

# IBM System z Technology Summit



## Simplify your infrastructure



© IBM Corporation 2011. All Rights Reserved.

These materials have been prepared by IBM or the session speakers and reflect their own views. They are provided for informational purposes only, and are neither intended to, nor shall have the effect of being, legal or other guidance or advice to any participant. While efforts were made to verify the completeness and accuracy of the information contained in this presentation, it is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this presentation or any other materials. Nothing contained in this presentation is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software.

References in this presentation to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in this presentation may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. Nothing contained in these materials is intended to, nor shall have the effect of, stating or implying that any activities undertaken by you will result in any specific sales, revenue growth or other results.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries: [ibm.com/legal/copytrade.shtml](http://ibm.com/legal/copytrade.shtml) AIX, CICS, CICSplex, DataPower, DB2, DB2 Universal Database, i5/OS, IBM, the IBM logo, IMS/ESA, Power Systems, Lotus, OMEGAMON, OS/390, Parallel Sysplex, pureXML, Rational, Redbooks, Sametime, SMART SOA, System z, Tivoli, WebSphere, and z/OS.

A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at [ibm.com/legal/copytrade.shtml](http://ibm.com/legal/copytrade.shtml).

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office

Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

## Session 4. Abstract

- **Looking for ways to accelerate the transfer of knowledge, skills, and best practice to the next generation of technical experts? Need to maintain productivity and protect service levels? CICS Explorer and zEnterprise lead the way to infrastructure simplification. In this session, you will learn how to identify and package applications in a more flexible way, increase your utilization of zAAP processors, reduce dependency on SNA, improve the throughput of your CICSplex, and simplify the authentication of distributed CICS users. You will also see how the CICS Explorer offers a much more powerful tooling environment that can improve the productivity with a more intuitive experience.**

# Agenda

- **IP Connectivity in CICS**
- **ID Propagation and Pass phrase support**
- **CICSplex SM Workload Manager**
- **JVM Servers**
- **Threadsafe optimization**
- **CICS Explorer**
- **CICS Configuration Manager**
- **CICS Deployment Assistant**

# CICS Support for IPv6

- **Allow for IPv4, IPv6 or host names in:**
  - Resource definitions
  - Application Programming Interface
  - Systems Programming Interface
  - User Replaceable Modules
  - Global User Exits
  - Monitoring Records
  - CICS Explorer V1.1

# IP Interconnectivity

- **CICS IP interconnectivity strategy**
  - Transactional IP communications protocol for connectivity between and into CICS
  - Long term plan to provide CICS with IP choice for most of the CICS programming model
- **CICS TS V4.2 enhancements**
  - IPIC Function Shipping for File Control, Temporary Storage, Transient Data
- **Prior releases**
  - Distributed Program Link
  - 3270 transaction routing
  - Asynchronous Starts

# Identity Context Propagation

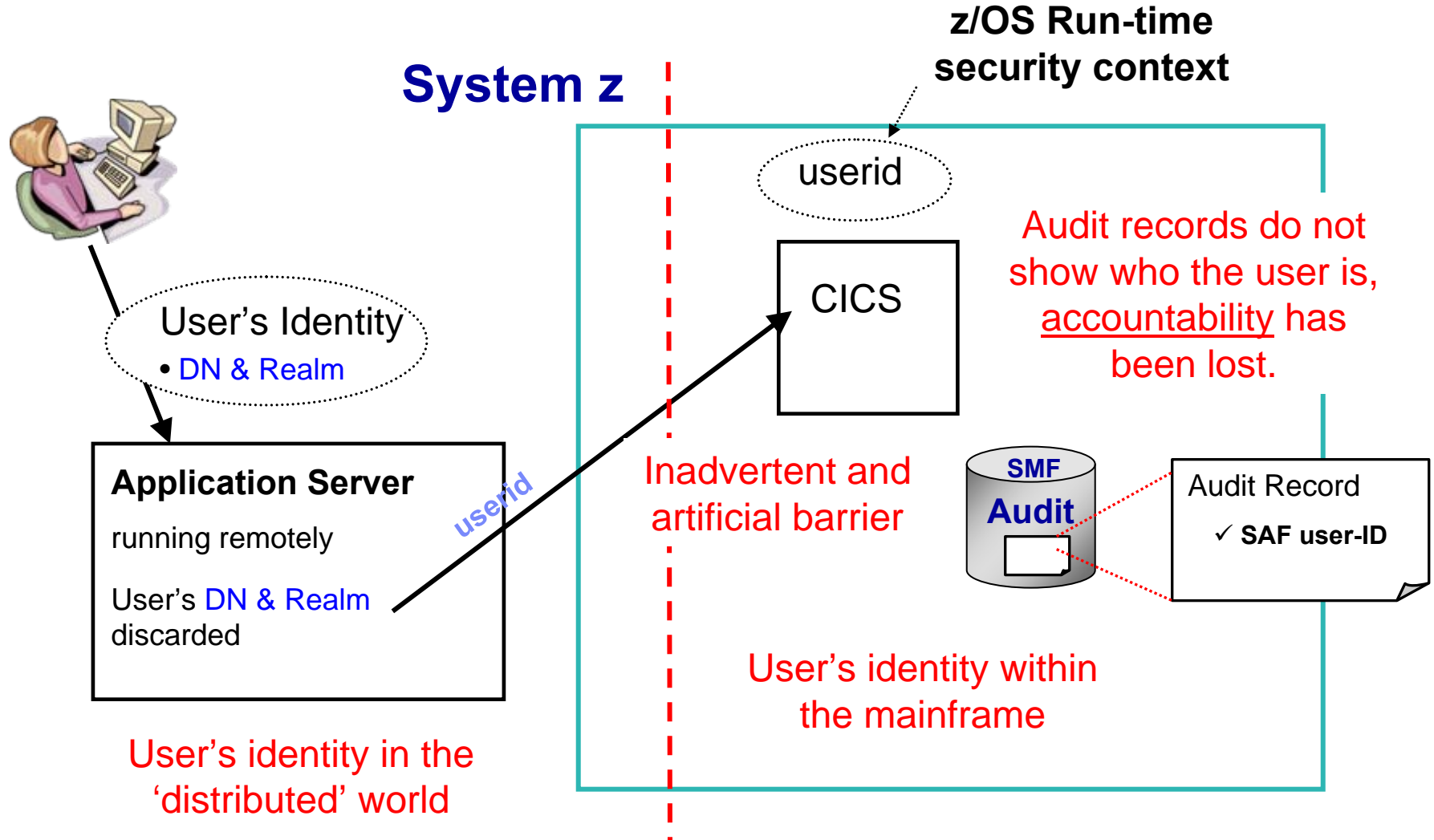
- **z/OS Identity Propagation initiative to provide asserted identity for end-to-end distributed security**
  - Logically tie together distributed end-user identities with z/OS userids
  - Enhance the ability for z/OS applications to participate centrally in SOA solutions
  - Requires z/OS 1.11
- **ID Context Propagation allows an end user's identity to be propagated through to CICS**
  - Currently, the end users' identity is lost before the request gets to CICS

# Identity Context Propagation...scenarios

- **Support for Inbound Web services, propagating on as Web Service provider**
  - Provides support for Web Services callers
- **Support for Inbound over IP Interconnectivity (IPIC)**
  - Used by CICS TG when operating as a WebSphere connector
    - Will require use of JCA resource adapter
- **Sysplex Support**
  - CICS will propagate on over MRO and IPIC Connections only



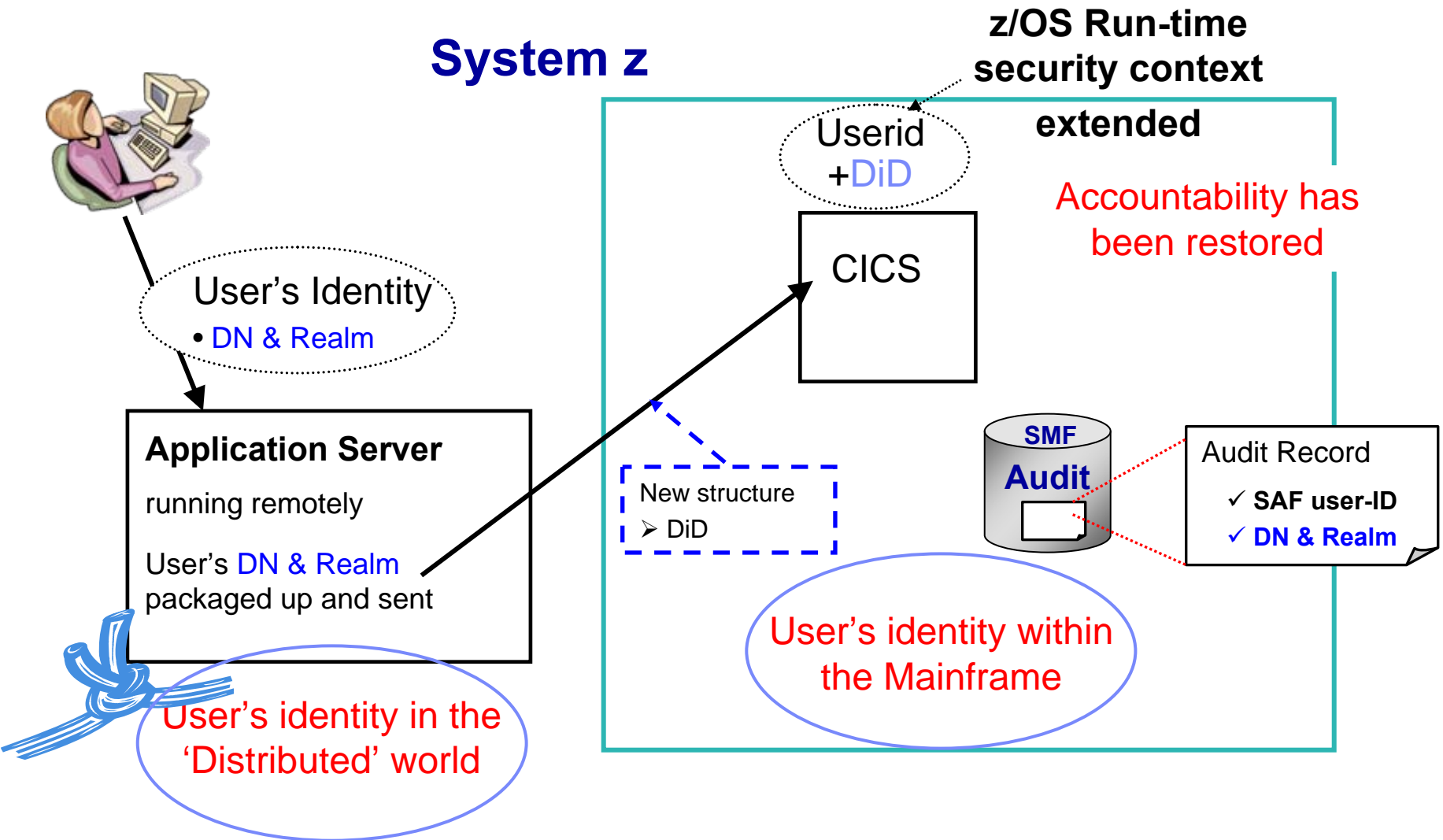
# Identity Propagation – current problem



