



Cloud Service Providers Foundation Project

Stage Zero Guide

End2End set-up from GitHub to Debugging in Eclipse Enterprise Developer

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About

Stage Zero ensures that a basic end to end understanding is obtained prior to focussing on cloud scenarios. The end-to-end steps includes cloning a Git repository, compiling the code, creating a new CICS region and debugging the code.

Prerequisites

The following items are required to be in place prior to this guide.

1. GitHub SSH connectivity with Enterprise Developer. ¹
2. Access to the relevant GitHub repository.
3. A clean Enterprise Developer Workspace.
4. The installation of Rumba, either as a separate product or as part of ED, is required.

Primary Objectives

The following objectives can be considered as the Definition of Done (DoD):-

1. Source code has been successfully cloned from GitHub.
2. Source code has been successfully compiled.
3. A new region has been successfully created.
4. Source code has been successfully debugged in Enterprise Developer.

Secondary objectives

The following secondary objectives are optional.

1. Make a source code change and successfully push and commit the code base back to GitHub.
2. Study the .gitignore file and understand how it works.
3. Set the TN3270 port to be static.
4. Use an external Rumba TN3270 instance.
5. Use "Post-build Events" rather than specifying the target binary output directory.
6. Use CICS Group BANKGRP2 instead of BANKGRP, and study the CATALOG configuration.

¹[GitHub SSH Guide](#)

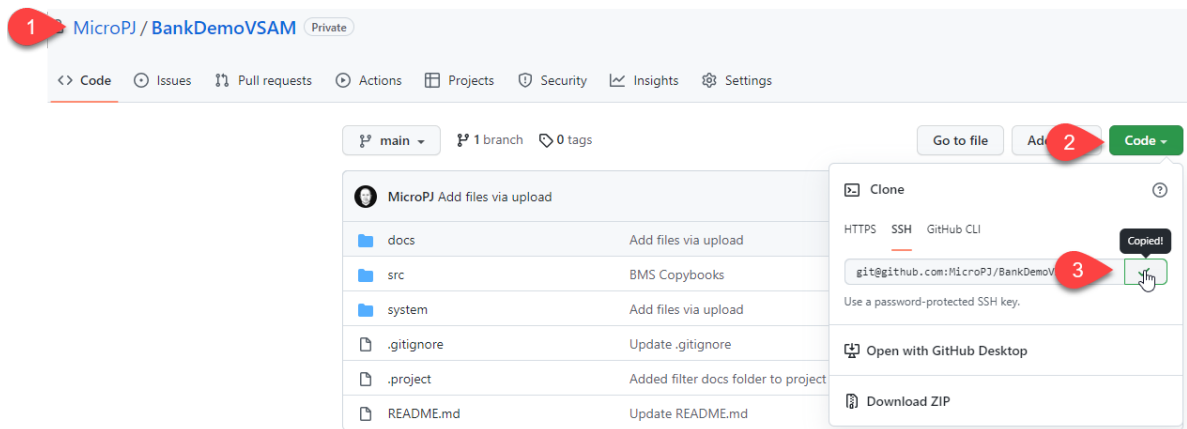
The Guide

The following steps are required to be completed in order.

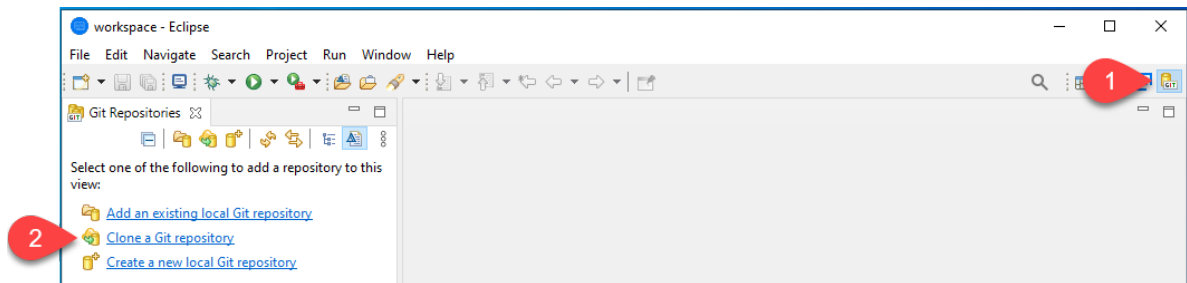
Step 1 - Clone

NB: When starting Enterprise Developer, set the automatic project build setting to off (to stop automatic build before the project is ready)

- 1) From GitHub, [1] find the repository your wish to use, [2] click the green code button and [3] copy the SSH URL path.



- 2) Within Enterprise Developer, [1] select the git perspective and then [2] Clone a Git repository



- 3) Paste in the copied SSH URL and check it populates the boxes as shown below. Click Next to continue.

Clone Git Repository

Source Git Repository

Enter the location of the source repository.

Location

URI: :MicroPJ/BankDemoVSAM.git Local Folder... Local Bundle File...

Host: github.com

Repository path: MicroPJ/BankDemoVSAM.git

Connection

Protocol: ssh

Port:

Authentication

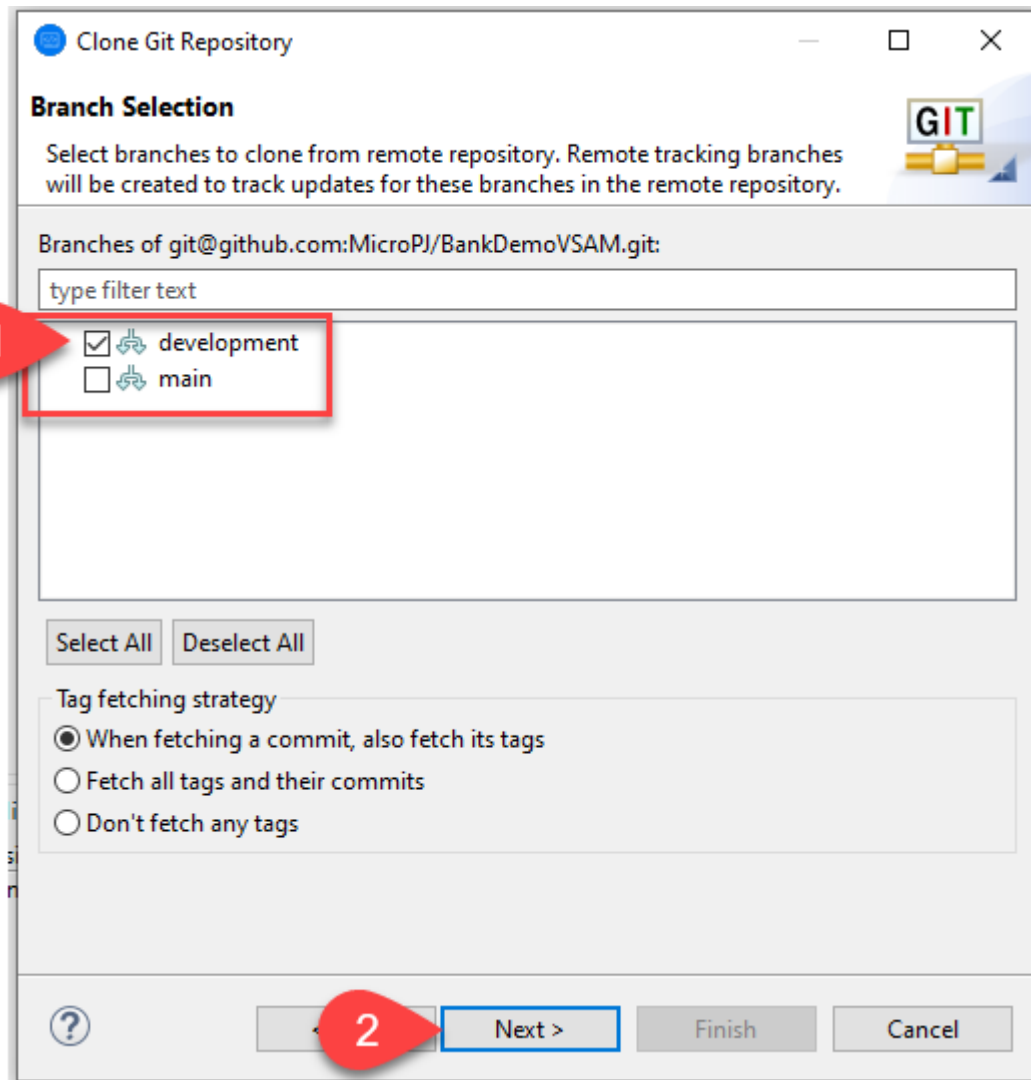
User: git

Password:

