



### 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

Nationwide







#### 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)
- <u>www.youtube.com/embe</u> <u>d/ryNtVK55OUY</u>







### 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
  - PDTools (Debug, Fault Analyzer, File Manager, APA)
  - COBOL, Java, XML, C++, Fortran, PL/I
  - z/Linux

6

• Multiple Data Centers, Servers, LPARs Complete your session evaluations online at www.SHARE.org/Anaheim-Eval





### **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 offplatform
- 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



#### S H A R Technology - Connections

### **RDz Adoption Helpers**

- FREE RDz Training (now through Royal Cyber)
- Online resources IBM Education Assistant, You Tube
- 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



- From Pramit 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, SHARE

••• in Anaheim

11 Complement of the second se





## 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...



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

Zerme connection i		
arent profile:	VMCULLIMK	•
łost name:	AGISXA02.ALLIED.NWIE.NET	<b>.</b>
connection name:	AGISXA02.ALLIED.NWIE.NET.DEMO	
escription:		
Z Verify host name	2	

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

• . . • in Anaheim

	🗐 Remote	Systems 🛛	
<b>Open Host emulator</b>	⊳ _≜ Nev	📽 શ   🗇 🔿 Connection	@  = \$\$ 7 @
	⊳ 📑 Loca	al xa02 allied pwie pet	~
<ul> <li>Right-click the connection</li> </ul>		New Go Into	Þ
<ul> <li>Select Host Connection Emulator</li> </ul>	⊳ <b>⇔∭</b> P	Go To	,
🗟 agisxa02alliednwienet.hce 🛛	_ ⊳ <b>411 c</b> ⊑	Open in New Window	
Current host connection profile is: /HostConnectProjectFiles/agisxa02alliednwienet.hce		Show in Table	_
0 DATA CENTER WEST	5	Defeet	
		Ketresh	
	4	Rename	F2
Warning: This system is for authorized use only. Any unauthorized use of or unauthorized access to this system is subject to prosecution. Sustem use must conform with company policies. Activities on this		Copy	Delete
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	4	Move	(X)
Your Workstation's LU Name is: TCP0L00N Time: 06:33:02		Export	X
IP         Address is: 10.56.64.105         Date: 03/24/13           Enter your application name ==>		Import	`
	- 1	Move Up	-7
Host Properties Diost Connection	┙╹	Move Down	
<ul> <li>Tip: Check the Host Properties</li> </ul>		Connect	
and make sure screen size is		Work Offline	/
43x80	•	Change password	_
	DS Search	Host Connection Emula	tor
		Properties	Alt+Enter
Complete your session evaluations online at www.SHARE.org/Anaheim-Eval			SHARE in Anaheim

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

SHARE

 OATA 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 IP Address is: 10.198.207.150 Enter your application name\_===> tpx

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

Time: 12:12:31 Date: 03/20/13

•••• in Anaheim

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

SHARE

0															
@ @ @		0	0	0			0								
00	0	0	0		000		0								
00	@ @	0	0	0	0 0	(	0000								
000000	@@@	0	0	0	00000	0	0								
00	00	0	0	0	0	0	0								
00	@@	00	00	0	0000	6	000								
0000															
0	00	9 @	00	00	0	0	000	@(	<u>a</u> @ @	00	<u>a</u> @	00	0	00	
Q	00	Q	0		0	0	<u>@</u> @	0	Q	00	Q	Q	<u>@</u>	<u> </u>	
0	0	0	000	@@	0	0	0	0	0	0	0	0		@@@@@	
0	0	0		0	0	0	0	0	0	0	0	0	0	0	
@@@@@	0	0	@@@	@@	000	0	0	@(	000	0	0	00	0	000	
									a me	mber	of	Nati	.onw	ide Insuran	ce
Useri	d:		pk	b008	(o	r LO	)GOFF)							12:13:14	
Passw	ord:				_									03/20/13	
New P	asswo	ord:												TCP0L20D	
Accou	nt:									Trans	sfer			3278-4A	
Velcome	to Al	llied	d In	form	ation	Ser	rvices -	Mu	lti-S	essi	on F	acil	.ity		
PF1=H	elp	PF	-3=L	ogo f	f										
Complete y	our sessi	on evalı	ations	online a	at www.SH	ARE.org	g/Anaheim-Eva	ι						•••• In Anano	eim

#### Log on to test region



5 U A D E

	TPX ME	NU FOR PKB008	Panelid	- TEN0041
Cmdkey=PF12/24 Print=NONE	Jump=PA1 Cmdchar= <b>\</b>	Menu=PF4	Model System	- 3278-4A - TPX
<u>Sessid</u>	<u>Sesskey</u>	Session Description	<u>Status</u>	
_ TSOTEST	PF	TSO (Dev LPAR)		
_ CICSPT	PF	CICS Production TOR - E-Mail CICS Test TOR		
_ CICSTY	PF	TSTY0010 AUTOMAX test region		
CICST5 CICSP5	PF	AOR P5CICSPA14		
CICSTA15	PF	Life Model Office - CICS		
_ CICSUA11	PF	Unit Test 11	NZA	
	PF	Unit Test UB00		
_ CICSUC02	PF	Unit Test UC02	NZA	
_ CICSCRT2	PF	CICSCRT2		
TPXADMIN	PF	TPX Administration		

Command ===> \n untau032 PF1=Help PF7/19=Up PF8/20=Down PF10/22=Left PF11/23=Right H =Cmd Help SHAKE







SHARE

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

*****	*****	*****	*****\(R)
*******	*****	*******	*******
**\\\\**\	**\\\	**\\\\**\	**\\\\**\
**\ \\	<b>* *</b> \	**\ \\	**\ \\
**\	**\	**\	******
**\	<b>*</b> * \	** <b>\</b>	******
**\	<b>* *</b> \	**\	\\\\**\
**\ **\	<b>* *</b> \	**\ **\	**\ **\
*******	*****	******	*******
******\\	*****	******	****
11111	11111	111111	111111

•••• in Anaheim

#### **CICS Sign-on command CESN**



cesn	
Complete your cossion avaluations online at your SHAPE arg/Anchoim Eval	



Signon to CICS	APPLID	UNTAU032
Allied NEW UNIT TEST CICS/TS 4.2.0 / Applid UNTAU032 / CPS (	Commercial	
Type your userid and password, then press ENTER:		
Userid <u>pkb008</u> Groupid		
Language	· · · · · · · · · · · ·	
New Password		
DFHCE3520 Please type your userid.		
Complete your session synluctions online at your SHADE arg/Anchoim Evol		n Anaheim

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



SHARE

### Commercial Farm Application – FM00 transaction



SHARE

fm00	
DFHCE3549 Sign-on is complete (Language ENU).	
Complete your session evaluations online at www.SHARE.org/Anaheim-Eval	

#### Farm System Menu Screen – Quote Inquiry



SHARE POLICY DATE CLAIM FARM SYSTEM MENU SCREEN ENTER POLICY INFORMATION: PKG PRFX POL PRFX POL NO 0 0010507 EFF DATE DATE RECEIVED UND APPROVED DATE PRINT OPTION RETURN TO PAK? PLACE AN 'X' IN FRONT OF THE DESIRED TRANSACTION AND COMPLETE ALL ADDITIONAL INFORMATION TO THE RIGHT, CORRESPONDING TO THE TRANSACTION. INQUIRY WORKSHEET OUOTE QUOTE INQUIRY 🗙 OUOTE 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 REPRINT TYPES PRINT OPTIONS ADJ IND 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 CO COPY A AMENDMENT **45 NONPAYMENT** N NO COPIES **B** BLANK 46 INSURED'S REQUEST 47 LAPSE PRO RATA DATE: MUST BE ENTERED IF **48 MANAGEMENT DECISION** CANCEL REASON 45 OR 47 IS KEYED.

