





PUBLIC


ABAP Platform 2021 FPS01 and ABAP Environment

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Installing ABAP Development Tools

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1 About This Installation Guide

Scope of Documentation



This documentation describes how to install the Eclipse-based front-end components of ABAP Development Tools (ADT) on a local drive. It also includes information on how to connect ABAP Development Tools to an ABAP back-end system.

Target Audience

- ABAP system administrators and developers who want to install, build, or provide ADT installation packages for ABAP developers who work with an Eclipse-based IDE
- ABAP system administrators who configure the ABAP server for each back-end system in order to connect them with ADT


Context



ABAP Development Tool provides features that are client-specific or require a specific back-end version. Consequently, this overview covers all client-specific and back-end-specific dependencies. To highlight and contrast back-end-specifics in the relevant context, the following icons are used:

Icon	Deployment Model	Description
 <i>Home</i>	On-premise/Private Cloud	Used for SAP S/4HANA and for SAP S/4HANA Cloud, private edition
 <i>Cloud</i>	Public Cloud	Used for SAP BTP ABAP environment and SAP S/4HANA Cloud ABAP Environment

Validity of Documentation

This documentation belongs to the ABAP Development Tools with the client version **3.28** and refers to the range of functions that have been shipped as part of the standard delivery for:

-  *Home* On-premise/Private Cloud shipments:
 - SAP NetWeaver 7.3 EHP1 **SP04 and higher**
 - SAP NetWeaver 7.4 **SP02 and higher**
 - SAP NetWeaver 7.5 **SP00 and higher**
 - SAP NetWeaver AS for ABAP 7.51 innovation package **SP00 and higher**

- SAP NetWeaver AS for ABAP 7.52 **SP00 and higher**
- Application Server ABAP 7.53 **SP00 and higher** (a.k.a. ABAP platform 1809)
- Application Server ABAP 7.54 **SP00 and higher** (a.k.a. ABAP platform 1909)
- Application Server ABAP 7.55 **FPS 00 and higher** (a.k.a. ABAP platform 2020)
- Application Server ABAP 7.56 **FPS 00 and higher** (a.k.a. ABAP platform 2021)
- Application Server ABAP 7.57 **FPS 00 and higher** (a.k.a. ABAP platform 2022)
- SAP S/4HANA Cloud, private edition
-  [Cloud](#) SAP BTP ABAP environment
-  [Cloud](#) SAP S/4HANA Cloud ABAP Environment

Prerequisite

To enable development using the ADT client in releases \geq SAP NetWeaver 7.3 EHP1 SP04 and \geq SAP products based on ABAP platform 1909 (Application Server ABAP 7.54) the ABAP system administrator needs to configure each back-end first.

For more information, see the back-end configuration guide [Configuring the ABAP Back-end for ABAP Development Tools](#)

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Eclipse Platform: <ul style="list-style-type: none">• 2022-09 (4.25)• 2022-06 (4.24)• 2022-03 (4.23)	Eclipse Public License v 1.0
Eclipse Semantic File System (SFS) (SAP), 0.7.0.sap	Eclipse Public License v 1.0
Handy-URI-Templates, 1.1.7	Apache License 2.0
lz4 Compression algorithm, 1.8.1.2	BSD Two Clause "Simplified" License
spring-security-jwt, 1.1.1	Apache License 2.0

List of additional features required for running ABAP Development Tools

Feature Name	Feature ID
EMF Edit Data Binding	org.eclipse.emf.databinding.edit.feature.group
EMF Model Query	org.eclipse.emf.query.feature.group
EMF Model Transaction Workbench Integration	org.eclipse.emf.workspace.feature.group
EMF Validation Framework	org.eclipse.emf.validation.feature.group
Graphiti (Incubation)	org.eclipse.graphiti.feature.feature.group
Web Services Tools	org.eclipse.wst.ws_ui.feature.feature.group
Zest	org.eclipse.zest.feature.group

ABAP Development Tools (ADT) requires manual installation of the above mentioned additional Eclipse features before the ABAP Development Tools package installation due to the following reasons:

1. **Customer Requirement:** Many developers at customer and partner organizations do not have internet access or an official SAP Support Portal (S-) User. Thus, SAP decided to provide an installation scenario for a person who usually has an `S_USER` and internet access: that is, an administrator who is responsible for the development landscape in the customer or partner organization.
2. **One Central Reference Installation:** The additional manual steps are only required for one administrator who assembles a complete reference installation. SAP is responsible and will provide support and maintenance for the SAP features in this central reference installation.
3. **Several Decentralized Customer Installations:** The administrator can copy and extend the reference installation with more features and takes over the responsibility for this customer specific installation. The administrator will then provide this customer specific installation to many developers (without `S_USER` or internet access). Thus the majority of developers in the SAP customer and partner community will not have to perform the mentioned manual installation steps of some additional Eclipse features.
4. **Innovation:** SAP is able to support the current Eclipse release with this product at an earlier point in time than in the past.
5. **Transparency:** SAP customers and partners know exactly for which features SAP is responsible and for which SAP will provide support and maintenance. With an automatic installation of the required additional features, this would not be transparent.

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2.4 Documentation in the SAP Help Portal

You can find this documentation at the [Product Finder on the SAP Help Portal](#) in the *Technology Platform* area.


3 Support and Maintenance Strategy

ABAP Development Tools (ADT) include a server and a client part. For both the Support and Maintenance Strategy is different from **SAP NetWeaver 7.3 EHP1**. As SAP GUI the ABAP Development Tools follow the SAP Maintenance Strategy Rule 11: "Downward-compatible software component versions can be replaced by a higher version in the course of the life of the application release they are built into, without adaptations or changes to other software component versions within the release. Therefore downward-compatible software component versions are usually not maintained for the entire mainstream and extended maintenance period of the application release they are built into. Instead they have to be replaced by a higher version."

ABAP Development Tools is a Downward-Compatible Software Component Version. This means that starting with **SAP NetWeaver 7.3 EHP1** the most current client version of the ABAP Development Tools will always be compatible with all future SAP NetWeaver 7.3 EHP1, ABAP platform 1809 (AS ABAP 7.53) and higher, as well as SAP BTP ABAP environment shipments. But this requires the users to regularly update to the current client version of the ABAP Development Tools. Because the client has many dependencies this may require additional updates on the PC which will be listed in the following client section.

i Note


For more information, see <https://launchpad.support.sap.com/#/notes/> ABAP Development Tools support strategy

 *Cloud* SAP GUI is not relevant in the context of SAP BTP ABAP environment.

3.1 General Terms

ABAP Development Tools (ADT) depends on Eclipse and SAP GUI. It will not be shipped as a bundle with Eclipse and SAP GUI but separately as an Eclipse p2 repository. Both Eclipse and SAP GUI are supported for different individual platforms. The support of individual platforms also depends on the support of the operating systems by the manufacturers. SAP cannot provide support for a platform or for an operating system that is no longer supported by its vendor or manufacturer. By the same token, SAP cannot provide support for an Eclipse version or any other Open Source software version that is no longer supported by the Eclipse Foundation or the Open Source community.

i Note


 *Cloud* SAP GUI is not relevant in the context of SAP BTP ABAP environment.

3.2 Support Platform Matrix



ABAP Development Tools is only supported for a subset of the individual platform and operating system versions for which Eclipse and SAP GUI are supported. The various individual operating system versions, Java




runtime versions, Eclipse versions, SAP GUI versions, Microsoft VC runtime versions and browser versions for which ABAP Development Tools is supported are listed in the ABAP Development Tools Support Platform Matrix. Running ABAP Development Tools on operating system versions, Java runtime versions, Eclipse versions, SAP GUI versions, Microsoft VC runtime versions and Browser versions that are not listed in the ABAP Development Tools is not supported by SAP.

i Note

 *Cloud* SAP GUI is not relevant in the context of SAP BTP ABAP environment.

