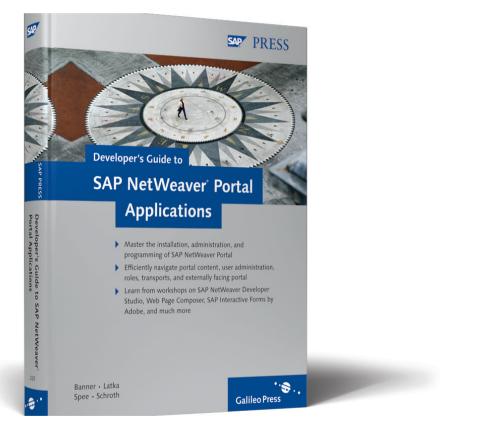
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# Developer's Guide to SAP NetWeaver<sup>®</sup> Portal Applications





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In this chapter, we provide you with an installation guide for setting up a local portal instance to help you understand the examples.

# 2 Installation and Basic Setup

To enable you to reproduce in practice the examples that we want to help you understand in this practical handbook, we will explain how to install a local portal environment in the next sections. We have chosen a version that also works on slightly weaker hardware and can be accessed by every reader free of charge from the SAP Developer Network (SDN).

Local portal environment

#### 2.1 Preparation

To be able to install the SAP NetWeaver Portal, you need at least the following hardware and software equipment:

- Windows 2000 (Service Pack 3); Windows XP Professional (Service Pack 1) or Windows Server 2003.
- ► NTFS file system.
- ▶ Internet Explorer 5.5 (or higher) or Firefox 1.0 (or higher).
- ► At least one gigabyte working memory, but we recommend two gigabytes.
- ► At least Intel Pentium III/1.1 GHz (or something comparable to this).
- 14 GB of free hard disk space (8.6 GB for the installed software and 4.9 GB for the installer software).
- ► Screen resolution of 1.024 × 768 pixels or more, 256 colors.
- Sun Microsystems J2SE SDK Version 1.4.2\_08 or 1.4.2\_09. Note that Version 1.4.2\_10 may cause installation problems.

► If a J2EE Engine is already installed, ensure that none already has the name J2E.

As soon as you have the hardware and software equipment described above, you can begin obtaining the necessary SAP software.

1. Call the *http://sdn.sap.com* URL. You will see a login window on the upper left of the screen, as shown in Figure 2.1.

Address 🙆 http:	s://www.sdn.sap.c	om/irj/sdn						
SAD S	AP COM	IUNIT	YN	ETWO	ORK			
W	elcome Guest							
SDN Community	BPX Community	Forums	Wiki	Blogs	Downloads	eLearning	Events	Premium Access Zon
Member Login User ID or Em Passwo	ail	nber?	Ins	ide S	DN			
Forgot your pass	Rememb		in fe	K	and SA Learn ho <u>Portlets</u> (	NetWea w to use the ( WSRP) stand	<b>Web Servi</b> Web Servi	ird-Party Portal tal <u>:es for Remote</u> sume content from luce content for third-

Figure 2.1 Login to SAP Developer Network

- Logging on to the SAP Developer Network
   2. If you have SAP access, you can log on here directly with your user ID and password. If you do not yet have access, you can use the NOT A MEMBER? link to obtain access to the system free of charge.
  - 3. After you have successfully logged on to SDN, you can search for the appropriate software for the installation. Select the DOWNLOADS function, as displayed in Figure 2.1, from the menu bar. This takes you to the menu area displayed in Figure 2.2.
  - 4. Select the SAP NETWEAVER MAIN RELEASES link displayed in Figure 2.2. This takes you to a download selection. Search for SAP NETWEAV-ER 7.0 JAVA TRIAL VERSION and download the installation files to your local host.
- Downloading the software 5. To use the download function, you must be logged on to the SDN system. The following SAP components are contained in the software package:

- SAP NetWeaver Development Infrastructure
- SAP NetWeaver Developer Studio
- ► SAP NetWeaver Portal with PDK
- Web Dynpro
- Visual Composer
- Content Management and Collaboration
- ► TREX
- SAP NetWeaver Business Intelligence Java SDK
- SAP Interactive Forms by Adobe
- Composite Application Framework
- SAP NetWeaver Knowledge Management

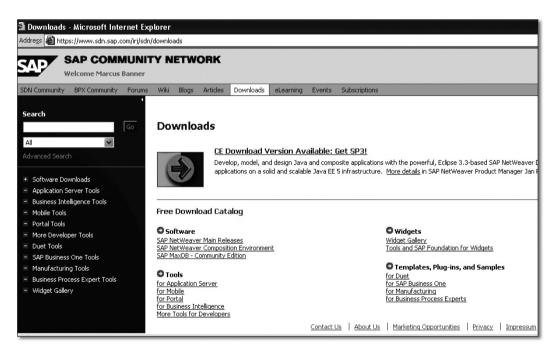


Figure 2.2 Software Download

#### 2.2 Installation

After you have downloaded the software (approximately 2.6 GB), unpack the files into a standard folder on your local drive and assign the folder a name of your choice. Then proceed as follows:

Starting the installation

1. Start the *setup.bat* installation file in this folder.

2. The SAP Installer starts and, if you have met the previously described general criteria, a view like the one in Figure 2.3 appears on your screen.

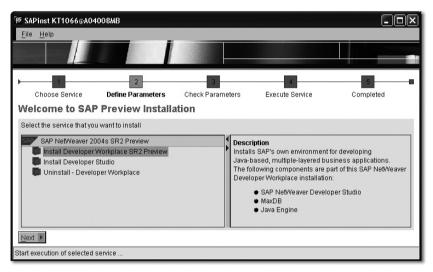


Figure 2.3 SAP Installer – First Install Screen

- 3. Choose the first selection in the installer, as shown in Figure 2.3 and click the NEXT button.
- 4. A dialog screen with the license terms opens. Read this thoroughly and, after you have selected the I HAVE READ AND AGREE TO THIS LICENSE checkbox at the end of the license agreement, click NEXT.
- 5. The next dialog box is interesting (see Figure 2.4): Before you can install the software further, you must arrange for a Java Cryptograph-

ic Extension policy using a different download. You need this package for the encryption routines in the SAP NetWeaver Portal. Use the links in the dialog box to switch to the corresponding locally installed virtual machine of your manufacturer to download this virtual machine. We have chosen the Sun Microsystems option for this example. Depending on your hardware, you can use other Java VMs (for example, the 64-bit version from IBM).

