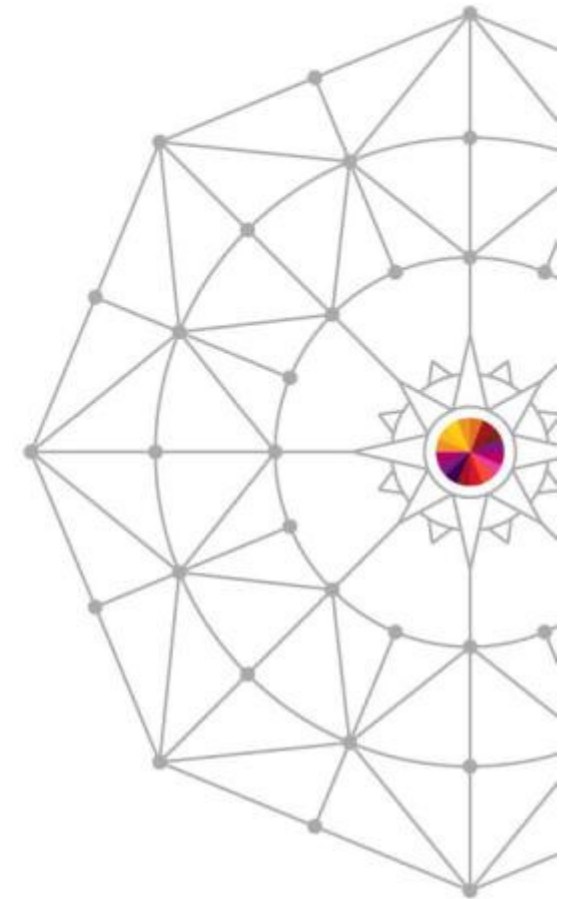
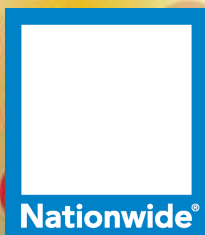




Rational Developer for System z (RDz) at Nationwide

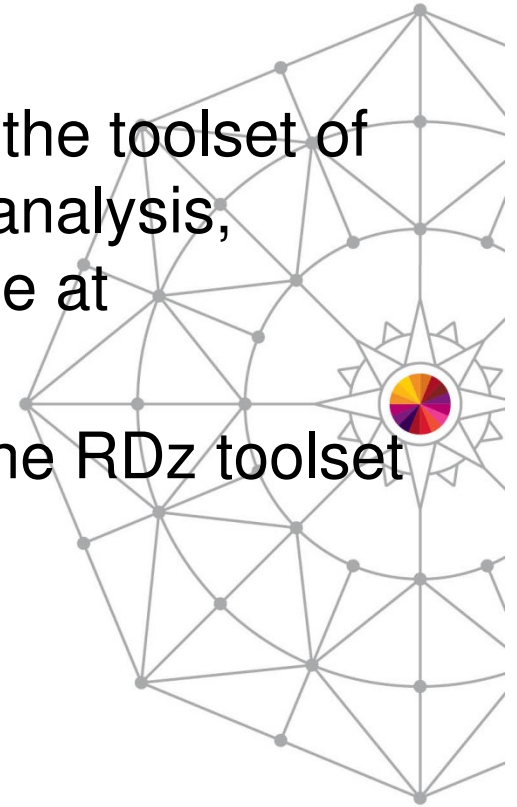
Kelly Cullimore
cullimk@nationwide.com
Nationwide Mutual Insurance Company

Wednesday, March 12, 2014
4:30pm
Session Number 14970



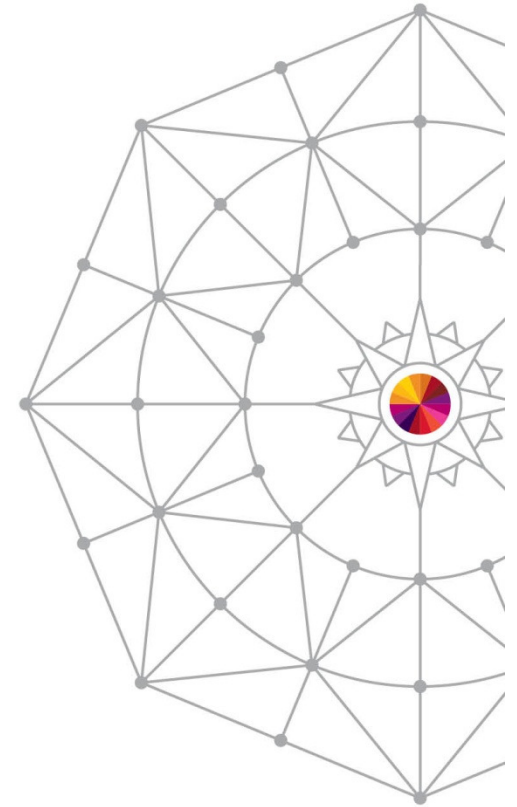
Purpose

- Purpose
 - SHARE experience with adopting RDz as the toolset of choice for mainframe access, application analysis, development, testing & deployment of code at Nationwide
 - Demonstrate a life-like scenario of using the RDz toolset and plug-ins



Agenda

- Agenda
 - Who is Nationwide
 - A little about me
 - IT at Nationwide
 - System z at Nationwide
 - RDz Drivers
 - RDz Roadmap
 - RDz Adoption Challenges
 - RDz Adoption Helpers
 - Who is using and what they have to say
 - DEMO



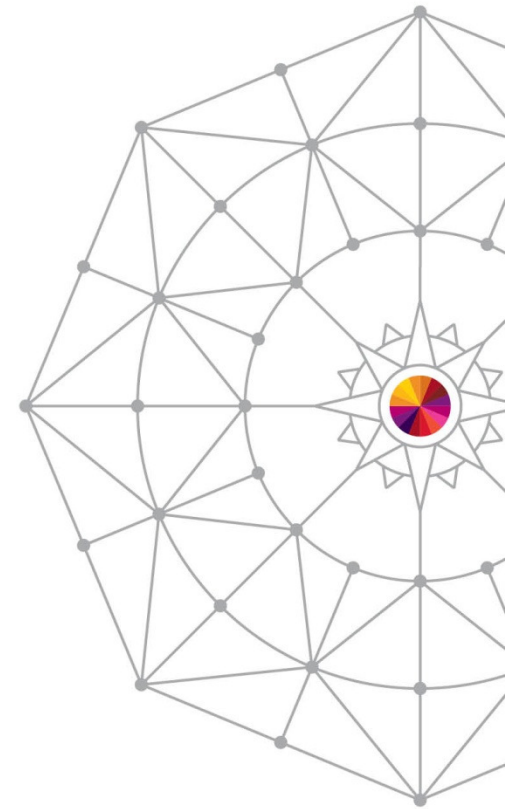
Who is Nationwide

- Financial institution
- Fortune 500 - #100
- Columbus, OH based
- 30,000 employees
- Companies (some)
 - Allied (Des Moines, IA)
 - Titan (Cleveland, OH)
 - Scottsdale (AZ)
 - Harleysville (PA)
- www.youtube.com/embed/ryNtVK55OUY



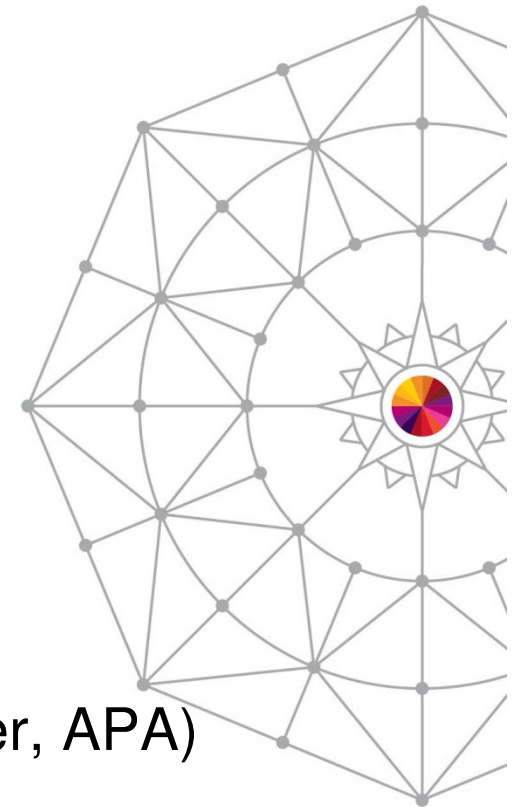
IT at Nationwide

- 5,000 IT Staff
- Organization
 - Application Development Center
 - CMMI Level 3
 - BSAs
- Agile Mindset
- Lean practices
- Embraced DevOps



System z at Nationwide

- Staff
 - 300 Mainframe Developers
 - 70 Mainframe System Engineers
- Some of the technologies
 - z196 / zOS 2.1
 - DB2, IMS
 - SERENA ChangeMan
 - CICS, MQ
 - PDTTools (Debug, Fault Analyzer, File Manager, APA)
 - COBOL, Java, XML, C++, Fortran, PL/I
 - z/Linux
- Multiple Data Centers, Servers, LPARs



RDz Drivers

Nationwide's mainframe development capability is being impacted by:

Staffing:

- Need a modernized approach to COBOL development to attract wider pool of skilled development resources

Productivity:

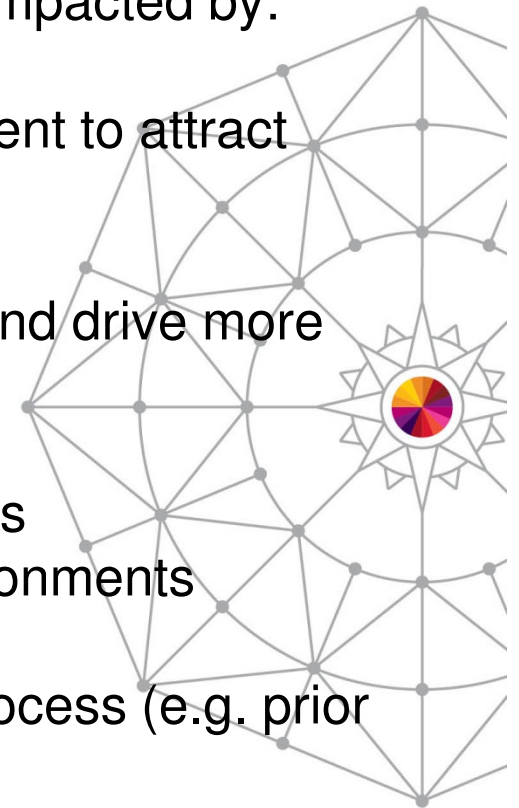
- Lack of a robust IDE to find problems (e.g. syntax) and drive more productive software development
- Too many develop/compile/test cycles
- Too much involvement of developers in testing cycles
- Wait states in testing due to contention for test environments

Quality:

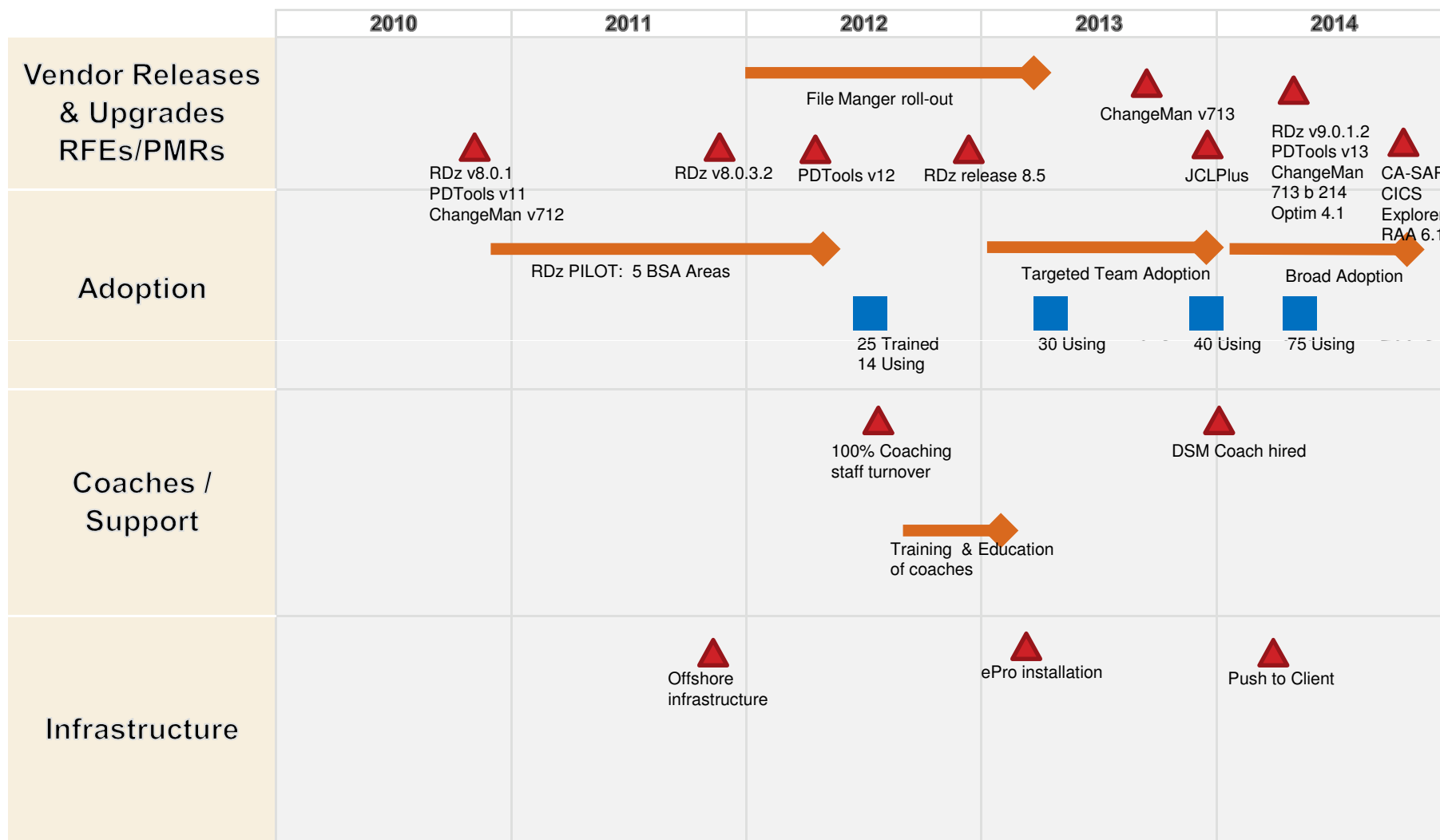
- Inability to find defects earlier in the development process (e.g. prior to a testing the entire system) which drives cost up
- Lack of automated testing capabilities which drives costs up

Costs:

- All of the above leading to higher costs for COBOL development

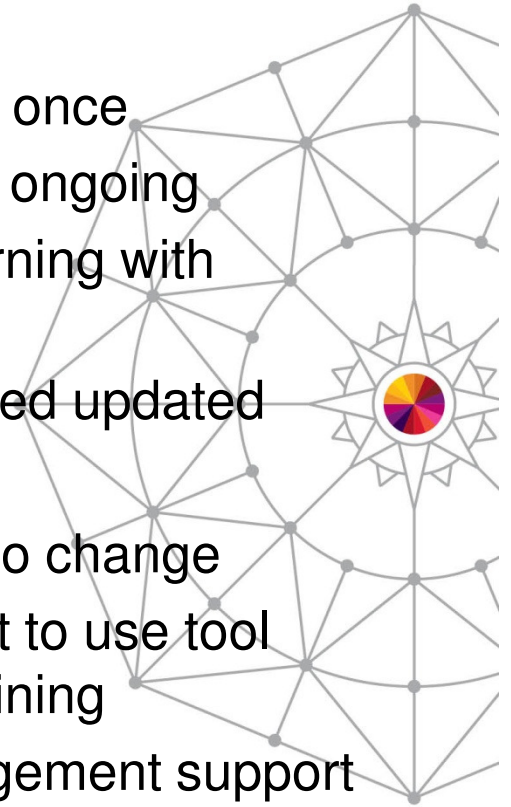


Nationwide's RDz Roadmap



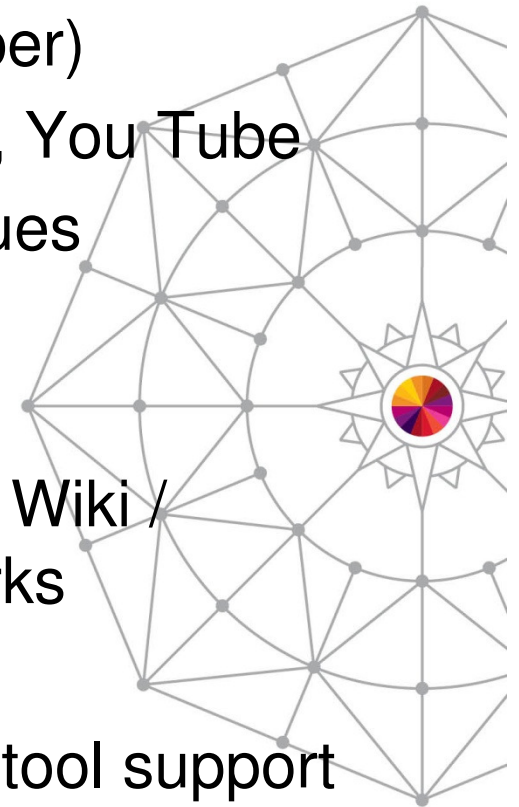
RDz Adoption Challenges

- Support
 - Coaching staff turnover
 - Lost DSM presence
 - Established SMEs moved off-platform
- Product maturity
 - Lack of plug-ins or functionality
 - Too many software updates
 - Install/set-up process
 - Performance
 - “Buggy”
- Training
 - Too much at once
 - Needs to be ongoing
 - Balance learning with delivery
 - Materials need updated
- Mindset
 - Resistance to change
 - Commitment to use tool following training
 - Need management support
 - Pilot groups didn’t understand expectations



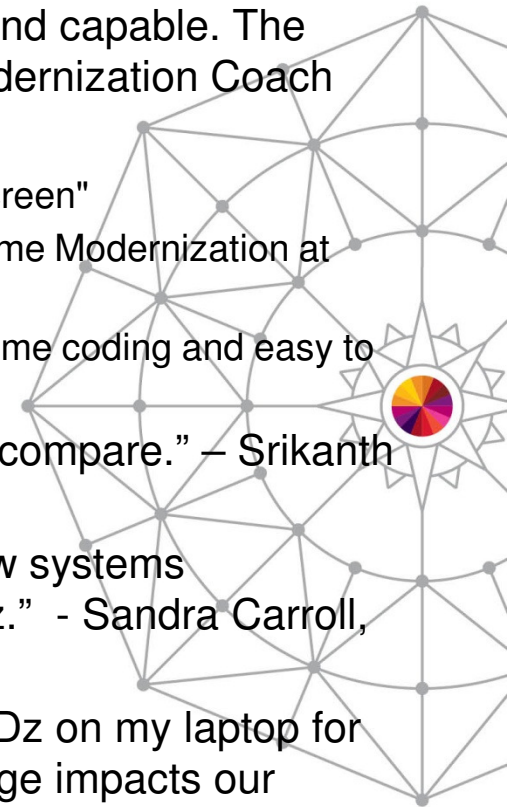
RDz Adoption Helpers

- FREE RDz Training (now through Royal Cyber)
- Online resources – IBM Education Assistant, YouTube
- Vendor – Response time to questions or issues
- Catalysts – Thought leaders / SMEs
- License – Covered under ELA
- Collaboration (internal & external) – SPOT / Wiki / Yammer / User Group / DPP / developerWorks
- Mainframe Community of Practice (MCoP)
- Coaches offering on boarding guidance and tool support
- Management support



Who is using RDz and what they have to say

- “As we move forward with technology, RDz provides all the necessary improvements to continue to make mainframe and distributed work more cohesive and capable. The positives far outweigh the negatives.” –Russ Penning, COBOL Modernization Coach
- From Prमित Gupta, Developer:
 - "The RDz Tool is a great chill out away from the Green Font on Black screen"
 - "Using the RDz Tool is a small step towards giant leap of Cobol/Mainframe Modernization at Nationwide"
 - "RDz Tool creates enthusiasm among non-mainframers to learn Mainframe coding and easy to teach because of its UI based features."
- “I use RDz extensively for code analysis, code walk thru and code compare.” – Srikanth Loganathan”, Technical Lead
- “RDz makes an excellent tool for the systems programmer and new systems programmers are able to be more productive much faster with RDz.” - Sandra Carroll, System Engineer
- I seldom change or write programs, however I'm always running RDz on my laptop for analytical purposes. When I want to know how an upstream change impacts our applications, RDz is my tool. When I'm looking to redesign and I improve our processes, RDz is my tool. Advanced search capabilities and all resources in a single view with no need to remember library names or locations of key resources. Using 3270 emulation against green screens would take 2 or 3 times longer for my tasks” Joe Elliott,





COBOL/Mainframe Modernization DEMO– RDz, PDTools, RAA

Prepared by: Kelly Cullimore



COBOL Mainframe Modernization - DEMO



❖ Part 1: RDz Working CICS Transaction

❖ Part 2: The ABEND

❖ Part 3: Analysis

❖ Fault Analyzer – where it happened (program)

❖ Debug – why it happened (drill down)

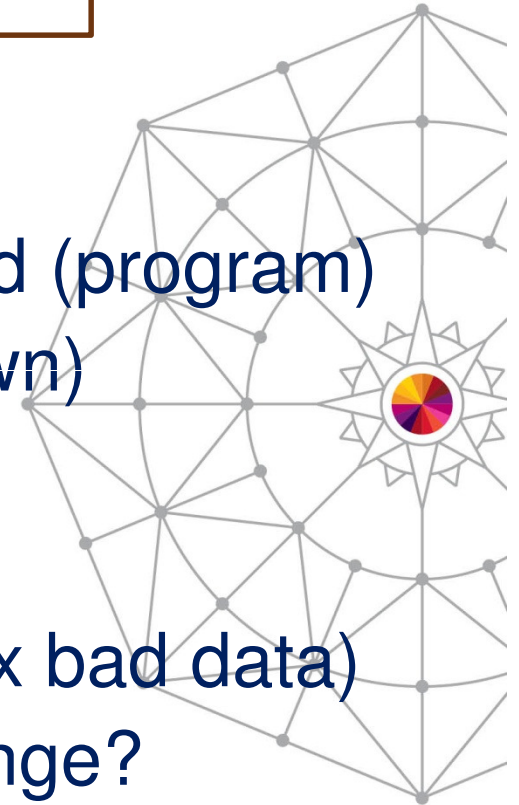
❖ Part 4: The Fix

❖ RAA – find a copybook for a file

❖ File Manager – view/edit the file (fix bad data)

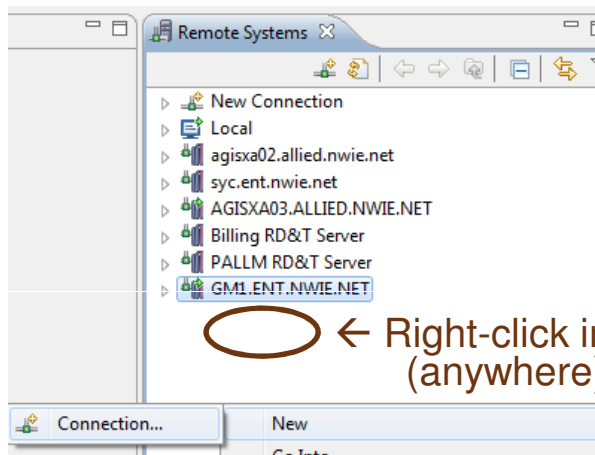
❖ Part 5: What if it requires a code change?

