



IBM System z Technology Summit

CICS - Strength throughout the ecosystem. Are you tooled up?



Agenda

- **Scenario introduction**
 - Business needs
 - Technical solution
- **The scenarios**
- **Summary**
- **Reference material**

Business view

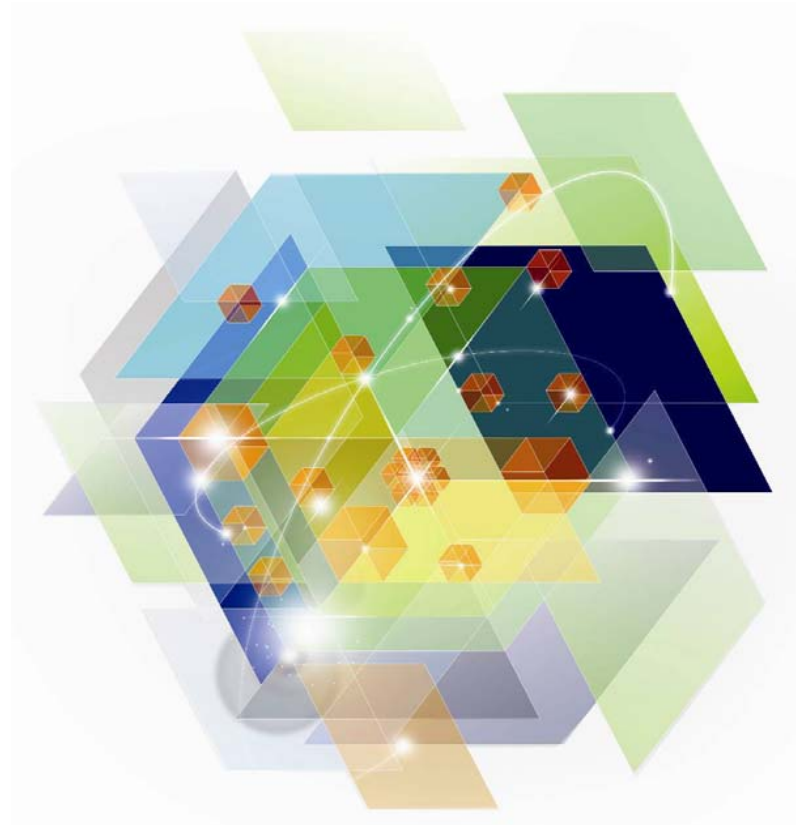
▪ JK Insurance

- Regional insurance company - planning to go national
- Extending its current reach with web and Smartphone access
- 24/7 availability needed for consumer buying patterns
- Fast and consistent response times needed to avoid leakage
- PCI DSS (Payment Card Industry Data Security Standard) compliance is essential

IT view

- **Policy trading app (GENAPP) runs in single CICS region**
 - Clone region to improve availability and scalability
 - Implement CICSplex SM for SPOC and workload management
- **Current team unfamiliar with GENAPP**
 - Use appropriate tooling to meet aggressive launch date
 - Analyze application to understand resource interdependencies and affinities
- **VSAM files require batch window for reporting, backups, and maintenance**
 - Migrate files to DB2 without modifying application
 - Encrypt credit card and key customer data
- **Application has some performance issues**
 - Conduct a performance analysis and tuning project

The scenarios



Understanding the application

■ Analyze resource interdependencies

The screenshot displays the CICS Interdependency Analyzer interface. On the left, a tree view shows the asset hierarchy: SC2, SC6, SSC1, and SSF. A context menu is open over SSC1, with 'Uses Resources' selected, showing options for 'All Regions' and 'Specific Region'. The main window shows 'Transaction(SSC1) in Region IYDZEJ07' with a 'By Resource' list containing 'LGICUS01'. Below this, two tables show command flow details.

Resources used:

- Program (5)
 - LGACDB01 (1)
 - LGACUS01 (1)
 - LGICDB01 (1)
 - LGICUS01 (1)
 - LGTESTC1 (1)
- Temporary Storage
 - GENACNTL (2)
 - GENACUSTNUM
 - GENAWMQC (1)
 - READQ
- Transaction (1)
- ENQNAME (1)
- MAPSET (1)
- CONDITION (1)
- Map (1)
- AID (1)
- TEXT (1)
- File (1)

Command Flow ID 13 (Total commands: 13):

Command Flow ID	Command	Resource
SSC1	LGTESTC1	
	Start of transaction Transaction()	GA-C-INQ
	Send Map(SSMAPC1)	GA-C-INQ
	Handle AID()	GA-C-INQ
	Handle CONDITION()	GA-C-INQ
	Receive Map(SSMAPC1)	GA-C-INQ
	Link Program(LGICUS01)	GA-C-INQ
	LGICUS01	
	Readq Temporary Storage(GENAWMQC)	GA-C-INQ
	Link Program(LGICDB01)	GA-C-INQ
	LGICDB01	
	Read File(KSDSCUST)	GA-C-INQ
	Return Transaction()	GA-C-INQ
	LGICUS01	
	Return Transaction()	GA-C-INQ
	LGTESTC1	
	Send Map(SSMAPC1)	GA-C-INQ
	Return Transaction(SSC1)	GA-C-INQ

Command Flow ID 21 (Total commands: 21):

Command Flow ID	Command	Resource
SSC1	LGTESTC1	
	Start of transaction Transaction()	GA-C-ADD
	Send Map(SSMAPC1)	GA-C-ADD
	Handle AID()	GA-C-ADD
	Handle CONDITION()	GA-C-ADD
	Receive Map(SSMAPC1)	GA-C-ADD
	Link Program(LGACUS01)	GA-C-ADD
	LGACUS01	
	Link Program(LGACDB01)	GA-C-ADD
	LGACDB01	
	Readq Temporary Storage(GENACUSTNUM)	GA-C-ADD
	Write File(KSDSCUST)	GA-C-ADD
	Deleteq Temporary Storage(GENACUSTNUM)	GA-C-ADD
	Writeq Temporary Storage(GENACUSTNUM)	GA-C-ADD
	Return Transaction()	GA-C-ADD
	LGACUS01	
	Return Transaction()	GA-C-ADD
	LGTESTC1	
	Enqueue ENQNAME()	GA-C-ADD
	Readq Temporary Storage(GENACNTL)	GA-C-ADD
	Readq Temporary Storage(GENACNTL)	GA-C-ADD
	Readq Temporary Storage(GENACNTL)	GA-C-ADD
	Writeq Temporary Storage(GENACNTL)	GA-C-ADD
	Dequeue ENQNAME()	GA-C-ADD
	Send Map(SSMAPC1)	GA-C-ADD
	Return Transaction(SSC1)	GA-C-ADD

CICS Interdependency Analyzer

Understanding the application

- Analyze application and system affinities

The screenshot displays the IBM Worklight console interface. The left pane shows a tree view under 'Supplied Samples' > 'CICS' > 'Affinities'. The right pane shows the details for 'All GENAPP programs with potential affinities', which is circled in red. The details view includes a list of programs and their associated resource types.

Program Name	Count
PROGRAM (LGACDB01)	(1)
Resource type (TSQUEUE)	(1)
GENACUSTNUM	
PROGRAM (LGAPDB01)	(1)
PROGRAM (LGDPDB01)	(1)
PROGRAM (LGICUS01)	(1)
PROGRAM (LGIPDB01)	(1)
PROGRAM (LGSTSQ)	(1)
PROGRAM (LGTESTC1)	(2)

Understanding the application

- Analyze application and system affinities

```

11/15/2011 - CICS INTERDEPENDENCY ANALYZER (CIU) - Version 310      Page: 08
INTER-TRANSACTION AFFINITIES REPORT FOR APPLID: IYDZEJ07 - TEMPORARY STORAGE

Trangroup      : TS.0000004
Affinity       : Background
Lifetime       : PERMANENT
Queue          : GENACUSTNUM                (C7C5D5C1C3E4E2E3D5E4D440404040)
Recoverable    : Yes                      TSQ MAIN
Tranid         Program          Offset          Usage          Command          Terminal
-----
SSC1           LGACDB01          00000A76        1              READQ            No
SSC1           LGACDB01          00000CEA        2              WRITEQ           No
SSC1           LGACDB01          00000C84        1              DELETEQ          No
Total Transactions : 1
Total Programs    : 1
  
```

- and generate affinity-transaction-group definitions
 - suitable for input to CICSplex SM

CICS Interdependency Analyzer for z/OS (CICS IA)

▪Key features

- Captures CICS application relationships:
 - Programs, Files, TSQs, TDQs, Events, Web services, etc, plus DB2, MQ, IMS plus Web services, Natural and Adabas
- Intuitive CICS Explorer plug-in integrates with CICS run-time and other tools
- Centralized data access using DB2® database
- See *uses* and *where used* relationships
- Powerful comparison feature
- Command Flow gives advanced program analysis
- Business application analysis
- Identify threadsafe / non-threadsafe programs
- Isolate and remove affinities
- Speed CICSplex® SM workload management
- Highlight CICS web service candidates
- Track Task Control Block (TCB) switches

