

A decorative graphic in the top left corner consists of several overlapping circles of various sizes. Each circle is divided into multiple segments of different colors, including shades of orange, yellow, magenta, and blue, creating a vibrant, abstract pattern.

# **CICS V5.1** *Applications agility*

Speaker Name and Title



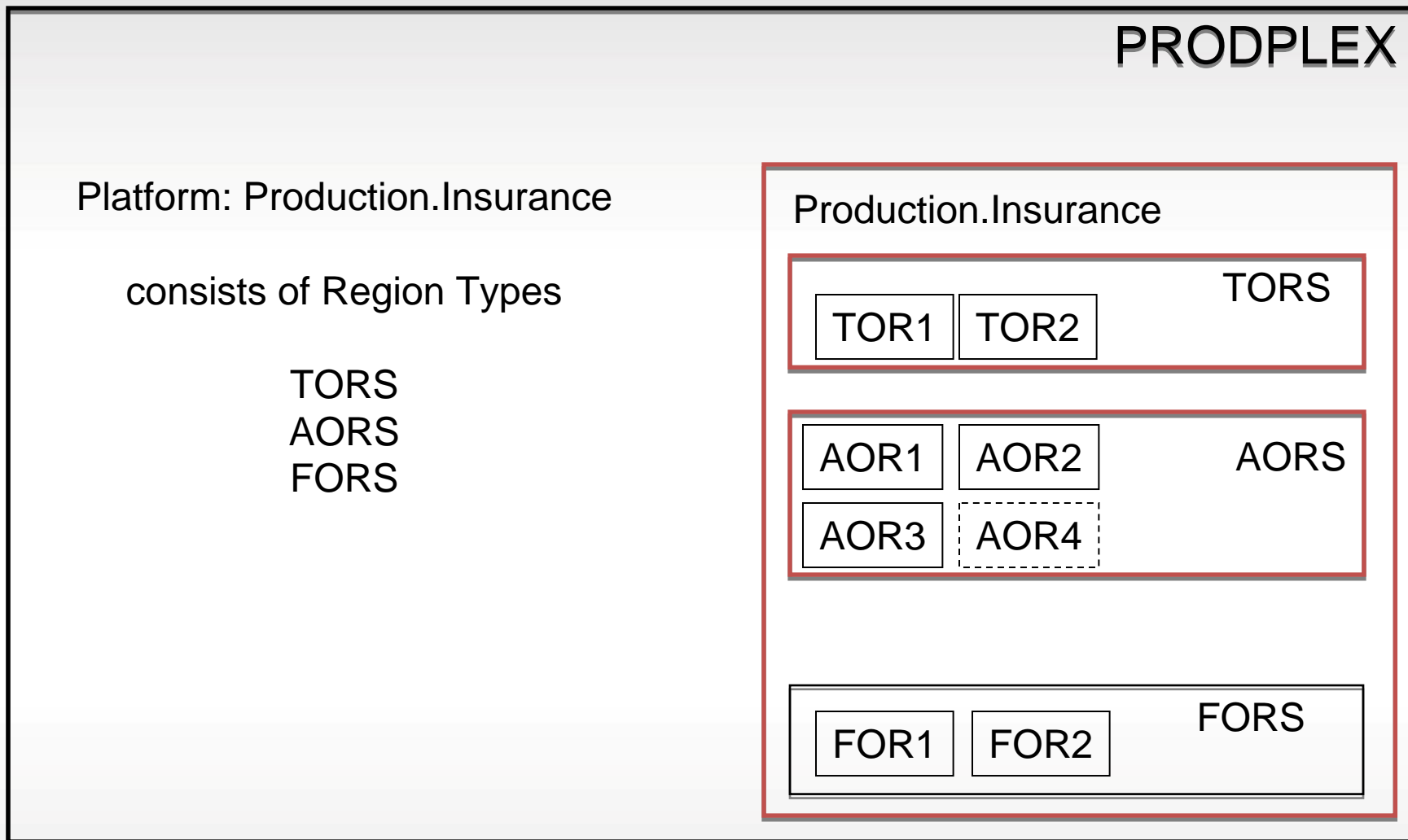
## Session Agenda

- **What is an Application?**
  
- **Application Packaging**
  - Bundles
  - Application Projects
  
- **Application Deployment**
  - Bindings
  - Appdef
  
- **Modernization and the Liberty web container**



# CICS Platform as a Service Review

- A review of a CICSplex and a Platform





## Application Deployment

- **What is a CICS application?**

- *a collection of related programs and other resources that together perform a business operation*

- **How is a CICS application invoked?**

- *Transaction ID for 3270*
- *EXEC CICS START*
- *URIMAP for a web request*
- *...*

- **What resource (dependencies) does a CICS application need?**

- *VSAM files or DB2 tables*
- *Temporary Storage, Transient Data or MQ queues*
- *Programs*
- *JVM*
- *...*



## CICS BUNDLE Resource

- **Collection of CICS resources**
  - Managed as a logical unit
    - All bundle parts are managed together
      - If any part is disabled, the whole bundle is disabled
    - Bundle artifact is migrated from test to production
      - Similar to a load module
  - Resource dependencies can be specified
    - e.g. FILE(ABC) must be present for the bundle to install



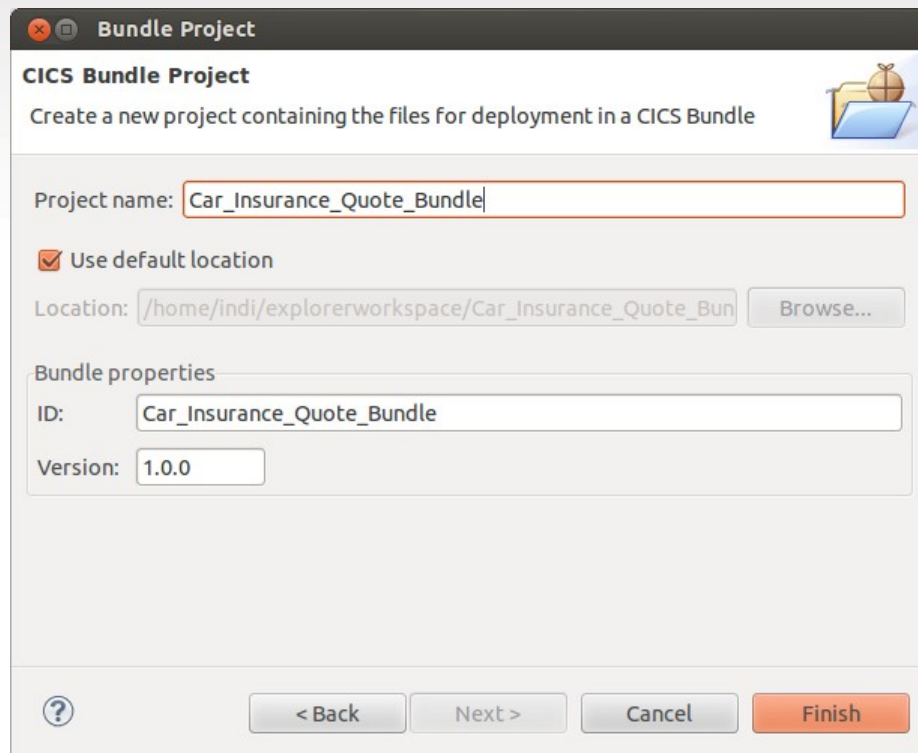
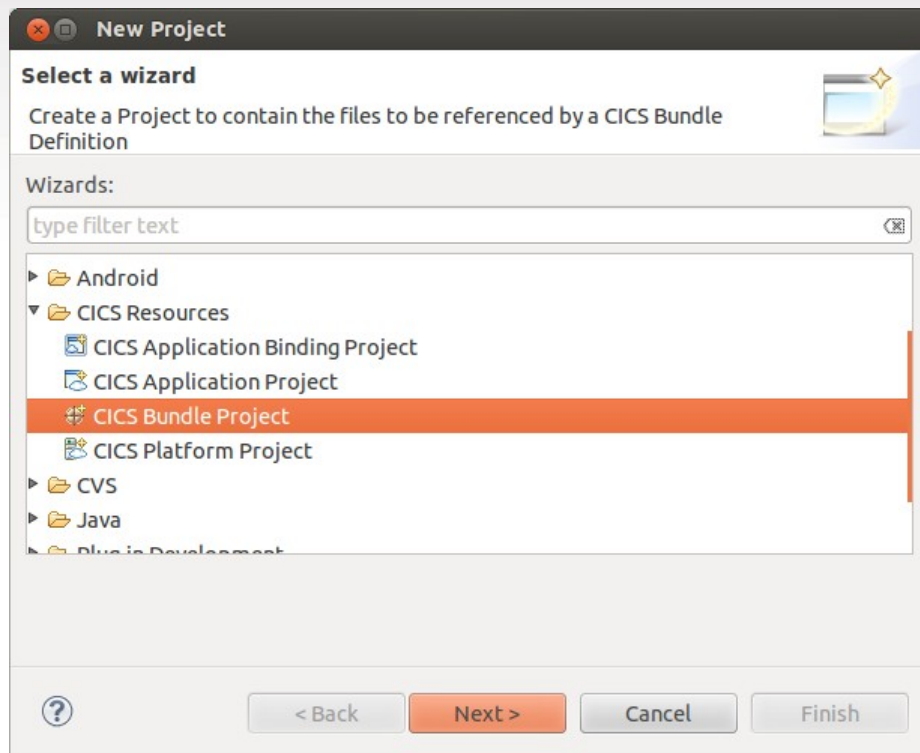
## Application Deployment

