

Documentation and Test Catalog in order to complete the [JAVA-EE-NW 7.4 certification scenario based on SAP NetWeaver 7.4 SPS03 \(SAP JAVA HANA enabled\)](#)

[Introduction and Important Things to Know Before You Start](#)

It is assumed that you have a basic understanding of EE 5 concepts, hardware, software, operating systems and databases when reading this document.

This document will address the certification requirements for the **JAVA-EE-NW 7.4** integration scenario based on the [SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition](#) architecture.

With SAP NetWeaver 7.4, [SAP HANA](#) is now also supported in the SAP Java environment. You can newly install SAP NetWeaver Application Server Java 7.4 on SAP HANA or you can migrate the existing database to the new one. Before you can use AS Java systems on SAP HANA and also before the migration to SAP HANA, you need to update your AS Java systems to SAP NetWeaver 7.4 SP03. To implement SAP NetWeaver AS Java 7.4 on SAP HANA, you have the following options:

- 1) New installation
- 2) Classical database migration

More details about these installation options are available in the [End-to-End Implementation Roadmap for SAP NetWeaver AS Java](#) document.

SAP NetWeaver Application Server Java 7.4 provides the following key capabilities:

- ✓ **Develop** a [J2EE 1.4](#) and / or [EE 5](#) compliant application based on the Java EE standard, in addition to migrating existing J2EE applications.
- ✓ Implementation of the SAP Java Virtual Machine is called [SAP JVM](#). **SAP JVM is a certified Java SE 6 Virtual Machine (VM) and Java Development Kit (JDK)** based on the Oracle HotSpot technology and enhanced with several supportability features. It is built and supported by SAP and is available for all processor architectures and operating systems supported by SAP NetWeaver. It therefore provides a consistent configuration and behavior of essential VM functions. The SAP JVM aims to be a stable and high performance base for Java application servers, while supporting software developers and system administrators with useful features.
- ✓ **Connect** the SAP Java server to the **System Landscape Directory** of the [SAP NetWeaver SLD](#). A system landscape consists of a number of hardware and software components that depend on each other with regard to installation, software updates, and demands on interfaces.
- ✓ Make use of the [SAP NetWeaver Developer Studio](#) (see also **SAP note 1791485** why you need to install SAP NetWeaver Developer Studio from **SAP release 7.3...there is no installation file for SAP release 7.4**), SAP's Integrated Development Environment (IDE) for Java.
- ✓ You can also make use of the [SAP NetWeaver Development Infrastructure \(NWDI\)](#). The NWDI is designed for the development and maintenance of business applications in complex landscapes. It provides the services for all development steps that are part of the software life cycle: from the administrator creating the development landscape using the central and project-specific administration

of source files and archives of the developers, to consolidation and test phases of quality management, to the final delivery and production of support packages.

To briefly summarize, with the [Java EE 5 SAP 7.4 NetWeaver Application Server Java](#), you can develop Java EE applications based on Java EE 5 technology, in addition to migrating existing EE 5 / J2EE applications to the SAP platform, and have such applications certified by [SAP ICC \(Integration & Certification Center\)](#).

The certification process verifies that an existing J2EE 1.4 and / or EE 5 compliant application (your software product) that you either migrated or developed from scratch (J2EE 1.4 and / or EE 5 compliant application) runs on the SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition.

Migration is the process of taking an existing J2EE 1.4 and / or EE 5 compliant application running on another J2EE or EE 5 application server or an existing J2EE (1.3, 1.4), EE 5 SAP NetWeaver 7.1 and / or EE 5 SAP NetWeaver 7.2/7.3 application already running on a previous version of the SAP NetWeaver platform, and porting it on to the SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition.

Developing an EE 5 application from scratch will be relevant in the situation where you have no existing J2EE / EE 5 application to migrate. In this case you can use the SAP NetWeaver Developer Studio in order to develop a J2EE 1.4 and / or EE 5 compliant application.

In standard EE 5 / J2EE terminology, the EE 5 / J2EE enterprise archive file is considered the final EE 5 / J2EE product to be used as an application. The EAR file is prepared and deployed according to the [EE 5 specification](#).

