SAP NetWeaver

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About the Tutorial

SAP NetWeaver is an open technology platform that offers a comprehensive set of technologies for running mission-critical business applications and integrating people, processes, and information.

It utilizes open standards to enable integration with information and applications from almost any source or technology.

Audience

This tutorial has been prepared for those who want to acquire knowledge on the basics of SAP NetWeaver. After completing this tutorial, you will find yourself at a moderate level of expertise and possess fair knowledge on how to use the platform for your benefit.

Prerequisites

The course is designed for beginners with little or no SAP NetWeaver experience. But you need to have a basic understanding of SAP basics to make the most of this tutorial.

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SAP NetWeaver (SAP NW) describes all the software and services used for 'Business Enablement'. The SAP Business suite, such as ERP Central Component (ECC) or Supplier Relationship Management (SRM), contains the software components for that specific business solution.

Following are the key points about SAP NetWeaver platform:

- It is an open technology platform that offers a comprehensive set of technologies for running mission-critical business applications and integrating people, processes, and information.

- It is a web-based, open integration, application platform that serves as the foundation for Enterprise Service-Oriented Architecture (Enterprise SOA) and allows the integration and alignment of people, information, and business processes across business and technology boundaries.

- It utilizes open standards to enable integration with information and applications from almost any source or technology.

- It is the foundation of SAP Business Suite and SAP Business by Design. It also powers partner solutions and custom-built applications.

SAP NW Development

SAP NetWeaver was first introduced by TopTier Software, an Israeli company, in 1997. SAP has acquired this company in the early 2000's. The first version of SAP NetWeaver was released in 2004 with version NW7.0.

Note: The latest available version is SAP NetWeaver 7.5 released in Q4 2015.

SAP has tied up with various hardware vendors to provide different application components to enhance the capabilities of the NetWeaver platform. SAP Business Warehouse (BW) Accelerator is one of the examples that was developed to improve data load and query performance in SAP BW.

Various application development has been introduced by SAP based on the NetWeaver platform like ABAP Workbench, Web Dynpro, Visual Composer, SAP Solution Manager and NetWeaver Developer Studio (NWDS) based on JAVA stack.

In the following image, you can see key enablement based on SAP NW Platform:

- **Highly Configurable Business Applications** – This includes SAP ECC suite, SAP CRM software suite for Customer Relationship Management, Supply Chain Management and other key modules that are part of SAP Enterprise Resource Planning (ERP) solution.

- **Business Enablement Applications** – This contains business enablement applications like SAP Process Integration (PI), Enterprise Portal, and Business Intelligence software suite.

- **Common Development and Technology Platform** – This contains web development and application development technologies like ABAP Workbench, SAP Web Dynpro, Visual Composer, etc.
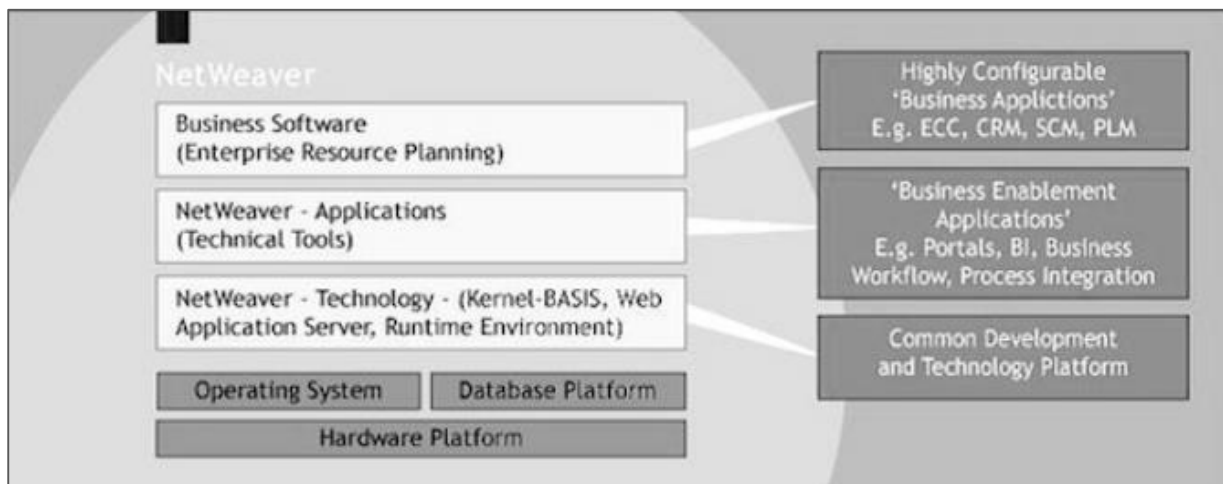
SAP NetWeaver –etWeaver ve

SAP NW is an open platform for managing and configuring business applications for the development of workbench application so you can achieve multiple advantages.

