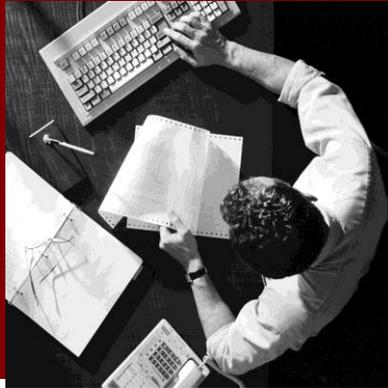


Installation Guide: SDK



SAP[®] ME Software

Development Kit 6.1

Target Audience

- Developers

Document Version 1.0 – October 26, 2012

Typographic Conventions

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

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

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History of Changes

The following table provides an overview of the most important changes that were made in the latest versions.

Version	Important Changes
1.0	Initial revision

1 Installation Overview

The SAP ME Software Development Kit (SDK) is a set of tools and documentation that can be used to develop and build extensions for the SAP Manufacturing Execution (ME) application. This guide provides information about installing and configuring the SDK development environment, which includes an IDE, integrated build tool, source control client, and runtime system for testing extensions.

It is worthy to note that the local development landscape also includes the installation of a stand-alone build tool instance known as the Central Build Instance (CBI). The CBI is used to create ME releases that can be shipped to test and production systems. Each software vendor involved in the project must install their own CBI. See the *SAP ME Build Tool Installation Guide: Central Build Instance* for information about the CBI.

1.1 Platform Availability

The following table lists version requirements for external software products used by the SDK:

Component	Version
OS	Windows 7 (64bit)
JDK	Java 2 Standard Edition 1.6 update 21 or higher 1.6 release (32 bit)
Application Server (AS Java)	SAP NetWeaver 7.30 Application Server Java SP8 or higher SP with MaxDB SAP NetWeaver 7.31 Application Server Java SP5 or higher SP with MaxDB
ME Application	6.1.0.3 or higher 6.1.x release
ME Database	See the SAP ME 6.1 Product Availability Matrix for required database versions
Source Control	Any

The following table defines the minimum hardware requirements depending on your database configuration:

Configuration	Free Disk Space	Physical Memory	CPU
Locally hosted database	20G	8G	2 Ghz
Shared (remote) database	15G	8G	2 Ghz

1.2 Prerequisites

The following information and software should be available prior to creating a new installation of the SDK:

- Vendor ID assignment
- ME core and legacy Software Component Archives
- ME Configuration Wizard (CTC) Software Component Archive
- Developer Workplace for NetWeaver 7.3 installation media
- SAP NetWeaver 7.30 SP8 / 7.31 SP5 or higher SP with MaxDB installation media

- Installed Java Development Kit (JDK) 1.6 update 21 or higher 1.6 release (32 bit)

1.2.1 Vendor ID

A team ID, referred to as the vendor ID, must be assigned by the project manager to each member of the local development team. If more than one development team is participating in the project, then each team must have a unique ID assignment.

 The same ID value must be used by all members of your local development team (i.e. you should not create your own ID). In addition, the vendor ID is very difficult to change after development has started, and so its value should be chosen with the upmost care. The ID "sapdev" is reserved for SAP Custom Development.

On a technical level the vendor ID is a namespace qualifier that is used by the embedded SDK build tool to package development artifacts and to create unique names for the resulting build archives. This insures that artifacts such as Java classes and the archives in which they are packaged are globally unique with respect to those created by other software vendors.

If you have not been assigned a vendor ID, contact your project manager so that one can be created. Note that the installer will only allow a vendor ID value that conforms to the following restrictions:

- Globally unique for all software vendors participating in the project
- Contains only lower case alphanumeric characters, including underscore
- Does not begin with an underscore or number
- Is between two and sixteen characters long

1.2.2 ME Software Component Archives

As of SAP ME 6.1 shipment using the Software Update Archive (SUA) has been replaced with the standard Software Component Archive (SCA). The SAP MFG EXECUTION LEGACY 6.1 and SAP MFG EXECUTION CORE 6.1 software components are installation pre-requisites and are made available for download from [SAP Service Marketplace](#) at the following location:

Software Downloads->Support Packages and Patches->A - Z Index->M->SAP MFG Execution->SAP MFG Execution 6.1->Comprised Software Component Versions

The SDK installer will prompt you to choose the legacy and core SCAs and automatically import them into the SDK installation.

