



IBM Software Group

CICS TOOLS

Making your job Easier!



ON DEMAND BUSINESS™

I ♥ CICS

Preface

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Topics

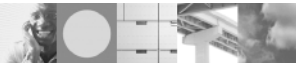
- **Why CICS Tooling is important to you.**
 - ▶ Improved productivity and cost reduction

- **CICS Performance Analyzer**
 - ▶ Simplifies performance and tuning activities.

- **CICS Interdependency Analyzer**
 - ▶ Improved efficiencies when everyone understands relationships and interactions within the CICS environment.

- **CICS Configuration Manager**
 - ▶ Single point of control for CICS resource definitions with full audit and governance capabilities.

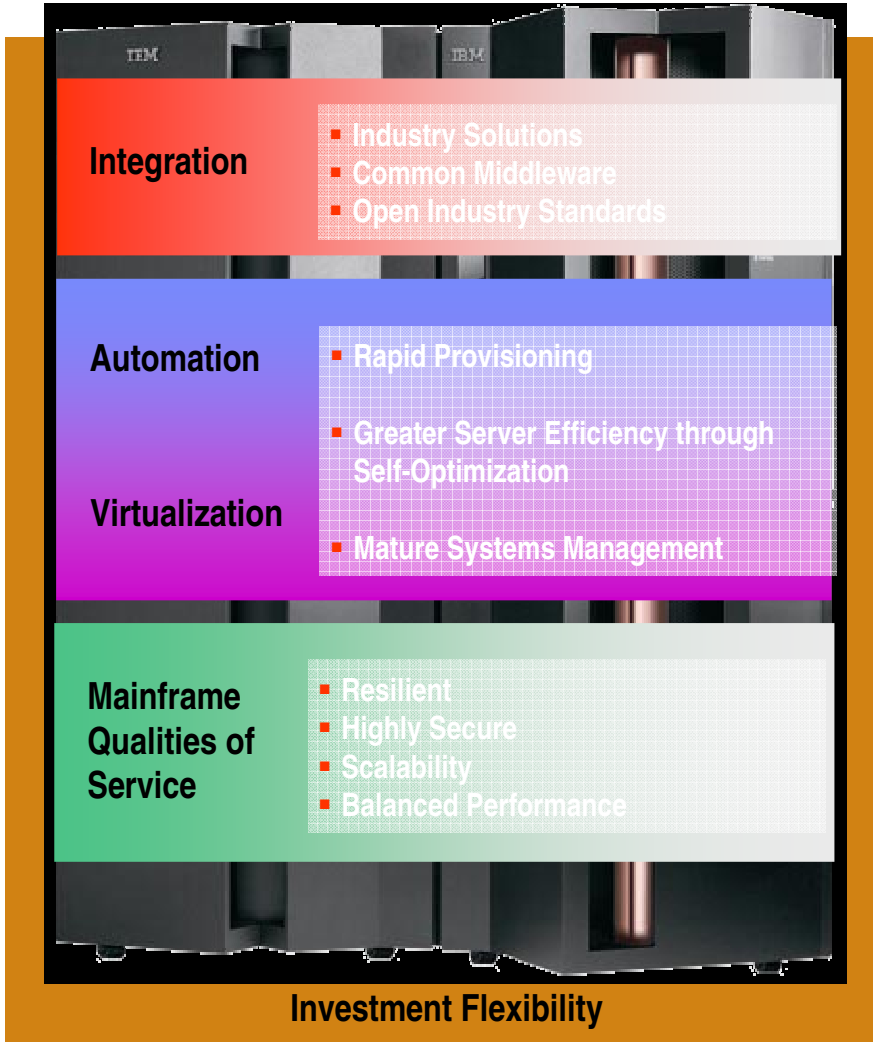
- **CICS Explorer: - Live Demonstration**
 - ▶ The “New Face” of CICS



System z core values – Built upon a 40-year heritage. . . And still relevant

Business Challenges

- Financial Pressures
- Security and Operational Resiliency
- Simplify Infrastructure Complexity
- Accelerate Time-to-Market
- Increase Revenues
- Deploy New Capabilities



IT Challenges

- Be responsive to changing business needs
- Meet service level agreements
- Increase server and IT resource utilization
- Help reduce IT Costs
- Develop new applications while mitigating risk



Business today is focused on Costs, Skills, Competition and Regulatory Compliance

▪ **Competitive Edge:**

- ▶ “I need a faster response in the market by using insight from business key performance indicators to identify changes ”
- ▶ “I want to change business application behaviours quickly and without new risks”

▪ **Regulatory Compliance:**

- ▶ “We must demonstrate that lending/capital ratio’s are maintained at all times”
- ▶ “National Government mandates that money laundering exceptions are identified and corrective action is taken immediately”

▪ **Cost & Skills :**

- ▶ “Our systems infrastructure is complex and fragile; it takes a lot of time to understand what the consequences of configuration change may be and I need my best guys to do that.”
- ▶ “Our business is at risk as natural attrition of critical systems administrations expertise are proving tough to replace”



Branham Group ROI white paper

- This Branham Group white paper (June 2009) provides an independent perspective on the value of IBM's CICS tools.
- In cooperation with IBM, Branham interviewed IBM CICS Tools customers with IBM CICS IA, CICS PA, and CICS CM
- The following provides just a snapshot of the achievable cost savings:
 - ▶ 75% time savings for the identification, coding, and testing of CPSM rules, in some cases equating to the recovery of a whole month in time savings for a major affinity.
 - ▶ Upwards of 90% time savings to identify and validate typical performance issue related changes.
 - ▶ An average of 66% less time to administer CICS Service Definition changes, which happen on a daily basis.
 - ▶ The recovery of 2%-15% of CPU cycles through the designation of CICS applications as threadsafe.
- <https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=swg-cicstroj>

IBM CICS Tools:
Unrealized Productivity Gains
and True Cost Savings

June 2009



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CICS Performance Analyzer

Simplifies performance and tuning activities



CICS Performance Analyzer

- **What does it do?**
 - ▶ ISPF Dialog to build, maintain and submit reports
 - ▶ Extensive Tabular Reports and Graph Reports
 - ▶ Create Historical Databases that include trend and capacity information
 - ▶ Comprehensive Batch Reporting and Analysis from SMF data
 - ▶ Online Statistics Reporting Capability
- **Benefits**
 - ▶ Improves tuning and capacity planning analysis
 - ▶ Improve transaction response time
 - ▶ Provides detailed performance bottleneck analysis
 - ▶ Uncovers trends leading to poor CICS performance or even outages
 - ▶ Helps plan capacity for optimal performance



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 data
- ▶ Threadsafe metrics

■ CICS Support

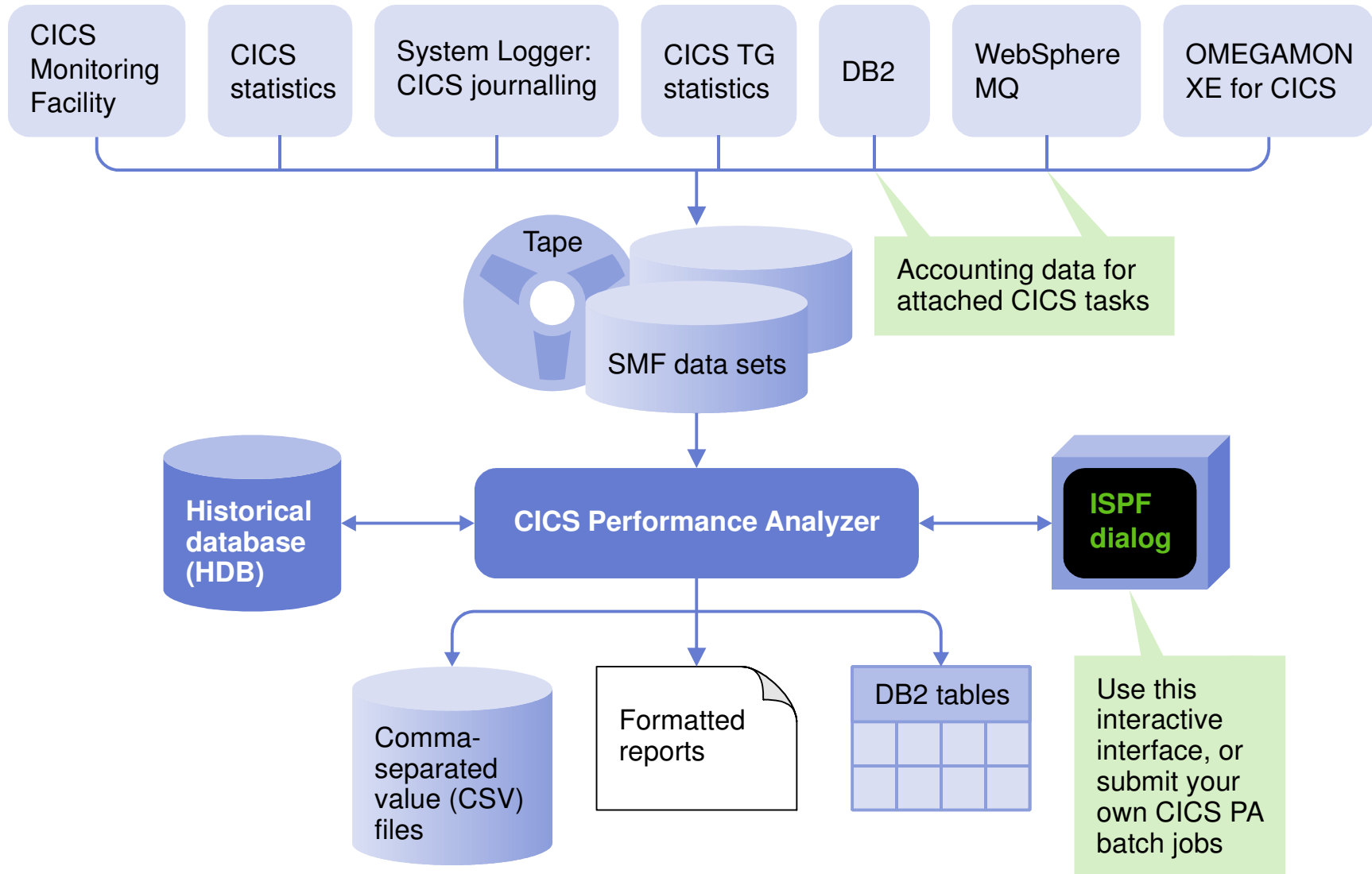
- ▶ CICS Transaction Server for z/OS, V2, V3, and V4

New in CICS PA V3.1 (May 2009)

- **CICS TS V4.1 support and exploitation of all new CICS SMF 110 data including:**
 - **Event Processing, Atom feeds**
 - **Data Mapping Conversion, XML System Services, Web Services Addressing**
 - **IPv6, JVM Server, Dispatcher**
- **CICS Explorer plug-in extended and fully supported**
- **New and updated sample reports to support the new performance data metrics provided by CICS TS V4.1**
- **Additional enhancements delivered via the service channel**



CICS PA Overview



Easy to Customize Sample Reports

```

File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - IMSTHRD      Row 1 of 18 More: >
Command ==> _____ Scroll ==> PAGE

Description . . . Transaction DBCTL Analysis      Version (VRM): 620

Selection Criteria:
  Performance *                                Page width . . 132

Field      Sort
/ Name +   K  0 Type      Fn      Description
-----
TRAN     K  A _____ _____ Transaction identifier
PSBNAME  K  A _____ _____ PSB Name
TASKCNT  -  - _____ _____ Total Task count
RESPONSE -  - _____ AVE Transaction response time
IMSREQCT -  - _____ AVE IMS (DBCTL) requests
IMSWAIT  -  TIME _____ AVE IMS (DBCTL) wait time
THREDCPU -  - _____ AVE Thread TCB CPU time
OVFLBFRU -  - _____ AVE Number of Overflow Buffers used
SCHTELAP -  - _____ AVE Elapsed time for Schedule Process
POOLWAIT -  - _____ AVE Elapsed wait time for Pool Space
INTCWAIT -  - _____ AVE Elapsed wait time for Intent Conflict
DBIOELAP -  - _____ AVE Elapsed time for Database I/O
PILOCKEL -  - _____ AVE Elapsed time for PI Locking
DBIOCALL -  - _____ AVE Number of Database I/Os
EOR     -  - _____ _____ ----- End of Report -----

```



Distribution Reports ...

V2R1M0

CICS Performance Analyzer
Performance Summary

SUMM0003 Printed at 15:14:26 2/14/2007 Data from 08:27:42 1/30/2007 to 09:19:35 1/30/2007
Transaction Response Time Distribution Summary (Percentage) by Time-of-Day

Page 8

Stop Interval	Tran	#Tasks	<0.1 Response Time	0.1-0.25 Response Time	0.25-0.5 Response Time	0.5-0.75 Response Time	0.75-1.0 Response Time	1.0-1.5 Response Time	1.5-2.0 Response Time	2.0-10.0 Response Time	>=10.0 Response Time	Max Response Time	Avg Response Time
09:16:00	WMSC	24	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0004	.0004
09:16:00		29	89.66	6.90	3.45	.00	.00	.00	.00	.00	.00	.2788	.0212
09:17:00	CEDF	9	11.11	.00	.00	22.22	11.11	22.22	22.22	11.11	.00	2.1832	1.1744
09:17:00	CEMT	1	.00	.00	.00	.00	.00	.00	.00	.00	100.00	14.9315	14.9315
09:17:00	WMSC	24	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0004	.0004
09:17:00		34	73.53	.00	.00	5.88	2.94	5.88	5.88	2.94	2.94	14.9315	.7503
09:18:00	CATA	1	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0332	.0332
09:18:00	CEDF	3	.00	.00	.00	.00	.00	33.33	.00	33.33	33.33	32.6115	13.0935
09:18:00	CEJR	2	50.00	.00	50.00	.00	.00	.00	.00	.00	.00	.3164	.1583
09:18:00	CEMT	3	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0588	.0216
09:18:00	CESN	1	.00	100.00	.00	.00	.00	.00	.00	.00	.00	.2283	.2283
09:18:00	CGRP	1	.00	100.00	.00	.00	.00	.00	.00	.00	.00	.1779	.1779
09:18:00	CISC	1	.00	100.00	.00	.00	.00	.00	.00	.00	.00	.1499	.1499
09:18:00	CPIR	7	57.14	28.57	14.29	.00	.00	.00	.00	.00	.00	.3686	.0875
09:18:00	CPLT	1	.00	.00	.00	.00	.00	.00	.00	100.00	.00	6.2207	6.2207
09:18:00	CQRY	1	.00	100.00	.00	.00	.00	.00	.00	.00	.00	.1021	.1021
09:18:00	CRSQ	1	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0998	.0998
09:18:00	CSSY	9	33.33	44.44	11.11	.00	.00	.00	.00	11.11	.00	6.3256	.8250
09:18:00	CWBG	1	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0420	.0420
09:18:00	CXRE	1	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0552	.0552
09:18:00	DPL3	1	.00	.00	.00	.00	.00	.00	.00	.00	100.00	50.0251	50.0251
09:18:00	WMSC	19	100.00	.00	.00	.00	.00	.00	.00	.00	.00	.0005	.0004
09:18:00		53	64.15	18.87	5.66	.00	.00	1.89	.00	5.66	3.77	50.0251	1.9781
Total		1317	75.40	4.56	2.96	4.86	2.51	3.19	1.75	3.04	1.75	1887.437	6.3369

Cross-System Work Report – Default ...

V1R2M0														CICS Performance Analyzer		
														Cross-System Work		
CROS0001 Printed at 12:09:28 1/24/2002 Data from 11:10:51 2/04/1999 to 08:10:28 2/16/1999														Page 3		
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	UOW Seq	APPLID	Task T	R Stop Time	Response Time	A B
ABRW	BRENNER	TP	U	S23D	IGCS23D	AP:	DFHÚABRW	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	61	T 11:13:20.275	.0080	
CMSI	CBAKER	TO	UM	R11	IYK2Z1V1	FS:F---	DFHMIRS	T/R11	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	57	T 11:13:20.274	.0044	
ABRW	BRENNER	TP	U	S23D	IGCS23D	AP:	DFHÚABRW	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	62	T 11:13:21.332	.0064	
CMSI	CBAKER	TO	UM	R11	IYK2Z1V1	FS:F---	DFHMIRS	T/R11	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	58	T 11:13:21.331	.0039	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	3	IYK2Z1V1	72	T 11:16:28.284	1.1025	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72	C 11:16:27.181	3.0046	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72	C 11:16:24.177	2.2127	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72	C 11:16:21.964	46.5125	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72	C 11:15:35.451	.6794	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140	T 11:21:24.062	51.3442	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140	C 11:20:32.718	8.3481	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140	C 11:20:24.370	.0042	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	174	T 11:21:28.662	1.1930	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	174	C 11:21:27.469	.0041	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178	T 11:22:38.447	48.9210	
STAT	CBAKER	TO	U	R11	IYK2Z1V1	AP:	DFH0STAT	S/S23D	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	349	T 11:22:38.433	66.7720	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178	C 11:21:49.526	10.0524	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178	C 11:21:39.473	7.8027	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178	C 11:21:31.671	.0110	
STAT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFH0STAT	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	195	T 11:22:52.663	2.0203	
STAT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFH0STAT	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	195	C 11:22:50.642	8.9745	

CICS Performance Analyzer Threadsafe

Use CICS Performance Analyzer to analyze your CICS applications to determine which of these applications are good candidates for Threadsafe....and then when to stop

- How many switches (change modes) occurred?
 - ▶ What was the delay as the result?
- How much CPU time did they use?
 - ▶ What is this costing me?
- Sample Report Forms ...
 - ▶ CPU Usage, Delays, Change Mode Delays, **Transaction Profiling** ...
- Business Benefit of CICS Performance Analyzer...without would be a longer and more painful process....providing future performance analysis



An example of the customized TCB3LST report form

```

Display  Eilter  View  Print  Options  Help
-----
SDSF OUTPUT DISPLAY CICST05A JOB06972  DSID   103 LINE 0          COLUMNS 02- 133
COMMAND INPUT ==> █          SCROLL ==> CSR
***** TOP OF DATA *****

V2R1M0                                CICS Performance Analyzer
                                       Performance List

LIST0001 Printed at  9:42:32  7/23/2008    Data from 07:09:38  3/28/2008    APPLID CICSACB6    Page
CICS TCB Usage and Delays (V3) - Detail

Tran Userid      TaskNo Stop          User CPU Response TCBAtach DSTCBHWM DSCHMDLY DSTCBMWT MAXSTDLY MAXXTDLY KY8 Disp KY9 Disp
                Time            Time    Time
TXD0 DNET409      78 07:09:38.039  .0024  .9163      0      0          4      0      0      0      0      0
TXDA DNET409      79 07:09:39.053  .2298  1.0153     1      1         108     0      0      0      52     0
TXDB DNET409     110 07:09:39.505  .2277  1.4667     1      1         104     0      0      0      52     0
TXDC DNET409     111 07:09:39.515  .2275  1.4765     1      1         104     0      0      0      52     0
TXDD DNET409     112 07:09:39.958  .2268  1.9190     1      1         104     0      0      0      53     0
TXDE DNET409     113 07:09:39.968  .2266  1.9290     1      1         104     0      0      0      53     0
TXDA DNET409     114 07:09:40.414  .2266  2.3748     1      1         104     0      0      0      53     0
TXDB DNET409     115 07:09:40.433  .2265  2.3939     1      1         104     0      0      0      53     0
TXDC DNET409     116 07:09:40.867  .2266  2.8285     1      1         104     0      0      0      53     0
TXDD DNET409     117 07:09:40.882  .2263  2.8428     1      1         104     0      0      0      53     0
TXDE DNET409     118 07:09:41.328  .2265  3.2889     1      1         104     0      0      0      53     0
TXDA DNET409     119 07:09:41.342  .2265  3.3033     1      1         104     0      0      0      53     0
    
```

CICS PA V2.1 – Transaction Profiling

- **Transaction Profiling compares transaction performance between two different time periods, for example ...**
 - ▶ CICS (or DB2,IMS) release migration when you need to ensure transaction performance is not degraded
 - ▶ Application changes when you need to determine the impact of change on transaction performance
 - ▶ Benchmark from last month when performance was good compared to yesterday when performance was sub-standard
- **Use Transaction Profiling to identify ...**
 - ▶ Changes in application performance behaviour over time
 - ▶ Causes for the change in behaviour



CICS PA V2.1 – Transaction Profiling ...

