



Dramatic improvements with IBM z/OS tools: Here's how did it

En Argentina y en el mundo, HSBC

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Preface



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- **HSBC Group**
 - Headquartered in London
 - One of the world's largest banking and financial services organizations.
- **Significant operations**
 - Retail, commercial, corporate and investment banking, and insurance
 - More than 9,500 offices in 79 countries and territories in Asia, the Middle East, Europe, America and Africa.
- **In 2006, HSBC acquired Banca Nazionale del Lavoro**
 - Serves customers through its network of 140 offices and branches.

- **Business need**
 - HSBC Bank Argentina S.A. needed to reduce mainframe application development costs and quickly identify and fix root-cause issues impacting application performance and reliability.
- **Solution**
 - Using IBM Problem Determination Tools, the bank's development team modernized its processes for developing back-end IBM CICS applications.
- **Benefits**
 - Developers reduced time needed to analyze coding issues in both development and production environments from hours to seconds, cutting costs and increasing programmer productivity by 10 percent.
- **Complete Case Study**

<http://www.ibm.com/software/success/cssdb.nsf/CS/RNAE-9364PL>

- **Goals: Optimize programmer productivity and reduce development costs**
- **Constraint: Process precision and application integrity is extremely critical**
 - Highly regulated, security-focused and customer service-oriented banking industry.
- **Issues: Application development and testing**
 - Complex and multifaceted process
 - Cumbersome debugging and data management tools
 - Technically challenging time-intensive and problem identification process
- **Requirements: Developers**
 - Collect application data and its environment at the time of failure, without requiring a technical support team's intervention.
 - Quickly identify root cause of production application problems and repair it immediately.

- **Debug Tool for z/OS**
 - Lightweight tool for improving the quality of application code
 - Helps enable to connect, using graphical interfaces, with CICS and Rational Developer for System z applications
 - Makes it much easier and less resource-intensive to manipulate a program and its code variables.
- **Fault Analyzer for z/OS software**
 - Deployed throughout the bank's development, testing and production environments
 - Automates previously manual processes for identifying and resolving application failures.
- **File Manager for z/OS**
 - Development, release management, job scheduling and technical support functions
 - View and edit data to perform large-scale code testing
 - Identify potential problems, such as inconsistent data types or invalid data formats

HSBC – The Results

- **Better application quality**
- **Improved process efficiency**
- **Increased development team productivity**

- **Debug Tool**
 - Impact has been significant and wide-ranging
- **Fault Analyzer**
 - Lets developers quickly access reports to identify exactly which instructions within an application are causing problems in the production environment.
- **File Manager**
 - Used for large-scale code testing and to identify potential data problems

“We’ve increased programmer productivity by 10% and cut development costs. Not only that, but we’ve experienced significant decreases in the number of transaction failures within our applications.”

Roberto L De Hoz, manager mainframe support, HSBC Bank Argentina S.A.

““Before, when there was a failure in production, determining the root-cause issue was not a simple process,” says Mr. De Hoz. “We had to have technical support people analyze the issue before providing any help to our development team. With Fault Analyzer reports, the **developers themselves can easily identify problems.** That saves time and money.”

Demo Scenarios



1. HSBC case study

- Meeting client requirements

2. Integration

- Bringing everything together

3. Insight

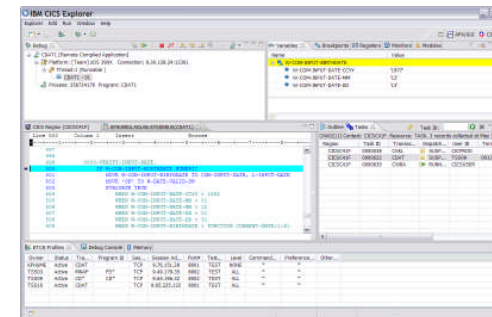
- Understanding application behaviour and performance

SCENARIO 1 – HSBC CASE STUDY

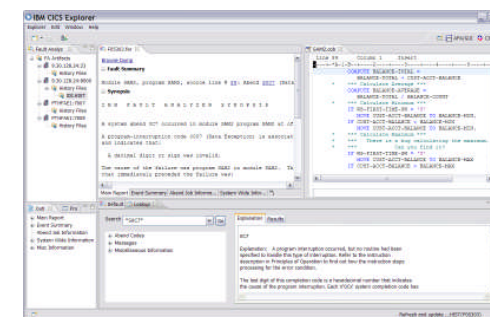
IBM PD Tools - Meeting client requirements



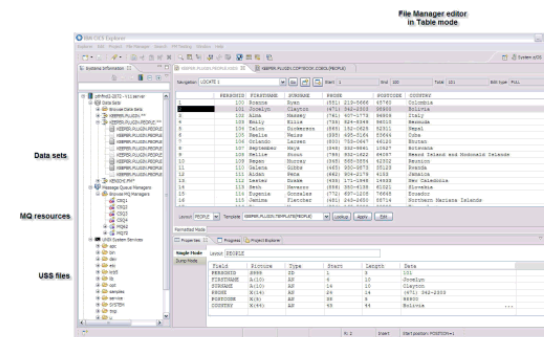
- **NO** Cumbersome debugging and data management tools
- **NO** Technically challenging time-intensive and problem identification process
- **NO** Complex and multifaceted process



IBM Debug Tool



IBM Fault Analyzer



IBM File Manager



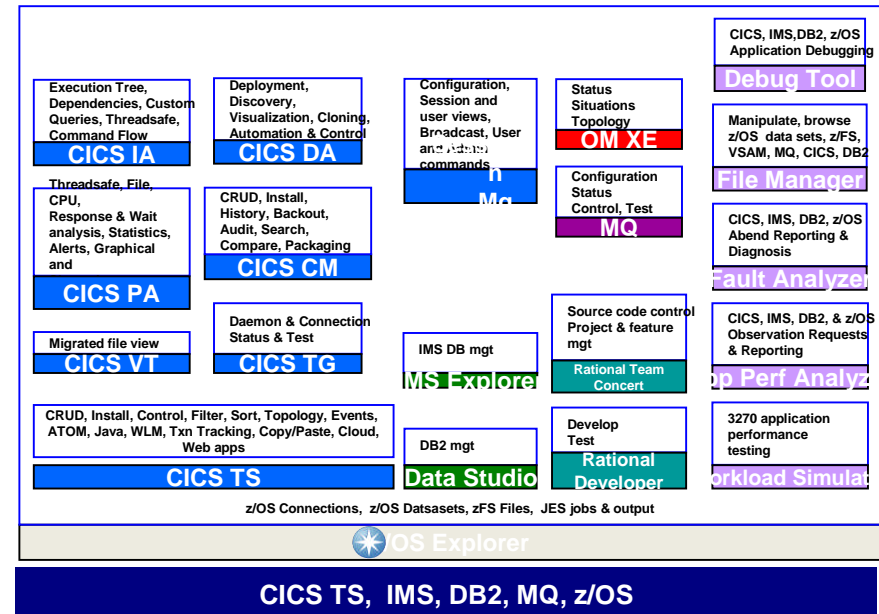
Case Study Demo

SCENARIO 2 - INTEGRATION

Integration - Bringing everything together



- **Do you want to?**
 - Understand CICS application relationships?
 - Create and manage test and production data
 - Develop, test, and debug applications for CICS, IMS, DB2, and batch?
 - Manage Define MQ channels etc?
 - Create and manage CICS regions and all its artefacts?
 - Build IMS data artefacts?
 - Model, create, and tune DB2 artefacts?
 - Manage change effectively?
 - Drive and measure performance tests?
 - Analyze CICS performance?
 - Diagnose problems?
- **All of the above – and more**



IBM Explorer for z/OS® V2.1

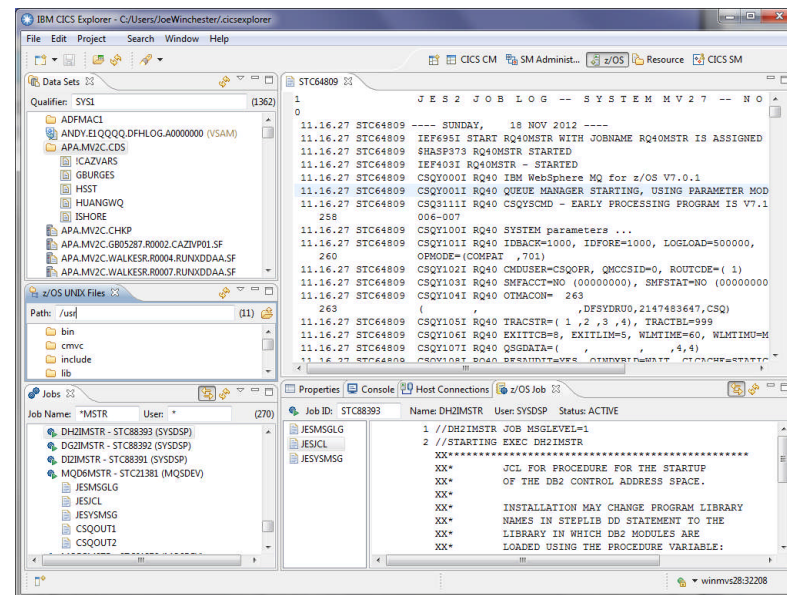
IBM Explorer for z/OS V2.1 (z/OS Explorer)



- Simplifies and accelerates tasks for all roles
- Integrates multiple tools across many domains
- Enables easy access to z/OS function

What's new:

- A single desktop client for all users of z/OS-based resources and subsystems
- A rich connection framework with single sign-on to z/OS resources and sub-systems
- A unifying and extensible integration platform for IBM, client, and 3rd party Eclipse-based tools for z/OS
- A single web repository of compatible IBM product plug-ins including CICS Explorer, CICS Tools, PD Tools, RDz, RTC, and IBM Data Studio
 - Statements of Direction for IMS Enterprise Explorer and MQ Explorer
- An essential one-stop shop for all IT roles: operators, systems programmers, architects, developers, and testers
- A common and unified approach to daily IT tasks
- Supported on Windows and Linux



