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**

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CICS Platform as a Service Review

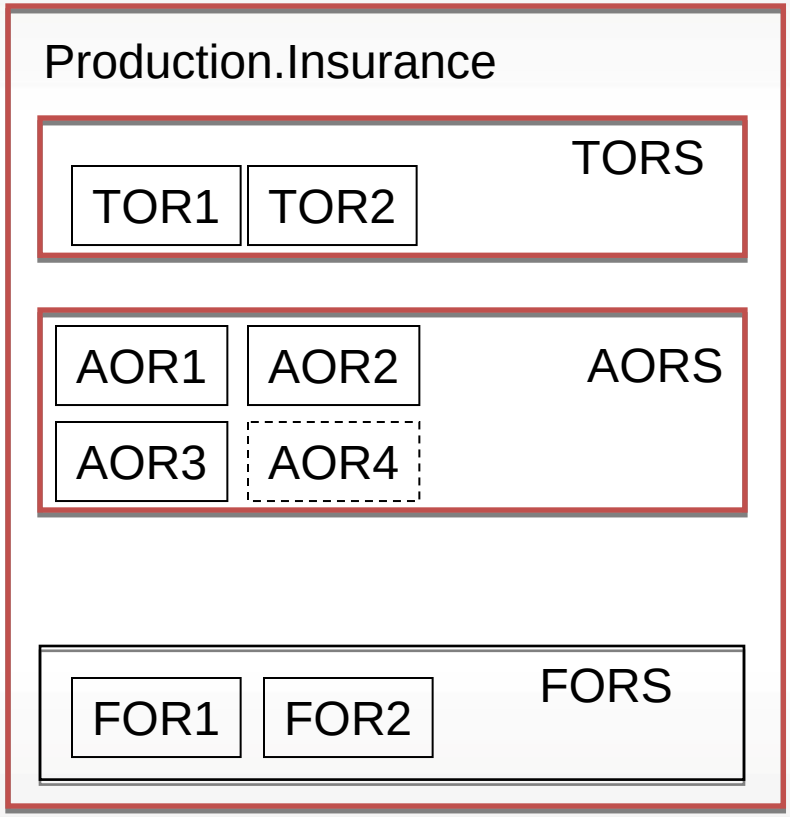
- **A review of a CICSPlex and a Platform**

PRODPLEX

Platform: Production.Insurance

consists of Region Types

TORS
AORS
FORS



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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*
  - *…*

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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

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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

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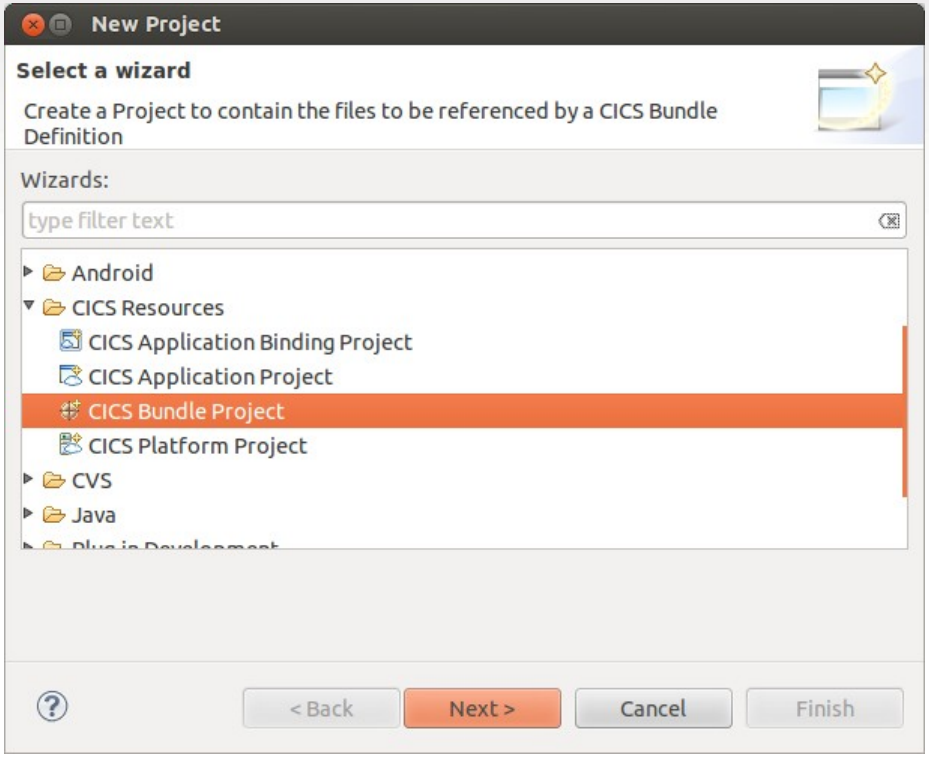
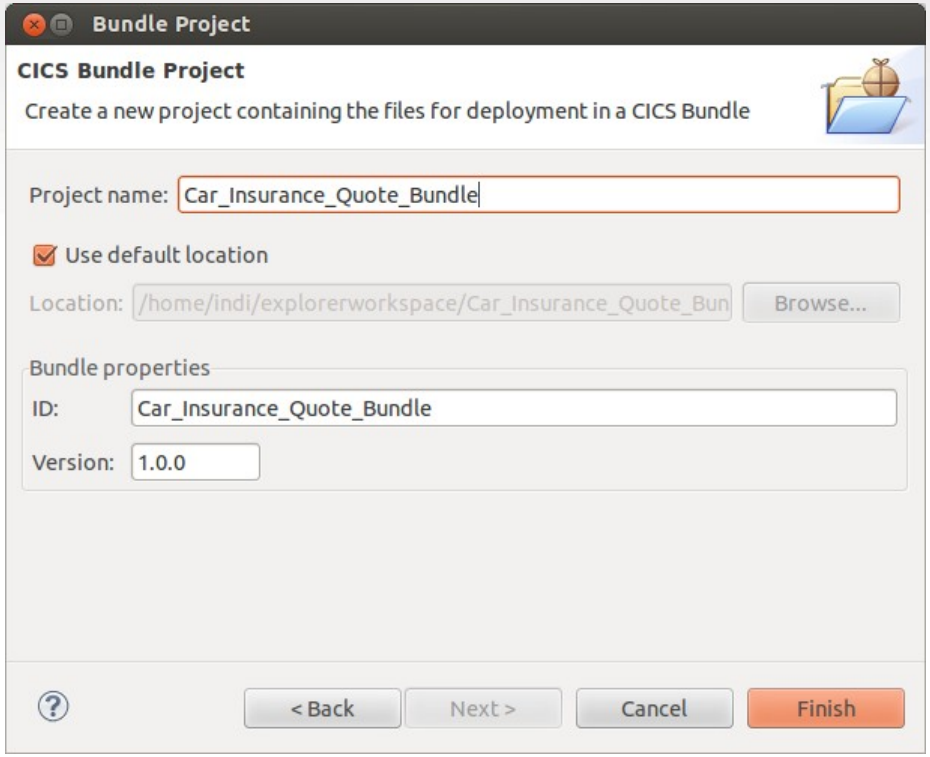
Application Deployment…

- **Creating the Bundle Project**





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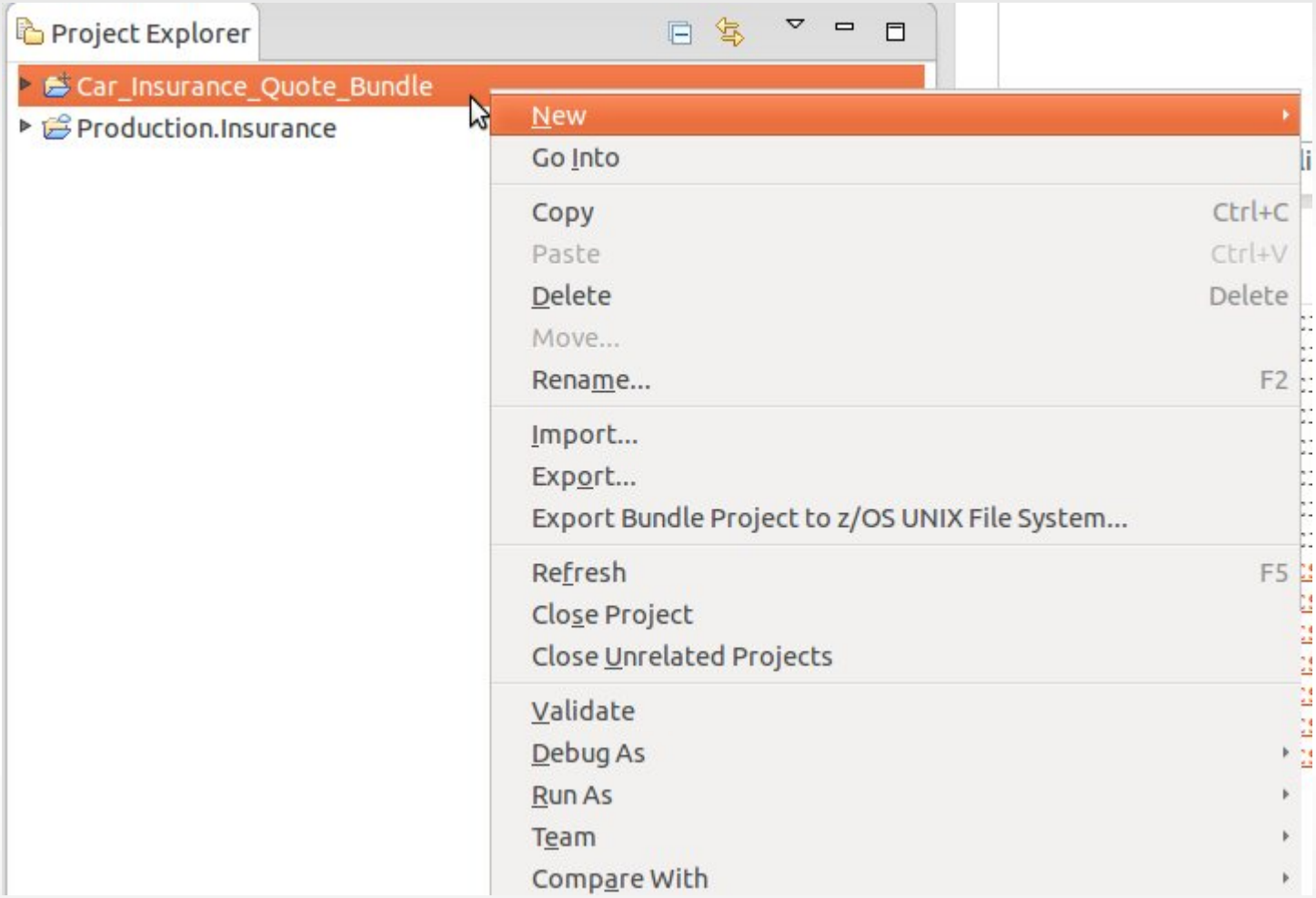
Application Deployment…