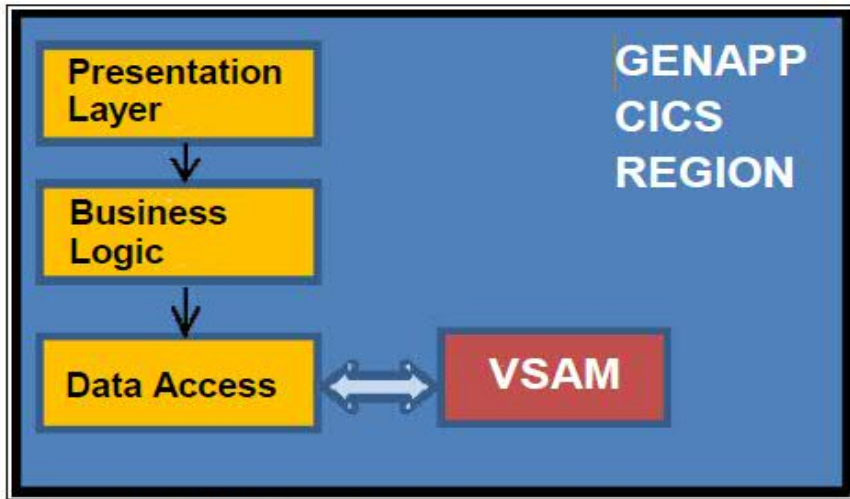
▪CICS support

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

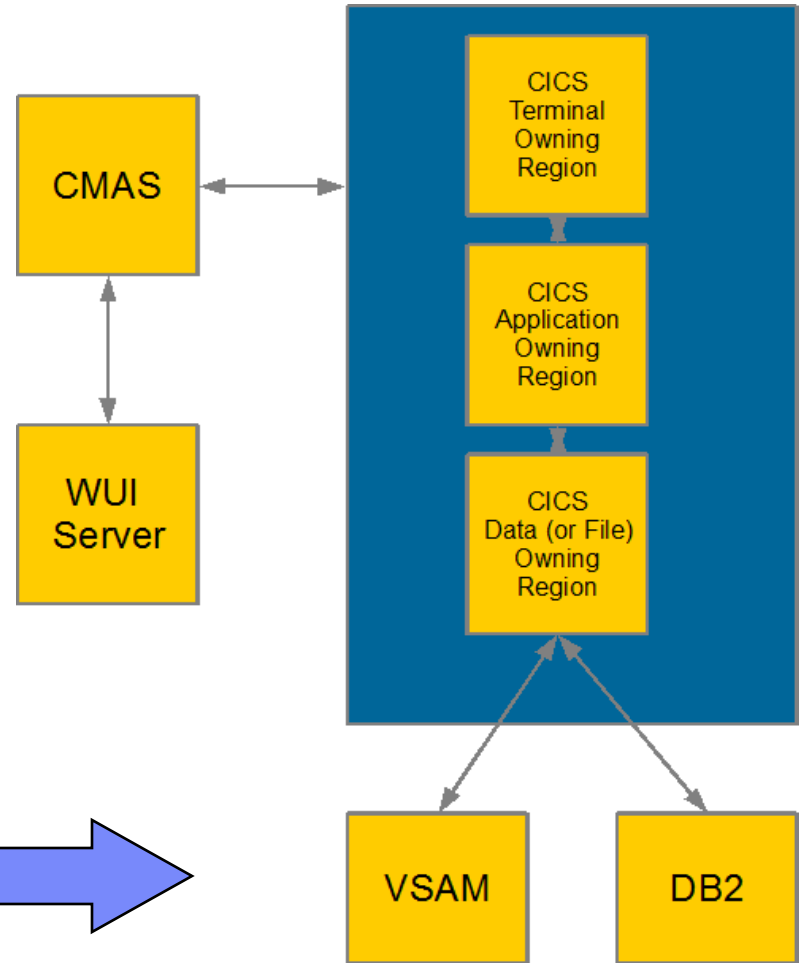
New in CICS IA V3.2

- Support for CICS TS V4.2
- Improved CICS Explorer views
- Plug-in control for data collection
- Command Flow self-service
- CICS Business Events support
- Enhanced business application analysis
- CICS user exit detection and mapping
- Data life-cycle management

Create the new regions



Single region structure



CICSplex structure

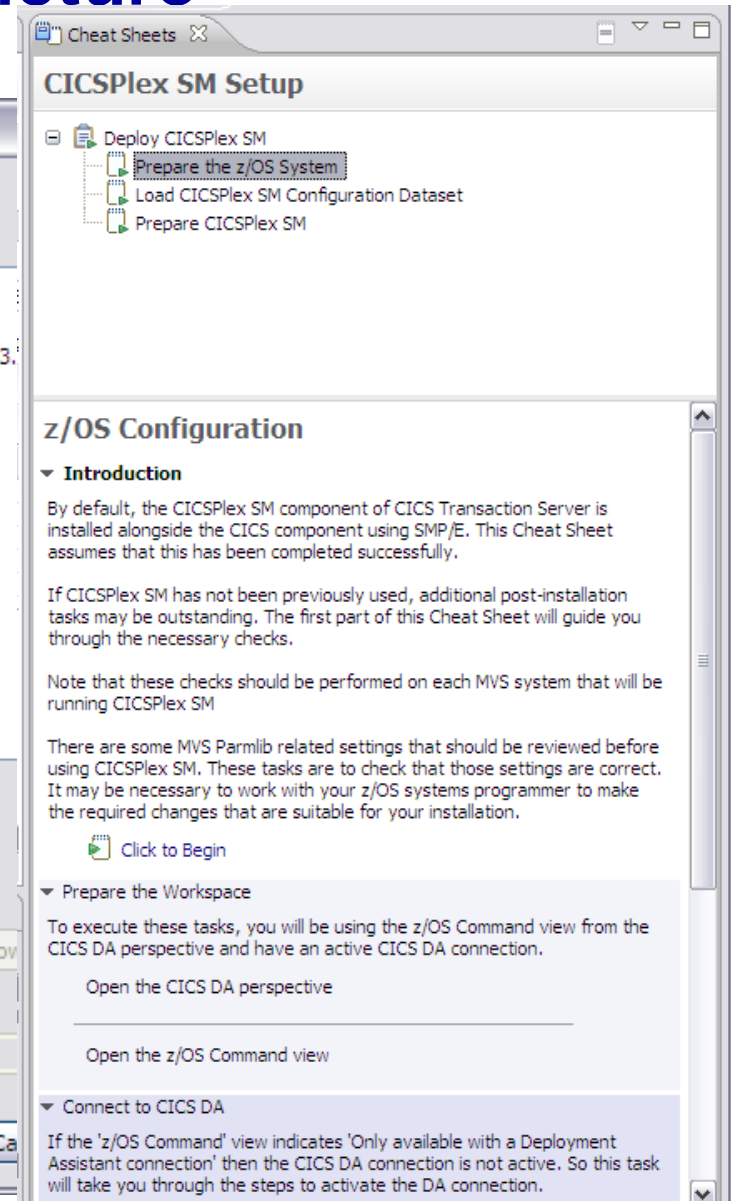
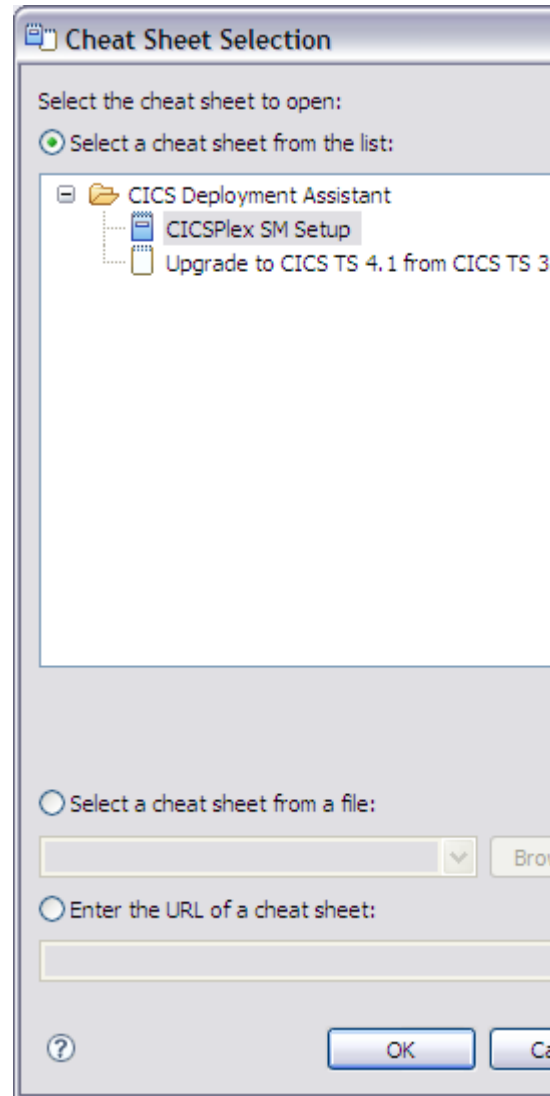
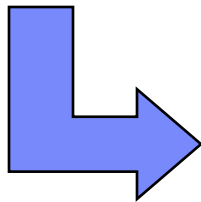
Building the CICSplex infrastructure

