



# Configuring a Local Adapter Engine to Work with a Central Instance

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**As a result of this session, you will be able to:**

- n Explain the architecture of J2EE Adapter Framework**
- n Explain why de-central Adapter engines may be necessary**
- n Install the XI adapter engine java components via SAPINST**
- n Setup the connection between decentral adapter engine & XI**
- n Use the decentral adapter engine to configure communication channel using Integration Directory**
- n Monitoring the local adapter engine using runtime workbench**



**Adapter framework/engine Overview**

**Preparation/Installation**

**Execution & monitoring**

**Summary**



## Adapter framework/engine Overview

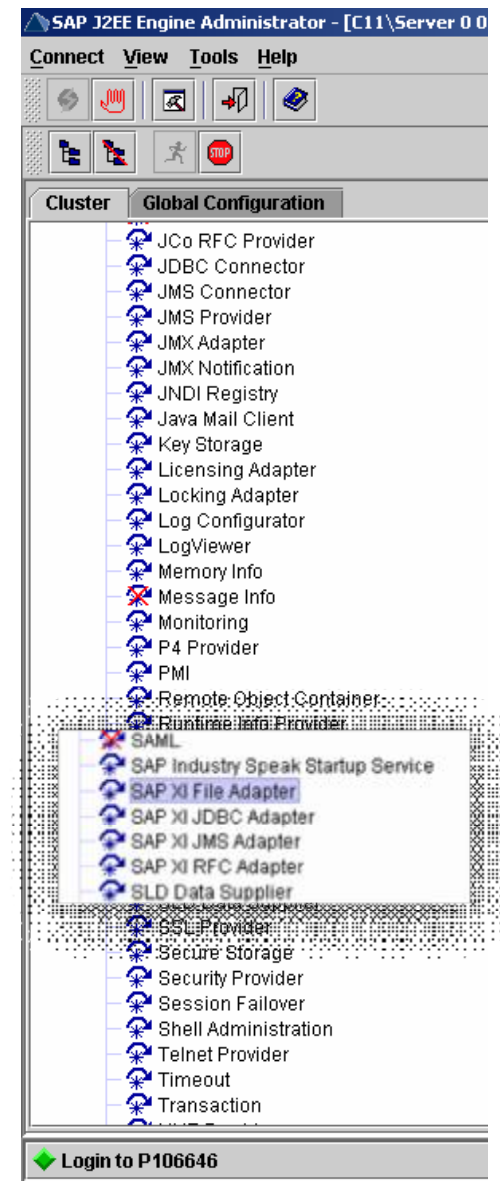