# Remedy

- **Platform-architected Distributed Identity solution that subsystems participate in**
- **An asserted identity for end-to-end distributed security**
- **That logically ties together distributed end-user identities with userids on the host**
- **An Identity Context Reference that flows in a trusted way**
  - X.500 distinguished name of end-user
  - X.500 DN of original registry
  - Optional SAF userid

# Identity Propagation – solution



# Password Phrase Support

## ▪ Background

- Introduced in z/OS 1.8
  - 14-100 character password phrases
- Updated in z/OS 1.9
  - 9-100 character password phrases if ICHPWX11 installed
- Alternative to traditional passwords
  - Improved system security - harder to attack, Easier to remember

## ▪ **Must be a text string of 9-100 characters**

- Characters A-Z, a-z, 0-9, special characters, punctuation, blank, any character that can be typed on TSO command

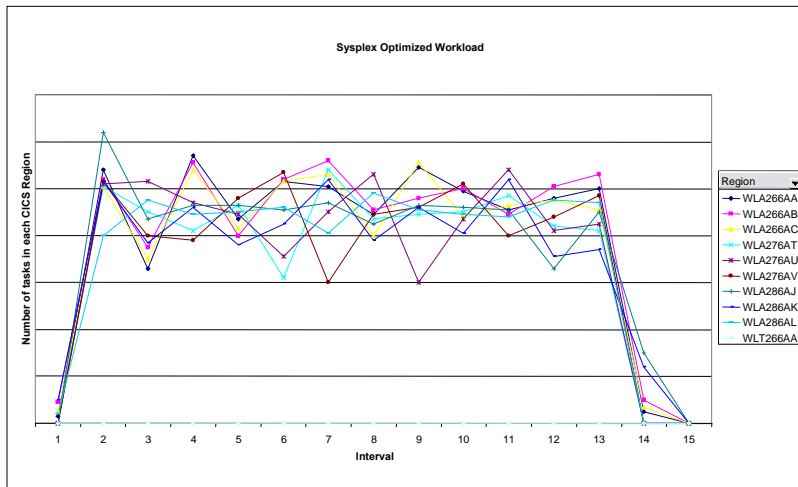
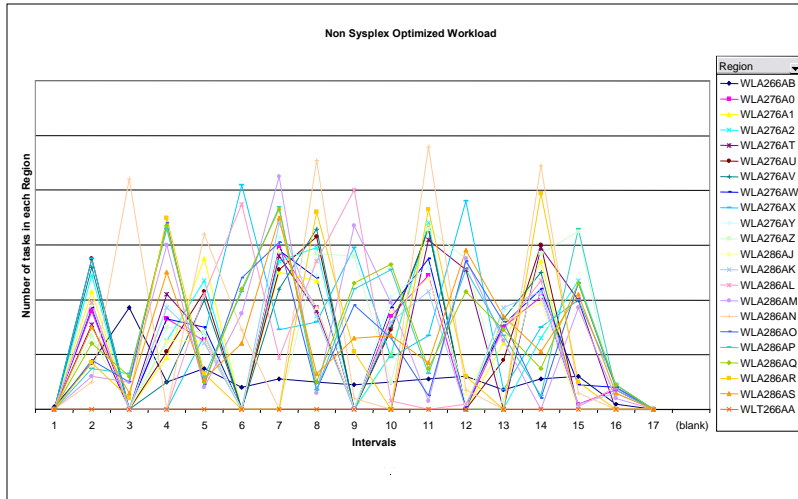
## ▪ **Functions that support password phrases**

- API - EXEC CICS SIGNON, EXEC CICS CHANGE PHRASE, EXEC CICS VERIFY PHRASE, EXEC CICS WEB SEND or CONVERSE
- Transactions – CESL, CEDF
- Other - CMCI, CICS Explorer, Web Services, LDAP (supports a long password), CICSplex SM Web User Interface

# Workload Management and CICSplex SM

- **Sysplex-optimization to significantly reduce workload batching effects**
  - Exploitation of z/OS coupling facility
    - “Near real time” Sysplex-wide focus on target region status
    - No impact to “non-optimized” WLM
  - Optimized WLM routing enabled by configuring a Region Status Server
    - Uses CF Data Table to hold Region Status information
      - SOS, MaxTask, System or transaction dump in progress, Current Tasks?
    - Shared by all routing regions (in the Sysplex)
- **Percentile goals**
  - CICSplex SM WLM support for percentile goals
- **Support in CICSplex SM for all new resources, statistics, etc**

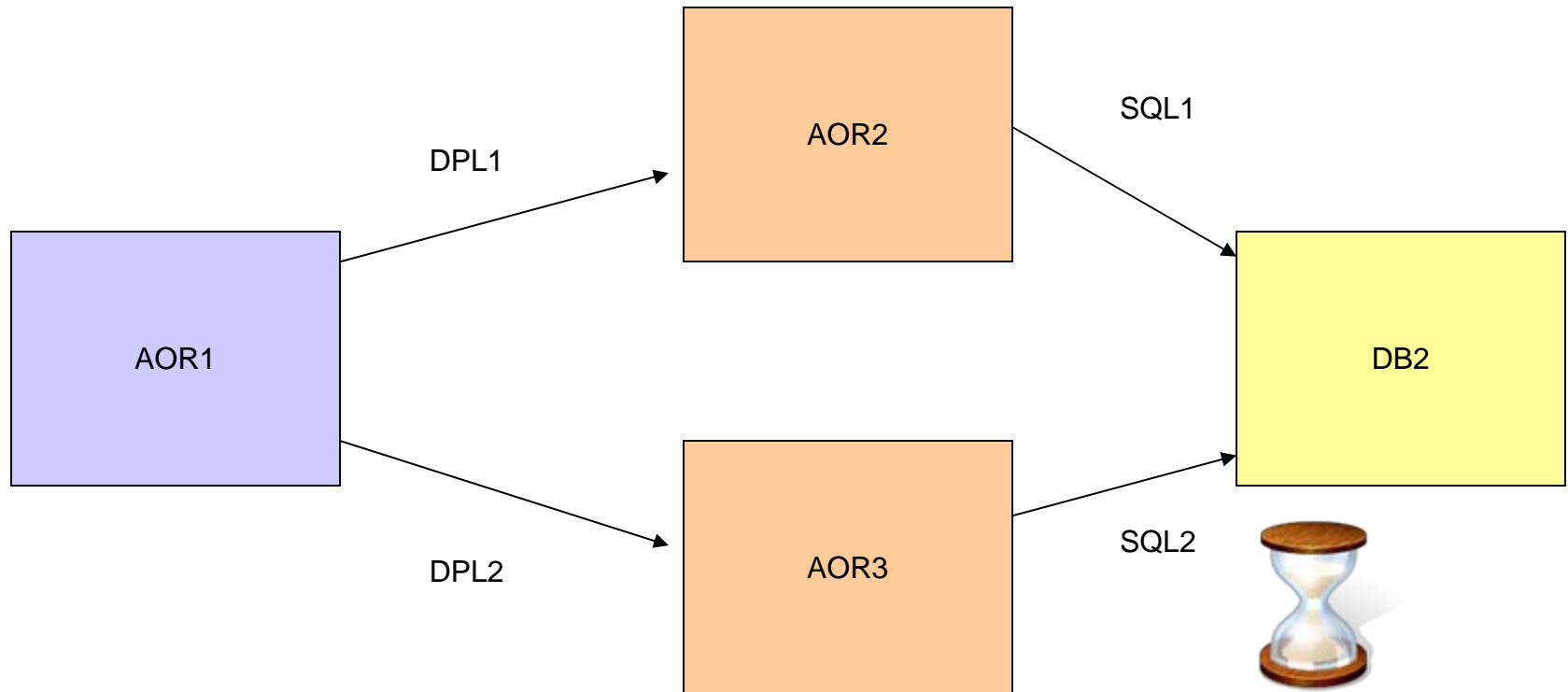
# CICSplex SM WLM: Optimized versus Non-optimized Routing



- **Non-optimized Routing**
  - 27 CICS regions on 3 LPARs
- **Optimized Routing**
  - 9 CICS regions on 3 LPARs
- **Comparison**
  - Workload is 10K started transactions
  - Number of tasks in each region measured every 10 second interval
- **Results**
  - Non-optimized environment shows “batching effects
  - Optimized results shows smoother distribution of work and higher throughput

# Dynamic WLM improvements in CICS TS V4.2

- Resolves problems with multiple DPLs in a single UOW
- Known as the UOW affinity problem



# Dynamic WLM improvements in CICS TS V4.2 ...

- **New CICS affinity relationship**
  - LOCKED
- **New CICS affinity lifetime**
  - UOW
- **Changes to:**
  - Views:
    - WLMSPEC, TRANGRP, WLMAWORK, WLMATGRP, WLMATAFF, WLM AWTOR
  - User Replaceable Modules
    - DFHDYPS, EYURWCOM, EYURWTRA



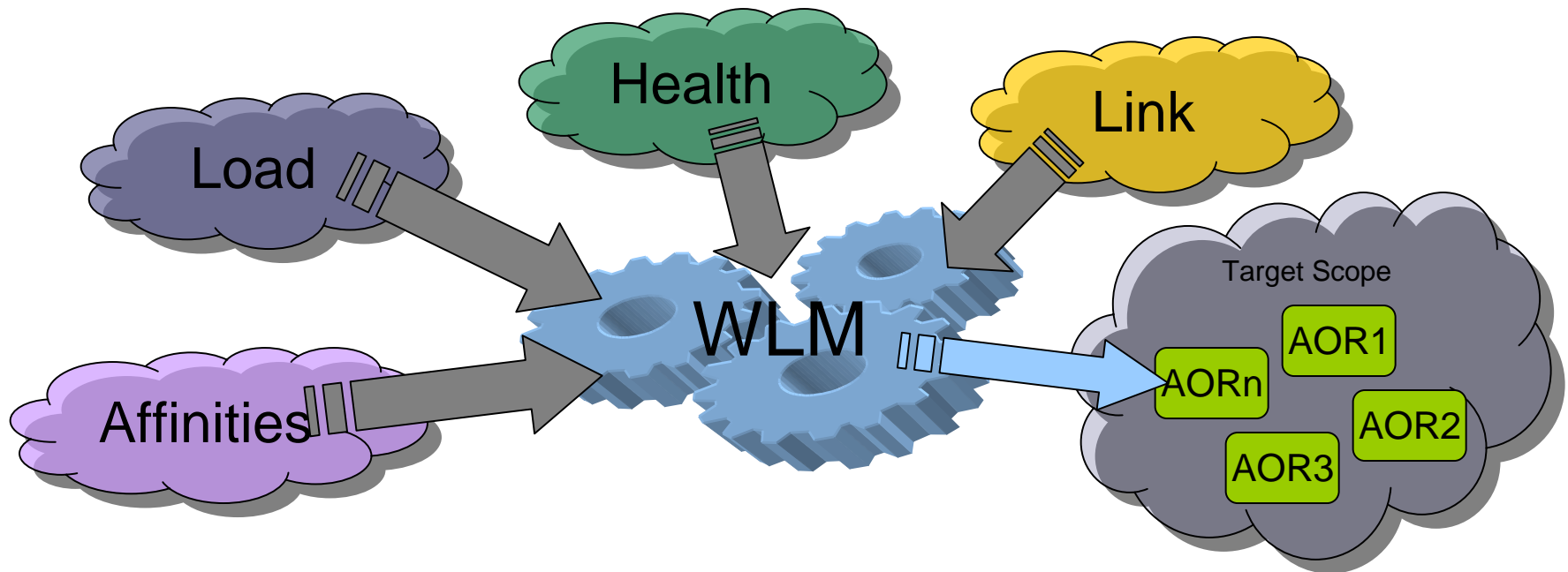
# WLM routing change for IPIC connections

- **WLM LINK weighting factor changed for IPIC connections**
  - IPIC weighting moved above LU6.2 and Indirect
- **New LINK weighting order**
  - Local
  - MRO/IRC
  - MRO/XCF
  - ***IPIC***
  - LU6.2
  - Indirect

# CPSM Workload Management

- Workload Management is about providing CICS with the 'best' target region at the moment the request is made from all of the possible region candidates.