❖ ChangeMan



Connect to Data Center West (Allied/DSM) System z

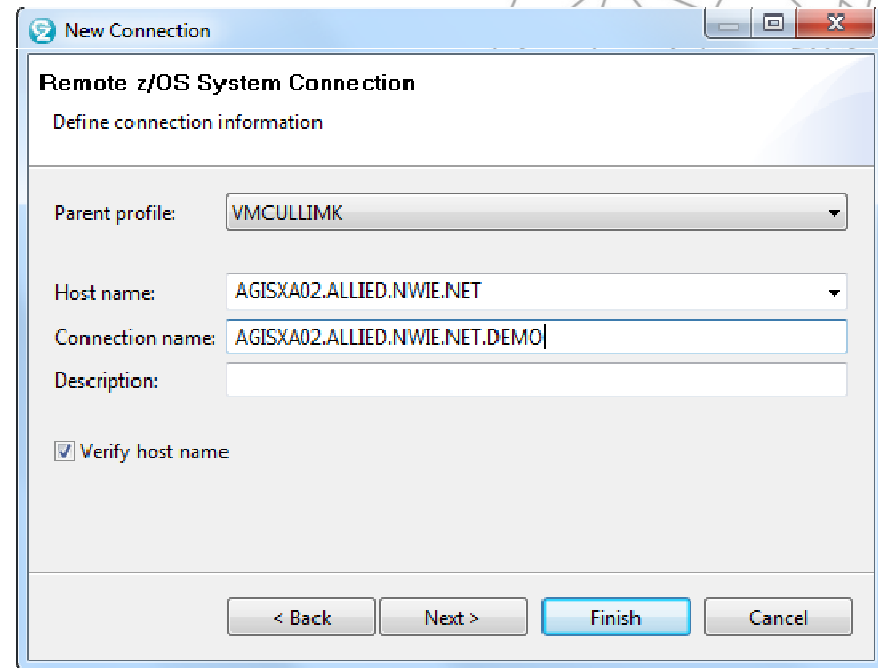
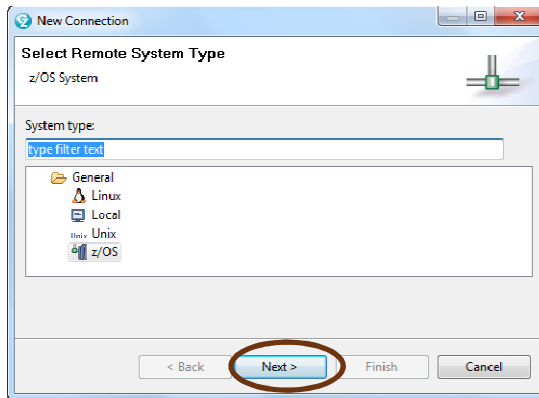
- Configure Connection (if not already there):
 - In the Remote Systems Explorer (RSE) view, right-click and select New...



← Right-click in this window (anywhere)

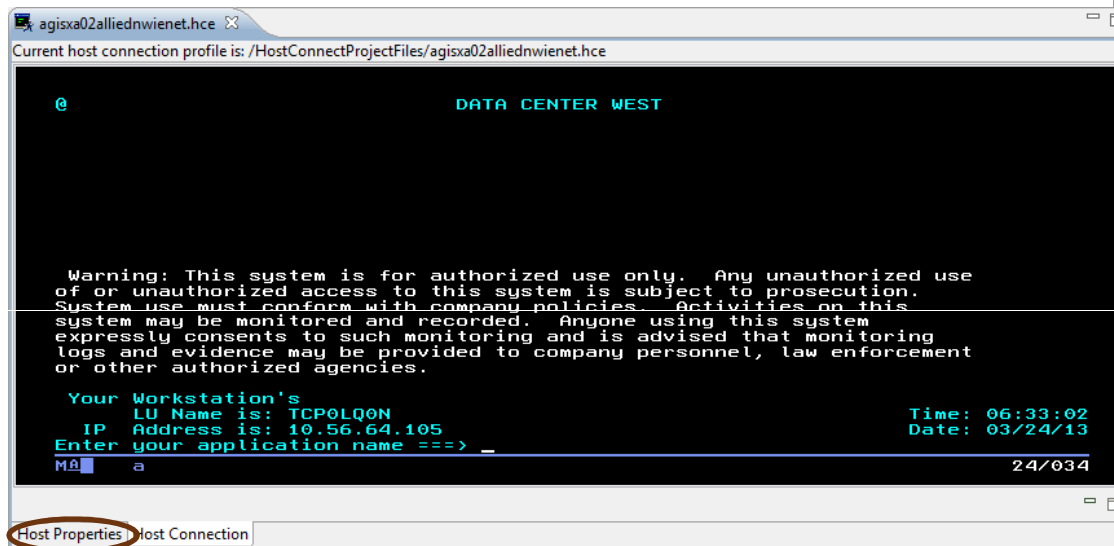
- Type Host name
- Type Connection Name (defaults to Host name, but can be whatever you want)
- Click <Finish>

- z/OS should be selected – Click <Next>

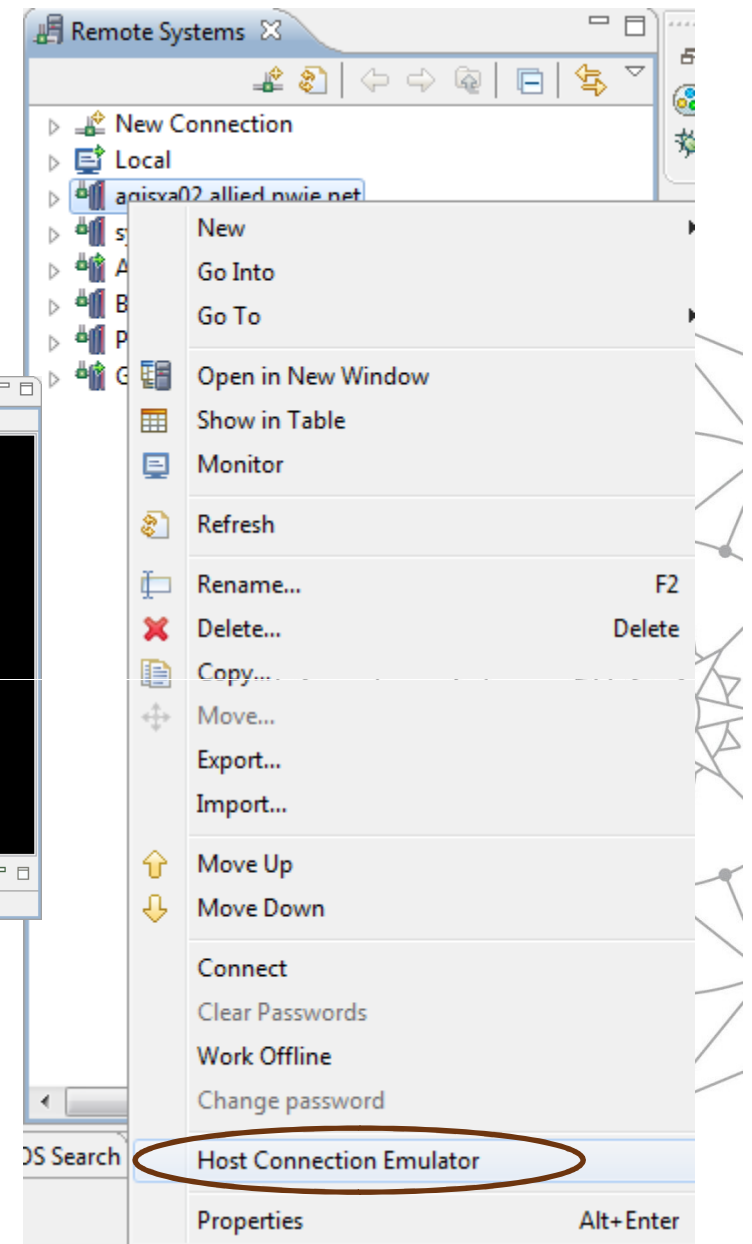


Open Host emulator

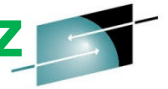
- Right-click the connection
- Select Host Connection Emulator



- Tip: Check the Host Properties and make sure screen size is 43x80



Sign on to Data Center West (Allied/DSM) System z



SHARE

@ DATA CENTER WEST

Warning: This system is for authorized use only. Any unauthorized use of or unauthorized access to this system is subject to prosecution. System use must conform with company policies. Activities on this system may be monitored and recorded. Anyone using this system expressly consents to such monitoring and is advised that monitoring logs and evidence may be provided to company personnel, law enforcement or other authorized agencies.

Your Workstation's

LU Name is: TCP0L20D

Time: 12:12:31

IP Address is: 10.198.207.150

Date: 03/20/13

Enter your application name ==> tpx

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval

in Anaheim

Log in to Data Center West (Allied/DSM) System z



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                                     a member of Nationwide Insurance

Userid:          pkb008      (or LOGOFF)          12:13:14
Password:                _          03/20/13
New Password:
Account:
Transfer:          3278-4A

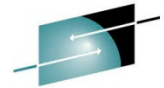
Welcome to Allied Information Services - Multi-Session Facility
PF1=Help      PF3=Logoff

```

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval

... In Anaheim

Log on to test region



SHARE

```
TPX MENU FOR          PKB008
Cmdkey=PF12/24      Jump=PA1      Menu=PF4
Print=NONE          Cmdchar=\

Panelid - TEN0041
Terminal - TCP0L20D
Model    - 3278-4A
System   - TPX

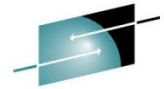
  Sessid      Sesskey      Session Description      Status
  ---        -
  TSOTEST     PF          TSO (Dev LPAR)
  CICSPT      PF          CICS Production TOR - E-Mail
  CICSST      PF          CICS Test TOR
  CICSSTY     PF          TSTY0010 AUTOMAX test region
  CICSST5     PF          CICS test AOR #5...CICSTA14
  CICSSTP5    PF          AOR P5...CICSPA14
  CICSSTA15   PF          Life Model Office - CICS
  CICSUA11    PF          Unit Test 11              N/A
  CICSUB00    PF          Unit Test UB00            N/A
  CICSUB02    PF          Unit Test UB02            N/A
  CICSUC02    PF          Unit Test UC02            N/A
  CICSVRT2    PF          CICSVRT2
  TSOPROD     PF          TSO (Prod LPAR)
  TPXADMIN    PF          TPX Administration

Command ==> \n untau032_
PF1=Help  PF7/19=Up  PF8/20=Down  PF10/22=Left  PF11/23=Right  H =Cmd Help
```

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval



Pause (Break) to clear screen



SHARE

Allied NEW UNIT TEST CICS/TS 4.2.0 / Applid UNTAU032 / CPS Commercial 12:14:22

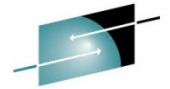
```
*****\ *****\ *****\ *****\ (R)
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CICS Sign-on command CESN



```
cesn_
```

CICS Logon



SHARE

APPLID UNTAU032

Signon to CICS

Allied NEW UNIT TEST CICS/TS 4.2.0 / Applid UNTAU032 / CPS Commercial

Type your userid and password, then press ENTER:

userid pkb008 Groupid _____

Password _____

Language _____

New Password _____

DFHCE3520 Please type your userid.

F3=Exit

Commercial Farm Application – FM00 transaction



fm00_

DFHCE3549 Sign-on is complete (Language ENU) .

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval

 In Anaheim

Farm System Menu Screen – Quote Inquiry



```

POLICY                                DATE                                CLAIM
                                FARM SYSTEM MENU SCREEN
ENTER POLICY INFORMATION:  PKG PRFX  fpk
                           POL PRFX  fmp
                           POL NO    71 0 0010507
                           EFF DATE  042013
                           DATE RECEIVED 032013
                           UND APPROVED DATE 032013
                           PRINT OPTION
                           RETURN TO PAK? N
PLACE AN 'X' IN FRONT OF THE DESIRED TRANSACTION AND COMPLETE ALL ADDITIONAL
INFORMATION TO THE RIGHT, CORRESPONDING TO THE TRANSACTION.
INQUIRY                                WORKSHEET
QUOTE                                  QUOTE INQUIRY x
- QUOTE UPDATE                          WORKSHEET
  QUOTE TO POLICY
  POLICY TO QUOTE
  NEW BUSINESS
  MANUAL TO AUTOMATED
  RENEWAL
  AMENDMENTS                            ADJ IND P
  CANCELLATION                          ADJ IND REASON PRO RATA DATE
  REINSTATEMENTS                        COVERAGE REACTIVATION DATE
  REMOVE FOR MANUAL
  REPRINT FORMS                          REPRINT TYPE
  REVIEW PENDING POLICIES/CHANGES
  UPDATE POLICY ON DATA ENTRY FILE
  REISSUE
  PREFIX TRANSFER
  SUMMARY OF AMENDMENTS

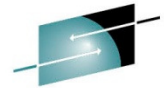
CANCEL REASONS                          ADJ IND REPRINT TYPES PRINT OPTIONS
41 NONRENEWAL (UND)                     P PRO RATE N NEW BUSINESS A ALL COPIES
42 MID-TERM CANCEL (UND)                 S SHORT RATE C CONVERSION B INS & AGT COPY
43 NONRENEWAL                            F FLAT RATE R RENEWAL D ALL EXCEPT
44 CANCEL/REWRITE                         A AMENDMENT CO COPY
45 NONPAYMENT                             B BLANK N NO COPIES
46 INSURED'S REQUEST
47 LAPSE
48 MANAGEMENT DECISION                   PRO RATA DATE: MUST BE ENTERED IF
                                           CANCEL REASON 45 OR 47 IS KEYED.

```

FMP0101



Yeah!



SHARE

```

POLICY FPK FMP 7100010507 DATE 040113 CLAIM
FARM - GENERAL INFORMATION INQRY

INS1 NAME #TESTING
INS2 NAME
STR ADDR 1310 S 14TH ST
CITY ADEL STATE IA ZIP 500031903 TRANSFER CODE
TRANSFER BOOK N
REMARKS N
CLAIMS N

POLICY PERIOD FROM 040113 TO 040114 ORIG EFF DT 040113

AGENT ST VA AGENT NUM 29813 PROD CODE 001 UND ID 001
BILL CODE A PAYOR IND A GROUP NUM
SUSP AMT ACCT NUM
SUSP NUM

COMP NUM 001 RATE ST IA REINS IND N
IRPM % MPD? N COMMISSION CONTRIBUTION % C
REG COMM 12.0 % LPDP FCTR 2.0 % C
FSC COMM DEV %

LIABILITY? Y LIAB ST IA
FARM TYPE FARM NUM MEMOS 00 PRINT OPTN D
CUST TYPE CC
SIC CODE SIC DESC
PREVIOUS POLICY NUMBER

MEMBERSHIP INFO: DISCOUNT? N MEMBER CODE
EARTHQUAKE INFO: INCLUDED? N DEDUCT PCT 00 LIMITED? N
TRANSFER INFO: FACTOR % NUM YEARS

REVIEW INFO: REVIEW 60 REVIEW 010114 IS REVIEW Y
CODE 66 REMOVAL 010118 RECURRING Y
DATE (Y/N)

POL END CITY TAX $ $0.00 POL END CNTY TAX $ $0.00
STATUS INFO LAST ACTIVITY NEXT ACTIVITY NEW/ NO TIMES
DATE CODE PREV CODE DATE TERMID CODE DATE REN RENEWED
04/01/13 A 70010 03/11/13 LW41 N 00

AGENT CATALYST TEST AGENT SURCHARGE/ TOTAL ADDL/RETURN
INFO COLUMBUS VA 35434 ASSESSMENT PREMIUM PREMIUM
AGENT TRFR INFO? N 757 575-7575 $0.00 $ 14,533 $ 0.00
SUR EXEMPT N SURC IND? N
PAK READ ERROR FOR CSC IND
NEXT PANEL NA 001 NA=INSD AI=ADIN LD=LEGL LC=LIAB PR=PROP LH=LOSS FMP0201

```

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval



COBOL Mainframe Modernization - DEMO



❖ Part 1: RDz Working CICS Transaction

❖ Part 2: The ABEND

❖ Part 3: Analysis

❖ Fault Analyzer – where it happened (program)

❖ Debug – why it happened (drill down)

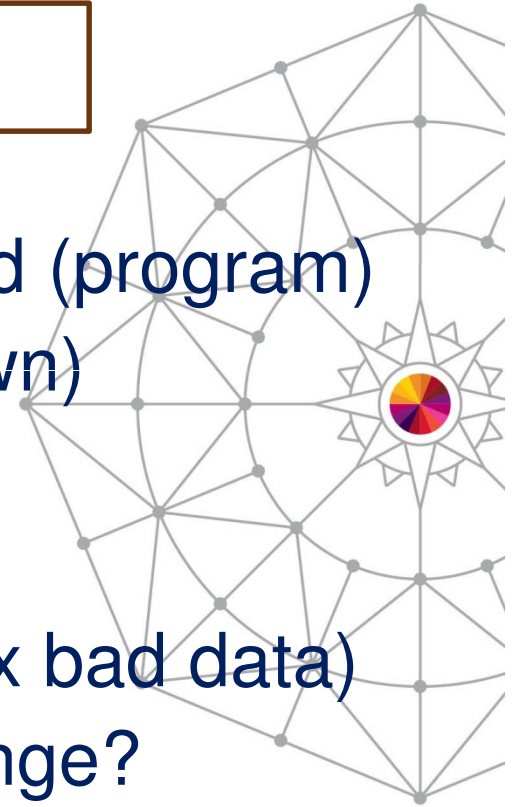
❖ Part 4: The Fix

❖ RAA – find a copybook for a file

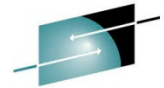
❖ File Manager – view/edit the file (fix bad data)

❖ Part 5: What if it requires a code change?

❖ ChangeMan



Abending transaction – FM00



SHARE

```

POLICY FPK FMP 7100010507 DATE 040113 CLAIM
FARM SYSTEM MENU SCREEN

ENTER POLICY INFORMATION: PKG PRFX FPK
POL PRFX FMP
POL NO 71 0 0010508
EFF DATE 040113
DATE RECEIVED 032213
UND APPROVED DATE 032213
PRINT OPTION
RETURN TO PAK? N

PLACE AN 'X' IN FRONT OF THE DESIRED TRANSACTION AND COMPLETE ALL ADDITIONAL
INFORMATION TO THE RIGHT, CORRESPONDING TO THE TRANSACTION.
INQUIRY WORKSHEET
QUOTE QUOTE INQUIRY X
QUOTE UPDATE WORKSHEET
QUOTE TO POLICY
POLICY TO QUOTE
NEW BUSINESS
MANUAL TO AUTOMATED
RENEWAL
AMENDMENTS ADJ IND P
CANCELLATION ADJ IND REASON PRO RATA DATE
REINSTATEMENTS COVERAGE REACTIVATION DATE
REMOVE FOR MANUAL
REPRINT FORMS REPRINT TYPE
REVIEW PENDING POLICIES/CHANGES
UPDATE POLICY ON DATA ENTRY FILE
REISSUE
PREFIX TRANSFER
SUMMARY OF AMENDMENTS

CANCEL REASONS ADJ IND REPRINT TYPES PRINT OPTIONS
41 NONRENEWAL (UND) P PRO RATE N NEW BUSINESS A ALL COPIES
42 MID-TERM CANCEL (UND) S SHORT RATE C CONVERSION B INS & AGT COPY
43 NONRENEWAL F FLAT RATE R RENEWAL D ALL EXCEPT
44 CANCEL/REWRITE A AMENDMENT CO COPY
45 NONPAYMENT B BLANK N NO COPIES
46 INSURED'S REQUEST
47 LAPSE PRO RATA DATE: MUST BE ENTERED IF
48 MANAGEMENT DECISION CANCEL REASON 45 OR 47 IS KEYED.

DFHAC2206 11:47:40 UNTAU032 Transaction FM01 failed with abend ASRA. Updates
to local recoverable resources backed out.
    
```

COBOL Mainframe Modernization - DEMO

- ❖ Part 1: RDz Working CICS Transaction

- ❖ Part 2: The ABEND

- ❖ Part 3: Analysis

 - ❖ Fault Analyzer – where it happened (program)

 - ❖ Debug – why it happened (drill down)

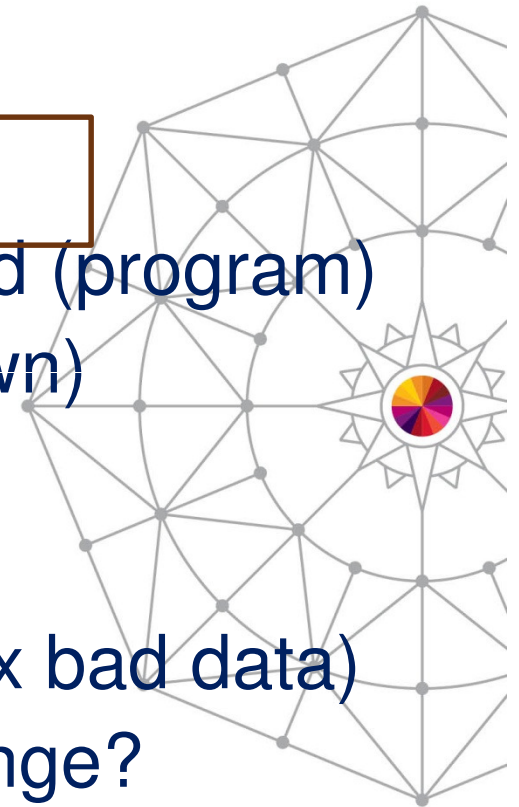
- ❖ Part 4: The Fix

 - ❖ RAA – find a copybook for a file

 - ❖ File Manager – view/edit the file (fix bad data)

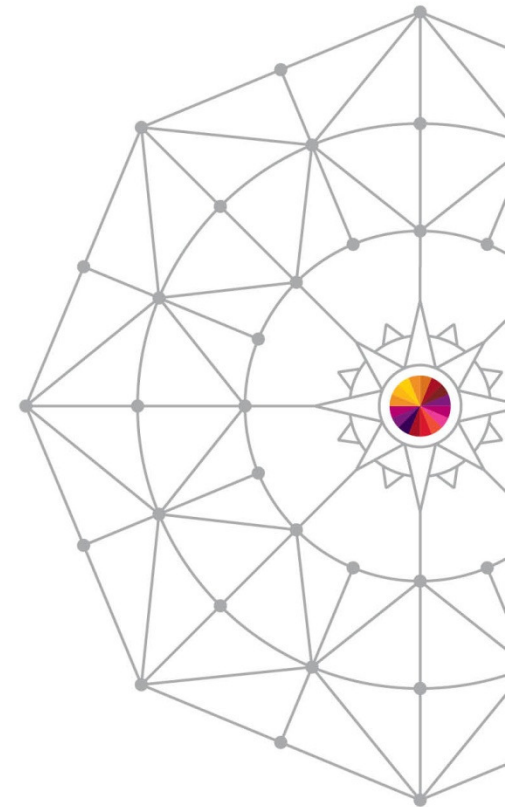
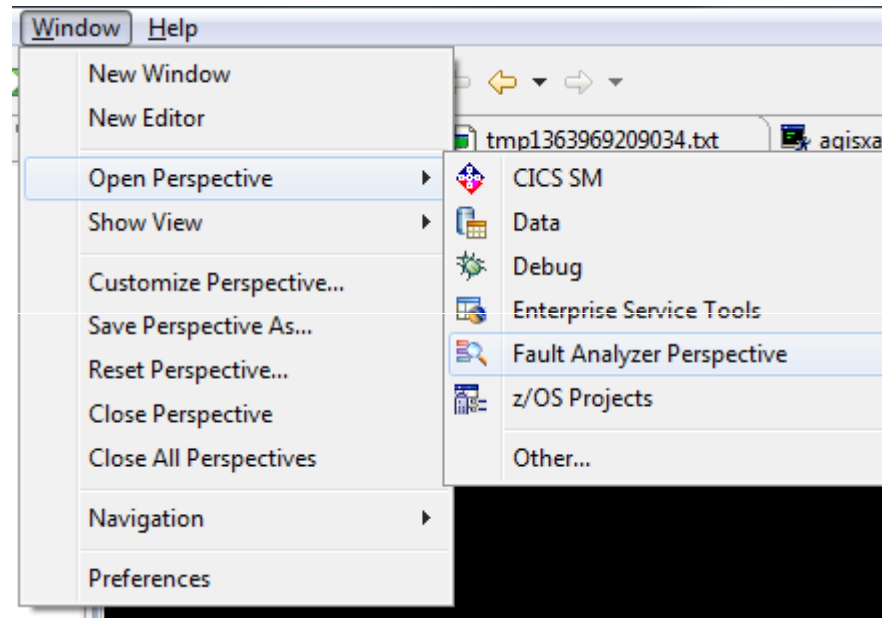
- ❖ Part 5: What if it requires a code change?

