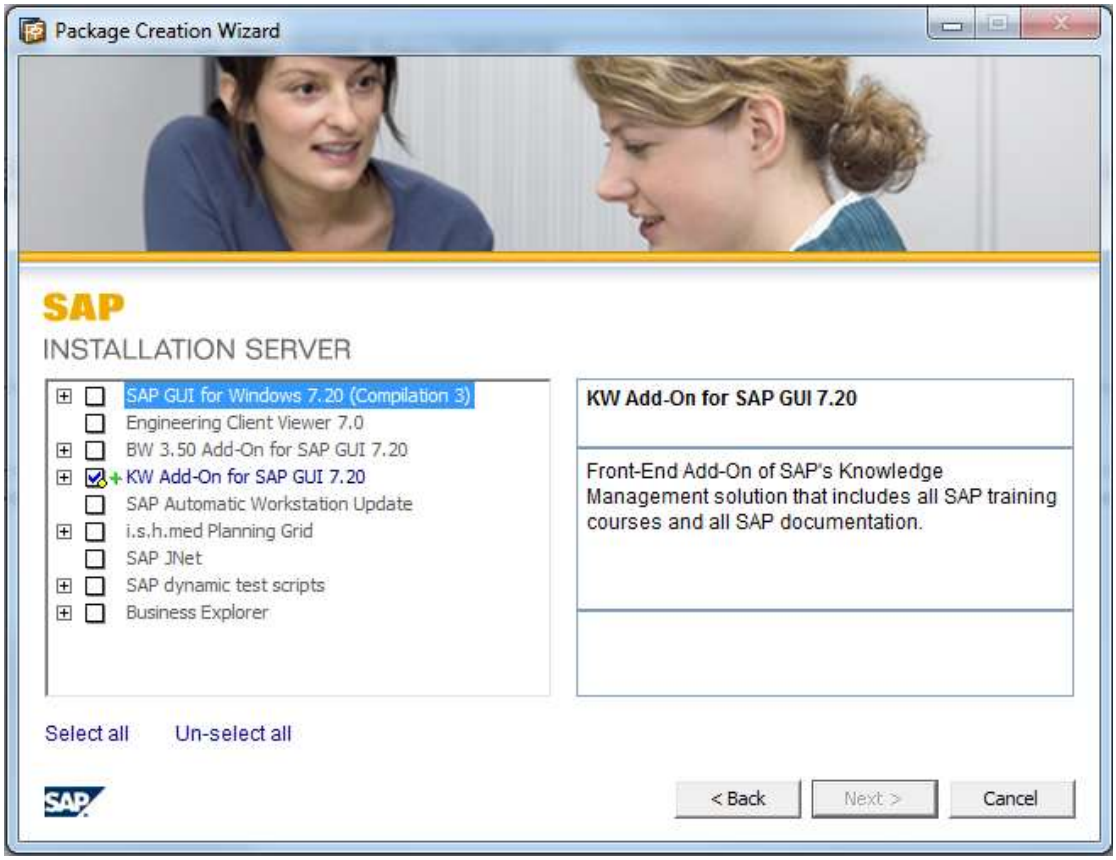
   The wizard displays the SAP front end components available on the installation server. Select the SAP front end components that you want to include in your package.

   A yellow dot indicates a change in the selection list. A green plus sign indicates the SAP front end components to be installed.

   You can create packages that do not contain any SAP front end components. Such packages can be used to execute event scripts on workstations, for example to distribute your own configuration files. For further information, see

sections Configuring Packages and Event Scripts and Creating and Deploying Single-File Installer for Packages.



4. Choose *Next*.

   Enter a display name of your choice for the new package.
5. Choose *Next*.

   Enter a command line name of your choice for the new package. The default is the same as the display name. This name is required when installing the package by calling `NwSapSetup.exe` on the command line with the parameter `/package`. For further details, see section Front End Installation and Update Command Line Parameters.
6. The wizard confirms the creation. Choose *Close*.

The new package is now displayed on the *Packages* tab. Right-click a package and choose *Configure this Package* to implement event scripts and customize installation parameters, for example the installation target path.

3.6.2. Configuring Packages and Event Scripts

Use

You can change the attributes of a package (for example, the name), define a package description and customize the installation of the package by adding scripts that are executed during events in its lifecycle.

Prerequisites

- An available installation server
- Packages created by the administrator are available

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Switch to the *Packages* tab. The existing packages are displayed on the left side of the screen.
3. Select the package that you want to customize. You can change its name, add a description, or implement script events.

   The end user will see name and description when he installs the package. Therefore, specify a name and a description that enables the end user to identify the correct package.
4. Optional: Add event scripts to perform custom actions on the user's workstation during the installation of the package (for example, copying additional files). You can insert script samples delivered by SAP with the *Insert Script* function and adapt them according to your requirements. The scripts are executed at the following events:
   - *On Installation Start*: executed before the installation of a package
   - *On Installation End*: executed after the installation of a package
   - *On Uninstallation Start*: executed before the uninstallation of a package
   - *On Uninstallation End*: executed after the uninstallation of a package
   - *On Update Start*: Executed before the update and the repair of a Package
   - *On Update End*: Executed after the update and the repair of a Package

   For further information, see section Changing the Package Content.
5. Choose *Save*

   When uninstalling with the command line options **`/uninstall /all`**, the event scripts defined for the events "On Uninstallation Start" and "On Uninstallation End" will also be executed for all packages that are being uninstalled.

Package Event Script Samples

You can insert script samples delivered by SAP by choosing *Insert Script* on the *Configure Packages* tab and adapt them to your needs.

The following Visual Basic Script commands help you to customize your packages:

Add custom logging to the log file

```
NwEngine.Context.Log.Write "Event: On Installation Start"
```

Log an error

```
'Adds an error log entry to NwSapSetup.log, SAPSetup will exit with return
code different than 0
NwEngine.Context.Log.WriteError "Error in custom script: something failed!"
```

Get the value of an installation variable

```
strSrcFile  =
NwEngine.Variables.ResolveString("%SapSrcDir%\CustomerFiles\TestFile.txt")
strSrcFolder = NwEngine.Variables.ResolveString("%SapSrcDir%\CustomerFiles")
strDstFolder = "C:\temp\TestFolder"
strDstFile  = "C:\temp\TestFolder\TestFile.txt"
strDstFile1 =
NwEngine.Variables.ResolveString("%ProgramFiles%\TestFile.txt")
strDstFile2 =
NwEngine.Variables.ResolveString("%CommonProgramFiles%\TestFile.txt")
strDstFile3 = NwEngine.Variables.ResolveString("%WinDir%\TestFile.txt")
```

Check whether a file exists

```
If NwEngine.Shell.FileExist( strSrcFile ) Then
'...
End If
```

Copy a file

```
NwEngine.Shell.CopyFile szSrcFile, szDstFile
'enforce the copy by skipping time stamp and file version check
NwEngine.Shell.CopyFileEx szSrcFile, szDstFile, vbTrue
```

Delete a file

```
NwEngine.Shell.DeleteFile szDstFile
```

Copy a directory recursively

```
NwEngine.Shell.CopyDirectory strSrcFolder, strDstFolder
'enforce the copy by skipping time stamp and file version check
NwEngine.Shell.CopyDirectoryEx strSrcFolder, strDstFolder, vbTrue
```

Create a directory

```
NwEngine.Shell.CreateDirectory strDstFolder
```

Delete a directory

```
NwEngine.Shell.DeleteDirectory strDstFolder
```

Check whether a registry key exists

```
If NwEngine.Shell.RegKeyExist("HKLM\SOFTWARE\SAP\TestKey") Then
'...
End If
```

Set a registry value

```
NwEngine.Shell.SetRegValue "HKLM\SOFTWARE\SAP\TestKey\TestString", "REG_SZ",
"TestValue"
NwEngine.Shell.SetRegValue "HKLM\SOFTWARE\SAP\TestKey\TestDWord",
"REG_DWORD", "65536"
```

Read a value from the registry

```
szRegValue =
NWEngine.Shell.GetRegValue("HKLM\SOFTWARE\SAP\TestKey\TestString")
```

Execute another application

```
strCmdLine = NwEngine.Variables.ResolveString("%WinDir%\NotePad.exe")

bNoWaiting = vbFalse  'This means: Wait for the started process
NwEngine.Shell.Execute strCmdLine, bNoWaiting

bVisible  = vbFalse  'This means: Do not display the UI of the started
process
NwEngine.Shell.ExecuteEx strCmdLine, bNoWaiting, bVisible
```