*It's NOT about evenly distributing work!*



# New WLM routing algorithms

- **Exclude LINK weighting in target region selection**
  - LNQUEUE
    - Route the transaction to the target region with best combination of:
      - Health (MaxTask, Short-on-storage, Dumping, Stalled)
      - Task queue depth (or load)
      - Abend probability, when calculated
      - RTA event impact, when defined
  - LNGOAL
    - Route the transaction to the target region that:
      - Is the most likely to allow the transaction to meet its response time goal

# Transaction Level Control for Dynamic Routing

- **In CICS TS V4.1 routing behavior is specified on the WLMSPEC**
  - Routing algorithm applies to the entire workload
- **In CICS TS V4.2 routing algorithm can be specified on the TRANGRP**
  - Allows different transaction to have different behaviors
  - New ALGTYPE attribute
    - QUEUE
    - GOAL
    - LNQUEUE
    - LNGOAL
    - INHERIT

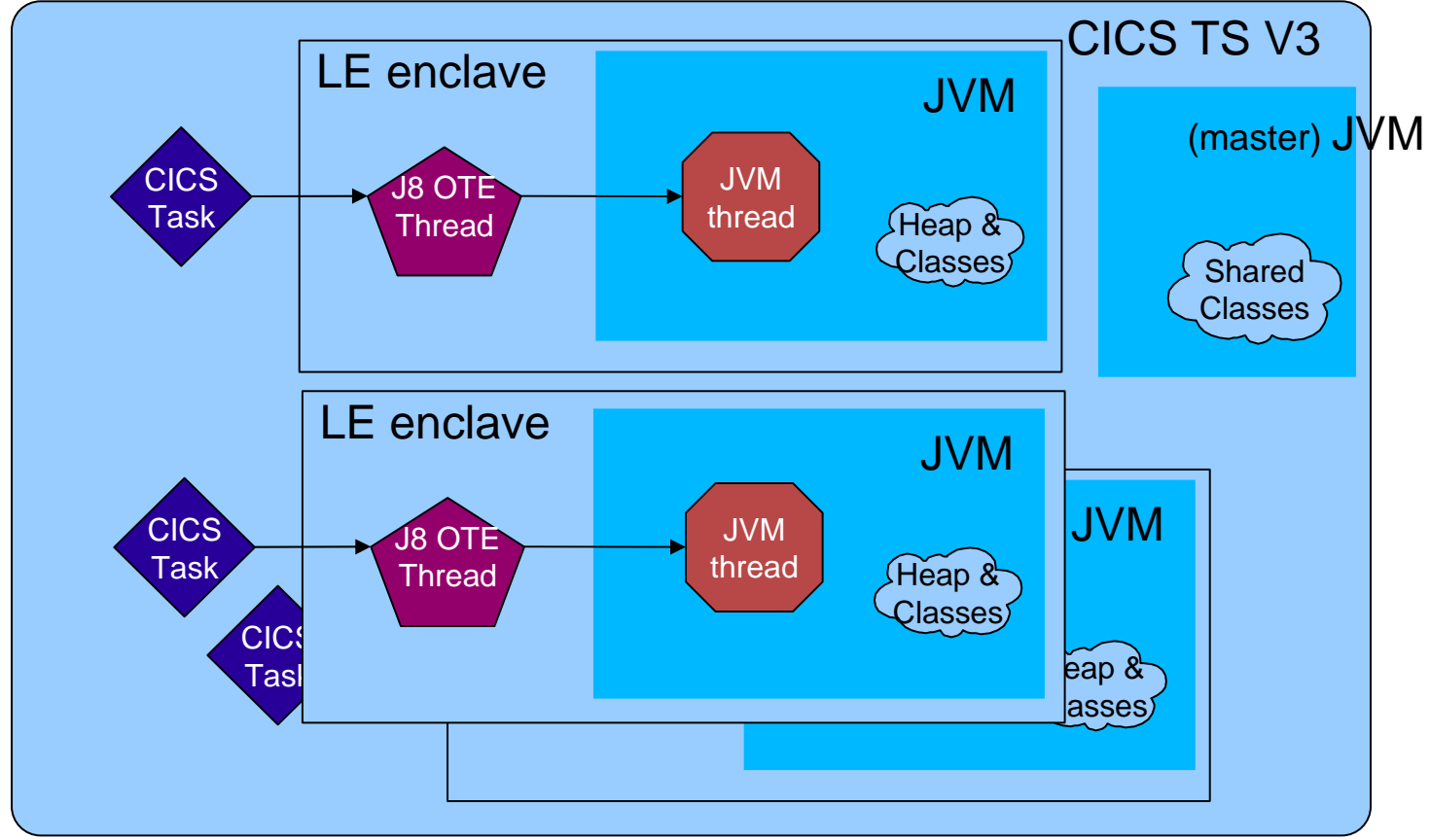
# Java and JVMServers

- **JVM implementation in CICS continues to evolve**
  - JDK 1.1.8, HPJ and Hotpooling, IBM Persistent Reusable JVM, Continuous mode, Java 5, Java 6, ...
- **JVMs in CICS TS V2 and V3**
  - Single task, serial reuse
  - Large memory footprint
  - Excellent isolation characteristics
- **JVMServers in CICS TS V4**
  - Multiple tasks (threads) in a JVM concurrently
  - Java 6.0.1 - exploits new z196 instruction set, improved GC, improved JIT, significant performance improvements, 64-bit, larger heaps, stack and heaps allocated above the bar
  - Risk of collateral damage
  - Used by Axis2 web services stack and Dynamic Scripting FP (SOD for CICS TS V4.2)
  - In CICS TS V4.2 - can deploy customer applications as OSGi bundles

# JVMPool Architecture - CICS TS V3 (and V2)

Single CICS task dispatched into a JVM in the pool at a time. So concurrent task count limited to the number of JVMs that can fit in the region.

Result is about 20 tasks/JVMs concurrently in each region.

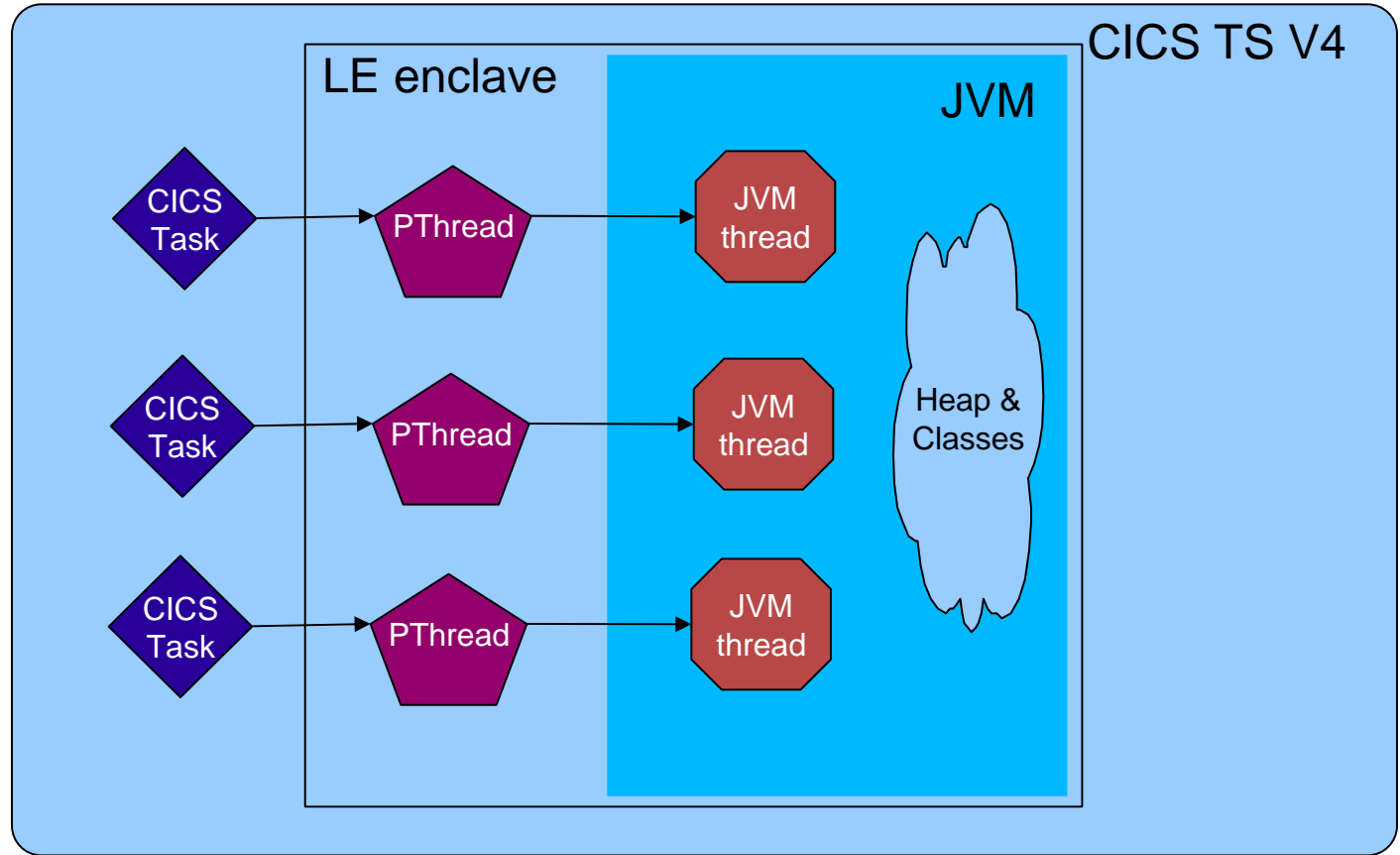


# JVMServer Architecture

Can attach multiple pthread/T8/CICS tasks to the JVM at the same time.

Therefore serve more requests using a single JVM.