V2R1M0

CICS Performance Analyzer
Transaction Profiling

PROF0001 Printed at 8:19:02 10/28/2008 Report Data from 11:22:39 3/20/20
Baseline Data from 11:22:39 3/20/20

Transaction Profiling

Tran		#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg QR CPU Time
TXDA	Report	13	184.9159	12.0625	11.3313	172.8534	8.5657	2.5630
TXDA	Baseline	10	259.3623	11.6278	11.3364	247.7345	31.0950	11.0913
	Delta	+3	-74.4465	+ .4346	-.0051	-74.8811	-22.5293	-8.5283
	Change%	+30.00	-28.70	+3.74	-.05	-30.23	-72.45	-76.89
				.				
TXDB	Report	15	230.3776	12.0201	11.3307	218.3575	10.3600	3.7001
TXDB	Baseline	11	315.4359	11.6446	11.3355	303.7913	32.1837	10.0834
	Delta	+4	-85.0582	+ .3755	-.0048	-85.4338	-21.8238	-6.3833
	Change%	+36.36	-26.97	+3.22	-.04	-28.12	-67.81	-63.31
				.				
TXDC	Report	14	216.4352	11.8608	11.3285	204.5744	7.9447	3.1722
TXDC	Baseline	11	303.1090	11.6455	11.3359	291.4635	26.1401	10.0836
	Delta	+3	-86.6738	+ .2153	-.0074	-86.8891	-18.1954	-6.9114
	Change%	+27.27	-28.59	+1.85	-.07	-29.81	-69.61	-68.54
				.				

CICS Transaction Server for z/OS Version 4.1 Support

- Support and exploitation of all new CICS SMF 110 data
- Monitoring Data ...
 - ▶ Web, Web Services, WS-Addressing, Event Processing, ...
 - ▶ IPv6, XML System Services, JVM Server, Dispatcher, ...
- New metrics and reports also support performance analysis of other key CICS TS V4.1 enhancements, including ...
 - ▶ Event Processing, Atom feeds, ...
 - ▶ Data Mapping Conversion, Web Services Addressing, ...
- New sample report forms are provided to support the new performance data metrics provided by CICS TS V4.1 enabling improved reporting of CICS applications



CICS Transaction Server for z/OS Version 4.1 Support

- Statistics Data ...
 - ▶ Event Processing, IPv6, JVM Server, CICS Dispatcher, ...
 - ▶ Web and Web Services ...
 - Urimap, Pipeline, Webservice, Atomservice, Xmltransform
 - ▶ Ipconn, DB2Conn, DB2Entry, MQConn, ...
 - ▶ Resource Definition/Install Signature ..
 - Combines the installation and definition signatures providing specific information for resource definitions that were installed or changed in CICS TS V4.1
 - Users will be able to use these improved details to detect resource modifications for auditing, tracking, or problem resolution



CICS Resource Signatures

- Definition signature attributes added to CICS resources
 - ▶ Signature data added when you add/alter a resource
 - DEFINESOURCE, DEFINETIME, CHANGETIME, CHANGEUSRID, CHANGEAGENT, CHANGEAGREL

- Installation signature attributes added to CICS resources
 - ▶ Signature data added when you Install a resource
 - INSTALLAGENT, INSTALLTIME, INSTALLUSRID

The screenshot shows the IBM CICS Explorer interface. The main window displays the 'URI Map (DFH\$WUUR)' resource. The 'Attributes' pane on the right shows the 'Resource Signature' section with the following data:

Property	Value
Change Agent	CSDAPI
Change Agent Release	0660
Change Time	13-Mar-2009 09:21:18
Change User ID	COCKERM
Define Source	MCSMSS
Define Time	13-Mar-2009 09:21:18
Install Agent	CSDAPI
Install Time	23-Mar-2009 15:55:33
Install User ID	COCKERM

■ Signature information display

- CEDA, CEMT, INQ SPI, CICS Explorer, CICSplex SM Views, DFHCSDUP



Statistics Alert Reporting

- Statistics Alert Reporting is a new capability enabling the definition of conditions, in terms of CICS TS or CICS TG statistics field values, which will generate alerts in batch reports
- These new batch reports ...
 - ▶ Can be used to assist users in highlighting potential tuning opportunities or identify trends that may lead to poor CICS performance or even unnecessary CICS system outages
 - ▶ Enable users to more easily identify the specific CICS regions, the time of day and the type of CICS resources that may require further specific in-depth performance analysis thereby allowing preventative tuning action to be taken
 - ▶ Either from SMF data (in Report Sets) or from HDBs



Statistics Alert Reporting ...

- Alert Definition
 - ▶ Defined with arithmetic formula using CICS statistics field names
 - ▶ Up to three threshold values indicate the severity ...
 - Critical, Information, Warning
 - ▶ For example ... a condition can trigger an alert when ...
 - the number of CICS tasks exceeds a percentage of the maximum number of tasks allowed
 - the number of transaction dumps is greater than zero
 - the number of VSAM file string waits is greater than zero
 - ▶ Possible to limit the reporting to specific CICS resources
 - Specific Files, Transaction Classes, Connections, ...
 - ▶ Sample Alert Definitions
 - Warning, Information



Statistics Alert Reporting ...

```

MVS2CTSO - [32 x 80]
File  Systems  Options  Help

ALERT - Statistics Alert Report

Command ==> _____

System Selection:
  APPLID . . . _____ +
  Image . . . MV2C _____ +
  Group . . . _____ +

Alert . . . SAMPLES _____ +

Report Sorted By:
  1 1. APPLID
  2 2. Alert
  3 3. Collection Time
  4 4. Statistics Interval
  5 5. Resource

Report Type (APPLID and Alert only):
  / List  _ Summary

Report Output:
  DDname . . . . . STAL0001
  Print Lines per Page . . . _____ (1-255)

Report Format:
  Title . . . _____

Filter Criteria:
  Type . . . . . / EOD / INT / USS / REQ / RRT

HDB Register . . : CBAKER.CICSPA.TEST.REGISTER

Mf b 04/015

```



Statistics Alert Reporting ...

```

MVS2CTSO - [32 x 80]
File Edit Lists Options Help
EDIT Statistics Alert Definition - SAMPLES Row 4 of 197 More: >
Command ==> _____ Scroll ==> PAGE
Description . . . Sample Statistics Alerts
Specify the Conditions for this Alert Definition.
- Alert      System dumps requested
  Formula    SYS DUMPS TAKEN
  Critical   _____ Warning >0 _____ Info _____ +
  Resource   _____ List _____ +
  APPLID     _____
-----
- Alert      Maximum tasks reached
  Formula    XMGTAMXT
  Critical   _____ Warning >0 _____ Info _____ +
  Resource   _____ List _____ +
  APPLID     _____
-----
- Alert      Peak tasks (% of maximum tasks)
  Formula    XMGPAT / XMGMXT * 100
  Critical   _____ Warning _____ Info >=90 _____ +
  Resource   _____ List _____ +
  APPLID     _____
-----
Mf b 04/015
    
```



Statistics Alert Reporting ...

V3R1M0

CICS Performance Analyzer
Statistics Alerts - List by APPLID

STAL0001 Printed at 13:30:41 4/14/2009 Data from 12:16:06 4/14/2009 to 12:58:27 4/14/2009 Page 1

System: CICS0000 Image: CTS1 VRM: 660 Type: TS

Sev Alert	Threshold	Actual	Collection Time	Type
W Transaction dumps requested	>0	3	2009-04-14 12.30.45	EOD
W Transaction dumpcode taken Dump Code = ASP2	>0	1	2009-04-14 12.30.45	EOD
W Transaction dumpcode taken Dump Code = AZI4	>0	1	2009-04-14 12.30.45	EOD
W Connection allocates failed (link): system Connection Name = CCC1	>0	6	2009-04-14 12.30.45	EOD
W Connection allocates failed (link): system Connection Name = CCC2	>0	208	2009-04-14 12.30.45	EOD
W Connection allocates failed (link): system Connection Name = CCC1	>0	5	2009-04-14 12.58.26	EOD
W Connection allocates failed (link): system Connection Name = CCC2	>0	34	2009-04-14 12.58.26	EOD
W Maximum active transactions in class reached Tclass Name = DFHTCL02	>0	329	2009-04-14 12.58.26	EOD

System: CICS0001 Image: CTS1 VRM: 660 Type: TS

Sev Alert	Threshold	Actual	Collection Time	Type
W Program load requests that waited	>0	3	2009-04-14 12.51.54	EOD
W System dumps requested	>0	1	2009-04-14 12.51.54	EOD
W Transaction dumps requested	>0	1	2009-04-14 12.51.54	EOD
W Transaction dumpcode taken Dump Code = AEIP	>0	1	2009-04-14 12.51.54	EOD
W Transaction dumpcode taken Dump Code = ASRA	>0	48	2009-04-14 12.51.54	EOD



Application Grouping

- Application Grouping is a facility that allows users to consolidate and view transaction performance information for related CICS tasks as a logical business unit rather than by individual transaction IDs

- Using Application Grouping ...
 - ▶ CICS transactions that belong to the same business unit are reported together under their application name
 - For example you can define an Application Group that groups all Finance transactions together under the FINANCE application name



Reporting Enhancements

- Cross-System Work Report
 - ▶ End of unit-of-work marker
- ListX Report Enhancements – User Fields ...
 - ▶ Such as OMEGAMON or DBCTL, now available as sort keys
- DB2 Report Enhancements
 - ▶ Parallel Thread support
- Additional sample Report Forms ...
 - ▶ BADCHMDS – Top 20 worst Change modes by Transaction ID
- Time Precision ...
 - ▶ New Format Type for START/STOP fields – TIMEP
 - Use the Report Set PRECISION setting for START/STOP fields



CICS PA Explorer plug-in

- Provides Visualization of historical performance data
- Access to critical data summaries and reporting scenarios via CSV or database (DB2) extracts
- Numerous visualizations presentable
- Integrates with the strategic CICS Explorer and other tooling plug-ins



Integration with CICS Explorer

The screenshot displays the IBM CICS Explorer application interface. On the left, a tree view shows the hierarchy of CICS regions under the server IYCYZC23, including TOOLPLX1 (3/4) and TSTPLEX (11/12). The main pane shows a list of CICS regions with columns for Region, Name, Status, and Use C. The CRTP region is selected, and a context menu is open over it, with 'Performance history' highlighted. To the right, a 'CPU time' graph shows a bar chart of CPU usage over time. Below the graph, the 'Transaction detail for: CRTP' is displayed, including start date, start time, and applid. An 'Overview' section shows four circular gauges for Threadsafe, CPU time, Response time, and Storage. A table below provides detailed performance metrics for the CRTP transaction.

Region	Name	Status	Use C
CICSC231	CPMI	✓ ENABLED	0
CICSC231	CPSS	✓ ENABLED	0
CICSC231	CQPI	✓ ENABLED	0
CICSC231	CQPO	✓ ENABLED	0
CICSC231	CQRY	✓ ENABLED	0
CICSC231	CREA	✓ ENABLED	0
CICSC231	CREC	✓ ENABLED	0
CICSC231	CRMD	✓ ENABLED	0
CICSC231	CRMF	✓ ENABLED	0
CICSC231	CRSQ	✓ ENABLED	1
CICSC231	CRSR	✓ ENABLED	0
CICSC231	CRSY	✓ ENABLED	0
CICSC231	CRTE	✓ ENABLED	0
CICSC231	CRTP	✓ ENABLED	250
CICSC231	CSKP	✓ ENABLED	0
CICSC231	CSMI	✓ ENABLED	0
CICSC231	CSM1	✓ ENABLED	0

Transaction detail for: CRTP
 Start date=2007-01-12, Start time=02.05.00, Applid=IYCYZC21, Transaction ID=CRTP

Transaction detail for: 2007-01-12, 02.05.00, IYCYZC21

Overview:

- Threadsafe: [Gauge]
- CPU time: [Gauge]
- Response time: [Gauge]
- Storage: [Gauge]
- File usage: [Gauge]

Safe: (averages)

Item	Time (avg)	Count	%Overall	%f
TCB mode switches (average)	0	0	0	0
DB2 requests	0	0	0	0
File control requests	0	0	0	0



Visualizing the summary data

The screenshot displays the IBM CICS Explorer interface with several key components:

- Summary Table:** A table listing transaction details such as Start date, Start time, Applid, Transacti..., Task ter..., Respons..., User Disp..., User CPU..., and Suspend... for various transactions like PDQVHRL, HELMCK, PDQDIR, etc.
- Transaction Detail Window:** A window titled "Transaction detail for: 2007-01-11, 23.50.00, IYCYZC24, CRTP" showing an overview with pie charts for Threadsafe, CPU time, Response time, and Storage. Below this is a detailed "Response measurement" table.

Response measurement	Time (avg)	Count	%Overall	%Relative
Response time: 0 TCB mode switches (average)	0.002938	-	-	-
Response user:				
User Dispatch time	0.001620	2	55%	55%
User CPU time	0.000612	2	21%	38%
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	-	-
X9 TCB CPU time	0	0	-	-
Miscellaneous TCB CPU ttr	0	0	-	-
R0 TCB CPU time	0	0	-	-
QR TCB CPU time	0.000612	2	21%	100%
Suspend time	0.001317	2	45%	45%
Dispatch wait time	0.000238	1	8%	18%
- Bar Chart:** A bar chart showing "Time (seconds)" on the y-axis (0 to 0.2) for various transactions. A callout indicates "CICS Key 8 TCB CPU time average=0.169700".
- Transaction List:** A list of transactions ordered by Change TCB modes, including NR1 (1), NK3 (2), NK5 (1), RRBZ (1), ERGR (1), ERMI (1), ERWZ (1), ER02 (2), ER97 (1), PDQOBS, DTQ (1), BULM (3), PDQDIR, ZFAZ (1), ZFA3 (1), ZFPZ (1), BRUL (1), BROF (2), H000 (1), J253 (1), J262 (1), KMBQ (2), CQAZ (1), PDQESTE, OVIDA (2), OVSW (2), and OV72 (1).

CICS PA Version 3 Release 1 Highlights

- CICS PA Explorer plug-in updated
- CICS Transaction Server for z/OS Version 4.1 Support
- Statistics Alert Reporting Enhancements
- CICS PA Version 2.1 Enhancements Incorporated
 - ▶ Application Grouping
 - ▶ Reporting Enhancements
- CICS PA Version 3.1 – Product information ...
 - ▶ Program Product – 5655-U87



Summary - CICS Performance Analyzer

- Analyzes SMF records to produce a wide range of reports and extracts
- Extensive Tabular Reports and Extract Data Sets
- Historical Database
 - ▶ Trending and Capacity Planning
- ISPF Dialog to build, maintain, and submit reports and extracts
- Graphical view of performance and statistical data via CICS Explorer
- Supports CICS TS, Version 4, Version 3, and Version 2
- Program Product – 5697-U87



CICS Interdependency Analyzer

Understand Relationships in your CICS Environment



CICS Interdependency Analyzer

- **What does it do?**
 - ▶ Real-time capture of CICS application calls (API's,SPI's,Calls)
 - ▶ Query facilities: Windows / CICS / Batch
 - ▶ Document application affinities to facilitate Dynamic Transaction Routing
 - ▶ Identify application programs that are ThreadSafe / Open TCB
 - ▶ Creates and updates CPSM affinities rules database
- **Benefits**
 - ▶ Automated documentation of CICS applications
 - ▶ Quickly identify application scope
 - ▶ Verify the application code via call path tracing
 - ▶ Automatically maintains CPSM rules
- **Makes it easier to maintain, enhance, modify, and redistribute your applications.**



CICS Interdependency Analyzer for z/OS (CICS IA)

Key features

- ▶ **Captures CICS application relationships:**
 - Resources used by a transaction - Programs, Files, TSQs, TDQs plus DB2, MQ, IMS plus Web services, Natural and Adabas
 - Transactions with affinities and their type / lifetime
 - Unused resources
 - Sequencing of transactions within an application
 - Command flow shows detailed TCB switching within a transaction
- ▶ **Relationship data loaded onto a DB2 data base or UDB**
- ▶ **CICS Explorer plug-in integrates with CICS run-time and other tools**