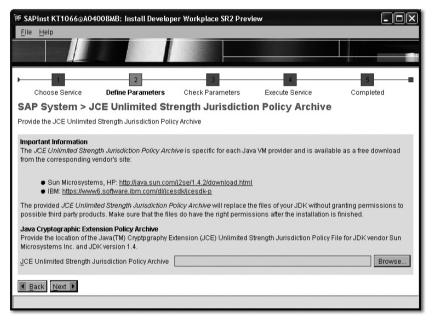


Figure 2.4 JCE Unlimited Strength Jurisdiction Policy Archive

6. There is a small special feature to consider when downloading from the Sun Microsystems homepage. You use your own SUN DOWNLOAD MANAGER here. If you want to download the software from your company network and find yourself behind a firewall or proxy, you must implement a corresponding configuration in the Download Manager, as shown in Figure 2.5 and Figure 2.6. Select the CONTROL menu function (see Figure 2.5). You go from here to the configuration or the proxy and FTP settings.

Installing the JCE from Sun Microsystems



Figure 2.5 Sun Download Manager

7. Enter your specific proxy here (see Figure 2.6), and continue the download. A general example is "proxy.sap.de" with the port "8080." Now download the ZIP file from the Sun Microsystems server.

Sun(TM) Dow	nload Man	ager - Set Option	ns and Proxies		×
Download	Proxies	Authentication			
HTTP Setting					
🗹 Use a Pr	oxy Server	Proxy Address:	proxy.		
		Proxy Port:	8080		
FTP Settings					
🗌 Use a Pr	oxy Server	Proxy Address:			
🗌 Use HTT		Proxy Port:	8080		
Do not Use P	roxy for Hos	ts:			
ОК	Cancel	Note: Complete F	Proxies tab if connecting	through a proxy server.	

Figure 2.6 Proxy and FTP Settings of Sun Download Manager

8. Do not unpack this file; instead, simply specify the path to the zipped file in the SAP installer and then click the NEXT button. The parameters you will use for the installation will then be displayed, as shown in Figure 2.7.

Be absolutely sure to check whether you have set all parameters correctly here. If you are uncertain or if you notice an error, you can change the parameter by selecting the checkbox next to the parameter and clicking START. You can change this parameter in the subsequent dialog box. You then go to the summary from the window in Figure 2.7 again.

9. After you have set all parameters correctly, you click the START button, which takes you to the actual installation process. The individual installation phases are run and displayed graphically. If an error occurs during the installation, this is also displayed and explained in the installer.

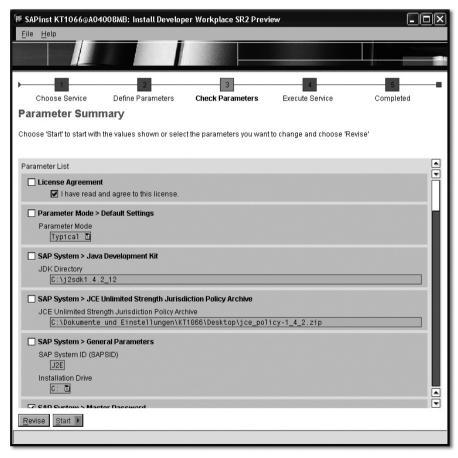


Figure 2.7 Parameter Summary

Installing the SAP<br/>NetWeaver<br/>Developer Studio10. The installation package selected in our example also contains the<br/>local development environment, which we will explain in detail in<br/>the next chapters. If you have already installed this development<br/>environment, we recommend that you save your local workspaces,<br/>because a new installation of the SAP NetWeaver Developer Studio<br/>will be performed automatically.

11. After you have installed the SAP NetWeaver Developer Studio successfully, you should restart your host to enable you to complete the installation.

 SAP Management Console of SAP NetWeaver Portal
 12. After you restart your host, you will find a new entry called SAP MANAGEMENT CONSOLE in your Start menu. Start this tool. The dialog box shown in Figure 2.8 will now appear. You can use this tool to start and stop your local portal and identify problems during operation. You can also access the web administration interface of your local MaxDB portal database from here.

In Figure 2.8, you see (similar to your dialog box) your portal instance called J2E, your dispatcher, your server nodes and, high-lighted in blue, your database. To start the portal, select the J2E node and click the START button.

im Console Root		- DX
Console Root     SAP Systems     D=     D=     A04008MB     D=     A04008MB     D=     A04008MB 1     D=     A04008MB 1	Name	

Figure 2.8 SAP Management Console

13. This starts the portal. This process may take several minutes, depending on the hardware you use. You will see the availability of your local portal when the color of all text displayed in gray changes to green (see Figure 2.9); they appear in yellow while the portal is being started.

im sapmme - [Console Root\SAP Sys	ster	ns\J2E\A0	40088	(B 0\J2EE Proc	ess Tabl	e]								_ 7×
Datei Aktion Ansicht Favoriten										_8×				
Console Root		Name	Pid	Туре	Restart	Exitcode	Status	Debug	Start Time	Elapsed Time	Restarts	Errors	CPU Time	
🖨 🏧 SAP Systems		SDM		SDM Server	Yes		Running	Switched off	2007 08 31 13:43:19	0:01:10	0	0	0:00:03	
T AD4000MD		dispatcher	6120		Yes		Running	Disabled	2007 08 31 13:43:18	0:01:11	0	0	0:00:20	
	0	server0	5900	J2EE Server	Yes		Starting framework	Switched off	2007 08 31 13:43:19	0:01:10	0	0	0:00:33	
Process List														
Gurrent Status     Green Alerts														
JZEE Process Table														
A04008MB 1														
Process List														
🗄 📲 Syslog														

Figure 2.9 Starting the Portal

- 14. You access your local portal by using the host name of your local host (not the IP address) and the /irj extension and portal 50000, for example, http://yourhost:50000/irj.
- 15. You then go directly to the home page of the portal. If you only use the URL with the port and without the *irj* addition, you will go to the home page of the J2EE Engine, where you will find tools that include user administration and the SAP NetWeaver Administrator (NWA).