Preparation/Installation

Execution & monitoring

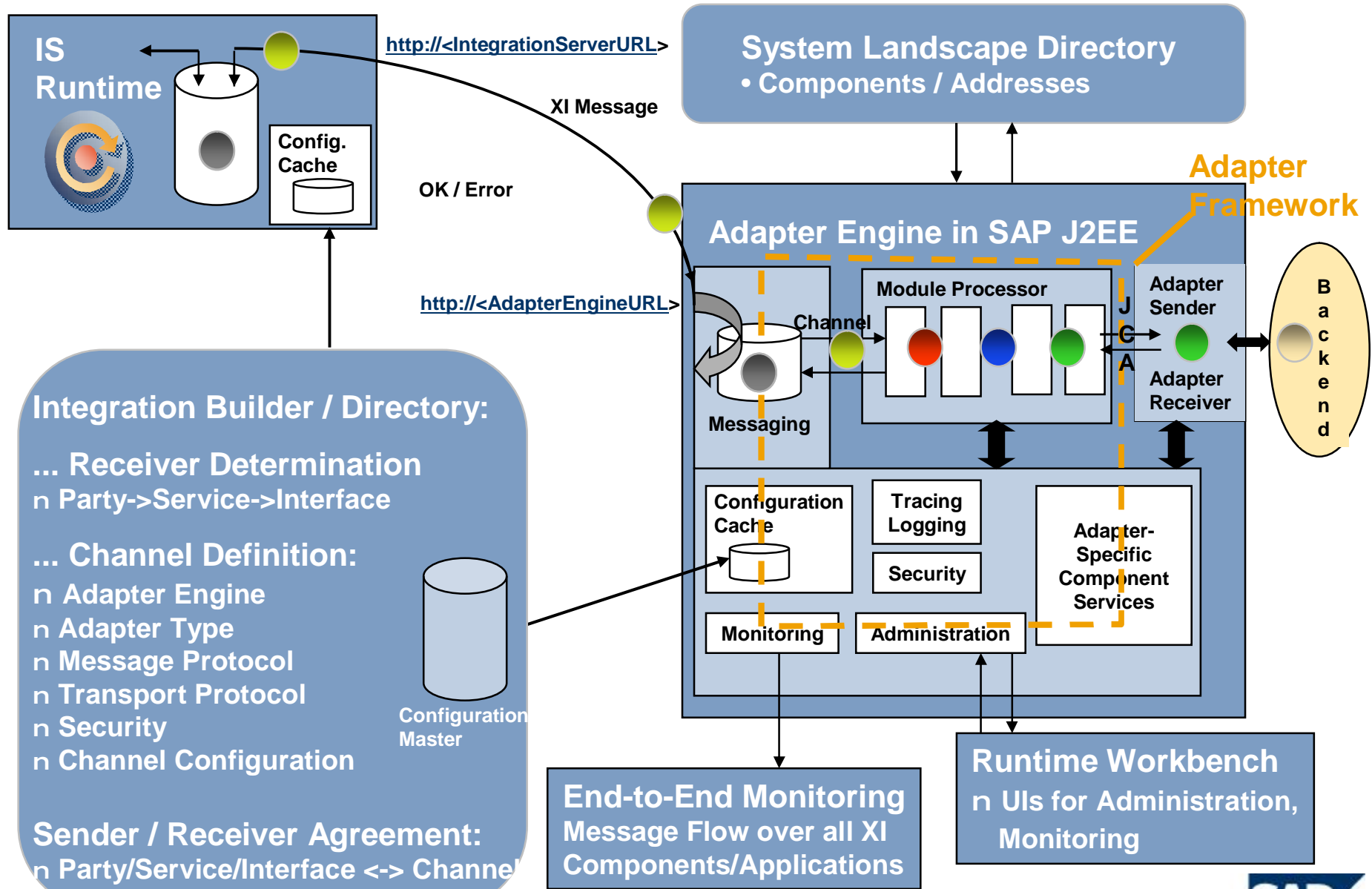
Summary

# The SAP XI Adapter Framework

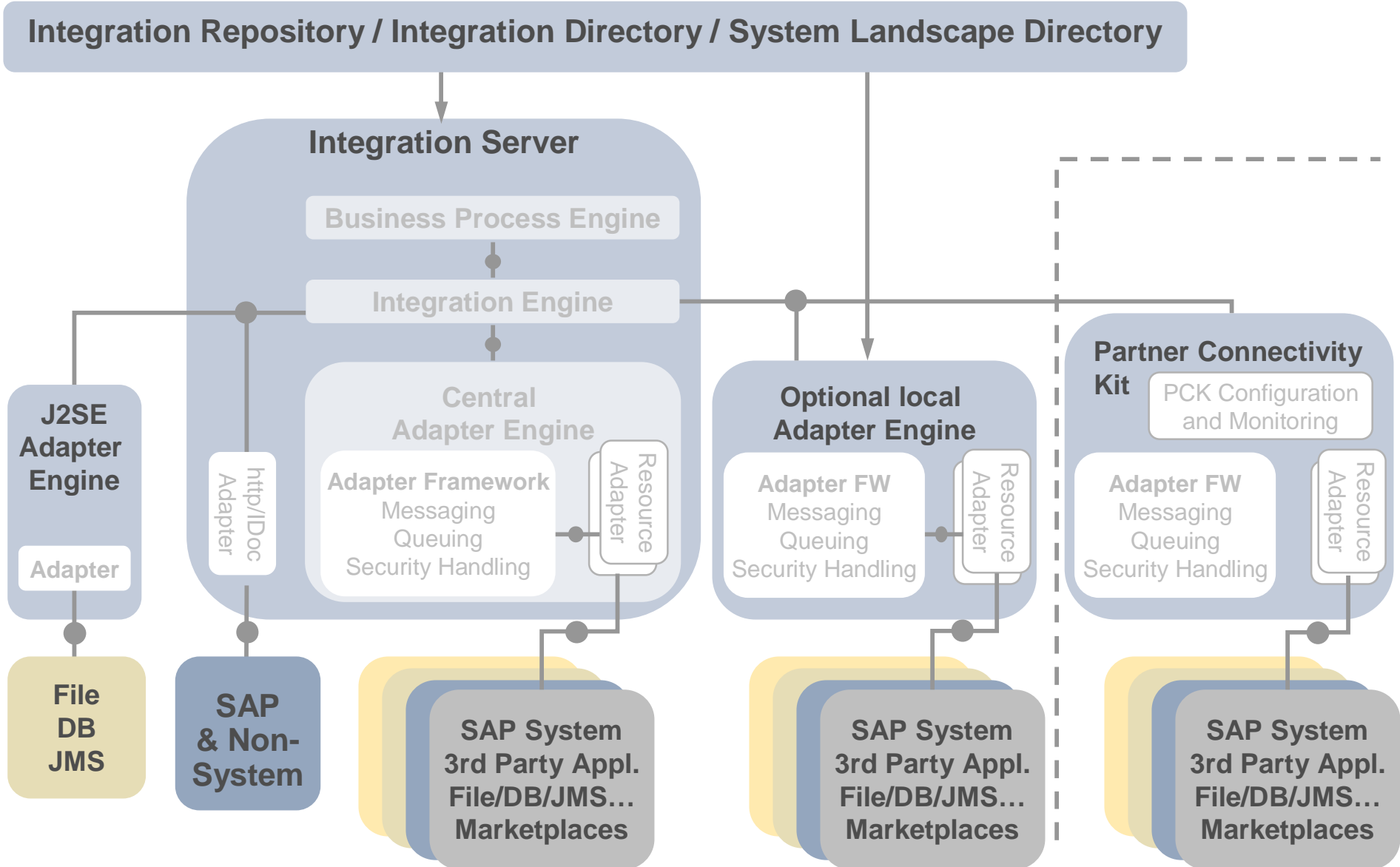
- n Based on SAP J2EE Engine
- n Uniform Handling of Deployment, Configuration, Administration (User, SLD-Registration), Monitoring, Security, Extensions and Adapter-Development
- n Technical Basis for Adapter Engine (central and decentral) and SAP Partner Connectivity Kit
- n The individual Adapters run as Services within the SAP J2EE Engine while using the J2EE-Services of the Adapter Framework (e.g. Queuing/Logging) and of the SAP J2EE Engine
- n Usage of open standards: SOAP, XML, J2EE, JCA, JMS, JDBC.....



