

# IBM System z Technology Summit



## Revitalizing Your (CICS) Applications Part 2 - Extending the reach of CICS



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## Session 3. Abstract

- **If you want to identify applications that can be easily extended to act as Web services, CICS Tools such as CICS Interdependency Analyzer can be used to identify those applications that may benefit most from being extended into new business processes while CICS Performance Analyzer can be used to ensure and check that your system is still working in an optimum way. If you are interested in opening your key CICS data to a wider range of applications, we have a tool to migrate your VSAM data to DB2 without modifying your CICS or batch programs. In this session, we will cover these and other scenarios including a look at a rich IDE to develop new or extend existing programs for CICS in a range of application styles.**

# Agenda

- **Understanding application relationships**
- **Performance analysis for application developers**
- **Non-invasive DB2 migration**
- **A development platform for z/OS and its sub-systems**
- **Managing web service meta data**
- **Rule enablement for COBOL applications**

# Revitalizing CICS Applications



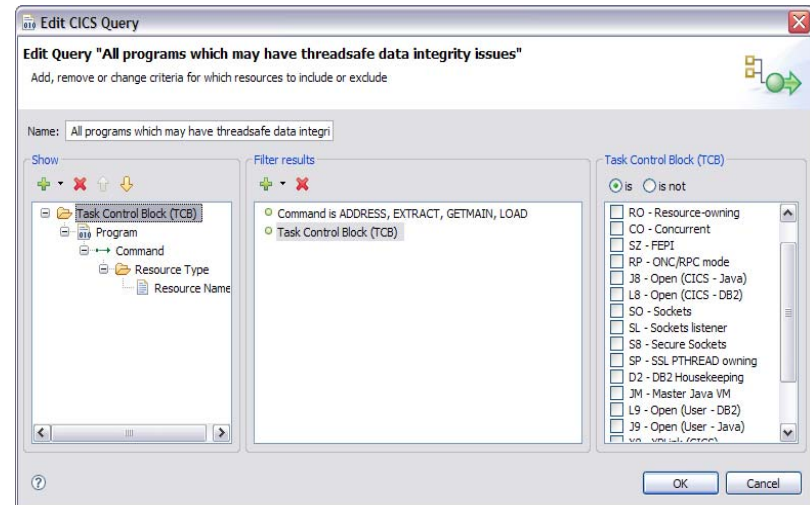
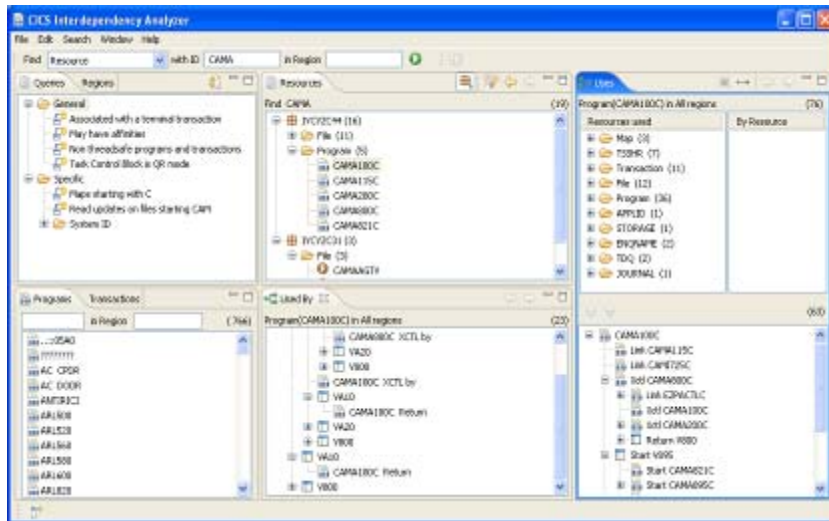
**Understanding application relationships  
and performance**



# Application Insight

## CICS Interdependency Analyzer

Need to extend existing CICS applications



### Solution:

- CICS IA collects key relationship data
- CICS Explorer plug-in provides insight:
  - Using Programs as Web services
  - Locating Business Event sources
  - Identifying Atom feeds, thread-safe programs
  - Programs using files, message queues, and database tables
  - Command Flows, Natural and Adabas, etc etc

### Value:

- Reduced risk of problems changing complex applications when under time pressure or without deep CICS skills
- Bring new staff up to speed more quickly
- Deliver situational applications to broader user community

# What is CICS Interdependency Analyzer ?

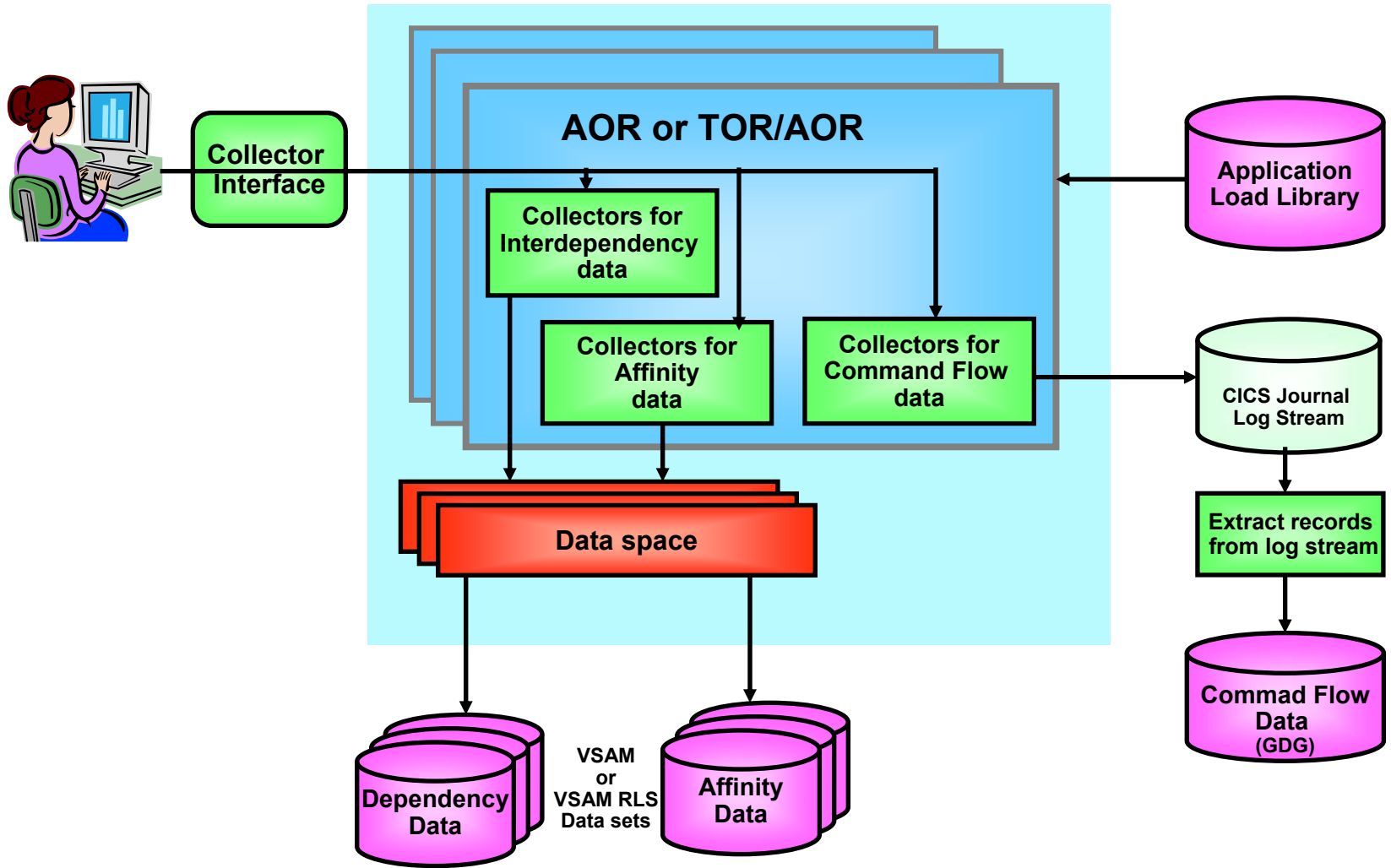
- **CICS Interdependency Analyzer for z/OS**
  - Run-time tool for use with CICS TS for z/OS
  - Identifies the sets of resources used by CICS transactions, and their relationships to other resources
  - Consists of,
    - run-time collector
    - query interface
    - batch reporter
    - load module scanner
    - CSECT scanner
    - CICS IA plug-in for CICS Explorer
  
- **Program Product - 5655-U86**
  - Not part of CICS Transaction Server for z/OS

# CICS IA Benefits

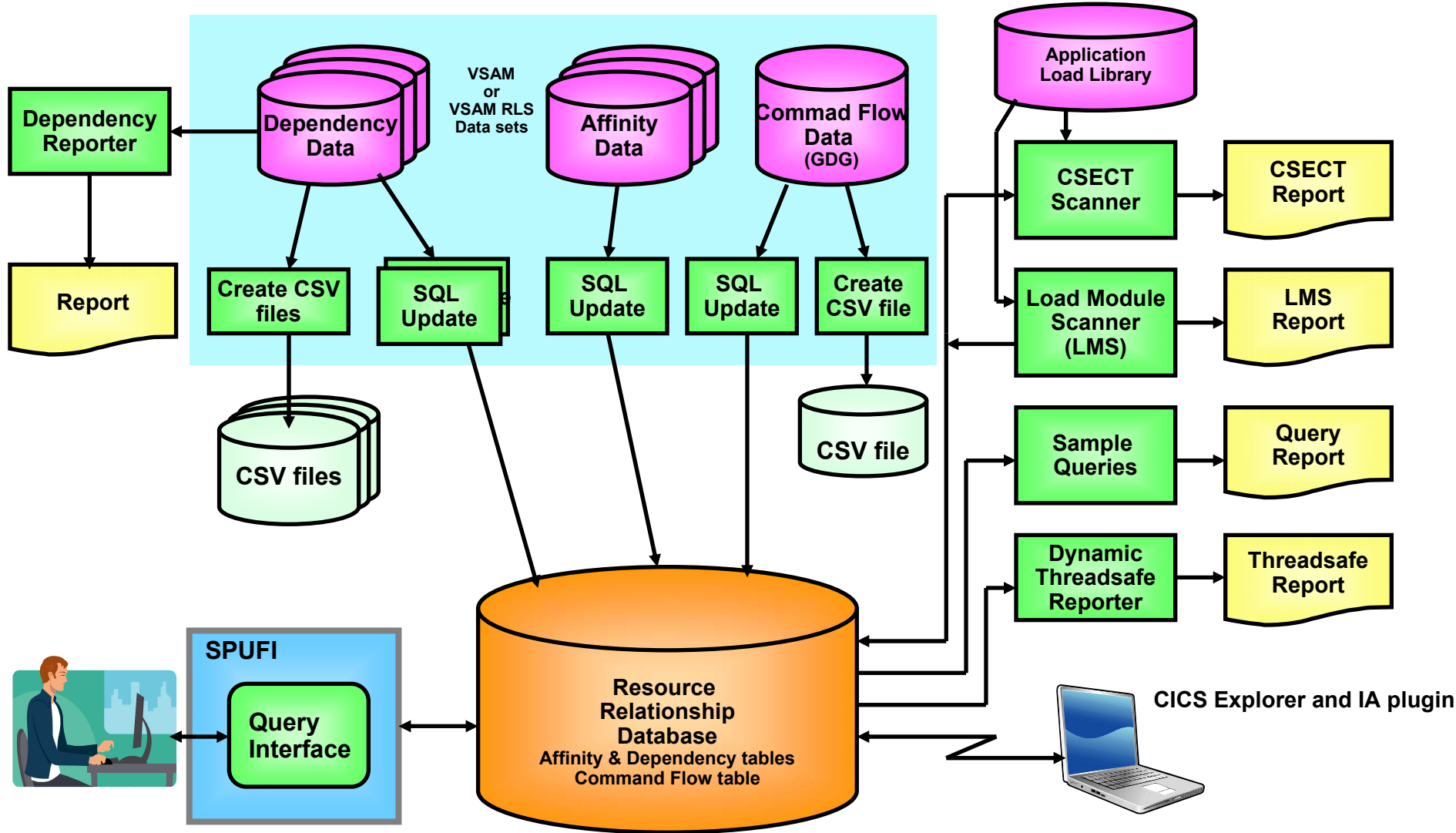
- **Enables you to understand the relationships between resources used by CICS and its applications.**
  
