Remote z/OS Debugging

SHARE Orlando, February 2008
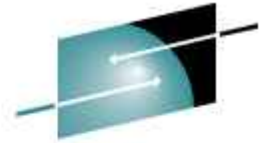
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Session: 8355

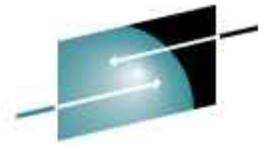# Trademarks

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Agenda

❖ The Debug Perspective
- The Debug Perspective
- Exercise 1
- Remote Debugging
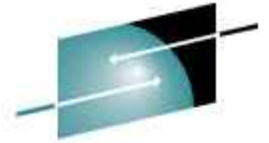- Exercise 2

Debug Perspective

❖ The debug perspective gives you access to functionality which enables the user to run code interactively by:

- 1. Stepping through the execution line by line

- 2. Setting break points at places in the code where the execution will suspend

- 3. Examining program attributes, such as variables, locks, memory, registers, … at any given (break) point

- 4. Modifying variables during program execution
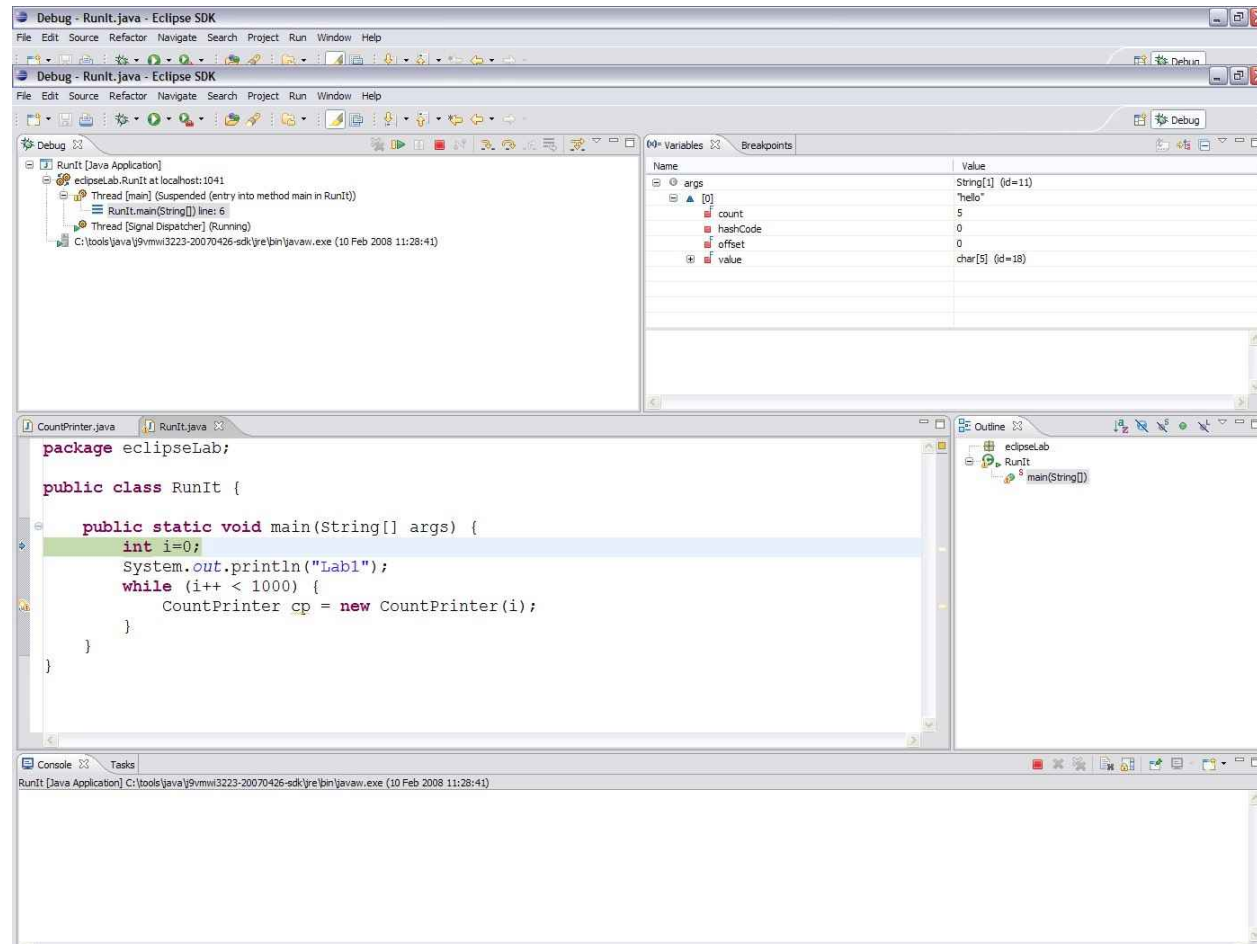
- 5. Modifying code during program execution

