Java Support Package Manager

SAP NetWeaver Release 2004s SPS09

Copyright

Icons in Body Text

Icon	Meaning
⚠	Caution
🗨	Example
💡	Note
🧭	Recommendation
SYN	Syntax

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help → General Information Classes and Information Classes for Business Information Warehouse* on the first page of any version of *SAP Library*.

Typographic Conventions

Type Style	Description
Example text	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.
	Cross-references to other documentation.
Example text	Emphasized words or phrases in body text, graphic titles, and table titles.
EXAMPLE TEXT	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
`Example text`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Java Support Package Manager

Purpose

You can use the Java Support Package Manager (JSPM) to apply support packages on deployed software components. You can also deploy SAP and third-party software components to which you can then apply support packages and patches. You can deploy new business packages of mySAP Business Suite. You can also upgrade and update business packages of mySAP Business Suite that are deployed on the system to a higher release and support package level respectively. In addition, JSPM detects SAP software components that have been modified and allows you to apply support packages to them.

The JSPM has the following features:

- Usability

    - Offers a simple and intuitive graphical user interface (GUI)

    - Shares common GUI with SAPinst and SAPJup

    - Automatically detects and offers you only components that can upgrade deployed components

    - Shows only necessary information. Shows additional details at your request.

- Deployed Component Overview

    - Displays support package level information

- Support Package Level Administration

    - Allows definition of dependencies between versions of software components

    - Checks whether a new software component version may correctly upgrade an existing software component version

- Development Component Level Administration

    - Checks deployment dependencies between development components

- Update of Kernel Binaries, Software Deployment Manager (SDM), Internet Graphics Server (IGS), and JSPM

- Deployment

    - Allows you to apply a support package stack

    - Allows you to apply single support packages

    - Allows you to deploy SAP and third-party software components

    - Allows you to deploy and upgrade business packages of mySAP Business Suite

    - In NWDI development (DEV) and consolidation (CONS) systems, detects modified software components and transports them for deployment to NWDI

    - In NWDI test (TEST) and production (PROD) systems, detects and deploys modified software components

    - Informs you if restarting of the J2EE Engine is necessary during the deployment process

    - Offers a better support of the patch process in a distributed systems scenario

      ○   Monitors and logs the deployment process

      ○   Allows you to restart the deployment of support packages

      ○   At the end of a patch procedure, it offers a Java Support Package Manager Evaluation Form. The evaluation form contains important information about the patch procedure and allows you to provide feedback about your experience with JSPM. You can send the evaluation form to SAP to analyze your patch procedure and the errors that might have occurred. The evaluation form will also help SAP to improve the overall patch procedures.

Integration

JSPM connects to the SDM server to deploy support packages and software components. The SDM server performs additional validation of the support packages and software components for deployment.

JSPM is integrated with the SAP NetWeaver Development Infrastructure (NWDI). JSPM detects SAP software components that have been modified and allows you to apply support packages to them.

See also:

Software Delivery Unit [Page 7]

Starting JSPM [Page 11]

Software Delivery Unit

Definition

A software component archive (SCA), Java archive (JAR) or SAP archive (SAR) that can be deployed by the JSPM.

SCAs that are modified using the NWDI can also be handled by the JSPM.

Use

The following software delivery units (SDUs) can be deployed by the JSPM:

- Support package stacks

  Support package stacks are defined by SAP collections of support packages for all software components in one product. Support package stacks have been designed to reduce the amount of different combinations of software versions at customer systems and to provide customers with a set of versions that can work best together.

  A support package stack can contain a combination of the following:

  - A set of different SCAs

  - A set of different SCAs that are modified using the NWDI

  - The SDM JAR – `SDMkit.jar`

  - The kernel SARs:

    - Database Independent: `SAPEXE.SAR` and other operating system dependent SARs

    - Database Dependent: `SAPEXEDB.SAR` and other database dependent SARs

    - The SAP archiving tool – SAPCAR

  - The IGS SAR – `IGSEXE.SAR`

  - A configuration XML file, which includes a description of the components that are part of the stack and their respective support package and patch levels.

- Single support packages

  SAP provides support packages on a component level. Java support packages contain the complete version of the development components of an application. You, therefore, need to import the latest support package only. If there are dependencies with other Java support packages, they are specified in an SAP Note.

  SAP provides support packages also as a single component patch. For example, patch 2 of support package 3 may include some fixes.

  Support packages are provided in the form of SCAs, JARs, and SARs. Support packages that are provided in the form of SCAs can be modified using the NWDI.

- New software components

  Third-party software components and SAP software components, both ones that are part of an SAP usage type and ones that are not part of an SAP usage type.

  Software components are provided in the form of SCAs.

- Business packages of mySAP Business Suite

Business packages of mySAP Business Suite are business solutions and applications, for example, mySAP Customer Relationship Management, mySAP Supplier Relationship Management, and so on. Business packages are provided in the form of SCAs.

In addition, during the scan of the global EPS inbox directory, JSPM can detect and offer for deployment SCAs with a ZIP file extension.

Structure

Each SCA has the following attributes:

- Vendor

  The company that produced the software, for example, sap.com.

- Name

  The name of the component, for example, SAP-JEE.

  The vendor and the name form the unique identifier of the software component. Components with one and the same name but with different vendors are considered different components.

- Release

- Support package level

- Patch level

- Counter

  Contains the release, support package level, patch level, and timestamp. For example, 1000.7.00.2.0.20050524093600, where 7.00 is the release, 2 is the support package level, 0 is the patch level, and 20050524093600 is the timestamp.

- Provider

  The provider that built the software component version, for example, SAP AG.

An SCA may have several versions. An SCA version is defined by a combination of all of the attributes above. Before the deployment of a software component, the JSPM performs the following types of version checks:

- The vendors and the names of the SCAs are the same as the ones of the software components that are installed on the system.

- The releases of the SCAs are the same as the ones of the software components that are installed on the system. JSPM allows updates only within one release.

- The support package levels of the SCAs are higher than or equal to the ones of the software components that are installed on the system.

- If the support package levels of the SCAs are equal to the ones of the software components that are installed on the system, the patch levels of the SCAs are higher.

- Checks for modified software components

  If the provider of an SCA is different from the original provider, SAP AG, of the software component that is installed on the system, this SCA has been modified using the NWDI.

- Checks on foreign software components

  The JSPM checks if, after the deployment of a software component, the dependencies on other software components are fulfilled.

JSPM executes additional checks at the Check Queue wizard step. You can view the results of these checks in the JSPM UI and in the log files.

Integration

Before the deployment of a software component, the SDM server performs additional version checks. Only new software components that have a higher counter than the counter of the old software components can be deployed.

JSPM detects software components that have been modified using the NWDI. The way in which JSPM handles modified software components depends on the respective NWDI system role.

Requirements for Free Disk Space

You have to make sure that there is enough free disk space for the archives that you download on SAP Service Marketplace at **service.sap.com**.

Patching SAP Kernel and IGS

During SAP kernel or IGS patch, JSPM extracts the archives to a temporary directory under the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/tmp` directory. If the total size of the archives is X MB, there must be about 3 times X MB free disk space. When the patch is completed, the temporary directory is deleted.

If you have a heterogeneous cluster, this procedure is repeated for each separate kernel. When each kernel patch is completed, the temporary directory is deleted.

Patching SDM

During SDM patch, JSPM extracts the `SDMkit.jar` to a temporary directory under the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/tmp` directory. Since this archive contains other archives, its extracted size is almost the same, about 10 MB. When the SDM patch is completed, the temporary directory is deleted.