- **You can see**
  - what resources a CICS region uses
  - what resources a transaction needs in order to run
  - which programs use which resources
  - which resources are no longer used
  
- **Ability to maintain, enhance, modify or redistribute your applications is much improved**



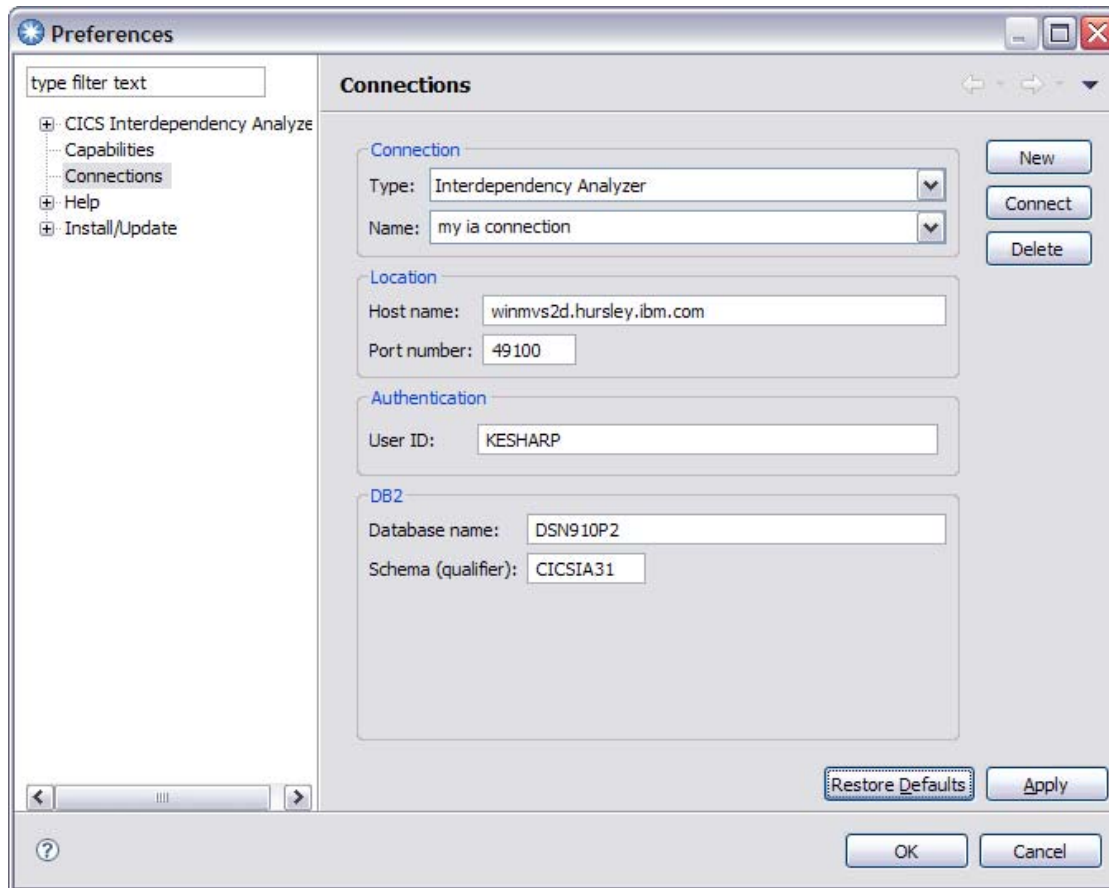
# CICS IA Architecture (Collector structure)



# CICS IA Architecture (Reporting Structure)



# Defining a Connection

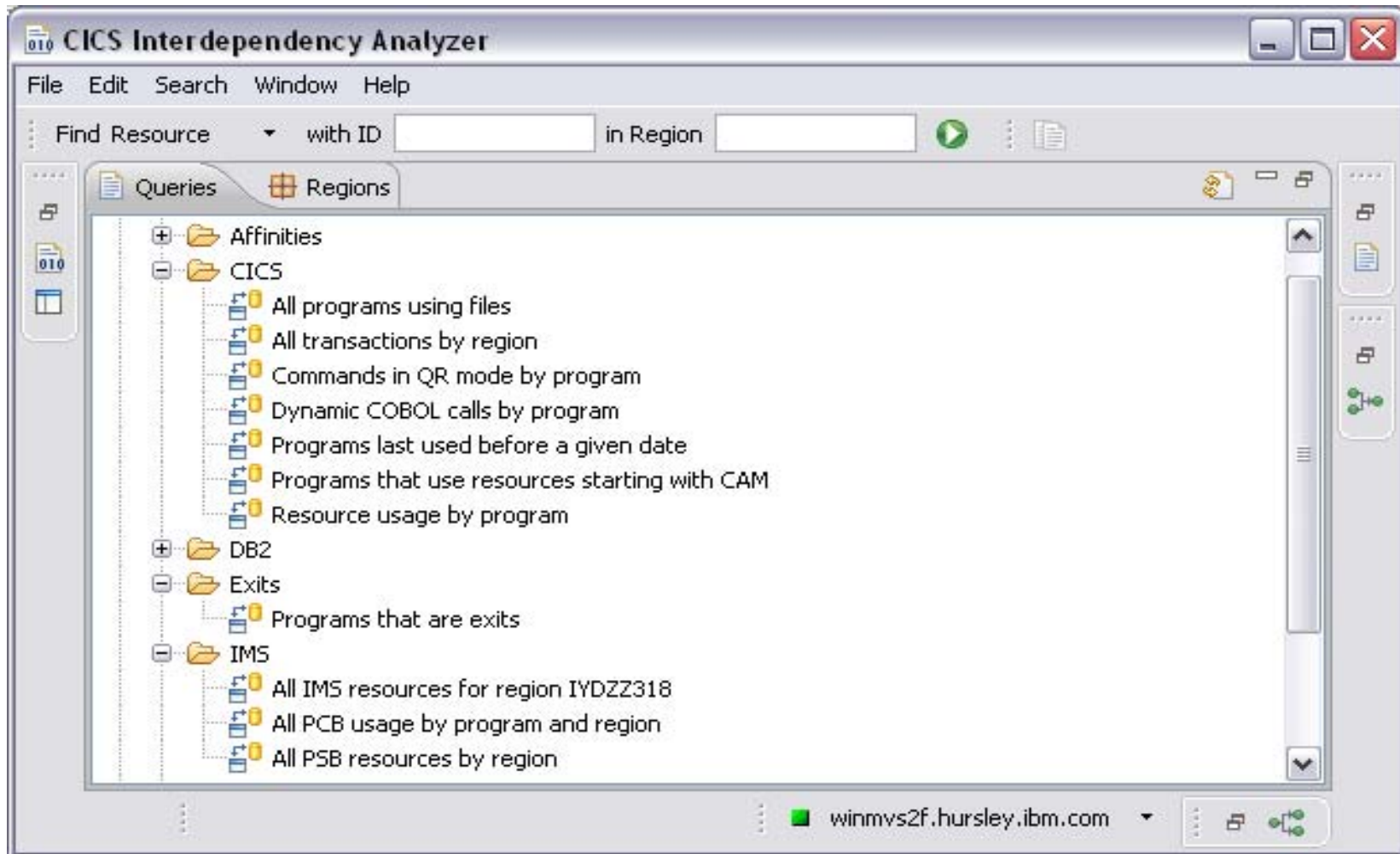


Use the Connections Preference page to define a connection of type “Interdependency Analyzer”

Click New to define a new connection, Apply to save.