Integrated tools make productive users

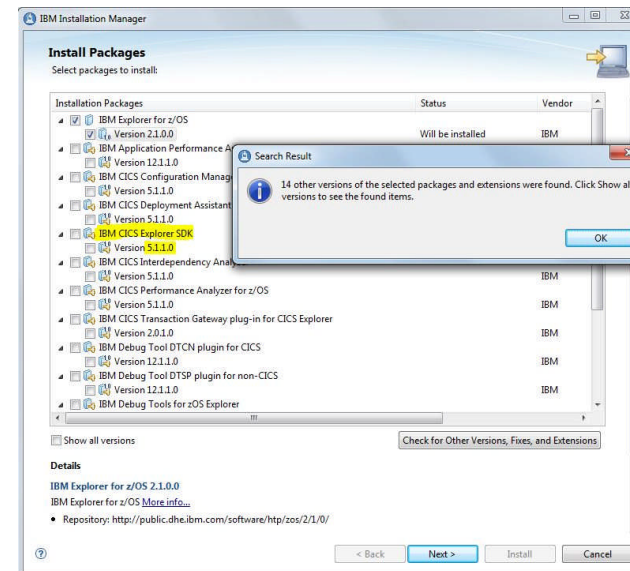
Web page
ibm.com/systems/Z/os/zos/explorer
Announcement letter
<http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&subtype=ca&supplier=897&letternum=ENUS213-141>

How to install z/OS Explorer and CICS Explorer

- **Installation Manager (Recommended)**

- Download IM + z/OS Explorer / package from repository
 - <http://www-01.ibm.com/software/http/cics/ibmexplforzos/downloads.html>
- Run *disk1/launchpad.exe*
- When IM starts, check for other updates – select any required plug-ins, e.g. CICS Explorer, CICS Tools, etc
- Run z/OS Explorer from Start Menu

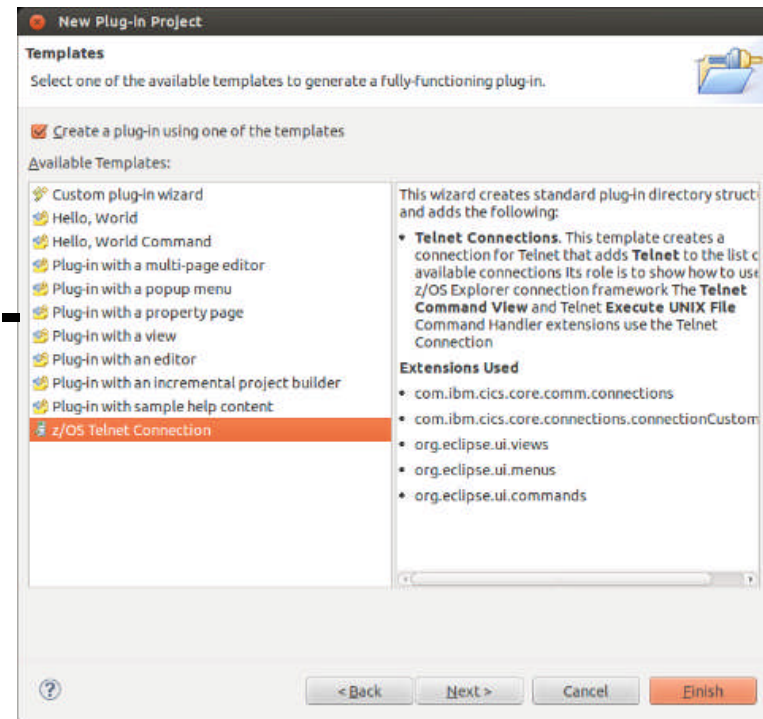
- **Enables update of Java, Eclipse, and most IBM-supplied plug-ins**
- **Supports large-scale deployment**
- **Use to install CICS Explorer SDK into an existing Installation Manager managed deployment**



Extending z/OS Explorer and CICS Explorer

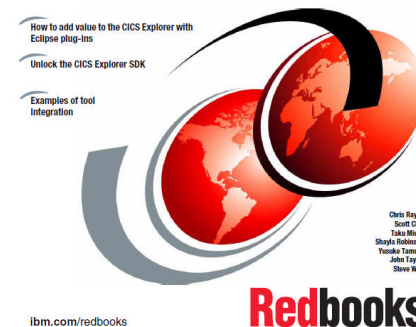


- **z/OS Explorer and CICS Explorer plug-ins include**
 - Sample implementation, Javadoc
- **Integration APIs for your plug-ins**
 - To your z/OS-based components
 - With z/OS files, datasets, jobs, and output
 - With CICS resources
- **Plug-in Development Tooling (PDT) included in CICS Explorer and z/OS Explorer RCPs**
- **Deploy your plug-ins with your CICS Explorer installation**



IBM
Draft Document for Review November 9, 2009 11:18 am
SG24-7819-00

Extend the CICS Explorer: A smart way to manage your CICS



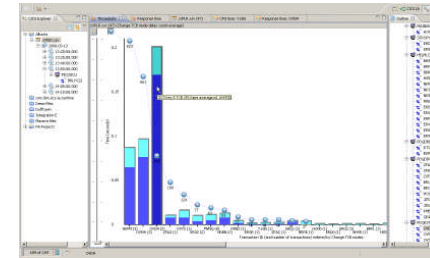


Integration Demo



SCENARIO 3 - INSIGHT

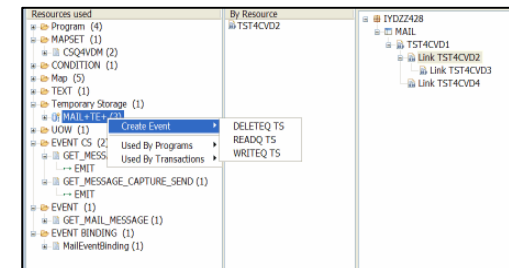
- **Do you know?**
 - Which transactions and programs switch most TCBs
 - Which programs are not threadsafe, and why?
 - If your CICS system will restart successfully?
 - What changed in the CUSTFILE definition?
 - Which programs update CUSTFILE?
 - What connections are there between each CICS region?



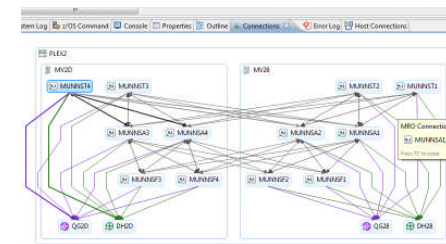
CICS Performance Analyzer

| Revision Time | Resource Name/After | Resource Type/Before | Group | User Name | Command | Change P... | Scheme |
|---------------------|---------------------|----------------------|-------|-----------|---------|-------------|--------|
| 2009/07/09 13:18:35 | DEMO | TRANDEF | BEP | CICUSER | DELETE | | |
| 2009/07/09 13:15:28 | DEMO | TRANDEF | BEP | CICUSER | CREATE | | |
| 2009/07/09 13:43:41 | FOO9 | TRANDEF | BEP | CICUSER | UPDATE | | |
| | changeAgentRele | 0660 | | | | | |
| | description | Changed | | | | | |
| 2009/07/07 23:09:39 | 3055 | CONINDEF | BEP | CICUSER | DELETE | | |

CICS Configuration Manager



CICS Interdependency Analyzer



CICS Deployment Assistant



Insight Demo

- **Powerful, easy to use tools**
 - Satisfied and productive users
 - Return on investment
- **Integration**
 - Fewer UIs – isn't one enough?
 - Less switching – more sharing
- **Insight**
 - Understand and plan not react
 - Drill down and diagnose
 - Visualize for better context

For more information



- **z/OS Explorer**
 - ibm.com/systems/Z/os/zos/explorer
- **CICS Tools**
 - ibm.com/cics/tools/
- **PD Tools**
 - ibm.com/software/awdtools/deployment/
- **CICS Showcase**
 - ibm.com/cics/showcase