Patching J2EE Components

The deployment of the SCA files from the global EPS inbox directory is handled by SDM. If the total size of an SCA is X MB, at least 2 times X MB must be free under the `/usr/sap/<SID>/<Central instance name>SDM/root` directory. In addition, during the deployment X MB must be free temporarily under the `/usr/sap/<SID>/<Central instance name>/SDM/program/temp` directory. Therefore, a total of 3 times X MB must be free under the `/usr/sap/<SID>/<Central instance name>/SDM` directory.

In addition, depending on the J2EE components, some J2EE Engine containers require additional free disk space. There must be at least enough free disk space to extract all software deployment archives inside the SCAs.

Additional

JSPM requires about 20 MB free disk space under the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM` directory for log and data files.

Starting JSPM

Prerequisites

- The J2EE Engine and the SDM server are running.

- No application is connected to the SDM server. There can be only one connection to the SDM server at a time. For example, if you have an open SDM GUI, you must disconnect from the SDM server. Otherwise, the JSPM cannot connect to the SDM server to apply support packages and to deploy software components.

- Directories and files have not been deleted, renamed, or created in the following directories and their subdirectories: `/usr/sap/<SID>/SYS/exe` and `/usr/sap/<SID>/SYS/profile`. Otherwise, JSPM cannot detect the kernel and the system profiles, and cannot be started. If a backup of the kernel and the system profiles has been required, it has been created in a different directory.

- You have logged on to the operating system as a `<SID>adm` user. If you have not done this, you must switch to it before starting to use JSPM. Fore more information, see below.

- If your system is an IBM eServer iSeries:

  - You have logged on as a `<SID>adm` or a `<SID>ofr` user.

  - The release of JSPM is not lower than SAP NetWeaver 2004s SPS06.

  - If you have to deploy JSPM as of SAP NetWeaver 2004s SPS06, the `go` and `StartGui` scripts have been downloaded. For more information, see SAP Note 885063.

Switching to <SID>adm user

For Windows OS

You can do this in two ways.

With menu options

1. Open *Start → Programs → Accessories*

2. Click with the secondary mouse button on the *Command Prompt* icon.

3. From the pop-up menu, choose *Run As*.

4. Choose `<SID>adm` user.

5. Start JSPM from the new console.

With runas command

Use the following command line:

```
runas /profile /user:<domain or host>\<sid>adm <full path to
JSPM\go.bat>
```

```
runas /profile /user:%COMPUTERNAME%\j70adm
D:\usr\sap\J70\JC03\j2ee\JSPM\go.bat
```

For UNIX OS

6. Use the following command:

   ```
   su - <sid>adm
   ```

7. Start JSPM.

Starting JSPM on Any Operating System

8. In the file system, go to the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM` directory.

   > Depending on the system, the name of the central instance has the following syntax:
   >
   > - For a standalone system – `JC<xx>`
   >
   > - For an add-on system – `DVEBMGS<xx>`, where xx is the number of the central instance.

9. To start JSPM, run the `go` script file.

   > In this step you can specify a temporary inbox directory. See Detecting and Changing the Global EPS Inbox Directory [Page 13].

10. Enter your password for the SDM and choose *Log On.*

    > If you enter an incorrect password three times in a row, the SDM server will be stopped. You must start it and log on to the JSPM again. For more information about starting the SDM server, see Starting and Stopping the Software Deployment Manager [External].

Starting JSPM on an IBM eServer iSeries System

1. To prevent JSPM from automatically starting its GUI, in the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/param/jspm_config.txt` file, change the `/dialog/SDTServerConnection/SDTGui/launch` property from `true` to `false`.

2. Run the `go` script on the IBM eServer iSeries host using the following OS/400 command:

   QSH CMD('/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/go').

3. To start the JSPM GUI, from the mounted `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM` directory, run the `StartGui` script.

   The JSPM GUI appears.

4. In the *Host* field, enter the target IBM eServer iSeries host.

5. Enter your password for the SDM and choose *Log On.*

Detecting and Changing the JSPM Inbox Directory

Use

The JSPM ibox directory contains the archives that you have downloaded to patch the system. You need to know the location of the JSPM inbox directory for maintenance reasons. By default it is *<DIR_EPS_ROOT>\in*.

Prerequisites

You are logged on to the operating system as a `<SID>adm` user.

Changing the Inbox Directory

To change the directory from where JSPM reads the SCAs you can either change the global EPS inbox directory or set a new JSPM inbox directory.

Detecting the Global EPS Inbox Directory

If you want to detect the value of the `DIR_EPS_ROOT` parameter, on the command line, execute the following command:

```
sappfpar
pf=<install_directory>:\usr\sap\<SID>\SYS\profile\<SID>_<Central
instance name>_<host> DIR_EPS_ROOT
```

Changing the Global EPS Input Directory

JSPM detects the location of the global EPS inbox directory by reading the value of the central instance profile parameter `DIR_EPS_ROOT`. The location of the global EPS inbox directory is the `in` subdirectory of this location. On most systems, the default value of the parameter is */usr/sap/trans/EPS* and the location of the global EPS inbox directory is */usr/sap/trans/EPS/in*.

For more information about other directories that are used by JSPM and NWDI, see Maintaining Modified Java Runtime Systems Using NWDI.

> We recommend that you do not change the value of the central instance profile parameter `DIR_EPS_ROOT` unless you are advised to do so by SAP support. Otherwise, your system may stop working because many SAP NetWeaver components are using it. In addition, if you have a double-stack system, bear in mind that the ABAP Support Package Manager also uses the central instance profile parameter `DIR_EPS_ROOT`.

To change the value of the `DIR_EPS_ROOT` parameter:

6. In the */usr/sap/<SID>/SYS/profile/<SID>_<Central instance name>_<host>* file:

    ○ If the parameter exists, change the value of the parameter as follows:

        ```
        DIR_EPS_ROOT=<New location>
        ```

    ○ If the parameter does not exist, add the following line:

        ```
        DIR_EPS_ROOT=<Location>
        ```

        > We recommend that you use the following pattern for the location *<any path>/EPS*.

7. Add a blank line at the end of the file.

8. If you are logged on to JSPM, restart it.

Setting a JSPM Inbox Directory

9. Stop JSPM.

10. Open *usr\sap\<SID>\<SYS>\j2ee\JSPM\param\jspm_config.txt*.

11. Add a new parameter `jspm/inbox` with a value equal to the full path to the new inbox directory.

12. Start JSPM.

Setting a Temporary Inbox Directory

⚠

The temporary inbox directory has precedence over the permanent directory.

To use a temporary inbox directory, when you start the JSPM you have to run the `go` script file as follows:

- For Windows

  ```
  go.bat "-config=jspm/inbox=<path_to_inbox>"
  ```

- For Unix

  ```
  go '-config=jspm/inbox=<path_to_inbox>'
  ```

Viewing the Deployed Components

Use

Before you start a new deployment you can view details about vendor, release, SP level, counter, active usage type and provider of the software components that are currently deployed. After you finish a deployment, you can view the updated details about the respective deployed components.

Procedure

1. Choose the *Deployed Components* tab. SCAs and SDAs that are deployed appear. They are organized in a tree with the following structure:

   ○ Product -

   ○ Active usage type -

   ○ Software components -

   ○ Development components -

   If there are components that do not belong to any active usage type, they will be displayed at first level in the tree below the structure of the products.