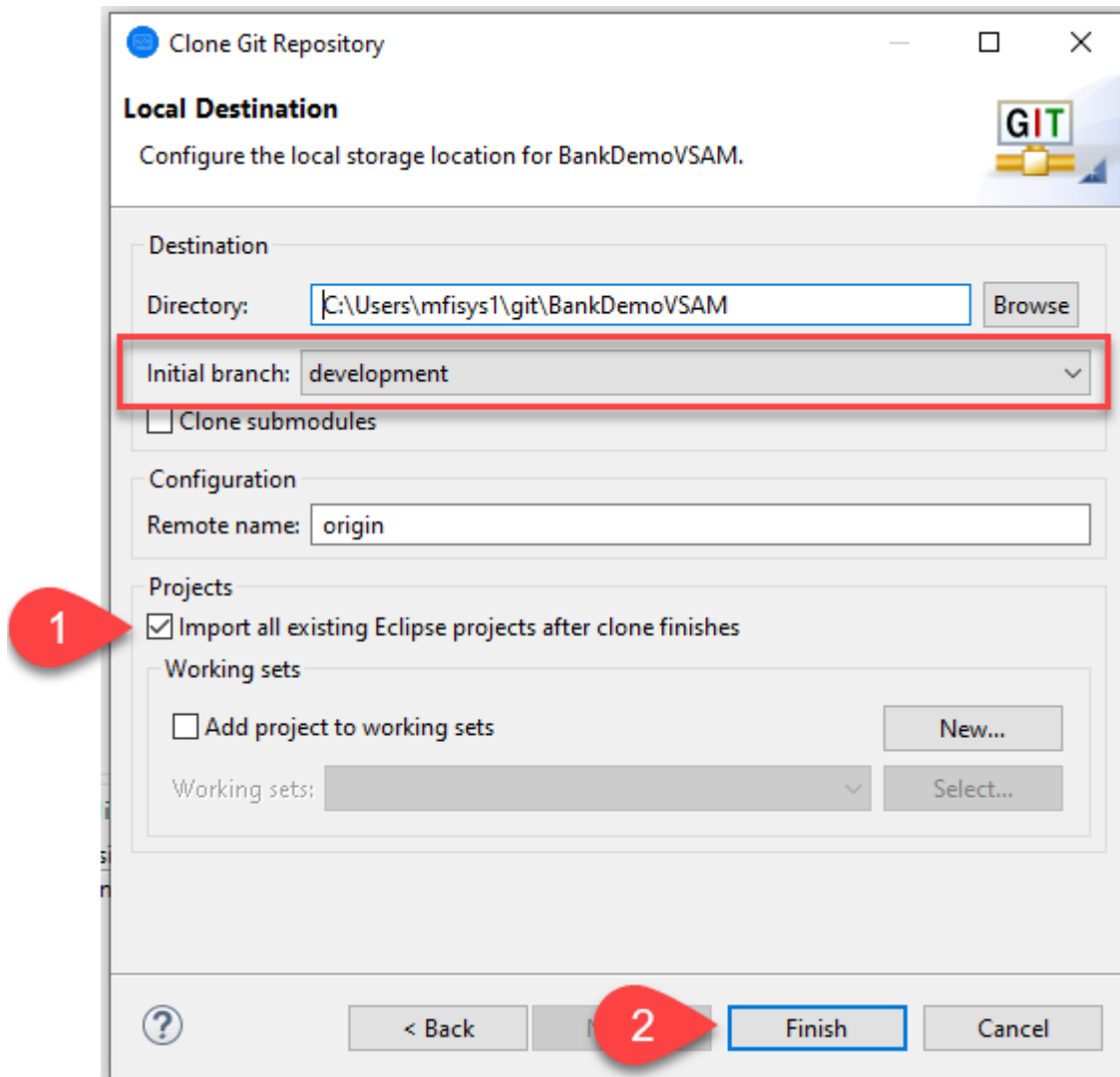
☐ Store in Secure Store

? < Back Next > Finish Cancel

4) [1] Select only the development branch, and [2] click next to continue



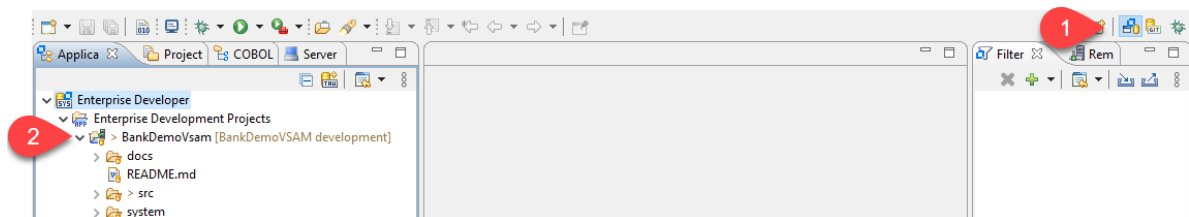
5) [1] Select to import the project files and then [2] Finish



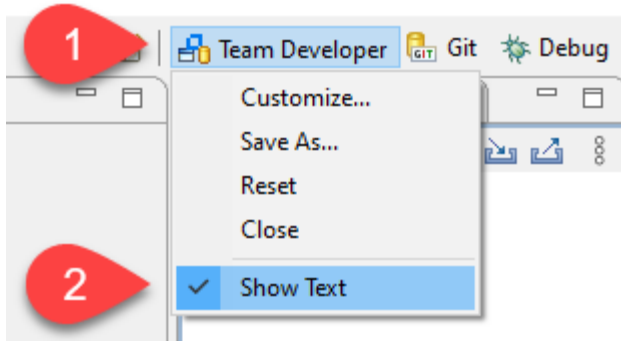
- 6) Enterprise Developer will now pull the GitHub repository locally and populate a new Project. Once the repository has been pulled, you will see the contents in the left window within the Team Developer view.

Step 2 - Compile

- 1) [1] Switch to the Team perspective view, and the [2] project will be visible.

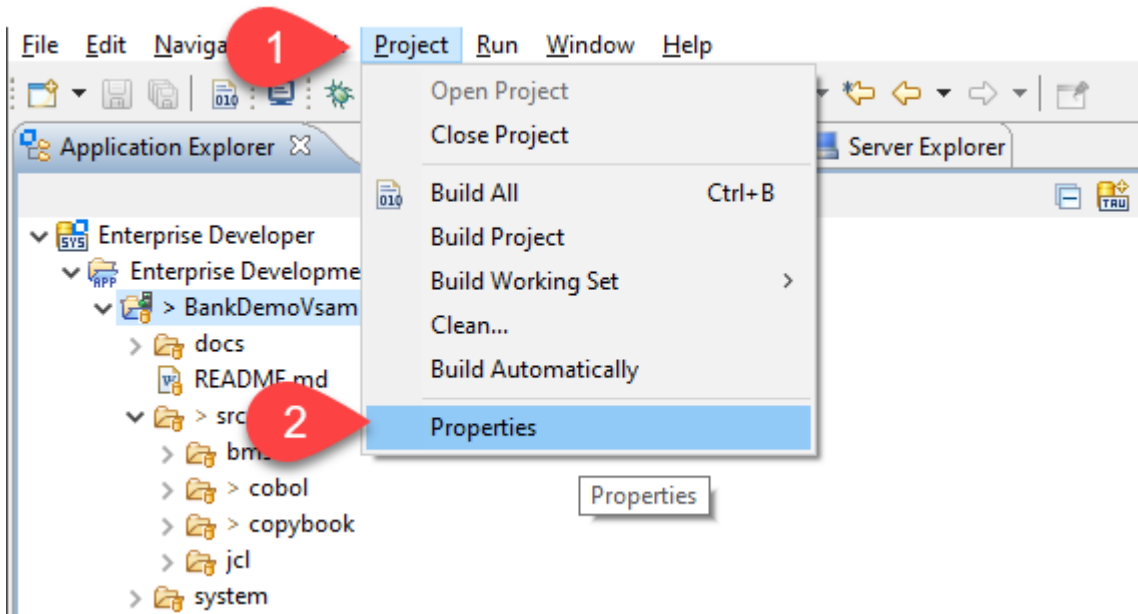


Optional: Right hand mouse click the Team Developer and select “Show Text”

