CICS V5.1

Applications

Presenter – Title

Date
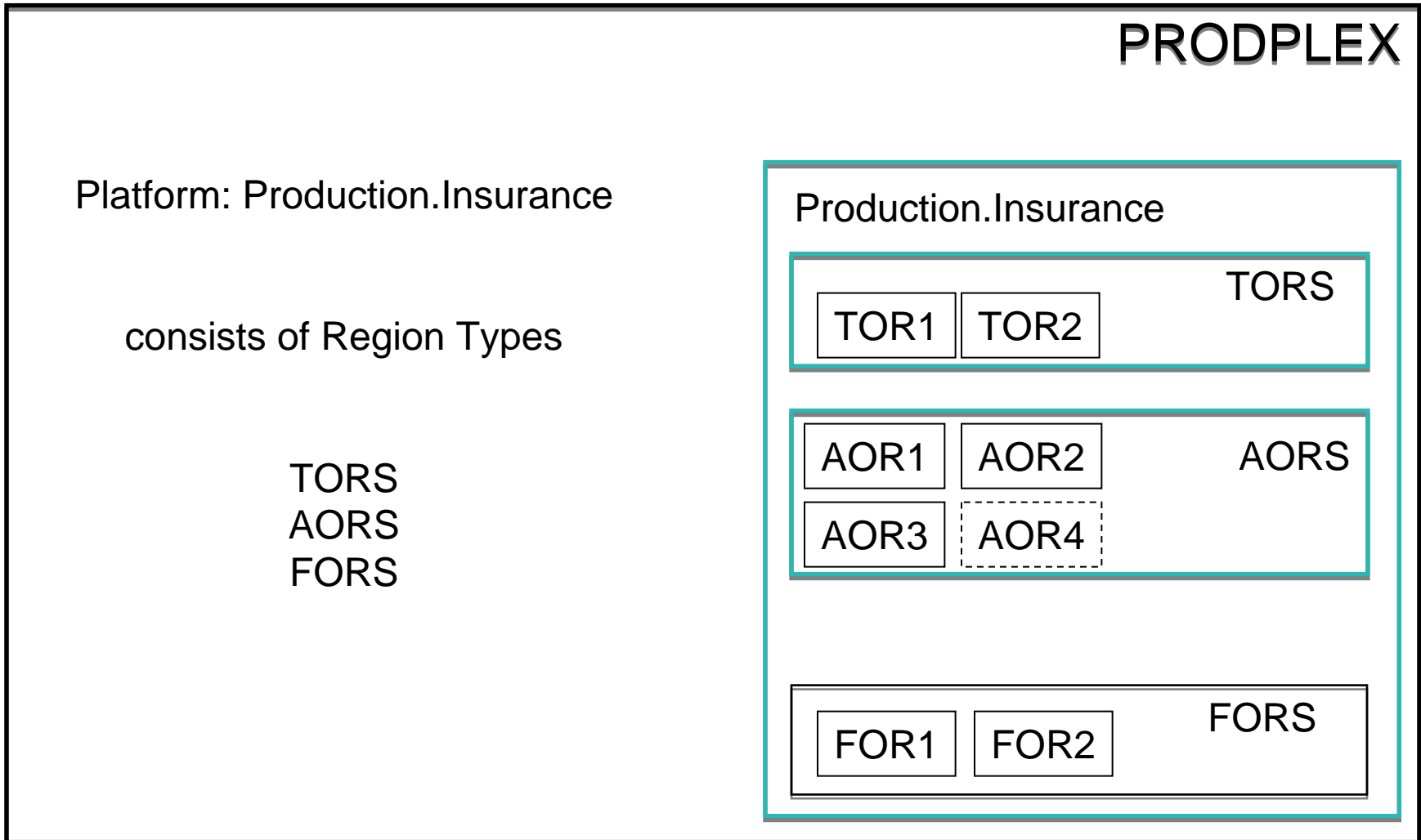
Session Agenda

- **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**

PRODPLEX

Platform: Production.Insurance

consists of Region Types

TORS
AORS
FORS

Production.Insurance

| TORS |
| TOR1 | TOR2 |

| AORS |
| AOR1 | AOR2 |
| AOR3 | AOR4 |

| FORS |
| FOR1 | FOR2 |

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
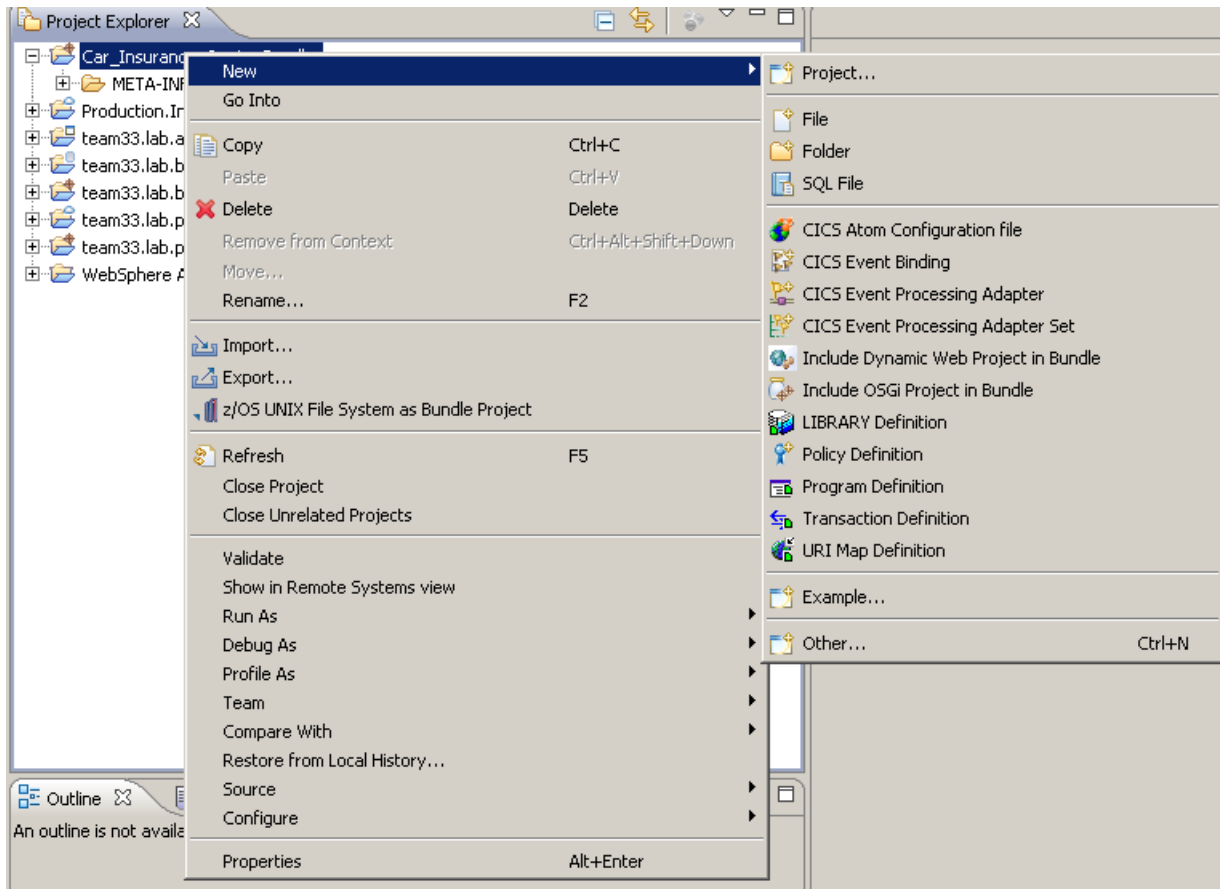 - Allows you to manage the application as a single entity