Helpful examples for customizing your SAP GUI packages

Example 1: Copy a customized “SapLogon.ini” and “services” file

```
'This script can be added to the “On Installation End” section of a SAP GUI
710 package event script.
'It distributes your special version of the “SapLogon.ini” and services file
```

```
'given these files exist inside a directory "CustomerFiles" on your
installation server share.'
NwEngine.Context.Log.Write "Event: Copying customized SapLogon.ini"
strSrcFile =
NwEngine.Variables.ResolveString("%SapSrcDir%\CustomerFiles\SapLogon.ini")
strDstFile = NwEngine.Variables.ResolveString("%WinDir%\SapLogon.ini")

If NwEngine.Shell.FileExist( strSrcFile ) Then
   NwEngine.Shell.CopyFile strSrcFile, strDstFile
End If

NwEngine.Context.Log.Write "Event: Copying customized services file"
If NwEngine.Shell.FileExist("%SAPSrcDir%\CustomerFiles\services") Then
   NwEngine.Shell.CopyFile "%SAPSrcDir%\CustomerFiles\services",
"%WinSysDir%\drivers\etc\services"
End If
```

Example 2: Set registry values to configure auto-update settings for SAP Logon

```
'This script can be added to the "On Installation End" section of a SAP GUI
710 package event script to configure the auto update settings for SAP
Logon.
NwEngine.Context.Log.Write "Event: Setting the auto update registry key for
SAP Logon"

strRegUpdate =
"HKLM\SOFTWARE\SAP\SAPsetup\SAPstart\AutoUpdate\SAPLogon.exe\UpdateMode"
strRegProb  =
"HKLM\SOFTWARE\SAP\SAPsetup\SAPstart\AutoUpdate\SAPLogon.exe\Prob"

'Option 1: Update Mode is switched on with update frequency = 10. The user
is not allowed to configure.
NwEngine.Shell.SetRegValue strRegUpdate, "REG_SZ", "ForceOn"
NwEngine.Shell.SetRegValue strRegProb, "REG_DWORD", "10"

'Option 2: Update Mode is switched off. The user is not allowed to switch it
on.
NwEngine.Shell.SetRegValue strRegUpdate, "REG_SZ", "ForceOff"

'Option 3: Update Mode is switched on with update frequency = 10. The user
is allowed to change the configuration.
NwEngine.Shell.SetRegValue strRegUpdate, "REG_SZ", "On"
NwEngine.Shell.SetRegValue strRegProb, "REG_DWORD", "10"

'Option 4: Update Mode is switched off. The user is allowed to change the
configuration.
NwEngine.Shell.SetRegValue strRegUpdate, "REG_SZ", "Off"

'The same settings can be applied to the registry values for 'SAPLgPad.exe':
' strRegUpdate =
"HKLM\SOFTWARE\SAP\SAPsetup\SAPstart\AutoUpdate\SAPLgPad.exe\UpdateMode"
' strRegProb  =
"HKLM\SOFTWARE\SAP\SAPsetup\SAPstart\AutoUpdate\SAPLgPad.exe\Prob"
```

Example 3: Replace a line inside a text file

```
'This script can be added to the "On Installation End" section of a SAP GUI
710 package event script
'
'It replaces the default line
' Cmd=""
```

```
'with the line
' Cmd="/ini_file="C:\temp\saplogon.ini""
'inside the file "%ProgramFiles%\SAP\SapSetup\setup\SAL\SapLogon.sal"
'
'You can redirect "SAPLogon.exe" to the INI-file "C:\temp\saplogon.ini".
NwEngine.Context.Log.Write "Event: Editing SAPLogon.sal"

strSalFile = NwEngine.Variables.ResolveString(
"%ProgramFiles%\SAP\SapSetup\setup\SAL\SapLogon.sal" )

Set objTextFile = CreateObject("NwSapSetupATLCommon.TextFileParser")
If objTextFile.Parse( strSalFile ) Then
NwEngine.Context.Log.Write "Event: Open and modify the file " & Chr(34) &
strSalFile & Chr(34)
   szOldLine = "Cmd=" & Chr(34) & Chr(34)
   szNewLine = "Cmd=" & Chr(34) & "/ini_file=" & Chr(34) &
"C:\temp\saplogon.ini" & Chr(34) & Chr(34)
   objTextFile.ReplaceLineEx szOldLine, szNewLine
   objTextFile.Save( strSalFile )
Else
   NwEngine.Context.Log.WriteWarning "Event: Could not open the file " &
Chr(34) & strSalFile & Chr(34)
End If
```

Example 4: Modifying the “services”-file on install

```
'This script can be added to the "On Installation Start" section of a SAP
GUI 710 package event script
'
'It checks whether a line containing the string "Alpha" exists.
'If so, it replaces that line with
'"Alpha 1901/tcp"
'Otherwise it simply appends the new line to the end of the services file.
'
NwEngine.Context.Log.Write "Event: Appending or replacing lines in the
services file"

strFile = NwEngine.Variables.ResolveString(
"%WinSysDir%\drivers\etc\services" )
Set objTextFile = CreateObject("NwSapSetupATLCommon.TextFileParser")

If objTextFile.Parse( strFile ) Then
   NwEngine.Context.Log.Write "Event: Modify the file " & Chr(34) & strFile
& Chr(34)
   If objTextFile.DoesStringExist( "Alpha" ) Then
      objTextFile.ReplaceLineEx "Alpha", "Alpha 1901/tcp"
   Else
      objTextFile.AppendLine "Alpha 1901/tcp"
   End If
   objTextFile.Save( strFile )
Else
   NWEngine.Context.Log.WriteWarning "Event: Could not open the file " &
Chr(34) & strSalFile & Chr(34)
End If
```

Example 5: Modifying the “services” file after uninstallation

```
'This script can be added to the "On Uninstallation End" section of a SAP
GUI 710 package event script
'
'It removes a line from the services file which was set in the last Example
4.
'
NwEngine.Context.Log.Write "Event: Removing a line from the services file"

strFile = NwEngine.Variables.ResolveString(
"%WinSysDir%\drivers\etc\services" )
Set objTextFile = CreateObject("NwSapSetupATLCommon.TextFileParser")

If objTextFile.Parse( strFile ) Then
   NwEngine.Context.Log.Write "Event: Modify the file " & Chr(34) & strFile
& Chr(34)
   objTextFile.RemoveLine "Alpha 1901/tcp"
   objTextFile.Save( strFile )
Else
   NwEngine.Context.Log.WriteWarning "Event: Could not open the file " &
Chr(34) & strSalFile & Chr(34)
End If
```

3.6.3. Changing the Package Content

Use

You can modify the package content by adding or removing SAP front end components to be installed with the package. You can also add event scripts that are executed before or after the update process.

Prerequisites

- An available installation server
- Packages created by the administrator are available

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Switch to the *Package Configuration* tab. The packages are displayed on the left side of the screen.
3. Select the package whose content you want to update and choose *Change Package Content*. You can change the selection of SAP front end components. The added components are installed on the workstations. Removed components are uninstalled from the workstations if they are not part of any other package marked for installation. When updating a package, the package parameters are also refreshed. They now include new variables and no longer include those that belong to SAP front end components that are no longer part of this package.
4. Optional: Add event scripts to perform custom actions on the user’s workstation during the update of the package. You can insert script samples delivered by SAP with *Insert Script Sample* and adapt them to your requirements. The scripts are executed before or after the update:
   a. *On Update Start*: Executed before the update of a package
   b. *On Update End*: Executed after the update of a package
5. Choose *Save.*

   Saving the package increases the version number and the package is marked for update on the workstation. When the package installation is updated on the

workstation, the package components that have been added or removed by the administrator are automatically installed or uninstalled.



If you updated package event scripts or files copied by event scripts, choose *Mark for Update* on the *Configure Packages* tab to increase the package version. Choose *Save*.

The installer now recognizes the package as updated, and the modifications are transferred to the workstations during the update with the event scripts.

3.6.4. Deleting an Installation Package

Procedure

1. Choose the *Packages* tab.
2. Right-click the package you want to delete and choose *Delete Package*.

The package is deleted and removed from the *Packages* tab.



The package and its event scripts are permanently deleted without any option for recovery.

3.6.5. Creating and Deploying a Single-File Installer for Packages

Use

The single-file installer for a package contains only those files of the SAP front end components that are a part of the package. This reduces the network load if you have to copy the distribution medium to the workstation before installing.

The single-file installer can also install silently without user interaction, by specifying `/silent` on the command line. For further information, see section Front End Installation and Update Command Line Parameters.

Prerequisites

- An available installation server
- Packages created by the administrator are available
- Optional: If you want to distribute configuration files, e. g. the `saplogon.ini`, together with the single-file installer, create a directory named `CustomerFiles` on the installation server and copy your files into this directory. For further information, see the event script example `Copy a file` in section Configuring Packages and Scripting Events.

Procedures

To create and deploy a single-file installer for a package, proceed as follows:

Creating a single-file installer for a package

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. On the *Packages* tab, right-click the package for which you want to create a single-file installer and choose *Compress to Single-File Installer*.
3. Follow the wizard instructions.

Deploying a single-file installer for a package

1. The single-file installer can be executed on any workstation.



If you want to install the single-file installer silently, provide the command line parameter `/silent`. For further information, see section Front End Installation and Update Command Line Parameters.

