

JZOS batch launcher implementation.

In this training module you will learn how to implement and verify the JZOS batch launcher.

The JZOS batch launcher is a feature of Java[™] for z/OS[®] SDK version 5. Install and verify Java for z/OS SDK V5 before you implement the JZOS batch launcher version 2.3.0. For more information about the installation, see the *Java for z/OS SDK V5 installation and verification* training module.

JZOS batch launcher overview

- IBM 64-bit Java for z/OS SDK V5 provides an optional feature for running Java programs in batch jobs under z/OS
 - ▶ Known as the JZOS batch launcher version 2.3.0
 - ▶ Install the 64-bit Java for z/OS SDK V5 before you use the JZOS batch launcher
- TWS for z/OS uses the batch launcher to support EDWA data set triggering
 - Supports XML-based data set selection criteria for data set triggering
 - Supports Tivoli Dynamic Workload Console reporting
- The JZOS batch launcher provides an executable module, a JCL procedure, and sample JCL batch job in the J5.0_64/mvstools directory

Implement these items under z/OS



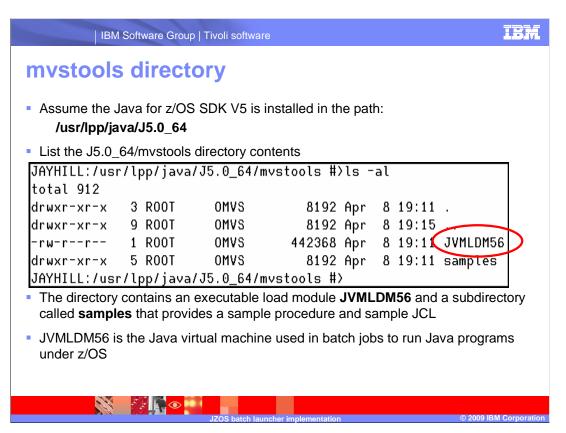
JZOS batch launcher overview.

Tivoli Workload Scheduler for z/OS 8.5 uses the JZOS batch launcher to enable Java programs in batch mode under z/OS.

Tivoli Workload Scheduler for z/OS 8.5 uses these Java programs to process XML and to support historical run data archiving for Tivoli Dynamic Workload Console reporting.

The XML defines data set selection criteria for data set triggering. For more information about using the XML, see the *XML Implementation* training module.

The files for implementing the JZOS batch launcher are created in the **J5.0_64/mvstools** directory when you install the Java for z/OS SDK V5.



mystools directory.

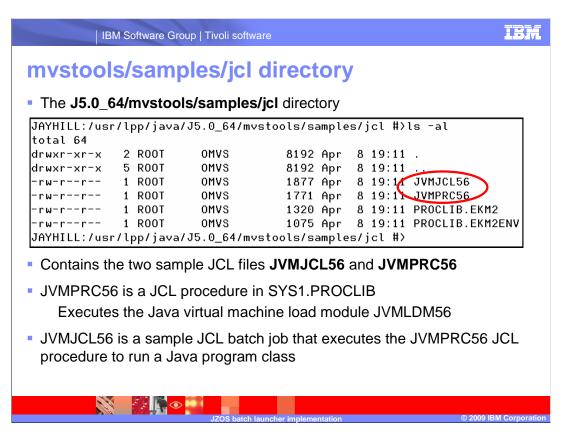
For the remainder of this training module, assume the Java for z/OS SDK V5 is installed in the path, /usr/lpp/java/J5.0_64.

If you list the contents of the **J5.0_64/mvstools** directory, the first file you see in the directory is the JVMLDM56 file.

JVMLDM56 is an executable load module that provides the Java virtual machine for z/OS batch jobs. Copy this module into an executable load library **PDSE** under z/OS.

The default load library used by the SMP/E installation is SYS1.SIEALNKE.

The JZOS batch launcher uses a subdirectory called **samples** that contains a sample procedure and a sample JCL.



mvstools/samples/jcl directory.