Application Deployment…

- **Creating the Bundle Project**
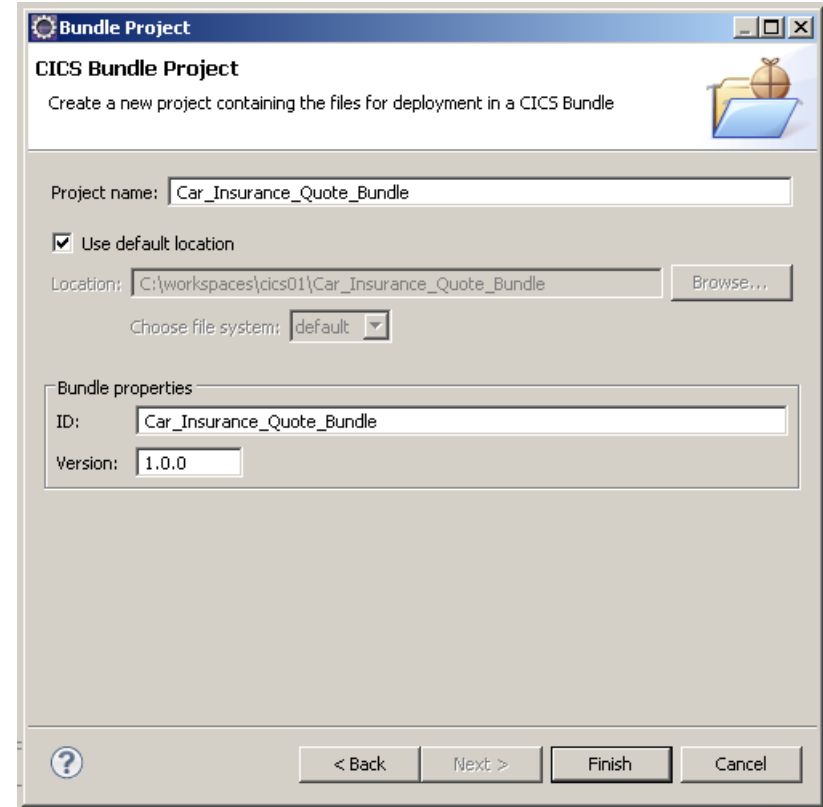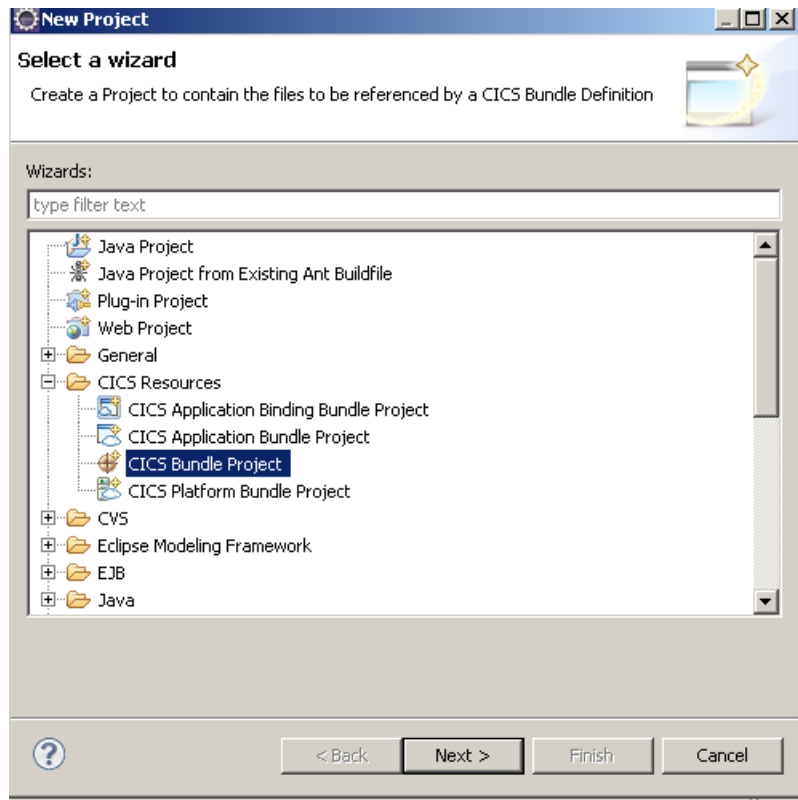
Application Deployment…