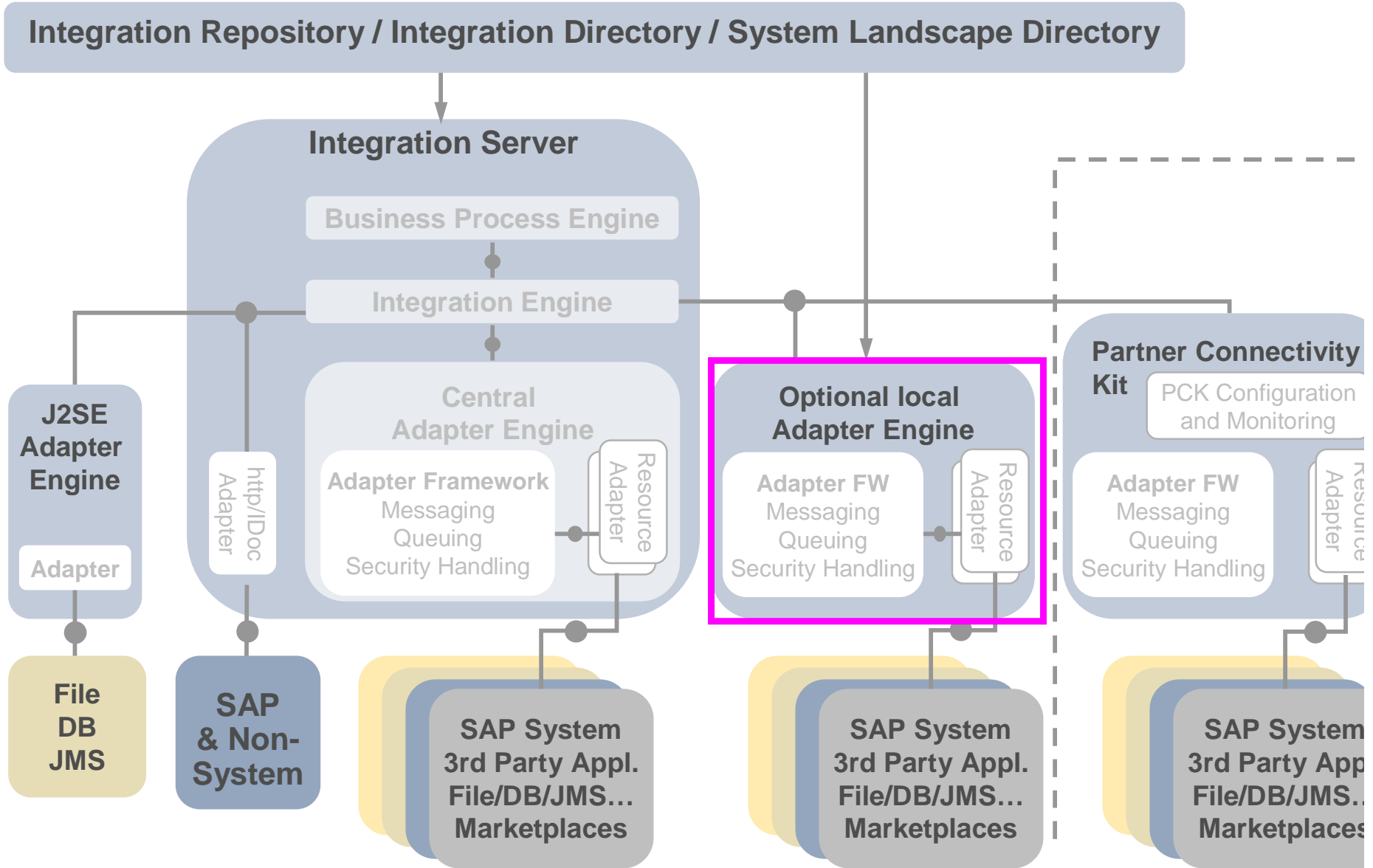
# Adapter Engine of SAP XI 3.0



# SAP XI 3.0 – Adapters Logical View



# SAP XI 3.0 – Adapters Logical View



© Configuring a Local Adapter Engine to Work with a Central Instance



## J2EE Adapter Engine – central or decentral?

- n **Use Central Adapter Engine if possible**
- n **Use Central User- and Role Management (synchronized with ABAP-Stack of the Integration Server => UME with ABAP)**
- n **Reasons for Decentral SAP J2EE-based AE:**
  - u **Protocol of Sender/Receiver system (e.g. ftp not allowed)**
  - u **Driver OS – dependent**
  - u **Firewall between Integration server and Business sys**
  - u **Closer proximity to Business systems**
  - u **Performance**
  - u **Organizational Aspects**



Adapter framework/engine Overview

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## Pre-requisites

Many flavors of the installations are possible (NW developer Workplace or standalone java system, etc)

- n Successful installation of J2EE (with UME configuration set to ABAP systems for Users & Groups & SLD Connection with http)
- n J2EE patched to the latest support pack release

Notes: Please refer to the WebAS installation guide for more details.

We will cover the Windows XP/MAXDB installation procedure here

# Part 1 of 2: Installation of J2ee

## Installing WebAS J2EE SP10 for WinXP / MAXDB

Download the following J2EE files from [service.sap.com/download](http://service.sap.com/download)

Navigate through the following menus:

Installations and Upgrades SAP NetWeaver SAP NETWEAVER SAP  
NETWEAVER 04

### Installation and Upgrade

└ AIX ; AIX4\_32 ; AIX4\_64 ; AIX5\_32 ; AIX5\_64 ; AIX\_64

└ HPUX IA64 ; HPUX ; HPUX\_11 ; HPUX\_64 ; HPUX\_SHM

└ LINUX\_32 ; Linux\_64

└ **NT/IA386 ; NT/IA64**

└ DB2 UDB

└ INFORMIX

└ MS SQL SERVER

└ ORACLE

└ **SAP DB**

└ OS390\_32

└ OS/400 ; OS/400 V4R1M0 ; OS/400 V4R2M0 ; OS/400 V4R3M0 ;

└ SOLARIS ; SOLARIS\_64

└ COMPAQ TRU64 (DEC)

**You are here:**

- ▼ SAP Software Distribution Center
  - ▼ Download
    - ▶ Support Packages and Patches
    - ▼ Installations and Upgrades
      - Search for Installations and Upgrades
      - **Entry by Application Group**
      - My Company's Application Components
      - RampUp for Installations and Upgrades
      - Installation and Upgrade Guides
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      - SAP Cryptographic Software
      - SAP Connectors
      - Development Projects
    - ▶ Search
      - Ordering SAP-Software
      - Download Basket

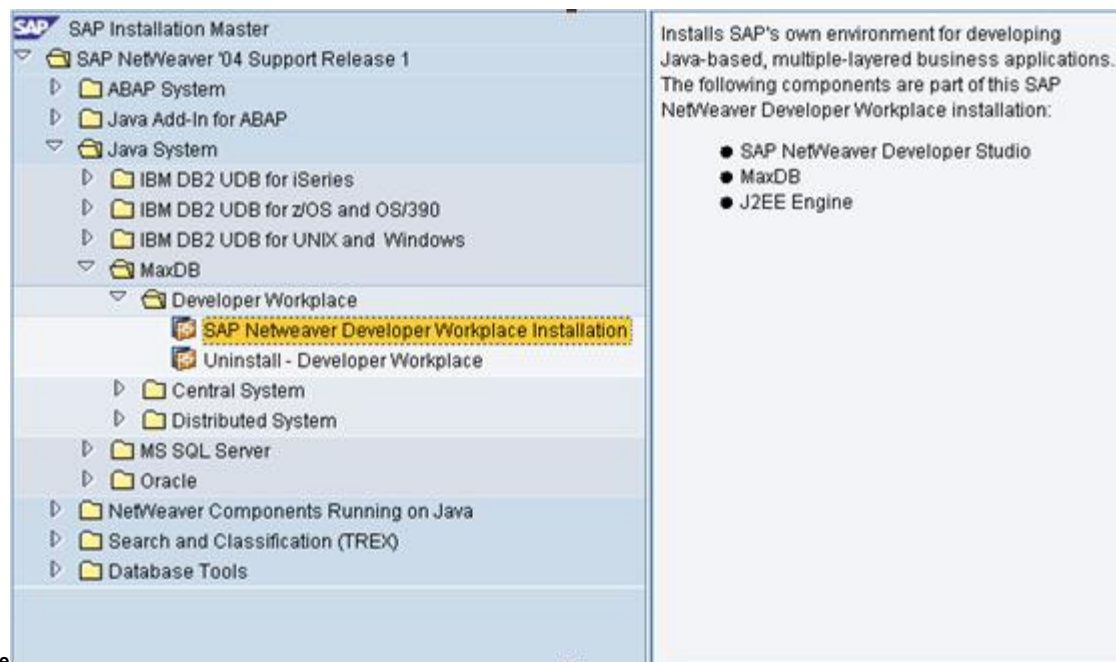
## Installing WebAS J2EE SP10 Local Adapter Engine for WinXP / MAXDB

n Download the necessary components for J2EE & XI (different components will be needed based on the installation option)

n Unzip/SAPCAR and put them in a directory

n Locate the program sapinst.exe and execute it

n Select NW Developer Workplace installation (alternatively, you can also chose to install MaxDB à Central System à Standalone Java system) (In both cases UME & SLD pre-reqs apply)



