z/OS 3.1 IBM Education Assistant

Solution Name: Communications Server Support for Java 11

Solution Element(s): z/OS Communications Server

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Agenda

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Trademarks

- See URL, http://www.ibm.com/legal/copytrade.shtml, for a list of trademarks.
- Additional Trademarks:
  - None

Objectives

- Continue to modernize the level of Java used on z/OS
  - Enable user applications to run on all supported versions of Java on z/OS
  - Eliminate dependencies on 31-bit Java
- Do not require updates to users' Java programs to accomplish the above goals

Overview

- Who (Audience)
  - Users who write and maintain Java applications on z/OS that use the FTP client API for Java.
- What (Solution)
  - The FTP client API for Java in z/OS is updated to support being invoked from programs running in a 64-bit Java Virtual Machine (JVM).
- Wow (Benefit / Value, Need Addressed)
  - Restriction that the FTP client API for Java can only be called from 31-bit JVMs is lifted
  - You can now use your Java programs that invoke the FTP client API for Java in 64-bit JVMs (on either Java 8 or Java 11) without needing to update them.
  - 31-bit JVMs with Java 8 or earlier versions of Java are still supported as well.

Usage & Invocation

No updates to Java programs are required to exploit this support.

The `EZAFTP.jar` file must be in your `classpath` to use this API

- This is not a new requirement

To support calling the FTP client API for Java from a 64-bit JVM, an additional shared object is introduced onto the file system.

- Shared object, `libEZAFTP64.so,` must be in your `libpath`
- IBM ships this new file in `/usr/lpp/tcpip/lib` and symbolically links it to `/usr/lib`
  - These are the same directories that the existing 31-bit shared object, `libEZAFTP.so`, is shipped in
- The Java classes in EZAFTP.jar will automatically load the correct shared object based on the bitness of the JVM.

Interactions & Dependencies

- Software Dependencies
  - none
- Hardware Dependencies
  - none
- Exploiters
  - none

Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level:
  - No
- Upgrade considerations: None
- Coexistence considerations: None

Installation & Configuration

- Ensure that the FTP client API for Java class file, `EZAFTP.jar`, is accessible through your `classpath` environment variable
  - This is not a new requirement
- Ensure that the FTP client API for Java shared objects, `libEZAFTP.so` and `libEZAFTP64.so`, are accessible using your `libpath` environment variable
  - This is not a new requirement for the existing 31-bit shared object, `libEZAFTP.so`.
  - This is a new requirement for the new 64-bit shared object, `libEZAFTP64.so`
    - IBM ships this file linked into `/usr/lib` so if that directory is already in your `libpath`, no additional setup is required.

Summary

The FTP client API for Java has been updated to work seamlessly when called from 64-bit or 31-bit JVMs.

- You do not need to update your Java programs or take any actions to exploit this support, except for ensuring the new 64-bit FTP client API for Java shared object is available in your `libpath`.
  - IBM ships this new part linked into `/usr/lib` which should already be in your `libpath`.

Appendix

Reference: “*z/OS Communications Server: IP Programmer’s Guide and Reference*”

- Chapter 12: FTP Client Application Programming Interface (API)