### ■ **Support for application packaging**

- Use the CICS Explorer to define the resources, dependencies and application code for a CICS application
  - Create a Bundle Project(s)
    - Specify resources to define
    - Specify resource dependencies
- Create an Application Project that describes the application
  - Application name, description and version
  - References to CICS bundles
- Allows you to manage the application as a single entity

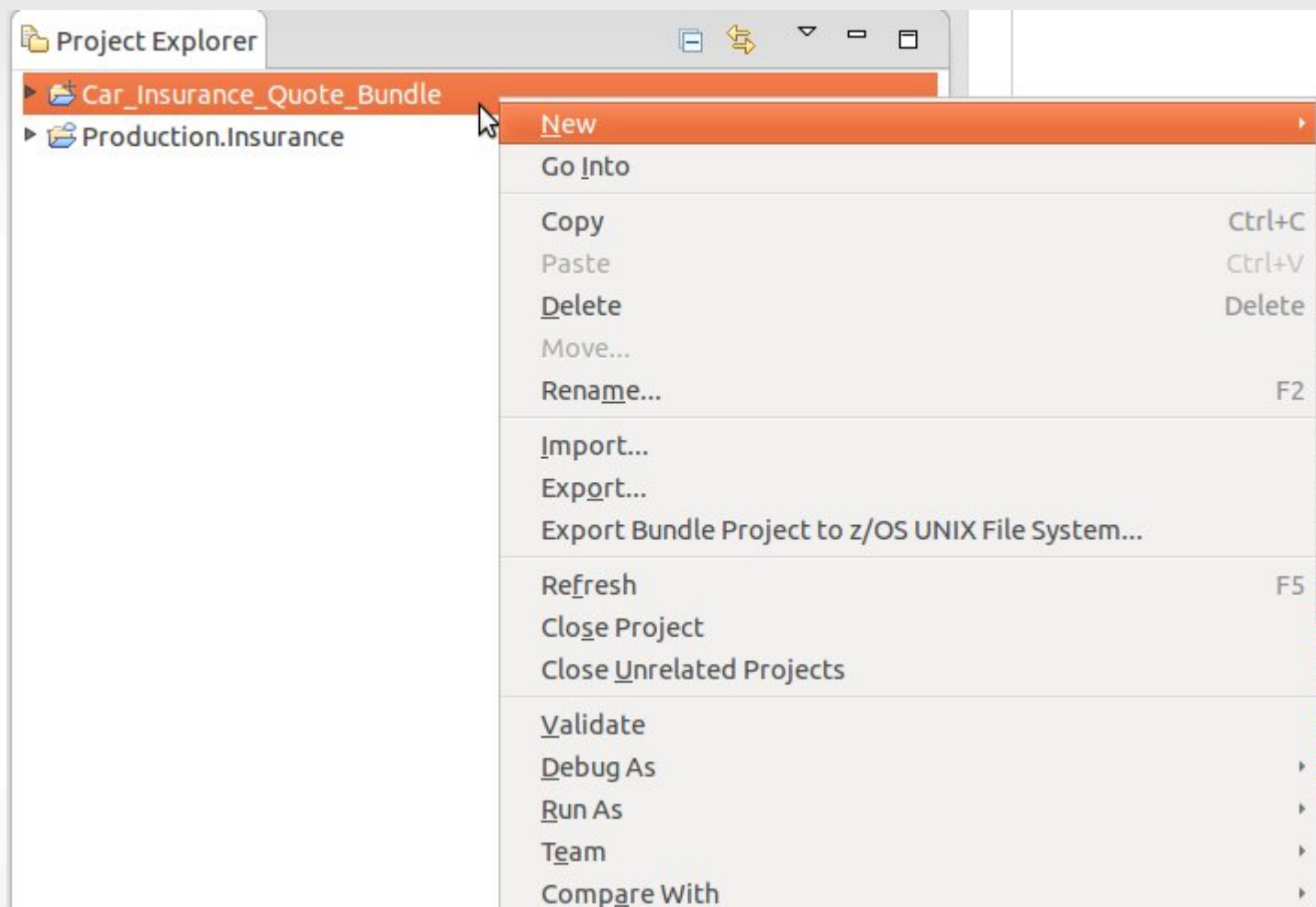
# Application Deployment...

## ■ Creating the Bundle Project



## Application Deployment...

- **Add entries to the bundle project**







# Application Deployment...

- **Create the resource definitions**

**New Program Definition**

Create a program definition in a CICS bundle.

Bundle: Car\_Insurance\_Quote\_Bundle

Name: ICRATE

Description: Car Insurance Rating

Program Type

Assembler, C/C++, COBOL, or PL/I

Java

Service Name:

JVM Server:

Create an Application entry point

Operation name:

Open editor

Cancel Finish

**New Transaction Definition**

Create a transaction definition in a CICS bundle.

Bundle: Car\_Insurance\_Quote\_Bundle

Name:

Description:

Program Name:

Remote System Name:

Open editor

? Cancel Finish



# Application Deployment...

- **Specify the resource dependencies for this bundle**

**Car\_Insurance\_Quote\_Bundle**

### Bundle Overview

**General Information**  
This section describes general information about this bundle.

ID:

Version:

**Defined Resources**  
Specify the CICS resources that are installed and managed by this bundle.

New...  
Remove  
Move Up  
Move Down

**Actions**  
You can perform the following actions on this bundle:

1. Add or remove CICS resource definitions using this editor
2. [Create an entry point to define an application operation](#)
3. [Apply a policy to an application operation](#)
4. [Export the bundle to a platform or specific location in zFS](#)

**Imported Resources**  
Specify CICS resources on which this bundle depends. The bundle will only become ENABLED when all required dependencies are met.

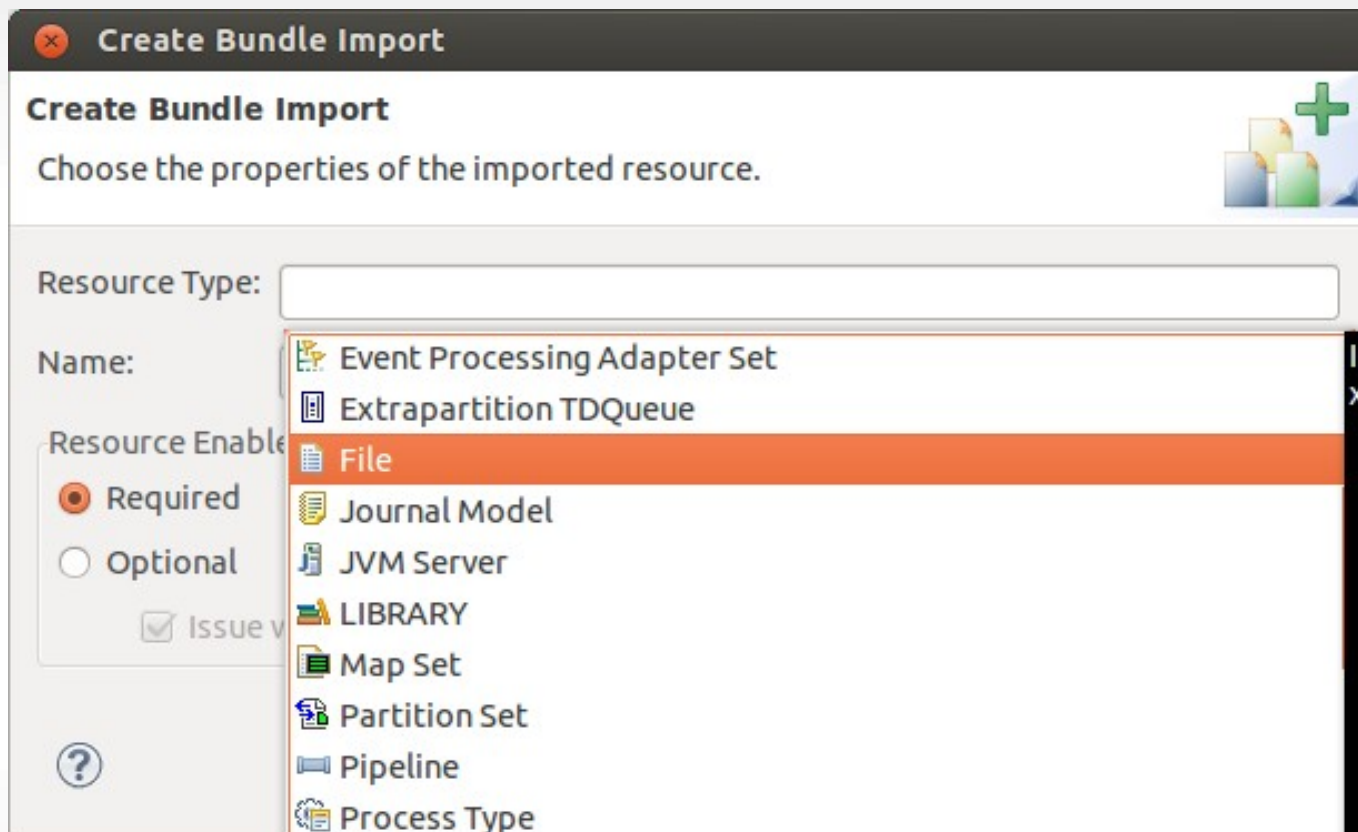
Add...  
Remove  
Properties...