- **Add entries to the bundle project**



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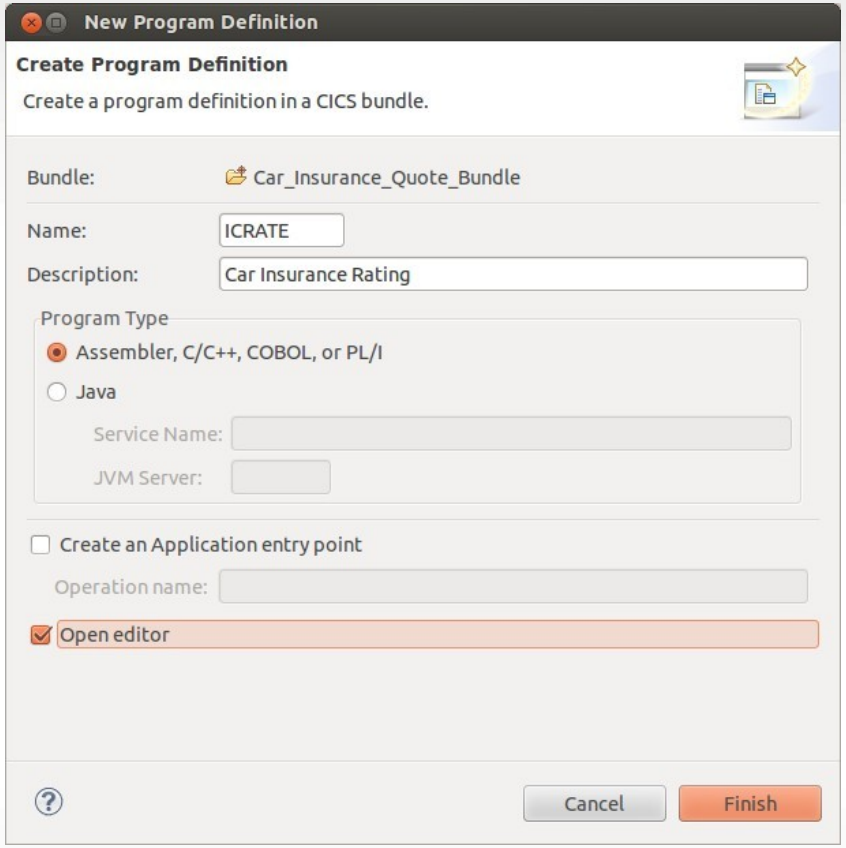
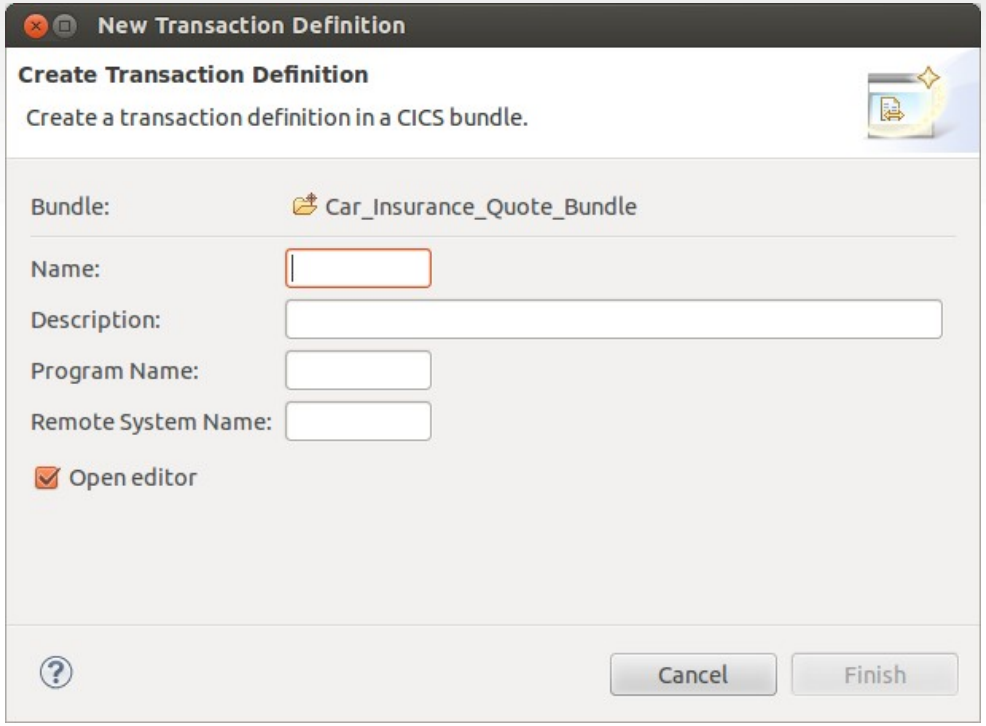
Application Deployment…

- **Create the resource definitions**





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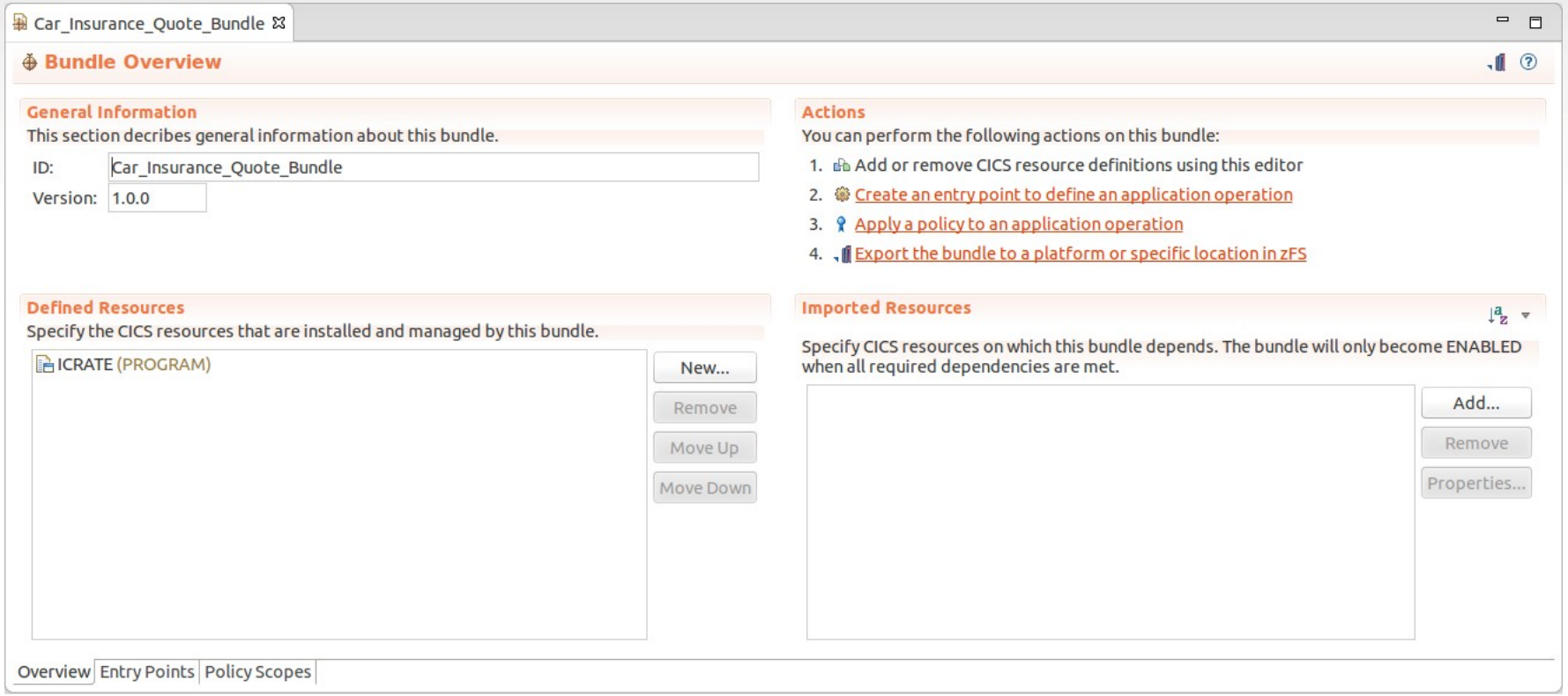
Application Deployment…

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



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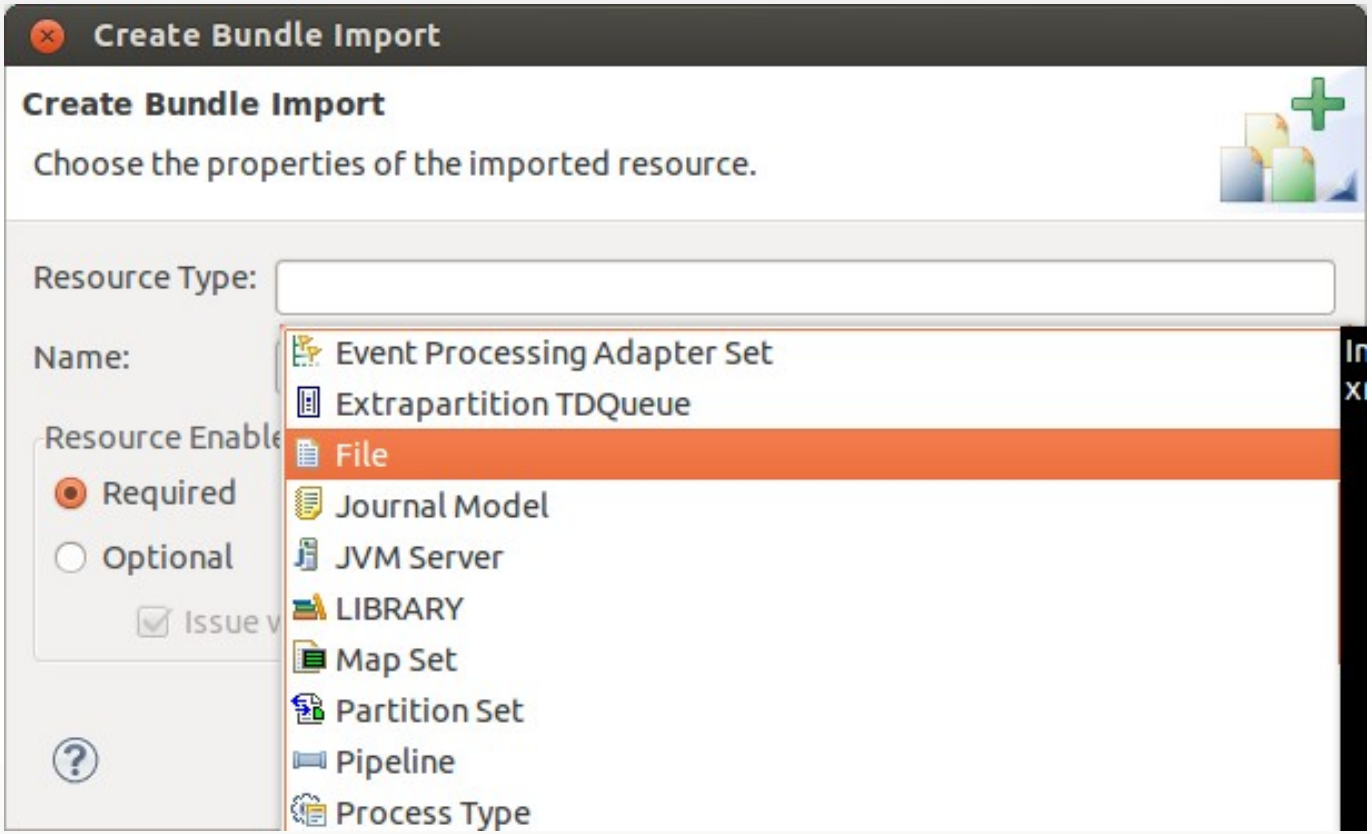
Application Deployment…