Password prompted for on connect

# IA Explorer – Queries folder



# IA Explorer – Uses folder

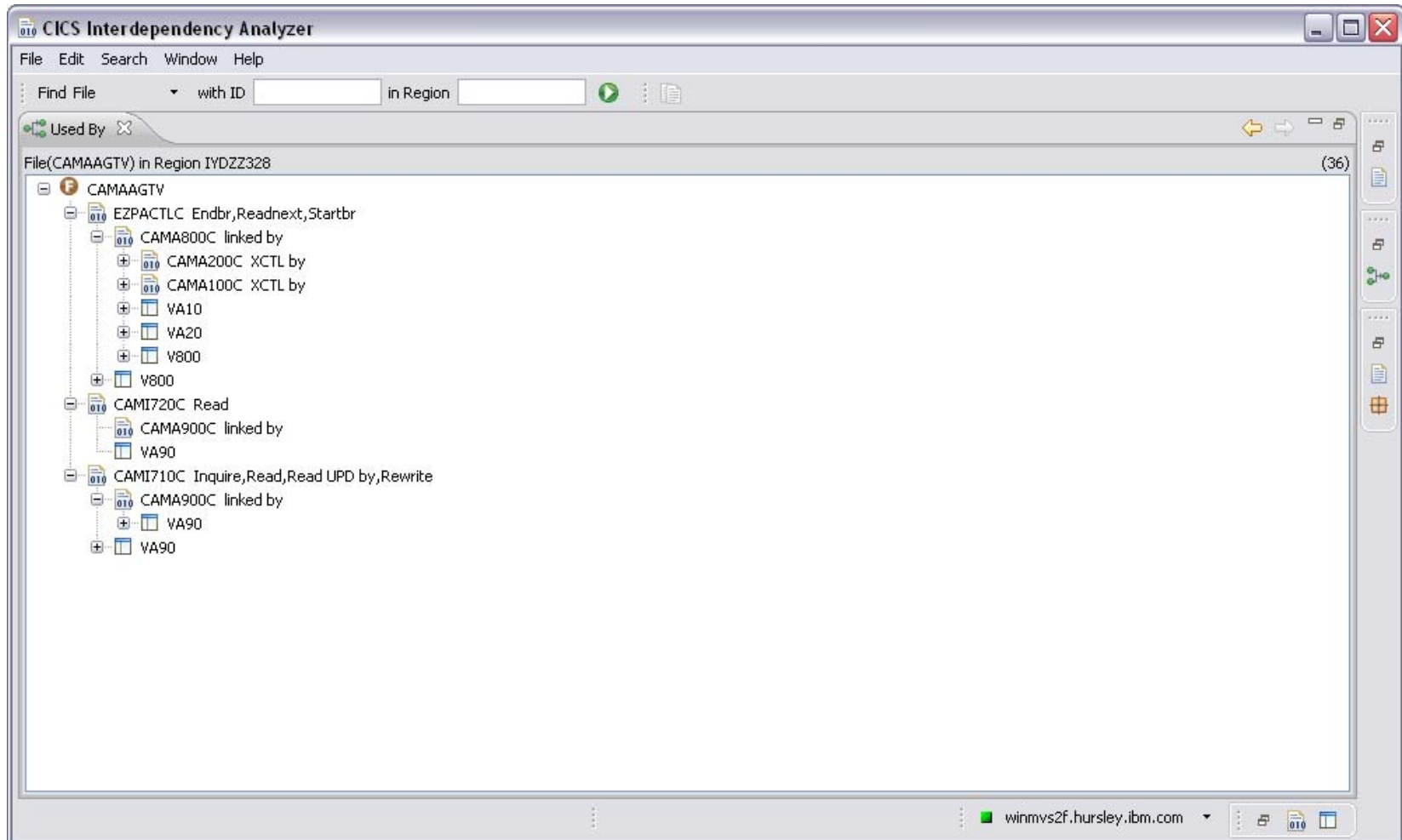
The screenshot displays the CICS Interdependency Analyzer (IA Explorer) interface. The window title is "CICS Interdependency Analyzer". The menu bar includes "File", "Edit", "Search", "Window", and "Help". Below the menu bar is a search bar with the text "Find Queue" and a dropdown menu set to "with ID" and "in Region".

The main area is divided into three panes:

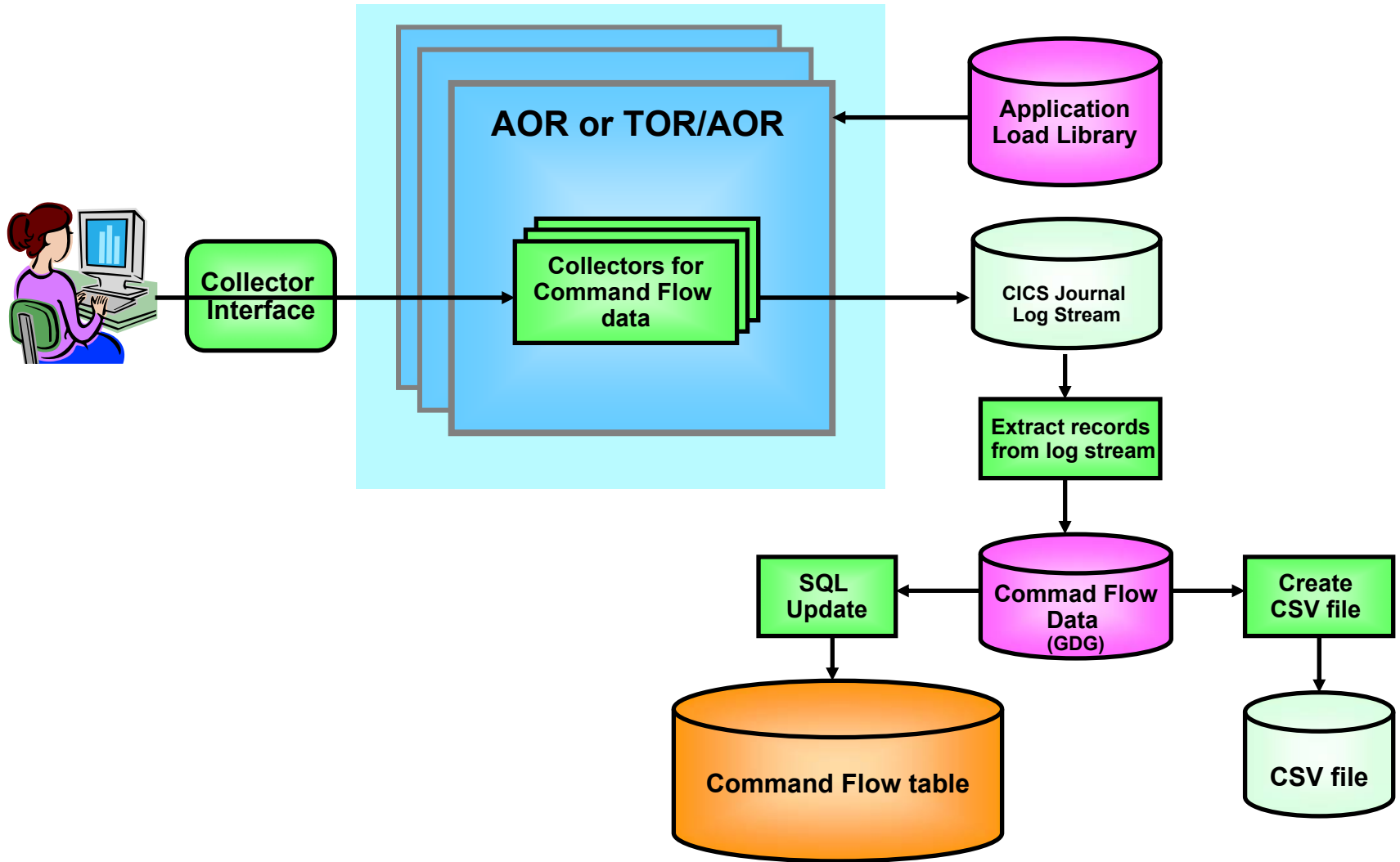
- Left Pane:** "Transaction(V800) in All regions (87)". It shows a tree view of resources used, including VA10 (1), V800 (1), VA20 (1), V884 (1), V400 (1), V200 (1), V550 (1), V205 (1), V210 (1), V220 (1), and a "File (12)" folder containing programs like CAMAGRSV (2), CAMASWIT (7), CAMAAGTV (3), EQZSWCH (1), CAMAAMRT (2), CAMATRKT (2), CAMADNST (2), CAMAPLTT (2), CAMABPNT (2), CAMAISTT (2), CAMASPFT (2), and CAMALBFT (2).
- Middle Pane:** "By Resource". It lists resources: CAMA100C, EZPACTLC, CAMA821C, and CAMA895C.
- Right Pane:** "Programs using CAMAGRSV (105)". It shows a detailed tree view of the V800 transaction, including "Start CAMA100C", "Link CAMA115C", "Link CAMI725C", "Xctl CAMA800C", "Link EZPACTLC", "Xctl CAMA100C", "Xctl CAMA200C", "Link CAMI725C", "Link CAMTSWAN", "Xctl CAMA800C", "Return VA20", "Start CAMA200C", "Start CAMA800C", "Start CAMI725C", "Start CAMTSWAN", "Start EQZ1SWCH", "Start EZPSSMHC", "Return V800", "Start V895", "Return VA10", "Start CAMA115C", "Start CAMA200C", "Link CAMI725C", and "Link CAMTSWAN".

The status bar at the bottom shows the user "winmys2f.hursley.ibm.com".

# IA Explorer – Used by folder



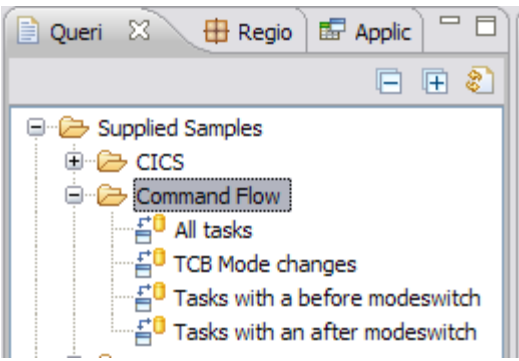
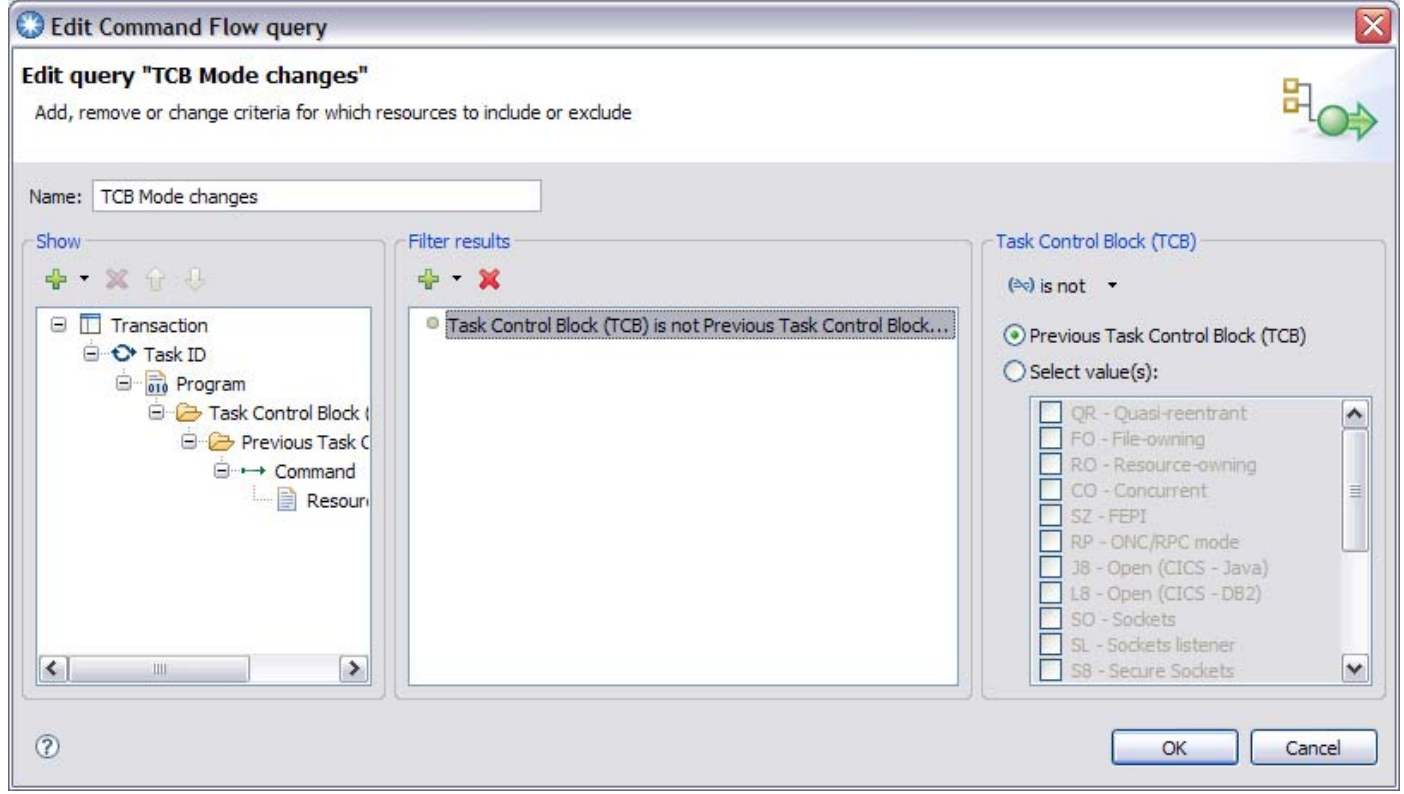
# Command Flow option structure