❖ This enables the user to:

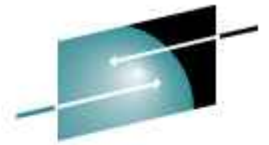- 1. Find code errors

- 2. Unit test

Debug Perspective

Exercise 1

❖ Run RunIt.java from Monday's Eclipse Lab in debug mode

❖ Use the debug entities and functions:
- breakpoints
- step though, step into, step out, continue to next break point

❖ Display runtime entities
- variables
- thread stacks

❖ Advanced debugging techniques
- Modify variables in flight
- Change code in flight

Agenda

❖ The Debug Perspective

  ▪ Debug functions and hot code replacement

  ▪ The debug perspective layout

  ▪ Exercise 1

  ▪ Remote Debugging

  ▪ Exercise 2

Remote Debugging

❖ In this exercise an application running on a z/OS box will be debugged from Eclipse running on a windows box.

❖ The application is the RunIt application

❖ The exercise consists of 2 parts:
- starting the application on a remote machine (z/OS)
- debugging the application from Eclipse

The Application

```
package eclipseLab;


public class RunIt {

  public static void
   main(String[] args) {

    int i=0;

    System.out.println("Lab1");

    while (i++ < 1000) {

      CountPrinter cp = new
    CountPrinter(i);

    }

  }

}
```

```
package eclipseLab;


public class CountPrinter {

  public CountPrinter(int num){

    System.out.println("Count = "
   + num);

  }

}
```

On The Remote Machine

❖ The files and directory structure on z/OS
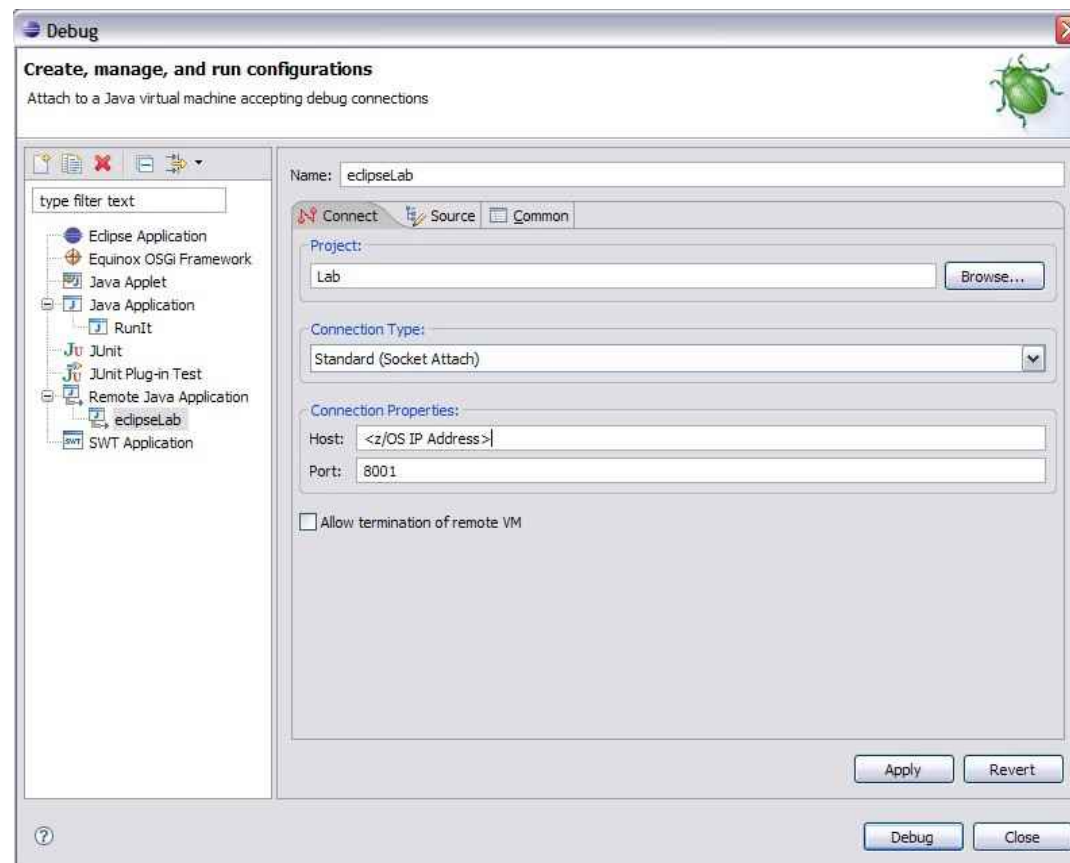
```
-rw-r-----   1 SHARA01   SHARUSER      128 Feb 11 04:33 CountPrinter.java
-rw-r-----   1 SHARA01   SHARUSER      201 Feb 11 04:33 RunIt.java
drwxr-xr-x   3 SHARA01   SHARUSER     8192 Feb 11 04:39 ..
-rw-r--r--   1 SHARA01   SHARUSER      680 Feb 11 04:39 RunIt.class
-rw-r--r--   1 SHARA01   SHARUSER      674 Feb 11 04:39 CountPrinter.class
drwxr-xr-x   2 SHARA01   SHARUSER     8192 Feb 11 04:39 .
MVS1:SHARA01:/sharelab/shara01/eclipselab/eclipseLab: > cd ..
MVS1:SHARA01:/sharelab/shara01/eclipselab: > ls -lrta
total 56
drwxr-xr-x   7 SHARA01   SHARUSER     8192 Feb 11 04:32 ..
-rwxr-xr-x   1 SHARA01   SHARUSER      204 Feb 11 04:39 runMeRemote
drwxr-xr-x   3 SHARA01   SHARUSER     8192 Feb 11 04:39 .
drwxr-xr-x   2 SHARA01   SHARUSER     8192 Feb 11 04:39 eclipseLab
MVS1:SHARA01:/sharelab/shara01/eclipselab: >
```