Overview | Entry Points | Policy Scopes



## Application Deployment...

- Specify the resource dependencies for this bundle





## Application Deployment...

### ■ Application Entry Points

- Associate CICS tasks with an application
  - Define application entry point on a BUNDLE program definition
  - Define application entry point with SET PROGRAM OPERATION
    - Only sets the OPERATION attribute
- Application can comprise one or more tasks in different regions
  - Application context will flow between regions
    - MRO and IPIC connected regions
- Application context data will be included in monitoring data
  - Application name, Platform, Version, Operation



# Application Deployment...

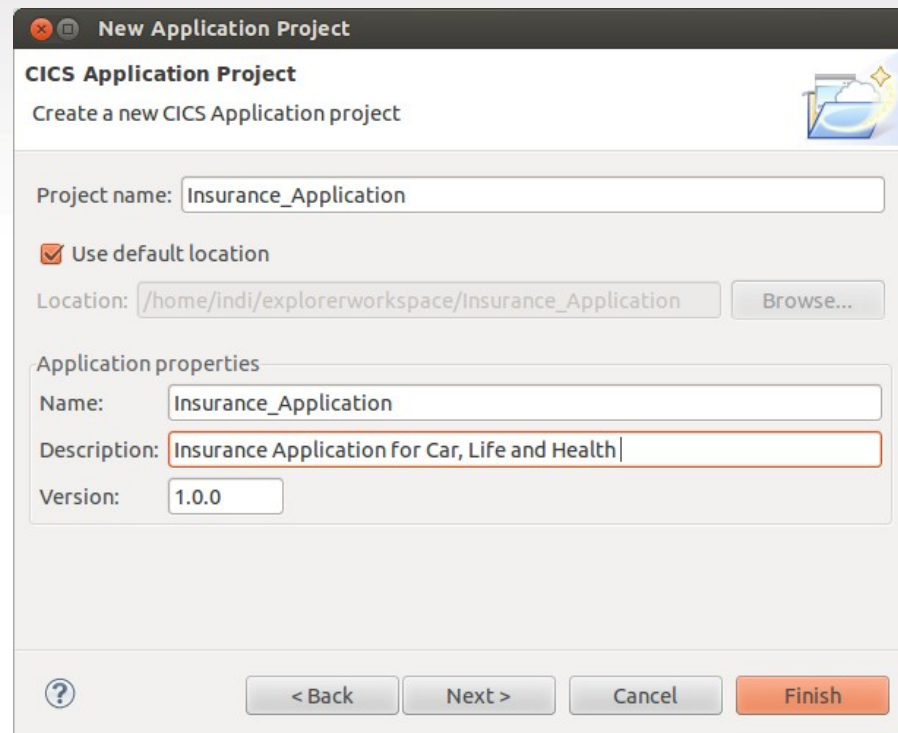
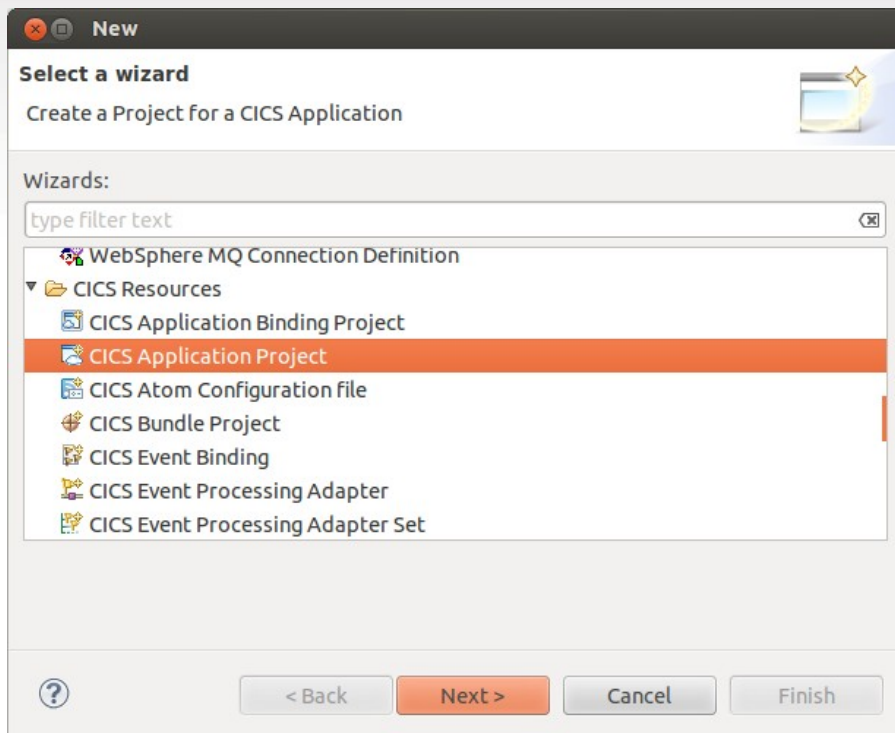
- **View or add and application entry points**

The screenshot shows a web-based configuration interface for CICS V5 Applications. The browser tab is titled "Car\_Insurance\_Quote\_Bundle". The main heading is "Application Entry Points". Below this, there is a section titled "Entry Points" with the instruction "Specify CICS resources to declare as an entry point." A table with three columns is visible: "Operation", "Resource Name", and "Resource Type". The table is currently empty. To the right of the table are three buttons: "Add...", "Remove", and "Properties...". At the bottom of the interface, there is a navigation bar with three tabs: "Overview", "Entry Points" (which is selected), and "Policy Scopes".

Operation	Resource Name	Resource Type
-----------	---------------	---------------