# Command Flow queries

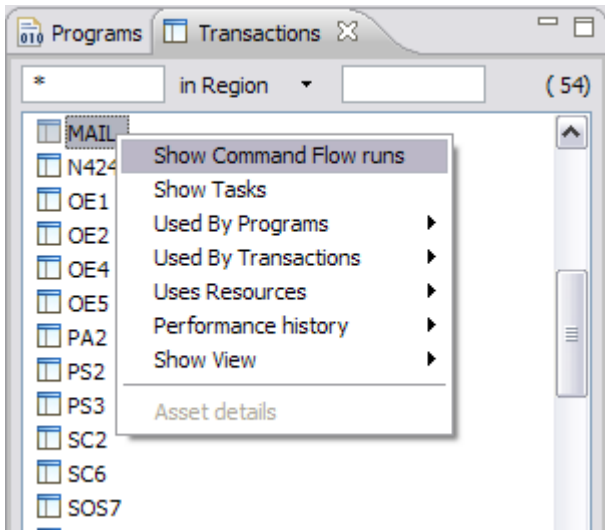
Use command flow query editor to query command flow table directly



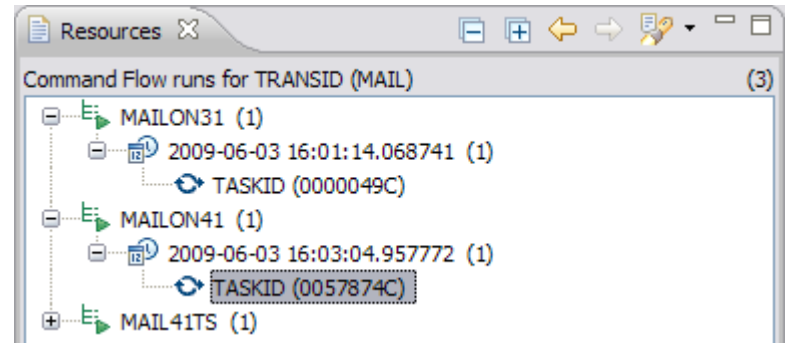
Sample queries provided



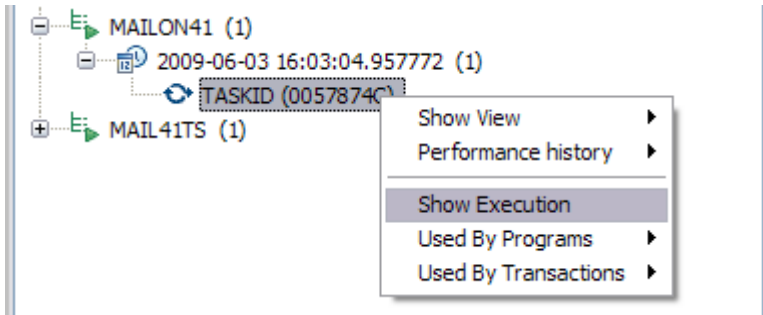
# Command Flow



Show collected Command Flow runs for a Transaction



Select which task you are interested in



Show the execution of that task

# Command Flow Continued...

Uses Command Flow TASKID(0057874C) under TRANSID (MAIL)

TCB Modes Used	TCB Mode Switches
QR (84)	QR (11)
L8 (15)	L8 (11)

Total commands: 99

	TCB Mode	Previous TCB Mode
MAIL		
TST4CVD1		
Start of transaction	QR	QR
DFHPGADX		
TST4CVD1		
DFHPGADX		
TST4CVD1		
DFHPGADX		
TST4CVD4		
TST4CVD1		
DFHPGADX		
TST4CVD2		
DFHPGADX		
TST4CVD3		
TST4CVD2		
TST4CVD3		
TST4CVD2		
TST4CVD1		

Displays commands in time order alongside summary of TCB Modes used and any TCB mode switches

Total commands: 99

	TCB Mode	Previous TCB Mode
TST4CVD2		
Getmain STORAGE_A	QR	QR
Ignore	QR	QR
Deleteq MAILTC55	QR	QR
Get CSQ4SAMP.MAIL	L8	QR
Writeq MAILTC55	QR	L8
Get CSQ4SAMP.MAIL	L8	QR
Writeq MAILTC55	QR	L8
Get CSQ4SAMP.MAIL	L8	QR
Writeq MAILTC55	QR	L8
Get CSQ4SAMP.MAIL	L8	QR
Writeq MAILTC55	QR	L8
Ignore	QR	L8
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Send CSQ4UDP2	QR	QR

RESP=0000002C RESP2=00000000

Command with non-zero response code decorated with warning. Codes shown on selection

TCB Mode switches decorated with red switch arrow

# CICS Performance Analyzer for z/OS (CICS PA)

## ▪Key features

- Comprehensive Performance Reporting and Analysis for CICS including DB2, WebSphere MQ, and MVS System Logger
- Extensive Tabular Reports and Extract Data Sets
- CICS Explorer
- Historical Database (HDB)
- Trending and Capacity Planning
- ISPF Dialog to build, maintain, and submit reports and extracts
- Comprehensive reporting of CICS Statistics and Statistics Alert data

## ▪CICS Support

- CICS Transaction Server for z/OS, V3 and V4

## **New in CICS PA V3.2**

- CICS TS and CICS TG statistics data viewable using the CICS PA plug-in to the CICS Explorer**
- Capture Statistics Alerts in HDB and viewable using the CICS PA plug-in**
- Output batch reports as Portable Document Format (PDF) files**
- Support for CICS Transaction Gateway V8.0**
- Simplified data source set-up and housekeeping**
- Documentation update: New CICS PA Getting Started Guide**

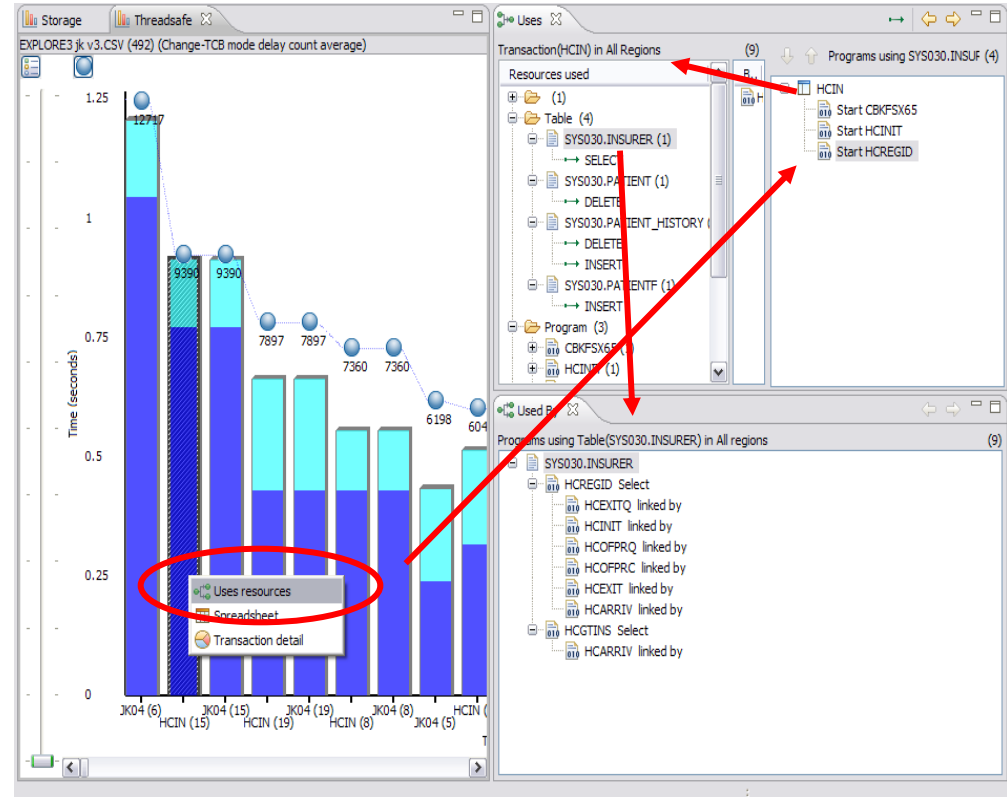
# Optimize CICS performance

## Problem

- Best practice recommends early life-cycle performance analysis, but developers lack easy access to performance metrics

## Solution

- Intuitive views of performance and statistics data in CICS Explorer
- CICS PA perspective delivers task-oriented approach, e.g. Threadsafe Analysis
- Drill-down into application structure with CICS IA integration



## Value

- Effective performance analysis saves MIPs and associated hardware and software costs
- Better response times improves customer satisfaction and retention