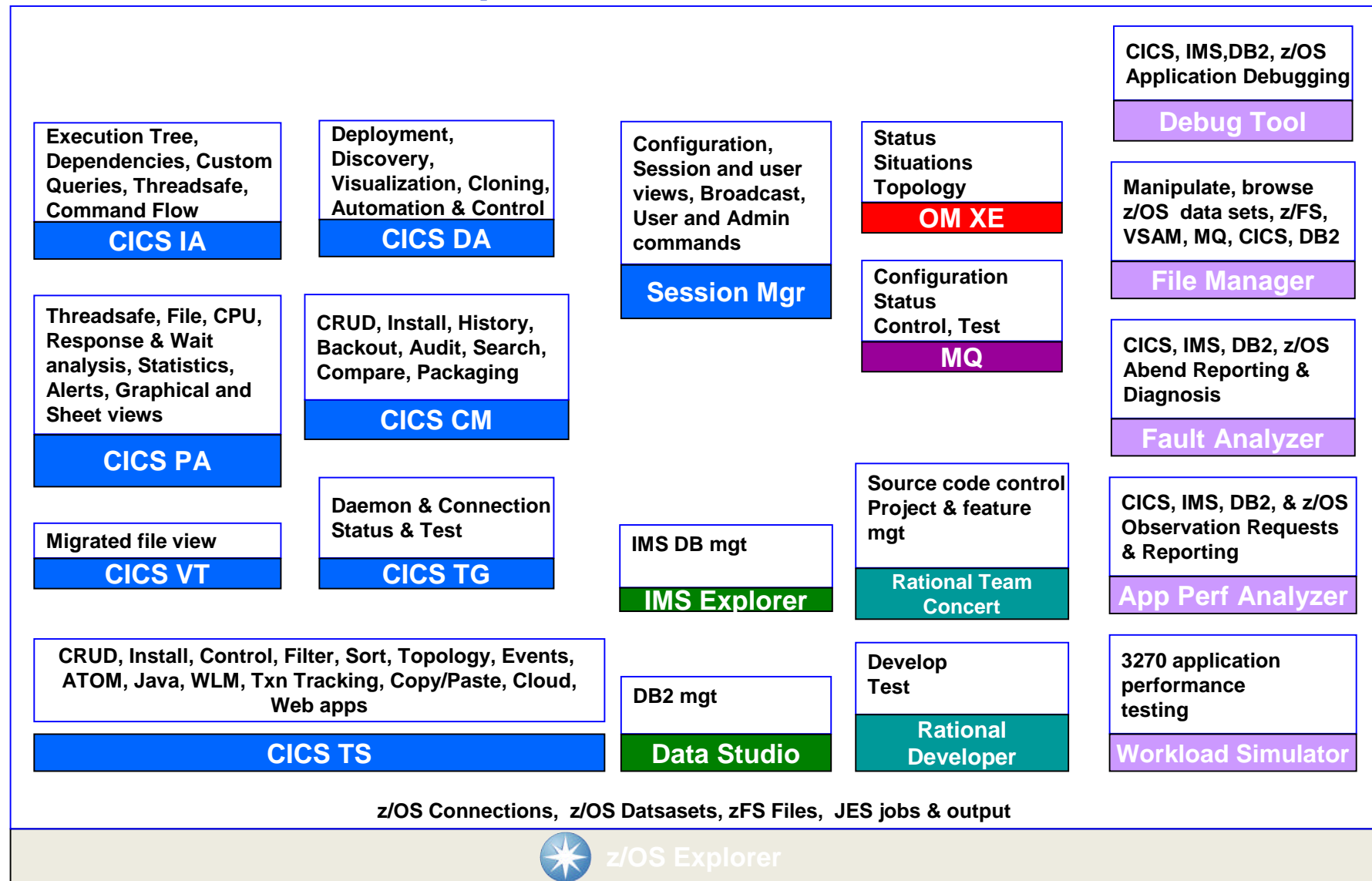


Questions



Backup material

IBM Explorer for z/OS® V2.1



CICS TS, IMS, DB2, MQ, z/OS

Debug Tool



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

- Debug Tool Program Stack:** Located in the top-left pane, showing the application context (CDAT1), platform (z/OS 390X), connection details, and the current thread (Thread:1 (Runnable)) and process (Process: 356724176 Program: CDAT1).
- Debug Breakpoints, Variables, Registers:** Located in the top-right pane, showing a list of variables such as W-COM-INPUT-BIRTHDATE, W-COM-INPUT-DATE-CCYY (value: '1977'), W-COM-INPUT-DATE-MM (value: '12'), and W-COM-INPUT-DATE-DD.
- Debug Source:** Located in the middle-left pane, showing the source code for the program. Line 500 is highlighted, containing the statement: `IF W-COM-INPUT-BIRTHDATE NUMERIC`.
- CICS Region Tasks:** Located in the middle-right pane, displaying a table of tasks running in the CICS region.
- DTCN Profiles:** Located in the bottom pane, displaying a table of DTCN profiles.

Fault Analyzer



The screenshot displays the IBM CICS Explorer interface with three main components highlighted by callouts:

- Fault Analysis:** Located in the top-left pane, it shows a 'Fault Summary' for module SAM2, program SAM2, source line # 89, and abend S0C7. The synopsis states: "A system abend 0C7 occurred in module SAM2 program SAM2 at of... A program-interruption code 0007 (Data Exception) is associated and indicates that: A decimal digit or sign was invalid. The cause of the failure was program SAM2 in module SAM2. That immediately preceded the failure was:"
- Source Code:** Located in the top-right pane, it shows the source code for SAM2.cob. The code includes comments like "Calculate Average" and "Calculate Maximum", and a note: "There is a bug calculating the maximum. Can you find it?".
- Abend Code Lookup:** Located in the bottom-right pane, it shows a search for '*S0C7*' with a 'Go' button. The results show the explanation for 0C7: "Explanation: A program interruption occurred... specified to handle this type of interruption. Refer to the instruction description in Principles of Operation to find out how the instruction stops processing for the error condition. The last digit of this completion code is a hexadecimal number that indicates the cause of the program interruption. Each X'0Cx' system completion code has..."

Additional interface elements include a 'Fault Analyz' tree on the left, a 'Main Report' pane at the bottom left, and a 'Refresh and update ...HIST(F05303)' button at the bottom right.

Application Performance Analyzer



The screenshot displays the IBM CICS Explorer interface with the Application Performance Analyzer (APA) GUI. The main window shows the 'APA Observations List (CAZA) - Local' with a table of observations. A callout box labeled 'APA Observation List' points to this table. On the left, a callout box labeled 'APA Started Tasks' points to the 'STC View' pane. At the bottom, a callout box labeled 'APA Reports' points to the 'S01: Measurement Profile (5193/SAM1RUN)' report window.

APA Started Tasks

| Property | Value |
|----------|---------------------|
| DSNHLQ | ADTOOLS.APAA10 |
| Job | CAZA |
| Started | 2010-05-02 18:33:19 |
| Sysplex | CAZAPLEX |
| Version | 10.10E |

APA Observation List

| ReqNum | Owned By | Description | Job Name | Date/Time | Samples | Status |
|--------|----------|-------------------------------|----------|--------------|---------|--------|
| 5212 | B13639 | CM2 0315 | TMLESH02 | Mar-16 09:56 | 244 | Ended |
| 5211 | B13639 | 562 D0315 | TMLESH02 | Mar-16 09:56 | 82 | Ended |
| 5210 | B13639 | XMITSHLD | TMLESH01 | Mar-15 14:06 | 1,480 | Ended |
| 5208 | B13639 | | TMLESH01 | Mar-15 14:00 | 989 | Ended |
| 5206 | B13639 | | | Mar-15 13:58 | 79 | Ended |
| 5205 | TSS16 | | | Mar-12 08:38 | 10,000 | Ended |
| 5204 | TSS16 | | TSS16CT | Mar-12 08:25 | 4,666 | Ended |
| 5195 | TSS16 | | TSS16A | Mar-12 07:42 | 10,000 | Steps |
| 5194 | TSS16 | Threshold SAM2 > 20 sec CPU | SAM2Z | Mar-12 07:28 | 1,000 | Thresh |
| 5185 | TSS16 | Program SAM1 | SAM1RUN | Mar-12 07:25 | 1,000 | Steps |
| 5186 | | 0001 IKJEFT01 CUSTKSDS CHECKV | | Mar-12 07:26 | 2 | Ended |
| 5187 | | 0002 IEFBR14 CUSTKSDS ALLOCV | | Mar-12 07:26 | 1 | Failed |
| 5188 | | 0003 IDCAMS CUSTKSDS COPYV | | Mar-12 07:26 | 1 | Failed |
| 5189 | | 0004 IKJEFT01 CUSTKSDS CHECKV | | Mar-12 07:26 | 2 | Ended |
| 5190 | | 0005 IEFBR14 CUSTKSDS ALLOCV | | Mar-12 07:26 | 1 | Failed |
| 5191 | | 0006 IDCAMS CUSTKSDS COPYV | | Mar-12 07:26 | 1 | Failed |
| 5192 | | 0007 IDCAMS VERIFY | | Mar-12 07:26 | 3 | Ended |
| 5193 | | 0008 SAM1V RUNSAM | | Mar-12 07:26 | 779 | Ended |
| 5184 | TSS16 | | TSS16D | Mar-12 07:23 | 1,000 | Ended |
| 4984 | MACHIN2 | v10ref7-uc7 | CICSC32F | Mar-10 07:33 | 99,999 | Ended |

APA Reports

S01: Measurement Profile (5193/SAM1RUN)

| Overall CPU Activity | Value | Percentage |
|----------------------|-------|------------|
| Samples | 778 | 100.0% |
| CPU Active | 728 | 93.5% |
| WAIT | 40 | 5.1% |
| Queued | 10 | 1.2% |

File Manager



**File Manager editor
in Table mode**

Data sets

MQ resources

USS files

| PERSONID | FIRSTNAME | SURNAME | PHONE | POSTCODE | COUNTRY |
|----------|-----------|----------|----------------|----------|--------------------------------|
| 1 | Roscoe | Ryan | (951) 210-8466 | 98765 | Colombia |
| 2 | Jocelyn | Clayton | (471) 342-3333 | 99999 | Bolivia |
| 3 | Alma | Murray | (781) 407-1173 | 84808 | Italy |
| 4 | Billy | Kille | (733) 824-8348 | 94000 | Bonada |
| 5 | Talon | Duckman | (995) 142-0428 | 82101 | Ropal |
| 6 | Reylie | Medes | (995) 495-8204 | 82444 | Cuba |
| 7 | Islando | Larson | (855) 792-8447 | 44228 | Burton |
| 8 | September | Kays | (348) 332-8840 | 10027 | Botswana |
| 9 | Bellie | Boss | (788) 832-3422 | 84887 | Spain, Ireland and Netherlands |
| 10 | Reese | Norris | (995) 505-3334 | 42302 | Reunion |
| 11 | Salena | Sibbe | (465) 566-8878 | 88128 | Bonada |
| 12 | Aidan | Rees | (662) 804-2178 | 4233 | Jamaica |
| 13 | Deston | Duck | (498) 172-3348 | 14833 | New Caledonia |
| 14 | Beth | Murray | (888) 380-4338 | 82021 | Slovakia |
| 15 | Eugenie | Gonzalez | (772) 497-1288 | 76648 | Ecuador |
| 16 | Jessica | Fletcher | (481) 240-8488 | 88714 | Northern Mariana Islands |

| Field | Structure | Type | Start | Length | Data |
|-----------|-----------|------|-------|--------|----------------|
| PERSONID | 9999 | SP | 1 | 3 | 100 |
| FIRSTNAME | A(10) | SP | 4 | 10 | Jocelyn |
| SURNAME | A(10) | SP | 14 | 10 | Clayton |
| PHONE | X(14) | AN | 24 | 14 | (471) 342-3333 |
| POSTCODE | X(8) | AN | 38 | 8 | 99999 |
| COUNTRY | X(44) | SP | 46 | 14 | Bolivia |

**File Manager editor
Single mode**

Workload Simulator



The screenshot displays the Workload Simulator interface. On the left, the 'Project View' window shows a tree structure with 'TEST3' selected. A context menu is open over 'CASE3', listing actions: Open, New Test Case, Edit STL, Notes, Translate, UTBL, View, and Delete. On the right, the 'CASE3' window shows the 'Test case overview' for 'CASE3'. The 'Test case information' section includes 'Name: CASE3' and 'Description: V case1'. The 'Other information' section includes 'Type: CPIC', 'Notes flag', and 'UTLB counts'.

Project View

- TEST3
 - Test Case
 - CASE3
 - Test G
 - Sched
 - Report
 - TEST1
 - TEST2

Context Menu (over CASE3)

- Open
- New Test Case
- Edit STL
- Notes
- Translate
- UTBL
- View
- Delete

CASE3 Overview

Test case information

Name: CASE3

Description: V case1

Other information

Type: CPIC

Notes flag:

UTLB counts:

Outline

An outline is not available.

