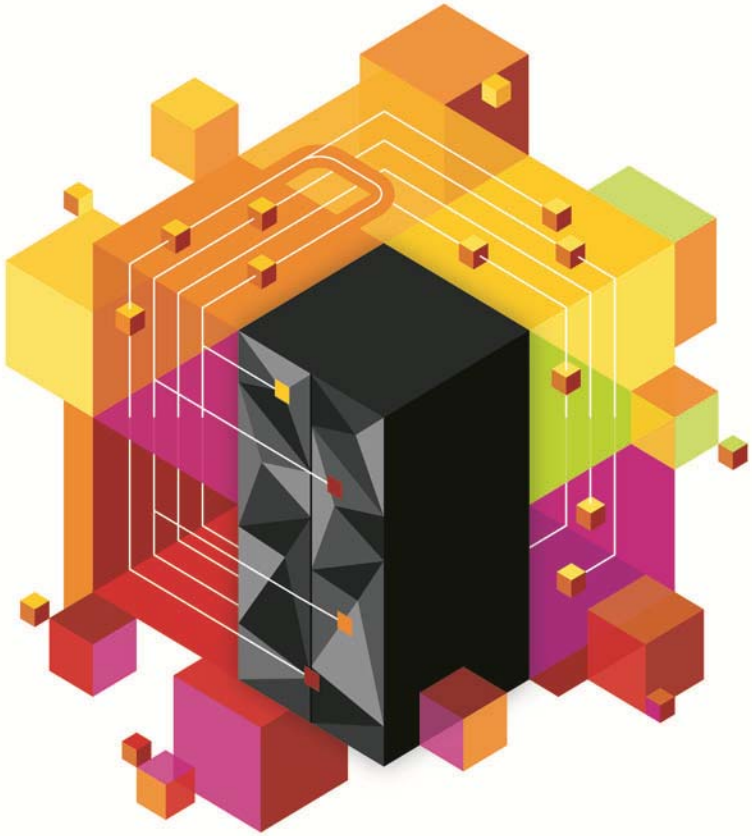
Session 13157:
Lunch and Learn: Live demo! New IBM CICS Tools and IBM Problem Determination Tools



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Vikram Manchala vikramm@us.ibm.com

Date 02/05/2013

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Preface

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IBM Problem Determination Tools Version 12.1

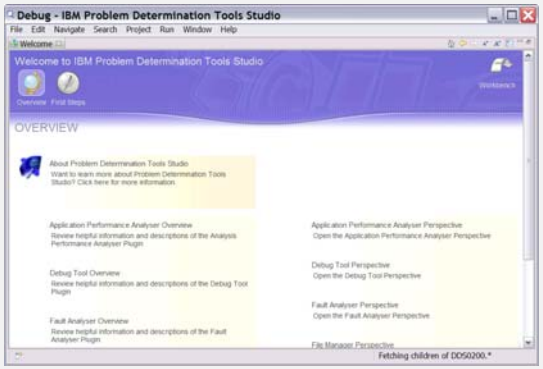
Tools to address your z/OS Development or System Programming needs

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



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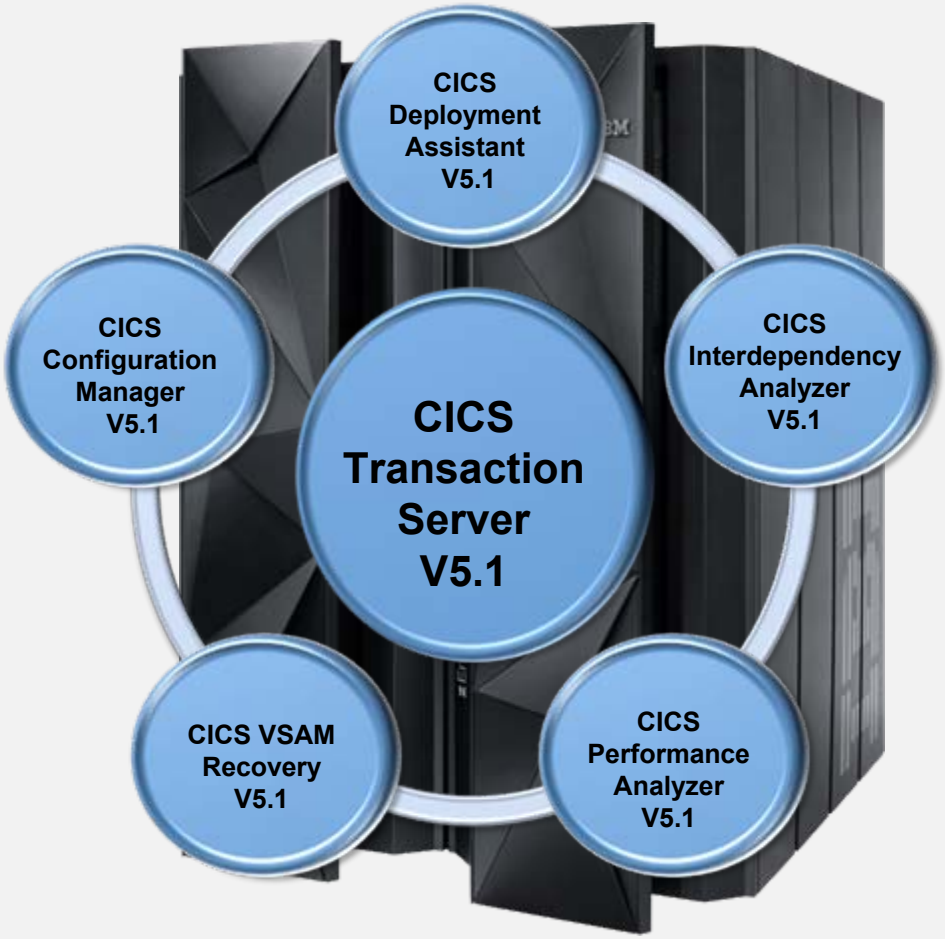
Five core CICS Tools – Day one CICS TS V5.1 exploitation

Fully integrated with CICS TS & CICS Explorer

- Discovery and visualization aids insight into application and platform dependencies
- Automation speeds service delivery and ensures standardization and governance
- Modern, integrated user interfaces lower skills barrier
- Day-1 exploitation of CICS TS V5.1 new capabilities reduces time to value
- Five core tools support and extend the CICS runtime



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IBM CICS Explorer® V5.1

Enhanced!

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

ISM

New!

Migrated file view

VT

Daemon & Connection Status & Test

TG

Threadsafe, File, CPU, Response & Wait analysis, Statistics, Alerts, Graphical and Sheet views

PA

Deployment, Discovery, Visualization, Cloning, Automation & Control

DA

Enhanced!

Execution Tree Dependencies Queries Command Flow

IA

CRUD, Install, History, Backout, Audit, Search, Compare, Packaging

CM

IMS DB mgt

IMS Explorer

Develop Test

RDz

Enhanced!

CRUD, Install, Control, Filter, Sort, Topology, Events, ATOM, Java, WLM, Txn Tracking, Copy/Paste, Cloud, Web apps

SM

z/OS Connections, z/OS Datsasets, zFS Files, JES

z/OS Explorer

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

Configuration Status Control, Test

MQ

Status Situations Topology

XE

Manipulate, browse z/OS data sets, z/FS, VSAM, MQ, CICS, DB2

FM

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

FA

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

DT

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

APA

3270 application performance testing

WSIM

Complete PD Tools workbench

PDT Studio

New!

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
VT	CICS VAM Transparency

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

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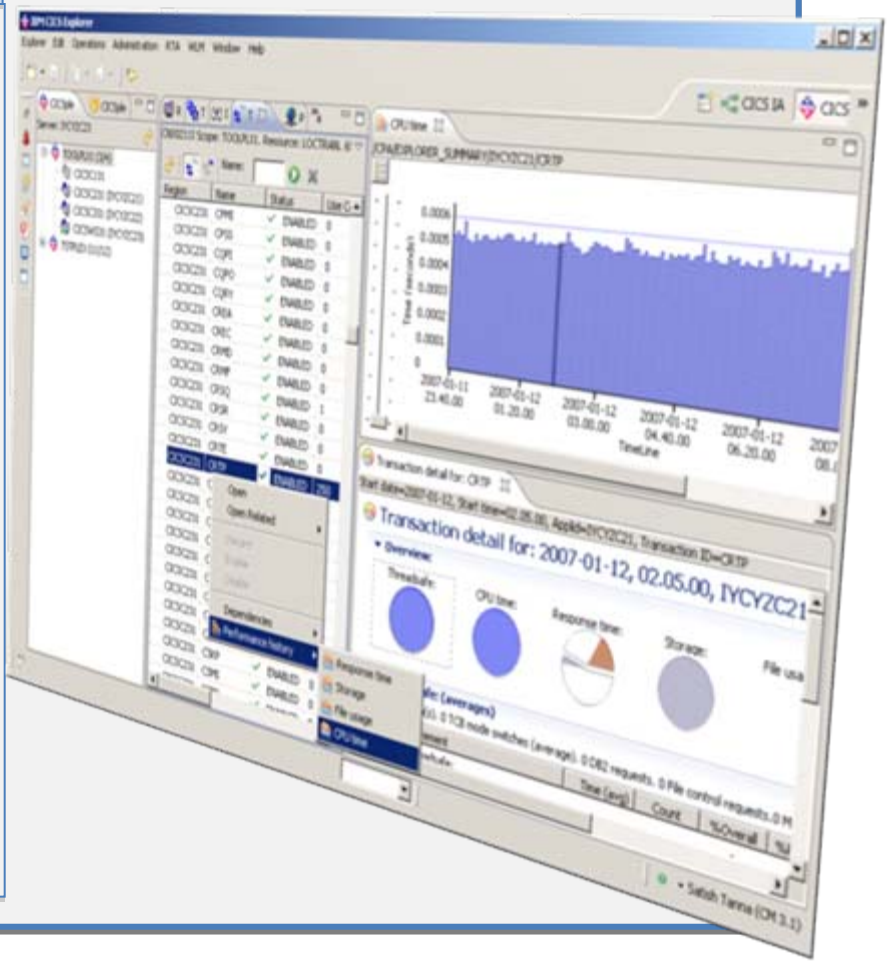
Live Demonstration via CICS Explorer
Using PD and CICS tools plug-ins

The General Insurance Application (GENAPP)

The general insurance application is a working COBOL application that you can use to try out different features of CICS.

- The general insurance application simulates transactions made by an insurance company to create and manage its customers and insurance policies.
- The application provides sample data and a 3270 interface for creating and inquiring on customers and policy information. Because the application is designed to simulate the flow of an application, some aspects of the application architecture do not use best practices.
- However, the application is designed to be extended to demonstrate other ways of accessing and transforming traditional applications that are best practices.
- GENAPP is available described in greater detail in the CICS V51 info-center and is also available as suportpac CB12.



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Lunch and Learn: Live demo! New IBM CICS Tools and IBM Problem Determination Tools Efficiently Support the z/OS Ecosystem

Product Descriptions and Sources of Information

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CICS Deployment Assistant for z/OS V5.1

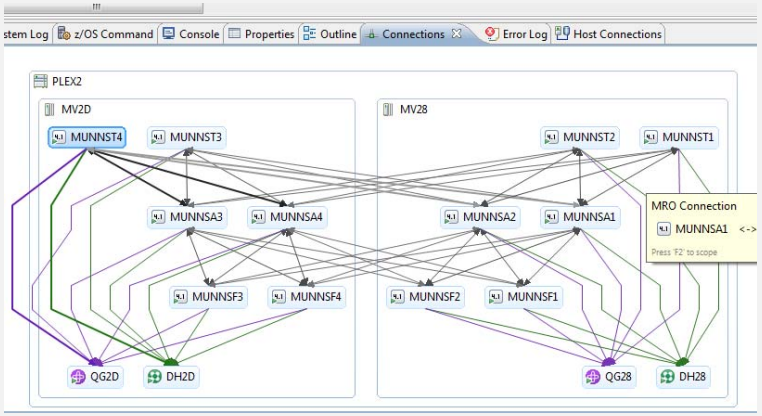
CICS Discovery and Provisioning

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 sub-systems
- Automation creates new CICSplex
- Plexify and clone CICS regions
- Start and stop a CICS region



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CICS Performance Analyzer for z/OS V5.1

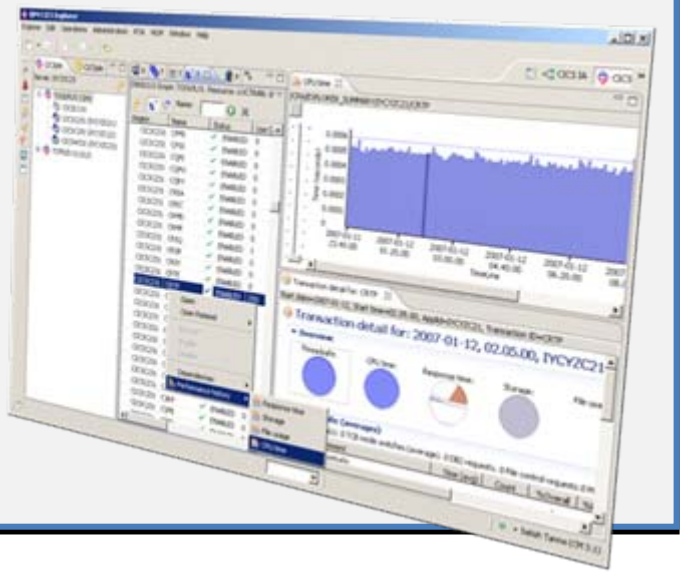
Performance insight

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 log stream 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



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CICS Interdependency Analyzer for z/OS V5.1

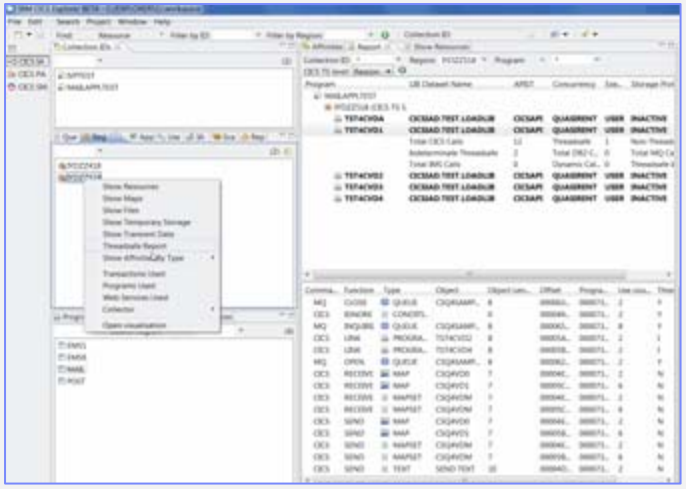
Application Understanding

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



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Application Performance Analyzer for z/OS (APA) V12.1

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

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Fault Analyzer for z/OS (FA)

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

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IBM Debug Tool for z/OS V12.1

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
- 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

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File Manager for z/OS (FM) V12.1

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…

- 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

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CICS Configuration Manager for z/OS V5.1

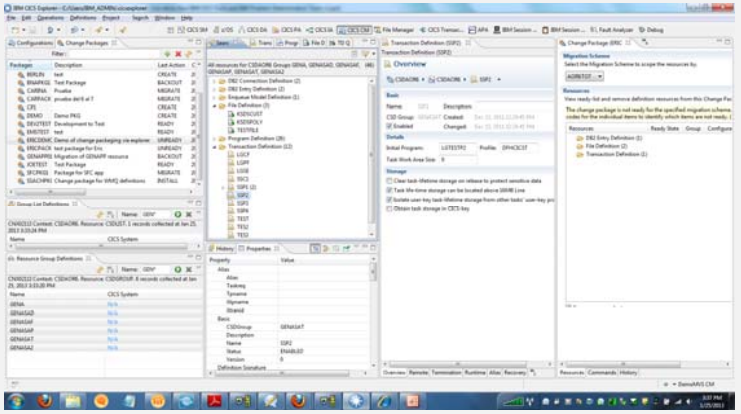
Single point of control over CICS resource definitions

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



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CICS VSAM Recovery for z/OS V5.1

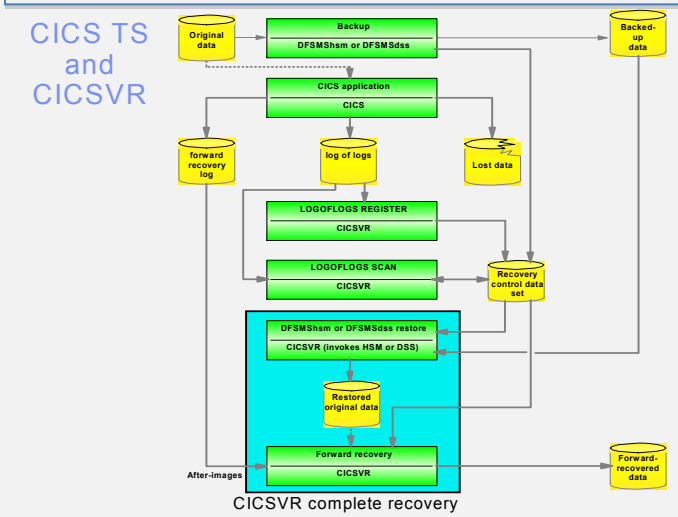
Reduce the risk to your VSAM Data

What's new in CICS VR V5.1…

- Replication logging in support of the GDPS-Active-Active availability solution
- Batch logging enhancements
- Batch backout improvements
- Migration utility enhancements
- Logstream printing and other usability enhancements

CICS VR enables you to…

- Supports backups created by Backup-While-Open (BWO)
- Automate recovery
- Test forward recovery and backout
- Produce disaster recovery reports



CICSVR complete recovery

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CICS VSAM Transparency for z/OS V2.1

Modernize your CICS and batch VSAM data

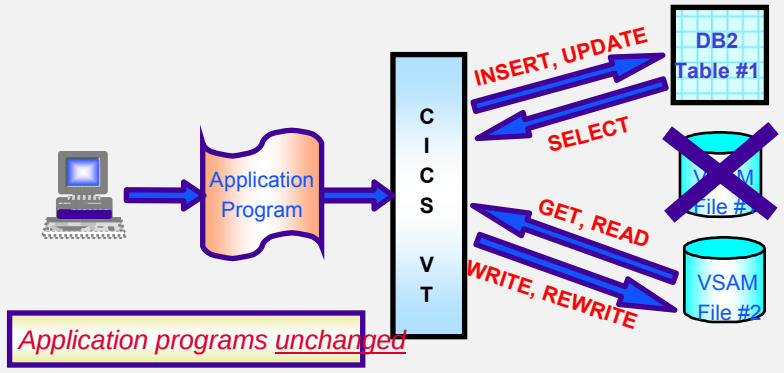
What's new in CICS VT V2.1…

- Auto-generate customized data migration JCL
- Enhanced IDCAMS REPRO support
- New migration tracking report
- Improved diagnostic facilities
- Support for CICS® Transaction Server V5.1 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
- New plug-in for CICS Explorer

CICS VT enables you to…

- Migrate VSAM files to DB2 without changing application programs
- Maintain single copy of the data
- CICS and batch programs access data in DB2 under the control of CICS VT
- Access migrated DB2 data natively using SQL

After CICS VT



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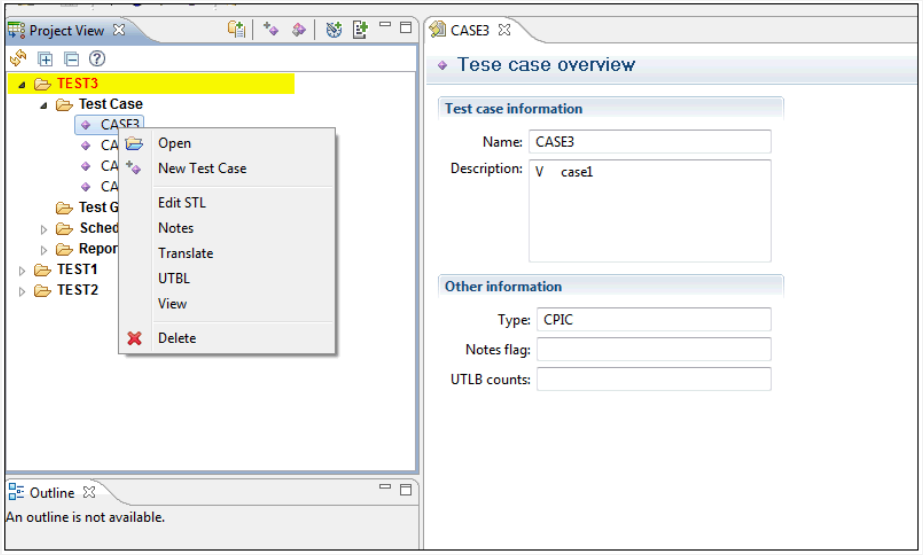
IBM Workload Simulator for z/OS (WSIM)

Regression and load test interactive z/OS applications

What's new in WSIM V12.1…

- Integrated plug-in for CICS Explorer, RDz, and IMS Enterprise Explorer



WSIM enables you to…

- Drive 3270 performance test workload on System z
- Broad protocol support
- SNA, CPI-C (LU 6.2), and enhanced TCP/IP support, Telnet 3270, 3270E, and 5250 clients, Telnet line mode network virtual terminal clients, Simple TCP and UDP clients, File transfer protocol (FTP) clients
- Multiple client applications that run on top of TCP/IP
- SNA LU simulation
- Test manager (WTM) guides the user through the test process.
- Extensive run-time, script-generating, and post-test utilities
- ISPF Interface
- Plug-in support for CICS Explorer, RDz, and IMS Enterprise Explorer

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CICS and PD Tools Solutions by Key Business Requirement

Solutions \ Requirement	Business Flexibility	IT Service Management	Governance & Compliance	Reduced TCO
CICS Deployment Assistant	√	√	√	√
CICS Interdependency Analyzer	√	√	√	√
CICS Transaction Gateway	√			√
CICS VSAM Transparency	√	√	√	√
CICS Configuration Manager	√	√	√	√
CICS Performance Analyzer	√	√	√	√
CICS VSAM Recovery		√	√	√
CICS Batch Application Control		√		√
IBM Session Manager		√	√	√
CICS Online Transmission Time Optimizer		√		√
Application Performance Analyzer for z/OS	√			√
Fault Analyzer for z/OS	√	√		√
Debug Tool for z/OS	√			√
File Manager for z/OS	√	√	√	√
Workload Simulator for z/OS	√	√	√	√

CICS Tools PD Tools

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New!

CICS TS V5.1 Evaluations. No Cost. No Fuss.

CICS Transaction Server for z/OS V5.1 Developer Trial

- **Try-before-you-buy** the latest production ready edition of CICS Transaction Server
- **Zero-cost license**, no single version charging (SVC) period, no reason to wait
- **Easy ordering via IBM ShopzSeries**, with internet or physical delivery options

What's new with the Developer Trial?

