



**SAP Integration Certification Guide  
for  
NW-MOB-DEV**

**SAP NetWeaver Mobile - Device Certification**

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## 1. Introduction

The purpose of this document is to outline the NW-MOB-DEV certification requirements and the certification process that device vendors can follow to obtain certification for their devices from the SAP Integration and Certification Center (SAP ICC).

The target audience of this document is executives, architects and developers of mobile device vendors who intend to develop or have developed a mobile handheld device which can be submitted to SAP for certification.

## 2. Overview

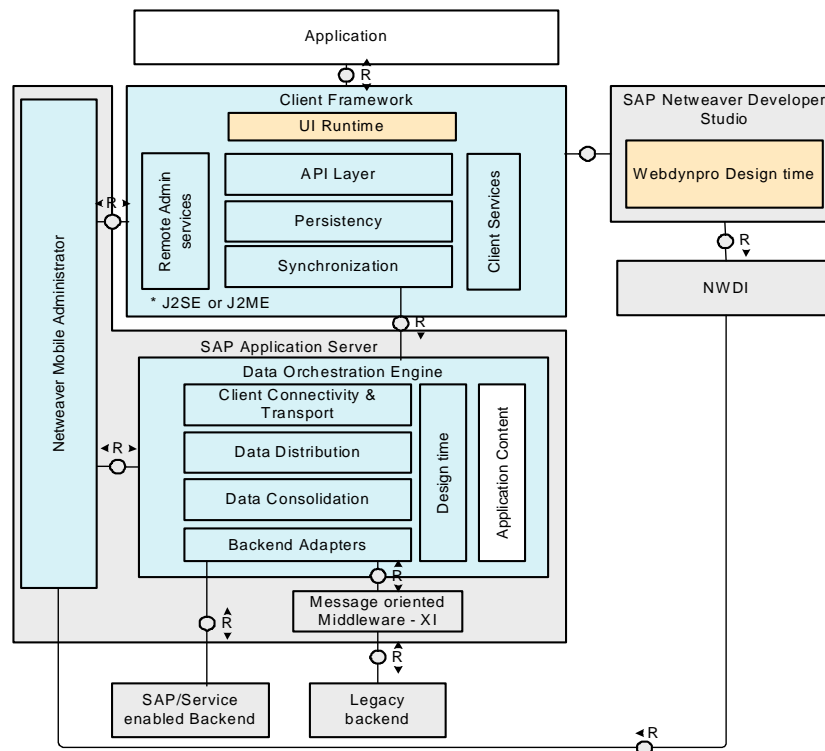
Mobile scenarios are all about end user productivity. There is a need to have the information provisioned to the end user anywhere anytime. This means that every user will carry own personal device which needs to have this information regardless of the connectivity, online or offline. In such a scenario, it is obvious that number of devices that are going to request for the data is huge since each and every end user is targeted. Also the information that is going to be provisioned could come from multiple sources or systems like ERP, CRM etc. Information that needs to be provisioned should also be a relevant subset based on subscriptions or profile of the user, making scalability a real challenge.

Along with this, there are other challenges like Model Driven Application Development, Manageability of the landscape, frequently changing organization structure, Real time user experience, Data Consistency, Data volume on wire, and Long synchronization time to mobilize information.

These challenges and required capabilities of a platform which helps in mobilizing data from various backend systems are taken care of in SAP NetWeaver Mobile.

The versions of SAP NetWeaver Mobile that are considered for this certification are SAP NetWeaver Mobile 7.0 and SAP NetWeaver Mobile 7.1.

The diagram in Figure 1. illustrates the architecture of SAP NetWeaver Mobile 7.1.



**Figure 1. SAP NetWeaver Mobile 7.1 Architecture Diagram**

SAP NetWeaver Mobile 7.1 contains three core components:

**Data Orchestration Engine (DOE)** – This is the middle tier server which helps in mobilizing data from various backend systems and filters out the data relevant for a specific user based on subscriptions