 - ❖ ChangeMan



Fault Analyzer: Open the perspective

- Window → Open Perspective → Fault Analyzer

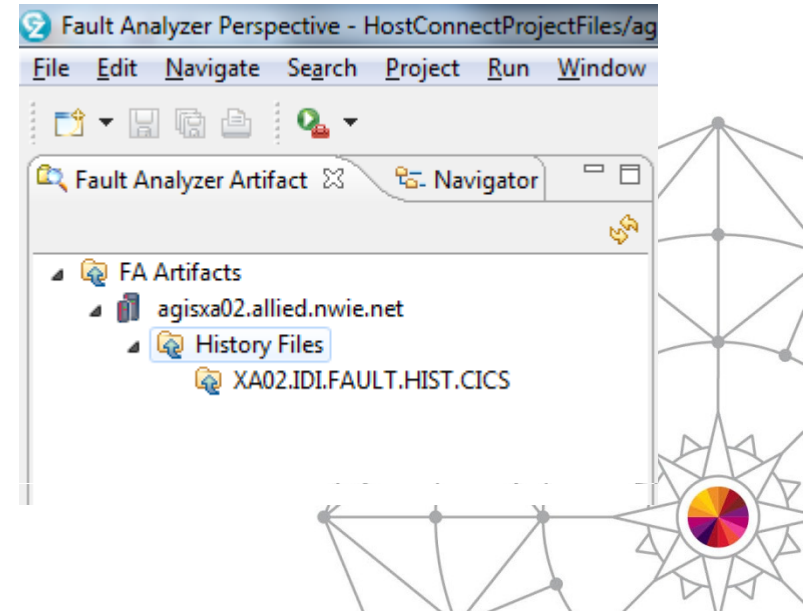


NOTE: May have to select other if not seen in the list above

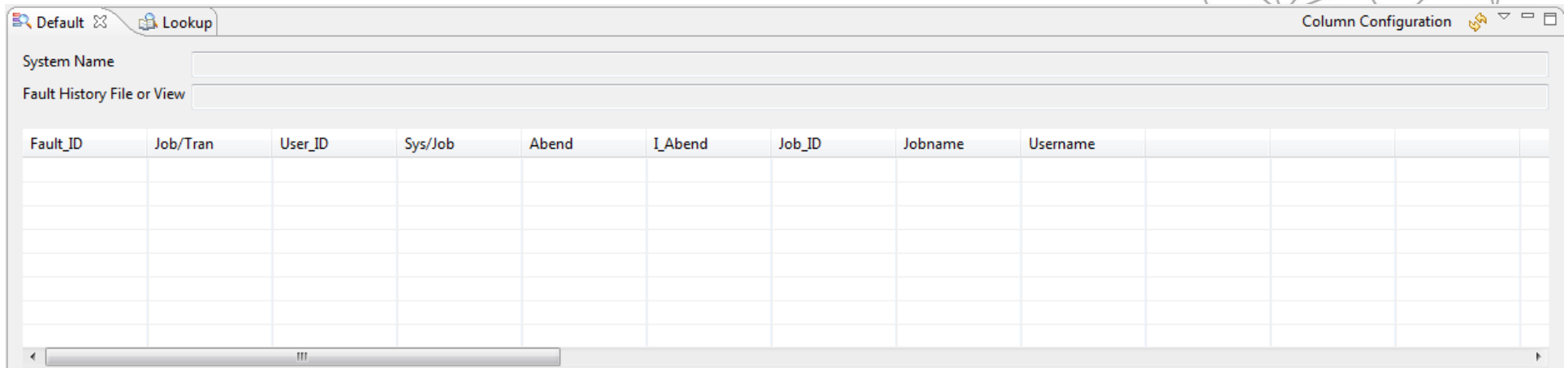
Fault Analyzer: Open the perspective



- The Fault Analyzer Artifact window will open

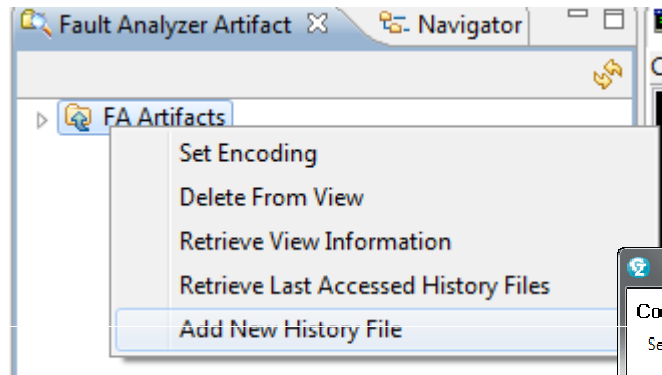


The default view will open

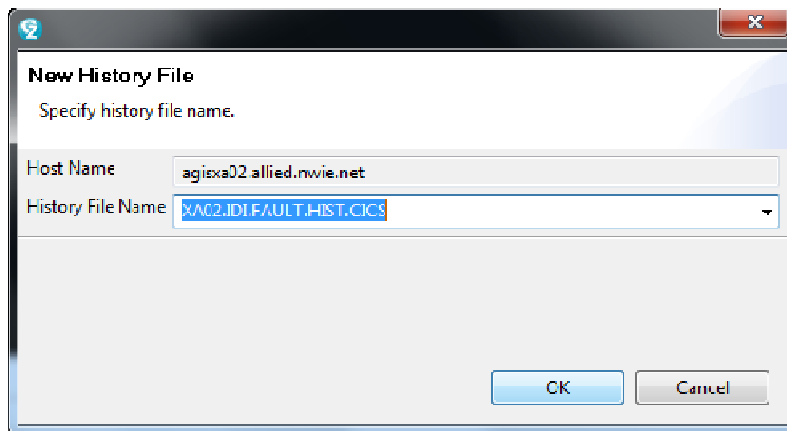
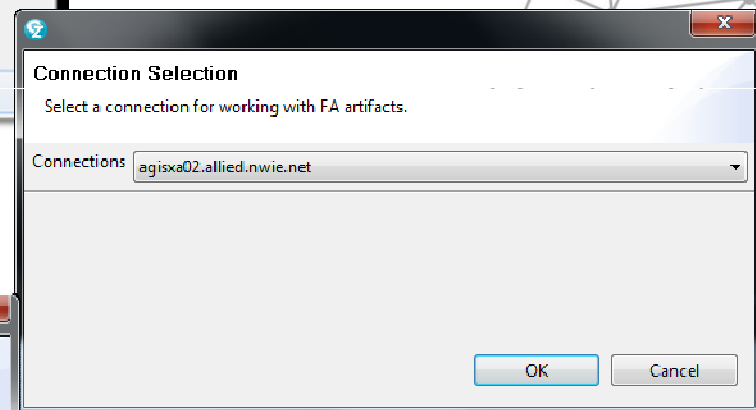


Fault Analyzer: Set up the files

- If the history file(s) are not set up, you can add them by:
Right-click → Add New History File



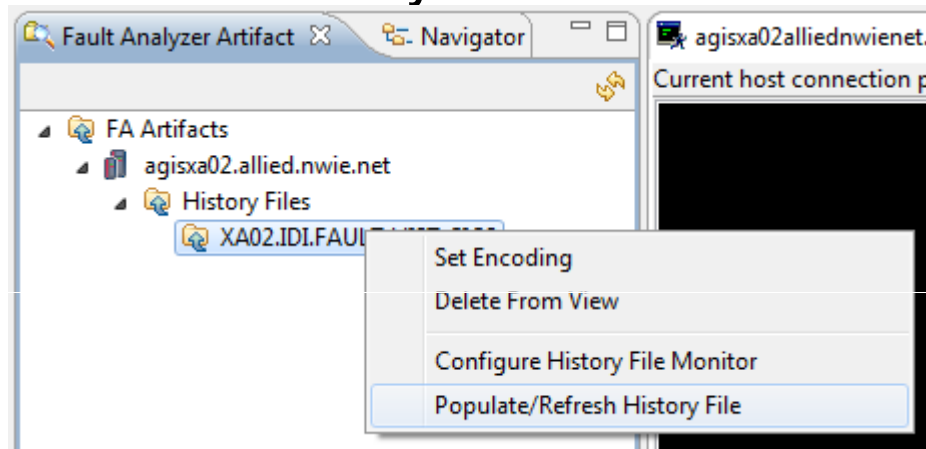
- Select Connection and click <OK>
- Type History File Name and click <OK>



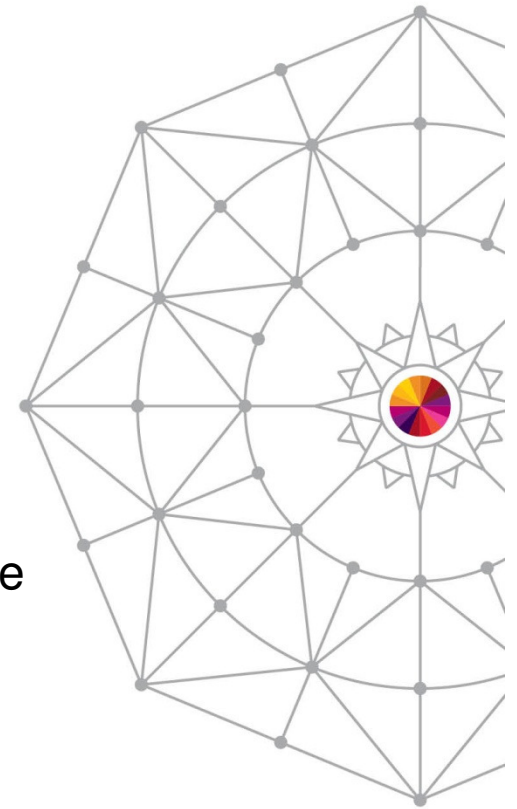
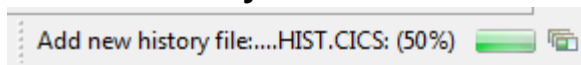
- Tip: History file names kept on our wiki

Fault Analyzer: View the files

- Right-click the history file name and select Populate/Refresh History file



TIP: You might think nothing is happening! Check out the lower right-hand side of your screen for a status:



Fault Analyzer



agisxa02alliednwiene tmp1363969209034.txt agisxa02alliednwiene VTEST.U032.FMP.QUOTE F43631.far

Browse Dump

Synopsis
Module IFMP434I, program IFMP434I, offset X'3CAC': CICS abend ASRA

Summary
I B M FAULT ANALYZER SYNOPSIS

A CICS abend ASRA occurred in module IFMP434I program IFMP434I at offset X'3CAC'.

A program-interruption code 0007 (Data Exception) is associated with this abend and indicates that:

A decimal digit or sign was invalid.

The abend was caused by machine instruction F870D4783051 (ZERO AND ADD).

Recently referenced data items:

Data Item : BLL=0011+05
At Address : 1CA30500

NOTE: Source code information for program IFMP434I could not be presented because no compiler listing or side-file data sets were provided.

Main Report | Event Summary | Abend Job Information | System Wide Information | Misc Information

CCkel Lookup Column Configuration

System Name: agisxa02.allied.nwie.net
Fault History File or View: XA02.IDI.FAULT.HIST.CICS

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	I_Abend	Job_ID	Jobname	EXEC
F43635	PASM	STCTA35	CID4TA35	AEXY	AEXY	STC06588	CID4TA35	DFHSI
F43634	PAAD	PMG027	CID4TA35	ASRA	ASRA	STC06588	CID4TA35	DFHSI
F43633	FMWQ	STCTA42	CID4TA42	ASRA	ASRA	STC06605	CID4TA42	DFHSI
F43632	PAQQ	PDH020	CID4TA35	ASRA	ASRA	STC06588	CID4TA35	DFHSI
F43631	FM01	PKB008	UNTAU032	ASRA	ASRA	STC06617	UNTAU032	DFHSI
F43630	PA50	PDH020	CID4TA35	ASRA	ASRA	STC06588	CID4TA35	DFHSI
F43629	HOME	PSM051	UNTAU055	ASRA	ASRA	STC06659	UNTAU055	DFHSI
F43628	TXXX	PRK023	TSTF0110	AZTS	AZTS	STC06675	TSTF0110	DFHSI

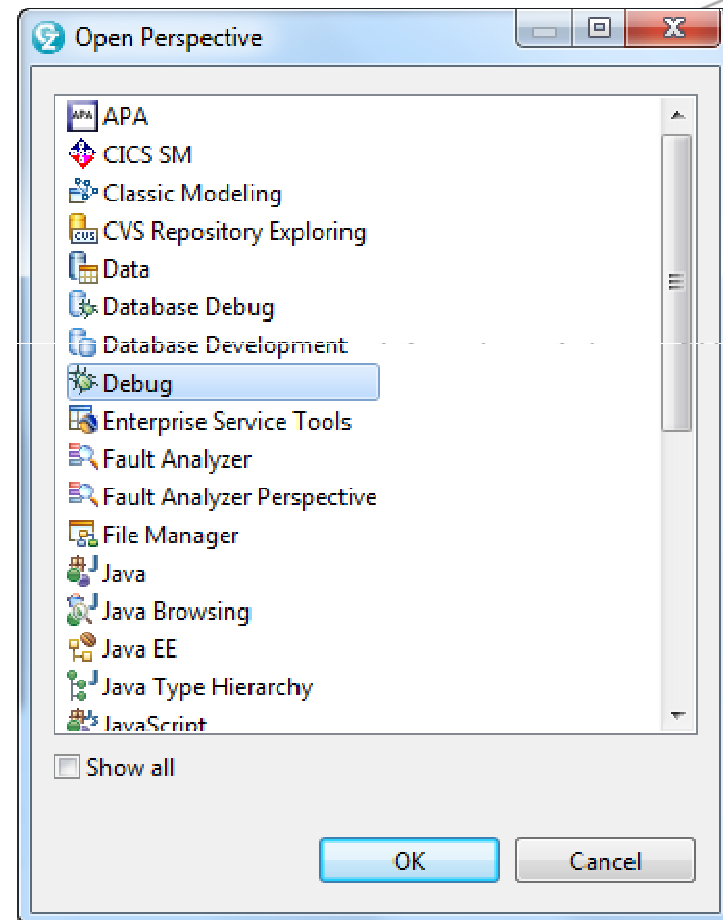
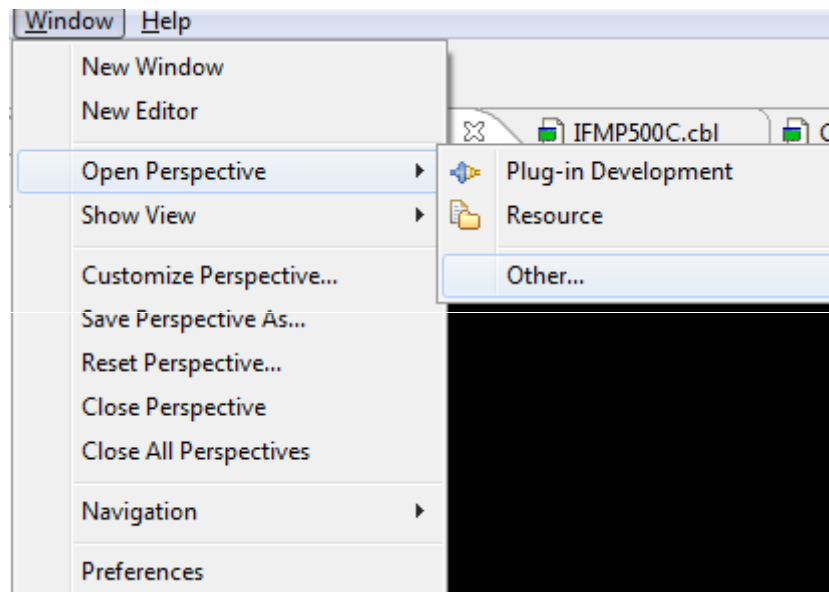
Double-click this →

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval



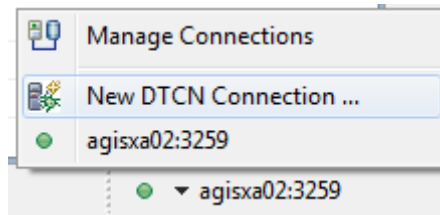
Debug: Open the perspective

- Window → Open Perspective → Debug (or Other...) if Debug not seen
- Select Debug and Click <OK>

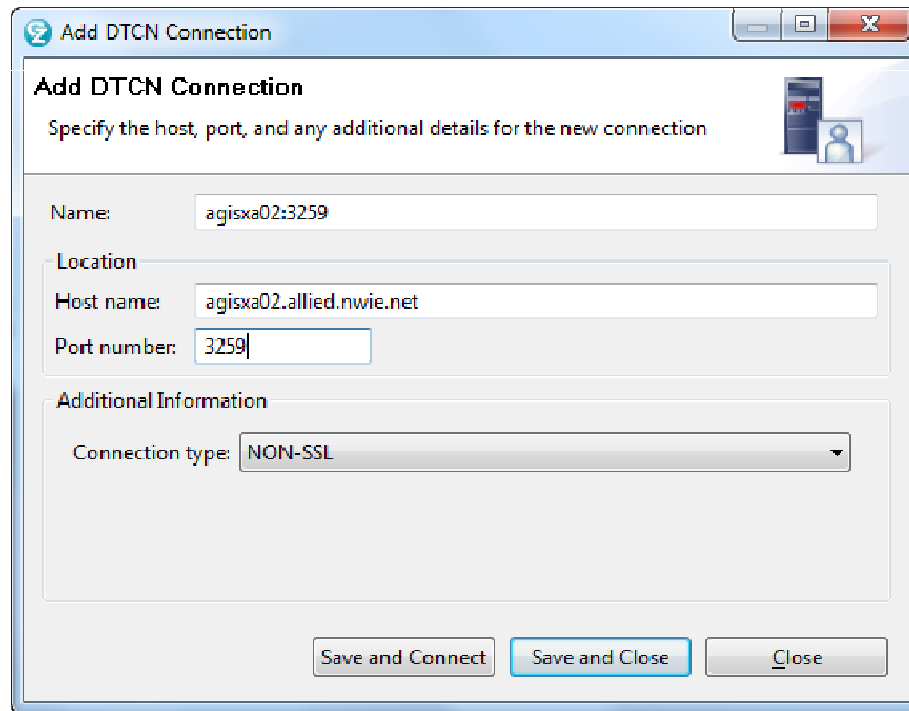


Debug: Set up connection to CICS

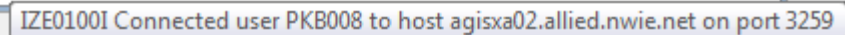
- Look in the lower right corner of your screen to see if you have a connection and verify it is pointing to the region (port) you are debugging in
- If needed, Click the arrow and select New DTCN Connection:



Tip: You could configure debug ports by region in a default workspace. We keep our regions/ports on our wiki.