2. Follow the wizard instructions.

Result

You have created and deployed a single-file installer.

3.6.6. Creating a Package Definition File (PDF)

Use

You can create a package definition file (PDF) for an installation server package. PDF is a package description format that simplifies the interoperability and information exchange between SAPSetup and system management products such as Microsoft's Systems Management Server.

Procedure

To create a PDF, proceed as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. On the *Packages* tab, right-click the package for which you want to create a PDF file, and choose *Create Package Definition File*.
3. Choose the directory in which you want to save the file, enter a file name, and choose *Save*.

Result

`NwSapSetupAdmin.exe` creates a PDF file and an SMS file in the specified directory.

3.7. Patching the Installation Server

Use

Patching SAP front end components on the installation server keeps them up to date with the most recent correction and enhancements from SAP.

You can configure the AWUS. This service updates the workstations and reboots them, if necessary, whenever the installation server is patched or the installed packages are updated. The AWUS also works if no user is logged on to the workstation. For further information, see section Configuring the Automatic Workstation Update Service (AWUS)

Prerequisites

- An available installation server

  To ensure a successful patch and to prevent having to reboot after the patch, you can unshare the installation server during the patch and share it again when the patch has finished.

- A patch for SAP front end components is available on the installation server.

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Choose *Patch Server*.
   This starts the patch wizard.
3. Choose *Next* to continue.
4. Browse to a valid SAP patch file and choose *Next* to continue.

`NwSapSetupAdmin.exe` validates the patch. If the patch is valid, you are prompted to proceed.



When the patch process starts, `NwSapSetupAdmin.exe` is closed. It restarts after the patch process has completed. This ensures that the installation server is not modified during the patch process.

5. Choose *Next* to continue.

   `NwUpdateInstServer.exe` starts patching the installation server.

6. Follow the wizard instructions.

   Processing is recorded in the file `NwUpdateInstServer.log`, which is located in the SAPSetup log file directory.

   If an error occurs, see section Troubleshooting on the Installation Server.

   The wizard confirms the successful patch process.

7. Choose *Close*.

   `NwSapSetupAdmin.exe` now restarts.

Patching a SAP front end component (for example, SAP GUI for Windows 7.30) increases the version of each package that contains this component.

3.8. Configuring the Local Security Handling (LSH)

Use

Local security handling (LSH) enables users to install SAP front end components on their workstations without requiring administrator privileges.

Prerequisites

- An available installation server
- The installation server must be accessible via file sharing from the workstation. Server and workstations must be part of a Windows Domain or Active Directory.
- Two domain user accounts to run the Installation Service (IS) and the Distribution Service (DS). The user for the DS must have administrative privileges on each workstation. The user for the IS will get administrative privileges on the workstation temporarily, if he doesn't have them anyway. You can use the same user account for both services.
- It must be possible to control services via the Remote Service Management on the workstations. Make sure to configure the firewall accordingly

Procedure

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server. You need administrator privileges on the installation server.
2. Choose *Services* and select *Configure Local Security Handling*.

   The LSH configuration wizard starts.

3. Choose *Next*.

   The wizard prompts you for the credentials of an account that has administrator privileges on all workstations on the network. The distribution service (DS) will run with these credentials. Enter the account name with domain qualifiers.

4. Choose *Verify*.

   Verification only confirms that the password supplied matches its repetition. Verification does **not** validate credentials.

5. Choose *Next*.

6. Enter the details for the installation service (IS) account, verify, and choose *Next* to complete the process.

   The wizard indicates whether LSH has been configured successfully. If the configuration was successful, the state of the distribution service is displayed as *Active* in the status bar at the bottom of `NwSapSetupAdmin.exe`.
7. Test the LSH by starting `NwSapSetup.exe` from this installation server on a workstation as a user without administrator privileges.

Result

If the front end installer starts successfully and is able to install SAP front end components available on the installation server, the configuration is successful.

If not, you have to reconfigure the LSH.

3.9. Configuring the Automatic Workstation Update Service (AWUS)

Use

The automatic workstation update service (AWUS) is shipped with most SAP Frontend products. AWUS is installed on workstations. During installation, the installation server from where the installation has been started is stored as source location for updates. Whenever the installation server is updated or patched, or installed packages are updated, this service updates the workstation and reboots it, if required. It works only when installed on the workstation. The AWUS works regardless of whether a user is logged on or not.

- If a user is logged on, he is informed of the availability of an update, and the update happens on the user's assent. The user is also informed about whether a reboot is required, and the reboot is executed only upon confirmation by the user.
- If no user is logged on, the update and the reboot (if necessary) are started automatically.

  The AWUS updates itself whenever a patch is available.

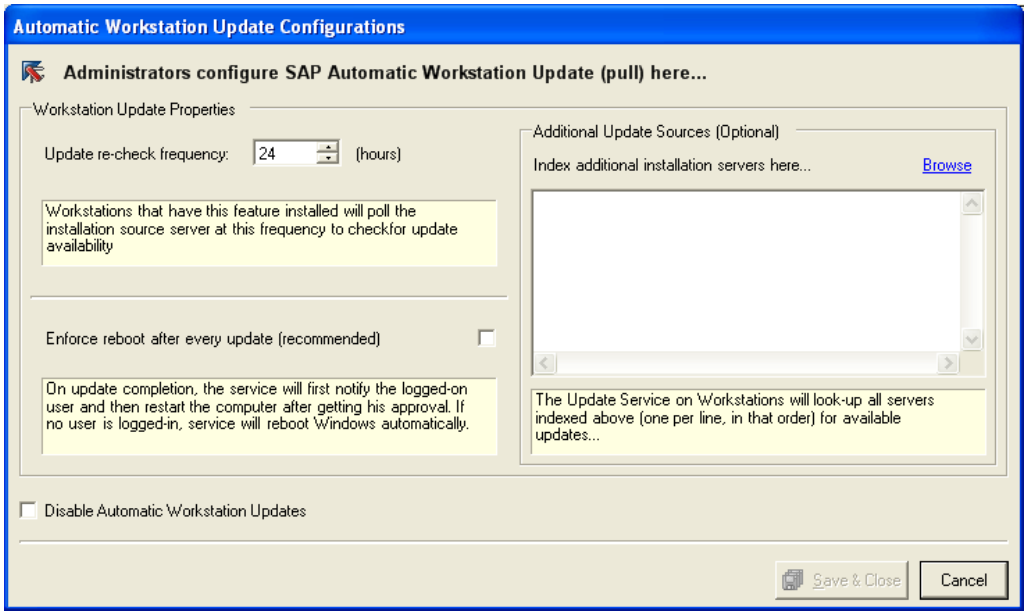
Prerequisites

- The workstation requires network access to the installation server.
- The installation server should be hosted on a machine that can work as a file server and serve numerous network sessions.
- A Windows Server system is recommended as operating system for the installation server, with the following local security policy:
  - “Accounts: Guest account status” – Enabled.
  - “Network access: Let ‘Everyone’ permissions apply to anonymous users” -– Enabled.
  - The share is NULL-session accessible.
- The installation server should be created (and configured) using `NwCreateInstServer.exe`.

Procedure

Configure the AWUS as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Choose *Services* and *Configure Automatic Workstation Update*. The dialog for configuring the AWUS is displayed:



You have the following options:

a. Update check frequency

   The workstations will check for updates at this interval. The default is 24 hours.

b. Choose whether a reboot of the workstation should be enforced after every update.

   If this checkbox is not activated, the user is asked to reboot only if a reboot is required to complete an update. If the checkbox is activated, the user is always asked to reboot following an update.

c. Additional Update Sources (optional)

   You can list additional installation servers. The AWUS will check the listed installation servers for available updates in the given order. By default, the AWUS will always check the installation server from which it had been installed itself.

3. Save your entries and close the program.

   To make the AWUS available on workstations, create a package containing the component *SAP Automatic Workstation Update* and deploy the package on the workstations. Once the AWUS is installed, the following programs will run on the workstation in the background:

   - `NwSapSetupUserNotificationTool.exe`
   - `NwSapAutoWorkstationUpdateService.exe`.

   The AWUS checks for updates on the last 10 installation sources that are network paths.

Result

You have configured the AWUS and installed it on the workstations.

To disable automatic updates, choose *Disable automatic workstation updates* on the installation server (see screenshot above). The AWUS on the workstation will not execute updates from this server, until you enable it again. To re-enable the AWUS, deselect *Disable automatic workstation updates*.

To permanently stop AWUS on a workstation, uninstall it from the workstation.

3.10. Controlling Remote Workstations

Use

The remote workstation control helps you to remotely access and control workstations on which you have administrator privileges.

Prerequisites

- An available installation server
- The Windows Management Instrumentation (WMI) is enabled.
- The firewall should be configured not to block WMI access.
- You have to be an administrator on the workstation you want to access. This means you should have either domain administrator privileges or local administrator privileges for the corresponding machine.

