IBM – CICS Workshop

L03 – CICS-Policy

Lab Version V0.1

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Overview

The behavior of CICS can be controlled during run time, based on predefined policies. CICS performs the action that is defined for a policy rule when all the conditions that are specified by the rule are met.

- Policies define the action that CICS is to take when one of the following conditions is met:
- A CICS user task makes excessive use of system resources; for example, a user task consumes too much storage.
- A CICS system or user task changes the state of a system resource; for example, a FILE resource is closed.

The overall system health changes; for example, the number of active tasks exceeds the maximum user tasks in the CICS system (the MXT value).

A condition and action pair make up a policy rule, and one or more policy rules can be defined within a policy. A policy is defined in a CICS bundle and a CICS bundle can consist of one or more policies.

In this lab, you will configure new policy definitions introduced in CICS V6.1. The first one is generic transaction definition for the condition of policy task rule, and the second one is the compound system rule with opening/closing the WLM health.

Lab Scenario

In our scenario, you are a system programmer and define a “all” condition for VSAM access in OD* transactions in two AOR2. You can see the messages in the CICS region log, MSGUSR.

Then, you will define a policy system rule to be triggered when the Db2 is disconnected in one CICS region. Once it’s disconnected, you can check whether the OD* transactions are routed to that CICS region or not. To recover the workload status, you can connect the Db2 and enable one program at the same time by using the compound policy system rule defined by yourself.

Lab Requirements

Please note that there are often several ways to perform functions in and for CICS. This lab exercise will present one of the ways. If you are familiar with CICS, you will notice that some of the statements are general, and not necessarily true for every situation.

This lab uses the PCOMM and CICS Explorer. If you are not familiar with these, please contact one of the lab instructors for assistance.

The following are other assumptions made in this lab exercise.

- **CICS TS V6.1:** This lab exercise only works in CICS V6.1. You have your own z/OS image you can change all resources in four CICS regions.

- **Login:** A TSO userid is available with the appropriate password provided, and you will also use the same TSO userid with the z/OS Explorer.

- The **CICS Explorer:** In the lab environment we have installed the CICS Explorer to configure CICS resources and the security request recording function.

Lab Step Overview

Part 1: Try the CICS bank sample application (hereafter CBSA) in 4 CICS regions

Logon to the CICS61T1 and run the transaction OMEN. Then, try to browse customer number with "1" and display the account "1" in menus. Make sure no problems happen there. Check the CICSPlex workload balancing in the CICS Explorer.

Part 2: Create a policy task rule to check OD* transaction of accessing VSAM resources

By using the generic transaction definition and "all requests" rule for VSAM files, you will find out transactions accessing any VSAM files.

Part 3: Create a policy system rule with a compound condition

Try to browse the customer number, "1" in the customer inquiry menu and see the application making errors.

Part 4: Test the system rule operation with disabling DB2 connection

Disconnect DB2 in one CICS region to control the incoming workload

Part 5: Summary

This is a recap of the steps performed in this lab exercise and answers for quizzes.

Part 0: Check the CICS Explorer Connection to CICS

In this part of the lab exercise you will configure the connection between the CICS Explorer running on your workstation to CICS running on z/OS.

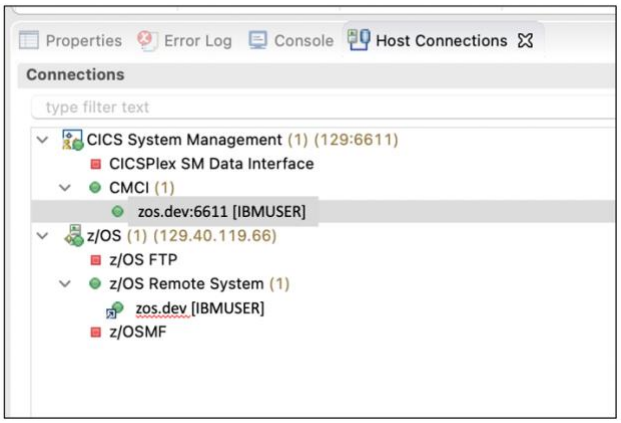
Start the CICS Explorer

___1. From the **desktop**, **double-click** the **CICS Explorer** icon to start the Explorer if it is not already running.

___2. When you start the Explorer, if you are prompted for a workspace, click the **OK** button to select the default.

Verify that you have an FTP connection to z/OS in your CICS Explorer

___3. If you have not already created connections to the z/OS host system, check the connection as in the screen shot. Both the **Remote System Explorer** and **CMCI** connections should be started and active.
IP : zos.dev / CMCI port : 6611 / User : IBMUSER / Password : sys1



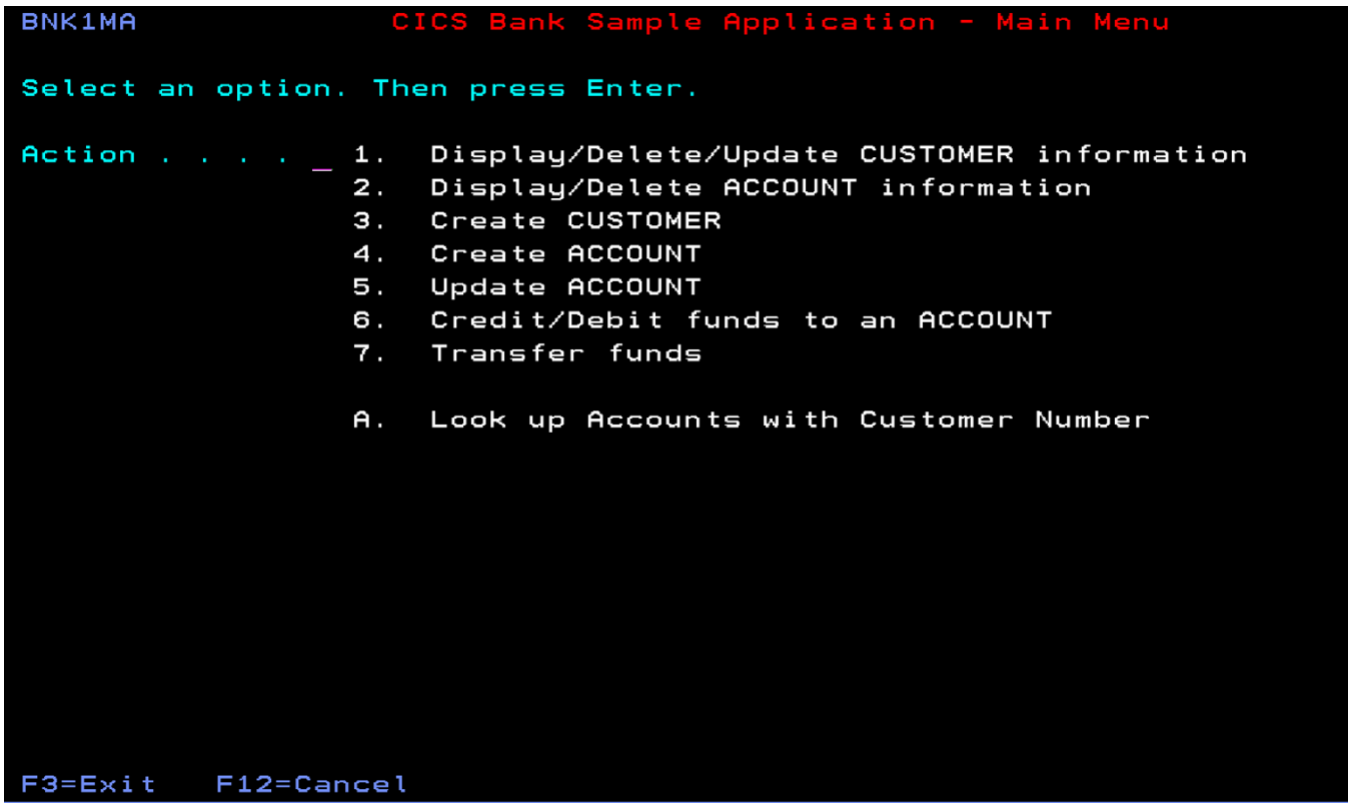
Part 1: Try the CICS bank sample application (hereafter CBSA) in 4 CICS regions

In this part of the lab exercise you will try the CICS bank sample application.