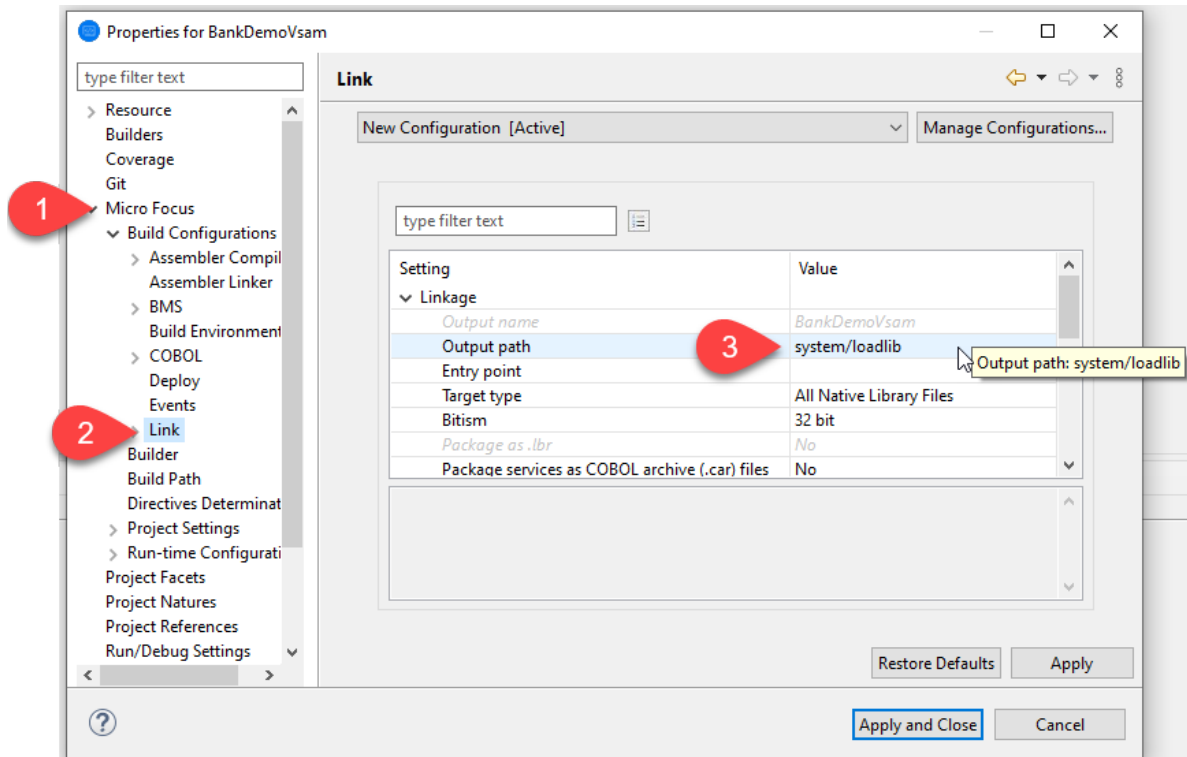


2) The newly created project will need some basic settings applied to the Micro Focus Properties.

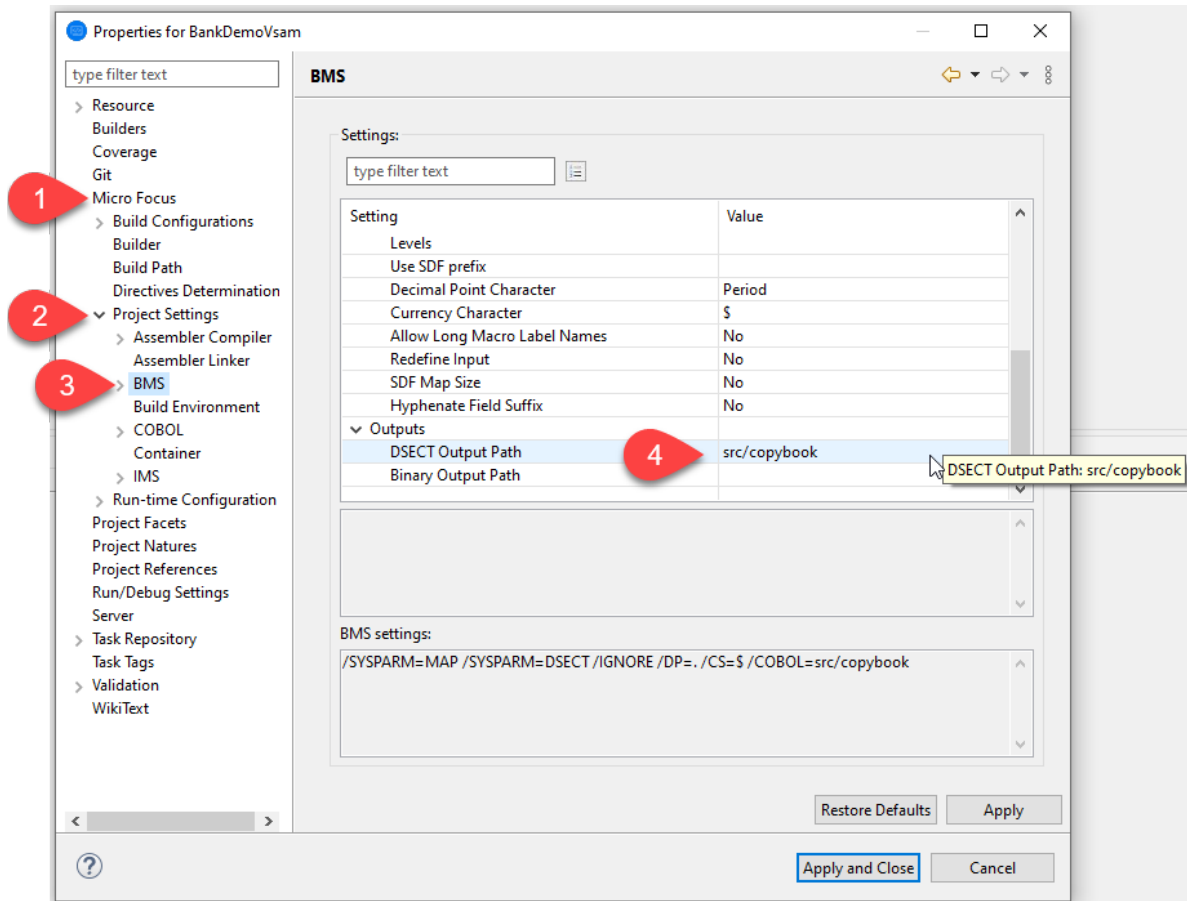
Open Micro Focus Properties



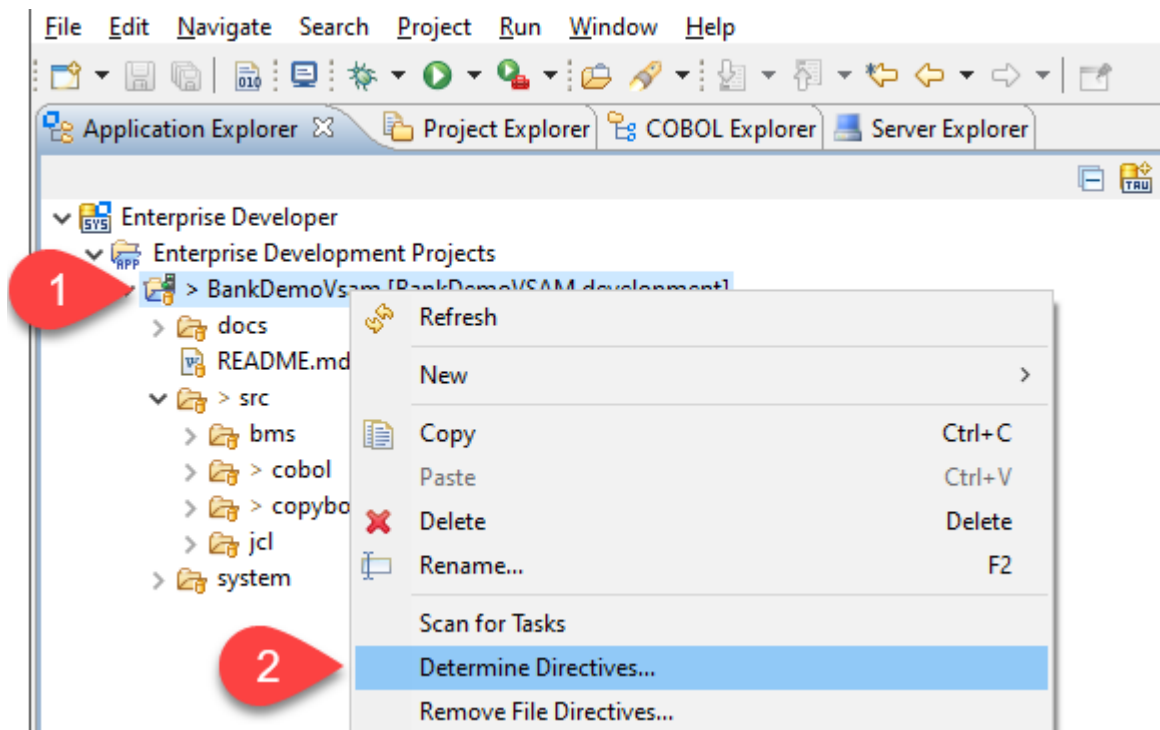
Set Output Path NB: Ignore any warnings.



