

# Reinventing the CICS Application Lifecycle

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Tuesday, February 5, 2013  
12426



<http://www.linkedin.com/pub/matthew-webster/31/b09/b16>

# Reinventing the CICS Application Lifecycle



*Application resources enable a far greater level of control and management than in previous CICS releases. Applications can be monitored as a logical whole, helping users to manage resource usage and process internal charge-back billings. Applications enable you to drill down to the resource consumption of individual resources. The latest release of CICS IA allows you to gain far greater insight into your applications and their dependencies, whilst CICS PA allows you to fine tune your application performance and identify application bottlenecks. This session will demonstrate the complete CICS Application lifecycle and show how portfolio tools complement the associated development and management activities.*

# CICS Cloud Enablement

## Monday

1:30 PM *CICS TS V5.1 Technical Overview*

## Tuesday

9:30 AM *CICS and the Cloud, Mobile and Big Data*

**11:00 AM Reinventing the CICS Application Lifecycle**

1:30 PM CICS as a Platform Service Provider

## Wednesday

## Thursday

12:15 PM CICS Explorer

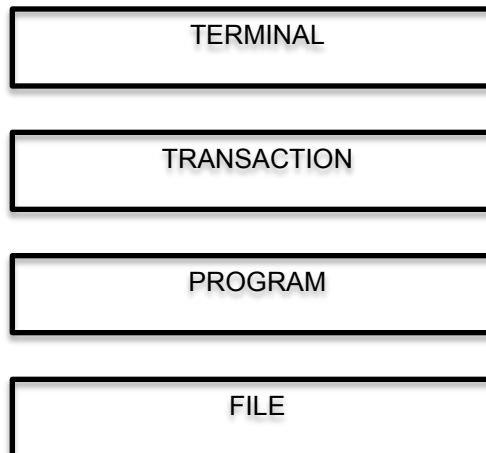
4:30 PM *Modernizing CICS - Hands on Lab, Part 1 of 2*