#### **Basic Maintenance Functions** 2.3

To be able to maintain the SAP NetWeaver Portal yourself, we want to briefly familiarize you with some of the most important tools and functions. These are the SAP NetWeaver Administrator and Visual Administrator tools.

#### **SAP NetWeaver Administrator** 2.3.1

As soon as you have successfully started your portal, you can essentially control it using the web-based SAP NetWeaver Administrator.

1. To start this tool, go to http://yourhost:50000 and select the SAP Calling the SAP NetWeaver NETWEAVER ADMINISTRATOR function (see Figure 2.10).

Administrator

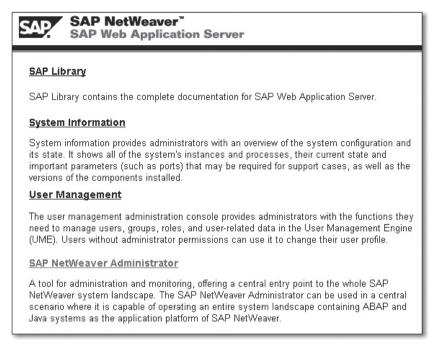


Figure 2.10 SAP NetWeaver Administrator of J2EE Engine

2. After you click the link, you are prompted to log on to the system, after which you go to a menu overview (see Figure 2.11).

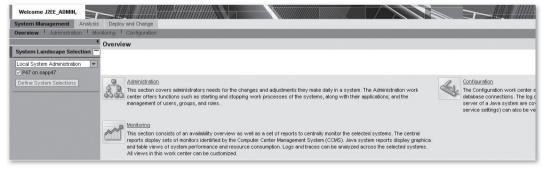


Figure 2.11 Administration Menu of SAP NetWeaver Administrator

3. You will see three segments on the main screen in Figure 2.11.

#### Monitoring

The MONITORING segment consists of an availability overview and a number of reports for monitoring the selected systems centrally. The central reports display monitors that were identified by the Computer Center Management System (CCMS). Java system reports display graphic and table views of the system performance and resource consumption. You can analyze logs and traces over all selected systems. You can also customize all views accordingly in this work center.

#### Administration

The ADMINISTRATION segment covers the requirements of administrators regarding necessary changes and customizations that they make daily in a system. The Administration work center contains functions such as starting and stopping the work processes of systems together with their applications and managing users, groups, and roles.

#### Configuration

You can use the CONFIGURATION segment to configure Java applications and resources used by the applications, for example, database connections. You use the log configuration tool to customize log and trace settings. Tasks for configuring the web server of a Java system are also covered. The user can also check all system properties of a selected system (for example, VM parameters and service settings).

#### **Monitoring Functions**

After you have called the MONITORING segment by clicking its link, you go to a dialog screen (see Figure 2.12) where you can call the following functions:

#### Availability

The AVAILABILITY function enables you to find out about all selected systems conveniently at a glance. The function includes status icons and progress bars for the availability level of contained instances. The detail view gives you additional information about the current number of users and the average response time of ABAP systems. SAP NetWeaver Administrator functions

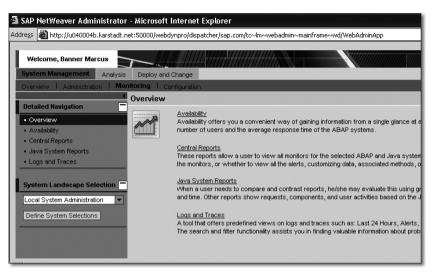


Figure 2.12 Monitoring Functions in SAP NetWeaver Administrator

#### Central Reports

CENTRAL REPORTS enable users to display all monitors for the selected ABAP and Java systems and their applications. They are sorted according to monitor sets (view sets) and monitor groups (views) that can be selected. Users can also specify whether they want to display the current data for the monitors or all alerts, Customizing data, associated methods or defined threshold values. All views contain details such as configuration data, history, and the Alert Browser, where the alert history and complete alerts are reported.

#### Java System Reports

If users have to compare or contrast reports, they can do this using graphical charts or tables that display capacity planning, resource consumption, and error statistics. The reporting times can be customized by selecting a predefined period or setting or a personal date or time. Other JAVA SYSTEM REPORTS show requests, components, and user activities based on the Java Application Response Time Measurement (JARM). A local monitor browser and a table of requests that are being processed at the time are also available. This function enables you to see the current memory consumption of your portal applications at a glance (see Figure 2.13).