## Important changes to installation parameters

1. SLD connection & UME configuration must be checked and values provided.
2. The default can be changed (Optional) for SAPSID & DBSID

Check the proposed default values for this installation and change them if required

**Installation Parameters**  
You can change the default parameters values by selecting the appropriate check box in the *Change this Value* column.

Parameter Name	Parameter Value	Change this Value
SAP System ID (SAPSID)	J2E	<input checked="" type="checkbox"/>
Database ID (DBSID)	J2E	<input checked="" type="checkbox"/>
Central Instance Number	02	<input type="checkbox"/>
SCS Instance Number	03	<input type="checkbox"/>
SCS Messaging Service Port	3603	<input type="checkbox"/>
JDK Directory	C:\jdk1.4.2_06\	<input type="checkbox"/>
Cryptography Level	Weak	<input type="checkbox"/>
Windows Domain	I012559L	<input type="checkbox"/>
Drive for Database Data Files	C:	<input type="checkbox"/>
Drive for Database Log Files	C:	<input type="checkbox"/>
Data Volume Size (MB)	400	<input type="checkbox"/>
SLD Connection	No SLD available	<input checked="" type="checkbox"/>
UME Configuration	Use the J2EE Database	<input checked="" type="checkbox"/>
Install SAP Netweaver Develop...	true	<input type="checkbox"/>
IDE Destination	C:\Program Files\SAP\JDT	<input type="checkbox"/>

**Additional Information**  
Note that SAPinst may automatically select a checkbox if required (for example, if the *SAP System ID* already exists on this installation host). You must not deselect those checkboxes. Note that this dialog will be displayed several times until no further parameter changes are requested.

Back Next Cancel Log Off

# SLD Connection parameter

**Make sure the password matches the password in XI system**

## Java System > SLD Connection

Enter the parameters for connecting to the SLD

### SAP System Landscape Parameters

The SAP System Landscape Directory (SLD) is an SAP software component designed for registering the software components of your whole system automatically reports information about its configuration in the SLD.

SLD Connection  No SLD available

Connect to SLD with HTTP

### SLD with HTTP Parameters

HTTP Host

HTTP Port

SLD User

Password

## Useful oss notes for UME: 810434, 720590, 718383

### Java System > UME Configuration

Decide, which option you want to use for the management of users and groups in your J2EE engine

**Mandatory**

#### UME Configuration

Before selecting one of these options, you should identify the appropriate one for your scenario. Depending on the usage scenario, there are different recommendations.

- UME Configuration
- Use Java system database
  - Use ABAP system for users only
  - Use ABAP system for users and groups (SAP Exchange Infrastructure only)

#### Additional Information

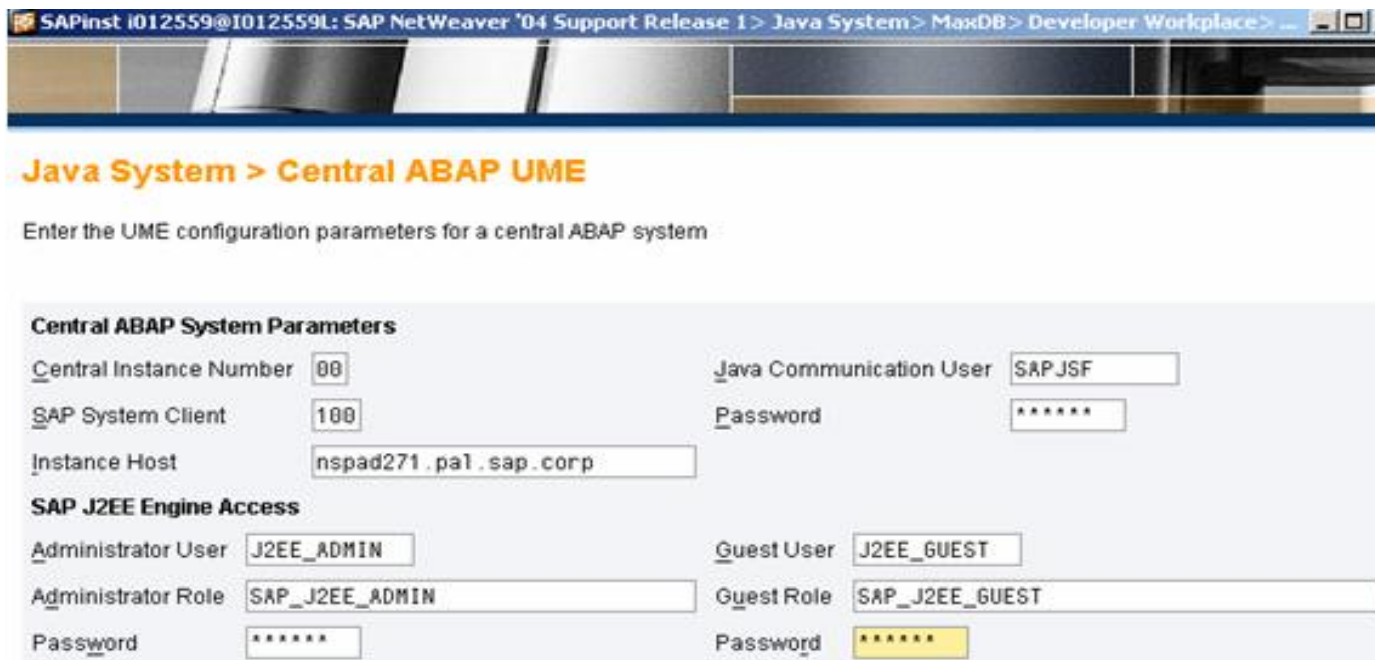
- The option *Use Java system database* is suitable for all scenarios, except for the SAP Exchange Infrastructure. With this option, user and group management will be done with the UME Web Admin and the Visual Administrator only.
- The option *Use ABAP system for users and groups* is only suitable, if you want to deploy the SAP Exchange Infrastructure (XI) on this J2EE Engine. It is particularly not recommended, if you want to deploy the SAP Enterprise Portal. With this option, user management can be done with the SAPGUI transaction SU01 and depending on the permissions of your communication user also with the UME Web Admin and the Visual Administrator. Group management can be done with the SAPGUI transaction PFCG only.
- The option *Use ABAP system for users only* is suitable for all scenarios, except for the SAP Exchange Infrastructure. With this option, user management can be done with the SAPGUI transaction SU01 and depending on the permissions of your communication user also with the UME Web Admin and the Visual Administrator. Group management can be done with UME Web Admin and the Visual Admin.