- It is based on the Service-Oriented Architecture approach and hence allows you to perform tasks with flexibility. System upgrades can also be performed easily.

- With the use of SAP NetWeaver Application server, you can perform analysis and embedded analytics in real time.

- Easy development of web applications using tools like ABAP Workbench, Web Dynpro, and NW Development Studio.

- A single application platform to manage applications from different providers, implemented in different languages.

- Easy implementation and consumption of business logic and SAP Backend system content using web and mobile applications.

- Flexible and simple development environment for mobile and web applications using SAP NetWeaver Gateway, SAP UI5 based on JAVA, and HTML5 based Application development.

- Easy workflow and management of day-to-day business operations by using SAP Fiori Launchpad based on NetWeaver platform deployment model. Using NetWeaver gateway, developers can create applications that link business users to SAP software from any environment and through any device.
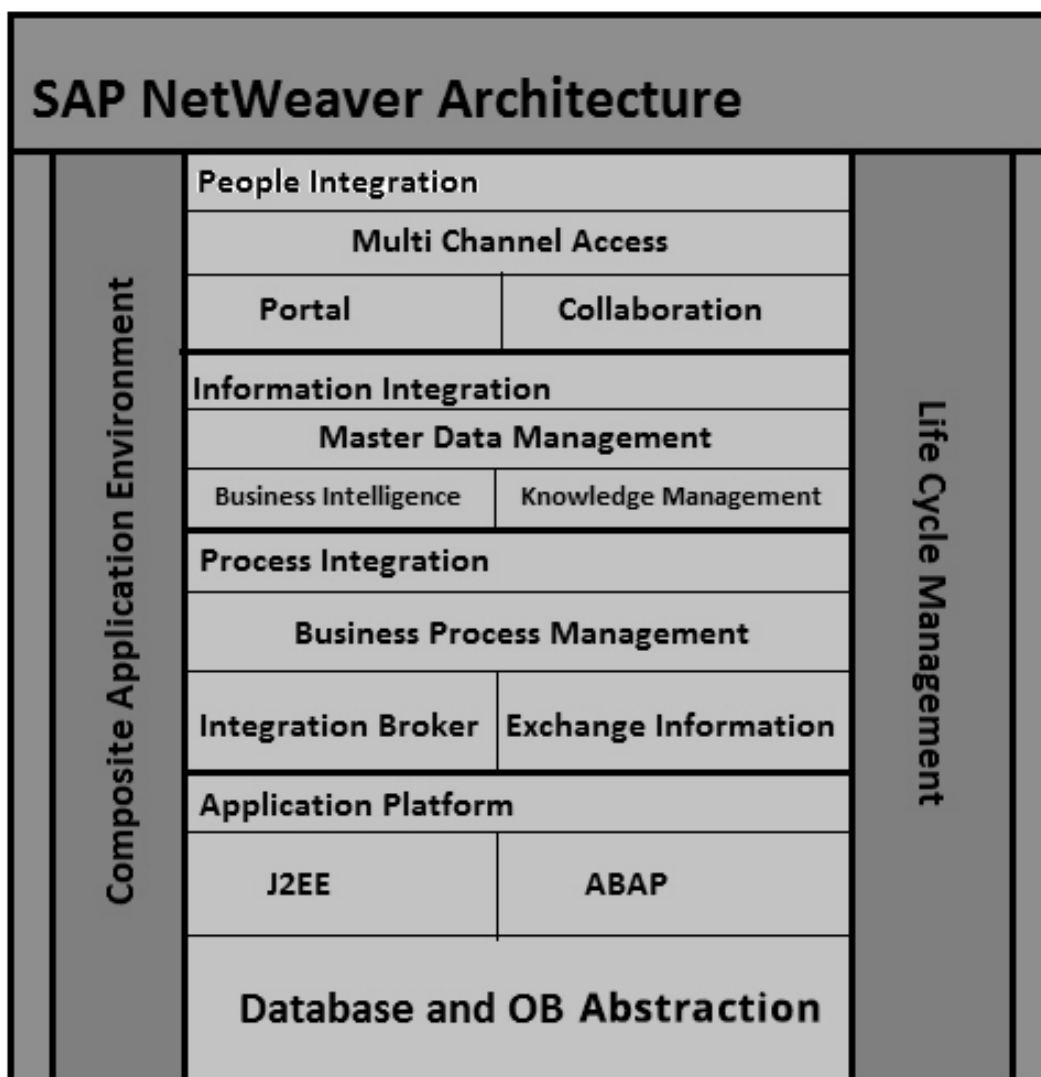
2.   SAP NW – Architecture

SAP NetWeaver is called a central foundation for SAP software stack and provides a flexible platform for other NetWeaver components such as Process Integrator, Business Intelligence, Enterprise Portal, and also for ABAP and Java applications.

SAP NetWeaver Application Server supports platform-independent web services, business applications, and standards-based development, enabling you to leverage existing technology assets for Web-services-oriented solutions.