6:00 PM *Modernizing CICS - Hands on Lab Part 2 of 2*

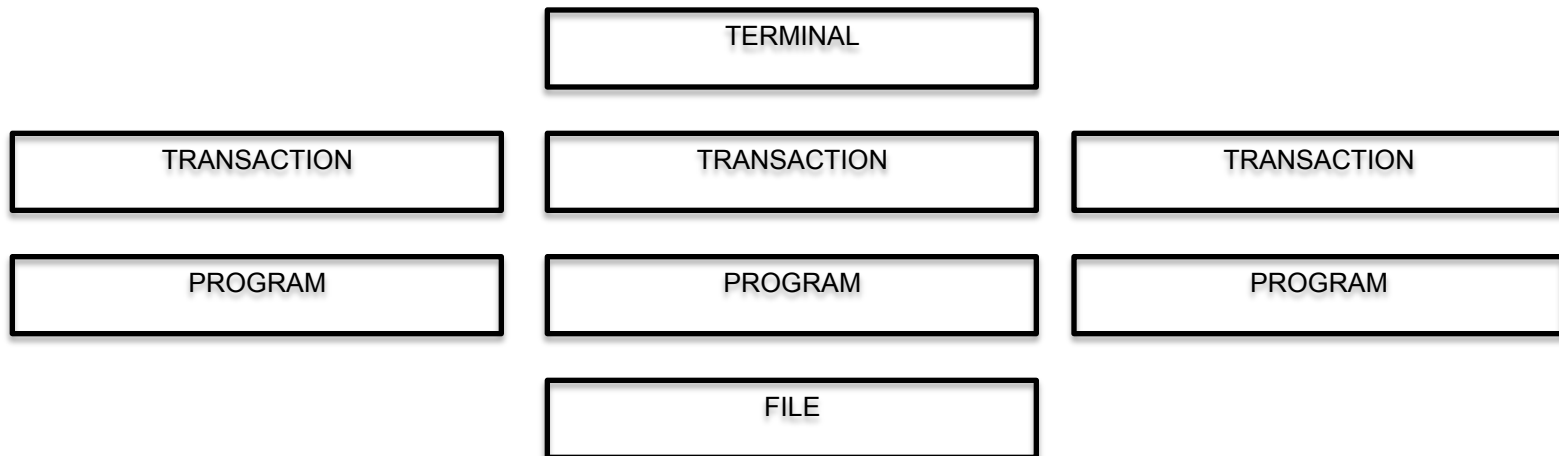
## Friday

# Once upon a time things were simple

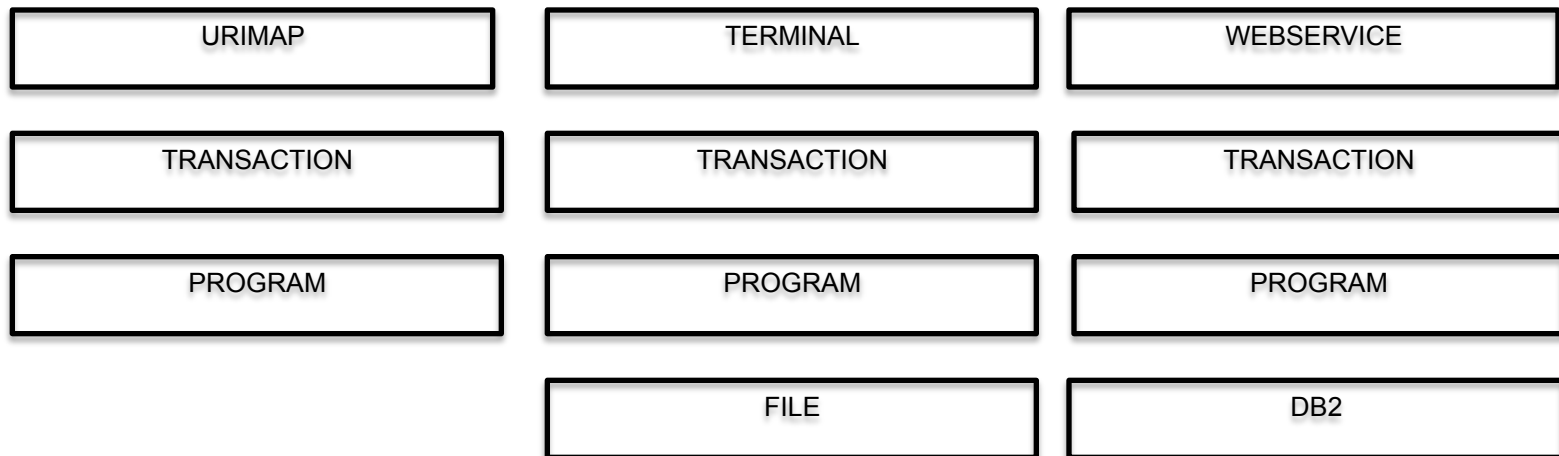
# Once upon a time things were simple



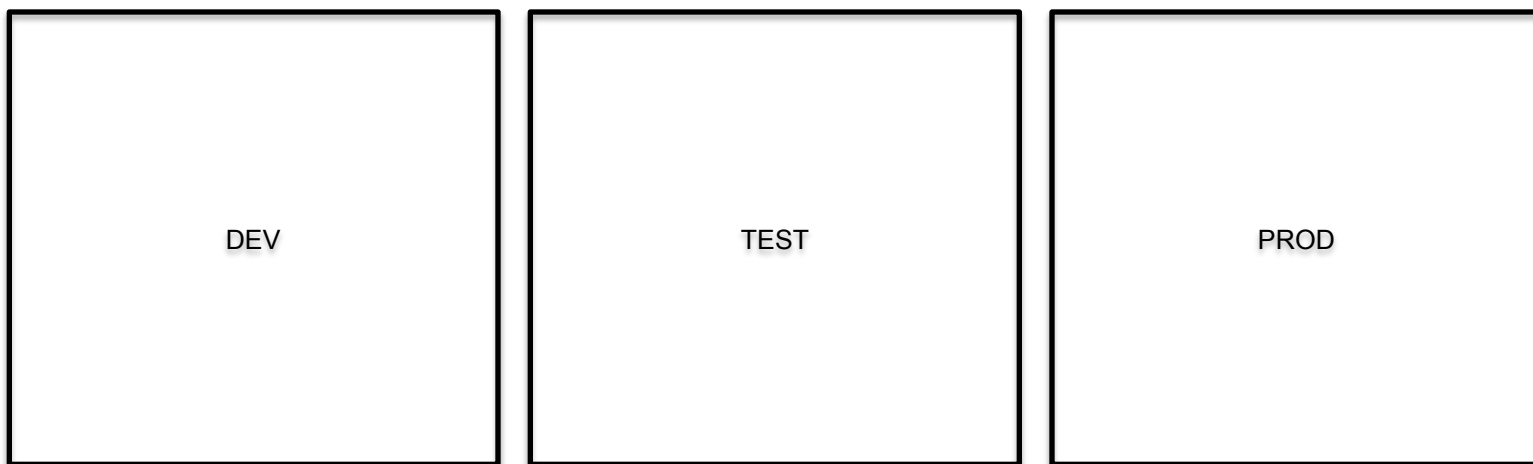