Two approaches

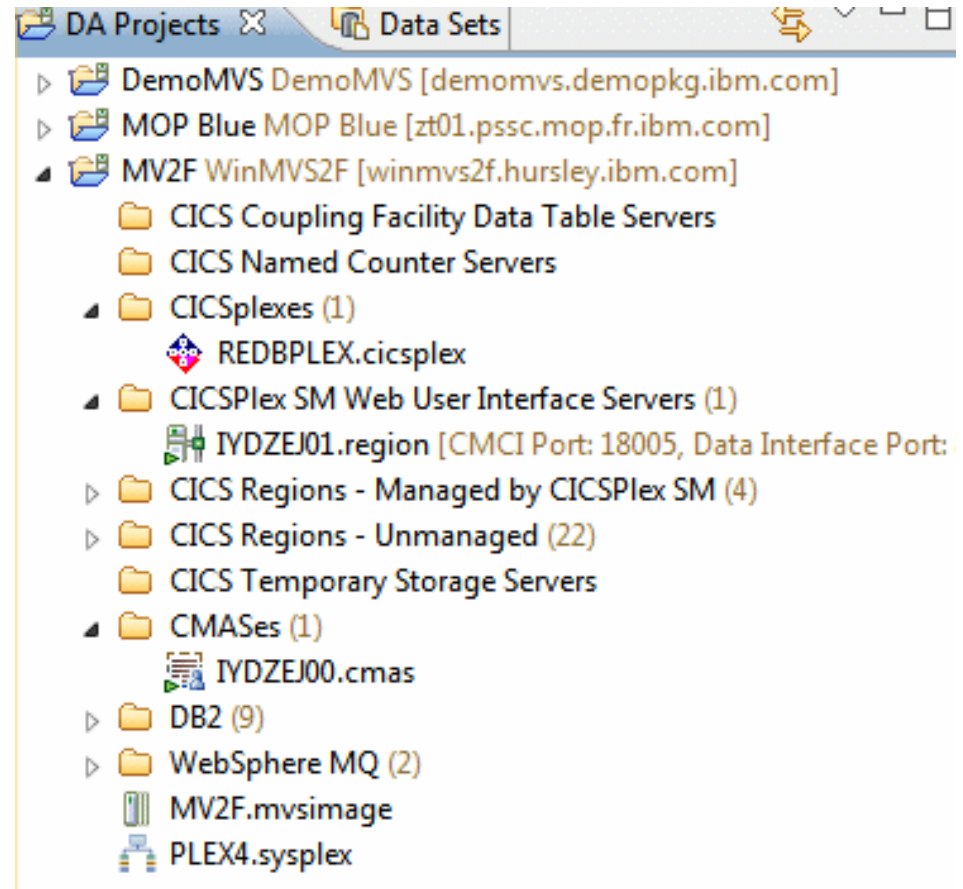
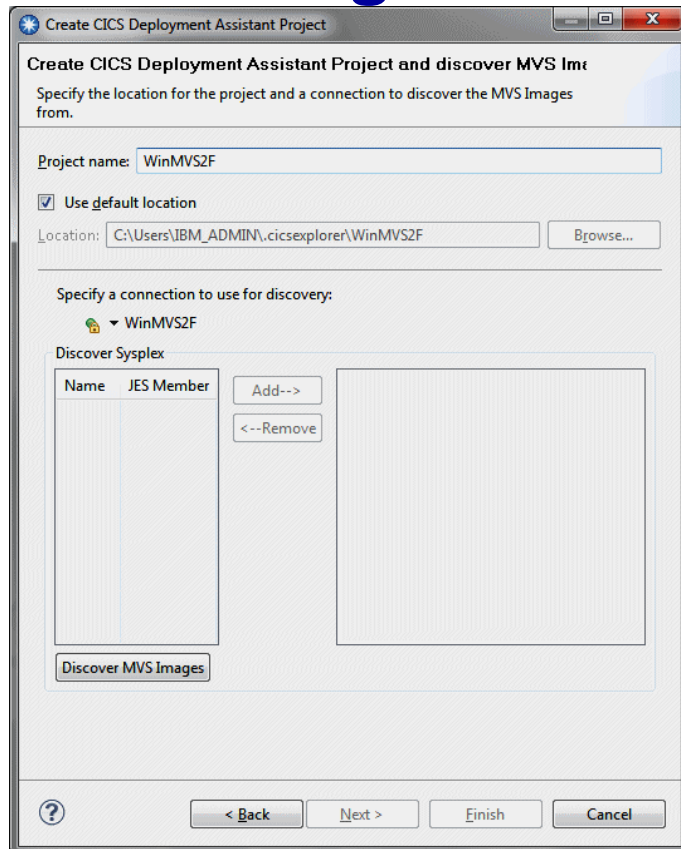
•CICSplex SM commands

```
CONTEXT REDMAS42
DEFINE CICSplex GNAPPLEX
*
CONTEXT GNAPPLEX
*
```

•CICS DA wizard



Discovering CICS and other sub-systems



CICS Deployment Assistant
discovery wizard

Add CICS regions to the CICSplex

CICS Deployment Assistant



Add CICS region to CICSplex
Add CICS region IYDZT416 to the specified CICSplex

MAS Name: REDDTOR
Description: Region GENAPP TOR added to CICSplex by CICS DA Wizard

Select a CICSplex:
REDBPLEX

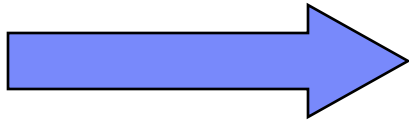
Choose some groups

Choose an owning CMAS

Finish Cancel

Clone an existing CICS region

CICS Deployment
Assistant clone
wizard



Clone a CICS Region

Clone a CICS region
Specify attributes and start policy for your new region, based on those from IYDZEJ07

New CICS Applid: REDDVC42
New CICS Sysid: EJ0B
New MAS Name: REDDVC42
New Description: Region cloned from REDDVA42 by CICS DA

Specify the start policy for your new CICS region.

Start Command: S REDDVC42

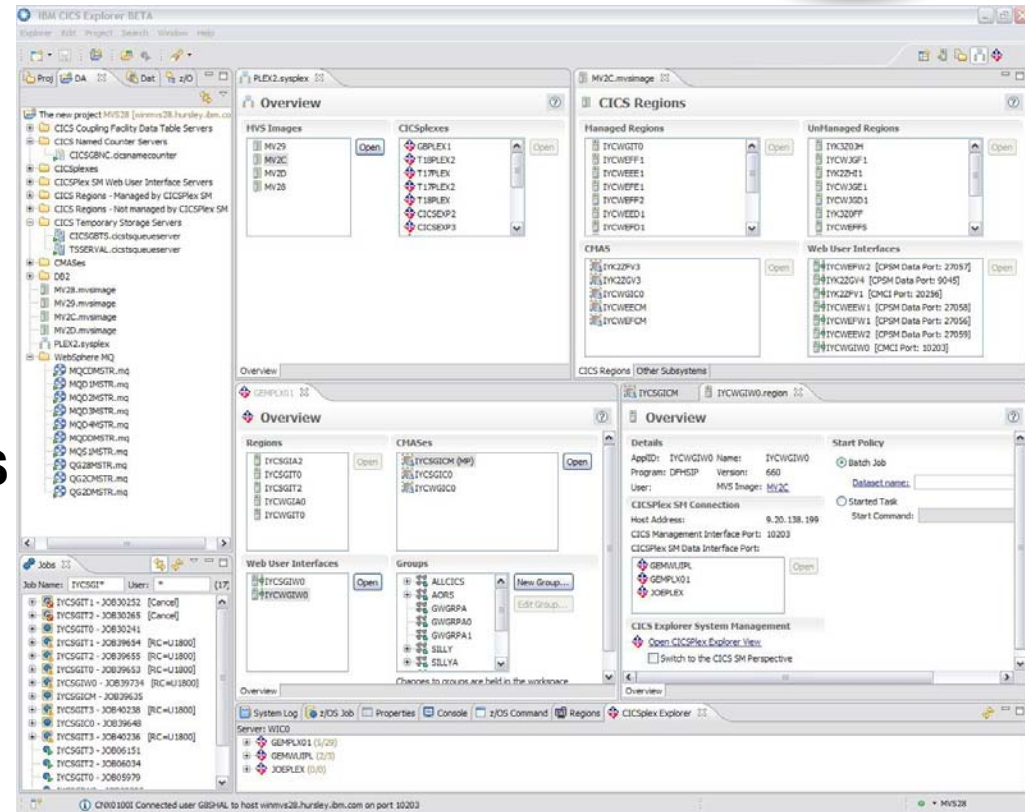
? < Back Next > Finish Cancel

Accelerating return on your CICS investments

IBM CICS Deployment Assistant for z/OS



- **New Deployment perspective integrates with CICS Explorer**
- **Discovery, Modelling and cloning CICS Systems**
- **Topology Visualization**
- **Automated creation, deployment, customization, and control of CICS regions**
- **Edit files, submit JCL, view output**
- **Simplify tasks, save time, and reduce risk**
- **More info at <http://ibm.com/software/http/cics/deployment/>**
 - Features and benefits, data sheet, announcement letter ...