All NetWeaver components are built on SAP Web Application Server and components are written in J2EE or ABAP.

SAP NetWeaver Architecture

| Composite Application Environment	People Integration		Life Cycle Management
	Multi Channel Access		
	Portal	Collaboration	
	Information Integration		
	Master Data Management		
	Business Intelligence	Knowledge Management	
	Process Integration		
	Business Process Management		
	Integration Broker	Exchange Information	
	Application Platform		
	J2EE	ABAP	
	Database and OB Abstraction		

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SAP NetWeaver – Architecture

SAP NetWeaver is one of central component of entire SAP software stack and provides a platform for the other components, as well as JAVA and ABAP applications.

SAP Application server consists of multiple application server instances and also database servers. With the use of dialog instance, it also contains a message server and an enqueue server.

A dialog instance executed by the user has the following components:
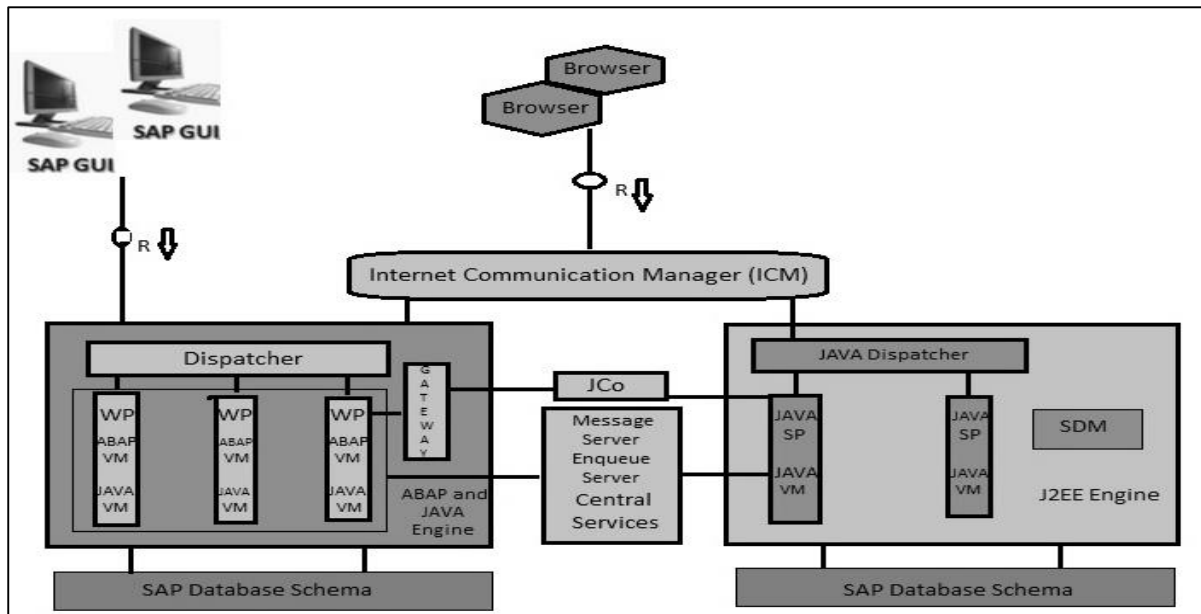
- **Internal Communication Manager** – It is used to process both the client and the server web requests. It supports protocol – HTTP, HTTPS, SMTP.

- **Dispatcher** – Dispatcher is used to distribute the user request to different work processes. If all the work processes are busy, requests are stored in the Dispatcher queue.

- **Work Processes** – These are used to execute Java or ABAP programs.

- **SAP Gateway** – This provides RFC interface between SAP instances.

- **Message Server** – This is used for message communication and also balances the load in SAP system.

SAP NetWeaver includes a comprehensive set of components, applications, and tools.

SAP NetWeaver Application Server

It supports platform-independent web services, business applications, and standards-based development, enabling you to leverage the existing technology assets for Web-services-oriented solutions.

Its key features include:

- Proven scalable and comprehensive toolset for managing application platform development.