- ***Evaluate the value*** of a CICS TS upgrade, before committing time and resources to a production migration project.
- ***Explore all CICS TS V5.1 features*** and benefits, in non-production environments only.
- ***Decide to upgrade to CICS TS V5.1*** - the latest production ready release of CICS TS that delivers major enhancements in five key areas

Get ready for the cloud with CICS TS V5.1

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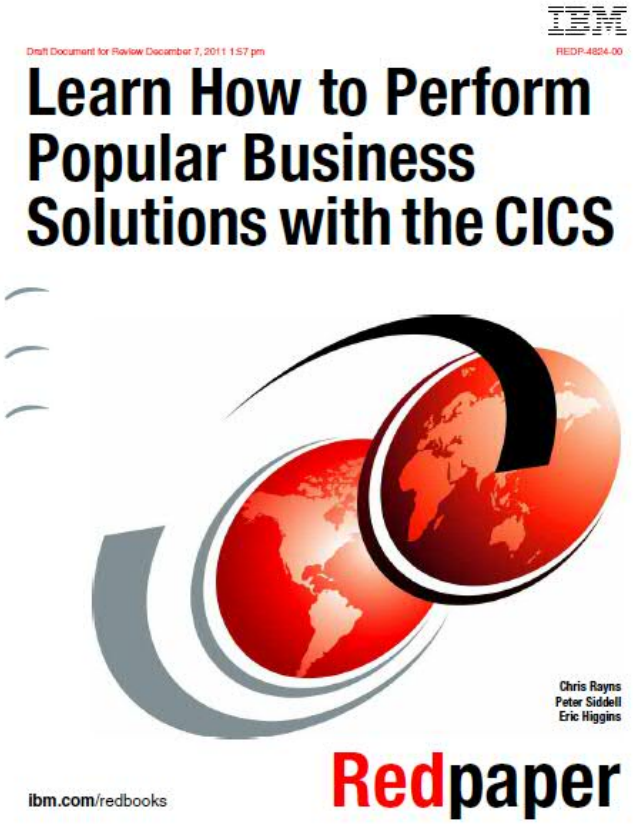
GENAPP – SupportPac and Redpaper

- **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
- **There is a paper based on GENAPP with scenarios in this new IBM Redpaper**
  - Download from http://www.redbooks.ibm.com/abstracts/redp4824.html?Open



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Sources of Information

- **Web**
  - CICS home page ibm.com/cics
  - CICS Tools home page ibm.com/cics/tools/
  - PD Tools site ibm.com/software/awdtools/deployment/
  - CICS Tools trials ibm.com/software/os/zseries/trials/cicstools/
  - CICS Explorer home page ibm.com/cics/explorer
  - CICS Explorer download page http://ibm.com/cics/explorer/download
- **Demos and animations**
  - CICS Explorer animation - http://www.youtube.com/watch?v=-NzWwUi5lLw
  - CICS Explorer flash demo - featuring Threadsafe Analysis using the CICS PA, CICS IA, and CICS CM perspectives - http://www.youtube.com/watch?v=Jk3YdvI8lno
- **Other**
  - CICS Transaction Server in your SOA - Great source of links to more CICS ecosystem information - ftp://ftp.software.ibm.com/software/htp/cics/presentations/CICS_TS_in_your_SOA_-_Links_-_Issue_3.ppt

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ibm/developerworks/cicsdev

facebook.com/IBMCICS

twitter.com/IBM_CICS

youtube.com/cicsfluff

youtube.com/cicsexplorer

ibm.com/cics

twitter.com/IBM_System_z

CICS Explorer Forum
ibm.com/developerworks/forums/forum.jspa?forumID=1475&start=0

CICS-L list Forum
listserv.uga.edu/archives/cics-l.html

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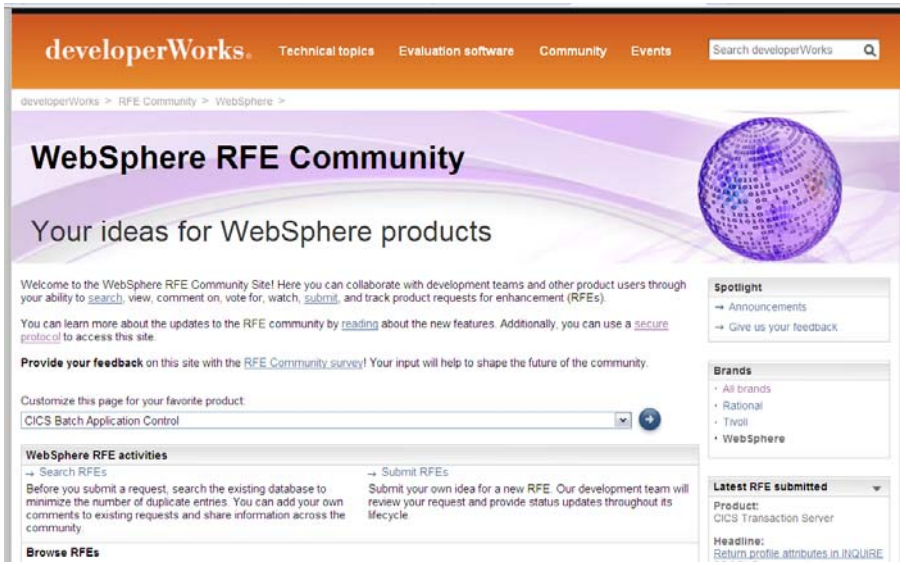
Raising new requirements with RFE

- **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



- **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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Select Demonstration Screen Shots

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CICS Explorer Introduction

- The following slides show basics for installing and customizing the CICS Explorer with the available tooling plug-ins

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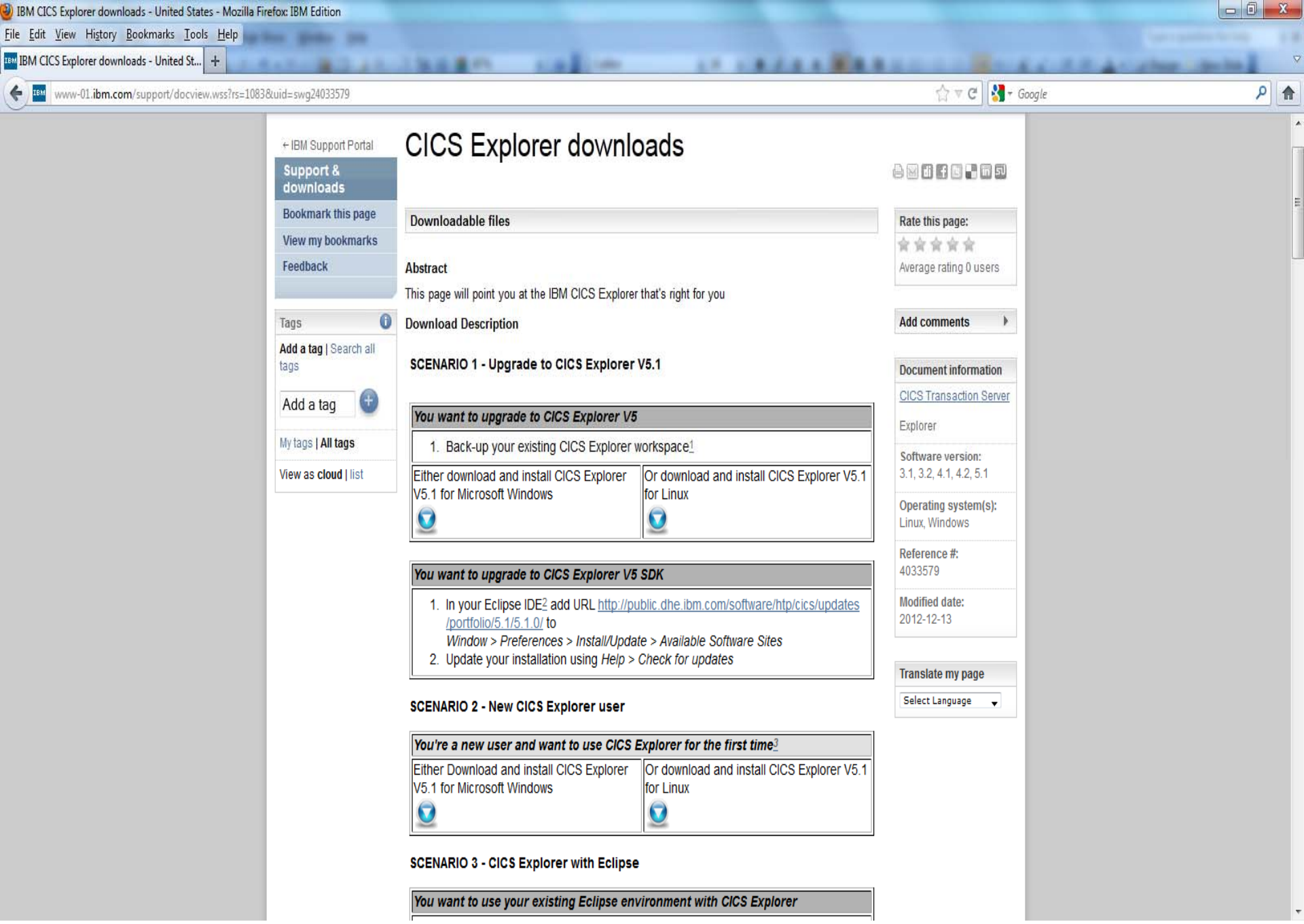

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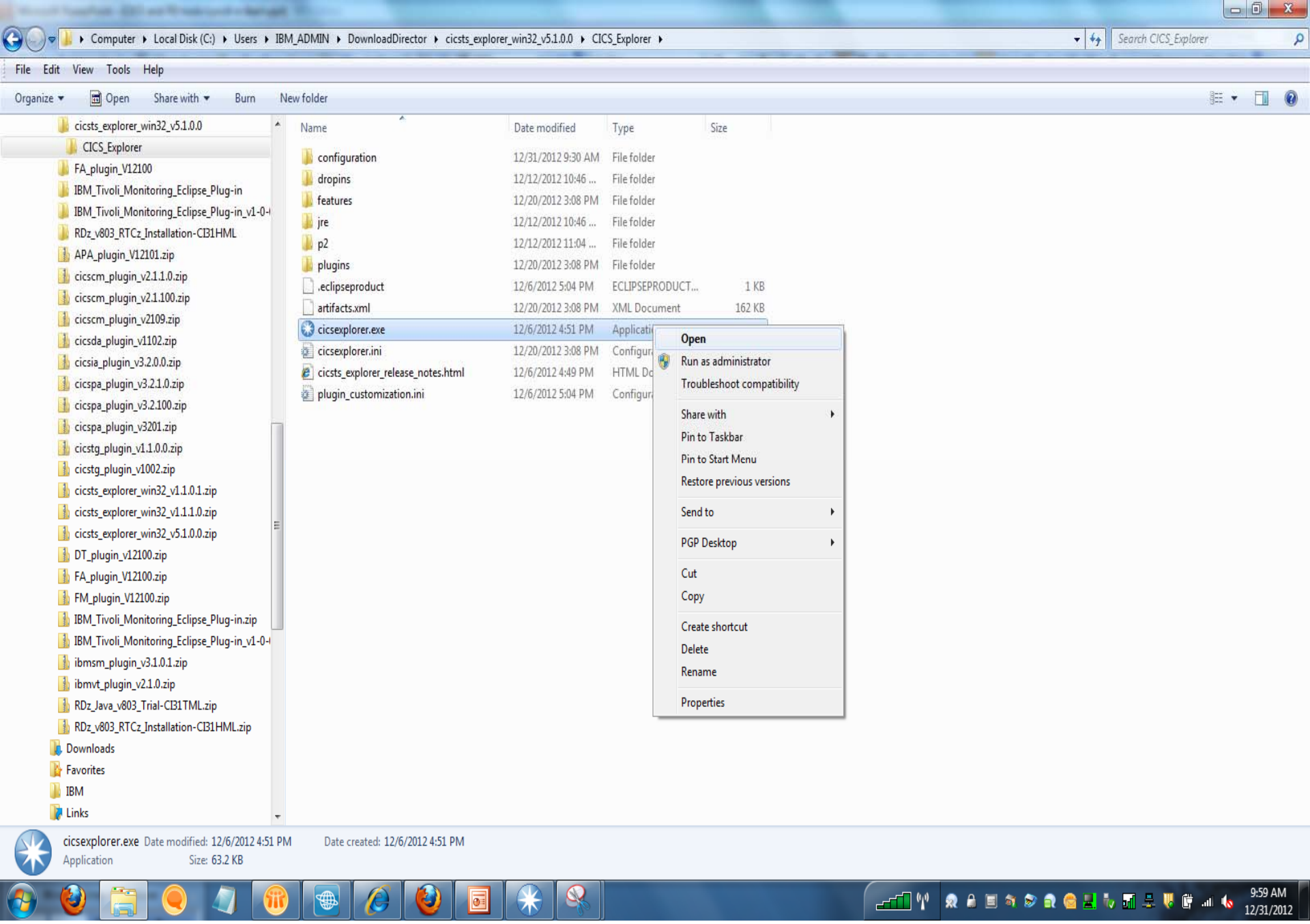

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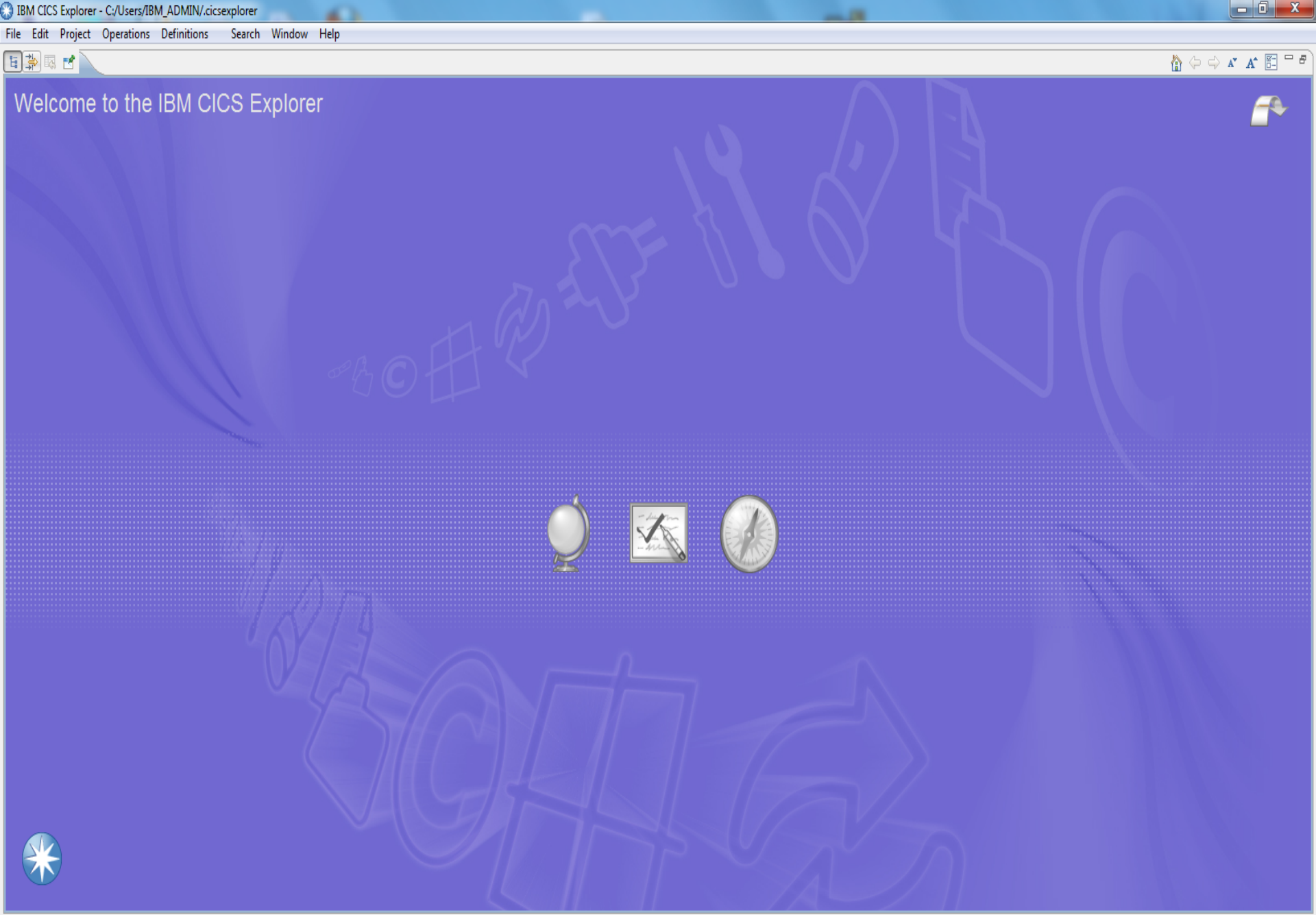

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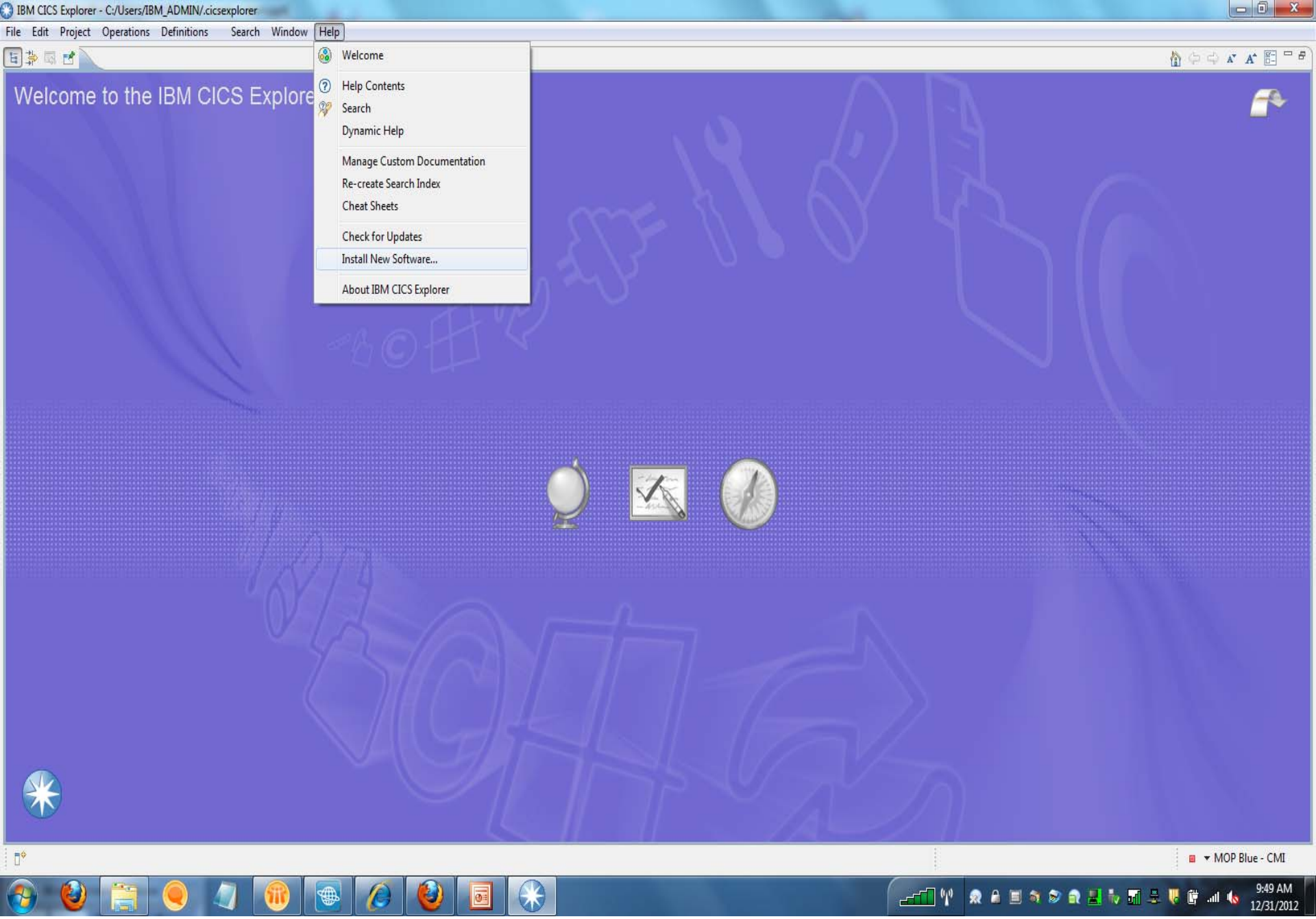

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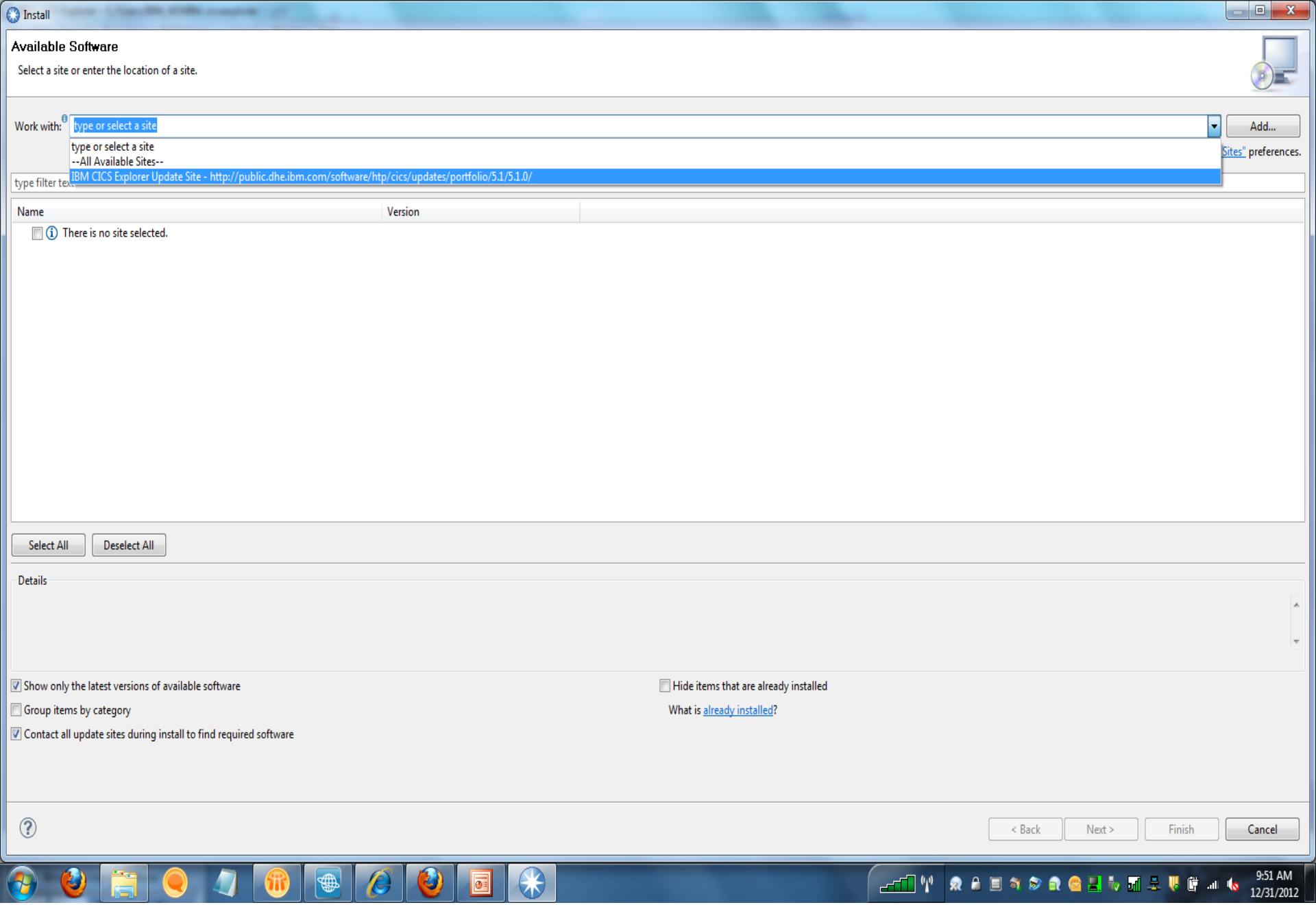