# Then capability was added



# Then we started getting really clever



# And what about those pesky\* application developers



\*Troublesome; annoying: a *pesky mosquito*

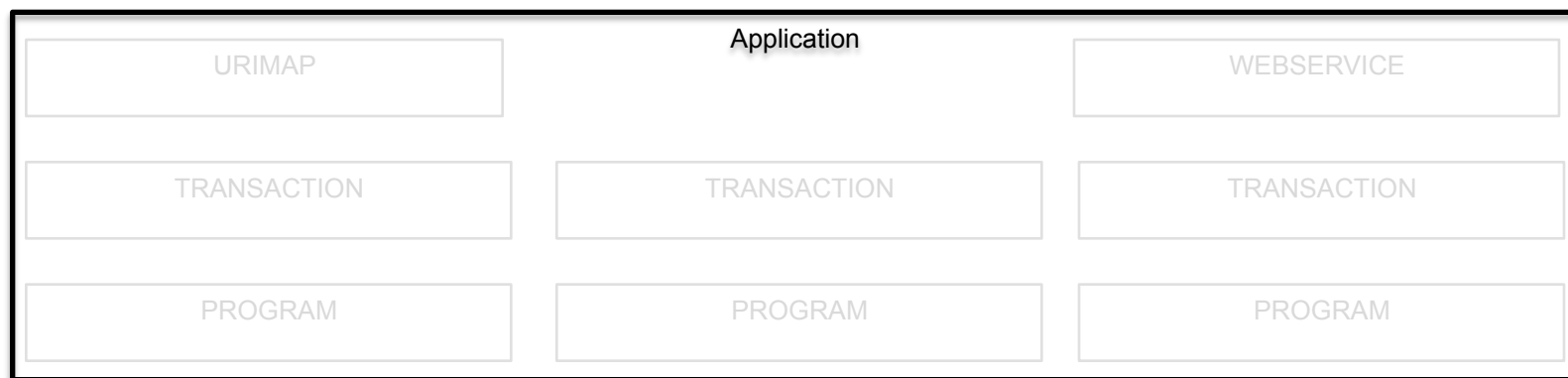
<http://http://www.thefreedictionary.com/pesky>