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



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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

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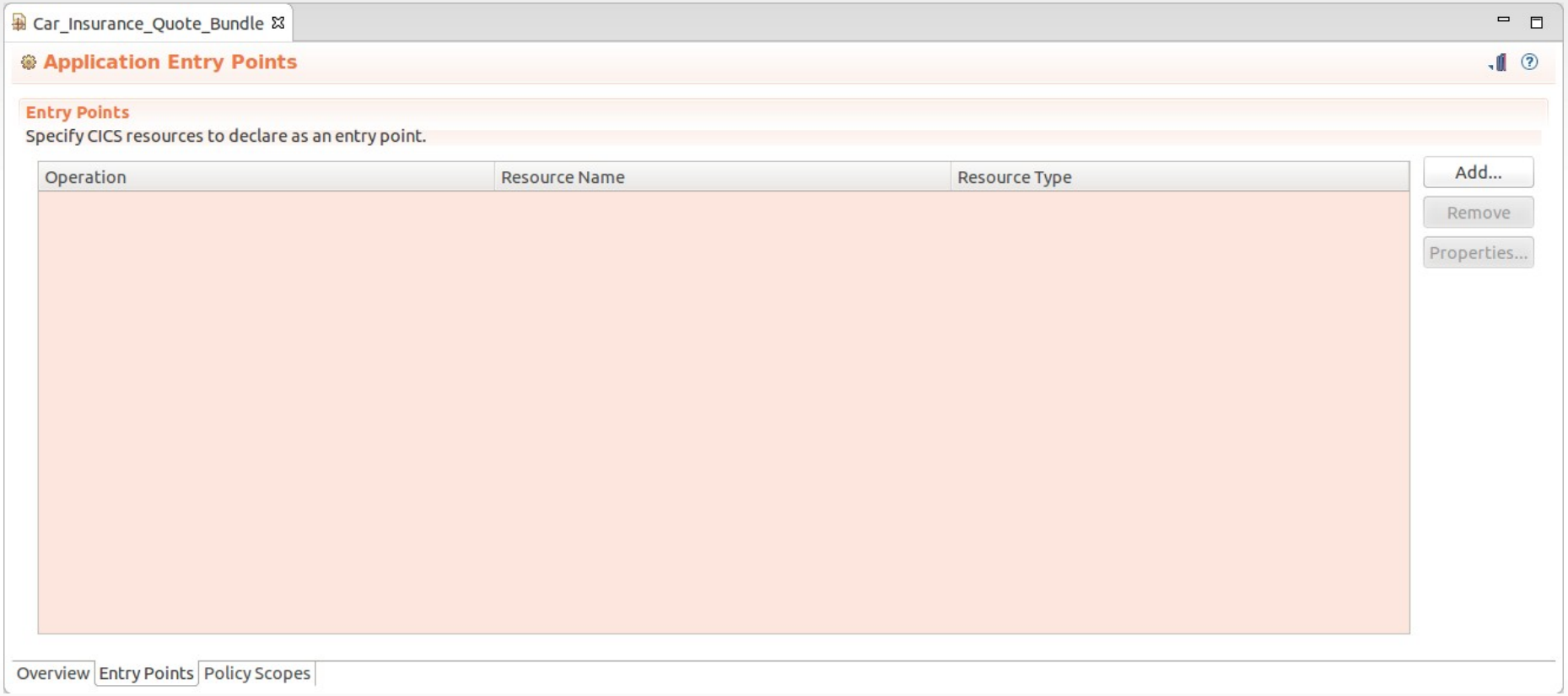
Application Deployment…

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



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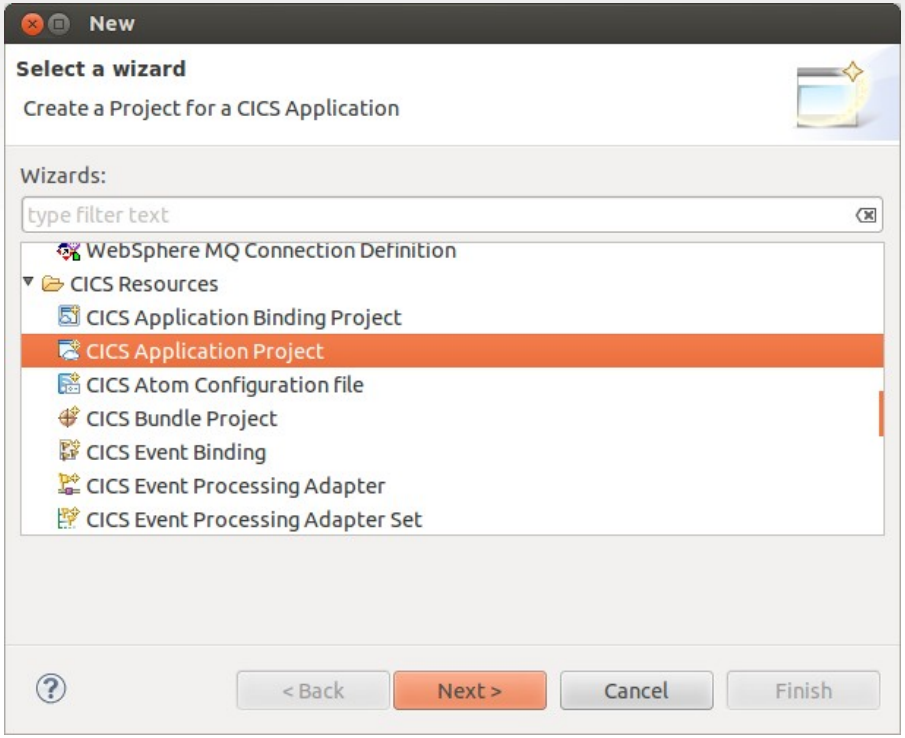
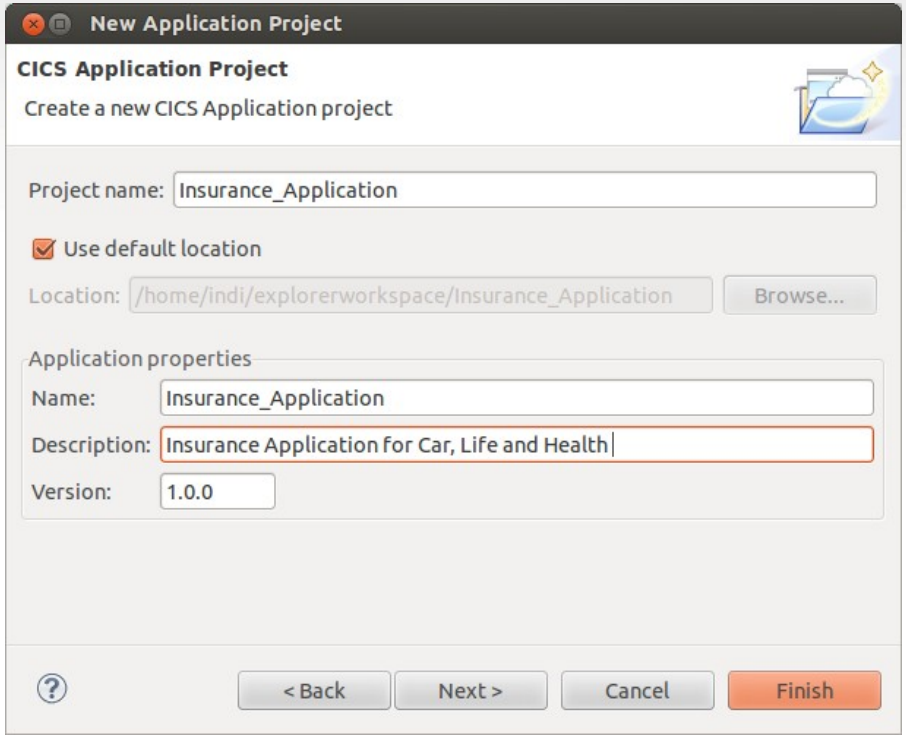
Application Deployment…