#### Guided Procedures

Under GUIDED PROCEDURES, you can display the current status of guided procedures components. Export and import requests are displayed together with transferred content for a certain period. All activated templates can be checked for flow, parameter types and parameter mappings, Object Linking and Embedding (OLE), attachments, and so on. You can search for process instances and check their status and parameter values as well as the document status and background queues.

the second se														
	Java System Reports													
tailed Navigation	Instance DVEBMGS35 ID3	539169 🔻 Clu	ster Node Server	0 ID35391695	0 🔻	Time Perio	d Hour		Open	Customizatio	n Settings	Export Hist	ory	
Overview														
vailability entral Reports	Reports Charts													_
wa System Reports	Refresh Report Resou	rce Consu 💌												
ogs and Traces	Name:	Resource Consum	ntion											
	Description:	This report include							_					
tem Landscape Selection		and application thre		nory usage of	a cluster noi	e, and a cha	int related to	the system	A V					
al System Administration	Hint on Charts													
48 on sapt48	Memory Consumption	Go to Detailed Chart												
fine System Selections	Time Interval: Aug 27, 20		27, 2008 11:48:00	AM										
	Name	11:00 AM	11:15 AM	11:30 AM	11:40 AM	11:41 AM	11:42	AM 11:4	43 AM -	11:44 AM	11:45 AM	11:46 A	M 11:4	47 AM
	AllocatedMemory MB M	9 2048.0	2048.0	2048.0	2048.0	2048.0	2048.0	204	8.0 :	2048.0	2048.0	2048.0	2048	8.0
	AvailableMemory MB MB	9 2048.0	2048.0	2048.0	2048.0	2048.0	2048.0	204	8.0 :	2048.0	2048.0	2048.0	2048	8.0
	UsedMemory MB MB	439.73	451.73	456.9	461.0	458.0	459.0	464	0.0	459.0	462.0	462.0	426.	.0
	Row 1 of 3													
	Threads/Go to Detailed													
	Time Interval: Aug 27, 20		27, 2008 11:48:00	AM										
	Name			11:00 AM		11:30 AM	11:40 AM		11:42 AM	11:43 AM		11:45 AM	11:46 AM	
	Application Threads Por	NActiveThreadsCount	threads threads	45.5	45.4	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
	Application Threads Por	MaximumThreadPool	Size threads threa	ds 150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.
	System Threads PoolVA	ctiveThreadsCount thr	eads threads	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
			e threads threads	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.

Figure 2.13 Java System Reports – Memory Analysis

#### Logs and Traces

LOGS AND TRACES contains a tool that provides predefined views for logs and traces, such as the last 24 hours, alerts, and SAP logs. You can conveniently use this tool to display different log files, which you can call by clicking them. If you select a user-defined view, you can create a personalized view. Search and filter functions support you when you are searching for valuable information about problems and alerts. If necessary, you can customize the table in such a way that only the required information is displayed, and unnecessary details are not. In this function, you can go to troubleshooting in the system environment and specifically search for errors in the log (see Figure 2.14).

Welcome J2EE_ADMIN,					
System Management Analysis	Deploy and	-			
Overview Administration Mon	itoring I Co	nfiguration			
•	Logs and T	races			
Detailed Navigation					
Overview	Show Predet	fined View	▼ SAP	Logs	Open Filter
<ul> <li>Availability</li> </ul>	SAP Logs				
<ul> <li>Central Reports</li> </ul>					
<ul> <li>Java System Reports</li> </ul>	Open Column	Customization	Open Rei	cord Details	Download Content Open Search Filter by DSR GUID
<ul> <li>Logs and Traces</li> </ul>	Details	Severity	Date	Time	Message
	•	i info	2008-08-27	11:52:07:197	Sweep unused binaries away
Related Tasks	•	i info	2008-08-27	11:52:07:197	Sweep unused binaries away
Log Configuration	•	. warning	2008-08-27	11:51:40:421	SLD is not accessible. Check SLD Data Supplier service settings.
	•	! warning	2008-08-27	11:51:40:420	Insufficient permissions for getting SLD access information. You can add permissions for your application the SLD service in the "visual Administrator".
System Landscape Selection	Þ	info	2008-08-27	11:51:40:420	[permissions_collection_operator} [permission_collection]: domain's permissions: [ standalone; [] collections:[see details]
✓ T48 on sapt48 Define System Selections	•	iinfo	2008-08-27	11:51:40:419	[permissions_collection_operator] [permission_collection]: AccessController.checkPermission ((com.sap.engine.lib.security.SIdPermission SLD.read)) (tailed at domain [sap.cont.chim-webadnin-mainframe-wd/webdyprorpublicBits/sap.com-ch-im-webadnin-mainframe-
	•	! warning	2008-08-27	11:51:40:405	Insufficient permissions for getting SLD access information. You can add permissions for your application the SLD service in the "Visual Administrator".
	•	iinfo	2008-08-27	11:51:40:405	[permissions_collection_operator]; [permission_collection]; domain's permissions: [ standalone: [] collections:[see details]
	•	iinfo	2008-08-27	11:51:40:405	[permissions_collection_operator] [permission_collection]: AccessController.checkPermission ((com.sap.engine.ilb.security.SidPermission SLD.read)) tailed at domain [sap.com.cherwebadmin-mainframe-wd/webdympro/bublic/lib/sap.com-cherm-webadmin-mainframe-
	•	iinfo	2008-08-27	11:51:40:289	Computed locale for session ClientSession(id=(sapt47_147_35) ID1081593350D601055465965574680971End_239664207, -null>, Locale usage=locale was received to client user. RN=br3de0C074111 data3371653068b2932

Figure 2.14 Error Log Analysis

#### Administrative Functions

You can call the following functions (see Figure 2.15) in the Administration area.

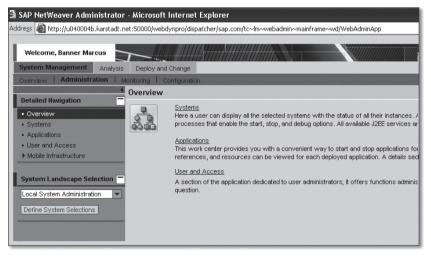


Figure 2.15 Administrative Functions of SAP NetWeaver Administrator

#### ► Systems

Under SYSTEMS, you as the user can display all selected systems together with the status of all corresponding instances. You can also obtain specific information about the systems, such as instances, host names, and versions. When you select an instance, a DETAILS frame displays the J2EE processes with start, stop, and debugging options. All available J2EE services are listed, which you can activate or deactivate from this frame.