# Application Deployment...

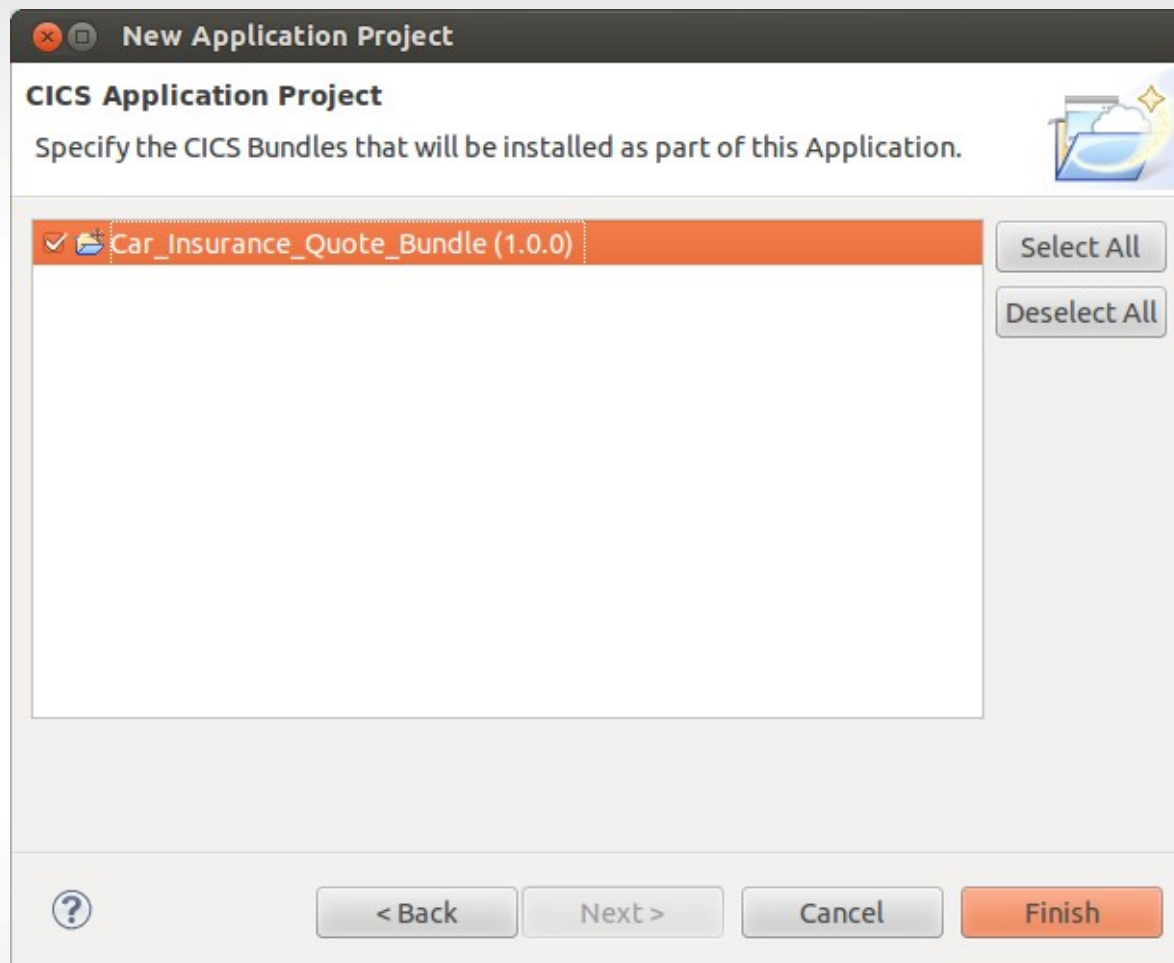
## ■ Creating the Application Project





## Application Deployment...

- **Select the bundles which comprise this application**





## Application Deployment...

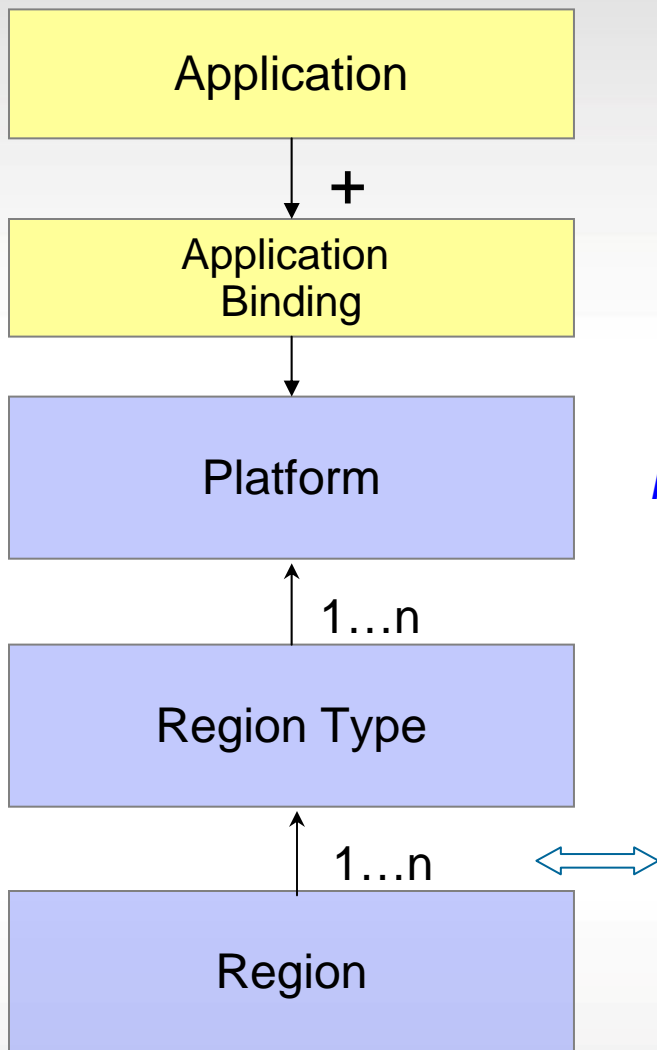
### ■ **Application Binding Project**

- Decouple applications from underlying region topology
- Ties the Application to the Platform
  - Associates bundles with region types
  - Allows the Application project to be mapped to different platforms
    - e.g. Development, Quality Assurance, Production
- Allows additional bundles to be deployed based on the platform





# Application Deployment...



Package application resources and dependencies

Bind the application to the platform. Map bundles within the application to region types. (map developers' world to the operations world)

*Platform: where applications are deployed and run*

Characterize regions in the region type  
e.g. TOR, AOR, ROR, FOR

Elastically scale regions in the region type (within specified bounds)



# Application Deployment...

## ■ Creating the Application Binding

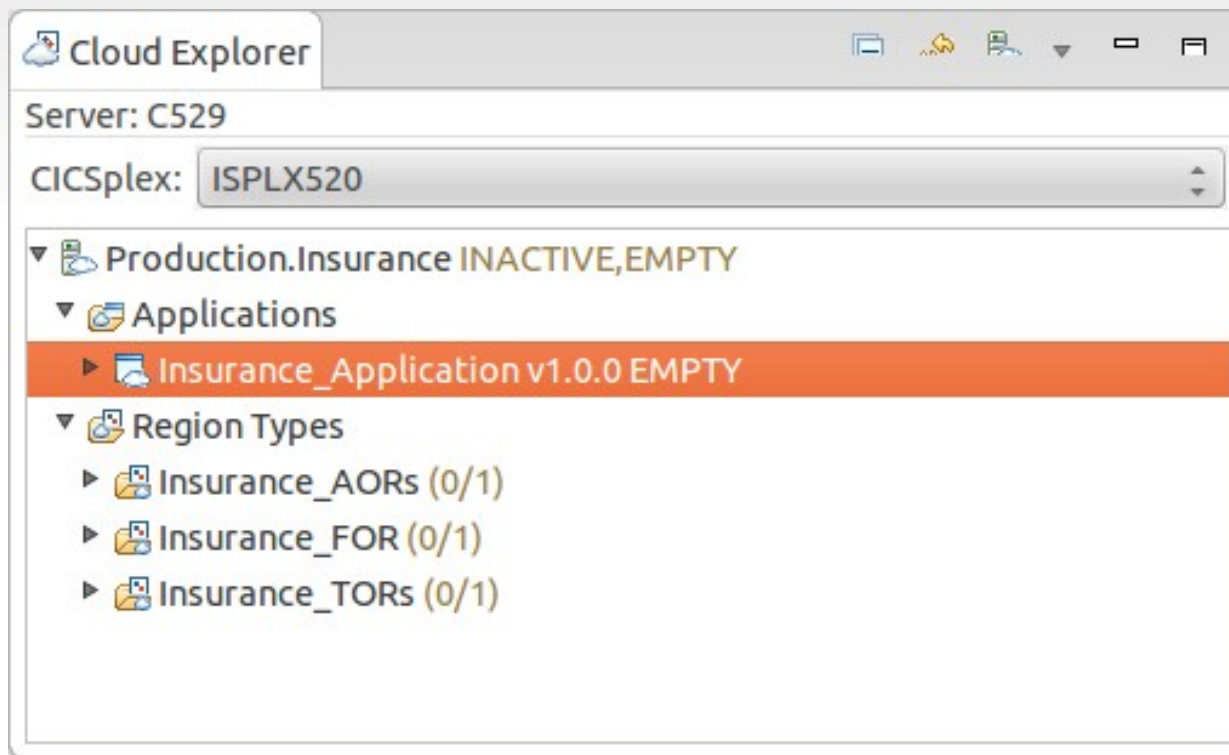
The screenshot illustrates the process of creating a CICS Application Binding project in Eclipse IDE, consisting of several sequential dialog boxes:

- New**: Select a wizard to create a project for a CICS Application Binding.
- New Application Binding Project**: Set the project name to "Insurance.Binding" and use the default location.
- New Application Binding Project**: Configure application binding properties: Name: "Insurance.Binding", Description: "Binding", Version: "1.0.0", Application: "Insurance\_App", Platform: "Production.Ins".
- New Application Binding Project**: Select region types. "Insurance\_AORs" is selected, while "Insurance\_FOR" and "Insurance\_TORs" are unselected.
- Export Application to the home directory of a Platform**: Select the binding "Insurance.Binding (1.0.0)" under the "Production.Insurance (/var/cicsts/ISPLX520/Production.Insurance/)" platform.



## Application Deployment...

- **View the Application and Platform**





# CICS Interdependency Analyzer for z/OS

## What is CICS IA?

- A discovery tool that identifies resource interdependencies and affinities in your CICS systems

## Captures CICS application relationships:

- Resources used by a transaction - Programs, Files, TSQs, TDQs plus DB2, MQ, IMS, Web services, and Natural
- Identifies AG Natural and Adabas relationships
- Identifies non-threadsafe programs
- Transactions with affinities and their type / lifetime
- API changes between CICS versions / releases
- Unused resources
- Sequencing of transactions within an application

## What's its value?

- Real time documentation of CICS application systems
- Automate Threadsafe Analysis
- Identify and analyze affinities
- Assist in application modernization activities
- Quickly identify application scope
- Verify the application code via call path tracing
- Automatically maintains CPSM rules

## Why is this tool important to CICS customers?

- Reduce both time/resource required in understanding active CICS application inventory for efficient maintenance and reuse. A manual and error prone process today.