In order to have your software product certified, the EE 5 application also known as an **EAR** file (J2EE / EE 5 enterprise archive file) needs to be converted to an **SCA (Software Component Archive)** file and has to be deployed on the SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition. In the SAP environment this converted EAR file is viewed as one software component. Thus, if you had more than one EE 5 application (several converted EAR files), then each EE 5 application (SCA file) would need to be certified separately, since every individual EAR / SCA file is equivalent to exactly one software component.

An EE 5 / J2EE enterprise application archive file (EAR) can consist of a WAR file (Web archives, for example servlets, JSPs, filters and listeners) and/or JAR (Enterprise Java Beans, for example entity, stateless session or message driven beans). These source or module projects are then deployed or published using SAP standard deployment tools, in order to generate an EE 5 application (EAR file) which when packaged as an SCA file can then be deployed with the **SAP Software Update Manager** (also called **SAP SUM** which replaces the Java Support Package Manager known as **SAP JSPM**, see also [SAP note 1589311](#) (you have access to the SAP note via the S user account you obtain by having purchased an SAP NetWeaver Developer User license, see details below) and the **SAP blog** -> <http://scn.sap.com/community/it-management/alm/software-logistics/blog/2012/11/07/software-update-manager-sum-introducing-the-tool-for-software-maintenance>).

You can also use the [SAP NetWeaver Developer Studio](#) to develop / migrate a Java application, but need to make sure the resulting EE 5 / J2EE enterprise application archive file (EAR) is packaged as an SCA file.

Details on how to package an EAR file into an SCA file can be found in [SAP note 1223957](#) (you have access to the SAP note via the S user account you obtain by having purchased an SAP NetWeaver Developer User license, see details below).

You can also develop an SAP [WebDynpro](#) application (Java Web Dynpro is a model-driven user interface technology with various backend options such as Business APIs, function modules, enterprise services, and Web services) and have this certified as an EE 5 application.

If you want you can also develop [JavaServer Faces \(JSF\) web applications](#). A JavaServer Face is a Web User Interface (UI) based on JSF technology. A JSF web application can also be deployed as an enterprise application archive (EAR) file and when packaged and deployed as an SCA file be certified.

Thus, for your product to be certified, you need to have a Java EE 5 application (**EAR** file), **delivered as an SCA file**.

EAR (your final EE 5 software application) = WAR and / or JAR

The **EAR** file is the software component which is part of your certifiable SCA file. Thus, your EAR file which must be converted into an SCA file (details how to do this are explained later in the document) is what we can certify.

For certification purposes, at least one SAP NetWeaver Developer User license per developer in your team will be mandatory in order to go through the certification process. Upon request, SAP can check if your company already has purchased named developer user licenses before you begin with your integration work.

Having the proper development environment installed before, during, and after successful deployment certification enables you to support your product running on the SAP NetWeaver 7.4 platform and also entitles you to have access to the SAP support infrastructure.

SAP support can be used to resolve technical issues encountered within SAP software or to obtain newer SAP support package stacks as they become available. For example, when you purchase a SAP NetWeaver Developer User license, you will:

- 1) Have access to the SAP support portal on the [SAP Service Marketplace](#). For example, in the SAP Support Portal, SAP customers can obtain their software via download, and also have access to other important information relating to SAP software.
- 2) Request a [development name space](#) for your Java development.
- 3) Have access to valuable information regarding [SAP SLD](#) (SAP System Landscape Directory).
- 4) Have access to SAP supported software covered under your license agreement.
- 5) Have access to SAP support packages as they become available.
- 6) Have access to SAP notes (they help you to analyze and solve technical problems).
- 7) Have the capability to open up a trouble ticket and submit it to SAP support in order to resolve SAP errors.
- 8) Have access to information regarding the [SAP Service- and Support Infrastructure](#).

Certification topics tested, covered, reviewed and discussed

Mandatory test criteria relevant for JAVA-EE-NW 7.4

- 1) A **SAP NetWeaver Developer User license** must be purchased. Contact icc@sap.com for licensing details.
- 2) The document with the filename **EE_5_Technical_Product_Profile.doc** must be filled out and will be reviewed and discussed with your designated integration consultant once the certification contract has been signed. The document describes both the system environment and the technical details of your EE 5 product which will be utilized during your integration work. Your designated integration consultant will send this document to you via e-mail. The file **EE_5_Technical_Product_Profile.doc** will go hand in hand with either the file **EE_5_Test_Report.doc** (certification test report not using SAP HANA) or **EE_5_Test_Report_oH.doc** (certification test report using SAP HANA).