Troubleshooting

If you encounter problems with the WMI feature, check the WMI connectivity to a remote workstation using the Microsoft tool `wbemtest.exe`.



Enter the connection namespace as `\\WorkstationName\root\cimv2`.

3.10.1. Collecting Log Files

Procedure

To collect log files from workstations remotely, proceed as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Choose *Remote* → *Collect Log Files (WMI)*

   Enter the workstation name. If you want to collect log files from several workstations, enter their host names separated by commas.

   In the screen area *Administrative Credentials*: If your current user has no administrator privileges on the remote workstation, enter the credentials of a user with administrator privileges on the remote workstation. This data will not be saved.
3. Choose *Collect Logs* to collect the log files from the remote workstations. If you want to stop the collection process, choose *Abort*. Once the file collection has completed, the corresponding directory under `%temp%`\SAPRemoteWksta, to which the files have been copied, is opened.

3.10.2. Executing a Process Remotely

Procedure

To execute a process on a workstation remotely, proceed as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Choose *Remote* → *Execute Process Remotely (WMI)*

   Enter the workstation name and the application name. If necessary, specify command line parameters. For example:

   `C:\Program Files\Sap\SapSetup\Setup\NwSapSetup.exe /uninstall /all /silent`.
3. Choose *Execute* to run the process on the remote machine.

Start only non-interactive processes with this feature, as WMI will not allow the process to interact with the user.



Only programs installed on the local hard drive can be executed.

4. To display a list of running processes on the remote workstation, choose *Display Running Processes*. For further information, see the following paragraph.

Delegation

To start an installation on a remote workstation from an installation server, you have to activate the delegation function for the workstation. For further details, refer to the Microsoft TechNet article at http://technet.microsoft.com/en-us/library/ee692772.aspx; question 10.

3.10.3. Listing Remote Processes

Procedure

To display a list of processes running on a remote workstation, proceed as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory of the installation server.
2. Choose *Remote* → *Remote Task Manager (WMI)*

   Enter the workstation name and choose *Display*. If you want to terminate a process, select the process and choose *Terminate*.

   If you choose *Terminate*, the user working on the workstation might lose unsaved data.

3.11. Removing an Installation Server

Use

You can remove an installation server if it is no longer required.

Procedure

1. If the LSH is configured, start `NwSapSetupAdmin.exe` and choose *Services* → *Stop Distribution Service*.
2. Unshare the directory so that the installation server is unavailable for workstations.
3. Delete the directory containing the installation server.

3.12. Command Line Parameters for Installation Servers

Command line parameters are not case-sensitive.

`NwCreateInstServer.exe` and `NwUpdateInstServer.exe`

Parameter	Description
`/Dest`	Destination directory in which you want to create your installation server.  Example: `/Dest="C:\MyInstServerPath" /silent`

`/nodlg`	Shows only the progress dialog. Displays no other user interface. You can use it instead of `/silent`, if you wish to see the progress.  If you use `/nodlg`, you have to supply the destination path with `/Dest:<destination path>`
`/silent`	Does not display a user interface.  If you use `/silent`, you have to supply the destination path with `/Dest:<destination path>`
`/DontConfigureServerPath`	Disables the automatic configuration of the installation source directory (network share creation and null-session accessibility) when creating an installation server with the command line.

NwSapSetupAdmin.exe

Parameter	Description
`/checkserver`	Verifies the integrity of the installation server in silent mode. See section Troubleshooting on the Installation Server. Returns an error level greater than zero and writes an error file, if discrepancies are found. See section Viewing Log and Error Files.

3.13. Troubleshooting on the Installation Server

To check the integrity of your installation server, proceed as follows:

1. Start `NwSapSetupAdmin.exe` from the `Setup` directory.
2. Choose *Check Server* and follow the wizard instructions. This checks whether all required files are available.
3. If files are missing, the wizard displays a link to an error report. Choose the link to view the error report in a web browser. Otherwise, choose *Close* to exit the wizard.

This integrity check is helpful if you face problems with creating a single-file installer, for example.

For further information, see section Viewing Log and Error Files.

On the *Packages* tab, the packages are displayed in the navigation pane on the left side of the screen. The  icon indicates that the package is incomplete. This occurs when you deleted a SAP front end component contained in the package from the installation server. Delete this package, reimport the missing SAP front end component, or change the package content.

4. Installation Process

Use

This section provides information about the steps that you have to perform to install SAP front end components on a workstation.

Prerequisites

- You have completed the Planning
- If you want to install from an installation server, you must first set up an installation server.

  If an error occurs, see section Troubleshooting on the Workstation.

Procedure

1. Perform the installation.
2. Perform the required software updates.

4.1. Installing SAP Front End Components

Use

This section describes how to install the SAP front end components.

Procedure

You install SAP front end components on your workstations centrally from an installation server or locally from a distribution medium.

4.1.1. Installing SAP Front End Components from an Installation Server

Use

This section describes how to install **SAP front end components** from an installation server.

For further information on how to install **packages** from an installation server, see the following sections:

- Installing Packages Configured by the Administrator
- Installing Packages Using the Logon Script

Prerequisites

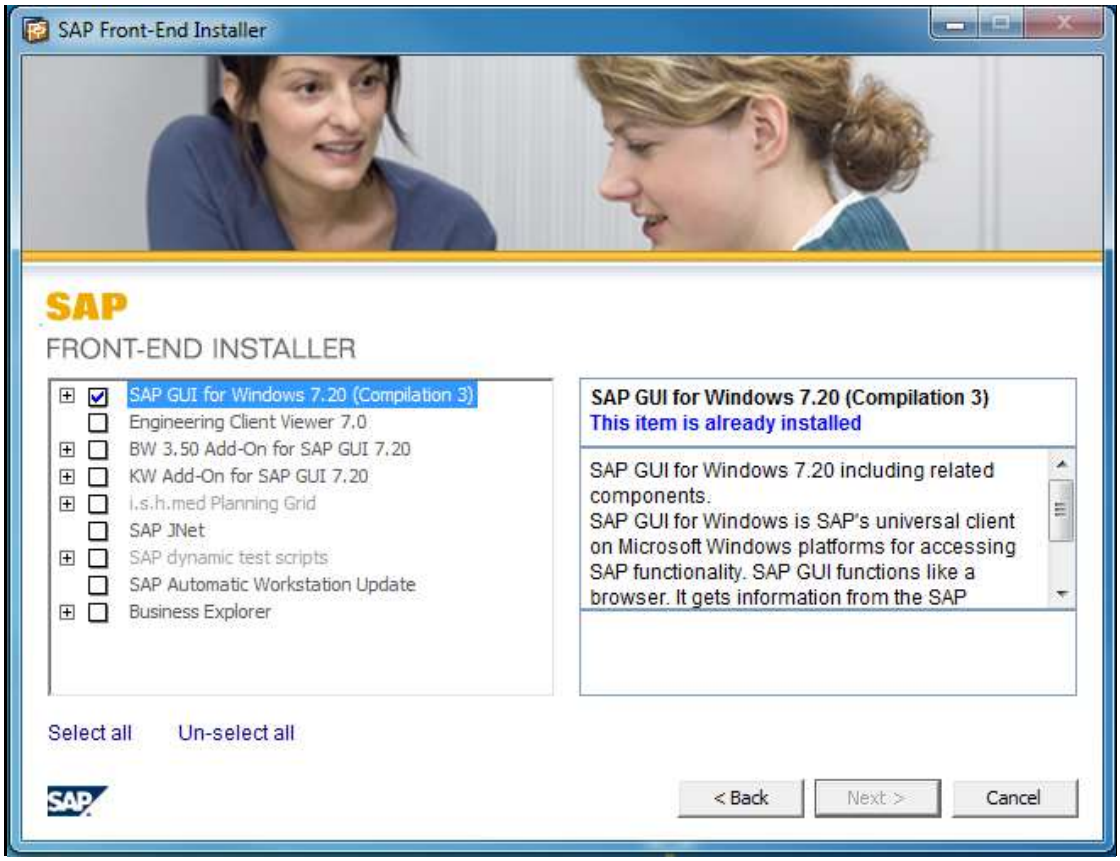
- An available installation server
- The user logged on to the workstation must have local administrator privileges.
- If the user does **not** have local administrator privileges, make sure that LSH is correctly configured on the installation server.
- SAP front end software applications should not be running during installation. If an application is running, the user may be prompted to reboot afterwards to complete the installation. If the installation runs interactively, the user is prompted to stop the applications. If he does so, no reboot is necessary.