DISCOVERY



## Why use CICS IA?

### Projects

- **Workload balancing**
  - Affinity Analysis
  - Resource utilization
- **Application Modernization**
  - Web services
  - Atom services
  - Events deployment
- **CICS TS Upgrade**
  - Understand the use of TRUEs and GLUEs
  - Understand the use of modified or deleted SPIs and APIs
  - Assist with test coverage
- **Threadsafe Analysis**
  - Identify “safe” code
  - Identify “inhibitors”
  - Reduce time for analysis

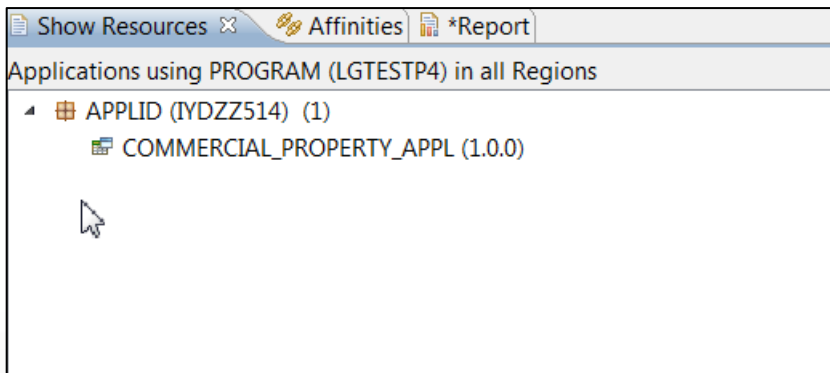
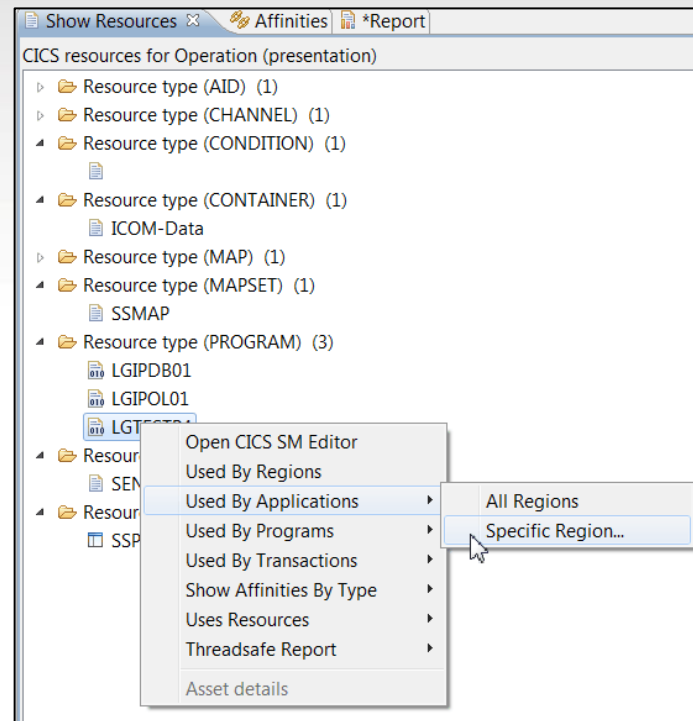
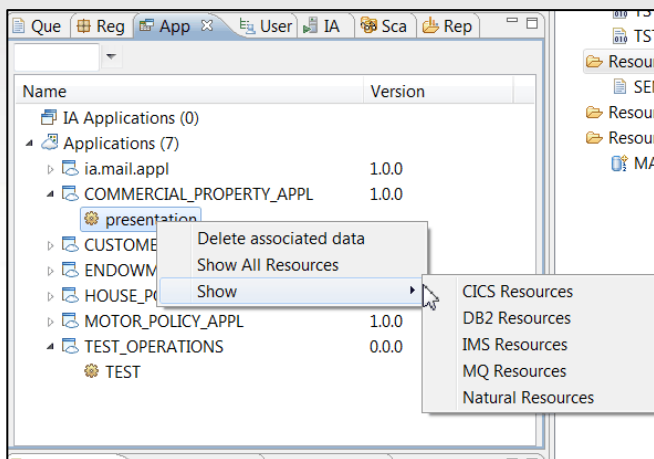
### Day to Day usage

- **Application changes**
  - Which programs uses a given resource
- **Application deployment**
  - Governance – check for Affinities , Threadsafe commands , site rules
- **Problem determination**
  - What new commands have been added to a given program using the First\_used timestamp column
  - Use Command flow to dive into a problem transaction
- **VSAM or resource recovery**
  - Disable all programs that use this file



# CICS Interdependency Analyzer V5.1 Highlights...

Application support – collect and display data for a deployed application



New menu option – “Used by Applications”  
Can be used against any resource.

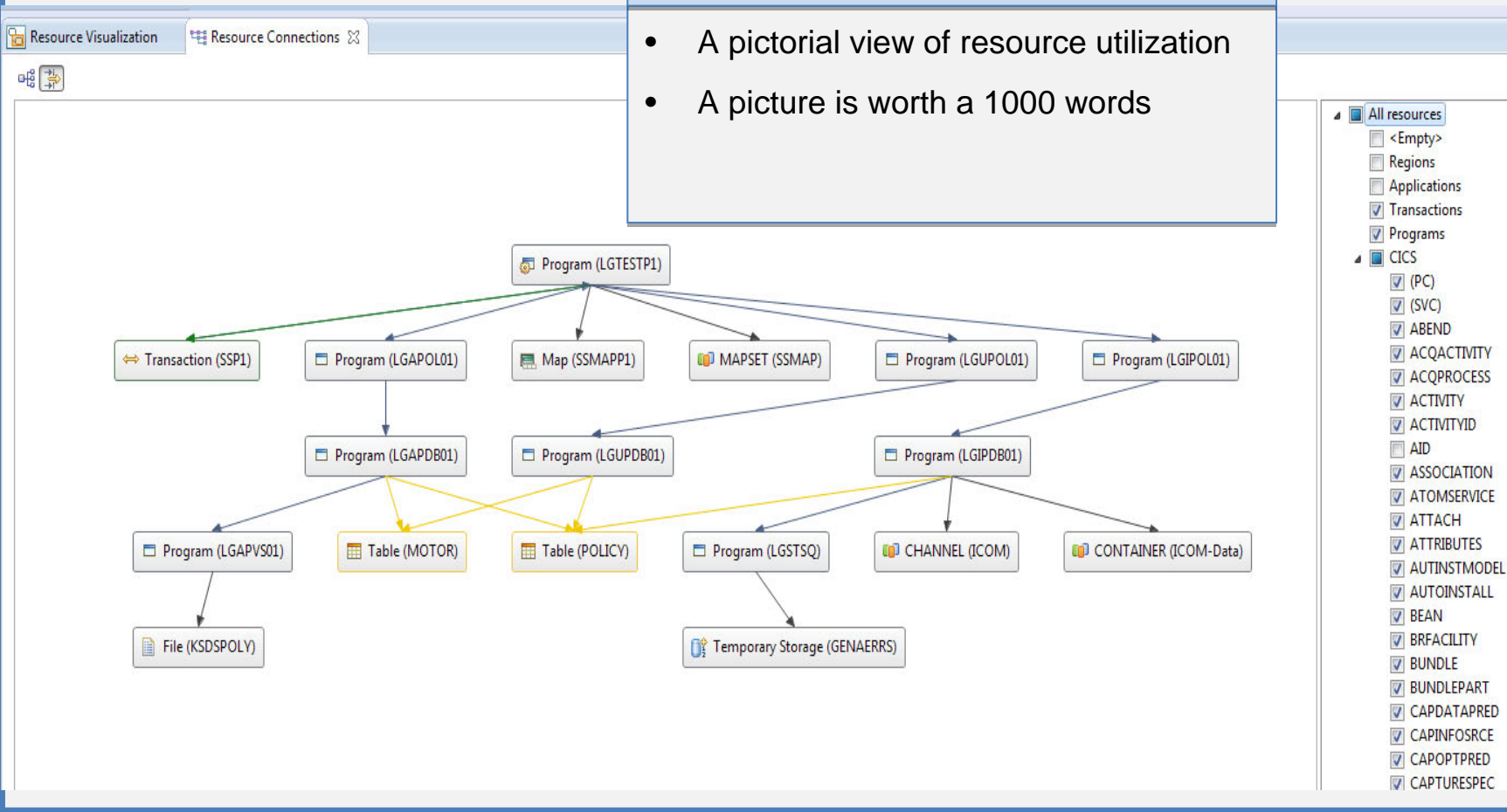


# CICS Interdependency Analyzer V5.1

## Visualization

### Benefits

- A pictorial view of resource utilization
- A picture is worth a 1000 words





# CICS Configuration Manager for z/OS

## What is it?

- CICS Configuration Manager simplifies CICS resource-definition administration and maintenance, while at the same time offering comprehensive reporting and optional change-management control facilities.

## What's its value?

- Single point of control for managing CICS application resource definitions. Aids systems administration, lowers costs, reduces risk of downtime due to user errors and speeds version to version migration

## How does it enhance CICS management?

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

## Why is this tool important?

- Accurate CICS resource definitions are essential to maintain the high availability expected of CICS. With tens, or even hundreds, of CICS regions across the enterprise, each containing hundreds or thousands of artifacts, maintaining potentially millions of definitions can be challenging.
- Reduce both time/resource in gaining tighter control over CICS CSD administration
- Enhance compliance with change management policies.
- Generate audit reports to simplify effort and costs associated with compliance

**RESOURCE MANAGEMENT**





# Single point of control over Resource Definitions Access multiple CSDs, Data Repositories, Lists, and Groups from single interface

The screenshot displays the IBM CICS Explorer application interface. The main window is titled "IBM CICS Explorer - C:/Users/IBM\_ADMIN/cicsexplorer". The interface is divided into several panes:

- Configurations (12):** A list of CSDs and their contexts, including CICSOR1 through LIVCEMSR.
- Search Results:** A tree view showing "All resources for CSDAOR6 Groups GENA, GENASAD, GENASAF, GENASAP, GENASAT, GENASA2 (45)". It lists various resource types like DB2 Connection Definition, File Definition, Program Definition, and Transaction Definition.
- Group List Definitions:** A list of groups under the CSDAOR6 package, including GENA, GENASAD, GENASAF, GENASAP, GENASAT, and GENASA2.
- Transaction Definition (TEST):** A detailed view of the TEST transaction definition, showing basic information (Name: TEST, Description:), CSD Group (GENASA2), and details like Initial Program (GENA001) and Profile (DFHCICST).
- History:** A table showing the resource history for TEST from 2012/09/17 13:35:09 to the latest entry.