3.3 ABAP Development Tools Support Platform Matrix

Software	Version
Operating System	<ul style="list-style-type: none"> • Microsoft Windows 10™ or higher • Apple Mac OS X 10.14 or higher <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>i Note</p> <p>Architecture <i>AArch64</i> (M1) is also supported, but you must use the <i>x86_64</i> version of Eclipse.</p> </div>
Java Runtime	<p>JRE version 11 (64-Bit, LTS) or higher</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>i Note</p> <ul style="list-style-type: none"> • ADT is validated and tested against Java versions 11 and 17 (Oracle Java and OpenJDK). • The latest Eclipse packages are bundled with Eclipse Temurin, an OpenJDK binary distribution provided by the Eclipse Adoptium project. Any other JRE found on the system is not used. If you want to remove the bundled JRE and use a custom one, see SAP note 3035242. </div>
Microsoft Visual C++ Runtime	Visual Studio 2013 (Visual C++ 12.0)
 <i>Home</i> SAP GUI for Windows	7.60 or higher
	<div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>i Note</p> <p> <i>Cloud</i> SAP GUI is not relevant in the context of SAP BTP ABAP environment.</p> </div>

Software	Version
 Home SAP GUI for Java (Mac OS)	7.50 or higher
	<div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 10px;"> <p>i Note</p> <ul style="list-style-type: none"> •  Cloud SAP GUI is not relevant in the context of SAP BTP ABAP environment • SAP GUI for Java is only compatible with Java 11. Hence it is not compatible with the bundled Eclipse Temurin 17 in the standard Eclipse packages. In this case, follow SAP note 3035242  in order to remove the bundled JRE and use a custom one. </div>
Browser	Chromium-based Browser / Firefox / Microsoft Edge / Safari
Eclipse Platform	<ul style="list-style-type: none"> • 2022-09 (4.25) • 2022-06 (4.24) • 2022-03 (4.23)

3.4 Special Terms for Operating Systems

SAP recommends that you always use a current Support Package for the relevant operating system listed in the ABAP Development Tools. An operating system that is no longer supported by its manufacturer should no longer be used in conjunction with ABAP Development Tools. If an issue occurs only on an unsupported operating system SAP will not analyze nor solve the issue, but instead reply by recommending an operating system upgrade. Additionally SAP does not test ABAP Development Tools on such operating systems anymore.

3.5 Special Terms for Java Runtime Versions

SAP recommends that you always use a current Java runtime version listed in the ABAP Development Tools. A Java runtime version that is no longer supported by the Java runtime version manufacturer should no longer be used in conjunction with ABAP Development Tools. If an issue occurs only on an unsupported Java runtime version SAP will not analyze or solve the issue, but instead reply by recommending a Java runtime version upgrade. Additionally SAP does not test ABAP Development Tools on such Java runtime versions anymore.

3.6 Special Terms for Eclipse Versions

SAP recommends that you always use a current Eclipse version listed in the ABAP Development Tools. An Eclipse version that is no longer supported by the Eclipse foundation should no longer be used in conjunction


with ABAP Development Tools. If an issue occurs only on an unsupported Eclipse version SAP will not analyze or solve the issue, but instead reply by recommending an Eclipse version upgrade. Additionally SAP does not test ABAP Development Tools on such Eclipse versions anymore.

3.7 *Home* Special Terms for SAP GUI Versions

SAP recommends that you always use a current SAP GUI version listed in the ABAP Development Tools.

A SAP GUI version that is no longer supported by SAP should no longer be used in conjunction with ABAP Development Tools. If an issue occurs only on an unsupported SAP GUI version SAP will not analyze or solve the issue, but instead reply by recommending a SAP GUI version upgrade. Additionally SAP does not test ABAP Development Tools on such SAP GUI versions anymore.

i Note

 *Cloud* SAP GUI is not relevant in the context of SAP BTP ABAP environment.

3.8 Special Terms for Microsoft Visual C++ Runtime Versions

A Microsoft Visual C++ runtime version that is no longer supported by Microsoft should no longer be used in conjunction with ABAP Development Tools.

If an issue occurs only on an unsupported Microsoft VC runtime version SAP will not analyze or solve the issue, but instead reply by recommending a Microsoft VC runtime version upgrade.

i Note

SAP does not test ABAP Development Tools on such Microsoft VC runtime versions anymore.

→ Recommendation

SAP recommends that you always use a current Microsoft VC runtime version. For more information, see [Prerequisites \[page 24\]](#)

3.9 Special Terms for Browser Versions

SAP recommends that you always use a current browser version listed in the ABAP Development Tools. A browser version that is no longer supported by the browser manufacturer should no longer be used in conjunction with ABAP Development Tools. If an issue occurs only on an unsupported browser version SAP will

not analyze or solve the issue, but instead reply by recommending a browser version upgrade. Additionally SAP does not test ABAP Development Tools on such browser versions anymore.

3.10 Language Support

SAP does not explicitly release different language versions of ABAP Development Tools other than English.

3.11 SAP Shipment Channel and License Agreement

The use of ABAP Development Tools (ADT) is subject to the terms and conditions of your license agreement with SAP which is directly related to the SAP shipment channel where ABAP Development Tools has been initially been downloaded and installed from. SAP does not support to update ABAP Development Tools with software from a different SAP shipment channel than the initial installation of ABAP Development Tools has been done.

❖ Example

An update of an older ABAP Development Tools installation which has originally been downloaded and installed from the SAP Support Portal with a newer ABAP Development Tools version which is provided on the SAP Developer Center is not recommended and not supported by SAP.

4 Introduction

ABAP Development Tools (ADT) is the integrated ABAP development environment built on top of the Eclipse platform.

Its main objective is to support developers in today's increasingly complex development environments by offering state-of-the-art ABAP development tools.

These tools include strong and proven ABAP lifecycle management on the open Eclipse platform with powerful UI (user interface) capabilities.

5 Home Preparation

The preparation prior to the installation of front-end components includes all steps that you must perform in order to work smoothly with ABAP Development Tools on the ABAP back-end system. It includes the completion of the subsequent activities for each back-end system you want to work with and the establishing of the Secure Network Communication (SNC).

5.1 Preparing the ABAP Back-End System

In the context of on-premise scenarios, each back-end system you want to work with ADT, the ABAP system administrator needs to configure the corresponding ABAP systems first.

For this, the [Configuration Guide for Configuring the ABAP Back-end for ABAP Development Tools](#) is provided where you can find further information.

5.2 Establishing Secure Network Communication

Prerequisites

For security reasons, however, you must ensure that the **Secure Network Communication (SNC)** is implemented for the corresponding system and enabled for the selected system connection.

Context

In ABAP Development Tools, developers always work with ABAP projects to access repository objects from back-end systems. An ABAP project represents a real system connection on the front-end client and, therefore, it requires an authorized user to access the back-end system. With the standard authentication method, the user enters his or her user ID and password at the front-end client to log on to the back-end system.

Procedure

To enable SNC for an ABAP system, proceed as follows:

1. Add the relevant ABAP system to the **SAP Logon Pad** – if not already done.

2. In the SAP Logon Pad, open the **Properties** page for the ABAP system.
3. Enable the **Secure Network Communication** for the selected system – if not already done.

5.2.1 Recommendation

Context

For the sake of convenience, and again for security reasons, use also the single sign-on (SSO) option for system authentication (if it is available in your SAP NetWeaver system landscape). Compared with SNC, SSO meets the security requirements for working with ABAP projects even more. Using SSO, the user does not need to enter a user ID and password, but can access the specific system directly after the system has checked the validity of the logon ticket.

Procedure

To enable SSO for an ABAP system, proceed as follows:

1. Install the SAP NetWeaver **Single Sign-On 1.0 SP03 or higher** (either `Secure LoginClient` or `Enterprise Single Sign-On`) for the corresponding platform (64-Bit).
2. Configure the Secure Network Communication (SNC) between ABAP Development Tools and the ABAP back-end system.

For more information, see [SAP Single Sign-On Community](#) 

6 Installation

The subsequent installation procedure comprises all front-end components (SAP and Eclipse IDE packages) that are required to run ABAP Development Tools (ADT) on your local drive.

6.1 Installing ABAP Development Tools

6.1.1 Prerequisites

Operating System

The following operating system (OS) is installed on your local PC:

- **Microsoft Windows™** 10 or higher
- **Apple Mac OS X** 10.14 or higher

i Note

Architecture *AArch64* (M1) is also supported, but you **must** use the *x86_64* version of Eclipse.

Java Runtime Environment (JRE)

Java Runtime Environment (JRE) 11, 64-Bit or higher is required.

i Note

- ADT is validated and tested against Java versions 11 and 17 (Oracle Java and OpenJDK).
- The latest Eclipse packages are bundled with Eclipse Temurin, an OpenJDK binary distribution provided by the Eclipse Adoptium project. Any other JRE found on the system is not used. If you want to remove the bundled JRE and use a custom one, see SAP note [3035242](#).

Eclipse

You have already installed a suitable Eclipse IDE package based on one of the following releases:

- 2022-09 (4.25)
- 2022-06 (4.24)

- 2022-03 (4.23)

i Note

Technically any Eclipse IDE package with feature `org.eclipse.platform` of the corresponding release is installed, as a minimum, on your local drive.

SAP Software and SAP Support Portal Access

- [Home](#) For Windows™, SAP GUI for Windows 7.60 or higher, is installed on your local drive
For Apple Mac OS, SAP GUI for Java 7.50 or higher, is installed on your local drive

i Note

If this is not the case, install the SAP GUI¹⁾ first from the SAP Software Download Center on the SAP Support Portal.