   If you want to view the details about the kernel, SDM, and IGS, they are shown in the selection tree as follows:

   - *sap.com/SAP KERNEL*

   - *sap.com/SAP_JAVASL*

   - *sap.com/BC-FES-IGS*

2. If you want to start a new deployment, choose the *Deployment* tab.

For more information about the deployment process, see:

- Applying a Support Package Stack [Page 16]

- Applying Single Support Packages [Page 22]

- Deploying New Software Components [Page 27]

- Deploying and Upgrading Business Packages [Page 30].

Applying a Support Package Stack

Use

You can update all software components of SAP products that are deployed on the system by applying a support package stack. Support package stacks are defined by SAP collections of support packages for software components that work best together. In addition, you can apply a support package stack, which contains newer versions of SAP software components that have been modified in the NWDI.

> Before you can apply a support package stack of a given level, you have to update JSPM to the same level by applying it as a single support package [Page 22].
>
> The update of JSPM does not require a restart of the J2EE Engine and does not affect the system operation.

Prerequisites

- The SAP NetWeaver Application Server Java (AS Java) and the database have been backed up. For more information, see Backing Up and Restoring AS Java [External].

- Directories and files have not been deleted, renamed, or created in the following directories and their subdirectories: `/usr/sap/<SID>/SYS/exe` and `/usr/sap/<SID>/SYS/profile`. Otherwise, JSPM cannot detect the kernel and the system profiles, and cannot be started. If a backup of the kernel and the system profiles has been required, it has been created in a different directory.

- If your database is MaxDB, the overwrite mode for the log area has been set. For more information, see Changing Log Settings [External].

- The support package stack you want to apply and the corresponding stack definition XML file have been downloaded to the global EPS inbox directory `/usr/sap/trans/EPS/in`. For more information about SAP products, see SAP Service Marketplace at **service.sap.com/sp-stacks**.

- If the support package stack you want to apply includes the Enterprise Portal (EP), the SDM timeout for the automatic start/stop of the J2EE Engine has been increased to 2 hours. For more information about increasing the SDM timeout, see SDM Troubleshooting [External].

- The `<SID>adm` user has Read permissions for the global EPS inbox directory `/usr/sap/trans/EPS/in`.

- The database and the SDM repository have been synchronized. For more information, see JSPM Does Not Update the Versions of the Deployed Components [Page 45].

- There is enough disk space. For more information, see Requirements for Free Disk Space [Page 10].

Procedure

1. Choose the *Deployment* tab.

   JSPM will guide you through the process of applying a support package stack via a wizard, which consists of the following five steps: Select Package Type, Specify Queue, Check Queue, Deploy Queue, and Completed.

Select Package Type

2. Select *Support Package Stack*, and then:

   o   If your system is not used for NWDI development, select *No NWDI*.

   o   If your system is used for NWDI development, select the role of your system by selecting one of the following: *DEV*, *CONS*, *TEST*, or *PROD*.

3. Choose *Next*.

   Support package stacks that are available for deployment from the global EPS inbox directory are displayed.

   If your system is used for NWDI development, and it is either a DEV or a CONS system, and if JSPM has found in the global EPS inbox directory the `sap.com/SAP_BUILDT` and `sap.com/EP_BUILDT` components, they will also be listed for deployment.

   If your system is not used for NWDI development, or is either TEST or PROD system, these components will not be proposed for deployment. They do not contain deployable content but only development content required for DEV and CONS systems.

Specify Queue

4. To view the details about the software components that are part of a support package stack, choose *Show Details*.

   One stack definition XML file may contain many product support package stacks. For each product, however, there may be only one support package stack. The details about all software components that are part of these support package stacks are displayed.

   If JSPM has found any modified software components, they are marked with .

5. Select a support package stack you want to apply.

   By default, the target SP level is the latest available SP.

6. If you do not want to apply the latest support package, from the *Target SP Level* dropdown box, select the SP level you want and choose *Next*.

Check Queue

In this step, JSPM checks the deployment queue. The status of the components of the selected support package stack can be:

- OK

- WARNING

  You can go on with the deployment or you can change the content in the global EPS inbox directory and go back to the Select Package Type wizard step. We recommend that you view the details about the component by choosing *Show Details*:

  o   If your system is used for NWDI development, and it is either a DEV or a CONS system, you will be informed that JSPM will not deploy the modified software components, but only transport them, together with the other software components of the support package stack that are not modified, to the CMS transport directory `/usr/sap/trans/EPS/in/CMS<hostname><SID>`. JSPM will deploy only the software components that are not modified.

  o   If your system is not used for NWDI development, or if your system is used for NWDI development and it is either a TEST or a PROD system, you will be

informed that JSPM has found newer versions of modified software components in the global EPS inbox directory, and will automatically replace the original versions with the newer versions. JSPM will deploy all software components that are not modified and the replaced versions of the modified software components.

If your system is used for NWDI development, and it is either a DEV or a CONS system, the `sap.com/SAP_BUILDT` and `sap.com/EP_BUILDT` components are always with status WARNING. If you have selected the component for deployment, JSPM will never deploy it, but only transport it to the CMS transport directory.

- REVISE

  You cannot go on with the deployment.

  You can view the details about the component by choosing *Show Details*.

  If your system is not used for NWDI development, or if your system is used for NWDI development, and it is either a TEST or a PROD system, and you want to apply a support package stack that includes modified software components for which JSPM does not find newer versions in the global EPS inbox directory, these software components will always be with status REVISE.

  You have to change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

7. If the status of the selected support package stack is OK or WARNING, choose *Next*.

   You will be informed if the J2EE Engine will be restarted during the deployment.

   If the support package stack includes a kernel, you will be prompted to stop any running dialog instances. For more information, see Starting and Stopping the J2EE Engine [External]. In addition, on Microsoft Windows you will be prompted to close the Microsoft Management Console (MMC).

Deploy Queue

JSPM starts the deployment of the software components that are part of the selected support package stack. The status of all software components changes to SCHEDULED.

If the support package stack includes a kernel, and if your system is distributed, during the deployment you will be first prompted to stop the central services instance and any running dialog instances, and to choose *Next*. You will be then prompted to start the central services instance and to choose *Next*.

To avoid failover of your SAP system, while patching it, temporarily disable the SAP system failover/restart capabilities in your high availability (HA) software. The patch procedure might require the SAP system to be down for a while, which will conflict with the restart/failover actions that are triggered by the HA software. To disable the SAP system failover/restart capabilities, stop the SAP instance, using the HA software, stop the HA software and start the SAP system manually before starting the patch procedure. After the patch procedure has finished, stop the SAP system manually and start it again using the HA software. For more information, contact your HA implementation partner.

Completed

The deployment of the components of the support package stack can finish with the one of the following statuses:

- DEPLOYED

    If the support package stack includes the JSPM, when it has been updated, for the update to take effect, you will be prompted to restart it. If there are still components in status NOT DEPLOYED, JSPM will proceed with their deployment when you start it again.

    Bear in mind that you must not change the content of the global EPS inbox directory before the deployment has finished.

- DEPLOYED WITH WARNING

    The component has been deployed but it is possible that it will not work properly with other deployed software components.

    You can view the details about the component by choosing *Show Details*.

    You can also view the details about the component by choosing the *Deployed Components* tab (see Viewing the Deployed Components [Page 15]).

    You can also view the log files [Page 35].

- ERROR

    An error has occurred during the deployment of the component. You can proceed as described for a deployment that finished with status DEPLOYED WITH WARNING.