Set BMS Maps to CPY (if required)

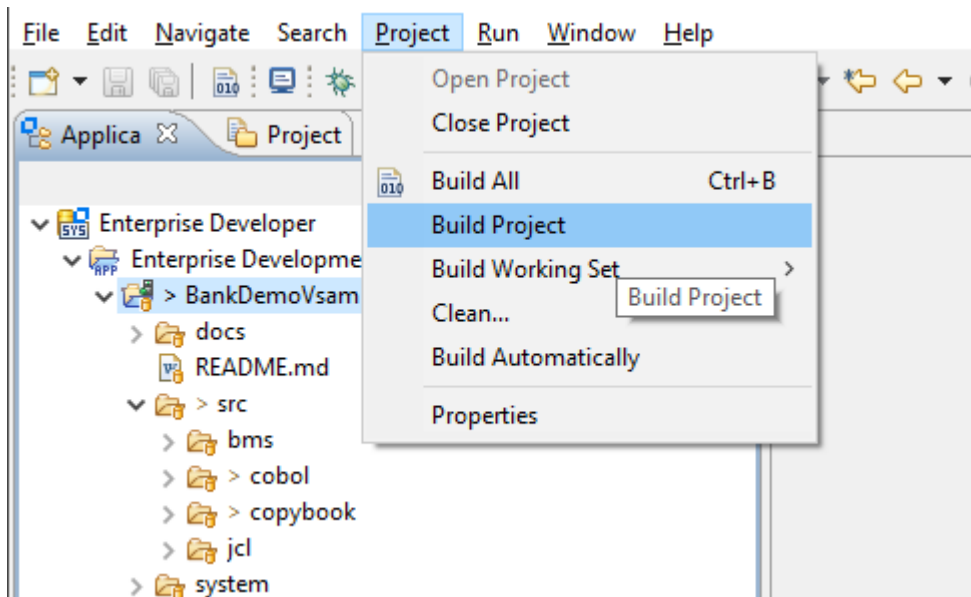


3) [1] Right hand mouse click on the application, and [2] select Determine Directives.

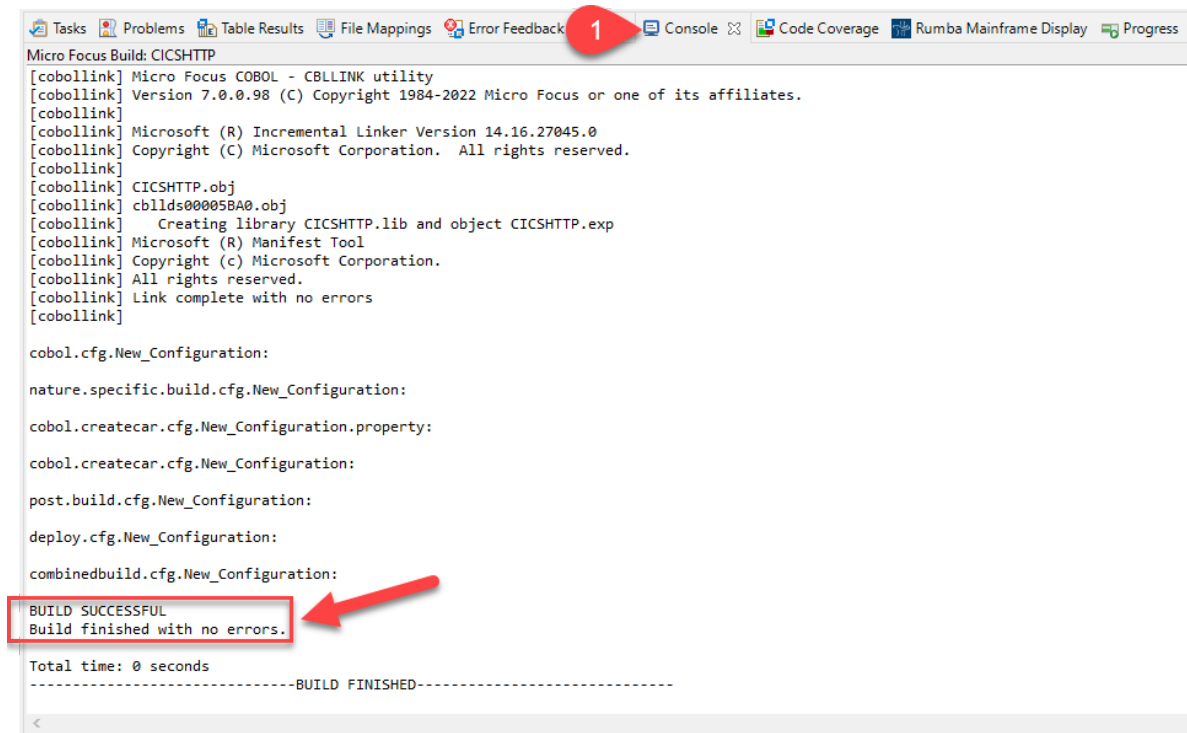


NB: Click Okay in the pop-up once the directives have been determined. This may take a few minutes.

- 4) [1] You can now Build the project.

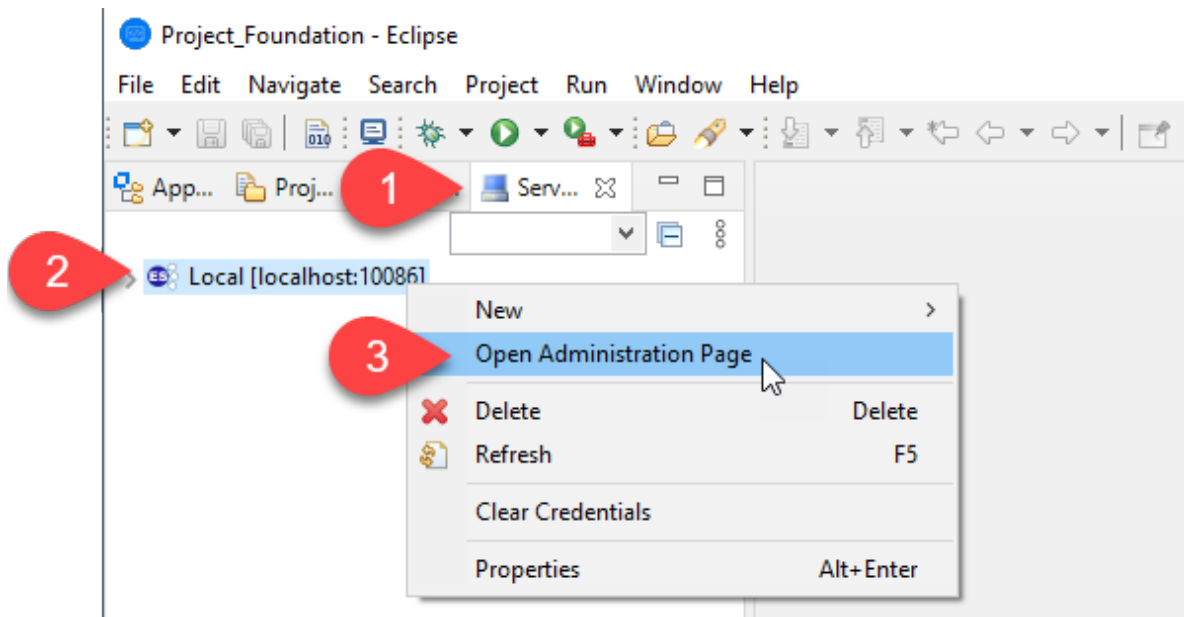


- 5) [1] Check that the compilation was clean.