Revision Time	Resource Name/After	Resource Type/Before	Group	User Name	Configurat
2012/09/25 21:10:38	TEST	TRANDEF	GENASA2	DNET409	CSDAOR6
shutdown	ENABLED	DISABLED			
2012/09/25 21:10:27	TEST	TRANDEF	GENASA2	DNET409	CSDAOR6
shutdown	DISABLED	ENABLED			

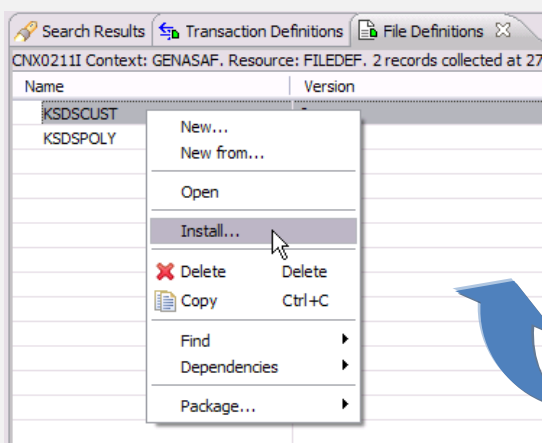
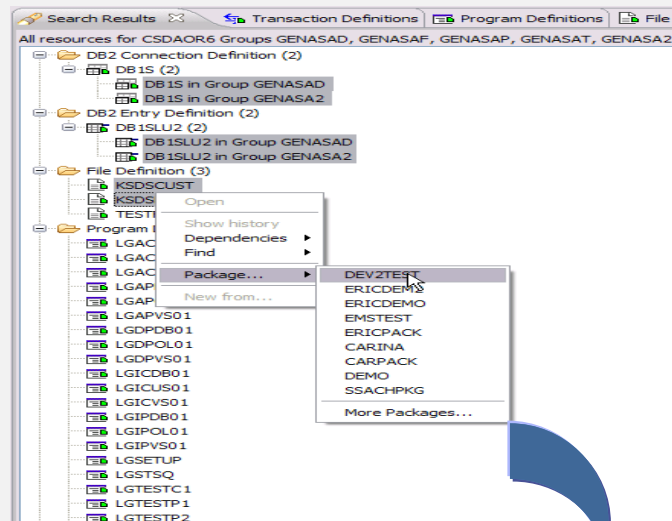


# CICS CM – CICS resource definition lifecycle management

## Benefits

- Eliminate manual and error prone processes
- Full audit trail and backout capability
- Integrate with source code change management processes

Change package created for resources in Development repository



Install definitions in CICS regions on test environment

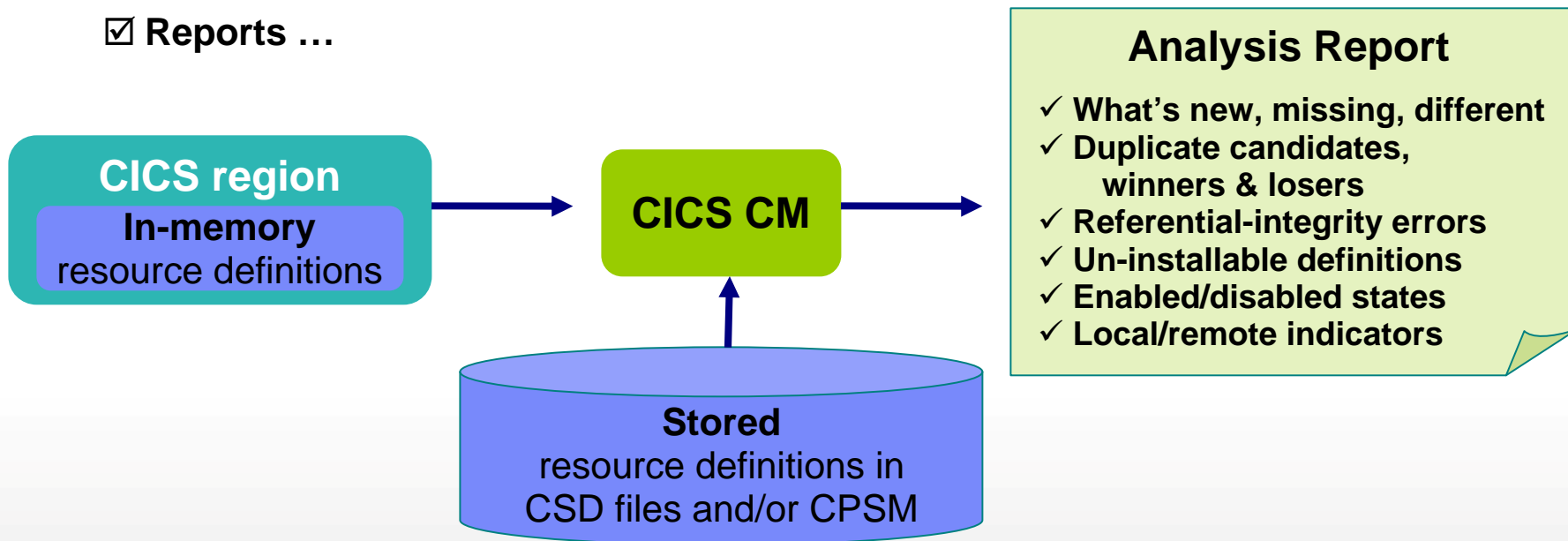
Packages	Description	Last Action	Changetime
CP1		CREATE	2012/05/21 06:49:
DEMO	Demo PKG	CREATE	2012/07/19 08:28:
DEMO	Development to Test	READY	2012/09/27 05:44:
DEMO	of change packaging via explorer	UNREADY	2012/09/25 21:26:
DEMO	for Humana	MIGRATE	2012/09/26 13:51:
DEMO	package for Eric	MIGRATE	2012/09/18 10:22:
DEMO	ation of GENAPP resource	READY	2012/04/29 12:40:
SFCPKG1	Package for SFC app	MIGRATE	2012/05/02 17:52:
SSACHPKG	Change package for WMQ definitions	MIGRATE	2012/07/11 03:44:
00000001	Migrate resources from CICS TS 3.2 to 4.1	READY	2012/04/18 05:31:
00000002	Migrate from AOR6 to AOR7	MIGRATE	2012/02/13 08:24:
00000003	Migrate from CSD to CPSM BAS	BACKOUT	2012/05/30 03:55:

Change package migrated to test environment



## CICS CM: Deployment analysis

- ✓ Immediate analysis – no need to stop/start CICS regions
- ✓ Supports CSD, CPSM, or CSD/CPSM hybrid models
- ✓ Understands ‘order-sequence’ processing and RASGNDEF overrides
- ✓ Provides filtering for auto-install, dynamic resources, known conditions
- ✓ Reports ...

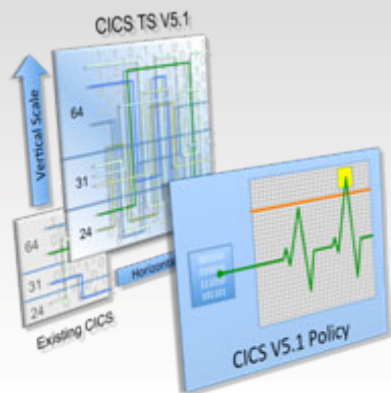




# How can I modernize my CICS Applications With today's technologies?



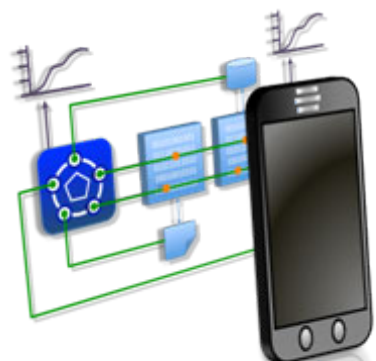
# The new CICS Transaction Server V5.1 delivers...



100+ requirements satisfied!