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

SHARE •••• in Anaheim





**FUADE** 

•••• in Anaheim

							JHAKE
	POLICY	FPK FMP FAI	7100010507 RM - GENER(	DAT AL INFORMAT	E 040113 ION	CLAIM	INQRY
INS1 NAME	#TESTIN	G					
STR ADDR CITY	1310 S ADEL	14TH ST	STATI	E IA ZIP	500031903	TRANSFER TRANSFER REMARKS	CODE BOOK N
POLICY PER	RIOD FRO	M 040113 T	0 040114	ORIG EFF D	T 040113	CLAIMS	N
AGENT ST BILL CODE	VA A	AGENT NUM PAYOR IND	29813 A	PROD CODE GROUP NUM SUSP AMT	001	UND ID ACCT NUM SUSP NUM	001
COMP NUM IRPM	001 %	RATE ST MPD?	IA N	REINS IND COMMISSION REG COMM FSC COMM D	N CONTRIBUT 12.0 % EV %	TION LPDP FCTR	% C 2.0 % C
LIABILITY? FARM TYPE	Y FARM	LIAB ST	IA	NUM MEMOS	00	PRINT OPTN	D
CUST TYPE SIC CODE PREVIOUS F	CC POLICY N	SIC DESC UMBER					
MEMBERSHIF EARTHQUAKE TRANSFER	P INFO: INFO: INFO:	DISCOUNT? INCLUDED? FACTOR	N N %	MEMBER COD DEDUCT PCT NUM YEARS	E 00	LIMITED?	Ν
REVIEW INF	FO: RE COI	VIEW 60 DE 66	REVIEW 010 REMOVAL 010 DATE	0114 IS R 0118 RECU (Y/N	EVIEW Y RRING Y )		
POL END CI STATUS DATE C 04/01/13	TY TAX S INFO CODE PRES A	\$\$0.00 LAS V CODE 70010	POL EI T ACTIVITY DATE TEI 03/11/13 LU	ND CNTY TAX NEX RMID COD W41	\$ \$0.0 T ACTIVIT E DATE	DO Y NEW/ REN N	NO TIMES RENEWED 00
AGENT CATA INFO COLU AGENT TRFR SUR EXEMPT	ALYST TES JMBUS VA R INFO? I N SUR	ST AGENT N C IND? N	3! 757 575-	5434 7575	SURCHARGE ASSESSMEN \$0.00	EZ TOTAL AD NT PREMIUM \$ 14,533 \$	DL/RETURN PREMIUM 0.00
NEXT PANEL	<u>N</u> A 00	1 NA=INSD	AI=ADIN LI	D=LEGL LC=L	IAB PR=PR	DP 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



#### **Abending transaction – FM00**



			SHARE
_ POLICY FPK FMP 7	100010507 Farm system mei	DATE 040113 NU SCREEN	CLAIM
ENTER POLICY INFORM	MATION: PKG PRI POL PRI	ТХ БРК ТХ БМР	
	POL NO	71 0 0010508	
	EFF DA	TE 040113	
	DATE RECEIV	ED 032213	
UI	ND APPROVED DA	TE 032213	
	RETURN TO DA	UN 72 N	
PLACE AN 'X' IN FRONT OF THE	DESIRED TRANS	ACTION AND COMPLE	TE ALL ADDITIONAL
INFORMATION TO THE RIGHT, CON	RRESPONDING TO	THE TRANSACTION.	
INQUIRY	WORKSHI	EET	
QUOTE	QUOTE	INQUIRY ×	
	WURKSHI		
NEW BUSINESS			
MANUAL TO AUTOMA	TED		
RENEWAL			
AMENDMENTS	ADJ IN		
GHNGELLHTION	HD3 IN	COVERACE REACTIV	ATION DATE
REMOVE FOR MANUAL		GOVERAGE REAGILY	HIGH BHIE
REPRINT FORMS	REPRIN	Т ТҮРЕ	
REVIEW PENDING P	DLICIES/CHANGE	5	
UPDATE POLICY ON	DATA ENTRY FI	LE	
REISSUE			
SUMMARY OF AMENDI	MENTS		
	200		
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 NUNRENEWHL 44 CANCEL / REWRITE	F FLHI RHIE	A AMENDMENT	
45 NONPAYMENT		B BLANK	N NO COPIES
46 INSURED'S REQUEST			
47 LAPSE	PRO RATA DATI	E: MUST BE ENTERE	DIF
48 MANAGEMENT DECISION	CANCEL REASO	N 45 OR 47 IS KEY	
to local recoverable resource	ransaction FM	Tailed with ab	end HSRA. Updates
	ses backed out	•	SHAKE

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

• SHAKE

# **COBOL** Mainframe Modernization - **DEMO**



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  $\rightarrow$  Open Perspective  $\rightarrow$  Fault Analyzer

	<u>W</u> in	dow <u>H</u> elp							
		New Window							
		New Editor		📄 tmp1363969209034.txt 🛛 🖳 agisxa0					
1		Open Perspective	×	٠	CICS SM				
		Show View	►	C.	Data				
		Customize Perspective		轸	Debug				
		Save Perspective As		5	Enterprise Service Tools				
		Reset Perspective		2	Fault Analyzer Perspective				
		Close Perspective			z/OS Projects				
		Close All Perspectives			Other				
		Navigation	×						
	_	Preferences							

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

💐 Default 🖾	🕼 Lookup								Column Config	guration 🤣 🗸 🗖
System Name									 	
Fault History File	e or View									
Fault ID	Job/Tran	User ID	Sys/Job	Abend	I Abend	Job ID	lobname	Username		
Tudit_10	500, Hall	0301_10	5,505	Aberra	1_Abend	100_10	Jobhame	osemane		
•										•



#### 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

🔍 Fault Analyzer Artifact 🛛 🖓 🔂 Navigator 📄 🗖	
Ay	C
FA Artifacts	
Set Encoding	
Delete From View	
Retrieve View Information	
Retrieve Last Accessed History Files	Connection Selection
Add New History File	Select a connection for working with FA artifacts.
Select Connection and click -OK>	Connections agisxa02.allied.nwie.net
<ul> <li>Type History File Name and click <ok></ok></li> </ul>	
New History File	OK Cancel
Speerly instally including	
Host Name agisxa02 allied.nwie.net	
Fistory File Name XA02.JDI FAULT.HIST.CICS	Iip: History file names kept
	on our wiki
CK Cancel	SHARE
Complete your session evaluations online at www.SHARE.org/Anaheim-Eva	•••• in Anaheim

#### **Fault Analyzer: View the files**



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

🕰 Fault Analyzer Artifact 🛛 😤	🗄 Navigator 🛛 🗖 🖳 agisxa02alliednwiene
	Current host connection
<ul> <li>A General FA Artifacts</li> <li>B agisxa02.allied.nwie.net</li> <li>A General History Files</li> </ul>	
👰 XA02.IDI.FAUI	Set Encoding
	Delete From View
	Configure History File Monitor
	Populate/Refresh History File