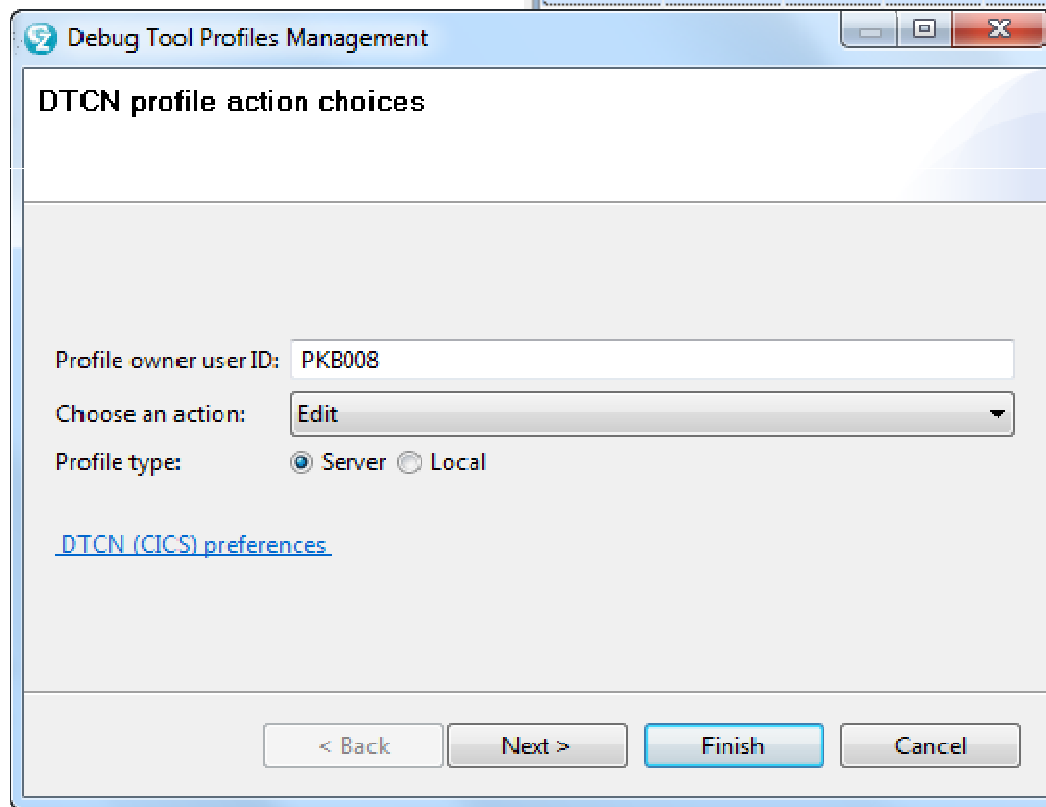
- Type Host name and Port number
- Click <Save and Close>



- Tip: If you don't see the lower right connection icon, make sure the DTCN Server Profiles view is open and active. You may have to open it from Windows → **Show** View (type DTCN)

Debug: Set up DTCN profile

- Right-click anywhere in the DTCN Server Profiles view
- Select Create



Debug Tool Profiles Management

DTCN profile action choices

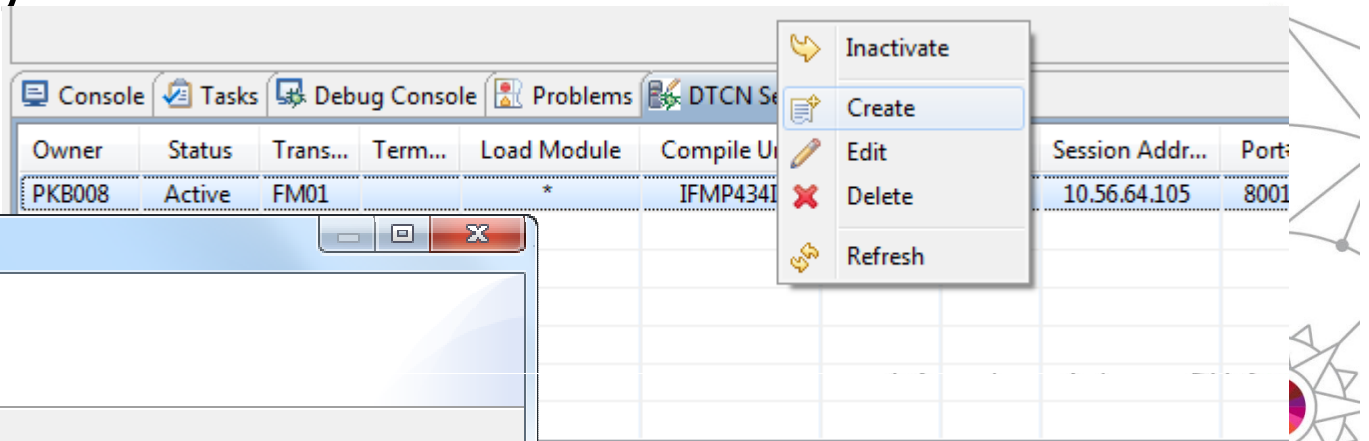
Profile owner user ID: PKB008

Choose an action: Edit

Profile type: Server Local

[DTCN \(CICS\) preferences](#)

< Back Next > Finish Cancel



Owner	Status	Trans...	Term...	Load Module	Compile U...	Session Addr...	Port
PKB008	Active	FM01	*	IFMP434I		10.56.64.105	8001

- Click <Next>

Debug Tool Profiles Management

DTCN pattern matching resources

Resources to debug

TransactionId: **FM01**

Terminal Id:

Load Module and Compile Unit (maximum 8 pairs)

Load Module	Compile Unit
*	IFMP134I

Add...
Edit...
Remove

User Id: PKR008

NetName:

IP Name/Address:

Commarea

Offset: 0

Data:

Container

Name:

Offset: 0

Data:

URM Debugging: NO

Profile Status: ACTIVE

< Back Next > **Finish** Cancel

Debug: Set up DTCN profile



- Enter info (Transactio ID, Compile Unit)
- Click <Next>
- (Changed Test Level to ERROR)
- <Finish>

Debug Tool Profiles Management

DTCN TEST run-time options

Test Type: TFST

Test Level: **ERROR**

Prompt: PRMPT

Session Type: TCP

Session Address or Terminal Id: 10.56.64.105

Port: 8001

Commands File: *

Preference File: *

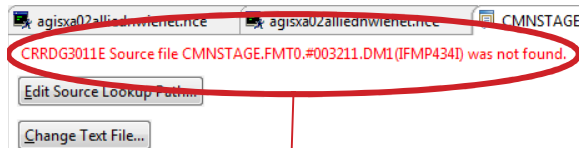
EQAOPTS File:

Other Language Environment: Options:

< Back Next > **Finish** Cancel

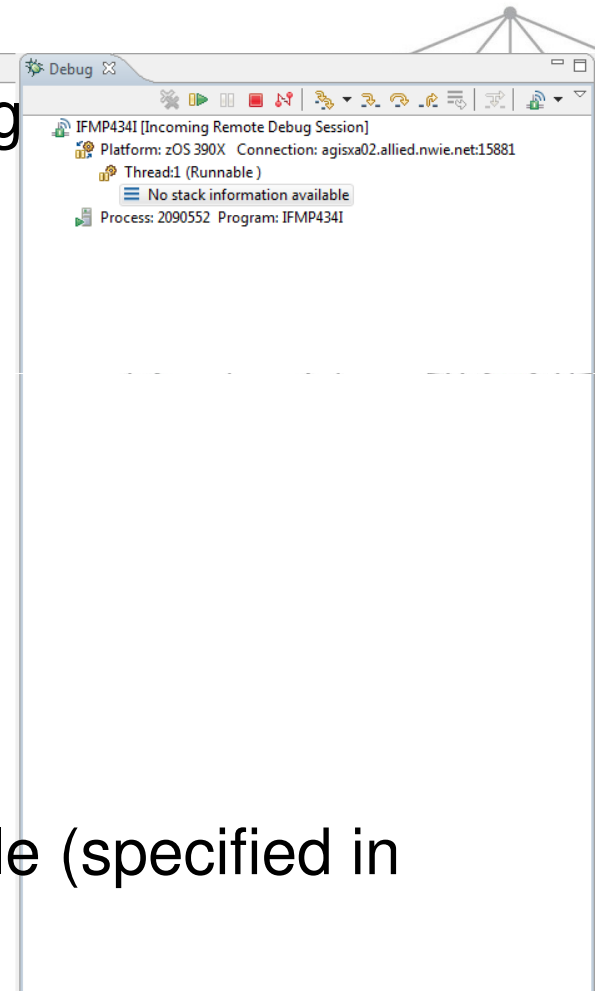
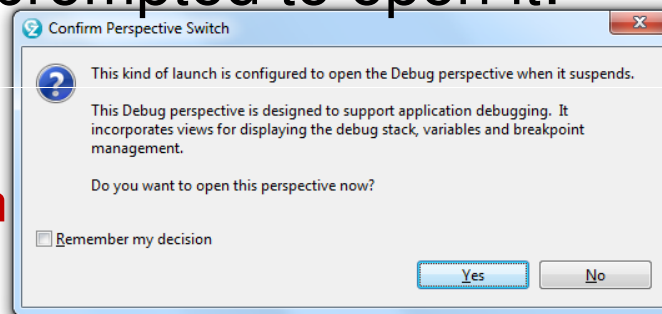
Debug: Run the transaction

- In Host Emulator CICS region, type transaction, <Enter>, enter policy #/quote inquiry, <Enter>



If you are not in the debug perspective, you will be prompted to open it:

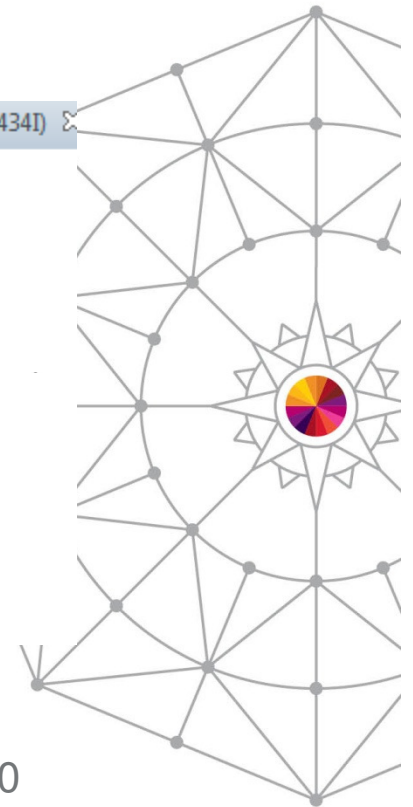
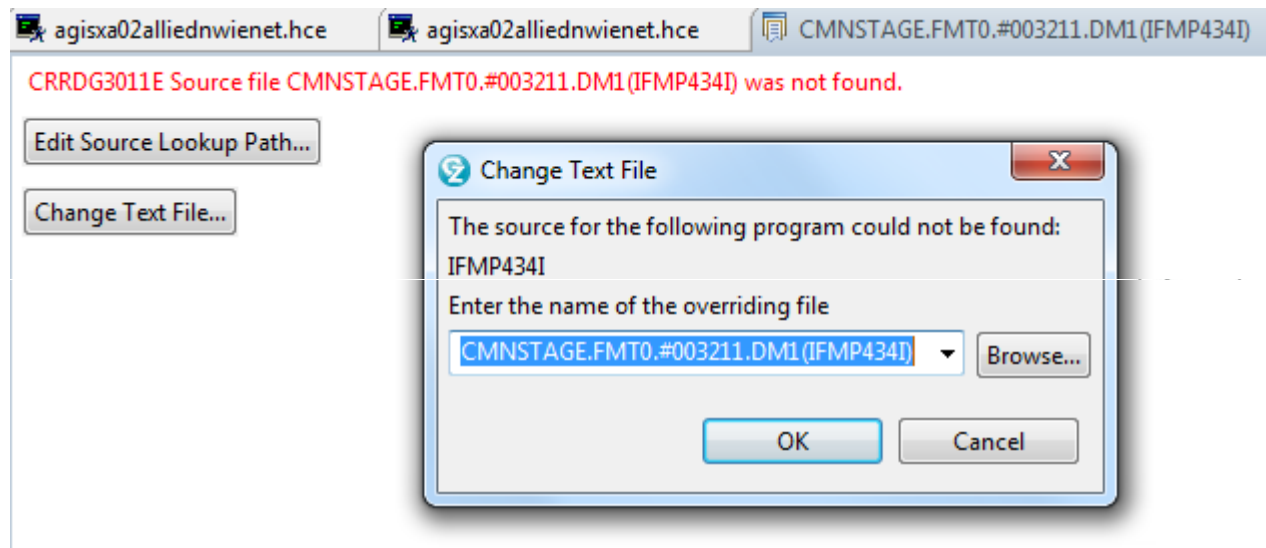
NOTE: It tried to stop in the program but couldn't find it (more on this next slide)



- Click <Yes>
- Tip: You could set this in a preference file (specified in DTCN profile on previous screen)

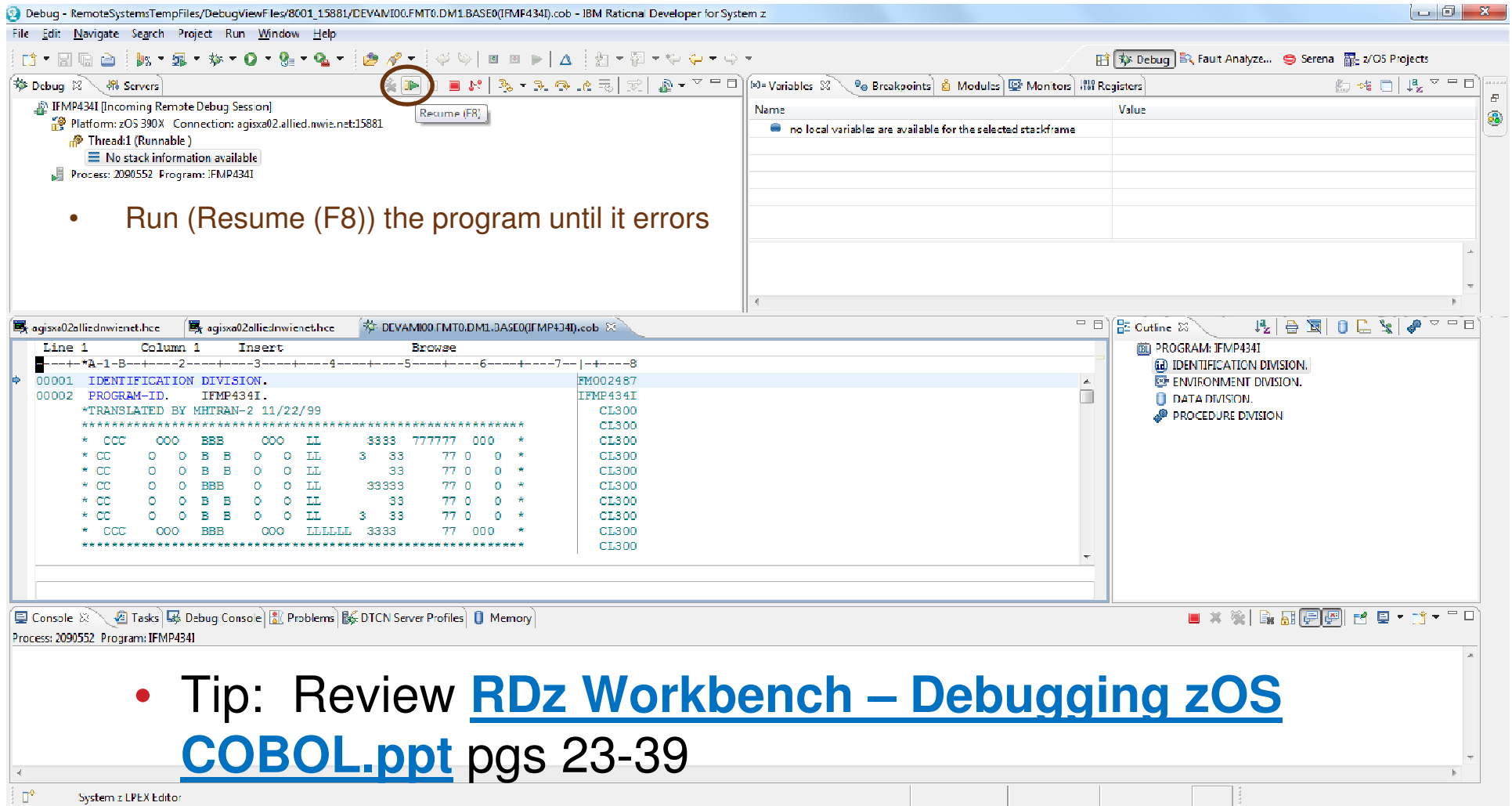
Debug: Tell Debug where to get the source (if it didn't find it)

- Click <Change Text File>



- NOTE: In this case, all files should be in: DEVAMI00.FMT0.DM1.BASE0

Debug: The Layout

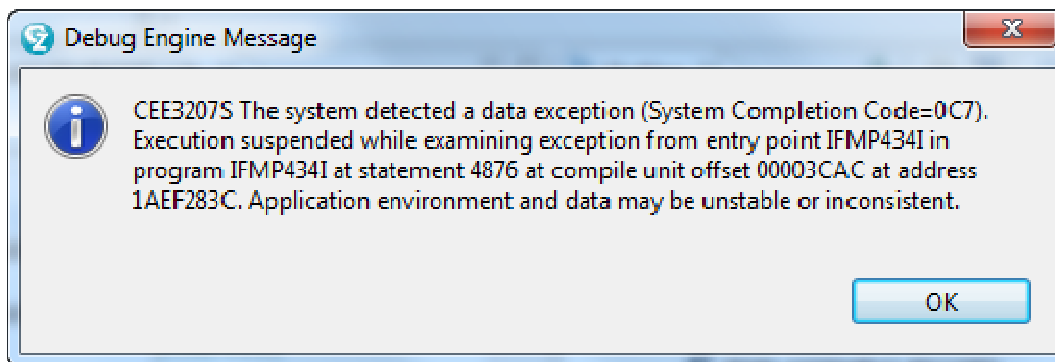
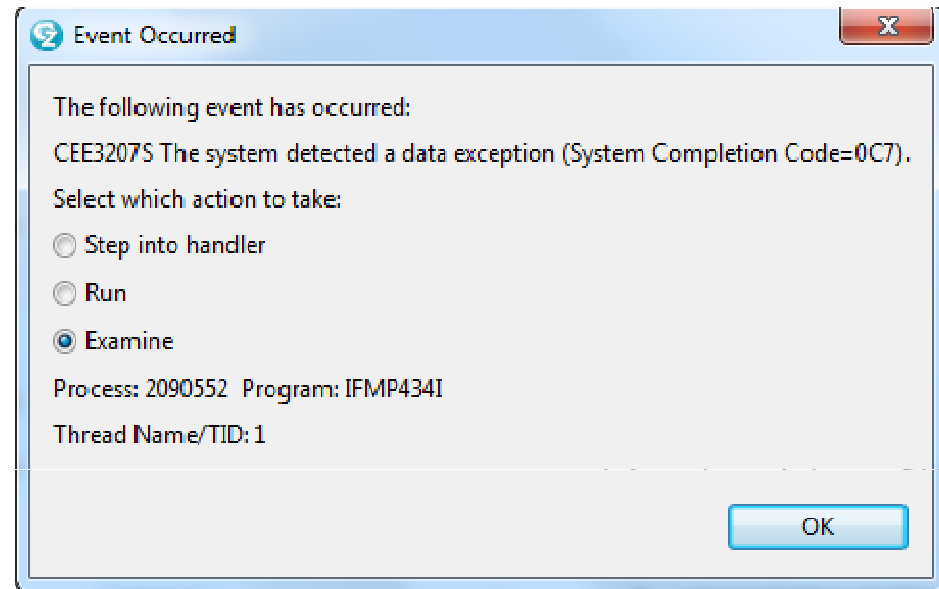


The screenshot shows the IBM Rational Developer for System z interface in debug mode. The top toolbar contains various icons, with the 'Resume (F8)' icon circled in red. The 'Debug' window on the left shows the current session details for 'IFMP434I'. The main editor window displays COBOL source code with a highlighted line. The 'Registers' window on the right shows the current register values. The console window at the bottom displays the program's output.

- Run (Resume (F8)) the program until it errors
- Tip: Review [RDz Workbench – Debugging zOS COBOL.ppt](#) pgs 23-39

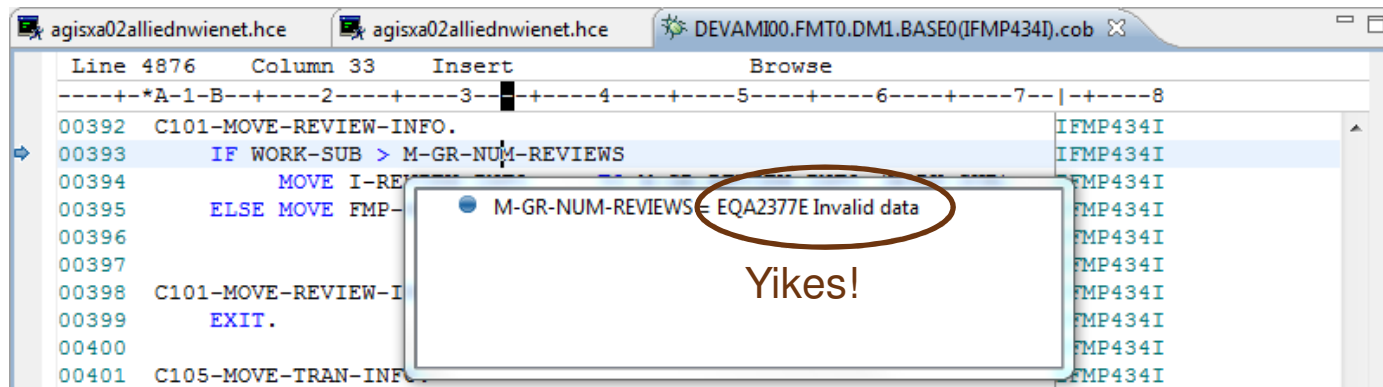
Debug: Analysis

- Select Examine and click <OK>
- Click <OK>



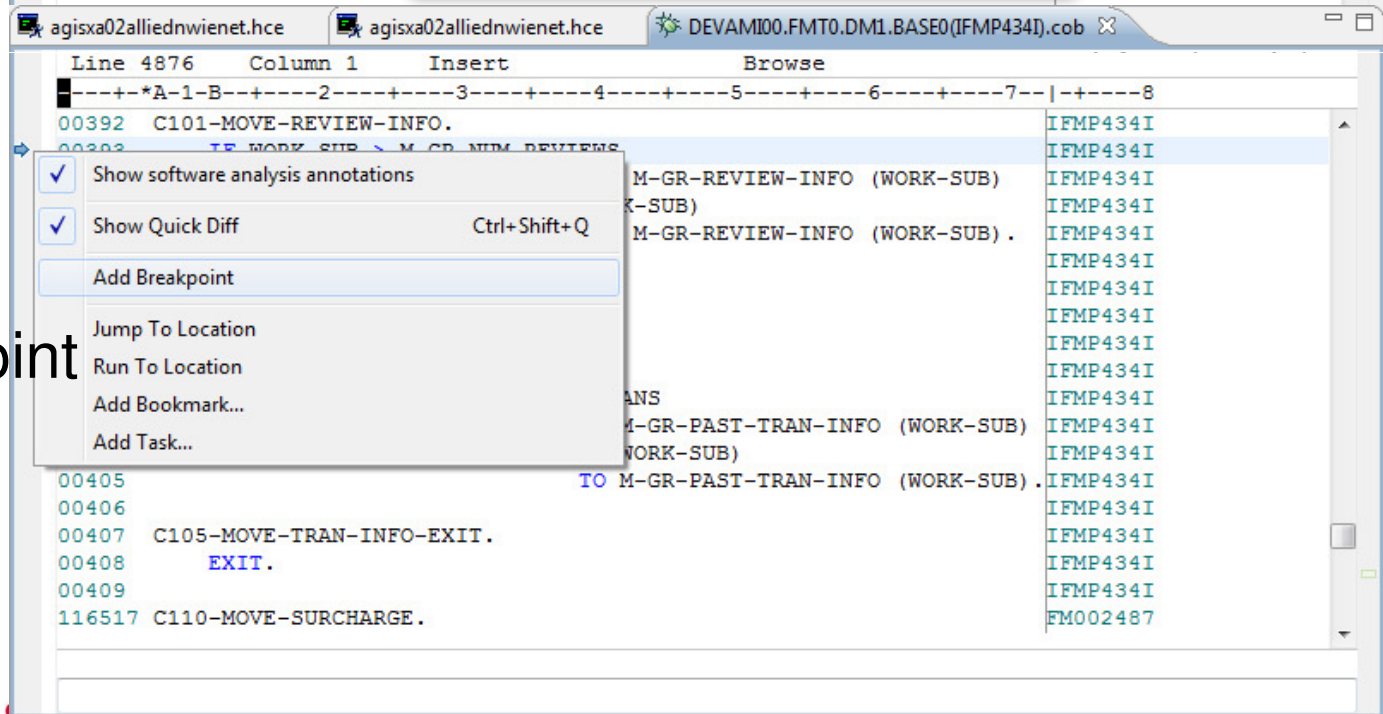
Debug: Analysis

- Hover



```
Line 4876 Column 33 Insert Browse
-----*A-1-B-----2-----3-----4-----5-----6-----7--|-----8
00392 C101-MOVE-REVIEW-INFO. IFMP434I
00393 IF WORK-SUB > M-GR-NUM-REVIEWS IFMP434I
00394 MOVE I-REVIEWS EQA2377E Invalid data IFMP434I
00395 ELSE MOVE FMP-REVIEWS IFMP434I
00396 IFMP434I
00397 IFMP434I
00398 C101-MOVE-REVIEW-INFO. IFMP434I
00399 EXIT. IFMP434I
00400 IFMP434I
00401 C105-MOVE-TRAN-INFO. IFMP434I
```