Further info: <http://help.sap.com> or SAP Note 718383.



## UME related data

The passwords for SAPJSF, J2EE\_GUEST & J2EE\_ADMIN must match password in XI system



SAPinst i012559@i012559L: SAP NetWeaver '04 Support Release 1 > Java System > MaxDB > Developer Workplace > ...

### Java System > Central ABAP UME

Enter the UME configuration parameters for a central ABAP system

Central ABAP System Parameters	
Central Instance Number	00
SAP System Client	100
Instance Host	nspad271.pa1.sap.corp
Java Communication User	SAPJSF
Password	*****

SAP J2EE Engine Access	
Administrator User	J2EE_ADMIN
Administrator Role	SAP_J2EE_ADMIN
Password	*****
Guest User	J2EE_GUEST
Guest Role	SAP_J2EE_GUEST
Password	*****

# Java system password

**This is for the local system. Please store it!  
You will need it later.**

## Java System > Password

Enter the master password for all users listed below

### Java System Master Password

Password

Confirm

### Additional Information

SAPinst creates the following accounts:

- User */012559/L/ssnadm* - J2EE Engine owner on operating system level
- User */012559/L/SAPServiceSSN* - to run the Windows services of the J2EE Engine
- User *SAPSSNDB* in database *SSN*
- User *Administrator* for the J2EE Engine
- User *Guest* for the J2EE Engine
- User for SDM

**Follow the prompts and complete the  
installation**

**The time to install depends on the hardware**

## Important userids & passwords

1. SAPJSF
2. J2EE\_ADMIN
3. J2EE\_GUEST
4. XISUPER
5. XILDUSER

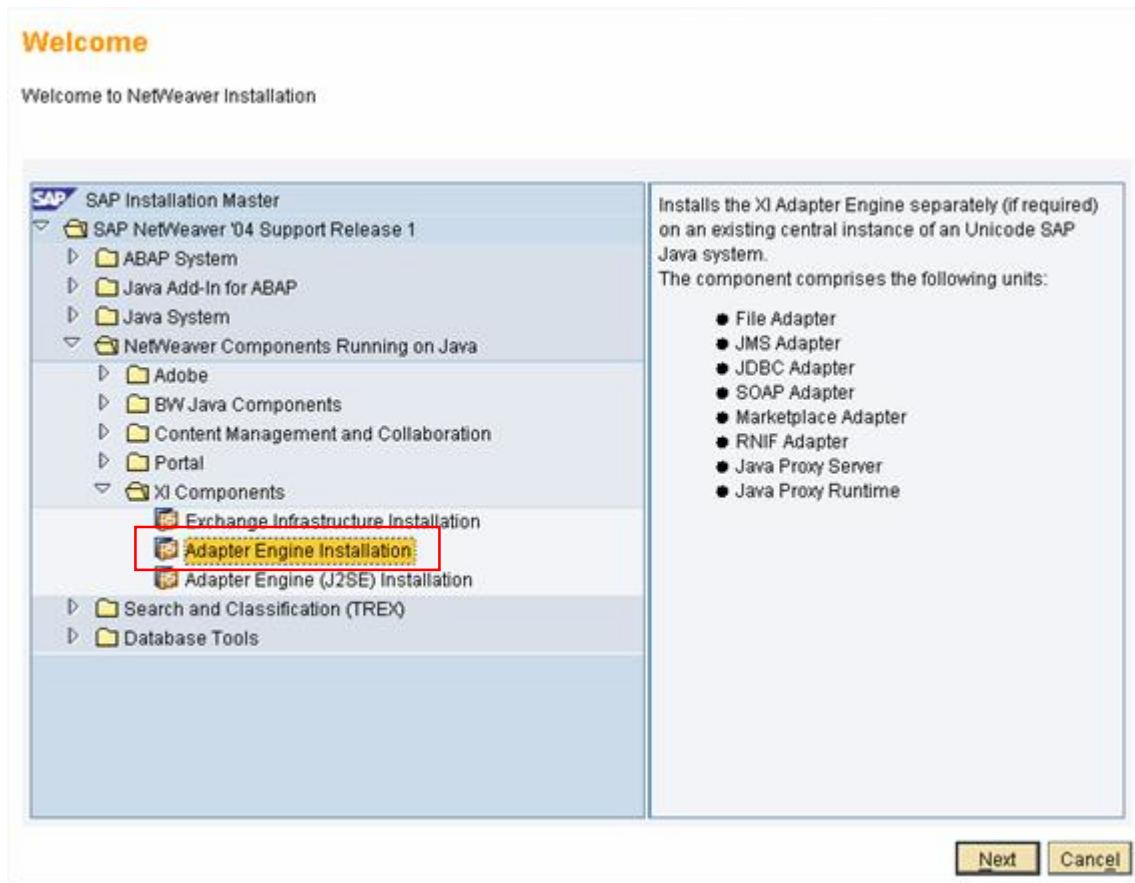


**From XI  
Server**

## Part 2 of 2: Installation of AE

n Start SAPINST

n Select NetWeaver Components Running on Java à XI Components à Adapter Engine Installation



## Connection to J2EE engine

**Provide the password for Administrator (this is for local J2EE engine)**

### SAP XI Adapter Engine > Java System

Enter the connection parameters for the existing SAP Java system

#### Java System Identification

SAP System ID (SAPSID)

#### J2EE Connection Parameters

Administrator User

Password

#### Additional Information

The Adapter Engine must be installed on a SAP Java system. To perform the installation on the SAP system, SAPinst needs the valid SAP System ID and the valid J2EE engine administrator account.