- **Creating the Application Project**





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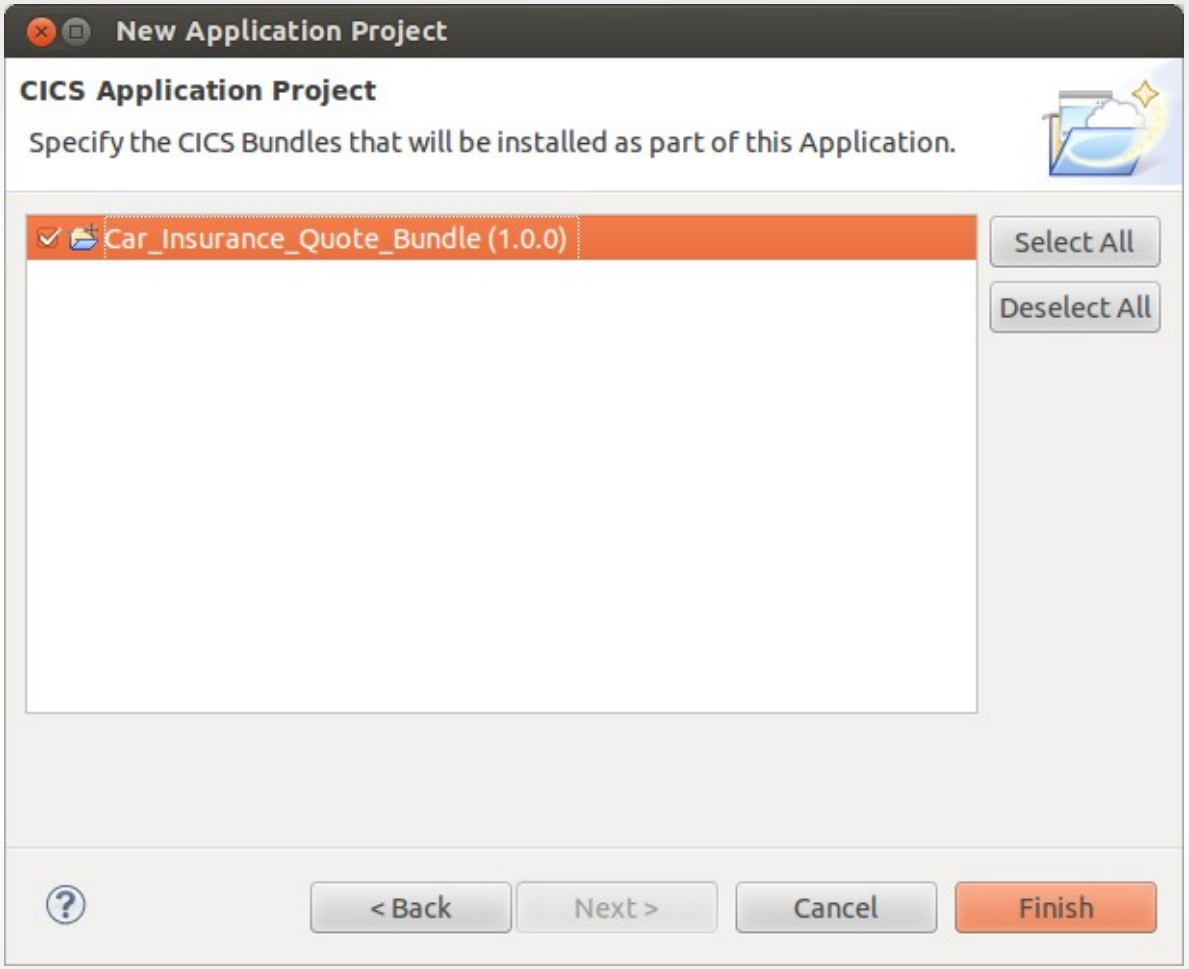
Application Deployment…

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



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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

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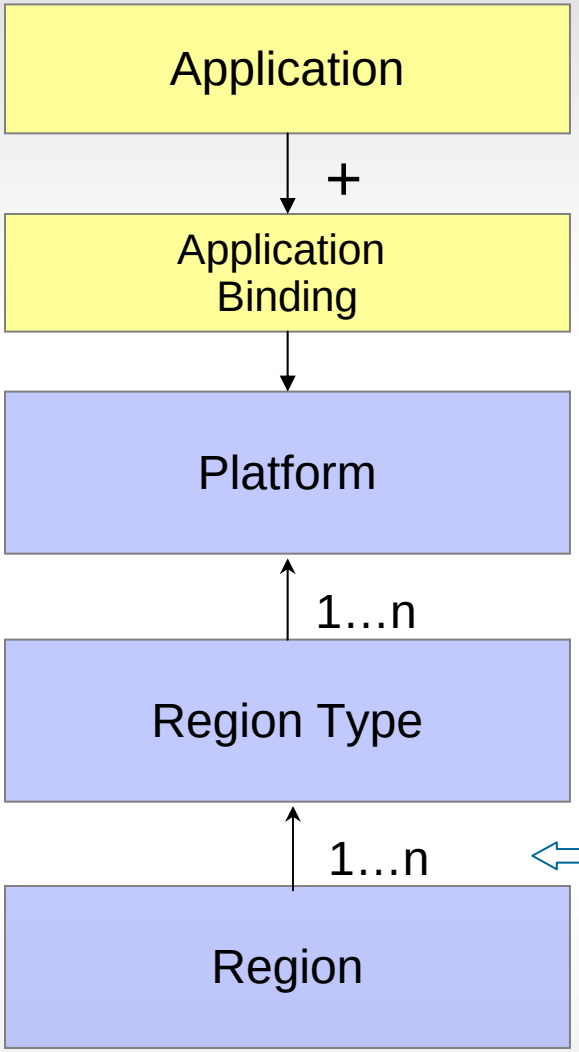
Application Deployment…



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)

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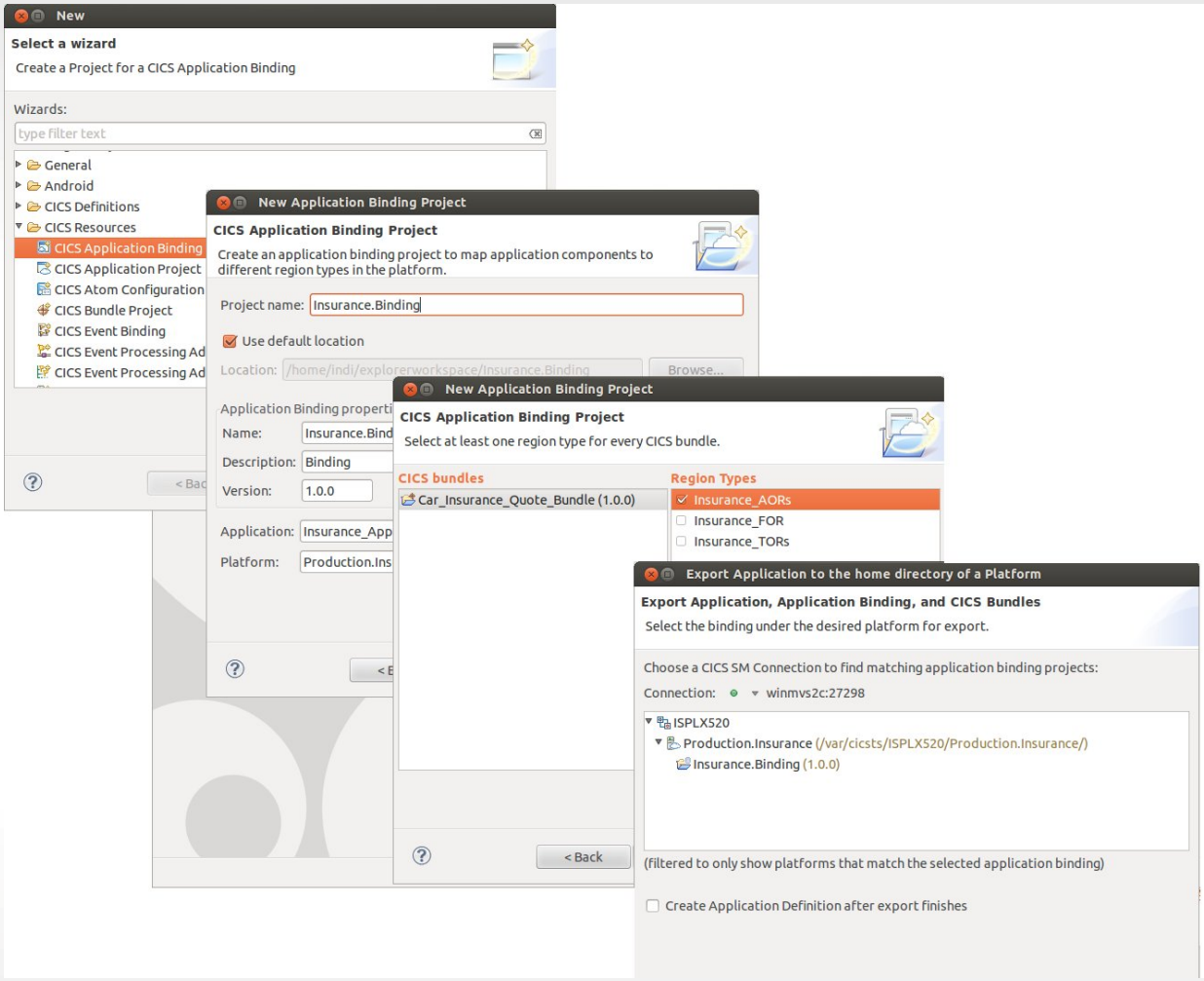
Application Deployment…

- **Creating the Application Binding**



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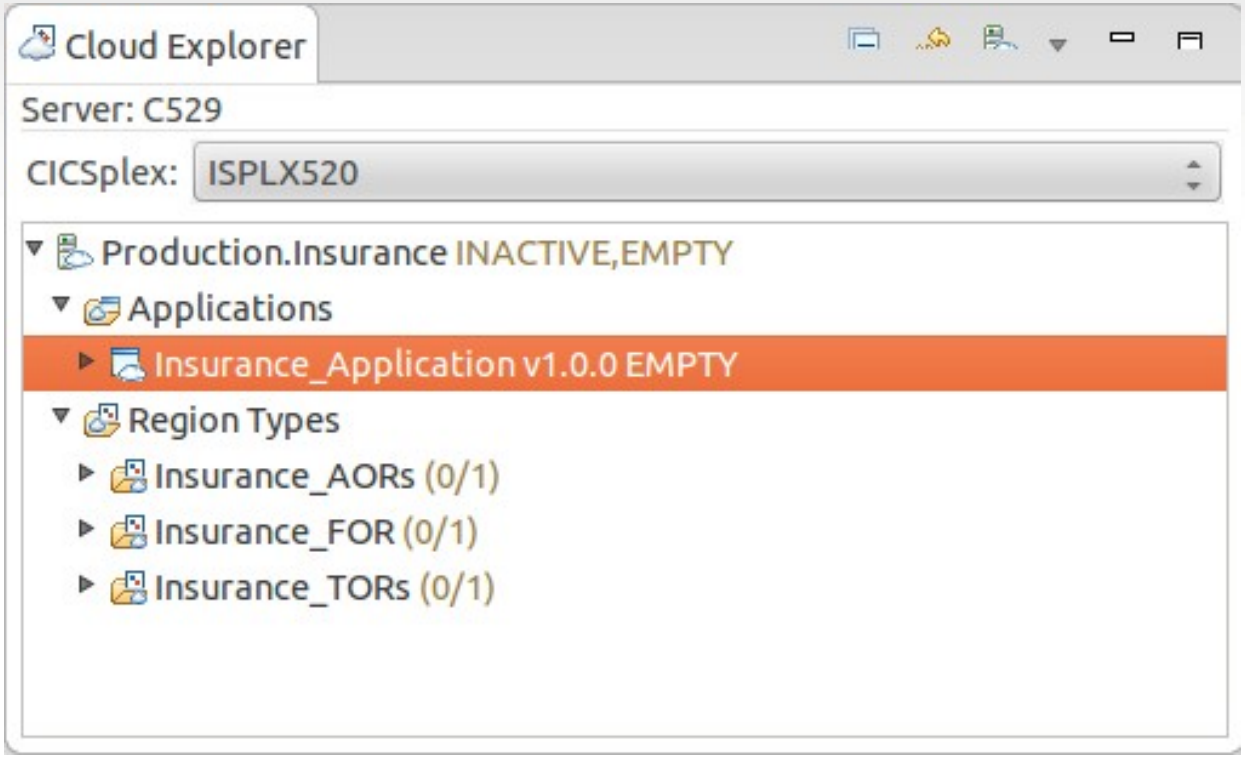
Application Deployment…