Single point of control

The screenshot displays the IBM Business Partner Center interface. On the left, a tree view shows the hierarchy: Groups > in (REDDVA42/GENALIST) > GENASAT (selected) > GENASAP. The main area shows 'All resources for REDDVA42 Group GENASAP' with a sub-section for 'Program Definition (26)'. A table lists 26 program definitions with columns for Name, Version, Create Time, and Change Time. The table data is as follows:

Name	Version	Create Time	Change Time
LGACDB01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGACUS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGACVS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGAPDB01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGAPOL01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGAPVS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGDPDB01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGDPOL01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGDPVS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGICDB01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGICUS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGICVS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGIPDB01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGIPOL01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGIPVS01	1	17-Nov-2011 16:52:30	17-Nov-2011 16:52:30
LGSETUP	1	17-Nov-2011 16:52:31	17-Nov-2011 16:52:31
LGSTSQ	1	17-Nov-2011 16:52:31	17-Nov-2011 16:52:31

Build a change package and migration scheme

```

File Menu Settings Help
-----
Package Change Package GENAPP Row 1 to 16 of 41
Command ==> _____ Scroll ==> PAGE

Filter * * + GENA* REDDVA42 *

/ Name Type Group Prompt Config --- Changed ---
-----
GENAMOD ENQMODEL GENA REDDVA42 2011/11/09 15:47
GENASTSQ TSMODEL GENA REDDVA42 2011/11/09 15:47
GENLIB LIBRARY GENALIB REDDVA42 2011/11/10 15:08
IM2D DB2CONN GENASAD
IM2DLU2 DB2ENTRY GENASAD
KSDSCUST FILE GENASAF
KSDSPOLY FILE GENASAF
LGACDB01 PROGRAM GENASAP
LGACUS01 PROGRAM GENASAP
LGACVS01 PROGRAM GENASAP
LGAPDB01 PROGRAM GENASAP
LGAPOL01 PROGRAM GENASAP
LGAPVS01 PROGRAM GENASAP
LGCF TRANSACTION GENASAT
LGDPDB01 PROGRAM GENASAP
LGDPOL01 PROGRAM GENASAP

```

```

File Menu Settings Help
-----
Edit Migration Scheme Row 1 to 1 of 1
Command ==> _____ Scroll ==> PAGE

Name . . . . : GENAPP
Description . . Migration Scheme for the GENAPP application

Approval Processing
_ Activate

Choose a view for related options
1 1. Migration paths
2. Transform variables

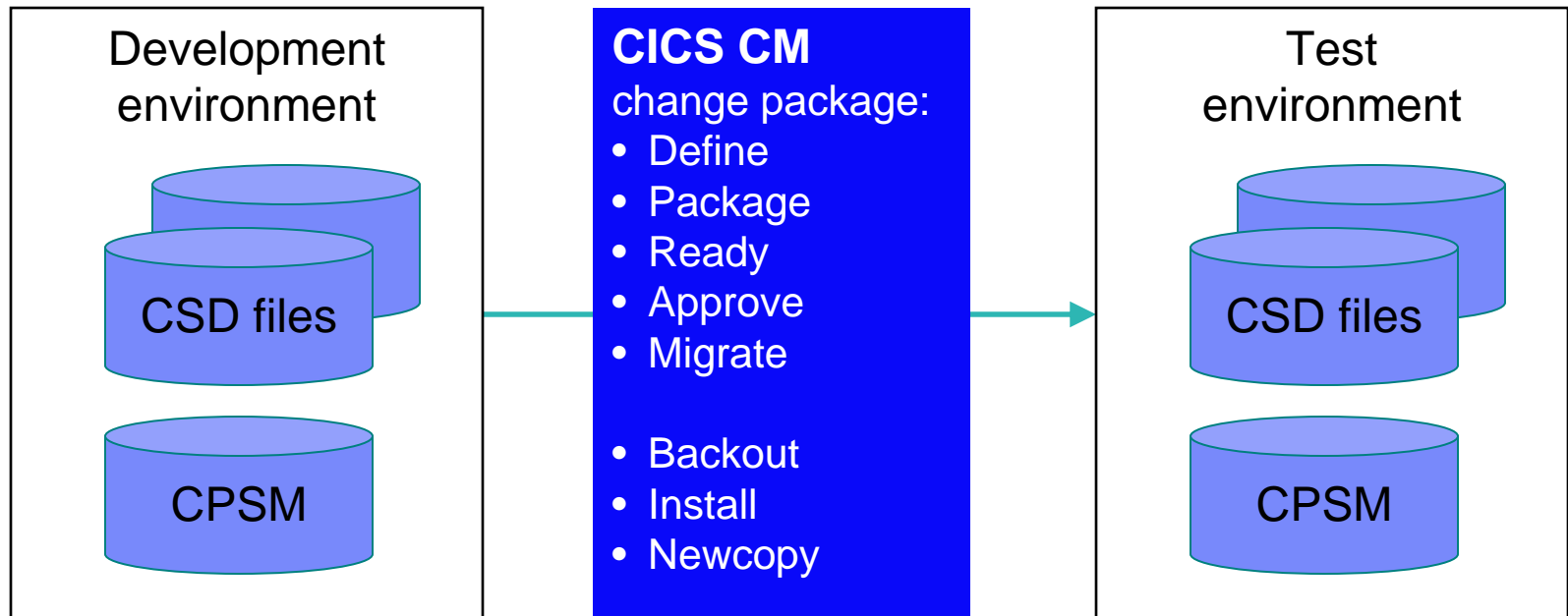
Define the migration path source and target CICS Configurations

Delete at
/ Source + Target + Transform Rule + Source
_ REDDVA42 REDDVB42 GENAPP NO
***** Bottom of data *****

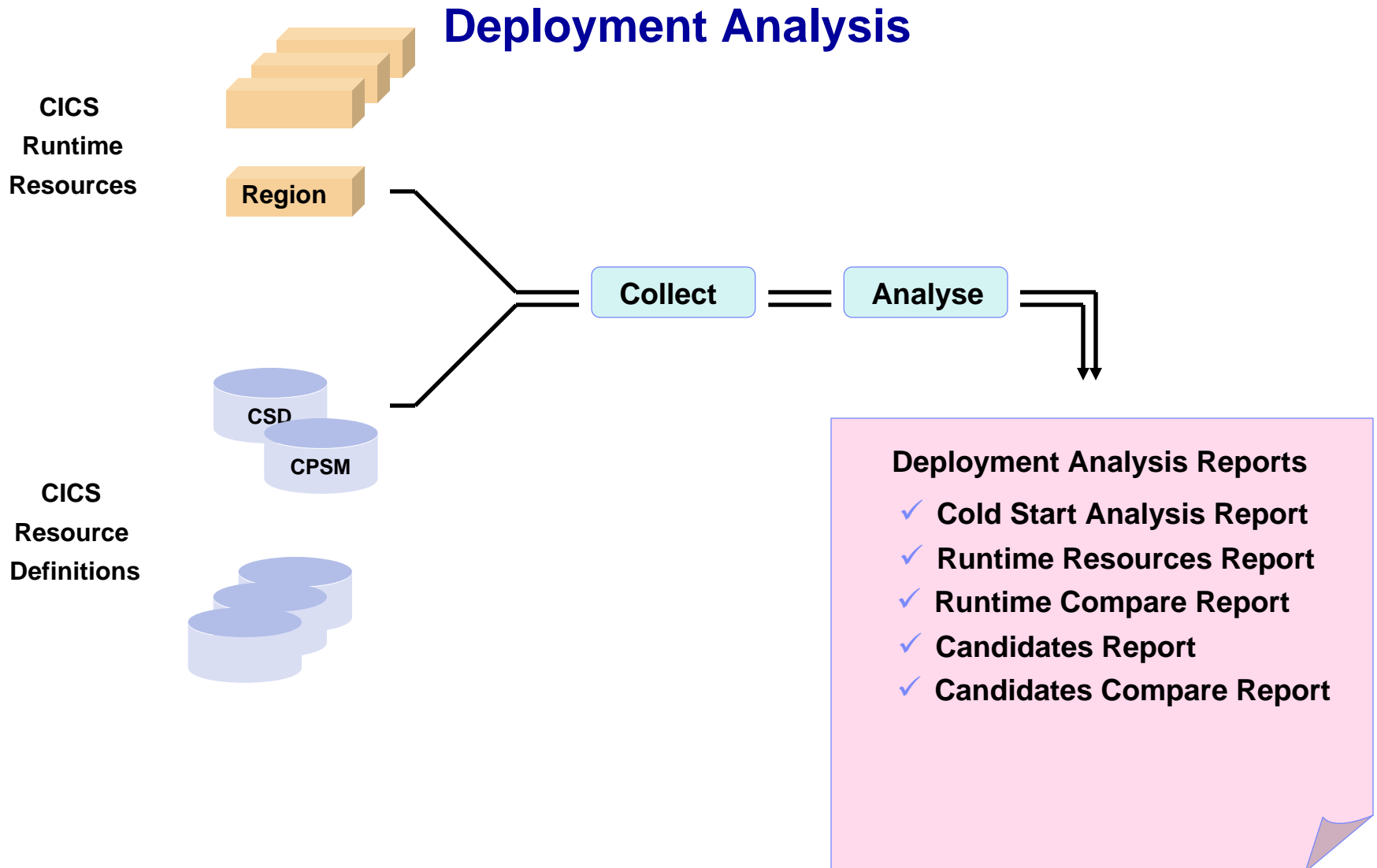
```

Migrating changes between environments

- ✓ Group changes into a CICS CM change package
- ✓ Manage the package as a single unit
- ✓ Supports Ready, Approve and Backout processing
- ✓ APIs and exit-points for integration to change-control products
- ✓ Migration schemes and transformation rules allow for flexible deployment paths



What will change at the next Cold Start?