# CICS PA - Visualizing the summary data

**See extracts of the raw data in the Sheet view**

Start date	Start time	Applid	Transacti...	Task ser...	Respons...	Re...	User Dep...	User CPU...	Suspend...	Suspend...
2008-03-13	14:10:00...	PDQVARI	ERLS	1	327.559700	327.559700	0.007300	8	0.003000	327.552400
2008-03-13	14:10:00...	HELM.CK	ERF4	1	83.478700	83.478700	0.004800	187	0.030600	83.442000
2008-03-13	14:10:00...	PDQQR	ZS3	1	5.079000	5.079000	0.001000	6	0.000700	5.077900
2008-03-13	14:10:00...	PDQQR	ZS2	1	3.211200	3.211200	0.000900	4	0.000700	3.210300
2008-03-13	14:10:00...	PDQFP20	HO8	2	1.308100	2.010900	1.307600	54	0.011700	0.000900
2008-03-13	14:10:00...	HELM.CK	NR1	1	1.524100	1.524100	0.001900	7	0.001100	
2008-03-13	14:10:00...	HELM.CK	ER02	2	0.763100	1.459200	0.005200	106	0.010100	
2008-03-13	14:10:00...	STRCPY	ER02	3	0.521600	1.443200	0.000800	2		
2008-03-13	14:10:00...	HELM.CK	BR2	1	0.999800	0.999800	0.000700	2		
2008-03-13	14:10:00...	PDQFP20	HFFM	3	0.614500	0.703700	0.510100	624	0.007000	
2008-03-13	14:10:00...	PDQESTE	OVSF	2	0.422400	0.672600	0.410100	666	0.996800	
2008-03-13	14:10:00...	PDQESTE	OYDA	2	0.316500	0.585900	0.308400	305	0.200800	
2008-03-13	14:10:00...	PDQQR	HMBQ	2	0.268100	0.536600	0.000700	2	0.000600	
2008-03-13	14:10:00...	PDQQR85	DTQ	1	0.395500	0.395500	0.011900	756	0.011500	
2008-03-13	14:10:00...	PDQQR85	BR10	1	0.173000	0.173000	0.001900	2	0.001000	
2008-03-13	14:10:00...	PDQFP20	HNAQ	8	0.082000	0.154600	0.065000	64	0.011200	
2008-03-13	14:10:00...	PDQPR1	ER97	2	0.062800	0.082100	0.000800	3	0.000600	
2008-03-13	14:10:00...	PDQPR1	ZU95	1	0.070300	0.070300	0.000600	5	0.000500	
2008-03-13	14:10:00...	HELM.CK	NR30	1	0.051700	0.051700	0.000400	10	0.002000	
2008-03-13	14:10:00...	PDQESTE	OY72	1	0.043200	0.043200	0.040100	120	0.016000	
2008-03-13	14:10:00...	HELM.CK	H550	1	0.038600	0.038600	0.001100	7	0.001100	
2008-03-13	14:10:00...	PDQQR	ZFA3	1	0.032200	0.032200	0.001000	2	0.000800	
2008-03-13	14:10:00...	PDQQR	ZFA3	8	0.031700	0.031700	0.000800	181	0.010500	
2008-03-13	14:10:00...	HELM.CK	NR31	2	0.025400	0.027100	0.002000	11	0.001700	
2008-03-13	14:10:00...	HELM.CK	ERH1	1	0.021800	0.021800	0.001900	10	0.001600	
2008-03-13	14:10:00...	PDQQR	COA2	1	0.021500	0.021500	0.000800	2	0.000700	
2008-03-13	14:10:00...	HELM.CK	NR32	1	0.018800	0.018800	0.017900	25	0.004200	
2008-03-13	14:10:00...	PDQOSIS0	BLM1	6	0.012900	0.021800	0.001100	4	0.000500	
2008-03-13	14:10:00...	PDQQR	ZDF2	1	0.016400	0.016400	0.001100	4	0.000800	
2008-03-13	14:10:00...	HELM.CK	ER02	1	0.014900	0.014900	0.000900	14	0.001600	
2008-03-13	14:10:00...	STRCPY	ERD0	1	0.014800	0.014800	0.000600	2	0.000500	
2008-03-13	14:10:00...	HELM.CK	ER50	1	0.014100	0.014100	0.000400	12	0.002300	
2008-03-13	14:10:00...	PDQQR	COA2	2	0.011700	0.011700	0.000900	3	0.000400	
2008-03-13	14:10:00...	PDQQR85	BLM1	3	0.008700	0.010000	0.000800	3	0.000400	
2008-03-13	14:10:00...	PDQQR85	SAQ	2	0.008300	0.010000	0.005400	8	0.004400	
2008-03-13	14:10:00...	PDQESTE	BLM1	2	0.008050	0.009950	0.000400	3	0.000400	
2008-03-13	14:10:00...	PDQQR	BR0F	2	0.004300	0.000800	0.000400	1	0.000300	
2008-03-13	14:10:00...	PDQPR1	DO99	1	0.004900	0.004900	0.000500	3	0.000300	
2008-03-13	14:10:00...	HELM.CK	ER97	1	0.004700	0.004700	0.000300	4	0.000800	
2008-03-13	14:10:00...	PDQQR	ZFA2	1	0.003900	0.003900	0.000900	2	0.000900	
2008-03-13	14:10:00...	PDQSTND	ZFA2	1	0.002900	0.002900	0.000300	11	0.002200	
2008-03-13	14:10:00...	PDQFP10	YIGN	1	0.002000	0.002000	0.002300	16	0.002000	

**Powerful active outline view speeds selection**

**Drill into data files using the explorer view**

**Flexibility in what you want to see**

**..or follow Analysis Scenarios like Threadsafe to highlight issues**



# CICS PA - Comparison views

**Comparison between "before" and "after" situations**

Start date	Start time	Appid	Tr...	Task ter...	Respons...	Respons...	Dispatch...	User Dis...	User Dis...	User CP...	Suspend...	Suspend...	Dispatch...	
2008-03-13	14:10:00...	PDQHP20	HDBN		2	1.308100	2.010900	53	1.307600	54	0.012700	0.000500	54	0.000100
2008-03-13	14:10:00...	PDQWTC1	HDBN		2	1.309100	2.011800	1	0.001100	2	0.000900	1.308000	2	0
2008-03-13	14:10:00...	PDQHP20	HKFM		3	0.614500	0.703700	823	0.604500	824	0.087000	0.010000	824	0.005200
2008-03-13	14:10:00...	PDQWTC1	HKFM		3	0.615400	0.704500	1	0.001200	2	0.000900	0.614300	2	0
2008-03-13	14:10:00...	MAIN001	HO00		1	0.002300	0.002300	4	0.000900	5	0.000900	0.001300	5	0
2008-03-13	14:10:00...	PDQDIR	HO00		1	0.002700	0.002700	1	0.000800	2	0.000600	0.001900	2	0
2008-03-13	14:10:00...	HELMCLK	HSS0		1	0.038600	0.038600	6	0.001100	7	0.001100	0.037400	7	0
2008-03-13	14:10:00...	BEERPLUM							0.006500		5.210900		116	0.009500
2008-03-13	14:10:00...	BEERPLUM							0.111600		4.942800		215	0.008300
2008-03-13	14:10:00...	PDQDIR							0.000700		5.077900		6	0
2008-03-13	14:10:00...	BEERPLUM							0.006200		3.203600		66	0.000100
2008-03-13	14:10:00...	PDQDIR							0.000700		3.210300		4	0
2008-03-13	14:10:00...	PDQDIR							0.000600		0.267400		2	0
2008-03-13	14:10:00...	BEERPLUM							0.299800		0.198300		5880	0.160800
2008-03-13	14:10:00...	PDQHP20	MVWQ				0.154800		0.011200		0.016000		64	0.010200
2008-03-13	14:10:00...	HELMCLK	NK31				0.027100		0.001700		0.023400		11	0.000100
2008-03-13	14:10:00...	HELMCLK	NK50				0.051700		0.003000		0.047600		18	0.000400
2008-03-13	14:10:00...	HELMCLK	NKR1				1.524100		0.001100		1.522300		7	0
2008-03-13	14:10:00...	PDQESTE	OV5W		2	0.422400	0.672600	665	0.096600		0.012200		666	0.007500
2008-03-13	14:10:00...	PDQESTE	OV7Z		1	0.043200	0.043200	127	0.016000		0.003100		128	0.001800
2008-03-13	14:10:00...	PDQESTE	OVD		2	0.316500	0.555900	304	0.306400		0.200800		305	0.007000
2008-03-13	14:10:00...	PDQDIR	OV		1	0.021500	0.021500	1	0.000800		0.000700		2	0

**Threadsafte XPLR\_C.csv (58) (Change-TCB mode delay count average)**

Transaction ID (and r)	Time (seconds)
KWO1 (1)	5878
HKFM (3)	823
OV5W (2)	661
OVD (2)	300
ZFA3 (1)	180
OV7Z (1)	114
ER02 (2)	71
MVWQ (6)	65
HDBN (6)	58

**Threadsafte XPLR\_C.csv (1368) (Change-TCB mode delay count average)**

Transaction ID (and r)	Time (seconds)
QFOR (6)	12717
SUHT (12)	9961
KWX1 (9)	6605
KWO1 (6)	5905
KXZ5 (3)	5752
KXZ4 (10)	5520
KXZ6 (5)	4945
QSR5 (4)	4524
OV46 (4)	3314
OV46 (1)	2760
QFOR (2)	1785

# CICS PA - Integration with CICS IA

**Transaction detail for: CRTP**  
 Start date=2007-01-12, Start time=04.00.00, Applid=IYCYZC20, Transaction ID=CRTP

**Transaction detail for: 2007-01-12, 04.00.00, IYCYZC20, CRTP**

**Overview:**

- Threadsafe:
- CPU time:
- Response time:
- Storage:
- File usage:

**Threadsafe (averages)**  
 3 transaction(s), 0 TCB mode switches (average), 0 DB2 requests, 0 File control requests, 0 MQ requests, 6 RMI requests.

Measurement	Time (avg)	Count	%Overall	%Relative
readsafe:				
User CPU time	0.000672	2	100%	100%
CICS Key 8 TCB CPU time	0	0	-	-
J8 TCB CPU time	0	0	-	-
L8 TCB CPU time	0	0	-	-
S8 TCB CPU time	0	0	-	-
T8 TCB CPU time	0	0	-	-
X8 TCB CPU time	0	0	-	-
CICS Key 9 TCB CPU time	0	0	-	-
J9 TCB CPU time	0	0	-	-
L9 TCB CPU time	0	0	-	-
S9 TCB CPU time	0	0	-	-
Miscellaneous TCB CPU time	0	0	-	-
R0 TCB CPU time	0	0	-	-
QR TCB CPU time	0.000672	2	100%	100%







# Revitalizing CICS Applications

**Revitalizing your CICS Application data  
using CICS VT**



# DB2 Benefits to Business and Application

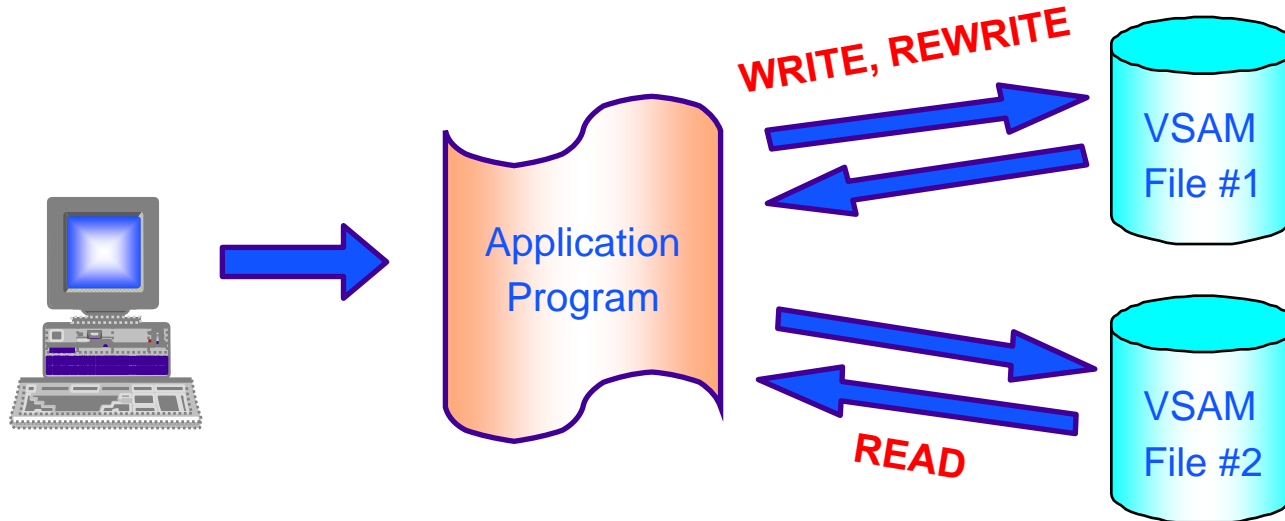
- **Faster business need fulfillment**
  - Increase application productivity and functionality by leveraging a database platform that supports multiple 3rd party and rapid application development tools
- **Mitigate risk of losing market share**
  - Legacy database limits application development choices, programmer productivity and ability to meet the changing market demands
- **Reduce risk of application failures**
  - Avoid maintaining complex legacy applications and file structures that cannot be easily modified
- **Data Integrity**
  - The existing VSAM files do very little to ensure the data is accurate or consistent.
- **Data security**
  - Data encryption requires application code
- **Separation of Data from Business Rules**
  - Today, master file data cannot be interpreted without applying business logic that is embedded in the programs
  - Data stored in a database needs to be viewed as having its own existence outside of the application processes that maintain it – ADHOC reporting