## Operational Efficiency

- *Greater capacity - achieve cost savings through consolidation*
- *Managed operations - reduce cost and risk through automation*
- *Increased availability - reduce the need for planned downtime*
- *Deeper insight - improve decision making and audit readiness*
- *Modern batch – manage your batch window*
- *Security integration – reducing the cost and complexity of security*



## Service Agility

Free Feature Packs

- *First-class applications - create agile services from existing assets*
- *First-class platforms - create agile service delivery platforms*
- *Modern interfaces - build rich web experiences for critical applications*
- *Foundational enhancements - extend core capabilities*
- *Mobile extensions – simplified integration with mobile devices*
- *Dynamic Scripting – enterprise class composite web applications*

Over 150 ISV applications supporting CICS V5.1



... with Cloud Enablement

consistent with the IBM Cloud Computing strategy positions customers for the next transformational era in technology moves towards a cloud oriented service delivery platform



*Mobile extensions – simplified integration with mobile devices*

## *CICS Transaction Server Feature Pack for Mobile Extensions*

### *Scalable platform*

*CICS TS V5.1's advanced scalability makes it the ideal platform for managing mobile workloads*

### *Service enablement*

*COBOL, C/C++, PL/I and Java programs can be RESTful service providers*

### *Agile integration*

*JSON data and RESTful interface makes integration with mobile devices simple and efficient*

**Available on CICS  
TS V4.2 & V5.1**

Via Worklight Server

Worklight® Server



COBOL, PL/I, C/C++,  
and Java Services

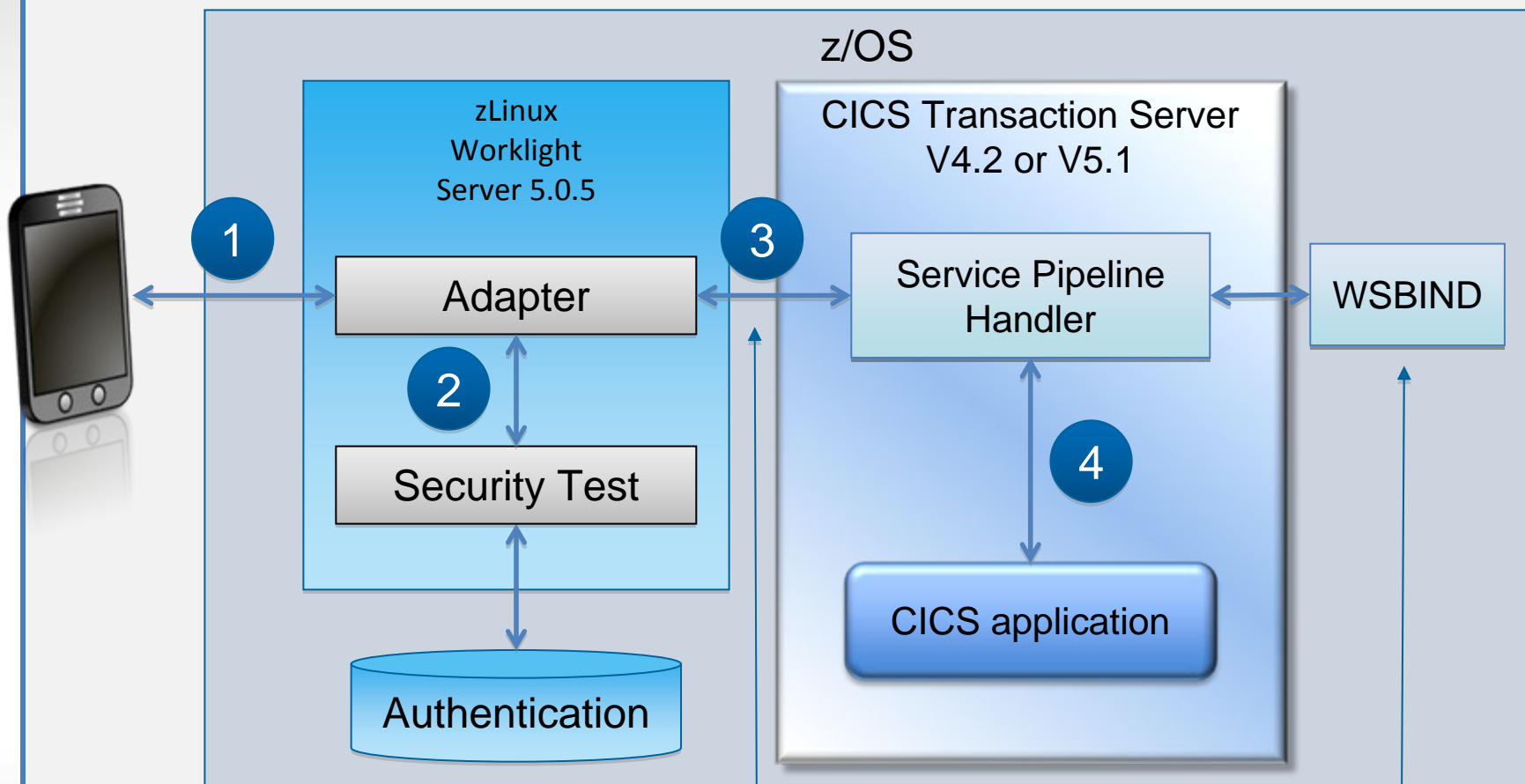
Direct to CICS







*Mobile extensions – simplified integration with mobile devices*



Hypersocket connections. All connections are SSL.

Stored on zFS



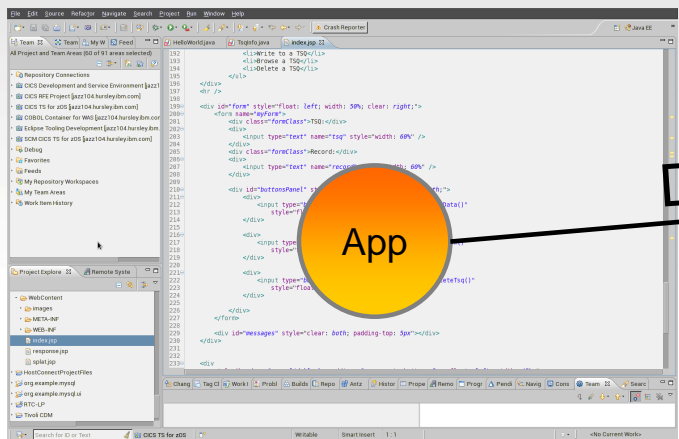
## Liberty Profile Web Container

- **New Java web container is built on WebSphere Application Server Liberty profile technology:**
  - Liberty is a lightweight, composable, ‘profile’ of WebSphere Application Server
    - Provides a fast and lightweight Java web container
  - Provides “off the shelf” Web-server capabilities (JSPs and Servlets)
  - Provides potential to re-use even more WebSphere technology in CICS.
  - JSP and Web servlets have direct, local, access to CICS data and resources.
  - Servlets can take advantage of existing CICS OSGi applications to provide a Dynamic Web front end.