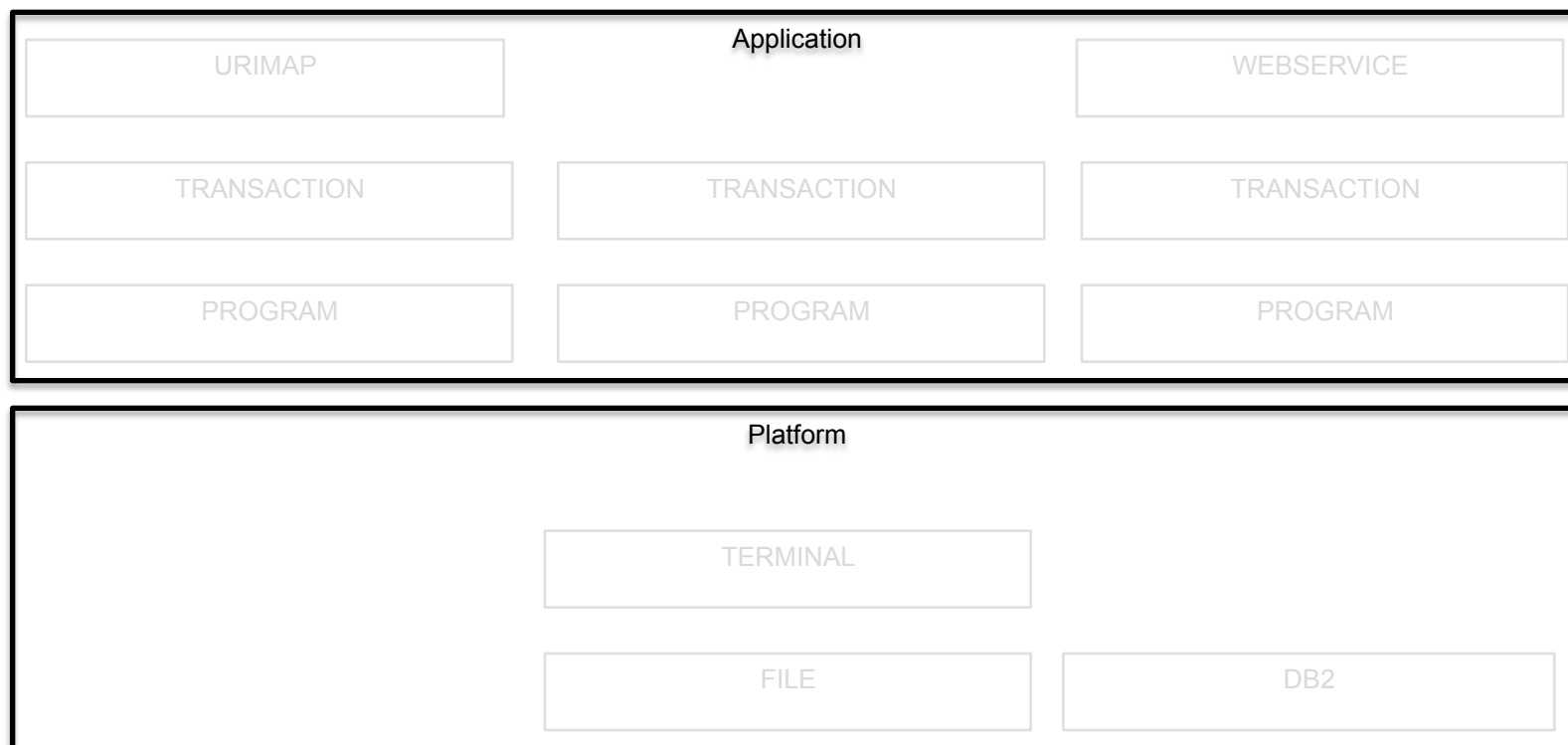
# We need things to be simple again

PROGRAM