Try the CICS Bank Sample Application

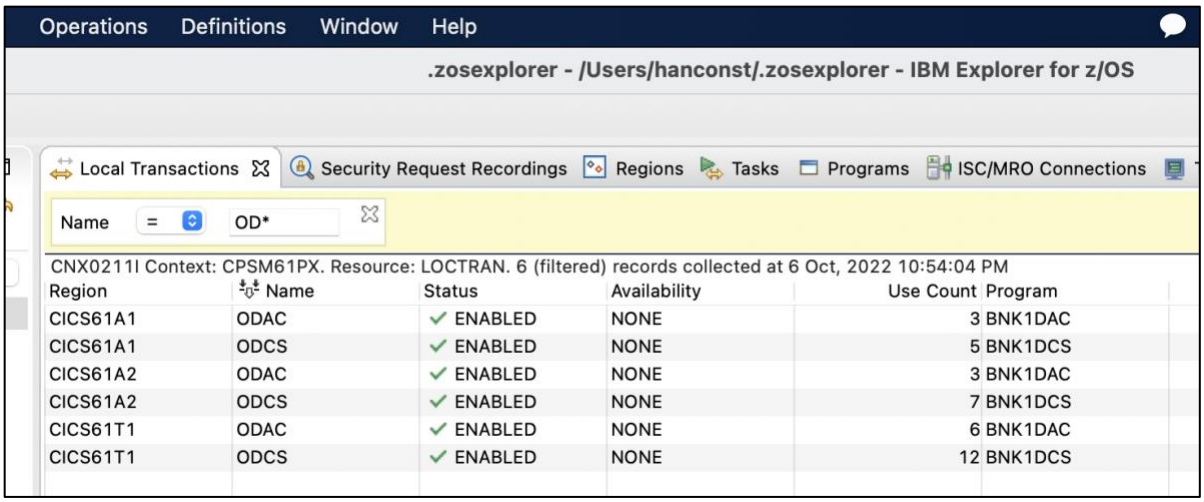
___1. Open a session in the PCOMM, and type "**L CICS61T1**" to logon.

___2. Clear the screen and type "OMEN" to start the main screen.



___3. Try to display the customer number 1 and account number 1. Also, you can create customer and account numbers as you want to test the CICS Bank Sample Application. (CBSA)

___4. Check the transaction execution status in the CICS explorer.
ODCS is the customer transaction from a VSAM file and ODAC is the account transaction from a DB2 table.



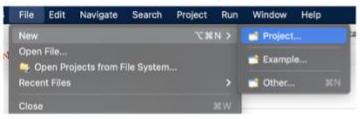
Operation → Local transactions → Filter by the Name, OD*

Part 2: Create a policy task rule to check OD* transaction of accessing VSAM resources

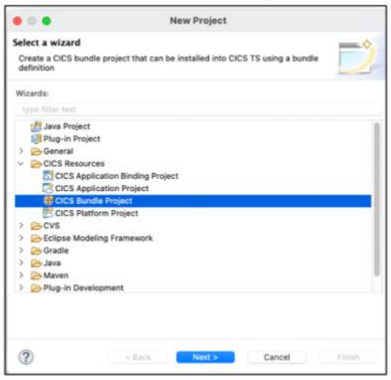
Create a CICS bundle project to define the policy task rule.

___1. From the CICS Explorer, **go to MENU, New, Project and create a CICS bundle project, "CBSA Policy task rule".**

1. File -> New -> Project

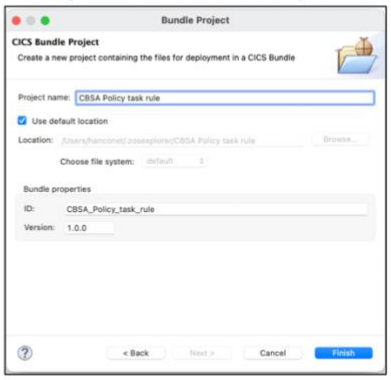


2. Select "CICS Bundle Project"



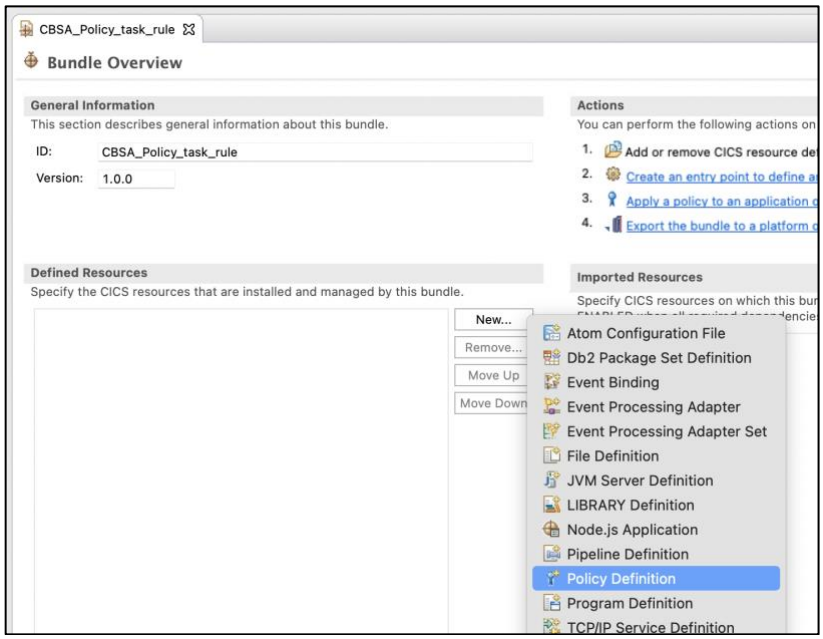
3. Click Next

4. Project name : CBSA Policy task rule

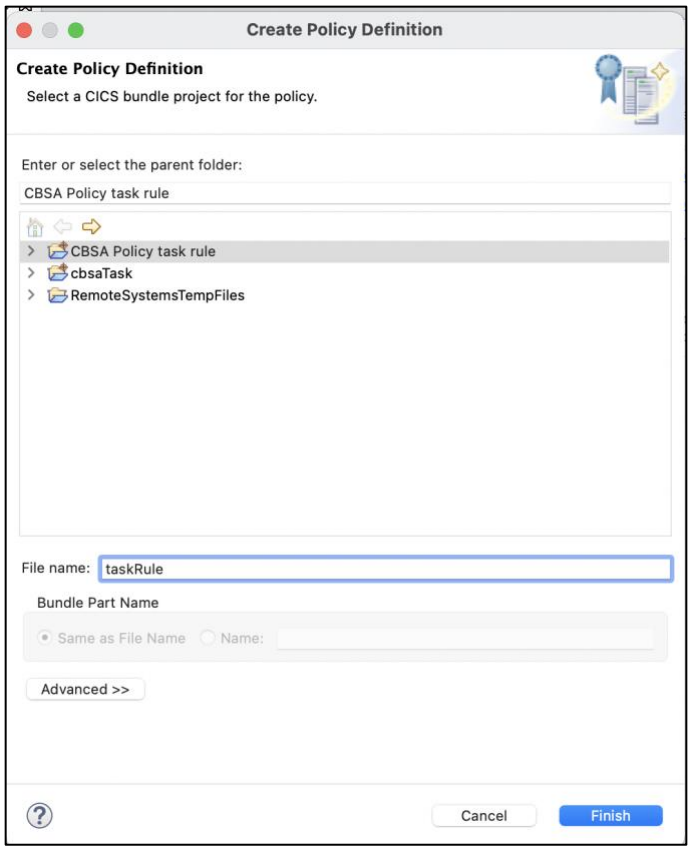


5. Click Finish

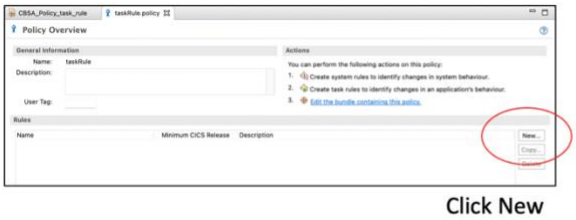
___2. In the defined resources section, click new and select "Policy definition".