CICS support

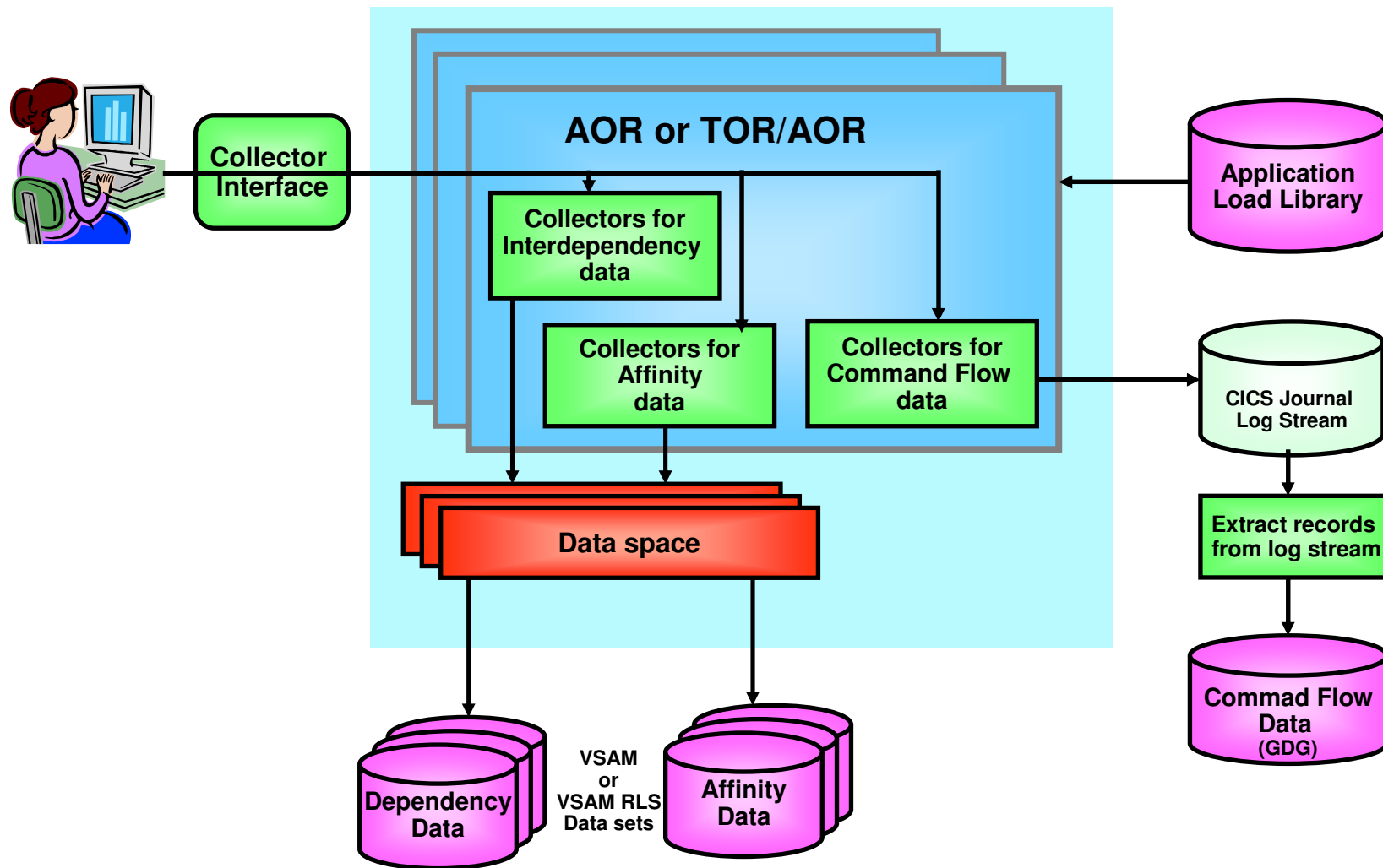
- ▶ CICS Transaction Server for z/OS, V3 and V4

New in CICS IA V3.1 (Sept 2009)

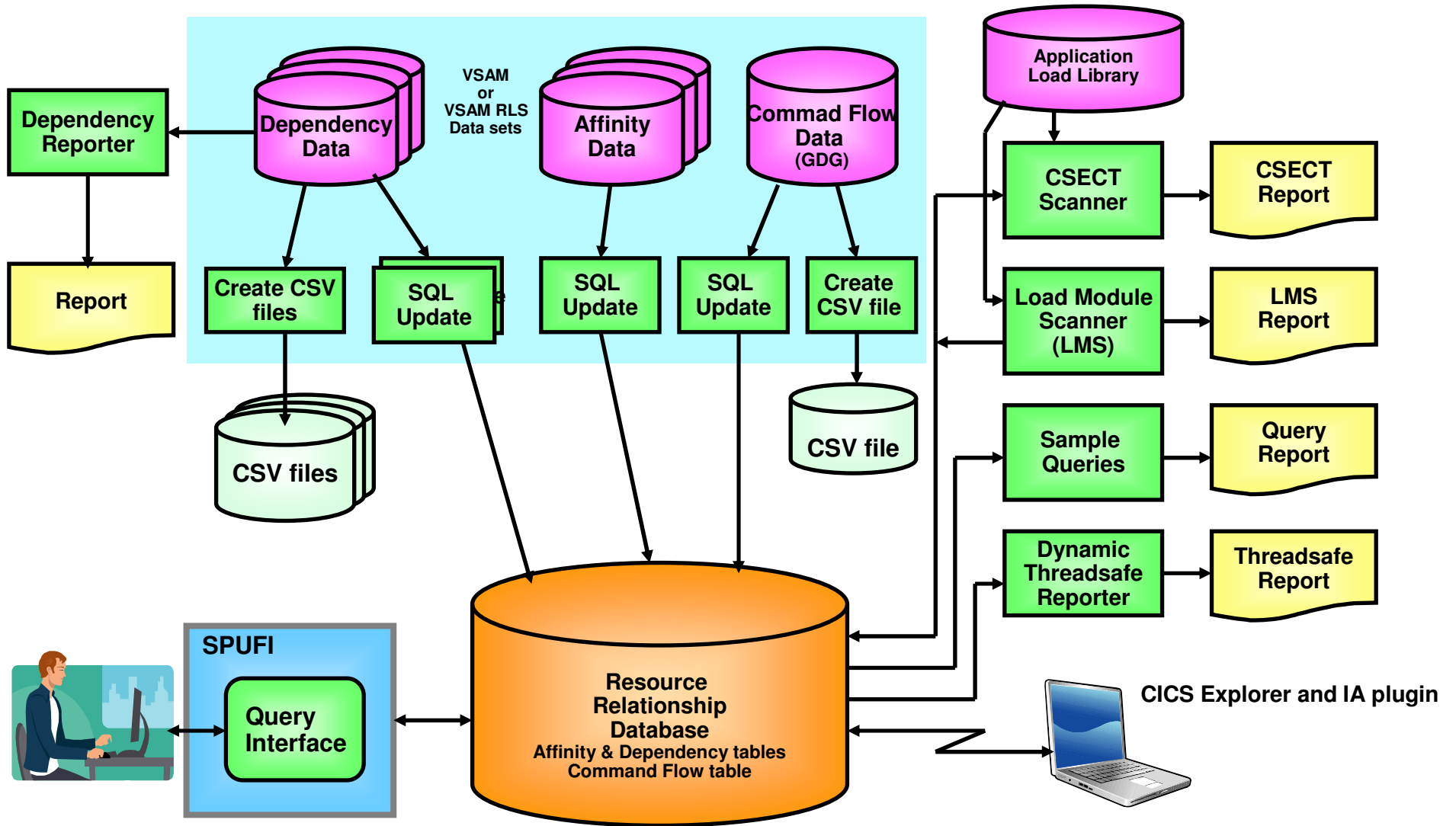
- **Supports all new and updated CICS TS V4.1 resources, including Events, Atom feeds, Bundles, XML mappings, etc**
- **Fully supported plug-in for the CICS Explorer**
- **Command Flow feature**
- **Natural program interactions and ADABAS usage**
- **Migration queries for CICS TS V4.1.**
- **Collect Affinity and Dependency data at the same time**
- **Change collector options dynamically**



CICS IA Architecture (Collector structure)



CICS IA Architecture (Reporting Structure)



CICS IA – Business Value

- **Understand active application inventory quickly and efficiently**
 - ▶ Understand cross-system applications and dependencies
 - ▶ Know the resource topology within a particular CICS region
 - ▶ Understand the where and how resources are used
 - ▶ Know the last time a particular resource was used

- **Maintain or enhance applications more quickly and efficiently**
 - ▶ Identify the scope of a change
 - ▶ What resources that are affected directly and indirectly
 - *Transactions, programs, data elements: files, queues, screens, ...*
 - ▶ What to change, what to build, what to test, what needs to be communicated to roles involved
 - ▶ Look across boundaries, including shared data



CICS IA Key Features

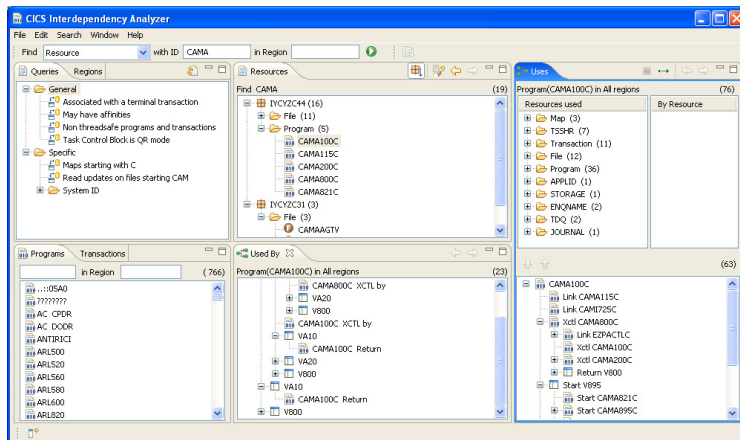
- Affinity Analysis Support
- Web Services Support
- Application Migration Support
- Application Performance Support - Threadsafe
- Support for Software AG's Natural
- Command Flow
- IA Explorer



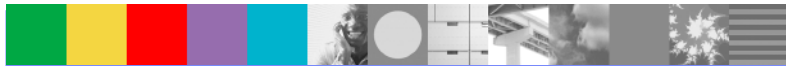
CICS IA Explorer Architecture

CICS IA **Explorer** is a stand alone PC application that includes an Eclipse Rich Client platform and Java Runtime Environment. Saved queries and query results are stored locally on the PC

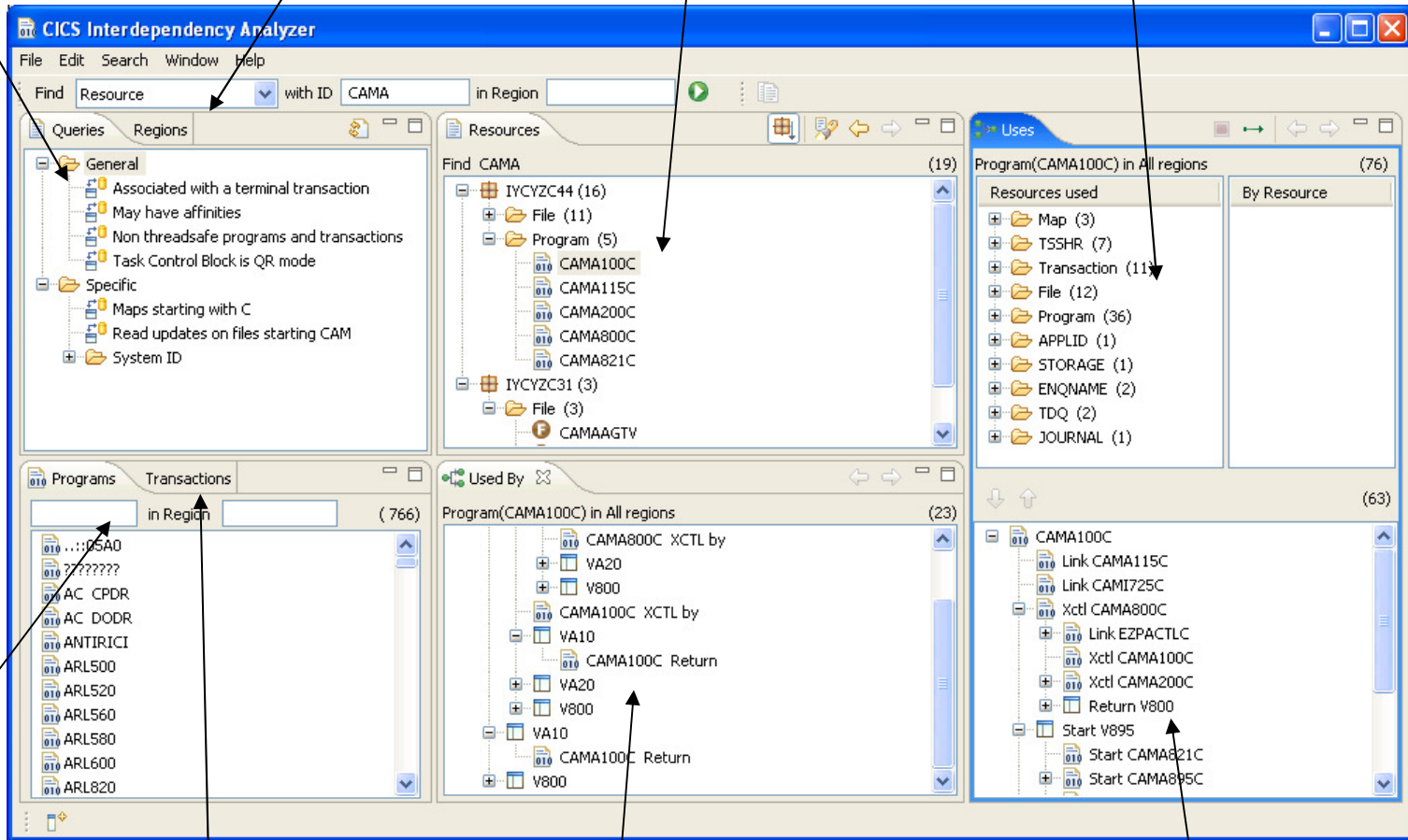
CICS IA **Collector** runs in regions and writes data about Interactions between Transactions, Programs and other resources to DB2 tables



JDBC type 4 driver accesses DB2 Tables on System z



Saved query definitions List of all Regions Results of queries Breakdown of resources used



List of all Programs

List of all Transactions Where is resource used ? Call tree of program execution

Commands Monitored by CICS IA for Affinities

CICS Commands

Inter Transaction Affinities :-

**ENQ, DEQ
READQ TS, WRITEQ TS,DELETEQ TS
LOAD HOLD, RELEASE
RETRIEVE WAIT, START
ADDRESS CWA
GETMAIN SHARED, FREEMAIN
LOAD, FREEMAIN
CANCEL, DELAY, POST, START.**

Transaction System Affinities :-

**INQ, SET, ENABLE, DISABLE, EXTRACT, COLLECT STATS
PERFORM, DISCARD, CREATE, RESYNC
CICS BTS BROWSE
WAITCICS, WAIT EVENTS , WAIT EXTERNAL.**



The Affinity Reporter - example output (ENQ/DEQ)

2006/05/18 - CICS INTERDEPENDENCY ANALYZER (CIU) - Version 210 - Page: 5
 INTER-TRANSACTION AFFINITIES REPORT FOR APPLID: IYCYZC41 - ENQ/DEQ

Trangroup : EQ.00000001
 Affinity : GLOBAL (Worsened from USERID)
 Lifetime : SYSTEM
 Resource : 'CAMENQTL' (C3C1D4C5D5D8E3D3)
 Length : 8

Tranid	Program	Offset	Usage	Command	Terminal	CBTS Task	Link3270
V800	EZPACTLC	00002074	1	ENQ NAME	Yes	No	No
V800	EZPACTLC	000020A0	1	DEQ NAME	Yes	No	No
Total Transactions			:	1			
Total Programs			:	1			

Trangroup : EQ.00000002
 Affinity : Background
 Lifetime : SYSTEM
 Resource : 'NQ200205' (D5D8F2F0F0F2F0F5)
 Length : 8

Tranid	Program	Offset	Usage	Command	Terminal	CBTS Task	Link3270
V200	CAMT200C	00002AB4	8	ENQ NAME	No	No	No



The Affinity Reporter - example output (TSQs)

2006/05/18 - CICS INTERDEPENDENCY ANALYZER (CIU) - Version 210 - Page: 11
 INTER-TRANSACTION AFFINITIES REPORT FOR APPLID: IYCYZC41 - TEMPORARY STORAGE COMMANDS

Trangroup : TS.00000001
 Affinity : LUNAME
 Lifetime : SYSTEM (Worsened from LOGON)
 Queue : CAMTCORS (C3C1D4E3C3D6D9E24040404040404040)
 Recoverable : No (AUX)
 Terminal Id : TC49 (E3C3F4F9)

Tranid	Program	Offset	Usage	Command	Terminal	CBTS	Task	Link3270
VA10	CAMI725C	000014E8	10	READQ TS	Yes	No	No	No
VA20	CAMI725C	000014E8	1	READQ TS	Yes	No	No	No
VA90	CAMI710C	0000B380	1	READQ TS	Yes	No	No	No
VA90	CAMI715C	000053F8	1	READQ TS	Yes	No	No	No
VA90	CAMI720C	00003C40	5	READQ TS	Yes	No	No	No
V800	CAMI725C	000014E8	2	READQ TS	Yes	No	No	No
V800	EZPACTLC	000009D8	1	READQ TS	Yes	No	No	No
V800	EZPACTLC	00000B32	1	WRITEQ TS	Yes	No	No	No
V800	EZPACTLC	00000BD0	1	READQ TS	Yes	No	No	No
V800	EZPACTLC	00000C2E	1	READQ TS	Yes	No	No	No
V884	CAMA884C	00000CA2	2	READQ TS	No	No	No	No

The Affinity Builder - example output

```
* HEADER APPLID(BUILDER )   SAVEDATE(20050426)   SAVETIME(132144   );
*
* Generated by CICS IA Transaction Affinities (Builder) on 2005/04/27
* Note: Suitable for input to CICSplex SM
*
* REMOVE TRANGRP NAME(CTSAGRP );
CREATE TRANGRP NAME(CTSAGRP ) AFFINITY(GLOBAL   ) AFFLIFE(SYSTEM   )
      MATCH(LUNAME) STATE(ACTIVE );
      CREATE DTRINGRP TRANGRP(CTSAGRP ) TRANID(CTSA);
      CREATE DTRINGRP TRANGRP(CTSAGRP ) TRANID(CTST);
      CREATE DTRINGRP TRANGRP(CTSAGRP ) TRANID(TSTA);
*
* REMOVE TRANGRP NAME(CTSDGRP );
CREATE TRANGRP NAME(CTSDGRP ) AFFINITY(GLOBAL   ) AFFLIFE(SYSTEM   )
      MATCH(LUNAME) STATE(ACTIVE );
      CREATE DTRINGRP TRANGRP(CTSDGRP ) TRANID(CTSD);
*
* REMOVE TRANGRP NAME(CTSEGRP );
CREATE TRANGRP NAME(CTSEGRP ) AFFINITY(GLOBAL   ) AFFLIFE(SYSTEM   )
      MATCH(LUNAME) STATE(ACTIVE );
      CREATE DTRINGRP TRANGRP(CTSEGRP ) TRANID(CTSE);
```

Find Resource with ID in Region

Queries Regions

- Supplied Samples
 - CICS
 - Affinities
 - Affinity groups by region
 - All Affinities for programs EQZ%
 - All programs with potential affinities
 - ENQ Affinities by Program
 - Exits
 - General
 - All programs using files
 - All transactions by region
 - Commands in QR mode by program
 - Dynamic COBOL calls by program
 - Programs last used before a given date
 - Programs that use resources starting with EMS
 - Resource usage by program
 - Migration
 - Specific
 - Threadsafe
 - All programs that issue a GETMAIN
 - All programs that issue an ADDRESS CWA
 - All programs that issue an EXTRACT EXIT
 - All programs that issue an LOAD
 - All programs which may have threadsafe data integrity issues
 - CICS commands by TCB mode and program
 - DB2 commands by TCB mode and program
 - IMS commands by TCB mode and program
 - MQ commands by TCB mode and program
 - Webservices
 - DB2
 - All plans by region
 - Cursor resources by region
 - DB2 Resources by subsystem
 - IMS
 - MQ
 - User Queries

Resources

All programs with potential affinities (53)

- PROGRAM (CSQ4CVD2) (1)
 - Resource Type (TSAUX) (1)
- PROGRAM (EMSTESTS) (6)
 - Resource Type (TS) (3)
 - Resource Type (FILE) (3)
- Resource Type (TSAUX) (3)
- Resource Type (ENQNAME) (2)
- Resource Type (PROGRAM) (6)
- Resource Type () (2)
 - (CWA)
 - (TCTUA)
- PROGRAM (KATPROGA) (1)
- PROGRAM (JASHU123) (1)
- PROGRAM (EMSTEST1) (2)
- PROGRAM (EMSTEST2) (1)
- PROGRAM (EMSCONTD) (2)
- PROGRAM (KATPROGA) (1)

Used By

(CWA) in All regions (2)

- CWA
 - EMSTESTS Address
 - TSTS

Uses

Resources used	By Resource

--	--

Web Services support

- **Detection of a Web service requester**
 - ▶ Captured in table CIU_CICS_DATA

- **Captured Web service resources information**
 - ▶ When the CICS Resource Option 'Web Services' is set to 'D'
 - ▶ Captured in the table CIU_WEBSERV_DETAIL

- **Sample queries help identify candidate Web services programs**
 - ▶ Program does not contain any CICS presentation logic (contains only business logic)
 - ▶ Program is linked using a COMMAREA or CHANNEL

- **Detection of a Web service provider**
 - ▶ Captured at a Captured when
 - the application issues EXEC CICS INVOKE WEBSERVICE command
 - and CICS Resource Option 'Web Services' is set to 'Y' or 'D'
 - new CICS TS GLUE – to be provided via service channel
 - ▶ Data captured will be the same as for a requester.