    In addition, if you receive an error during deployment message, you have the following options:

    - If you have corrected the error, but not by changing the content of the global EPS inbox directory, you can choose *Resume*.

        The deployment is resumed from the Deploy Queue wizard step.

    - If you have corrected the error by changing the content of the global EPS inbox directory, you can choose *New Deployment* and try to deploy the stack again.

    - You can stop JSPM by choosing *Exit*.

        Next time you launch JSPM, the *Broken Deployment* screen appears and you will have the two options: to resume the deployment or to start a new deployment.

- NOT DEPLOYED

    JSPM has not attempted to deploy the component.

    - If your system is not used for NWDI development, you can proceed as described for a deployment that finished with status ERROR.

    - If your system is used for NWDI development, and it is either a DEV or a CONS system, the status of the modified software components is always NOT DEPLOYED. JSPM has transported the software components of the support package stack, both modified and not modified, to the CMS transport directory. The deployment of the modified software components is handled by NWDI (see Import of Support Packages into Follow-On Systems [External]).

8. To view some statistics for your patch procedure and to send feedback to SAP about your experience with JSPM, choose *Evaluation Form*. For more information, see Evaluation Feedback and Statistics Form [Page 33].

9. If the deployment of the support package stack has finished with status DEPLOYED, you can choose *New Deployment* or *Exit*.

Result

The deployed components on the system are updated to the newer versions defined in the support package stack you have selected. On the *Deployed Components* tab page, the details about the SP level and counter of the respective deployed components are updated.

> If your system is used for NWDI development, and it is either a DEV or a CONS system, on the *Deployed Components* tab page, the details about the modified software components are not updated. JSPM has transported the software components of the support package stack, both modified and not modified, to the CMS transport directory.

> On a UNIX operating system, if you have applied a support package stack that includes the kernel, you have to execute the saproot.sh script [Page 21] to configure the ownership and permissions of some kernel files, including `saposcol`.

> On an IBM eServer iSeries system, if you have applied a support package stack that includes the kernel, a new kernel library is installed during the patch procedure and applied to the system. If you want to use the current name of your kernel library, you have to rename the libraries manually after the patch. The pattern for the name of the new kernel library is the following `<SID>KRN<n>`, where n is the next available number. For example, if the existing kernel library for a system is `<SID>KRN1`, the new kernel library will be `<SID>KRN2`.

See also:

Maintaining Modified Java Runtime Systems Using NWDI [External]

Troubleshooting [Page 34]

Executing the saproot.sh Script

Use

On a UNIX operating system, if you have applied a support package stack that includes the kernel, or if you have applied a single support package to update the kernel, you have to execute the `saproot.sh` script to configure the ownership and permissions of some kernel files, including `saposcol`.

Prerequisites

You have logged on to the operating system as a `<SID>adm` user.

Procedure

1. On an ADABAS D, INFORMIX, or an ORACLE database, execute the following commands:

   stopsap

   su - root

   cd /sapmnt/<SID>/exe

   ./saproot.sh <SID>

   exit

   startsap

2. On an IBM DB2 Universal Database, execute the following commands:

   stopsap

   su root (not su – root)

   cd /sapmnt/<SID>/exe

   ./saproot.sh <SID>

   exit

   startsap

Applying Single Support Packages

Use

If you want to update only particular software components that are deployed on the system and do not want to apply complete support package stacks, you can apply single support packages. The import time is shorter for single support packages than for support package stacks. In addition, you can apply newer support packages of SAP software components that have been modified in the NWDI.

> ⚠
>
> Before you can apply a support package of a given level, you have to update JSPM to the same level by applying it as a single support package.
>
> The update of JSPM does not require a restart of the J2EE Engine and does not affect the system operation.
>
> ⚠
>
> If you want to apply a support package stack, you must not use this procedure.

Prerequisites

- The AS Java and the database have been backed up. For more information, see Backing Up and Restoring AS Java [External].

- Directories and files have not been deleted, renamed, or created in the following directories and their subdirectories: `/usr/sap/<SID>/SYS/exe` and `/usr/sap/<SID>/SYS/profile`. Otherwise, JSPM cannot detect the kernel and the system profiles, and cannot be started. If a backup of the kernel and the system profiles has been required, it has been created in a different directory.

- If your database is MaxDB, the overwrite mode for the log area has been set. For more information, see Changing Log Settings [External].

- The support packages you want to apply have been downloaded to the global EPS inbox directory `/usr/sap/trans/EPS/in`. For more information about SAP products, see SAP Service Marketplace at **service.sap.com/swdc**.

- If you want to update the EP as a single support package, the SDM timeout for the automatic start/stop of the J2EE Engine has been increased to 2 hours. For more information about increasing the SDM timeout, see SDM Troubleshooting [External].

- The `<SID>adm` user has Read permissions for the global EPS inbox directory `/usr/sap/trans/EPS/in`.

- The database and the SDM repository have been synchronized. For more information, see JSPM Does Not Update the Versions of the Deployed Components [Page 45].

- There is enough disk space. For more information, see Requirements for Free Disk Space [Page 10].

Procedure

1. Choose the *Deployment* tab.

   JSPM will guide you through the process of applying support packages via a wizard, which consists of the following five steps: Select Package Type, Specify Queue, Check Queue, Deploy Queue, and Completed.

Select Package Type

2. Select *Single Support Packages*, and then:

   ○ If your system is not used for NWDI development, select *No NWDI control*.

   ○ If your system is used for NWDI development, select the role of your system by selecting one of the following: *DEV*, *CONS*, *TEST*, or *PROD.*

3. Choose *Next.*

   Software components that are deployed on the system to which you can apply support packages are displayed.

   If your system is used for NWDI development, and it is either a DEV or a CONS system, and if JSPM has found in the global EPS inbox directory the `sap.com/SAP_BUILDT` or the `sap.com/EP_BUILDT` components, they will be displayed so that you can select them.

   If your system is not used for NWDI development, or is either a TEST or PROD system, these components will not be proposed for deployment. The reason is that they do not contain deployable content but only development content required for DEV and CONS systems.

Specify Queue

4. To view the details about a support package, choose *Show Details.*

   If JSPM has found any modified software components, they are marked with

5. From the *Target SP Level* dropdown box, select:

   ○ *<x.x>*, where x.x is the support package and patch level, if you do not want to apply a modified software component

   ○ *<x.x, Modified by NWDI>*, if you want to apply a modified software component

   ○ *skip*, if you do not want to apply a software component

   It is also possible that JSPM has not found a newer version in the global EPS inbox directory for a software component that is deployed on the system.

6. Choose *Next.*

Check Queue

In this step, JSPM checks the deployment queue. The status of the selected support packages can be:

- OK

- WARNING

  You can go on with the deployment or you can change the content in the global EPS inbox directory and go back to the Select Package Type wizard step. We recommend that you view the details about the component by choosing *Show Details*:

  ○ If your system is used for NWDI development, and it is either a DEV or a CONS system, you will be informed that JSPM will not deploy the modified software components, but only transport them together with all other software components that you selected and that are not modified to the CMS transport directory `/usr/sap/trans/EPS/in/CMS<hostname><SID>`. JSPM will deploy only the software components that are not modified.

○ If your system is not used for NWDI development, or if your system is used for NWDI development and it is either a TEST or a PROD system, you will be informed that JSPM has found newer versions of modified software components in the global EPS inbox directory, and will automatically replace the original versions with the newer versions. JSPM will deploy all software components that are not modified and the replaced versions of the modified software components.