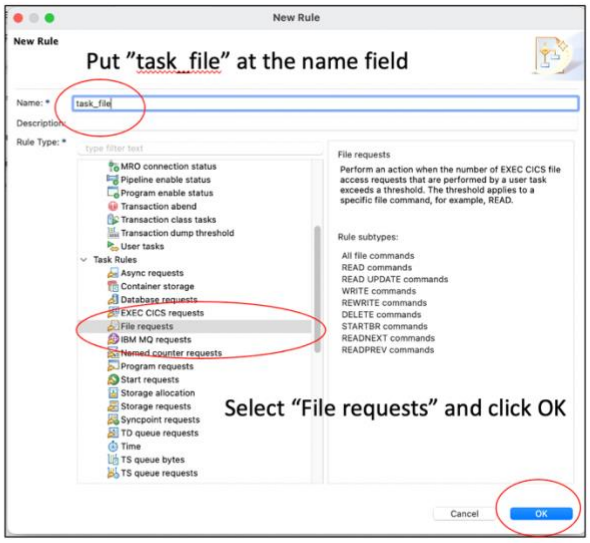


___3. Put "taskRule" in the File name field at the "Create Policy Definition" view. And click Finish.

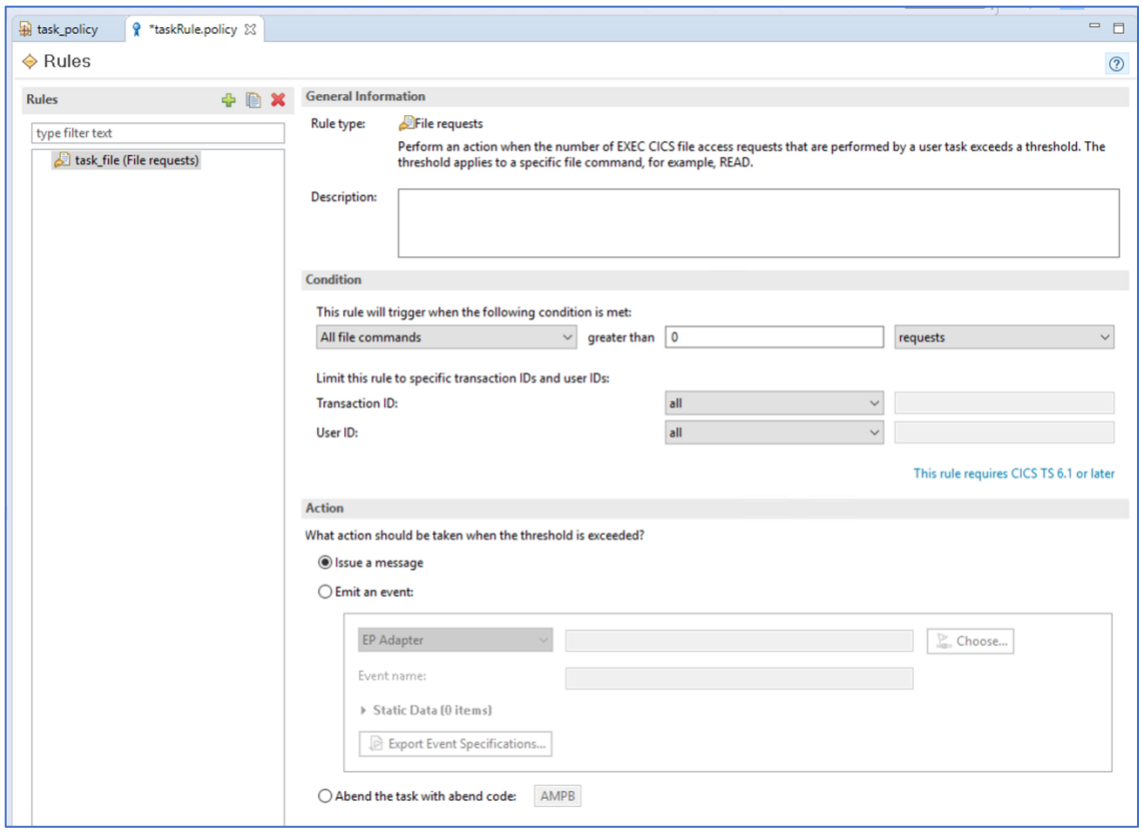


___4. Click **New** in the policy overview and create the **task_file** policy for file requests.



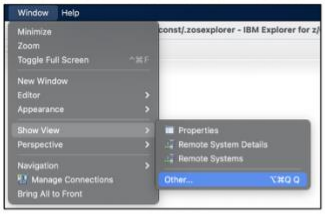


___**5.** In the Rule view, setup "**greater than 0 condition for all file commands"** and **"transactions started with OD"**. Then, save the project with Control-S and close the policy definition.



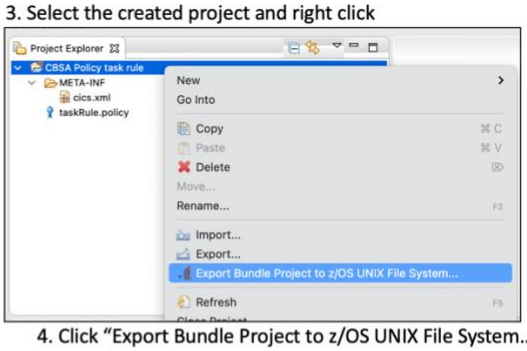
___6. Go to the Project Explorer view and export the project to a z/OS USS directory.
- Parent Directory : **/cics/cics61/bundles**

1. Window -> Show View -> Other



2. Select Project Explorer in General

3. Select the created project and right click



4. Click "Export Bundle Project to z/OS UNIX File System...

5. Select the second option

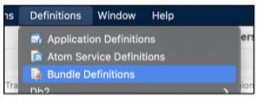
6. Parent Directory : **/cics/cics61/bundles**

7. Click Finish

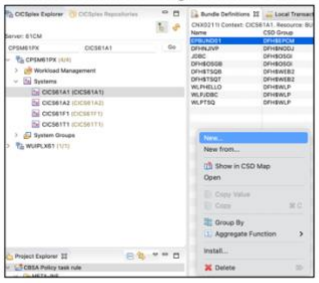
Double check the directory is created : **/cics/cics61/bundles/CBSA_Policy_task_rule_1.0.0/**

___7. Create the CICS bundle definition in the CSD.
To see the bundle definitions, you have to select one of CICS regions because they are in the shared CSD dataset for all four CICS regions.

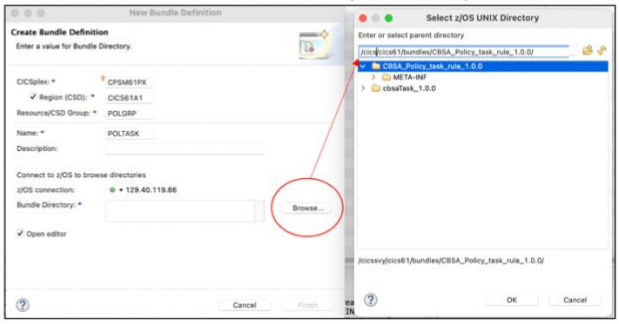
Definition -> Bundle Definition



Bundle Definition -> Right Click -> New



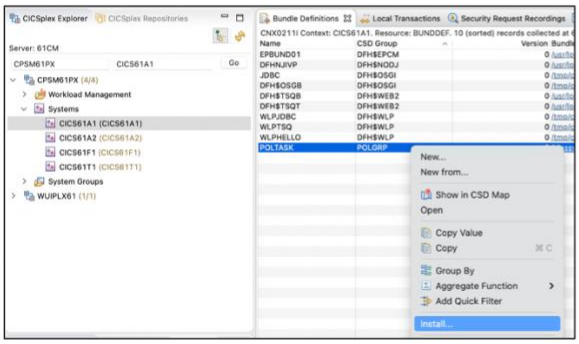
Create the bundle, POLTASK and select the exported directory



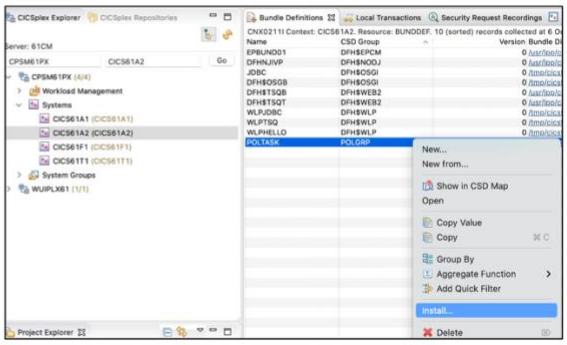
Then click the finish button to create the local bundle definition, POLTASK.