 The *SAP ME Build Tool User Guide* is delivered by the installation and describes SCA import as well as other build system operations and concepts.

The installer will make a copy of both archives and place them in the `<InstallDir>\import\sca` directory. Once installation is completed you can remove the downloaded copies from the download location.

1.2.3 ME Configuration Wizard (CTC)

SAP ME 6.1 is installed using the NetWeaver Configuration Wizard (CTC) for SAP ME. The Configuration Wizard is shipped as a software component that must be deployed in order to complete the SAP ME installation and configuration.

The configuration wizard is made available as a software component archive on [SAP Service Marketplace](#) at the following location:

Software Downloads->Support Packages and Patches->A - Z Index->M->SAP MFG Execution->SAP MFG Execution 6.1->Comprised Software Component Versions

Download the SAP ME CTC software component `SAPMECTC<XX>.sca` to a temporary location so that it is available during the SAP ME installation described later in this guide.

1.2.4 Installing NetWeaver Application Server

NetWeaver application server can be installed in both development and productive modes. It is important that you perform the development mode installation since it is tailored for efficiency to run on a single developer machine. You install the application server in development mode by performing the Developer Workplace installation for NetWeaver 7.3. Note that while the Developer Workplace installer allows you to install the SAP NetWeaver Developer Studio IDE in addition to the application server, you need only perform the application server installation.

You can find the Developer Workplace installation guide as well as other required documentation on SAP Service Marketplace by going to <http://service.sap.com/installnw73>.

1.2.5 Installing the JDK

The embedded build tool and IDE require the Java 1.6 32 bit JDK. The SDK installer will prompt you to specify the location of the JDK, and so this must be downloaded and installed prior to installation. The latest 1.6 JDK is available for download at <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.

2 Installation

 Before continuing with the installation, make sure you have fulfilled all installation prerequisites and read any SAP Notes related to the SDK version you are installing. SAP ME SDK notes can be accessed on Service Marketplace using the MFG-ME-SDK component.

To install the SDK, run the setup file and follow the on-screen instructions. Once completed proceed to *Post Installation Steps*.

3 Post Installation Steps

There are several steps that must be performed after the installer has finished, including:

1. Configure eclipse.exe compatibility mode
2. Configure the Eclipse Workspace
3. Install SAP ME

The SDK will be ready for developing extensions once these steps are completed.

3.1 Configure Compatibility Mode

Several NetWeaver specific Eclipse views will not be available if Eclipse is run directly on Windows 7. You must set Windows XP compatibility mode on the Eclipse executable (eclipse.exe) to correct this problem. To set compatibility mode, right click on `<InstallDir>\eclipse\eclipse.exe` and select *Properties*. On the Compatibility tab, enable *Run this program in compatibility mode for* and select *Windows XP (Service Pack 3)*.

3.2 Configure the Eclipse Workspace

The SDK installation includes a preconfigured workspace and several default projects. Before you can begin developing extensions you must complete the workspace configuration by importing the default projects and configuring the Ant View so that build system targets can be executed from within Eclipse.

 If you are not familiar with Eclipse concepts, please refer to the online help by selecting *Help->Help Contents* from the main menu.

3.2.1 Import Default Projects

There are several default projects provided with the installation that allow you to quickly work with different types of ME extensions. Before these projects can be used they must be imported into the workspace. Use the following steps to import the default projects into the workspace:

1. Run Eclipse and proceed to the Workbench.
2. Go to *File->Import* and select *General->Existing Projects into Workspace* and click *Next*.
3. Select *Browse* and choose the `<InstallDir>\workspace` directory.
4. Several projects will be listed in the projects list. Accept all projects and click *Finish*.

 Do not select the option *Copy projects into workspace*.

3.2.2 Configure the Ant View

1. On the right side of the workbench you will see the *Ant View* displayed. Click the *Add Buildfiles* button on the *Ant View* toolbar.
2. Select `Build Resources/script/build.xml` file and click *OK*. All Ant target defined for the embedded build tool will be displayed.

3.2.3 Connect to SAP AS Java

The SDK includes two Eclipse plug-ins that allow you to interact with the NetWeaver cluster and application server. Before they can be used you must add the SAP system to the *SAP AS Java* configuration. Perform the following steps to add the SAP AS system.