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

Add new history file:....HIST.CICS: (50%) 🛛 🔤 🕾





1	💂 agisxa02alliedn	nwiene 🛛 🗐 ti	mp1363969209034.tx	t 🛛 🖳 agisxa02a	alliednwiene	R VTEST.U032.FM	IP.QUOTE 🔰 🕅 🕄 I	43631.far 🛛 🎇	2 6		
	Browse Du	mp							<u>^</u>		
	⊖ <mark>Synopsis</mark> Module IFI ⊖ Summary	MP434I, prog	gram IFMP434I,	offset X'3C	AC': CICS a	bend <u>ASRA</u>			-	Technology - Conne	
	A CICS abo	FAULT end ASRA occ	ANALYZH curred in modu	CR SYNO	PSIS program IFM	1P434I at offse	≥t		E		
	A program and indica	-interruptic ates that:	on code 0007	(Data Excepti	on) is asso	ciated with th	his abend			×	
	A decima	al digit or	sign was inva	alid.							
	The abend was caused by machine instruction F870D4783051 (ZERO AND ADD).										
	Recently	referenced (	data items:		Data Item	JUDIAYE					
	Recently : Data It( A + Ad)	referenced ( em	data items:	=0011+05	Data Item TE: Source of because	code informatic no compiler li	. FF "." on for program sting or side	IFMP434I coul file data set	d not be p s were pro	presented byided.	
	Recently : Data Ite	referenced of em dress nt Summary Abe	data items: ••••••••••••••••••••••••••••••••••••	=0011+05 III System Wide Infor	Data Item TE: Source of because	code informatic no compiler li	on for program sting or side-	IFMP434I coul -file data set	d not be p s were pro	presented byided.	
	Recently : Data Ito A Data Ito Main Report Ever	referenced of em dress nt Summary Abe	data items: : BLL= 	System Wide Infor	Data Item DTE: Source of because	formation	on for program sting or side Colu	IFMP434I coul -file data set mn Configuration	d not be p s were pro	presented byided.	
1	Recently : Data Ite A A Main Report Ever CCkel & System Name	referenced of em dress nt Summary Abe Lookup agisxa0	data items: : BLL= : BLL= 	System Wide Infor	Data Item TE: Source of because	code informatic no compiler li	. Fr "." on for program .sting or side- Colu	IFMP434I coul -file data set mn Configuration	d not be p s were pro	oresented ovided.	
(rec	Recently of Data Ite A and Main Report Ever CCkel & System Name Fault History File	em dress nt Summary Abe Lookup agisxa0 e or View XA02.II	data items: : BLL= 	System Wide Infor	Pata Item PTE: Source of because	formation	on for program sting or side Colu	IFMP434I coul -file data set mn Configuration	d not be p s were pro	oresented ovided.	
	Recently : Data It Main Report Ever CCkel & System Name Fault History File	em Areas nt Summary Abe Lookup agisxa0 e or View XA02.II Job/Tran	data items: : BLL= : BLL= : Can end Job Information )2.allied.nwie.net DI.FAULT.HIST.CICS User_ID	System Wide Infor	Data Item DTE: Source of because	formation	on for program sting or side Colu	IFMP434I coul -file data set mn Configuration Jobname	d not be p s were pro	bresented byided.	
(rec	Recently : Data Ite * 24 24 Main Report Ever CCkel & System Name Fault History File Fault_ID F43635	em dress nt Summary Abe Lookup agisxa0 s or View XA02.II Job/Tran PASM	data items: : BLL= : BLL= : BLL= : DLA1 end Job Information D2.allied.nwie.net D1.FAULT.HIST.CICS User_ID STCTA35	System Wide Infor	Pata Item DTE: Source of because mation Misc In Abend AEXY	formation I_Abend AEXY	on for program sting or side Colu Job_ID STC06588	IFMP434I coul -file data set mn Configuration Jobname CID4TA35	d not be p s were pro	bresented byided.	
	Recently : Data Ite * Adv Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634	em	data items: : BLL= : BLL= 	System Wide Infor System Vide Infor CID4TA35 CID4TA35	Paca Icen TE: Source of because rmation Misc In Abend AEXY ASRA	formation I_Abend AEXY ASRA	on for program sting or side Colu Job_ID STC06588 STC06588	IFMP434I coul -file data set mn Configuration Jobname CID4TA35 CID4TA35	d not be p s were pro	bresented byided.	
	Recently : Data Ite A A A Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634 F43633	em	data items: : BLL= : BLL= : BLL= : DICA: : DICA: : DICA: : DICA: : DICA: : DICA: : DICA: 	System Wide Infor System Wide Infor CID4TA35 CID4TA42	Abend ASRA	formation ILAbend AEXY ASRA ASRA	. Fr on for program .sting or side Colu Job_ID STC06588 STC06588 STC06588	IFMP434I coul -file data set mn Configuration Jobname CID4TA35 CID4TA35 CID4TA42	ed not be p s were pro- EXEC_ ^ DFHSI DFHSI DFHSI	bresented byided.	
ble-clic	Recently : Data Itc At Adv Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634 F43633 F43632	em	data items: : BLL= : BLL= : DLCA: end Job Information D2.allied.nwie.net D1.FAULT.HIST.CICS User_ID STCTA35 PMG027 STCTA42 PDH020	System Wide Infor System Wide Infor CID4TA35 CID4TA35 CID4TA35	Abend ASRA ASRA ASRA	formation ILAbend AEXY ASRA ASRA ASRA	on for program sting or side Colu Job_ID STC06588 STC06588 STC06588 STC06588	IFMP434I coul -file data set mn Configuration Jobname CID4TA35 CID4TA35 CID4TA35	d not be p s were pro	bresented byided.	
ble-clic	Recently : Data Ite Ant Adv Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634 F43633 F43632 F43631	em em em em mt Summary Abe Lookup agisxa0 agisxa0 e or View XA02.II Job/Tran PASM PAAD FMWQ PAQQ FM01	data items: : BLL= : BLL= : Dica: end Job Information Dicallied.nwie.net DI.FAULT.HIST.CICS User_ID STCTA35 PMG027 STCTA42 PDH020 PKB008	System Wide Infor System Wide Infor CID4TA35 CID4TA35 CID4TA35 UNTAU032	Abend ASRA ASRA ASRA ASRA	formation ILAbend AEXY ASRA ASRA ASRA ASRA	on for program sting or side Colu Job_ID STC06588 STC06588 STC06588 STC06588 STC06588 STC06588 STC06588 STC06588	IFMP434I coul -file data set mn Configuration CID4TA35 CID4TA35 CID4TA35 CID4TA35 UNTAU032	d not be p s were pro EXEC_ ▲ DFHSI DFHSI DFHSI DFHSI DFHSI DFHSI	bresented byided.	
ble-clic this →	Recently : Data Ite At add Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634 F43633 F43632 F43631 F43630	em	data items: : BLL= : BLL= : DLA1 end Job Information D2.allied.nwie.net D1.FAULT.HIST.CICS User_ID STCTA35 PMG027 STCTA42 PDH020 PKB008 PDH020	System Wide Infor System Wide Infor CID4TA35 CID4TA35 CID4TA35 CID4TA35 UNTAU032 CID4TA35	Abend AEXY ASRA ASRA ASRA ASRA	I_Abend AEXY ASRA ASRA ASRA ASRA ASRA	on for program sting or side Colu Job_ID STC06588 STC06588 STC06588 STC06605 STC06588 STC06617 STC06588	IFMP434I coul -file data set mn Configuration CID4TA35 CID4TA35 CID4TA35 CID4TA35 UNTAU032 CID4TA35	d not be p s were pro	presented byided.	
ble-clic this →	Recently : Data Ite A+ Adv Main Report Ever CCkel & System Name Fault History File Fault_ID F43635 F43634 F43633 F43632 F43631 F43630 F43629	em	data items: : BLL= : BLL= : DLA1 end Job Information D2.allied.nwie.net D1.FAULT.HIST.CICS User_ID STCTA35 PMG027 STCTA42 PDH020 PKB008 PDH020 PSM051	System Wide Infor System Wide Infor CID4TA35 CID4TA35 CID4TA35 UNTAU032 CID4TA35 UNTAU055	Abend AEXY ASRA ASRA ASRA ASRA ASRA ASRA	formation I_Abend AEXY ASRA ASRA ASRA ASRA ASRA ASRA ASRA ASRA	I for program sting or side Colu Job_ID STC06588 STC06605 STC06588 STC06605 STC06617 STC06588 STC06617 STC06588 STC06659	IFMP434I coul -file data set mn Configuration CID4TA35 CID4TA35 CID4TA42 CID4TA35 UNTAU032 CID4TA35 UNTAU032 CID4TA35	d not be p s were pro	bresented byided.	