If your system is used for NWDI development, and it is either a DEV or a CONS system, and if you have selected the `sap.com/SAP_BUILDT` or the `sap.com/EP_BUILDT` components, they will always be with status WARNING. If you have selected one of these components for deployment, JSPM will never deploy it, but only transport it to the CMS transport directory.

- REVISE

  You cannot go on with the deployment.

  You can view the details about the software component by choosing *Show Details.*

  If your system is not used for NWDI development, or if your system is used for NWDI development, and it is either a TEST or a PROD system, and you want to apply modified software components for which JSPM does not find newer versions in the global EPS inbox directory, these software components will always be with status REVISE.

  You have to change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

7. If the status of the selected support packages is OK, choose *Next.*

You will be informed if the J2EE Engine will be restarted during the deployment.

If you have selected to update the kernel, you will be prompted to stop any running dialog instances. For more information, see Starting and Stopping the J2EE Engine [External]. In addition, on Microsoft Windows you will be prompted to close the Microsoft Management Console (MMC).

Deploy Queue

JSPM starts the deployment of the software components that you selected. The status of all software components changes to SCHEDULED.

If you have selected to update the kernel, and if your system is distributed, during the deployment you will be first prompted to stop the central services instance and any running dialog instances, and to choose *Next.* You will be then prompted to start the central services instance and to choose *Next.*

To avoid failover of your SAP system, while patching it, temporarily disable the SAP system failover/restart capabilities in your high availability (HA) software. The patch procedure might require the SAP system to be down for a while, which will conflict with the restart/failover actions that are triggered by the HA software. To disable the SAP system failover/restart capabilities, stop the SAP instance using the HA software, stop the HA software and start the SAP system manually before starting the patch procedure. After the patch procedure has

finished, stop the SAP system manually and start it again using the HA software. For more information, contact your HA implementation partner.

Completed

The deployment of the support packages can finish with the one of the following statuses:

- DEPLOYED

    If you have selected to update the JSPM, when it has been updated, for the update to take effect, you will be prompted to restart it. If there are still support packages in status NOT DEPLOYED, JSPM will proceed with their deployment when you start it again.

    Bear in mind that you must not change the content of the global EPS inbox directory before the deployment has finished.

- DEPLOYED WITH WARNING

    The support package has been deployed but it is possible that it will not work properly with other deployed software components.

    You can view the details about the support package by choosing *Show Details*.

    You can also view the details about the support packages by choosing the *Deployed Components* tab (see Viewing the Deployed Components [Page 15]).

    You can also view the log files [Page 35].

- ERROR

    An error has occurred during the deployment of the support package. You can proceed as described for a deployment, which has finished with status DEPLOYED WITH WARNING.

    In addition, if you receive an error during deployment message, you have the following options:

    - If you have corrected the error, but not by changing the content of the global EPS inbox directory, you can choose *Resume*.

        The deployment is resumed from the Deploy Queue wizard step.

    - If you have corrected the error by changing the content of the global EPS inbox directory, you can choose *New Deployment* and try to deploy the support package again.

    - You can stop JSPM by choosing *Exit*.

        Next time you launch JSPM, the *Broken Deployment* screen appears and you will have the two options: to resume the deployment or to start a new deployment.

- NOT DEPLOYED

    JSPM has not attempted to deploy the support package.

    - If your system is not used for NWDI development, you can proceed as described for a deployment that finished with status ERROR.

    - If your system is used for NWDI development, and it is either a DEV or a CONS system, the status of the modified software components is always NOT DEPLOYED. JSPM has transported the software components that you selected, both modified and not modified, to the CMS transport directory. The deployment of the modified software components is handled by NWDI (see Import of Support Packages into Follow-On Systems [External]).

8. To view some statistics for your patch procedure and to send feedback to SAP about your experience with JSPM, choose *Evaluation Form*. For more information, see Evaluation Feedback and Statistics Form [Page 33].

9. If the deployment of the support packages has finished with status DEPLOYED, you can choose *New Deployment* or *Exit*.

Result

The support packages you have selected are deployed. On the *Deployed Components* tab page, the details about the SP level and counter of the respective deployed components are updated.

If your system is used for NWDI development, and it is either a DEV or a CONS system, on the *Deployed Components* tab page, the details about the modified software components are not updated. JSPM has transported the software components that you selected, both modified and not modified, to the CMS transport directory.

On a UNIX operating system, if you have applied a single support package to update the kernel, you have to execute the saproot.sh script [Page 21] to configure the ownership and permissions of some kernel files, including `saposcol`.

On an IBM eServer iSeries system, if you have applied a single support package to update the kernel, a new kernel library is installed during the patch procedure and applied to the system. If you want to use the current name of your kernel library, you have to rename the libraries manually after the patch. The pattern for the name of the new kernel library is the following `<SID>KRN<n>`, where n is the next available number. For example, if the existing kernel library for a system is `<SID>KRN1`, the new kernel library will be `<SID>KRN2`.

See also:

Maintaining Modified Java Runtime Systems Using NWDI [External]

Troubleshooting [Page 34]

Deploying New Software Components

Use

You can deploy new third-party software components and new SAP software components, both ones that are part of an SAP usage type and ones that are not part of an SAP usage type, to which you can then apply support packages.

> Before you can deploy a new software component of a given support package level, you have to update JSPM to the same level by applying it as a single support package [Page 22].
>
> The update of JSPM does not require a restart of the J2EE Engine and does not affect the system operation.

Prerequisites

- The AS Java and the database have been backed up. For more information, see Backing Up and Restoring AS Java [External].

- If your database is MaxDB, the overwrite mode for the log area has been set. For more information, see Changing Log Settings [External].

- The SCAs you want to deploy have been downloaded to the global EPS inbox directory `/usr/sap/trans/EPS/in`. For more information about SAP products, see SAP Service Marketplace at **service.sap.com/swdc**.

- The `<SID>adm` user has Read permissions for the global EPS inbox directory `/usr/sap/trans/EPS/in`.

- The database and the SDM repository have been synchronized. For more information, see JSPM Does Not Update the Versions of the Deployed Components [Page 45].

- There is enough disk space. For more information, see Requirements for Free Disk Space [Page 10].

Procedure

1. Choose the *Deployment* tab.

   JSPM will guide you through the process of deploying new software components via a wizard, which consists of the following five steps: Select Package Type, Specify Queue, Check Queue, Deploy Queue, and Completed.

Select Package Type

2. Select *New Software Components*.

3. Choose *Next*.

   Software components that are available for deployment from the global EPS inbox directory are displayed.

Specify Queue

4. Select the software components you want to deploy.

5. From the *SP Level* dropdown box, select the SP level you want and choose *Next*.

Check Queue

In this step, JSPM checks the deployment queue. The status of the selected software components can be:

- OK

- WARNING

    You can go on with the deployment.

    You can view the details about the software component by choosing *Show Details*.

    You can change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

- REVISE

    You cannot go on with the deployment.

    You can view the details about the software component by choosing *Show Details*.

    You have to change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

6. If the status of the selected software component is OK, choose *Next*.

    You will be informed if the J2EE Engine will be restarted during the deployment.

Deploy Queue

JSPM starts the deployment of the selected software components and the status changes to SCHEDULED.

Completed

The deployment of the software components can finish with the one of the following statuses:

- DEPLOYED

- DEPLOYED WITH WARNING

    The software component has been deployed but it is possible that it will not work properly with other deployed software components.

    You can view the details about the software component by choosing *Show Details*.

    You can also view the details about the software component by choosing the *Deployed Components* tab (see Viewing the Deployed Components [Page 15]).