Once the certification contract has been signed, your designated integration consultant will send one of the above mentioned test reports to you via e-mail. The test report is used to document the certification test and is filled out by SAP during the certification test process.

- 3) Your EAR file **must** be packed into an SCA file (your final EE 5 certifiable software application) and then deployed using either the **SAP Software Update Manager** (also called **SAP SUM** which replaces the Java Support Package Manager known as **SAP JSPM**) or the [SAP NetWeaver Developer Studio](#). See also [SAP note 1223957](#) (you have access to the SAP note via the S user account you obtain by having purchased an SAP NetWeaver Developer User license) for instructions how to assemble an SCA file. An undeployment test will also be conducted. The reason you need to pack an EAR file into the SAP proprietary SCA file format and then deploy / undeploy the SCA file is to meet and adhere to SAP support requirements. Your certified product will meet the [SAP Solution Manager Ready](#) status. [Read this in order to see how you can change the default preferences for the application server which the SAP NetWeaver Developer Studio uses when deploying applications.](#)

The EE 5 Application must be deployed during the certification test on an SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition (**Support Package Stack 3 or greater SP3**) running on an SAP supported 64 bit operating system, database and platform. See the following showing the SAP NetWeaver 7.4 general release date and Support Package Stacks available according to the SAP Product Availability Matrix (SAP PAM) after the general release date.

SAP Product Availability Matrix External View (Settings)

SAP NETWEAVER 7.4

General Information | Technical Release Information | SAP Software Download Center | System Data

Details & Dates | Related Product Versions | Support Package Stacks

Details for Product Version SAP NETWEAVER 7.4

Official Name: SAP NetWeaver 7.4
Product: SAP NETWEAVER
Type of Product Version: Standalone
Release Type: Standard
Current Status: Unrestricted available
Portfolio Category: Database and Technology > Appl. Development & Integrat. > NW Foundation Comp. and EhPs

Release Plan

Beta Shipment: 12/14/2012
Release to Customer: 05/10/2013
General Availability: 05/10/2013
End of Mainstream Maintenance: 12/31/2020 [Additional Information](#)

SAP Product Availability Matrix

Welcome Bernhard Weiss (Settings)
External View

SAP NETWEAVER 7.4

General Information | Technical Release Information | SAP Software Download Center | System Data

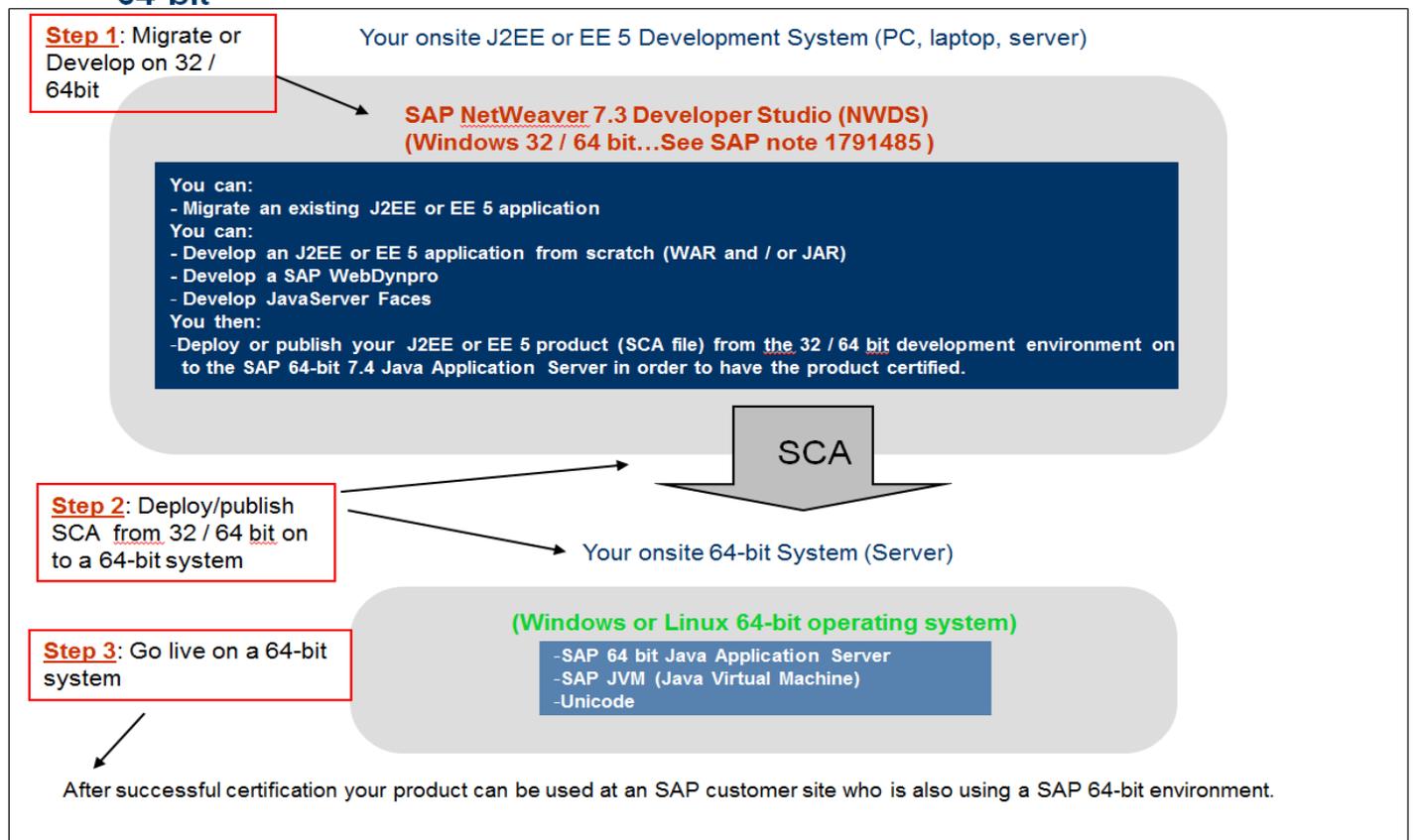
Details & Dates | Related Product Versions | **Support Package Stacks**