## Re-vitalizing application data using CICS VT

- Migrate VSAM files to DB2 without changing application programs
- Legacy programs access DB2 data using driver modules CICS VT generates for each migrated data set
- Migrated data can be accessed by SQL in new programs
- Existing programs can be enhanced using SQL
- Lowest risk migration strategy
- DB2 and associated tools ensure that private and confidential data is strongly protected

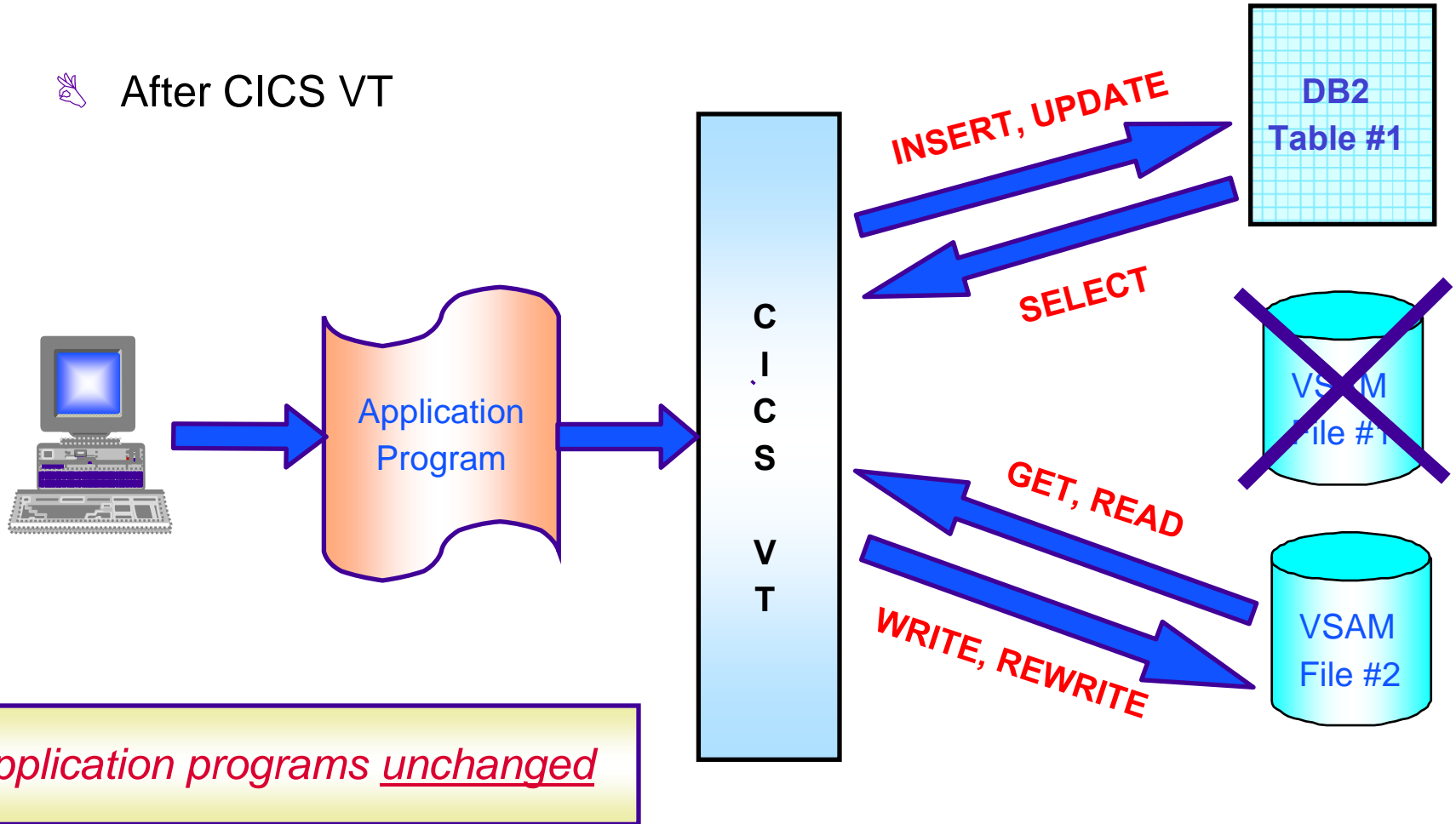
# Re-vitalizing application data using CICS VT

✎ Before CICS VT



# Re-vitalizing application data using CICS VT

✎ After CICS VT

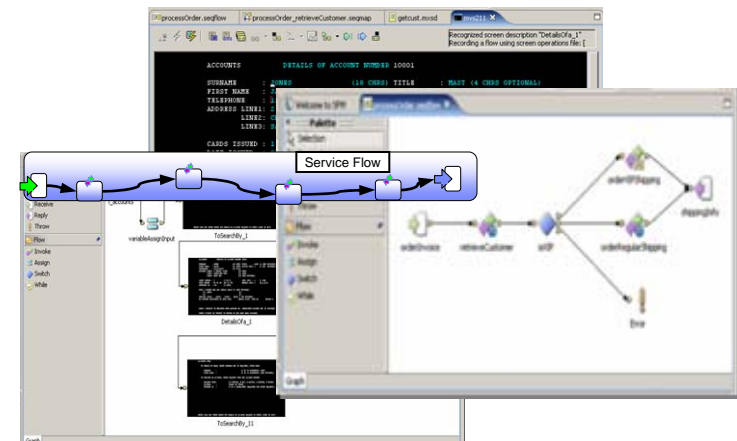
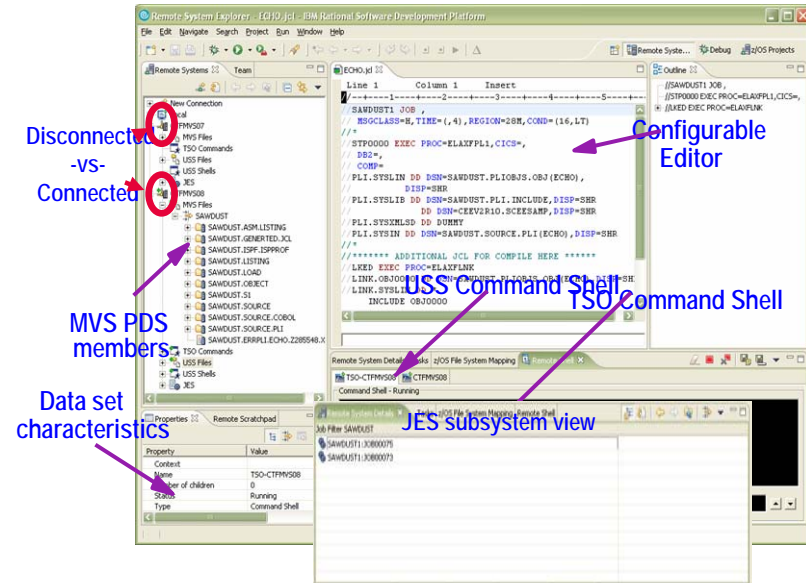


## CICS VT HIGHLIGHTS

- Completely separate from application program
- Transparent access to data in DB2
- 100% static SQL
- Migrate on a file by file basis
- Single live copy of data
  - Dual mode available for test purposes
- Data can be re-engineered
  - Same data returned to VSAM programs
  - Enhanced data available using SQL

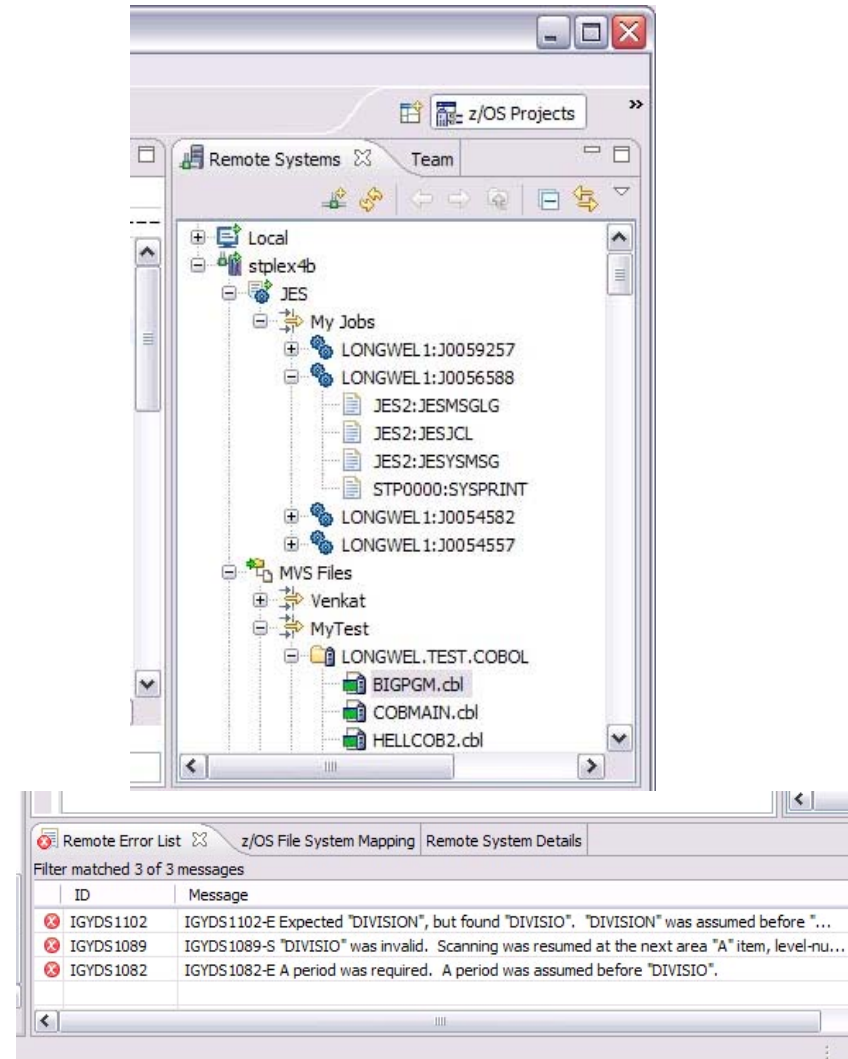
# Rational Developer for System z (RDz)