Example of DT, FA, and APA in CICS Explorer



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

- Debug Tool Views:** Located at the top left, it shows the application structure for SAM1 [Remote Compiled Application] on a z/OS 390X platform. The process ID is 328254224 and the program is SAM1. The thread is 1 (Runnable) with sub-threads SAM2:02 and SAM1:01.
- Variables:** A table showing current variable values:

| Name | Value |
|-------------------|--------------|
| BALANCE-TOTAL | +00000000.00 |
| CUST-ACCT-BALANCE | +00000067.68 |
- Breakpoints:** A list of active breakpoints including Entry [SAM2] and three statements within ADTOOLS.ADLAB.SYSDEBUG(SAM1) and ADTOOLS.ADLAB.SYSDEBUG(SAM2).
- Source Code:** The main editor shows COBOL code for ADTOOLS.ADLAB.SYSDEBUG(SAM2). Line 89 is highlighted, showing a COMPUTE statement: `COMPUTE BALANCE-TOTAL = BALANCE-TOTAL + CUST-ACCT-BALANCE`.
- Fault Analyzer Analysis:** The right pane shows a fault summary for module SAM2, program SAM2, at source line # 89. The abend code is SOC7 (Data Exception). The synopsis states: "A system abend 0C7 occurred in module SAM2 program SAM2 at offset X'39A. A program-interruption code 0007 (Data Exception) is associated with this abend and indicates that: A decimal digit or sign was invalid."
- APA Reports:** The bottom left pane shows a list of reports for S01 - Measurement Profile (5193/SAM1RUN), including Statistics/Storage, Load Module Attributes, Load Module Summary, TCB Summary, and Memory Usage Timeline.
- APA Report Details:** The bottom right pane shows a detailed report for S01, including a table for overall CPU activity:

| Category | Count | Percentage |
|------------|-------|------------|
| Samples | 778 | 100.0% |
| CPU Active | 728 | 93.5% |
| WAIT | 40 | 5.1% |
| Queued | 10 | 1.2% |

z/OS Perspective



The screenshot displays the IBM CICS Explorer BETA interface. The top window shows a file browser for the z/OS UNIX File System, with the path `/u/` and a list of files and folders including `makefile`, `myfile.dat`, `prefs`, `semcr`, `stewplat`, `stewplt2`, `applications`, `bindings`, `bundles`, `platform`, `asd`, and `META-INF`. The `platform.xml` file is selected.

The middle window shows the XML content of `platform.xml`:

```
<?xml version="1.0" encoding="UTF-8"?>
<platform:platform xmlns:platform="http://www.ibm.com/xmlns/prod/cics/management"
  <regionType id="PLATGRP1" name="as"/>
</platform:platform>
```

The bottom window shows a list of jobs and a properties table for the selected file.

Jobs List:

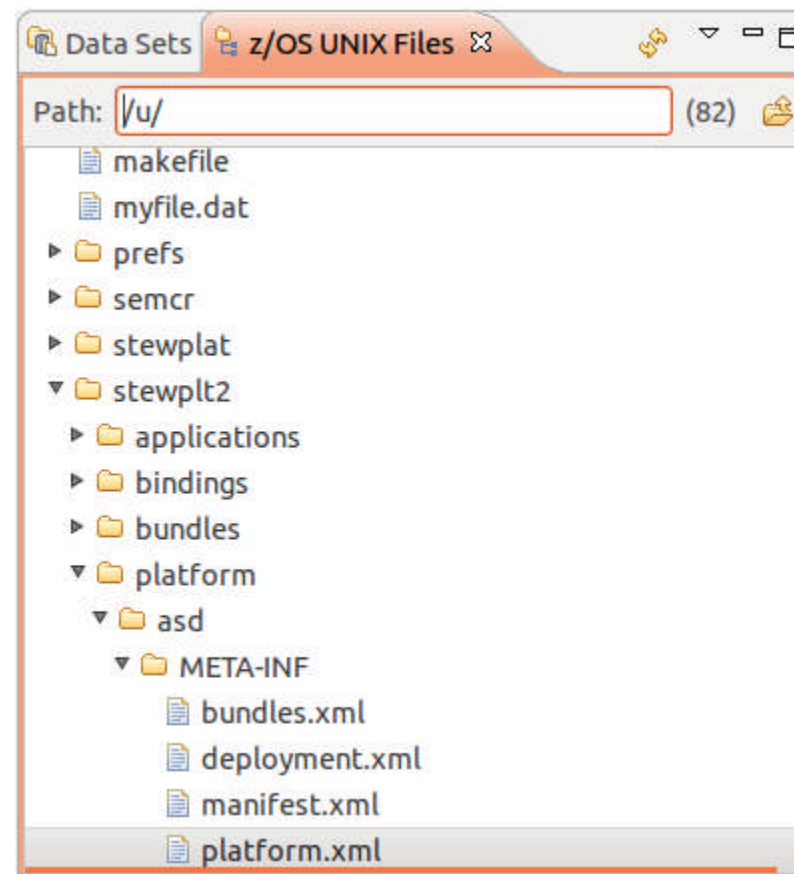
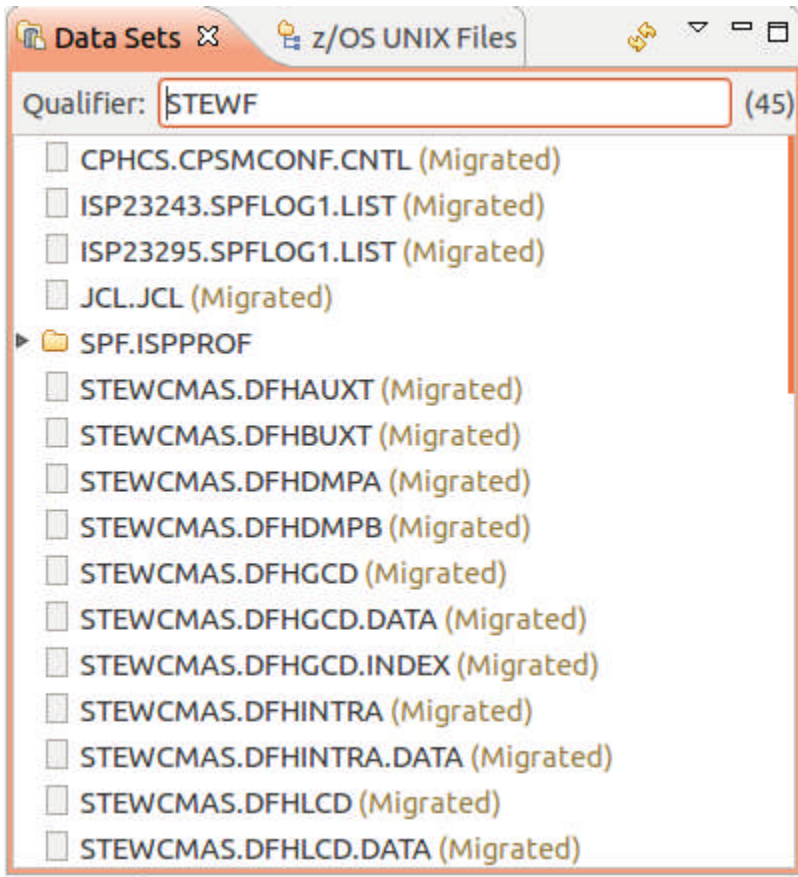
| Job Name | User |
|------------------------------|------|
| IYCWJHHS - JOB56702 (MQTEST) | * |
| IYCWJHCD - JOB90731 (MQTEST) | * |
| IYCWJHCM - JOB90729 (MQTEST) | * |
| IYCWJHWD - JOB91163 (MQTEST) | * |
| IYCWJHW1 - JOB91157 (MQTEST) | * |
| IYCWJHWM - JOB91142 (MQTEST) | * |
| IYCWJHHS - JOB91238 (MOTEST) | * |

Properties Table:

| Property | Value |
|--------------------|--|
| Last modified | 19 September 2012 10:09 |
| Name | platform.xml |
| Owner - File | STEWF |
| Owner - Group | TSOUSER |
| Path | /u/stewf/stewplt2/platform/asd/META-INF/platform.xml |
| Permission - Group | read |
| Permission - Other | none |
| Permission - Owner | read, write |
| Size | 361 |
| Type | File |

The status bar at the bottom indicates: `IZE0100I Connected user STEWF to ...p3host.hursley.ibm.com on port 21` and `Fetching children of ...F Status:ALL`. A connection indicator for `cicexp3host:21` is also visible.