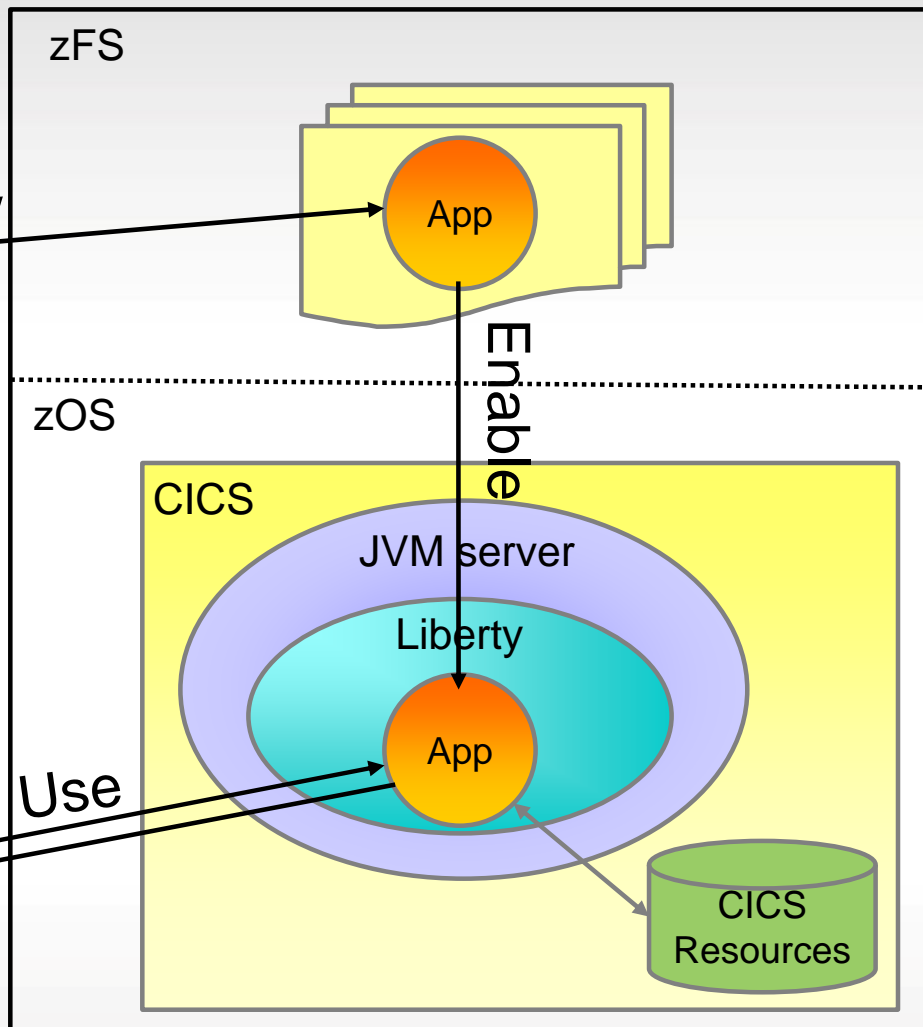


# Liberty Profile Web Container - Putting it all together

## Eclipse with CICS Explorer SDK & Liberty Tools



Deploy





## Dynamic Scripting – Run PHP applications inside CICS

### CICS Transaction Server Feature Pack for Dynamic Scripting

#### Mobile interfaces

Create rich web or mobile interface to existing CICS applications and services

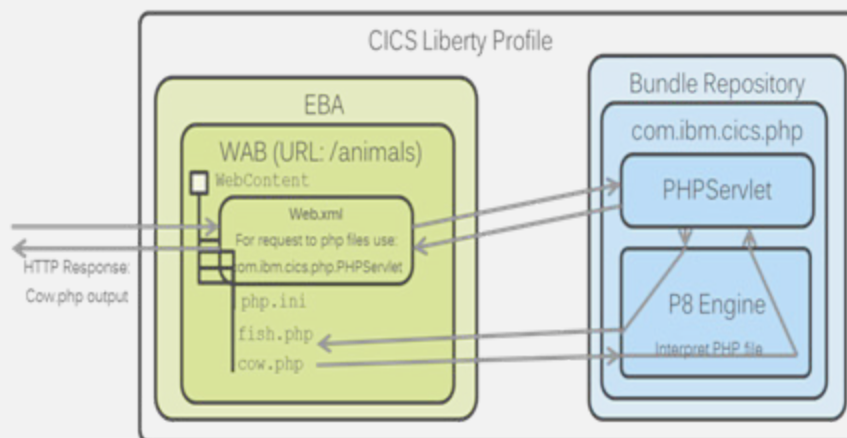
#### PHP Support

PHP support introduced in CICS TS V4 is now available in CICS TS V5

#### Co-location

Remove network latency and overheads by co-locating presentation logic with business data

Available on CICS TS V5.1

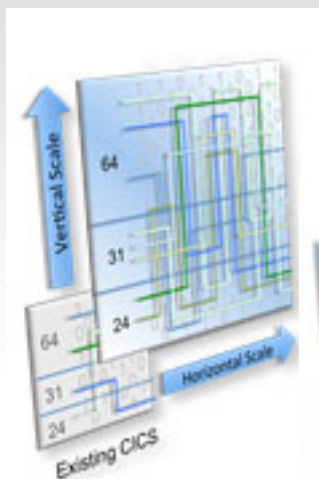




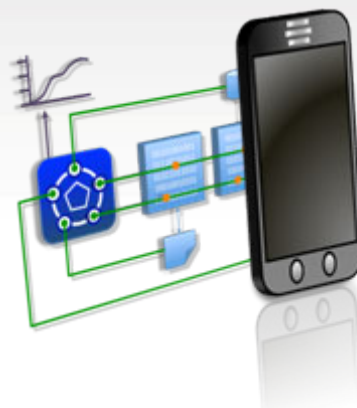
## Summary

- **What is an Application?**
- **How do we package an application?**
  - Bundles
    - Definitions
    - Dependencies
    - Context
  - Application Project
- **How do we deploy an application to different platforms?**
  - Bindings
  - Application definitions
  - Cloud Explorer
- **How do we modernize our applications?**
  - Liberty Web Container

Try it now



**CICS Transaction Server V5.2  
Open Beta**



Delivers more dynamic, flexible CICS application deployment.  
 Faster and more reliable CICS platform deployment.  
 Policy-based management of CICS applications and platforms.  
 Better vertical and horizontal scaling

64-bit addressing, thread safe, and higher maximum CICS tasks.

More exploitation of industry standards,  
 XML, Java, and TCP/IP.

Includes more core transaction processing capability

email notifications, identity propagation, API, and enhanced events.

Provides more comprehensive monitoring and statistics to improve operational metrics.

**CICS TS V5.2  
Open Beta  
Available now!**



# CICS Resources

## Find out more

Register for Impact 2014 today

-30 CICS related sessions

- 2 Labs

-Meet CICS Technical specialists

-Hear about the latest CICS V5.1 Portfolio release

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

### Impact 2014

The Venetian, Las Vegas, NV | April 27th - May 1st

▶ Save The Date!



## CICS Smart Seminars

Arrange a customized CICS agenda at your location and hear about the CICS topics you want to hear about. Contact your local IBM representative or send an

Email to [cicssem@uk.ibm.com](mailto:cicssem@uk.ibm.com)

## CICS Developer Trial

### CICS Developer Trial V5.1

Operational Efficiency and Service Agility with Cloud Enablement



- V5.2 Available in 2014
- No charge trial, fixed expiry date
- Does not start SVC period
- For non-production environments
- Available through IBM ShopzSeries
- PID 5655-Y30

Based on CICS TS V5.1

- (with restrictions)

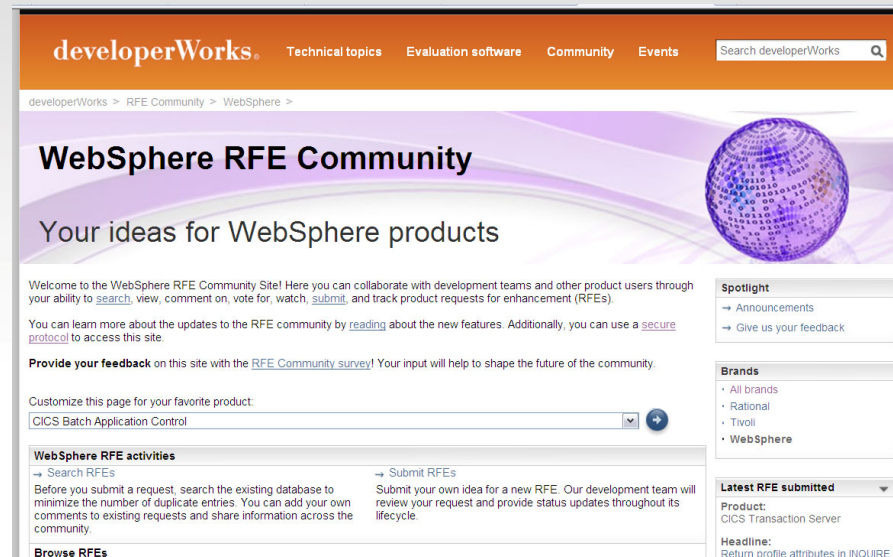
- Performance
- Capacity
- License

<http://www-03.ibm.com/software/products/en/cics-ts-devtrial>

## 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



The screenshot shows the 'WebSphere RFE Community' page on the developerWorks website. The page has an orange header with navigation links: 'Technical topics', 'Evaluation software', 'Community', and 'Events'. A search bar is located in the top right corner. Below the header, the page title is 'WebSphere RFE Community' and the subtitle is 'Your ideas for WebSphere products'. The main content area includes a welcome message, instructions on how to use the site (search, view, comment, vote, watch, submit), and a link to a secure protocol. There is a 'Provide your feedback' section with a link to an RFE Community survey. A 'Customize this page for your favorite product' section shows 'CICS Batch Application Control' selected. Below that, there are two sections: 'WebSphere RFE activities' with 'Search RFEs' and 'Submit RFEs' links, and 'Browse RFEs'. On the right side, there are three sidebar sections: 'Spotlight' with links to 'Announcements' and 'Give us your feedback'; 'Brands' with a list including 'All brands', 'Rational', 'Tivoli', and 'WebSphere'; and 'Latest RFE submitted' with details for 'CICS Transaction Server'.

- All previous FITS requirements have been processed, and 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](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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 [youtube.com/cicsfluff](https://youtube.com/cicsfluff)

 [youtube.com/cicsexplorer](https://youtube.com/cicsexplorer)



 [twitter.com/IBM\\_System\\_z](https://twitter.com/IBM_System_z)

 CICS Explorer Forum  
[ibm.com/developerworks/forums/forum.jspa?forumID=1475&start=0](http://ibm.com/developerworks/forums/forum.jspa?forumID=1475&start=0)

 CICS-L list Forum  
[listserv.uga.edu/archives/cics-l.html](http://listserv.uga.edu/archives/cics-l.html)

## Key documents

### ▪ Analyst papers

- Lustratus Research - New project platform section for CICS Users  
[ftp://public.dhe.ibm.com/software/htp/cics/pdf/Lustratus\\_Research\\_Paper\\_New\\_project\\_p\\_latform\\_selection\\_for\\_CICS\\_users.pdf](ftp://public.dhe.ibm.com/software/htp/cics/pdf/Lustratus_Research_Paper_New_project_p_latform_selection_for_CICS_users.pdf)
- Branham Group: IBM CICS Tools: Unrealized Productivity Gains and True Cost Savings  
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- Software Strategies: IBM z/OS Problem Determination Tool Suite Leads Again  
[https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?lang=en\\_US&source=sw\\_g-rszswg](https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?lang=en_US&source=sw_g-rszswg)

### ▪ IBM Redbooks

- [CICS Transaction Server from Start to Finish](#), SG24-7952-00
- [Implementing IBM CICS JSON Web Services for Mobile Applications](#), SG24-8161-00
- [Smarter Banking with CICS Transaction Server](#), SG24-7815-00
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- [Architects guide to CICS on System z](#), SG24-8067-00
- [IBM CICS and the JVM server: Developing and Deploying Java Applications](#), SG24-8038



## Next Session

# CICS V5 Scalability and availability for a mobile world

- **Scalability**
- **Performance**
- **Policies**
- **Scalability Tooling**
- **Connectivity**
- **Summary**