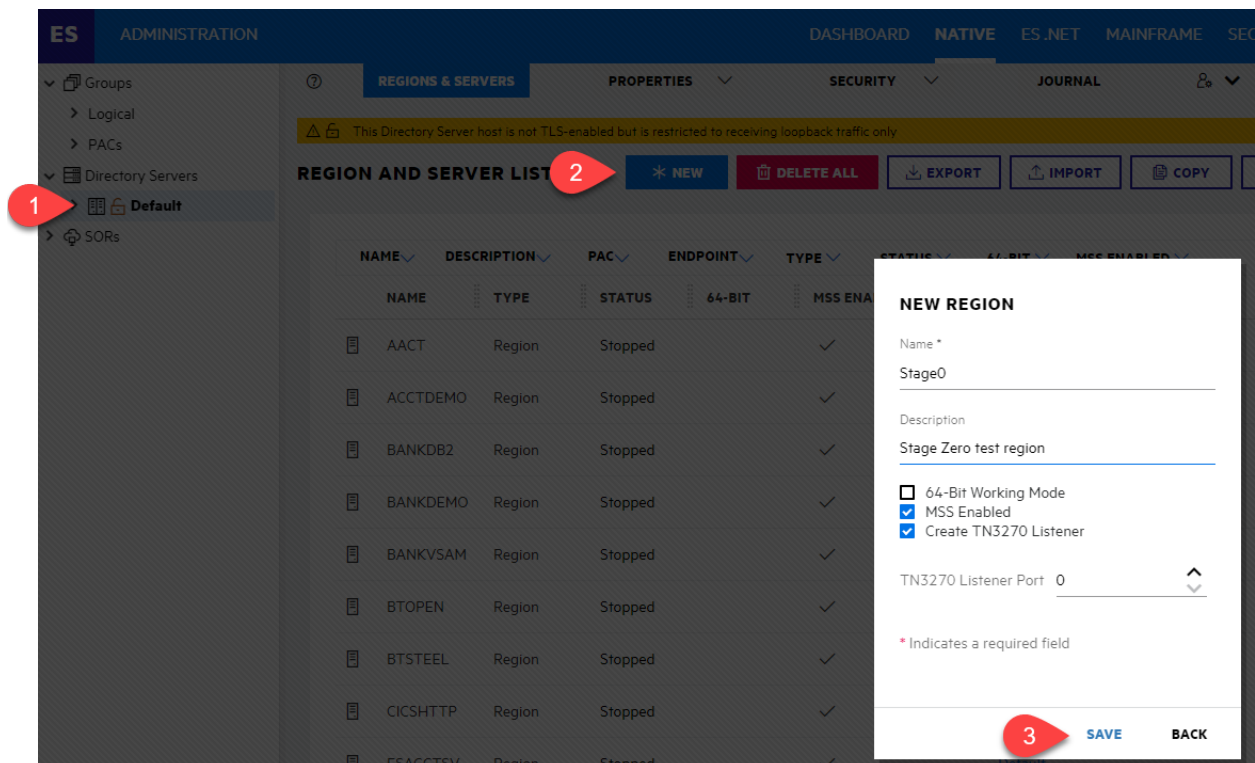
Step 3 - Create Region

- 1) [1] Select Server Explorer, [2] right hand click on Local, and [3] select Open Administration Page



2) [1] Select Default within the Directory Servers section, [2] click New, and [3] save after entering a meaningful 6 character name and longer description

NB: Consider setting the TN3270 Listener Port to 5001, so that you have a known TN3270 Port number when debugging BankDemo later in this guide



3) [1] Select GENERAL Properties on your new Region, [2] populate the ES-Environment section within the Configuration Information box, [3] input the System Directory, and [4] click to Allow Dynamic Debugging.

NB: Use the COPY BOXES below for example configuration

The screenshot shows the BANKVSAM configuration interface. At the top, there are tabs for DASHBOARD, NATIVE, ES.NET, MAINFRAME, and SECURITY. Below these are sub-tabs for GENERAL, MONITOR, CICS, JES, and USER. The GENERAL tab is selected, and the 'GENERAL PROPERTIES' section is active. A red circle with the number 1 points to the 'GENERAL' tab. A red circle with the number 2 points to the 'Configuration Information' section at the bottom. A red circle with the number 3 points to the 'System Directory' field, which contains '\$ESP\logs'. A red circle with the number 4 points to the 'Show Local Console' checkbox. A red circle with the number 5 points to the 'APPLY' button. The 'STARTUP OPTIONS' section includes fields for Name (BANKVSAM), System Directory (\$ESP\logs), Shared Memory Pages (512), Shared Memory Cushion (32), SEP Count (2), Console Log Size (0), and checkboxes for Show Local Console, Allow Dynamic Debugging, Start on System Start, 64-Bit Working Mode, and Purge Old Logs. The 'REGION FEATURES' section includes checkboxes for MSS Enabled, JES Enabled, IMS Enabled, PL/I Enabled, and MQ Enabled. The 'WINDOWS MONITORING AND MANAGEMENT' section includes a checkbox for Allow Performance Monitoring and an 'Event Logging' section with checkboxes for Informational, Error, Warning, and Severe.

Ensure you click [5] APPLY to save changes

NB: Ensure the ESP logical path is updated to reflect your local environment, i.e. {USERNAME}

Config Copy Boxes

[2] Configuration Information ²

```
[ES-Environment]
ESP=C:\servers\BankDemoVSAM\system
MF_CHARSET=E
```

[3] System Directory

\$ESP\logs

- 4) [1] Select CICS, [2] populate the Resource Definition File Path, [3] Transaction Path, [4] File Path, and [5] Map Path

NB: Use the COPY BOXES below for example configuration

²[Enterprise Developer Configuration](#)

The screenshot shows the 'CICS CONFIGURATION' page. At the top, there are tabs for 'GENERAL', 'MONITOR', and 'CICS'. The 'CICS' tab is selected. Below the tabs, there is a title 'CICS CONFIGURATION' and an 'APPLY' button. The configuration fields are as follows:

- System Initialization Table:** (empty)
- Resource Definition File Path:** \$ESP\rdef
- Transaction Path:** \$ESP\loadlib;\$ESP\sysloadlib
- File Path:** \$ESP\catalog\data
- Map Path:** \$ESP\loadlib;\$ESP\sysloadlib
- EZASOCKET Support:** ☐ (unchecked)

Ensure you click [6] APPLY to save changes

Config Copy Boxes

[2] Resource Definition File Path

\$ESP\rdef

[3] Transaction Path

\$ESP\loadlib;\$ESP\sysloadlib

[4] File Path

\$ESP\catalog\data

[5] Map Path

\$ESP\loadlib;\$ESP\sysloadlib

- 5) [1] Select JES, [2] populate the JES Program Path, [3] Default Allocated Dataset Location, [4] System Catalog, and [5] System Procedure Library

NB: Use the COPY BOXES below for example configuration

The image shows the 'JES CONFIGURATION' screen in a web application. At the top, there are tabs for 'GENERAL', 'CICS', and 'JES'. A red circle with the number '1' points to the 'JES' tab. Below the tabs, there is a red circle with the number '6' pointing to the 'APPLY' button. The main configuration area has several fields: 'JES Program Path' (value: \$ESP\loadlib;\$ESP\sysloadlib), 'Default Allocated Dataset Location' (value: \$ESP\catalog\data;), 'System Catalog' (value: \$ESP\catalog\CATALOG.dat;), and 'System Procedure Library' (value: SYS1.PROCLIB;). Red circles with numbers 2, 3, 4, and 5 point to these respective fields.

Optional Add a JES Initiator

The image shows the 'JES CONFIGURATION' screen with the 'INITIATORS' section selected. A red circle with the number '1' points to the '* NEW' button. A modal window titled 'JES INITIATOR' is open, showing fields for 'Name' (value: INITA), 'Class' (value: A), and 'Description' (value: Class A Initiator). A red box highlights the 'Name' field. Below the modal, there is a table with columns 'NAME', 'CLASS', and 'DESCRIPTION'. The table is currently empty, and the total count is 'Total: 0'.

Ensure you click [6] APPLY to save changes

Config Copy Boxes

[2] JES Program Path

\$ESP\loadlib;\$ESP\sysloadlib

[3] Default Allocated Dataset Location

\$ESP\catalog\data

[4] System Catalog

\$ESP\catalog\CATALOG.dat

[5] System Procedure Library

SYS1.PROCLIB

- 6) [1] Open an Enterprise Developer Command Prompt **and** change directory to the rdef folder of your project before executing the commands below [2] Create a vanilla rdef file ³ (rdef), and [3] Update the clean vanilla rdef with the project definitions

```
C:\Users\PJennings\git\BankDemoVSAM\system\rdef>caspcrd /c
Adding SNT entries
Adding/updating SIT entries
Adding/updating LIST entries
Adding/updating GROUP entries
Adding/updating GROUP PCT entries
Adding/updating GROUP FCT entries
Adding/updating GROUP DCT entries
Adding/updating TERM entries
Adding/updating GROUP TYPETERM entries
Adding/updating PLT entries
Adding/updating GROUP PPT entries
Adding/updating GROUP TST entries
Adding/updating GROUP TCIPSRV entries
Adding/updating GROUP URIMAP entries
Adding/updating GROUP DOCTEMPL entries
dfhdrdat

Resource file created successfully

C:\Users\PJennings\git\BankDemoVSAM\system\rdef>casrdtup /fbankvsam.rdt /opC:\Users\PJennings\git\BankDemoVSAM\system\rdef
Loading of resource entries in progress.
Resource load is complete.
Total records loaded :      45
Total records in file :      45
Input file name       : bankvsam.rdt
Log file name         : bankvsam.log

C:\Users\PJennings\git\BankDemoVSAM\system\rdef>
```

NB: Ensure the rdef logical path is updated to reflect your local environment

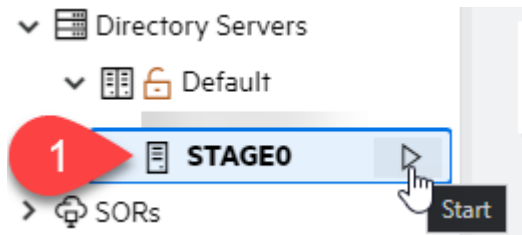
- [2] Create a vanilla rdef file ⁴

caspcrd /c

- [3] Update rdef file with project definitions

casrdtup /fbankvsam.rdt /opC:\Users\{USERNAME}\git\BankDemoVSAM\system\rdef

- 7) [1] Start your new region



- 8) [1] Select Monitor, [2] Logs, and [3] Console Log to check the region has started successfully.