Solution

Cold start analysis

CICS Deployment Analysis Report
Region Startup Compare Report
Missing Definitions

Missing

Count	ID	Name	Type	Group	List or RESDESC	Code	Error	Loc Rem	Ena Dis	WV	Deploy Checksum	Collection Type
1	01	CCVR0001	FILE			0200	Missing	LOC	DIS		8FE06597	REGION-CCM
2	01	CCVR0002	FILE			0200	Missing	LOC	DIS		DB710EBA	REGION-CCM

CICS Deployment Analysis Report
Region Startup Compare Report
Mismatched Definitions

Different

Count	ID	Name	Type	Group	List or RESDESC	Code	Error	Loc Rem	Ena Dis	WV	Deploy Checksum	Collection Type
98	01	T31M	CONNECTION			0300	Checksum Mismatch	LOC	ENA		A381AB42	REGION-CCM
		Attribute:	ACCESSMETHOD		Value: IRC							
99	02	T31M	CONNECTION	CCVLINKS	CCVT22M	0300	Checksum Mismatch	LOC	ENA		93C0BDE4	CANDIDATES-CSD
		Attribute:	ACCESSMETHOD		Value: XM							

CICS Deployment Analysis Report
Region Startup Compare Report
Referential Integrity Verification

RI errors

Count	ID	Name	Type	Group	List or RESDESC	Code	Error	Loc Rem	Ena Dis	WV	Deploy Checksum	Collection Type
142	02	CCVBACK	FILE	CCV210	CCM210	0951	CCV5451W	LOC	ENA		DB5D5400	CANDIDATES-CSD
		Attribute:	LSRPOOLID		Value: 1							

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

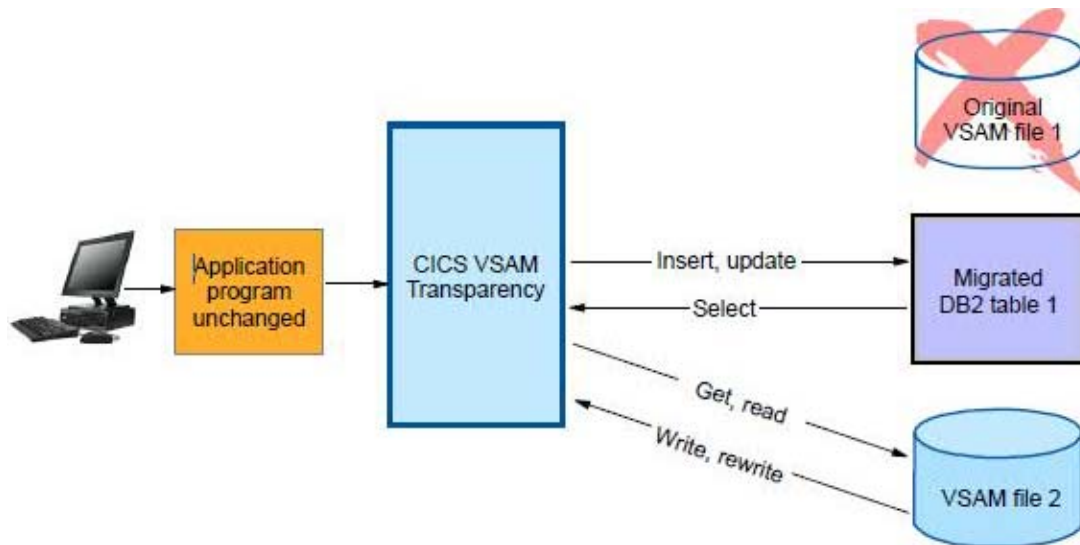
- CICS Transaction Server for z/OS, V3 and V4

New in CICS CM V2.1

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

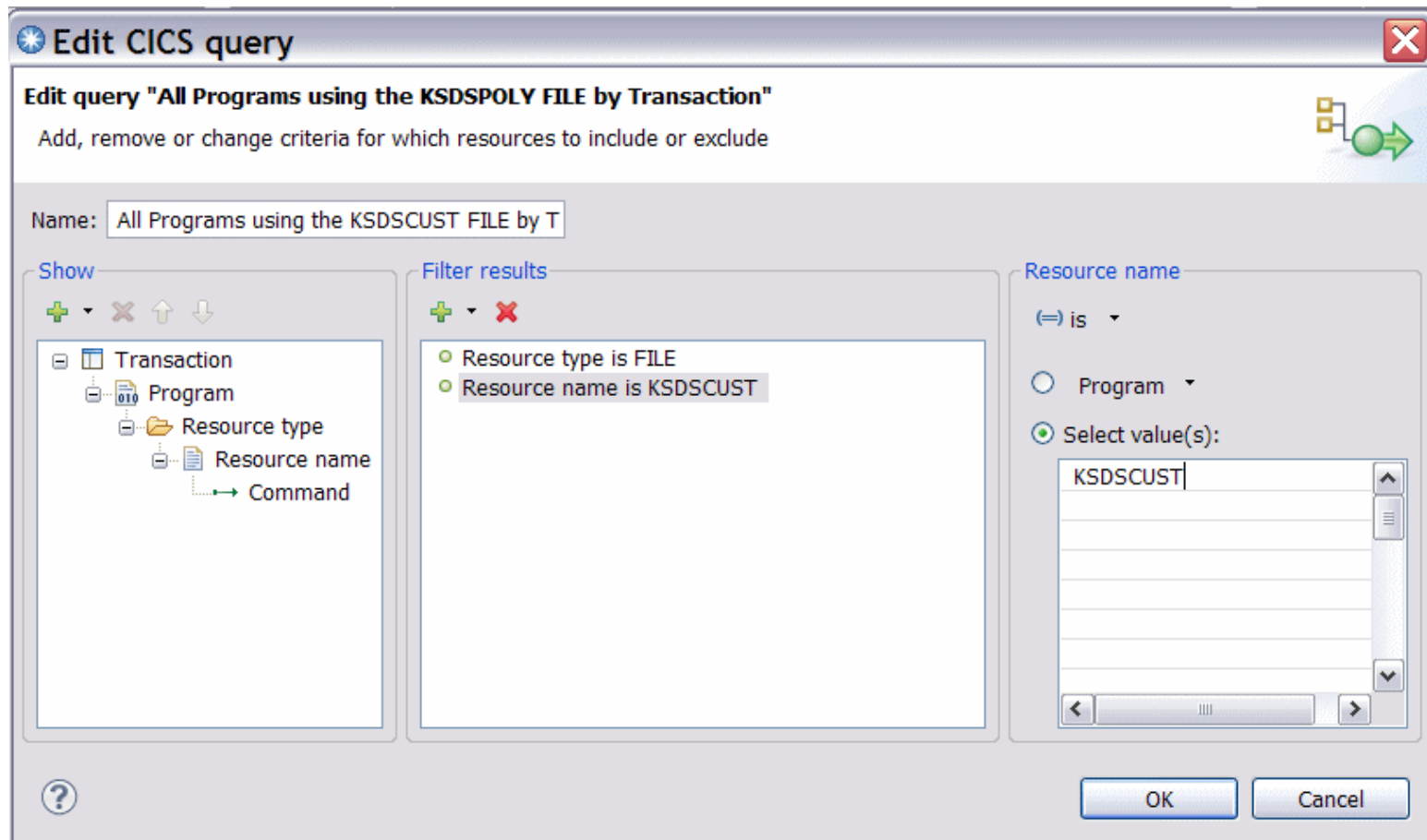
Migrating VSAM data to DB2

- Migrate files transparently - without application change



Migrating VSAM data to DB2

- Determine where the KSDSCUST file is used

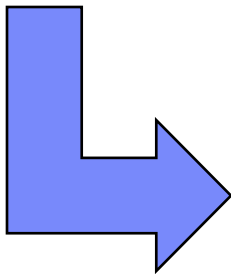


Migrating VSAM data to DB2

- Convert KSDSCUST file from VSAM to DB2
 - Mapping – to create the database schemas

```

01  LG-CUSTOMER-INFO.
    05 LG-CUST-NUMBER      PIC 9(10).
    05 LG-FIRST-NAME      PIC X(10).
    05 LG-LAST-NAME       PIC X(20).
    05 LG-DOB             PIC X(10).
    05 LG-HOUSE-NAME      PIC X(20).
    05 LG-HOUSE-NUM       PIC X(4).
  