Web Services support

- CICS IA captures these CICS presentation commands :
 - ▶ BMS commands
 - EXEC CICS PURGE MAP
 - EXEC CICS RECEIVE MAP
 - EXEC CICS SEND MAP
 - EXEC CICS SEND TEXT
 - ▶ Presentation commands
 - EXEC CICS ADDRESS TCTUA
 - EXEC CICS ASSIGN SCRNRWD
 - EXEC CICS ASSIGN SCRNRHT
 - EXEC CICS ASSIGN EXTDS
 - EXEC CICS ASSIGN COLOR
 - EXEC CICS ASSIGN PS
 - EXEC CICS ASSIGN HILIGHT
 - EXEC CICS ASSIGN SYSID
 - EXEC CICS ASSIGN MAPLINE
 - EXEC CICS ASSIGN MAPCOLUMN
 - EXEC CICS ASSIGN MAPHEIGHT
 - EXEC CICS ASSIGN MAPWIDT
 - EXEC CICS ASSIGN APLTEXT
 - EXEC CICS ASSIGN TEXTKYBD
 - EXEC CICS ASSIGN APLKYBD
 - EXEC CICS ASSIGN TEXTPRINT
 - EXEC CICS ASSIGN DEFSCRNRWD
 - EXEC CICS ASSIGN DEFSCRNRHT
 - EXEC CICS ASSIGN ALTSCRNRWD
 - EXEC CICS ASSIGN DS3270
 - EXEC CICS ASSIGN ALTSCRNRHT
 - EXEC CICS ISSUE COPY
 - EXEC CICS ISSUE PASS
 - EXEC CICS ISSUE RESET
 - EXEC CICS SIGNOFF
 - EXEC CICS SIGNON
- ▶ **Commands where CONVID option is NOT present**
 - EXEC CICS CONVERSE
 - EXEC CICS EXTRACT PROCESS
 - EXEC CICS ISSUE ABEND
 - EXEC CICS ISSUE CONFIRMATION
 - EXEC CICS ISSUE SIGNAL
 - EXEC CICS ISSUE ERROR
 - EXEC CICS ISSUE DISCONNECT
 - EXEC CICS RECEIVE
 - EXEC CICS SEND



Queries | **Regions**

- Supplied Samples
 - CICS
 - Affinities
 - Exits
 - General
 - Migration
 - Specific
 - Copy of Programs that contain presentation logic
 - Programs that DO NOT contain presentation logic
 - Programs that call a webservice
 - Programs that contain presentation logic
 - Programs that use containers
 - Threadsafe
 - Webservices
 - Command Flow
 - DB2
 - IMS

***Resources**

Programs that DO NOT contain presentation logic (352)

- ADTCAOR1 (2)
 - PROGRAM (FMN3CICS)
 - PROGRAM (MYTRADMD)
- ADTCAOR2 (2)
- ADTCFOR (1)
- ADTCMONO (8)
- ADTCTOR (5)
- CICACB13 (34)
- CICACB14 (34)
- CICACB22 (32)
- CICACB23 (36)
- CICACB28 (32)
- CICACB29 (15)
- CICACB91 (71)
- CICACB95 (5)
- CICACB96 (5)
- CICACB97 (3)
- IYCYZ3A (8)
- IYCYZ3C (4)
- IYCYZ31 (9)

Uses

Program(FMN3CICS) in All Regions (60)

Resources used	By Resource
(10)	
TD (11)	
ENQNAME (2)	
Transaction (1)	
Program (3)	
TSAUX (5)	
Map (2)	
File (16)	
TEXT (1)	
EXIT (1)	
TS (8)	

Programs | **Transactions**

in Region (107)

- .TMD
- CATA
- CATD
- CATR
- CCVA
- CCVC
- CCVI
- CCVT
- CCVW
- CDT#
- CECI
- CEDA
- CEDC
- CEJR
- CEMT
- CESD
- CESF
- CESN

Used By

Programs using Program(FMN3CICS) in All regions (1)

- FMN3CICS
 - FMN3CICS linked by

FMN3CICS

- Link FMN3CICS
 - Call FMN3LVL
 - Call FMN3POPT
 - Start FMVU
- Call FMN3LVL
- Call FMN3POPT
- Start FMVU

Application Migration Support

- **Assist users in selecting which applications need testing during the migration from one CICS TS release to another**
- **Done by identifying**
 - ▶ programs that include APIs or SPIs that have changed
 - ▶ Exits routines used in the CICS region
- **CICS IA provides sample SQL queries that help identify**
 - ▶ Obsolete commands and options
 - ▶ Changes to File control API's
 - ▶ Changes to Program API's
 - ▶ Changes to SPI commands and options for:
 - Programs
 - Transactions
 - Files
 - CORBA
 - TCP/IP
 - Web services
 - Pipelines
 - JVM's
 - Doc Templates



Application Migration support

- **Sample queries for the different migration combinations.**
 - ▶ **CIUM1332 - Migration from TS 1.3 to TS 3.2**
 - ▶ **CIUM2231 - Migration from TS 2.2 to TS 3.1**
 - ▶ **CIUM2232 - Migration from TS 2.2 to TS 3.2**
 - ▶ **CIUM2331 - Migration from TS 2.3 to TS 3.1**
 - ▶ **CIUM2332 - Migration from TS 2.3 to TS 3.2**
 - ▶ **CIUM3132 - Migration from TS 3.1 to TS 3.2**
- **Processes for evaluating applications to migrate**
 - ▶ Collect data for applications in TS version to be migrated.
 - ▶ Run SQL queries to identify those application that may need changing
 - ▶ Evaluation and/or change application
 - ▶ Test on new TS version.



Queries Regions

- TS13 to TS31
- TS13 to TS32
- TS22 to TS31
- TS22 to TS32
- TS23 to TS31
- TS23 to TS32
- TS31 to TS32
 - CONTAINER APIs
 - DOCTEMPLATE SPIs
 - FILE APIs - new XRBA option
 - INQUIRE FILEs
 - JVM PROFILE SPIs
 - PIPELINE SPIs
 - Program SPIs - INQUIRE,ENABLE
 - TCPIP Service SPIs
 - WEB APIs
 - WEB Service SPIs

*Resources (291)

FILE APIs - new XRBA option

- PROGRAM (CBKFSX65) (1)
- PROGRAM (CCVALIST) (4)
 - READ UPD (1)
 - Resource Type (FILE) (1)
 - CCVEXML
 - REWRITE (1)
 - UNLOCK (1)
 - WRITE (1)
- PROGRAM (CCVINIT) (2)
- PROGRAM (CCVSCXTC) (4)
- PROGRAM (CCVSMCSD) (3)
- PROGRAM (CCVSMDDD) (8)
- PROGRAM (CCVSMJNL) (9)
- PROGRAM (CCVSRCSO) (7)
- PROGRAM (CCVSUTIL) (4)
- PROGRAM (CCVSWASH) (5)
- PROGRAM (CCVXLAC) (3)
- PROGRAM (CCVXLAD) (3)
- PROGRAM (EMSTESTS) (5)
- PROGRAM (EZACIC02) (1)

Uses (58)

Program(CCVALIST) in All Regions

Resources used	By Resource
(5)	
Program (18)	
STORAGE (1)	
File (11)	
ENQNAME (3)	
EXIT (1)	
???????? (1)	
TD (1)	
TSAUX (8)	
TEXT (1)	
TS (7)	
STORSHR (1)	

Programs Transactions (107)

in Region

- .TMD
- CATA
- CATD
- CATR
- CCVA
- CCVC
- CCVI
- CCVT
- CCW
- CDT#
- CECI
- CEDA
- CEDC
- CEJR
- CEMT
- CESD
- CESF
- CESN

Used By (43)

Programs using File(CCVALIST) in All regions

- CCVEXML
 - CCVSCXTC Endbr,Inquire,Readnext,Startbr
 - CCVADISP linked by
 - CCVXLAC Read UPD by,Rewrite,Write
 - CCVXLAD Read UPD by,Rewrite,Write
 - CCVALIST Read UPD by,Rewrite,Unlock,Write
 - CCVACMDA linked by
 - CCVSWASH Delete,Endbr,Readnext,Set,Startbr
 - CBKFSX65 Inquire
 - CCVSUTIL Read UPD by,Rewrite,Unlock,Write

(38)

- CCVALIST
 - Link CCVSIMP
 - Link CCVSMCPS
 - Link CCVSMDDD
 - Link CCVSMJNL
 - Link CCVSMMSGH
 - Link CCVSOWAB
 - Link CCVSRCSO
 - Link CCVSSECI
 - Link CCVXLAC
 - Link CCVXLAD
 - Call CCVSMISC

Application performance support

- **Support to identify the thread-safe aspect of your program inventory**
- **Limit the number of TCB swaps to the quasi-reentrant task control block. Saving as much as 15% in processor usage.**
- **How do you find which programs would benefit from being made Threadsafe?**
 - ▶ CICS documents which EXEC CICS commands are threadsafe.
 - API and SPI Programming Ref guides
 - ▶ Those identified as thread safe do not cause a TCB swap.
 - ▶ Using as many of these threadsafe commands will increase performance.
 - ▶ Programs that are threadsafe can be defined to CICS with CONCURRENCY(THREADSAFE) or API(OPENAPI)
- **Command Flow Feature**
 - ▶ Track commands in chronological sequence to see exactly where TCB switching occurs



Threadsafe Dynamic Analysis report

```
1CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0                2007/10/03:14.01.34    PAGE
Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS

Report options:
PROGRAMNAME=*          REGIONNAME=*          CICSLEVEL=          REPORT=DETAIL    LINESPERPAGE=60

Definitions of Terms:

'Threadsafe' calls are EXEC CALLS commands that do not cause a TCB swap.

'Non-Threadsafe' calls are EXEC CALLS commands that cause a TCB swap.

'Indeterminate Threadsafe' calls are EXEC CALLS commands where it cannot be determined if the call causes a TCB swap.

'Dynamic calls' are calls to modules at execution time. Programs that are called dynamically take on the same environment as the calling program.

'Threadsafe Inhibitor calls' are EXEC CICS commands that need to be investigated further because they may prevent you from defining your program as threadsafe. These commands are: ADDRESS CWA, EXTRACT EXIT, GETMAIN SHARED and LOAD.
```



Threadsafe Dynamic Analysis report - Summary

```

CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0                                2007/10/19:11.50.59    PAGE
3
Program Dynamic Analysis - THREADSAFE SUMMARY LISTING FOR CICS TS 3.2

APPLID   Program   Linkedit   Execution   Concurrency   APIST   Storage   CICS   LIB Dataset Name
          Date      Key
-----
IYDZZ328 EMSCONTA ----- USER      QUASIRENT   CICSAPI ACTIVE  0650   CICSIA.D.TEST.LOADLIB
Total CICS calls:          13  Threadsafe:          1  Non-Threadsafe:          7  Indeterminate Threadsafe:
0
          DB2 calls:          0  MQ calls:          0  IMS calls:
0
          Dynamic Calls:          0  Threadsafe Inhibitor calls:          0

IYDZZ328 EMSTESTS ----- USER      QUASIRENT   CICSAPI ACTIVE  0650   CICSIA.D.TEST.LOADLIB
Total CICS calls:          64  Threadsafe:          34  Non-Threadsafe:          26  Indeterminate Threadsafe:
0
          DB2 calls:          0  MQ calls:          0  IMS calls:
0
          Dynamic Calls:          0  Threadsafe Inhibitor calls:          5
    
```



Threadsafe Dynamic Analysis report

```

CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0                                2007/10/19:12.22.05    PAGE
3
Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS 3.2
APPLID  Program  Linkedit  Execution  Concurrency  APIST  Storage  CICS  LIB Dataset Name
         Date      Key
-----
Threadsafe
Type
-----
IYDZZ328 EMSTESTS ----- USER          QUASIRENT  CICSAPI ACTIVE  0650  CICSIAD.TEST.LOADLIB
*          CICS ADDRESS                      CWA          E76      3380      1      Y
          .
          CICS ADDRESS                      TCTUA        E76      3380      1      Y
          CICS ADDRESS                      TCTUA       1152     3380      1      Y
          .
          CICS DEFINE                      COUNTER     TESTDCOUNTER 1BE0     3380      1      N
          CICS DELETE                      COUNTER     TESTCOUNTER  1F2C     3380      1      N
          CICS DELETE                      COUNTER     TESTDCOUNTER 1F78     3380      1      N
Total CICS calls:          64  Threadsafe:          34  Non-Threadsafe:    26  Indeterminate Threadsafe:
                          DB2 calls:          0  MQ calls:          0  IMS calls:
                          Dynamic Calls:        0  Threadsafe Inhibitor calls (*): 5
    
```


Use IA Explorer to help with Threadsafe analysis

CICS Interdependency Analyzer

File Edit Search Window Help

Find Resource with ID in Region

Queries Regions

Supplied Samples

- CICS
 - Affinities
 - Exits
 - General
 - Migration
 - Specific
 - Threadsafesafe
 - All programs that issue a GETMAIN
 - All programs that issue an ADDRESS CWA
 - All programs that issue an EXTRACT EXIT
 - All programs that issue an LOAD
 - All programs which may have threadsafe data integrity issues
 - CICS commands by TCB mode and program
 - CICSACB6 CICS commands by TCB mode and program
 - CICSACB7 CICS commands by TCB mode and program
 - DB2 commands by TCB mode and program
 - IMS commands by TCB mode and program
 - MQ commands by TCB mode and program
 - Webservices
- DB2
- IMS
- MQ
- User Queries
 - DB2 Tables by Transaction
 - DB2 Tran Ids by DB2 Table
 - EHDRIVER resources
 - Mass Mutal Exec test
 - Programs Using Files

Resources

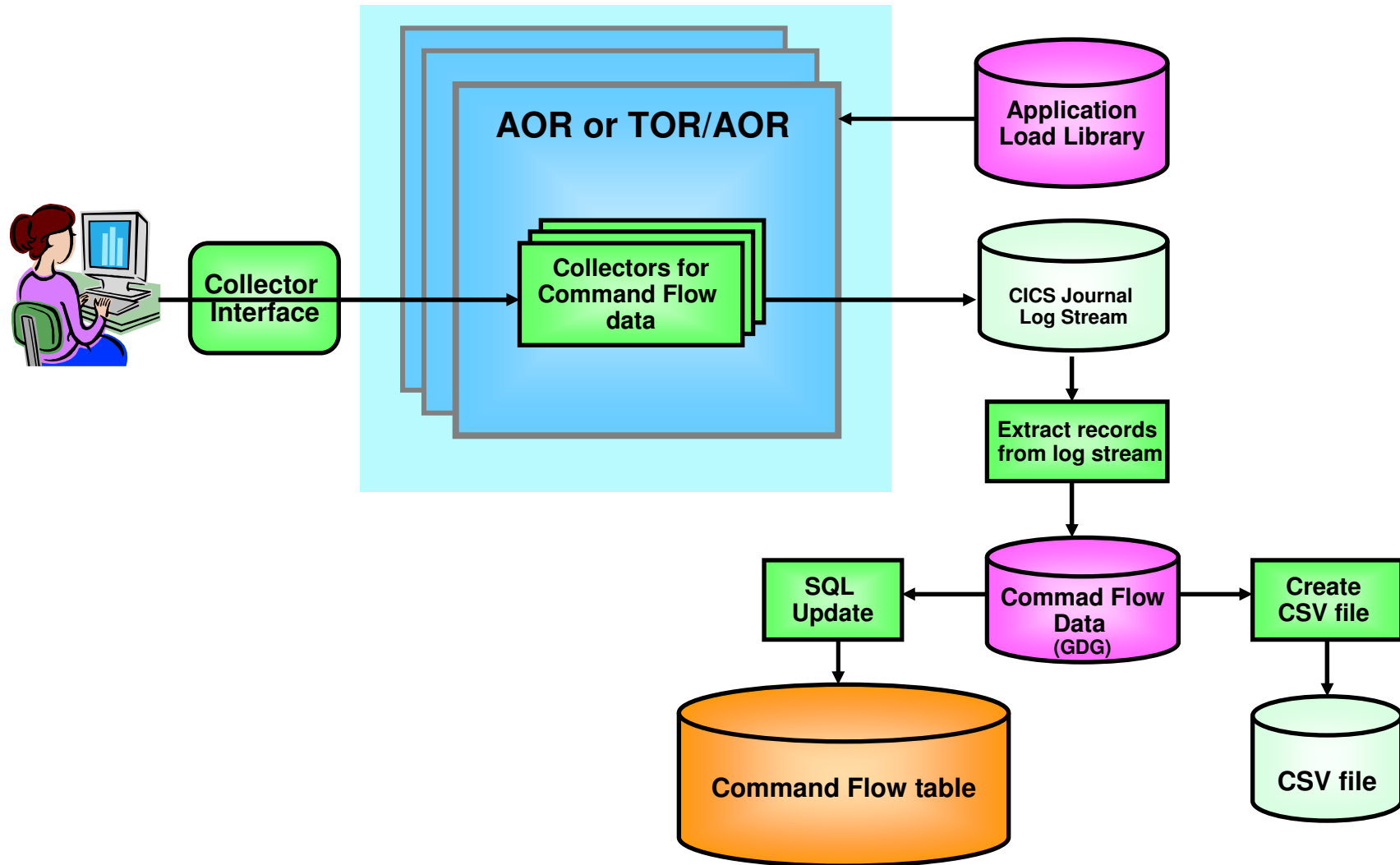
All programs which may have threadsafe data integrity issues