- Leverage the existing infrastructure skillset.
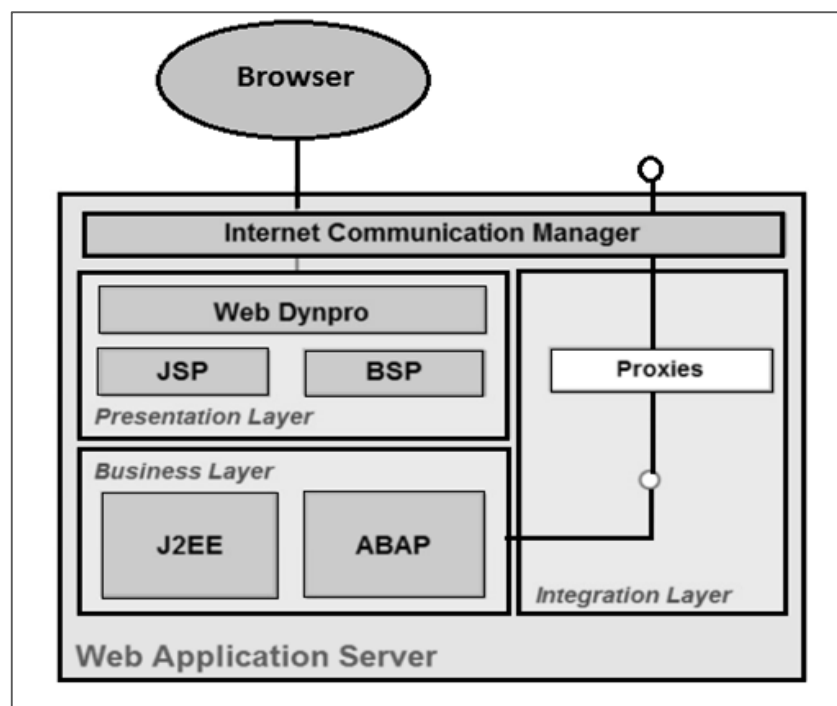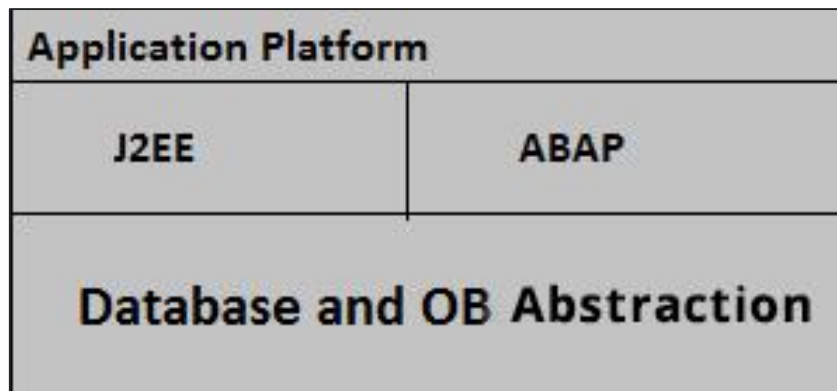
Internet Communication Manager

Internet Communication Manager (ICM) is used to process web and server requests and to set up the connection to the internet using HTTP, HTTPS and SMTP protocol. The requests were sent via Web browser by the users.

- A RFC connection is used to connect SAP NetWeaver Application server to Back-end system for acquiring and processing the data.

- In SAP Web Application Server, SAP Gateway makes the RFC interface between the SAP instances available.

- The Message Server is used to process the messages and for load balancing in the SAP system.

Installation Options for the SAP NetWeaver Application Server

For the installation of SAP NetWeaver Application Server, you can select from the following two installation options:

- **ABAP System**: Using this installation method, you can run ABAP programs and also few selected SAP Java applications.

- **Java System**: Using this installation method, you can run J2EE applications but not any ABAP programs.

SAP NetWeaver − Business Intelligence

It enables you to integrate data from across the enterprise and transform it into practical, timely business information to drive sound decision making.

SAP NetWeaver − Gateway

It enables developers to create applications that link business users to SAP software from any environment and through any device.

SAP NetWeaver − Master Data Management

It ensures cross-system data consistency and helps integrate business processes across the extended value chain.

SAP NetWeaver − Process Orchestration

It helps improve processes, from simple workflows to integrated processes that span applications and organizational boundaries. It includes capabilities for business process management, business rules management, and process integration.

SAP NetWeaver − Portal

It unifies critical information and applications to provide users with role-based views that span the enterprise, enabling you to take full advantage of your information resources.

SAP Auto-ID Infrastructure

It gives you all the capabilities you need to integrate all automated sensing devices including RFID reader and printers, bluetooth devices, embedded systems, and barcode devices.

SAP NetWeaver − Identity Management

It addresses access and provisioning issues facing a typical enterprise. It creates a new opportunity for integrating business processes, and helps to integrate systems in a heterogeneous IT environment.

SAP NetWeaver − Information Lifecycle Management

It allows you to archive data in a readily accessible format according to regulatory retention rules that you define.

SAP NetWeaver platform and different applications based on NetWeaver technology allows you to use SAP and non-SAP products in a heterogeneous environment. In the following table lists different release details of SAP NetWeaver platform.