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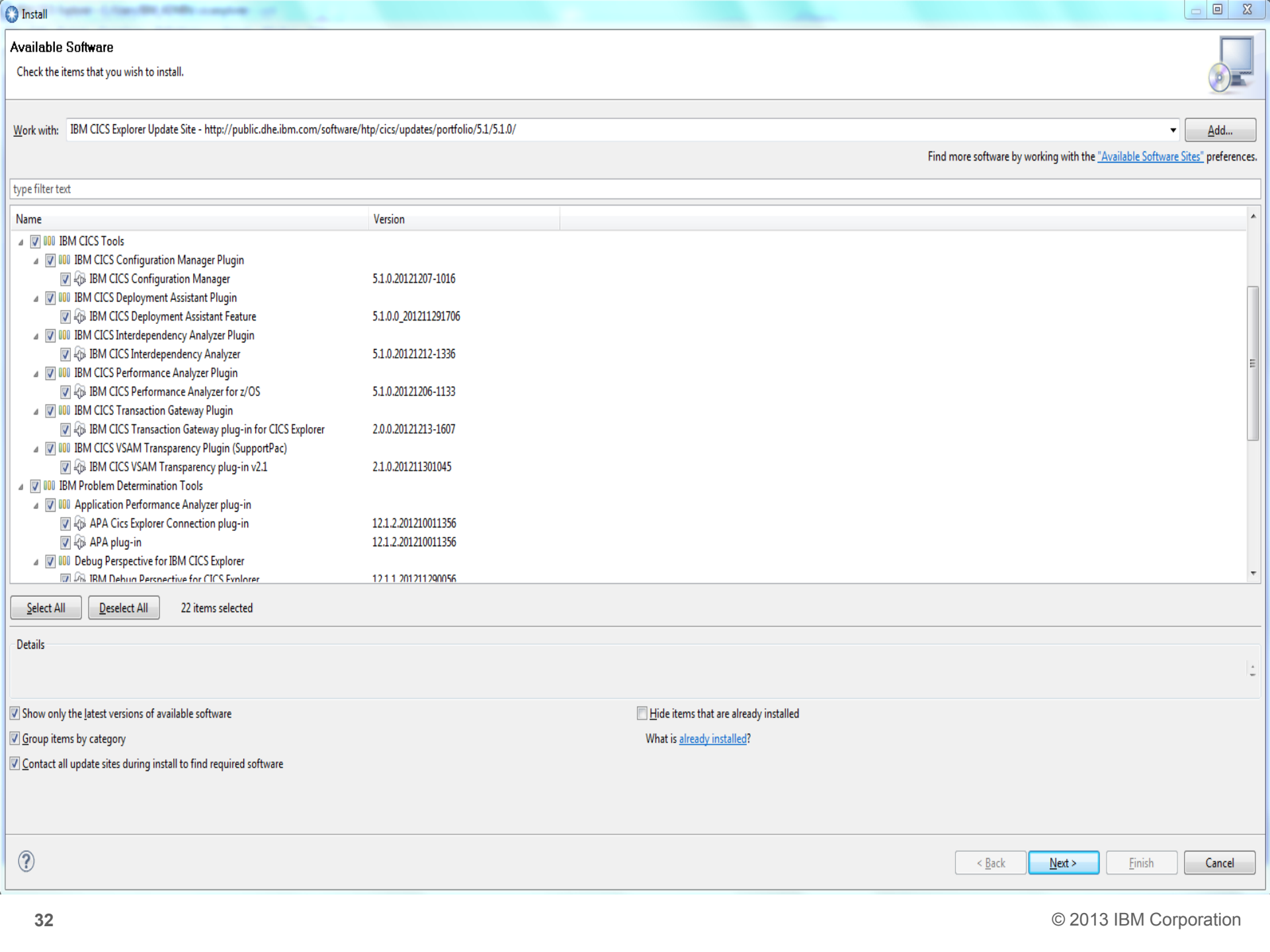

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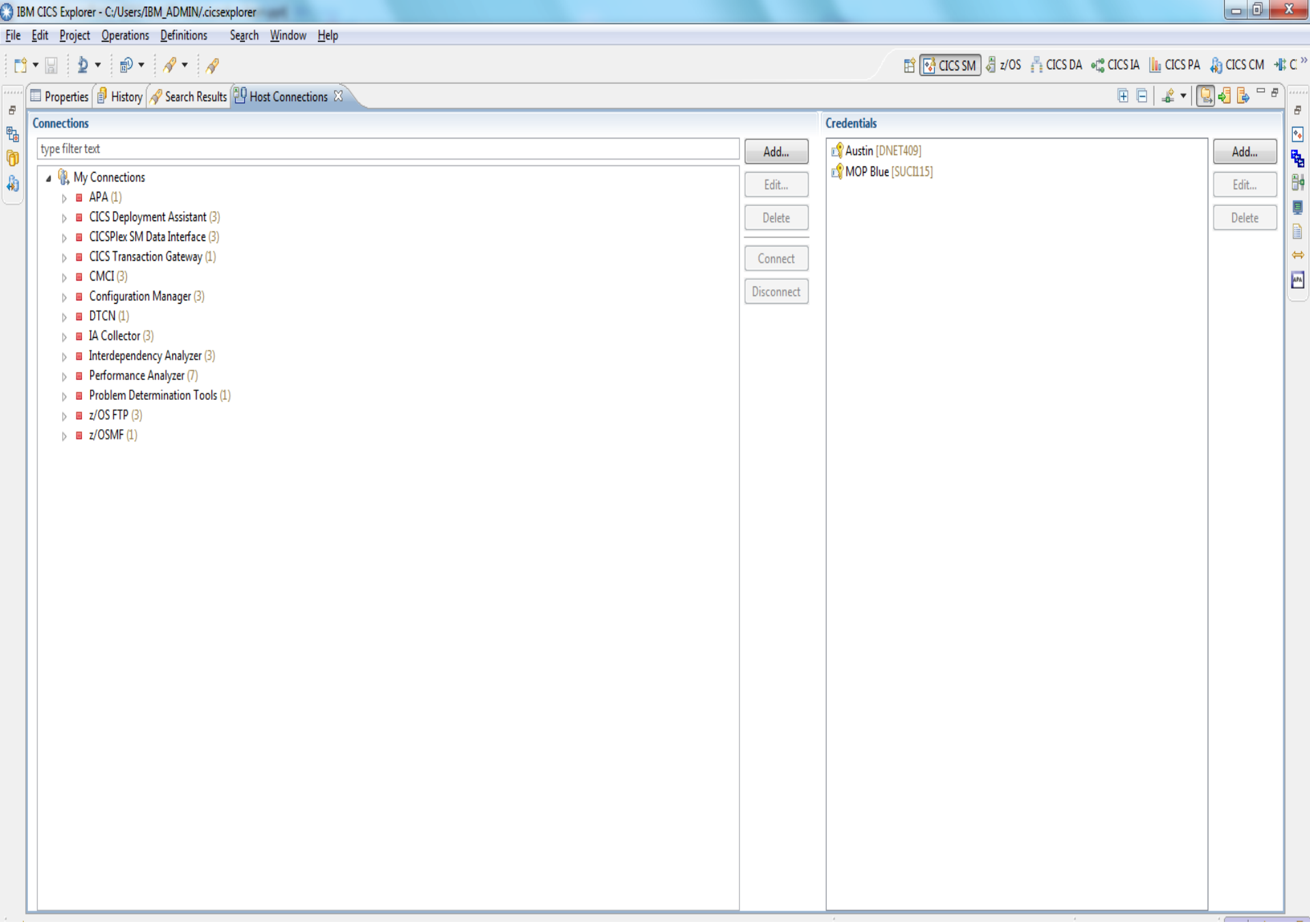

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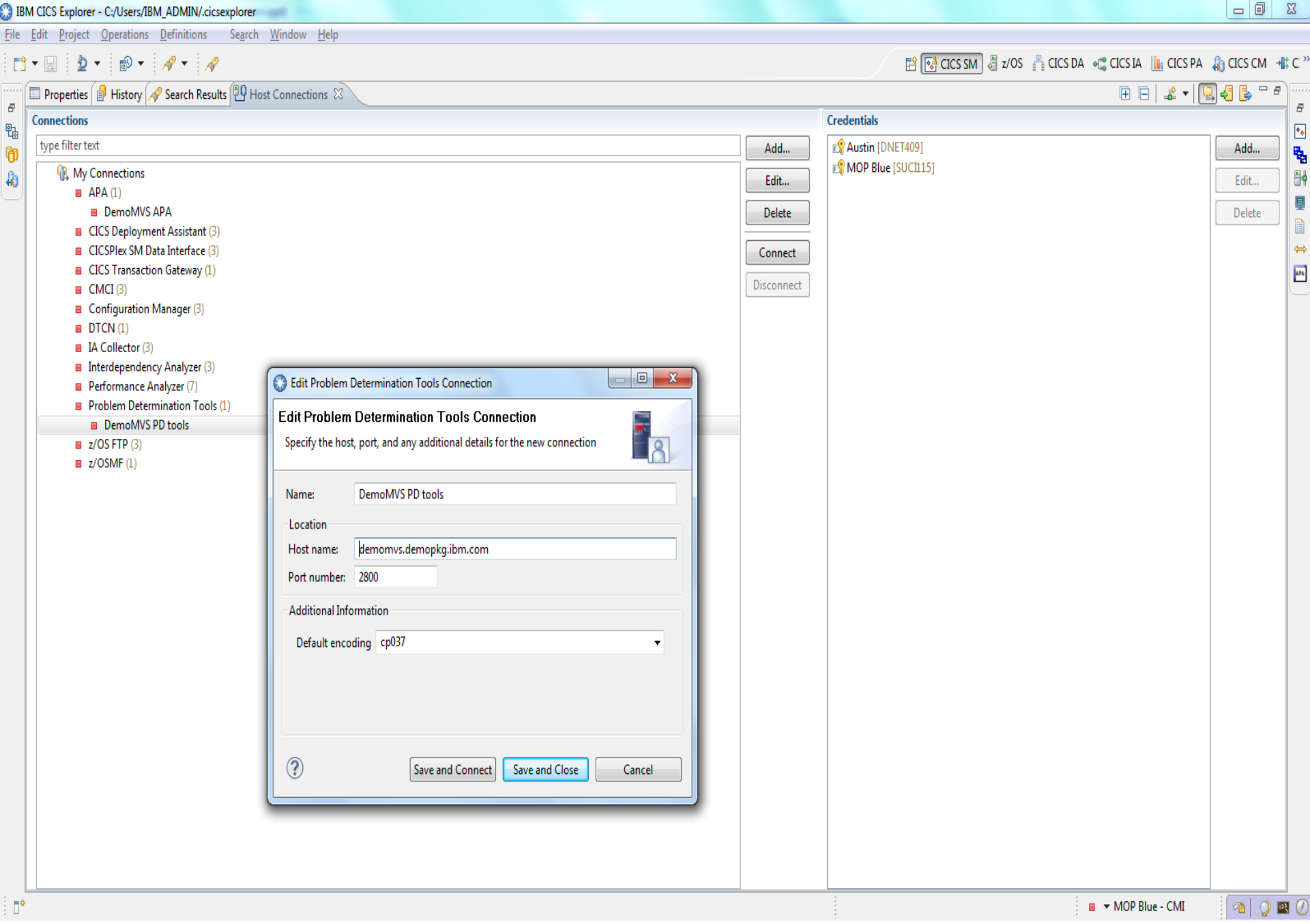

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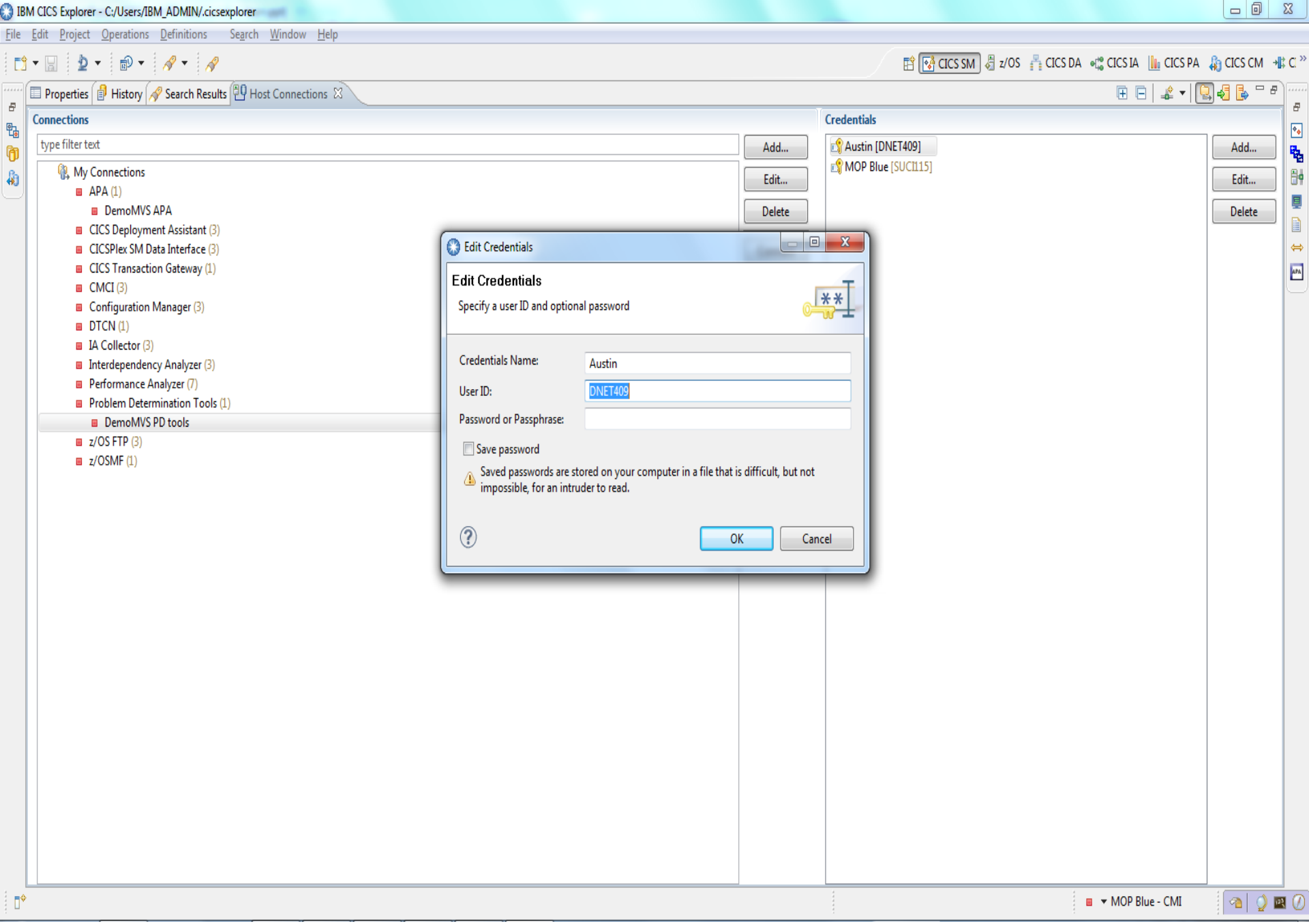

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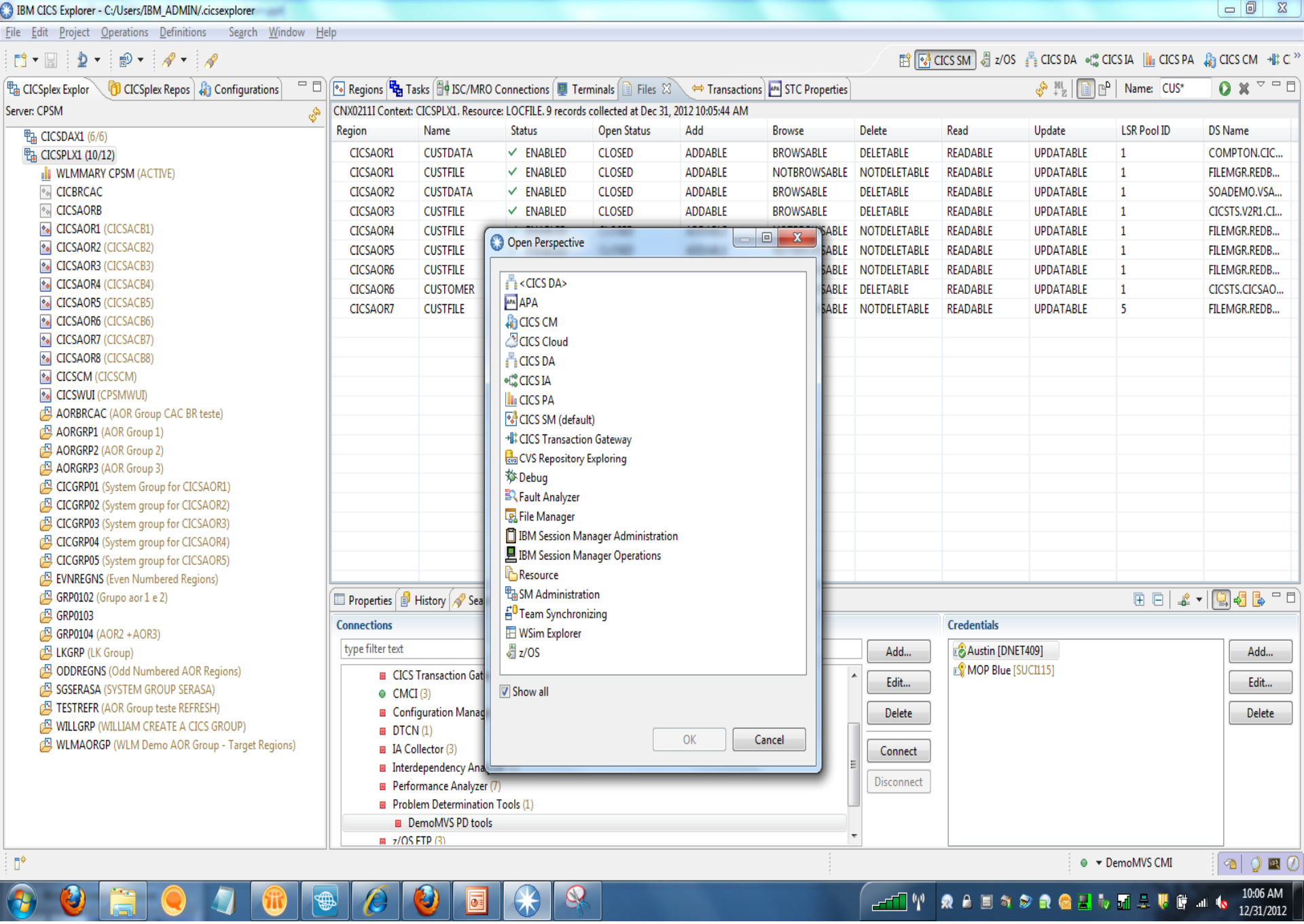

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Use CICS and PD tools to Diagnose a real issue

- The following slides show how CICS and problem determination tooling work together to resolve a real world issue

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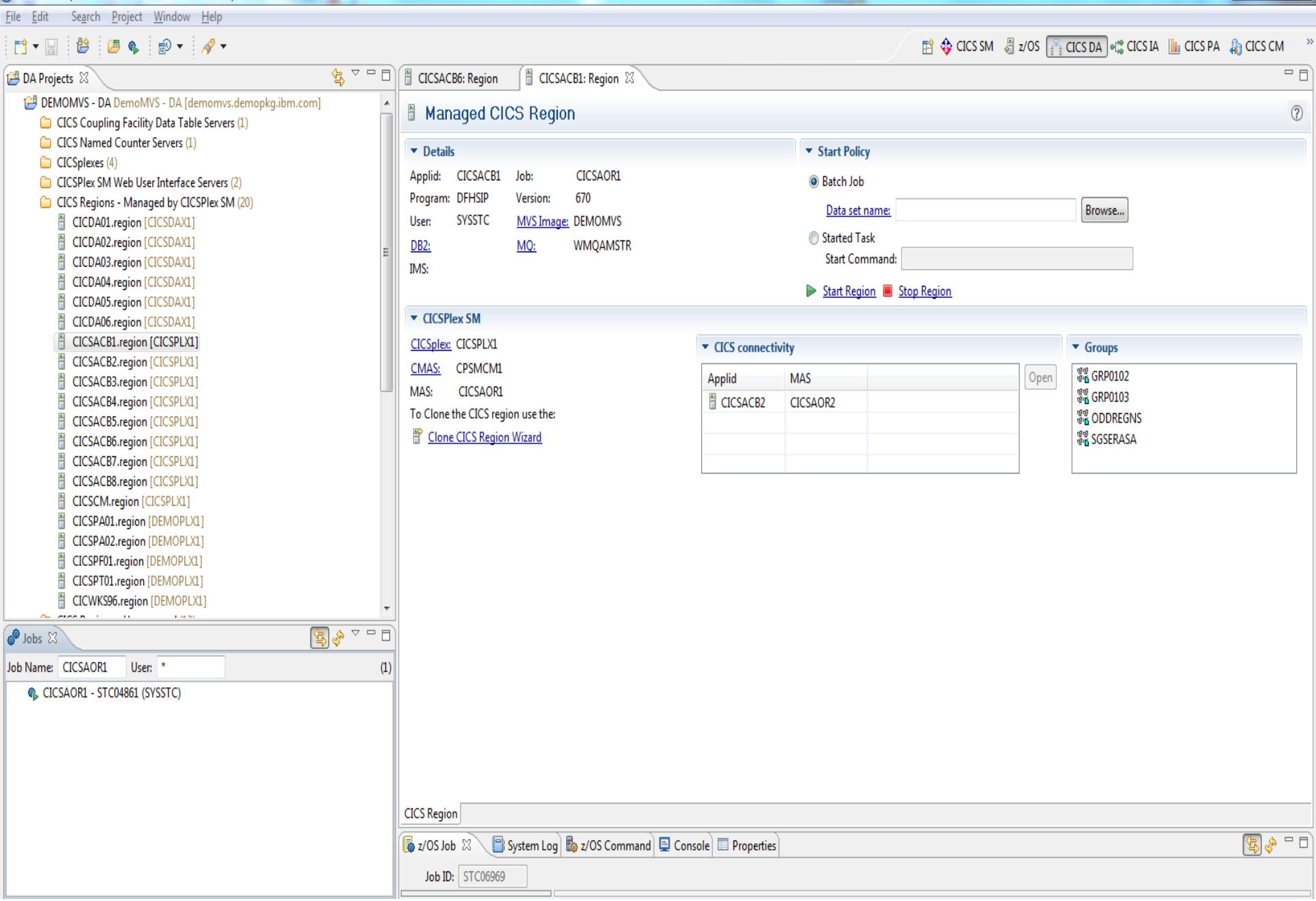