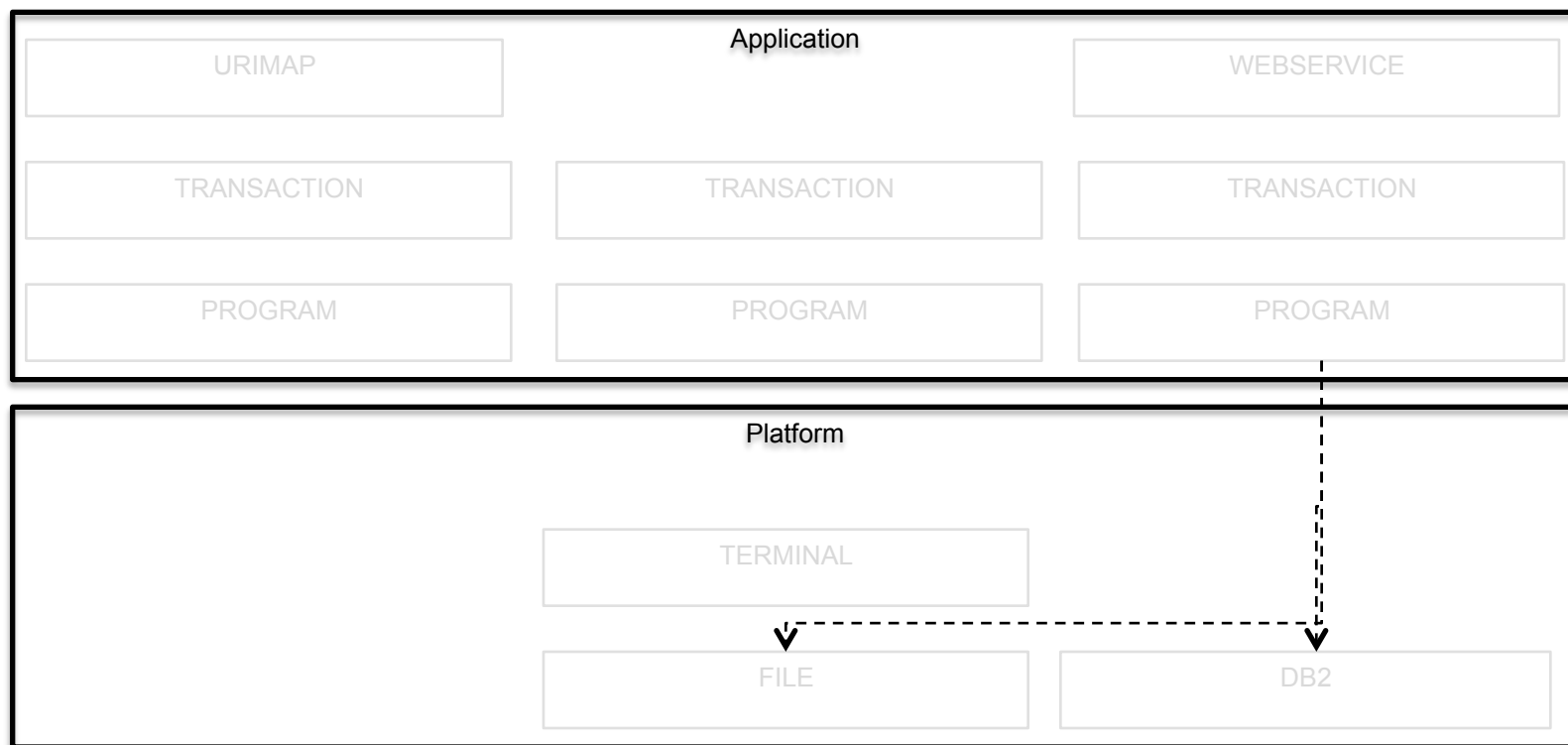
# We need things to be simple again: Application