## Connection to SLD (of XI server)

**Provide the password for XILDUSER (this must match the SAP XI host, if not XI will become unstable)**

### SAP XI Adapter Engine > SAP XI Parameters

Enter the connection parameters for the existing SAP Web AS where your SAP XI is installed

#### Web AS Connection

SAP XI Host	<input type="text" value="nspad271.pa1.sap.corp"/>
SAP XI Instance Number	<input type="text" value="00"/>
SAP XI Client	<input type="text" value="100"/>
SAP XI User for SLD	<input type="text" value="XILDUSER"/>
Password	<input type="password" value="*****"/>

#### Additional Information

The Adapter Engine needs a connection to the host where the SAP Exchange Infrastructure is installed.

# Completion!!!

**The installation is now complete J**

**Finished successfully**

**SAP NetWeaver '04 Support Release 1 > NetWeaver Components Running on Java > XI Components > Adapter Engine  
Installation finished successfully.**

Temporary files, such as log files etc. have been written to C:\Program Files\sapinst\_instdir\NW04SR1\XIAF.



Adapter framework/engine Overview

Preparation/Installation

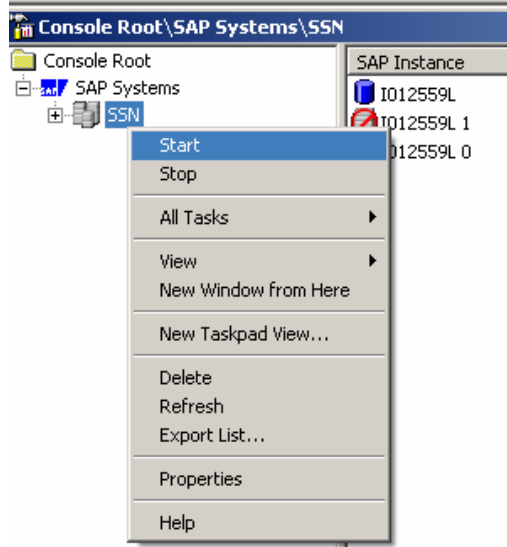
**Execution & monitoring**

Summary



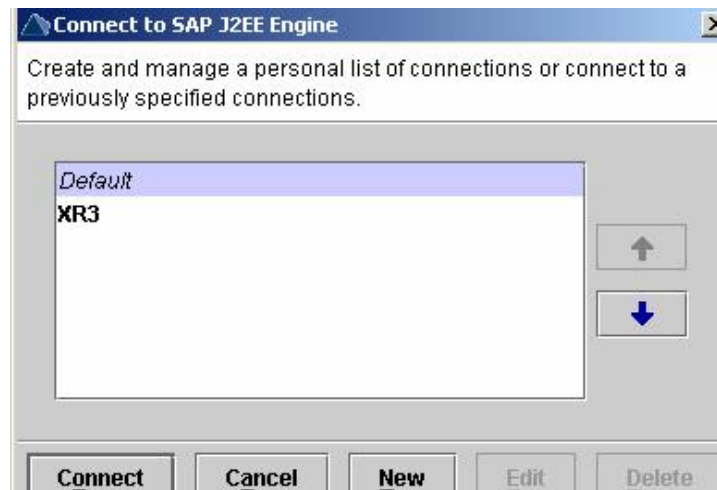
# Verification

**Start the J2EE from SAP management console and starting the J2EE**



**If you have dynamic IP address, then hosts file in server should be changed before starting decentral AE**

**Start Visual Administrator & login to your Default connection.**



# SLD connection verification

**Navigate to Services à SLD Data Supplier and verify the SLD connection**

The screenshot displays the SAP NetWeaver Administration console. On the left, a tree view under 'Global Configuration' lists various services. The 'SLD Data Supplier' service is highlighted with a red box. On the right, the 'Runtime' tab is active, showing 'System Landscape Directory: Status Information'. Below this, a table displays the following data:

Latest Send Activity	2005/03/09 17:44:47.346
Used HTTP Parameters [http host:port] [user] [protocol]	[nspad271:50000] [disuper] [http]
Sending Node [nodeID] [hostname]	[1907050] [012559L]
Send Result	Success
Next Automatic Send Timestamp	2005/03/10 05:44:26.591
Send Type	Automatic (Time Scheduled)
Configuration Status	Valid

At the bottom of the console, there are tabs for 'Information', 'HTTP Settings', 'RFC Settings', and 'CIM Client Generation Settings'.

# SLD Connection verification

The screenshot shows the SAP configuration interface. On the left, a list of services is displayed, with 'SLD Data Supplier' highlighted in a red box. The main area shows the 'Grant CIM Client Generation Permissions to Protection Domains [Domain Persistence Valid]' dialog. Below this, the 'HTTP Connection Parameters' section is visible, with fields for Host (nspad271), Port (50000), User (xisuper), Password (\*\*\*), Use HTTPS? (unchecked), and Trust Store (TrustedCAs). A 'CIMClient Test' button is highlighted in a red box. A dialog box titled 'System Landscape Directory' is overlaid on the main window, displaying the message 'CIMOMClient object generation and connection test successful' and an 'OK' button.

Grant	Domain
<input type="checkbox"/>	ejbGensap.com/com.sap.aii.adapter.bc.app:ejbGensap.com/com.sap.aii.adapter.bc.ap
<input type="checkbox"/>	ejbGensap.com/com.sap.aii.adapter.jms.app:ejbGensap.com/com.sap.aii.adapter.jms
<input type="checkbox"/>	ejbGensap.com/com.sap.aii.adapter.mail.app:ejbGensap.com/com.sap.aii.adapter.ma
<input type="checkbox"/>	ejbGensap.com/com.sap.aii.adapter.marketplace.app:ejbGensap.com/com.sap.aii.ad
<input type="checkbox"/>	ejbGensap.com/com.sap.aii.adapter.rfc.app:ejbGensap.com/com.sap.aii.adapter.rfc.ap

**HTTP Connection Parameters**

Host: nspad271  
Port (http/https): 50000  
User Parameter Settings  
User: xisuper  
Password: \*\*\*  
Use HTTPS?   
Trust Store: TrustedCAs