You will need this SAP GUI¹⁾ for integration of GUI-based tools in the IDE for ABAP development.

[Cloud](#)SAP GUI is not relevant in the context of SAP BTP ABAP environment.

- You have an `s_user` that enables to download the ABAP Development Tools package from the SAP Support Portal.

Required Eclipse Features

To benefit from all ADT features, you need to install the following additional Eclipse features in accordance to the relevant installation:

Feature Name	Feature ID	SAP HANA Studio	Eclipse IDE for Java Developers
EMF Edit Data Binding	org.eclipse.emf.databinding.edit.feature.group	-	X
EMF Model Query	org.eclipse.emf.query.feature.group	X	X
EMF Model Transaction Workbench Integration	org.eclipse.emf.workspace.feature.group	-	X
EMF Validation Framework	org.eclipse.emf.validation.feature.group	-	X
Graphiti (Incubation)	org.eclipse.graphiti.feature.feature.group	-	X
Web Services Tools	org.eclipse.wst.ws_ui.feature.feature.group	X	X
Zest	org.eclipse.zest.feature.group	-	X

i Note

If required Eclipse features are not displayed, it might be that they are already installed.

- To display all available features, deselect the *Hide items that are already installed* checkbox.
- To check what is already installed, choose the *What is already installed?* link beside the checkbox from above.

Internet Browser

On your local drive, one of the following browsers is installed:

- Chromium-based Browser
- Firefox
- Microsoft Edge
- Safari

Microsoft Components for Windows™

Microsoft Visual C++ Redistributable Packages for Visual Studio 2013 (64 bit) is installed on your local drive.

i Note

- You need this component for communication with the back-end system.
- You need to install the runtime component separately from the Microsoft installation page.
- If you start ADT before you have installed the DLLs, an error dialog might be opened stating that the ABAP communication layer is configured incorrectly. In this case, you need to restart Eclipse once with the "-clean" option. Afterwards, remove the "-clean" option again. For further information, see here [The Eclipse runtime options](#) ➔

6.1.2 Context

The ABAP Development Tools package is available for download in the [SAP Software Download Center](#) on the SAP Support Portal.

6.1.2.1 Use Cases

The subsequent installation of SAP components requires that you already have a suitable Eclipse IDE package in operation on your computer.

Depending on your use cases, you might need different Eclipse IDE packages:





- **ABAP development only:** For this use case, you only need the minimum Eclipse IDE package – for example, the Platform Runtime Binary – from the Eclipse download page.
- **Side-by-side Java and ABAP development:** For this use case, you usually already have an Eclipse IDE running. Here you can add the ABAP Development Tools features.
- **ABAP development on SAP HANA:** For this use case, you have already installed the latest SAP HANA Studio version on your local drive.

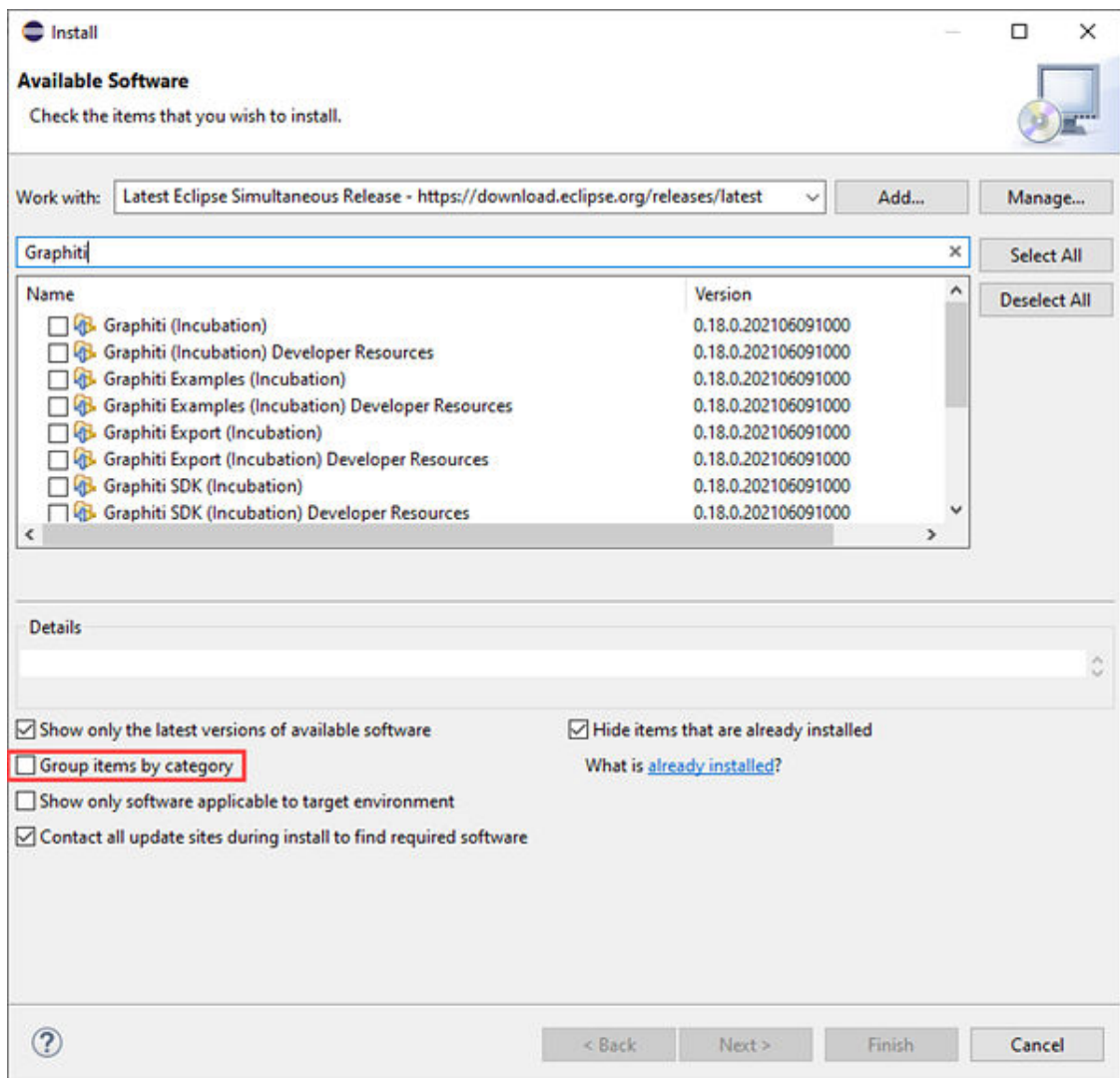
i Note

This use case is not relevant in the context of SAP BTP ABAP environment.

6.1.3 Installation Steps

Procedure

1. Downloading the ABAP Development Tools package from the [SAP Support Portal](#)
 - a. Launch the [SAP Software Download Center](#) on the SAP Support Portal.
 - b. In the *Search Term* input field, enter **ABAP in Eclipse** for the name of the ADT package.
 - c. In the *Search Results* view, choose the package with the highest version.
 - d. Add the package to the download basket.
 - e. Download the archive zip file to the local directory of your choice.
2. Installing additional Eclipse features that are required for running ABAP Development Tools:
 - a. Launch the Eclipse IDE or SAP HANA Studio (see [Prerequisites \[page 24\]](#) above) that is installed on your local drive.
 - b. Choose the menu  *Help*  to start the installation wizard.
 - c. In the *Work with* field of the wizard, choose the update site which fits to the Eclipse release of the downloaded Eclipse IDE package.
 - d. For convenient selection, deselect the *Group items by category* checkbox on the wizard page.



Manual installation of a required feature provided by the latest Eclipse update site

- e. Install the relevant Eclipse features – depending whether you are going to install ABAP Development Tools on top of SAP HANA Studio or not.

i Note

For more information about the required Eclipse features, see [Prerequisites \[page 24\]](#)

Ensure that the filter box is empty.

If you cannot find a required Eclipse feature, it might be already installed. To check this, deselect the *Hide items that are already installed* checkbox.

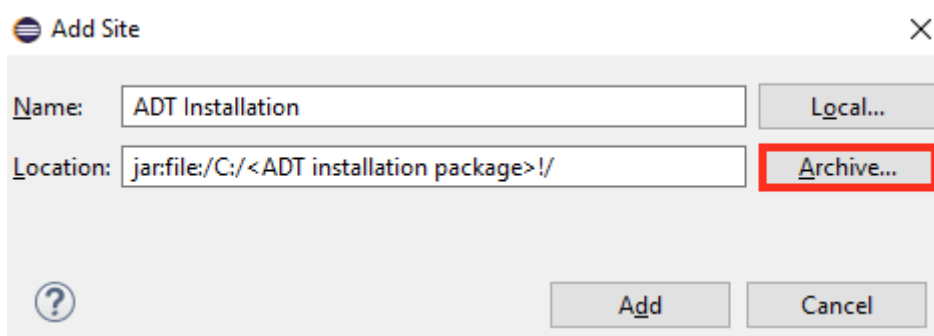
- f. When you have finished marking your selections, ensure first the filter box is empty and then choose *Next*.
- g. On the next wizard page, review the list of features to be installed and choose *Next*.
- h. After you have accepted the terms of license agreement, initiate the installation of the selected features with *Finish*.
- i. To apply the changes, restart the Eclipse IDE using the corresponding button in the information dialog that appears.