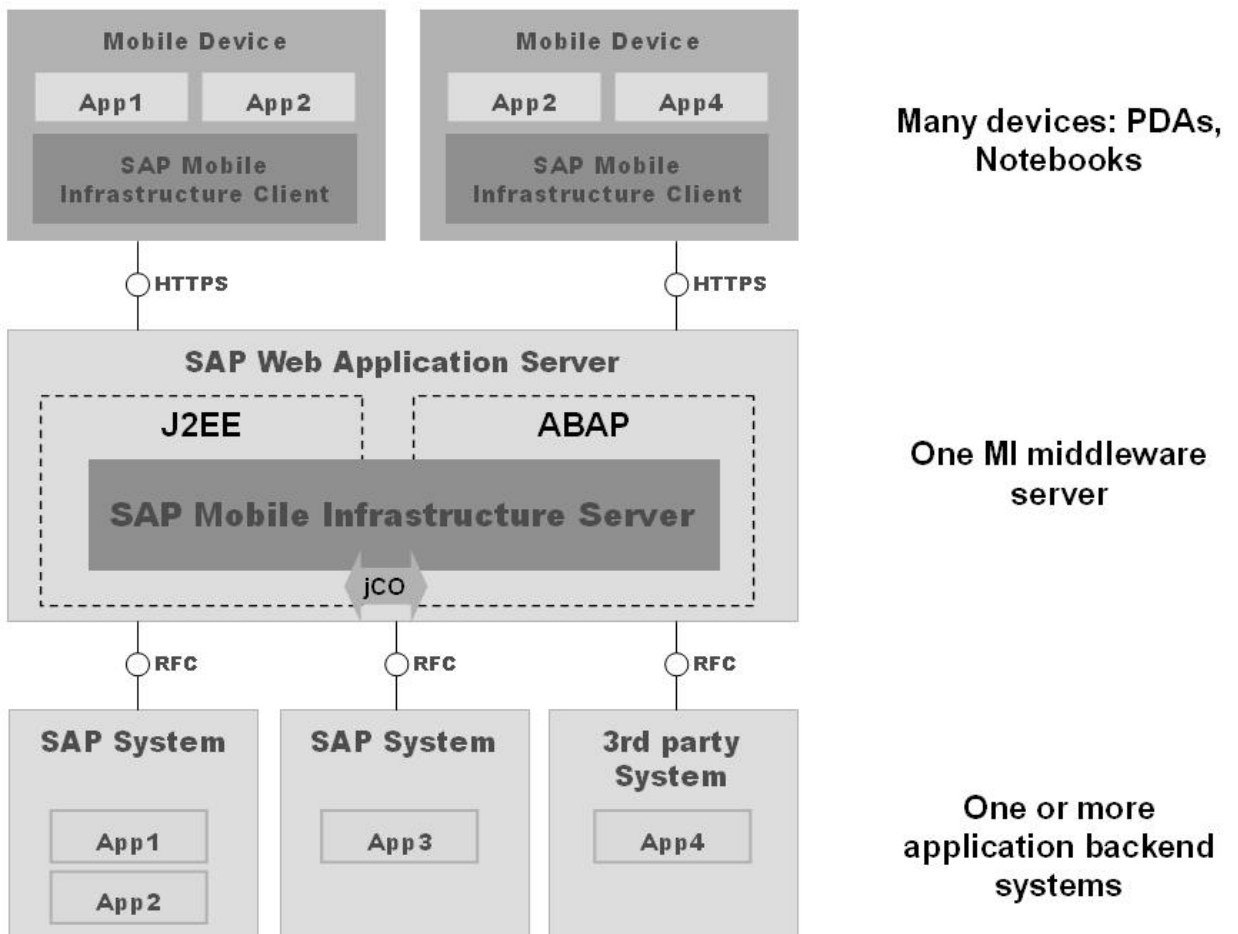
**Mobile Client Framework** – This piece of software will reside on the targeted handheld device. Applications running on the client can be developed using SAP NetWeaver Developer Studio which provides IDE functionalities for developing Mobile Applications. It contains two core runtime parts:

- **UI Runtime** – Runtime which renders the application on to the screen
- **Client Framework Services (CFS)** – Provides persistency and synchronization capability to locally stage the data and synchronizing the changes with DOE. Also it provides supporting services like user management, deployment, logging, tracing etc.,

**NetWeaver Mobile Administrator** – Provides set of tools and capabilities to manage the landscape in an efficient way.

Promoting the vision of a mobile world and delivering software technologies that enable enterprise level mobility, SAP has developed the mobile device certification program, through which a vendor may apply for certification of its mobile device from SAP subject to the criteria set forth in this mobile device certification guide.

The diagram in Figure 2. illustrates the architecture of SAP NetWeaver Mobile 7.0.



**Figure 2. NetWeaver Mobile 7.0 Architecture Diagram**

SAP NetWeaver Mobile 7.0 consists of a server component and a client component. The client component provides a runtime for mobile applications on a mobile device. It offers generic services through an API to be accessed by mobile applications. The server component spans the Java EE and the ABAP stack of the SAP NetWeaver Application Server, and handles the reception and transfer of data to and from the client and the application backend. There is also a possibility that Middleware and backend system can be the same.

### 3. Mobile Device Certification Process

Upon a Vendor's inquiry of certification for a device running SAP NetWeaver Mobile 7.1 and SAP NetWeaver Mobile 7.0, SAP provides this certification guide<sup>1</sup> to the Vendor. The Vendor's device should follow the SAP guidelines outlined in this document. SAP ICC provides an option to sign up for certifications of multiple devices in a single contract. Additionally, the Vendor can opt to certify their device(s) for SAP NetWeaver Mobile 7.0 or SAP NetWeaver Mobile 7.1 or both.

Once the Vendor is familiar with the certification guidelines and is ready to start the certification process, he should contact SAP ICC to formally register and sign the integration certification agreement for SAP NetWeaver Mobile – Device Certification (NW-MOB-DEV).

Once the certification agreement is signed, SAP ICC will provide the SAP NetWeaver Mobile – Device Technical Product Profile document to the Vendor. The Vendor should fill in the information in the document and submit it to the SAP ICC in order to schedule a one day assessment meeting.

In the assessment meeting, SAP ICC will educate the Vendor about the certification and how the certification process would be carried out.