**Result is 100s tasks per region.**



# CICS and Threadsafe (OTE) – what is it ?

- **Threadsafe allows introduction of extreme parallelism into CICS application serving of legacy workloads**
  - Significant CPU reduction is possible which allows cost reduction for existing applications
  - This cost savings - thru technology - should also be positioned as a means to introduce new workloads onto CICS at reduced TCO
  - These new workloads can be managed more efficiently using tools targeted for both old and new workloads running under CICS
  - These multiple benefits will allow the driving of new workloads to System z leveraging new SOA capabilities of CICS
  - This is part of the overall System z strategy to protect client application assets while improving the operational efficiency of the platform

OTE – Open Transaction Environment



# New Threadsafe options in CICS TS 4.2

- **Remote File Control and Temporary Storage requests over IPIC are now threadsafe**
  - No switch to QR in the calling AOR
  - Mirror in the remote region can run on the open TCB
  - IPCONN MIRRORLIFE option controls lifetime of mirror
- **New Program option - CONCURRENCY(REQUIRED)**
  - States that the application **must** run on an open TCB
  - Application **starts** on an open TCB
- **CICS-DBCTL interface will use OTE when connected to IMS 12\***
  - At connect time CICS & IMS determine if each other can support OTE
  - With IMS 10 & 11 - CICS-DBCTL TRUE enabled as QUASIRENT
    - Toleration APAR PM31730 (IMS 10), PM31729 (IMS 11)
  - With IMS 12\* - CICS-DBCTL TRUE enabled as OPENAPI
    - Exploitation APAR PM31420 is required
- **\*At General Availability of CICS TS V4.2, IMS 12 is available through a Quality Partnership Program (QPP).**
  - For more information, visit <http://www.ibm.com/software/data/ims/>

# Other APIs made threadsafe in CICS TS V4.2

- **SYNCPOINT**
- **SYNCPOINT ROLLBACK**
- **RESYNC**
  
- **QUERY SECURITY**
- **SIGNON, SIGNOFF**
- **VERIFY PASSWORD, VERIFY PHRASE**
- **CHANGE PASSWORD, CHANGE PHRASE**
- **EXTRACT TCPIP, EXTRACT CERTIFICATE**
  
- **All Call and Exec Level Named Counter Server commands**
- **Built in functions for DIGEST and DEEDIT**
  
- **Plus all new, and many existing SPI commands**

# Customer Threadsafe experiences

## ▪ **Danske Bank**

- Threadsafe conversion MIPS saving of about 300 MIPS during the peak processing period – directly attributed to reduced TCB switching
- Customer looking forward to CICS Transaction Server Version 3.2 where WMQ, local File Control, and VSAM RLS are threadsafe, promising even greater improvements

## ▪ **“Large financial services organization in the US“**

- Estimated \$32M per year in savings based on data center chargeback reduction
- Estimated 10-15% of their total available savings
- Public domain information, delivered at Impact 2008
- The above is based on 1 non-dedicated systems person for 6-7 months without using tools
- Can easily cost-justify tools to speed the process
- Savings may be difficult to quantify beforehand

## ▪ **“Major US bank”**

- Saved 700 MIPS by making one major application threadsafe

## ▪ **Savings we have seen with other similar projects**

- CICS CPU savings of 2-15%
- Reduced VSAM Transparency product overhead by over 12%

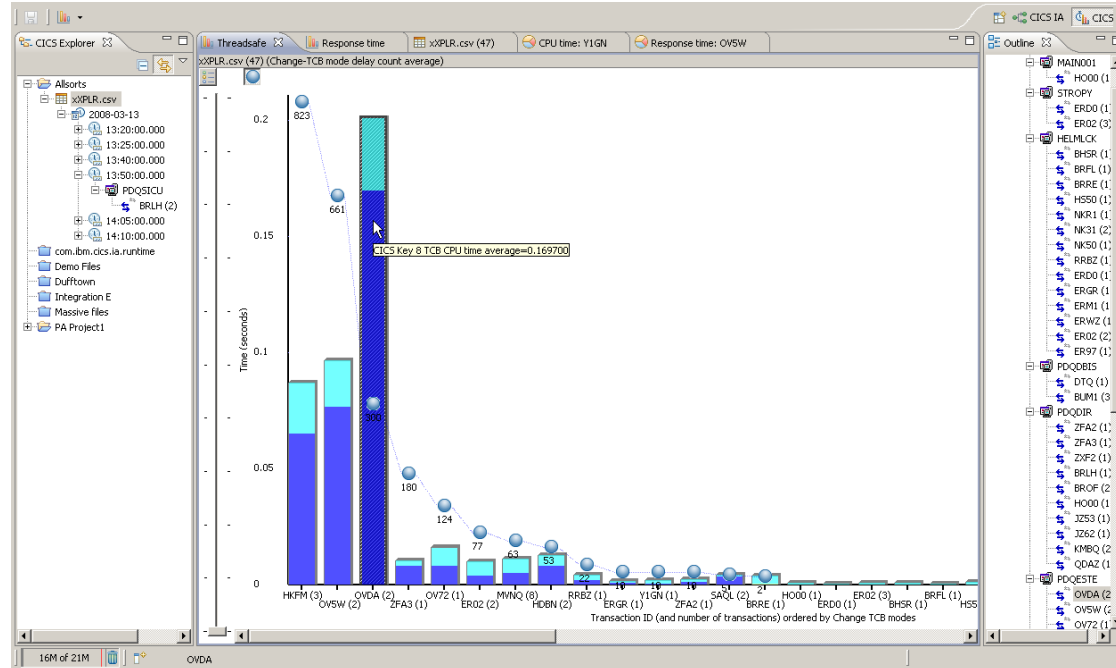
# CICS PA finds the best candidates for threadsafe optimization

## Problem

- Identifying the best candidates for threadsafe optimization and knowing when to stop - you've achieved your goals

## Solution

- Performance summary, list, and list extended reports plus metrics like TCB use by transaction, dispatch and CPU time, number of TCB switches and change mode delay time and Getmain usage help zero-in on the programs with most to gain



## Value

- CICS PA easily helps improve CICS threadsafe performance, validate savings and track service levels

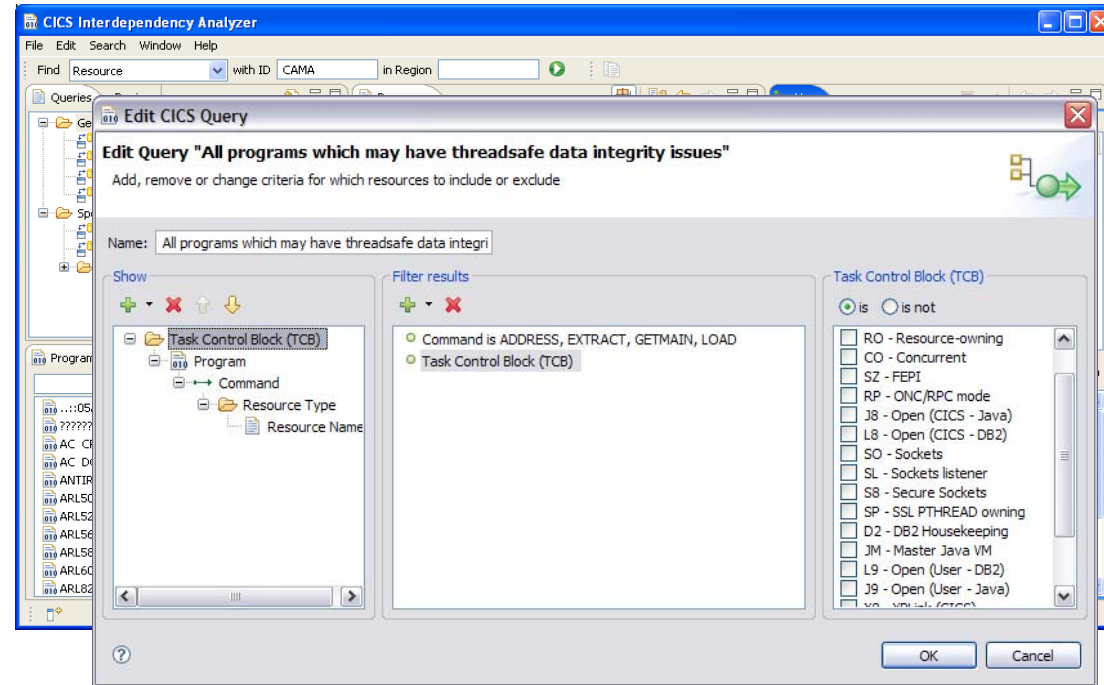
# CICS IA helps get the best out of threadsafe CICS TS V4.2

## Problem

- Migrating large number of complex CICS applications without retesting entire portfolio
- Identifying suitable candidates for thread-safe optimization

## Solution

- CICS IA identifies programs most sensitive to CICS API changes enabling more focussed testing
- CICS IA shows non-threadsafe programs and highlights what's needed to optimize them – including IMS resource access

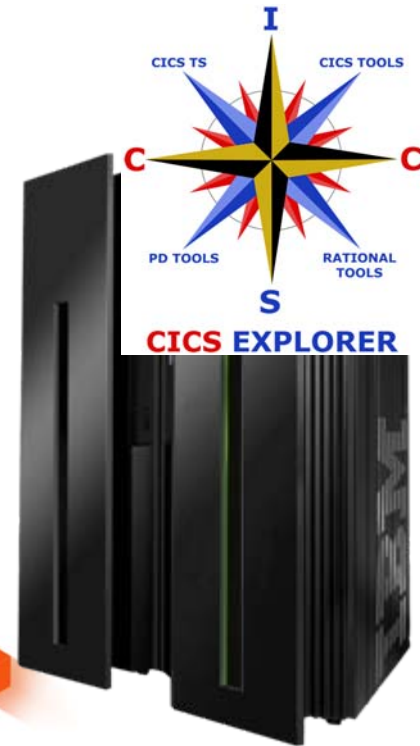


## Value

- Helps customers under time pressure to migrate to latest versions with reduced risk
- Even without deep CICS skills, you can optimize your portfolio and benefit from threadsafe



# IBM CICS Explorer™ - The New Face of CICS

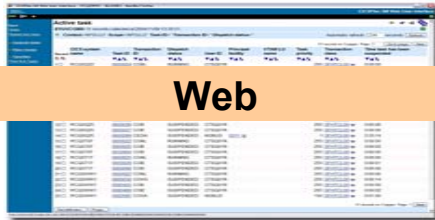


# The changing face of CICS tooling

**CICS Explorer** reduces need for multiple interfaces

Previously...

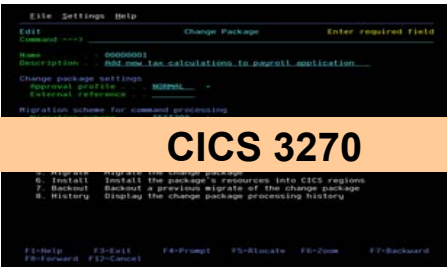
Now ...