- **Add entries to the bundle project**

Application Deployment…

- **Create the resource definitions**

Application Deployment…

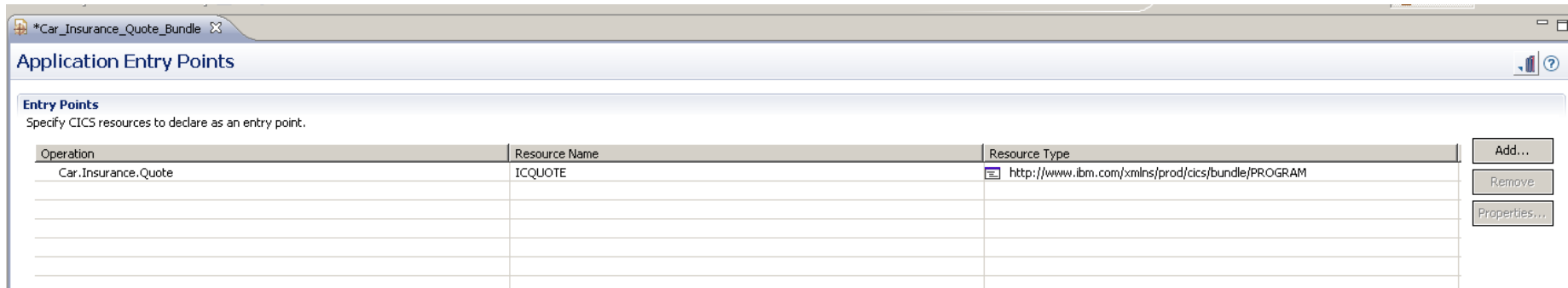- **Specify the resource dependencies for this bundle**
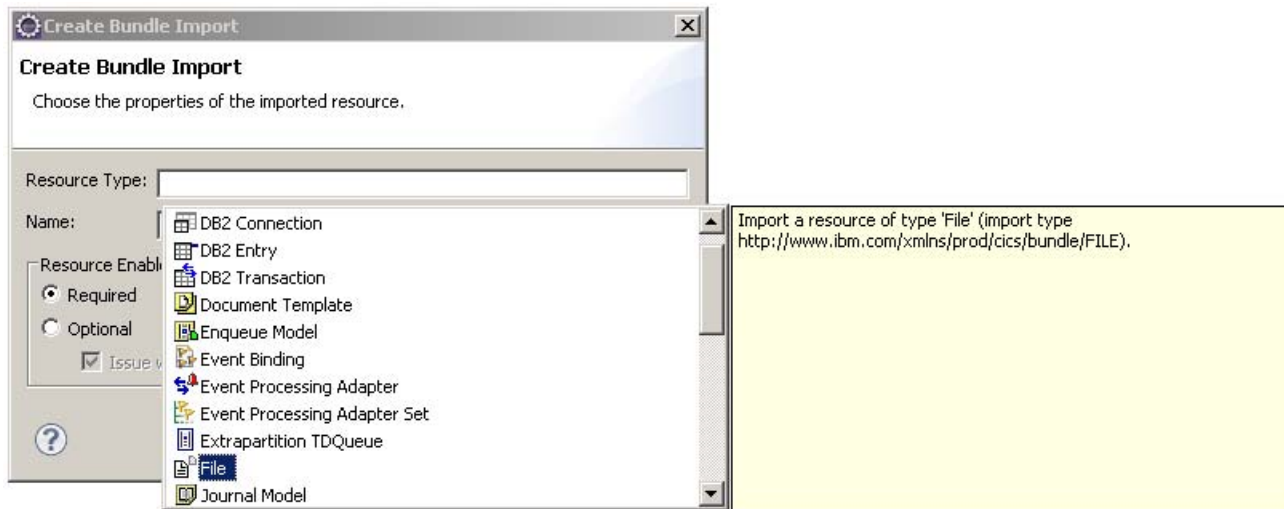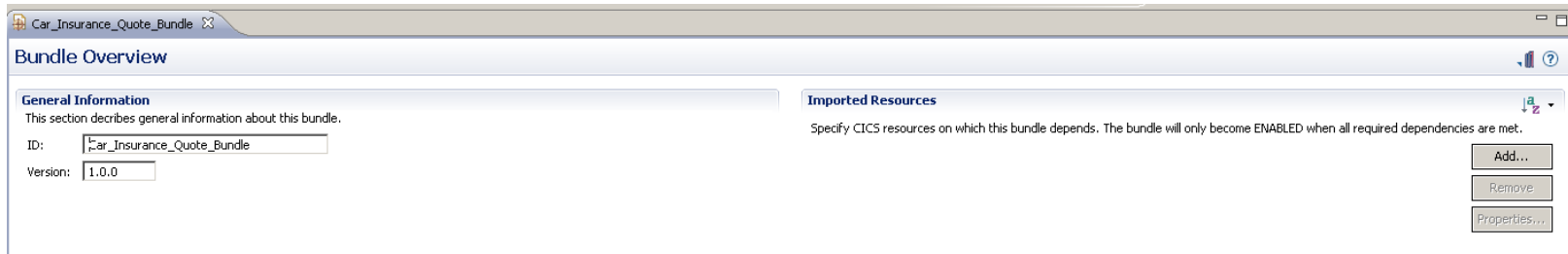
Application Deployment…

- **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**

Application Deployment…
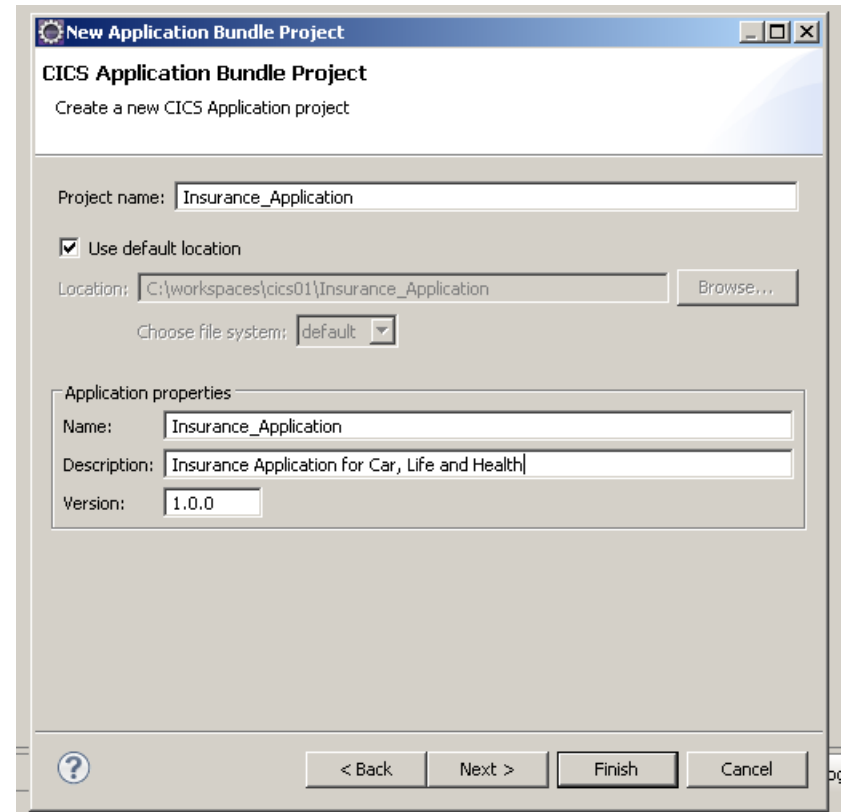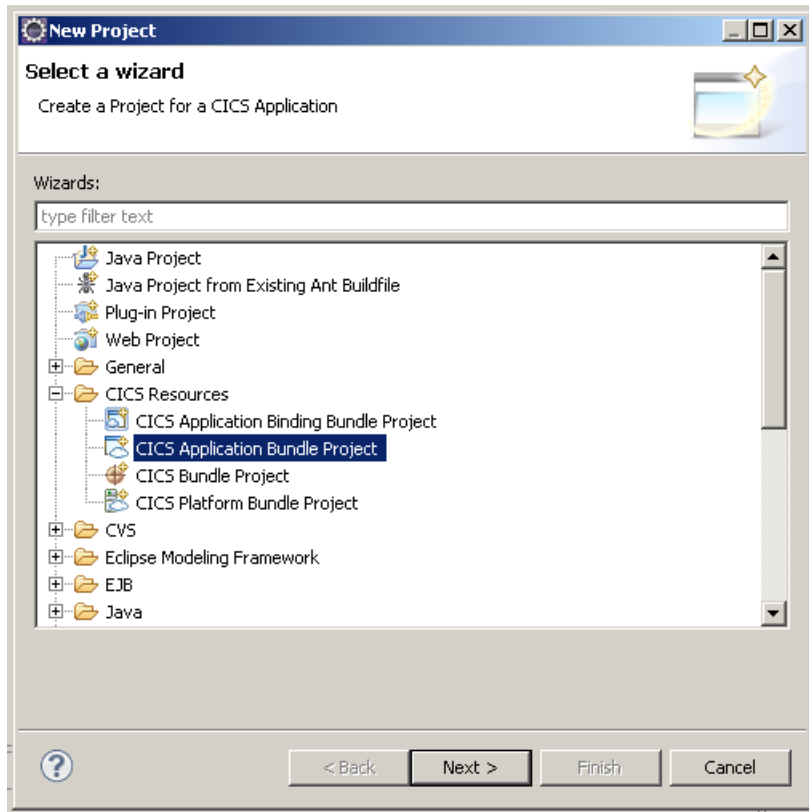
- **Creating the Application Project**