___8. Install the created bundle definition to two CICS AOR regions.

Select **CICS61A1** in the CICSPlex Explorer
Right click at the POLTASK
Click Install



Select **CICS61A2** in the CICSPlex Explorer
Right click at the POLTASK
Click Install



___9. If you meet “Auth” error, please issue the RACF commands in ISPF menu 6 as follows and do the step 8 again.

RDEF CPSMOBJ ** UACC(NONE) OWNER(IBMUSER) NOTIFY(IBMUSER)

PERMIT ** CLASS(CPSMOBJ) ID(IBMUSER) ACCESS(ALTER)

SETROPTS RACLIST(CPSMOBJ) REFRESH

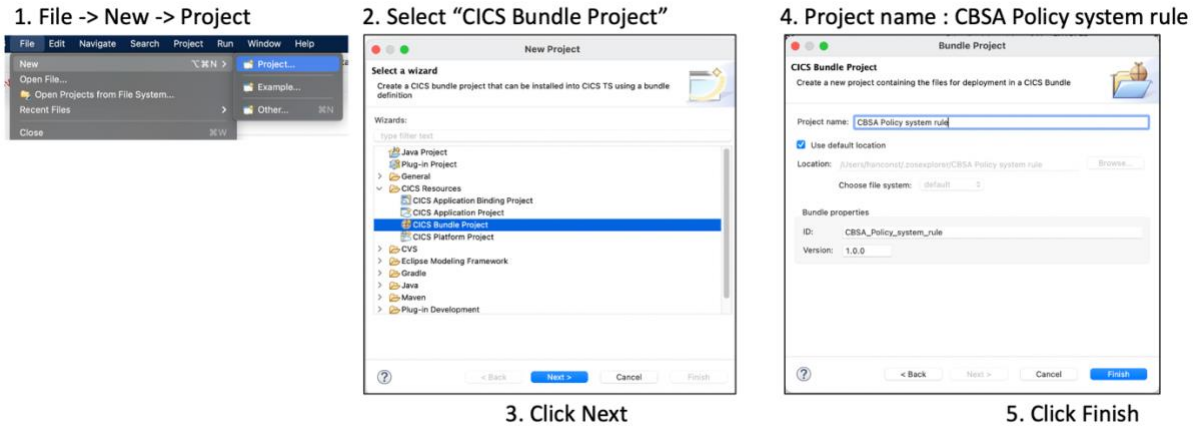
___10. Run CBSA transactions to browse the customer number, “1”, multiple times and check the messages in the CICS MSGUSR logs of CICS61A1 and CICS61A2.

```
DFHMP3001 10/06/2022 23:38:20 CICS61A1 Task 00372(ODCS) exceeded a policy threshold. BundleId=CBSA_Policy_task_rule,
          PolicyName=taskRule, RuleName=task_file, RuleType=filerequest, Category=all, Threshold=0 (Value=0, Unit=),
          CurrentCount=1.
DFHMP3001 10/06/2022 23:38:23 CICS61A1 Task 00375(ODCS) exceeded a policy threshold. BundleId=CBSA_Policy_task_rule,
          PolicyName=taskRule, RuleName=task_file, RuleType=filerequest, Category=all, Threshold=0 (Value=0, Unit=),
          CurrentCount=1.
```

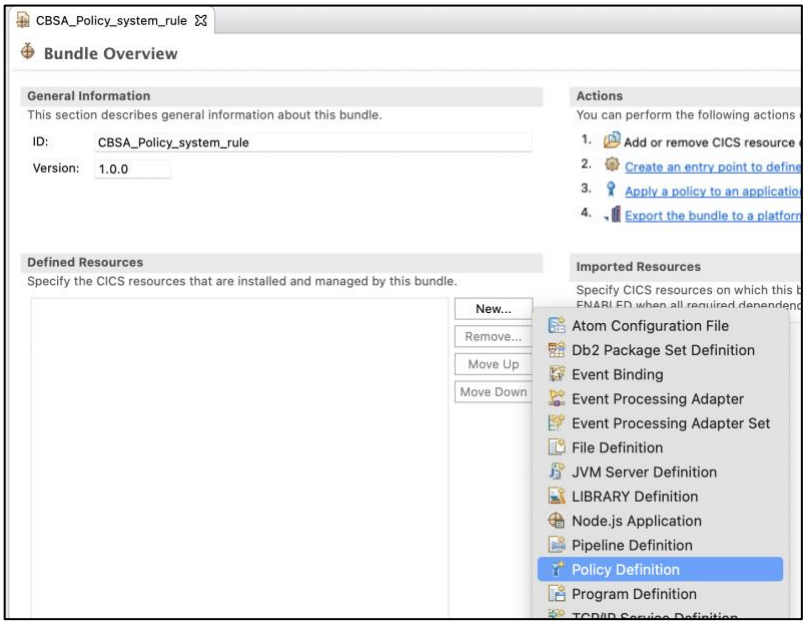
Part 3: Create a policy system rule with a compound condition

Create a CICS bundle project to define the policy system rule.

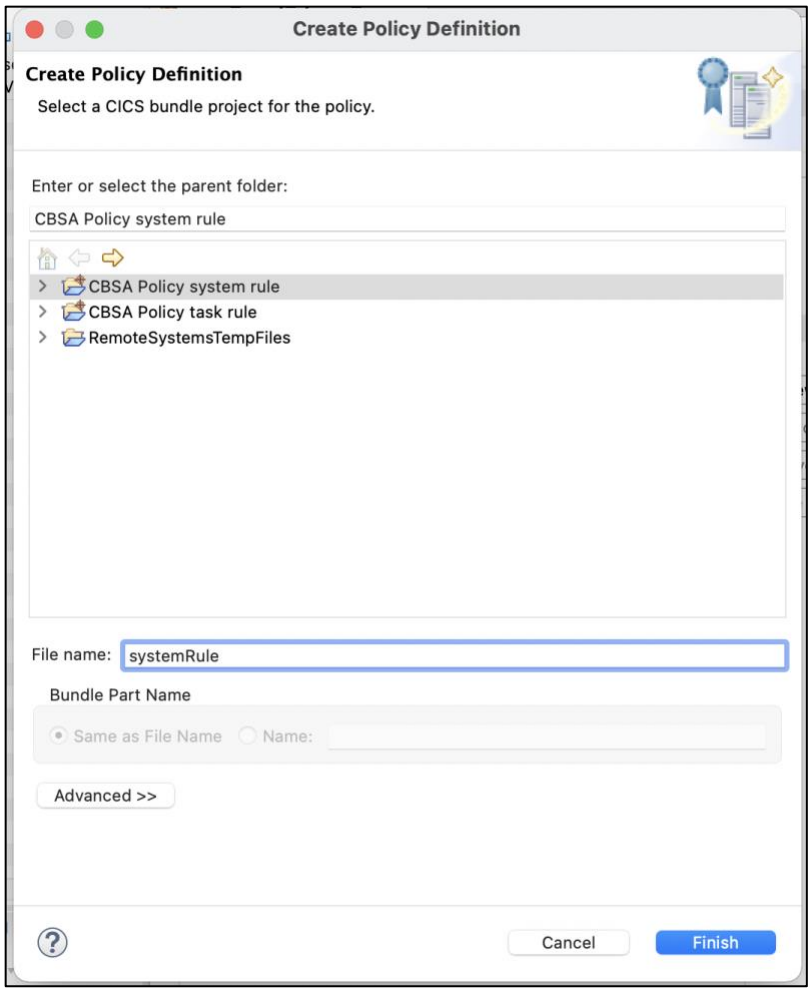
___1. From the CICS Explorer, **go to MENU, New, Project and create a CICS bundle project, "CBSA Policy system rule".**



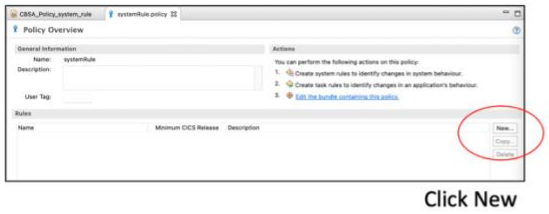
___2. In the defined resources section, click new and select "Policy definition".