- Add a breakpoint

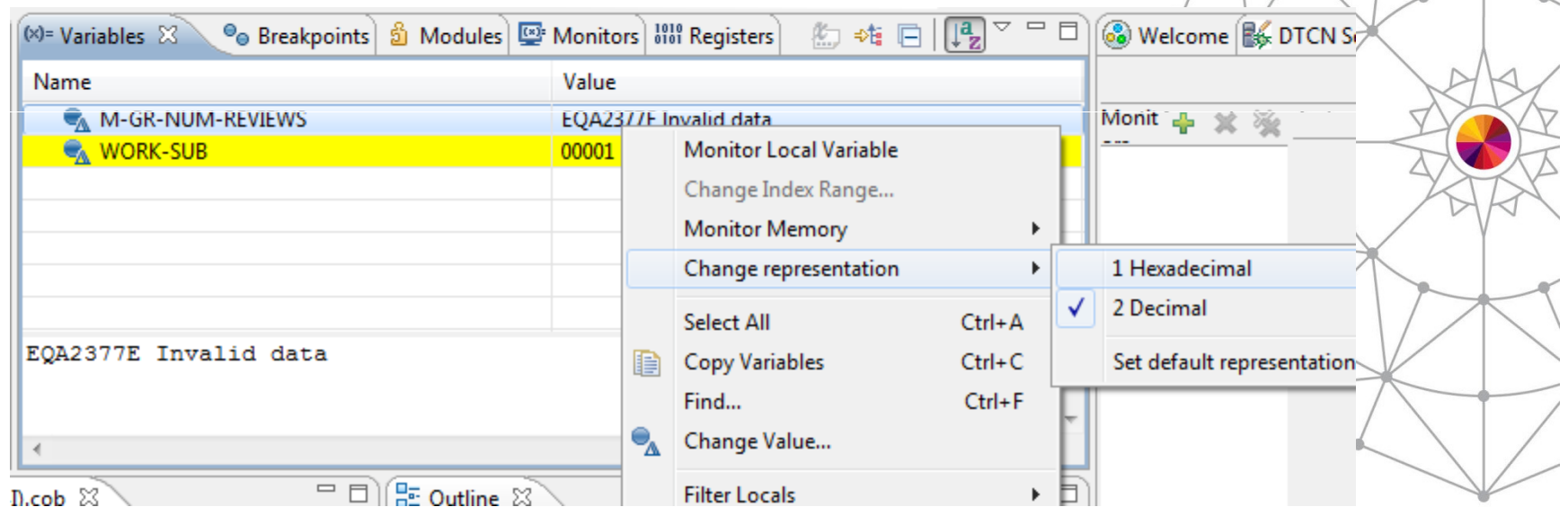


```
Line 4876 Column 1 Insert Browse
-----*A-1-B-----2-----3-----4-----5-----6-----7--|-----8
00392 C101-MOVE-REVIEW-INFO. IFMP434I
00393 IF WORK-SUB > M-GR-NUM-REVIEWS IFMP434I
00394 M-GR-REVIEW-INFO (WORK-SUB) IFMP434I
00395 M-GR-REVIEW-INFO (WORK-SUB) IFMP434I
00396 M-GR-REVIEW-INFO (WORK-SUB) . IFMP434I
00397 IFMP434I
00398 IFMP434I
00399 IFMP434I
00400 IFMP434I
00401 IFMP434I
00402 IFMP434I
00403 IFMP434I
00404 IFMP434I
00405 TO M-GR-PAST-TRAN-INFO (WORK-SUB) . IFMP434I
00406 IFMP434I
00407 C105-MOVE-TRAN-INFO-EXIT. IFMP434I
00408 EXIT. IFMP434I
00409 IFMP434I
116517 C110-MOVE-SURCHARGE. FM002487
```

Complete your session

Debug: Analysis

- Examine values – look in the Variables view
- View in Hex: Right-click → Change representation → Hexadecimal



Debug: Analysis

- Right-click a variable to see options: Holy Context Menu!!!
- Open Declaration will take you to the variable definition

OR

- Put your cursor on the variable and click <F3>

NOTE: There are lots of shortcut keys in RDz and you can customize many of these...may take some time to learn

The screenshot displays the IBM z/OS DebugView interface. At the top, a context menu is open over a variable, with 'Open Declaration' selected (F3). The background shows a COBOL program listing with the following code:

```

Line 4876 Column 28 In
-----*A-1-B-----2-----+
00392 C101-MOVE-REVIEW-INFO.
00393 IF WORK-SUB > M-TR
00394 MOVE I-RE
00395 ELSE MOVE FMP-
00396
00397
00398 C101-MOVE-REVIEW-I
00399 EXIT.
0400
0401 C105-MOVE-TRAN-INF
  
```

Below the code, a linkage section tree is visible, showing a hierarchy of sections. The variable 'M-GR-NUM-REVIEWS' is highlighted in the tree:

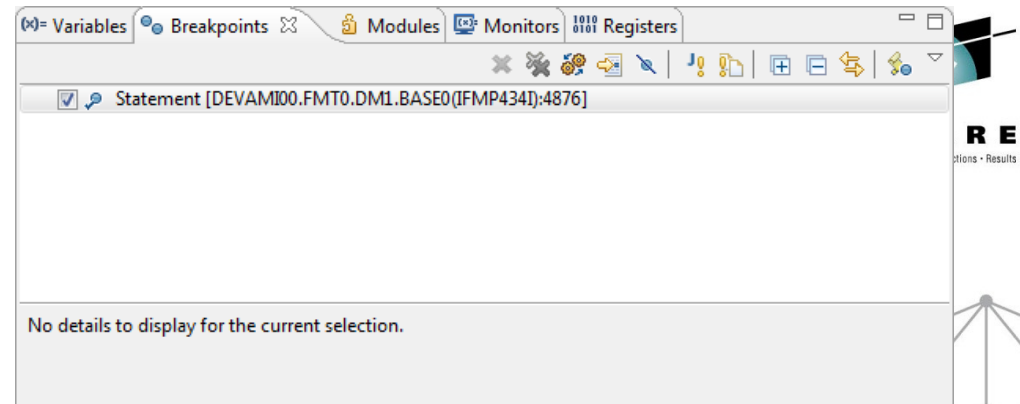
```

LINKAGE SECTION.
  01 dfheiblk.
  01 DFHCOMMAREA.
  01 POLICY-RECORD-AREA
  01 FMPDEKEY
  01 FMP-REC-00
  01 FMP-REC-10
  COPY FMPGENL.
  03 M-GR-KEY.
  03 FILLER
  03 M-GR-POLICY-FILE-SEGMENT-X10.
    05 M-GR-POLICY-KEY-SECTION.
      05 M-GR-NUM-REVIEWS
      05 M-GR-NUM-PAST-TRANS
  
```

Line	Column	Insert	Browse
		07 M-GR-TRANS-SEQUENCE	PIC 9(7) COMP-3.
		05 M-GR-NUM-REVIEWS	PIC 9 COMP-3.
		05 M-GR-NUM-PAST-TRANS	PIC 99 COMP-3.
116517		05 M-GR-NUM-SURCHARGE	PIC 99 COMP-3. PH003582
		05 M-GR-POLICY-INFO-SECTION.	
		07 M-GR-EXTRACT-CODE	PIC 999 COMP-3.
		07 M-GR-AGENT-ID.	
		09 M-GR-AGENT-STATE	PIC 999 COMP-3.
		09 M-GR-AGENT-NUM	PIC 9(5) COMP-3.
		09 M-GR-AGENT-PROD	PIC 999 COMP-3.
		07 M-GR-POLICY-INFO.	
		09 FILLER	PIC 9 COMP-3.
		09 M-GR-PREMIUM-WRITTEN	PIC S9(7)V99 COMP-3.
		07 M-GR-BATCH-INFO	

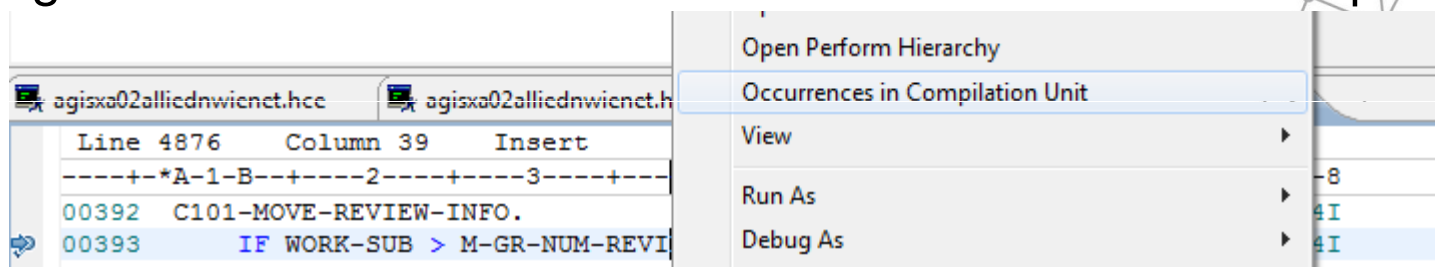
Debug: Analysis

- Tip: Double-click your breakpoint to get back

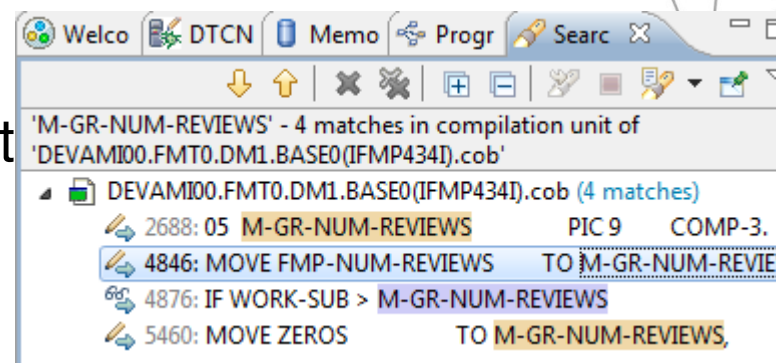


Where does this variable get its value from?

- Right-click on the variable and select Occurrences in Compilation Unit



- Opened a search window
- Double-click any of these to quickly navigate to that point in the source



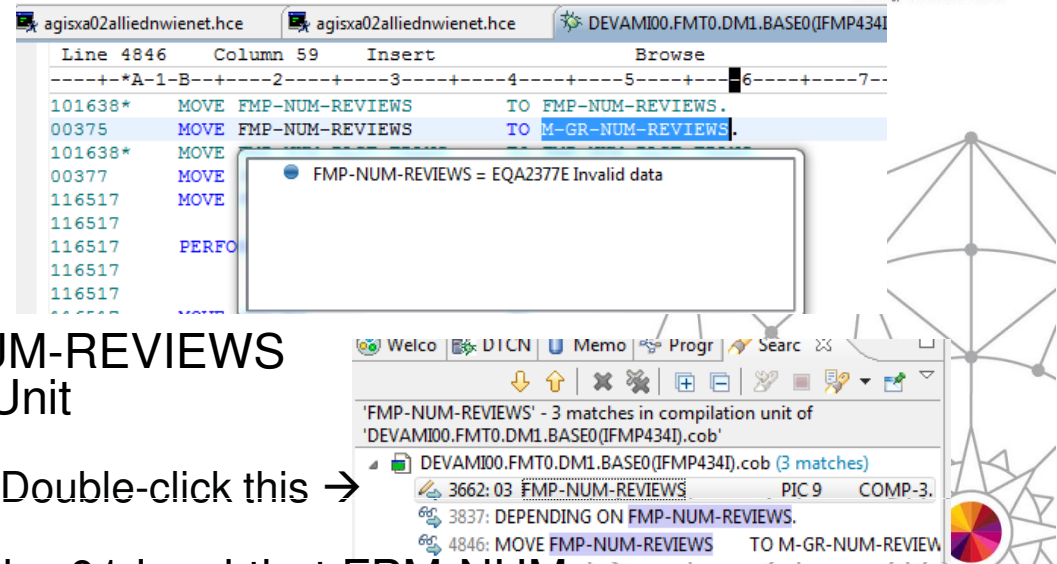
← Double-click this



Debug: Analysis

Navigates directly to source statement where you can see the source of the invalid value

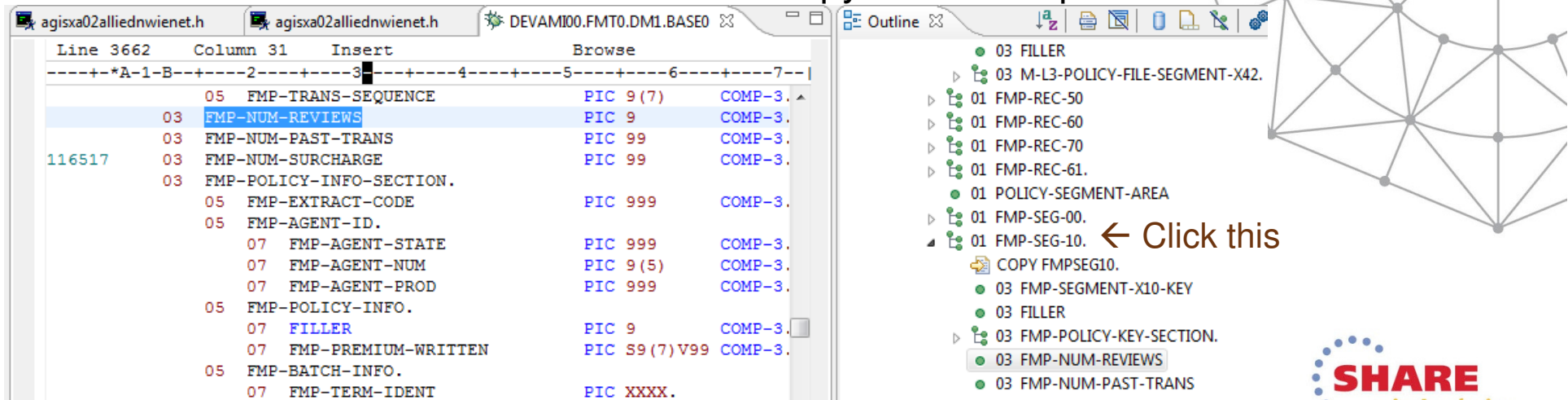
- Right-click with cursor in FMP-NUM-REVIEWS and Occurrences in Compilation Unit



The screenshot shows a COBOL editor window with a compilation error: "FMP-NUM-REVIEWS = EQA2377E Invalid data". A search window is open, showing results for "FMP-NUM-REVIEWS" in the compilation unit "DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob". The search results list three matches: a PIC 9 COMP-3 definition at line 3662, a dependency at line 3837, and a MOVE statement at line 4846. An arrow points to the MOVE statement entry in the search results.

Double-click this →

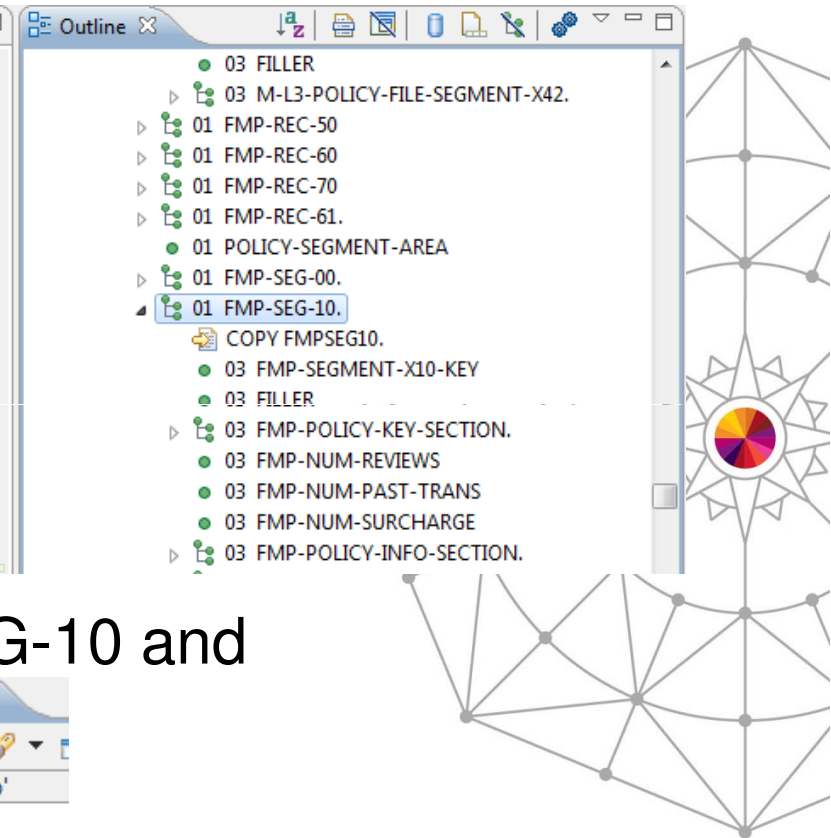
- The Outline view will nicely show the 01 level that FMP-NUM-REVIEWS is defined under ...and the copybook it is a part of



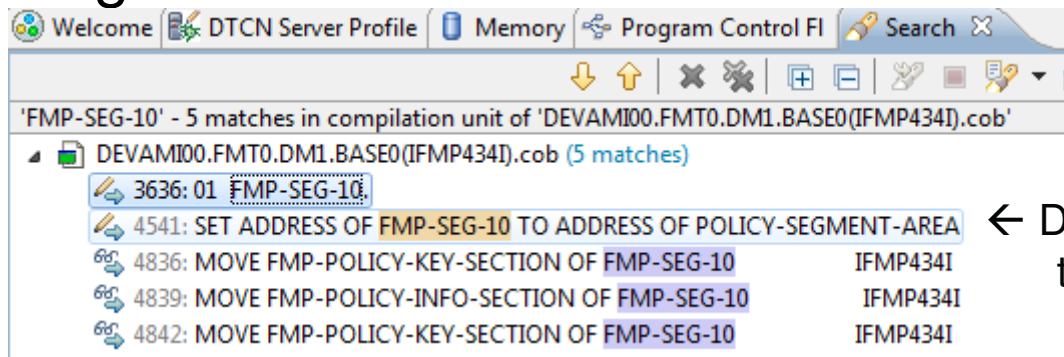
The screenshot shows the COBOL editor with the source code for FMP-TRANS-SEQUENCE. The FMP-NUM-REVIEWS statement is highlighted. The Outline view on the right shows the program structure, with the FMP-SEG-10 level expanded. An arrow points to the FMP-SEG-10 level in the Outline view.

Debug: Analysis

```
agisxa02alliednwienet.h  agisxa02alliednwienet.h  DEVAMI00.FMT0.DM1.BASE0  Outline
Line 3636  Column 31  Insert  Browse
-----*A-1-B-----2-----3-----4-----5-----6-----7---|
101638      07  M-LD-REPRINT-TRAN  PIC X(5) .
           07  M-LD-REPRINT-MTG-NBR  PIC 9(03) COMP-3.
           05  FILLER  PIC X.
           05  M-LD-KEEP-ON-PROCESS-FILE  PIC X.
           05  M-LD-KEEP-VERSION  PIC X.
           05  M-LD-PRINT  PIC X.
           05  M-LD-CONVERT-2000-IND  PIC X.
           05  M-LD-REGLN-OFFICE  PIC XX.
00142  01  FMP-SEG-10.
00143      COPY FMPSEG10.
           *01  FMP-FILE-SEGMENT-X10.
           *
           *
           *  GENERAL INFORMATION, VARIABLE FROM 744 TO 900.
           *
           *
CL001 * 10/01/09 PGP003 CL001 WR12583  FARM SERVICE CENTER
```



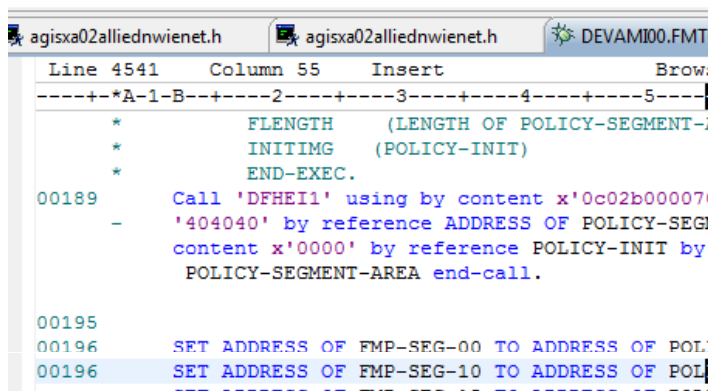
- Right-click with cursor in FMP-SEG-10 and



← Double-click this

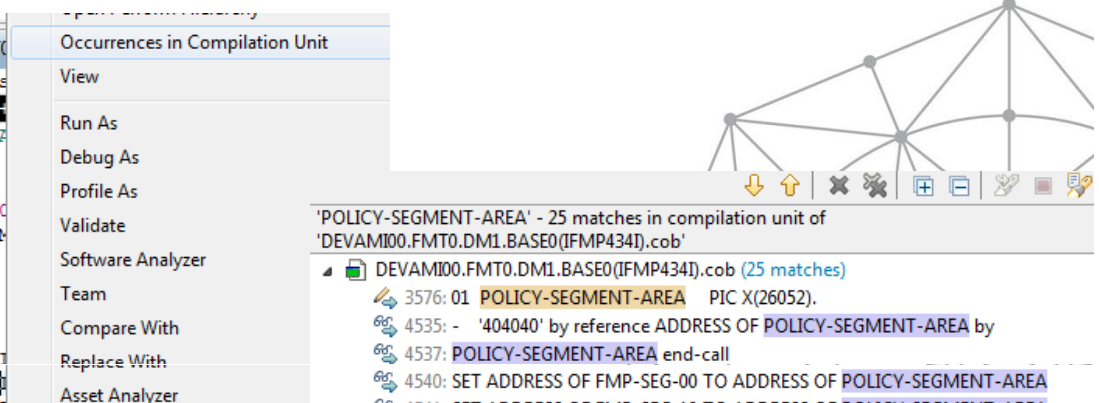
Debug: Analysis

- Navigates to that line in the source:



```
Line 4541 Column 55 Insert Browse
-----+*A-1-B--+-----2-----3-----4-----5-----
*          FLENGTH (LENGTH OF POLICY-SEGMENT-AREA)
*          INITIMG (POLICY-INIT)
*          END-EXEC.
00189      Call 'DFHEI1' using by content x'0c02b000070
-          '404040' by reference ADDRESS OF POLICY-SEGMENT-AREA
          content x'0000' by reference POLICY-INIT by
          POLICY-SEGMENT-AREA end-call.

00195
00196      SET ADDRESS OF FMP-SEG-00 TO ADDRESS OF POLICY-SEGMENT-AREA
00196      SET ADDRESS OF FMP-SEG-10 TO ADDRESS OF POLICY-SEGMENT-AREA
```



Occurrences in Compilation Unit

View

Run As

Debug As

Profile As

Validate

Software Analyzer

Team

Compare With

Replace With

Asset Analyzer

'POLICY-SEGMENT-AREA' - 25 matches in compilation unit of 'DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob'

- DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob (25 matches)
- 3576: 01 POLICY-SEGMENT-AREA PIC X(26052).
- 4535: - '404040' by reference ADDRESS OF POLICY-SEGMENT-AREA by
- 4537: POLICY-SEGMENT-AREA end-call
- 4540: SET ADDRESS OF FMP-SEG-00 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4541: SET ADDRESS OF FMP-SEG-10 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4542: SET ADDRESS OF FMP-SEG-15 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4543: SET ADDRESS OF FMP-SEG-20 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4544: SET ADDRESS OF FMP-SEG-30 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4545: SET ADDRESS OF FMP-SEG-31 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4546: SET ADDRESS OF FMP-SEG-32 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4547: SET ADDRESS OF FMP-SEG-35 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4548: SET ADDRESS OF FMP-SEG-36 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4549: SET ADDRESS OF FMP-SEG-40 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4550: SET ADDRESS OF FMP-SEG-41 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4551: SET ADDRESS OF FMP-SEG-42 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4552: SET ADDRESS OF FMP-SEG-50 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4553: SET ADDRESS OF FMP-SEG-60 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4554: SET ADDRESS OF FMP-SEG-61 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4555: SET ADDRESS OF FMP-SEG-70 TO ADDRESS OF POLICY-SEGMENT-AREA
- 4556: SET ADDRESS OF POLICY-SEGMENT-AREA TO ADDRESS OF CL300
- 4557: POLICY-SEGMENT-AREA
- 4669: Move LENGTH OF POLICY-SEGMENT-AREA to dfhb0020
- 4672: POLICY-SEGMENT-AREA by reference dfhb0020 by reference
- 4710: Move length of POLICY-SEGMENT-AREA to dfhb0020
- 4713: POLICY-SEGMENT-AREA by reference dfhb0020 by reference

- Right-click with cursor in POLICY-SEGMENT-AREA and Occurrences in Compilation Unit

NOTE: CICS programmers will recognize a Move LENGTH OF... as part of a compiler translation of an EXEC CICS READ command

Debug: Analysis

- Navigates to that line in the source:
- Hover the C-PASS-FILE variable to see the file name (NICE, you can see this even though code is commented!)
- Now I can go find the actual file in CICS
- Tip: You can easily open another session by right-clicking the current session and selecting New Editor
- Use the CEMT I FI command to get the DSN

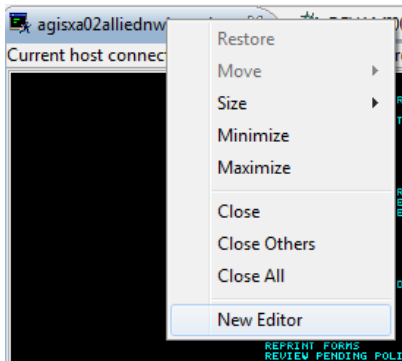
The screenshot shows a CICS source editor window with the following code:

```

Line 4669      Column 28      Insert      Browse
-----*A-1-B-----2-----3-----4-----5-----6-----7--|
0292      Call 'DFHEI1' using by content x'0204e0000713100d000000000000(
-      '00000000000000000f0f0f3f5f6404040' end-call
      Service label
      Go to Z900-NOT-OPEN Z900-NOT-OPEN H100-NOTFOUND depending
      on dfheigdi.

0296
*EXEC CICS READ
*      DATASET (C-PASS-FILE)
*      INTO
*      RIDFLD
*      KEYLENGTH
*      LENGTH
*      END-EXEC.
0297      Move LENGTH OF
      Call 'DFHEI1' u
-      '404040' by ref
POLICY-SEGMENT-AREA by reference dfhb0020 by reference
FMPQKEY by reference WORK-KEY-LEN end-call.
    
```

A tooltip is displayed over the variable C-PASS-FILE, showing its value: C-PASS-FILE = 'FMPQHOLD'.