3. Installing the ABAP Development Tools package:

- a. Launch the installation wizard again through the menu ► *Help* ► *Install New Software...* ►
- b. In the *Work with* field of the wizard, now specify the target directory where you downloaded the package using ABAP Development Tools.

→ Tip

To add the new installation directory, click the ► *Add...* ► *Archive...* ► button to specify the location and enter a name for your local software site. As highlighted in the screenshot below make sure the location path starts with "jar:file:/" and ends with "!/".



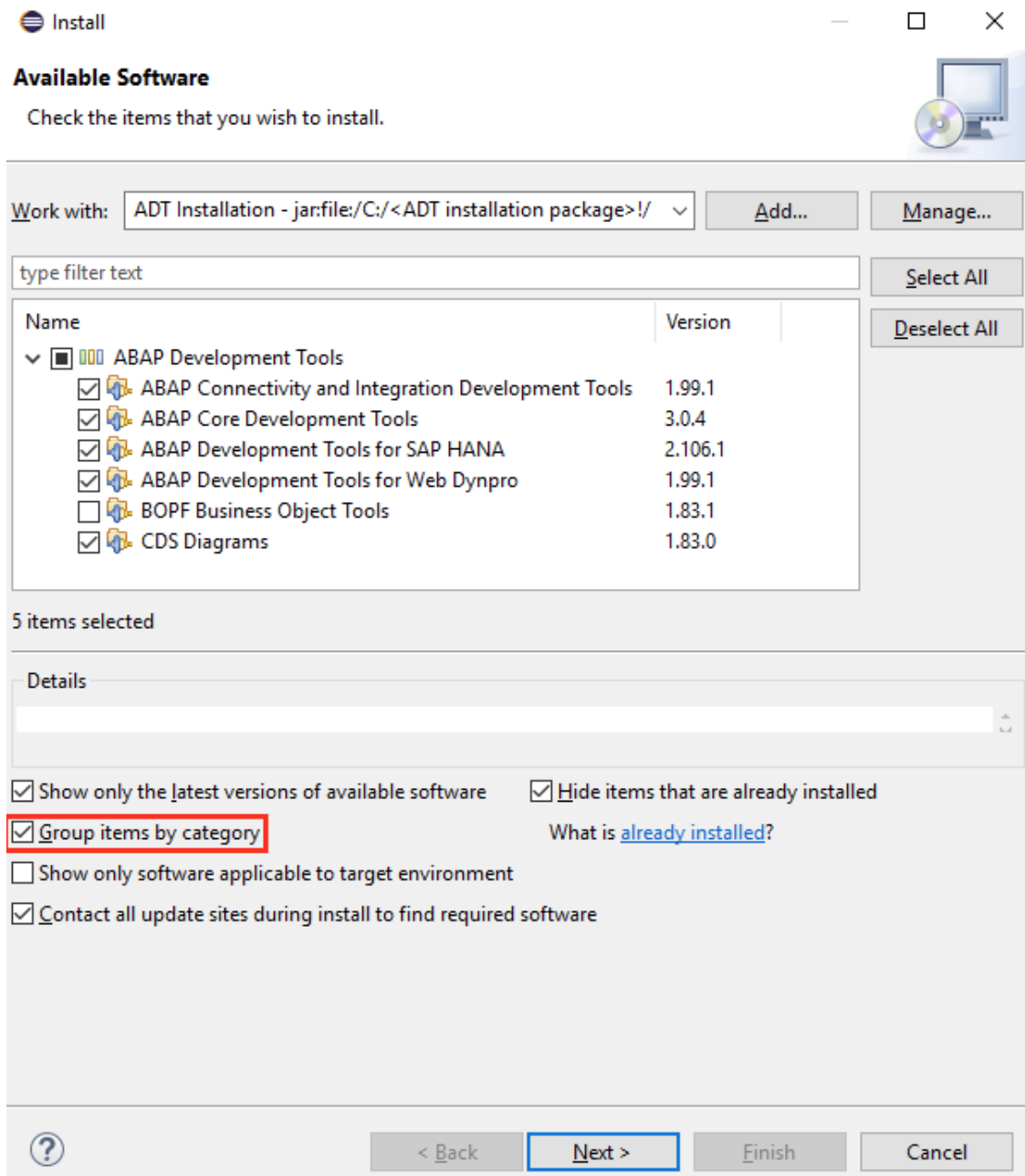
A software site that is located in the local file directory is specified by: jar:file:/<drive:>/<directory_with_zipped_content>!/

- c. For convenient selection, check the *Group items by category* field on the *Wizard* page.
- d. Select the relevant *ABAP Development Tools* item(s) and choose *Next*.

i Note

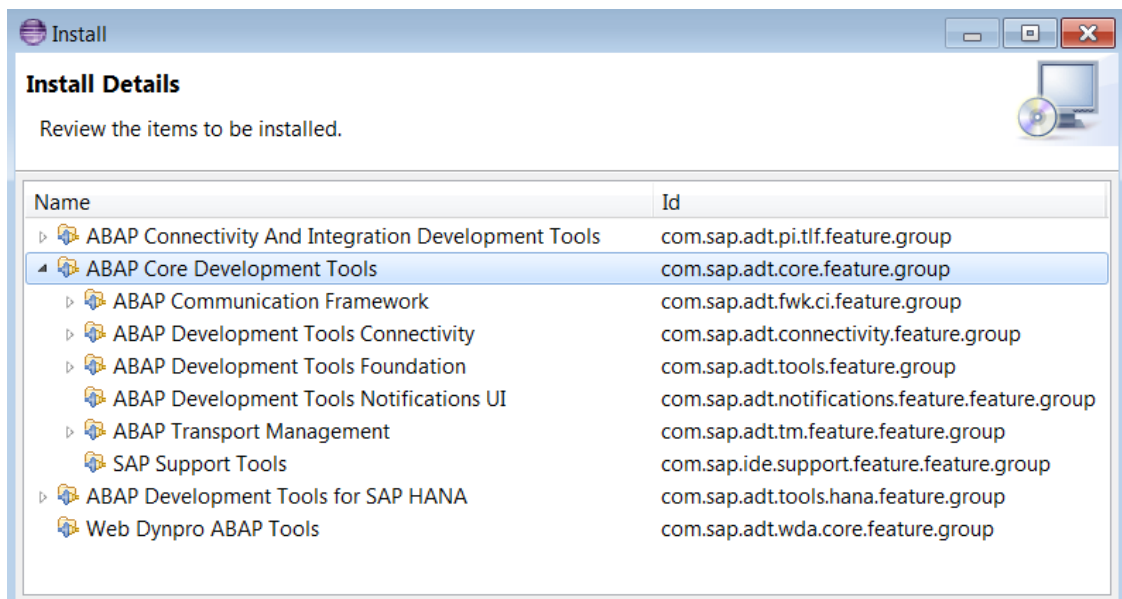
The *ABAP Core Development Tools* are the mandatory installation whereas installation of other tools is optional. Select optional tools based on your requirements.

In the context of SAP BTP ABAP environment, only the *ABAP Core Development Tools* is required.



The target directory where you extracted the zip file in step 1 d) serves as the local software site for installation of ABAP Development Tools.

- e. On the next page, review the feature groups to be installed and choose *Next* again.