- What is RDz
  - Eclipse-based IDE speeding modern composite (SOA) application development
- RDz supports Enterprise Modernization
  - Links WAS and core system z processing
  - Supports common IDE for COBOL, PL/I, C, C++, HLASM, Java, and web services
  - Transforms UML to COBOL source code
  - Provides interactive access to z/OS for development, debug, job generation, submission, monitoring, command execution
  - Supports new and existing runtimes (CICS, IMS, Batch, USS, DB2 SP, WAS)
- RDz supports SOA
  - Enables CICS and IMS applications for web services and SOA including System z runtime micro-flows
  - Supports for J2EE, JCA, XML, web services



# Gain productivity and ROI

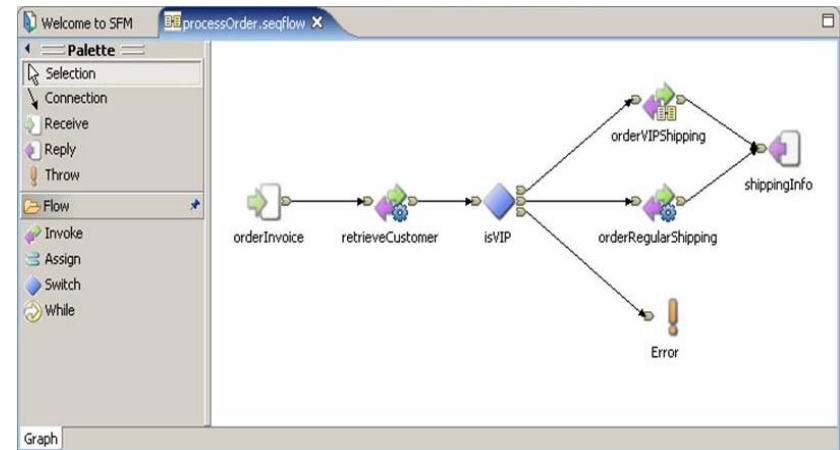
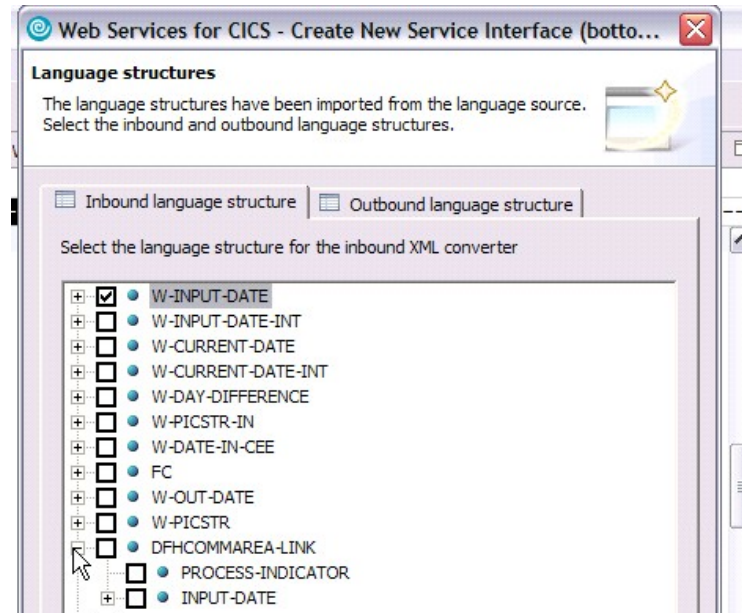
- Real-time mainframe connection with Remote System Explorer
  - Direct access to host subsystems and file system
  - Project assets connected to host resources
- Eclipse-based editor (LPEX)
  - Green-screen compatible environment but with eclipse flavor
    - Content assist; Discover/Link to include files; Error markers, etc
- Local and Remote syntax check
  - Mainframe programs can be compiled and errors listed in the problems view
  - Saves time and cost (MIPS reduction) over traditional compile process on host
- Remote Debugging with Debug Tool integration
  - Debug programs as they execute on the host in real-time from eclipse unified debugger
  - Debug composite applications linking seamlessly from WAS to host runtimes





# Move to SOA easily

- **Customers today tend to focus on applications which already exist on the mainframe (limited new workload creation)**
- **RDz can help maintain and componentise existing mainframe applications to prepare host systems for a SOA architecture**
- **RDz offers XML services for the Enterprise**
  - Wizard-driven web-service creation
  - Works with existing host programs without changing program code (lost cost, low risk)
  - Creates program skeleton for new program creation
  - Works for major mainframe runtimes (Batch, CICS, IMS)
- **CICS Service flow**
  - Create orchestration logic for combining multiple green screen transactions or service calls into a single web service



# RDz-based development

- Common development environment for COBOL, PL/I, C/C++, and Java
- Simplified development with more information at your fingertips

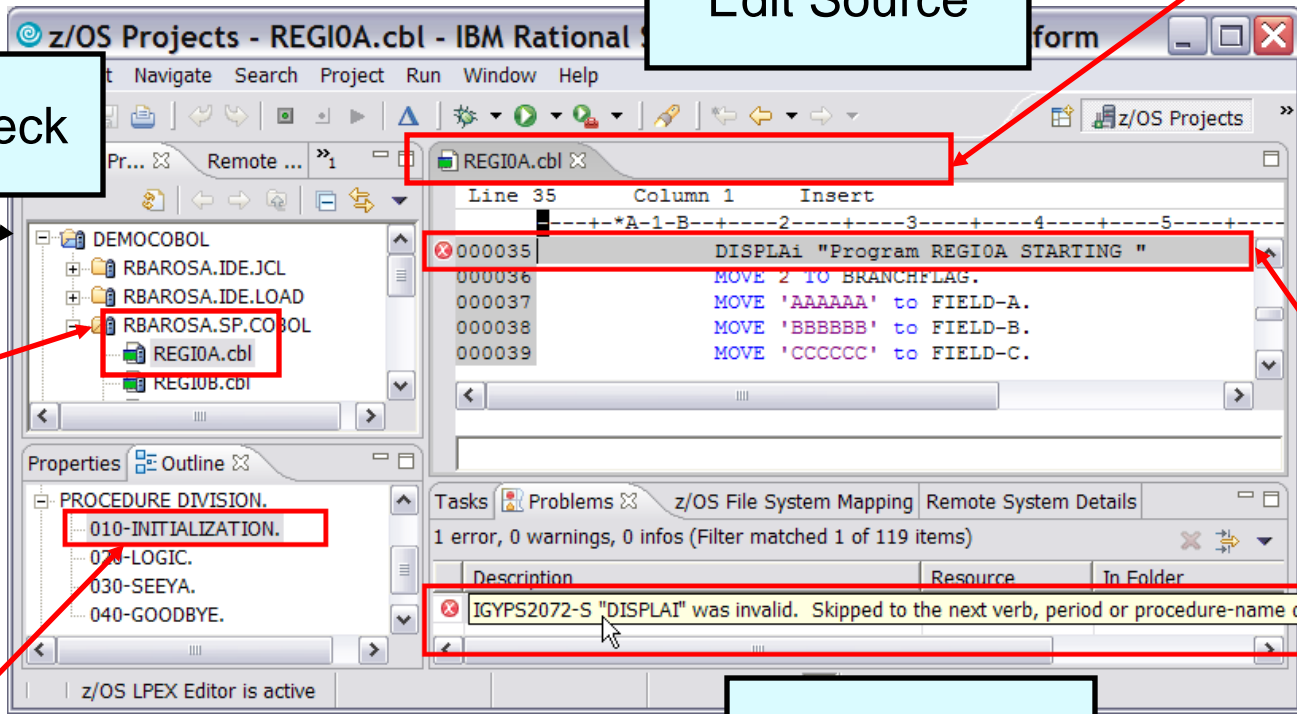
Open and edit multiple source and JCL members simultaneously

Edit Source

Syntax Check

Submit jobs, access job output, or open source members with a single click

Outline view presents COBOL structure



Statement in error indicated in source

Double-Click on the Error

Error list in Problems view

# Member – Edit & Syntax Check RDz

\*HELOWAPG.cbl

Line 17 Column 14 Insert 1 change

```

-----+*A-1-B-+-----2-----3-----4-----5-----+
000008 IDENTIFICATION DIVISION.
000009 PROGRAM-ID. HELOWAPG.
000010 AUTHOR. Arnold.
000011
000012 ENVIRONMENT DIVISION.
000013
000014 DATA DIVISION.
000015
000016 PROCEDURE DIVISION .
000017 Di "Hello World"
000018
  
```

ABC DISPLAY  
 ABC DIVIDE  
 ABC DIVIDE - NOT ON SIZE ERROR - EN  
 ABC DIVIDE - ON SIZE ERROR - END-DI  
 ABC DIVIDE - ON SIZE ERROR - NOT ON

HELOWAPG.cbl

Line 17 Column 18 Insert

```

-----+*A-1-B-+-----2-----3-----4-----5-----+
000008 IDENTIFICATION DIVISION.
000009 PROGRAM-ID. HELOWAPG.
000010 AUTHOR. Arnold.
000011
000012 ENVIRONMENT DIVISION.
000013
000014 DATA DIVISION.
000015
000016 PROCEDURE DIVISION .
000017 Di "Hello World"
000018 STOP RUN .
  
```

[GYPS2072-S "DISPLA" was invalid. Skipped to the next verb, period or procedure-name definition.]

# Member – Compile, Link, Go

The image illustrates the workflow for compiling, linking, and running a COBOL program on z/OS using IBM Rational Developer for System z. The process is shown in several stages:

- Project Navigation:** The 'z/OS Projects' view shows a project named 'zHero' containing a subproject 'batchCOBOLArn [zHero]'. The source file 'ARNOLD.RDZCOBOL(HELOWAPG).cbl' is selected.
- Build Process:** A context menu is open over the selected file, with 'Run Application' highlighted. This action triggers the compilation and linking of the program.
- Job Submission Confirmation:** A dialog box titled 'Job submission confirmation' displays the message: 'WZID0805I: 'JOB07391' has been submitted to host 'zHero'. Use JES on the Remote Systems view to view its output.' An 'OK' button is present.
- Output View:** The 'ARNOLD.GENJCL.J...' editor shows the output 'Hello World'.
- Remote Systems View:** The 'Remote Systems' view shows a tree structure for the 'zHero' host. Under 'My Jobs', a job 'GENJCL :JOB07391' is listed, with its output files 'JES2:JESMSGLG', 'JES2:JESJCL', 'JES2:JESYSMSG', and 'GO:SYSOUT' visible.