```

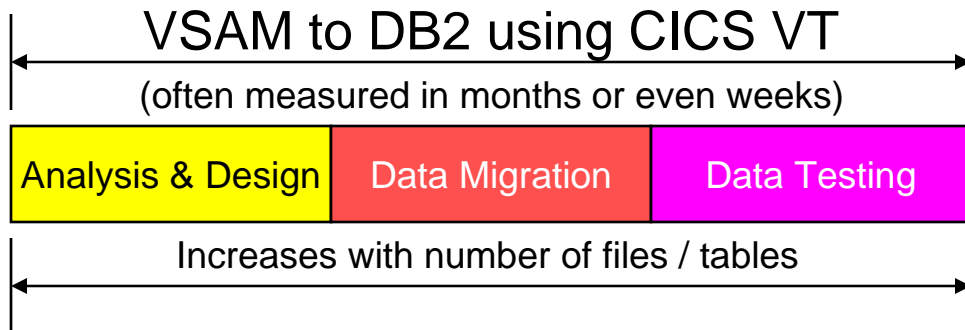
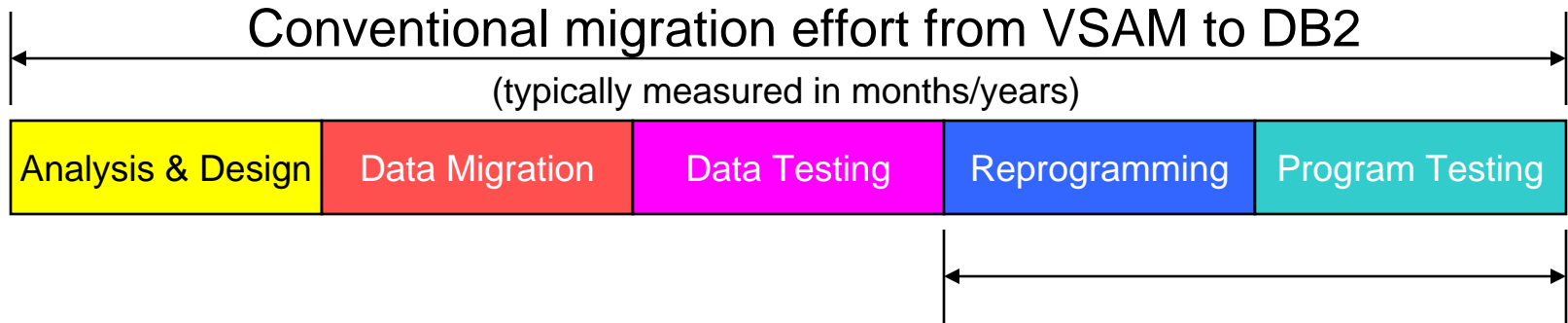


```

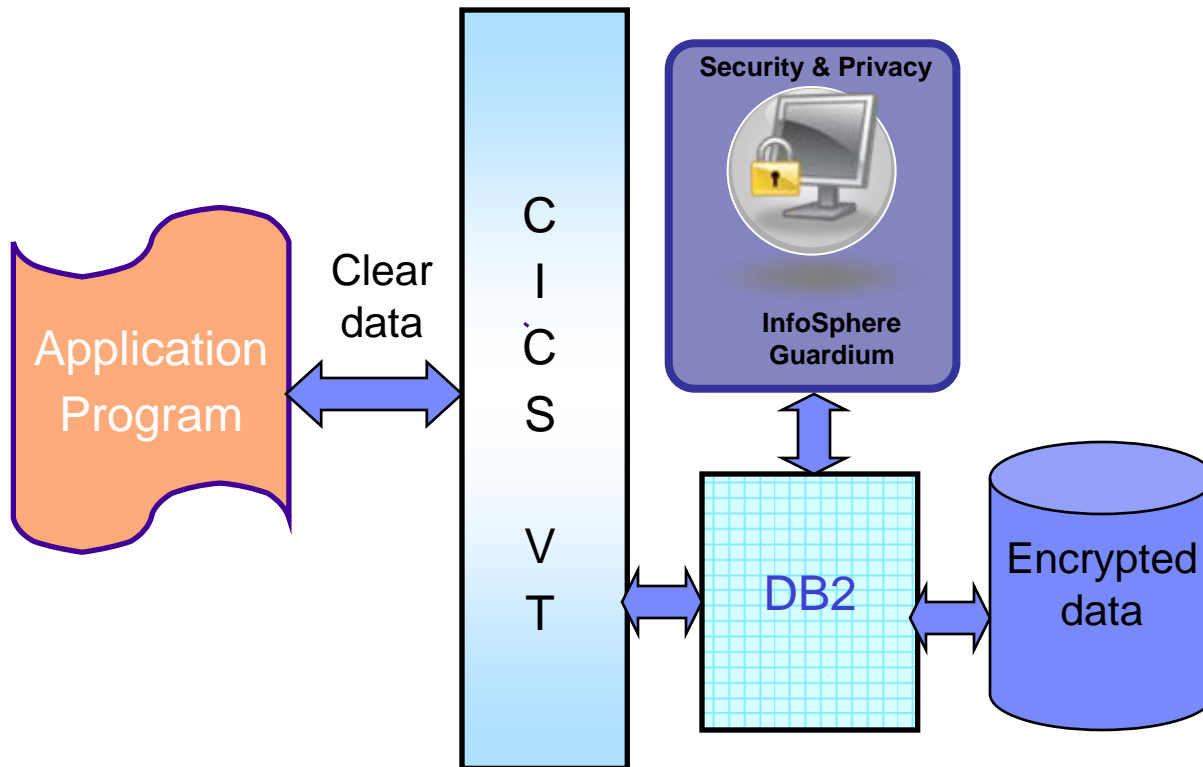
CREATE TABLESPACE KSDSCUS
  IN CVIDB
  USING STOGROUP CVTSG
  PRIQTY 65862
  SECQTY 2
  SEGSIZE 4
  BUFFERPOOL BP0
  ;
COMMIT;
CREATE TABLE DMUSERS.KSDSCUS
  (
    LG_CUST_NUMBER          CHAR(10)          NOT NULL,
    LG_FIRST_NAME          CHAR(10)          NOT NULL,
    LG_LAST_NAME           CHAR(20)          NOT NULL,
    LG_DOB                 CHAR(10)          NOT NULL,
    LG_HOUSE_NAME          CHAR(20)          NOT NULL,
    LG_HOUSE_NUM           CHAR(4)           NOT NULL,
    LG_POSTCODE            CHAR(8)           NOT NULL,
    PRIMARY KEY (
      LG_CUST_NUMBER
    )
  )
  IN CVIDB.KSDSCUS;
COMMIT;

CREATE UNIQUE INDEX DMUSERS.IX_KSDSCUS
  ON DMUSERS.KSDSCUS
  (
    LG_CUST_NUMBER          ASC
  )
  
```


Data Migration – CICS VT vs. Conventional Method



RUN TIME CALL INTERCEPTION - CICS

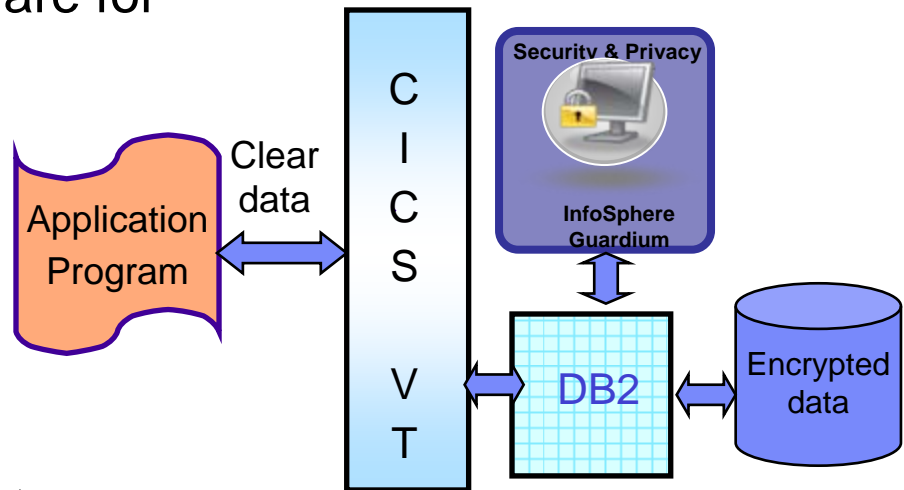


Encrypt credit card and key customer data

- **InfoSphere Guardium Data Encryption for DB2 and IMS Databases**

- DB2 edit routines and IMS exit routines that invoke the z/OS Integrated Cryptographic Service Facility (ICSF), which exploits the Crypto Hardware for data encryption and decryption
- Sample implementation jobs
- An ISPF front end to build implementation jobs
- The capability to specify unique encryption keys

- **Use in conjunction with CICS VT to encrypt key credit card data to meet PCI-DSS requirements**



CICS VSAM Transparency for z/OS (CICS VT)

▪Key features

- Migrate VSAM files to DB2 without changing application programs
- Single copy of the data
- CICS and batch programs access data in DB2 under the control of CICS VT
- Data migrated to DB2 can be accessed natively by new programs
- Existing programs enhanced using SQL
- Lower risk migration strategy

New in CICS VT V2.1

- Auto-generate customized data migration JCL
- Enhanced IDCAMS REPRO support
- New migration tracking report
- Improved diagnostic facilities
- Support for CICS® Transaction Server V4.2 and DB2® 10
- Other functional enhancements
 - Long column name support
 - HLL support for user exits
 - RRS support in batch
 - Read-only DDM
 - Dynamic DST update