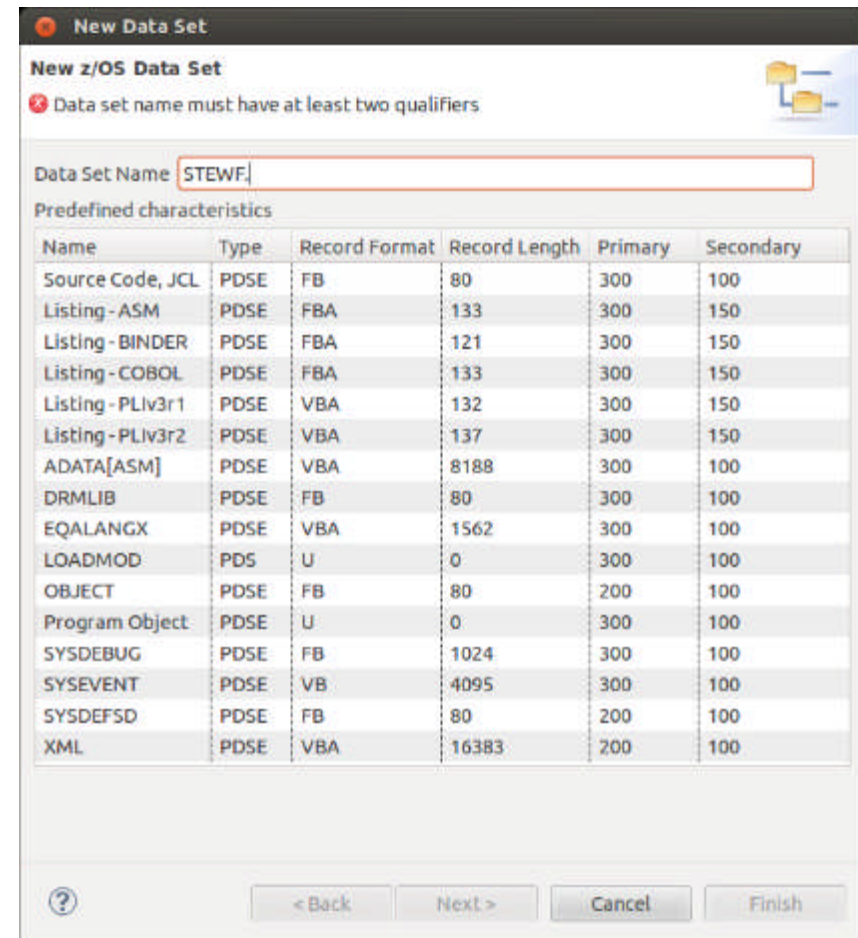
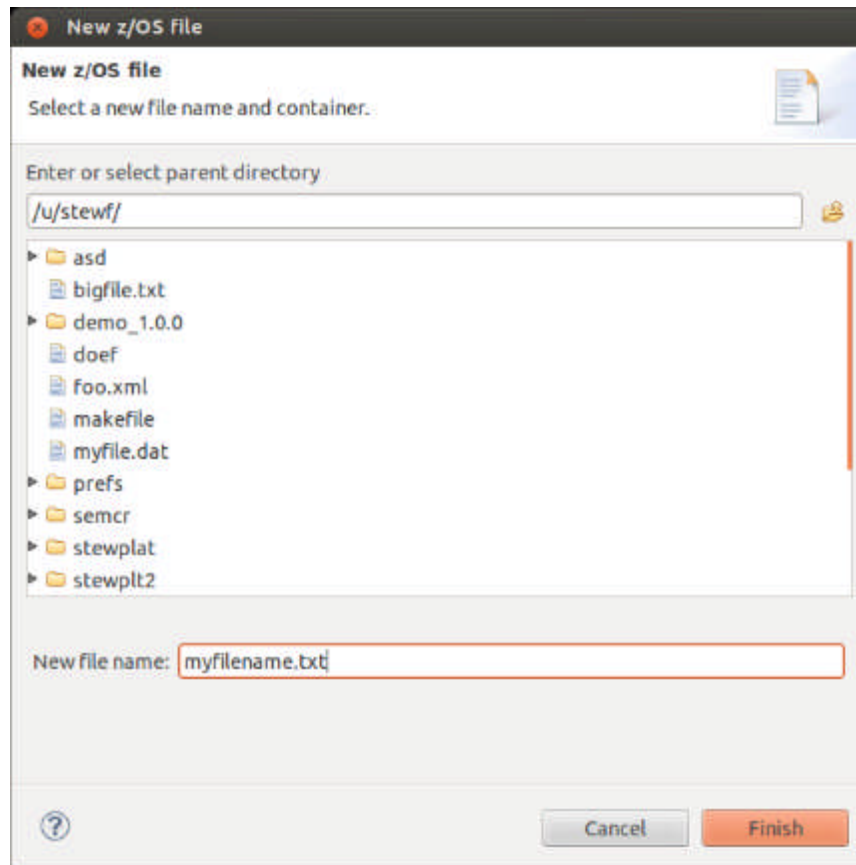
Datasets and Unix Files



z/OS Explorer V2.1 Enhancements



- Multi-select delete jobs/hfsfiles/datasets
- Create files/folders on HFS
- Create datasets



Job output



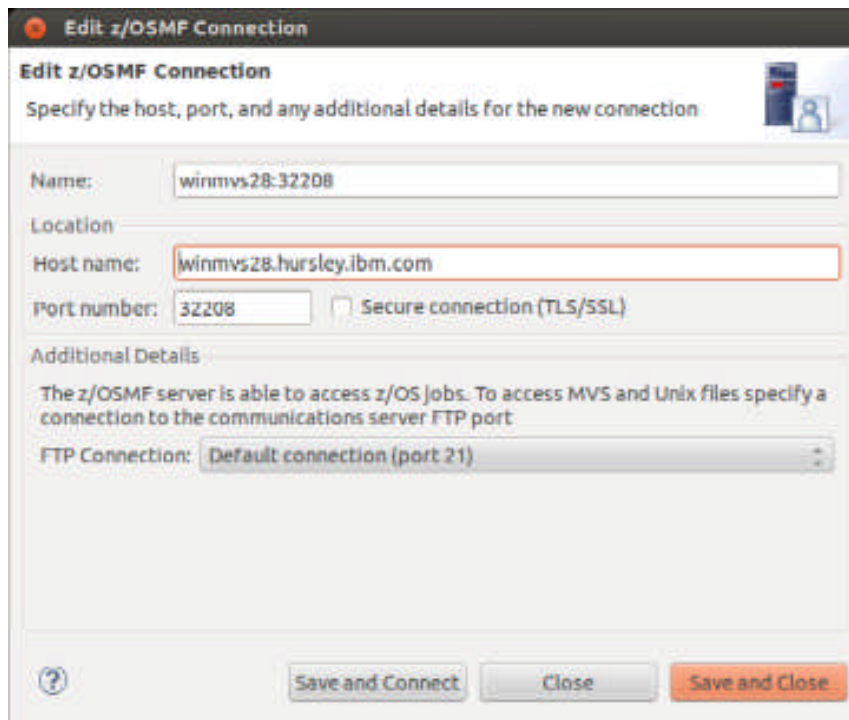
The screenshot shows a z/OS Job console window with the following details:

- Job ID: JOB56702
- Name: IYCWJHHS
- User: MQTEST
- Status: OUTPUT

The console output is as follows:

```
1 J E S 2 J O B L O G -- S Y S T E M M V 2 C -- N O D E W I N M
0
12.39.04 JOB56702 ---- THURSDAY, 27 SEP 2012 ----
12.39.04 JOB56702 IRR010I USERID MQTEST IS ASSIGNED TO THIS JOB.
12.39.04 JOB56702 ICH70001I MQTEST LAST ACCESS AT 12:39:00 ON THURSDAY, SEPTEMBER 27, 2
12.39.04 JOB56702 $HASP373 IYCWJHHS STARTED - INIT 132 - CLASS A - SYS MV2C
12.39.04 JOB56702 IEF403I IYCWJHHS - STARTED
12.39.05 JOB56702 DFHPA1101 IYCWJHHS DFHSIT6$ IS BEING LOADED.
12.39.05 JOB56702 DFHPA1108 IYCWJHHS DFHSIT6$ HAS BEEN LOADED. (GENERATED AT: MM/DD= 09,
12.39.05 JOB56702 DFHPA1100 IYCWJHHS OVERRIDE PARAMETERS FROM JCL EXEC STATEMENT: SYSIN
12.39.05 JOB56702 DFHPA1102 IYCWJHHS OVERRIDE PARAMETERS FROM SYSIN:
12.39.05 JOB56702 DFHPA1927 IYCWJHHS USSHOME=/itbld/cics.ts.spa/BSF/dist
12.39.05 JOB56702 DFHPA1927 IYCWJHHS APPLID=IYCWJHHS
12.39.05 JOB56702 DFHPA1927 IYCWJHHS AICONS=AUTO
```

- Provides a RESTful interface to z/OS jobs
- Allows us to view **active** jobs, e.g. CICS regions, MQ queue managers
- Linked with an FTP connection to provide simultaneous access to HFS files and datasets



Edit z/OSMF Connection

Specify the host, port, and any additional details for the new connection

Name: winmvs28:32208

Location

Host name: winmvs28.hursley.ibm.com

Port number: 32208 Secure connection (TLS/SSL)

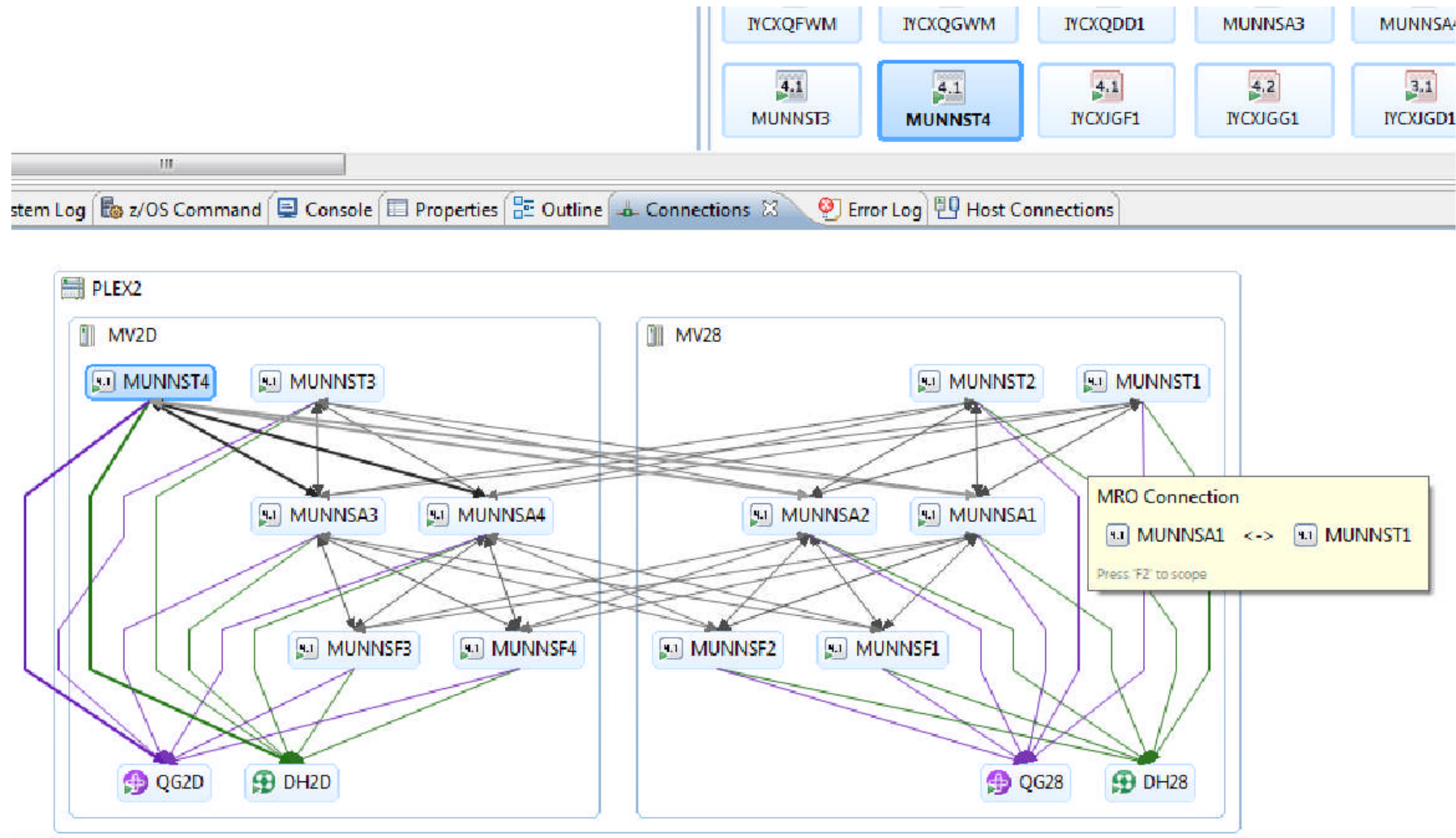
Additional Details

The z/OSMF server is able to access z/OS jobs. To access MVS and Unix files specify a connection to the communications server FTP port