List of SAP feature groups to be installed

Note

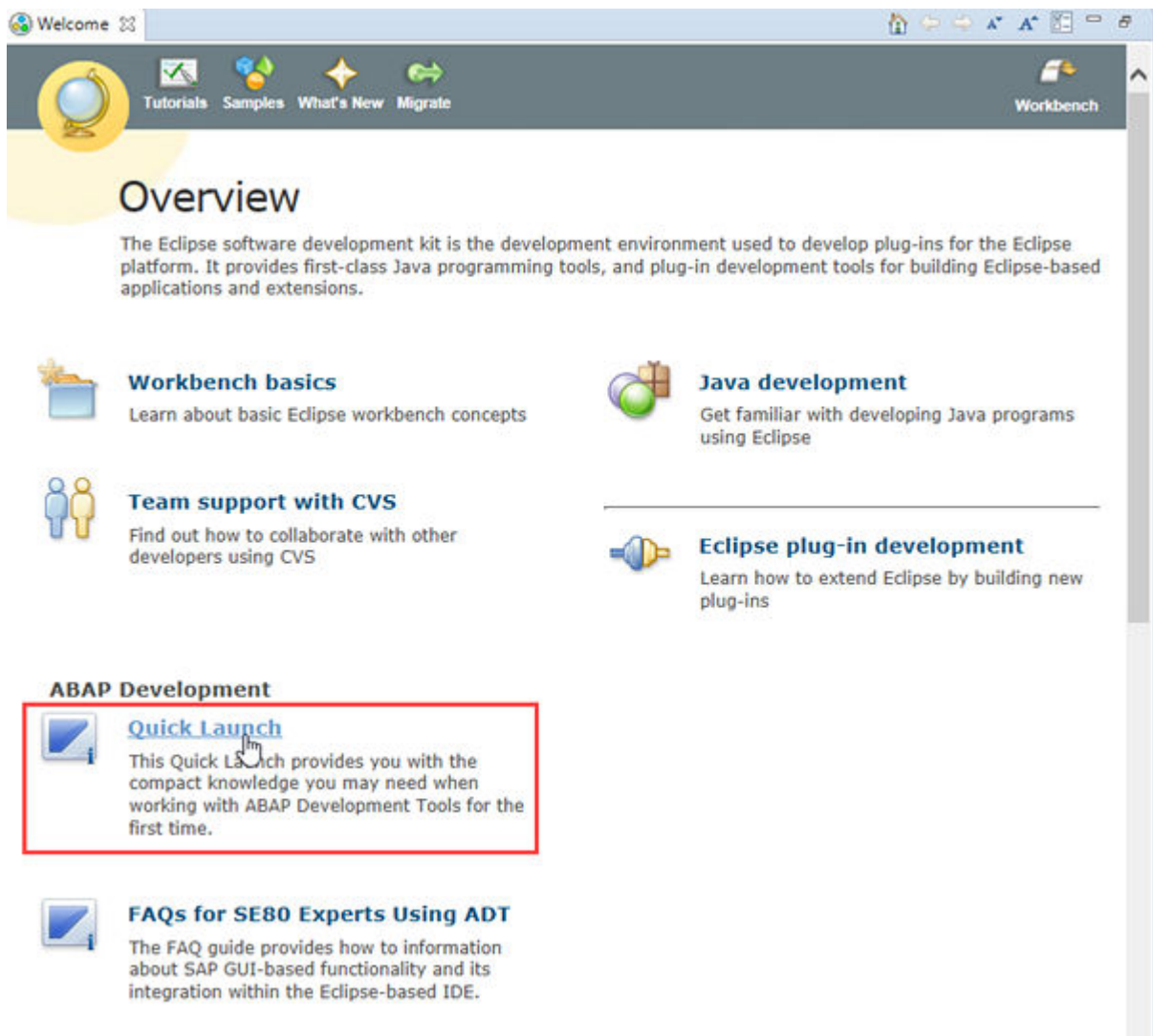
In case one or more of the required Eclipse features are missing, the [Install Remediation Page](#) is displayed with a warning that the installation cannot be completed. In this case, check and ensure that you have installed all required Eclipse features.

- f. After you have accepted the terms of the license agreement, initiate the installation of selected SAP feature groups with [Finish](#).
- g. To apply the changes of the installation procedure, restart the Eclipse IDE.

6.1.4 Result

The successful installation procedure provides you with a ready-to-use ADT installation inside an Eclipse IDE package. It contributes the [ABAP](#) perspective to the Eclipse IDE.

The [Welcome](#) page ([Help > Welcome](#)) provides central access to knowledge material and provides links to related **ABAP Development User Guide** topics.



The Quick Launch on the Overview tab provides you with compact knowledge that you may need when working with ADT for the first time.

6.2 Updating ABAP Development Tools

Context

If you want to update an existing version of ABAP Development Tools, open the [SAP Software Download Center](#) on the SAP Support Portal. Here you will always find the most current version as an archive file.

i Note

If you want to add new functionality like "ABAP Enterprise Services and Integration Development Tools" or "ABAP Development Tools for Web Dynpro", you have to install these features by processing the installation steps from chapter [Installing ABAP Development Tools \[page 24\]](#).

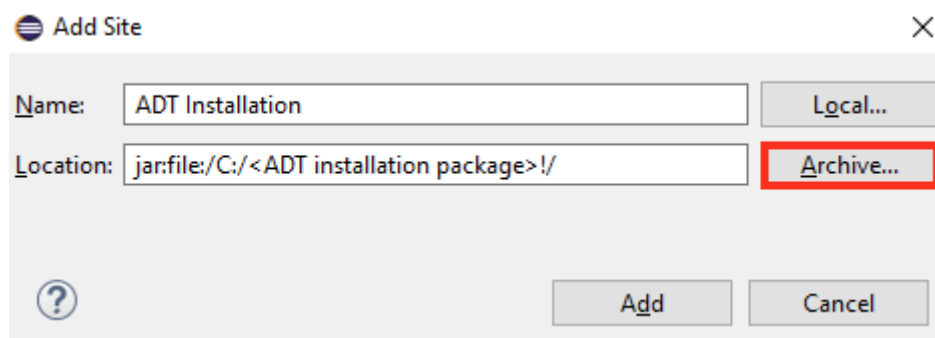
Procedure

1. Download the new version of the ABAP Development Tools package from the SAP Support Portal to a location of your choice.

→ Tip

In case of the downloaded archive has the same name as the former archive, you can add the major and minor version to the name of the downloaded archive. So that you do not need to replace the former archive. This enables you to revert the update if it is required.

2. Configure the new archive as an update site.
 - a. In the menu bar, select **Windows > Preferences**.
 - b. In the Preferences window, select the **Install/Update > Available Software Sites**.
 - c. To add the new archive, select the **Add... > Archive...** button to specify the location and enter a name for your local software site.



A software site that is located in the local file directory is specified by: `jar:file:/<drive>:/<directory_with_zipped_content>!/`

3. Trigger the update by selecting the menu entry **Help > Check for Updates**.

6.3 Recommendations for the System Administrator

The [Installation Steps \[page 27\]](#) above describe how to install all front-end components that are required to run ABAP Development Tools (ADT) on a local machine.

In addition, SAP system administrators or IT experts can build their own Eclipse IDE package, containing ADT. This package can be distributed to the ABAP developers using a standard distribution process.

❖ Example

If ABAP developers in your company, have no permission to install ADT on their local machines, this option enables you to build Eclipse IDE packages containing ADT which can be distributed using the distribution process of your company.

To create the Eclipse IDE package for central distribution, you have the following options:

- [Manual Building of a Distributable Eclipse IDE Package \[page 34\]](#): You want to define the configuration and creation of your Eclipse IDE package step-by-step.
- [Automated Building of a Distributable Eclipse IDE Package \[page 36\]](#): You want to automate the configuration and creation of your Eclipse IDE package.
- [Updating an Already Distributed Eclipse IDE Package \[page 43\]](#): You want to update an Eclipse IDE package which has already been distributed within your company.

6.3.1 Manual Building of a Distributable Eclipse IDE Package

You want to build an Eclipse IDE package, that is based on an existing Eclipse IDE package and contains ABAP Development Tools features, step-by-step. This package can then be centrally distributed within your company.

Prerequisites

Download and extract an Eclipse IDE package (for example, Eclipse IDE for Java Developers) or install an SAP HANA Studio. Herein, install the ADT features as described [above \[page 27\]](#).

The Eclipse IDE that has been previously installed needs to be closed.

i Note

To avoid unexpected behavior of the Eclipse IDE, do not work in folders that require specific write authorizations on your local machine. Such a folder would be, for example, *Program Files* on Microsoft Windows™.

Context

You want to manually prepare an Eclipse IDE package step-by-step for central distribution within your company.

→ Recommendation

SAP recommends to use manual building before you start using the [automated option \[page 36\]](#).

Procedure

1. Navigate to the directory where you have extracted the Eclipse IDE package and have installed the ADT features.
2. Configure the default values for various preferences as follows:

- a. Open the `eclipse.ini` file with a text editor.
- b. After the `--launcher.appendVmargs` statement, ...

Note

To ensure that user-specific configuration data is **not** overwritten with the next update, define the configuration area and the location of the instance area (workspace) explicitly.