#### Applications

The APPLICATIONS work center enables you to start and stop applications conveniently for all selected systems. An advanced search function enables you to find the relevant applications quickly and easily. You can display statuses, modules, references, and resources for each deployed application. DETAILS contains additional data such as the deployment time and duration, archive size, and failover settings. Here, you can specifically stop and start your own web applications that you deployed on the portal (see Figure 2.16).

www. «Select Application» 💌 Get Application Name 💌 *rep* Go Open Advanced	Search
Application List	
Save Refresh	
▲ Name	Vendor
caf~Ul~ptn~reporting	sap.com
caf~Ul~repositorybackup	sap.com
com.sap.xi.repository	sap.com
tc~webadministrator~ccrep	sap.com
tc~webadministrator~fvrep	sap.com
	Server
Application Details           Status         References         Modules         Resources         Details           Statut         Stop         Statu on All Servers         Stop on All Servers         Refresh	Server Server 0 35_71626
Application Details           Status         References         Modules         Resources         Details           Start         Stop         Start on All Servers         Stop on All Servers         Refresh <ul></ul>	
Application Details           Status         References         Modules         Resources         Details           Start         Stop         Start on All Servers         Stop on All Servers         Refresh <ul></ul>	
Application Details           Status         References         Modules         Resources         Details           Statu         Stop         Status         References         Modules         Resources         Details           Statu         Stop         Statu         Stop on All Servers         Refresh <ul> <li>Host</li> </ul>	

Figure 2.16 Starting and Stopping Applications

#### Identity Management

The USER AND ACCESS part of the application is tailored for user administrators. It provides required functions for managing users, groups, in the portal roles, and user-specific data for J2EE systems in the User Management Engine (UME). In terms of ABAP systems, you use Transaction SU01 of the relevant system. We will describe this function in more detail in Chapter 4 User Administration.

#### **Configuration Functions**

As soon as you click CONFIGURATION, you go directly to the configuration dialog box, as shown in Figure 2.17. You can display the individual parameters of your portal here. This is often useful if you have to check SAP notes to analyze error situations in the J2EE environment.

System Properties	
Configurations	
Refresh	
Name	
▼ 148	
Global dispatcher configuration	
Global server configuration	
▶ Instance ID3539169	
Details Kernel Services	
Name	
CacheManager	
ClassLoaderManager	
ClusterManager	
ConfigurationManager	
ConnectionsManipulator	
IpVerificationManager	
LicensingManager	
LockingManager	
LogManager	
PoolManager	
Extended Details	
Properties	
Display All Values	

Figure 2.17 Configuration Dialog Box of SAP NetWeaver Administrator

#### 2.3.2 Visual Administrator

Another important tool for the administration of your portal is the Javabased Visual Administrator. The Visual Administrator is a GUI-based version of the SAP NetWeaver Administrator but has considerably more functions than the web-based SAP NetWeaver Administrator. The Visual Administrator is therefore a very powerful tool. You will find this tool on the installation drive via the <*drive>:\usr\sap\J2E\JCO0\j2ee\admin* path. Using the Visual Administrator

1. This folder contains a file called *Go.bat*. Start this file locally on your host. The local Visual Administrator with the connection dialog box shown in Figure 2.18 now starts.



Figure 2.18 Connection Dialog Box of Visual Administrator

2. To establish a connection to the portal, you must first set up a new connection. Click NEW. You now go to the dialog box displayed in Figure 2.19.



Figure 2.19 Setting Up the J2EE Connection for the Visual Administrator

- 3. Choose the DIRECT CONNECTION TO A DISPATCHER NODE function and enter a name for the connection. This creates a direct connection to your locally installed J2EE Engine. Click NEXT.
- 4. In the next window (see Figure 2.20), enter the user name that you want to use to connect to your portal. In this example, use the "Administrator" build-in account. Also enter the host name of the target system and the port. The port is always the standard J2EE port selected by you plus 4, therefore, port 50000 + 4 in our example.

🛆 Create a n	ew Connection
Specify connec node.	tion parameters for a direct connection to a dispatcher
Display Nam	e:
YourPortal	
User Name:	Administrator
Host:	localhost
Port:	50004
[ Transport	Layer
Default	▼ <u>S</u> ettings
	Back Save Cancel

Figure 2.20 Connection Parameters of J2EE Connection

- 5. Click SAVE to save the connection in the connection overview and to enable you to select it.
- 6. Select your entry, as shown in Figure 2.18, and click the CONNECT button. A login screen appears containing the user you set. Enter your password here and connect to the J2EE stack of your portal. An overview of the Visual Administrator similar to the one shown in Figure 2.21 should now be displayed.
- 7. On the left, you will see a tree structure under the J2E node. Your local DISPATCHER and SERVER 0 of your local portal appear here accordingly. We are particularly interested in the SERVICES function of SERVER 0; simply expand this tree as shown in Figure 2.22.

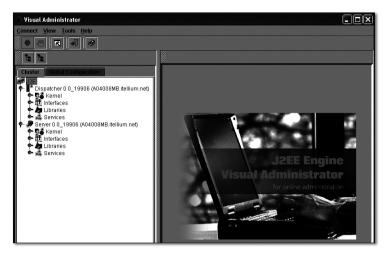


Figure 2.21 User Logged On to Visual Administrator – J2EE Stack

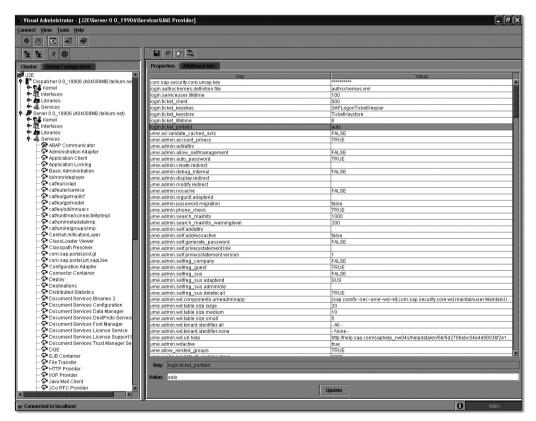


Figure 2.22 Services of Server 0 – Parameter Changes

8. You can view and select the individual services of your portal that are running on this server node to perform configuration options or parameter changes (see Figure 2.22). Remember that some parameter changes will only become effective after you restart the server.

