



SAP JVM 4 and IBM i

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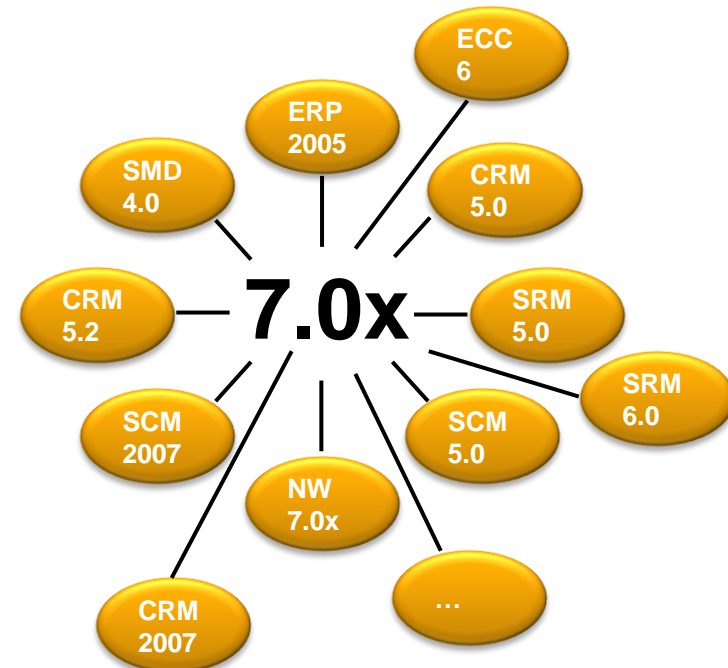
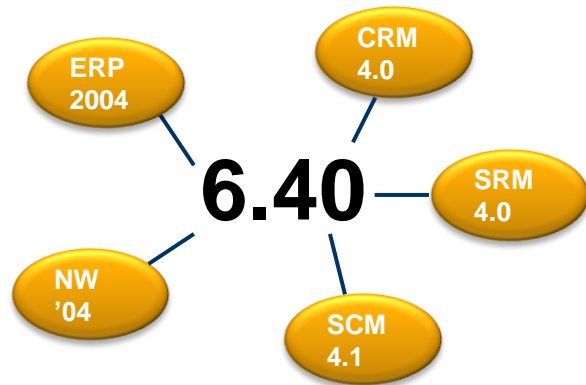


Agenda

- About SAP JVM 4
- Benefits of SAP JVM 4
- SAP JVM 4 Switch Procedure
- SAP JVM 4 Parameters
- Developer Tools for SAP JVM
- References

About SAP JVM 4

- SAP JVM 4 replaces **all** Java 1.4 vendor JVMs for SAP NetWeaver based applications
- Generally available since August 2011
- End of SAP support for vendor JVMs is September 30th 2012
- Affected SAP releases:



Benefits of SAP JVM 4

- Compared to Classic JVM

- Increased performance
- Reduced resource footprint
- Improved supportability, analysis and diagnostic capabilities
- Simplified JVM management