For more information, see:

- [Eclipse Multi-User Installs](#)
- [The Eclipse runtime options](#)

1. Define the configuration area.

Sample Code

```
-configuration
@user.home\AppData\Local\ADT\configuration
```

2. Define the instance area.

Sample Code

```
-data
@user.home\AppData\Local\ADT\workspace
```

- c. Save your changes.
3. [Optional:] Configure a default proxy as follows:

To define the proxy configuration of the Eclipse IDE using a configuration file, proceed as follows:

- a. Navigate to the directory where you have extracted the Eclipse IDE package and have installed the ADT features.
- b. Open the `eclipse.ini` file with a text editor.
- c. At the beginning of the file, insert the following code snippet:

Source Code

```
-pluginCustomization
plugin_customization.ini
```

- d. Save your changes.
- e. Create a new file named `plugin_customization.ini` with a text editor and save it in the same folder as the `eclipse.ini` file.
- f. Insert the following code snippet:

Source Code

```
org.eclipse.core.net/proxyData/HTTP/host=<your_proxy_host>
org.eclipse.core.net/proxyData/HTTP/port=<your_proxy_port>
org.eclipse.core.net/proxyData/HTTPS/host=<your_proxy_host>
org.eclipse.core.net/proxyData/HTTPS/port=<your_proxy_port>
org.eclipse.core.net/systemProxiesEnabled=false
```

- g. Add the values for the proxy host and proxy port.
- h. Save your changes.

i Note

If there are no folders upon restart of the Eclipse IDE, preconfigured folders are used or created.

4. Provide the Eclipse IDE package to your IT organization for distribution.

Results

You have manually created a preconfigured Eclipse IDE package, that contains ADT features.

This package can, for example, be compressed, and centrally distributed to ABAP developers through the distribution process of your company.

i Note

ABAP developers can change the predefined configuration in the preferences of the Eclipse IDE. These changes are stored in their instance area or configuration area. Consequently, these preferences are **not** overwritten with the next update.

Related Information

[Prerequisites \[page 24\]](#)

[Automated Building of a Distributable Eclipse IDE Package \[page 36\]](#)

6.3.2 Automated Building of a Distributable Eclipse IDE Package

You want to build an Eclipse IDE package, that is based on an existing Eclipse IDE package and contains ABAP Development Tools features, in an automated way, using an Ant script. This package can then be centrally distributed within your company.

Prerequisites

- Download and extract an Eclipse IDE package (for example, Eclipse IDE for Java Developers) from <http://www.eclipse.org> or install an SAP HANA Studio.

i Note

To ensure that the added features will be located inside the Eclipse IDE package, do **not** work in folders that require specific write authorizations on your local machine. Such a folder would be, for example, *Program Files* on Microsoft Windows™.

For more information, see [Eclipse multi-user installs](#) .

- Download the ADT package from the [SAP Software Download Center](#) on the SAP Support Portal.

Context

You want to centrally distribute an Eclipse IDE package containing ABAP Development Tools in an automated way within your company.

i Note

To run an Ant script, you need an Ant Runner, that is included in any Eclipse IDE package.

Execution of the Ant script automatically accepts **all** questions regarding licensing, **without** further notification or information! It also triggers the installation of all the required [Eclipse features \[page 25\]](#).

The steps of the subsequent procedure are only relevant for Windows™.

Procedure

You can define your own Ant script step-by-step **or** use a [sample code \[page 51\]](#) and adopt it.

To develop your own Ant script, proceed as follows:

1. Create a file named `installSAPtools.xml` with a text editor in the location of your choice.

i Note

You can reuse this script for upcoming releases.

2. Insert the following code snippet:

Source Code

```
<project name="<your_project_name>" default="install">
  <target name="install">
    <!-- Insert your code here -->
  </target>
</project>
```

3. Within the `target` element, define the properties to declare the Eclipse IDE release you work with as well as the repositories from which you retrieve the required Eclipse features and ADT features that need to be installed as follows:
 - a. Specify the release of the used Eclipse IDE.

Add the `property` element and the following attributes and values:

- `name` with the value `eclipse.release`
- `value` with the name of the Eclipse release, for example `2022-06`.

i Note

The value of properties can be reused using the `${<property_name>}` placeholder.

≡ Sample Code

```
<property name="eclipse.release" value="2022-06"/>
```

- b. Configure the repositories that are used for downloading the Eclipse and ADT features.

Add another `property` element and the following attributes and values:

- `name` with the value `repo`
- `value` with the URLs of the Eclipse update site and the file location of the downloaded ADT package

i Note

You can add several values. Use commas to separate them.

≡ Sample Code

```
<property name="repo" value="jar:file:/C:/<ADT package>!/,http://download.eclipse.org/releases/${eclipse.release}"/>
```

- c. Configure the installable units of Eclipse (in short "iusRequiredEclipseFeatures") to define which Eclipse features are to be installed from the Eclipse update site by your Ant script.

Add the `property` element and the following attributes and values:

- `name` with the value `iusRequiredEclipseFeatures`
- `value` with the feature ID of the Eclipse feature

For more information, see [Eclipse features \[page 25\]](#).

≡ Sample Code

Sample code snippet that contains the feature IDs required for ADT:

```
<property name="iusRequiredEclipseFeatures"
  value="org.eclipse.emf.databinding.edit.feature.group,
  org.eclipse.emf.query.feature.group,
  org.eclipse.emf.workspace.feature.group,
  org.eclipse.emf.validation.feature.group,
  org.eclipse.graphiti.feature.feature.group,
  org.eclipse.wst.ws_ui.feature.feature.group,
  org.eclipse.zest.feature.group"/>
```

- d. Configure the installable units of ADT (in short "iusADT") to define which ADT features are to be installed by your Ant script.

Add the `property` element and the following attributes and values:

- `name` with the value `iusADT`
- `value` with the name of the relevant ADT feature groups

Sample Code

Sample code snippet that contains the plug-in IDs of the ADT features:

```
<property name="iusADT" value="com.sap.adt.tools.bopf.feature.group,
  com.sap.adt.pitools.tlf.feature.group,
  com.sap.adt.core.feature.group,
  com.sap.adt.tools.hana.feature.group,
  com.sap.adt.wda.core.feature.group"/>
```

Note

You can add several values. Use commas to separate them.

The following table provides you an overview of the feature IDs and ADT features to be installed:

Value	Description
<code>com.sap.adt.tools.bopf.feature.group</code>	ABAP Business Object Tools
<code>com.sap.adt.pitools.tlf.feature.group</code>	ABAP Enterprise Services And Integration Development Tools
<code>com.sap.adt.core.feature.group</code>	ABAP Core Development Tools
<code>com.sap.adt.tools.hana.feature.group</code>	ABAP Development Tools for SAP HANA
<code>com.sap.adt.wda.core.feature.group</code>	ABAP Development Tools for Web Dynpro

4. Within the `target` element, define how to run the installation of the Eclipse and ADT features by adding the following code snippet:

For more information, see [Installing software using the p2 director application](#).

Source Code

```
<java classname="org.eclipse.equinox.launcher.Main" failonerror="true">
  <classpath>
    <fileset dir="plugins">
      <include name="org.eclipse.equinox.launcher_*.jar"/>
    </fileset>
  </classpath>
  <arg value="-application"/><arg
value="org.eclipse.equinox.p2.director" />
  <arg value="-repository"/><arg value="\${repo}" />
  <arg value="-installIU"/><arg value="\${iusRequiredEclipseFeatures}" />
  <arg value="-installIU"/><arg value="\${iusADT}" />
</java>
```

5. [Optional:] If you want to set certain preferences, such as proxy settings, add the `propertyfile` element within the target element and define access for default values of various preferences.

i Note

ABAP developers can change the preferences at any time. These changes are stored in their instance area or configuration area. Preferences that are changed in the `plugin_customization.ini` are considered with a lower priority.

- a. To make the script generate the `plugin_customization.ini`, add the following code snippet:

Source Code

Sample code snippet which contains various preferences:

```
<propertyfile file="./plugin_customization.ini">
  <entry key="org.eclipse.core.net/proxyData/HTTP/host"
value="<proxy_host>"/>
  <entry key="org.eclipse.core.net/proxyData/HTTP/port"
value="<proxy_port>"/>
  <entry key="org.eclipse.core.net/proxyData/HTTPS/host"
value="<proxy_host>"/>
  <entry key="org.eclipse.core.net/proxyData/HTTPS/port"
value="<proxy_port>"/>
  <entry key="org.eclipse.core.net/systemProxiesEnabled"
value="false"/>
  <entry key="org.eclipse.equinox.p2.ui.sdk.scheduler/enabled"
value="false"/>
</propertyfile>
```

The following table provides you an overview of the preferences to be enabled or disabled:

Key	Value	Description
<code>org.eclipse.core.net/systemProxiesEnabled</code>	<code>true false</code>	Enables/disables the usage of the proxy settings, that are defined by the operating system
<code>org.eclipse.equinox.p2.ui.sdk.scheduler/enabled</code>	<code>true false</code>	Enables/disables automatic check for updates on startup of the Eclipse IDE

6. Define the location of the instance area (workspace) and configuration area as follows:
 - a. Within the target element, add the `replace` element and add the following code snippet:

i Note

The `replace` element defines how to search, replace, and add content within the `eclipse.ini` file. If the content to be replaced cannot be found, execution is terminated with an error.