Procedure

1. Start `NwSapSetup.exe` from the `Setup` directory on the installation server.

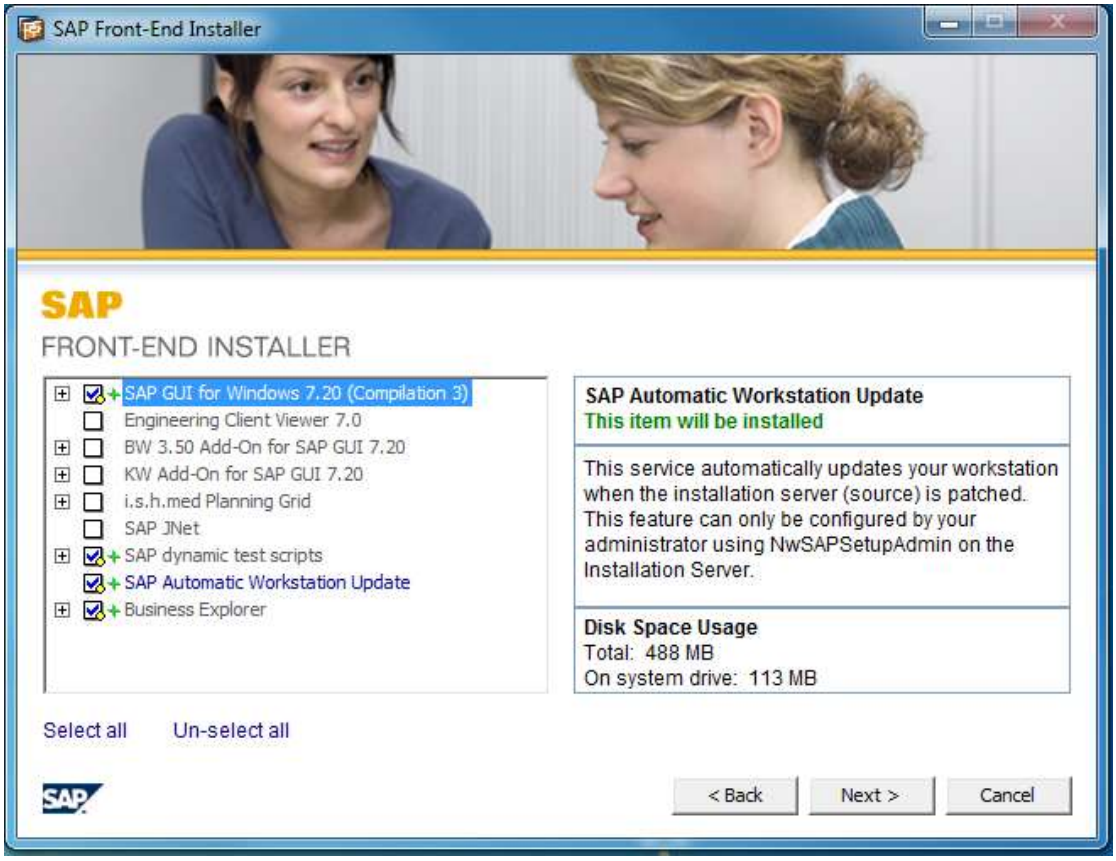
   The SAPSetup installation wizard is displayed.
2. Choose *Next.*

   The SAP front end component list is displayed. SAP front end components that have already been installed are preselected as shown in the following screenshot:

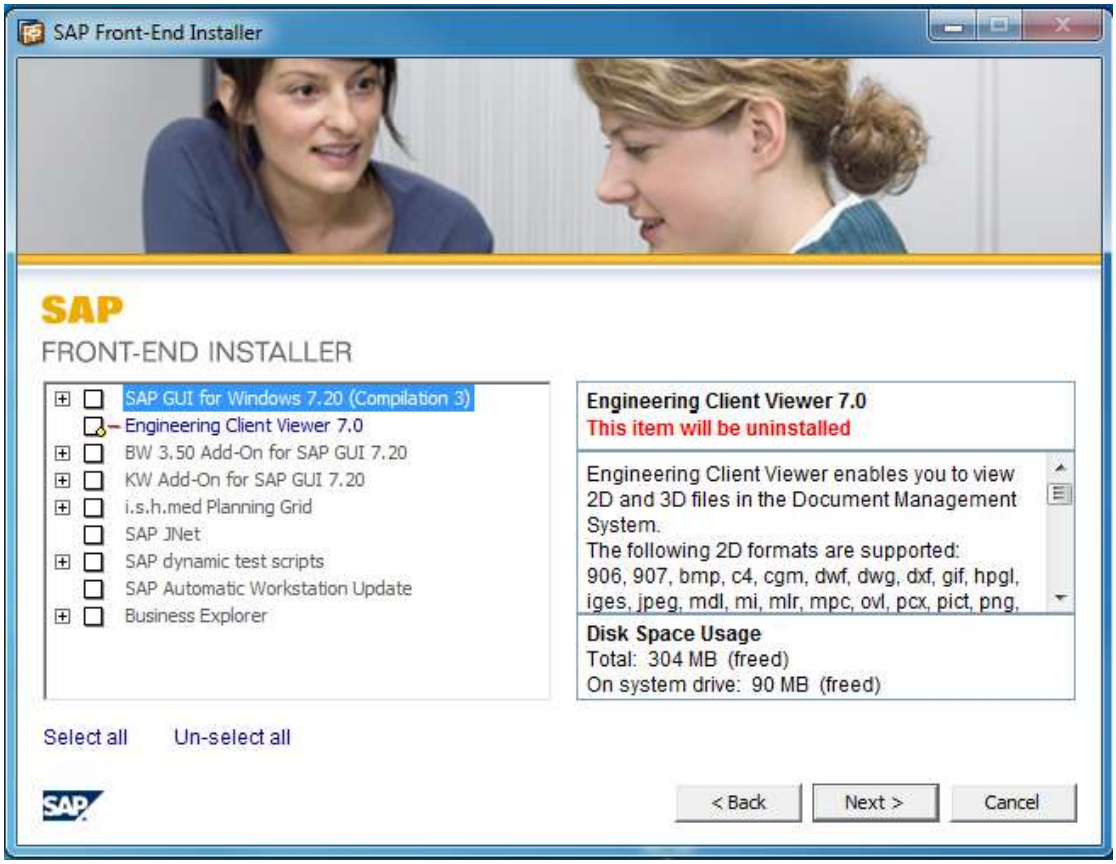


3. Select the SAP front end components that you want to install or deselect the ones you want to remove.

   A yellow dot indicates a change in the selection list. A green plus sign next to a SAP front end component name indicates that this SAP front end component will be installed.



If you deselect an installed SAP front end component in this list, a red minus sign indicates that this SAP front end component will be uninstalled.



4. Choose *Next*.

   The installation wizard might prompt you to enter customizing information for the installation of the selected SAP front end components, such as the installation directory.

   For example, the default path for installing SAP GUI for Windows is C:\Program Files\SAP\FrontEnd, but you can change this.

5. Choose *Next*.

   The installation starts and a progress screen is displayed.

   Processing is recorded in the file `NwSapSetup.log` in the SAPSetup log file directory.

   If an error occurs, see section Troubleshooting on the Workstation.

   Once the installation is complete, a confirmation screen is displayed. Your SAP front end component is now successfully installed and ready to use.

4.1.2. Installing Packages Configured by the Administrator

Use

This section describes the installation and removal of packages that have been configured on the installation server by the administrator.



When uninstalling packages, avoid mistakenly uninstalling shared components that are used by other packages you want to keep installed. If you have uninstalled shared components, reinstall the package you want to keep.