³Enterprise Developer CICS Commands: caspcrd

⁴Enterprise Developer CICS Commands: caspcrd

The screenshot shows the STAGE0 (DEFAULT) console window. The top navigation bar includes 'DASHBOARD', 'NATIVE', 'ES.NET', 'MAINFRAME', and 'SECURITY'. The left sidebar has 'GENERAL' and 'CICS' tabs. The 'CICS' tab is selected, and a dropdown menu is open showing 'Console Log' (checked), 'Communications Log', 'Trace', and 'Dumps'. The main console area displays a list of logs with columns for 'Resource', 'Group', and 'Message'. A red circle 1 points to the 'CICS' dropdown, a red circle 2 points to the 'Resources' column, and a red circle 3 points to the 'by Group' filter. The console shows various system messages, including 'Resource security disabled', 'CCSID tables 0000 to Unicode(UCS) not found', and 'Service Process Initialization started'.

9) [1] Select CICS, [2] Resources, [3] by Group, and BANKGRP to confirm that the rdef Updated worked.

RESOURCES | By Group | Resource Filter

BANKGRP | APPLY | COPY | DELETE

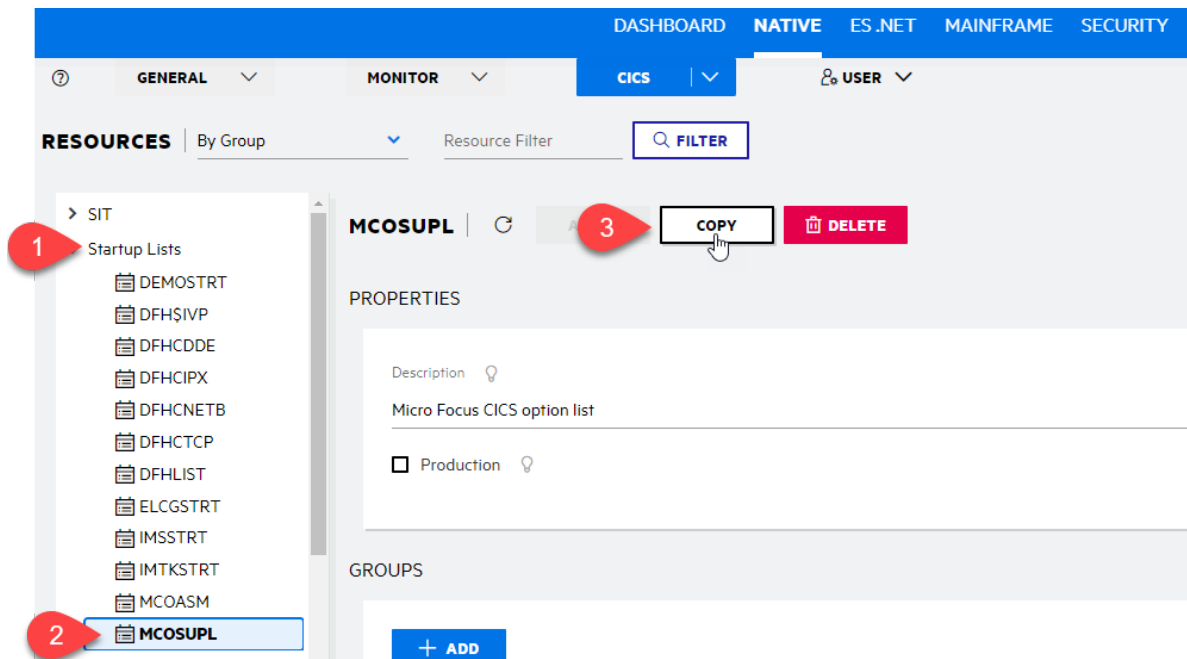
Description

BANKGRP RESOURCES | * NEW | COPY TO

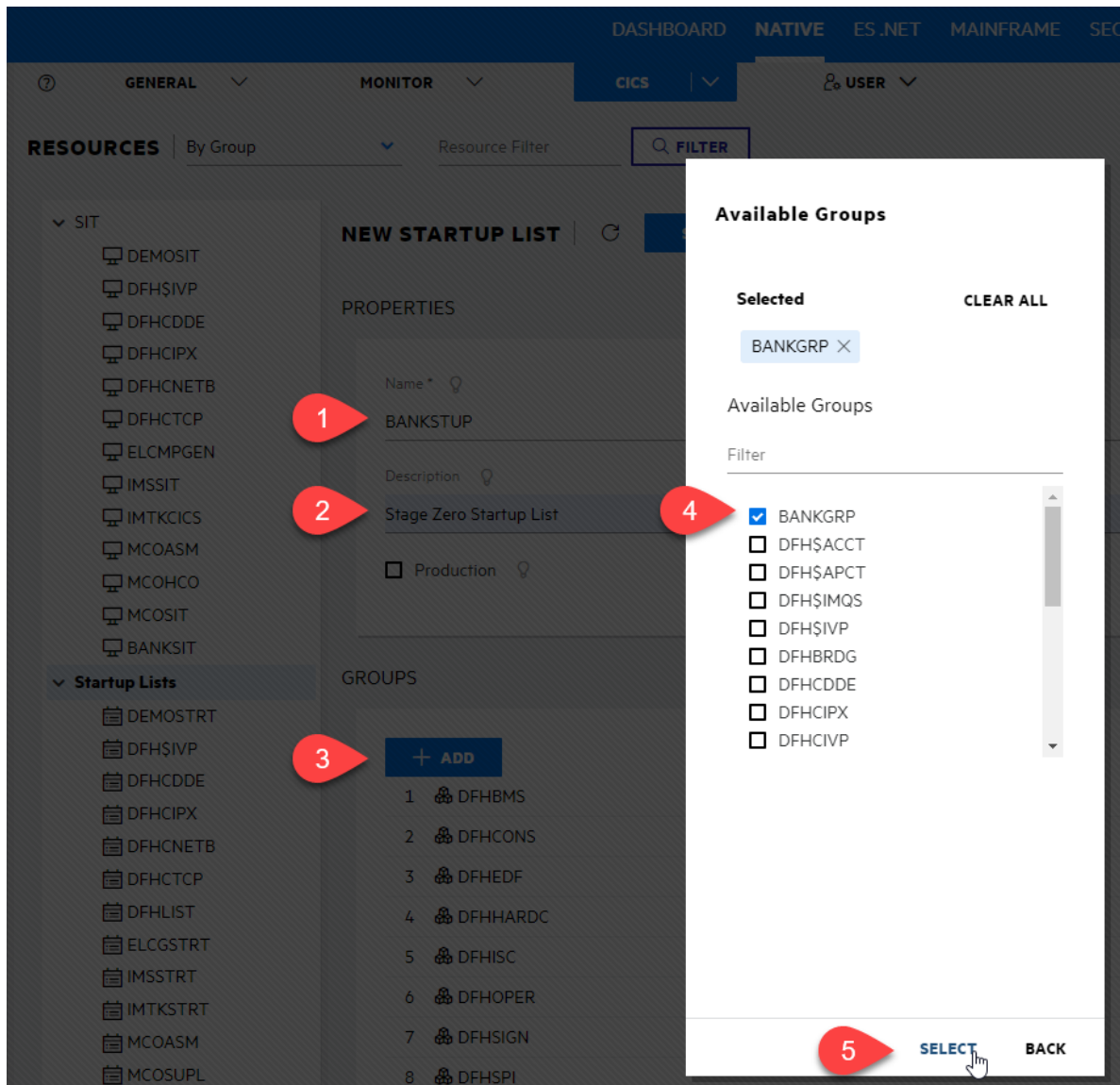
NAME	DESCRIPTION	TYPE
BANK	DEMO SYSTEM - BANK TXN	
BBANK10P		
BBANK20P		
BBANK30P		
BBANK40P		
BBANK50P		
BBANK60P		
BBANK70P		
BBANK80P		
BBANK99P		
BNKACC	BANK ACCOUNT	
BNKACC1	BANK ACCOUNT SECONDARY INDEX	
BNKATYPE	BANK ACCOUNT TYPE	
BNKCUST	BANK CUSTOMERS	
BNKCUST1	BANK ACCOUNT CUSTOMERS SECONDARY INDEX 1	
BNKCUST2	BANK ACCOUNT CUSTOMERS SECONDARY INDEX 2	
BNKHELP	DEMO HELP TEXT FILE	
BNKTXN	BANK ACCOUNT TRANSACTIONS	
BNKTXN1	BANK ACCOUNT TRANSACTIONS SECONDARY INDEX	
DBANK01P		
DBANK02P		
DBANK03P		
DBANK04P		

Total: 45

10) [1] Select Startup Lists, [2] MCOSUPL, and [3] COPY to clone an existing Startup List.