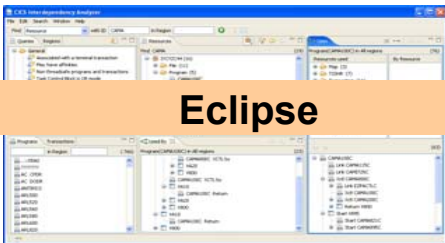
Web



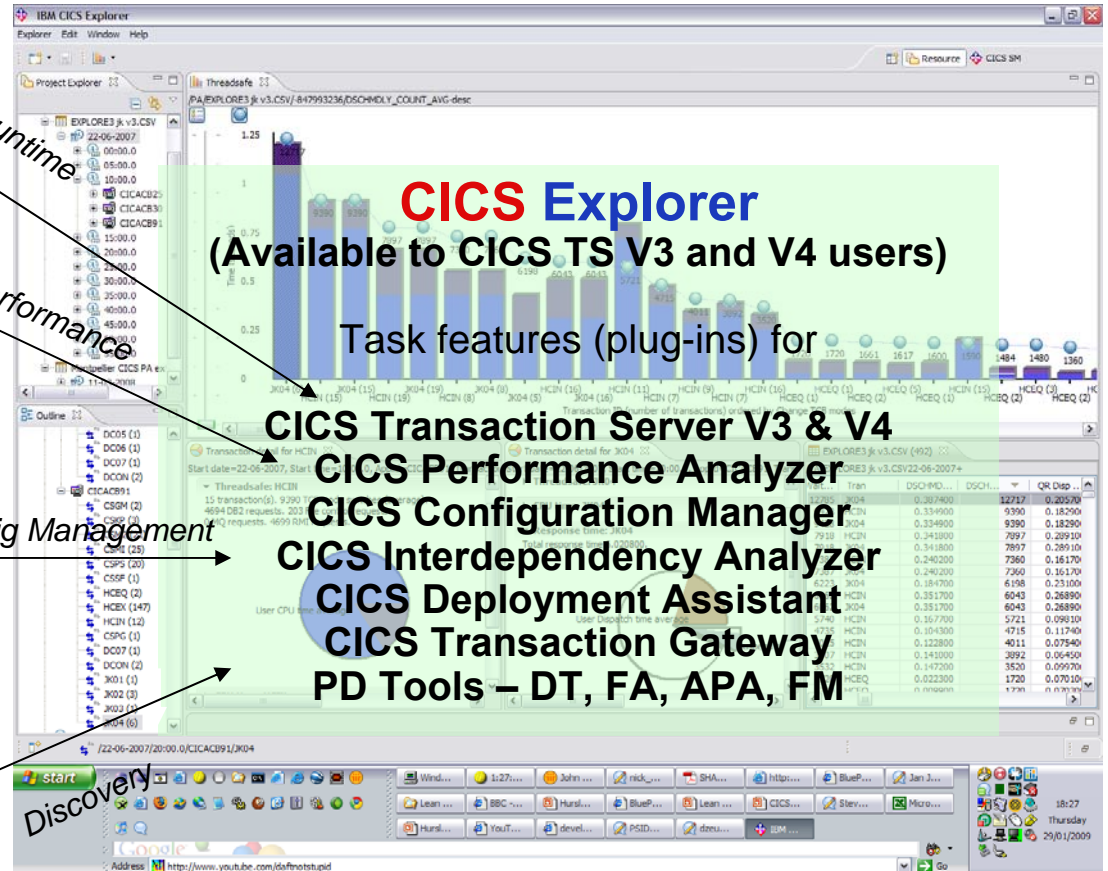
ISPF



CICS 3270



Eclipse



**CICS Explorer**  
(Available to CICS TS V3 and V4 users)

Task features (plug-ins) for

CICS Transaction Server V3 & V4

CICS Performance Analyzer

CICS Configuration Manager

CICS Interdependency Analyzer

CICS Deployment Assistant

CICS Transaction Gateway

PD Tools – DT, FA, APA, FM

Runtime

Performance

Config Management

Discovery

# IBM CICS Explorer™

*New!*

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**

*New!*

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

**FM**

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

**FA**

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

**PA**

Deployment, Discovery, Visualization, Cloning, Automation & Control

**DA**

*New!*



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

**SM**

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

**DT**

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

**APA**

Execution Tree Dependencies Queries Command Flow

**IA**

CRUD/Install History, Audit Backout Search, Compare

**CM**

**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**

[ibm.com/cics](http://ibm.com/cics)  
[ibm.com/cics/tools](http://ibm.com/cics/tools)  
[ibm.com/cics/explorer](http://ibm.com/cics/explorer)

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



# CICS administration problems solved using CICS CM

- **Working with multiple CSDs**
- **Working with CSD files and CICSplex SM DREPs**
- **Migrating changes between environments**
- **Delegating and approving changes**
- **Changes across LPAR boundaries**
- **Backout**
- **Audit compliance**
- **Cleanup and analysis**
- **Comparisons and exception analysis**
- **Cold start analysis**

# CICS Explorer - Program Definition editor - CICS CM

**Program Definition (IMPACT9) Lets change this today**

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

**Resource History For IMPACT9**

Revision Time	User Name	Attributes
2008/05/17 23:40:59	CICSUSER	USELPACOPY 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	

**Program Definition (IMPACT9) Lets change this today**

**Overview** This is just for your information

**Details**

Name: IMPACT9 Description: Lets change this today

Version: 1 Created: 09-Apr-2008 19:47:50

Enabled Changed: 28-May-2008 18:19:44

Language:  COBOL  Non-CICS (Open) API

Threadsafe (use task TCB)  SDF screens

**Storage**

Accept addresses above 16MB line

Storage key CICS gives control to the

User (Can only read CICS-key

CICS (Can read and modify CI

**Program reuse**

Always remain in memory for s

Never re-use: A new copy is loaded each time

A Program in memory for re-use is Unloaded at either:

The next dynamic memory compression

When the use count of the Program is zero

**User Data**

1:  2:  3:

Overview Remote Java™ Attributes

Dispose PROGDEF

Satish (CM)

*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*

# CICS Explorer - Powerful, context-sensitive resource editors

The screenshot displays the IBM CICS Explorer interface. The main window shows the configuration for a Transient Data Queue (TDQ) named 'EXIB'. The 'Extra partition Overview' tab is active, showing details such as Name, Description, Version, Created, and Changed. The 'Data set' section is expanded, showing the data set name 'FOOBAR' and options for 'Rewind tape data set to start', 'Defer data set open', and 'The data set may or may not exist when the queue is created'. The 'Number of Buffers' section is also expanded, showing the 'Specific value' set to 1. The 'User Data' section is visible at the bottom.

Name	Version	Created	Changed	Description	Type
EXIB	1	Sun May 18 ...	Sun May 18 ...	Input Data s...	EXTRA
EXIN	1	Sun May 18 ...	Sun May 18 ...	EXTRA type ...	EXTRA
EXO	1	Sun May 18 ...	Sun May 18 ...	Extra Output	EXTRA
EXSY	1	Tue May 20 ...	Tue May 20 ...	EXTRA with ...	EXTRA
INDT	1	Sun May 18 ...	Sun May 18 ...	Indirect Queue	INDIRECT
IND2	1	Sun May 18 ...	Sun May 18 ...	Indirect and ...	INDIRECT
INT1	1	Wed May 21...	Wed May 21...	Intra for Ter...	INTRA
RMT1	1	Sun May 18 ...	Wed May 21...	This is Remote	REMOTE
RMT2	1	Sun May 18 ...	Sun May 18 ...	Remote syst...	EXTRA
TDQD	1	Wed Oct 10 ...	Fri Jan 04 1...	Matthews T...	EXTRA
XTRA	1	Sun May 18 ...	Sun May 18 ...	Extra Queue	EXTRA

**Editors only show applicable attributes and tabs - overview/runtime/printer are all specific for a TDQ of type "Extra Partition"**

**This shows how for a non-CM connection the history view just gracefully says that the function isn't available.**

# CICS Explorer - No "magic" values - File definition editor

## Operations

Add option	<input type="checkbox"/> No
Browse option	<input type="checkbox"/> No
Delete option	<input type="checkbox"/> No
Read option	<input type="checkbox"/> Yes
Update option	<input type="checkbox"/> No

## Auto journaling

Journal number	<input type="checkbox"/> NO
Read operations recorded on journal	<input type="checkbox"/> None
Synchronous auto journaling for input	<input type="checkbox"/> No
Rewrite/delete operations recorded on journal	<input type="checkbox"/> No
Add operations recorded on journal	<input type="checkbox"/> None
Synchronous auto journaling for output	<input type="checkbox"/> Yes

(NO, 1-99, blank)

**Specifying which attributes to log in a journal for a file is very involved in CEDA and the WUI**

**File\_Definition (FC02)**  
File\_Definition (FC02) Joe's test file

**Runtime**

**Usage**  
The kind of operations that can be performed by programs against the file can be controlled to only a subset of allowable CICS functions

<input checked="" type="checkbox"/> Read	Records can be read
<input type="checkbox"/> Browse	Records can be read sequentially
<input type="checkbox"/> Add	Records can be added
<input checked="" type="checkbox"/> Delete	Records can be deleted
<input checked="" type="checkbox"/> Update	Records can be updated

**Auto Journal**  
CICS journal names are of the form DFHJnn, where nn is in the range 1 through 99

Do not use auto journaling  
 CICS journal name:

Synchronously auto-journal records for  Input  Output

Operations to be recorded in the journal

<input type="checkbox"/> Read only
<input checked="" type="checkbox"/> Read update
<input type="checkbox"/> Rewrite and delete
<input checked="" type="checkbox"/> Add write operation before the VSAM I/O operation
<input checked="" type="checkbox"/> Add write operation after the VSAM I/O operation

**Compare again the CICS Explorer with the WUI**

# CICS Explorer - Editor validation

The screenshot shows the 'Pipeline Definition (PIPELINE)' editor window. At the top, a red 'X' icon and the text '2 errors detected' are visible. The 'Details' section shows the pipeline name 'PIPELINE' and description 'Frog'. The 'Response Wait' section has a radio button selected for 'Number of seconds: 20p', which is highlighted with a yellow tooltip that reads 'Invalid character 'p' entered. Valid characters are A-Z a-z 0-9 . / \_ 10'. The 'HFS Details' section has a red 'X' next to the 'Configuration file name on HFS for this pipeline' field. The 'User Data' section shows three input fields: '1: EAT', '2: SOME', and '3: TODAY'. At the bottom, there are tabs for 'Foo Bar', 'Overview', and 'Attributes'.

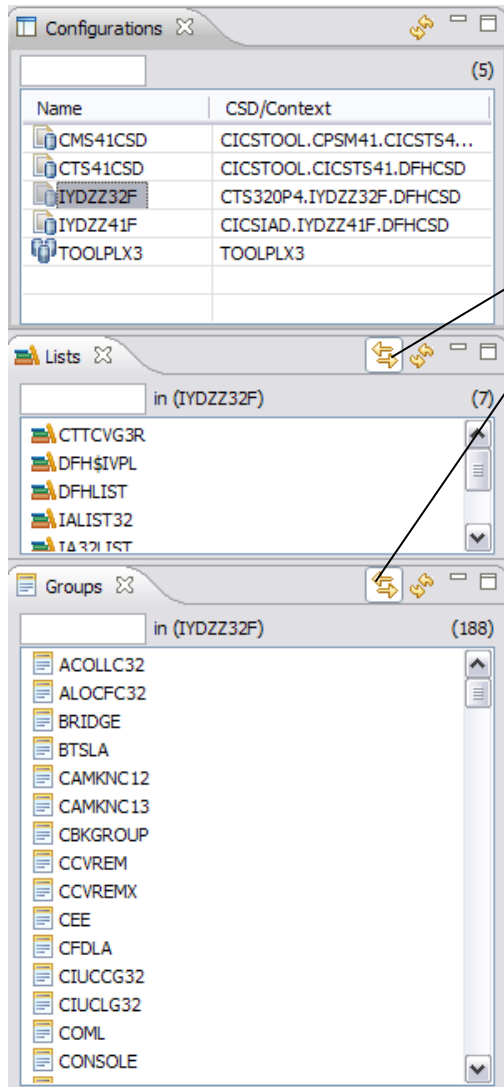
**An advantage of an Eclipse client over a browser/TSO/ISPF interface which is that keystroke by keystroke client validation occurs making the GUI more responsive (no server roundtrips) and less errors get sent down the wire to CICS making it faster.**

**The pipeline definition below has two errors - 20p is not a valid number ...**

**... and the configuration file name has an invalid character entered.**

**Each error field has a **red X** next to it to show it's bad, and hovering over the **red X** bring up a tooltip with the error. All errors can be seen by hovering over the **red X** at the top of the screen.**

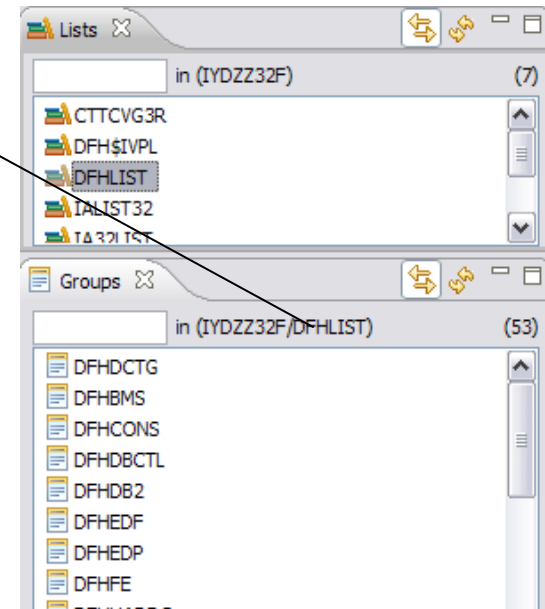
# CM - Configurations, Lists, Groups



Views display configurations, lists and groups

Linked to selection – the lists and groups are displayed for the currently selected configuration. Can be toggled on and off.