The **J5.0_64/mvstools/samples/jcl** directory contains the two sample JCL files for implementing the JZOS batch launcher.

The **JVMPRC56** file is a JCL procedure that can be executed from a JCL batch job. JVMPRC56 executes the Java virtual machine load module JVMLDM56. Copy the JVMPRC56 file as a member into SYS1.PROCLIB or some other JCL procedure library PDS under z/OS and customize the file before you use it.

JVMJCL56 is a sample JCL batch job that executes the JVMPRC56 JCL procedure to run a Java program class in batch mode under z/OS. Copy the JVMJCL56 file to a z/OS JCL file or a partitioned data set member and customize the file for your environment.

Use the JVMJCL56 sample to verify and test the JZOS batch launcher.

Implementing the JZOS batch launcher (1 of 3)

- Copy the J5.0_64/mvstools/JVMLDM56 file to a z/OS PDSE load module library with a member name of JVMLDM56 using the following commands from within OMVS:
 - cd /usr/lpp/java/J5.0_64/mvstools
 - cp -X JVMLDM56 "//'USER.LINKLIB2(JVMLDM56)'"
- Copy the sample JCL procedure J5.0_64/mvstools.samples/jcl/JVMPRC56 into a z/OS PDS procedure library with member name JVMPRC56
 - ${\tt cd /usr/lpp/java/J5.0_64/mvstools/samples/jcl}$
 - cp JVMPRC56 "//'USER.PROCLIB(JVMPRC56)'"
- Copy the sample JCL job J5.0_64/mvstools.samples/jcl/JVMJCL56 into a z/OS PDS procedure library with member name JVMJCL56
 - cd /usr/lpp/java/J5.0_64/mvstools/samples/jcl
 - cp JVMJCL56 "//'USER.JCLLIB(JVMJCL56)'"



Implementing the JZOS batch launcher (1 of 3).

Change directories to the **mvstools** subdirectory under the **J5.0_64** directory where the z/OS Java SDK V5 is installed.

Use the USS *cp* command as shown on the slide to copy the executable load module file JVMLDM56 into an executable load library of type PDSE as a member. The **-X** parameter on the copy tells the *cp* command that the file is an executable.

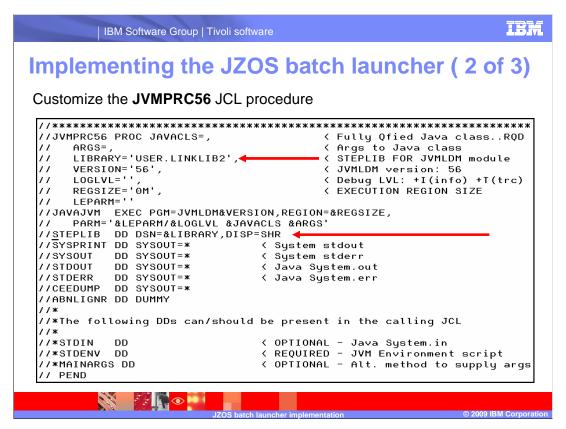
If successful, you return to the USS OMVS prompt with no messages displayed.

Change directories to the **mvstools/samples/jcl** subdirectory under the **J5.0_64** directory where the z/OS Java SDK V5 is installed. Use the USS *cp* command as shown on the slide to copy the sample JCL procedure file JVMPRC56 into a JCL procedure library PDS member.

If successful, you return to the USS OMVS prompt with no messages displayed.

From that same **mvstools/samples/jcl** subdirectory use the USS *cp* command as shown on the slide to copy the sample JCL batch job file JVMJCL56 into a JCL job library PDS member.

If successful, you return to the USS OMVS prompt with no messages displayed.



Implementing the JZOS batch launcher (2 of 3).

Tailor the JVMPRC56 JCL procedure for your installation.