In SAP HANA Studio, the file with the content to be replaced is named `hdbstudio.ini`.

Sample Code

The `replacetoken` element defines the value to be replaced. The `replacevalue` element defines the new value to be added.

```
<replace file="./eclipse.ini" failOnNoReplacements="true">
<replacetoken>--launcher.appendVmargs</replacetoken>
<replacevalue>--launcher.appendVmargs
-configuration
@user.home\AppData\Local\ADT\configuration
-data
@user.home\AppData\Local\ADT\workspace
-pluginCustomization
plugin_customization.ini
</replacevalue>
</replace>
```

- b. Within the `replacevalue` element, define the location of the instance area and configuration area as well as the reference for the defined `plugin_customization.ini` file.

Note

To ensure that user-specific configuration data is not overwritten with the next update, define the configuration path and the location of the installation area (workspace) explicitly.

For more information, see:

- [Eclipse Multi-User Installs](#)
- [The Eclipse runtime options](#)

- Define the folder to be used as configuration area.

Sample Code

```
-configuration
@user.home\AppData\Local\ADT\configuration
```

- Define the folder to be used as an instance area.

Sample Code

```
-data
@user.home\AppData\Local\ADT\workspace
```

- If you have defined a `plugin_customization.ini` file, define the path to the corresponding `plugin_customization.ini` file.

Sample Code

```
-pluginCustomization
plugin_customization.ini
```

7. After the `replace` element, add the following code snippet to remove all update sites from the distributable Eclipse IDE package.

Sample Code

```
<delete>
  <fileset dir="./p2/org.eclipse.equinox.p2.engine/profileRegistry"
    includes="**/*.repository.prefs" />
</delete>
```

8. Manually copy the `installSAPtools.xml` file containing the Ant script into the same directory where you have downloaded and prepared the Eclipse IDE package.
9. Open a new command line and navigate to the directory of the Eclipse IDE package.
10. Execute the Ant script by triggering it from the command line.

Source Code

Sample for a command in the command line:

```
.\eclipse.exe -nosplash -application org.eclipse.ant.core.antRunner -f
installSAPtools.xml
```

Results

The command starts the Eclipse Ant runner, that uses the script to create a preconfigured Eclipse IDE package, that contains the ADT features.

This package can, for example, be compressed, and centrally distributed to ABAP developers through the distribution process of your company.

→ Recommendation

SAP recommends to create a copy of the newly created Eclipse IDE package for testing the result of the script before distribution. Otherwise, any user-specific or workspace-specific settings might become part of the distributed package.

Related Information

[Updating an Already Distributed Eclipse IDE Package \[page 43\]](#)

[Apache Ant™ Manual](#)

[Installation Steps \[page 27\]](#)

[Prerequisites \[page 24\]](#)

[Disclaimer \[page 6\]](#)

6.3.3 Updating an Already Distributed Eclipse IDE Package

Prerequisites

As a system administrator, you have already generated and distributed an Eclipse IDE package containing ADT within your company.

Your IT organization has to remove the former Eclipse IDE package before installing a new one.

i Note

Do not delete the instance area (workspace) or configuration area. Keep their folders and names consistent. Otherwise, ABAP developers might lose their preferences or workspace.

The location and name of the Eclipse IDE package itself can vary.

Context

You want to update to a newer ADT version or Eclipse release that has already been distributed.

Procedure

1. Download and extract the newest version of the
 - Eclipse IDE package (for example, Eclipse IDE for Java Developers) or install an SAP HANA Studio.
 - ADT package from the SAP Support portal.
2. Depending on your choice, proceed as follows:
 - For manual building, follow the steps described in chapter [Manual Building of a Distributable Eclipse IDE Package \[page 34\]](#), and continue with step 4.
 - For automated building, adjust the `eclipse.release` attribute and the corresponding repositories in your Ant script.
3. Rerun the Ant script.
4. Delete the former installation and distribute the new Eclipse IDE package.

i Note

If the configuration area and instance area (workspace) are set to a path **within** the Eclipse IDE package directory, you will lose [user-specific configuration data \[page 35\]](#).

Results

The updated Eclipse IDE package is available to your ABAP developers.

ABAP Development Tools runs on the latest version.

Related Information

[Automated Building of a Distributable Eclipse IDE Package \[page 36\]](#)

7 Post-Installation

7.1 [Optional] Home Configuring SAP GUI for Java

Context

If you are using SAP GUI for Java, ensure that the qualified paths are defined for the configuration files in the preferences of SAP GUI for Java.

In addition, you can use the following VM parameters in the `eclipse.ini` file to configure the installation path of SAP GUI for Java :

VM Parameter	Default Value	Description
<code>com.sap.adt.sapgui.javaGuiInstallationPath=<path></code>	null	Installation path of the SAP GUI for Java in order to specify the location in case if it is not automatically detected

Procedure

In the Eclipse installation folder, open the `eclipse.ini` file.

At the end of the existing command lines, add the support-relevant VM parameters starting with “-D”.

i Note

Add the specific value after the equal mark at the end of the VM parameter.

Example

The following example is taken from a Mac OS installation:

```
-Dcom.sap.adt.sapgui.javaGuiInstallationPath=/Applications/SAP Clients/SAPGUI  
7.50/
```

7.2 [Optional] Configuring VM Parameters

General Procedure

1. In the Eclipse installation folder, search and open the `eclipse.ini` file.
2. At the end of the existing command lines, add the VM parameter starting with "-D".

i Note

Add the specific value after the equal mark at the end of the VM parameter.

3. Save your changes.
4. Restart your IDE.

The IDE is restarted and the VM parameters are effective now.

🔗 Example

☁ *Cloud* This is how the VM parameter entry in the `eclipse.ini` for enabling a cloud pilot project looks like:

```
-Dcom.sap.adt.tools.cloud.authentication.ui.cloud.pilot.project=true
```

7.3 [Optional] Configuring Accessibility Features of ADT

Eclipse and ABAP Development Tools (ADT) offer various accessibility features for use with a screen reader, such as bigger fonts, higher contrasts, for example. Some of these features are active by default; some have to be configured.

Procedure

To find more information, open the [▶ SAP - ABAP Development User Guide ▶ Concepts ▶ Accessibility Features in ADT ▶ Help Contents](#) in your Eclipse-based IDE.

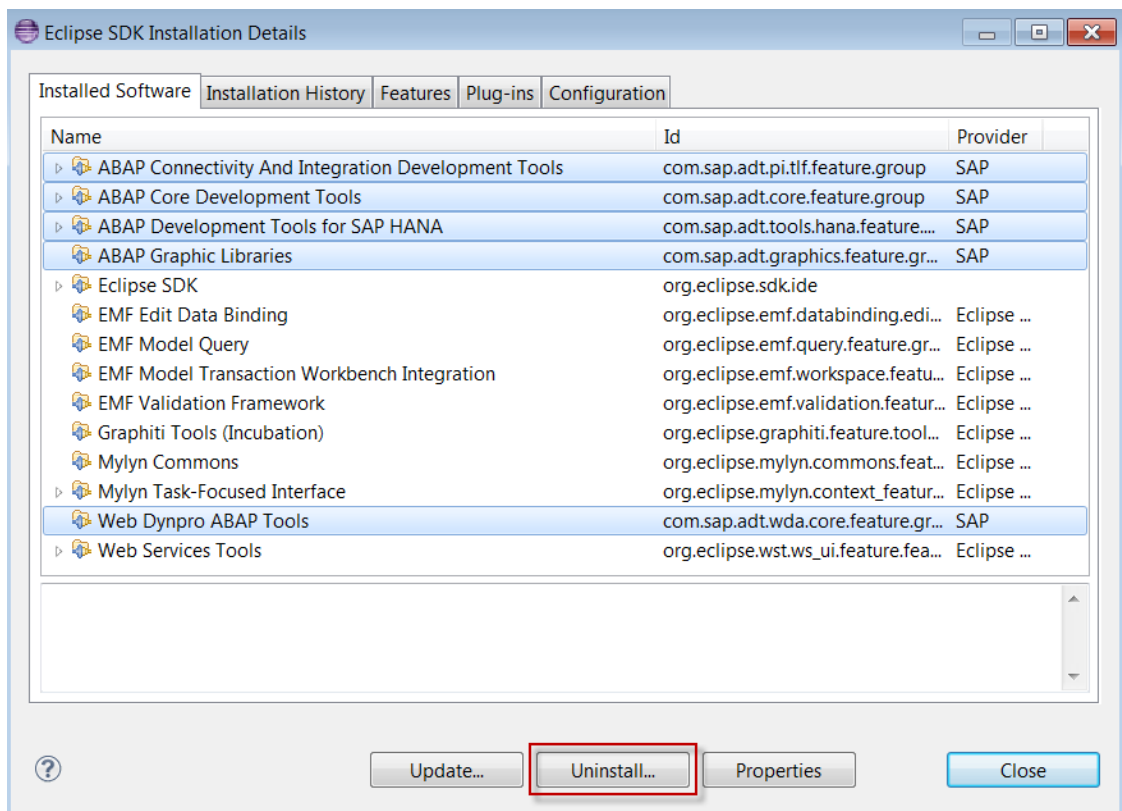
8 De-Installation

Context

To uninstall all front-end components required for running ABAP Development Tools, proceed as follows:

Procedure

1. To uninstall the ABAP Development Tools package, proceed as follows ...
 - a. Launch your Eclipse IDE – if this has not already been done.
 - b. Choose the menu ► *Help* ► *About...* ►
 - c. Click the *Installation Details* button.
 - d. Select the corresponding nodes, such as **ABAP Core Development Tools, etc.**
 - e. Click the *Uninstall...* button.