Groups can also be displayed for the currently selected list



# CM - History

Display by date groupings

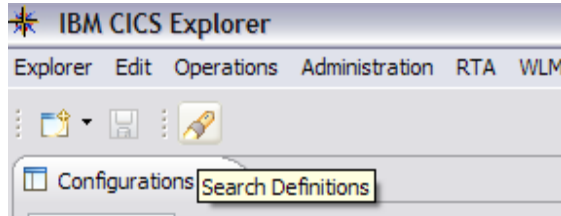
Revision Time	Resource Name/After	Resource Type/Before	Group	User Name	Command	Change P...	Scheme
Today							
2009/07/09 13:43	FOO9	TRANDEF	BEP	CICSUSER	UPDATE		
Older Than This Month							
2009/05/07 17:52	FOO9	TRANDEF	BEP	CICSUSER	CREATE		

Sort by columns by clicking on column header

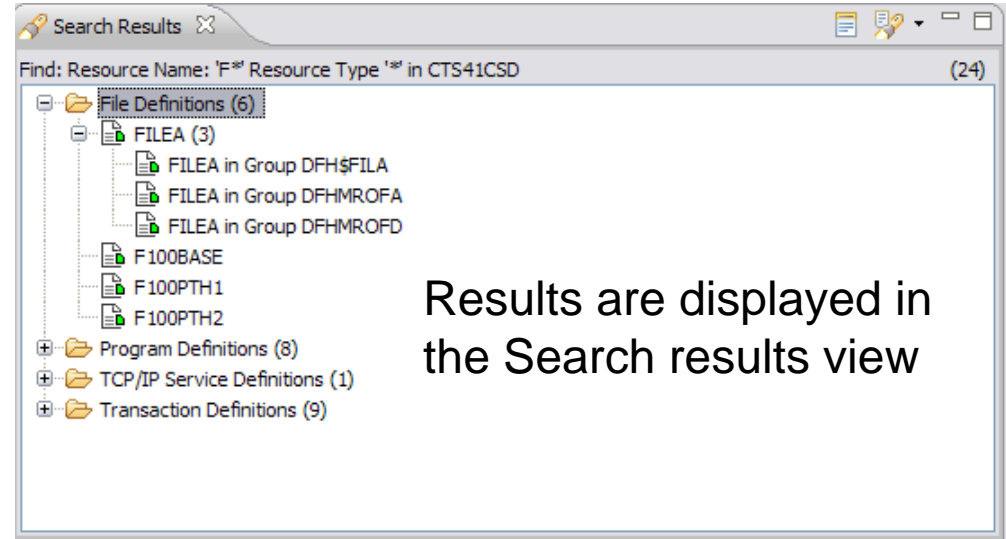
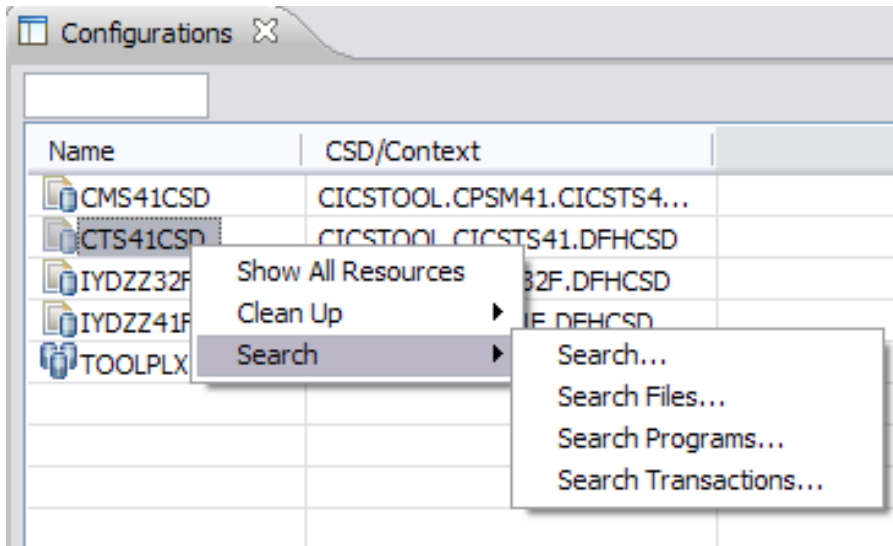
Revision Time	Resource Name/...	Resource Type/Before	Group	User Name	Command	Change P...	Sch
2009/05/27 09:31:41	A	ATOMDEF	BEP	CICSUSER	DELETE		
2009/05/27 09:31:37	A	ATOMDEF	BEP	CICSUSER	CREATE		
2009/07/09 13:18:35	DEMO	TRANDEF	BEP	CICSUSER	DELETE		
2009/07/09 13:15:28	DEMO	TRANDEF	BEP	CICSUSER	CREATE		
2009/05/07 17:53:37	FC02	TRANDEF	BEP	CICSUSER	CREATE		
2009/07/09 13:43:41	FOO9	TRANDEF	BEP	CICSUSER	UPDATE		
2009/05/07 17:53:19	FOO9	TRANDEF	BEP	CICSUSER	CREATE		
2009/05/18 14:40:28	FOOOO	TCPDEF	BEP	CICSUSER	CREATE		
2009/06/05 15:27:20	J000	CONNDEF	BEP	CICSUSER	DELETE		

# CM - Searching

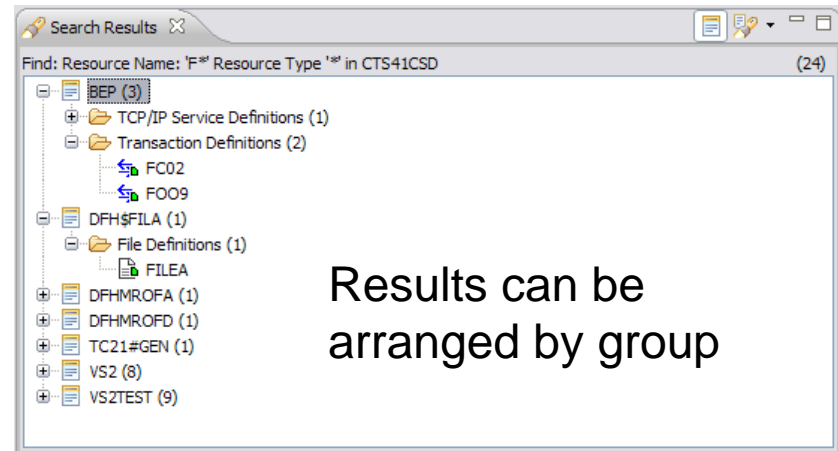
You can drive the search dialog from the toolbar



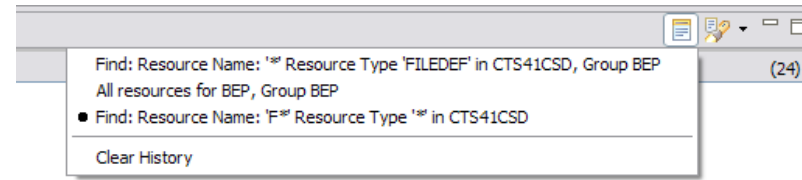
Or from one of the search options on a configuration or group