Performance analysis

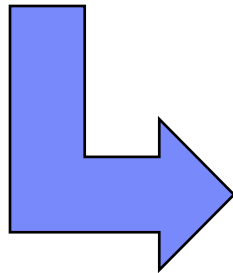
- Respond to user feedback to help desk

Regions Tasks ISC/MRO Connections Terminals Files Transactions

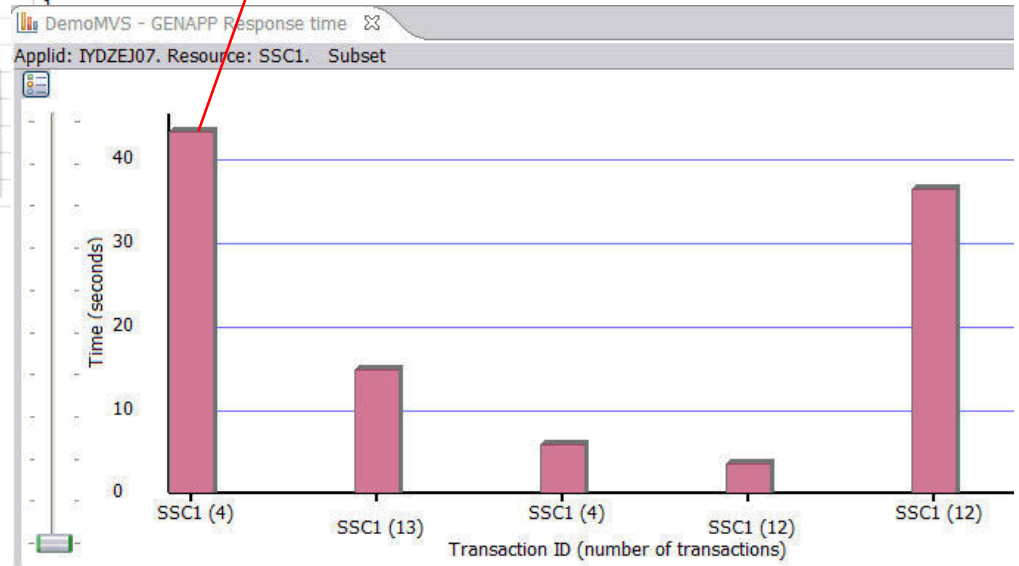
CNX0211I Context: REDDVA42. Resource: LOCTRAN. 92 records collected at Nov 18, 2011 4:23:20

Region	Name	Status	Use Count	Program	Priority
REDDVA42	SE65	ENABLED	0	SE650001	1
REDDVA42	SE66	ENABLED	0	SE660001	1
REDDVA42	SSC1	ENABLED	0	LGTESTC1	1
REDDVA42	SSP1	ENABLED	0	LGTESTP1	1
REDDVA42	SSP2	ENABLED	0	LGTESTP2	1
REDDVA42	SSP3	ENABLED	0	LGTESTP3	1
REDDVA42	SSP4	ENABLED	0	LGTESTP4	1
REDDVA42	SS05	ENABLED	0	SS050001	1
REDDVA42	SS06	ENABLED	0	SS060001	1
REDDVA42	SS07	ENABLED	0	SS070001	1
REDDVA42	SS08	ENABLED	0	SS080001	1
REDDVA42	SS09	ENABLED	0	SS090001	1
REDDVA42	SS10	ENABLED	0	SS100001	1
REDDVA42	SS11	ENABLED	0	SS110001	1
REDDVA42	SS12	ENABLED	0	SS120001	1
REDDVA42	SS13	ENABLED	0	SS130001	1

Open
Open Related
Discard
Enable
Disable
Dependencies
Performance history
Response time
Storage
File usage
CPU time



High response time
SLA says ≤ 1 sec



Performance analysis

- Drill down into problem

- Long terminal waits suggest not pseudo-conversational

DemoMVS - GENAPP Response time DemoMVS - GENAPP Transaction detail for: SSC1

Start Date=2011-11-16, Start time=11.35.00, Applid=IYDZEJ07, Transaction ID=SSC1

Transaction detail for: 2011-11-16, 11.35.00, IYDZEJ07, SSC1

Overview:

Response time Storage File usage Threadsafe CPU time

Response time (averages)

12 transaction(s): 0 TCB mode switches (average). 36.521965 seconds average response time per transaction.

Response measurement	Time (a...)	Count	%Ove...	%Rela...
Response time	36.521965		-	-
User Dispatch time	0.000956	1.333333	-	-
User CPU time	0.000720	1.333333	-	75%
QR TCB CPU time	0.000720	1.333333	-	100%
Suspend time	36.521009	1.333333	100%	100%
Dispatch wait time	0.000004	0.333333	-	-

Summary Data

	Time	Count	Ratio
	Total	Average	Total Average
# Tasks		101	
Response Time	968.0143	9.5843	
Dispatch Time	0.3526	0.0035	138 1.4 0.0% of Response
CPU Time	0.0001	0.0008	138 1.4 22.7% of Dispatch
Suspend Wait Time	967.6618	9.5808	138 1.4 100.0% of Response
Dispatch Wait Time	0.0015	0.0000	37 0.4 0.0% of Suspend
QR TCB Redispatch Wait Time	0.0015	0.0000	37 0.4 100.0% of Dispatch
Resource Manager Interface (RMI) elapsed time	0.0002	0.0000	202 2.0 0.0% of Response
Resource Manager Interface (RMI) suspend time	0.0000	0.0000	0 0.0 0.0% of Suspend

Suspend Detail

	Total	Average	Count
TJOWTT Terminal wait for input time	563.1805	5.5760	28 0.3
DSPCLAY First dispatch wait time	404.1028	4.0010	101 1.0
TCLDELAY > First dispatch TCLSNAME wait time	404.0997	4.0010	15 0.1
JCIDWTT Journal I/O wait time	0.2055	0.0020	6 0.1
FCIDWTT File I/O wait time	0.1729	0.0017	3 0.0

Performance analysis

- **Gather further evidence**
 - Statistics alerts indicate TCLASS problem

Sheet view Transaction Classes (1/1 rows)

Maximum active transactions in class reached Applid=IYDZEJ07, Version Release Modification=670, Interval Number=761, Type=INT, MVS ID=MV2F, Transaction class=DFHTCL09 Specific

Start D...	Start ti...	Applid	MVS ID	Version...	Type	Interval...	Interval...	Transaction class	Attaches	Times at Max active	Purged...	No long...	Accept
2011-11...	12.41.00	IYDZEJ07	MV2F	670	INT	00.01.00	761	DFHTCL09	14	15	0	1	

Alerts

Connected: DemoMVS - GENAPP. Alert table: Alert.

Alert description	Start ...	Start t...	Applid	MVS ID	Resourc...	Resourc...	Actual	Threshold	Type	Version .
Critical										
Maximum active transactions in class reached	2011-1...	12.41.00	IYDZEJ07	MV2F	Tclass Na...	DFHTCL09	15	>10	INT	670
Maximum active transactions in class reached	2011-1...	12.42.00	IYDZEJ07	MV2F	Tclass Na...	DFHTCL09	21	>10	INT	670
DB2 pool thread waits	2011-1...	13.16.00	IYDZEJ07	MV2F	DB2CONN...	DB2CONN1	148	>5	INT	670
Enqueues waited in ENQ pool - local	2011-1...	13.16.00	IYDZEJ07	MV2F	ENQ Pool...	EXECADDR	37	>25	INT	670

Performance analysis

- **Implement changes**
 - Update programs to remove terminal waits
 - Increase TCLASS limit for more parallelism

- **... and validate the results**

V3R2M0 CICS Performance Analyzer
Transaction Profiling

PROF0001 Printed at 23:01:30 11/17/2011 Report Data from 17:32:42 11/17/2011 to 17:45:53 11/17/2011
Baseline Data from 10:16:33 11/16/2011 to 12:19:45 11/16/2011 Page 1

SSC1 Transaction Profiling: Pseudo Conversational

Tran		#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
SSC1	Report	53	.7972	.0036	.0009	.7936	.0001	.0002	0	.0000	0	254117
SSC1	Baseline	101	9.5843	.0035	.0008	9.5808	.0000	.0017	0	.0000	0	234009
	Delta	-48	-8.7871	+.0001	+.0001	-8.7872	+.0001	-.0015	+0	.0000	0	+20108
	Change%	-47.52	-91.68	+2.28	+8.04	-91.72	+395.11	-87.25	+12.39	.00	.00	+8.59
Total	Report	53	.7972	.0036	.0009	.7936	.0001	.0002	0	.0000	0	254117
	Baseline	101	9.5843	.0035	.0008	9.5808	.0000	.0017	0	.0000	0	234009
	Delta	-48	-8.7871	+.0001	+.0001	-8.7872	+.0001	-.0015	+0	.0000	0	+20108
	Change%	-47.52	-91.68	+2.28	+8.04	-91.72	+395.11	-87.25	+12.39	.00	.00	+8.59

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

Follow-on activities

- **Remove affinities from the applications**
 - Use IBM Debug Tool for source level debug
 - Rerun CICS IA affinity query to validate all removed
- **Performance analysis**
 - Use IBM Application Performance Analyzer for deep dive into GENAPP performance
 - Threadsafe analysis using CICS IA and CICS PA
- **Event-enable GENAPP to gain insight from Analytics**
 - Using WODM, WBM, Cognos, etc
- **Rule-enable GENAPP to reduce IT latency and return some control to the LOB**
 - WODM rules server runs inside CICS TS

Debug Tool

▪Key features

–Debugs applications in CICS, IMS, DB2 Stored Procedures and UNIX System Services

- Source-level debugging, Multiple Conditional Unconditional breakpoints, Step mode debugging, Dynamic patching (Modify variables and Insert statements), log commands, Frequency sampler, Programmable command entry, etc etc

–**Identify** old OS/VS COBOL & VS COBOL II source code and **upgrade** it to IBM Enterprise COBOL or ANSI 85 standard

–One tool debugs batch, TSO, CICS, DB2, DB2 stored procedures and IMS applications written in COBOL, PL/I, C/C++ and Assembler

–Integrated development, test and debugging environment with CICS Explorer and Rational Developer for System z

–Code coverage tools

New in DT V11

- **Plug-in for CICS Explorer**
- **Explicit debug mode**
- **New UI for Terminal Interface Manager**
- **IBM zEnterprise 196 support**
- **Numerous customer requirements**

Application Performance Analyzer for z/OS (APA)

▪Key features

- Measure and report resource use in virtually any IBM z/OS® address space
- Isolates application performance problems across entire application – subsystems (DB2, IMS, CICS, MQ, USS, WAS), languages, and DASD
- Identify constraints
- Non-intrusive
- Helps with design, development and maintenance
- Shares side files with Fault Analyzer and Debug Tool

▪IBM Product Support

- Supports C/C++, Assembler, COBOL, PL/I, Java and CICS, DB2, IMS, WebSphere MQ and WebSphere Application Serve

New in APA V11

- **Plug-in for CICS Explorer**
- **64-bit Java support**
- **Enhanced CICS, DB2, and IMS support**
- **NATURAL and ADABAS support**

New!