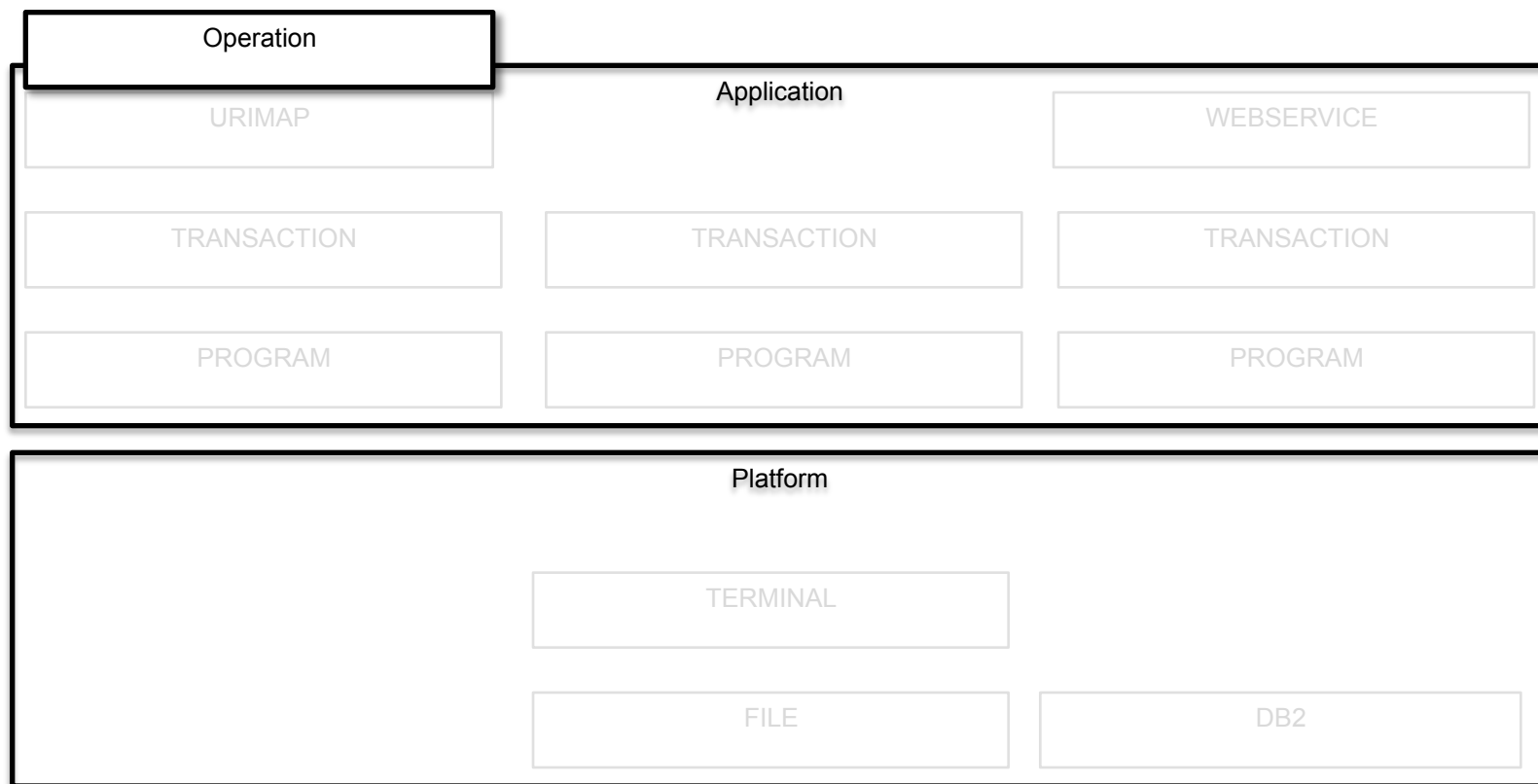
# We need things to be simple again: Platform