- Compared to IT4J (J9) JVM

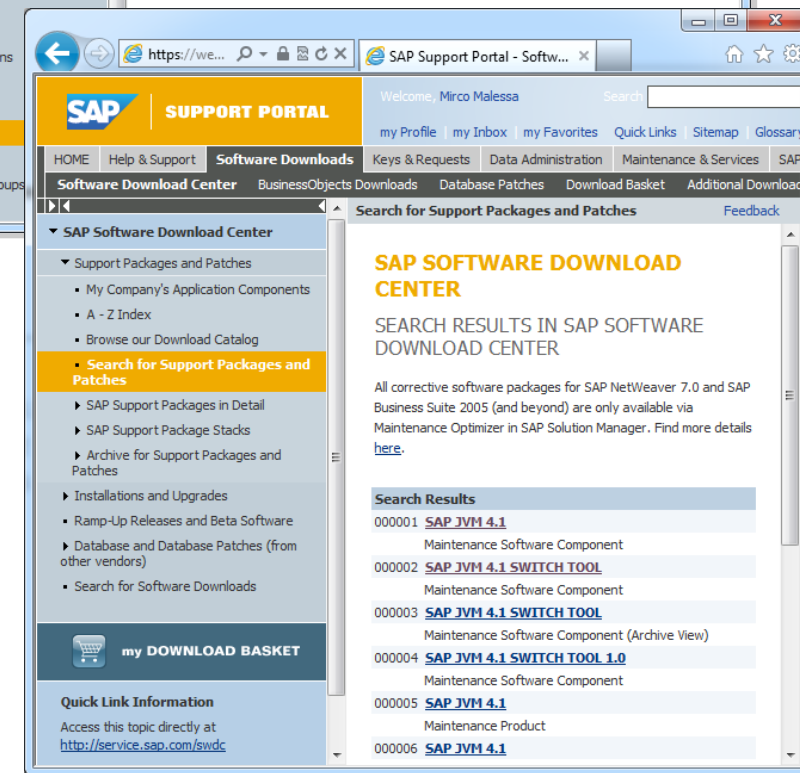
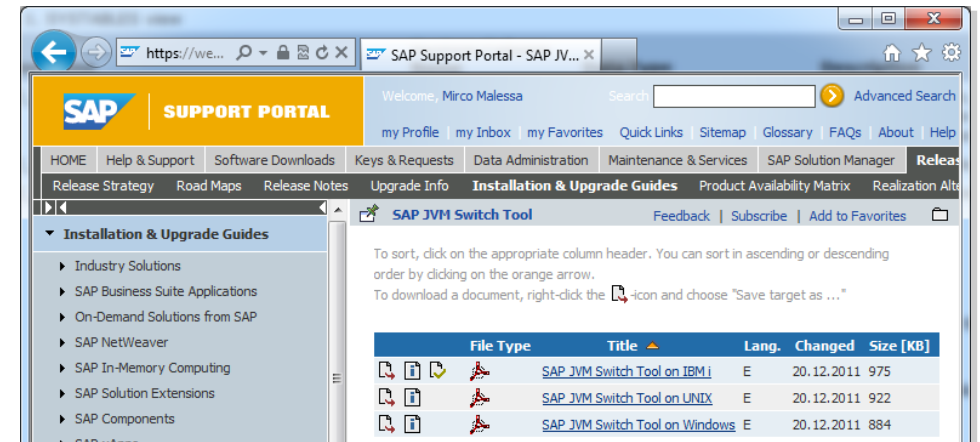
- Integration with SAP kernel handling
- Extended support lifecycle
- Additional tools available



SAP JVM 4 preserves the benefits from IT4J and adds more value

SAP JVM 4 Switch Procedure 1/3

- Get the installation guide
 - Go to <http://service.sap.com/instguides>
 - Choose 'SAP JVM Switch Tool' on the navigation tree on the left
 - Download the 'SAP JVM Switch Tool on IBM i' document
- Get SAP JVM 4
 - Go to <http://service.sap.com/patches>
 - Choose "Search for Support Packages and Patches" and search for 'SAP JVM 4'
 - Download latest SAPJVM4<version>.SAR from OS/400 section
- Get the switch tool
 - Go to <http://service.sap.com/patches>
 - Choose "Search for Support Packages and Patches" and search for 'SAP JVM 4'
 - Download latest SAPJVMSWITCH<version>.SAR from OS/400 section



SAP JVM Switch Procedure 2/3

- Preparations:
 - Make sure your system is at the required minimum kernel patch levels
 - 6.40: HYBLIB 378, APYR3KRN 382, R3INLPGM 383 , J2EEKRN 35
 - 7.00: HYBLIB 301, APYSAP 301, R3INLPGM 310
 - 7.01: ILE 151
 - [See SAP Note 1563545 - IBM i: Persisting SAP JVM objects in the kernel](#)
 - If your system uses the IBM i Native JDBC Driver, replace it with the IBM i Toolbox Driver
 - [See SAP Note 826449 - iSeries: Changing the JDBC driver](#)
 - Download Java Cryptography Extension policy file from Oracle/SUN
 - [See SAP Note 1426759 - Downloading the JCE Policy Files from SUN or IBM](#)

SAP JVM 4 Switch Procedure 3/3

- Extract SAPJVMSWITCH<version>.SAR using SAPCAR

– Do NOT extract SAPJVM4<version>.SAR

```
cd '/usr/sap/tmp'
```

```
SAPCAR PARMLIST('-xvf SAPJVMSWITCH00P 7-20008224.SAR')
```

- As QSECOFR like user:
Start the SAPinst based Switch Tool

– Perform a remote installation with SAPinst

```
cd '/usr/sap/tmp/SAPJVMSWITCH00'
```