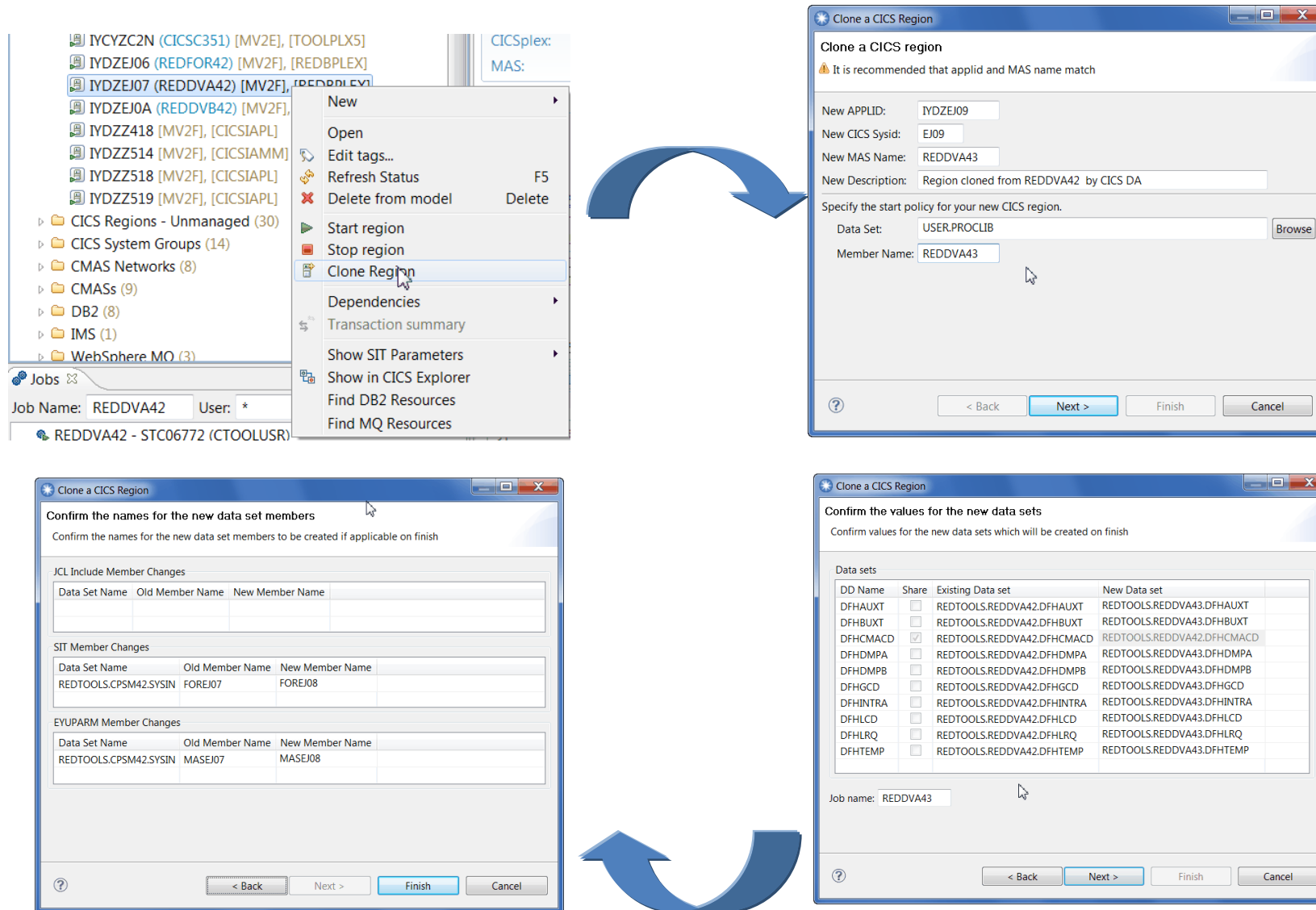
FTP Connection: Default connection (port 21)

? Save and Connect Close Save and Close

CICS DA – Quickly discover and manage CICS



CICS DA - Clone a development or test region



CICS CM – Speeding resource definition changes



The screenshot displays the IBM CICS Explorer BETA interface. The main window shows the 'Transaction Definitions' pane with a table of resources. A context menu is open over the 'KSDSP' resource, showing options like 'New...', 'Open', 'Delete', 'Copy', 'Find', and 'Package...'. The 'Package...' option is highlighted, and a sub-menu is visible showing package names: 'DEVZTEST', '00000001', '00000003', and '00000002'. Other panes include 'Change Packages', 'Group List Definitions', and 'Resource Group Definitions'. The Windows taskbar at the bottom shows the system tray with the date 'Wednesday 18/04/2012' and time '14:38'.

| Name | Version | Create Time | Change Time | Description | Status |
|----------|---------|-------------------|-------------------|-------------|-----------|
| KSDSCUST | 0 | 13-Dec-2011 12... | 13-Dec-2011 12... | | ✓ ENABLED |
| KSDSP | | 13-Dec-2011 12... | 28-Feb-2012 08... | | ✓ ENABLED |

| Name | CICS System |
|-----------|-------------|
| CIALIST | N/A |
| CICSSFRL | N/A |
| CMDEMOL1 | N/A |
| DFH\$IVPL | N/A |
| DFHLIST | N/A |
| DIANAS | N/A |
| DIANAT | N/A |

| Name | CICS System |
|---------|-------------|
| GENA | N/A |
| GENASAD | N/A |
| GENASAF | N/A |
| GENASAP | N/A |
| GENASAT | N/A |
| GENASA2 | N/A |

| Revision Time | Resource | Source Type/Before | Group | User Name | Comments |
|---------------------|----------|--------------------|---------|-----------|----------|
| 2012/02/28 08:51:57 | KSDSPOLY | FILEDEF | GENASAF | DNET409 | UPD... |

CICS CM – Resolving Deployment Issues



Job ID: JOB00709 Name: CCVJB1 User: STANNA Status: OUTPUT

```
GRPLIST=LISTAOR7,
LOCALSYSID=C22G,
PHASE=REPORT,
TYPE=COLDSTARTCOMPARE,
FILTERDATASET=CICSTS.CICSCM.DEPANL.FILTER
```

12012/04/18 08:07 CICS Configuration Manager V2.1 Page 2
Batch Utility

CICS Deployment Analysis Report
Cold Start Compare Report
Data Sources

| ID | Date | Time | Records | CollectionType | ReportSet | SMFID | Context | Scope | APPLID | SYSID |
|----|------------|-------|---------|----------------|-----------|-------|---------|-------|----------|-------|
| 01 | 2012/04/18 | 08:07 | 4177 | RUNTIME-CCM | 1 | MVSA | | | CICSACB7 | AOR |
| 02 | 2012/04/18 | 08:07 | 1522 | CANDIDATES-CSD | 2 | MVSA | | | | C22 |

----- Target Region -----
Region APPLID SYSID CTSVRM CCM
CICSCM CICSCM CCM1 0420 021

----- Target Region -----
Region APPLID SYSID CTSVRM CCM
CICSCM CICSCM CCM1 0420 021

CICS PA gives Platform and Application Performance insight



Scenario

- Summarize CICS performance data at application and transaction level
- Drill down into details such as CPU, Response time, Storage and TCB usage
- Data filtering to analyze specific transactions and operations
- Statistics alerts
- Simplify analysis of large volumes of data
- Identify performance bottlenecks promptly

Summarize and export application and transaction data to DB2

| Name | Type | Description | Changed | ID |
|----------|---------|-------------------------------|------------------|--------|
| APPLNMS1 | SUMMARY | Explorer HDB for Appl Context | 2012/07/01 12:00 | CICSPA |
| EXPLOR31 | SUMMARY | Explorer HDB for CICS TS V3.1 | 2012/07/01 12:00 | CICSPA |
| EXPLOR32 | SUMMARY | Explorer HDB for CICS TS V3.2 | 2012/07/01 12:00 | CICSPA |
| EXPLOR41 | SUMMARY | Explorer HDB for CICS TS V4.1 | 2012/07/01 12:00 | CICSPA |
| EXPLOR42 | SUMMARY | Explorer HDB for CICS TS V4.2 | 2012/07/01 12:00 | CICSPA |
| EXPLOR51 | SUMMARY | Explorer HDB for CICS TS V5.1 | 2012/07/01 12:00 | CICSPA |