The screenshot shows a terminal window with the following text:

```

Current host connection profile is: /HostConnectProjectFiles/agisxa02alliednwienet.hce

cent i fi(fmpqhold_
    
```

- Copy the DSN to your clipboard: (select and CTRL-C)

The screenshot shows the output of the CEMT I FI command in a terminal window:

```

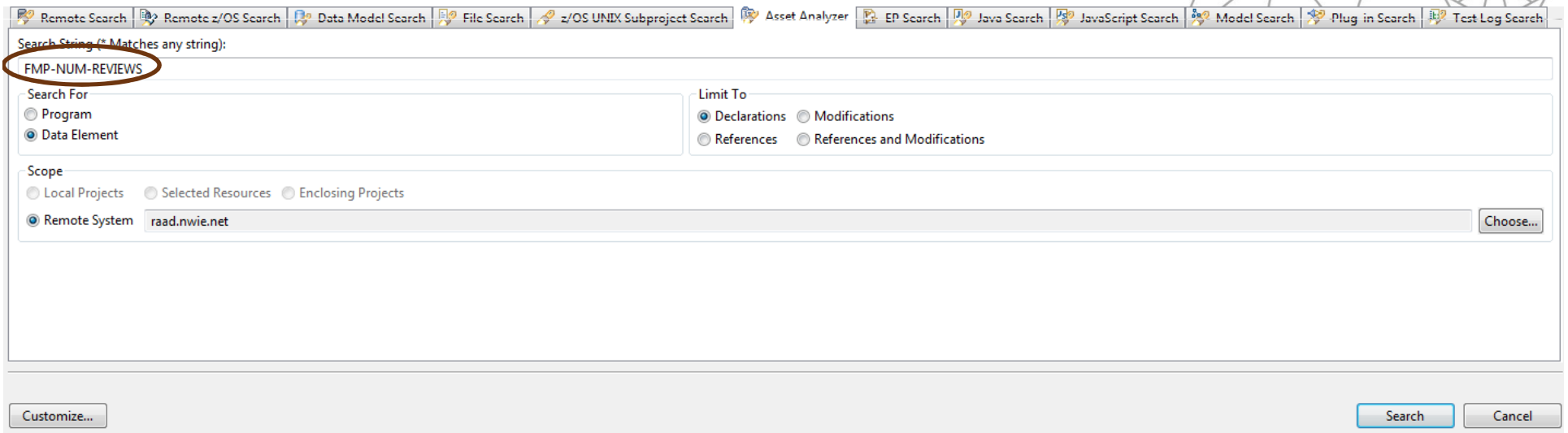
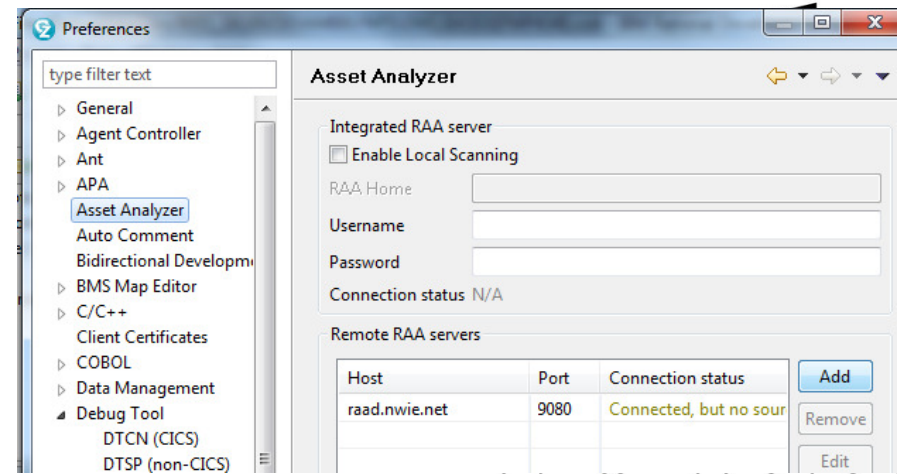
- I FI(FMPQHOLD
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(FMPQHOLD) Vsa Ope Ena Rea Upd Add Bro Del      Sha
Dsn( WTEST.U032.FMP.QUOTE.HOLD
    
```


COBOL Mainframe Modernization - DEMO

- ❖ Part 1: RDz Working CICS Transaction
- ❖ Part 2: The ABEND
- ❖ Part 3: Analysis
 - ❖ Fault Analyzer – where it happened (program)
 - ❖ Debug – why it happened (drill down)
- ❖ Part 4: The Fix
 - ❖ RAA – find a copybook for a file
 - ❖ File Manager – view/edit the file (fix bad data)
- ❖ Part 5: What if it requires a code change?
 - ❖ ChangeMan

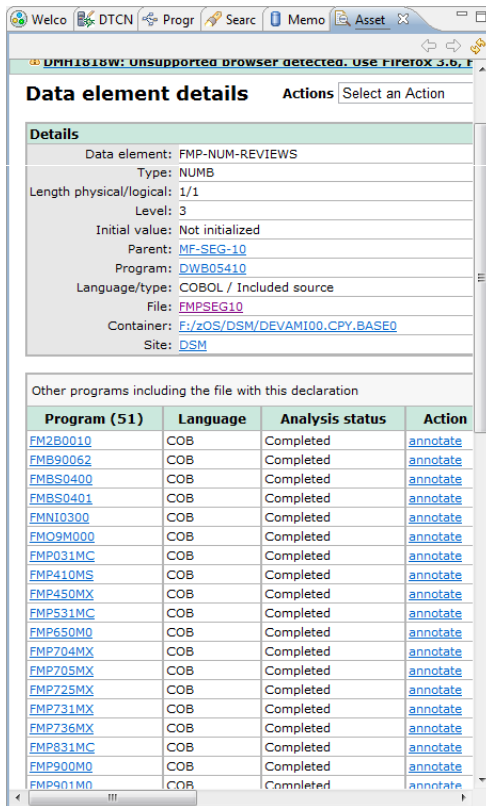
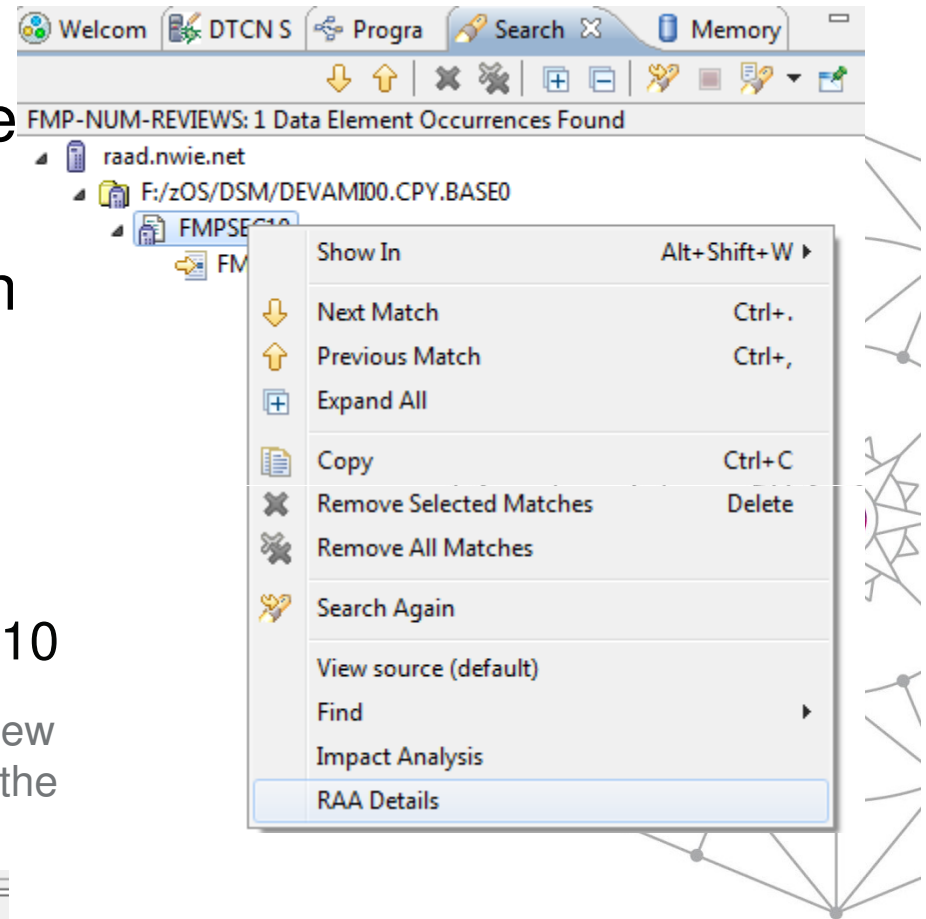
RAA: Where's the copybook?

- We will want to open the file in File Manager, but it would be nice to see it formatted
- We can use RAA to find out which library the copybook is in
- RAA is easily set up (one-time; saved in workspace)
- Now I can search by selecting Search → Search... from the top menu



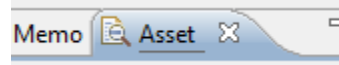
RAA: Where's the copybook?

- Search View results.
- Right-click the copybook name and select RAA Details
- An Asset details view will open



← Click FMPSEG10

Tip: Expand the view by double-clicking the tab



RAA: Where's the copybook?



- Click the Annotations tab

Welcome | DTCN Server Profiles | Program Control Flow | Search | Memory | Asset details

Rational Asset Analyzer

Home | Explore | Impact analysis | Database

Context : Home | File summary | File details

DMH1818W: Unsupported browser detected. Use Firefox 3.6, Firefox 4, Firefox 5, Internet Explorer 8, or Internet Explorer 9.

File details

Actions | Select an Action

Details

File: FMPSEG10
Language/type: COBOL / Included source
Analysis status: Completed
Metrics: Blank lines: 0, Comment lines: 14, Noncomment lines: 207, Number of lines in file: 221
Site: [DSM](#)
Container: NTFS [F:/zOS/DSM/DEVAMI00.CPY.BASE0](#)
Database updated: 2012/05/16 12:11:45 PM by MFOCUSAP

Programs | **Included files** | Batch jobs | CICS transactions | IMS transactions | Programs with errors | User-related assets | **Annotations**

Programs that include file FMPSEG10

Search:

Page 1 of 4

Program	Language	Analysis status	Action	Number of lines in program	Source location
DWB05410	COB	Completed	annotate	1893	F:/zOS/DSM/DEVAMI00.DWT0.BTS.BASE0/DWB05410
FM2B0010	COB	Completed	annotate	10642	F:/zOS/DSM/DEVAMI00.DWT0.BTS.BASE0/FM2B0010
FMB90062	COB	Completed	annotate	3694	F:/zOS/DSM/DEVAMI00.FMT0.BTS.BASE0/FMB90062
FMBS0400	COB	Completed	annotate	8335	F:/zOS/DSM/DEVAMI00.FMT0.BTS.BASE0/FMBS0400

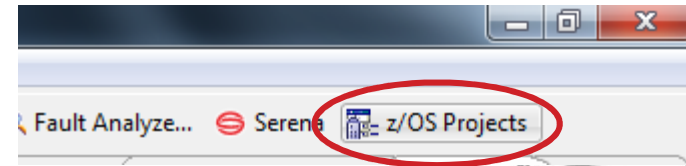
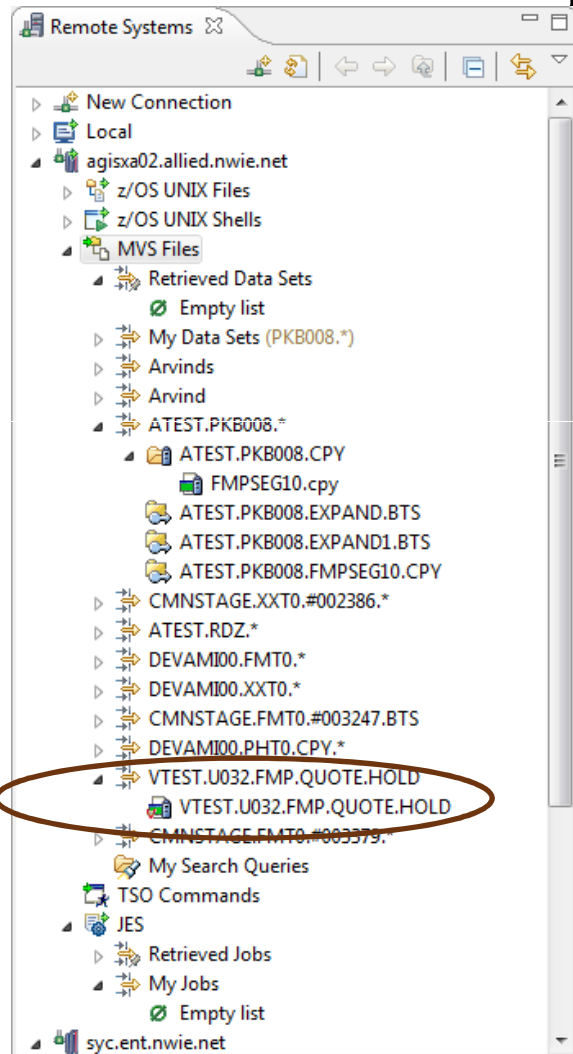
- Found it

Annotation text for File FMPSEG10.

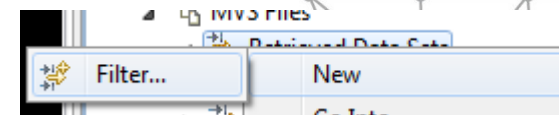
Type	
1ChangeMan Package	DEVAMI00.PHT0.CPY.BASE0
2Changed Date	2009-11-13:03:07:00/PJD031

File Manager: Open a file with a copybook

- Go to the z/OS Projects perspective by clicking the icon



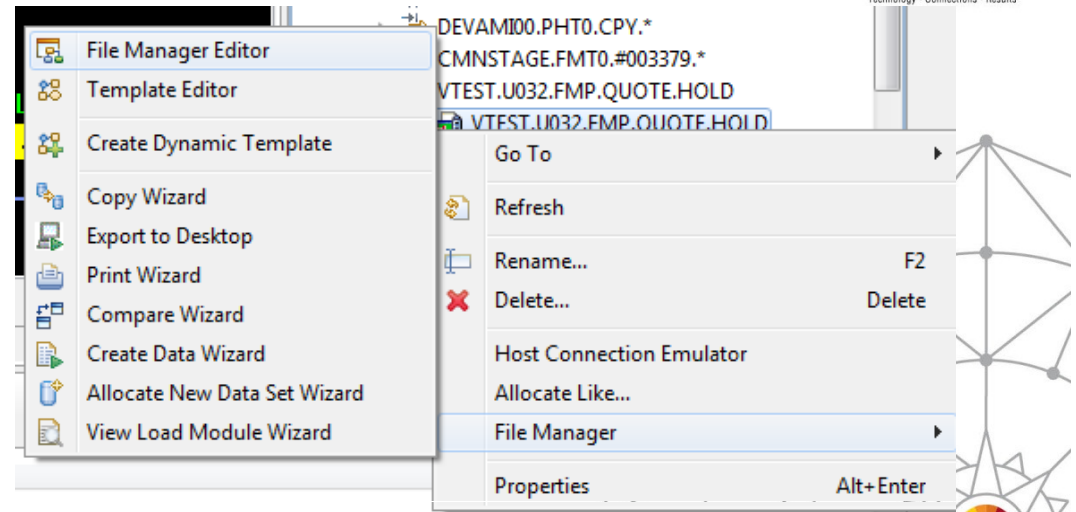
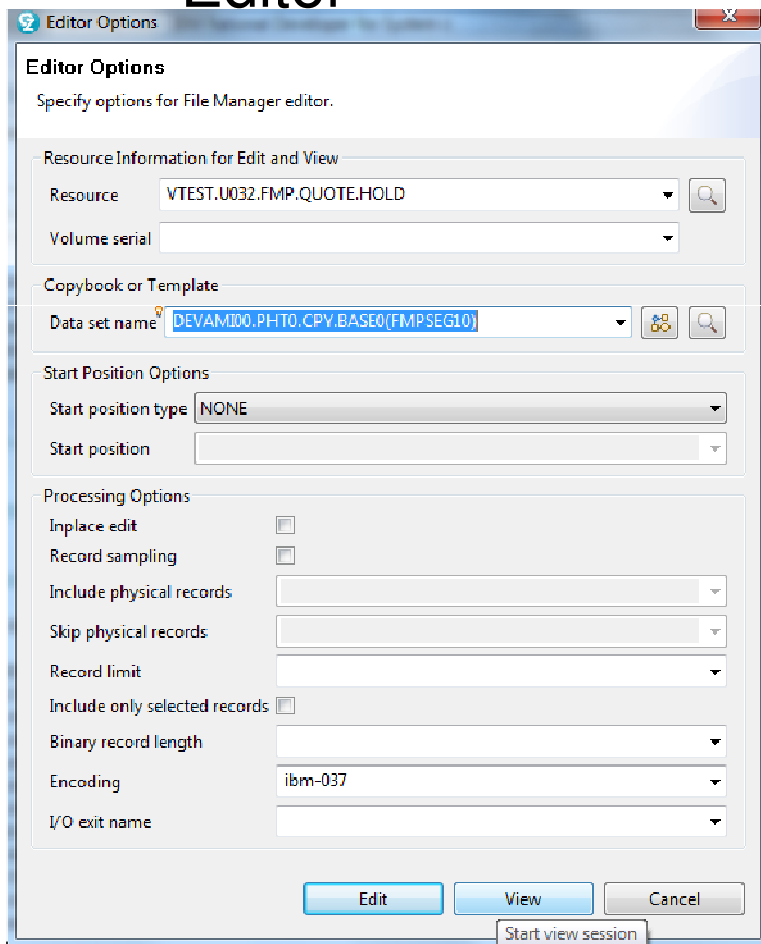
- Find your connection and navigate to MVS files.
- You can set up a filter by right-clicking MVS files (or Retrieved Data Sets) and select New...Filter



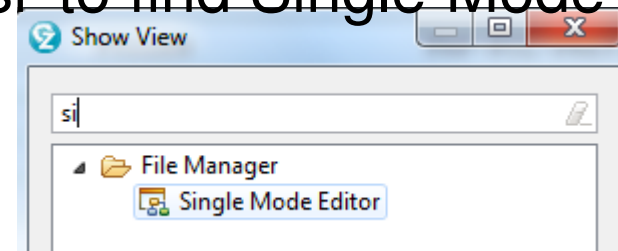
- Paste the DSN name into the Filter String
- Click <Next>
- Paste the DSN and Filter Name field
- Click <Finish>
- You will see the dataset in your list
- Click the arrow to expand the filter to see the dataset
- Right-click the file and select File Manager

File Manager: Open a file with a copybook

- Select File Manager Editor



- Key in the Copybook DSN name (from RAA)
- Click <View>
- Tip: Go to Windows → Show View and type 'si' to find Single Mode Editor



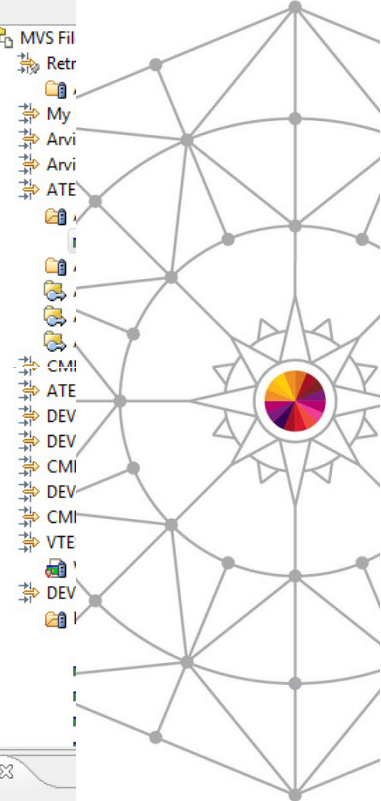
File Manager: Open a file with a copybook



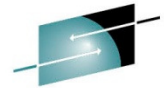
- Opened in editor:

The screenshot shows a file manager interface with a copybook file open in an editor. The editor displays a table with the following columns: FMP-SEGMENT-X10-KEY, FILLER, FMP-POL-PREFIX-A, FMP-POL-PREFIX-B, and FMP-POI. The table contains 19 rows of data, with the 15th row selected. Below the editor is a hex dump view showing the raw data of the selected line.