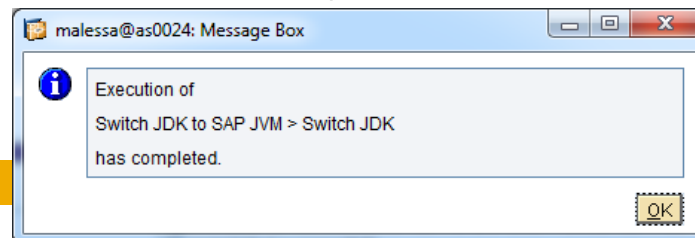
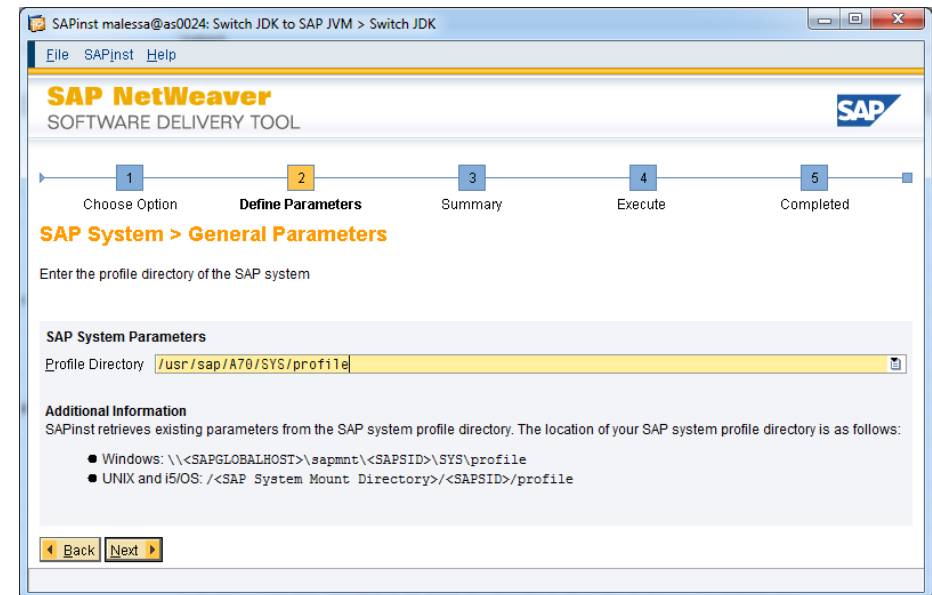
```
CALL PGM(QP2TERM) PARM('./sapinst' '-nogui')
```

- Start SAPinst GUI from Windows PC

– Run Windows Command Prompt as administrator

```
Z:\usr\sap\tmp\SAPJVMSWITCH00>sapinstgui.exe -host as0024
```

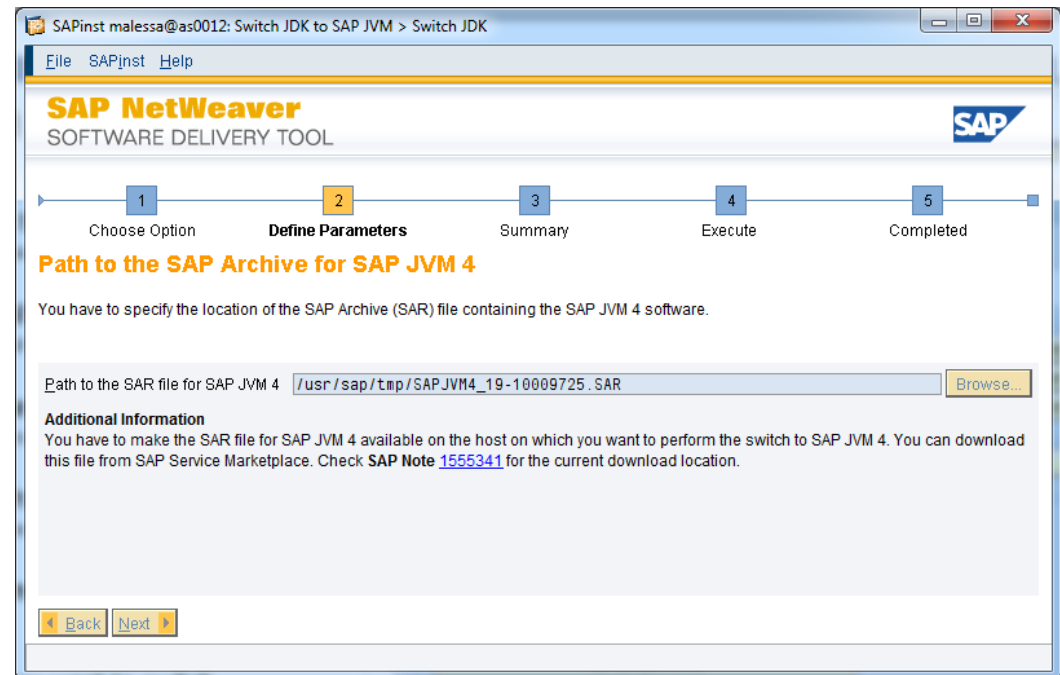
- The Switch Tool scans for existing SAP systems that can be switched
- Select the system you want to switch
- Follow the instructions to perform the switch
 - The switch procedure itself takes less than one hour for a system
 - Plan for half a working day with all preparations
 - The SAP system needs to be restarted to complete the switch