Results are displayed in the Search results view



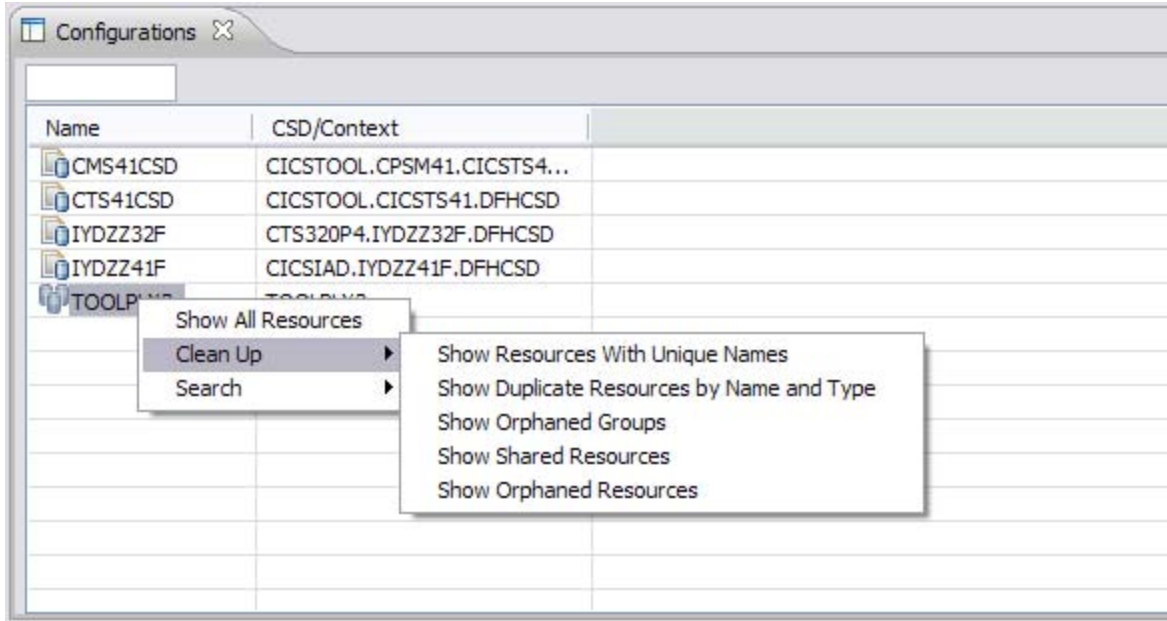
Results can be arranged by group



Result history

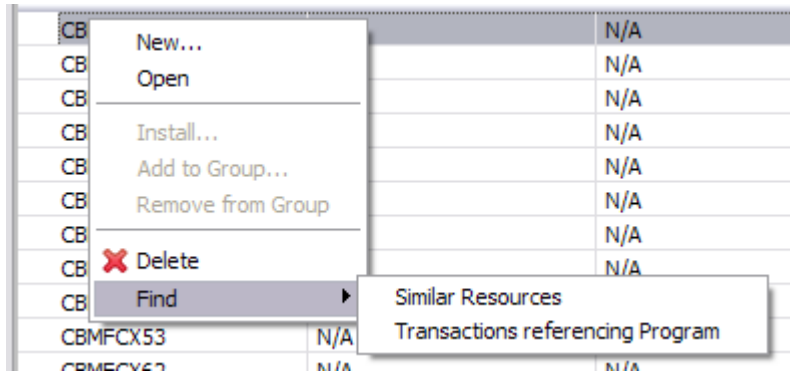


# CM - Clean Up – Specific Searches



Some searches to aid in resource and CSD clean up have been provided

Some specific searches on certain resource types:  
LSRPool  
Program

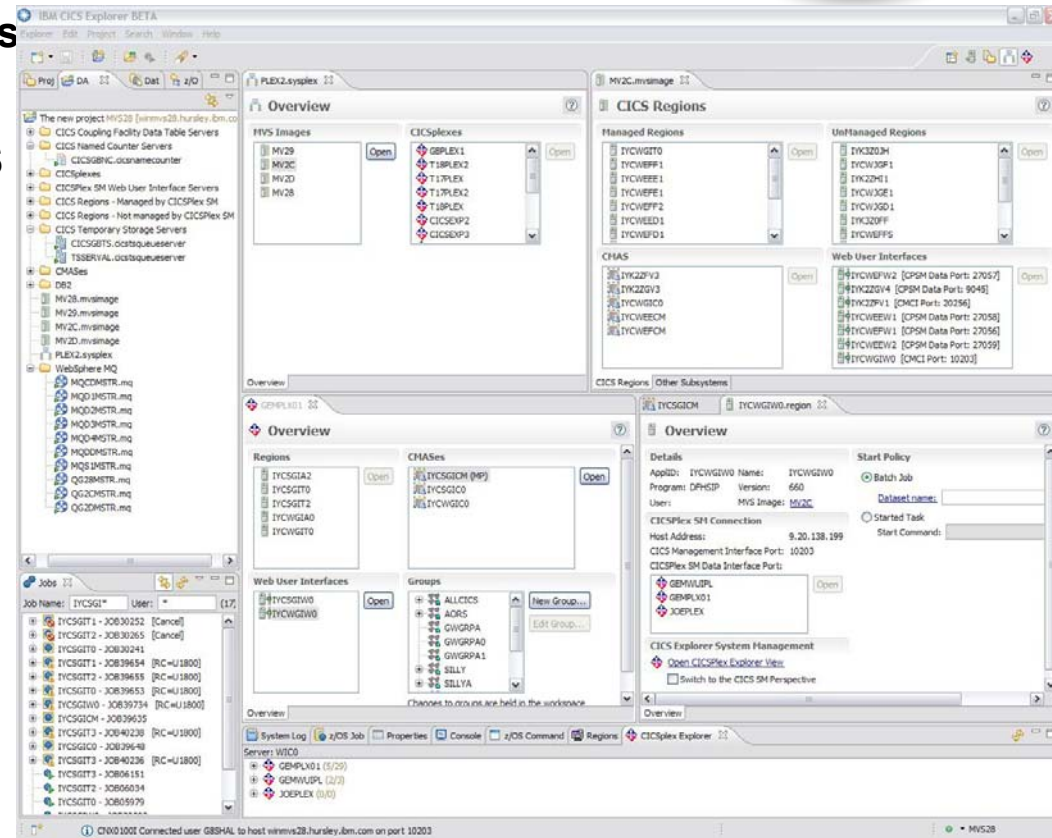


# Accelerating return on your CICS investments

## *IBM CICS Deployment Assistant for z/OS*

New!

- 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 ...



# Discovery – 5 simple steps

**Step 1: New Project**  
 Select a wizard: CICS Deployment Assistant

**Step 2: Create CICS Deployment Assistant Project**  
 Project name: MVS2Ca  
 Location: C:\Documents and Settings\username\cicsexplorer101\MVS2Ca

**Step 3: Specify a connection to use for discovery**  
 Connection: MVS2C

**Step 4: Discover Sysplex**

Name	JES Member
MV26	MV26
MV27	MV27
MV28	MV28
MV29	MV29
MV2D	MV2D
MV2G	MV2G
MV2H	MV2H
MV2I	MV2I

**Step 5: Discovered Resources**

- MVS2Ca MVS2C [winmvs2c.hursley.ibm.com]
  - CICS Coupling Facility Data Table Servers (3)
    - CFSEVRVC\_MV2C.cicscfdatatable
    - DFHCF2C4\_MV2C.cicscfdatatable
    - DFHCF2C6\_MV2C.cicscfdatatable
  - CICS Named Counter Servers
  - CICSplexes (16)
    - CICSplex SM Web User Interface Servers (6)
      - IYCWEW1.region [CPSM Data Port: 27058]
      - IYCWEW2.region [CPSM Data Port: 27059]
      - IYCWEFW1.region [CMCI Port: 27066,CPSM]
      - IYCWEFW2.region [CMCI Port: 27067,CPSM]
      - IYCWGIW0.region [CMCI Port: 10203,CPSM]
      - IYK2ZGV4.region [CPSM Data Port: 9045]
    - CICS Regions - Managed by CICSplex SM (10)
      - AKATDEMO.region [JTPLEX2]
      - IYCWEED1.region [CICSEXP3]
      - IYCWEED2.region [CICSEXP3]
      - IYCWEFD1.region [CICSEXP2]
      - IYCWEFE1.region [CICSEXP2]
      - IYCWEFF1.region [CICSEXP2]
      - IYCWEFF2.region [CICSEXP2]
      - IYCWGIT0.region [GEMPLX01]
      - IYCWGIT1.region [GEMPLX01]
      - IYK2ZGV1.region [JTPLEX2]
    - CICS Regions - Unmanaged (13)
    - CICS Temporary Storage Servers
    - CMASeS (4)
      - IYCWEECM.cmas
      - IYCWEFCM.cmas
      - IYCWGIC0.cmas
      - IYK2ZGV3.cmas
    - DB2 (9)
    - WebSphere MQ (4)
      - MQD1MSTR.mq
      - MQDDMSTR.mq
      - QG2CMSTR.mq
      - RQ34MSTR.mq
    - MV2C.mvsimage
    - PLEX2.sysplex

# Visualization - Sysplex

**Sysplex view shows all MVS images and CICSplexes in the LPAR**

**CICSplex views shows managed regions and groups, CMASs and WUIs**

The screenshot displays the IBM CICS Explorer interface. On the left, a tree view shows the project structure, including MVS Images and CICSplexes. The main window is divided into several panes:

- Sysplex View:** Shows a list of MVS Images (e.g., MV2C) and CICSplexes (e.g., CICSEXP2, CICSEXP3, DOH1, DOH2, DUMMY, DUMMY907, GEMPLX01). The CICSplexes list is circled in orange.
- CICSplex View:** Shows details for a selected CICSplex (CICSEXP2). It includes sections for Groups (ALLGRP, EXPGRP1, FOOBAR12, FRED, LMASGRP, NICED, ROUTERS1), Regions (a table with AppID and MAS columns), CMASes (IYCWEFCM (MP)), and Web User Interface servers (IYCWEFW1, IYCWEFW2).
- Console View:** Shows the output of a JESJCL job (JOB03802) for PLEX2.sysplex. The output includes XML tags for system discovery and activation.

Annotations include a green callout box pointing to the Sysplex view and another pointing to the CICSplex view. A red circle highlights the PLEX2.sysplex entry in the left tree view.

# Visualization - CICSplex

**Navigate from CICSplex to Managed region, CMAS, and WUI**

The screenshot displays the IBM CICS Explorer interface with several panels and tables. Orange arrows indicate the navigation path from the CICSplex overview to specific components.

**CICSplex Overview:**

- Groups:** ALLGRP, EXPGRP1, FOOBAR12, FRED, LMASGRP, Niced, ROUTERS1
- Regions:**

AppID	MAS
IYCWEFD1	IYCWEFD1
IYCWEFE1	IYCWEFE1
IYCWEFF1	IYCWEFF1
IYCWEFF2	IYCWEFF2
IYCWEFW1	IYCWEFW1
IYCWEFW2	IYCWEFW2
- Web User Interface servers:** IYCWEFW1, IYCWEFW2

**Managed CICS Region (IYCWEFD1):**

- Details:** Applid: IYCWEFD1, Job: IYCWEFD1, Program: DFHSIP, Version: 640, User: MQTEST, MVS Image: MV2C, DB2: MQ, IMS: (empty)
- Start Policy:** Batch Job (selected), Started Task (unselected)
- Buttons:** Start Region, Stop Region

**CMAS (IYCWEFCM):**

- tails:** IYCWEFCM Job: IYCWEFCM, Version: 660, MQTEST MVS Image: MV2C, IYCWEFCM CPSM Version: 0410
- Start Policy:** Batch Job (selected), Started Task (unselected)
- Buttons:** Start Region, Stop Region

**Web User Interface (IYCWEFW1):**

- Details:** Applid: IYCWEFW1, Job: IYCWEFW1, Program: DFHSIP, Version: 660, User: MQTEST, MVS Image: MV2C, MAS: IYCWEFW1
- Start Policy:** Batch Job (selected), Started Task (unselected)
- Buttons:** Start Region, Stop Region
- Host Address:** winmys2c.hursley.ibm.com
- Interfaces:** CICS Management Interface: 27066, CICSplex SM Data Interface: 27056

**Navigation Path (indicated by orange arrows):**

- Click on the **Regions** table in the CICSplex overview.
- Click on the **IYCWEFD1** region entry.
- Click on the **CMAS** (IYCWEFCM) entry in the left pane.
- Click on the **Web User Interface** (IYCWEFW1) entry in the left pane.