Support package stacks released after mainstream maintenance has ended are denoted by an asterisk (*) in the table. These support package stacks are only available as part of [extended maintenance](#). For more information about support package stacks and their schedules, see <https://service.sap.com/sp-stacks>.

Index	Stack	Release Information Note	Stack Status	Released On
5	06 (03/2014)		Released	03/27/2014
4	05 (12/2013)		Released	12/19/2013
3	04 (10/2013)		Released	09/30/2013
2	03 (07/2013)		Released	07/15/2013
1	02 (05/2013)		Released	05/08/2013

Thus, you migrate/develop on a 32 / 64 bit environment (**Step 1**, see also **SAP note 1791485** why you need to install SAP NetWeaver Developer Studio from **SAP release 7.3**), deploy the product (EAR converted to an SCA file) on a 64-bit environment (**Step 2**), and after successful certification, your product (when sold to an SAP customer) will then run on a 64-bit SAP supported environment (**Step 3**) as depicted in the figure below.

Migrate / Develop on 32 / 64 bit -> Deploy on 64-bit -> Go live on 64-bit



- 4) The EE 5 application must **start** and **function** successfully without any error (run on the server) after deployment. The EE 5 application must also allow the administrator to **stop** it correctly without any error. Furthermore, the Java EE 5 application must allow the administrator to completely **undeploy** it without any error. Details and instructions will be provided either by your designated integration consultant or contained in the zip file [java ee nw 74.zip](#) which you downloaded and extracted.
- 5) An **EE 5 application functional test** (minimum five mutually agreed-upon test cases) will be conducted. In addition, an **intentional EE 5 application error test** (minimum five mutually agreed-upon error test cases) requiring you to have your EE 5 application write error messages into the [SAP logging framework](#) will be mandatory in order to allow analyzing, troubleshooting and resolving of EE 5 application errors later on if needed. Thus, with the EE 5 application error test, your EE 5 application will need to create intentional errors in order to demonstrate that these error messages can be written into the SAP logging framework (open source logging frameworks such as log4j are not supported for certification purposes).