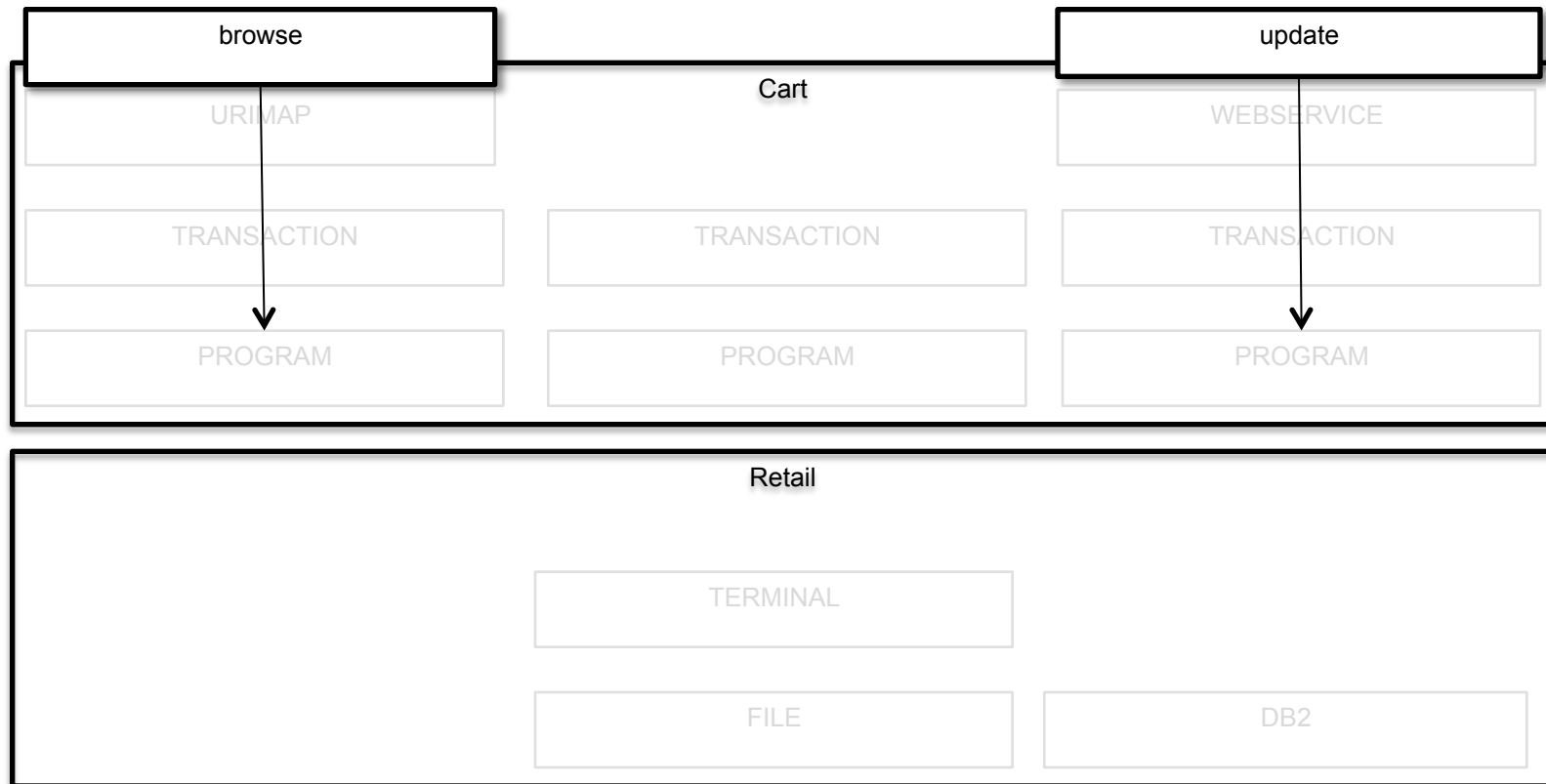
# We need things to be simple again: Dependencies