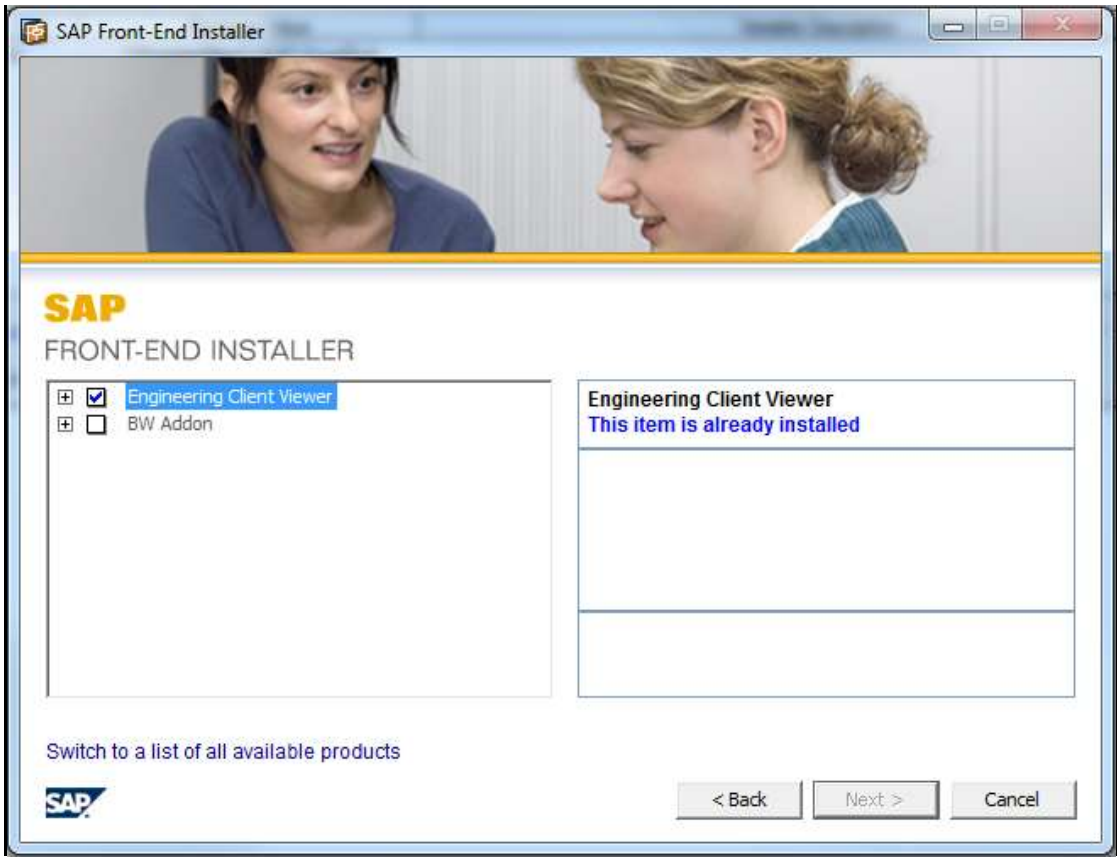
Prerequisites

- An available installation server
- The user logged on to the workstation has local administrator privileges.
- If the user does **not** have local administrator privileges, make sure that LSH is correctly configured on the installation server.
- The administrator has created packages on the installation server.

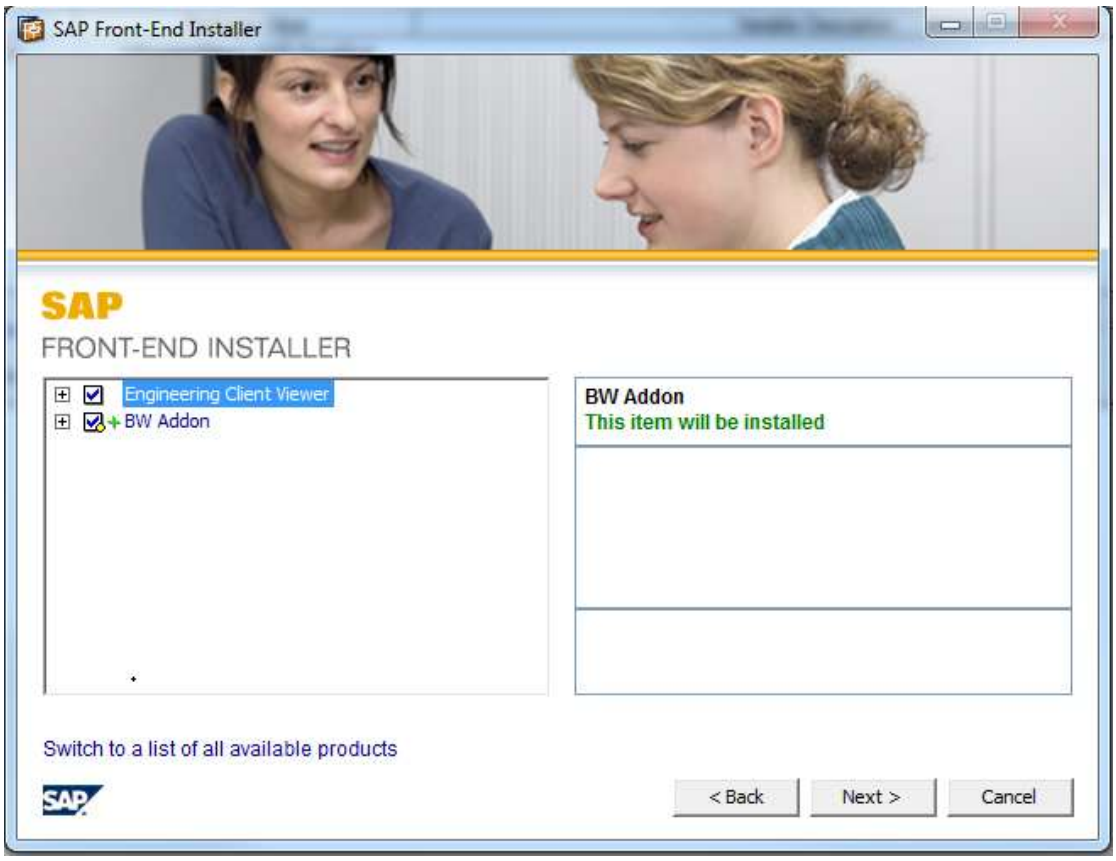
Procedure

1. Start `NwSapSetup.exe /package` from the `Setup` directory of the installation server or distribution medium. Alternatively, start `NwSapSetup.exe`, choose *Next* on the welcome screen, and then choose *Predefined packages*.

   A list is displayed showing the packages that the user is authorized to install. Packages that have already been installed are preselected. In the following example, the package *Engineering Client Viewer* is already installed on the workstation.



2. Select the components or packages that you want to install, or deselect the ones you want to remove.



In this example, the *BW Addon* has been selected for installation. A yellow dot indicates a change in the selection list. A green plus sign next to a package name indicates that this package will be installed. If you deselected a package, a red minus sign indicates that this package will be uninstalled.

3. After selection/deselection, choose *Next*.

SAPSetup now processes the packages and displays the completion status when finished.

Processing is recorded in the file `NwSapSetup.log` in the SAPSetup log file directory.

If an error occurs, see section Troubleshooting on the Workstation.

4.1.3. Installing Packages Using the Logon Script

Use

To automate the installation of SAP front end components on a large number of workstations, insert a command line into the logon scripts of the users. This enables you to start the installation of SAP front end components or a package when the user logs on.

Prerequisites

- The SAP front end components (especially SAP GUI) should not be running when you perform the following procedure, as SAPSetup might require a reboot to complete the installation if program files are in use.

Procedure

To automatically install a package when a user logs on, add the following command to the user's logon script:

```
\\<server>\<shared directory>\Setup\NwSapSetup.exe /package:"<package command line name>" /nodlg
```

When you start this command for the first time on a workstation, SAPSetup installs the specified package. With every following logon, SAPSetup will check for updates of this package on the installation server.

For a list of options, see section Command Line Parameters.

To ensure that an installation runs exactly once on a workstation, specify the following command line parameter:

`/once:"<OnceTag>"`

The tag `<OnceTag>` is stored in the Windows registry and is never deleted by SAPSetup. If an installation with the same tag is started again, it does nothing and instantly returns 0. This can be useful for distributing a correction to many workstations using event scripts and packages that contain no SAP front end components.

4.1.4. Installing Components Locally from a Distribution Medium

Use

This procedure installs SAP front end components on a single workstation from a distribution medium.

Prerequisites

- The user logged on to the workstation must have local administrator privileges.

Procedure

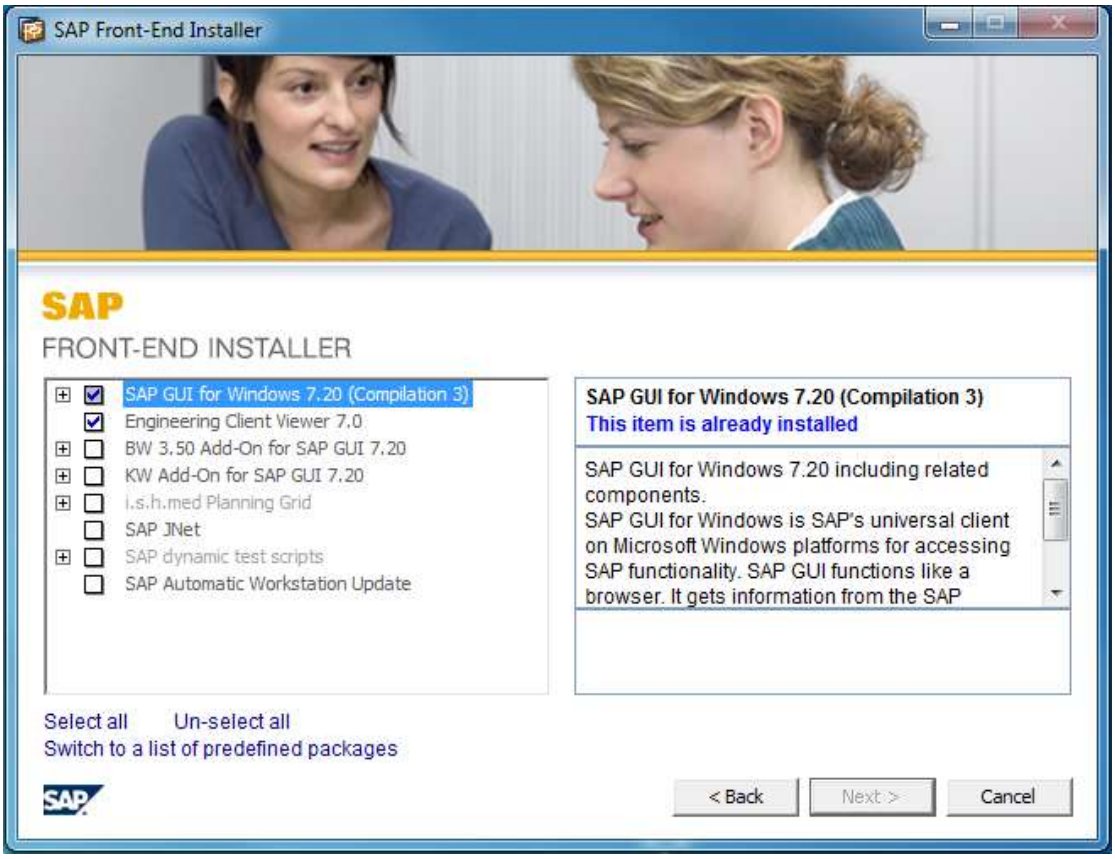
1. For example, in directory `GUI\WINDOWS\WIN32` on the *SAP NetWeaver Presentation DVD*, start `SapGuiSetup.exe`.