Because this is a very powerful tool for the target group of system administrators, we will only discuss the relevant deploy service for our practical example in detail here. We recommend that you use this tool as little as possible when using your portal locally and do not change any unknown services, because these could have a quick and lasting effect on the availability of your local portal.

## 2.4 Setting Up the SAP NetWeaver Developer Studio

After you have installed the SAP NetWeaver Portal successfully, you should now set up the local development environment to add your own source code to the portal environment. The installer should have automatically created a link to the SAP NETWEAVER DEVELOPER STUDIO on your desktop.

Starting the SAP NetWeaver Developer Studio

- 1. Start the SAP NetWeaver Developer Studio by double-clicking the desktop symbol. The first loading may take a few seconds. After you start the Developer Studio successfully, it should appear on your screen.
  - 2. To configure the Developer Studio for use in the portal, select the WINDOW PREFERENCES menu function, as shown in Figure 2.23. You go to the configuration dialog box shown in Figure 2.24.
  - 3. Select SAP J2EE ENGINE from the left tree structure, followed by the SAP J2EE ENGINE IS INSTALLED ON REMOTE HOST radio button, and enter your host name in the MESSAGE SERVER HOST field and port "3601" in the MESSAGE SERVER PORT field. This port is set during the standard installation (instance number 00). Click the OK button, and return to the main dialog box of the Developer Studio.

J2EE Development - application.xml -			_ BX		
File Edit Navigate Search Project Run Window Help					
🕂 - 🗔 🖳 🕭 🛛 🍌 🎢 🖉 🛛 🕅 🕅 New Window	-				
Image: Package Explorer     Open Perspective       Image: Package Explorer     Show New       Image: Package Explorer     Show New       Image: Package Explorer     Show New       Image: Package Explorer     Lock the Toolbars       Image: Perspective     Lock the Toolbars       Customize Perspective     Close Perspective       Close Perspective     Close Perspectives       Keyboard Shortcuts     Switch to Editor       Customize Package     Preferences	<pre>itelion.cml x iral al al viante viante</pre>	Description EAR description Browse, Browse,	< () () () () () () () () () () () () ()		
	General Modules Security Source				
	3 J2EE Engine		<b>a</b> ×		
Package Explorer Navigator  Properties  II III IIII IIII IIIIIIIIIIIIIIIIIII	Remote engine     apt47.essen.karstadt.de:3636     Monitor a9403mb     Monitor a94047     D     D     T47 instance 35 on sapt47     O     dispatcher     o     SDM     o     server0	Remote Engine Message Server Host sapt47.essen.karstadt.de Message Server Port 3636 Setting up the engine is done in the pre	eferences		
Properties Outline	Tasks Bookmarks J2EE Engine Deploy Output View				
			Writable		

Figure 2.23 SAP NetWeaver Developer Studio

Preferences	
Workbench     Ant     Duild Order     Composite Application Modeler     Debug     Dictionary     Dictionary     Debug     Java Development Infrastructx     MID Development     SAP Interprise Portal     SAP Interprise Portal     Trace Configuration     Web Editors     Web Editors     Web Services	SAP JZEE Engine         Please select an engine installation to be used for development.         © SAP JZEE engine is installed on remote host.         Message Server Host:       YourSystem         Message Server Port:       3601         © SAP JZEE engine is installed on local host.       Browse         System Name:
Import Export	Restore Defaults Apply

Figure 2.24 Configuring the SAP NetWeaver Developer Studio Environment

4. To test that the Developer Studio has connected successfully to your portal, select the J2EE ENGINE tab. If your dispatcher node and server

	I J2EE Development - application.xm1 -				
	Edit Navigate Search Proje				
		18    🎋 • 武 • 嘎 •    タ   や ¢	a • ⇔ •		
e (	Package Explorer	分分团 X % ▼ ×	application.xml ×		
	earBAMWatcher     warBAMWatcher		General		
•			General Display Name D	escription	
				EAR description	
			L Icon		
			Small Browse		
			Large Browse	2	
			General Modules Security Source		
	N XEE Ergine 🕲			10 ×	
			Remote engine	Process	
ļ	Package Explorer Navigator		E = - ■ ep6t.essen.karstadt.de:3601 = - ■ EP6 instance 00 on u0400040	Name server1	
	Properties	旧学習▲×	EP6 instance 00 on u0400040	State Starting applications	
	Property	Value	- SDM	Productive Use NO	
				Debug Mode OFF	
			Monitor a04008mb	Restricted Load Balancing NO	
				Automatic Restart YES	
			Manifest unitable	Http Port 0	
				Debug Port 50026	
				SDM Port 0	
				Cluster ID 6458551	
ļ	Properties Outline Tasks Bookmarks [22EE Engine Deploy Output View				
	<ul> <li>(4)</li> </ul>				

node now appear in the overview, as shown in Figure 2.25, you have created a successful connection to your portal.

Figure 2.25 Connecting the SAP NetWeaver Developer Studio to the Portal

5. You can right-click to restart your portal components at any time from the connection overview shown in Figure 2.25. In the following section, we describe in detail how you can use the Developer Studio to develop your own portal components and transfer them to the portal.

#### 2.5 Deployment Tools for the Portal

You can use different options to transfer your own component (for example, iViews) to the J2EE stack of your portal. One option is to deploy components normally using the SAP NetWeaver Developer Studio. Other options include the remote GUI of the Software Deployment Manager (SDM), the Service DEPLOY of the Visual Administrator, and the Deploy tool. In this section, we want to deal in particular with the last three tools mentioned.