SAP NetWeaver 7.0 was first released in 2004. Its latest release is SAP NetWeaver 7.5, which was released in Nov 2015.

| Technology	Release Details
SAP NetWeaver Platform	SAP NetWeaver 7.5 SAP NetWeaver 7.4 SAP NetWeaver 7.3 including Enhancement Package 1 SAP NetWeaver 7.3 SAP NetWeaver 7.0 including Enhancement Package 3 SAP NetWeaver 7.0 including Enhancement Package 2 SAP NetWeaver 7.0 including Enhancement Package 1 SAP NetWeaver 7.0
SAP Composition Environment	SAP NetWeaver Composition Environment 7.2 SAP NetWeaver Composition Environment 7.1 including Enhancement Package 1 SAP NetWeaver Composition Environment 7.1 Enterprise Services Repository for SAP NetWeaver CE 7.1

| SAP Enterprise Portal, Enterprise Workspaces	SAP NetWeaver Portal, Enterprise Workspaces 1.0 SAP NetWeaver Portal, Enterprise Workspaces 1.1
SAP NetWeaver Adaptive Computing Controller	SAP NetWeaver Adaptive Computing Controller 7.3 SAP NetWeaver Adaptive Computing Controller 7.2
SAP NetWeaver Enterprise Search	SAP NetWeaver Enterprise Search 7.3 SAP NetWeaver Enterprise Search 7.2
SAP NetWeaver Mobile	SAP NetWeaver Mobile 7.1 Including Enhancement Package 1 SAP NetWeaver Mobile 7.1
SAP NetWeaver MDM	SAP NetWeaver Master Data Management 7.1
SAP Process Integration	SAP NetWeaver Process Integration 7.1 Including Enhancement Package 1 SAP NetWeaver Process Integration 7.1
SAP Single Sign-On	SAP NetWeaver Single Sign-On 2.0 SAP NetWeaver Single Sign-On 1.0

As mentioned earlier, SAP NetWeaver includes a comprehensive set of components, applications, and tools. You can check the version of NetWeaver platform in SAP ECC suite.
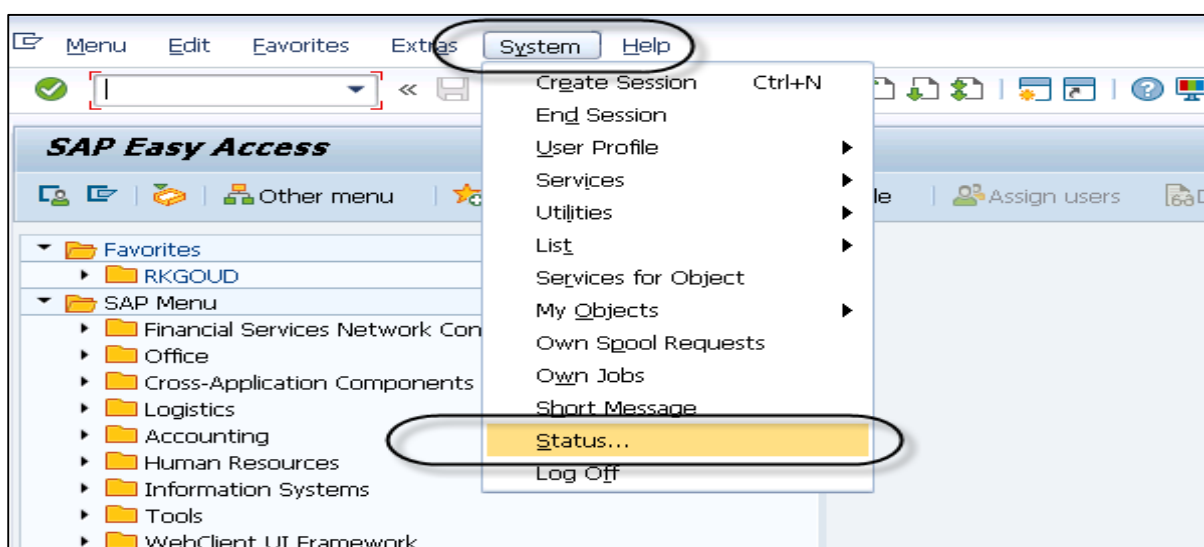
To check the version of NetWeaver platform –