    You can also view the log files [Page 35].

- ERROR

    An error has occurred during the deployment of the software component. You can proceed as described for a deployment that finished with status DEPLOYED WITH WARNING.

    In addition, if you receive an error during deployment message, you have the following options:

    - If you have corrected the error, but not by changing the content of the global EPS inbox directory, you can choose *Resume*.

        The deployment is resumed from the Deploy Queue wizard step.

- If you have corrected the error by changing the content of the global EPS inbox directory, you can choose *New Deployment* and try to deploy the software component again.

- You can stop JSPM by choosing *Exit*.

  Next time you launch JSPM, the *Broken Deployment* screen appears and you will have two options: to resume the deployment or to start a new deployment.

- NOT DEPLOYED

  JSPM has not attempted to deploy the software component. You can proceed as described for a deployment that finished with status ERROR.

7. To view some statistics for your patch procedure and to send feedback to SAP about your experience with JSPM, choose *Evaluation Form*. For more information, see Evaluation Feedback and Statistics Form [Page 33].

8. If the deployment of the software components has finished with status DEPLOYED, you can choose *New Deployment* or *Exit*.

Result

The software components you have selected are deployed. On the *Deployed Components* tab page, you can view the details about vendor, release, SP level, counter, and provider of the respective deployed components.

See also:

Troubleshooting [Page 34]

⬇ Deploying and Upgrading Business Packages

Use

Use these procedures to:

- Deploy new business packages

- Upgrade business packages that are deployed on the system to a higher release.

If you want to update business packages that are deployed on the system to a higher support package level, you have to apply them as part of a support package stack [Page 16] or as single support packages [Page 22].

> ⚠
>
>   Before you can deploy a business package, you have to update JSPM to the latest support package level that is available by applying it as a single support package.
>
>   The update of JSPM does not require a restart of the J2EE Engine and does not affect the system operation.

Prerequisites

- The AS Java and the database have been backed up. For more information, see Backing Up and Restoring AS Java [External].

- If your database is MaxDB, the overwrite mode for the log area has been set. For more information, see Changing Log Settings [External].

- The SCAs you want to deploy have been downloaded to the global EPS inbox directory `/usr/sap/trans/EPS/in`. For more information about SAP products, see SAP Service Marketplace at **service.sap.com/swdc**.

- The `<SID>adm` user has Read permissions for the global EPS inbox directory `/usr/sap/trans/EPS/in`.

- The database and the SDM repository have been synchronized. For more information, see JSPM Does Not Update the Versions of the Deployed Components [Page 45].

- There is enough disk space. For more information, see Requirements for Free Disk Space [Page 10].

Procedure

1. Choose the *Deployment* tab.

   JSPM will guide you through the process of deploying business packages via a wizard, which consists of the following five steps: Select Package Type, Specify Queue, Check Queue, Deploy Queue, and Completed.

Select Package Type

2. Select *Business Packages*.

3. Choose *Next*.

   Business packages that are available for deployment from the global EPS inbox directory are displayed.

Specify Queue

4. Select the business packages you want to deploy.

5. From the *Target Release.SPLevel.PatchLevel* dropdown box, select the release you want and choose *Next.*

Check Queue

In this step, JSPM checks the deployment queue. The status of the selected business packages can be:

- OK

- WARNING

  You can go on with the deployment.

  You can view the details about the business package by choosing *Show Details.*

  You can change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

- REVISE

  You cannot go on with the deployment.

  You can view the details about the business package by choosing *Show Details.*

  You have to change the content in the global EPS inbox directory and go back to the Select Package Type wizard step.

6. If the status of the selected business package is OK, choose *Next.*

      You will be informed if the J2EE Engine will be restarted during the deployment.

Deploy Queue

JSPM starts the deployment of the selected business packages and the status changes to SCHEDULED.

Completed

The deployment of the business packages can finish with the one of the following statuses:

- DEPLOYED

- DEPLOYED WITH WARNING

  The business package has been deployed but it is possible that it will not work properly with other deployed software components.

  You can view the details about the business package by choosing *Show Details.*

  You can also view the details about the business package by choosing the *Deployed Components* tab (see Viewing the Deployed Components [Page 15]).

  You can also view the log files [Page 35].

- ERROR

  An error has occurred during the deployment of the business package. You can proceed as described for a deployment that finished with status DEPLOYED WITH WARNING.

  In addition, if you receive an error during deployment message, you have the following options:

○ If you have corrected the error, but not by changing the content of the global EPS inbox directory, you can choose *Resume*.

The deployment is resumed from the Deploy Queue wizard step.

○ If you have corrected the error by changing the content of the global EPS inbox directory, you can choose *New Deployment* and try to deploy the business package again.

○ You can stop JSPM by choosing *Exit*.

Next time you launch JSPM, the *Broken Deployment* screen appears and you will have two options: to resume the deployment or to start a new deployment.

- NOT DEPLOYED

JSPM has not attempted to deploy the business package. You can proceed as described for a deployment that finished with status ERROR.

7. To view some statistics for your patch procedure and to send feedback to SAP about your experience with JSPM, choose *Evaluation Form*. For more information, see Evaluation Feedback and Statistics Form [Page 33].

8. If the deployment of the business package has finished with status DEPLOYED, you can choose *New Deployment* or *Exit*.

Result

The business packages you have selected are deployed. On the *Deployed Components* tab page, you can view the details about vendor, release, SP level, counter, and provider of the respective deployed components.

See also:

Troubleshooting [Page 34]

Evaluation Feedback and Statistics Form

Use

- This function:

- Provides the user with statistics about the patch process

- Provides SAP with the user's feedback about the patch process

Integration

The Evaluation Feedback and Statistics Form depends on the information provided by JSPM during the patch procedure. On the other hand, the successful patch procedure does not depend on the generation of the statistics form nor on the evaluation feedback.

Prerequisites

A patch procedure is performed.

Activities

Upon successful completion of the patch process (in step Completed with status DEPLOYED), choose *Evaluation Form*. You can now send your feedback to SAP and view statistics about the process.

![icon] Troubleshooting

Purpose

If errors occur while you are working with JSPM, we recommend that you view the log files [Page 35] first.

> You can also see SAP Note 891983, which is the central note for JSPM.

The following sections describe the solutions to the most common errors that may occur while you are working with JSPM:

Viewing Log Files

Use

You can view logs that are generated by the JSPM. You can also view logs generated by other applications that are integrated with the JSPM, for example, the SDM.

If JSPM is started, you can view logs using the integrated Log Viewer in the JSPM. If JSPM cannot be started, you can view LOG files in a human readable format using the Log Reader.

By default, all logs that are generated by the JSPM are stored in the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/log` directory. In addition, all logs that are generated by the SDM are copied to this directory.

You can view logs both from the current logon session and from previous sessions. Logs from every session are written to a subdirectory whose name contains the time stamp of the session.

The following table describes the most important log files and their content:

Log File	Contains Information About
JSPM_MAIN.LOG	Main JSPM processes. It may contain references to other log files that are generated by the JSPM or by other integrated applications, for example, the SDM.
SCAN_INBOX.LOG	The scan of the content of the global EPS inbox directory.
DETECT_SYSTEM_PARAMETERS.LOG	The system parameters that JSPM has detected during startup.
DETECT_SYSTEM_COMPONENTS.LOG	The components deployed on the system that JSPM has detected.
SDM_OPERATION.LOG	The update of the SDM.
ENGINE_OPERATION.LOG	Starting and stopping of the system.
EXCHANGE_KERNEL_BINARIES.LOG	Kernel update.
EXCHANGE_IGS_BINARIES.LOG	IGS update.