#### **Debug: Open the perspective**



Window → Open Perspective →
 Debug (or Other...) if Debug not seen

<u>W</u> in	dow <u>H</u> elp		_	
	New Window			
	New Editor		x	📄 IFMP500С.сы 🛛 🖨 Со
	Open Perspective	۲	-	Plug-in Development
	Show View	۲	6	Resource
	Customize Perspective			Other
	Save Perspective As			
	Reset Perspective			
	Close Perspective			
	Close All Perspectives			
	Navigation	F		
	Preferences			

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:



#### **Debug: Set up DTCN profile**



• Right-click anywhere in the DTCN Server Profiles view

Select Create	Ļ					,	$\heartsuit$	Inactivate	L	
	Console	🖉 Tasks	🗔 🖓 🕞	ug Consol	e 📳 Problems	🔣 DTCN Se	(	Create		
	Owner	Status	Trans	Term	Load Module	Compile U	P	Edit	Session Addr	Port
	PKB008	Active	FM01		*	IFMP434I	×	Delete	10.56.64.105	8001
Debug Tool Profiles Management			E		x_)		<u>چي</u>	Refresh		
DTCN profile action choices							-			
										3/
										Y
										MA/
Profile owner user ID: PKB008					_				X	~
									$\times$	
Brofile type:						Click	<	Next>		
Prome type.								K		
DTCN (CICS) preferences										
< Back Ne	ext >	Finish		Cancel						
									SHAR	E
Complete your session evaluations onlin	e at www.Sl	HARE.org/	Anaheir	m-Eval					•••• in Ana	aheim

Debug Tool Profiles Manac	gement			
DTCN pattern matching	I TESOUTCES		Debug: Se	et up DTCN
Resources to debug Transaction Id: FM01 Terminal Id: Load Module and Compile	e Unit (maximum 8 pairs)		<ul> <li>Enter info (Trail</li> <li>Click <next></next></li> <li>(Changed Test</li> </ul>	SHARE nsactio ID, Compile Unit) t Level to ERROR)
Load Module	Compile Unit	Add	<ul> <li><finish></finish></li> </ul>	
	11141-11-11	Edit	😡 Debug Tool Profiles Managemen	ıt 🛛 🗐 🗖 🖂
		Remove	DTCN TEST run-time option	is
User Id: PKR008			Test Type:	TEST
IP Name/Address			Test Level:	ERROR
Commercial			Prompt:	PROMPT
Offset: 0			Session Type:	ТСР 👻
Data:			Session Address or Terminal Id:	10.55.64.105
Container			Port:	8001
Vame:			Commands File	*
Offset: 0			Preference File:	Α
Data:			EQAOPTS File:	
			Other Language Environment Optic	ons:
KVI Debugging: NO				
Profile Status: ACTIVE		•		
			< Back	Next > Finish Cancel
A B	ack Next > Fi	nish Cancel	Eval	•••• In Ananeim

#### **Debug: Run the transaction**



• • • in Anaheim

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



- 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>

💐 agisxa02alliednwienet.hce	🖳 agisxa02alliednwienet.hce	CMNSTAGE.FMT0.#003211.DM1(IF	MP434I) 8
agisxa02alliednwienet.hce CRRDG3011E Source file CMNST Edit Source Lookup Path Change Text File	Agisxa02alliednwienet.hce	CMNSTAGE.FMT0.#003211.DM1(IF ) was not found. mg program could not be found: rriding file 1.DM1(IFMP434I)  Browse OK Cancel	MP434I) &
			$\times$

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



#### **Debug: The Layout**



Image: Streak points         Image: St	日 秋 Debug) 타 Fault Analyze 🤤 Serer Registers Value	1a ጬ 2/OS Projects ⓒ ≪ □ ↓ 및
● Variables & ● Breakpoints â Modules	담 秋 Debug 타, Faut Analyze 😂 Serer Registers Value	na 🙀 z/OS Projects
M= Variables 🔉 🗣 Breakooints 💰 Modules 🔛 Monitors 🔐 Name no local variables are available for the selected stackframe	Registers	
Name  No local variables are available for the selected stackframe	Value	
no local variables are available for the selected stackframe		
• • • • • • • • • • • • • • • • • • •		
	🗅 🔚 Cutline 😂 🛛 📲 📓	0 🗋 🏂 🖉 🗸 🗖 🚺
▲ 	PROGRAM: JFMP4341  DENTIFICATION DIVISION.  C+ ENVIRONMENT DIVISION.  DATA DIVISION.  PROCEDURE DIVISION	
	🔳 🛪 🔆   🗟 🚮 🧲	፼
ench – Debugg	ing zOS	۸ ۳ ۱
	ench – Debugg	Cutine Si Program Jim Participation (Continent Strength S

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

•••• in Anaheim

 Select Examine and click <OK>

S Event Occurred	×	ŋ
The following event has occu	urred:	
CEE3207S The system detect	ed a data exception (System Completion Code=0C7).	
Select which action to take:		
Step into handler		
🔘 Run		
Examine		
Process: 2090552 Program: I	FMP434I	
Thread Name/TID: 1		P/B/
	ОК	
(L		MAN
mpletion Code=0C7).		
point IFMP434I in		
0003CAC at address ble or inconsistent.		
	CHAD	E



Debug Engine Message CEE3207S The system detected a data exception (System i Execution suspended while examining exception from en program IFMP434I at statement 4876 at compile unit offs 1AEF283C. Application environment and data may be uns



Technology · Connections · Results



<ul> <li>Hover</li> </ul>	🗣 agisxa02alliednwienet.hce 🦷 🛯 🖳 agisxa02alliednwien	et.hce 🗇 DEVAMI00.FMT0.DM1.BASE0(IFMP434	41).cob 🖾 📃 🗖	
	Line 4876 Column 33 Insert	Browse		
	+-*A-1-B+2+3+	4	-+8	
	00392 C101-MOVE-REVIEW-INFO.		IFMP434I 🔺	
	00393 IF WORK-SUB > M-GR-NUM-RE	VIEWS	IFMP434I	
	00394 MOVE I-RE		TMP434I	
	00395 ELSE MOVE FMP- MI-GR-	NUM-REVIEWSE EQA2377E Invalid data	MP434I	
	00396		MP4341	
	00398 C101-MOVE-REVIEW-T	Yikes!	EMP434T	
	00399 EXIT.		FMP434I	
	00400		MP434I	
	00401 C105-MOVE-TRAN-INF		FMP434I	Å
	🗣 agisxa02alliednwienet.hce 🛛 🗐 agisxa02alliednwiene	et.hce 🏾 🎋 DEVAMI00.FMT0.DM1.BASE0(IFMP434I	]).cob ⊠ □ □	AB
	Line 4876 Column 1 Insert	Browse		XXXXX
	+-*A-1-B+2+3+-	4+5+6+7	- -+8	
	00392 C101-MOVE-REVIEW-INFO.		IFMP434I 🔺	
	AND TE MODE CHE & M CD MITM DE	UTENC	IFMP434I	AAR
	Show software analysis annotations	M-GR-REVIEW-INFO (WORK-SUB)	IFMP434I	Y
	Show Quick Diff Ctrl+Shif	t+0 w op privrou rupo (uopu oup)	IFMP434I	
		M-GR-REVIEW-INFO (WORK-SUB).	IFMP4341	A A
Add a	Add Breakpoint		TEMD434T	
			IFMP434I	
brookpo	Jump To Location		IFMP434I	
Dreakpo	Run To Location		IFMP434I	
•	Add Bookmark	ANS	IFMP434I	
	Add Tack	1-GR-PAST-TRAN-INFO (WORK-SUB)	IFMP434I	
	Auu Taskiii	VORK-SUB)	IFMP434I	
	00405	TO M-GR-PAST-TRAN-INFO (WORK-SUB)	.IFMP434I	
	00406 00407 CIOS MOUE TRAN INFO EVIT		IFMP4341	
	00407 CIOS-MOVE-IRAN-INFO-EXII.		TEMP4341	
	00409		TFMP434T	
	116517 C110-MOVE-SURCHARGE.		FM002487	
				KE
Complete your session (				Anaheim