1. Open SAP MMC and insure all processes in the NetWeaver cluster are started.
2. In Eclipse menu choose *Window -> Preferences*.
3. Select Item *SAP AS Java*.
4. Click *Add new SAP System*.
5. Enter the *Instance Hostname* and *Instance Number*.

 If you have a local NW installed the default values are the following:

Instance Hostname: **localhost**

Instance Number: **00**

6. The new SAP system should appear in the list. Click *Ok*.

3.2.4 Configure NetWeaver Deploy Views

NetWeaver Deploy views are used to deploy and undeploy software components into the application server. Use the following steps to add deploy views to the Eclipse Java EE perspective:

1. Open the Eclipse Java EE perspective
2. Open *Window->Show View->Other->Deploy View* and add each of the following views:
 - a. Deploy View
 - b. Deploy View Console
 - c. Repository View
 - d. Undeploy View

3.3 Install SAP ME

You must install and configure SAP ME before you can deploy and test your extensions. Refer to the *SAP ME* and *SAP ME Scripts* installation topics in the *SAP ME 6.1 Installation Guide* located on [SAP Service Marketplace](#) at

Software Downloads->Support Packages and Patches->A - Z Index->M->SAP MFG Execution->SAP MFG Execution 6.1

Note: You may use the eclipse Deploy View to deploy SAP ME software components.

3.5 Post-deployment Configuration

3.5.1 Configure SAP ME Application Data

Create an ME Test Site

Whether you are using a shared development ME database or are using a local database, it is a good practice to create a new ME site in which you can test your extensions. This is especially true when using a shared development database since each site encapsulates all ME configuration and production data, cleanly separating your data from the data created by other developers.

 The ME global site should not be used for development testing. This site is a special site that is typically only used to specify global configuration settings across all sites.

Use the following procedure to create and configure a development test site:

1. Access the SAP ME login page by navigating to
`http://localhost:<AS_Java_HTTP_port>/manufacturing`
2. Log in using your SAP ME user login ID and password.
3. Run the *Site Maintenance* activity under *MAINTENANCE->SYSTEM CONFIGURATION* in the activity tree.
4. Enter a test site ID in the *Site* field and set the time zone according to your time zone.
5. Click *Save*. This will trigger the IDAT process for the new site, which can take several minutes.
6. Navigate to NetWeaver Administrator:
`http://localhost:<AS_Java_HTTP_port>/nwa`
7. Choose *Configuration -> Security -> Identity Management*.
8. Click the *Configuration* button.
9. Select the *User Admin UI* tab and click the *Modify Configuration* button.
10. In the Administrator-Managed Custom Attributes field, enter the following value:

SAPME:DEFAULT SITE
11. Save the configuration.
12. Log out and log back into NetWeaver Administrator.
13. Choose *Configuration -> Security -> Identity Management*.
14. Retrieve and select the SITE_ADMIN user.
15. On the *Details* panel select the *Customized Information* tab.
16. Click the *Modify* button and enter your test site into the DEFAULT SITE field. The next time you log into SAP ME you will be brought immediately to your test site.
17. Save the user details.

4 Uninstall

The following options are available during the un-installation process:

1. Full Uninstall
2. Partial Uninstall

If you select the **Full** uninstall option then all files will be removed by the installer **except** extension sources located under the `\extension` directory.

If you select the **Partial** uninstall option then several directories and files will not be removed so that you may install the SDK into the same location and reuse many of the existing files (see *Upgrade* for more information). Retained files include:

- Build configuration file: Upon reinstallation you will be prompted to reuse build configuration settings so that you do not have to enter them again
- Third party libraries: Any third party libraries that your extension require
- SCA/SEA: The core and legacy ME SCAs and external software vendor's SEAs
- Build export: Exported build results
- Extension sources

5 Upgrade

The SDK supports limited upgrade capability so that you can install a newer version into an existing installation location.

 The eclipse IDE, workspace, and SDK projects are removed and reinstalled during the upgrade process. Any custom settings you have applied will be lost.

You perform the following steps to complete the upgrade:

1. Uninstall the current installation using the **Partial** uninstall option (see *Uninstall* for more information).
2. Run the new installer choosing the existing installation location.
3. Complete all post installation steps as described previously in this guide.
4. If you are upgrading an SDK 5.2 installation you will need to perform additional steps as described in the SDK Implementation Guide *Appendix D: SDK 5.2 Migration*.

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