Step 1: Login to SAP ECC system using SAP GUI.
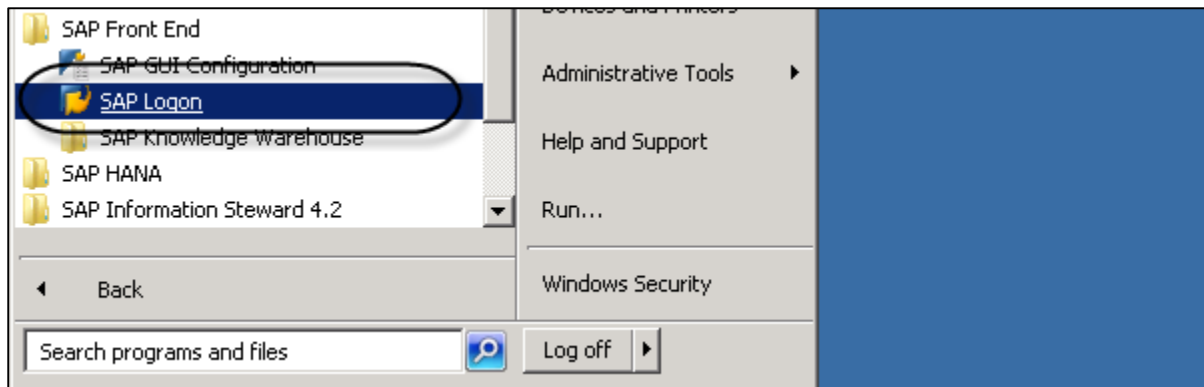
Step 2: Select the system for which you want to check NetWeaver version and login.
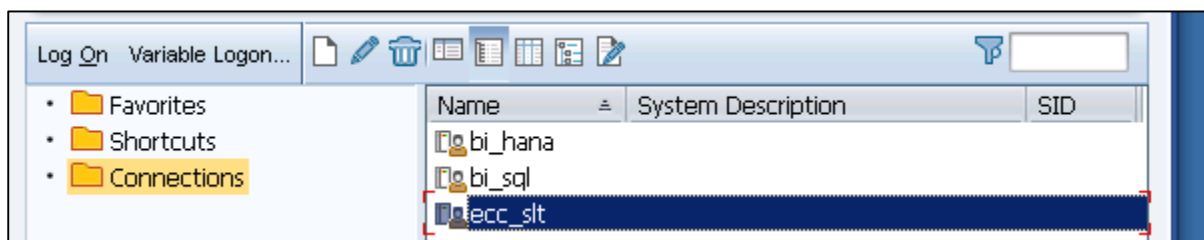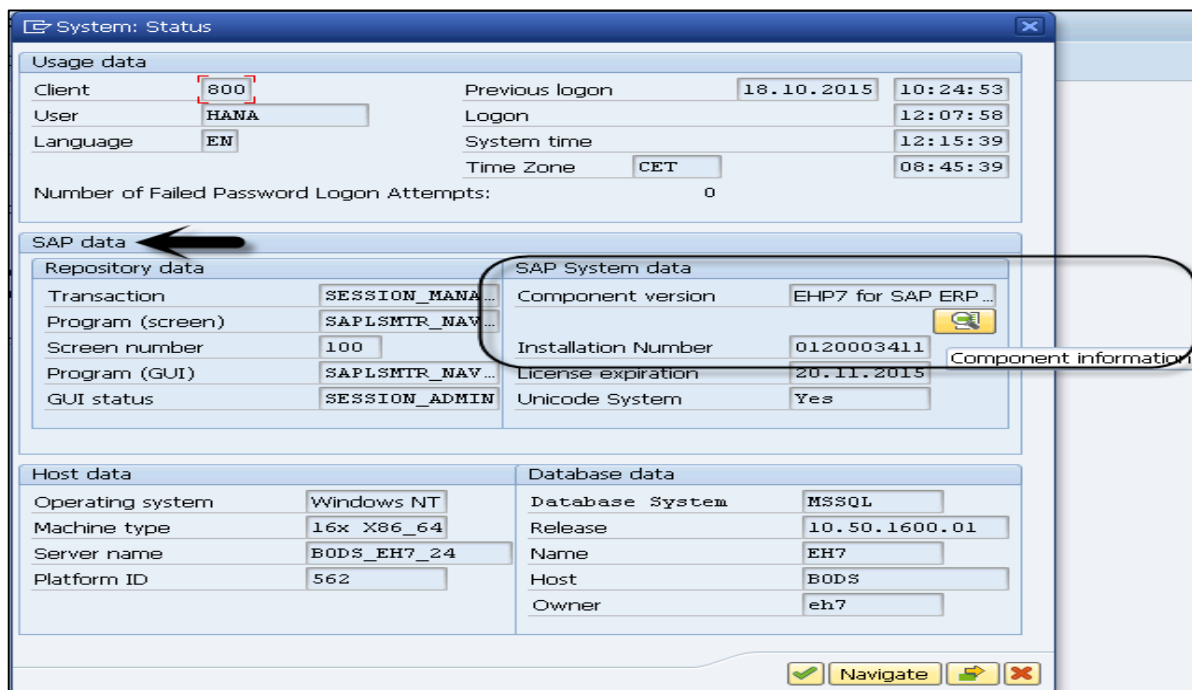

Step 3: To check the version, click the system tab at the top -> Status

This will open the System Status Tab.