Application Deployment…

- **Select the bundles which comprise this application**
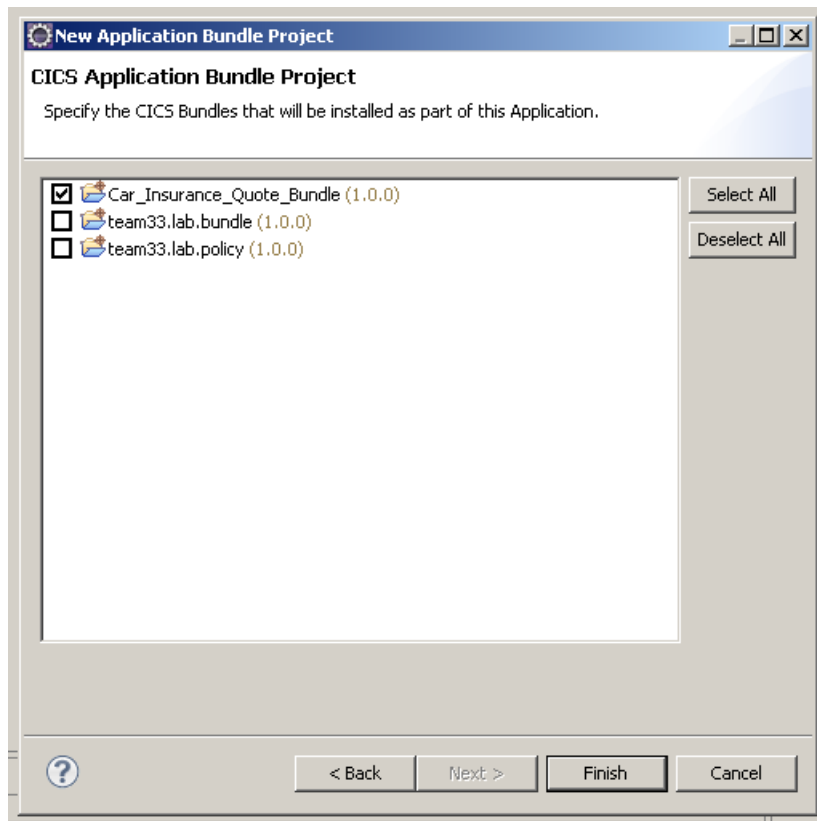
Application Deployment…

- **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…

```
┌─────────────────────────┐
│       Application       │          Package application resources
└─────────────────────────┘                  and dependencies
             │ +
             ▼
┌─────────────────────────┐          Bind the application to the platform. Map
│       Application       │          bundles within the application to region types.
│        Binding          │          (map developers' world to the operations world)
└─────────────────────────┘
             │
             ▼
┌─────────────────────────┐
│        Platform         │          Platform: where applications are deployed and run
└─────────────────────────┘
             ▲
          1…n │
┌─────────────────────────┐          Characterize regions in the region type
│       Region Type       │                e.g. TOR, AOR, ROR, FOR
└─────────────────────────┘
             ▲
          1…n │      ⟷           Elastically scale regions in the region
┌─────────────────────────┐             type (within specified bounds)
│         Region          │
└─────────────────────────┘
```
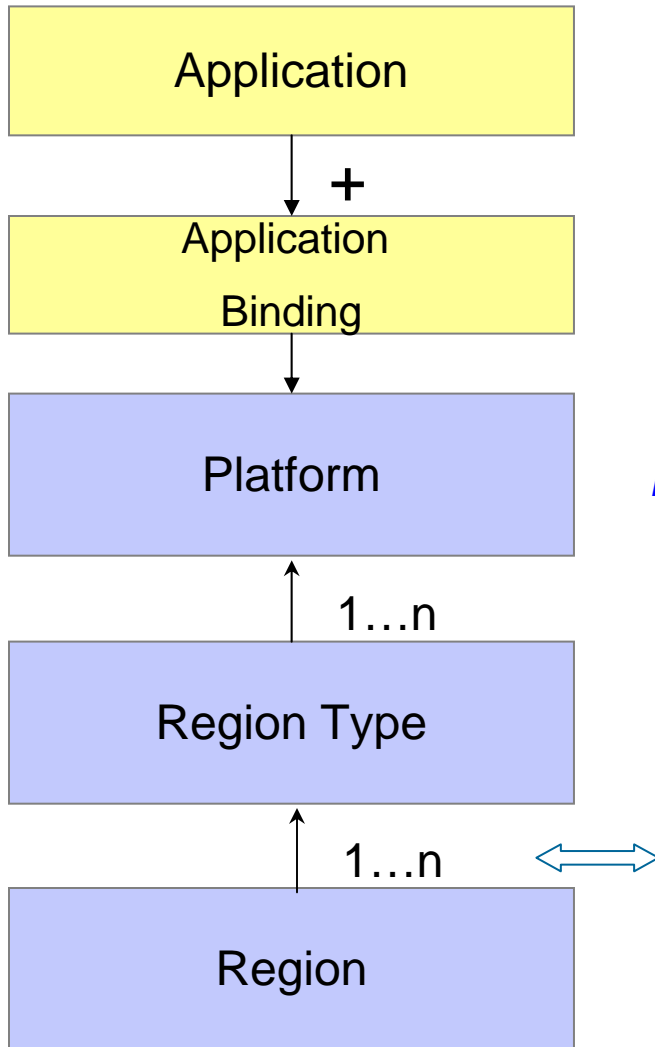
Application Deployment…