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

🖾 Variables 🖾 🗣 Breakpoints 🖞 Modules 😅	Monito	rs li	🐰 Registers 🛛 🐇 🕫	<b>□   ]]</b>	• D	🚳 Welcome 🎼 DTCN Sr
Name	Value					AA
M-GR-NUM-REVIEWS	EQA23	77E I	Invalid data			Monit 🖶 💥 💥
👻 WORK-SUB	00001		Monitor Local Variable	2		
			Change Index Range			Y Y Y
			Monitor Memory	,		
			Change representation	1 <b>)</b>		1 Hexadecimal
					1	2 Decimal
			Select All	Ctrl+A	Ľ	
EQA2377E Invalid data		Đ	Copy Variables	Ctrl+C		Set default representation
			Find	Ctrl+F	LT.	
		⊜.	Change Value			
		-2	change value		$\mu$	
D.cob 🛛 🖓 🖓 🖓 Dutline 🕅			Filter Locals	•		



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

OR

🖳 agisxa02alliednwienet.hce

Column 36

05

05

05

07

Line 2688

116517

- 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

Browse

PIC 9(7)

PIC 9

**PIC 99** 

PIC 99

**PIC 999** 

PIC 999

PIC 9(5)

PIC 999

PIC 9

🖳 agisxa02alliednwienet.hce

Insert

M-GR-NUM-REVIEW:

M-GR-NUM-PAST-TRANS

05 M-GR-POLICY-INFO-SECTION.

07 M-GR-EXTRACT-CODE

M-GR-NUM-SURCHARGE

07 M-GR-AGENT-ID.

09 FILLER

M-GR-TRANS-SEQUENCE

09 M-GR-AGENT-STATE

09 M-GR-AGENT-NUM

M-GR-POLICY-INFO.

M-GR-BATCH-INFO

09 M-GR-AGENT-PROD

09 M-GR-PREMIUM-WRITTEN



📑 agisxa02alliednwienet.hce

Line 4876

00392

00393

in the source

Tip: Double-click your breakpoint to get back



TO M-GR-NUM-REVIEWS,

In Anaheim

Section 2460: MOVE ZEROS

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

Column 39

C101-MOVE-REVIEW-INFO.











#### Navigates to that line in the source:

Occurrences in Comp

View Run As Debug As Profile As Validate Software Analyzer

Team Compare With Replace With Asset Analyzer

agisxa02a	lliednw	ienet.ł	h []	🔩 agis	sxa02al	liednwi	enet.h	1	🎋 DEVA	1MI00	).FMT(
Line	4541	C	Columr	1 55	Iı	isert				E	Brows
+-	*A-1-	-B+	+2	2	+	-3	-+	4-	+	5-	
	*		FLE	ENGTH		(LENG	гн о	F PC	LICY-S	EGME	ENT-Z
	*		INI	TIMG	(1	POLICY	Y-IN	IT)			
	*		ENI	)-EXE	c.						
00189		Call	DFF	HEI1'	usi	ng by	con	tent	x'0c0	2Ъ00	00070
	-	' 404 cont POI	4040' tent x LICY-S	by r 000 EGME	efer 0' by NT-AN	ence i y refe REA en	ADDR eren nd-c	ESS ce E all.	OF POL OLICY-	ICY- INII	-SEGM by
00195											
00196		SET	ADDRE	css o	F FMI	-SEG	-00	то д	DDRESS	OF	POLI
00196		SET	ADDRE	ISS O	F FMI	P-SEG-	-10	TO A	DDRESS	OF	POL
							1.5			07	

- 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 Double-click this translation of an EXEC CICS READ command

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

-		
ilation U	nit	
		V_SEGMENT-AREA' - 25 matches in compilation unit of
	'DEVAI	/IO0.FMT0.DM1.BASE0(IFMP434I).cob'
	4 📄	DEVAMI00.FMT0.DM1.BASE0(IFMP434I).cob (25 matches)
		4 3576: 01 POLICY-SEGMENT-AREA PIC X(26052).
		🕰 4535: - V404040' 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
S II	n	4547; SET ADDRESS OF FMP-SEG-35 TO ADDRESS OF POLICY-SEGMENT-AREA
		4548: SET ADDRESS OF FMP-SEG-30 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
this	$\rightarrow$	4669: Move LENGTH OF POLICY-SEGMENT-AREA to dfhb0020
		6 4672: POLICY-SEGMENT-AREA by reference dfhb0020 by reference
		4710: Move length of POLICY-SEGMENT-AREA to dfhb0020
		6 4713: POLICY-SEGMENT-AREA by reference dfhb0020 by reference

• • • • III Allallelll

- 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





• • • in Anaheim

# **COBOL** Mainframe Modernization - **DEMO**



- 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)
- Preferences type filter text Asset Analyzer General Integrated RAA server > Agent Controller Enable Local Scanning Ant APA Þ RAA Home Asset Analyzer Username Auto Comment **Bidirectional Developme** Password BMS Map Editor D Connection status N/A C/C++ D Remote RAA servers **Client Certificates** COBOL b Host Port Data Management raad.nwie.net 9080 ▲ Debug Tool DTCN (CICS) DTSP (non-CICS) Search

← → ⇒

Add

Remove

Edit

Connection status

Search...

R

Connected, but no sour

Project Run

Now I can search by selecting Search  $\rightarrow$  Search... from the top menu •

루 Remote Search	💱 Remote z/OS Search 👎 Data Model Search 挦 File Search 🥓 z/OS UNIX Subproject	t Scarch 🖗 Asset Analyzer 🔀 EP Scarch 👰 Java Scarch 💯 JavaScript Scarch 🧚 Model Sea	irch 🦻 Plug in Scarch 👭 Test Log Search 🚽
Search String (* Mate	hes any string):		
FMP-NUM-REVIEWS			
Search For		Limit To	,
Program     Data Element		Declarations O Modifications	
Uata Element		References References and Modifications	
Scope			,
Local Projects	Selected Resources Enclosing Projects		
Remote System	raad.nwie.net		Choose
Customize			Search Cancel
Customizen			
			SHARE
<b>C</b> 1		the first sector	in Anahoim
Comple	ate volir session evaluations online at www.SHARF org/A	nanoim-Eval	

#### **RAA:** Where's the copybook? Search View results. 🚳 Welcom <table-of-contents> DTCN S 😽 Progra Search 🔀 Memory F F 👻 🛃 Right-click the copybook name FMP-NUM-REVIEWS: 1 Data Element Occurrences Found ⊿ 🗊 raad.nwie.net and select RAA Details F:/zOS/DSM/DEVAMI00.CPY.BASE0 ▲ A FMPSE<sup>C10</sup> Alt+Shift+W ▶ Show In - FM An Asset details view will open Ð Next Match Ctrl+. 🚳 Welco 🞼 DTCN 🍫 Progr 🔗 Searc 🚺 Memo 🖳 Asset 💈 Previous Match Ctrl+, UMH1818W: Unsupported prowser detected. Use Firetox 3.6, F F Expand All Data element details Actions Select an Action Details P Ctrl+C Copy Data element: FMP-NUM-REVIEWS Type: NUMB × Remove Selected Matches Delete Length physical/logical: 1/1 Level: 3 8 Remove All Matches Initial value: Not initialized Parent: MF-SEG-10 Program: DWB05410 99 Search Again Language/type: COBOL / Included source ← Click FMPSEG10 File: FMPSEG10 Container: F:/zOS/DSM/DEVAMI00.CPY.BASE0 Site: DSM View source (default) Other programs including the file with this declaration Find ► Tip: Expand the view Program (51) Action Language Analysis status Impact Analysis FM2B0010 COB Completed annotate by double-clicking the сов FMB90062 Completed annotate RAA Details FMBS0400 COB Completed annotate FMBS0401 СОВ Completed annotate tab FMNI0300 COB Completed annotate FMO9M000 COB Completed annotate FMP031MC СОВ Completed annotate FMP410MS COB Completed annotate Memo 🔄 Asset 🖂 FMP450MX СОВ Completed annotate FMP531MC СОВ Completed annotate FMP650M0 COB Completed annotate COB FMP704MX Completed annotate FMP705MX COB Completed annotate сов FMP725MX Completed annotate FMP731MX СОВ Completed annotate СОВ FMP736MX Completed annotate FMP831MC СОВ Completed annotate сов