SAP JVM 4 Switch Procedure Notes

- Check that group SAPINST is added to <SID>ADM userprofile
 - If it is not, add it before starting the Switch Tool
- The SAPJVMSWITCH<version>.SAR from the OS/400 section currently does not include the Windows SAPinst GUI
 - Also download SAPJVMSWITCH<version>.SAR from the Windows section, extract it and start sapinstgui.exe from there
- Also specify the SAPJVM4<version>.SAR file you've downloaded in the 'Path to the SAP Archive for SAP JVM 4' step, the path alone doesn't work

**Supplemental groups : A70GROUP
R3OWNER
R3GROUP
SAPINST**



SAP JVM 4 Parameters

- The Switch Tool allows to check and modify JVM parameters
 - For details on JVM parameters see
 - [Note 1603093 - SAP JVM 4.1 parameters NetWeaver 2004 and 7.0](#)
- CONFIGJVM tool also works for SAP JVM 4
 - Cleanup of common parameters
 - Check / repair heap related settings (-Xmx, -Xms etc.)
 - Backup and restore set of VM related settings
 - [Note 1262494 - IBM i: CONFIGJVM tool to check/modify JVM settings](#)

SAPinst malesa@as0024: Switch JDK to SAP JVM > Switch JDK

File SAPInst Help

SAP NetWeaver
SOFTWARE DELIVERY TOOL

1 Choose Option 2 **Define Parameters** 3 Summary 4 Execute 5 Completed

Java Parameters for SAP JVM 4 Instance DVEBMGS70 (Server, ID7063423)

Check and - if required - modify the Java parameters to be used for running the system with SAP JVM 4.

Java Parameters for SAP JVM 4 and Vendor JVM

This table shows the Java parameters to be used with SAP JVM 4 in the *SAP JVM 4* column on the left, and the existing vendor parameters to be replaced or removed in the *Vendor JVM* column on the right. If you do not change the Java parameters and their assigned values given in the *SAP JVM 4* column, they are used by default for running the system with SAP JVM 4. You can check and - if required - modify them as described in [SAP Note 152200](#).

SAP JVM 4	Vendor JVM
-Xms2048m	-Xms2048m
-verbose:gc	-verbose:gc
-Djco.jar=1	-Djco.jar=1
-Djava.awt.headless=true	-Djava.awt.headless=true
-Djava.security.policy=../java.policy	-Djava.security.policy=../java.policy
-Dorg.omg.CORBA.ORBClass=com.sap.engine.system.ORBProxy	-Dorg.omg.CORBA.ORBClass=com.sap.engine.syste...
-Dorg.omg.CORBA.ORBSingletonClass=com.sap.engine.syste...	-Dorg.omg.CORBA.ORBSingletonClass=com.sap.e...
-Dorg.omg.PortableInterceptor.ORBInitializerClass.com...	-Dorg.omg.PortableInterceptor.ORBInitialize...
-Djavax.rmi.CORBA.PortableRemoteObjectClass=com.sap.en...	-Djavax.rmi.CORBA.PortableRemoteObjectClass...
-Dorg.xml.sax.driver=com.sap.engine.lib.xml.parser.SAX...	-Dorg.xml.sax.driver=com.sap.engine.lib.xml...
-Xbootclasspath/p:/usr/sap/DAA/SMDA96/SMDAgent/applica...	-Xbootclasspath/p:/usr/sap/DAA/SMDA96/SMDAg...