- PROGRAM (EQZ1SET) (1)
- PROGRAM (EQZ1RCV) (1)
- PROGRAM (EQZ3ACTL) (1)
- PROGRAM (EQZ1INIT) (1)
- PROGRAM (CBKCSTRT) (3)
- PROGRAM (EQZ1SWCH) (1)
- PROGRAM (EQZ1IDEN) (1)
- PROGRAM (EQZ2REQH) (1)
- PROGRAM (EQZ3SWCF) (1)
- PROGRAM (EQZ3STAT) (1)
- PROGRAM (EQZ3SUBS) (1)
- PROGRAM (EQZ4SIME) (1)
- PROGRAM (CAMA800C) (1)
- PROGRAM (EHDRIVER) (1)
 - ADDRESS (1)
 - Resource Type 0 (1)
 - (CWA)
- PROGRAM (EQZ1MONS) (1)
- PROGRAM (EQZ1REL) (1)
- PROGRAM (EZPACTLC) (2)
- PROGRAM (DRIVERP) (1)
- PROGRAM (CAMA895C) (2)
- PROGRAM (EQZ3SSUP) (1)
- PROGRAM (EQZ1MOP) (1)
- PROGRAM (CBKCMNDS) (1)
- PROGRAM (EQZ1IPGV) (1)
- PROGRAM (EQZ5TINT) (1)
- PROGRAM (CBKCSRSC) (1)

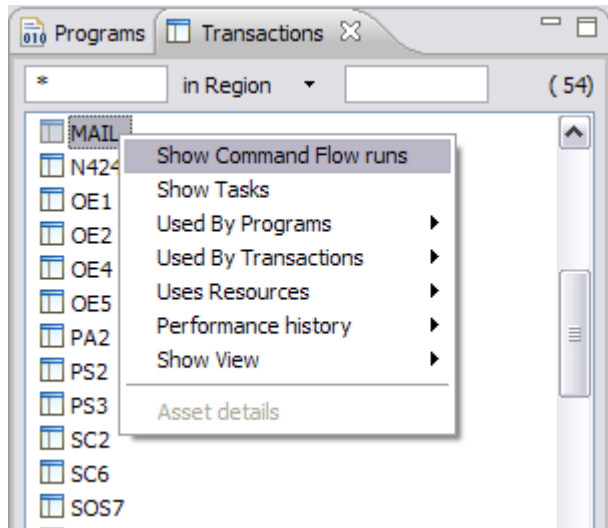
Command Flow Option



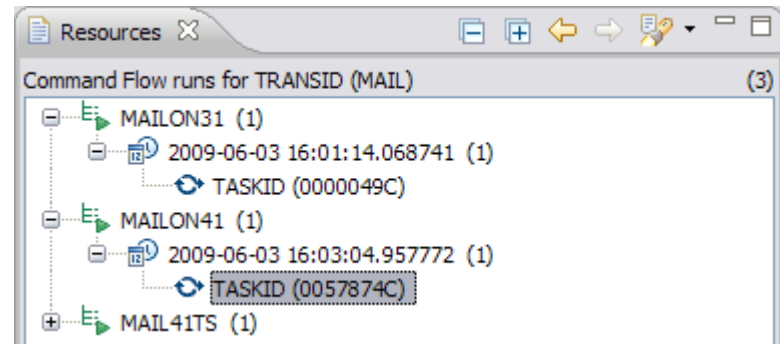
Command Flow option structure



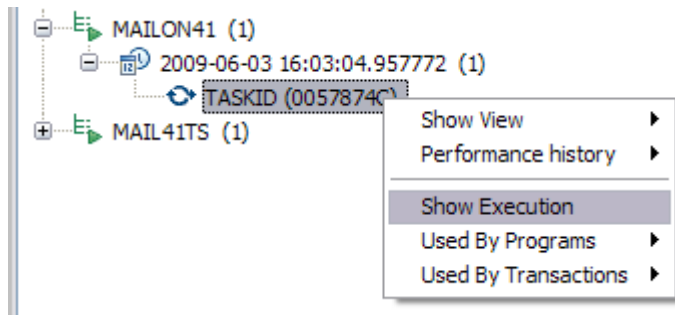
Command Flow



Show collected Command Flow runs for a Transaction



Select which task you are interested in



Show the execution of that task



Command Flow Continued...

TASKID(0057874C) under TRANSID (MAIL)

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

Total commands: 99

MAIL	TCB Mode	Previous TCB Mode
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 MAIL TC55	QR	L8
Get CSQ4SAMP.MAIL	L8	QR
Ignore	QR	L8
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Readq MAILTC55	QR	QR
Send CSQ4SAMP	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

Command Flow Continued...

The screenshot shows the 'Command Flow' window for TASKID(0058481C) under TRANSID (MAIL). It displays two tree views: 'TCB Modes Used' and 'TCB Mode Switches'. The 'TCB Mode Switches' tree is expanded to show a sequence of commands, with 'Put1 CSQ4SAMP.MAILMGR.JAMESE.JAMESE' selected. Below the trees is a table with 87 total commands, showing the transition between TCB modes.

	TCB Mode	Previous TCB Mode
Open	L8	QR
Close	L8	L8
Open CSQ4SAMP.MAILMGR.JAMESE	L8	L8
Send CSQ4VD1	QR	L8
Receive CSQ4VD1	QR	QR
TST4CVD4		
Getmain STORAGE_ADDRESS=13C096C8	QR	QR
Ignore	QR	QR
Send CSQ4VD4	QR	QR
Receive CSQ4VD4	QR	QR
Put1 CSQ4SAMP.MAILMGR.JAMESE.JAMESE	L8	QR
Put1 CSQ4SAMP.MAILMGR.JAMESE	L8	L8
Send CSQ4VD4	QR	L8
Receive CSQ4VD4	QR	QR
Return	QR	QR

See where in the tree a switch occurred – selecting an item in the summary drives the tree to that position



Summary – CICS Interdependency Analyzer

- Collect and store resource relationship information from running CICS environment
- Automate CPSM rules definitions with the affinity reporter and builder.
- Understand your applications for SOA enablement
- Extensive query capabilities (CICS interface, desktop IA Explorer, user defined queries)
- Exploit Features of CICS TS (threadsafe, LE enablement, and WEB enablement)
- Reduce time and effort for application maintenance activities
- Supports CICS TS, version 4, version 3, and version 2.
- Program product – 5655-U86



CICS Configuration Manager

***A single point of control
for CICS resource definitions across your enterprise***



ON DEMAND BUSINESS™

CICS Configuration Manager

- **What does it do?**

- ▶ Simplifies and automates the management of your CICS resources in both CSD and CPSM BAS environments
- ▶ Enables migration of CICS resources from different environments under a structured change control process
- ▶ Tracks resource history as well as provides back-out to previous change level
- ▶ Provides detailed reports of CICS resources

- **Benefits**

- ▶ Helps reduce errors and abends related to incorrect resource changes
- ▶ Minimizes manual work by operators and system programmers
- ▶ Provides complete audit history of all CICS resource modifications
- ▶ Improve Speed of Implementation
- ▶ Helps you lower the total cost of ownership of your zSeries platform



CICS Configuration Manager for z/OS (CICS CM)

■ Key features

- ▶ Create, Update, Delete, Copy, Replicate CICS resource definitions
- ▶ Change management through the life-cycle stages, e.g. development, test, production
- ▶ Create customized reports to identify redundant definitions, show resource relationships and change management history
- ▶ Audit, back-out and change authorization capabilities

■ CICS Support

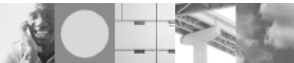
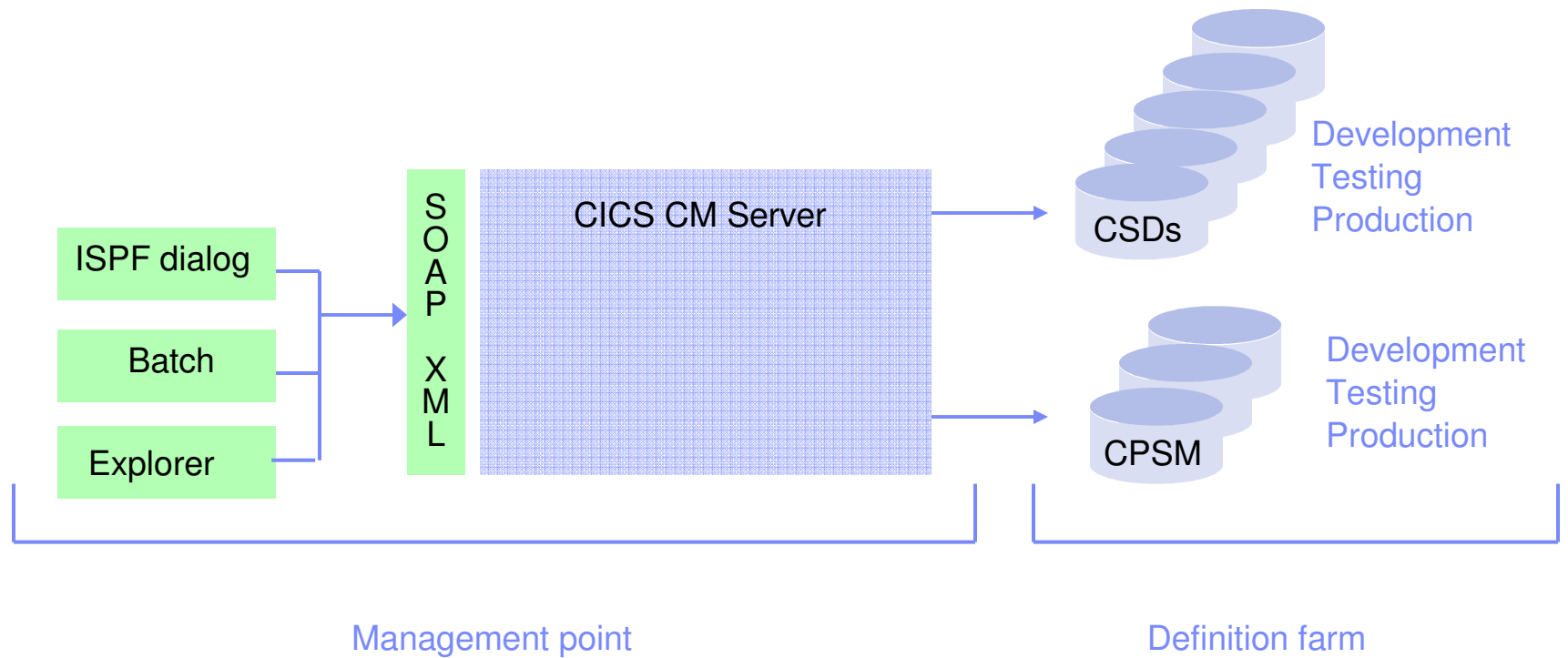
- ▶ CICS Transaction Server for z/OS, V3 and V4

New in CICS CM V2.1 (July 2009)

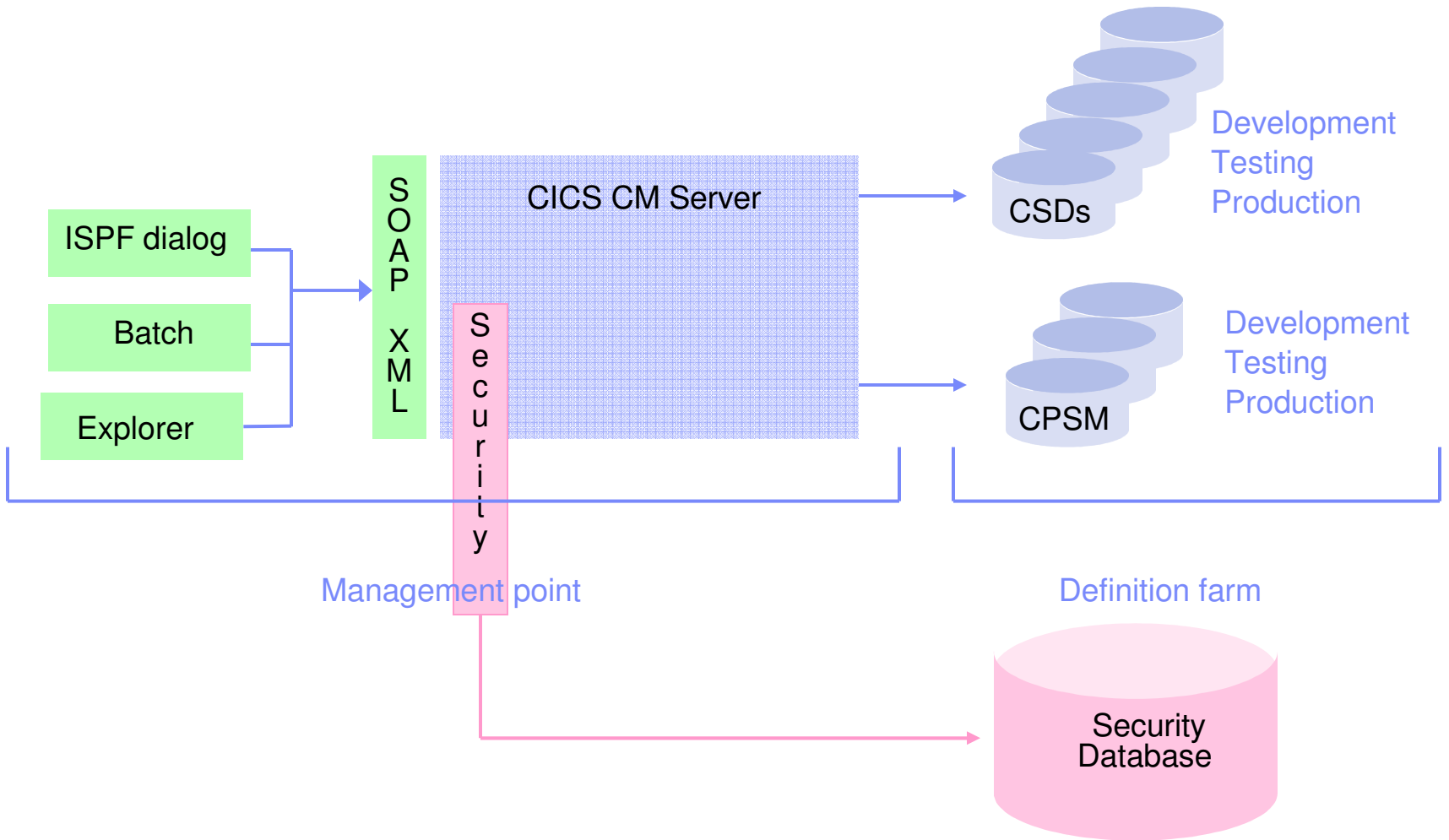
- **CICS TS V4.1 support**
- **Deployment Analysis Reports**
- **Fully supported CICS Explorer plug-in**
- **Full-function BAS definition support**
- **Change Package 'Command Stack'**
- **Diagnostic Collection**



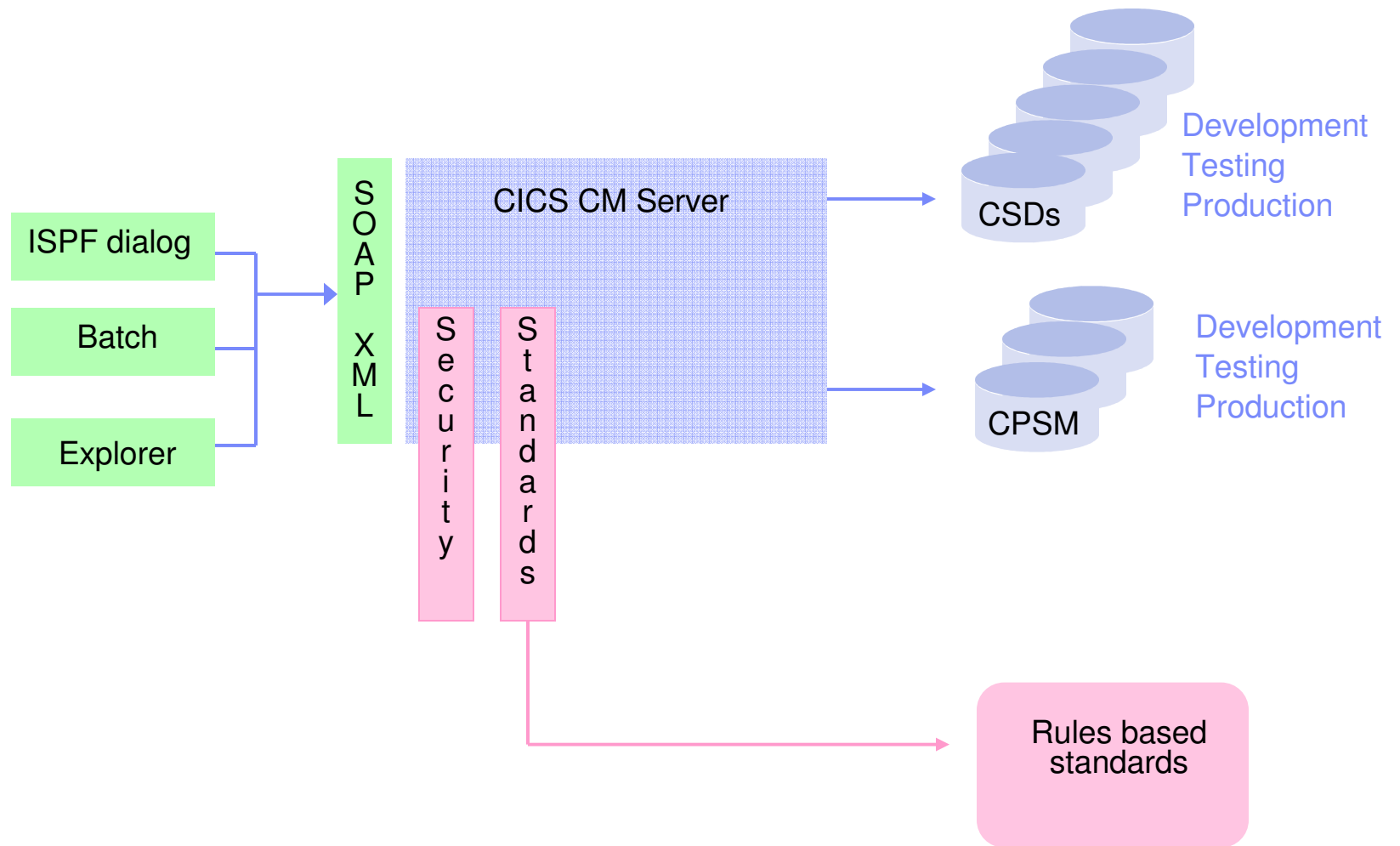
Centralize Resource Definition Management