# Clone – 3 simple steps

**Specify new names**

**New dataset names chosen automatically - edit if required**

**Cloned region added to model**

**Console view shows all cloning actions and list of outstanding manual tasks**

**Confirm values for the new data sets which will be created on finish**

Confirm the values for the new data sets

DD Name	Share	Existing Data set	New Data set
DFHXRMMSG	<input type="checkbox"/>	MQTST.SUBSYS.IYCWEFF2.DFHXRMSG	MQTST.SUBSYS.IYCWEFFA.DFHXRMSG
DFHEJDIR	<input checked="" type="checkbox"/>	MQTST.SUBSYS.IYCWEFF2.DFHEJDIR	MQTST.SUBSYS.IYCWEFF2.DFHEJDIR
DFHGCD	<input type="checkbox"/>	MQTST.SUBSYS.IYCWEFF2.GCD	MQTST.SUBSYS.IYCWEFFA.GCD

**Managed CICS Region**

**Details**

Applid: IYCWEFFA Job: IYCWEFFA  
 Program: DFHSP Version: 660  
 User: MVS Image: MV2C  
 DB2: MQ:  
 IMS:

**Start Policy**

Batch Job  
 Started Task  
 Start Command: sIYCWEFFa

**z/OS System Management**

Applid: CICSEXP2  
 MAS: IYCWEFFA  
 MAS:

To Clone the CICS region use the:

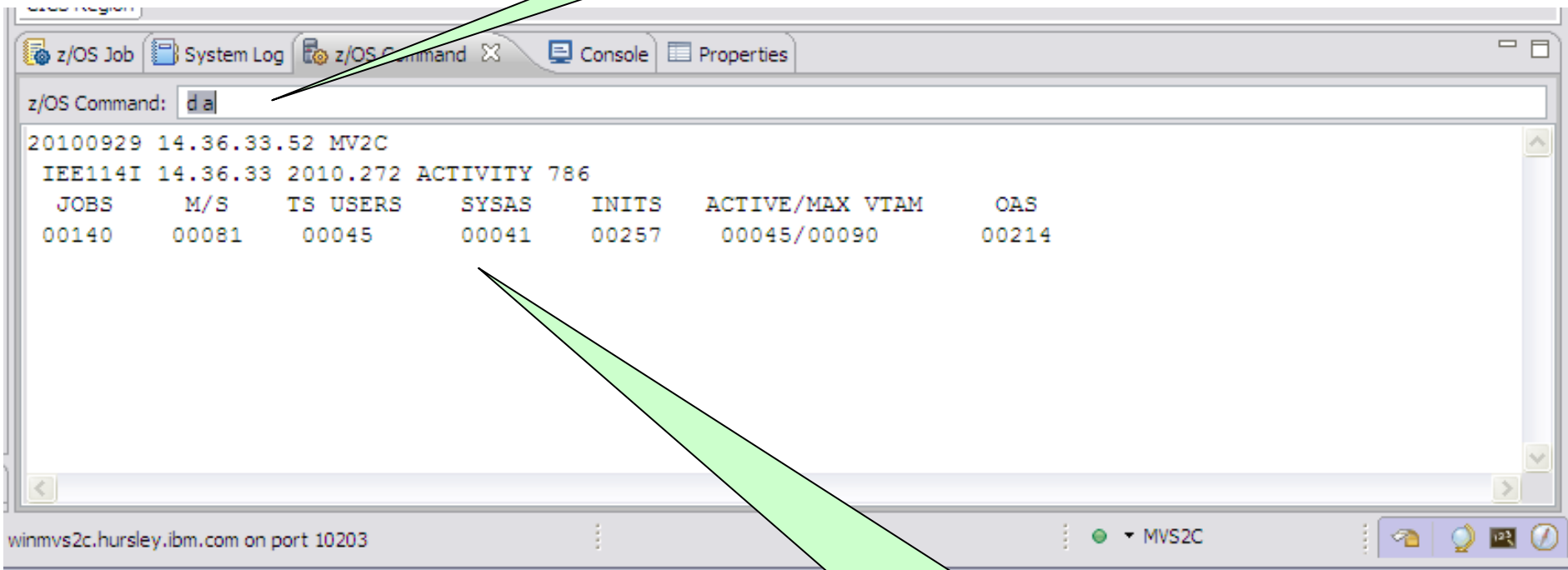
**z/OS Job**

```
System z/OS
Cloning of CICS region IYCWEFF2 to create CICS region IYCWEFFA completed successfully.

The following data sets were allocated and are ready to be used by the new CICS region:
MQTST.SUBSYS.IYCWEFFA.DUMPA
MQTST.SUBSYS.IYCWEFFA.DUMPB
MQTST.SUBSYS.IYCWEFFA.DFHXRMSG
MQTST.SUBSYS.IYCWEFFA.GCD
MQTST.SUBSYS.IYCWEFFA.DFHLRO
```

# z/OS Command Line

*Type in any authorized  
z/OS command*



The screenshot shows a terminal window titled 'z/OS Command' with a command prompt 'z/OS Command: d a'. The output is a table of system statistics. A green callout box points to the command input, and another points to the output table.

```
z/OS Command: d a
20100929 14.36.33.52 MV2C
IEE114I 14.36.33 2010.272 ACTIVITY 786
  JOBS      M/S      TS USERS    SYSAS      INITS      ACTIVE/MAX VTAM      OAS
00140      00081     00045      00041      00257      00045/00090      00214
```

winmvs2c.hursley.ibm.com on port 10203

*Command output shown below*

# Cheat Sheets

**Cheat Sheet Selection**

Select the cheat sheet to open:

Select a cheat sheet from the list:

- CICS Deployment Assistant
  - CICSplex SM Setup
  - Upgrade to CICS TS 4.1 from CICS TS 3.x

Select a cheat sheet from a file:

Browse...

Enter the URL of a cheat sheet:

OK Cancel

**CICSPlex SM Setup**

- Deploy CICSPlex SM
  - Prepare the z/OS System
  - Load CICSPlex SM Configuration Dataset
  - Prepare CICSPlex SM

**z/OS Configuration**

**Introduction**

By default, the CICSPlex SM component of CICS Transaction Server is installed alongside the CICS component using SMP/E. This Cheat Sheet assumes that this has been completed successfully.

If CICSPlex SM has not been previously used, additional post tasks may be outstanding. The first part of this Cheat Sheet covers the necessary checks.

Note that these checks should be performed on each MVS system running CICSPlex SM.

There are some MVS Parmlib related settings that should be reviewed when using CICSPlex SM. These tasks are to check that those settings are correct. It may be necessary to work with your z/OS systems programmer to make the required changes that are suitable for your installation.

[Click to Begin](#)

**Prepare the Workspace**

To execute these tasks, you will be using the z/OS Command Shell. You must open the CICS DA perspective and have an active CICS DA connection.

Open the CICS DA perspective

Open the z/OS Command Shell

**Connect to CICS DA**

If the 'z/OS Command Shell' view indicates 'Only available with a Deployment Assistant connection' then the CICS DA connection is not active. This Cheat Sheet will take you through the steps to activate the DA connection.

**Upgrade to CICS TS 4.1 from CICS TS 3.x**

**Introduction**

Review System requirements

**Upgrading CICS: Information Center documentation**

Definitive information on upgrading CICS is found in the CICS Information Center.

This step will open the Upgrading sections of the CICS Information Center.

**Note:** You will require access to the internet for the CICS Information Center to be opened.

For CICS TS 3.1 Users, Click to open the 'Upgrading from CICS TS 3.1' section of the CICS Information Center [▶](#)

For CICS TS 3.2 Users, Click to open the 'Upgrading from CICS TS 3.2' section of the CICS Information Center [▶](#)

**Redefine CICS Local and Global catalogs**

**CSD Considerations**

**Review SIT options**

The CICS SIT options/overrides need to be reviewed.

If you are upgrading from CICS TS 3.1, remove the redundant MNSUBSYS option if present.

If not already removed in a previous task, remove the WebSphere MQ connection program (CSQCPARM or DFHMQPRM) INITPARM option.

If you are upgrading from CICS TS 3.1, review the CICS APPLID option. CICS APPLIDs must be unique within the sysplex.

If you are upgrading from CICS TS 3.1 and are using the SEC=YES option, then the new SIT options XFHS and XRES should be reviewed as new security checks may occur.

Review the JVMPROFILEDIR option. The default JVMPROFILE option has changed, based upon the value of the new CICS\_HOME option.

Review the USSHOME option. The directory specified or defaulted by the USSHOME option must be available in the

MVS2C

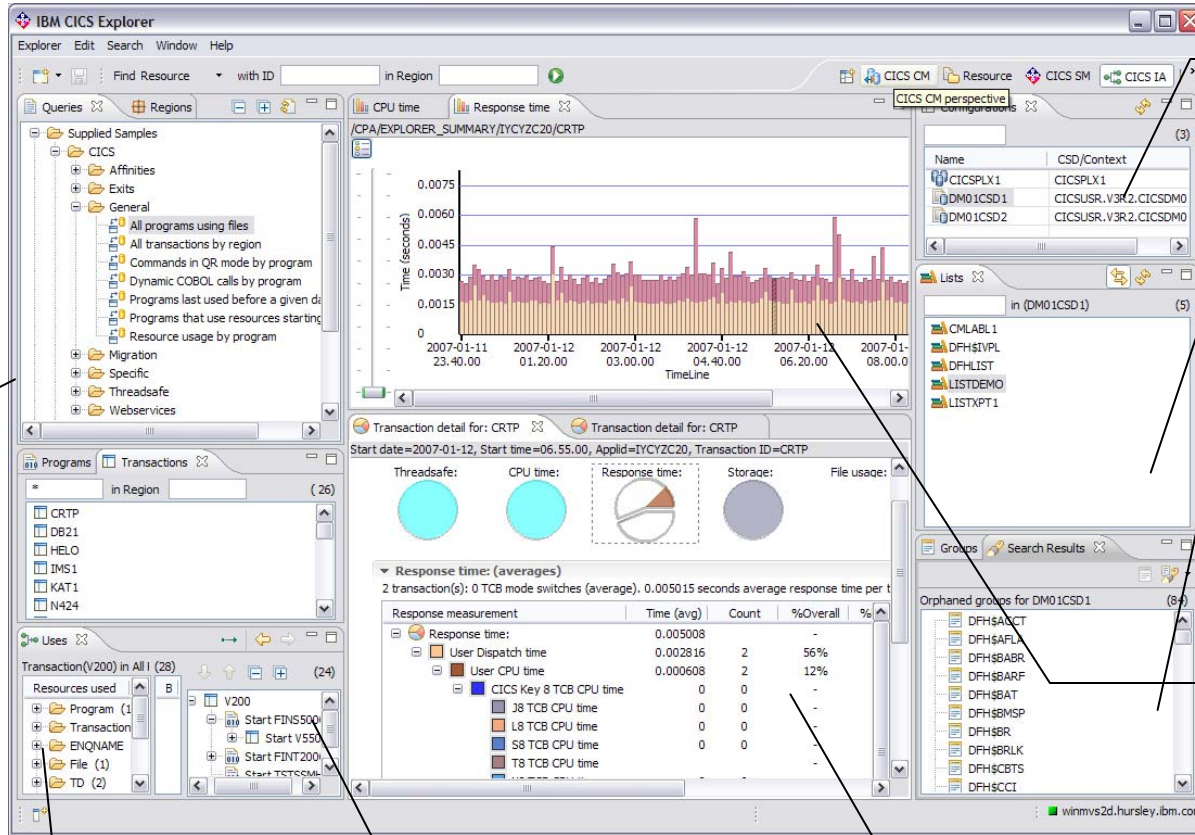


# CICS Explorer & CICS Tools: Putting it all Together

Interdependency  
Analyzer

Performance  
Analyzer

Configuration  
Manager



Single point of control for CSDs and DREPs

Lists and ResDescs

Search for Orphaned groups

Timeline of response times

Shipped Sample Queries

View tree of resources used

Resources used by a transaction

Drilldown into transaction

# Summary

- **Revitalize your infrastructure ...**
  - Simplify network set-up moving to IP
  - Manage distributed security with ID Propagation
  - Improve workload balancing with CICSplex SM
  - Save money with Threadsafe optimization
  - Reduce skills costs with CICS Explorer
  - Ease management burden with CICS Configuration Manager
  - Discover and clone complex environments with CICS Deployment Assistant

# Resources



**For more information**



# CICS Development Technical Services

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

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

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



## CICS On Demand Seminars

Free customised technical agenda of CICS TS and CICS tools products

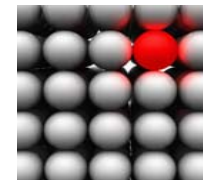
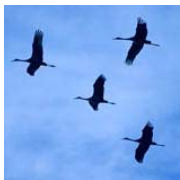
- Web Services, Events, Web 2.0, version upgrades, tooling etc.

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

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

Can be tailored to customers interests

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



# CICS Communities and Information

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



Thank You !