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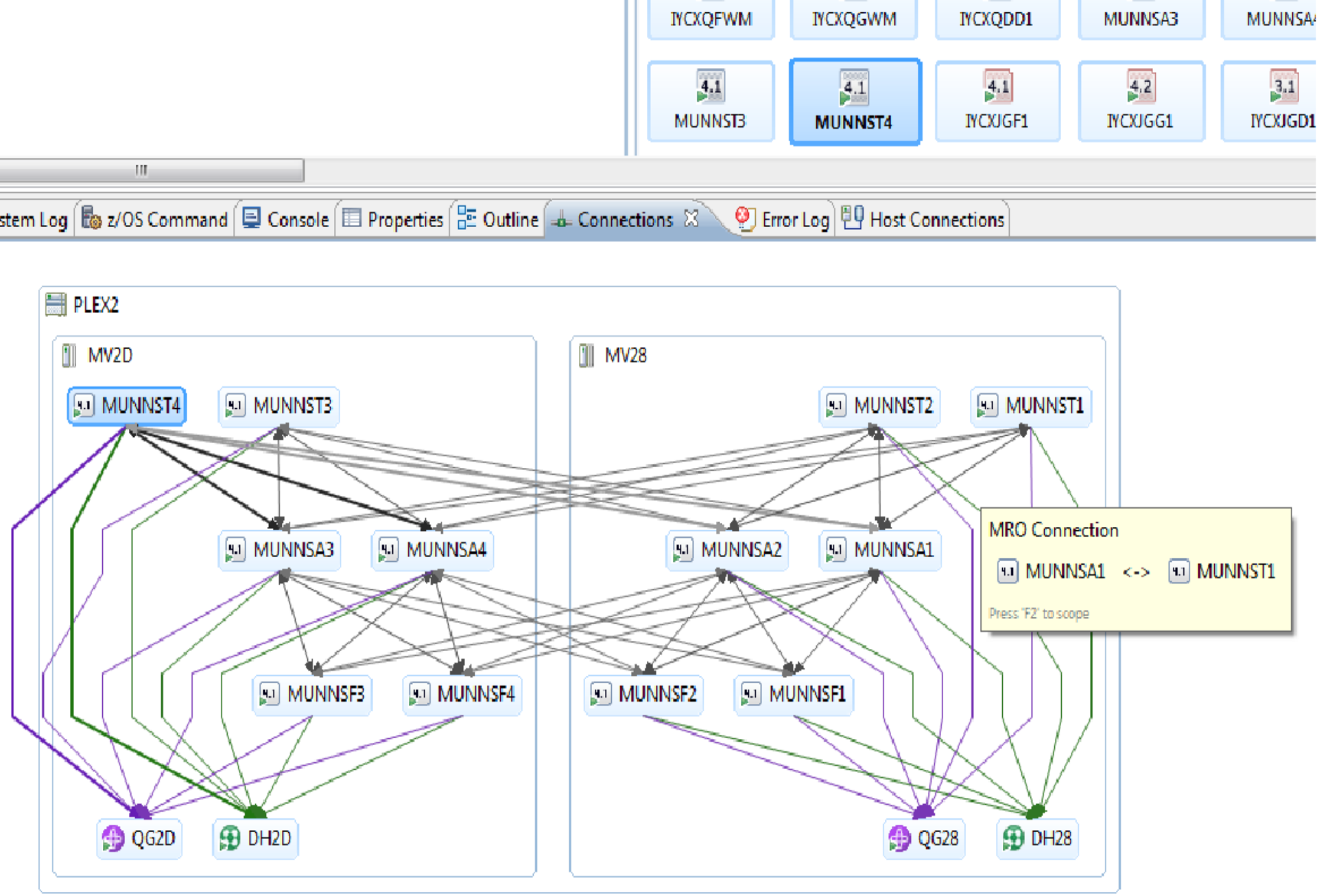

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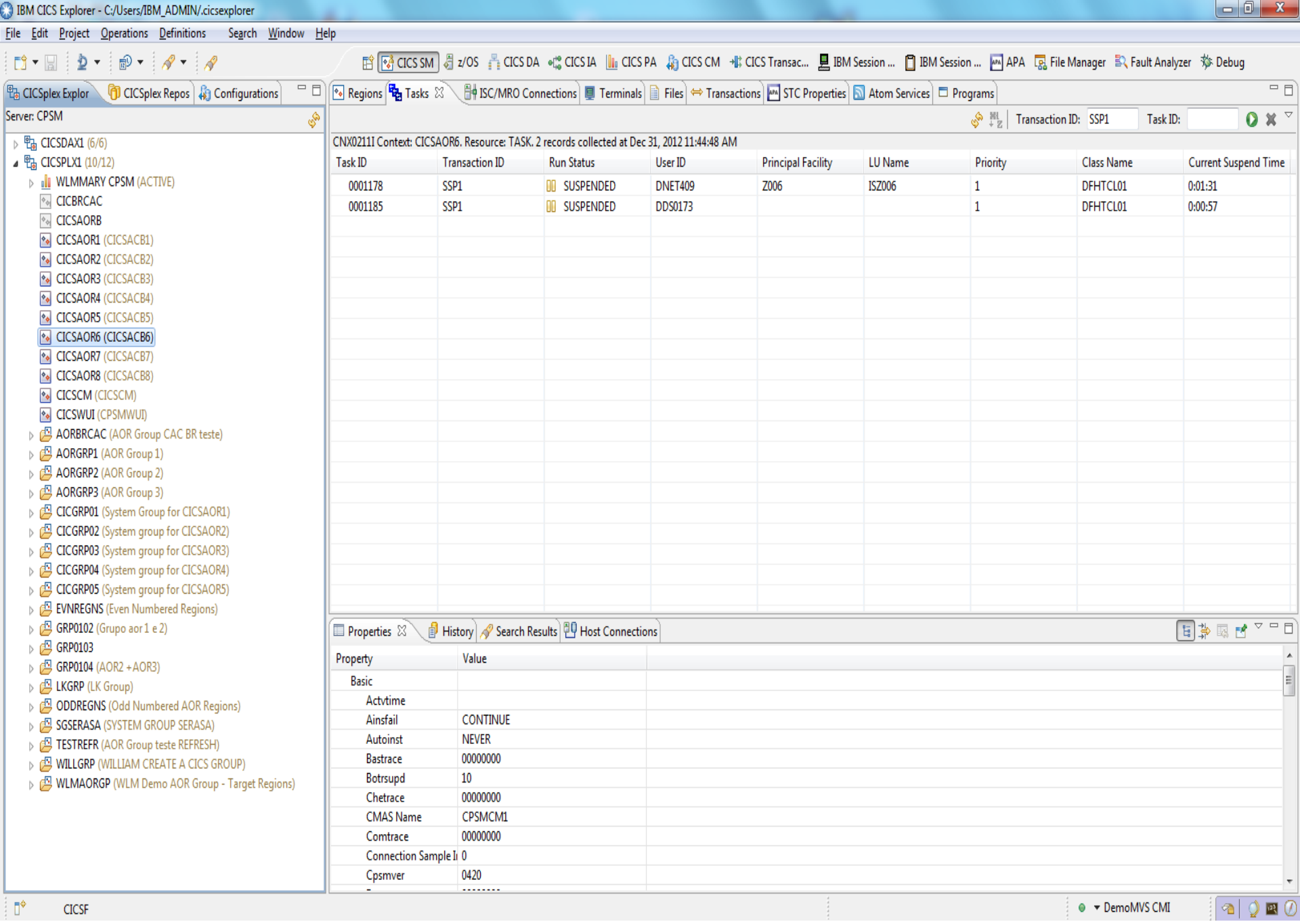

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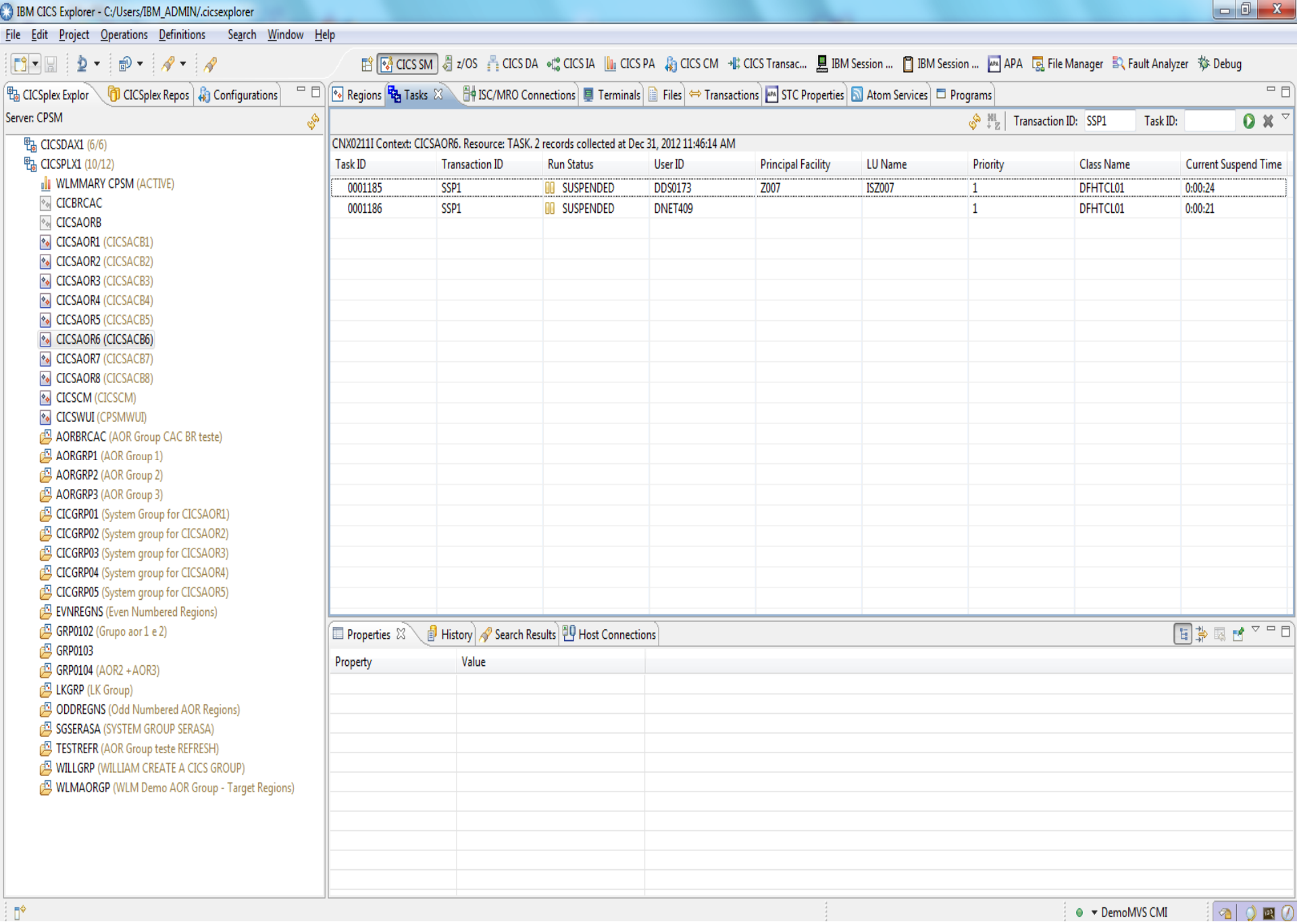

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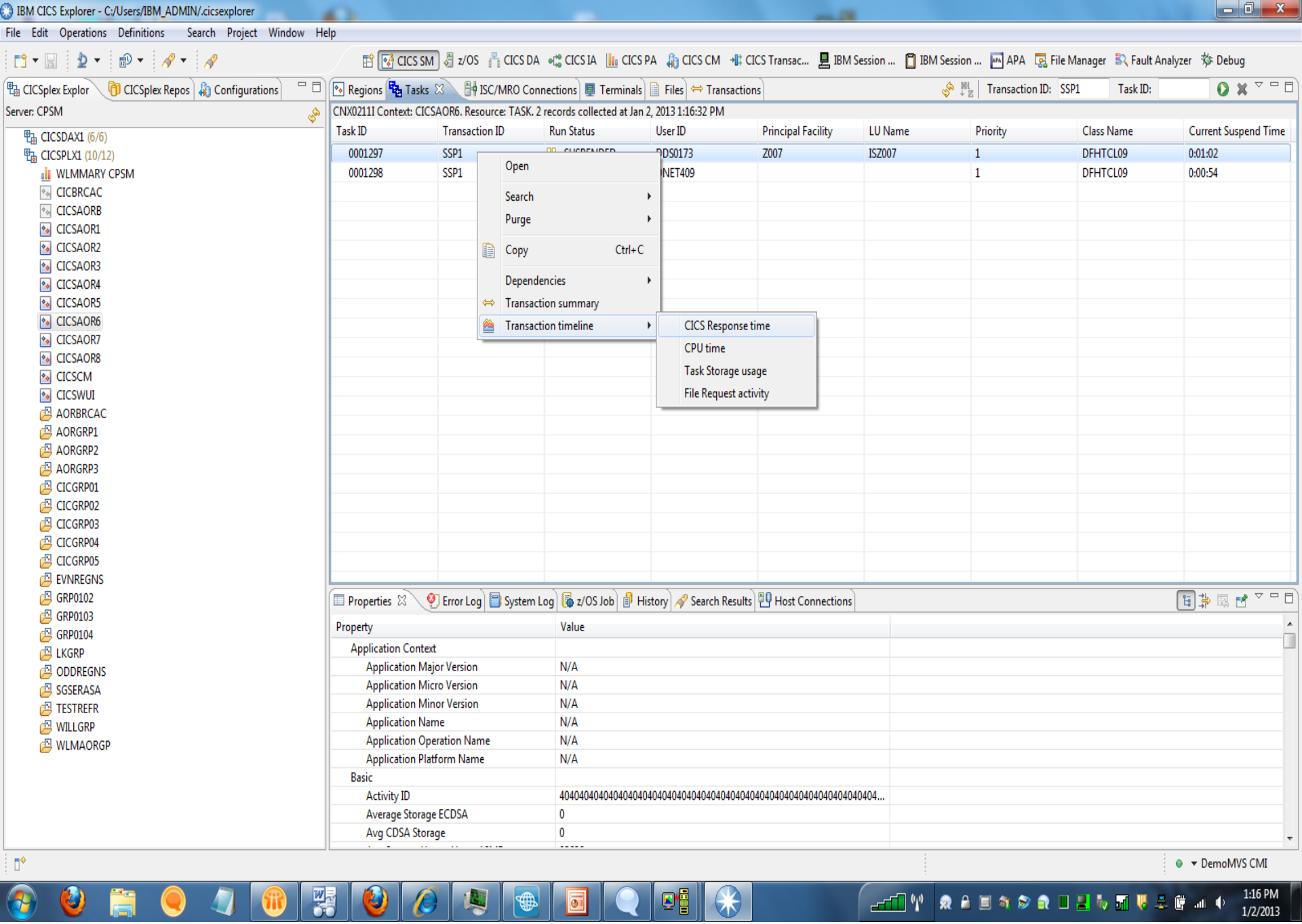

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CICS SM z/OS CICS DA CICS IA CICS PA CICS CM CICS Transac... IBM Session ... IBM Session ... APA File Manager Fault Analyzer Debug

CICSplex Explor CICSplex Repos Configurations

Server: CPSM

- CICSDAX1 (6/6)
- CICSPLX1 (10/12)
  - WLMMARY CPSM (ACTIVE)
  - CICBRCAC
  - CICSAORB
  - CICSAOR1 (CICSACB1)
  - CICSAOR2 (CICSACB2)
  - CICSAOR3 (CICSACB3)
  - CICSAOR4 (CICSACB4)
  - CICSAOR5 (CICSACB5)
  - CICSAOR6 (CICSACB6)
  - CICSAOR7 (CICSACB7)
  - CICSAOR8 (CICSACB8)
  - CICSCM (CICSCM)
  - CICSWUI (CPSMWUI)
  - AORBRCAC (AOR Group CAC BR teste)
  - AORGRP1 (AOR Group 1)
  - AORGRP2 (AOR Group 2)
  - AORGRP3 (AOR Group 3)
  - CICGRP01 (System Group for CICSAOR1)
  - CICGRP02 (System group for CICSAOR2)
  - CICGRP03 (System group for CICSAOR3)
  - CICGRP04 (System group for CICSAOR4)
  - CICGRP05 (System group for CICSAOR5)
  - EVNREGNS (Even Numbered Regions)
  - GRP0102 (Grupo aor 1 e 2)
  - GRP0103
  - GRP0104 (AOR2 +AOR3)
  - LKGRP (LK Group)
  - ODDREGNS (Odd Numbered AOR Regions)
  - SGSERASA (SYSTEM GROUP SERASA)
  - TESTREFR (AOR Group teste REFRESH)
  - WILLGRP (WILLIAM CREATE A CICS GROUP)
  - WLMAORGP (WLM Demo AOR Group - Target Regions)

Regions Tasks ISC/MRO Connections Terminals Files Transactions STC Properties Atom Services Programs

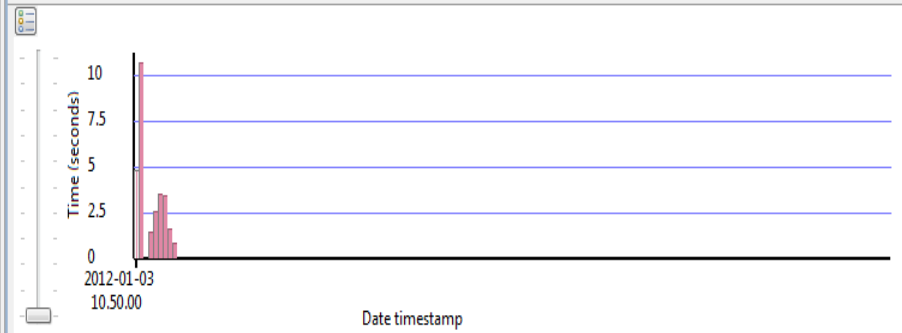
Name: SSP1

CNX0211I Context: CICSAOR6. Resource: LOCTRAN. 1 records collected at Dec 31, 2012 11:50:53 AM

Region	Name	Status	Use Count	Program	Priority	Transaction Class	Purgeability	Dumping	Routing
CICSAOR6	SSP1	ENABLED	11	LGTESTP1	1	DFHTCL01	NOTPURGEABLE	TRANDUMP	STATIC

Properties History Search Results Host Connections GENAPP CICS Response time

CICSACB6+SSP1



GENAPP

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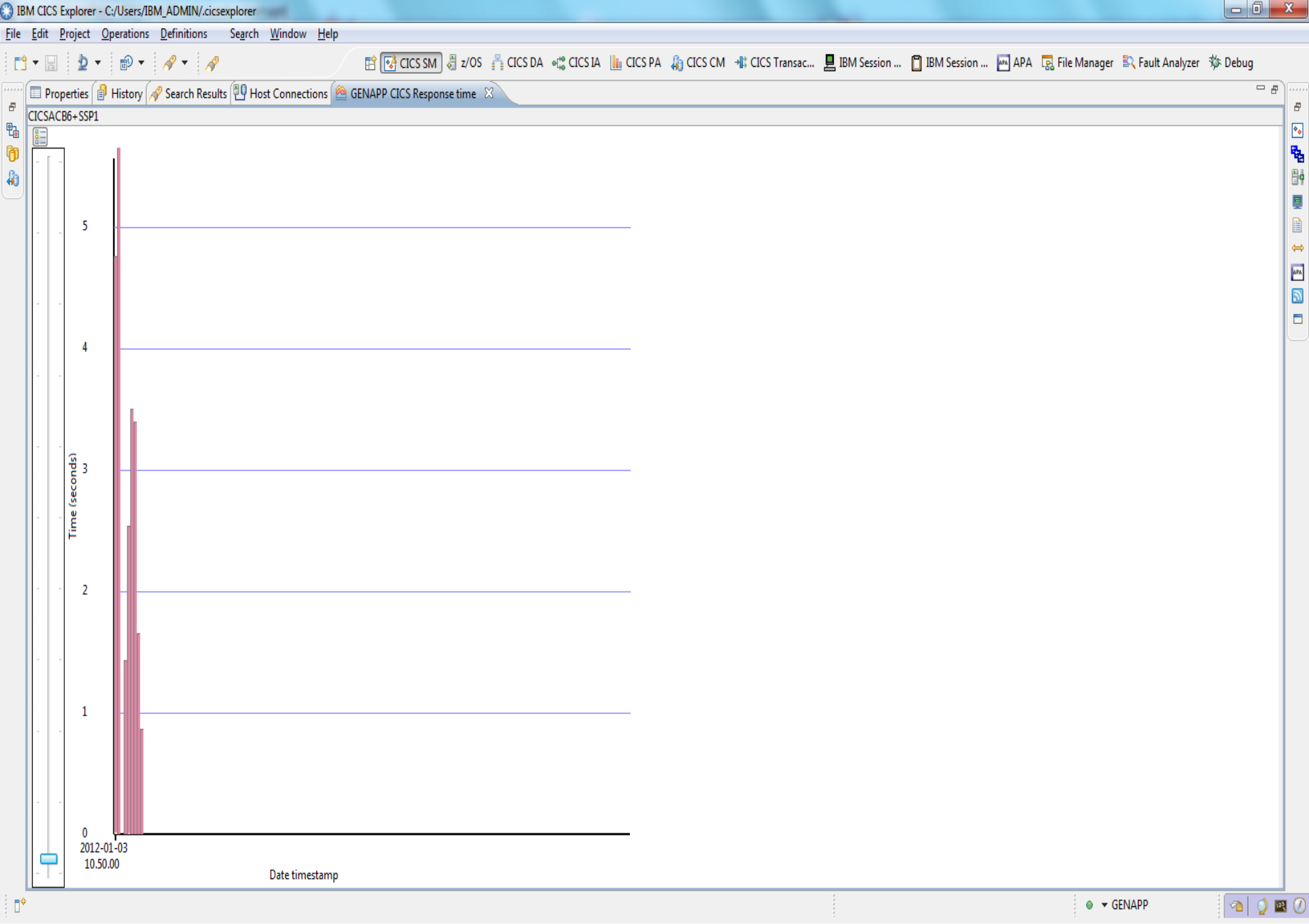