In addition to LOG files, you can view OUT and ERR files, which are standard output and error streams from external processes.

You can filter and view list formatted logs with different severity levels. A severity level denotes the level of importance of a given record. The following are the possible severity levels with an increasing severity:

- DEBUG

  Logs with this severity contain extensive and low level information that is relevant to debugging.

- PATH

  Logs with this severity contain information that is relevant to tracing the execution flow, for example, entering and leaving a method.

- INFO

  Logs with this severity contain information about what has been performed.

- WARNING

Logs with this severity are generated when the application can recover from an anomaly and perform a required operation, but attention from a user is required.

- ERROR

  Logs with this severity are generated when the application can recover from an error but cannot perform a required operation due to the error.

- FATAL

  Logs with this severity are generated when the application cannot recover from an error and the severe situation causes fatal termination.

Procedure

Viewing Logs Using the Integrated Log Viewer in the JSPM

1. To view log files, choose the *Logs* tab.

If You Want To	Then
View a log from the current logon session	In the navigation area on the left, browse *Log Files → Current Log Files* and select the log file you want to view.
View a from a previous logon session	In the navigation area on the left, browse *Log Files → Old Log Files* and from the subdirectory whose name contains the time stamp of the session you want to view, select the log file you want to view.

Log files are displayed in one of the following ways:

- List formatted – all records are displayed in a table. The newest record is displayed at the bottom.

- Non list formatted – only the complete message text is displayed.

2. Filter and search the log files.

If You Want To	Then
Filter the list formatted log files by severity level	1. From the *<Select Severity>* dropdown box, select the severity level you want. Log records with the selected severity level are displayed in a table. The newest record is displayed at the bottom. 2. To display all list formatted log records again, from the *<Select Severity>* dropdown box, select *All Severities*.
Search for a string in the complete message text of a non list formatted log file	Choose ⊞ *Find*, enter the string you want and choose *Find*.

Viewing Logs Using the Log Reader

1. In the file system, go to the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/log` directory.

2. To start the Log Reader, run the `log_reader` script file.

3. If you want to convert a LOG file to a human readable format and save it as a new file, enter the following command:

      ○   On Microsoft Windows:

```
log_reader.bat <Full path to source file> <Full path to
destination file>
```

      ○   On UNIX:

```
log_reader.sh <Full path to source file> <Full path to
destination file>.
```

The LOG file is converted to the format that you have specified
and it is saved to the directory that you have specified.

4. If you want to view a LOG file in a human readable format in the command line, enter
   the following command:

      ○   On Microsoft Windows:

```
log_reader.bat <Full path to source file>
```

      ○   On UNIX:

```
log_reader.sh <Full path to source file>.
```

The LOG file is converted to a human readable format and it is displayed in the
command line.

JSPM Cannot Be Started

Problem 1: Not Enough Disk Space Is Available

JSPM cannot be started. The following error message is displayed:

```
class com.sap.sdt.util.diag.DevelopmentSupportRequiredException:

Assertion failed for (handler != null) at
com.sap.sdt.util.diag.SDT.check(SDT.java:36)
```

Possible Reasons

Check if the last `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/trc/JSPM<_xx>.TRC` file contains the following error message:

```
[Error]: com.sap.sdt.tools.var.VariableAdmin [Thread[main,5,main]]:

Unable to load variable handler for /<Name> : Could not load
namespace /<Name> from file

<Drive>:\usr\sap\<SID>\<Central instance
name>\j2ee\JSPM\data\variables\

<File name>.xml.

org.xml.sax.SAXException has occurred: Fatal Error:
com.sap.engine.lib.xml.parser.ParserException:

Document is not well-formed: Start-tag StringValue is different from
end-tag VariableHandler
```

This error message means that the following file is corrupted: `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/data/variables/<File name>.xml`.

This can happen if not enough disk space is available to store the file.

Solution

If necessary, free some disk space. For more information, see Requirements for Free Disk Space [Page 10].

If a file in the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/data/variables` directory is corrupted or is empty (size is 0), and if:

- The file name contains `MetaData`, delete it and try to start JSPM again.

- The file name does not contain `MetaData`, redeploy JSPM using SDM.

Problem 2: GUI Connection Port Is in Use

JSPM cannot be started. The following error message is displayed:

```
Could not start JSPM. GUI connection port 6240 on localhost is
already in use.

Turn off the application which uses this port or change the

/dialog/SDTServerConnection/port property in the

<Drive>:\usr\sap\<SID>\<Central instance name>\j2ee\JSPM\param\

jspm_config.txt file.
```

Possible Reasons

Either another application or another running instance of JSPM is using the GUI connection port 6240.

Solution

If another running instance of JSPM is using port 6240, use this instance or stop it.

If another application is using port 6240, in the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/param/jspm_config.txt` file, change the value of the `/dialog/SDTServerConnection/port` property by specifying a port that is currently not in use and try to start JSPM.

Problem 3: JSPM Hangs On During Logon

JSPM hangs on during logon. The log files contain the following message:

```
Checking connectivity for SDM server on host <J2EE_Engine_Host>, port
<SDM_Port>

SDM server version is <xxx>, SDM client version is <xxx>
```

Possible Reasons

SDM with a version lower than SAP NetWeaver 2004s SPS04, hangs on when closing the connection to the SDM server if the `/usr/sap/<SID>/<Central instance name>/SDM/program/temp` directory does not exist. JSPM waits for a response and hangs on too.

Solution

Stop JSPM. Create the `/usr/sap/<SID>/<Central instance name>/SDM/program/temp` directory and try to start JSPM.

JSPM Does Not Display Packages from Inbox Directory

Problem

JSPM does not display the packages that you have placed in the global EPS inbox directory.

Possible Reasons

The packages are:

- Not valid or have not been downloaded successfully

- With a lower or equal support package level

- For an older release

- For a software component that is not currently deployed on the system.

Solution

- For more information about the validity of the files which JSPM has detected in the global EPS inbox directory, see the last `JSPM_MAIN_<xx>.LOG` and `SCAN_INBOX_<xx>.LOG` files.

  Download the packages again. For more information about SAP products, see SAP Service Marketplace at **service.sap.com/swdc**.

- Download only packages with a higher support package level.

  You can check the support package level of the components that are deployed on the system (see Viewing the Deployed Components [Page 15]).

  You can check the support package level of the packages that are downloaded in the global EPS inbox directory. The name of each package has the following syntax: `<Name_xx_x>.SCA`, where xx is the support package level and x is the patch level.

- Download only packages for the current release level.

- Deploy the software component (see Deploying New Software Components [Page 27]).

Error at the Check Queue Wizard Step

Problem 1

During a support package stack or support package deployment, at the Check Queue wizard step, a component has status REVISE and the following error message is displayed:

```
Archive not found in Inbox directory.
```

Possible Reasons

JSPM has detected the required files at the Specify Queue wizard step and afterwards you have renamed some of them or removed some of them from the global EPS inbox directory.

Solution

If you have accidentally renamed or removed a file, place it in the global EPS inbox directory and go back to the Specify Queue wizard step. JSPM detects the file and you can go on.

If you have intentionally renamed or removed a file, go back to the Select Package Type wizard step. JSPM does not detect the renamed or removed file and you can go on.

Problem 2

JSPM shuts down at the Check Queue wizard step.