**System Landscape Directory**

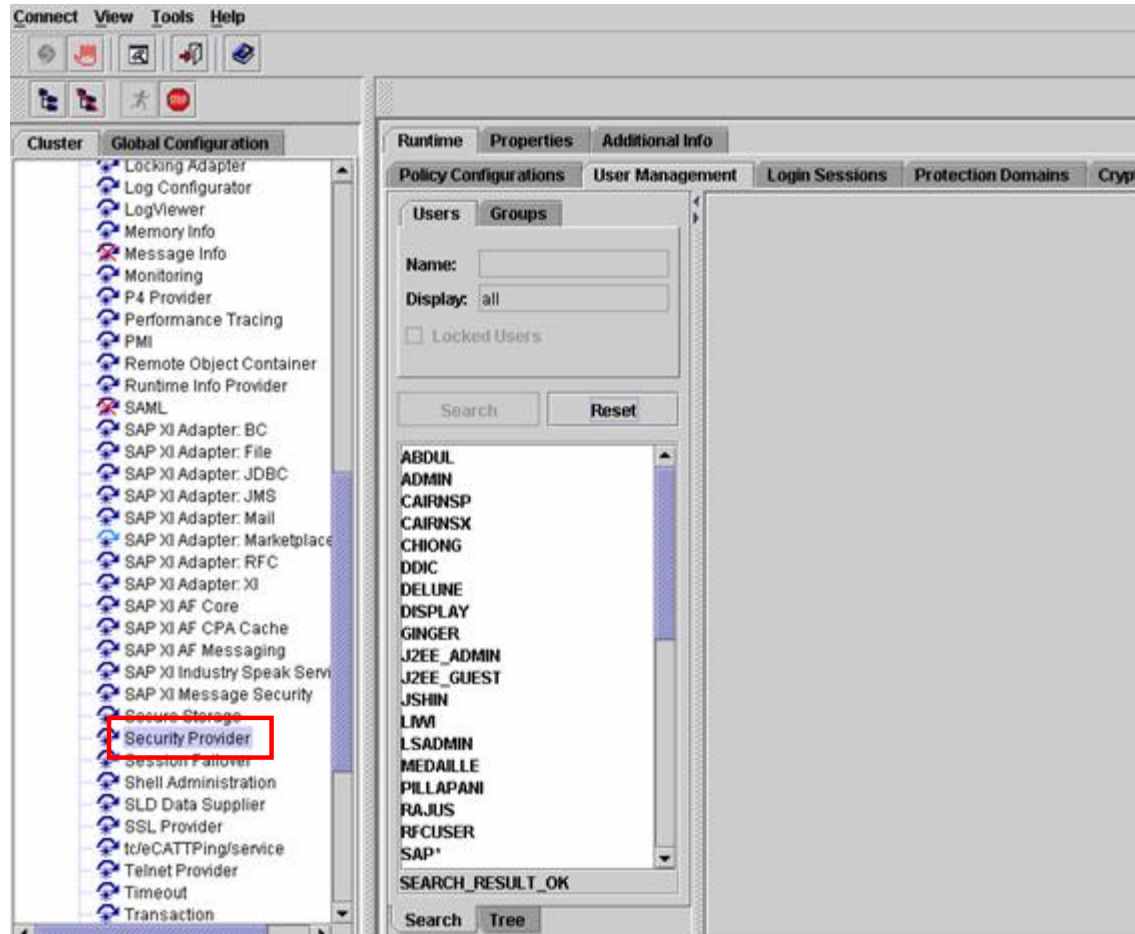
CIMOMClient object generation and connection test successful

OK

Save Refresh **CIMClient Test**

# UME verification

Navigate to Services à Security Provider and verify the users (its synchronized with the XI Server)



# Runtime workbench: Non-central AE

## RWB à Component Monitoring à Non-central AE

The screenshot displays the SAP NetWeaver Runtime Workbench interface. At the top, the SAP NetWeaver logo and 'SAP Exchange Infrastructure' are visible. Below this, the 'Runtime Workbench' section contains three tabs: 'Component Monitoring' (highlighted with a red box), 'Message Monitoring', and 'End-to-End Monitoring'. A dropdown menu shows 'Components with Status' set to 'All', with a 'Display' button next to it.

To the right, a tree view under 'Non-Central Adapter Engines' lists several engines. The last entry, 'Adapter Engine nspalc15', is highlighted with a red box. Below this, a detailed view for 'Adapter Engine nspalc15' is shown, including a green status indicator, the engine name, and sub-items for 'J2SE Adapter' and 'Tools'.

At the bottom, there are tabs for 'Status', 'Settings', and 'Test Message'. The 'Status' tab is active, showing a row of buttons: 'Repeat Ping', 'Repeat Self-Test', 'Security Archiving', 'Message Archiving', and 'Adapter Monitoring'. Below these buttons, the status is summarized:

- CCMS Status: Last Retry Fri Mar 11 08:31:51 PST 2005
- Ping Status: Last Retry Fri Mar 11 08:32:18 PST 2005
- Self-Test Status: Last Retry Fri Mar 11 08:32:19 PST 2005

A section titled 'Result of Self-Test' shows two checks, both with green status indicators:

- Is the exchange profile available? (Green)
- Is a user defined for component AF? (Green)

## Its possible to look at settings and send test messages

The screenshot displays the SAP Adapter Engine configuration interface. On the left, the 'Adapter Engine nspalc15' is selected, showing its 'Settings' tab. A table of parameters is visible, including Applications Directory, Bin Directory, LoadBalanceRestricted, SAPDBHOST, SAPINFO, SAPMYNAME, SAPSTARTUP, SAPSYSTEM, SAPSYSTEMNAME, SAP\_I2EE\_Engine\_Version, SSL\_CA\_CERTIFICATES\_DIR, and SSL\_CERTIFICATE\_CHAIN.

On the right, the 'Test Message' tab is active, showing options to 'Save Message', 'Open Message', 'Delete Message', and 'Send Message'. The 'Send Message To' field is populated with 'http://nspalc15:50200/MessagingSystem/receive/AFW/XI'. Below this, the 'Header Information' section includes fields for Party, Service (BS\_RIG\_SN\_I), Interface (Vendor\_out), User (sukumar), Password, and Quality of Service (Exactly Once).