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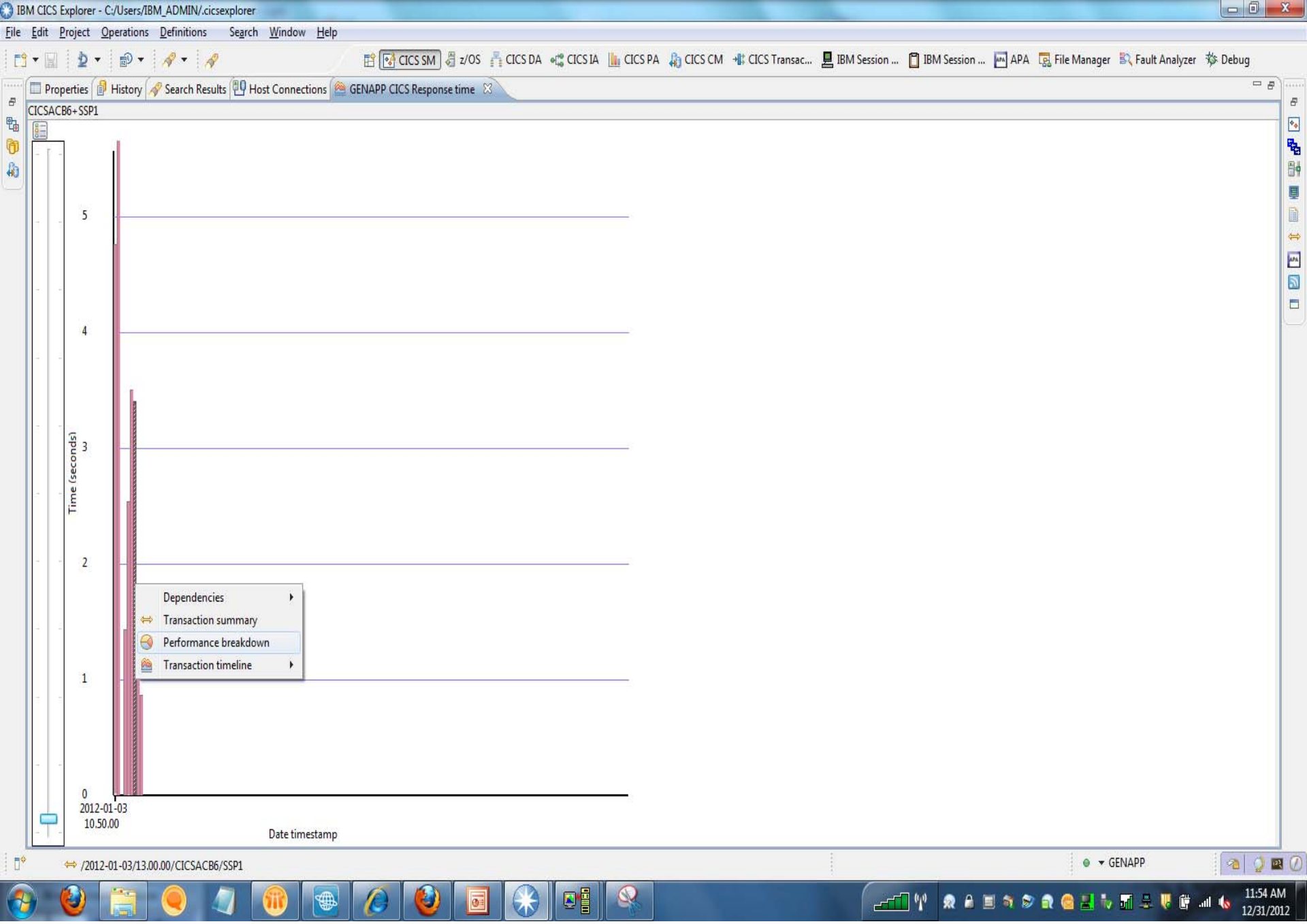

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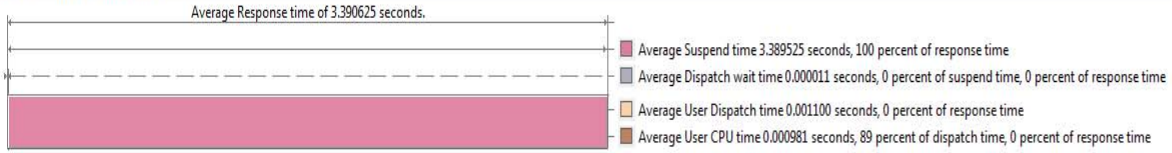
CICS SM z/OS CICS DA CICS IA CICS PA CICS CM CICS Transac... IBM Session ... IBM Session ... APA File Manager Fault Analyzer Debug

Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

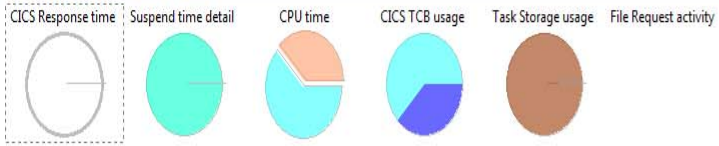
Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

Transaction response time (average)

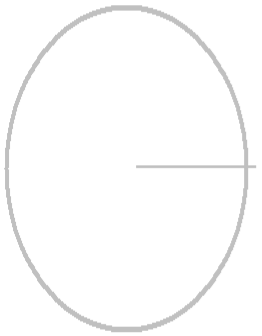


Performance averages at a glance



CICS Response time (averages)

2 transaction(s): 2 TCB mode switches (average). 3.390625 seconds average response time per transaction.



Response measurement	Time (avg)	Count (avg)	%Response ...	%Relative
CICS Response time	3.390625		-	-
User Dispatch time	0.001100	3	-	-
User CPU time	0.000981	3	-	89%
Suspend time	3.389525	3	100%	100%
Dispatch wait time	0.000011	2	-	-

☐ Restrict tree nodes to those applicable to visible chart.

☑ Include available non-zero values only

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File Edit Project Operations Definitions Search Window Help

CICS SM z/OS CICS DA CICS IA CICS PA CICS CM CICS Transac... IBM Session ... IBM Session ... APA File Manager Fault Analyzer Debug

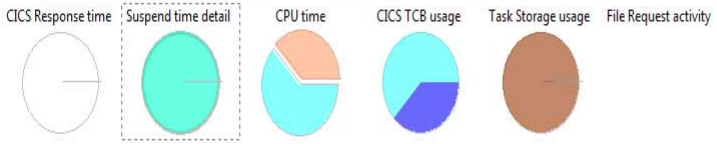
Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

Start Date=2012-01-03, Start time=13.00.00, Applid=CICSACB6, Transaction ID=SSP1

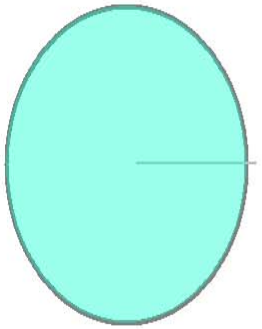
Transaction response time (average)

Performance averages at a glance



Suspend time detail (averages)

2 transaction(s): 3.389525 average suspend time per transaction.



Restrict tree nodes to those applicable to visible chart.

Include available non-zero values only

Suspend time component	Time (avg)	Count (avg)	%Suspend t...	%Relative
Suspend time	3.389525	3	-	-
I/O wait time	3.389506		100%	100%
Terminal control I/O wait time	3.389506	0	100%	100%
Other wait time	0.000019		-	-
First dispatch delay time	0.000012	1	-	62%
Change-TCB mode delay time	0.000007	2	-	38%
Uncaptured wait time	0		-	-

GENAPP

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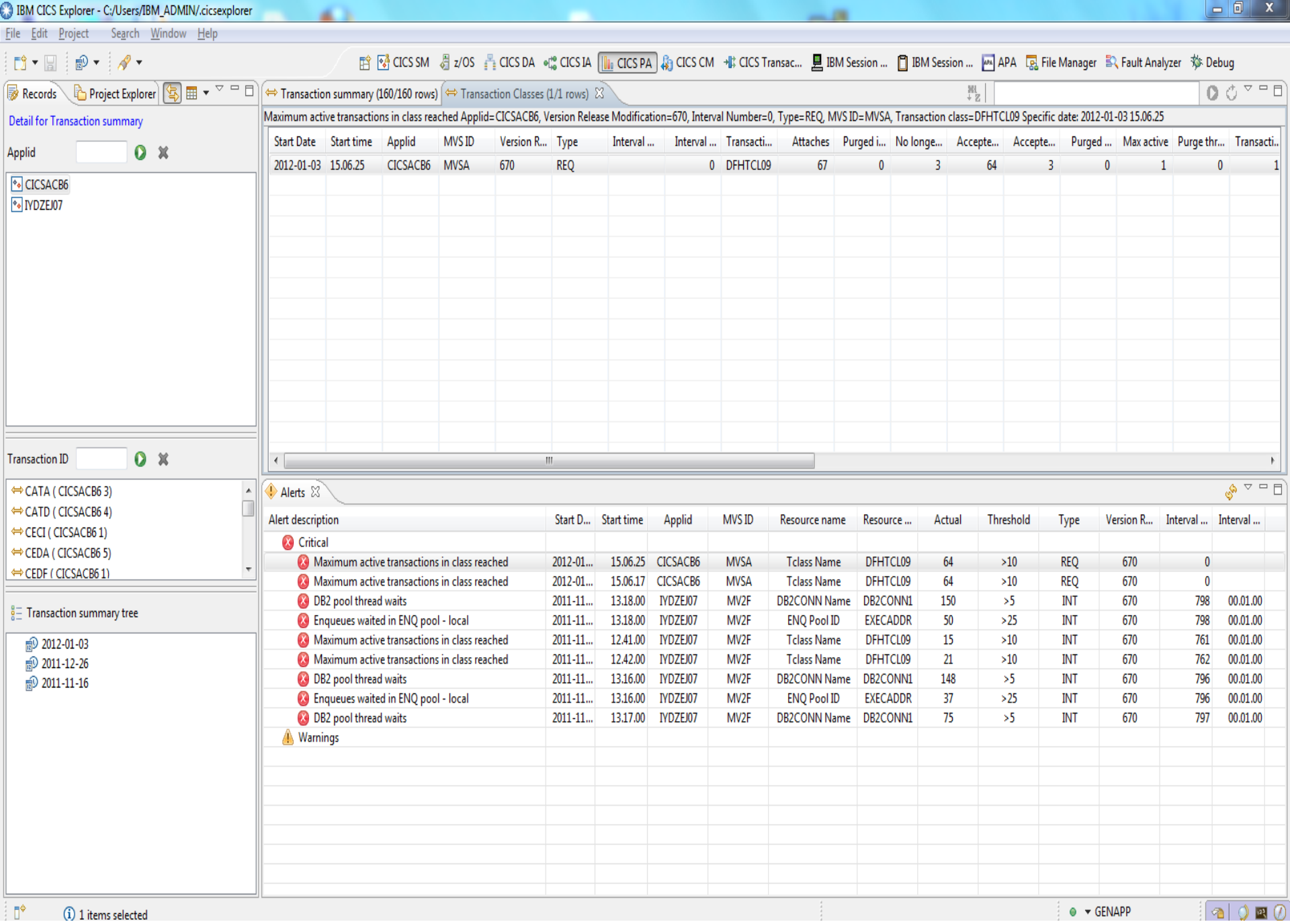

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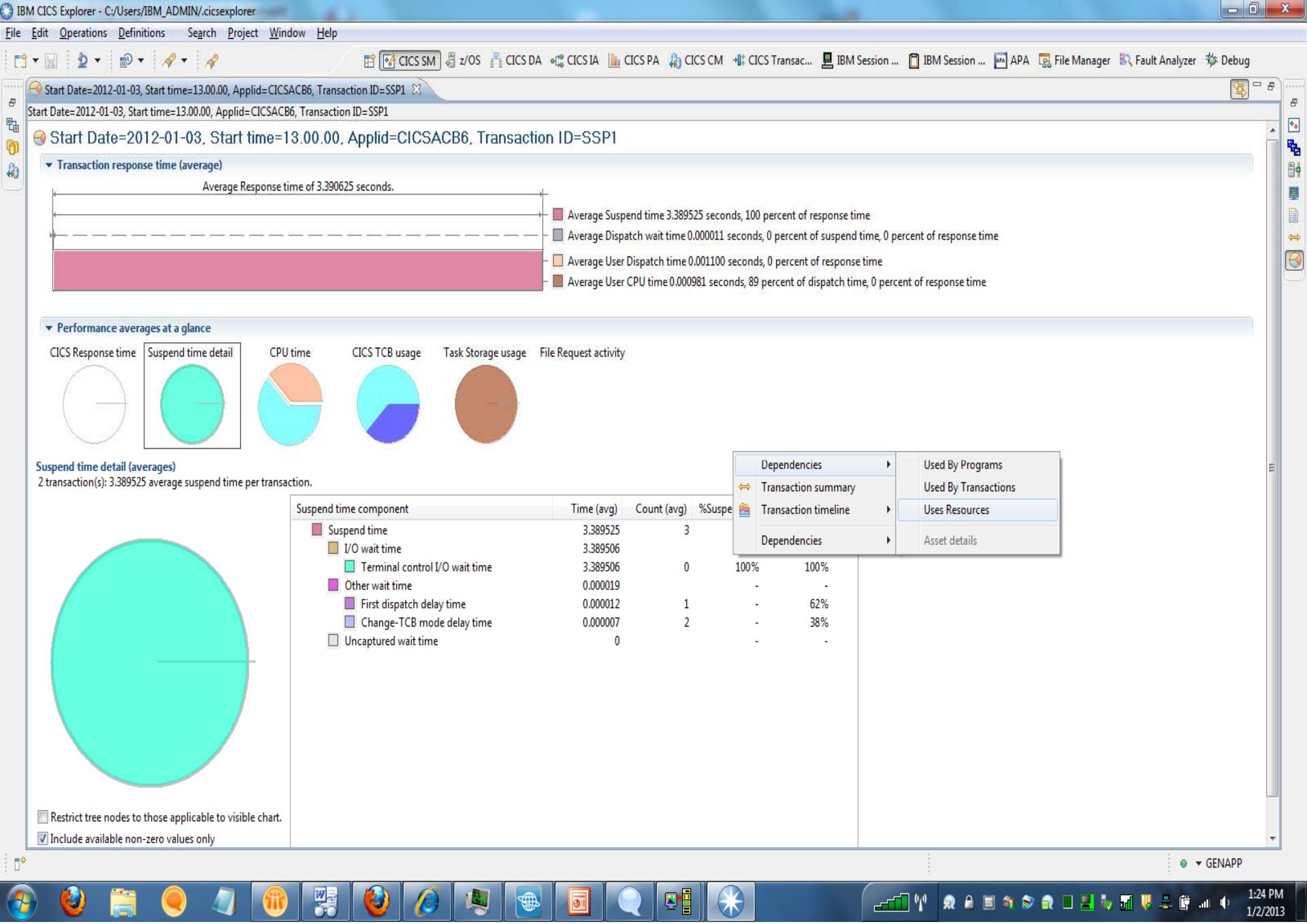

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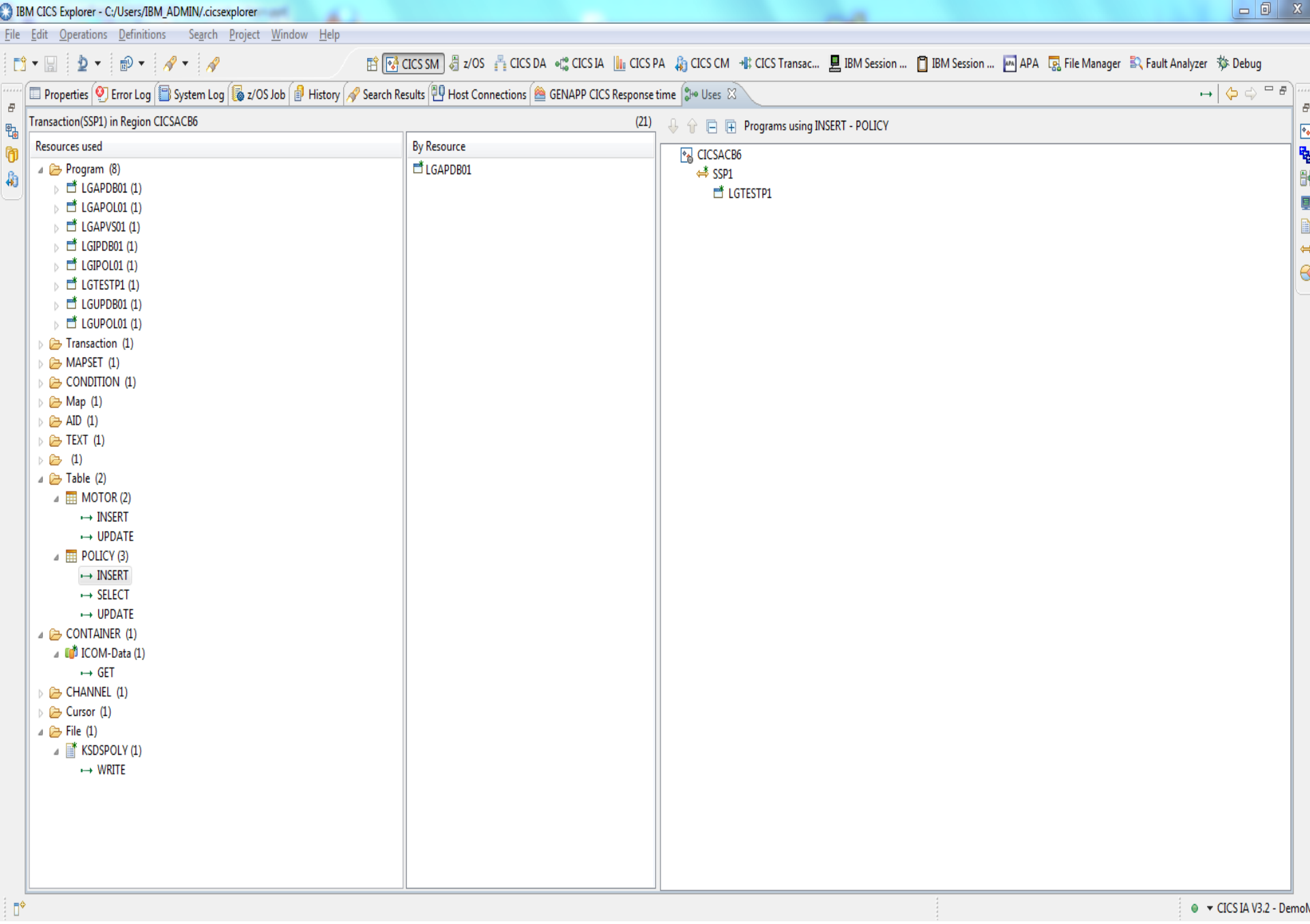

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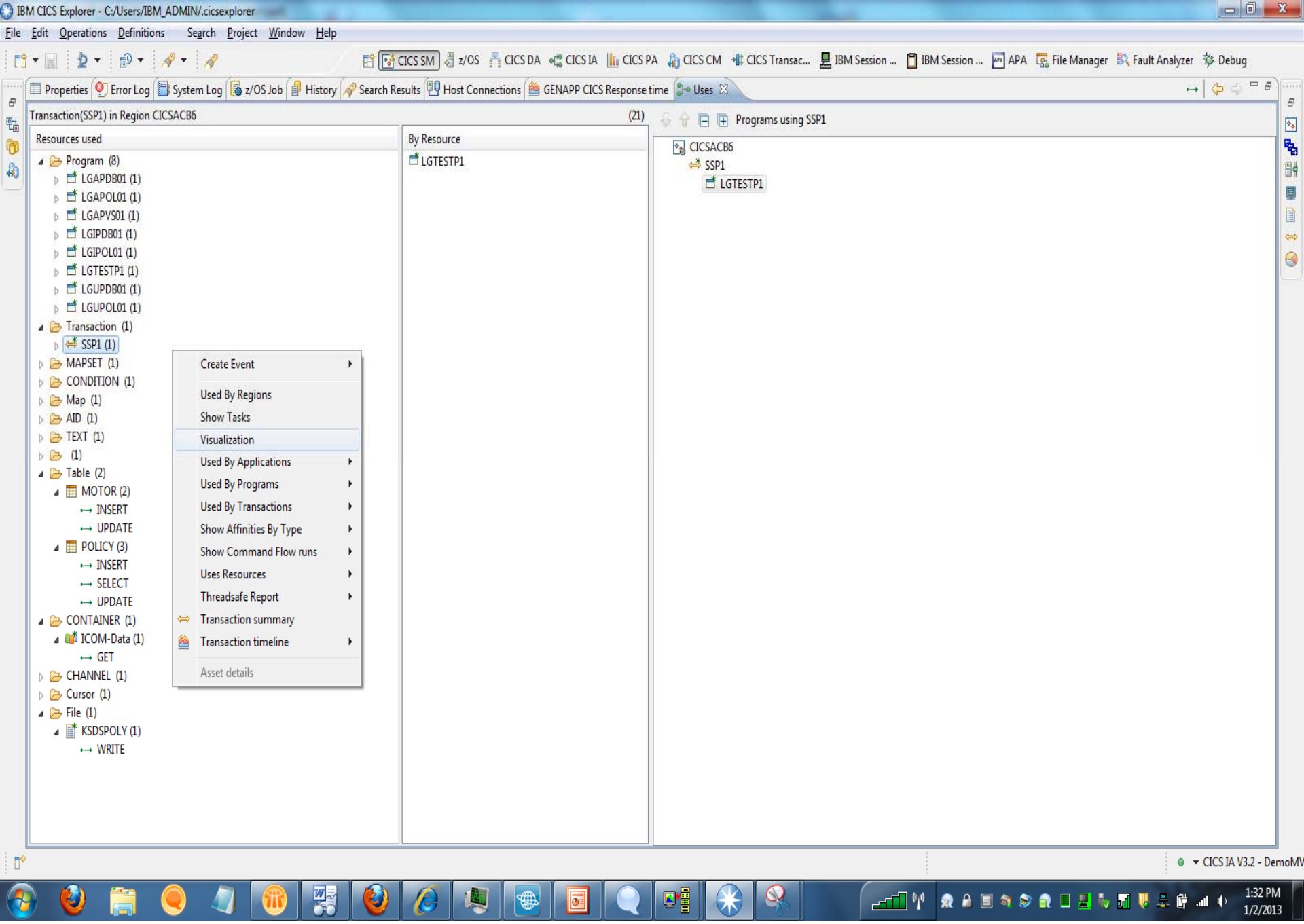