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
+0	C6	D7	D2	40	C6	D4	D7	40	F7	F1	F0	F0	F1	F0	F5	F0	F	P	K		F	M	P		7	1	0	0	1	0	5	0
+10	F8	F0	00	00	00	0F	01	0F	00	1F	00	0F	00	0F	40	40	8	0	.	.	.	.	.	.	.	.	.	.	.	.	.
+20	C6	D7	D2	40	C6	D4	D7	40	F7	F1	F0	F0	F1	F0	F5	F0	F	P	K		F	M	P		7	1	0	0	1	0	5	0



File Manager: Open a file with a copybook



agisxa02alliednwienet.hce DEVAMI00.FMT0.DM1.BASE0(IFMP434I). agisxa02alliednwienet.hce VTEST.U032.FMP.QUOTE.HOLD

Navigation Cursor Current 3 Total 256

	FMP-SEGMENT-X10-KEY	FILLER	FMP-POL-PREFIX-A	FMP-POL-PREFIX-B	FMP-POI
X 1 =LGTH	.....	.....	....	....	..
X 2 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070			
3	FPK FMP 7100105070.....	FPK FMP 7100105070	FPK	FMP	71
X 4 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070	....	....	.|
X 5 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070	....	....	.I
X 6 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070	....	....	.*
X 7 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070	....	..±.	-D
X 8 =LGTH	FPK FMP 7100105070.....	FPK FMP 7100105070	....	1310	S

Layout FMP-FILE-SEGMENT-X10 Template ATEST.PKB008.CPY(FMPSEG10)

Formatted Mode

Getting Started Remote Error List z/OS File System Mapping Property Group Manager Snippets Remote System Details VTEST.U032.FMP.QUO

Layout FMP-FILE-SEGMENT-X10 Current 3 Total 256 Cursor

Field	Picture	Type	Start	Length	Data
FMP-SEGMENT-X10-KEY	X (32)	AN	1	32	FPK FMP 7100105070.....
FILLER	X (18)	AN	33	18	FPK FMP 7100105070
FMP-POL-PREFIX-A	XXXX	AN	51	4	FPK
FMP-POL-PREFIX-B	XXXX	AN	55	4	FMP
FMP-POL-BRANCH-NUM	XX	AN	59	2	71
FMP-POL-NUM	X (7)	AN	61	7	0010507
FMP-POL-DEC-NUM	X	AN	68	1	0
FMP-RECD-TYPE	9	PD	69	1	7
FMP-TRANS-TYPE	99	PD	70	2	0
FMP-SUB-CODE	9	PD	72	1	1
FMP-MOVE-CODE	9	PD	73	1	0
FMP-TRANS-EFF-DATE	9 (7)	PD	74	4	2013091
FMP-TRANS-SEQUENCE	9 (7)	PD	78	4	82540
FMP-NUM-REVIEWS	9	PD	82	1	2

View Mode **Single Mode** Insert Mode Insert

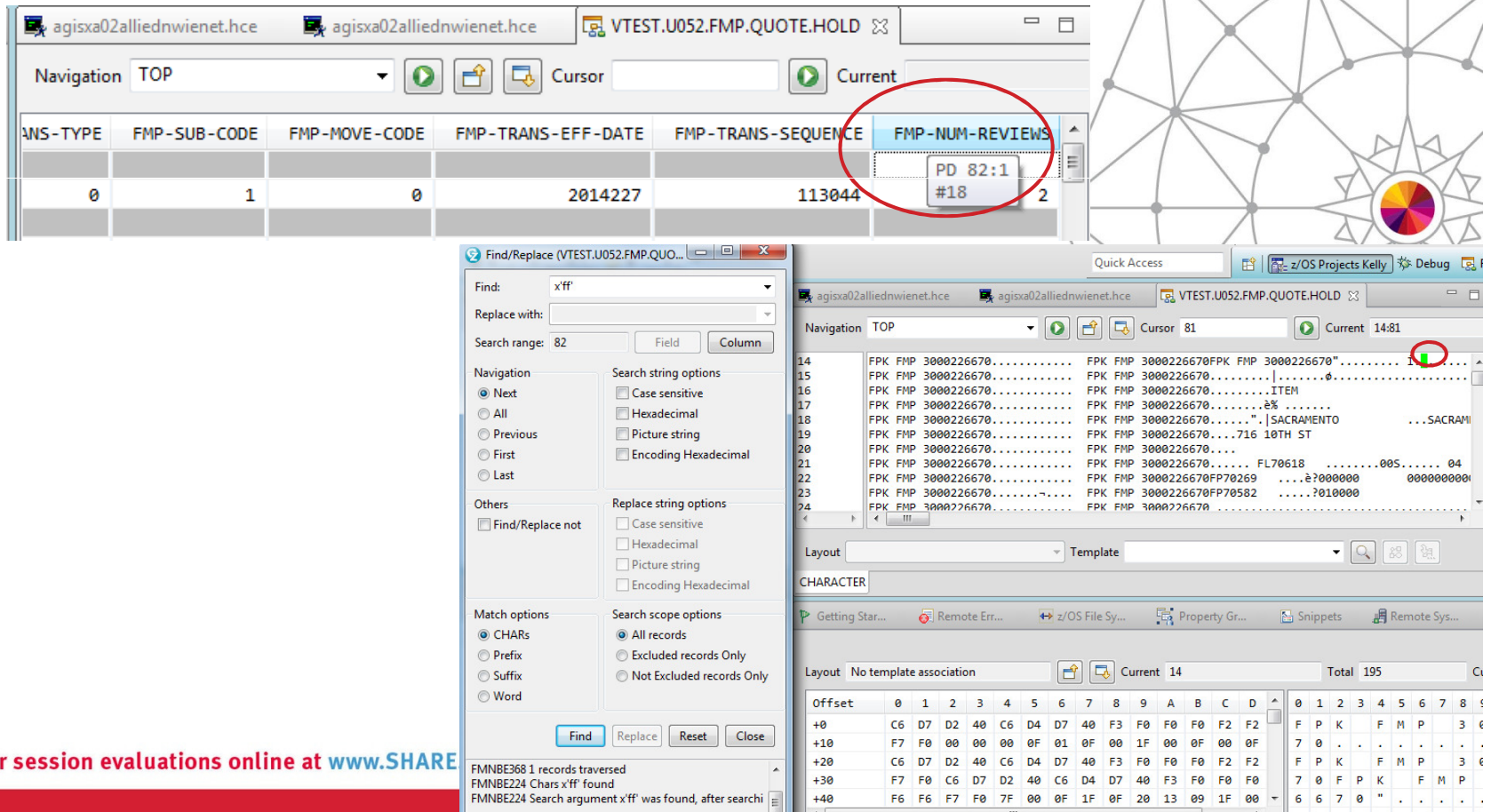
- Select Single Mode →

Complete your session evaluations online at www.SHARE.org/Anaheim-Eval



File Manager: Find the offending record

- Hover over the FMP-NUM-REVIEWS column to get offset
- FIND (CTRL+SHIFT+F) on x'FF' in column 81

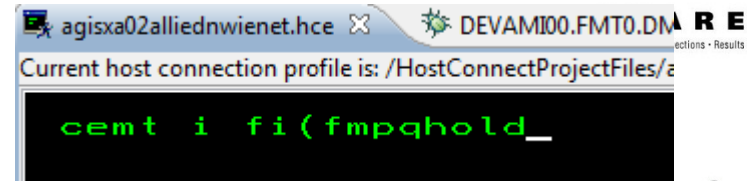


The screenshot displays a file manager window with a table of records. The 'FMP-NUM-REVIEWS' column is highlighted, and a tooltip indicates the offset 'PD 82:1 #18'. A 'Find/Replace' dialog box is open, showing the search criteria 'x'ff'' and 'Search range: 82'. The main window shows a list of records with a red circle around a specific record. At the bottom, a hex dump view shows the data in hexadecimal and ASCII format.

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D		0	1	2	3	4	5	6	7	8	9
+0	C6	D7	D2	40	C6	D4	D7	40	F3	F0	F0	F0	F2	F2		F	P	K		F	M	P		3	€
+10	F7	F0	00	00	0F	01	0F	00	1F	00	0F	00	0F			7	0	.	.	.	.	.	.	.	.
+20	C6	D7	D2	40	C6	D4	D7	40	F3	F0	F0	F0	F2	F2		F	P	K		F	M	P		3	€
+30	F7	F0	C6	D7	D2	40	C6	D4	D7	40	F3	F0	F0	F0		7	0	F	P	K		F	M	P	
+40	F6	F6	F7	F0	7F	00	0F	1F	0F	20	13	09	1F	00		6	6	7	0	"	.	.	.	.	.

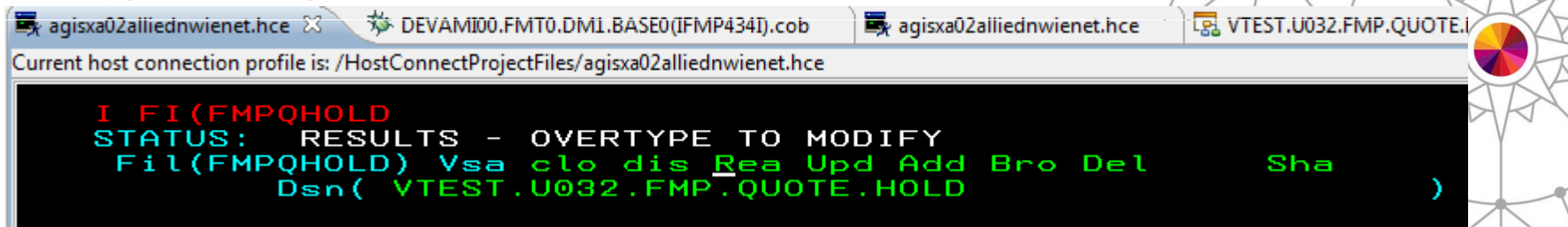
File Manager: Change the Data

- In the CICS region, close and disable the file, type:
- <Enter>



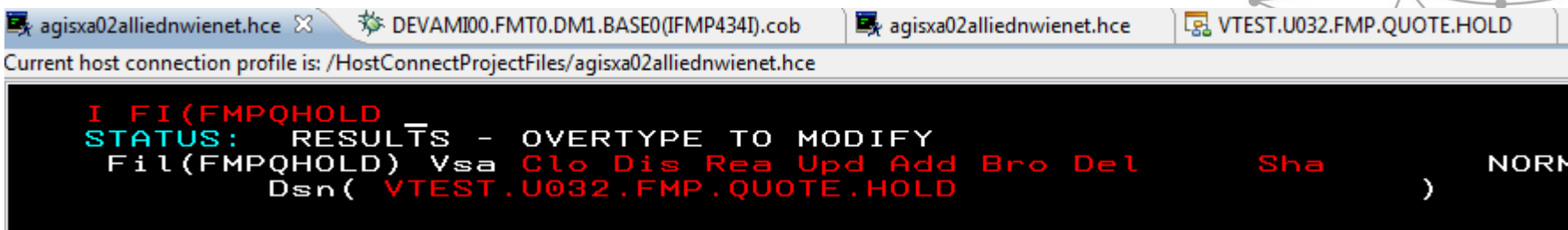
```
agisxa02alliednwienet.hce x DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob RE
Current host connection profile is: /HostConnectProjectFiles/a
cemt i fi(fmpqhold_
```

- Overtyping the Ope Ena with clo dis



```
agisxa02alliednwienet.hce x DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob agisxa02alliednwienet.hce VTEST.U032.FMP.QUOTE.HOLD
Current host connection profile is: /HostConnectProjectFiles/agisxa02alliednwienet.hce
I FI(FMPQHOLD
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(FMPQHOLD) Vsa clo dis Rea Upd Add Bro Del Sha
Dsn( VTEST.U032.FMP.QUOTE.HOLD )
```

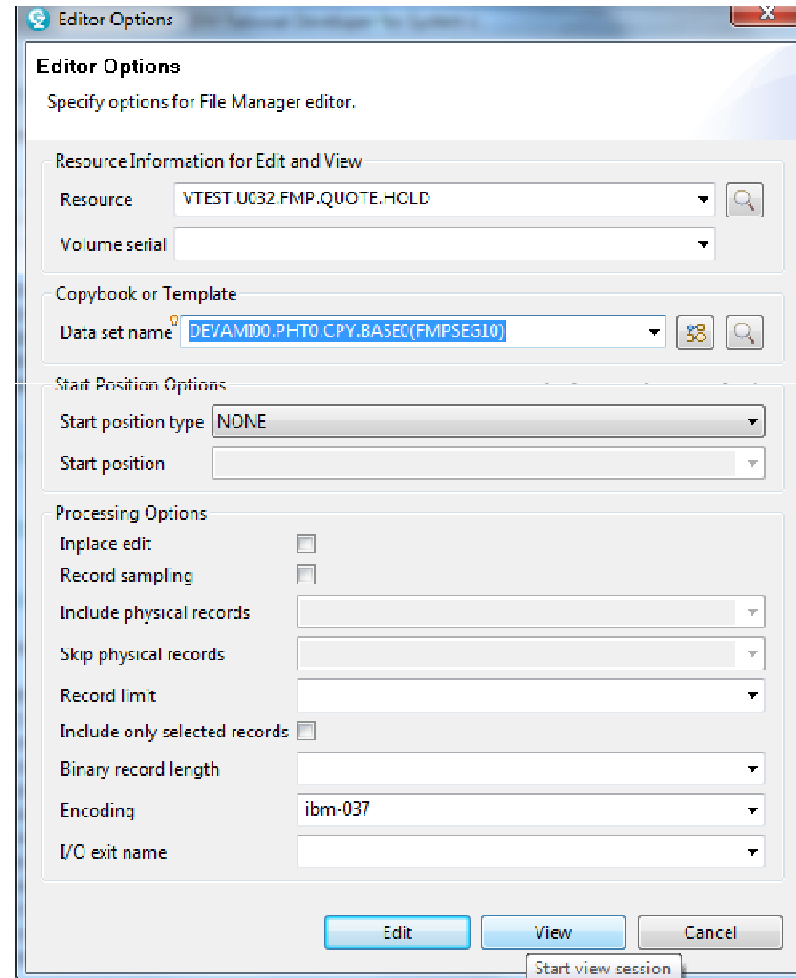
- <Enter>



```
agisxa02alliednwienet.hce x DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob agisxa02alliednwienet.hce VTEST.U032.FMP.QUOTE.HOLD
Current host connection profile is: /HostConnectProjectFiles/agisxa02alliednwienet.hce
I FI(FMPQHOLD
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(FMPQHOLD) Vsa Clo Dis Rea Upd Add Bro Del Sha NORM
Dsn( VTEST.U032.FMP.QUOTE.HOLD )
```

File Manager: Change the Data

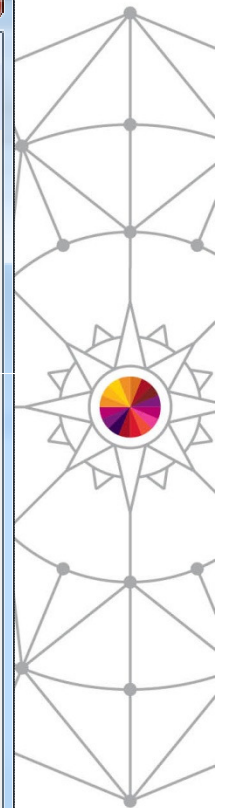
- Open in the file in edit mode
- Right-click the file in the Remote Systems Explorer view
- File Manager → File Manager Editor
- Fill in/select values for Resource & Data set name
- Click <Edit>



The screenshot shows the 'Editor Options' dialog box with the following settings:

- Resource Information for Edit and View:**
 - Resource: VTEST.U032.FMP.QUOTE.HCLD
 - Volume serial: (empty)
- Copybook or Template:**
 - Data set name: DE/AM100.PHTO.CPY.BASEQ(FMPSE610)
- Start Position Options:**
 - Start position type: NDNE
 - Start position: (empty)
- Processing Options:**
 - Inplace edit:
 - Record sampling:
 - Include physical records: (empty)
 - Skip physical records: (empty)
 - Record limit: (empty)
 - Include only selected records:
 - Binary record length: (empty)
 - Encoding: ibm-037
 - I/O exit name: (empty)

Buttons at the bottom: Edit, View, Cancel, and a 'Start view session' button below the Cancel button.



File Manager: Change the Data

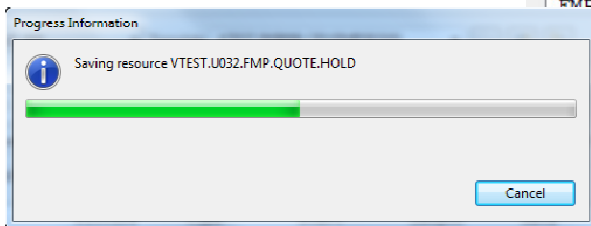
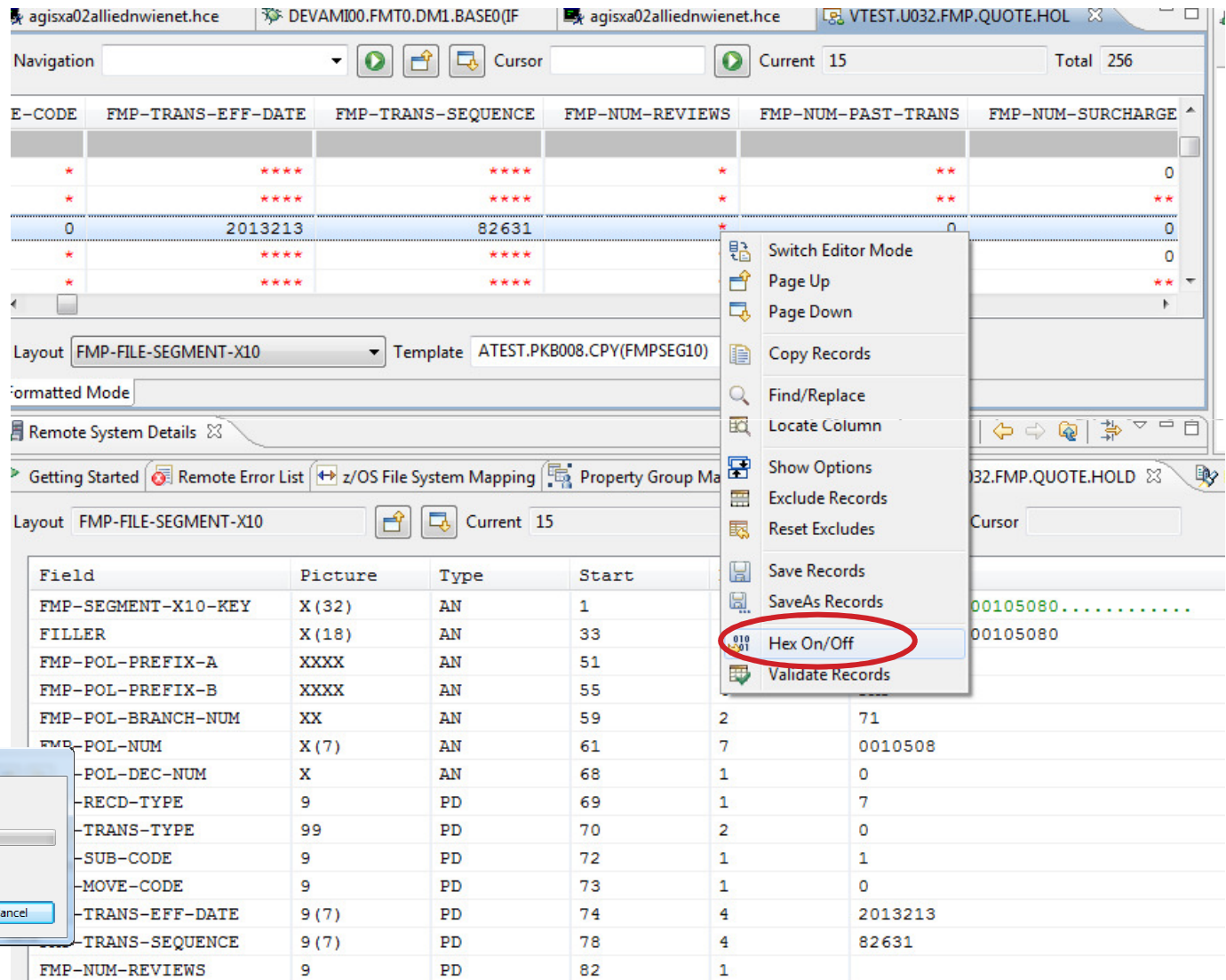
- Right click and select Hex On/Off

82631	*
0861	F
023F	F

- Overtyping to edit

ENCE	FMP-NUM-REVIEWS
2631	*
0861	2
023F	F

- <Ctrl>+S to save**

The screenshot shows the File Manager interface with a data table and a field list. A context menu is open over the data table, with the 'Hex On/Off' option highlighted in red.