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

annotate

Completed

Completed

FMP900M0

FMP901M0

COB

### **RAA: Where's the copybook?**



#### Click the Annotations tab

🚳 Welcome 👪 DTCN Server Profiles 🗇 Program Control Flow 🔗 Search 🚺 Memory 🗟 Asset details 🕺

	server romes g rio		iony Extractions			
Rational A	Asset Analyzer					
Home	Explore Impa	act analysis Database				
🖾 Context : 🖹 I	tome 📃 File sum	narv 🖹 File details				
4 DMH1818W: Un	supported browser	detected. Use Firefox 3.6, Firefox	x 4, Firefox 5, Inte	ernet Explorer 8, or Internet Explorer 9.		
File details				Actions Select an Activ	0.0	
The uctails				Actions Select an Action	011	
Details						
File:	FMPSEG10					
Language/type:	COBOL / Included so	urce				
Analysis status:	Completed					
Metrics:	Blank lines: 0, Comm	ent lines: 14, Noncomment lines: 207	7, Number of lines in	file: 221		
Site:	DSM					
Container:	NTFS F:/zOS/DSM/DE	VAMI00.CPY.BASE0				
Database updated:	2012/05/16 12:11:45	PM by MFOCUSAP				
Programs Includ	ed files Batch jobs	CICS transactions IMS transaction	ns Programs with e	rrors User-related assets Annotations		
Programs that inclu	de file FMPSEG10					
Search:	<b>N</b>					
🖓   Page 1 of 4	⇒					
Program	Language	Analysis status	Action	Number of lines in program		Source location
DWB05410	СОВ	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	СОВ	Completed	annotate	3694		F:/zOS/DSM/DEVAMI00.FMT0.BTS.BASE0/FMB90062
FMBS0400	СОВ	Completed	annotate	8335		F:/zOS/DSM/DEVAMI00.FMT0.BTS.BASE0/FMBS0400
•	Found it					
	i ound it					
Annotation text	for File FMPSEG	310.				
		Тур	)e			
1ChangeMan Pa	ickage					VAMIOO.PHTO.CPY.BASEO
2Changed Date					200	09-11-13:03:07:00/PJD031
						; JHANE
Complete	vour session e	valuations online at www.	SHARE.org/An	naheim-Eval		•••• in Anaheim



Go to the z/OS Projects perspective by clicking the icon 🔏 Remote Systems 🛛



 Select File Manager Editor

a contor options				
Editor Options				Expor
Specify options for File Mana	ger editor.		-	Print
	-		_	E Com
-Resource Information for Ec	it and View		-	🔒 Creat
Resource VTEST.U032	.FMP.QUOTE.HOLD			Alloc
Volume serial		-	_	🗋 View
Copybook or Template				
Data set name DEVAMI00	PHTO.CPY.BASE0(FMPSEG10)	88 🔍		
Start Position Options			•	Kρ
Start position type NONE		•		1.03
Start position		T		(fro
Processing Options				(
Inplace edit				Clic
Record sampling				
Skin nhyrical records				<b>T</b> !
D UC D			•	Ip;
Include only selected record	tc 🕅			
Binary record length				anc
Encoding	ibm-037			<b>L</b> Ч:
I/O exit name		-		EUI
	Edit View	Cancel		
Complete ver	Start view session			aim Eral



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

si

Editor	



#### • Opened in editor:

💃 agisxa02alliednv	vienet.hce	: 🕉	⊧ DE	VAMI00.FN	/TO.DI	M1.BA	SEO(IFN	/IP434	I).		agisxa	02allie	dnwie	net.hc	e	<u>छि</u> ।	TEST	.U032	.FMP.	QUOT	E.HOL	D 🛛				🖪 Re	mote	e Syst	tem						
Navigation				- 0		•] 🗖	Curs	or				0	Curr	ent 1	5					Total	256				-		*	MVS	S Fil				/	/	1
	FMP-SE	GMENT	-X1	0-KEY				FIL	LER				FME	P-POI	-PRE	CFIX	-A	FMP	-POL	-PRE	FIX-	в	FMP-	-POI				詩 F	Retr	_	1	5		/	
🔕 1 =LGTH																												*					/		
🔇 2 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070												1				파리	Δrvi <sup>™</sup>						1
3	FPK FM	P 710	010	5070			2	FPK	FMP	710	0105	070	FPF	c .				FMP					71					1	Arvi		/	T	1		
🔇 4 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070											-1	-				神	ATE	$\checkmark$			1		
🔇 5 =LGTH	FPK FM	P 710	010	5070			e	FPK	FMP	710	0105	070											.1					6	1						5
🙆 6 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070		•					•				.*								1				
🔇 7 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070						±					٦D					0	1			$\mathbf{Y}$			
🔕 8 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070						131	0				s					4	35		/	1			
🔇 9 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070																6	3		-		1	D	-
🔕 10 =DATA	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070	.×.						F				07					14	S⇒ ∖ CMI		/		_	N	L
🔇 11 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070	FP7	70				269										1	ATE	V			Y	Y	
🔇 12 =LGTH	FPK FM	P 710	010	5070		[ j		FPK	FMP	710	0105	070	FP7	70				582										₩ [	DEV				X	-11	1
🔇 13 =LGTH	FPK FM	P 710	010	5070				FPK	FMP	710	0105	070											•••					⊉ [	DEV	/ \	1		4	$\langle \rangle$	F
🔇 14 =LGTH	FPK FM	P 710	010	5080				FPK	FMP	710	0105	080																*	СМІ́	_	4		/	D	4
🙆 15 =DATA	FPK FM	P 710	010	5080	• • • •			FPK	FMP	710	0105	080	FPF	<				FMP	-				71						DEV		/	/	/		
🔇 16 =LGTH	FPK FM	P 710	010	5080				FPK	FMP	710	0105	080							•				+ L -						CMF	_	-	Ж			
🔇 17 =LGTH	FPK FM	P 710	010	5080				FPK	FMP	710	0105	080											.1					- - - - - - -			/		1		
🔇 18 =LGTH	FPK FM	P 710	010	5080				FPK	FMP	710	0105	080							Í				k.					) 같이 [1]	DEV	/			1		1
🔇 19 =LGTH	FPK FM	P 710	010	5080				FPK	FMP	710	0105	080						±					¬D		-			→I* •	a V	₹.			/	/	
• • • • • • • • • • • • • • • • • • •																			-				-	Þ							/	J	$\vee$		
Layout FMP-FILE	-SEGMEN	T-X10		•	Tem	plate	ATEST	.PKB0	08.CP)	(FMP	SEG10	)	•	<u></u>	88	<u>&amp;</u>	2								_					/		7	$\overline{\langle}$		-
													(		. (												. M		-			/	~	/	
r Getting Started	👀 Kemo	ote Error	List	Z/US I	File Sys	stem N	appin	9	Prop	erty G	roup N	/ianag	er 🗎	Snipp	ets a	E Ke	mote	Syste	m Det	ails L	ST A LE	:51.0	032.FN	VIP.QU	IOTE.	HULL	23	1						/	4
Layout FMP-FILE	-SEGMEN	IT-X10			1	<b>-</b>	urrent	15					Tota	256				Curs	or																
Offset	0 1	2	3	4 5	6	7	8	9	A	В	С	D	E	F	-	0	1	2 3	4	5	6	7 8	9	A	в	C I	DI	E I	Ε						
+0 0	6 D7	D2 4	10	C6 D4	D7	40	F7	F1	FO	FO	F1	FO	F5	FO		F	P	K	F	М	P	7	1	0	0	1 (	0 5	5 0	C						
+10 H	78 FO	00 0	00	00 OF	01	OF	00	1F	00	OF	00	OF	40	40		8	0		0.00	3.55	- 23 (C)	2	<ul> <li>3</li> </ul>	1.5	1	- C	.8								
+20 0	6 D7	D2 4	10	C6 D4	D7	40	F7	F1	FO	FO	F1	FO	F5	FO	-	F	P	K	F	М	P	7	1	0	0	1 (	0 5	5 0	5 <u>(</u>			_		_	
View Mode Dum	p Mode	-	Ins	ert Mode	Insert																									S	H	A	R	E	
	on eva	luati	on	s onlin	o at	14/14/	W SH	AAR	For	σ/A	nah	oim	-Eva	1																		in	Ana	ahe	ir