❖ run runMeRemote which starts RemoteRunIt suspended waiting on debug instructions on port 8001

```
MVS1:SHARA01:/sharelab/shara01/eclipselab: > cat runMeRemote
/usr/lpp/java15/J5.0/bin/javac -g eclipseLab/RunIt.java
/usr/lpp/java15/J5.0/bin/java -Xdebug -Xnoagent -Djava.compiler=NONE -Xrunjdwp:t
ransport=dt_socket,address=8001,suspend=y,server=y eclipseLab/RunIt
MVS1:SHARA01:/sharelab/shara01/eclipselab: > runMeRemote
Listening for transport dt_socket at address: 8001
```
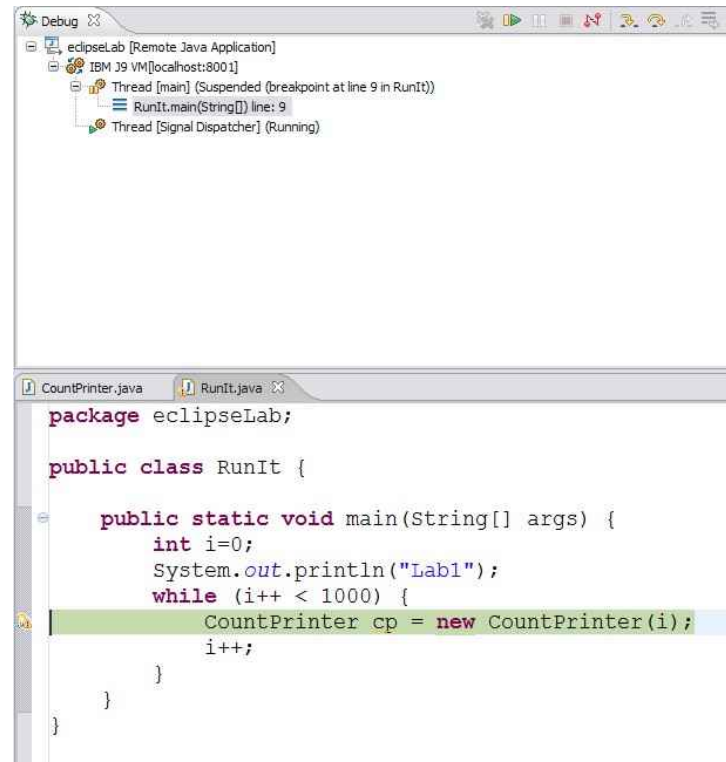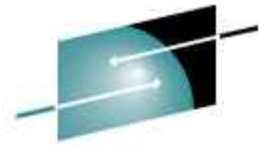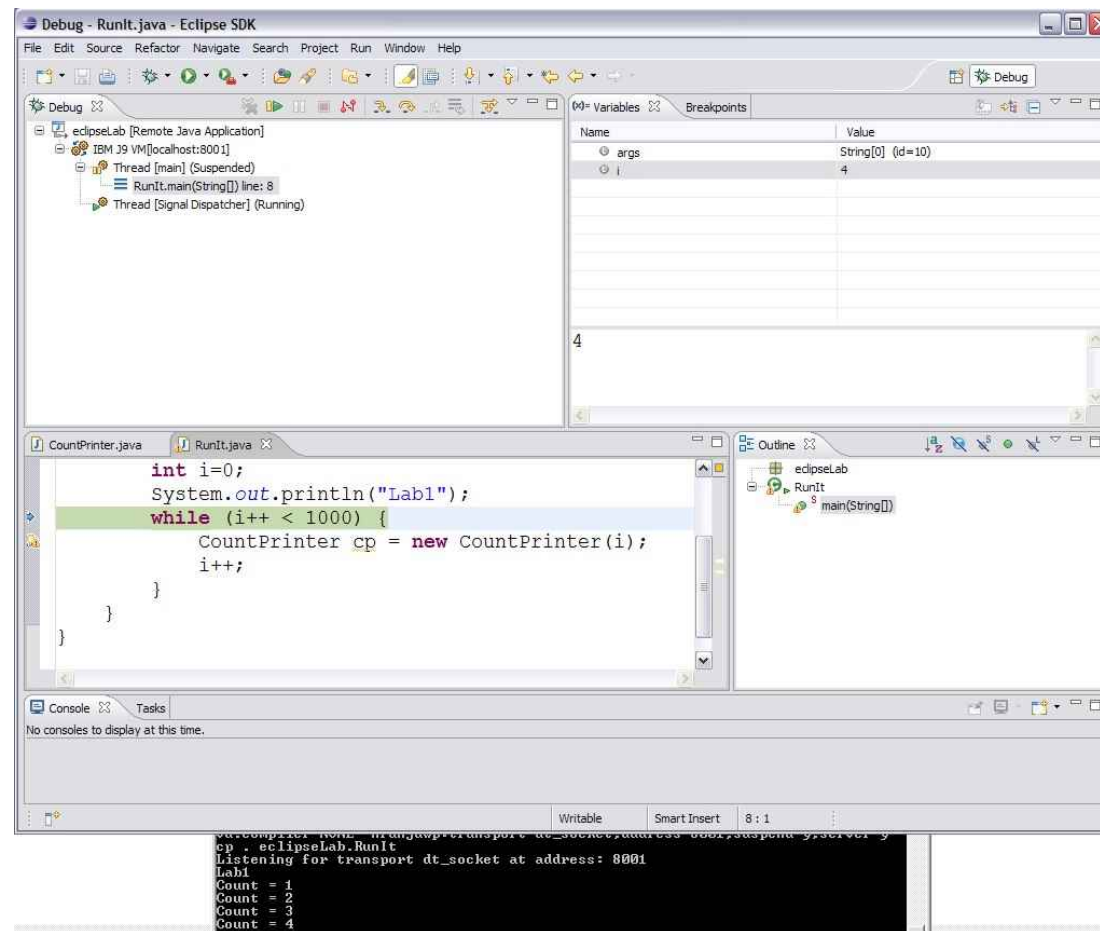
In Eclipse

❖ Select Run > Debug, enter the following settings and select Debug

In Eclipse

❖ A breakpoint was set at the start of the main method and execution is suspended here.

An In Flight Snapshot

Accessing the Remote z/OS Machine

Host name: mvs1.centers.ihost.com

Usernames: SHARA02 – SHARA30

p/w: firstpw

Putty config: mvs1_2994

Suggest you create a session on mvs1 using putty which is
   available from your desktop