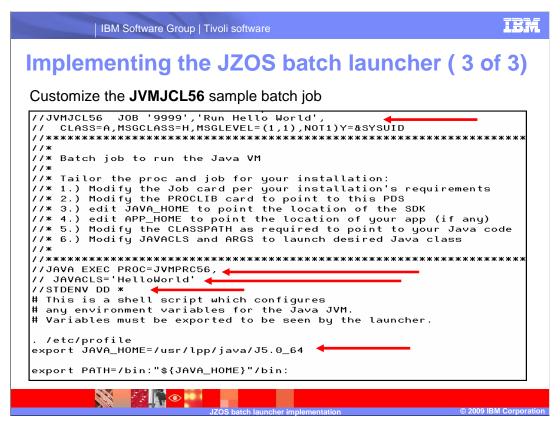
Replace '<HLQ>.JZOS.LOADLIB' with the load library PDSE that contains the JVMLDM56 module.

In the example on this slide USER.LINKLIB2 has been assigned to the LIBRARY symbolic parameter. The LIBRARY parameter and STEPLIB DD statements are commented out by default.

If you use the z/OS Java SDK V5 file from the Internet and the *pax* command to install the z/OS Java SDK V5, uncomment the LIBRARY and STEPLIB statements. Modify the LIBRARY statement to point to the location of the JVMLDM56 module.

If you use SMP/E to install the z/OS Java SDK V5, then the JVMLDM56 load module is in the LNKLST concatenation in the load library SYS1.SIEALNKE. In this case, do not uncomment the STEPLIB DD statement. In the example on the slide the STEPLIB DD statement is uncommented.

On the EXEC statement the **PGM=** parameter refers to the JVMLDM**56** load module when the version symbolic parameter has been applied.



Implementing the JZOS batch launcher (3 of 3).

Review the JVMJCL56 sample job. Read and follow the comments in the job for customizing the job. The job runs the HelloWorld Java class.

If you installed the Java for z/OS SDK V5 in /usr/lpp/java/J5.0_64, all you need to do is add a job card. The job executes the JVMPRC56 procedure passing the JAVACLS symbolic parameter, which specifies the Java class to be executed. In this case the class is the HelloWorld class.

The STDENV DD * statement provides the USS commands to establish the Java environment. This statement includes exporting the JAVA_HOME path as shown in the slide. If you installed Java for z/OS SDK V5 in the /usr/lpp/java/J5.0_64 directory, the existing

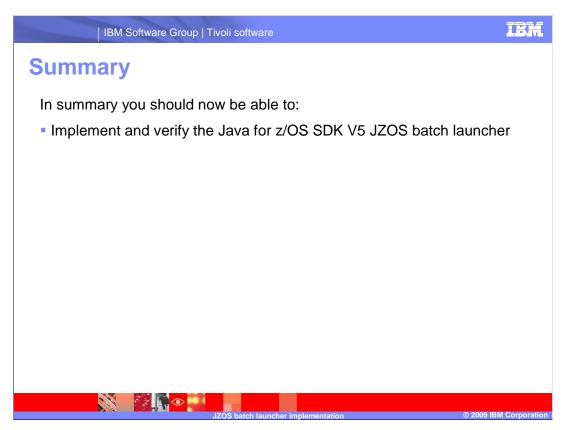
STDENV DD * statements work as defined. In this case the only customization required for the job is a job card. A job card has been added in this example as shown in the screen capture on this slide.

Verifying the JZOS batch launcher setup.

After customizing the JVMJCL56 job and adding a job card, submit the job. The job completes with a condition code zero.

Review the job output in SDSF. The job produces sysout messages with the JZOS batch launcher and Java for z/OS SDK version information as shown in the screen capture on the slide.

The job **stdout** contains the Hello World text produced by the HelloWorld Java class that was executed. This output verifies that the JZOS batch launcher is working.



Summary.

In summary you should now be able to implement and verify the Java for z/OS SDK V5 JZOS batch launcher.

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