lavigation		- 💽 🖻 🗔	Cursor	Current 3	Total 256	
	FMP-SEGMENT-	-X10-KEY	FILLER	FMP-POL-PREFIX-A	FMP-POL-PREFIX-B	FMP-POI
1 =LGTH						
2 =LGTH	FPK FMP 7100	105070	FPK FMP 7100105070			
3	FPK FMP 710	0105070	FPK FMP 7100105070	FPK	FMP	71
4 =LGTH	FPK FMP 7100	105070	FPK FMP 7100105070			•1
5 =LGTH	FPK FMP 7100	105070	FPK FMP 7100105070			.I
6 =LGTH	FPK FMP 7100	105070	FPK FMP 7100105070			.*
7 =LGTH	FPK FMP 7100	105070	FPK FMP 7100105070		±.	¬D
8 =T.GTH	FPK FMP 7100	0105070	FPK FMP 7100105070		1310	5

Formatted Mode

🕐 Getting Started 🕢 Remote Error List 🔂 z/OS File System Mapping 👫 Property Group Manager 屆 Snippets 🚛 Remote System Details 🗔 VTEST.U032.FMP.QUO

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







#### 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

📑 agisxa02alli	ednwienet.hce	属 agisxa02alliedn	wienet.hce	VTEST.U052.FMP.QU	OTE.HOLD	¤ 🗋	1		/		$\langle \rangle$	$\left  \right\rangle$		//
Navigation	ГОР	• 0	合 🗔 Curso	or	Curr	rent	-			V	/			
NS-TYPE F	MP-SUB-CODE	FMP-MOVE-CODE	FMP-TRANS-EFF	-DATE FMP-TRANS	SEQUENCE	FMP-N	UM-REVIE	EWS -	/	$\wedge$	4		A	M
0	1	0	201	14227	113044	#	18	2			$\left  \right\rangle$	X		X
			Find/Replace (VTEST.	U052.FMP.QUO 🗖 🗖 📈				(	uick Acces	5		- z/OS Project	s Kelly 🏇 D	Debug 🖪 I
			Find: x'ff'	•	agisxa02al	liednwienet.hc	e 🔜 agisxi	a02alliednwien	et.hce	🗔 VTEST.U	052.FMP.QU	IOTE.HOLD S	3	- 0
			Replace with: Search range: 82	Field Column	Navigation	ТОР	n J	- 0 🖻	Cur	sor 81		Curre	nt 14:81	
			Navigation Next All Previous First Last	Search string options Case sensitive Hexadecimal Picture string Encoding Hexadecimal	14 15 16 17 18 19 20 21 22 22 23	FPK FMP 300 FPK FMP 300	0226670 0226670 0226670 0226670 0226670 0226670 0226670 0226670		K FMP 300 K FMP 300	00226670FP 00226670 00226670 00226670 00226670 00226670 00226670 00226670FP 00226670FP	K FMP 300 ir è% 'SA 716 10T  70269 70582	0226670" EM CRAMENTO H ST 618 200000 201000		
			Others	Replace string options Case sensitive Hexadecimal Picture string Encoding Hexadecimal	Layout	FPK FMP 300	0226670	Temp	K FMP 300	0220070FF 10226670 .		•	<b>,</b> 88 (	► کی
			Match options © CHARs	Search scope options <ul> <li>All records</li> </ul>	P Getting St	ar 🧑 R	emote Err	➡ z/OS Fil	Sy	Property	Gr	Snippets	📕 Remo	te Sys
			Suffix	Not Excluded records Only	Layout No	template assoc	iation		J Current	14		Total	195	C
			© Word	Replace Reset Close	Offset +0 +10	0 1 C6 D7 F7 F0	2 3 4 D2 40 C6 00 00 00	5 6 7 D4 D7 40 0F 01 0F	8 9 F3 F0 00 1F	A B F0 F0 F 00 0F 0	C D 2 F2	0 1 2 F P K 7 0 .	3 4 5 6 F M F	678! P3(
our session eval	uations onli	ne at www.SHARE	FMNBE368 1 records trav FMNBE224 Chars x'ff' for FMNBE224 Search argun	versed und nent x'ff' was found, after searchi	+20 +30 +40	C6 D7 F7 F0 F6 F6	D2 40 C6 C6 D7 D2 F7 F0 7F	D4 D7 40 40 C6 D4 00 0F 1F	F3 F0 D7 40 0F 20	F0 F0 F F3 F0 F 13 09 1	F2 F2 F0 F0 LF 00 ₹	F P K 7 0 F 6 6 7	F M F P K F 0 "	P 3 ( F M P



#### 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>

Editor Options		
Editor Options		
Specify options for File Mana	ager editor.	
- Pessurce Information for Ex	dt and View	
Deseures VTEST 1/02		
Resource Tresholos		
Volume serial	•	
Copybook or Template		
Data set name DEVAMDO	.PHT0.CPY.BASEC(FMPSEG10) - 38 🔍	
Start Decition Ontions		XID
Start position type NONE		XXXXX
Start position type INOINE	· · · · · · · · · · · · · · · · · · ·	A
Start position	· · · · · · · · · · · · · · · · · · ·	KAR
Processing Options		
Inplace edit		
Record sampling		
Include physical records	<b></b>	
Skip physical records	The second secon	
Record limit	<b>•</b>	
Include only selected recor	ds 🔲	
Binary record length		
Encoding	ibm-037 👻	
I/O exit name	-	
	Edit View Cancel	
	Start view session	
	: SH	ARE
val		in Anaheim

#### File Manager: Change the Data



- Right click and select Hex On/Off
   82631
   9861
   F
   923F
- Overtype to edit