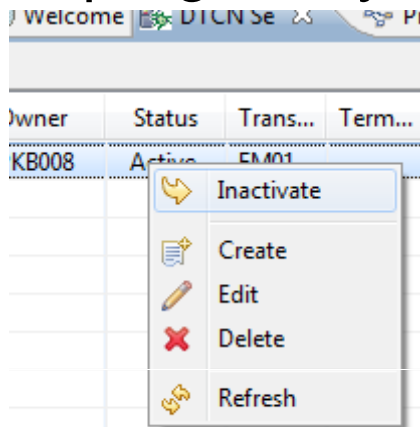
E-CODE	FMP-TRANS-EFF-DATE	FMP-TRANS-SEQUENCE	FMP-NUM-REVIEWS	FMP-NUM-PAST-TRANS	FMP-NUM-SURCHARGE
*	****	****	*	**	0
*	****	****	*	**	**
0	2013213	82631	*	0	0
*	****	****	*	**	0
*	****	****	*	**	**

Field	Picture	Type	Start	End	Value
FMP-SEGMENT-X10-KEY	X(32)	AN	1		
FILLER	X(18)	AN	33		
FMP-POL-PREFIX-A	XXXX	AN	51		
FMP-POL-PREFIX-B	XXXX	AN	55		
FMP-POL-BRANCH-NUM	XX	AN	59	2	71
FMP-POL-NUM	X(7)	AN	61	7	0010508
-POL-DEC-NUM	X	AN	68	1	0
-RECD-TYPE	9	PD	69	1	7
-TRANS-TYPE	99	PD	70	2	0
-SUB-CODE	9	PD	72	1	1
-MOVE-CODE	9	PD	73	1	0
-TRANS-EFF-DATE	9(7)	PD	74	4	2013213
-TRANS-SEQUENCE	9(7)	PD	78	4	82631
FMP-NUM-REVIEWS	9	PD	82	1	

Test



- Tip: If the DTCN profile is still set up to stop in the program, you may want to inactivate:



- Open Enable the file:

```
I FI (FMPQHOLD
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(FMPQHOLD) Vsa Ope Ena Rea Upd Add Bro Del Sha NORMAL
Dsn ( VTEST.U032.FMP.QUOTE.HOLD )
```

- Run the transaction:

```
POLICY FPK FMP 7100010508 DATE 080113 CLAIM
FARM SYSTEM MENU SCREEN

ENTER POLICY INFORMATION: PKG PRFX FPK
POL PRFX FMP
POL NO 71 0 0010508
EFF DATE
DATE RECEIVED 032313
UND APPROVED DATE 032313
PRINT OPTION
RETURN TO PAK? N
PLACE AN 'X' IN FRONT OF THE DESIRED TRANSACTION AND COMPLETE ALL ADDITIONAL
INFORMATION TO THE RIGHT, CORRESPONDING TO THE TRANSACTION.
INQUIRY WORKSHEET
QUOTE QUOTE INQUIRY X
QUOTE UPDATE WORKSHEET
QUOTE TO POLICY
POLICY TO QUOTE
NEW BUSINESS
MANUAL TO AUTOMATED
RENEWAL
AMENDMENTS ADJ IND P
CANCELLATION ADJ IND REASON PRO RATA DATE
REINSTATEMENTS
REMOVE FOR MANUAL
REPRINT FORMS REPRINT TYPE
REVIEW PENDING POLICIES/CHANGES
UPDATE POLICY ON DATA ENTRY FILE
REISSUE
PREFIX TRANSFER
SUMMARY OF AMENDMENTS

CANCEL REASONS ADJ IND REPRINT TYPES PRINT OPTIONS
41 NONRENEWAL (UND) P PRO RATE N NEW BUSINESS A ALL COPIES
42 MID-TERM CANCEL (UND) S SHORT RATE C CONVERSION B INS & AGT COPY
43 NONRENEWAL F FLAT RATE R RENEWAL D ALL EXCEPT
44 CANCEL/REWRITE A AMENDMENT GO COPY
45 NONPAYMENT B BLANK N NO COPIES
46 INSURED'S REQUEST
47 LAPSE PRO RATA DATE: MUST BE ENTERED IF
48 MANAGEMENT DECISION CANCEL REASON 45 OR 47 IS KEYED.

FMP0101
```

YEAH!

```
POLICY FPK FMP 7100010508 DATE 080113 CLAIM
FARM - GENERAL INFORMATION INQRY

INS1 NAME #TESTING
INS2 NAME
STR ADDR 1310 S 14TH ST
CITY ADEL STATE IA ZIP 500031903 TRANSFER CODE
REMARKS N
CLAIMS N

POLICY PERIOD FROM 080113 TO 080114 ORIG EFF DT 080113
AGENT ST VA AGENT NUM 29813 PROD CODE 001 UND ID 001
BILL CODE A PAYOR IND A GROUP NUM SUSP NUM
COMP NUM 001 RATE ST IA REINS IND N
IRPM % MPD? N COMMISSION CONTRIBUTION
REG COMM 12.0 % LPDP FCTR 7.0 % C
FSC COMM DEV %

LIABILITY? Y LIAB ST IA
FARM TYPE FARM NUM MEMOS 00 PRINT OPTN D
CUST TYPE CC
SIC CODE SIC DESC
PREVIOUS POLICY NUMBER

MEMBERSHIP INFO: DISCOUNT? N MEMBER CODE
EARTHQUAKE INFO: INCLUDED? N DEDUCT PCT 00 LIMITED? N
TRANSFER INFO: FACTOR? % NUM YEARS

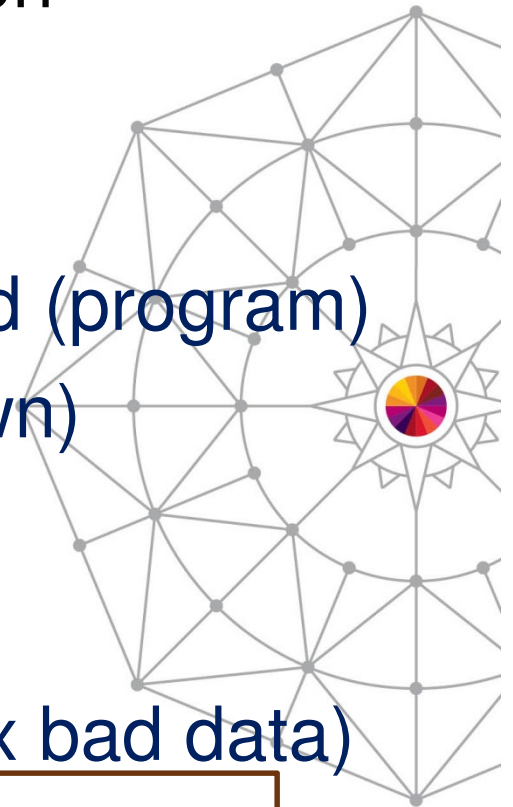
REVIEW INFO: REVIEW 60 REVIEW 050314 IS REVIEW Y
CODE 66 REMOVAL 050318 RECURRING Y
DATE (Y/N)

POL END CITY TAX $ $0.00 POL END CNTY TAX $ $0.00
STATUS INFO LAST ACTIVITY NEXT ACTIVITY NEW/ NO TIMES
DATE CODE PREV CODE DATE TERMID CODE DATE REN RENEWED
08/01/13 J 70010 03/11/13 LW41 N 00

AGENT CATALYST TEST AGENT SURCHARGE/ TOTAL ADDL/RETURN
INFO COLUMBUS VA 35494 ASSESSMENT PREMIUM
AGENT TRFR INFO? N 757 575-7575 $0.00 $ 76,055 $ 0.00
SUR EXEMPT N SURC IND? N
PAK READ ERROR FOR CSC IND
NEXT PANEL NA 001 NA=INSD AI=ADIN LD=LEGL LC=LIAB PR=PROP LH=LOSS FMP0201
```

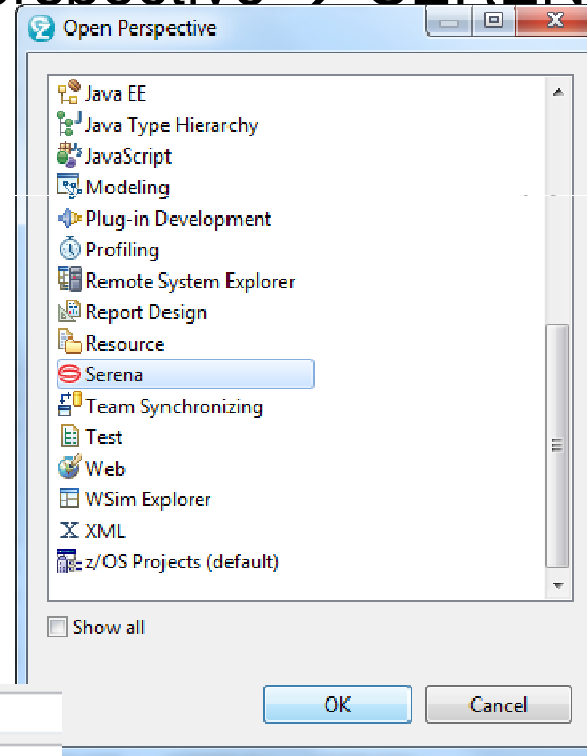
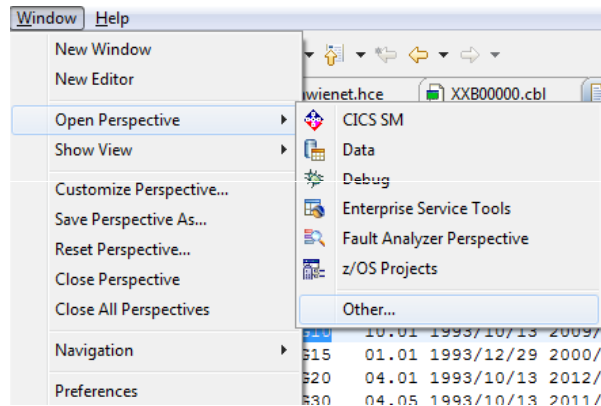
COBOL Mainframe Modernization - DEMO

- ❖ Part 1: RDz Working CICS Transaction
- ❖ Part 2: The ABEND
- ❖ Part 3: Analysis
 - ❖ Fault Analyzer – where it happened (program)
 - ❖ Debug – why it happened (drill down)
- ❖ Part 4: The Fix
 - ❖ RAA – find a copybook for a file
 - ❖ File Manager – view/edit the file (fix bad data)
- ❖ Part 5: What if it requires a code change?
 - ❖ ChangeMan



ChangeMan: Accessing ChangeMan

- If I need to change the code, I have to use ChangeMan
- It is just another perspective: SERENA
- Go to Windows → Open Perspective → SERENA



- TIP: Make sure RDz is pointing to the right server/port. Go to Windows → Preferences → zMFEclipse → Settings:

Web services host:

Web services port:

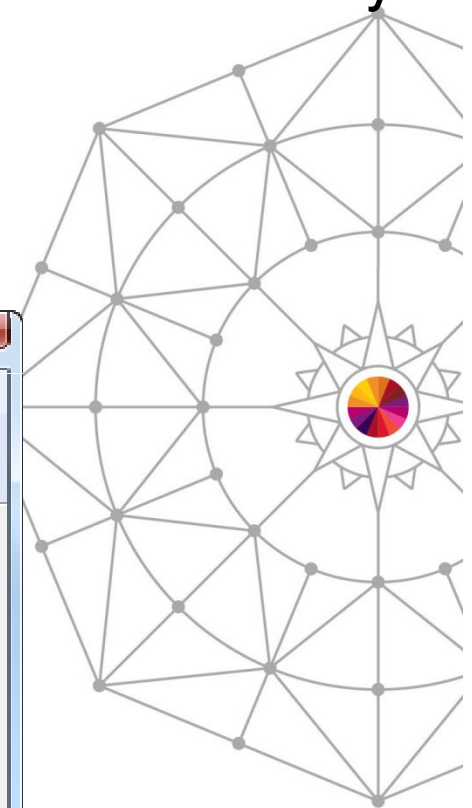
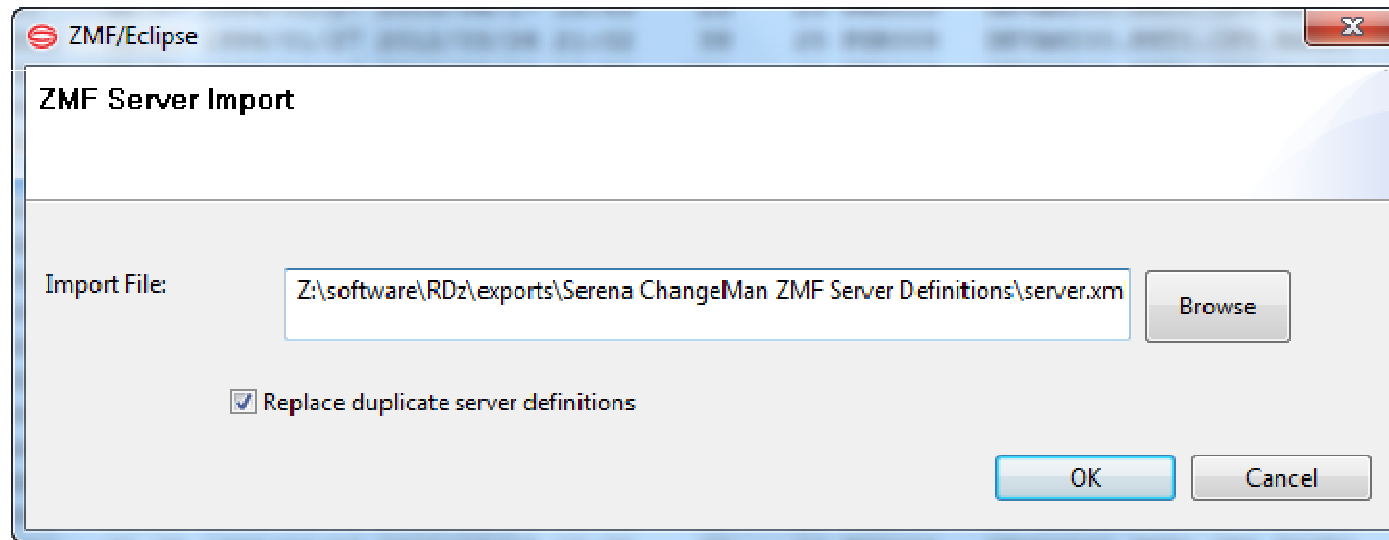
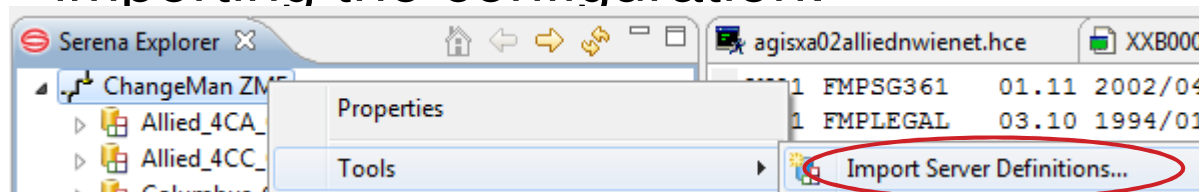
Show Notify Message Dialog

Maintain Job Card for each Server

Prompt for Change Description (if optional)

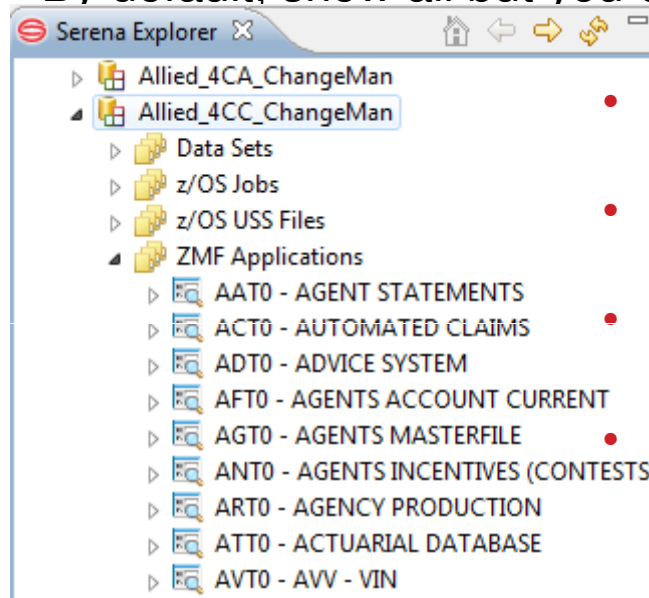
ChangeMan: Accessing ChangeMan

- (if not already done) Quickly set up ChangeMan Servers by importing the configuration:



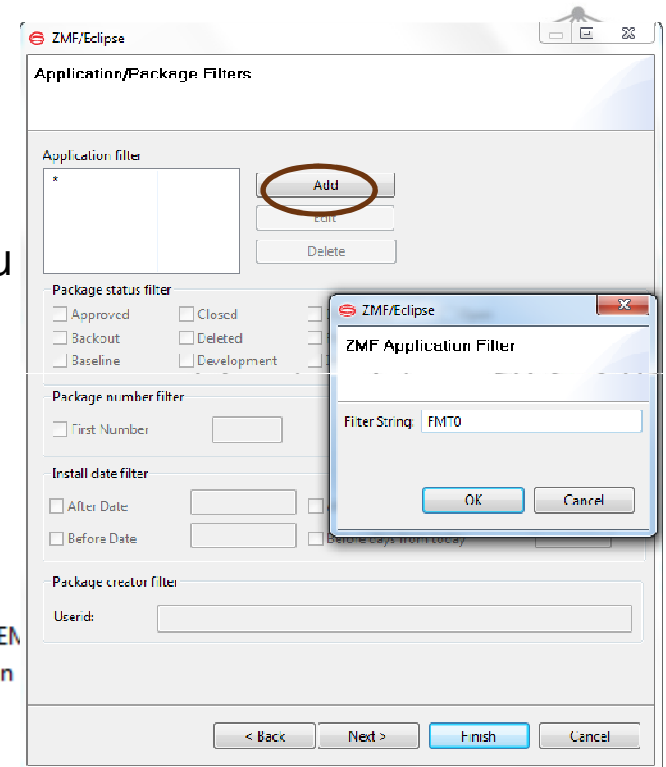
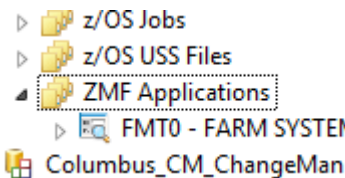
ChangeMan: Filters

- Expand the ChangeMan ZMF Server you need → ZMF Applications
- By default, show all but you can filter

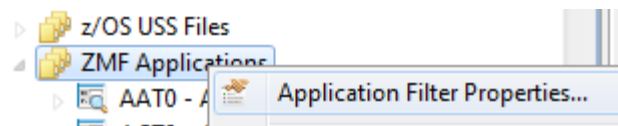


- Add the ChangeMan application
- Tip: Delete the * or you will still get them all!
- Click <Finish>

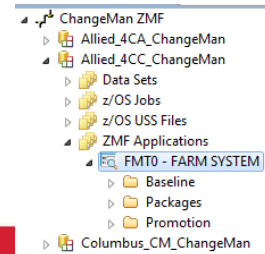
Cleaner:



- Right-click the ZMF Applications folder → Application Filter Properties...

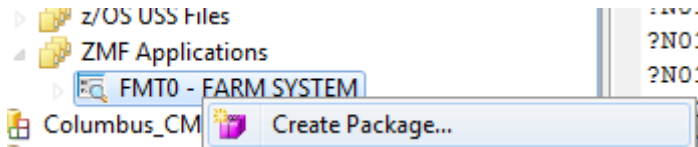


- View all baseline code, packages and promotion (these can be filtered, too)



ChangeMan: Package

- Create a package:



- Click <Next >

Enter Package Description, <Next >
Enter Installation instructions, <Next >

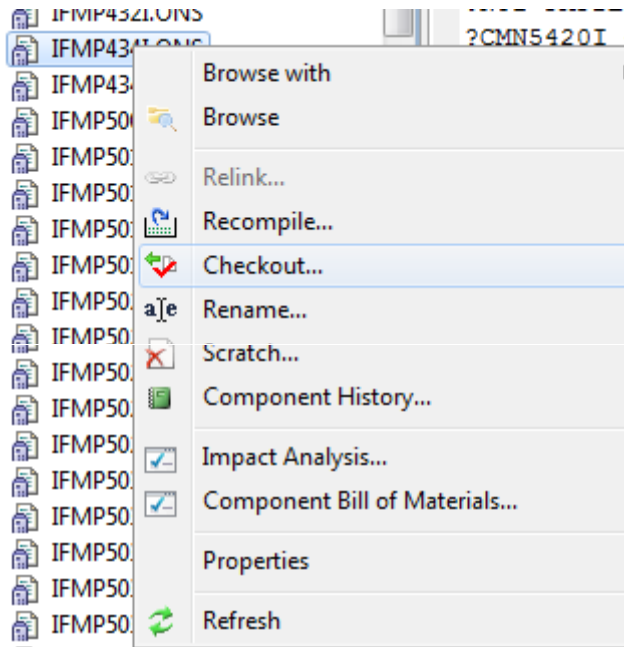
- Enter Site Information
- Click <Add >
- Click <Finish >

Site	Install ...	From...	To Ti...	Primary Contact	Primary Pho...	Secondary Cont...
ALLIED...	20130...	010000	230000	Kelly	95687	Vishnu

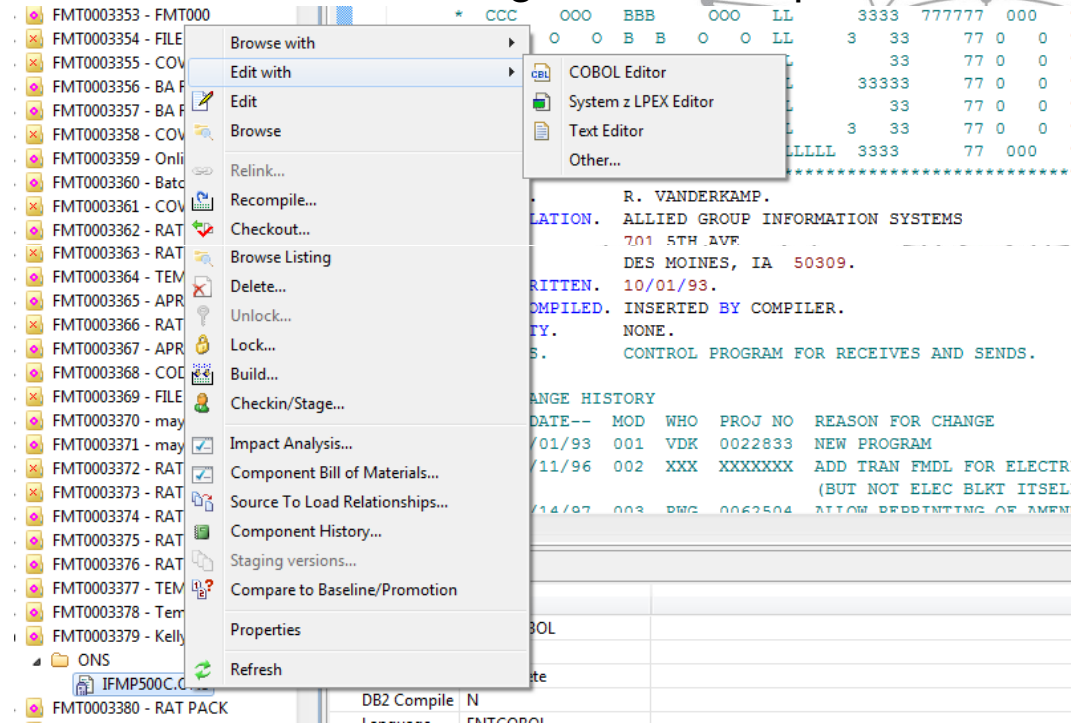
ChangeMan: Members



- Checkout: Baseline → ONS → IFMP434I → Right-click → Checkout



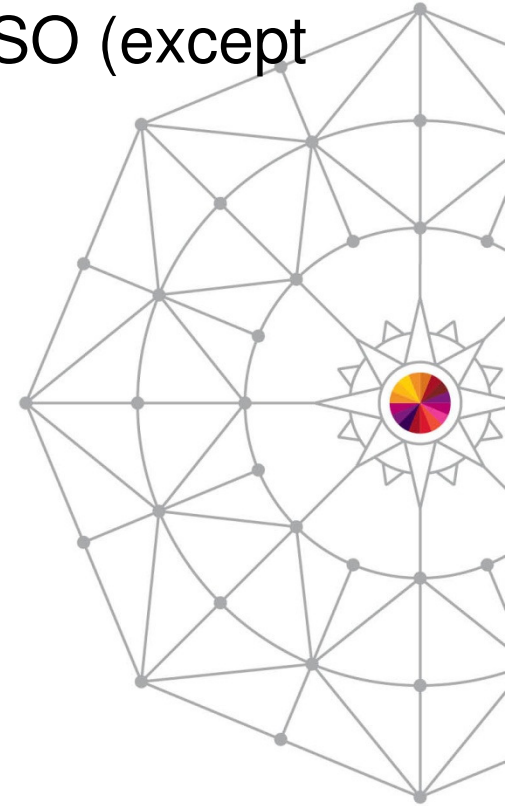
- Modify: Go to package → Folder → source member and right-click for options



ChangeMan: General Usage



- All the same functions available in RDz as TSO (except ERO)
- Right-click and follow the prompts



Recap of a few cool features discussed

- General
 - See more, do more (less swapping, paging) - maximized desktop real estate
 - RSE: No XCOMing files - Drag and Drop – connect to multiple LPARs
 - RSE/MVS Files: Don't have to remember data sets - Filters
 - z/OS ProjectsView: Documentation/Websites - all can be viewed within RDz (no need to ever leave!)
 - z/OS Projects View: Local Development (for specific use cases)
- Analysis
 - Program flow analytics made easy - Visual Program Control via Program Flow feature (also have RAA plug in)
 - Click navigation
 - Search
- Debug
 - Program analysis and navigation
 - All references to occurrences – SUPER COOL
 - See everything – source, outline, breakpoints, monitors, search results, etc & simple click navigation
- Editor
 - Expand/collapse sections/programs – outline navigation
 - Opening a copybook is EASY (don't have to look up library, swap, 3.4, just (highlight <F3>)
 - No more waiting for the compiler for syntax errors - Real-time editor (LPEX)