Drilldown to transaction or operation

Detailed performance and statistics analysis with data filtering

CICS PA - Visualizing performance data



See extracts of the raw data in the Sheet view

Powerful active outline view speeds selection

Flexibility in what you want to see

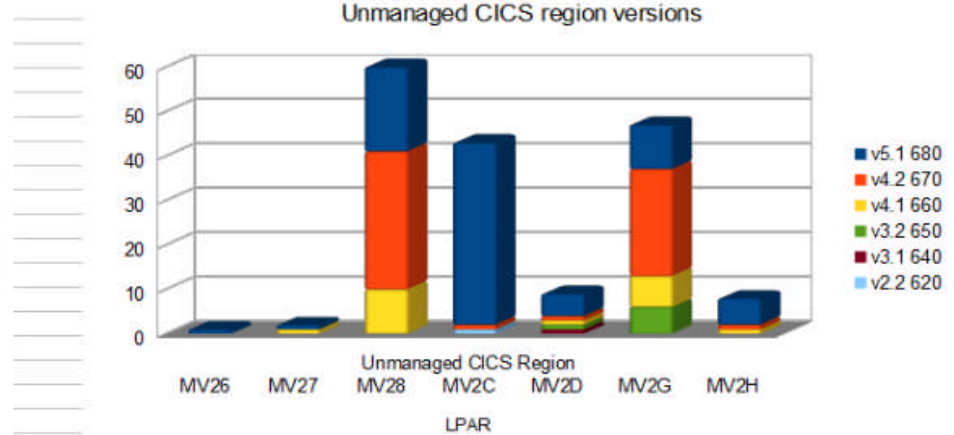
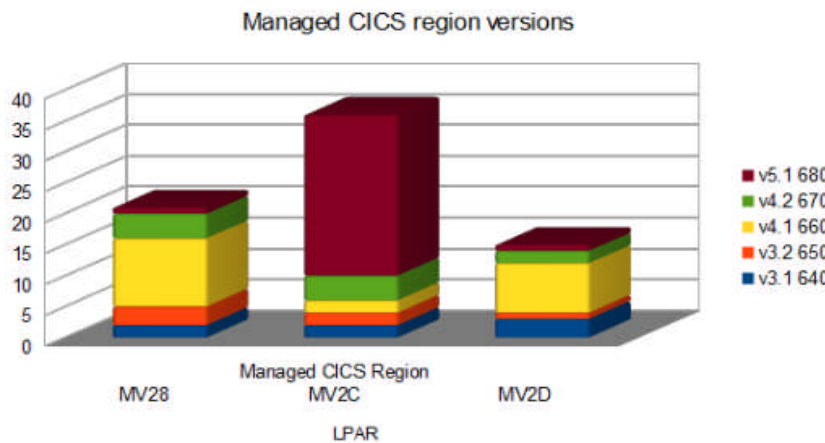
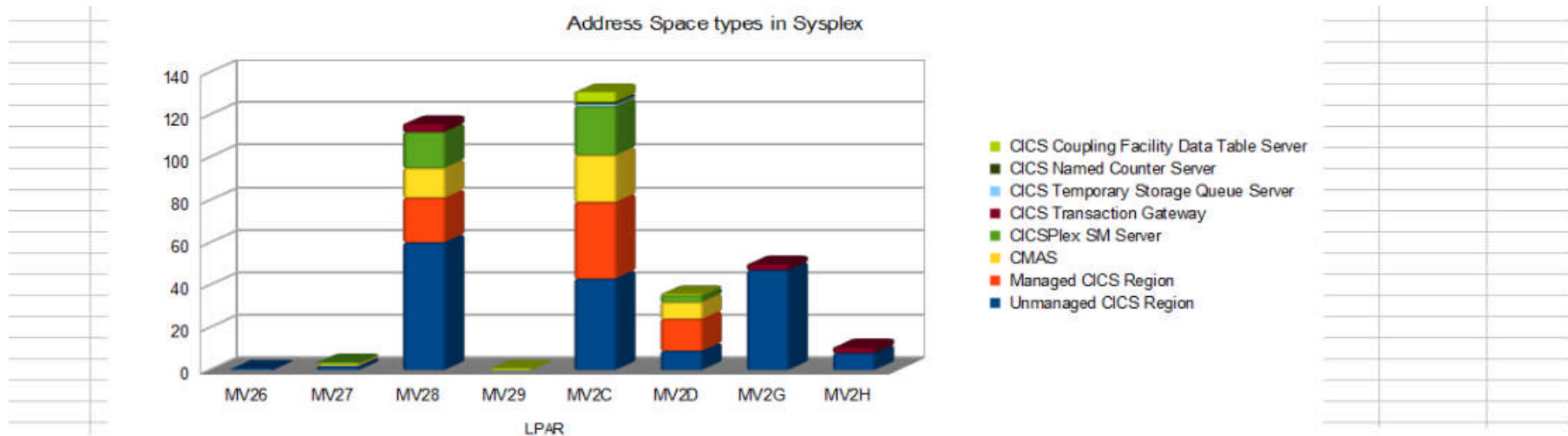
..or follow Analysis Scenarios like Threadsafes to highlight issues

Drill into data files using the explorer view

The screenshot displays the IBM CICS Explorer interface with several panels:

- Table View:** A table showing transaction data with columns: Start date, Start time, Applid, and Transact. The data includes transactions from 2008-03-13.
- Bar Chart:** A bar chart showing response times in seconds for various transaction IDs. The highest bar is for 'OYDA (2)' with a value of 0.2. A tooltip indicates 'CICS Key 8 TCB CPU time average=0.169700'.
- Pie Chart:** A pie chart showing the distribution of response time components. The largest slice is 'User Dispatch time' at 55%.
- Transaction Tree:** A hierarchical tree view of transactions, including 'NKR1 (1)', 'NK31 (2)', 'NK50 (1)', etc.
- Overview Panel:** A summary panel for a specific transaction (2007-01-11, 23.50.00, IYCYZC24, CRTP) showing metrics like CPU time, Response time, and Storage.

CICS DA – Helping to understand your CICS



Rational Developer for System z



The screenshot displays the IBM Rational Developer for System z interface. The main window is the Resource Definition Editor, which is used for defining and managing CICS resources. It includes a Navigator on the left showing a project structure with folders like Flows, Generation, and Source. The main area is divided into sections: Resource Definition (with a Target dropdown set to NQA17C01), Resources (a table listing resources like SFMFlow, SFMPIPE, etc.), Installation, and Export Definition. A yellow callout box points to the Resources table, listing resource types and their states.

CICS TS Explorer Region tree

CICS TS Explorer Resource types

- programs
- transactions
- files
- RPL list

CICS TS Explorer program list

| Program Name | Status |
|--------------|---------|
| ACCTCHAN | ENABLED |
| ACCTTEST | ENABLED |
| ADNCRDR | ENABLED |
| ADNCRDS | ENABLED |
| ADNTMSGH | ENABLED |
| BACEDALP | ENABLED |
| BACEDAP | ENABLED |
| BALAB6P | ENABLED |
| BAWYMQ | ENABLED |
| BAWYMQP | ENABLED |
| BA1DPLP | ENABLED |
| CBCDEBUG | ENABLED |
| CHANNELLE | ENABLED |

MQ Explorer within CICS Explorer



The screenshot displays the IBM CICS Explorer interface with the MQ Explorer sub-view active. The left-hand pane shows the 'Queue Managers' tree under 'IBM WebSphere MQ', with 'Q12F on winmvs2f.h' selected. The main pane shows the 'MQ Connections' table, 'MQ Connection Definitions', 'MQ Initiation Queues', and 'MQ Connection Statistics' tables. The 'MQ Connections' table has the following data:

| Region | Name | Connectst | Mqname | Mqgmgr | Mqrelease | Mqginitq | Tasks |
|----------|------|-----------|--------|--------|-----------|--------------|-------|
| REDDEV41 | MQC | CONNECTED | Q12F | Q12F | 0701 | CICS01.INITQ | |

The 'MQ Connection Definitions' table shows:

| Name | Version | Create Time | Change Time | Description |
|------|---------|----------------------|----------------------|------------------|
| MQC | 0 | 02-Nov-2009 10:34:15 | 02-Nov-2009 10:34:27 | Connection to MQ |

The 'MQ Initiation Queues' table shows:

| Region | Initqname |
|----------|--------------|
| REDDEV41 | CICS01.INITQ |

The 'MQ Connection Statistics' table shows:

| Region | Name | Connection Status | Mqconnect | Mqginitq | Mqgtasks |
|----------|------|-------------------|-----------|--------------|----------|
| REDDEV41 | Q12F | CONNECTED | MQC | CICS01.INITQ | 1 |

The 'Queues' table at the bottom shows a list of queues, with 'CICS01.INITQ' highlighted. The table has the following columns: Queue name, Queue type, QSG disposit..., Open inp..., Open out..., Current que..., Max queue depth, Pu.

| Queue name | Queue type | QSG disposit... | Open inp... | Open out... | Current que... | Max queue depth | Pu |
|--------------------------|------------|-----------------|-------------|-------------|----------------|-----------------|-----|
| CICS01.INITQ | Local | Queue mana... | 1 | 0 | 0 | 100 | All |
| CSQ4SAMP.B1.MODEL | Model | Queue mana... | | | | 999999999 | All |
| CSQ4SAMP.B2.INQUIRY | Local | Queue mana... | 0 | 0 | 0 | 999999999 | All |
| CSQ4SAMP.B2.OUTPUT.ALIAS | Alias | Queue mana... | | | | | All |
| CSQ4SAMP.B2.REPLY.1 | Local | Queue mana... | 0 | 0 | 0 | 999999999 | All |
| CSQ4SAMP.B2.REPLY.2 | Local | Queue mana... | 0 | 0 | 0 | 999999999 | All |

The status bar at the bottom indicates: CNX01001 Connected user KNUTSON to host WINMVS2F.hursley.ibm.com on port 8005. Redbook CMCI.

WebSphere MQ Explorer



WebSphere MQ enables your entire messaging backbone to be viewed, explored and altered remotely configured from a single console, called MQ Explorer.

- ✓ Stand alone GUI tool running on Windows and Linux (Intel x-64) built on Eclipse and supports MQ environments across all platforms
- ✓ Enables you to explore and configure all WebSphere MQ objects and resources, including Java Message Service (JMS), and publish/subscribe.
- ✓ Administer and monitor WebSphere MQ objects, whether they are hosted by your local computer or on a remote system
- ✓ Shipped as a part of WebSphere MQ and is also available separately via in [SupportPac MS0T](#).



Fig: WebSphere MQ Explorer Interface



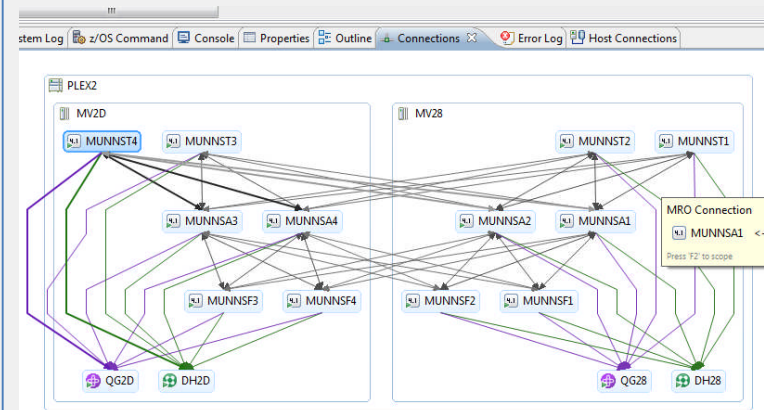
The power of discovery

What's new in CICS DA V5.1...