0861	2	
023F	<ctrl>+S</ctrl>	tc

save

Saving resource VTEST.U032.FMP.QUOTE.HOLD

Progress Information

	🖈 agisxa02a	lliednwienet.hce	₩ DEV	AMI00.FMT	DM1.BASE0(IF	🖳 🖳 agisxa02alliednw	/ienet.	nce	🕵 VTEST.U032.FN	IP.QUOTE.HOL
	Navigation			• 💽	合 🗔 Cursor		0	Current	15	Total 256
1	E-CODE	FMP-TRANS-EFF-	DATE	FMP-TRA	ANS-SEQUENCE	FMP-NUM-REVIE	WS	FMP-NU	M-PAST-TRANS	FMP-NUM-SURCHARGE
ļ										
	*		****		****		*		**	0
	*		****		****		*		**	**
	0	201	3213		82631			Switch	Editor Mode	0
			****		****			Dage II		0
4	(							Page D	P	
Ì							- ~	Fage D	own	
	Layout FN	IP-FILE-SEGMENT-X10	)	▼ Te	emplate ATEST.PK	B008.CPY(FMPSEG10)		Copy R	ecords	
1	ormatted N	lode					Q	Find/Re	eplace	
1	Bernete C	urtam Dataila					BO	Locate	Column	
-	g Kentote s	ystem betails to								
3	Getting S	tarted 👩 Remote Err	ror List	<table-cell-rows> z/OS File</table-cell-rows>	System Mapping	🙀 Property Group M	la 🗄	Show C	ptions	132.FMP.QUOTE.HOLD
			<u>,</u>					Exclude	Records	
	Layout Fiv	IP-FILE-SEGIVIEINT-ALC	0				5	Reset E	xcludes	Cursor
	Field		P	icture	Туре	Start		Save Re	ecords	
	FMP-SI	EGMENT-X10-KEY	х	(32)	AN	1	8	SaveAs	Records	00105080
	FILLE	R	х	(18)	AN	33	010	Hex On	/Off	00105080
	FMP-P	OL-PREFIX-A	XX	xx	AN	51		Validate	a Records	
	FMP-P	OL-PREFIX-B	XX	XXX	AN	55	-	validate		
	FMP-P	OL-BRANCH-NUM	XX	C C	AN	59	2		71	
	EMD-P	OL-NUM	х	(7)	AN	61	7		0010508	
	-P	OL-DEC-NUM	х		AN	68	1		0	
	-RI	ECD-TYPE	9		PD	69	1		7	
	-T	RANS-TYPE	99	э	PD	70	2		0	
	-51	UB-CODE	9		PD	72	1		1	
	-M	OVE-CODE	9		PD	73	1		0	
IN	cel -Ti	RANS-EFF-DATE	9	(7)	PD	74	4		2013213	
	T	RANS-SEQUENCE	9	(7)	PD	78	4		82631	
	FMP-N	UM-REVIEWS	9		PD	82	1			

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

•••• in Anaheim

#### Test



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

) Welcome 📷 DTCN Se 🐹 🖓 Pr



# **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

New Window     New Editor     Open Perspective     Show View     Customize Perspective     Save Perspective As     Reset Perspective     Close All Perspective     Close All Perspectives     Navigation     Preferences      TIP: Make a     the right ser     Windows →     zMEEclipse	<ul> <li></li></ul>	Tools spective 710/13 20097 712/29 2000/ 710/13 2012/ 710/13 2012/ 710/13 2011/ S pointing to 30 to es $\rightarrow$ S	<ul> <li>Java EE</li> <li>Java Type Hierarchy</li> <li>JavaScript</li> <li>Modeling</li> <li>Plug-in Development</li> <li>Profiling</li> <li>Remote System Explorer</li> <li>Report Design</li> <li>Resource</li> <li>Serena</li> <li>Team Synchronizing</li> <li>Test</li> <li>Web</li> <li>WSim Explorer</li> <li>XML</li> <li>z/OS Projects (default)</li> </ul>	
Ne Ne ▼ Complete your session ev 7	eb services host: eb services port: Show Notify Messa Maintain Job Card Prompt for Chang	syc.ent.nwie.net 3317 age Dialog for each Server	OK Cancel	SHARE in Anaheim



#### ChangeMan: Accessing ChangeMan

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

🗐 XXB000

🟠 🗇 🌩 🧬 🗖 🗖 🖪 agisxa02alliednwienet.hce

<ul> <li>▲ ChangeMan ZI</li> <li>▷ </li> <li>▲ Allied_4CA</li> <li>▷ </li> <li>▲ Allied_4CC</li> </ul>	Properties Tools	1         FMPSG361         01.11         2002/04           1         FMPLEGAL         03.10         1994/01           Import Server Definitions	
S ZMF/Eclipse			
ZMF Server Import			
Import File: Z	:\software\RDz\exports\Serena ChangeM	Ian ZMF Server Definitions\server.xm Browse	
Replace duplicate server definitions      OK      Cancel			



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

😂 Serena Explorer 🙁



#### **ChangeMan: Filters**

#### • Expand the ChangeMan ZMF Server you need $\rightarrow$ ZMF Applications



	Package Description Description.	-
Change Many Deckers		
Changeman: Package	Package Description:       Enter Installation	
J J		1
	Technology - Connections - Result	.5
Creata a paakaga:	ABeck Next > Devicement for the former	_
• Create à package.		
Z/OS USS Files	Contingency Scheduler	
ZMF Applications 2N01	Contract on the contact on the	
Column CM	Enter Site	
• Click <next></next>		
S ZMF/Eclipse - Package Create		
Package General Information		_
		37
Package title Kelly Cullimore RDz Test	S ZMF/Eclipse - Package Create	_
Application: FMT0 Package level: Simple	DP Site Information Page	
Requestor name: Kelly Cullimore Work request ID: C0000		
Requestor phone: 6142495687 Department: XXT0	Site: Install date: From time: To time:	
	ALLIED00 - 20130325 01.0000 230000	
Create using quick method	Primary contact: Primary phone:	
Urplaned change     Urplaned change     Temperature days	Kelly 95687 Add	
E remporary change	Secondary contact: Secondary phone:	
	Vishnu 95687 Remove	
	Install sites:	
< Back Next > Finish Concel	d Site Install From To Ti Primary Contact Primary Pho Secondary Cont	
	ALLIED 20130 010000 230000 Kelly 95687 Vishnu	
Complete your session evaluations online at www.SHARF.org/Anal	aheim-Eval	
complete your session eratuations onthic at ministrateiors/Anal	< Back     Next >     Einish     Cancel	

#### **ChangeMan: Members**



• Checkout: Baseline  $\rightarrow$  ONS  $\rightarrow$  IFMP434I  $\rightarrow$  Right-click  $\rightarrow$  Checkout



Modify: Go to package  $\rightarrow$  Folder  $\rightarrow$ source member and right-click for options FMT0003353 - FMT000 000 BBB 000 LL 3333 777777 000 0 ОВВ 0 O LL 3 FMT0003354 - FILE 33 77 0 0 Browse with 77 0 FMT0003355 - COV 33 Edit with COBOL Editor FMT0003356 - BA F 33333 77 0 0 FMT0003357 - BA F 🖉 System z LPEX Editor Edit 33 77 0 0 D. 33 77 0 0 Text Editor 3 Browse FMT0003358 - COV LLL 3333 77 000 FMT0003359 - Onli Other... Relink. FMT0003360 - Batc R. VANDERKAMP. FMT0003361 - COV 🔛 Recompile... ALLIED GROUP INFORMATION SYSTEMS ATION. FMT0003362 - RAT 🐄 Checkout.. 7.01 5TH AVE FMT0003363 - RAT Browse Listing DES MOINES, IA 50309. FMT0003364 - TEM Delete... ITTEN. 10/01/93. X FMT0003365 - APR MPILED. INSERTED BY COMPILER. Unlock.. FMT0003366 - RAT NONE . TY. FMT0003367 - APR 👌 Lock... CONTROL PROGRAM FOR RECEIVES AND SENDS. FMT0003368 - COE 🛃 Build.. FMT0003369 - FILE 🤱 ANGE HISTORY Checkin/Stage... 💁 FMT0003370 - may DATE-- MOD WHO PROJ NO REASON FOR CHANGE 💁 FMT0003371 - may 🗾 🛛 Impact Analysis... 01/93 001 VDK 0022833 NEW PROGRAM FMT0003372 - RAT Component Bill of Materials. 11/96 002 XXX XXXXXX ADD TRAN FMDL FOR ELECTE (BUT NOT ELEC BLKT ITSEI FMT0003373 - RAT 66 Source To Load Relationships.. DMC 0062504 FMT0003374 - RAT Component History.. 5 FMT0003375 - RAT Staging versions... FMT0003376 - RAT FMT0003377 - TEM Promotion FMT0003378 - Tem BOL Properties i 💁 FMT0003379 - Kelly a 
in ONS 🥏 Refresh IFMP500C.C DB2 Compile N FMT0003380 - RAT PACK ENITCORO 1 ------



#### 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
    - Åll 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)