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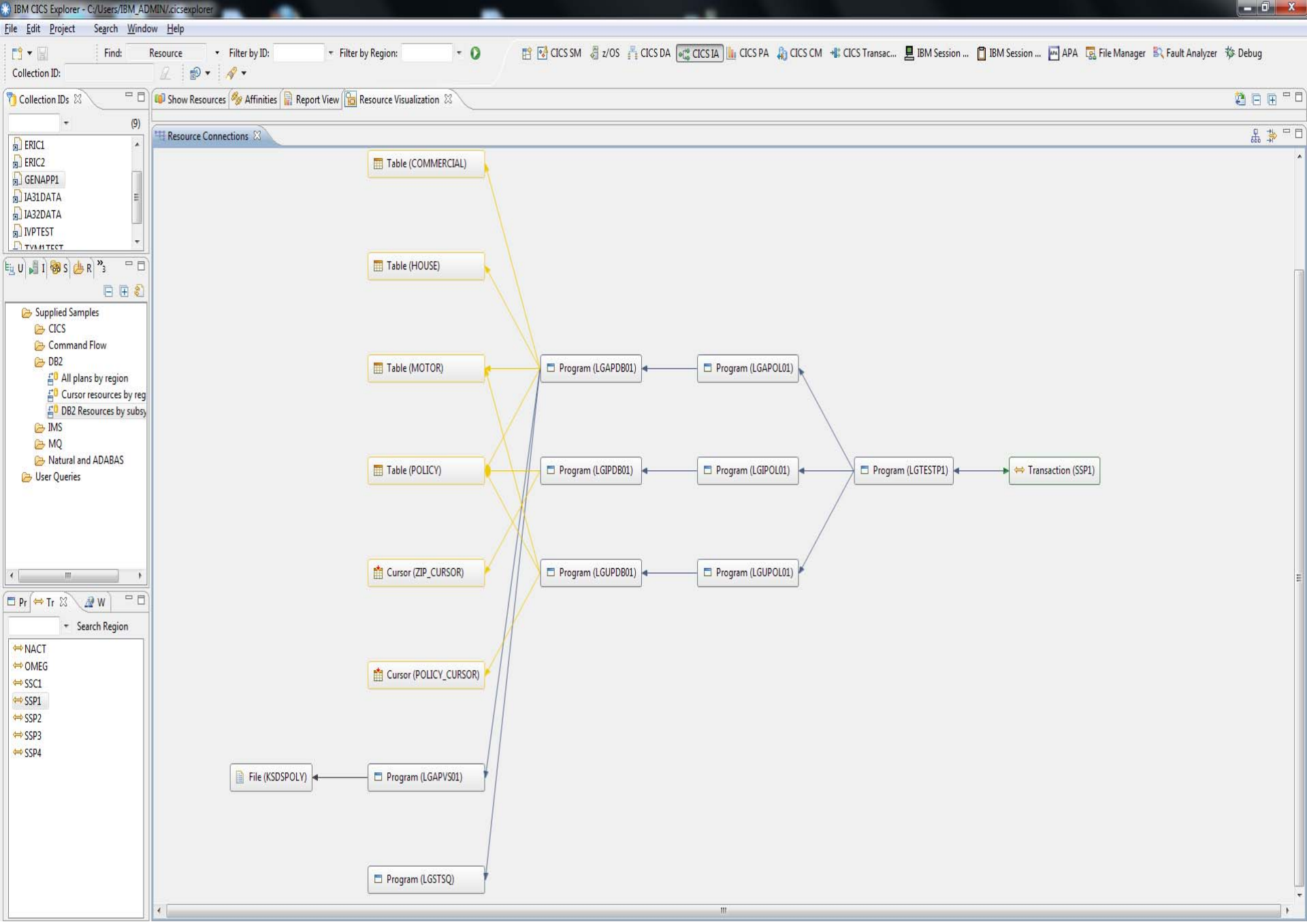

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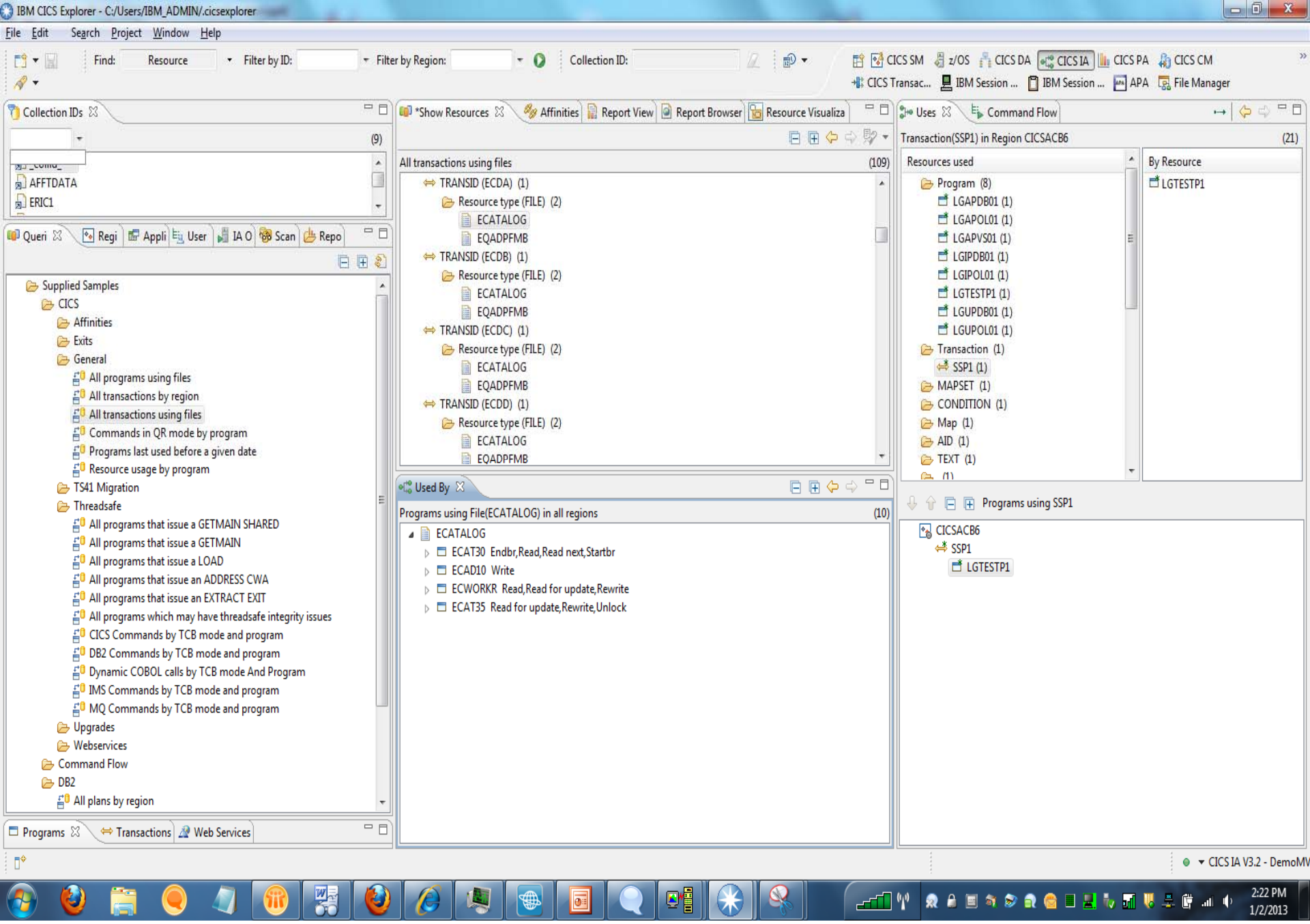

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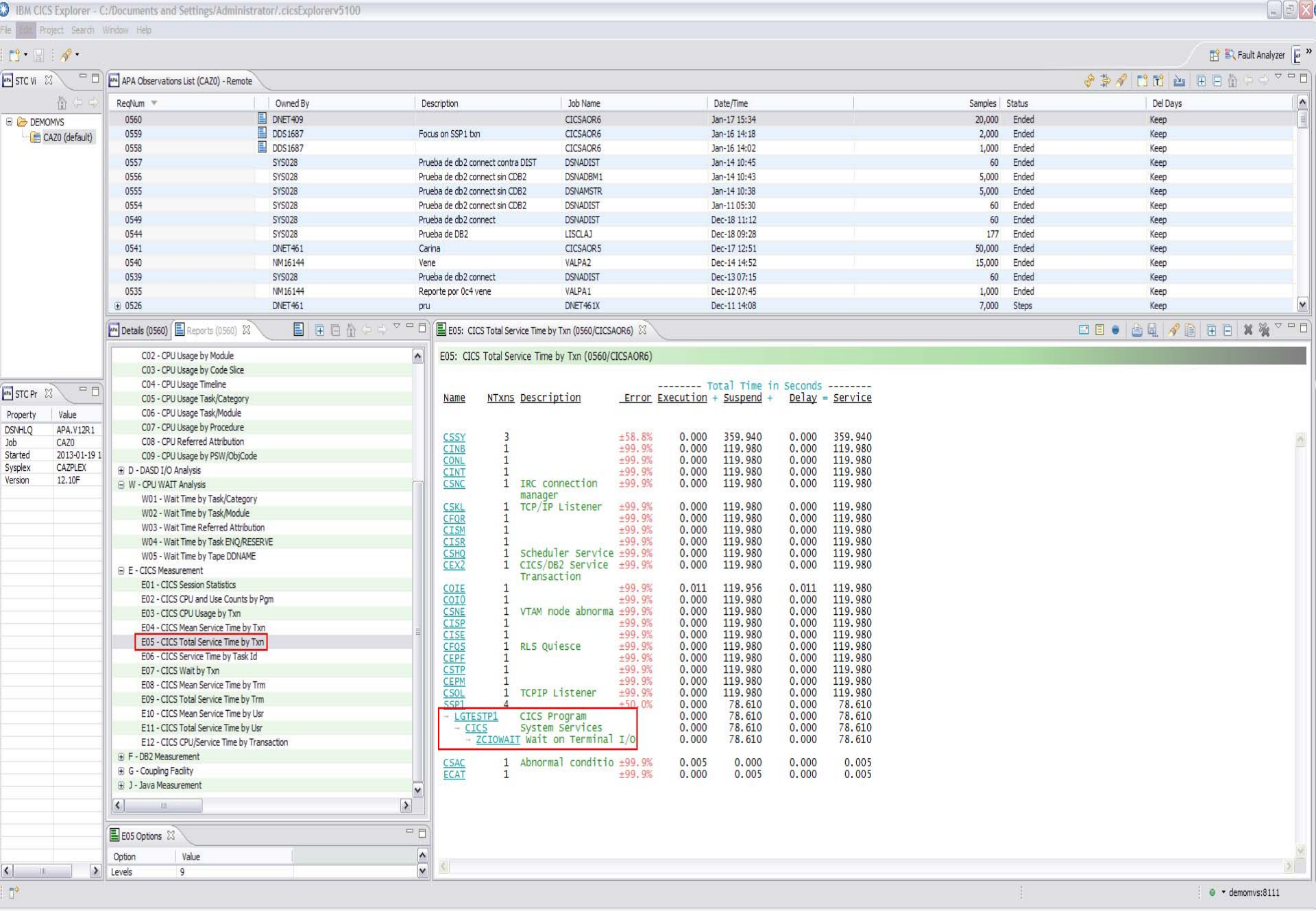

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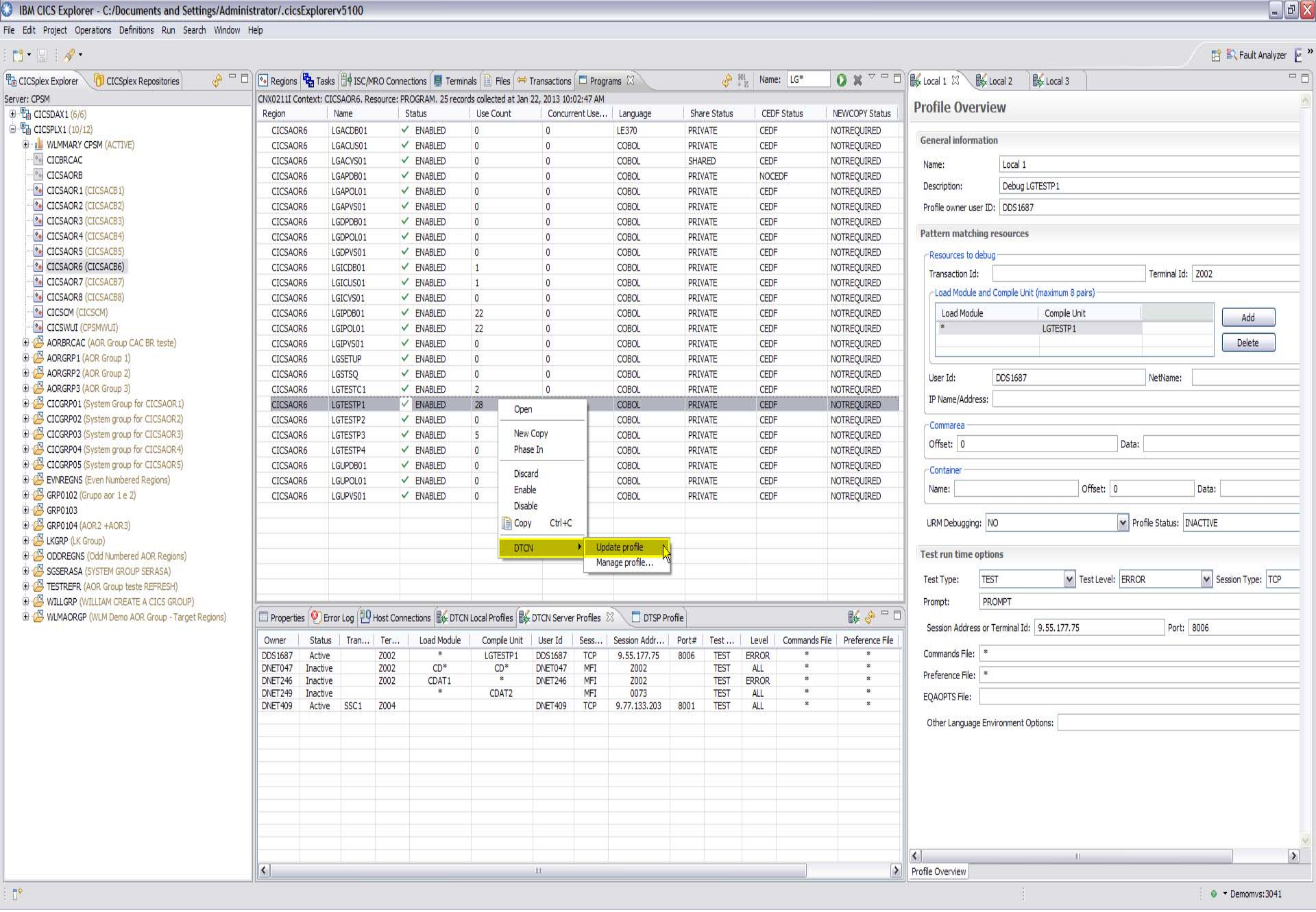

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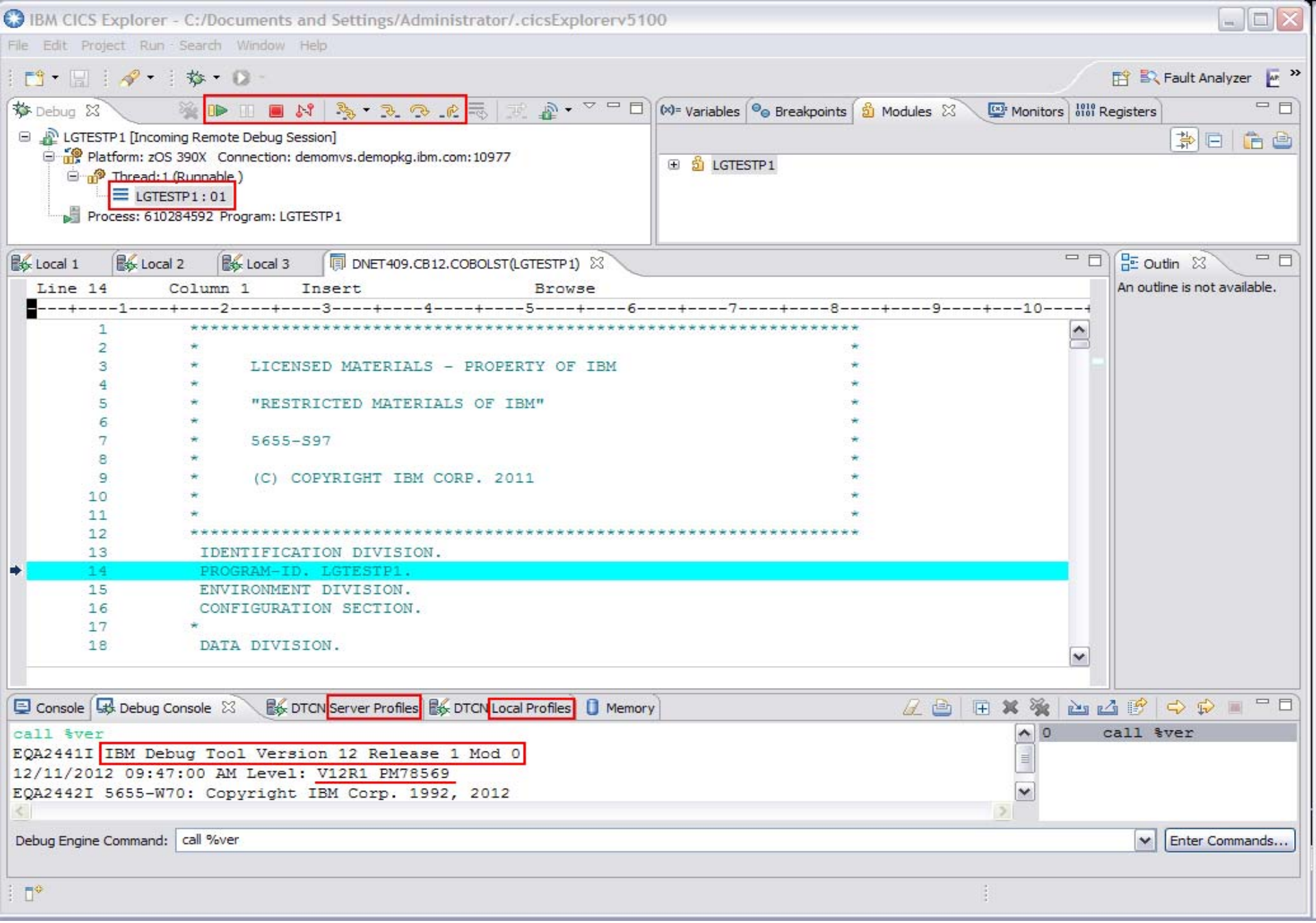

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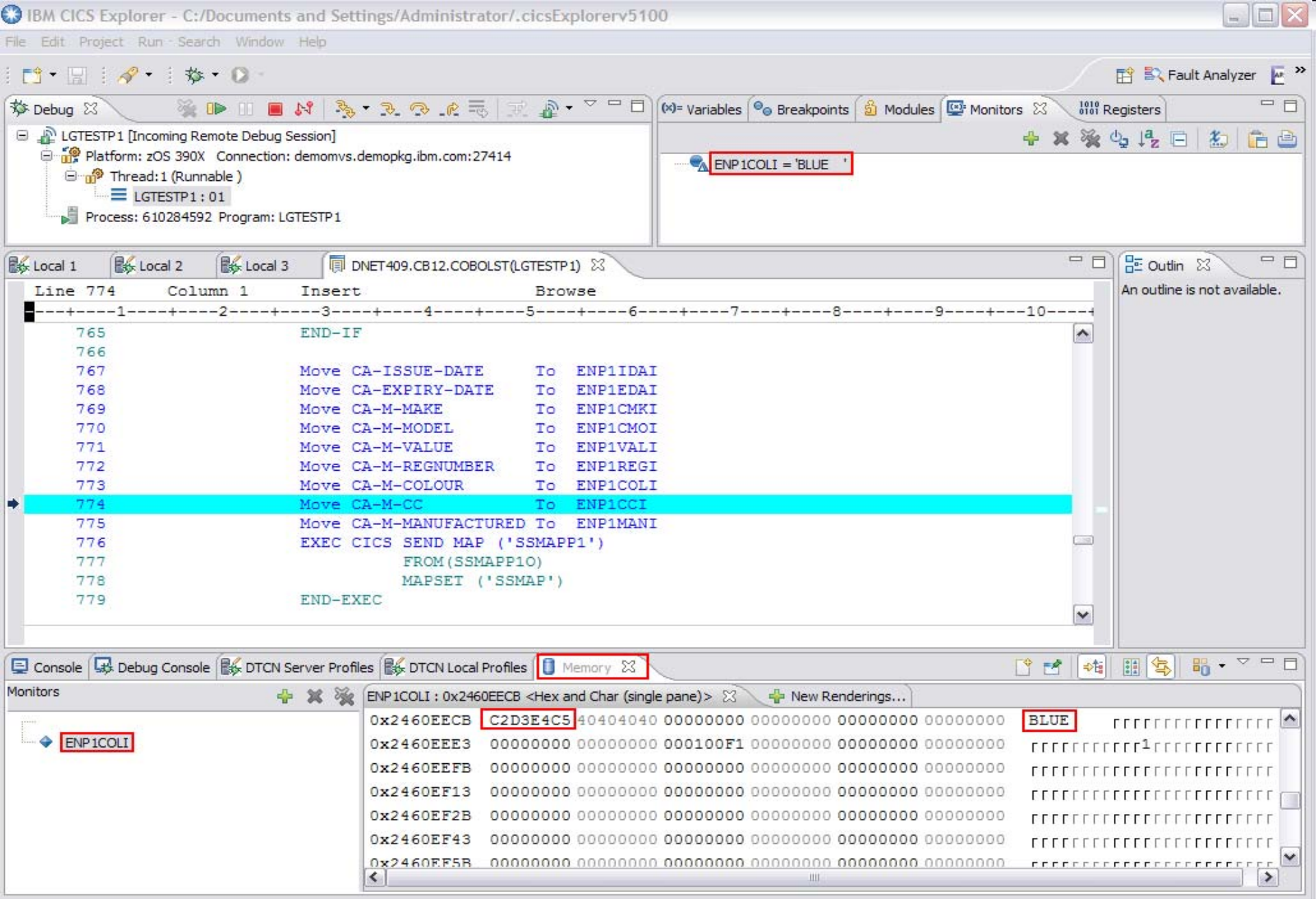