Add Remove

Old MaxHeapSize 2048

New MaxHeapSize(in MB) 2048

Back Next

Developer Tools for SAP JVM

- Memory Analyzer Tool (MAT)

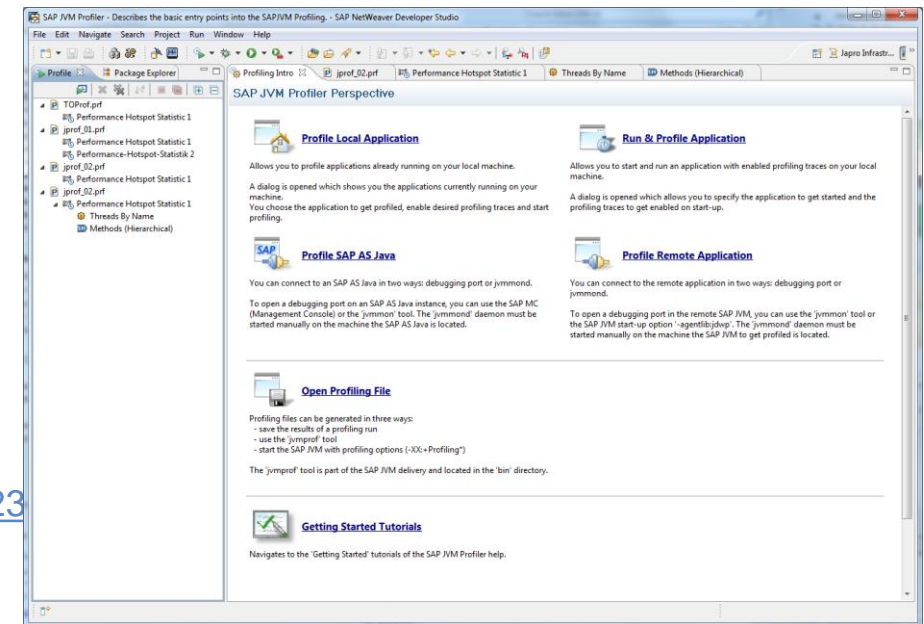
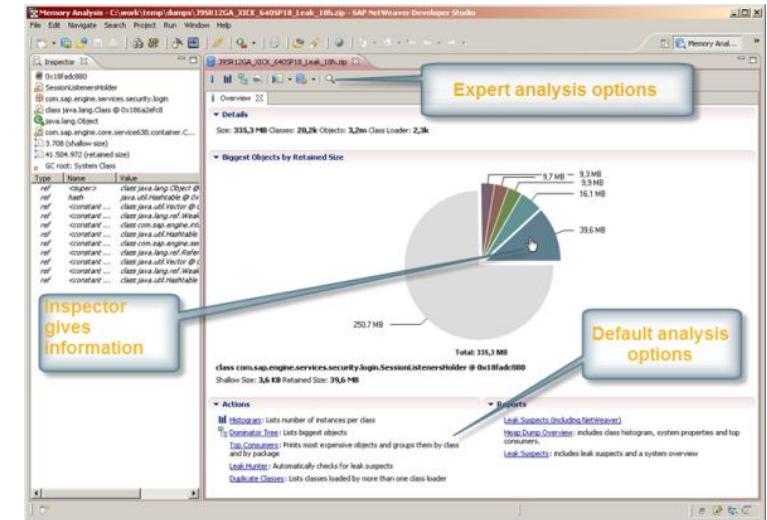
- Find memory leaks
- Analysis of huge productive heap dumps
- Fast and with relatively low memory footprint
- <https://wiki.sdn.sap.com/wiki/display/Java/Java+Memory+Analysis>

- SAP JVM Profiler

- Analysis of Java application runtime behaviour
- Find runtime hot-spots
- Plug-In that can be integrated into the NetWeaver Developer Studio or Eclipse IDE
- <https://wiki.sdn.sap.com/wiki/display/Java/Java+Profiling>

- On Demand Debugging with JVMmon

- sets a running SAP JVM into debugging mode
- allows to connect a debugger to the JVM (e.g. NetWeaver Developer Studio or Eclipse IDE)
- http://help.sap.com/saphelp_nwce71/helpdata/en/5f/d990520234aa1dc6aec5c806360/content.htm



Resources

- SAP on IBM i SAP Community Network space
 - <http://scn.sap.com/community/ibm-i>
- Important SAP Notes
 - [Note 1665953 - SAP JVM Switch Tool Composite Note](#)
 - [Note 1495160 - SAP JVM as replacement for Partner JDKs 1.4.2](#)
 - [Note 1555341 - Downloading SAP JVM Switch Tool and SAPJVM 4](#)
 - [Note 1618893 - Known Issues in the context of SAP JVM 4](#)

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