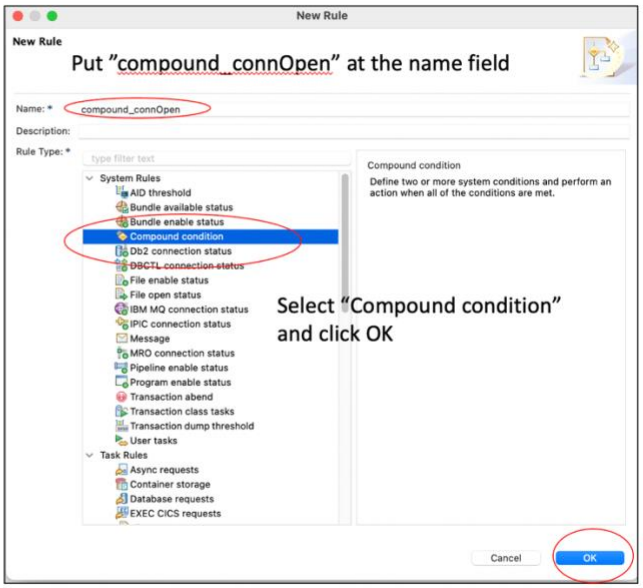


___3. Put "systemRule" in the File name field at the "Create Policy Definition" view. And click Finish.

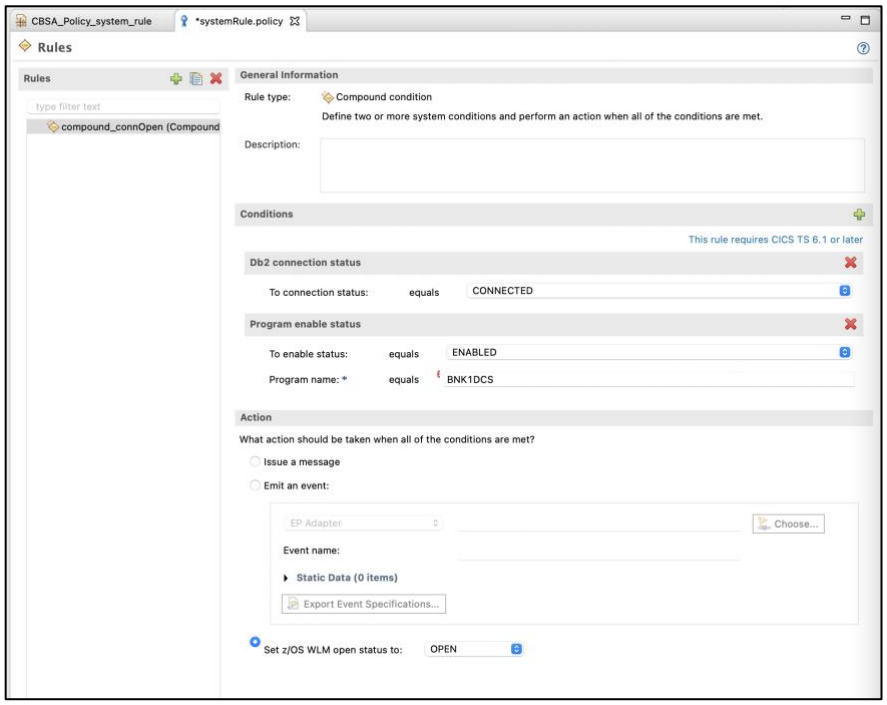


___4. Click **New** in the policy overview and create the **compound_connOpen** rule.

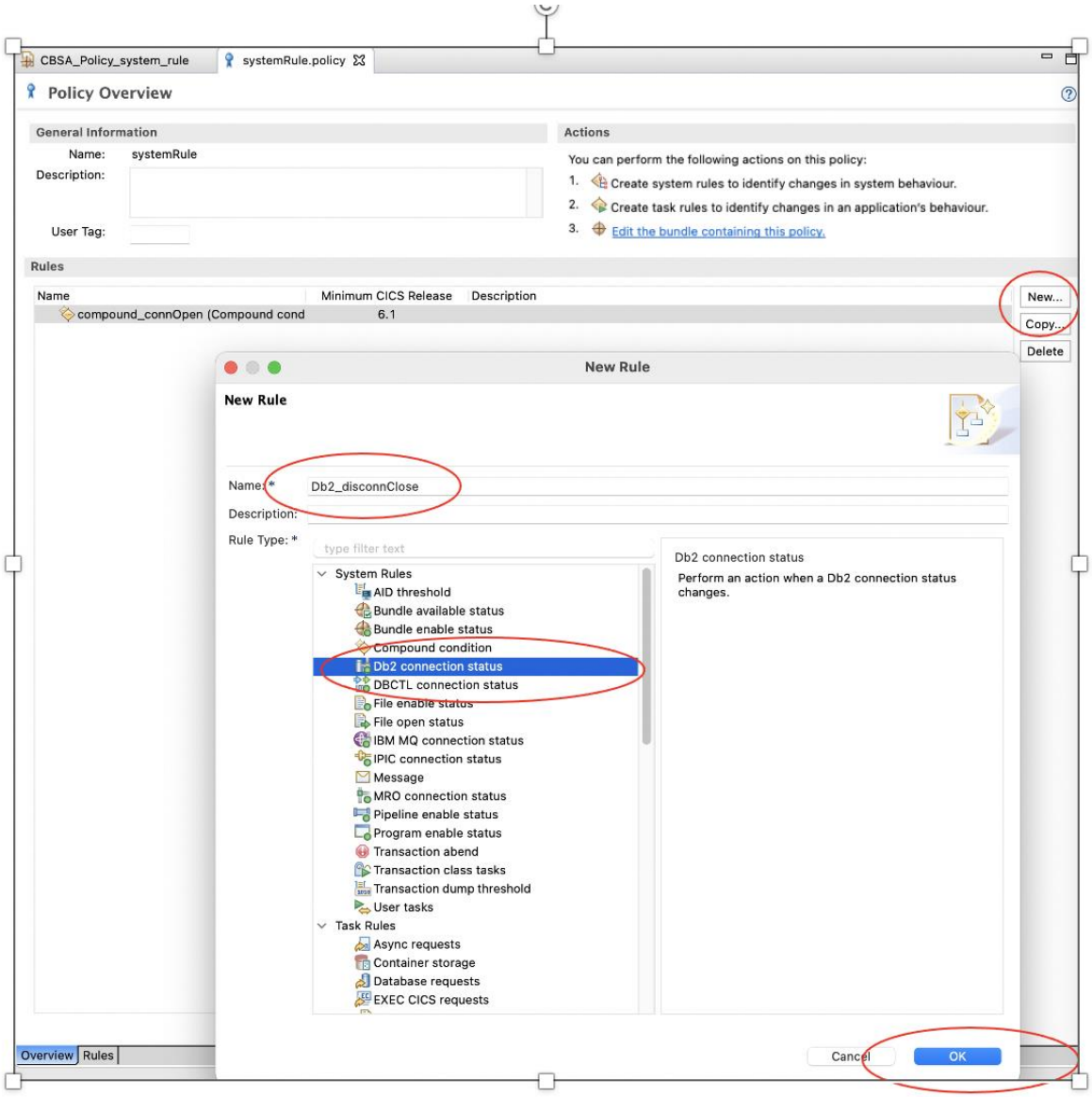




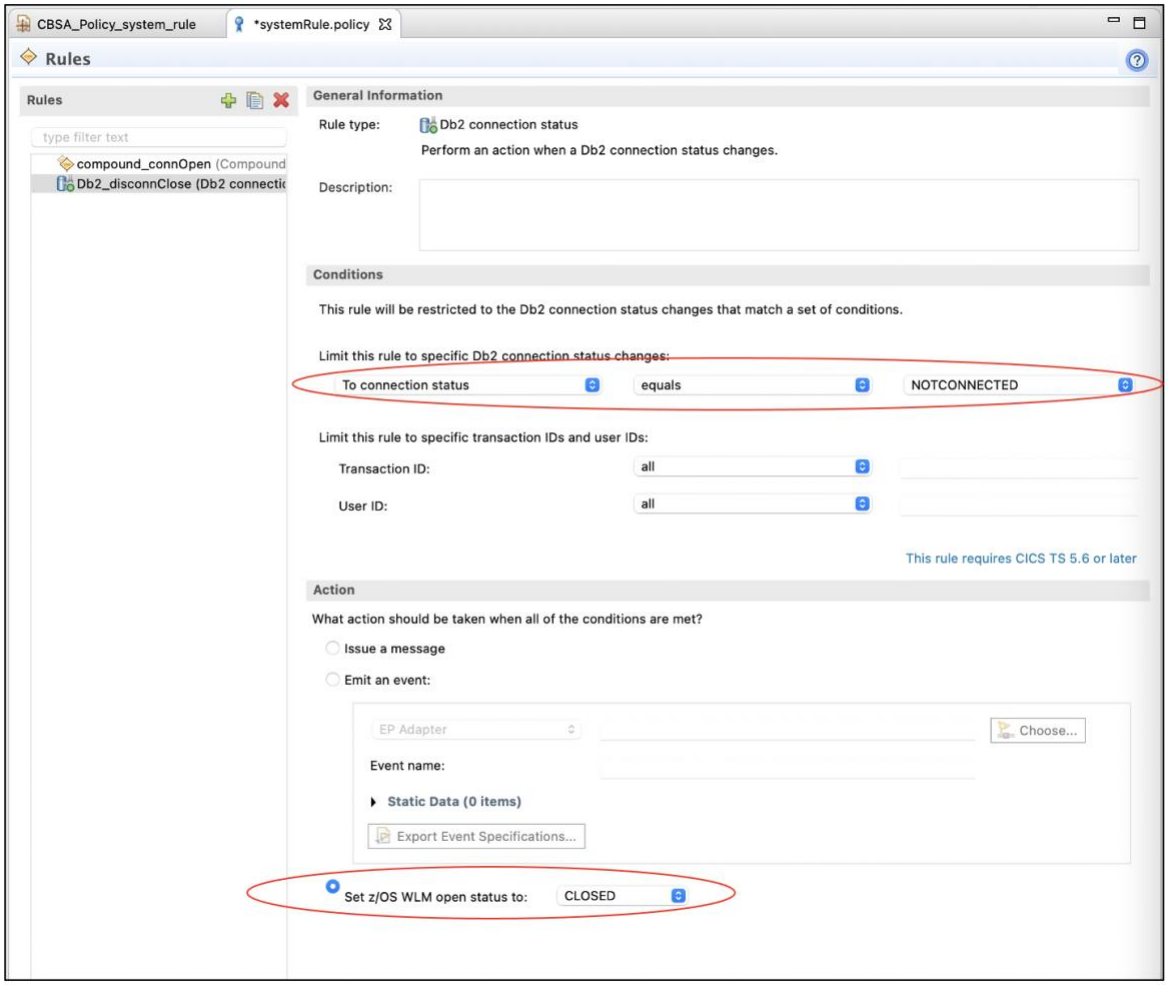
___5. In the Rule view, add "Db2 connection status" as "CONNECTED" and "Program enable status" as "ENABLED" and "BNK1DCS". And select "Set z/OS WLM open status to: Open" in the Action section. Then, save and close the Rules view.



___**6.** Click **New** in the policy overview one more time and create the **Db2_disconnClose** rule. It's to create one more rule when the Db2 is disconnected.

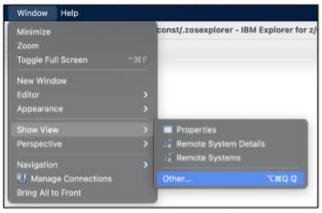


___**7.** In the Rule view, set “To connection status” “equals” “NOTCONNECTED” and select “Set z/OS WLM open status to: Close” in the Action section. Then, save and close the Rules view.

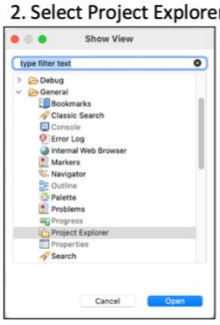


___8. Go to the Project Explorer view and export the project to a z/OS USS directory.
- Parent Directory : **/cics/cics61/bundles**