▪ **Creating the Application Binding**

Application Deployment…

■ **View the Application and Platform**
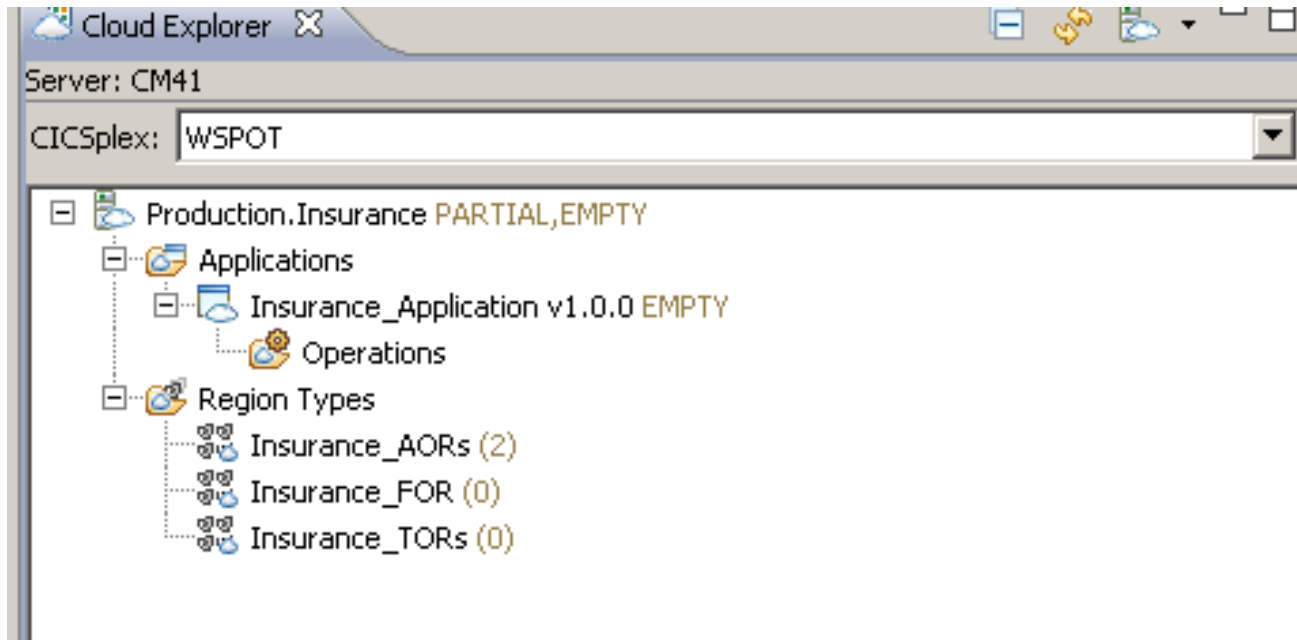
CICS Interdependency Analyzer for z/OS

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**

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
- **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
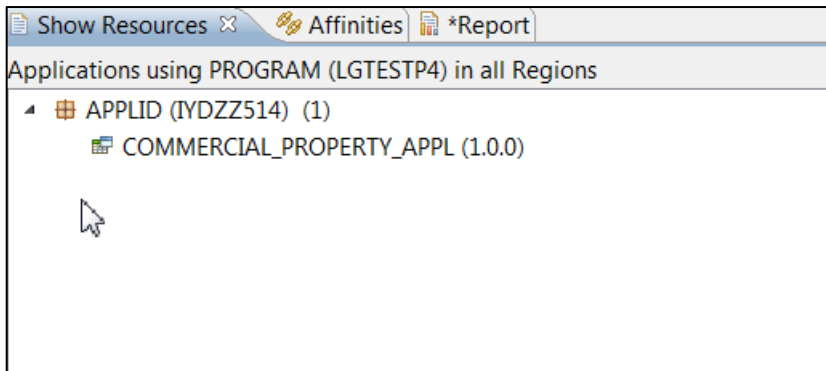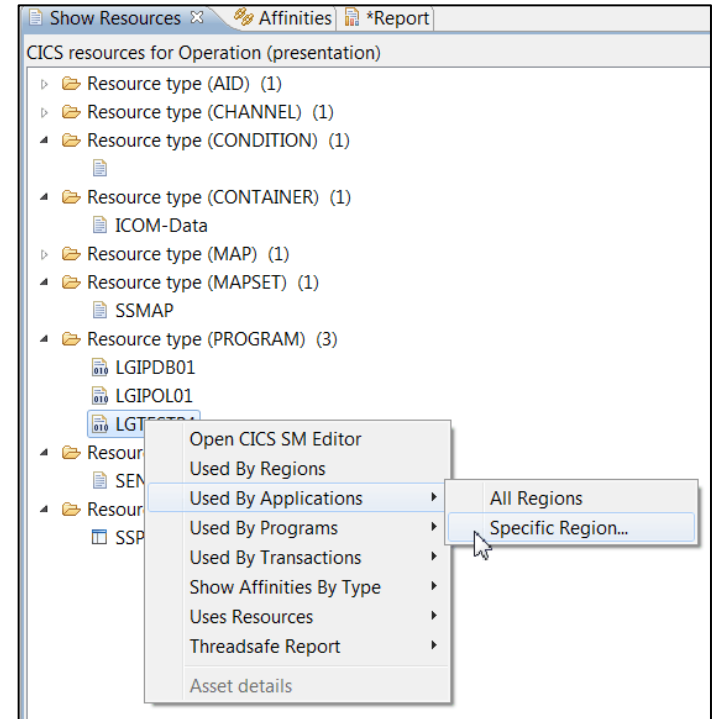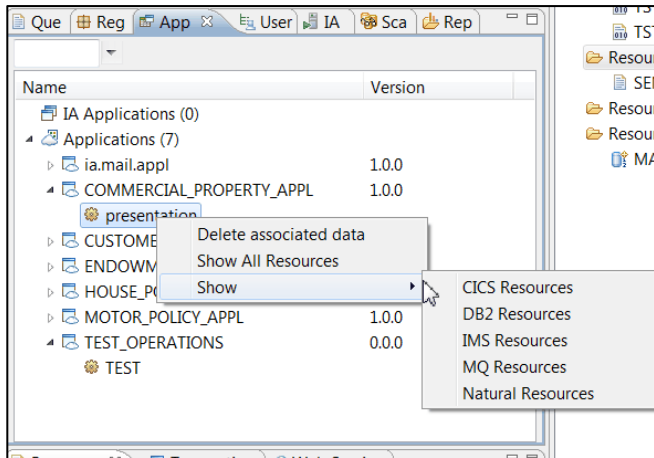
New menu option – "Used by Applications"