- **View the Application and Platform**



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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

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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

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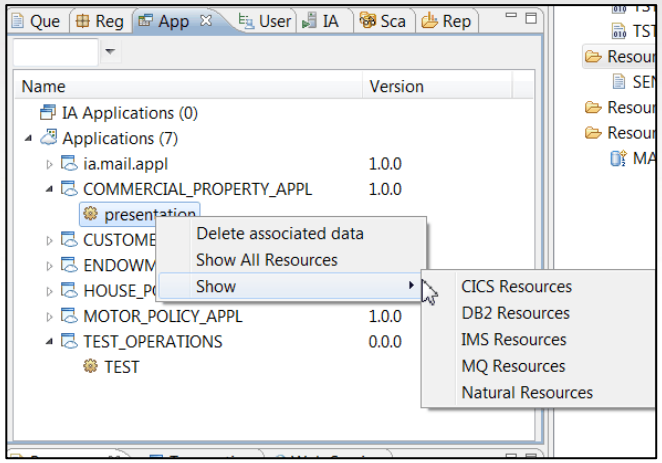
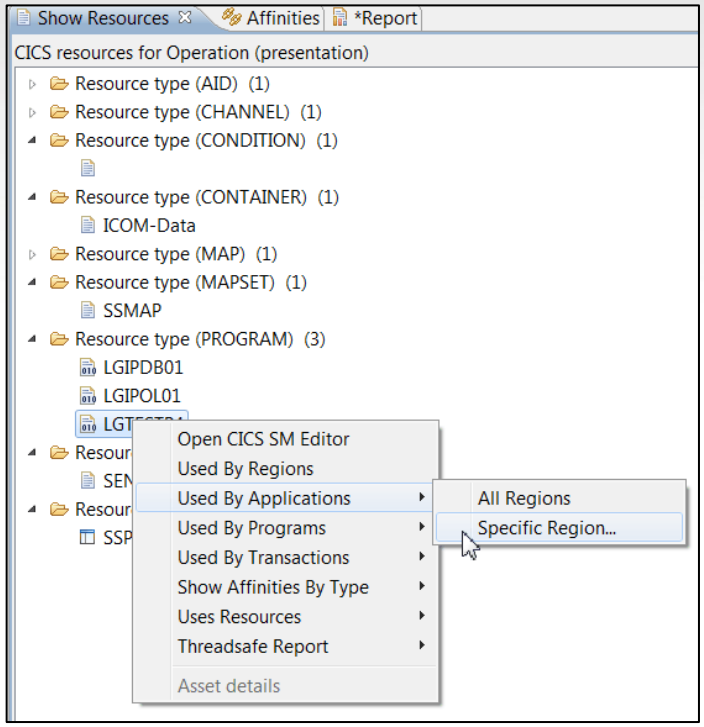
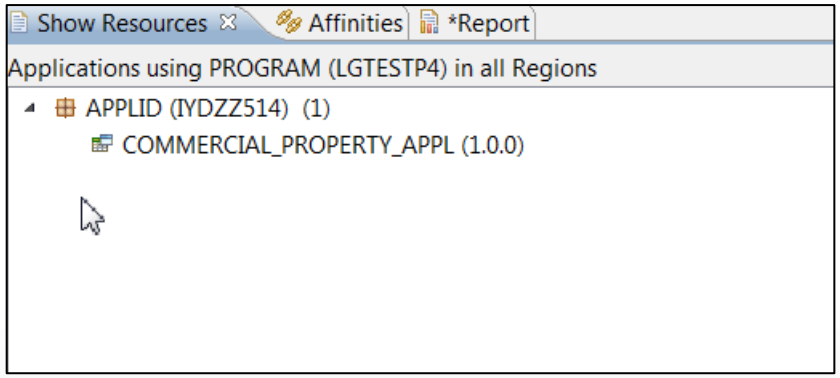
CICS Interdependency Analyzer V5.1 Highlights…

Application support – collect and display data for a deployed application







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

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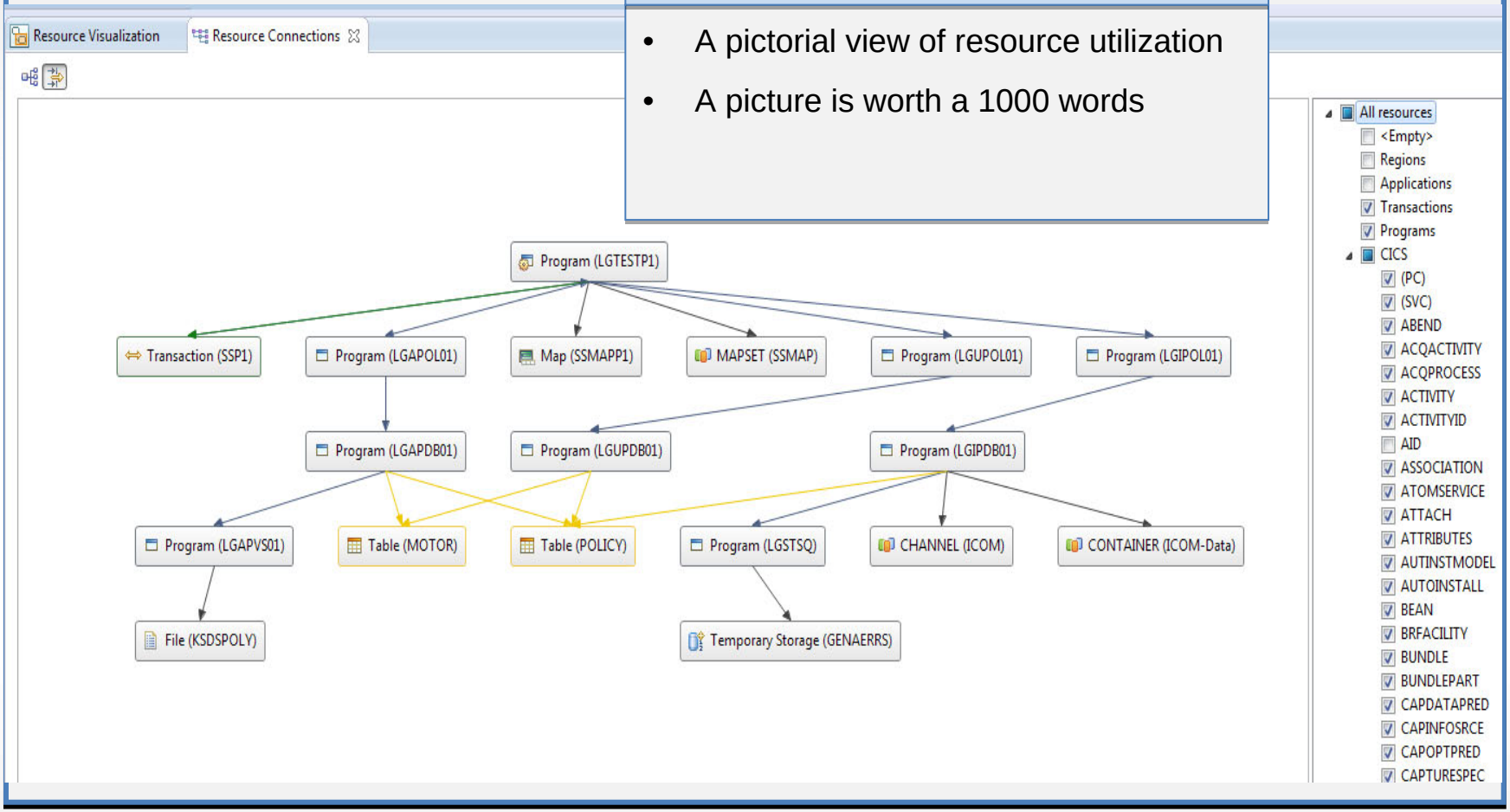
CICS Interdependency Analyzer V5.1

Visualization

Benefits

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



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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