#### 2.5.1 Remote GUI of Software Deployment Manager

The SDM (Software Deployment Manager) server is a server component for managing and installing software components. It is primarily used for importing SCA and SDA files from SAP and represents an interface of the Developer Studio for the deployment process. You can use remote GUI to establish a tool-based connection to the Software Deployment Manager to perform manual deployments.

The remote GUI of the SDM is located in the *installation drive:\usr\sap\ J2E\JC00\SDM\program* directory on your installation drive. This folder contains the *remoteGui.bat* file.

- 1. Start this file on your host. Like in the Visual Administrator, a local Java frontend starts.
- 2. A login screen appears with input parameters for the connection (see Figure 2.26). As you can see, you must enter the password you were assigned during the installation. You can leave the USER DESCRIPTION field empty.

💼 SAP - Software Deployment Manager GUI	_ <b>_</b> ×
SDM Gui Help	
	SAP
🖗 Enter Login Information for SDM Server 🛛 🗙	
Please Enter User Data	
Password	
User Description (optional)	
Please Enter SDM Server Data	
Hostname A04008MB	
Port 50018	
Login Cancel	
Not Connected	

Figure 2.26 Connection Parameters of SDM Server or Client

3. Enter the server name of the portal in the HOSTNAME field, enter "50018" as the port (default port during the installation with instance

SDM server and remote GUI for deployments number 00) in the PORT field, and click the LOGIN button. Note that only one administrator at a time can log in to the SDM. Three incorrect password attempts will cause the SDM server to shut down automatically.

- 4. After a successful login, you go to the initial screen of the SDM client (see Figure 2.27).
- 5. On the SDM REPOSITORY tab, you will be able to see the components already installed on your portal server and can display detailed information by selecting a component in the tree structure on the left.
- 6. On the DEPLOYMENT tab, you can transfer different components directly to your system using the Software Deployment Manager. The UNDEPLOYMENT tab enables you to release components again that you no longer need. A LOG VIEWER for the SDM server rounds off the service offer of this small tool. Because this tool is mainly used by system administrators, we will not discuss it in any further detail here.

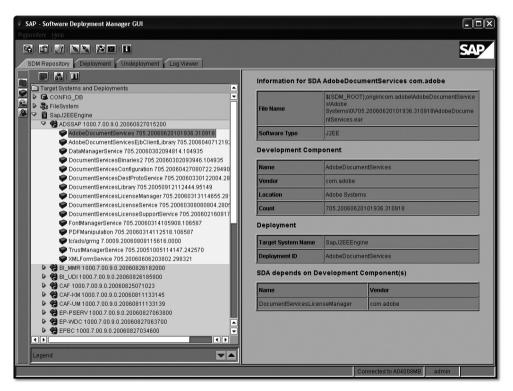


Figure 2.27 Initial Screen of the SDM Client

#### 2.5.2 Deploy Tool

The Deploy tool is another direct deployment interface for the portal. Deploy tool You will probably rarely use this tool; because it is a somewhat inconvenient option for deploying your own components, we will only describe it briefly. You will find this tool on the installation drive via the *installation drive:\usr\sap\J2E\JCOO\j2ee\deploying* path. This folder contains the *Deploytool.bat* file.

1. Start this file. A Java-based client starts on your local host again. A dialog box like the one shown in Figure 2.28 appears.

🛆 Deploy Tool		- O ×
Project Help		
J2EE Components	Assembler Deployer Server Components	

Figure 2.28 Start Menu of Deploy Tool

2. Select the NEW PROJECT function from the menu bar and select a corresponding project name. You go to a new menu system (see Figure 2.29).

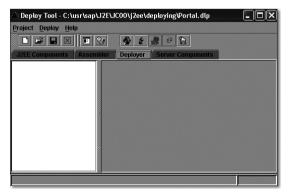


Figure 2.29 Deploy Selection in Deploy Tool

- 3. To deploy an existing local software component (for example, an EAR file), select the DEPLOYER function from the main navigation bar. A lightning icon called CONNECT appears in the icon bar.
- 4. Click this lightning icon to establish a connection to your J2EE stack. A familiar login screen appears (see Figure 2.30).

🛆 Login	×		
User Name: Administrator	SAD		
Password:			
Host: localhost	Connect		
Port: 50004	Cancel		
Transport Layers			
No Layer   Settings			

Figure 2.30 Login to J2EE Stack

- 5. Enter "Administrator" as the USER NAME, enter the host name of your portal in the HOST field, enter "50004" as the port, and then click the CONNECT button.
- 6. After you have connected to your portal server, select the icon beside the lightning icon to upload an EAR file.
- After you have chosen an EAR file, you can upload it to your portal server by selecting the EAR file, right-clicking, and choosing the DEPLOYMENT • DEPLOY EAR function from the context menu, as shown in Figure 2.31.

🔿 Deploy Tool - C:\usr\sap\J2E\JC00\j2ee\d	eploying\Portal.dlp		- D X
Project Deploy Help			1
	A C 🔁		
J2EE Components Assembler Deployer	Server Components		
earBAMWatcher ear	Descriptor Log Configuration	on JMS Connectivity DataSource	DataSource Aliases
→ SwarBAN EAR	Context Security View E	Extra Information Additional	
<u>∉ C</u> onnect	-MAR Files	File Name:	
Deployment   Deploy Ear  Dronerties Update	Ctrl-E warBAMWatcher.war	Context Root:	
Properties Update Undeploy	Curr		
errothet.			Modify
Loaded successfully!!!			

Figure 2.31 Deploying an EAR File Using the Deploy Tool

8. After you have successfully uploaded the EAR file, the Deploy tool will prompt you to verify whether you also want to start the uploaded software component on your portal (see Figure 2.32). Select YES here if you want to test the components.



Figure 2.32 Starting the Portal Component

The Deploy tool provides a very powerful selection of deployment options. We have only shown a small sample of the functions here. This tool is used mostly by system administrators and is not part of the daily tools you use for deploying your own software components.