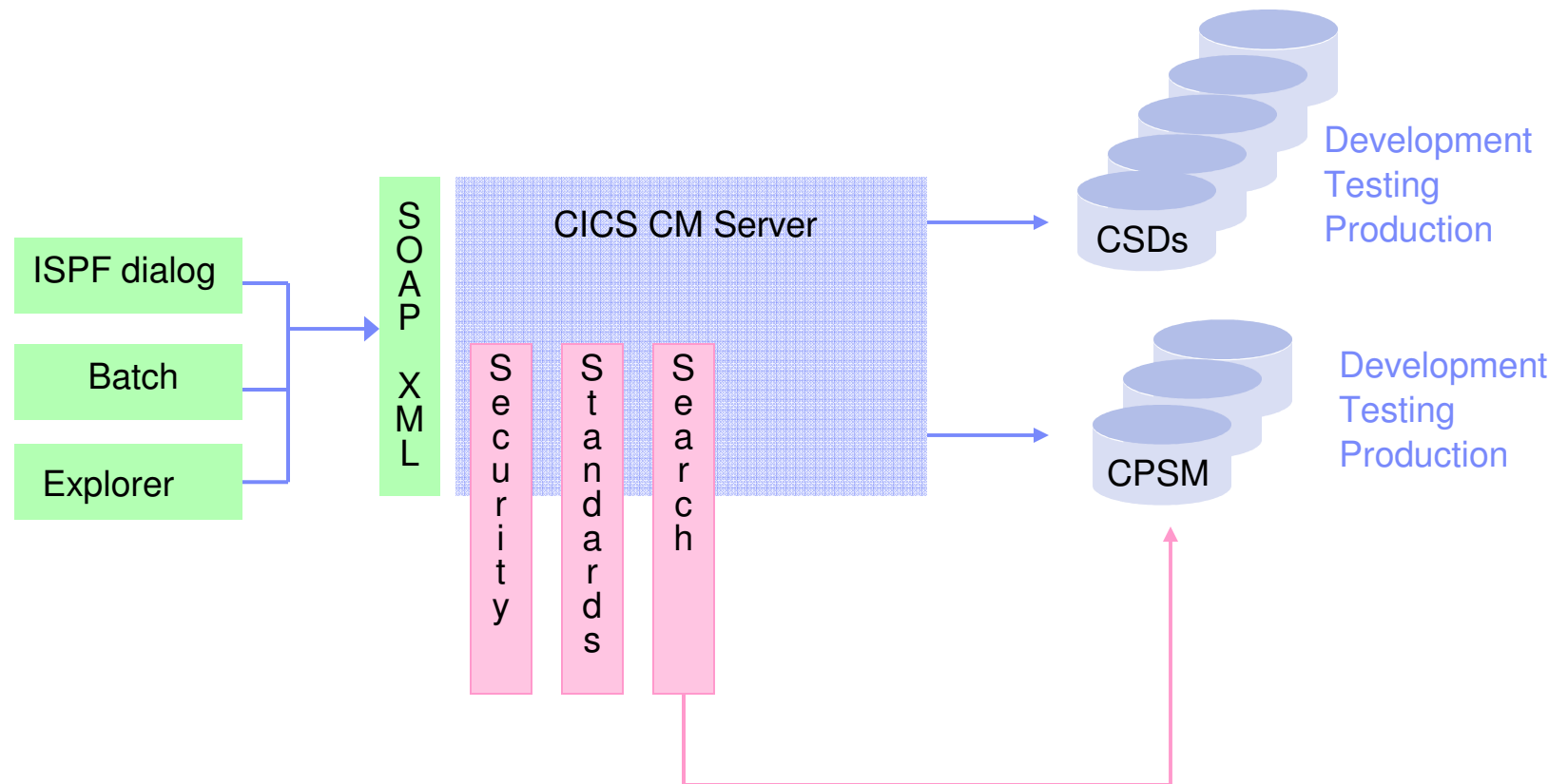
Centralize Resource Definition Management



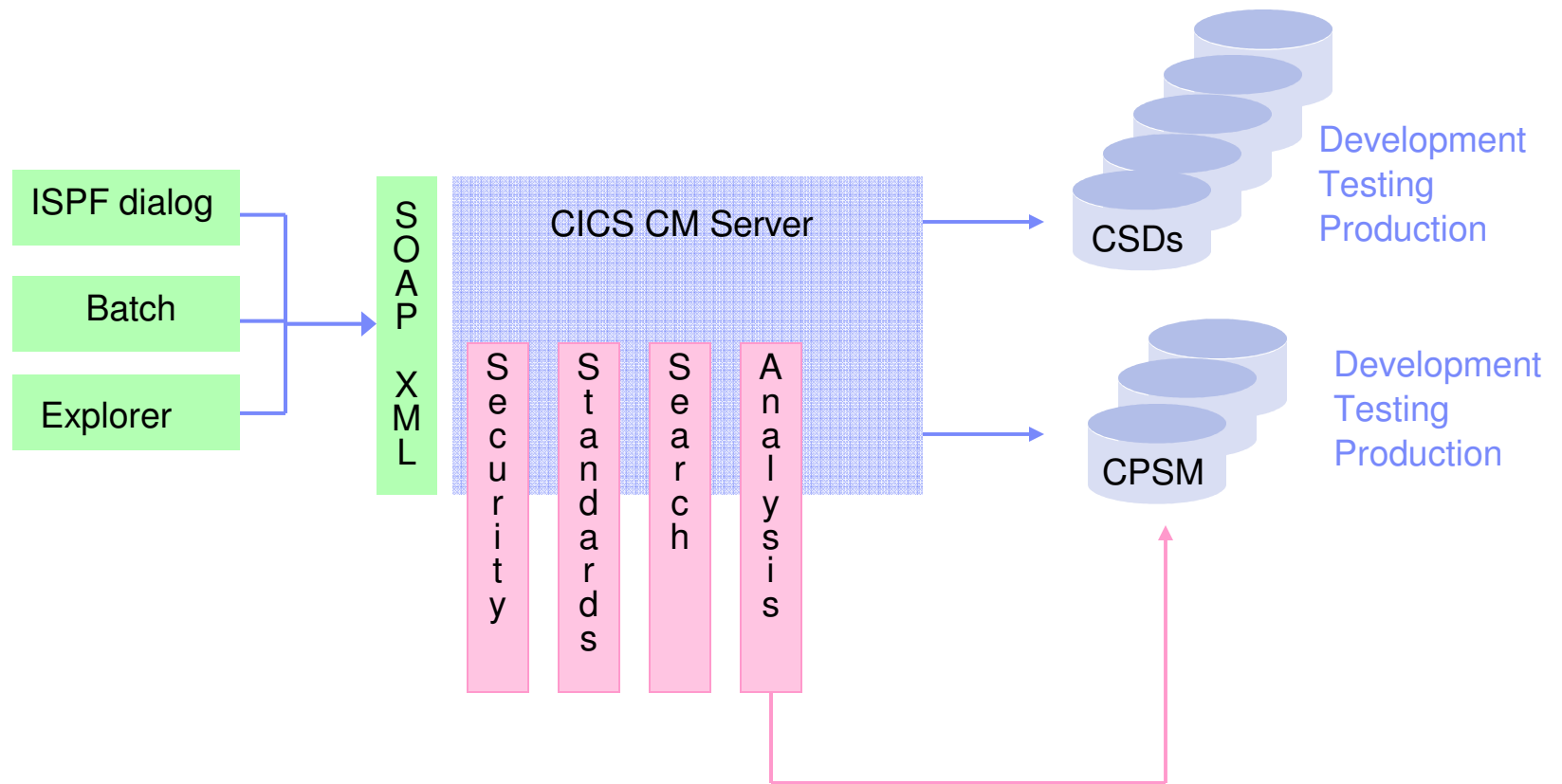
Centralize Resource Definition Management



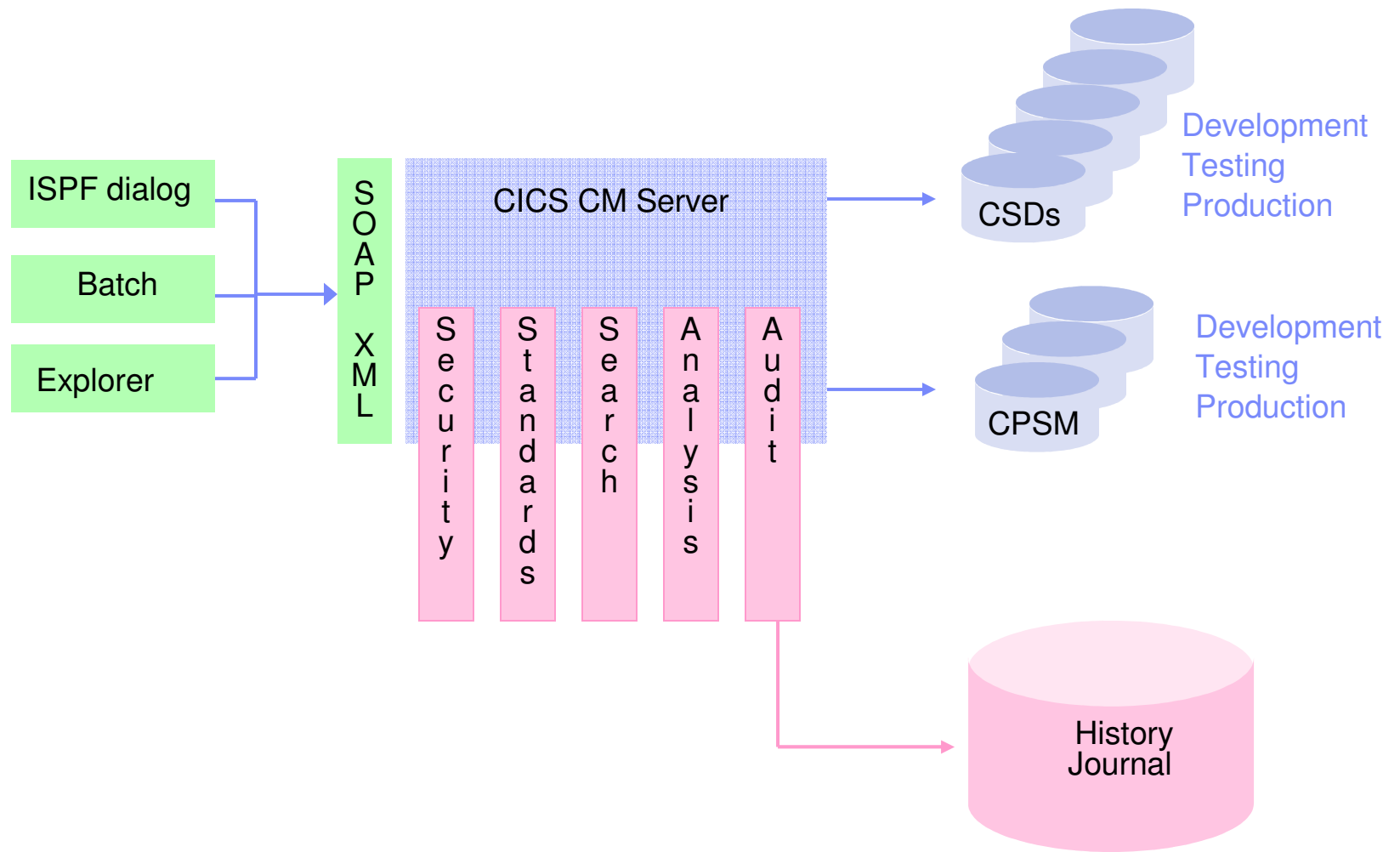
Centralize Resource Definition Management



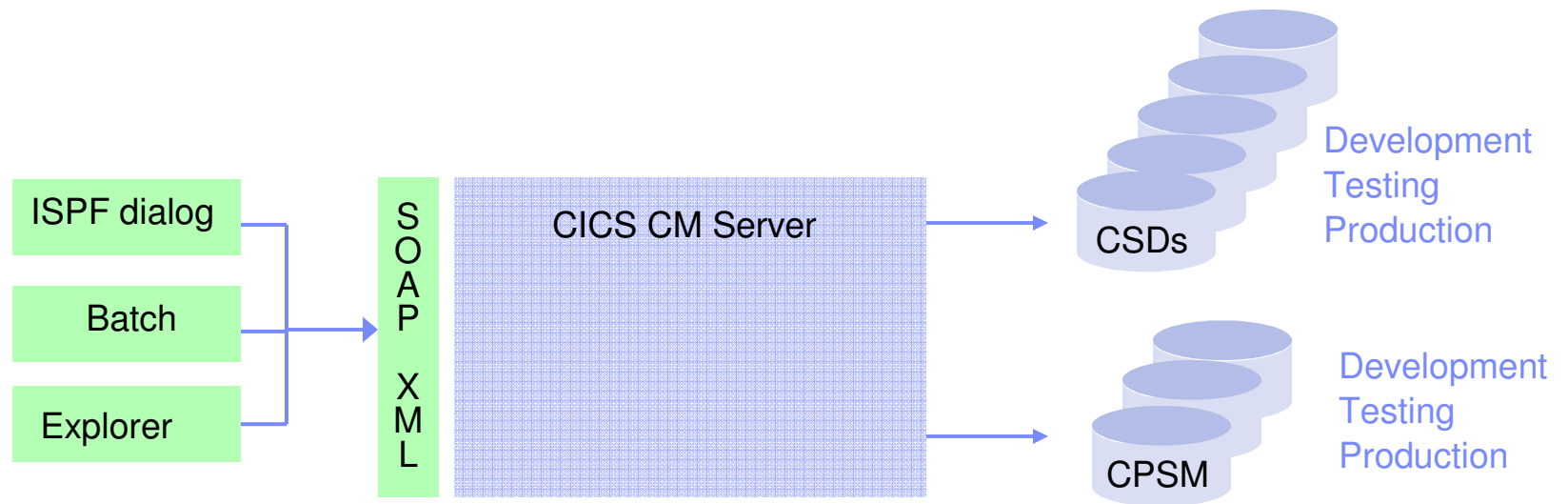
Centralize Resource Definition Management