The [SAP NetWeaver Administrator](#) (NWA) tool will be used to [view the logs of an application](#) and locate the error messages within the SAP logging framework. See also [how to write and log trace messages, logging, tracing](#), and the [SAP logging API](#). See also [sample logging tutorial](#) how to [develop logging-enabled applications](#).
- 6) The successfully deployed EE 5 application (SCA file) must be visible via the SAP NetWeaver Administrator (NWA) tool -> `http://<server>:<port>/nwa/sysinfo` -> System Information -> Components Info -> Software Components. In the Software Components section we must see the vendor, name, version, location of your deployed software component. This test ensures that your certifiable product is [SAP Solution Manager Ready](#).
- 7) The [SAP JVM \(Java Virtual Machine\)](#) which is a certified Java SE 6 Virtual Machine (VM) and Java Development Kit (JDK) based on the Oracle HotSpot technology must be used during certification.
- 8) You must document any configuration changes of SAP NetWeaver 7.4 Application Server Java needed for your application to work. For example, document any changes you made via the [Config Tool](#). The configuration changes will be documented in the file called **EE_5_Technical_Product_Profile.doc**.
- 9) The use of SAP backend applications (for example, [ABAP programming](#)) In such cases, SAP ICC reserves the right to check if other certifications are required, for example, [ABAP Add-On](#) or an [SAP Integration Assessment Service](#) type of certification. This must be discussed and documented in the **EE_5_Technical_Product_Profile.doc**.
- 10) [Third-Party Resource Adapters cannot be certified. You must use the integration scenario called NW-XI-AF \(Adapter Framework Certification\)](#).
- 11) A SAP [portal application](#) (PAR file) cannot be certified as an EE 5 application, since even if a PAR file could technically be packaged into an EAR file, it is not a standard EE 5 application.
- 12) Other sources of information helpful for EE 5 certification must be discussed. For example, <http://help.sap.com>, <http://www.sdn.sap.com>, <http://service.sap.com>.

Optional test criteria relevant for JAVA-EE-NW 7.4

- 1) [J2EE 1.4 compliant applications can be certified](#).
- 2) [JavaServer Faces \(JSF\) can be certified](#).
- 3) You can develop, deploy and certify a [SAP Java WebDynpro](#) application.

Documentation, Hardware and Software Requirements

Documentation

In order to familiarize yourself with the SAP NetWeaver 7.4 Application Server Java™ EE 5 Edition and the EE 5 development environment, please read the documentation and other sources of information as indicated below:

- 1) [What's New – Release Notes?](#)
- 2) [Integration with SAP HANA](#)
- 3) [End-to-End Implementation Roadmap for SAP NetWeaver AS Java](#)
- 4) [Installation and Upgrade Information](#)
- 5) [Security Information](#)
- 6) [Administrator's Guide](#)
- 7) [SAP JVM](#)
- 8) [Developer's Guide](#)
- 9) [*SAP Service Marketplace](#) (check the SAP Support Portal for up-to-date specific information about SAP NetWeaver 7.4 as it becomes available. For example, [SAP notes](#), [SAP Platform Availability Matrix \(SAP PAM\)](#) and more.
- 10) See also SAP notes*
 - 1589311 - Replacements of outdated tools via SL Toolset
 - 1223957 - Usage of NetWeaver Packaging Tool
 - 1641062 - Single component update and patch scenarios in SUM
 - 1791485 - NWDS 7.3 EHP1 as development environment for SAP NetWeaver 7.4

*You will need a special user to [access certain links and or information on the SAP Service Marketplace](#).

Hardware and Software Requirements

At the time of creation of this document, the following SAP supported Hardware and Software Requirements were available (*please check the [SAP PAM](#) for future SAP supported operating systems, databases, etc.*)

You need to install [SAP NetWeaver 7.4, Support Package Stack 3 \(SP3\)](#) or greater for certification purposes. You will need for certification purposes a 64 bit server, with at least 8 GB RAM and 50 GB of disk space in order to install the Java server along with a database (Please note, the SAP installation tool called sapinst will check during the installation process the minimal requirements). For the SAP NetWeaver Developer Studio (NWDS) installation, you will either need a separate Windows 32 bit installation in order to install the NWDS or a 32 bit JDK (for example, SAP JVM 6's JDK or Oracle's JDK 1.6.0_7).

In conclusion, whenever you are in doubt as to what platforms - hardware, operating systems, databases and Java Virtual Machines (JVMs) are supported by SAP and which ones can be used during certification, please either ask your designated ICC integration consultant and / or check the SAP Service Marketplace.

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Information Sources

Request assistance

For EMEA:	icc@sap.com
For Americas:	icc-americas@sap.com
For APA:	icc-apa@sap.com

Integration Services:

SAP Integration & Certification Center <http://www.sdn.sap.com/irj/sdn/icc>

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