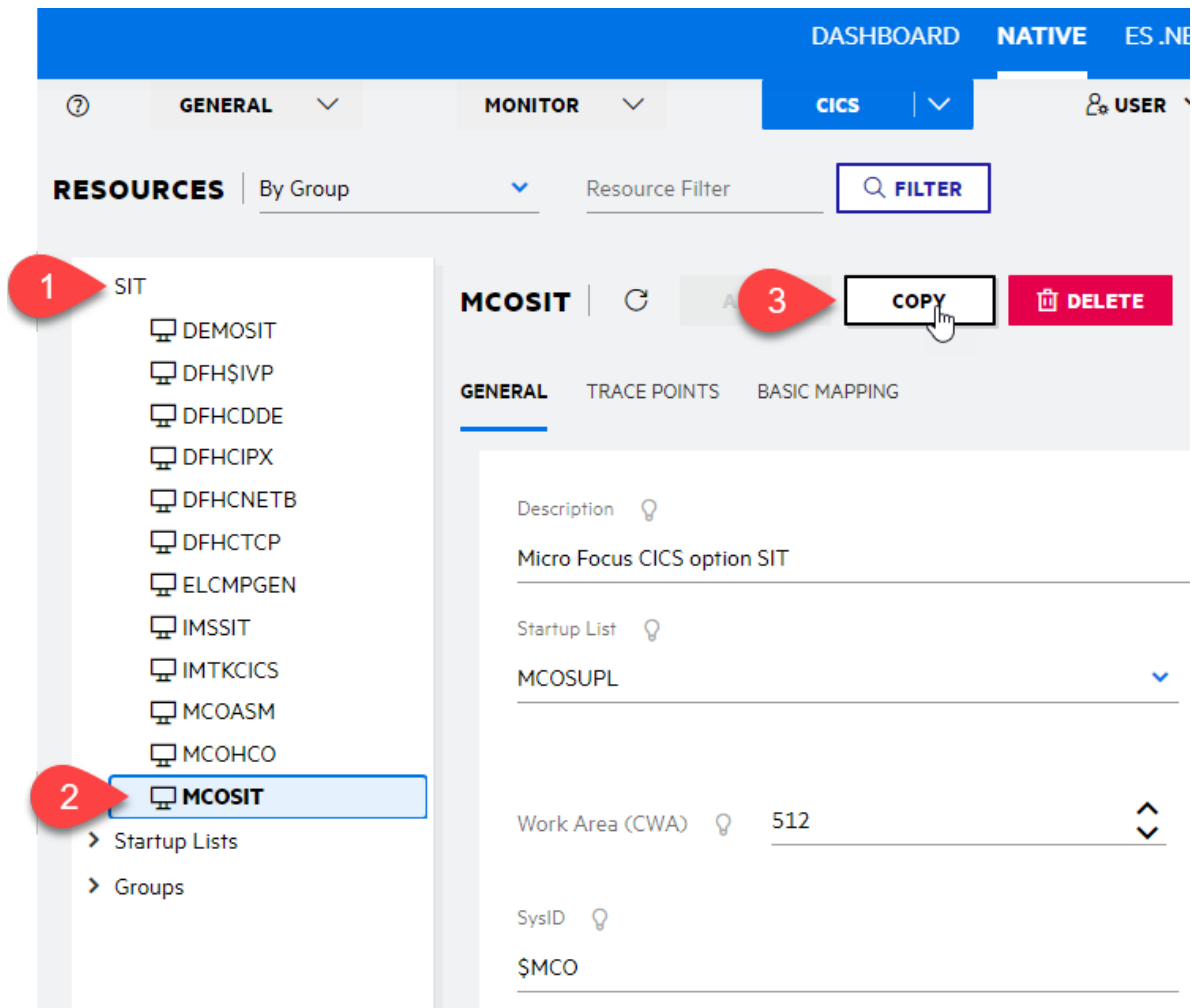


- 11) [1] Input a meaningful name, [2] Description, [3] ADD a Group, [4] BANKGRP, and [5] click Select to add.



Ensure you click SAVE to save changes

12) [1] Select SIT, [2] MCOSIT, and [3] COPY to clone an existing SIT.



- 13) [1] Input a meaningful name, [2] Description, [3] Select the new Start Up List created, [4] Change SysID (optional), [5] initial Tran ID (optional), and [6] SAVE.

NB: Untick the Development SIT

DASHBOARD NATIVE ES.NET MAINFRAME SECURITY

GENERAL MONITOR CICS USER

RESOURCES By Group Resource Filter FILTER

SIT

- DEMOSIT
- DFH\$IVP
- DFHCDDE
- DFHCIPX
- DFHCNETB
- DFHCTCP
- ELCMPGEN
- IMSSIT
- IMTKCICS
- MCOASM
- MCOHCO
- MCOSIT

Startup Lists

Groups

NEW SIT SAVE

GENERAL TRACE POINTS BASIC MAPPING

Name * BANKSIT

Description Stage Zero SIT

Startup List BANKSTUP Development SIT

Work Area (CWA) 512 Minimum Commarea 0

SysID BANK Initial Tran ID CSGM

Force Program Phase In

Program List Post Initialization (PLTPD)

Program List Shut Down (PLTSD)

IBM Client Sessions 0 CICS Release 3.3

14) [1] Select CICS, [2] Update the SIT to the newly created one, and [3] APPLY.