   The SAPSetup installation wizard is displayed, showing you a list of components that are part of the product SAP GUI for Windows 7.30.

   Starting `SetupAll.exe`, you can install all SAP front end components available on the distribution medium or installation server in one run.

2. Choose *Next*.

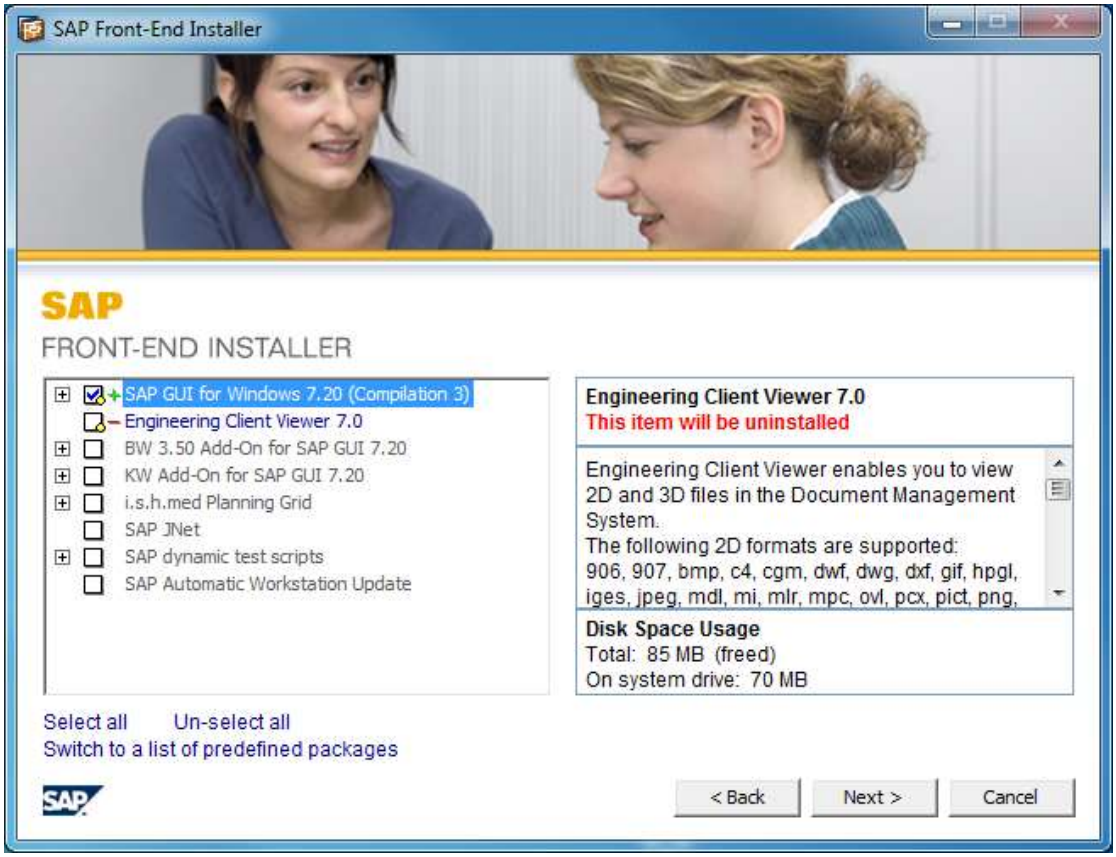
   A list of selectable SAP front end components is displayed:



   SAP front end components that have already been installed are preselected.

3. Select the SAP front end components that you want to install or deselect the ones you want to remove.

   A yellow dot indicates a change in the selection list. A green plus sign next to a SAP front end component name indicates that this SAP front end component will be installed. A red minus sign indicates that this SAP front end component will be uninstalled.



4. Choose *Next*.

   The installation wizard might prompt you to enter or change customizing information for the selected SAP front end components, such as the installation directory.

   Example

   The default path for installing SAP GUI for Windows is `C:\Program Files\SAP\FrontEnd`, but you can change this if required.

5. If necessary, change this information and choose *Next* to start the installation.

   The installation starts and the progress is displayed.

   Processing is recorded in the file `NwSapSetup.log` in the SAPSetup log file directory.

   If an error occurs, see section Troubleshooting on the Workstation.

The wizard confirms the successful installation. Your SAP front end components are now ready to use.

4.2. Updating SAP Front End Components

Use

This section describes how to update the installed SAP front end components when a newer version is available as a patch either on the installation server or on a distribution medium.

Procedure

You can update the SAP front end components on a workstation by using one of the following procedures:

Updating a Workstation from an Installation Server

Updating a Standalone Workstation

4.2.1. Updating a Workstation from an Installation Server

Use

Update SAP front end components on a workstation with a newer version from an installation server.

Prerequisites

- An available installation server
- You have installed SAP front end components on a workstation.
- A newer release of the installed SAP front end components is available on your installation server.
- SAP front end software applications should not be running during an udpate. If an application is running, the user may be prompted to reboot afterwards to complete the update. If the update runs interactively, the user is prompted to stop the applications. If he does so, no reboot is necessary.

Procedure

Updating SAP front end components on a workstation involves the same steps as an installation. For further information, see section Installation of the SAP Front End Components from an Installation Server.

You have the option of running the update unattended or automatically:

- For an unattended update, use the following command line:
  `\\<server_path>\Setup\NwSapSetup.exe /update /silent`

  To update a specific package or SAP front end component, add:

  `/package="package command line name"`

  or

  `/product="product command line name"`

  You will find the command line name of the package or SAP front end component in the administrative console `NwSapSetupAdmin.exe`.
- For an automatic update, you can use the AWUS. Whenever the installation server is patched or the installed packages are updated, this service updates the workstation(s) and reboots them, if necessary. The AWUS works regardless of whether a user is logged on.
  - If a user is logged on, the user is informed of the available update, and the update starts upon confirmation by the user. The user is also informed about whether a reboot is required, and the reboot is executed only upon confirmation by the user.
  - If no user is logged on, the update and the reboot (if necessary) are started automatically.

Result

Depending on the chosen update method, the SAP front end components are updated with or without user interaction. If the interactive update method is selected, the user simply has to choose *Next* to start the front end update.

4.2.2. Updating a Standalone Workstation

You can update SAP front end components on a standalone workstation by running a patch on it. Updating involves the same steps as an installation.

For further information, see section Installation of the SAP Front end Components.



We recommend updating from an installation server instead of updating individual workstations by running a patch. Using the automatic update mechanisms (AWUS or logon scripts) ensures a fast and efficient update of all workstations.

4.3. Uninstalling SAP Front End Components

Use

Remove SAP front end components from a workstation.

Prerequisites

- SAP front end components are installed on a workstation.
- SAP front end software applications should not be running during uninstallation. If an application is running, the user is prompted to reboot afterwards to complete the uninstallation. If the uninstallation runs interactively, the user is prompted to stop the applications, so that no reboot is necessary.

Procedure

1. Choose *Start* → *Settings* →*Control Panel* → *Add or Remove Programs.*
   A list of the installed applications is displayed.
2. Select the SAP front end component to be deleted.
3. Choose *Remove*.
4. Choose *Next*.

Result

The SAP front end component is uninstalled.



Processing is recorded in the file `NwSapSetup.log` in the SAPSetup log file directory.

If an error occurs, see section Troubleshooting on the Workstation.



To perform a silent, unattended uninstallation, enter the following commands:

`NwSapSetup.exe /Product="<product name>" /Silent /Uninstall` for uninstalling a certain product, for example SAPGUI710.

`NwSapSetup.exe /all /silent /uninstall` for silently uninstalling all SAP front end components installed by SAPSetup.

`NwSapSetup.exe /all /nodlg /uninstall` for uninstalling all SAP front end components installed by SAPSetup. Only a progress dialog is displayed.