Can be used against any resource.
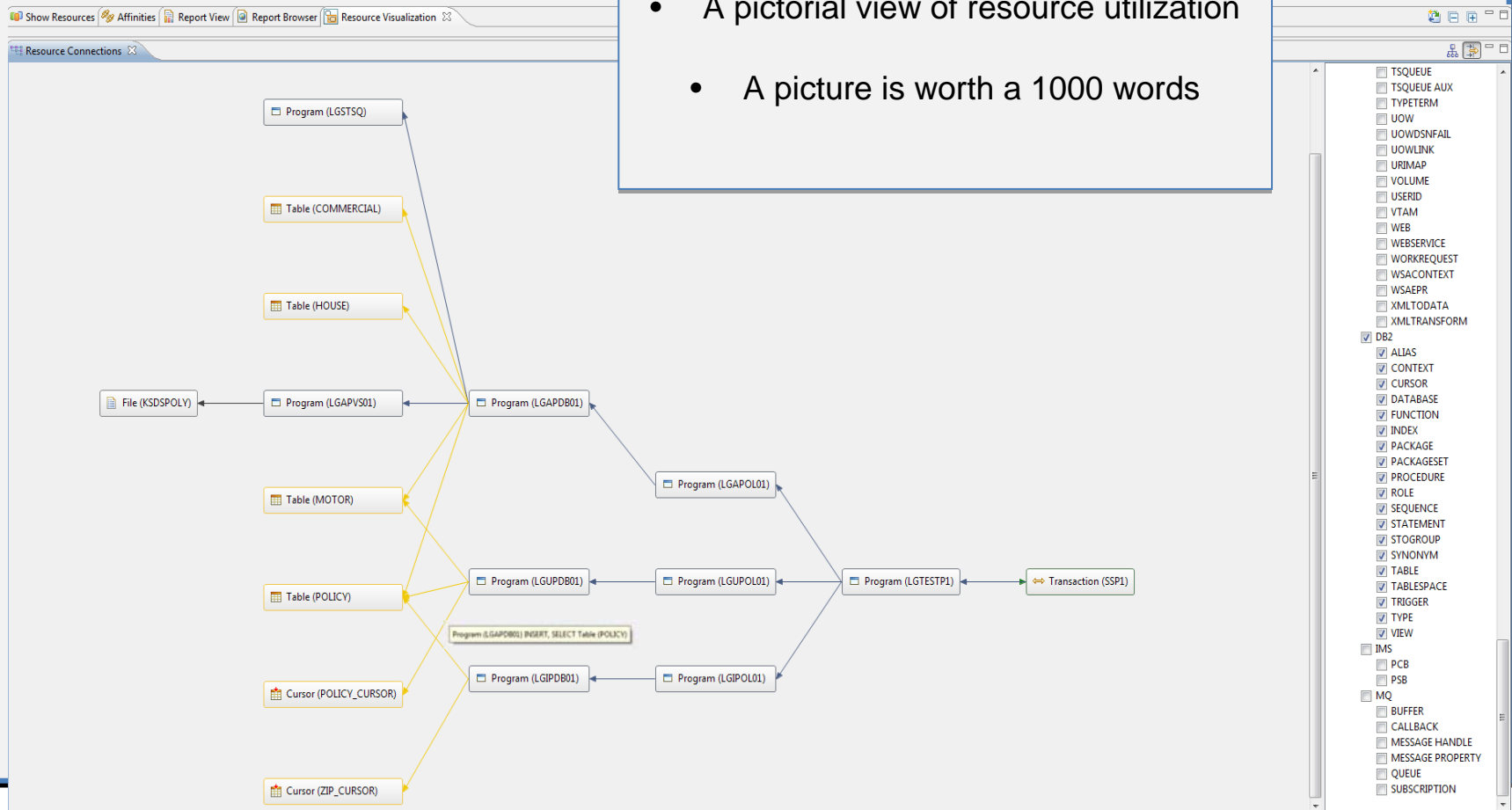
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CICS Interdependency Analyzer for z/OS V5.1

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

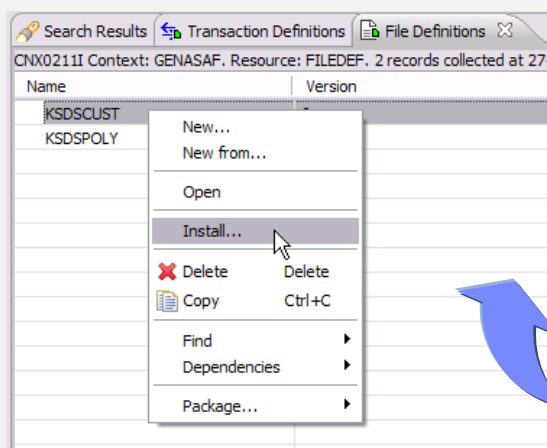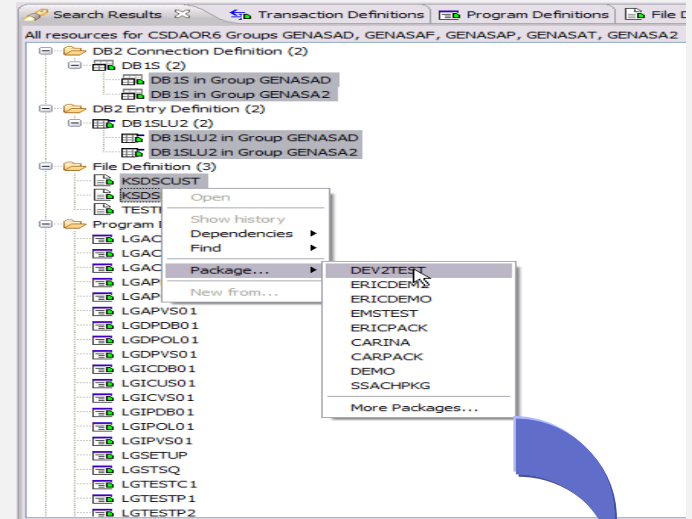# CICS CM – CICS resource definition lifecycle management