The certification test is conducted onsite at SAP ICC facilities and the Vendor is responsible for sending the device(s) to SAP ICC for certification testing, and for their return shipment. A Vendor representative may or may not be present during the device certification upon Vendor's choice. Alternatively the certification test can be conducted at a location specified by the Vendor. In such a case, Vendor shall pay for all travel and subsistence costs for the SAP personnel involved.

SAP ICC provides the device Vendor a sample mobile application, developed for certification purposes only and hence not supported by SAP. This sample application represents all standard characteristics of any application developed using SAP NetWeaver Mobile 7.0 and SAP NetWeaver Mobile 7.1. SAP ICC certifies that the sample application functions successfully on the device (as per the certification guidelines outlined in chapter 4.1). This does not guarantee that the device is error-free. Any device related issues have to be supported by the vendor.

Upon successful completion of the certification test, the device model will achieve "SAP Certified Integration" status, implying in this case that SAP NetWeaver Mobile based applications function successfully on this device. The mobile device will then be qualified to use the logo "Certified for SAP NetWeaver" (in future "SAP Certified – Integration with SAP NetWeaver").

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<sup>1</sup> This guide will also be made available on SAP Developer Network (SDN) web site.

## 4. Mobile Device Certification for Offline Applications

SAP offers certification for a mobile device, if a sample application developed using SAP NetWeaver Mobile can function successfully as outlined in this chapter, as a pretest for real-life applications developed using SAP's mobile platforms being deployed on the device.

Mobile capabilities of SAP NetWeaver are deployed in an offline infrastructure, and are used in case of "occasionally connected" applications. It would apply to devices running Microsoft Windows Mobile and devices that have other OS but supports a CDC compliant JVM.

For a Microsoft Windows based device certification, SAP ICC will provide a sample application package based on SAP NetWeaver Mobile client framework, and access to the SAP NetWeaver Data Orchestration Engine (DOE) via http based access over web. The sample application and the access to DOE can be used by the device vendor for testing and certification. The vendor can download the JVM from a download location specified by the JVM provider. Once ready for certification, the device vendor can make the mobile device available (ship or send along with a representative) to ICC with the OS and JVM installed on it.

For certification of a non-windows based device (with a CDC compliant JVM), SAP ICC will provide a sample application package based on SAP NetWeaver Mobile client framework, and access to the mobile middleware via http based access over web. The sample application and the access to DOE can be used by the device vendor for testing and certification. Obtaining a CDC compliant JVM would be the responsibility of the device vendor. Once ready for certification, the device vendor can make the device available (ship or send along with a representative) to ICC with the OS and JVM installed on it.

SAP ICC will perform the test and inform the vendor of the test results in writing. SAP does not take responsibility for the mobile device, in transit or during certification testing.

## 4.1 Requirements/Criteria

To achieve certification, as part of SAP NetWeaver Mobile integration certification scenario, the following basic requirements (as outlined in detail in the SAP ICC test plan) apply to any type of mobile application:

### **Mandatory**

- Installation of the sample application on the device
- All supported UI controls work as designed
- All supported data types are working as designed
- End to end device synchronization works. Data can be exchanged between the multiple mobile devices via the server and also between the server and mobile devices
- Basic security test cases for authentication
- Log files generation for logging test results
- Time taken for rendering a screen and other visual performance criteria (depending on the network speed, memory and CPU load at the time of running the application)

### **Optional**

- Non-Functional capabilities with impact on functionality (battery life, usability etc) in a mobile environment
- Common error situations that are related to the hardware device - Like out of memory, connectivity loss, etc are handled and errors raised
- Average synchronization time to be measured under standard conditions. The time taken will be established as follows: packets / second at network speed
- Support for sync over HTTPS

Detailed description of these requirements is noted in the Certification Test Catalog.



## 5. Additional Terms on the Certification

### 5.1 Quality Measures

Only the architectural and functional aspects discussed above are considered in the mobile device certification process. The only quality measure considered is the Performance of the SAP mobile clients on the device. The SAP NetWeaver mobile clients must have a minimal acceptable performance on the mobile device, and the criteria for the performance are decided by SAP. Other quality measures such as Scalability of the mobile device and so on are neither measured nor considered in this certification.

### 5.2 Future Changes

SAP defined the certification in a way that future evolution of SAP mobile platform, such as the introduction of the next version of SAP NetWeaver Mobile 7.1, should not make it necessary to conduct a complete re-architect of Vendor device.

However, SAP is free to revise the SAP technologies and the mobile device certification requirements at its sole discretion and to terminate formerly offered certification scenario.

### 5.3 Validity of certification

Due to the nature of the certification and dependencies on hardware specifications, the certification is performed for a particular release of the device model, OS, JVM, browser and the mobile capability of SAP NetWeaver (SAP NetWeaver Mobile 7.1/ SAP NetWeaver Mobile 7.0). Change in any of the 5 components or their release would require the device to be re-certified. Per certification program rules, any certification expires three (3) years after the certification tests have been completed, or when any of the certified components are no longer in maintenance by vendor, whichever comes first.

## 5.4 Disclaimer

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