#### 2.5.3 Deploy Service in Visual Administrator

Another option is to deploy software components directly in the Visual Administrator.

Deployment using the Visual Administrator and Deploy Service

- 1. As already explained, start the Visual Administrator on the local host and log on to the J2EE stack of the SAP NetWeaver Portal with the Visual Administrator.
  - 2. Then expand the tree structure under SERVER O called SERVICES and click the DEPLOY service name. Corresponding function options like the ones shown in Figure 2.33 are displayed:

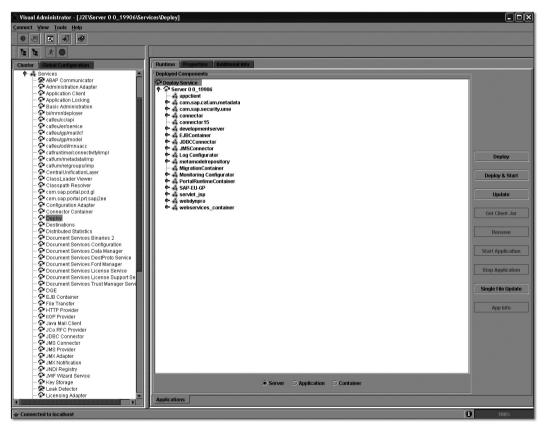


Figure 2.33 Deploy Service of Visual Administrator

#### Deploy

You use the DEPLOY function to install a new component similar to the Deploy tool if you don't want to start this component automatically.

#### Deploy & Start

Select the DEPLOY & START function if you want to install and immediately set the component to "running."

Update

The UPDATE function is provided to update a component that already exists.

- 3. Similar to the Deploy tool example, you will now use a small example to transfer an EAR file to the system; click DEPLOY & START for this purpose.
- 4. As shown in Figure 2.34, a search template appears, where you select the component to be installed. Select an EAR file on the local host here.

🗥 Deploy & Start [			
File:			
Work dir:	[.temp\deploying		
Additional Class Path			
	Change		
	Delete		
	Move Up	]	
	Move Down	]	
Remote Support			
p4			
liop			
Servers			
Server 0 0_19906			
	OK Cancel		

Figure 2.34 Selecting an EAR File – Visual Administrator Deployment

5. After you have selected the EAR file, click the OK button to load the EAR file into the portal and start it there.

6. A final confirmation prompt appears. Note the small APPLICATION OVERWRITING CHECK checkbox in this dialog box (see Figure 2.35). This checkbox checks whether the components are already in the system, and, if so, another confirmation prompt is issued beforehand. We recommend that you always activate this checkbox by default.

🛆 Deploy Dialog	×		
earBAMWatcher.ear warBAMWatcher.war			
Application overwriting check			
	OK Cancel		

Figure 2.35 Confirming the Deployment

7. After you click the OK button, the EAR file is installed on the portal server.

# 2.6 SAP Communities and Online Help

If this brief introduction into the topic of system tools has not been sufficiently detailed, you will find additional help and documentation in the SDN.

Brief overviewBy now, the SAP Developer Network (SDN) has a million members from<br/>over 200 countries. Through the SAP Developer Network, all members<br/>of the SAP ecosystem—customers and partners, such as independent<br/>software vendors (ISVs), system integrators, developers, and consul-<br/>tants—can cooperate and exchange information or download software.<br/>You access the SAP Developer Network using the http://sdn.sap.com URL.<br/>After you call the URL, you go to the SDN home page, which displays a<br/>structure similar to the one shown in Figure 2.36.

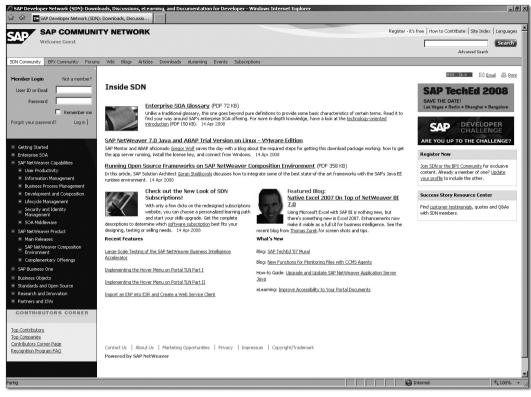


Figure 2.36 Setting Up the SAP Developer Network

There is a login area to this community on the upper left of the page. You can log on here with your SAP user ID or create a corresponding new user; you will already be familiar with this step from downloading the portal installation files.

A tree structure underneath the login frame shows the areas of primary interest for the SAP NetWeaver Portal. You will find these areas under SAP NETWEAVER CAPABILITIES • USER PRODUCTIVITY • PORTAL AND COLLAB-ORATION. All current topics, presentations, blogs, and so on for the SAP NetWeaver Portal are contained in this segment. A forum for exchanging information about problems and so on rounds off the SDN offer; you can also download source code samples here. In this area, you will also find a description and download option of individual content packages for the portal (see Figure 2.37).

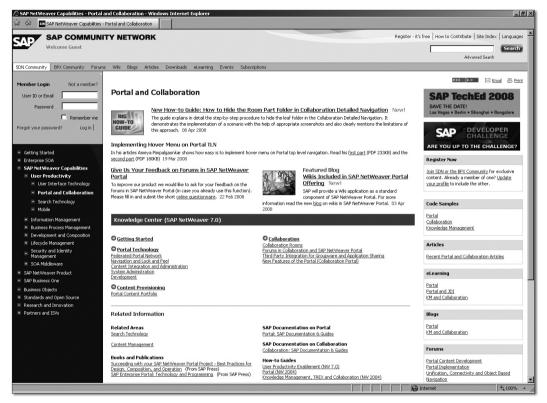


Figure 2.37 SAP Portal Content Portfolio

After the installation and a brief overview of the system tools available for administering the portal, the following chapters will deal with the content of the portal.

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&VARIABLE\_SCREEN=X;VARIABLE\_ SCREEN, 97

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