- Enriched discovery of over 30 entities
- Improved visualization with tagging and filtering
- Connections view with scoping
- Export model for external reporting
- CICS TS V5.1 upgrade cheat sheet
- Tagging and filtering of model elements
- New navigators
- Clone JCL improvements
- IPv6 support
- Virtual IP addressing support
- Serviceability enhancements

CICS DA enables you to...

- Visualize and manage your CICS topology
- Discover existing regions and sus-systems
- Automation creates new CICSplex
- Plexify and clone CICS regions
- Start and stop a CICS region



CICS Interdependency Analyzer for z/OS V5.1



Application insight

What's new in CICS IA V5.1...

- Support for CICS Transaction Server V5.1, including enhanced business application analysis
- New threadsafe analysis plug-in view and report
- Improved installation and configuration
- DB2 data lifecycle management
- Native SQL language stored procedures
- Graphical visualization view of resources

CICS IA enables you to...

- Identify threadsafe / non-threadsafe programs
- Isolate and remove affinities
- Speed CICSplex® SM workload management
- Advanced CICS command flow analysis
- Highlight CICS web service candidates

| Program | Lib | Default Name | APPL | Concurrency | Stat. | Storage Prot. |
|----------|---------------------|--------------|-----------|-------------|----------|---------------|
| NOZZ2318 | CICS TS 5 | | | | | |
| TST4CVDA | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDB | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDC | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDD | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDE | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDF | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDG | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDH | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDI | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDJ | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDK | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDL | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDM | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDN | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDO | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDP | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDQ | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDR | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDS | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDT | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDU | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDV | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDW | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDX | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDY | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |
| TST4CVDZ | CICSAD.TEST.LOADLIB | CICSAPI | QUASIRENT | USER | INACTIVE | |



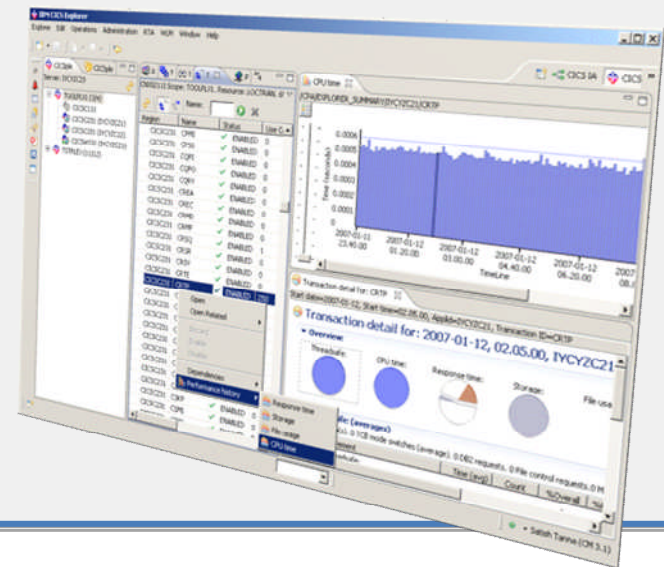
Performance insight

What's new in CICS PA V5.1...

- CICS TS V5.1 – support for new metrics
- Application, Platform, and Policy
- Plug-in enhancements:
 - Application centric view
 - Customizable sheet views
 - Suspend time reporting
 - Easy navigation to key reports and alerts
- SMF logstream support
- Batch statistics reporting for CICS TG
- Improved management of PA data loaded to DB2
- CPU totals on MQ reports
- SMF data processing performance improvements

CICS PA enables you to...

- Comprehensive Performance Reporting and Analysis for CICS including DB2, WebSphere MQ, and MVS System Logger
- Understand trends and develop capacity plans
- View statistics and create statistical alerts





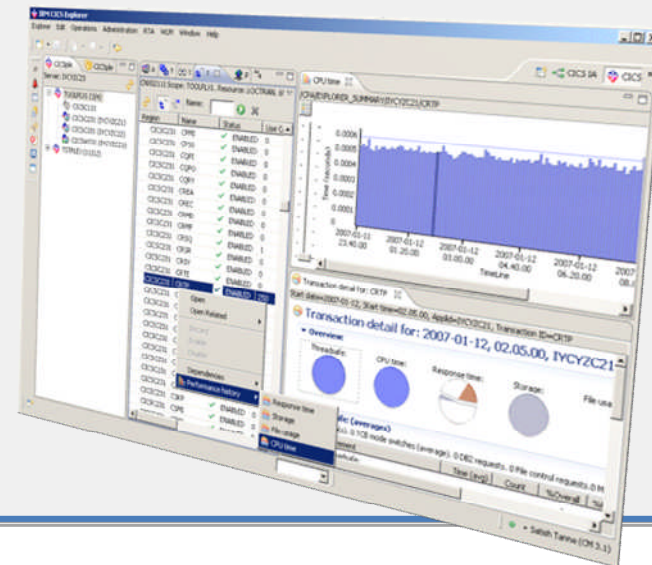
The value of control

What's new in CICS CM V5.1...

- Application, Platform, and Policy resources
- Enhanced plug-in with Packaging and Deployment Analysis
- Sort in Package view and Ready list
- ADD/REMOVE CSD group to/from LIST during Migrate operation
- Option to automatically remove empty Groups from CSD List
- SSL support for plug-in connection
- Audit trail for Install and NewCopy

CICS CM enables you to...

- Manage changes throughout the life-cycle
- Create reports to identify redundant definitions, show resource relationships, and change management history
- Manage audit, back-out and change authorizations





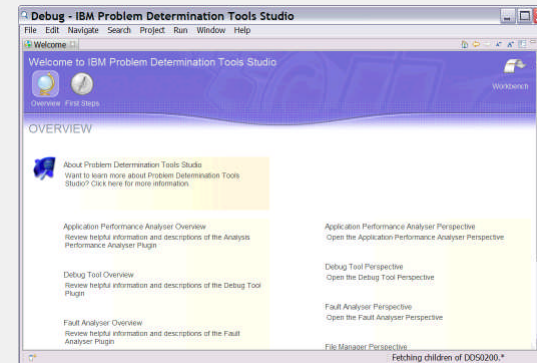
Tools to address your z/OS Development or System Programming needs

What's new in PD Tools V12.1

- New **IBM Problem Determination Tools Studio** pre-packaged with plug-ins
- File Manager DB2 and CICS plug-in
- Initial Workload Simulator plug-in
- Enhanced integration and synergy amongst PD Tools, CICS Explorer and/or IMS Explorer taking advantage of newly announce common z/OS Explorer capabilities
- CICS TS 4.2, IMS V12, MQ 8.1 updates to ensure synchronization with latest subsystems
- Improved Java support in APA and FA

PD Tools provides ...

- Five tools addressing z/OS problem resolution needs - Debug Tool, Fault Analyzer, File Manager, Application Performance Analyzer and Workload Simulator
- Subsystem and language support traversing z/OS provided in a timely manner when subsystems and languages are updated
- Improved TCO with full function tools at competitive price





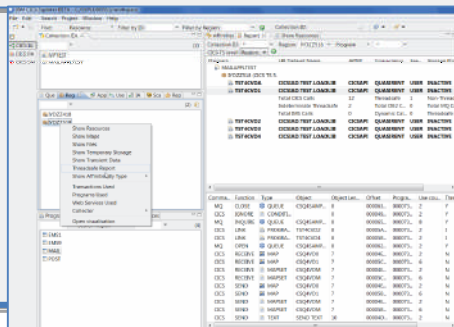
Application insight

What's new in DT V12.1

- Enhanced plug-in for CICS Explorer
- DTCN profile plug-in integrated with CICS Explorer
- Startup at subprogram boundary
- Dynamic debugging supports applications using XPLINK linkage
- Consolidated user exits
- Enhanced remote security
- Numerous other enhancements
- Support for CICS TS V5.1 and IMS V12

DT enables you to...

- Debug 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, RDz, and IMS Enterprise Explorer
- Code coverage tools





Pinpoint enterprise application bottlenecks

What's new in APA V12.1?

- Enhanced plug-in for CICS Explorer
- Integration with z/OS Explorer credentials and connections
- Reduced memory requirement
- Improved CICS and DASD report accuracy
- Sticky notes
- Save report as HTML, PDF, XML
- Email reports
- SSL and pass-phrase support
- Numerous other enhancements

APA enables you to...

- 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
- Broad product support:
 - C/C++, Assembler, COBOL, PL/I, Java V6.0.1, CICS TS V4.2, IMS V12, DB2, WebSphere MQ, and WebSphere Application Server



Manage a variety of enterprise data file structures

What's new in FM V12.1?

- Enhanced plug-in for CICS Explorer, including:
- Support for z/OS data sets, zFS files, CICS Files, TS and TS queues, MQ queues, and DB2 databases
- Integration with z/OS Explorer credentials and connections
- Support for CICS TS V5.1 and IMS V12
- Other Base, DB2, IMS, and plug-in enhancements

FM enables you to...

- Measure and report resource use in virtually any Select, create, browse, copy, edit, print, and format or reformat data files
- Manipulate data using COBOL and PL/I record layouts interactively or in batch.
- Comprehensive, user-friendly, batch and interactive utilities extends standard ISPF
- Access CICS resources with CICS transaction
- Audit logging and scrambling allow development and production use
- SQL Prototyping and Execution
- Broad product support:
 - Works with, CICS, DB2, IMS and z/OS (QSAM, VSAM, PDS, zFS) data
 - Plug-in support for CICS Explorer, RDz, and IMS Enterprise Explorer



Pinpoint the cause of enterprise application failures

What's new in FA V12.1...

- Enhanced plug-in for CICS Explorer
- Integration with z/OS Explorer credentials and connections
- Pass-phrase support
- Java enhancements
- Usability enhancements

FA enables you to...

- Detailed report about program failures
- Fault-history file to track and manage application failures and fault reports
- View storage contents, trace tables and terminal screen images at the time of failure
- Customize message descriptions for failure reports
- Control which users can access history files
- Plug-in support for CICS Explorer, RDz, and IMS Enterprise Explorer

IBM®