You can view different details such as Usage Data, Repository Data, and Host Data.
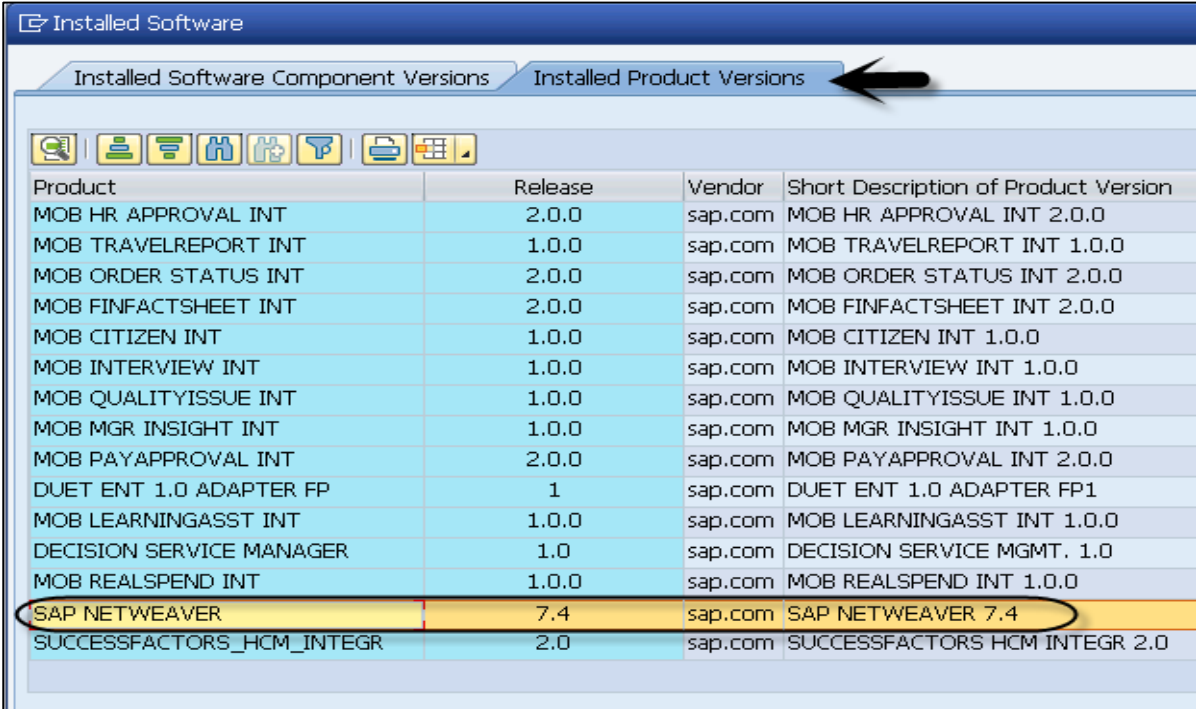

Step 4: To check the version, under SAP system data -> Component Version -> Click the Lens icon.

In the next Installed Software screen, under the Installed Software Component Versions, you can find Component name, Release, Service Pack Level, and Support Package.

Step 5: Under the Release tab, you can check the version of NetWeaver version. In the following screenshot, it is NetWeaver 7.4.

Step 6: Under the same screen but the next tab, i.e., Installed Product Versions, you can find the version of each component installed on the SAP system. To search the version of SAP NetWeaver, scroll down to find it.

Product	Release	Vendor	Short Description of Product Version
MOB HR APPROVAL INT	2.0.0	sap.com	MOB HR APPROVAL INT 2.0.0
MOB TRAVELREPORT INT	1.0.0	sap.com	MOB TRAVELREPORT INT 1.0.0
MOB ORDER STATUS INT	2.0.0	sap.com	MOB ORDER STATUS INT 2.0.0
MOB FINFACTSHEET INT	2.0.0	sap.com	MOB FINFACTSHEET INT 2.0.0
MOB CITIZEN INT	1.0.0	sap.com	MOB CITIZEN INT 1.0.0
MOB INTERVIEW INT	1.0.0	sap.com	MOB INTERVIEW INT 1.0.0
MOB QUALITYISSUE INT	1.0.0	sap.com	MOB QUALITYISSUE INT 1.0.0
MOB MGR INSIGHT INT	1.0.0	sap.com	MOB MGR INSIGHT INT 1.0.0
MOB PAYAPPROVAL INT	2.0.0	sap.com	MOB PAYAPPROVAL INT 2.0.0
DUET ENT 1.0 ADAPTER FP	1	sap.com	DUET ENT 1.0 ADAPTER FP1
MOB LEARNINGASST INT	1.0.0	sap.com	MOB LEARNINGASST INT 1.0.0
DECISION SERVICE MANAGER	1.0	sap.com	DECISION SERVICE MGMT. 1.0
MOB REALSPEND INT	1.0.0	sap.com	MOB REALSPEND INT 1.0.0
SAP NETWEAVER	7.4	sap.com	SAP NETWEAVER 7.4
SUCCESSFACTORS_HCM_INTEGR	2.0	sap.com	SUCCESSFACTORS HCM INTEGR 2.0

To set up SAP NetWeaver, you have to check SAP NetWeaver Product Availability Matrix (PAM) on SAP Site. This tells you the platform availability, release type and maintenance, and upgrade duration of the product.

