z/OS V1R13

BCP batch runtime: Java COBOL interoperability

Session objectives

- The purpose of this line item
- How to install this line item
- How to invoke this line item
- How to find information in the publications

Overview

- Problem statement / need addressed
  - Allow interoperability of COBOL and Java within same unit of work while providing data base integrity
- Solution
  - Run application within batch runtime environment
- Benefit / value
  - Preserve COBOL assets while migrating to Java applications

Usage and invocation (1 of 4)

- Batch runtime is invoked through batch JCL
  - Sample JCL procedure BCDPROC
  - Sample invocation JCL BCDBATCH
- Customize BCDBATCH job
  - Application name and language type
  - Application arguments (if any)
  - CLASSPATH and LIBPATH needed by application
- Run BCDIVP job to verify installation

- Batch runtime launches user COBOL or Java application
  - Launched application can call another COBOL or Java application
    - Any call depth
- All commit and rollback requests handled by batch runtime
  - Applications cannot use SQL commit or rollback
  - Commit and rollback must be coordinated by batch runtime
  - Batch runtime provides Java helper class used to invoke commit and rollback

- DB2 Connection management
  - Batch runtime calls JDBC to obtain connection to DB2 at startup
  - Subsequent COBOL SQL will share this connection
  - Java getConnection will return the same connection
- Batch runtime begins initial transaction (all transactions are global)
  - Calls RRS atrbeg
- For commit and rollback
  - Batch runtime helpers will call back to the batch runtime
  - Batch runtime will call RRS atrend (commit or rollback)
  - New transaction started (atrbeg)

- Commit and rollback helpers
  - For Java, call method directly
  - For COBOL, use the INVOKE statement
  - com.ibm.batch.spi.UserControlledTransactionHelper.commit()
  - com.ibm.batch.spi.UserControlledTransactionHelper.rollback()

Interactions and dependencies

- Software dependencies
  - IBM 31-bit SDK for Java technology edition, V6.0.1
    - jZOS launcher required (distributed with SDK)
  - Enterprise COBOL V4R2
  - DB2 v9 with PTFs UK62190 and UK62191
  - DB2 v10 with PTFs UK62141 and UK62145

- Hardware dependencies
  – None
- Exploiters
  – None

Migration and coexistence considerations

- None

Installation

- Batch container is implemented in Java
  – Installs into existing path /usr/lpp/bcp
- BCDPROC is installed into SYS1.PROCLIB
  - Check for any modifications needed
- Sample JCL BCDBATCH is installed in SYS1.SAMPLIB
  – Copy to your private JCL data set and customize as needed
- Re-instrument your COBOL and Java applications to use batch runtime provided commit and rollback helper methods

Appendix - References

- Documentation:
  – z/OS batch runtime: Planning and User's Guide (SA23-7270)