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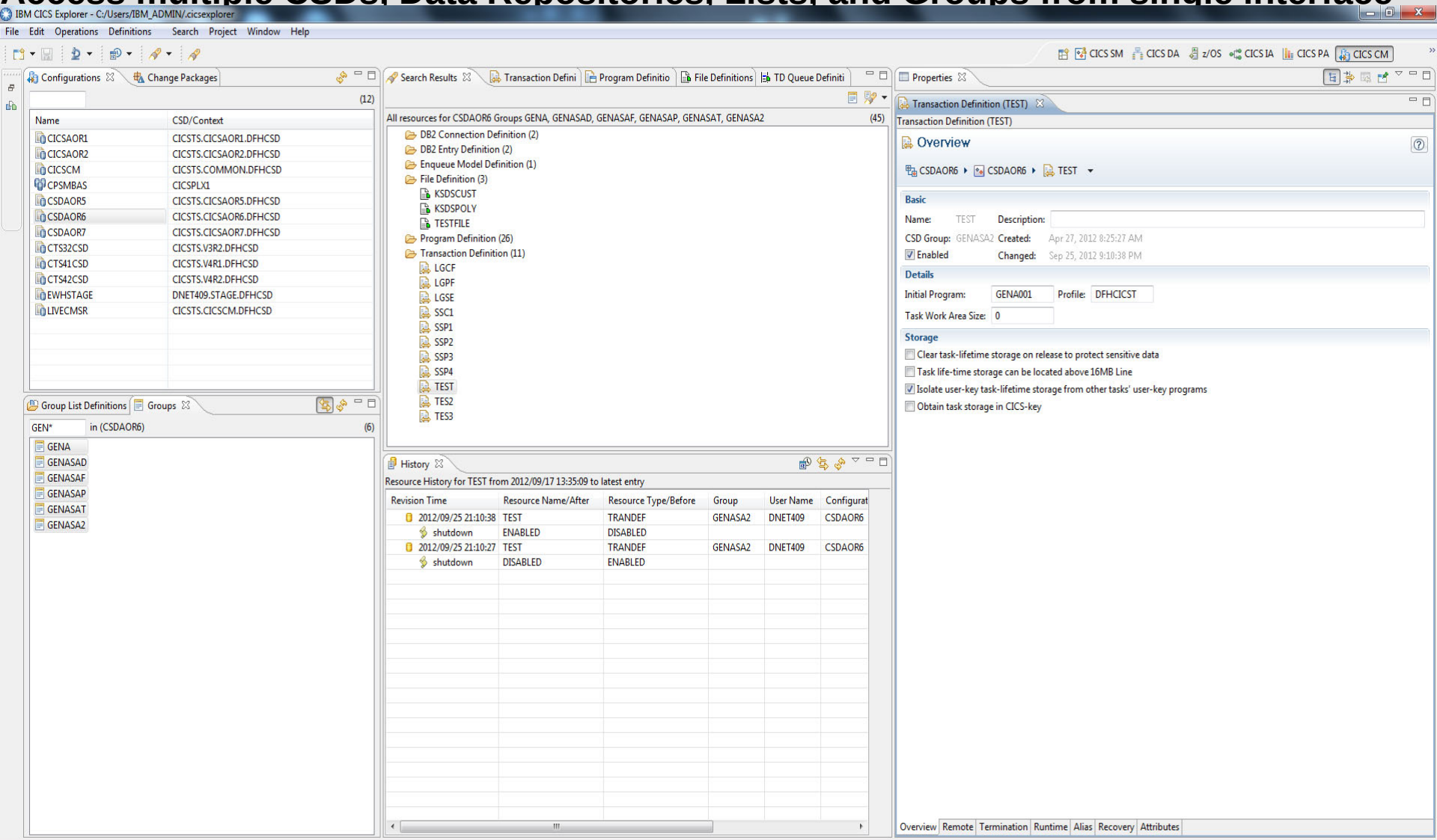
Single point of control over Resource Definitions

Access multiple CSDs, Data Repositories, Lists, and Groups from single interface



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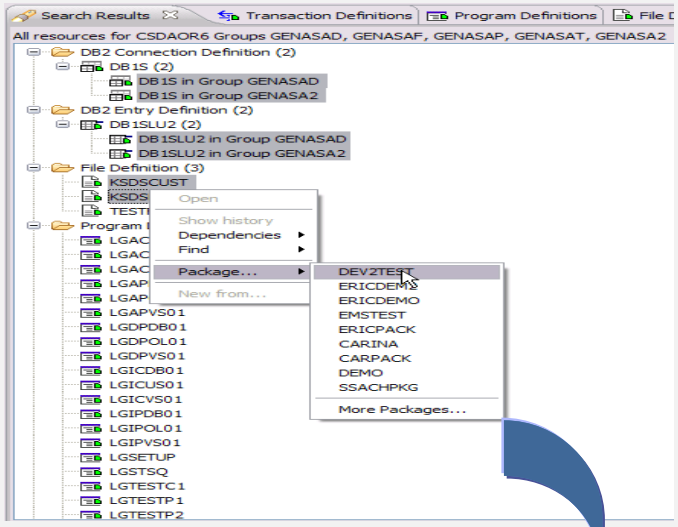
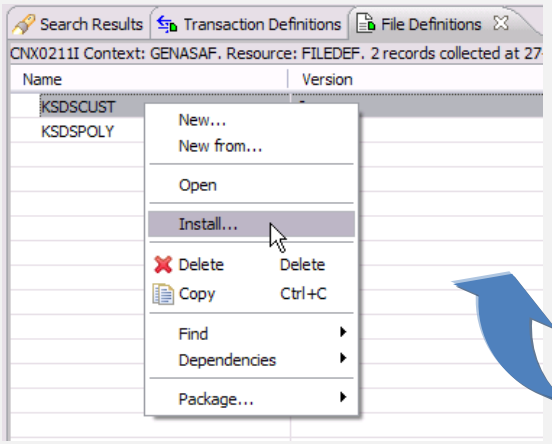
CICS CM – CICS resource definition lifecycle management

Benefits

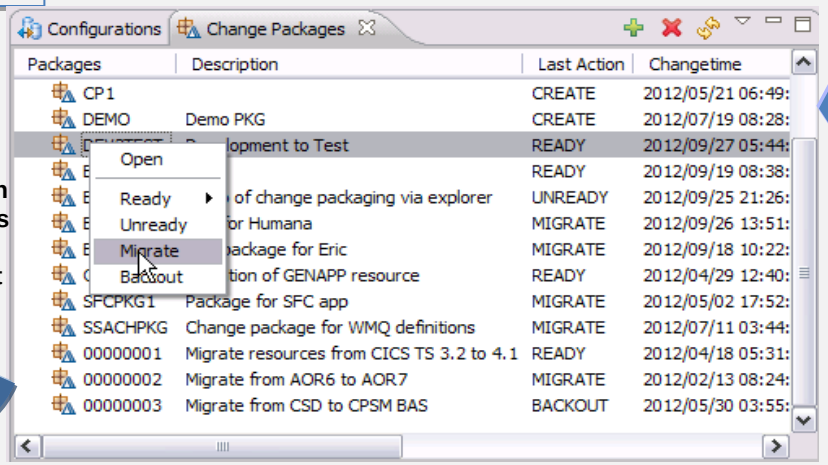
- Eliminate manual and error prone processes
- Full audit trail and backout capability
- Integrate with source code change management processes

Change package created for resources in Development repository





Install definitions in CICS regions on test environment



Change package migrated to test environment

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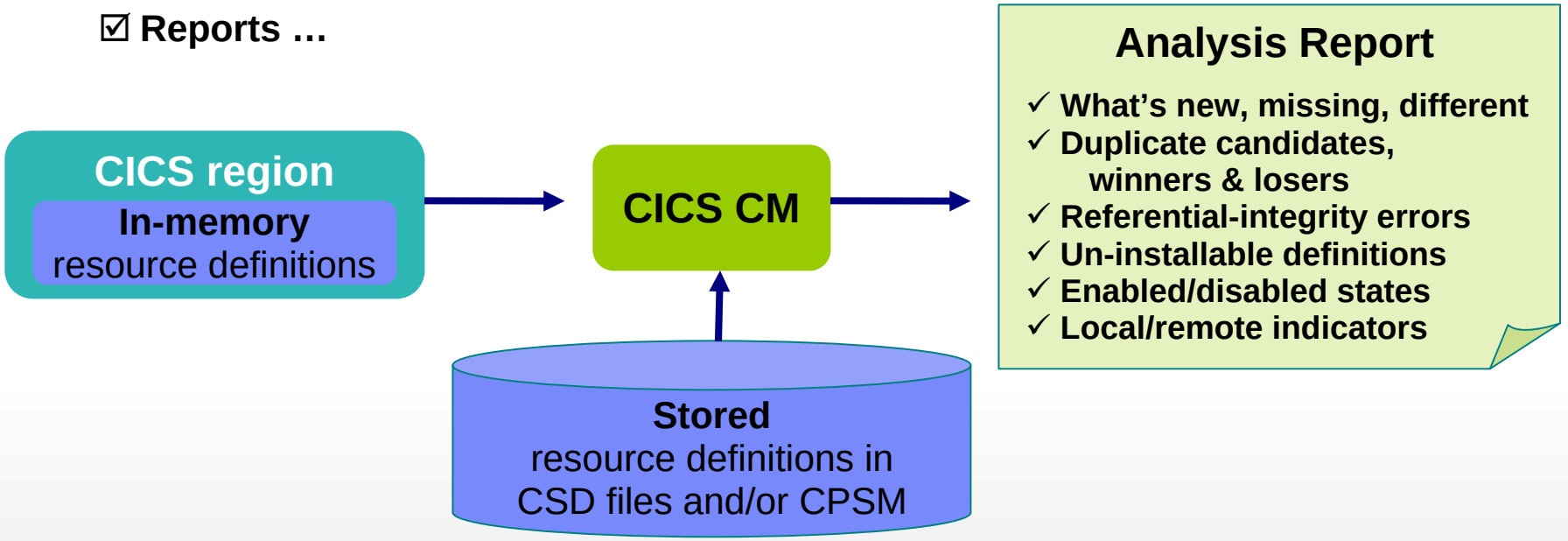
CICS CM: Deployment analysis

- ☑ **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 …**



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

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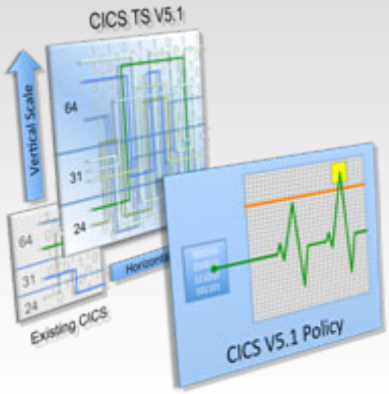
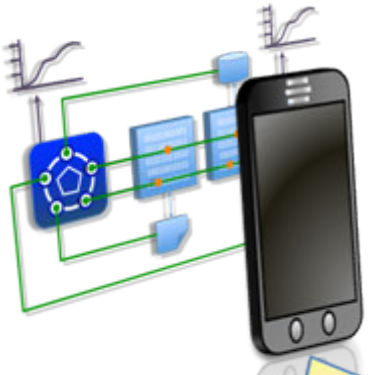
The new CICS Transaction Server V5.1 delivers…



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

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Mobile extensions – simplified integration with mobile devices