Using PAM, SAP publishes the following information about SAP software releases:

- Release type (for example, standard release, early adoption release, or custom development project release)

- Planned availability

- Maintenance durations

- Upgrade paths

- Platform availability, including database platforms and operating systems

To check the platform, maintenance and upgrade, and release details of SAP NetWeaver platform, go to the following SAP PAM site and login using partner ID and password.

https://apps.support.sap.com/sap/support/pam

To check PAM for SAP NetWeaver 7.4, go to the following link and login using your SID and password.

https://websmp201.sapag.de/~sapidb/011000358700000552252012E

Following information is available on this site:

- OS/DB
- Developer Workplace
- Language Support
- Browser Support

Note: SAP note 1843183 for Release of SAP NetWeaver 7.4.

Operating System/Database PAM for SAP NetWeaver

In the following table, you can find the Operating System and database Product Availability Matrix for SAP NetWeaver platform. Along the Y-axis, it shows the database support, their version, and along the X-axis it shows which Windows OS is supported.

	Windows (*1)		AIX	HP-UX	Solaris		Linux SLES 11, RHEL 6, 7			Oracle Linux 6,7	IBM i	z/OS
	Server 2008 x64 64bit (*3)	Server 2012 x64 64bit (*9, *18)	6.1, 7.1 (*8) Power 64bit	11.31 IA64 64bit	10 (*11),11 SPARC 64bit	10 (*11), 11 x64 64bit	x86_64 64bit	Power 64bit	System z 64bit	x86_64 64bit	7.1, 7.2 (*17) Power 64bit	1.12, 1.13, 2.1 System z 64bit
Oracle 11.2	✓	✓	✓	✓	✓	✓	✓	AS	-	✓	-	-
Oracle 12.1	✓	✓	✓	✓	✓	✓	✓	-	-	✓	-	-
SQL Server 2008 (*2)	✓	-	-	-	-	-	-	-	-	-	-	-
SQL Server 2012 (*6)	✓	✓	-	-	-	-	-	-	-	-	-	-
SQL Server 2014	-	✓	-	-	-	-	-	-	-	-	-	-
DB2 LUW V9.7, V10.1	✓	✓	✓	✓	✓	✓ (*12)	✓	✓	-	-	-	-
DB2 LUW V10.5	✓ (*4)	✓	✓	✓	✓	✓ (*12)	✓	✓	-	-	-	-
MaxDB 7.9	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
DB2 for i 7.1, 7.2 (*17)	AS	AS	-	-	-	-	-	-	-	-	✓	-
DB2 for z/OS 10, 11	AS	AS	AS	-	-	-	AS	-	AS	-	-	HA DB
ASE 15.7 (*9)	✓ (*4)	✓	✓ (*5)	✓	✓	-	✓	-	-	-	-	-
ASE 16 (*9)	✓ (*4)	✓	✓ (*5)	✓	✓	-	✓	-	-	-	-	-
HANA DB 1.00 (*14)	AS	AS	AS	AS	AS	AS	✓	✓ (*19)	AS	-	AS (*15)	HA (*20)

- AS - Application server with whole SAP NetWeaver stack only

- DB - Database Server only

- HA - High Available Solution only

- X64 - x64 and x86_64 represent the same hardware

Desktop and Mobile Browser Support for SAP NetWeaver

Following is the **desktop browser support** for SAP NetWeaver releases -

Microsoft Internet Explorer
- IE 11 Desktop (recommended)
- IE 11 on Windows 10 support planned for October 2015
- IE 7 - IE 10 until January 2016

Microsoft Edge
- Planned for UI Add-on 2.0 SP1 (SAPUI5 1.32). Down port to UI Add-on 1.0 SP15 (SAPUI5 1.28) planned

SAP NetWeaver

Mozilla Firefox

- Latest Extended Support Release Cycle (recommended)
- Latest Rapid Release Cycle (conditionally supported)

Google Chrome

- Latest Release Cycle for Windows
- Support of NW 7.02, 7.03, 7.30 and higher

Apple Safari

- On OS X for 3 years from the version release date
- Support of NW 7.02, 7.03, 7.30 and higher

Following is the **mobile browser support** for SAP NetWeaver releases -

- Apple Safari on iPad
- Apple Safari on iPhone
- Google Chrome on Samsung Galaxy Tab/S
- Android browser on Samsung Galaxy Tab/S (A4.4 and higher)
- Windows Phone 8.1 on Nokia Lumia 930 (conditionally supported)
- Windows Phone 10 on Nokia Lumia 930 (planned)
- BlackBerry on BlackBerry Z10/30

Note: Devices and OS version support for 3 years from vendor Release date.

Supported UI technologies:

- SAPUI5 / OpenUI5
- SAP Fiori applications may have different support

SAP NetWeaver Developer Workplace

- Consists of SAP NetWeaver Developer Studio and AS Java with limited platform support
- Local development and test capabilities
- No support for team development
- No tool updates available via Eclipse update sites
- No extension support

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Language Support

All information regarding language availability can be found in the Product Availability.

Matrix (PAM) under Technical Release Information -> Languages -> Product Instance -> Display link in Additional Information

End of ebook preview
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