# Member - Debug

**z/OS Projects**

- zHero
  - batchCOBOLArn [zHero]
    - ARNOLD.COBO.LSYSDEBUG(HELOWAPG)
    - ARNOLD.RDZCOBOL(HELOWAPG).cbl
    - ARNOLD.COBO.LLOAD(HELOWAPG).exe

**Context Menu:**

- New
- Open
- Open With
- Rename...
- Copy
- Delete...
- Search...
- Refresh
- Run Application
- Debug Application**
- Team
- Define Alias...
- Browse
- Remove from Subproject
- Add To Another Subproject ...
- Move To Another Subproject ...
- Properties
- Import z/OS Project...
- Compare With
- Replace With
- Open Welcome Page

**Confirm Perspective Switch**

This kind of launch is configured to suspend.

This Debug perspective is designed to incorporate views for displaying the management.

Do you want to open this perspective?

Remember my decision

**Debug - ARNOLD.COBO.LSYSDEBUG(HELOWAPG) - IBM Rational Developer for z/OS**

File Edit Navigate Search Project Data Debug Run Window Help

Debug Servers

HELOWAPG [Remote Compiled Application]

- Platform: OS/390(R) Connection: 1
- Thread: 1 (Runnable)
  - HELOWAPG : 01
- Process: 500224424 Program: HELOWAPG

**Source Code:**

Line	Column	Code
000014	14	DATA DIVISION.
000015	15	
000016	16	PROCEDURE DIVISION .
000017	17	DISPLAY "Hello World"
000018	18	STOP RUN .

**Debug Console:**

Process: 500224424 Program: HELOWAPG

WINMVS2E



# RDz flash demos to show you how it all works

The screenshot shows the IBM Education Assistant website in a Mozilla Firefox browser. The page title is "Rational Developer for System z" and the version is "V7.1". The main content area is a table with the following structure:

Topics	Rational Developer for System z Version: V7.1
Enterprise applications	<a href="#">Enterprise application development and transformation</a>
Web services	<a href="#">Web services development and transformation</a>
User assistance	<a href="#">Tour of user assistance features</a>
Preview	<a href="#">Technology preview</a>
Problem determination tool integration	<a href="#">Integration with z/OS® problem determination tools</a>

Below the table is a section titled "Most recently updated content" with the following entries:

- 2008-04-01
  - Rational Developer for System z V7.1
    - [Enterprise applications - Debugging a batch COBOL application](#) (7 min)
    - [System z LPEX Editor tech preview: Enhancements for COBOL editing](#) (4 min)
    - [Application Deployment Manager tech preview: Deploying Web services for CICS](#) (8 min)
- 2007-12-18
  - Rational Developer for System z V7.1
    - [Enterprise applications - System z LPEX editor enhancements in V7.1.1](#)

The browser's search bar contains "z/os" and the status bar shows "Done".

[http://publib.boulder.ibm.com/infocenter/ieduasst/rtnv1r0/index.jsp?topic=/com.ibm.iea.rdz/plugin\\_coverpage.html](http://publib.boulder.ibm.com/infocenter/ieduasst/rtnv1r0/index.jsp?topic=/com.ibm.iea.rdz/plugin_coverpage.html)

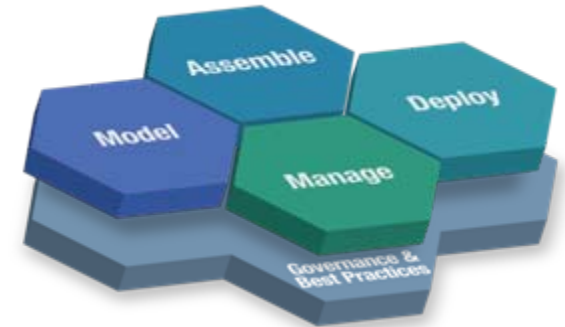
**Note : it is possible to hack around with the URL and download the swf files. There is over 30 RDz demos (>100MB total) of really good stuff to grab**

Or try the real thing in the Enterprise Modernization Sandbox for System z  
[http://www.ibm.com/developerworks/downloads/em\\_sandbox\\_systemz/index.html](http://www.ibm.com/developerworks/downloads/em_sandbox_systemz/index.html)

# WebSphere Service Registry and Repository

- *Enables governance* – Configurable service life-cycle, classifications and access controls
- *Manages service meta-data* – Providing better search granularity than most UDDI-based products
- *User-friendly UI* – Facilitates design time discovery
- Provides *location transparency* through runtime access
- Stores all service artifacts – *Not just WSDL*
- Provides *fully configurable* functionality to classify services
- *Supports state model functionality* – Manages service life-cycles in a shared environment
- *Service notification* – facilitates communication between service consumers and providers
- *Enforces* consumer access to services
- *Simple* version management functionality

# CICS Support for WSRR



## ■ DFHLS2WS

- Generate a WSDL file and WSBind file from copybooks and **publish WSDL file to WSRR**
- Options to specify location of WSRR server, and meta-data that describes the WSDL to be published

## ■ DFHWS2LS

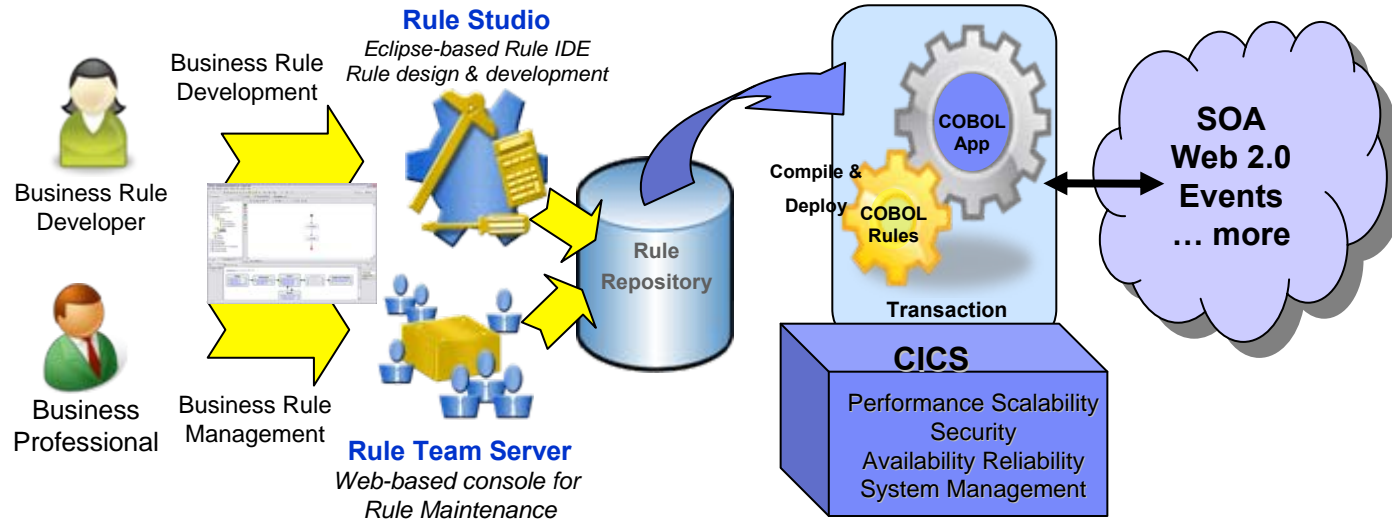
- **Extract a WSDL file from WSRR** and generate copybooks and WSBbind file
- Options to specify the WSRR server, and the WSDL document to be extracted





# CICS with ILOG Rules for COBOL

**Timely modification of offers to increase competitive edge**



**Solution**

- Developer authors rules to extend CICS COBOL applications to produce business behaviours, e.g. when orders are placed
- Business users make rule adjustments in Rule Team sever and deploy changes to CICS applications
- Business managers quickly identify what business decisions to change
- Auditable change management process

**Value**

- Simplified application modernization and consistent process compliance by introducing change in a single place
- Avoid application change **development** cycle
- LOB in control of the business changes
- Reduced risk, disruption, cost and time to implement change

# Rules for COBOL with CICS Channels and Containers

## ▪ Scenario

- A Rules for COBOL generated program is wrapped inside a program that receives CICS Channels and Containers
  - Normal Rules for COBOL programs must be statically linked with each calling program

## ▪ Approach

- Instead of linking with each calling program, just link into the Load Library
- Reasonably easy for a user to write a wrapper program, or modify a Rules for COBOL generated program
  - Was very straight forward to create the PoT
- User can produce themselves with a reasonably small amount of effort
- RedPaper describes how to write the wrapper program
  - <http://www.redbooks.ibm.com/abstracts/redp4589.html>
- CICS SupportPac (CA0A) generates the CICS Wrapper program automatically
- Use with CICSplex SM Workload Management to achieve best throughput

# Summary

- **Revitalize your applications using modern tooling**
  - Speed application modernization, threadsafe optimization, and more with CICS Interdependency Analyzer
  - Non-invasive DB2 support with CICS VSAM Transparency
  - Rational Developer for System z
  - Improve governance with WebSphere Service Registry and Repository
  - Simplify application modernization with ILOG Rule enablement

# Resources



**For more information**



# CICS Development Technical Services

Engage the IBM Hursley CICS development team to ensure that you get the maximum value from your CICS investments.

Consultants are now available via a funded services engagement directly from CICS development providing a complete range of CICS services - no one has more experience!

- For more information please contact: [CICSDTS@uk.ibm.com](mailto:CICSDTS@uk.ibm.com)



## CICS On Demand Seminars

Free customised technical agenda of CICS TS and CICS tools products

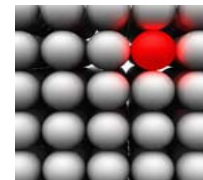
- Web Services, Events, Web 2.0, version upgrades, tooling etc.

Targeted at AD, System Programmers and Architects at customers' own location

Demonstrates how to use the new features in the latest releases to leverage existing solutions

Can be tailored to customers interests

- For more information please contact: [cicssem@uk.ibm.com](mailto:cicssem@uk.ibm.com)



# CICS Communities and Information

- **CICS Transaction Server V4.2**
  - <http://ibm.com/cics/tserver/v42>
- **CICS Explorer**
  - Home page [ibm.com/cics/explorer](http://ibm.com/cics/explorer)
- **Twitter**
  - Subscribe to the [IBM System z channel](#) & [CICSfluff](#) channel to get CICS news flashes
- **Facebook [I ♥ CICS group](#)**
  - News and views
- **YouTube channels**
  - [CICS Explorer](#) - Videos, demos and other cool stuff
  - [CICSFluff](#) - Other CICS videos
- **CICS Blog - Comment and opinion**
  - [TheMasterTerminal.com](http://TheMasterTerminal.com)
- **[CICS eNews](#)**
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- **[CICS Links](#) regular updates all in a single presentation deck**



Thank You !