CICS Transaction Server Feature Pack for Mobile Extensions

Scalable platform

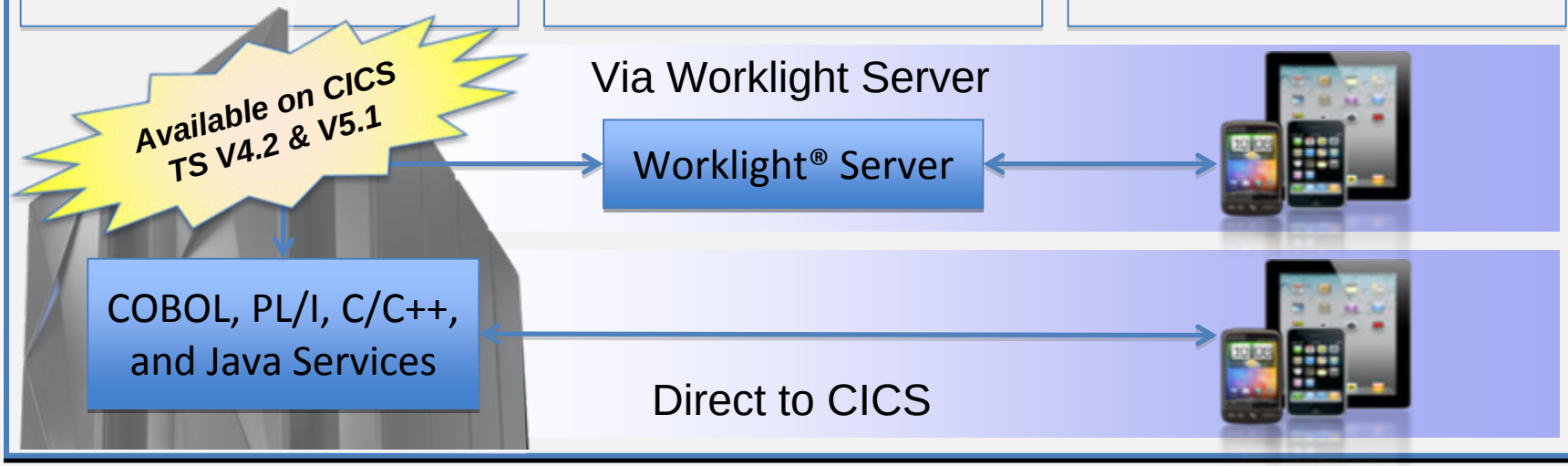
CICS TS V5.1's advanced scalability makes it the ideal platform for managing mobile workloads

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



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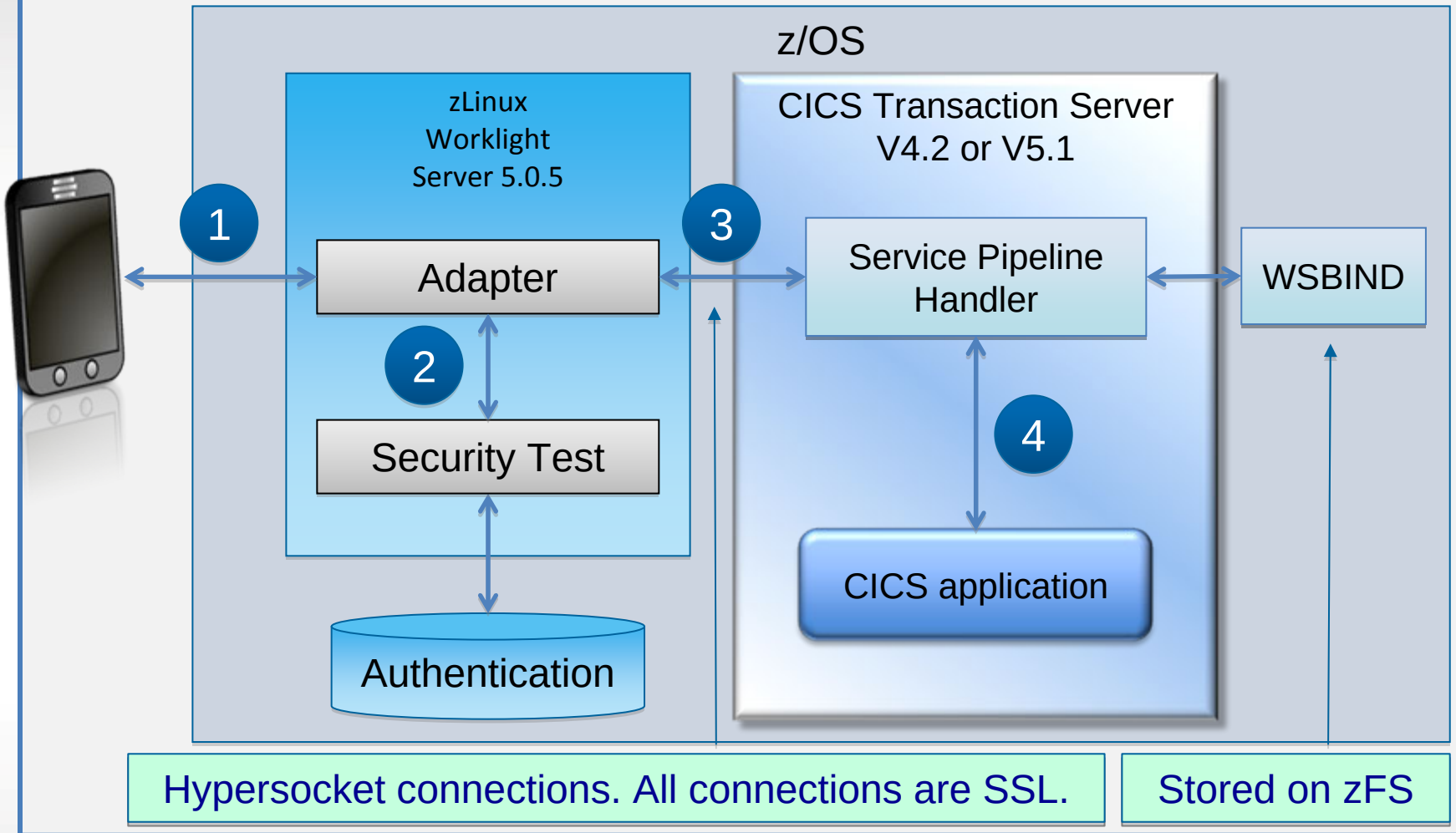
Mobile extensions – simplified integration with mobile devices



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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.

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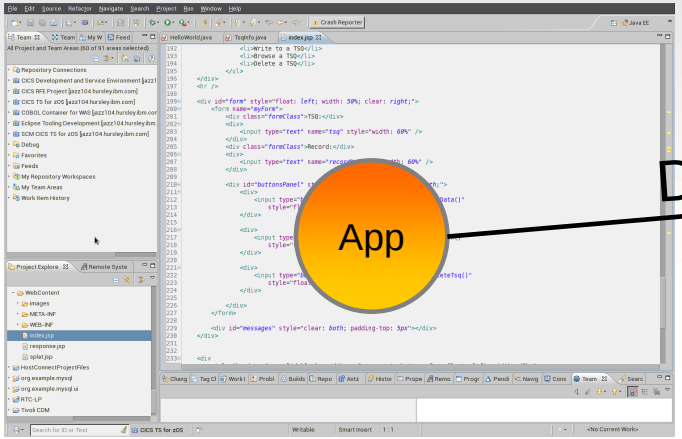
Liberty Profile Web Container - Putting it all together

Eclipse with CICS Explorer SDK & Liberty Tools



Deploy

zFS

App

Enable

zOS

CICS

JVM server

Liberty

App

Use

CICS Resources

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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

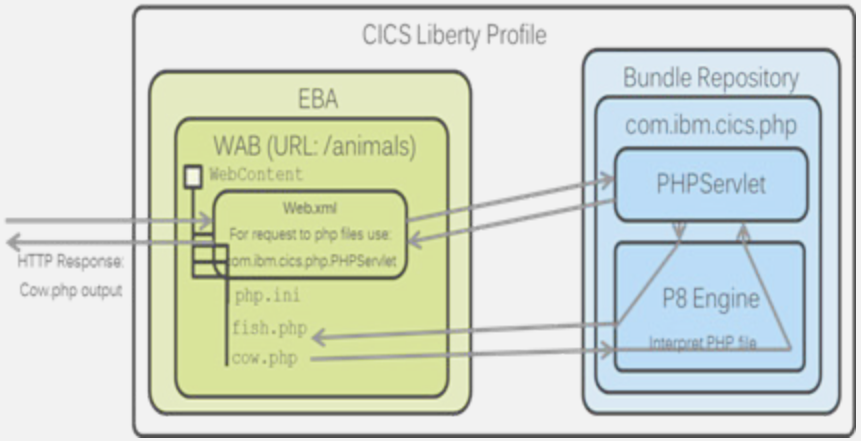
PHP Support

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



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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

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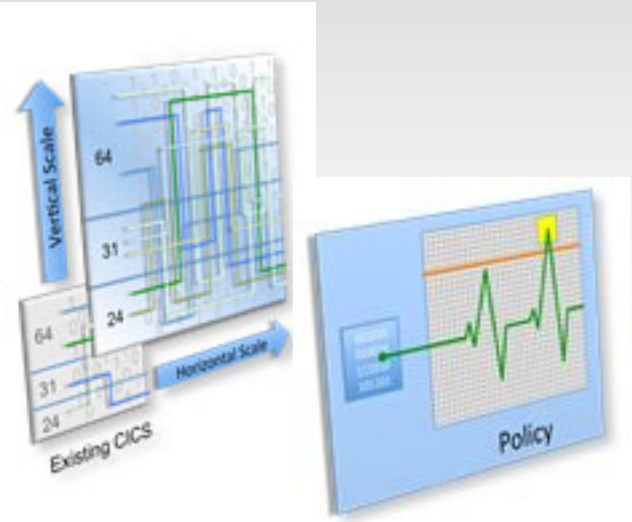
Try it now



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!