DASHBOARD NATIVE ES.NET MAINFRAME SECURITY

GENERAL MONITOR CICS USER

CICS CONFIGURATION APPLY

System Initialization Table BANKSIT Resource Definition File Path \$ESP\rdef

Transaction Path \$ESP\loadlib

File Path \$ESP\data

Map Path \$ESP\loadlib

EZASOCKET Support

15) Start/Restart the region and check the Console logs

Optional Save the example JCL below to a file and run through JES

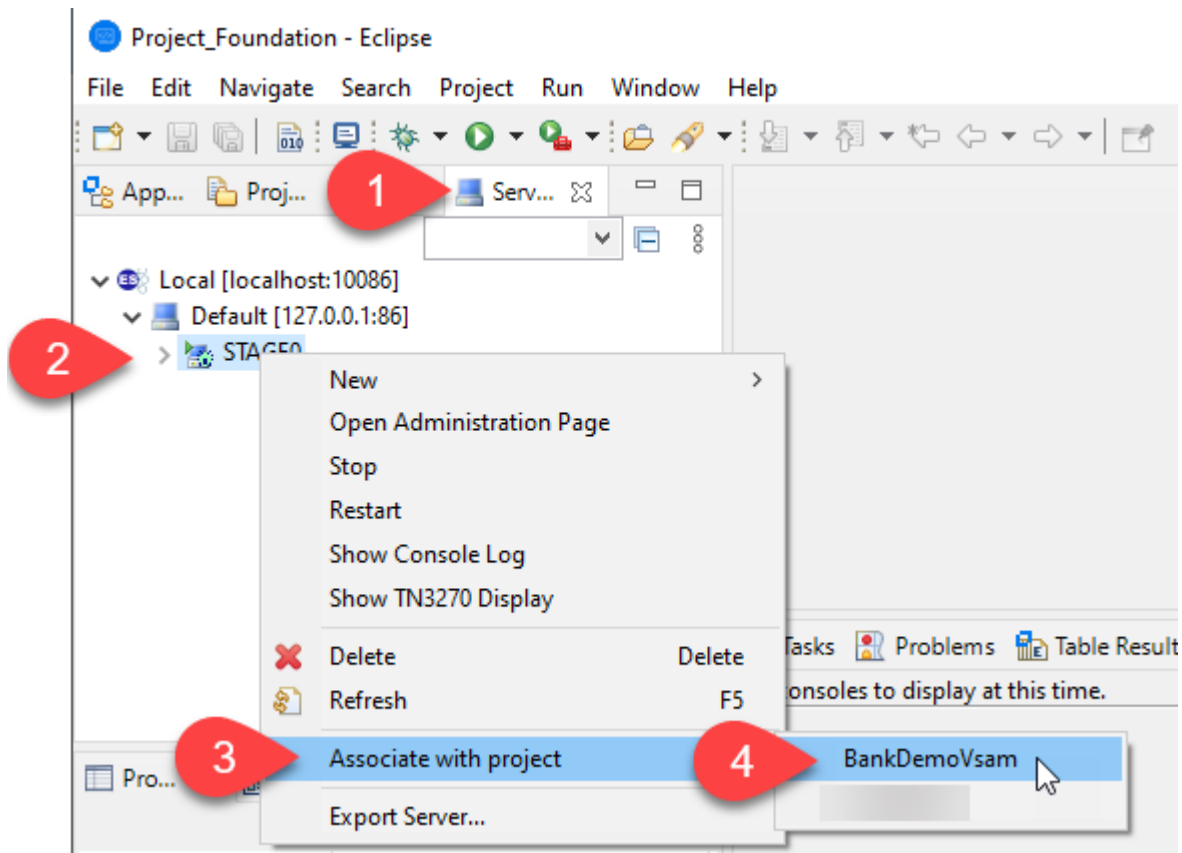
```
//MFIDEMO JOB MFIDEMO,MFIDEMO,CLASS=A,MSGCLASS=H,NOTIFY=MFIDEMO 00000100
//STEP01 EXEC PGM=IEFBR14 00000200
//SYSPRINT DD SYSOUT=* 00000300
```

Hint: look at the JES options

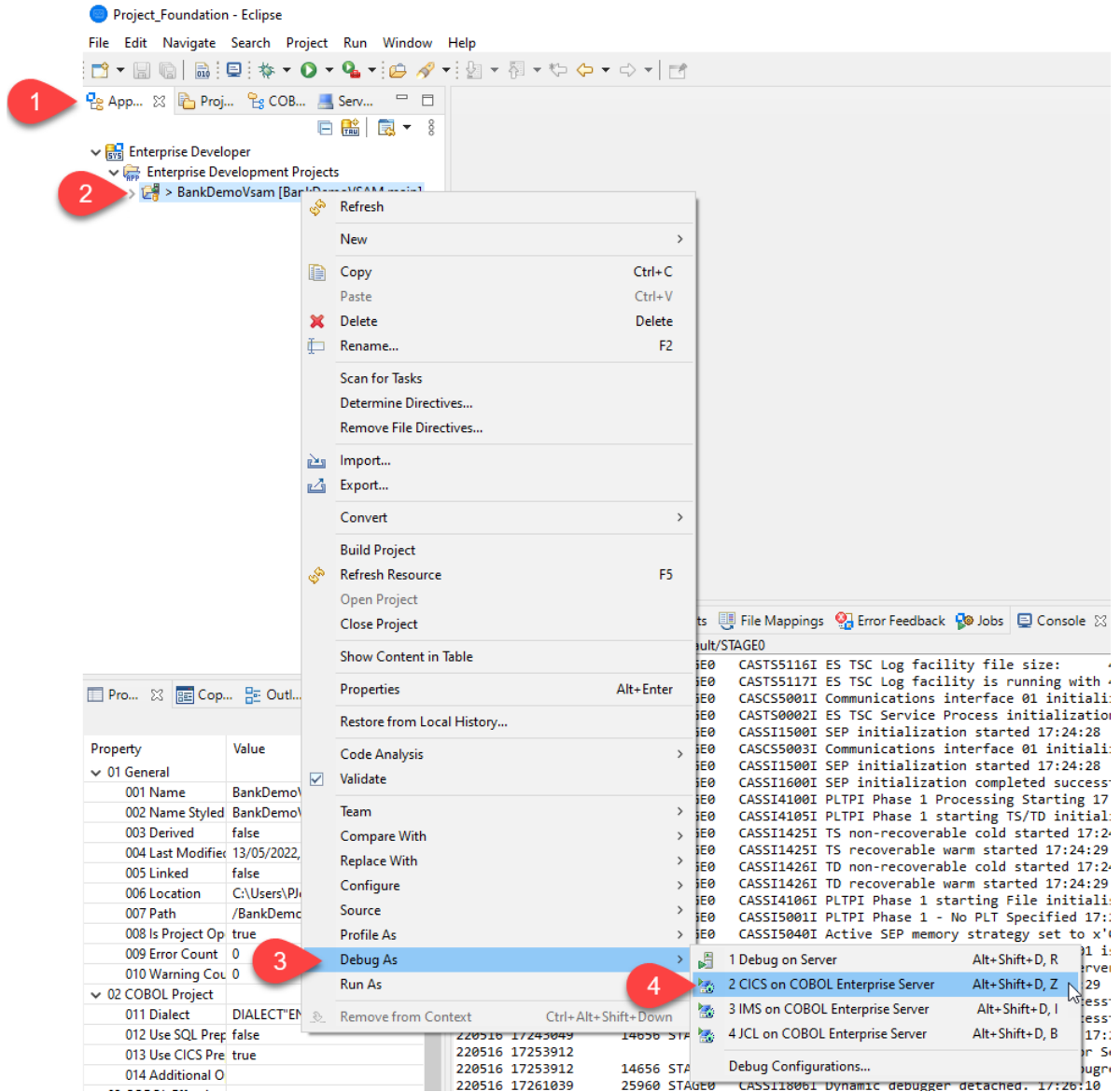
Step 4 - Debug

Optional: Before you start to debug, its a good idea to confirm that the BANK transaction is working as expected within Rumba+

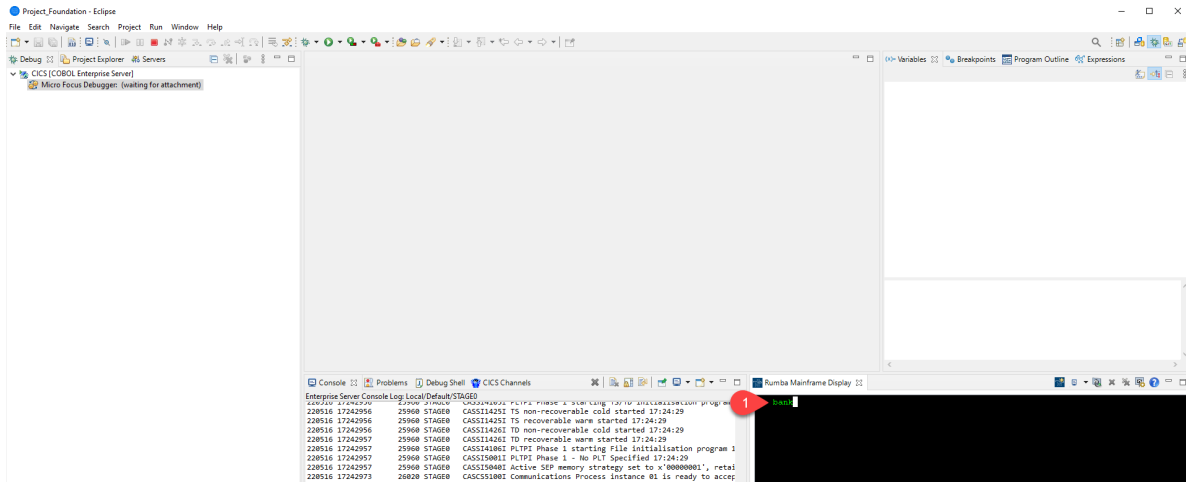
- 1) [1] Select Server Explorer, [2] Right hand click and select, [3] Associate with Project, and [4] Select the project. The region should restart and check the logs double check it started okay.



- 2) [1] Select the Application view, [2] Right hand click on the project, [3] select debug as, and [4] CICS on COBOL Enterprise Server.



- 3) Depending on your Enterprise Developer environment, you may be prompted to use Rumba to connect to the region. If so, click Connect and continue.
- 4) [1] In the Rumba window, or externally if you are choosing to use Rumba direct, press CTRL+SHIFT+Z to clear the screen and then type "bank" and press enter.



5) [1] Debugging with Enterprise Developer is now active and [2] attached. Perform normal debugging processes and [3] stop debugging when finished.