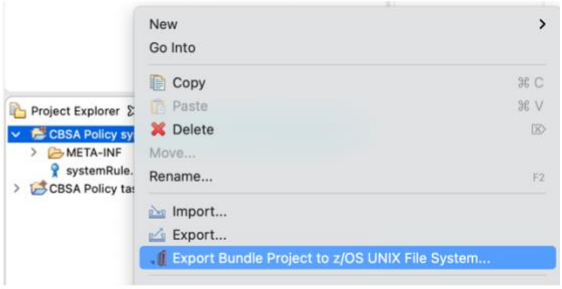
1. Window -> Show View -> Other



2. Select Project Explorer in General



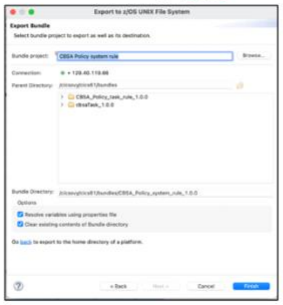
3. Select the created project and right click



4. Click "Export Bundle Project to z/OS UNIX File System...

5. Select the second option

6. Parent Directory : **/cics/cics61/bundles**

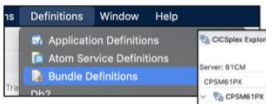


7. Click Finish

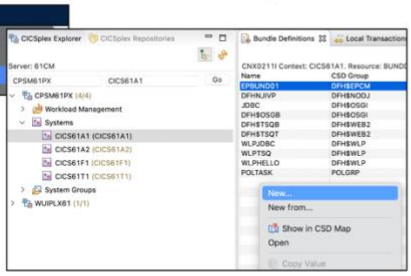
Double check the directory is created : **/cics/cics61/bundles/CBSA_Policy_system_rule_1.0.0/**

___9. Create the CICS bundle definition in the CSD.
To see the bundle definitions, you have to select one of CICS regions because they are in the shared CSD dataset for all four CICS regions.

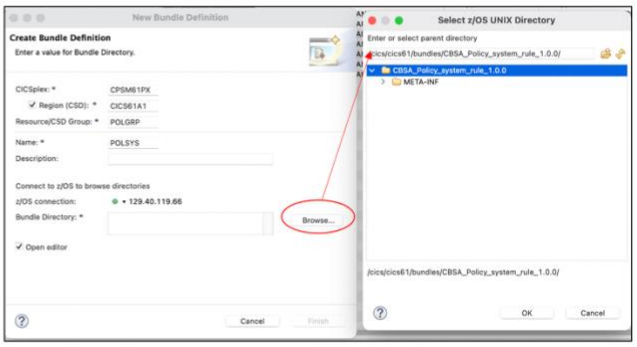
Definition -> Bundle Definition



Bundle Definition -> Right Click -> New



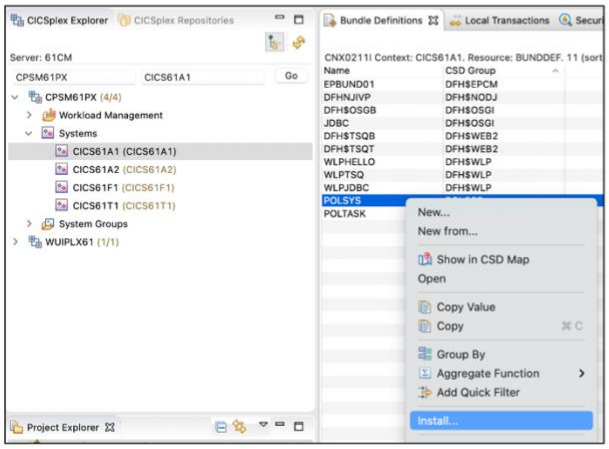
Create the bundle, POLSYS and select the exported directory



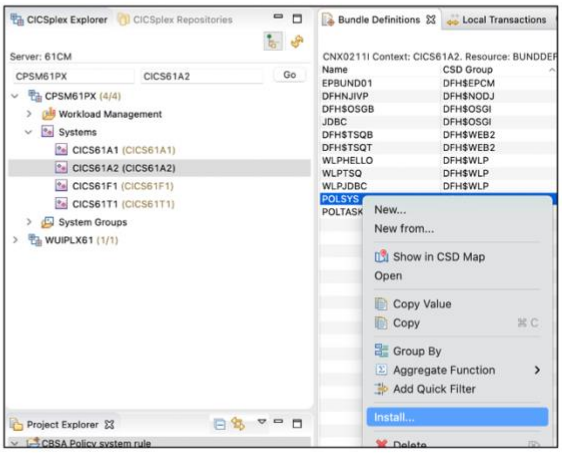
Then click the finish button to create the loc al bundle definition, POLSYS.