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 …**

CICS region

In-memory resource definitions

CICS CM

Stored resource definitions in

CSD files and/or CPSM

Analysis Report

✓ **What's new, missing, different**

✓ **Duplicate candidates, winners & losers**

✓ **Referential-integrity errors**

✓ **Un-installable definitions**

✓ **Enabled/disabled states**

✓ **Local/remote indicators**
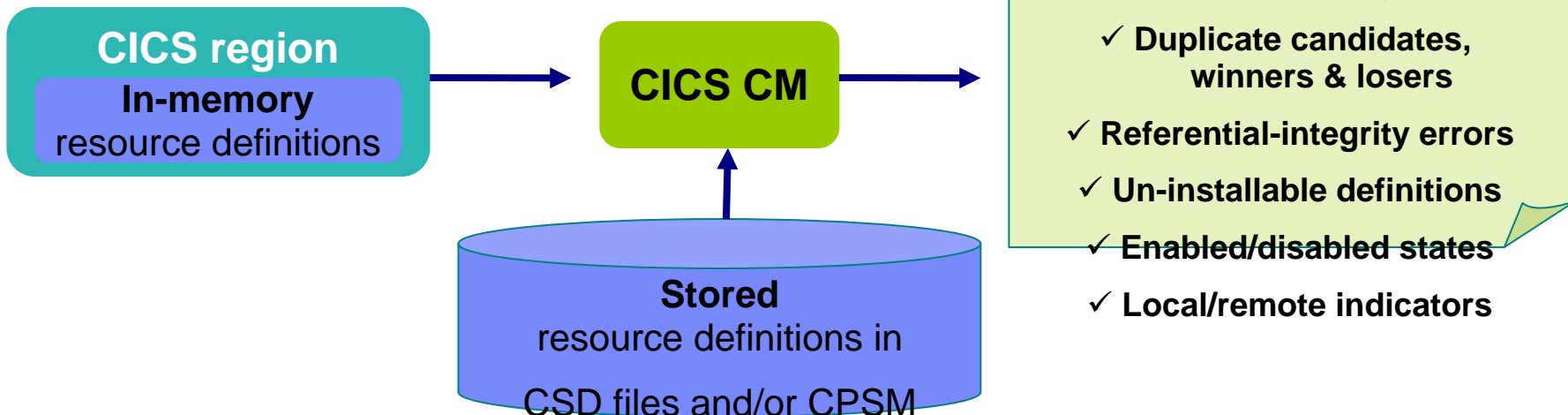
Liberty Profile Web Container

- **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…
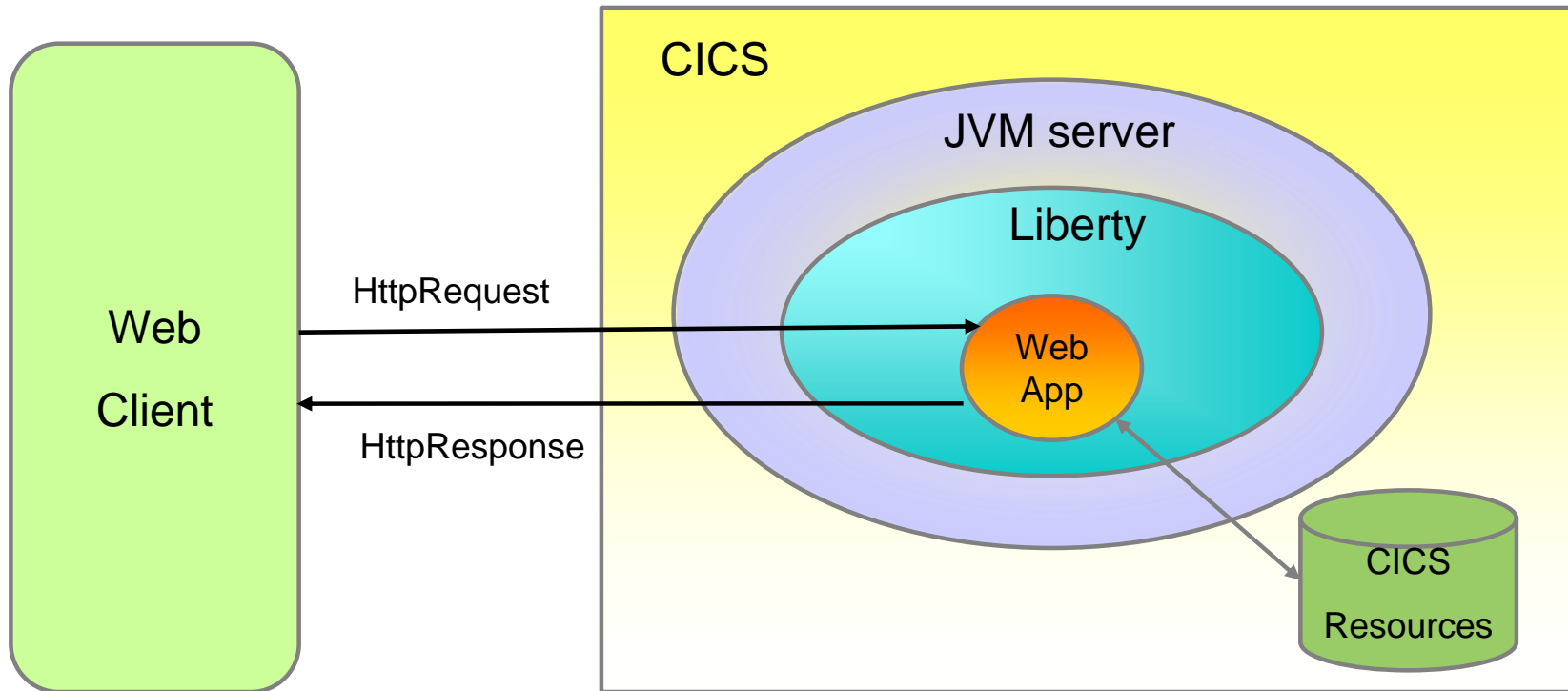
- Liberty Profile runs in a JVMSERVER
- Use sample JVMSERVER profile DFHWLP
- Web App developed and deployed using Eclipse IDE & CICS Explorer SDK

pse with CICS Explorer SDK & Liberty Tools

zFS

App

App

Deploy

Enable

zOS

CICS

JVM server

Liberty

App

Use

CICS Resources

WebSphere Liberty Profile for CICS TSQ Interface

Use this application to manage your TSQs. This interface allows you to:

- Write to a TSQ
- Browse a TSQ
- Delete a TSQ

TSQ:

Record:

Name: Type: Items:

Write TSQ   Browse TSQ   Delete TSQ

winmvs2c.hursley.ibm.com:28212/HelloWorld/
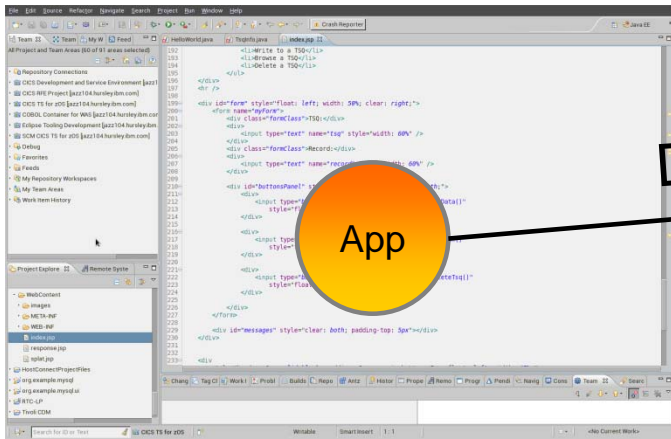
CICSdev Community
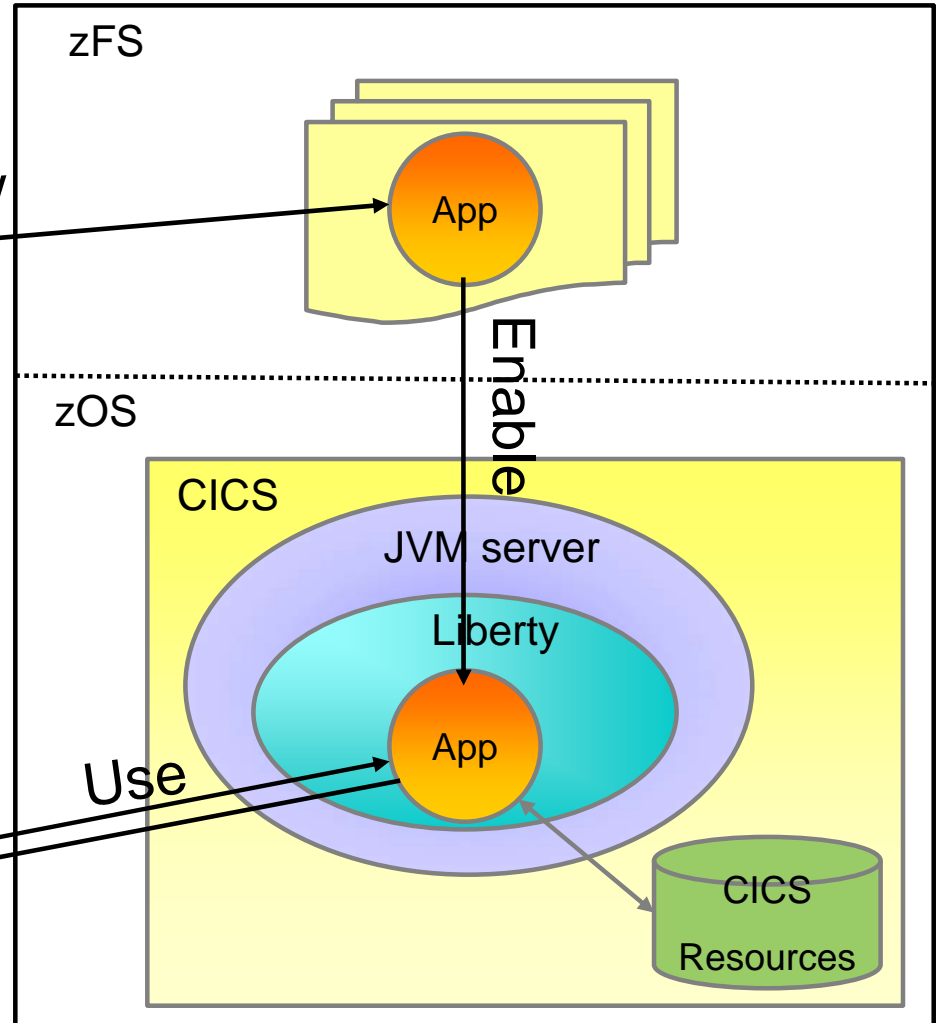
Summary

- **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

CICS Resources

Find out more

Register for Impact 2013 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

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 or Fred Marschner marschne@us.ibm.com

CICS Developer Trial

CICS Developer Trial V5.1

Operational Efficiency and Service Agility with Cloud Enablement

- Available from Jan 11th 2013
- No charge trial, fixed expiry date
- Does not start SVC period
- For non-production environments
- Available through IBM ShopzSeries
- PID 5655-CIC

Based on CICS TS V5.1

- (with restrictions)
  - Performance
  - Capacity
  - License

https://www.ibm.com/developerworks/connect/cicsdev

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 - coming soon (target end Jan 2012)
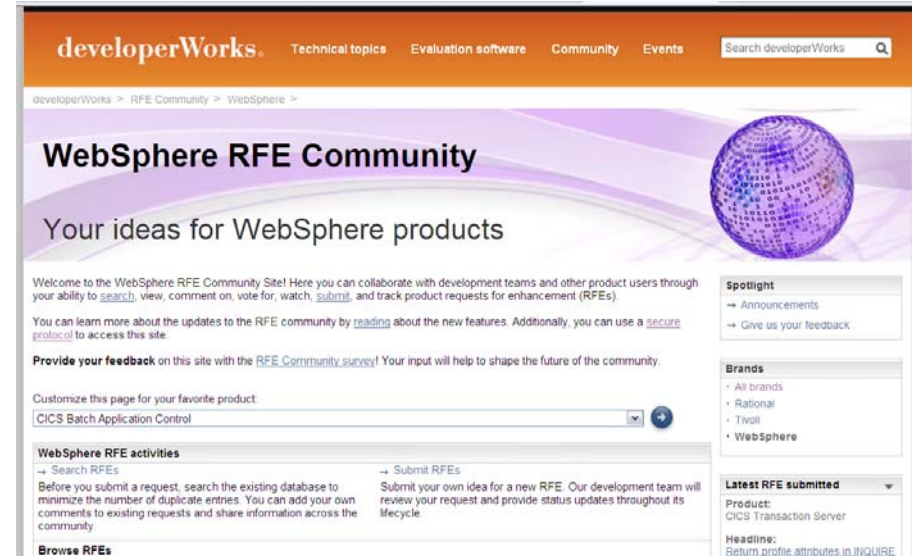
- **All previous FITS requirements have been processed, and either be transferred to RFE or closed and returned**

- **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

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
  - **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
  - **CICS Transaction Server Application Architecture**, Redbooks solution guide

Next Session

CICS V5 Scalability and Performance

- **Scalability**

- **Performance**

- **Policies**

- **Scalability Tooling**

- **Connectivity**

- **Summary**