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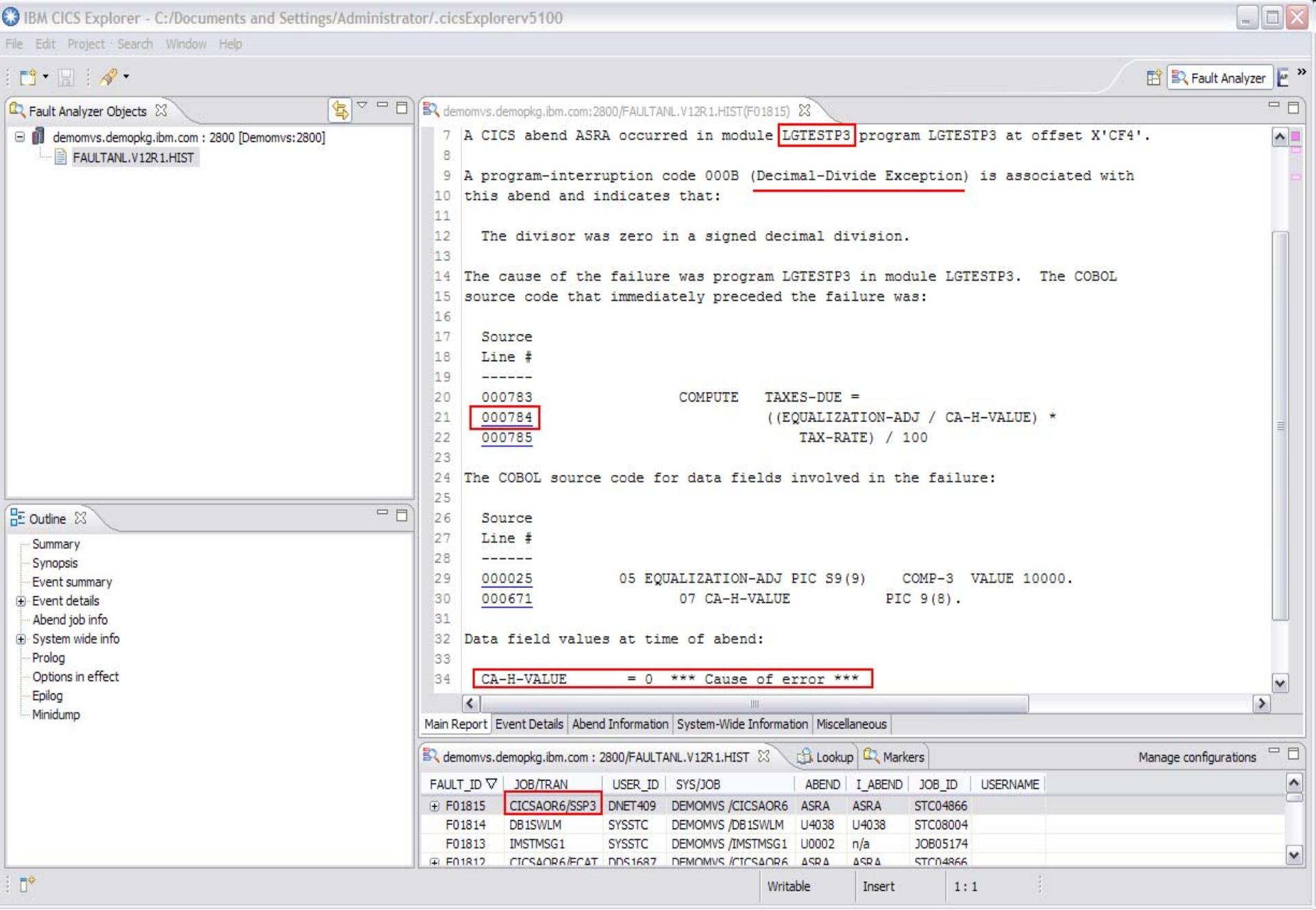

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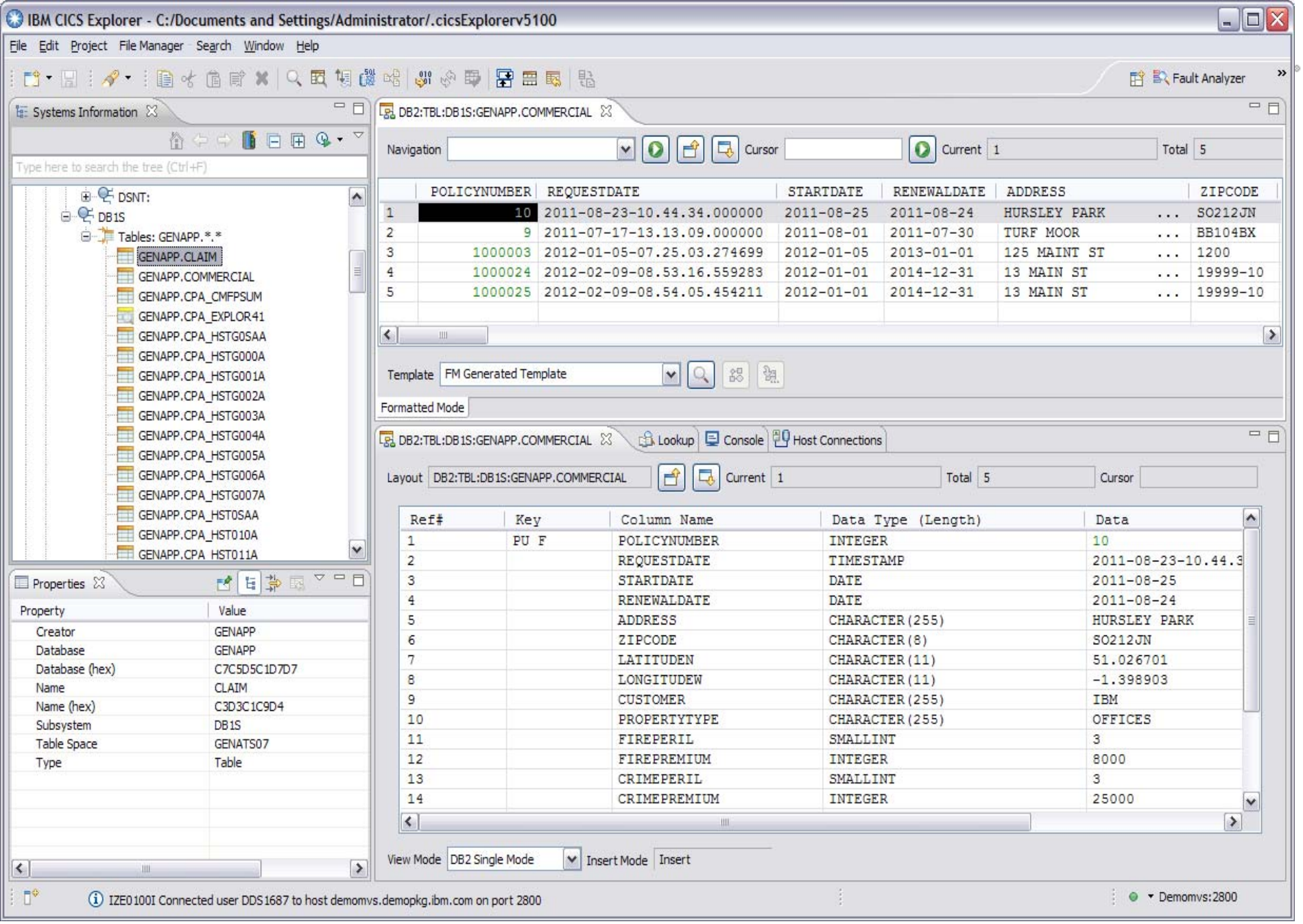

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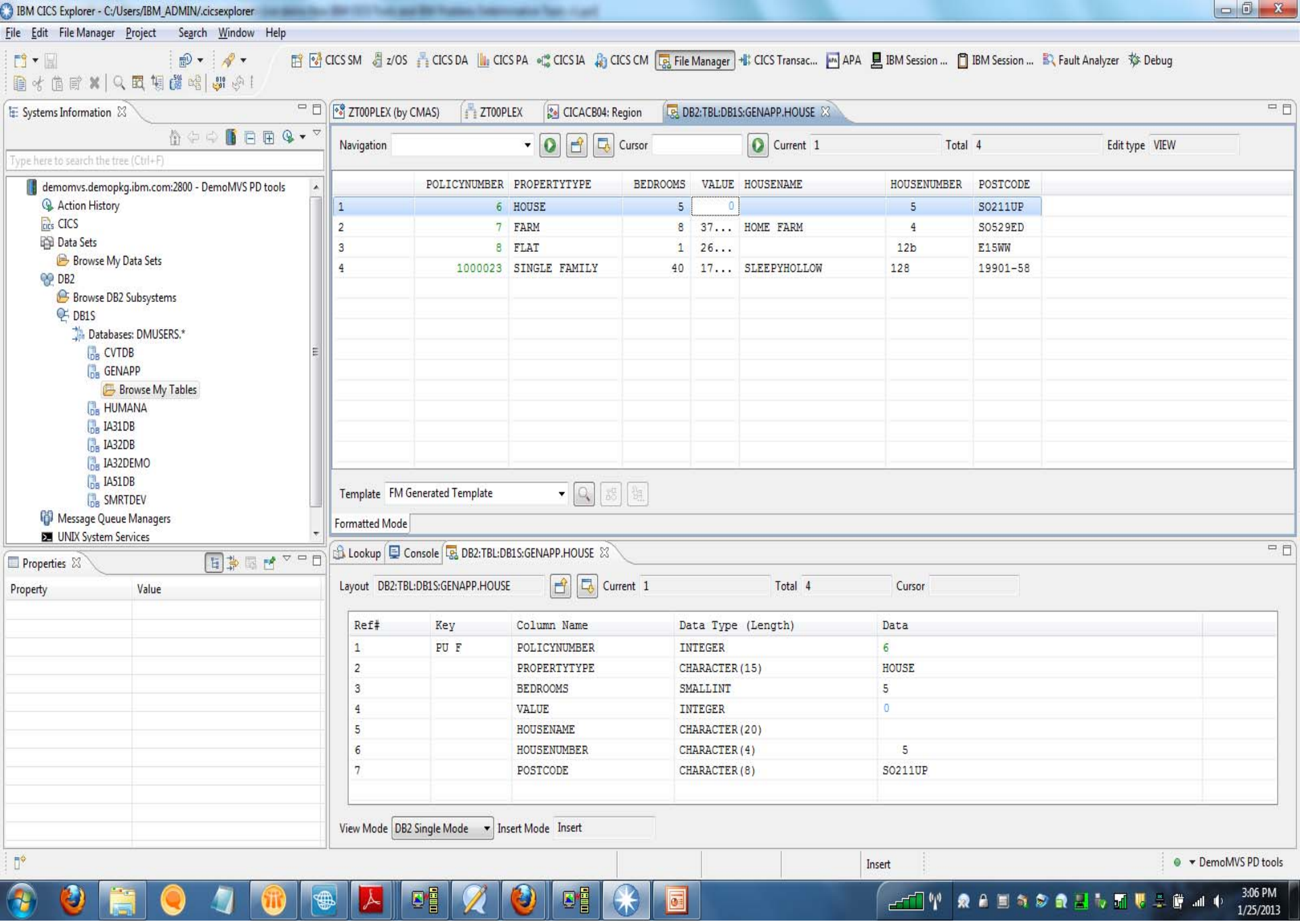

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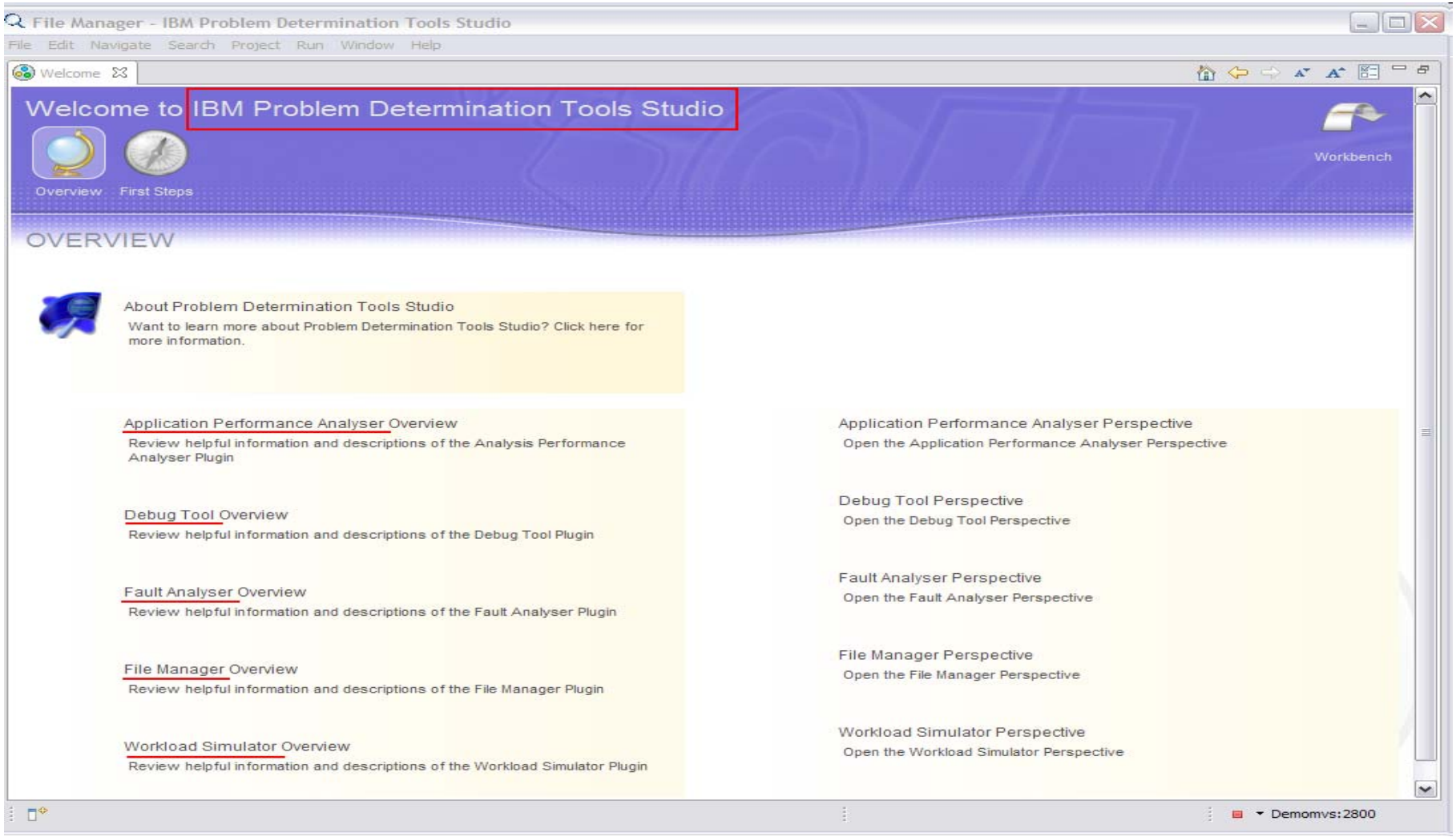

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- **The LGTESTP3 program has been fixed….**
  - Use CM to correct the TCLASS definition
  - Install corrected definition, new copy program

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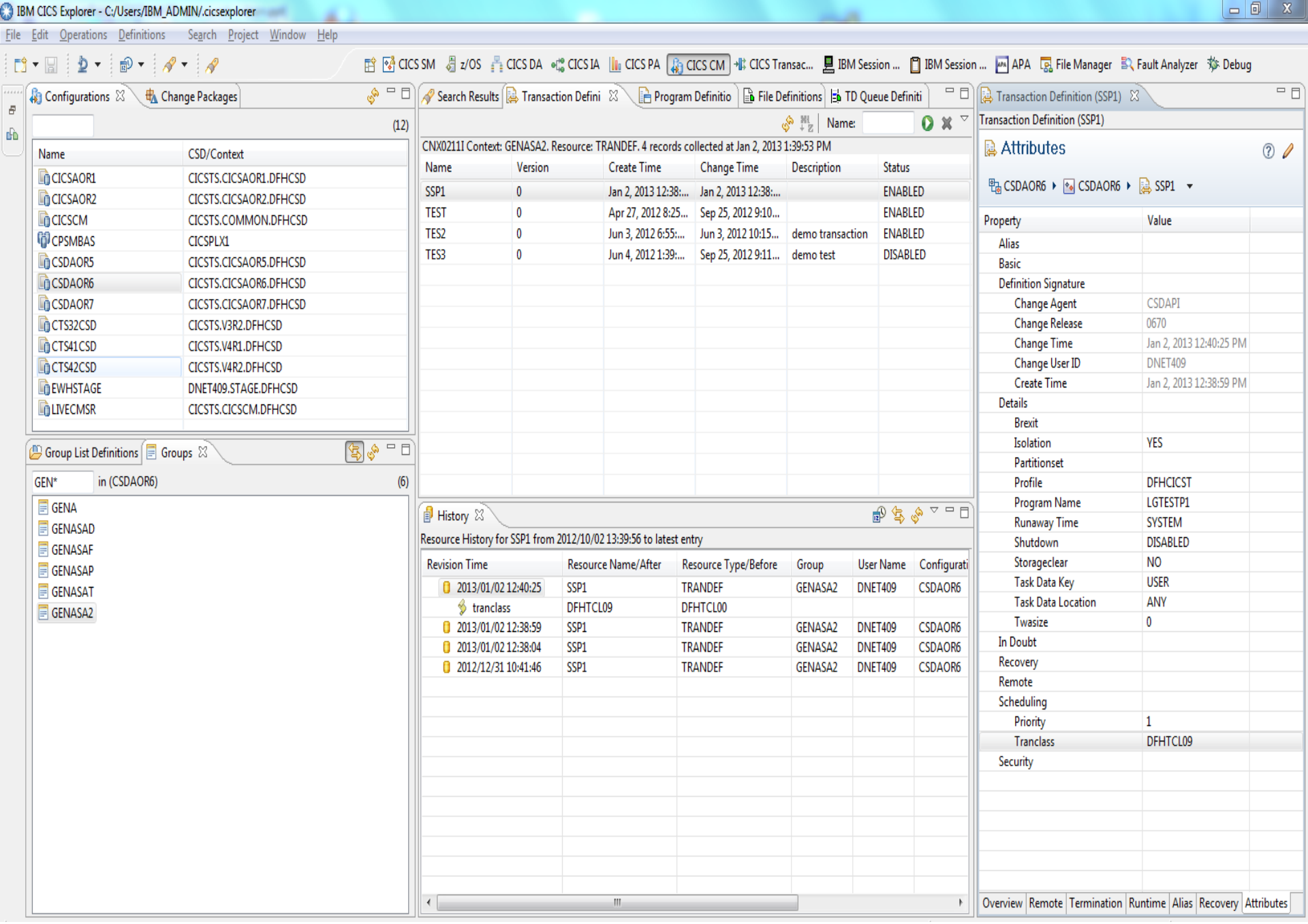

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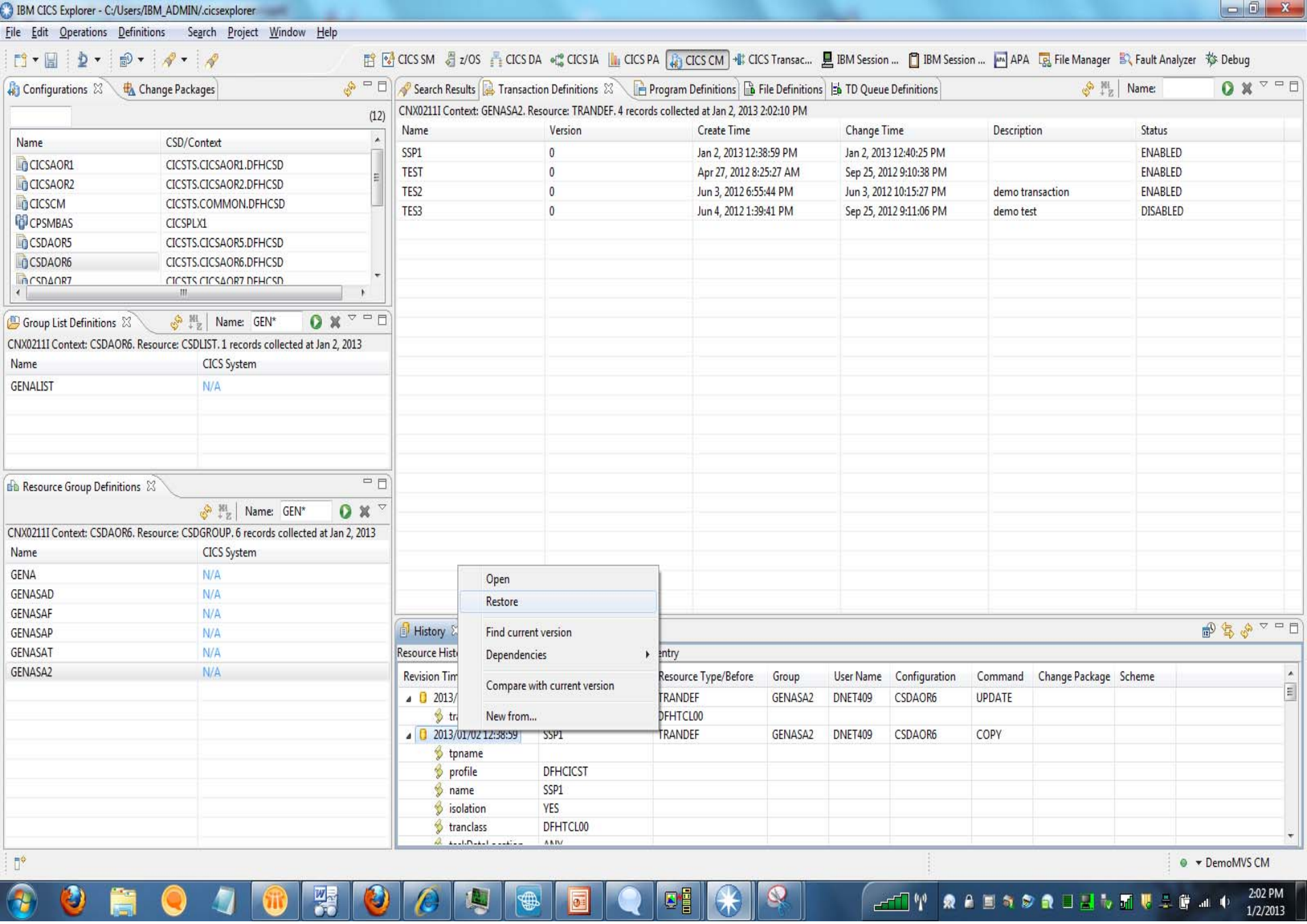