For further information, see section Front End Installation and Update Command Line Parameters.

When the command line options include **`/uninstall /all`** , the event scripts defined for the events “On Uninstallation Start” and “On Uninstallation End” will also be executed for all packages that are being uninstalled.



When trying to uninstall SAP front end components installed by SAPSetup version 8.6 and higher with an older SAPSetup, a message box is displayed advising you to start the SAPSetup executable from the workstation. On choosing *OK*, SAPSetup crashes. This is by design and not a bug.

4.4. Repairing Installed SAP Front End Components

Use

Repairing SAP front end components on a workstation that is not working. The repair process checks for discrepancies in files, services, registry-keys, and other artifacts installed by SAPSetup, and repairs these.

Prerequisites

- The user logged on to the workstation must have local administrator privileges.
- If the user does **not** have local administrator privileges, make sure that LSH is correctly configured on the installation server.
- SAP front end software applications should not be running during a repair. If an application is running, the user may be prompted to reboot afterwards to complete the repair. If the repair runs interactively, the user is prompted to stop the applications. If he does so, no reboot is necessary.

Procedure

To repair SAP front end components installed on a workstation, start the installation on the command line with the parameter `/repair`. You can start:

- `NwSapSetup.exe` from the `Setup` directory of the installation server
- `NwSapSetup.exe` from the `Setup` directory of a distribution medium
- a single-file installer

When the repair process starts, a progress screen is displayed.

Only those SAP front end components available on the source can be repaired.

The repair process includes an update of all SAP front end components. If the version of a component on the installation server is higher than that of the component installed on the workstation, this component is udpated.

If a package is installed, the package event scripts for updates are executed during repair.

Processing is recorded in the file `NwSapSetup.log` in the SAPSetup log file directory.

If an error occurs, see section Troubleshooting on the Workstation.

Result

The wizard confirms the successful repair. Your SAP front end components are now repaired and ready to use.

4.5. Command Line Parameters on the Workstation

The command line parameters are not case-sensitive.

NwSapSetup.exe

Parameter	Description

`/silent`	Does not display a user interface.  When using `/silent`, you must specify a product name, a package name, or `/update`
`/nodlg`	Shows only the progress dialog. Displays no other user interface. You can use it instead of `/silent`.  If using `/nodlg`, you must specify a product name, a package name, or `/update`
`/force`	Overwrites all files, registry keys and other artifacts installed by SAPSetup, regardless whether they exist or not. Even files with a newer file version are overwritten. SAP files are uninstalled even if their shared DLL counter is not zero.
`/once:"<OnceTag>"`	Make sure that an installation with the tag <OnceTag> runs exactly once on a workstation. The tag <OnceTag> is stored in the Windows registry and never deleted by SAPSetup. If an installation with the same tag is started again, it will do nothing and return 0 instantly.

`/uninstall`	Uninstalls SAP front end components installed by SAPSetup.
	
	To uninstall all SAP front end components, add
	`/all`
	To uninstall a specific product or package instead, add
	`/Product="Product Command Line Name"`
	or, respectively
	`/Package="Package Command Line Name"`
	
	Works only with `/nodlg` or `/silent`

`/product`	Runs the installer in product mode. You cannot switch to *Package View*.
`/package`	Runs the installer in package mode. You cannot switch to *Product View*.
`/product:"<product cmd name>"`	Only the specified product is processed. Other products are not displayed on the selection dialog. You can specify several products by concatenating their names with a plus sign (+).
`/package:"<package cmd name>"`	Only the specified package is processed. Other packages are not displayed on the selection dialog. You can specify several products by concatenating their names with a plus sign (+).

/update	Updates installed SAP front end components. To update all installed packages available on the installation server, add /Package To update a specific product or package instead, add /Product="Product Command Line Name" or, respectively /Package="Package Command Line Name" Works only with /nodlg or /silent
/skip=wtscheck	Skips the check whether the WTS server is in installation mode. Only provide this if the check does not work correctly; in this case, open a message on component BC-FES-INS for a bug report.
/ForceWindowsRestart	Restarts the workstation automatically when the installation is complete. Use in combination with /package or /product after /silent or /nodlg. Example: \NwSapSetup.exe /silent /product="SAPGUI710" /ForceWindowsRestart
/SMS:["<package cmd name>"]	Creates a status file named "Package Name.MIF" in the %temp% directory that indicates the success or failure of the process. Typically used by software distribution systems such as SMS to determine the success or failure of a remote installation (advertised package installation).
/repair	Repairs all installed SAP front end components. For further information, see section Repairing Installed SAP Front End Components
/MaintenanceMode	Usually, only those SAP front end components that are also available on the installation source are displayed in the selection dialog. With this switch, all installed SAP front end components are displayed and can be uninstalled.

Single-File Installer

Parameter	Description
/?	Provides help on command line parameters.
/extract:dest_dir	Extracts the single-file installer into directory dest_dir. If the directory does not exist, it will be created. This works with single-file installers shipped by SAP as well as with those created in NwSapSetupAdmin.

NwCheckWorkstation.exe

Parameter	Description
`/silent`	Does not display a user interface. Returns the same return values as `NwSapSetup.exe`. For further information, see section Return Codes.

4.6. Troubleshooting on the Workstation

To verify the integrity of installed SAP front end components on a workstation, start `NwCheckWorkstation.exe` from the `Setup` directory either of the installation server or of the workstation (`%ProgramFiles%\SAP\SapSetup\Setup` on 32bit Windows or `%ProgramFiles32%\SAP\SapSetup\Setup` on 64bit Windows), and follow the wizard instructions. You do not require administrator privileges to perform the check. If there are discrepancies, a report is displayed.

`NwCheckWorkstation.exe` verifies the installation of SAP front end components by checking for discrepancies in files, services, registry-keys, and other artifacts installed by SAPSetup.

The workstation check tool collects installation data and log files, and compresses them into a cabinet archive. After the check is completed, Windows Explorer opens the directory containing this `CAB` file. When reporting installation issues, you should forward the `CAB` file to SAP support for a quicker diagnosis.

If an error occurs during processing, the wizard displays a link to an error report. Follow the link to view the error report in a web browser.

For further information, see section Viewing Log and Error Files.

5. Additional Information

5.1. Viewing Log and Error Files

Log files

All the installation tools described in this document maintain an activity record in log files. The log files are stored in the following directory:

`%ProgramFiles%\SAP\SapSetup\LOGs` (32bit Windows)

`%ProgramFiles32%\SAP\SapSetup\LOGs` (64bit Windows)

Each tool stores the last 10 log files.

Error files

Errors are saved in an XML format in files that you can view in your web browser. The error files are stored in the following directory:

`%ProgramFiles%\SAP\SapSetup\Errors` (32bit Windows)

`%ProgramFiles32%\SAP\SapSetup\Errors` (64bit Windows)

Creating a message

If you create a message, use component BC-FES-INS and attach the relevant log files and error files to the message. If you run `NwCheckWorkstation.exe` on the workstation as described in section Troubleshooting on the Workstation, you can attach the generated `CAB` file instead.

Log and error files for each tool

Tool	Log File	Error File
NwCreateInstServer.exe	NwCreateInstServer.log	NwCreateInstServerErrors_<DateTime>.xml
NwUpdateInstServer.exe	NwUpdateInstServer.log	NwUpdateInstServerErrors_<DateTime>.xml
NwSapSetupAdmin.exe	NwSapSetupAdmin.log	NwSapSetupAdminErrors_<DateTime>.xml
NwSapSetup.exe single-file installer	NwSapSetup.log	SAPSetupErrors_<DateTime>.xml

5.2. Return Codes

If you start NwSapSetup.exe from a batch file, the environment variable %ERRORLEVEL% contains the return code.

Example

```
start /wait <Path to your installation source>\Setup\NwSapSetup.exe /package="<cmd line name of your package>" /silent
echo %ERRORLEVEL%
```

The following table describes the return codes for NwSapSetup.exe

Return Codes	Description
0	Process ended without detected errors
3	Another instance of SAPSetup is running
4	LSH failed
16	SAPSetup started on WTS without administrator privileges
26	WTS is not in install mode
27	An error occurred in COM
48	General error
67	Installation canceled by user
68	Invalid patch
69	Installation engine registration failed
70	Invalid XML files
129	Reboot is recommended
130	Reboot was forced
144	Error report created
145	Error report created and reboot recommended
146	Error report created and reboot forced

In event of return codes 144-146, look at the error and log file for NwSapSetup.exe as described in section Viewing Log and Error Files.

6. Appendix

6.1. Terms for Included Open Source Software

This SAP software contains also the third party open source software products listed below. Please note that for these third party products the following special terms and conditions shall apply.

www.sap.com/contactsap

© 2013 SAP AG or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

National product specifications may vary.

These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and other countries. Please see http://www.sap.com/corporate-en/legal/copyright/index.epx#trademark for additional trademark information and notices.