In the `JSPM_MAIN_<XXX>.LOG` file of the current logon session, you can find the following error:

```
com.sap.sdt.ucp.phases.AbstractPhaseType.doExecute(AbstractPhaseType.java:751):
Error java.lang.OutOfMemoryError: <null>
```

Possible Reasons

It is possible that some of the temporary XML files, whose name contains `DataModel`, and which are located in the `/usr/sap/<SID>/<Central instance name>/j2ee/JSPM/data/variables` directory, are not valid.

There is no sufficient JVM memory for saving JSPM internal data in the XML files.

Solution

Increase JSPM JVM memory settings, delete the corrupted XML files, and restart JSPM as described in SAP Note 874123.

Problem 3

JSPM hangs on at the Check Queue wizard step.

Possible Reasons

JSPM uses SDM for validation of the software components that are selected for deployment. It is possible that an out of memory error occurs in SDM. JSPM cannot detect this error.

Solution

1. Stop JSPM.
2. Change the SDM memory settings. For more information, see SAP Note 879377.
3. Restart JSPM and the deployment.

Error During Deployment

Problem 1: Out of Memory

JSPM cannot deploy all components. The deployment of at least one of the components that you selected has finished either with status DEPLOYED WITH ERROR or with status NOT DEPLOYED.

Possible Reasons

Check if the `/usr/sap/<SID>/<Central instance name>/j2ee/cluster/<Server process>/log/defaultTrace.<xx>.trc` file contains an `OutOfMemory` exception. Such an exception occurs if not enough J2EE Engine memory is available.

Solution

On all operating systems – using the Config Tool, set the heap size and permanent space Java parameters as described in SAP Note 723909.

> ⚠️
>
> On Linux on AMD64/EM64T Linux – set the Java parameters as described in SAP Note 861215.

On Microsoft Windows – get the SAP Address Space Viewer and rebase the DLLs as described in SAP Note 129813 and SAP Note 736462.

For more information about troubleshooting the J2EE Engine, see SAP Note 764417.

For more information about setting the Java parameters, see Configuring Instance Properties [External].

Problem 2: The J2EE Engine Administrator Password Has Been Changed

Check if the last `JSPM_MAIN<_x_xx>.log` file contains the following message:

```
Error during deployment. See <path>\sdmcl<yyyymmddhhmmss>.log for
details.
```

The SDM log file contains the following message:

```
Aborted: development component
'com.sap.ip.bi.ra.j2ee'/'sap.com'/'SAP'/'7.00.20050728182148.0000':
SDM could not start the J2EE cluster on the host <host>. The online
deployment is terminated. A timeout has occurred while ensuring that
process server <name> is in final state.
```

Possible Reasons

- After an upgrade from SAP NetWeaver release 2004 to SAP NetWeaver release 2004s, according to the new SAP security policy, the J2EE Engine administrator user may be prompted to change his or her password. The password is changed in the User Management Engine (UME).

- According to SAP security policy, the J2EE Engine administrator password must be changed every 90 days. The password is changed in the UME.

However, SDM reads the J2EE Engine administrator password not from the UME, but from the secure storage instead. The J2EE Engine administrator password is not changed in the secure storage. For more information, see SAP Note 870445.

Solution

Change the J2EE Engine administrator password in the secure storage. For more information, see Modifying the Default Administrator User [External].

Problem 3: JSPM Hangs On During Deployment

JSPM hangs on during deployment. If your database is MaxDB, the deployment may continue longer than expected (the maximum expected deployment time is about 3 hours).

Possible Reasons

If your database is MaxDB, the logs may be full.

Solution

If your database is MaxDB, we recommend that you set the overwrite mode for the log area. For more information, see Changing Log Settings [External].

Problem 4: SDM Times out

JSPM cannot deploy all components. Check if the last JSPM_MAIN<_x_xx>.log file contains the following message:

```
Error during deployment. See <path>\sdmcl<yyyymmddhhmmss>.log for
details.
```

The SDM log file contains one of the following messages:

```
SDM could not start the J2EE cluster on the host <hostname>! The
online deployment is terminated. A timeout occurred during the
cluster running verification!
```

Or

```
SDM could not stop the J2EE cluster! The offline deployment is
terminated. A timeout has occurred while ensuring that process
<process ID> is in final state!
```

Possible Reasons

The preset time interval during which SDM waits for the J2EE Engine to completely start or stop is too small.

Solution

You have to increase the wait time interval of SDM to a value that is large enough. You can do this by changing the:

- JSPM configuration

- SDM configuration

Changing the JSPM Configuration

4. Stop JSPM.

5. Open *usr/sap/<SID>/JC<instance number>/j2ee/JSPM/param/jspm_config.txt*.

6. Add property /jspm/sdmTimeout. Its default value is 21600 seconds. If there is no such property in the file, JSPM does not change the SDM timeout.

7. You can set a different value for the sdmTimeout property. The value must be a positive whole number. To do this, in the configuration file enter:

```
/jspm/sdmTimeout = <some value>
```

If the value is not valid, the time that SDM waits will not be changed.

8. Start JSPM.

Changing SDM Configuration

You can find detailed instructions in SAP Note 739190.

JSPM Does Not Update the Versions of the Deployed Components

Problem

You have selected a software component for deployment. There are no errors during deployment. The deployment of the component finishes with status DEPLOYED. However, JSPM does not update the deployed component versions on the *Deployed Components* tab page. If you select the component for deployment again, at the Check Queue wizard step, you are informed that it is already deployed on the system.

Possible Reasons

This problem occurs only for SDM as of SAP NetWeaver 2004s SPS04 and lower. Component versions are updated in the SDM GUI but not in the JSPM GUI. SDM does not update the versions of the deployed components in the database but only in the SDM repository.

Solution

To synchronize the database and the SDM repository:

1. Go to the `/usr/sap/<SID>/<Central instance name>/SDM/program` directory.

2. Run the `StopServer` script file.

3. In the command line, execute the following commands:

   ○ On a Microsoft Windows system:

     sdm jstartup "mode=standalone"

     sdm systemcomponentstate "mode=activate"

     sdm jstartup "mode=integrated"

   ○ On a UNIX system:

     ./sdm.sh jstartup "mode=standalone"

     ./sdm.sh systemcomponentstate "mode=activate"

     ./sdm.sh jstartup "mode=integrated"

   ○ On an IBM eServer iSeries system:

     QSH

     cd /usr/sap/<SID>/<Central instance name>/SDM/program

     ./sdm.sh jstartup "mode=standalone"

     ./sdm.sh systemcomponentstate "mode=activate"

     ./sdm.sh jstartup "mode=integrated"

4. Run the `StartServer` script file.

5. Restart JSPM.

For more information, see the SDM command line documentation in the `/usr/sap/<SID>/<Central instance name>/SDM/program/doc` directory.

Scripts Cannot Be Started After Deployment

Problem 1

After deployment of file system SCAs on a UNIX system, some UNIX scripts cannot be started.

Possible Reasons

UNIX scripts do not have executable rights.

Solution

Add executable rights to each UNIX script using the UNIX command according to your UNIX system.

For example, **`chmod 755 <Script name>`**.

Problem 2

After deployment on an IBM eServer iSeries system, the `go` script cannot be started.

Possible Reasons

The `go` script does not have executable rights.

Solution

Add executable rights to the `go` script in Qshell by executing the following commands:

```
QSH
cd /usr/sap/<SID>/<Central instance name>/j2ee/JSPM
mv go go_cp
cp go_cp go
chmod 755 go
rm go_cp
```