___**10.** Install the created bundle definition to two CICS AOR regions.

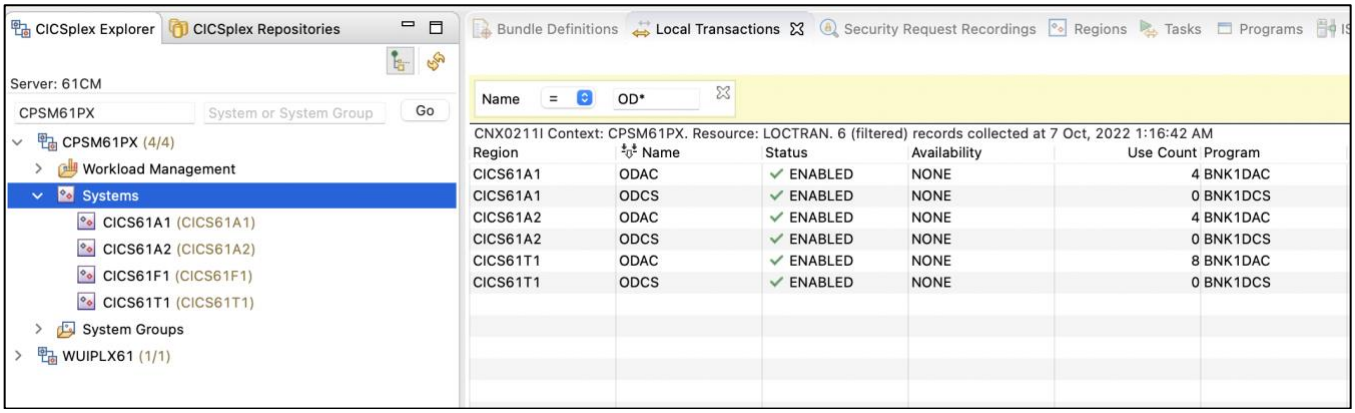
Select **CICS61A1** in the CICSPlex Explorer
Right click at the POLSYS
Click Install



Select **CICS61A2** in the CICSPlex Explorer
Right click at the POLSYS
Click Install



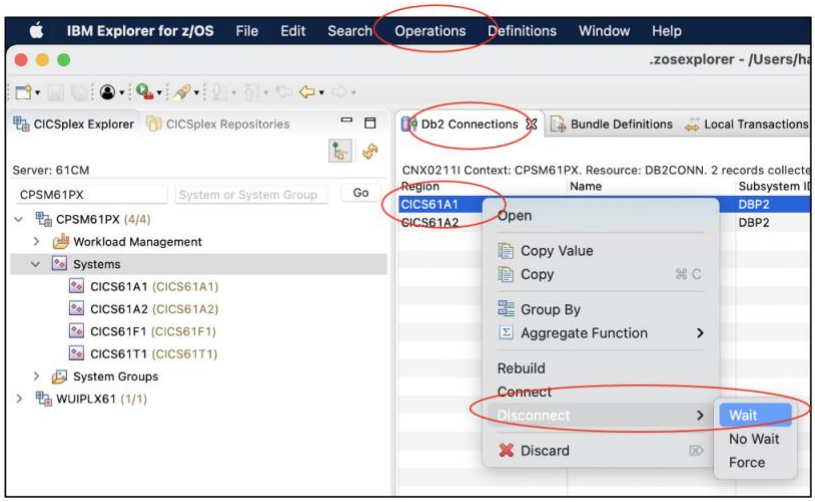
___**11.** Run CBSA transactions to browse the account number, “1”, multiple times and check the use count in the local transaction operation view. Double check ODAC transaction’s use counts in two AORs are increased at the same time.



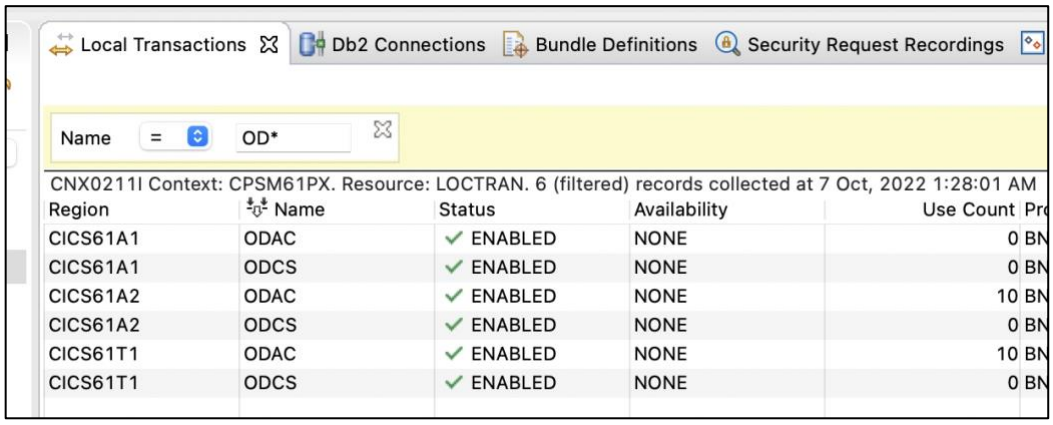
Part 4: Test the system rule operation with disabling DB2 connection