Uninstalling ABAP Development Tools

The *Uninstall Details* page displays a list of feature groups that will be uninstalled.

- f. To start the uninstall process, choose *Finish*.

2. [Optional-] If you have installed the Microsoft Visual C++ Runtime manually, you need to remove it.

	Microsoft Visual C++ 2013 Redistributable (x64) - 12.0.40660	20,6 MB
	12.0.40660.0	11.04.2019
	<input type="button" value="Modify"/>	<input type="button" value="Uninstall"/>

Removing Microsoft runtime DLLs

Related Information

[ABAP Development Tools Support Platform Matrix \[page 17\]](#)

9 Support Case

9.1 Providing Additional Information for Analyzing an Error

The Trace Configuration enables you to provide SAP additional information in case of errors in locations such as Debugger, Coverage, ABAP source code, etc.

Context

You set the Trace Configuration in the [Preferences](#) depending on the error location, proceed as follows:

Procedure

1. In the Eclipse workbench, choose the menu **▶ Window ▶ Preferences ▶**.
2. In the [Preferences](#) window, select **▶ ABAP Development ▶ Trace Configuration ▶**.
3. In the [Level](#) list box, choose [Info](#).
4. In the [Location](#) area, open the ABAP Development Tools tree and choose the corresponding entry, for example, **▶ Profiler ▶ UI ▶**.
5. Confirm with [OK](#).

Results

Now, the Eclipse-based IDE traces additional information which you can collect and provide as a ZIP file to the SAP support.

i Note

Only enable the Tracing Configuration in case of a specific error. Because, tracing is intense in memory consumption, deselect all locations after creating the support information file. Otherwise your client might work slower or after the next restart of the client, a corresponding dialog is opened.

Related Information

[Getting Support Information \[page 50\]](#)

9.2 Getting Support Information

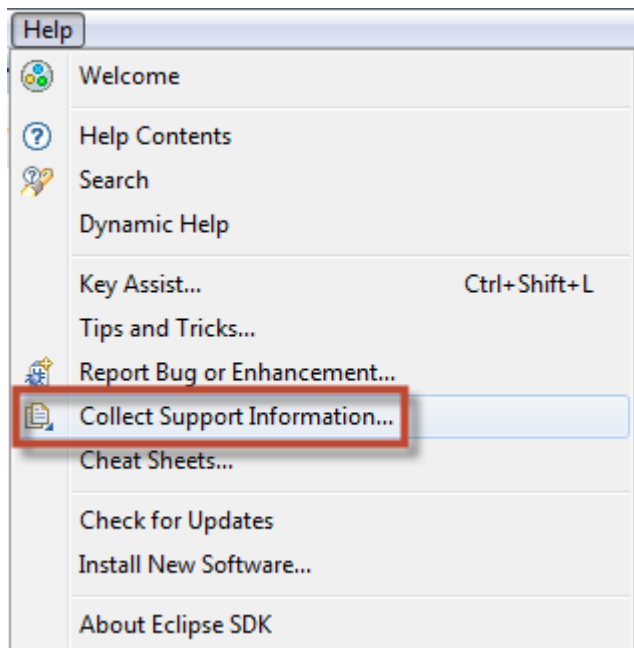
Context

Should errors occur in connection with ABAP Development Tools for which you, as an SAP customer, require more detailed support from SAP, it is of considerable importance that you provide all the required data for such a support case in order to speed up the troubleshooting process. For this purpose, ABAP Development Tools provides a comfortable tool support solution. With a few simple mouse clicks, you can generate a support information file. This file contains all the relevant data for your IDE or GUI version, as well as information on preference settings and technical system environment data. You can then add this support file to your OSS problem message as an attachment.

To collect the support information, proceed as follows:

Procedure

1. In the Eclipse workbench, choose the menu **Help > Collect Support Information...**



Launching the Support Information Collection using the menu

2. In the dialog box that appears, specify the location of the support file and choose **Finish**.

10 Additional Information

10.1 Installing Plug-ins from Third Parties

Your installation of Eclipse can be enriched with additional plug-ins from various providers (so called third party plug-ins) alongside ABAP Development Tools (ADT).

Risks

These plug-ins can gain control over your client installation or even your complete front-end PC.

Protection Measures

You should carefully decide on plug-ins that you are going to install. For this, only use plug-ins from trusted sources and which are using signatures.

→ Recommendation

If you do not trust third party plug-ins for Eclipse in general, we recommend managing this via your corporate requirements.

10.2 Sample Code for Building an Ant Script

The following sample code can be used as an example how to develop an Ant script for automated building of a distributable Eclipse IDE package.

i Note

To make the sample code executable, you need to adopt the relevant placeholders and the name of used elements.

≡ Sample Code

```
<project name="<prepareEclipse>" default="install">
  <target name="install">
    <property name="eclipse.release" value="<eclipse_release>"/>
    <property name="repo" value="jar:file:/C:/<ADT_package>!/,http://
download.eclipse.org/releases/${eclipse.release}"/ />
```

```

    <property name="iusRequiredEclipseFeatures"
      value="org.eclipse.emf.databinding.edit.feature.group,
      org.eclipse.emf.query.feature.group,
      org.eclipse.emf.workspace.feature.group,
      org.eclipse.emf.validation.feature.group,
      org.eclipse.graphiti.feature.feature.group,
      org.eclipse.wst.ws_ui.feature.feature.group,
      org.eclipse.zest.feature.group"/>
    <property name="iusADT" value="com.sap.adt.tools.bopf.feature.group,
      com.sap.adt.pitools.tlf.feature.group,
      com.sap.adt.core.feature.group,
      com.sap.adt.tools.hana.feature.group,
      com.sap.adt.wda.core.feature.group"/>
  >
  <java classname="org.eclipse.equinox.launcher.Main"
failonerror="true">
    <classpath>
      <fileset dir="plugins">
        <include name="org.eclipse.equinox.launcher_*.jar"/>
      </fileset>
    </classpath>
    <arg value="-application"/><arg
value="org.eclipse.equinox.p2.director" />
    <arg value="-repository"/><arg value="${repo}" />
    <arg value="-installIU"/><arg value="$
{iusRequiredEclipseFeatures}" />
    <arg value="-installIU"/><arg value="${iusADT}" />
  </java>
  <propertyfile file="./plugin_customization.ini">
    <entry key="org.eclipse.core.net/proxyData/HTTP/host"
value="<proxy_host>"/>
    <entry key="org.eclipse.core.net/proxyData/HTTP/port"
value="<proxy_port>"/>
    <entry key="org.eclipse.core.net/proxyData/HTTPS/host"
value="<proxy_host>"/>
    <entry key="org.eclipse.core.net/proxyData/HTTPS/port"
value="<proxy_port>"/>
    <entry key="org.eclipse.core.net/systemProxiesEnabled"
value="false"/>
  </propertyfile>
  <replace file="./eclipse.ini" failOnNoReplacements="true">
    <replacetoken>--launcher.appendVmargs</replacetoken>
    <replacevalue>--launcher.appendVmargs
      -configuration
      @user.home\AppData\Local\ADT\configuration
      -data
      @user.home\AppData\Local\ADT\workspace
      -pluginCustomization
      plugin_customization.ini
    </replacevalue>
  </replace>
  <delete>
    <fileset dir="./p2/org.eclipse.equinox.p2.engine/profileRegistry"
includes="**/*.repository.prefs" />
  </delete>
</target>
</project>

```

Related Information



[Additional Information \[page 51\]](#)

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