IBM CICS Explorer® V1.1

Session and user views, Configuration, Broadcast, User and Admin commands

ISM

Daemon & Connection Status & Test

TG

Develop Test Etc

RDz

Configuration Status Control, Test

MQ

Status Situations Topology

XE

Threadsafe, File, CPU, Response Time, Statistics, Alerts, Graphical and Sheet views

PA

Deployment, Discovery, Visualization, Cloning, Automation & Control

DA



Manipulate, browse z/OS data sets, z/FS, MQ

FM

New!

CICS, IMS, DB2, & z/OS Abend Reporting & Diagnosis

FA

Execution Tree Dependencies Queries Command Flow

IA

CRUD/Install History, Audit Backout Search, Compare

CM

CICS, IMS, DB2, & z/OS Application Debugging

DT

CICS, IMS, DB2, & z/OS Observation Requests & Reporting

APA

CRUD/Install, Control, Filter, Sort, Topology, Events, ATOM. Java z/OS, Txn Tracking, WLM

SM

ibm.com/cics
ibm.com/cics/tools
ibm.com/cics/explorer

Enhanced!

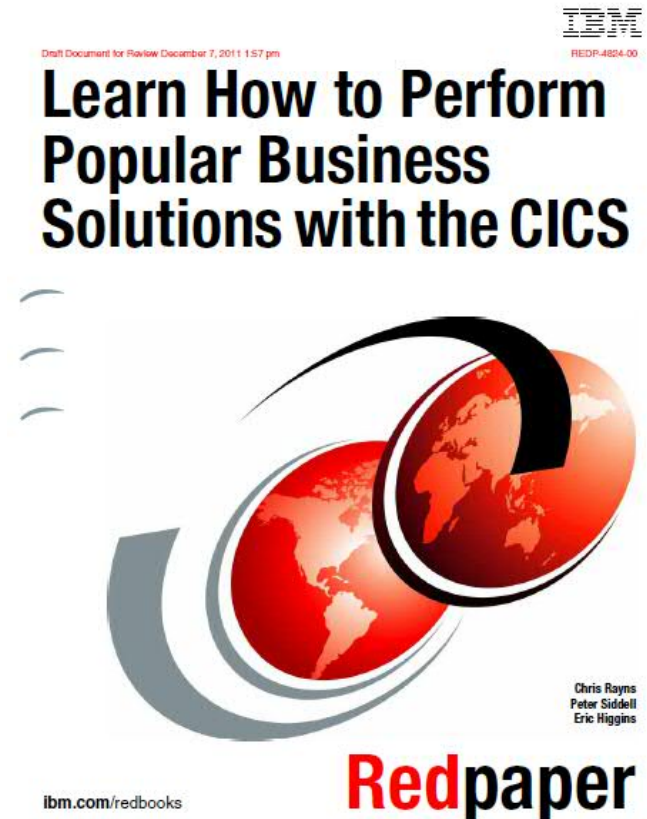
SM	CICS Transaction Server
IA	CICS Interdependency Analyzer
PA	CICS Performance Analyzer
CM	CICS Configuration Manager
DA	CICS Deployment Assistant
TG	CICS Transaction Gateway
ISM	IBM Session Manager

CICS TS

APA	Application Performance Analyzer
FA	Fault Analyzer
DT	Debug Tool
FM	File Manager
MQ	WebSphere MQ
XE	OMEGAMON XE for CICS
RDz	Rational Developer for System z

GENAPP – SupportPac and Redpaper

- **GENAPP is available to customers as SupportPac CB12, at no extra cost**
 - Download from <http://www-01.ibm.com/support/docview.wss?rs=1085&uid=swg24031760>
- **This presentation is based on GENAPP and the scenarios in this new IBM Redpaper**
 - Download from <http://www.redbooks.ibm.com/abstracts/redp4824.html?Open>



Summary

- **IBM CICS Tools and Problem Determination Tools can help you to be more effective**
 - Architects designing extensions to existing CICS applications
 - Developers diagnosing problems and packaging up code changes
 - System programmers deploying new regions and tracking performance
- **CICS Explorer delivers an integrated solution**
 - Meets the needs of beginners **and** experienced professionals

Reference material



CICS Communities and Information

- **Web pages**
 - Transaction Server V4.2 <http://ibm.com/cics/tserver/v42>
 - CICS Tools ibm.com/cics/tools
 - PD Tools ibm.com/software/awdtools/deployment/
 - CICS Explorer 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
- **CICSdev community**
 - Public community with blog, forum etc aimed at application developers
 - <https://www.ibm.com/developerworks/connect/cicsdev>
- **Twitter**
 - Subscribe to the [IBM System z channel](#) and the [ibm_cics channel](#) to get System z and CICS news flashes
- **CICS Blog**
 - Information, comment and opinion at TheMasterTerminal.com
- **[CICS eNews](#)**
 - Subscribe for news about CICS and related products – share with your clients
- **YouTube channels**
 - [CICS Explorer](#) - Videos, demos and other cool stuff
 - [CICSFluff](#) - Other CICS videos



Twitter



eNews



Key documents

▪ Analyst papers

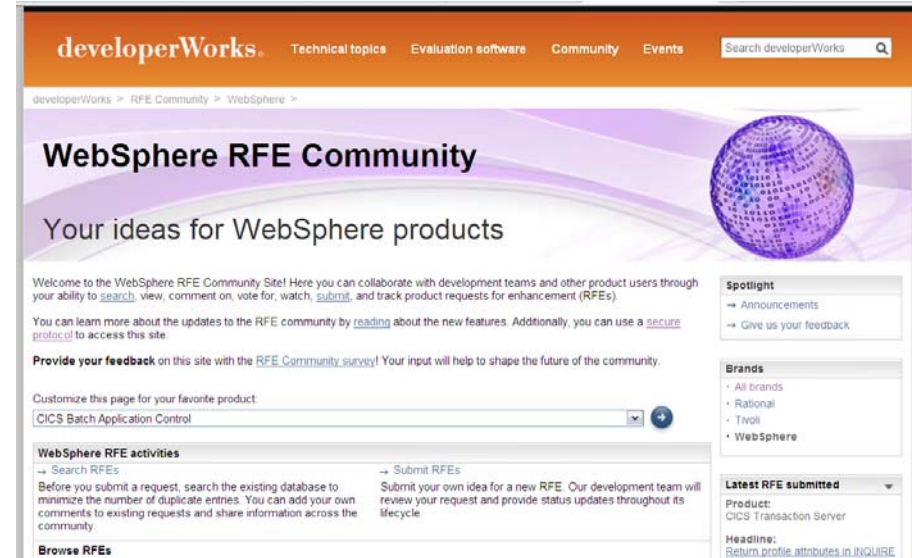
- Lustratus Research - New project platform section for CICS Users
ftp://public.dhe.ibm.com/software/htp/cics/pdf/Lustratus_Research_Paper_New_project_platform_selection_for_CICS_users.pdf
- Branham Group: IBM CICS Tools: Unrealized Productivity Gains and True Cost Savings
ftp://public.dhe.ibm.com/software/htp/cics/tools/IBM_CICS_Tools_Whitepaper_2009.pdf
- Software Strategies: IBM z/OS Problem Determination Tool Suite Leads Again
https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?lang=en_US&source=SWG-RSZSWG

▪ IBM Redbooks

- [CICS Transaction Server from Start to Finish](#), SG24-7952-00
- [Smarter Banking with CICS Transaction Server](#), SG24-7815-00
- [IBM Problem Determination Tools for z/OS](#), SG24-7918-00
- [Leveraging CICS Events with an ESB](#), SG24-7863-00
- Coming soon ...
 - CICS and SOA: Architecture and Integration, SG24-5466-06
 - Implementation of Popular Business Solutions with CICS Tools, REDP-4824-00

Raising new requirements with RFE

- You can now raise and track requirements using the new IBM RFE system for
 - CICS Transaction Server
 - CICS Explorer
 - TXSeries
 - WXTR
 - IBM CICS Tools
 - CICS Transaction Gateway
 - PD Tools - coming soon (target end Jan 2012)



- Existing FITS requirements are currently being processed, and will either be transferred to RFE or closed and returned.
- All brands <https://www.ibm.com/developerworks/rfe/> - select Brand: WebSphere
- WebSphere only https://www.ibm.com/developerworks/rfe/?BRAND_ID=181
- Select Product Family: Transaction Processing - for CICS Transaction Server, TXSeries, and WXTR
- Select Product Family: Enterprise Tooling - for the CICS Tools, CICS Transaction Gateway, and PD Tools
- Raise CICS Explorer base requirements against the Explorer component of CICS TS.
- Raise plug-in requirements against the Explorer component of related product.

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<http://www-01.ibm.com/software/websphere/events/impact/registration.html>