Db2 disconnection test to check the WLM close action in the system policy

___1. In the CICS61A1, disconnect the Db2 connection.

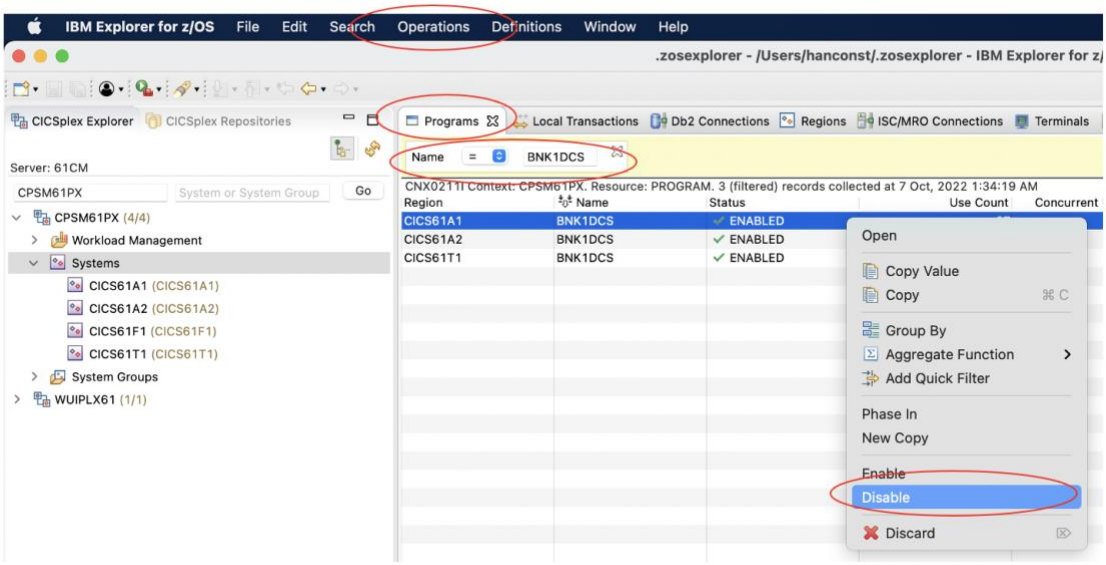


___2. Check the use counts of ODAC transactions in CICS61A1. It must be 0.

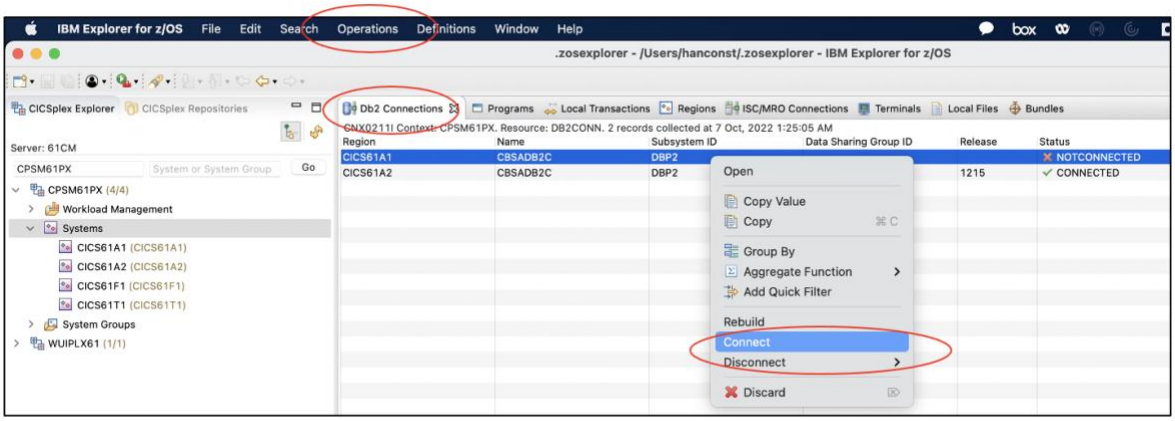


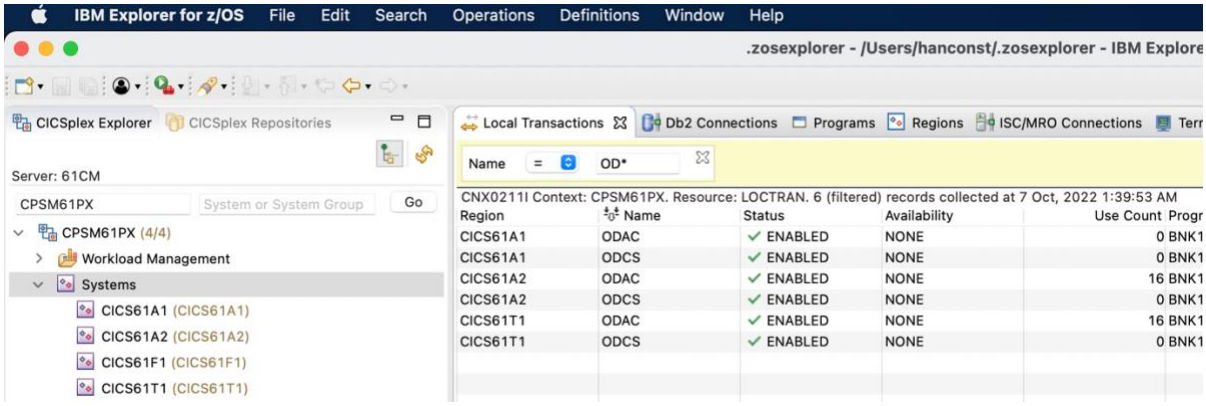
Test the compound rule to route transactions back to CICS61A1

___**3.** Disable the program BNK1DCS.



___**4.** Reconnect Db2 in CICS61A1 and run the account inquiry transactions to check.

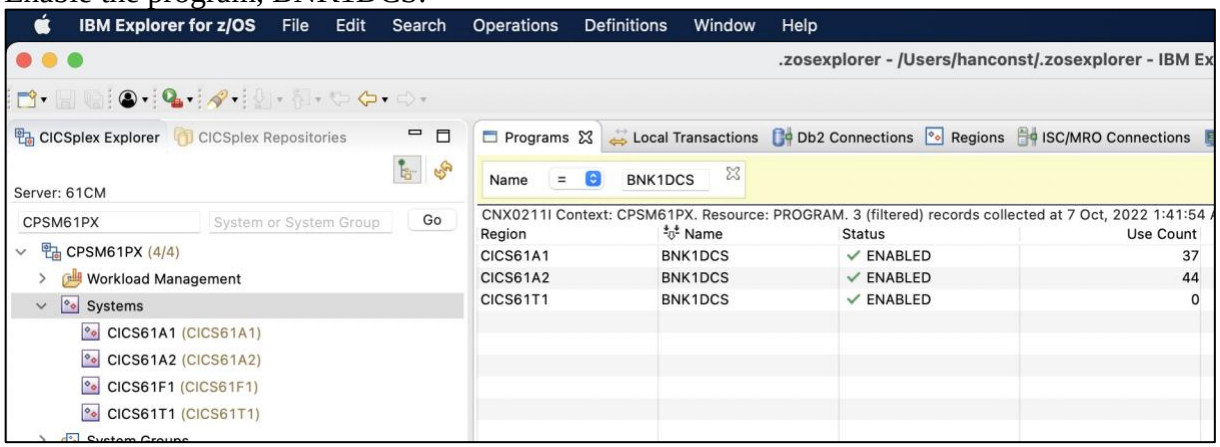




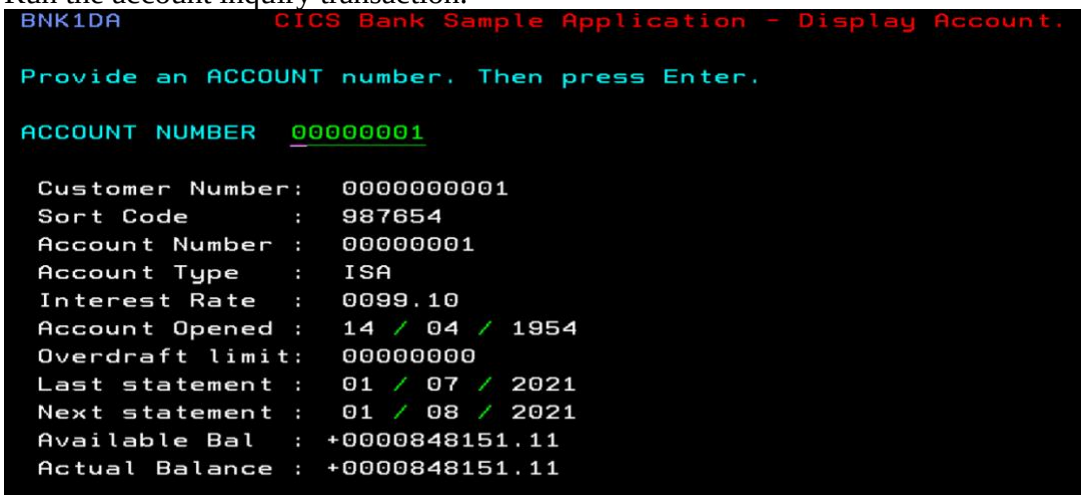
The transaction, ODAC is not routed to CICS61A1 yet.

___**5.** Enable the program, BNK1DCS, run the account inquiry transaction, and check the transaction use counts.

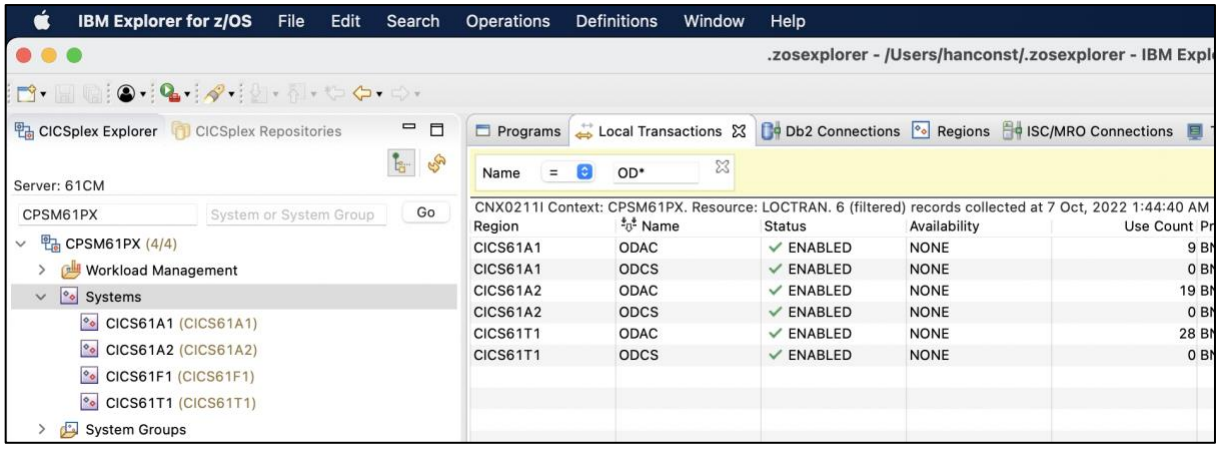
Enable the program, BNK1DCS.



Run the account inquiry transaction.



Check the ODAC use count in CICS61A1 is increased.



The compound condition works if the Db2 is connected and the program, BNK1DCS is enabled!

Part 5: Summary

Congratulations, you have successfully implemented CICS policies by using new enhancements in CICS V6.1.

In this lab you performed the following steps:

- Configuring a policy task rule to use transaction prefix and all request count for a VSAM file.
- Configuring a policy system rule to use the new WLM open/close action with the new compound rule.
- Test it with the CBSA application.