Centralize Resource Definition Management



Centralize Resource Definition Management

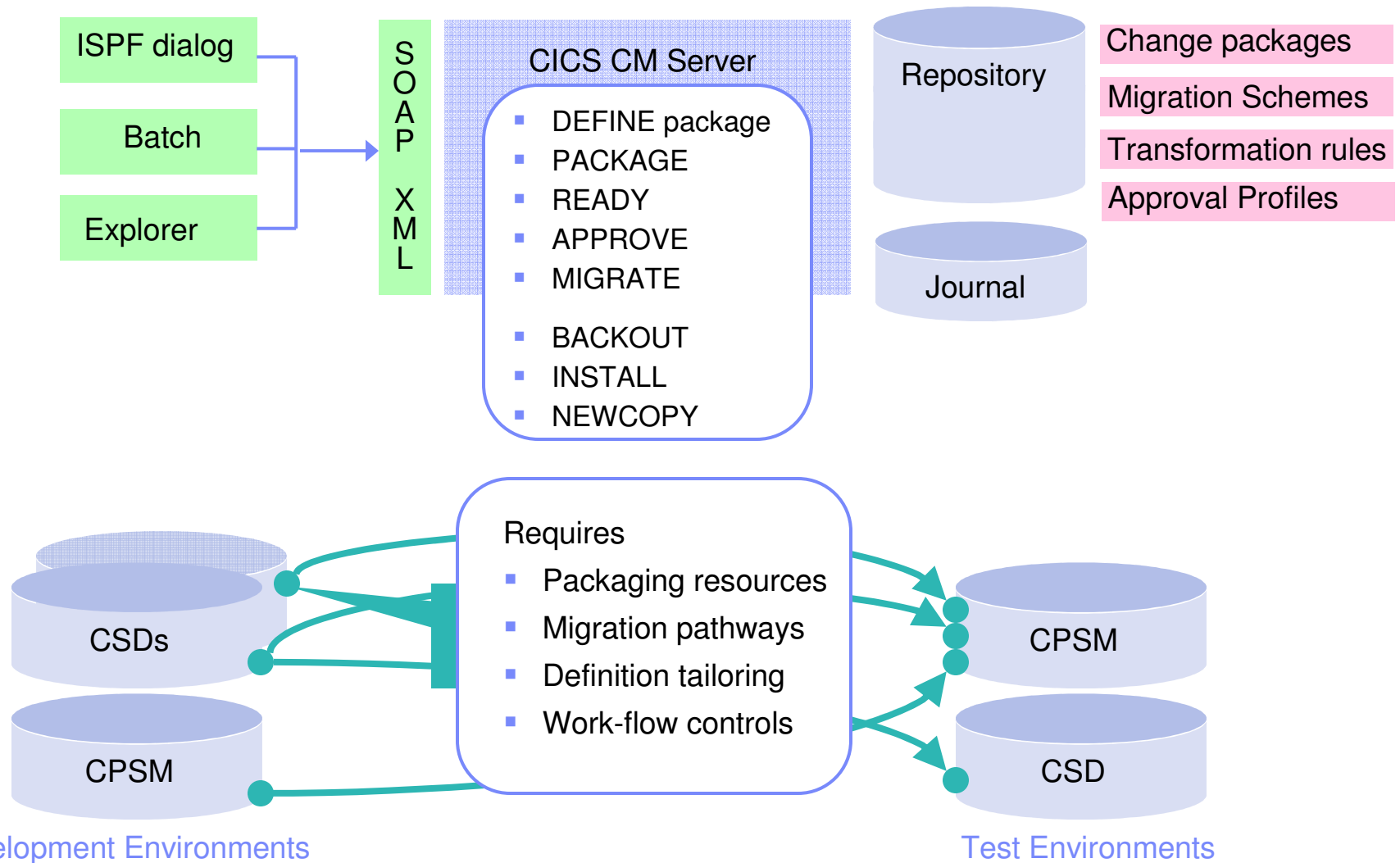


Benefits

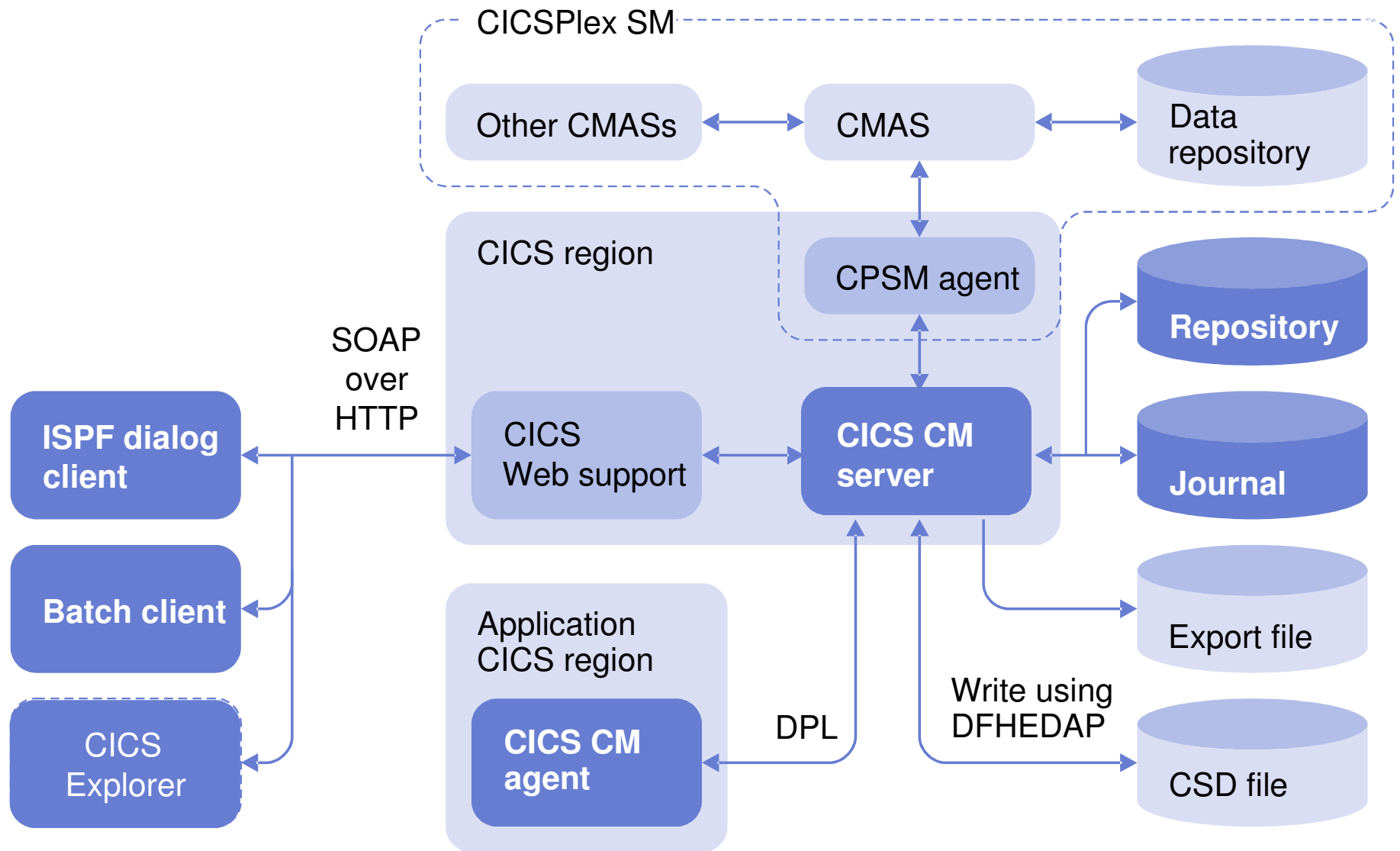
- Single point of governance
- Seamless interface between CPSM and CSDs
- Audit recording, resource histories
- Allows selective delegation via security and standard controls
- Supports CICS TS v1.3 to v4.1
- High productivity interface
- Change control capability ...



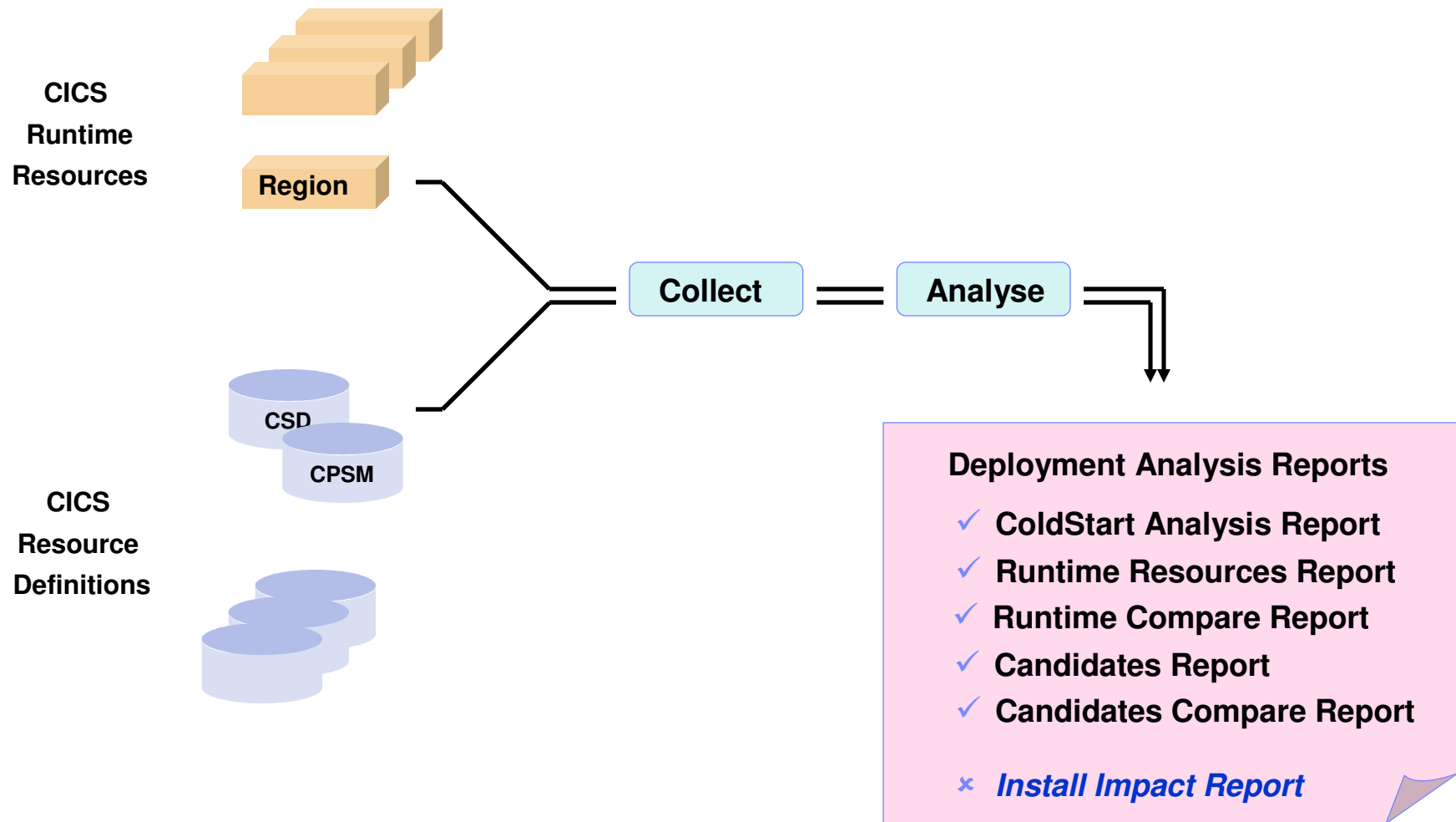
Promoting Definition Changes



CICS CM Component Architecture



Deployment Analysis – Unique Analytical Reporting



CICS CM Usage Examples

Function

Switching CSDs

Copying resources

Security/standards

History

Side-by-side compare

Compare Groups

Multiple configurations

Show exceptions

Search

Audit reporting

Migrate with transform

Clean-up reports

Wow

No routing, logging on and off

So easy, and it even does CPSM to CSD

I can finally delegate work and do important stuff

Tells me who, what, when, how

See resource differences on the screen

TEST is different to PROD, not what I expected

Great, I can see n-ways at the same time

Reduce clutter so I can easily see the problem

Just like Google - I can keep digging

That'll keep the Auditors happy

This will save heaps of time

My CSD files are in a mess



Product Overview – Control movement of definitions

- Users are able to gain more control over the movement of definitions
 - ▶ Packages – what to move
 - ▶ Migration schemes – source and target configurations
 - ▶ Transformation rules – how attributes are transformed
 - ▶ Approval processing (optional feature) prior to migration
 - ▶ Migrate/Backout commands to implement changes

- Migration schemes, transformation rules & approval profiles
 - ▶ Defined by the System Programmer

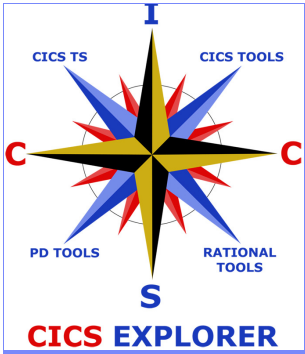
- Packages
 - ▶ Defined and processed by the Developer or System Programmer



Summary – CICS Configuration Manager

- Facilitate responsibility sharing between CICS sys-progs, application development and system administration
- Central point of control of CICS resource definitions
- End-to-end accountability and control
- Automate application-definition delivery and deployment
- Integrate change management and CICS administration strategies
- Reduce CICS system administration overheads
- Supports CICS TS, Version 4, Version 3
- Program Product – 5697-P09

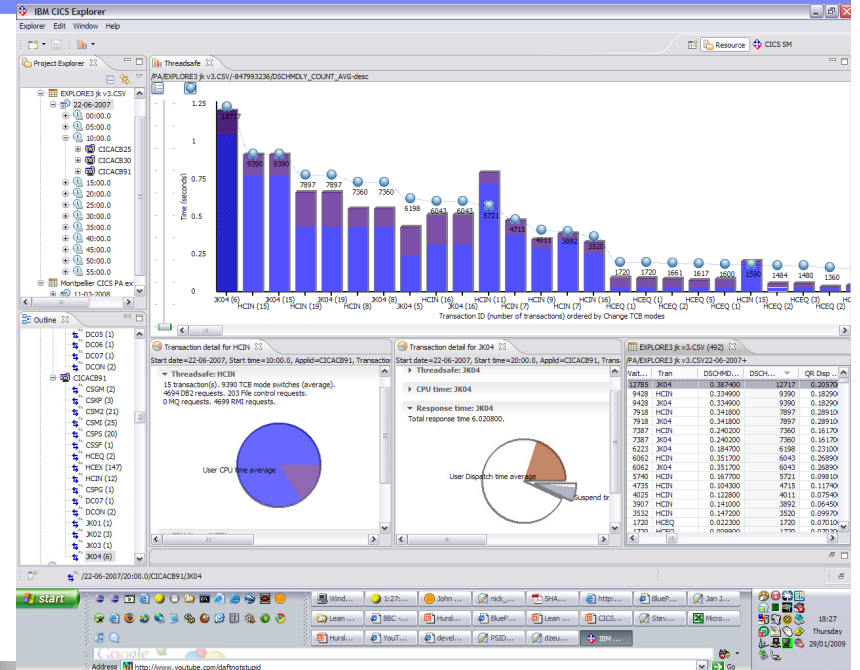




IBM Software Group

IBM CICS Explorer

The New Face of CICS



ON DEMAND BUSINESS™

I ♥ CICS

The changing world

- First- and second-generation System z specialists exit the industry
 - ▶ Enterprises must transfer skills, knowledge and best practice to new CICS technical staff
 - ▶ Productivity must be maintained, and service-levels protected
- Opportunity to build new System z skill pool
 - ▶ Specialists can collaborate with new developers and administrators to create new applications, and manage IT resources with a smaller operations team.
- CICS family is making a significant contribution by reducing the skills barrier to the development and management of CICS systems
- IBM **CICS Explorer**
 - ▶ Common, intuitive, Eclipse-based tooling environment for architects, developers, system administrators, system programmers, and operators
 - ▶ Integrated access to a broad range of data and control capabilities
 - ▶ Supports CICS runtime, CICS tools, and CICS connectors, plus other IBM and third-party software products

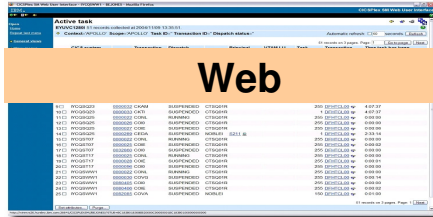


The changing face of CICS tooling

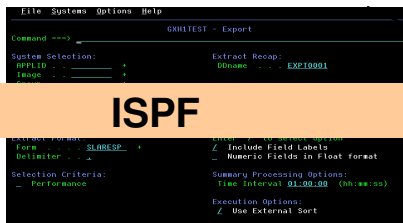
CICS Explorer reduces need for multiple interfaces

Previously...

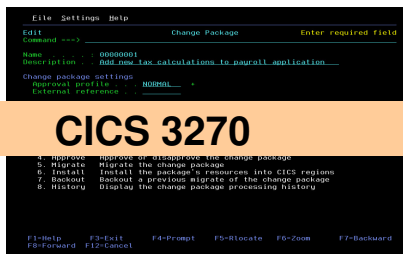
Now ...



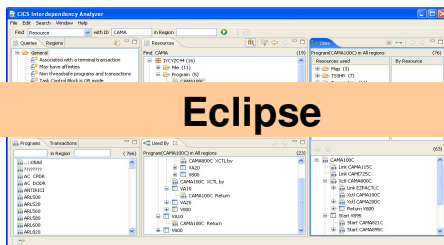
Web



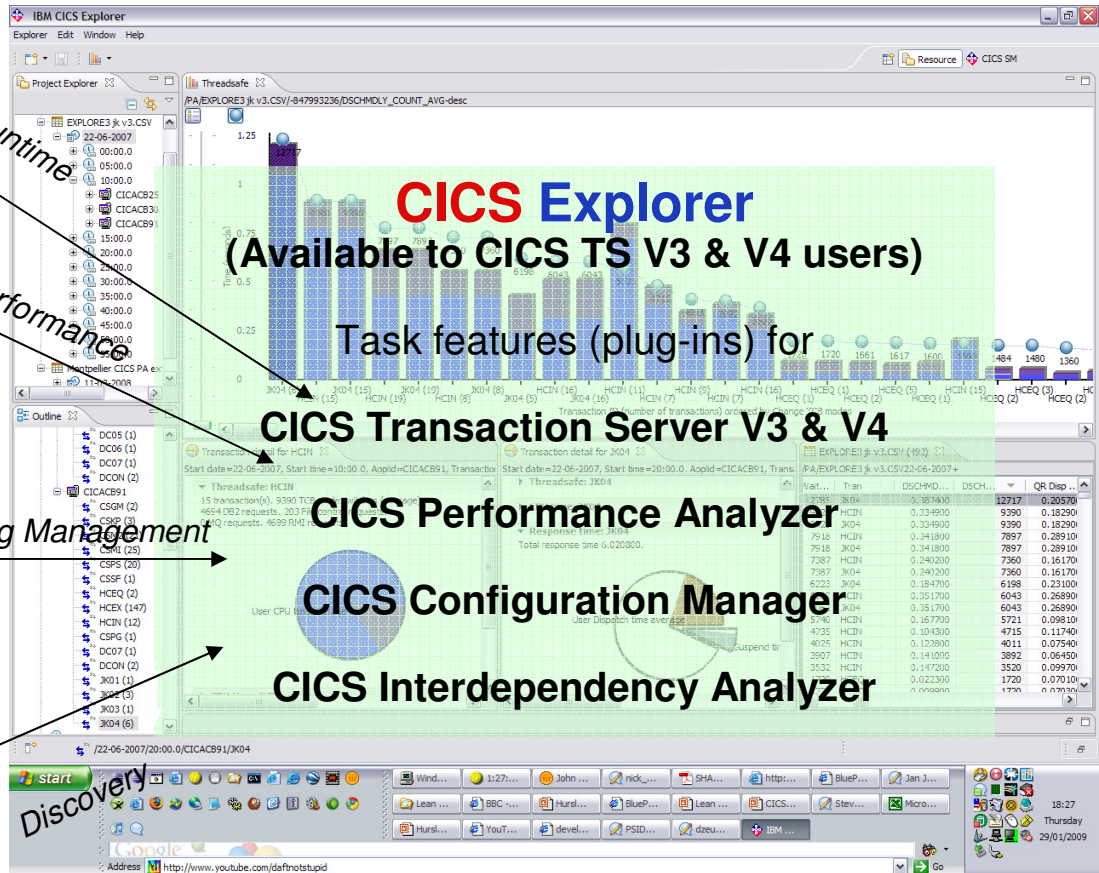
ISPF



CICS 3270



Eclipse



CICS Explorer
(Available to CICS TS V3 & V4 users)

Task features (plug-ins) for

CICS Transaction Server V3 & V4

CICS Performance Analyzer

CICS Configuration Manager

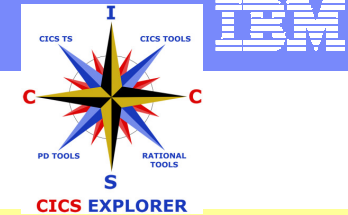
CICS Interdependency Analyzer

Runtime

Performance

Config Management

Discovery



IBM CICS Explorer - The New Face of CICS

Key features

- ▶ Common, intuitive, Eclipse-based environment for architects, developers, administrators, system programmers, and operators
- ▶ Task-oriented views provide integrated access to broad range of data and control capabilities
- ▶ Powerful, context-sensitive resource editors
- ▶ Integration point for CICS TS, CICS Tools, CICS TG, PD Tools, and Rational Tools
- ▶ Extensible by ISVs, SIs, and customers

CICS support

- ▶ CICS Transaction Server for z/OS V3.1, V3.2, V4.1
 - CICSplex SM WUI server required for CICS resource views

Available Now!