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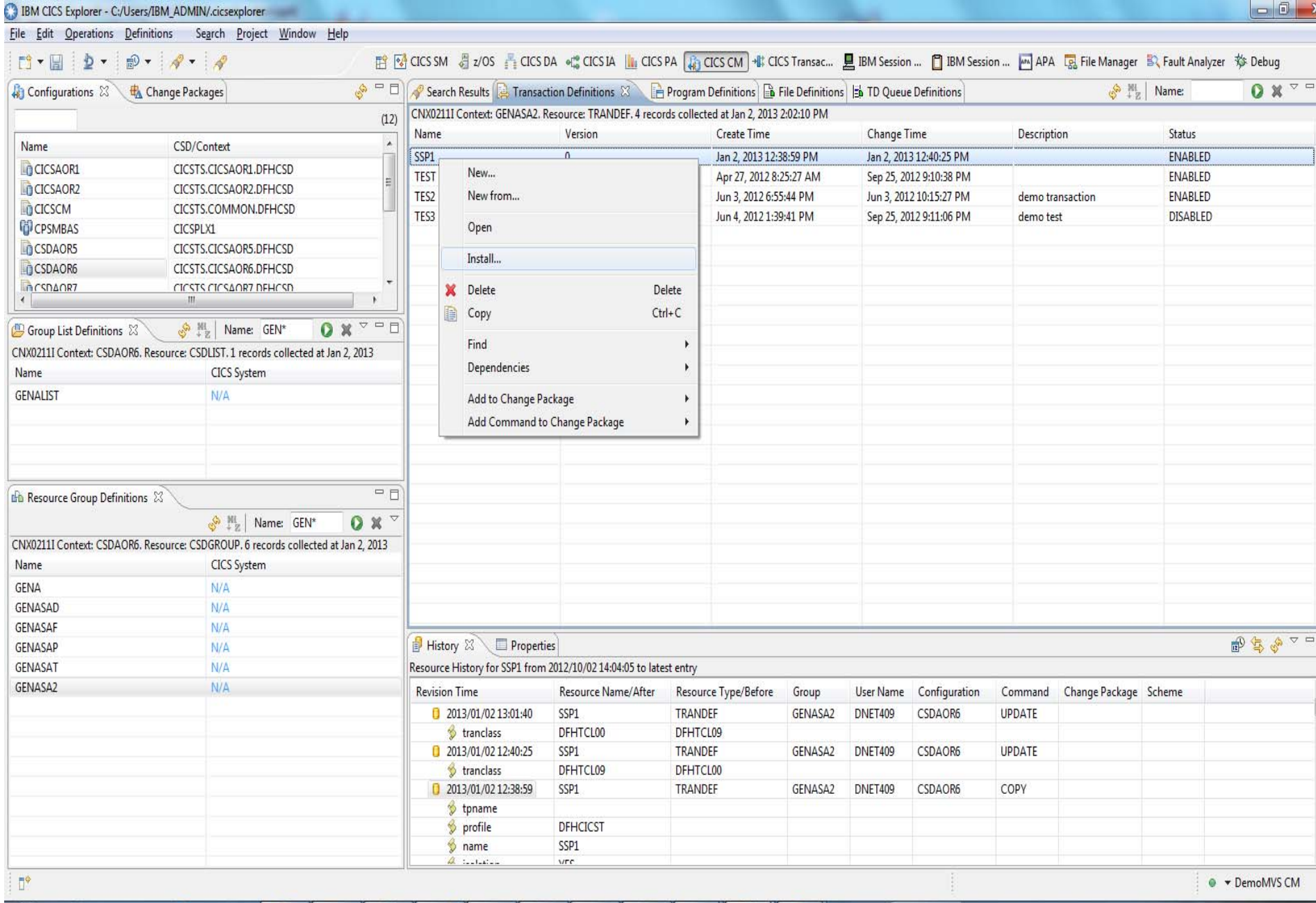

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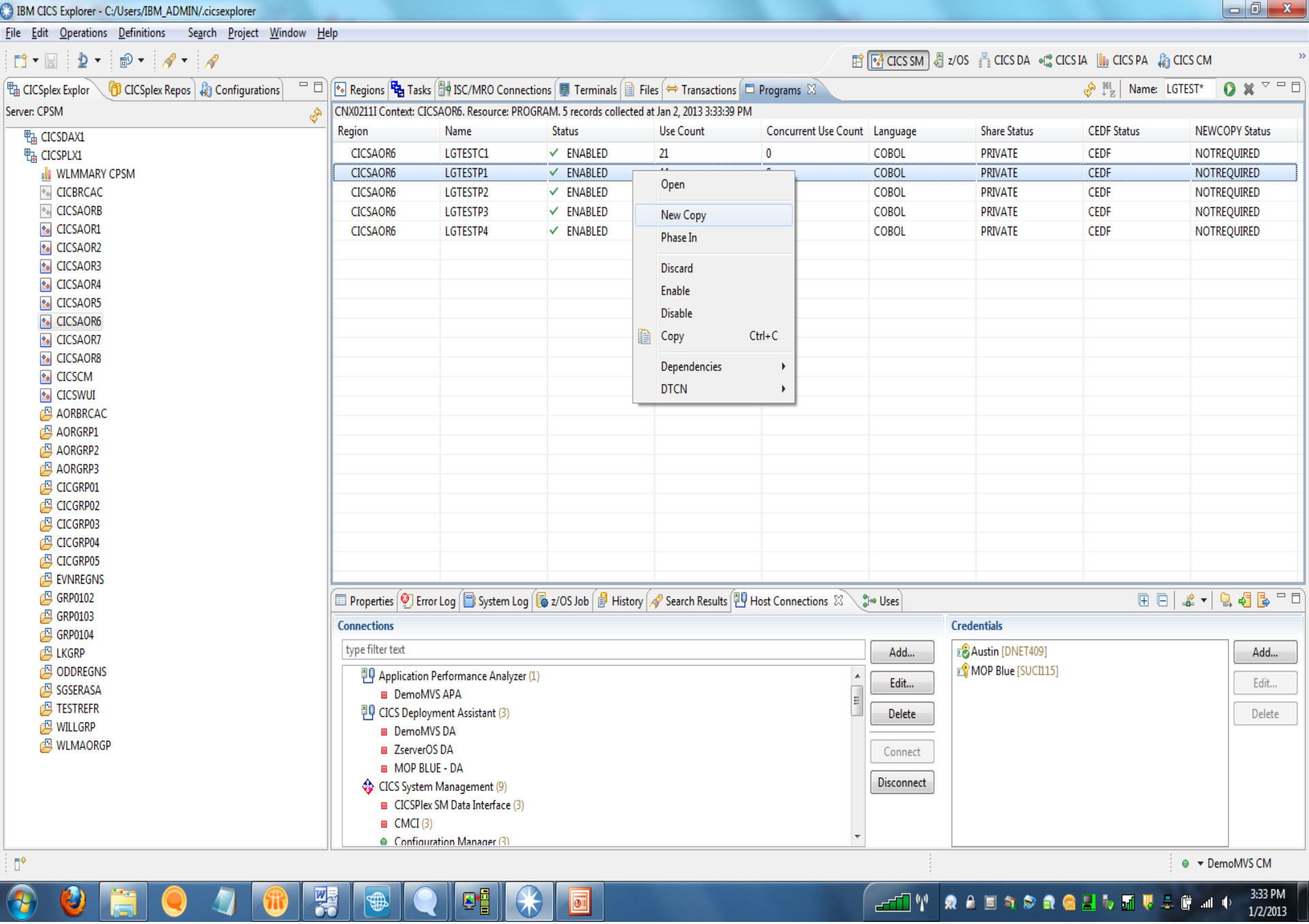

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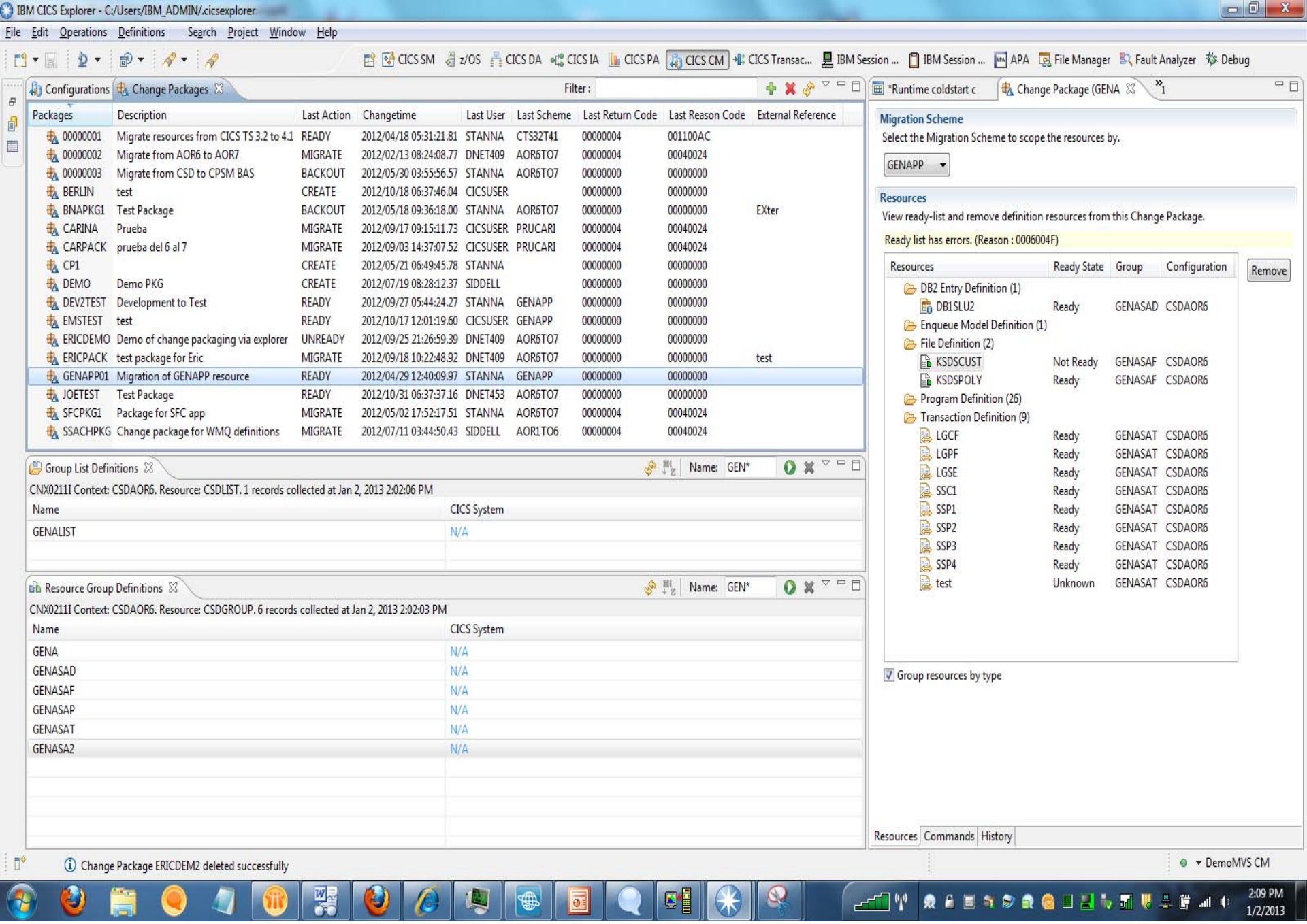

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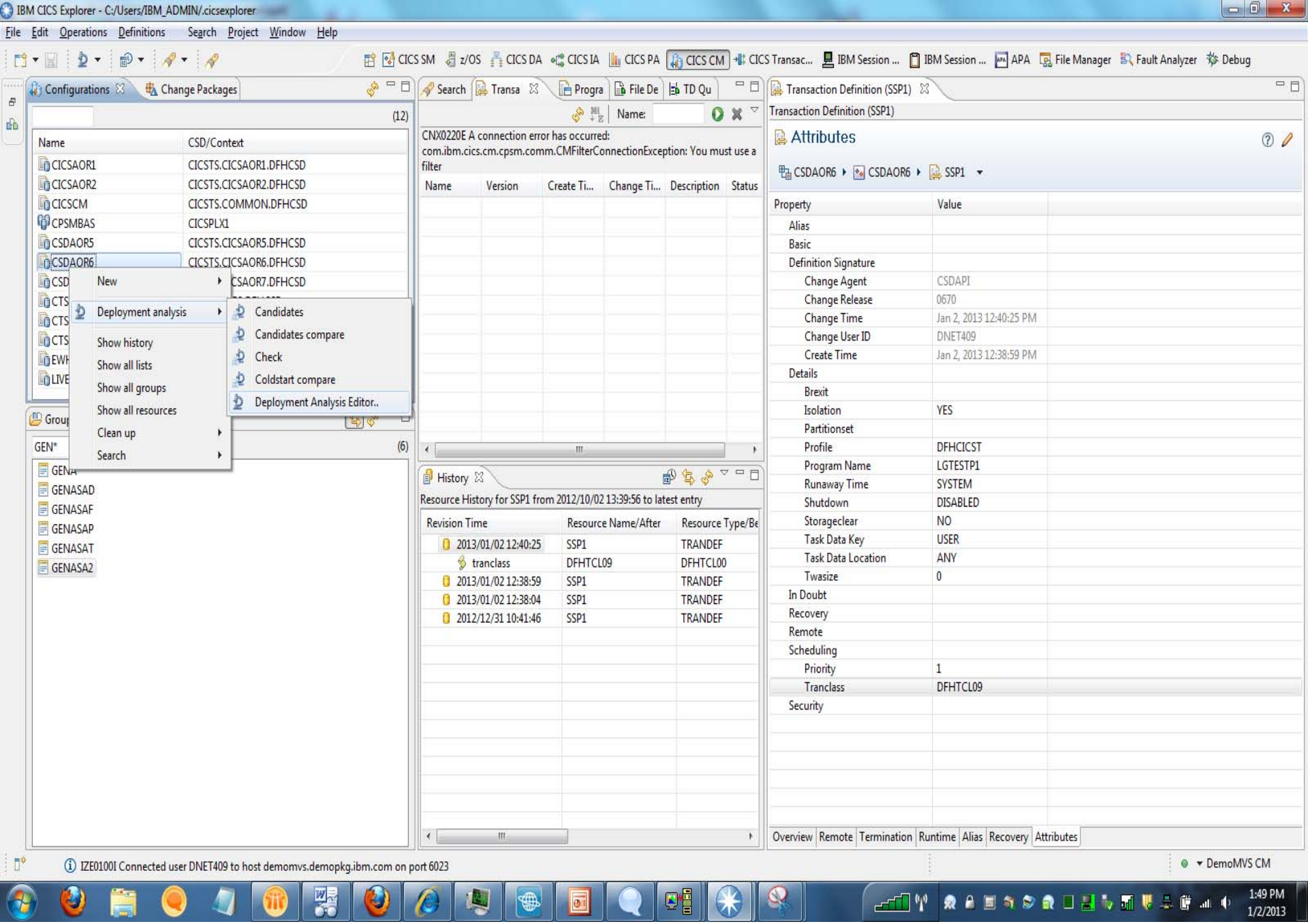

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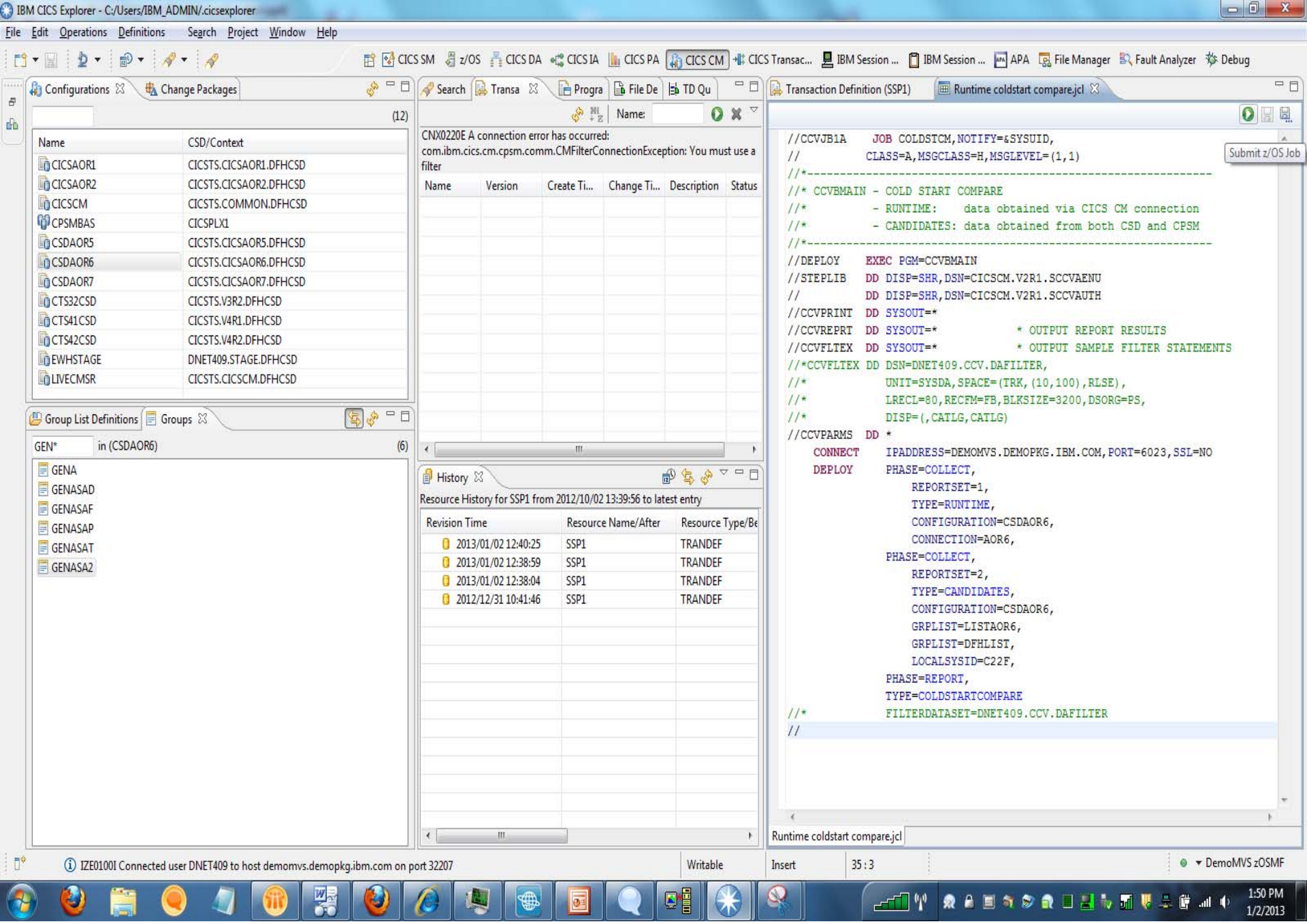

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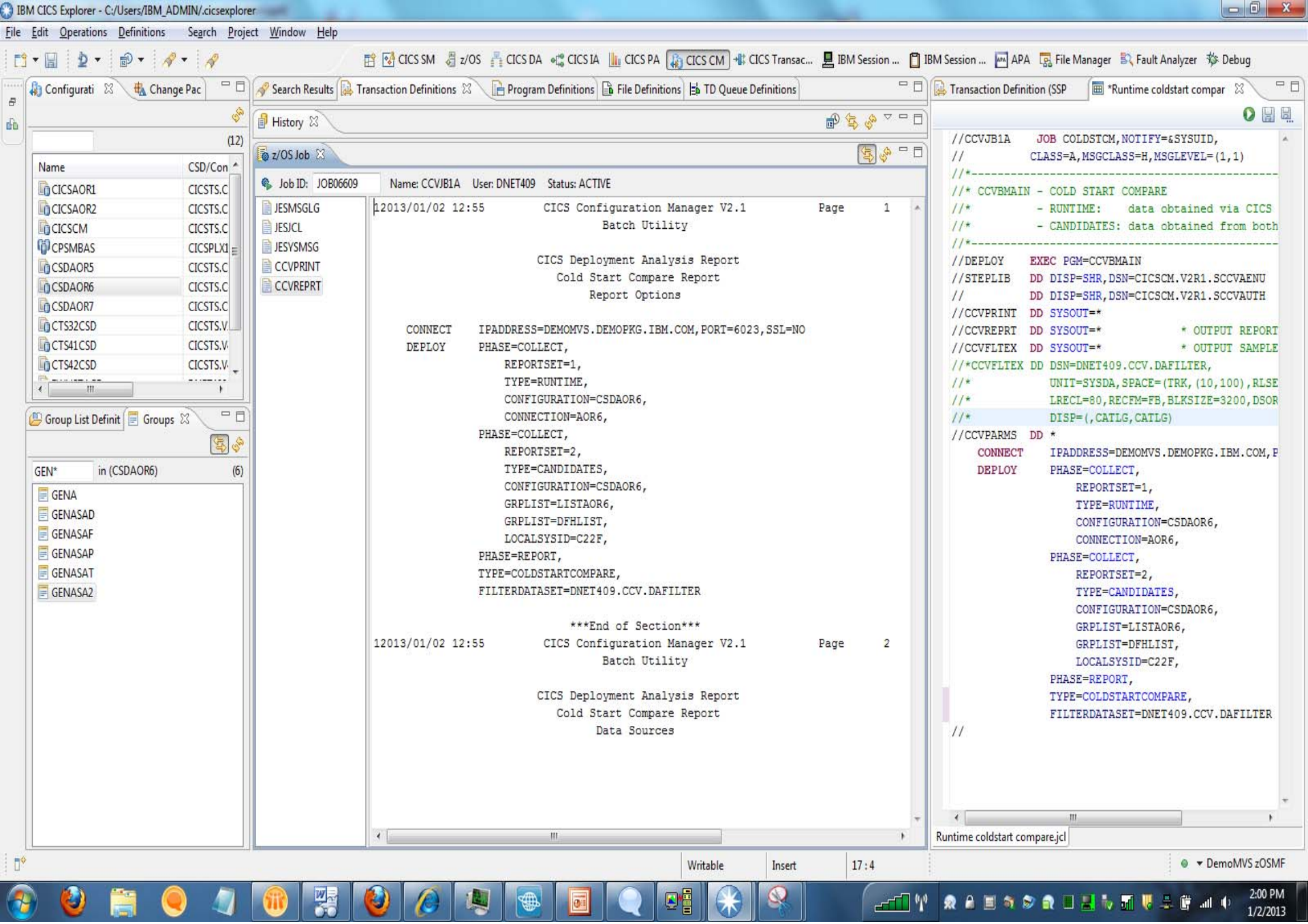

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