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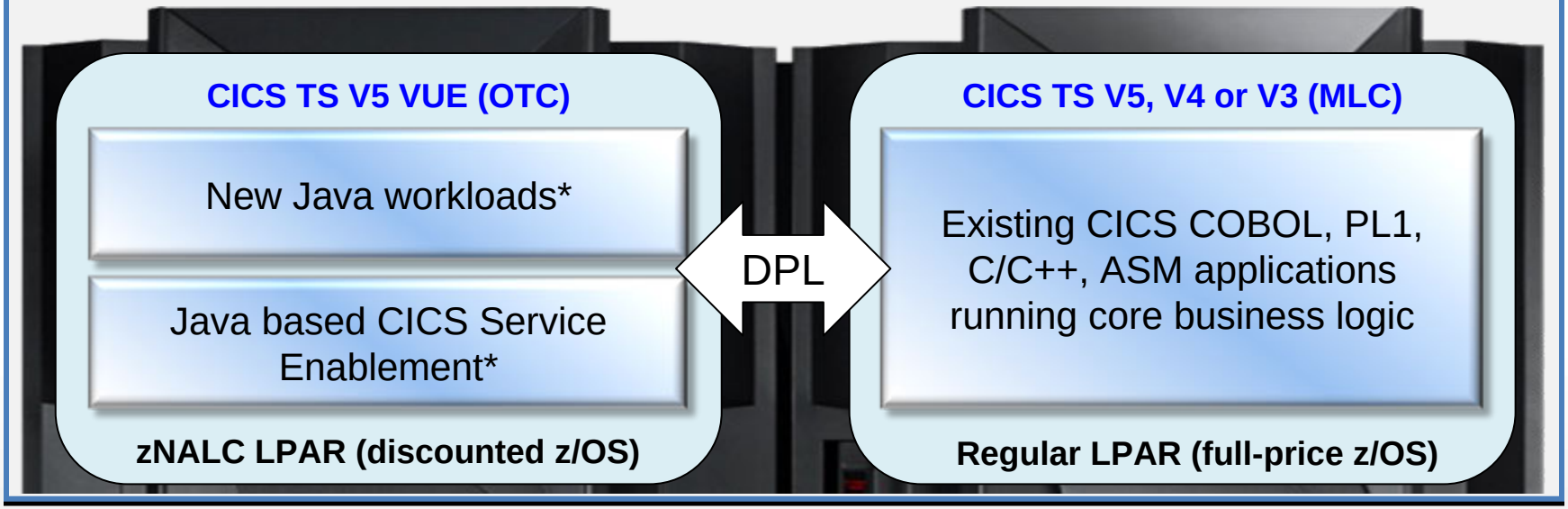
CICS TS Value Unit Edition – *For new Java workload and service enablement*

Responding to customer demand for an alternative pricing structure

CICS One-time-charge	*zNALC pricing*	*TS V5.1 avoiding SVC*
Alternative pricing model for new applications using a one-time-charge price metric*	*Reduced price for the z/OS operating system on LPARs that run a qualified application**	*CICS TS VUE is a separately licensed program and does not initiate Single Version Charging*



* zNALC approval is required for each application

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What is CICS Transaction Server Value Unit Edition V5.1?

A one-time charge version of CICS TS V5.1

A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

- *One-time-charge*
  - CICS TS VUE can be purchased as a one-time-charge product, unlike previous releases of CICS that have all been a monthly license charge
  - Allows you to purchase CICS as a one-time capital expense
- *Feature complete*
  - CICS TS VUE V5.1 is a complete version of CICS TS V5.1
- *Subscription and support*
  - Optional, allowing you to receive IBM support and remain on a currently release of CICS TS VUE

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A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

- *zNALC Licensing*
  - CICS TS VUE V5.1 is a separate product that runs within a z/OS LPAR operating under the System z New Application License Charge terms and conditions
- *Reduced price z/OS*
  - Reduced price for the z/OS operating system on zNALC LPARs that run a qualified application*
- *No Single Version Charge triggering*
  - CICS TS VUE does not trigger the SVC period for any of the existing MLC versions of CICS TS you may have installed

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What is CICS Transaction Server Value Unit Edition V5.1?

A one-time charge version of CICS TS V5.1

A separate licensed product running in a zNALC LPAR

Specifically for qualifying new Java workloads

- *New qualifying Java workloads*
  - Net new Java workloads are approved through a qualification process
- *New qualifying packaged applications*
  - Qualifying packaged applications can also be run within CICS TS VUE
- *First class Java environment*
  - Built on 64-bit multi-threaded Java 7 infrastructure
  - Allows CICS to run more Java applications in a single region, by delivering enterprise-class scalability for Java workloads

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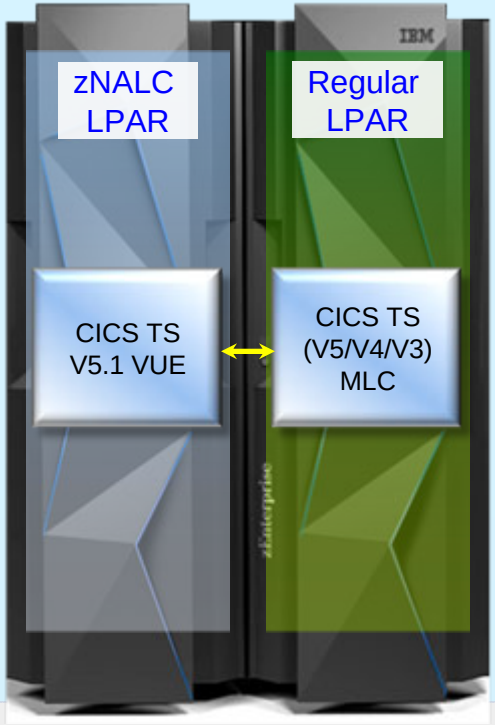
Deployment options for CICS TS VUE V5.1

Independent

- Single zNALC LPAR
- VUE Products only

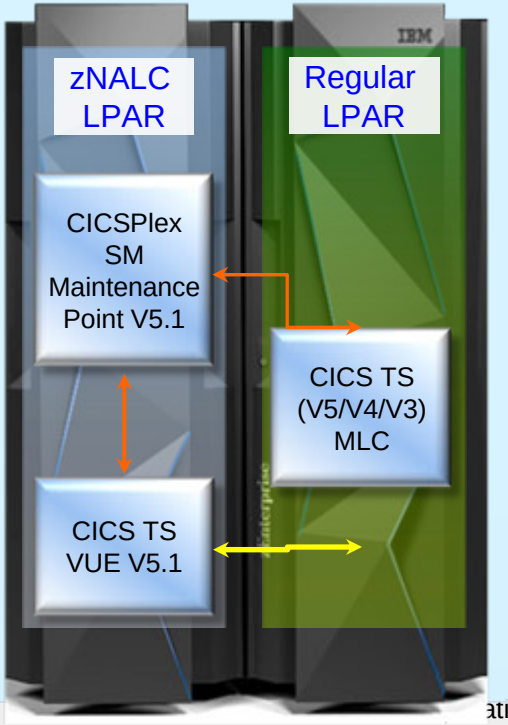
Connected

- zNALC & regular z/OS LPAR
- CICS TS VUE and CICS MLC LINKing to each other



Federated

- zNALC & regular z/OS LPAR
- CPSM managed CICSPlex



CICS Resources

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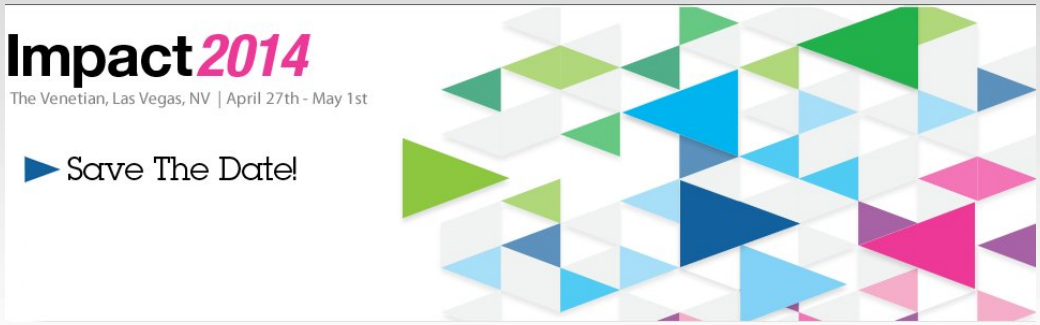
Find out more



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

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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

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CICS Developer Trial

- 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

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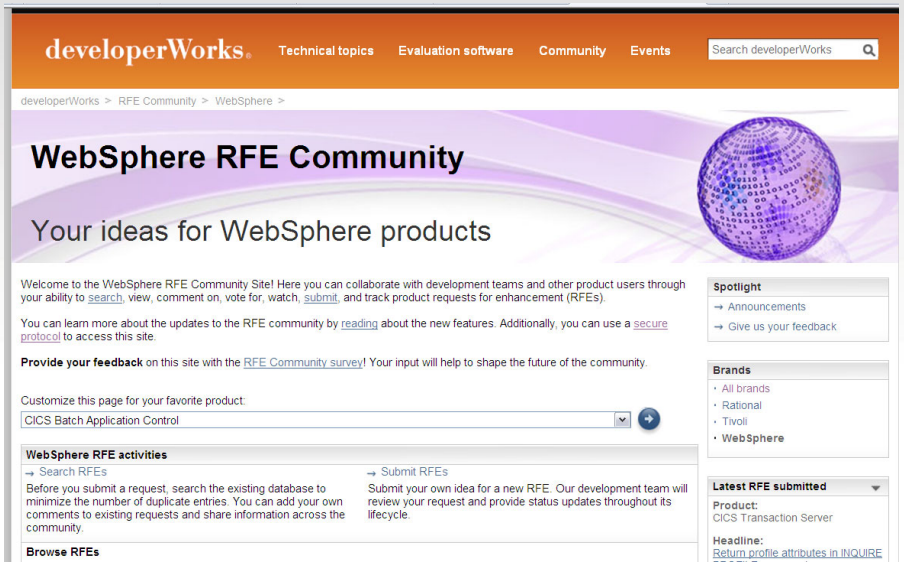
Raising new requirements with RFE

- **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



- **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**
- **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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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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Key documents

- **Analyst papers**
  - Lustratus Research - New project platform section for CICS Users ftp://public.dhe.ibm.com/software/htp/cics/pdf/Lustratus_Research_Paper_New_project_platform_selection_for_CICS_users.pdf
  - Branham Group: IBM CICS Tools: Unrealized Productivity Gains and True Cost Savings ftp://public.dhe.ibm.com/software/htp/cics/tools/IBM_CICS_Tools_Whitepaper_2009.pdf
  - Software Strategies: IBM z/OS Problem Determination Tool Suite Leads Again https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?lang=en_US&source=swg-rszswg
- **IBM Redbooks**
  - CICS Transaction Server from Start to Finish, SG24-7952-00
  - Implementing IBM CICS JSON Web Services for Mobile Applications, SG24-8161-00
  - Smarter Banking with CICS Transaction Server, SG24-7815-00
  - Implementing Event Processing with CICS, SG24-7792
  - CICS and SOA: Architecture and Integration, SG24-5466-06
  - Implementation of Popular Business Solutions with CICS Tools, REDP-4824-00
  - Threadsafe considerations for CICS, SG24-6351-04
  - Architects guide to CICS on System z, SG24-8067-00
  - IBM CICS and the JVM server: Developing and Deploying Java Applications, SG24-8038

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Next Session

CICS V5 Scalability and availability for a mobile world

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

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