The 'Payload' section contains an XML message:



```
<?xml version="1.0" encoding="UTF-8"?>
<ns:Vendor xmlns:ns="urn:sukumar-test">
  <VendorNumber>30101121</VendorNumber>
  <LastName>In</LastName>
  <SearchTerm>st</SearchTerm>
  <Currency>USD</Currency>
  <Address>
    <Street>st</Street>
    <City>city</City>
    <Zip>75075</Zip>
  </Address>
</ns:Vendor>
```

# Central Configuration

Integration Directory

**Edit Communication Channel** Status Active

Communication Channel: File\_Sender\_using\_localAE  
Party:   
Service: BS\_RIG\_SN\_I  
Description:   
  
**Parameters** | Identifiers | Module

Adapter Type \* File http://sap.com/xi/XI/System SAP BASIS 6.40  

Sender  Receiver

Transport Protocol \* File System (NFS)

Message Protocol \* File

Adapter Engine \* af.wl1.nspalc15

**File System Access**

Source Directory \* af.jd1.i801200  
Integration Server  
af.bl1.i014407a  
af.ssn.i012559l

File Name \* af.wl1.nspalc15  
af.j2e.i014407a  
af.jin.wdcn00153491a









**Processing Parameters**  
af.c11.i802563l

Selection of Adapter Type

List of all available Adapter Engines

# Cache refresh in Integration Directory

**After object activation go to Environment à  
Cache notifications**

af:wl1.nspalc15		3/11/05 3:...		3/11/05 ...	Direct
af:wl1.nspalc15		3/11/05 3:...		3/11/05 ...	Direct
af:wl1.nspalc15		3/11/05 3:...		3/11/05 ...	Direct
af:wl1.nspalc15		3/11/05 3:...		3/11/05 ...	Direct



# Cache on the ABAP stack

In the Integration Server client execute transaction **sxi\_cache**

Status of XI Runtime Cache **Cache refresh is automatic!**

Cache contents are up-to-date

Details

Column	Conts.
	CFD2CE1B80CF0A44BD7
Adapter Engine Name	af.wl1.nspalc15
Adapter Engine Name	AE
Adapter Engine URL	http://nspalc15:50200/Mes
User Name	XIISUSER
	11.02.2005

Adapter Engine Connection Data Cache

	AE Name	AE Name	Adapter Engine URL	Name
A9366CD5D286034980FC4F8A2986DB93	af.JD1.i801200i	AE	http://i801200i:50000/MessagingSystem/receive/AFW/XI	XIISUSER
C8186E39F3174F4D812262D29E7533D5	af.bl1.i014407a	AE	http://i014407a:50000/MessagingSystem/receive/AFW/XI	XIISUSER
75B91C4575882D489AC23913779B1548	af.jd1.i801200i	AE	http://i801200i:50000/MessagingSystem/receive/AFW/XI	XIISUSER
7F6C0B7DC099464CA99B1BF3C5C40084	af.spj.i802563a	AE	http://i802563a:50000/MessagingSystem/receive/AFW/XI	XIISUSER
CFD2CE1B80CF0A44BD762B7D541CB0E2	af.wl1.nspalc15	AE	http://nspalc15:50200/MessagingSystem/receive/AFW/XI	XIISUSER
DAC5A0E28C8E744FBD865ACE537CE9B9	af.xr3.nspad271	CA	http://nspad271:50000/MessagingSystem/receive/AFW/XI	XIISUSER

# CACHE info on the J2EE Engine

The screenshot displays the SAP NetWeaver Administrator interface. On the left, a tree view under 'Global Configuration' shows various components, with 'SAP XI AF CPA Cache' highlighted in a red box. On the right, the 'Properties' tab is active, showing a table of configuration parameters for the selected component.

Key	Value
SLD.selfregistration.hostName	
SLD.selfregistration.httpPort	
SLD.selfregistration.httpsPort	
SLDAccess	true
SLDReader.pollInterval	15
cacheFileName	CPACache.xml
cacheType	DIRECTORY
cacheUpdateDebugFile	false
cacheUpdateDebugFile.delta	DebugPartialCacheRefresh.xml
cacheUpdateDebugFile.full	DebugFullCacheRefresh.xml
cacheUpdateDelay	5
cacheUpdateTestMode	false
dbPoolName	jdbc/not/SAP/BC_XI_AF_CPA
directoryPwd	*****
directoryURL	http://localhost:50000/dir/hmi_cache_refresh_service/ext?me
directoryUser	XIAFUSER
ssl.serverNameCheck	false
trackCacheUpdateXML	false

# Central Monitoring from RWB

## Message Monitoring

Messages from Component:

- Integration Engine XR3
- Adapter Engine nspad271
- Proxy Runtime WMD\_RIG\_BW35
- Proxy Runtime XR3\_200
- Adapter Engine i014407A
- Adapter Engine i802563L
- Adapter Engine i014407a
- Adapter Engine i801200
- Adapter Engine WDCN00153491A
- Adapter Engine i012559L
- Adapter Engine nspal15

### Audit Log for Message: aee3d340-8440-11d9-a834-00508b6443cf

Time Stamp	Status	Description
2005-02-21 11:42:13	Success	Send text file "C:\data\File_send\LocalAdapterTest.xml", size 236, character encoding Cp1252 with QoS EO
2005-02-21 11:42:13	Success	Application attempting to send an XI message asynchronously using connection AFW.
2005-02-21 11:42:13	Success	Trying to put the message into the send queue.
2005-02-21 11:42:13	Success	Message successfully put into the queue.
2005-02-21 11:42:13	Success	The application sent the message asynchronously using connection AFW. Returning to application.
2005-02-21 11:42:13	Success	The message was successfully retrieved from the send queue.
2005-02-21 11:42:13	Success	Confirmation mode test found. File will be resent next time
2005-02-21 11:42:13	Success	The message status set to DLNG.
2005-02-21 11:42:13	Success	The message was successfully transmitted to endpoint http://nspad271.pal.sap.corp:8080/sap/xi/engine?type=entry using connection AFW.
2005-02-21 11:42:13	Success	The message status set to DLVD.
2005-02-21 11:42:13	Success	The message was successfully delivered.

**Total: 11 Entries**
 messages displayed per page; this is page  of 1 page(s)



Adapter framework/engine Overview

Preparation/Installation

Execution & monitoring

**Summary**

- n SAP XI's Adapter framework is J2EE based, and is JCA Complaint**
  - u Adapter Framework runs on the J2EE stack of SAP Web AS
  - u Adapter Framework is platfor for Adapter Engine & SAP PCK
- n Decentral AE is based on SAP WebAS**
- n Provides the same functionality as the central AE**
- n Communication channels pointing to decentral AE's can be configured centrally in ID**
- n RWB provides monitoring capabilities to check the status of decentral adapters as well as message monitoring**

## Further Information

### è Public Web:

[www.sap.com](http://www.sap.com)

SAP Developer Network: [www.sdn.sap.com](http://www.sdn.sap.com) è Exchange Infrastructure

SAP Customer Services Network: [www.sap.com/services/](http://www.sap.com/services/)

Adapter related information in Service marketplace: <http://service.sap.com/xi>

SAP XI in detail à Connectivity à Connectivity SAP XI 3.0

Online help @ [help.sap.com](http://help.sap.com)

### è Related SAP Education Training Opportunities

<http://www.sap.com/education/>

Questions?

# Q&A

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