- ▶ New capability is continually being added
- ▶ More information at ibm.com/cics/explorer
- ▶ Download from: <http://www-ibm.com/cics/explorer/download/>

Available now in CICS Explorer

- **CICS TS - Real-time resource status**
- **CICS IA - Resource dependency views**
- **CICS CM - Query and manage resource definitions**
- **CICS PA - Performance data drill-down, Threadsafe analysis**
- **RDz - CICS resource definition**
- **Plug-ins for CICS TG and OMEGAMON XE for CICS**
- **Operational & Administrative updates**
- **Events, Bundles, Components tooling**

CICS Explorer

View Systems

View status of tasks

Edit Resource Definitions

The screenshot displays the CICS Explorer application interface. On the left, the 'Explorer' pane shows a tree view of CICS systems and groups. The main area is divided into several tabs: 'Tasks' (showing a table of running tasks), 'Transactions' (showing a table of transaction definitions), 'Pipeline Definitions' (showing details for a specific pipeline), 'Program Definitions' (showing a table of program definitions), 'Regions' (showing a table of region definitions), 'Files', 'Events', 'Properties', 'TD Queues', and 'TS Queues'. The 'Tasks' table includes columns for Region, Task ID, Tran ID, Dispatch, User ID, Priority, and Attach. The 'Transactions' table includes Name, Version, Created, Changed, Language, Description, and Status. The 'Program Definitions' table includes Name, Version, Created, Changed, Language, Description, and Status. The 'Regions' table includes Region, Job Name, System, and Tasks. The 'Files' table includes Region, Name, Status, Open Status, Empty St..., I/O Type, Record Le..., and Record F....

Resource and System Groups

Views Program Definitions

Active CICS Systems in the selected PLEX

View Queue Information



CICS IA

View the TD Queues for CICSDM91 in CICSPLX1 - select CESE - then see which programs use it

Region	Name	Status	Open Status	Empty Status	I/O Type	Record Length	...
CICSDM91	CCSO	ENABLED	OPEN	NOTEMPTY	OUTPUT	133	VARIABLE
CICSDM91	CCVL	ENABLED	OPEN	NOTEMPTY	OUTPUT	255	FIXED
CICSDM91	CESE	ENABLED	OPEN	NOTEMPTY	OUTPUT	161	VARIABLE
CICSDM91	CESO	ENABLED	OPEN	NOTEMPTY	OUTPUT	133	VARIABLE
CICSDM91	CIBM	ENABLED	OPEN	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CIGZ	ENABLED	OPEN	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CINI	ENABLED	OPEN	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CINL	ENABLED	OPEN	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CINO	ENABLED	OPEN	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CINT	ENABLED	OPEN	NOTAPPLIC	INPUT	133	VARIABLE
CICSDM91	COPR	ENABLED	CLOSED	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	CPLI	ENABLED	OPEN	NOTEMPTY	OUTPUT	133	VARIABLE
CICSDM91	CRPO	ENABLED	OPEN	NOTEMPTY	OUTPUT	133	VARIABLE
CICSDM91	CSLS	ENABLED	OPEN	NOTEMPTY	OUTPUT	136	VARIABLE
CICSDM91	CXRF	ENABLED	OPEN	NOTEMPTY	RDBACK	32767	NOCTL
CICSDM91	FMNC	ENABLED	CLOSED	NOTAPPLIC	INPUT	?	NOTAPPLIC
CICSDM91	FMNJ	ENABLED	CLOSED	NOTAPPLIC	OUTPUT	?	NOTAPPLIC
CICSDM91	FMNM	ENABLED	OPEN	NOTEMPTY	OUTPUT	?	NOCTL
CICSDM91	TCPM	ENABLED	OPEN	NOTEMPTY	OUTPUT	?	VARIABLE
CICSDM91	VIDC	ENABLED	OPEN	NOTEMPTY	OUTPUT	80	FIXED
CICSDM91	VIDD	ENABLED	OPEN	NOTEMPTY	OUTPUT	133	FIXED
CICSDM91	VIDE	ENABLED	OPEN	NOTEMPTY	OUTPUT	80	FIXED

then drill down to the application structure



CICS PA - Rich views

The screenshot displays the IBM CICS Explorer interface with several key components:

- Explorer View:** A tree view on the left showing the file structure, including folders like 'com.ibm.cics.ia.runtime' and 'PA Data', and files like 'XPLR_C.csv'.
- Threadsafes Table:** A table showing transaction details for 'XPLR_C.csv (58)'. The table has columns for Start date, Start time, Applid, Transact..., Task ter..., Respons..., Respons..., User Dis..., User Dis..., and User CP... The data includes transactions for various programs like BEERPLUM, HKFM, OVSW, OVDA, ZFA3, OV72, HELMLCK, MVNQ, and HDBN.
- Threadsafes Chart:** A bar chart below the table showing 'Time (seconds)' on the y-axis and 'Transaction ID (and number of transactions)' on the x-axis. The highest bar is for KWO1 (1) with a value of 5878.
- Analysis Windows:** Two windows at the bottom provide detailed analysis for 'KWO1'. The 'Threadsafes analysis' window shows a pie chart for 'User CPU time' and a table with columns 'Value' and 'Overall'. The 'Response time analysis' window shows a pie chart for 'User Dispatch time' and a table with columns 'Reference' and 'Dispatch wait time average'.
- Outline View:** A tree view on the right showing a hierarchical structure of transactions and programs, such as BRUH (1), HOOO (1), JZ53 (1), etc.

See extracts of the file in raw data form..

Powerful active outline view speeds selection

Drill into data files using the explorer view

..or follow Analysis Scenarios like Threadsafes to highlight issues

Flexibility in what you want to see

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	MVNV				0.154800			64	0.011200	0.016000	64	0.010200
2008-03-13	14:10:00...	HELMCLK	NK31				0.025400	0.027100		11	0.001700	0.023400	11	0.000100
2008-03-13	14:10:00...	HELMCLK	NK50				0.051700	0.051700		18	0.003000	0.047600	18	0.000400
2008-03-13	14:10:00...	HELMCLK	NKR1				1.524100	1.524100		6	0.001100	1.522300	7	0
2008-03-13	14:10:00...	PDQESTE	OV5W		2	0.422400	0.672600	665	0.000000	666	0.096600	0.012200	666	0.007500
2008-03-13	14:10:00...	PDQESTE	OV72		1	0.043200	0.043200	127	0.000000	128	0.016000	0.003100	128	0.001800
2008-03-13	14:10:00...	PDQESTE	OVD		2	0.316500	0.555900	304	0.306400	305	0.200800	0.010100	305	0.007000
2008-03-13	14:10:00...	PDQDIR	OV		1	0.021500	0.021500	1	0.000000	2	0.000700	0.020700	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
OV72 (1)	114
ER02 (2)	71
MVNV (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 Explorer - Program Definition editor - CICS CM

Name	Version	Created	Changed	Description	Status
IMPACT9	1	Wed Apr 09 ...	Wed May 28...	Lets change ...	ENABLED
PEPSIONE	1	Wed Apr 09 ...	Wed Apr 09 ...	And change ...	ENABLED
JOE	1	Tue Sep 26 ...	Thu May 29 ...	Go on baby	DISABLED
JOE1	1	Thu Jul 19 1...	Thu May 22 ...		ENABLED

Revision Time	User Name	Attributes
2008/05/17 23:40:59	CICSUSER	UHELPACOPY YES NO RESIDENT YES NO EXECKEY USER CICS
2008/04/25 16:16:30	CICSUSER	
2008/04/24 11:40:25	CICSUSER	
2008/04/23 22:50:04	CICSUSER	
2008/04/23 22:46:29	CICSUSER	

The history view shows who made changes, when changed, by attribute

The editor is input capable (i.e. fields aren't grey) and changes can be made

...because same system connected to using CM

CICSplex SM QuickStart Set-up

- **What is actually involved in setting up CICSplex SM?**
- **Assumptions:** CICSplex SM has been down loaded off the distribution tape, but is currently not in use.
- **Objective:** To get Explorer up and running using CICSplex SM Operations capability for CICS regions in a single LPAR

- Setting up CICSplex SM for use with the CICS Explorer only should take about half a day, using the following high-level 10-step process.

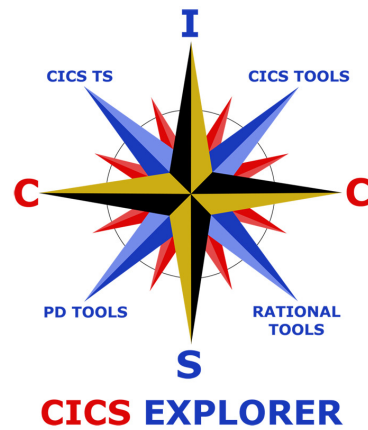
- Steps: Essentially
 - ▶ 1. Create datasets for two CICS regions that will become WUI Server and CMAS using existing CICS practices.
 - ▶ 2. Create VTAM Applids etc for these regions. using existing practices
 - ▶ 3. Make zOS changes for dataspaces (MVS LINK list, MAXCAD, NSYSLX).
 - ▶ 4. LPA and AUTH libraries (standard CICS practice again)
 - ▶ 5. Create CICSplex SM specific datasets (EYUDREP and EYUWREP). This is standard IDCAMS stuff.
 - ▶ 6. Modify existing CICS JCL with WUI server and CMAS specific DDs and minimum startup parms.
 - ▶ 7. Create WUI plex and WUI MAS membership via batchjob.
 - ▶ 8. Start up WUI server and CMAS
 - ▶ 9. Define CICSplex and Customer CICS regions via batch.
 - ▶ 10. Define a connection using the CICS Explorer. For a 'CICSplex SM' Connection type, it connects to a CICSplex SM Web User Interface (WUI) server. The Server address and port number on the connection panel, should match the CICSplex SM Web User Interface System Parameters TCPIPHOSTNAME and TCPIPPORT.

- Many of these steps are done via IVP code in 3.2, but many customers just modify existing JCL.

- These steps are outlined in detail in the WUI Redbook You need to configure CICSplex SM which is already installed when you install current releases of CICS. All the information you need is the CICS InfoCenter under "The CICSplex". There is also a Redbook: <http://www.redbooks.ibm.com/redbooks/pdfs/sq246793.pdf>.



IBM Software Group



Live Demonstration



ON DEMAND BUSINESS™

CICS Explorer SupportPacs

- CS1J: IBM CICS Explorer for Windows SupportPac
 - ▶ CICS Transaction Server for z/OS, V3.1, or later
 - ▶ Category 2 - un-supported
- CS1O: IBM CICS Explorer for Linux SupportPac
 - ▶ CICS Transaction Server for z/OS, V3.1, or later
 - ▶ Category 2 - un-supported
- CS1N: CICS Tools Plugins for SupportPac
 - ▶ CICS Configuration Manager (CM) for z/OS V1.2, and/or
 - ▶ CICS Interdependency Analyzer (IA) for z/OS V2.2, and/or
 - ▶ CICS Performance Analyzer (PA) for z/OS V2.1
 - ▶ Category 2 - un-supported
- CA1R: CICS Explorer SDK SupportPac
 - ▶ Classes and javadoc to integrate in-house, ISV, and SI tools with the CICS Explorer
- Note that ALL of the CICS Explorer SupportPacs can be downloaded from the CS1J page (<http://tinyurl.com/6o6n9v>) or from the CICS Explorer home-page <http://ibm.com/cics/explorer>



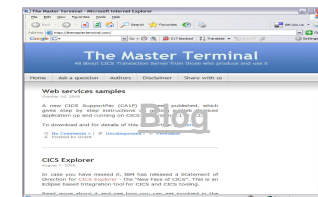
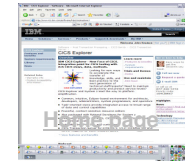
CICS Explorer Capability Matrix

With numerous choices between versions and releases of CICS Transaction Server, CICS tools, the CICS Explorer, and CICS tools plug-ins for the CICS Explorer, the following table is useful in deciding which version of the CICS Explorer and related plug-ins IBM recommends you use. In the table, 'GA' denotes General Availability - the version supplied with the latest released level of that product, and 'SP' denotes SupportPac

	CICS TS V3.x GA Explorer	CICS TS V4.1 GA Explorer	CICS CM V2.1 GA plugin	CICS CM V1.2 SP plugin CS1N(V1.4)	CICS IA V2.2 SP plugin CS1N(V1.4)	CICS PA V3.1 GA plugin	CICS PA V2.1 SP plugin CS1N(V1.4)
CICS TS V3.x	Y						
CICS TS V4.1		Y					
CICS CM V1.2 with CICS TS V3.x	Y			Y			
CICS CM V1.2 with CICS TS V4.1		Y		Y			
CICS CM V2.1 with CICS TS V3.x	Y		Y				
CICS CM V2.1 with CICS TS V4.1		Y	Y				
CICS IA V2.2 with CICS TS V3.x	Y				Y		
CICS IA V2.2 with CICS TS V4.1		Y			Y		
CICS PA V2.1 with CICS TS V3.x	Y						Y
CICS PA V2.1 with CICS TS V4.1		Y					Y
CICS PA V3.1 with CICS TS V3.x	Y					Y	
CICS PA V3.1 with CICS TS V4.1		Y				Y	

CICS Communities

- CICS Explorer home page
 - ▶ Remember this link ibm.com/cics/explorer
- CICS Explorer Forum
 - ▶ <http://tinyurl.com/68bndw>
 - ▶ IBM developerWorks forum with FAQs, Links and resources, ISV Contributions, etc. Ask questions, suggest improvements, report problems, chat
- Twitter
 - ▶ Subscribe to the [IBM System z channel](#) to get CICS Explorer news flashes
- CICS Blog
 - ▶ Comment and opinion at TheMasterTerminal.com
- CICS eNews
 - ▶ Subscribe for news about CICS and related products
- YouTube channels
 - ▶ [CICS Explorer](#) - Videos, demos and other cool stuff
 - ▶ [CICSFluff](#) - Other CICS videos



For more information

CICS Tools

- ▶ Home page ibm.com/cics/tools/
- ▶ Trial download ibm.com/software/os/zseries/trials/cicstools/

CICS Explorer

- ▶ Home page ibm.com/cics/explorer
- ▶ Download page <http://ibm.com/cics/explorer/download>
- ▶ CICS TS home page ibm.com/cics

Demos and animations

- ▶ CICS Explorer demo - featuring Threadsafe Analysis using the CICS PA and CICS IA perspectives - <http://www.youtube.com/watch?v=Jk3Ydvl8lno>
- ▶ CICS Explorer animation - <http://www.youtube.com/watch?v=-NzWwUi5lLw>
- ▶ CICS Transaction Server in your SOA - Great source of links to more CICS ecosystem information - ftp://ftp.software.ibm.com/software/htp/cics/presentations/CICS_TS_in_your_SOA_-_Links_-_Issue_3.ppt

Business Article

- ▶ **Branham Report:** Productivity gains and cost savings realized with CICS Tools
 - <https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=swg-cicstro>

Program numbers (licence):

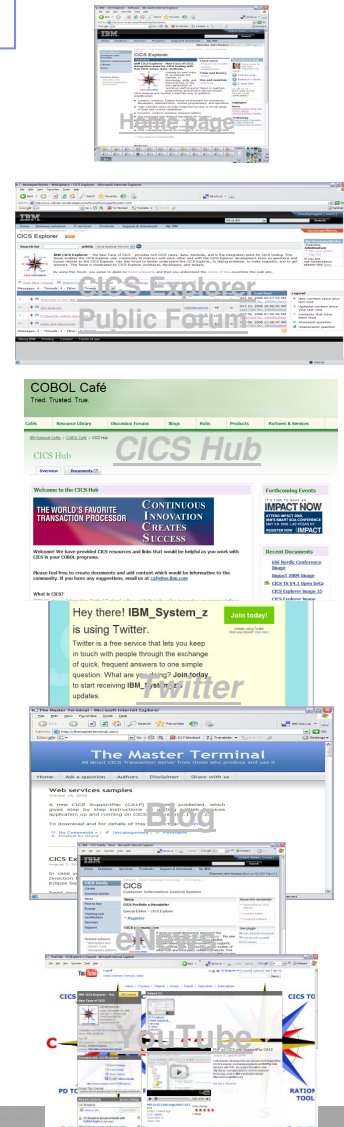
- 5655-U86: CICS Interdependency Analyzer
- 5697-U87: CICS Performance Analyzer
- 5697-P09: CICS Configuration Manager
- 5655-P30: CICS VSAM Recovery
- 5697-I76: CICS VSAM Transparency
- 5697-I94: CICS Batch Application Control
- 5655-K01: IBM Session Manager
- 5655-I05: CICS OTTO



CICS Communities and Information

zSeries
PD/CICS/Icing
Sales - CICS
Communities

- CICS Transaction Server V4.1
 - ▶ <http://ibm.com/cics/tserver/v41/>
- CICS Explorer home page
 - ▶ Remember this link ibm.com/cics/explorer
- CICS Explorer Forum
 - ▶ <http://tinyurl.com/68bndw>
 - ▶ IBM developerWorks forum with FAQs, Links and resources, ISV Contributions, etc. Ask questions, suggest improvements, report problems, chat
- New! CICS Hub on the Rational COBOL Café
 - ▶ <http://ibm.com/software/rational/cafe/community/cobol/cics>
- Twitter
 - ▶ Subscribe to the [IBM System z channel](#) to get CICS Explorer news flashes
- CICS Blog
 - ▶ Comment and opinion at TheMasterTerminal.com
- CICS eNews
 - ▶ Subscribe for news about CICS and related products
- YouTube channels
 - ▶ [CICS Explorer](#) - Videos, demos and other cool stuff
 - ▶ [CICSFluff](#) - Other CICS videos



New CICS Explorer RedBook - SG24-7778-00

- This RedBook focuses on the new CICS Explorer
- The first part of the RedBook overviews the CICS Explorer, along with all the CICS Tools plug-ins
- The second part of the RedBook focuses on different scenarios in which the CICS Explorer can be used, along with the CICS Tools plug-ins to resolve different problems

Draft Document for Review August 26, 2009 10:50 pm

CICS Explorer

IBM
SG24-7778-00

CICS Explorer

CICS Explorer tools plug-ins

CICS Explorer usage scenarios



Chris Rejms
Chris Baker
Diana Blair
Em James
Kat Sharp
Peter Siddell
Colin Stone
Satish Tanna
Joe Winchester

ibm.com/redbooks

Redbooks



Questions



Complete CICS Tools Portfolio



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CICS Tools portfolio

CICS Performance Analyzer

- Comprehensive batch performance reporting and analysis for tuning and capacity planning

CICS Interdependency Analyzer

- Understand your active application inventory for efficient maintenance and upgrades

CICS Configuration Manager

- Manage, replicate, and deploy CICS system definitions

CICS VSAM Transparency

- Enable VSAM to DB2 migration without rewriting applications

CICS VSAM Recovery

- Automate recovery of lost VSAM data

IBM Session Manager

- Provide secure, reliable, and easy access to multiple z/OS and OS/390 applications from a single terminal

CICS Online Transmission Time Optimizer

- Optimize 3270 data streams to increase your system performance

CICS Batch Application Control

- Simplify and automate batch access to CICS resources