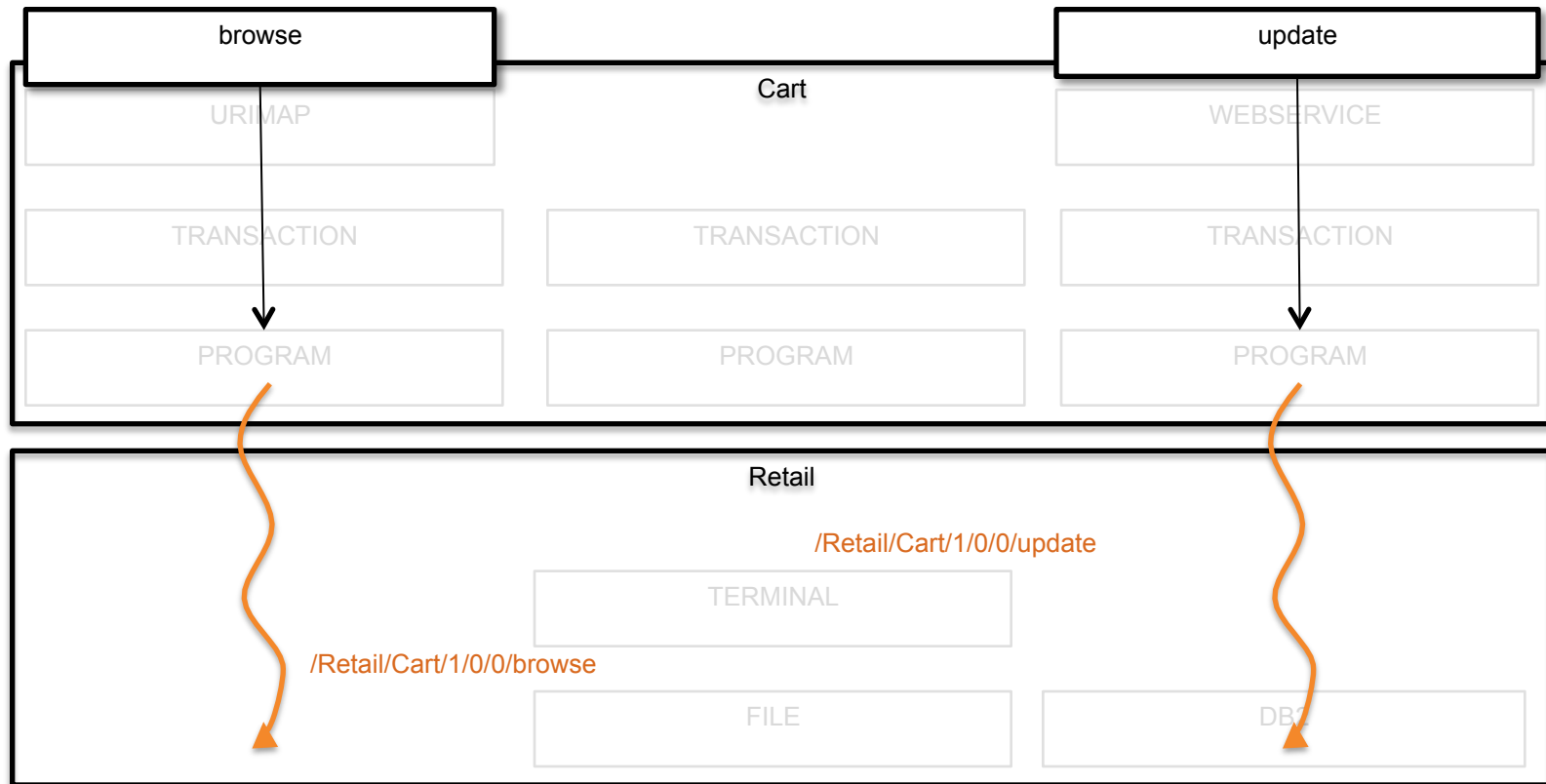
# We need things to be simple again: Operation



# We need things to be simple again: Entry Points



# We need things to be simple again: Application Context



# New First Class ~~Concepts~~ Resources

Application & Application Binding

Platform

Policy



# Application

An Application bundle

A collection of one or more CICS bundles

Life-cycle as a single entity

Measure and control resource usage

Develop in Eclipse/Rational

Share and promote through Source Code Management (SCM)

# Application Package

## Name

org.maw.banking.Loans

## Version

1.2.1

## Resources

LIBRARY, PROGRAM, TRANSACTION, URIMAP  
(EVENTBINDING, OSGIBUNDLE, ...)

## Dependencies

DB2CONNECTION, JVMSERVER, TCPIPService, ...

## Entry points

operation: browse, update, ...

resource: PROGRAM

## *Policy*

# Application Lifecycle

Create Application bundle project

# Application Lifecycle

Create Application bundle project

*Create Binding bundle project*

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Create Application bundle project

*Create Binding bundle project*

Package CICS bundle(s)

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Package CICS bundle(s)

Export Application package to zFS

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Create Application bundle project

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Package CICS bundle(s)

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INSTALL Application onto a Platform

ENABLE/DISABLE Application

DISCARD Application

# Application Lifecycle

Create Application bundle project

*Create Binding bundle project*

Package CICS bundle(s)

Export Application package to zFS

INSTALL Application onto a Platform

ENABLE/DISABLE Application

DISCARD Application

Application status (DISABLED | ENABLING | ...)



# Application Context

Manage Application

Measure & control resource usage

Associate Task with Application operation

PROGRAM

Flow from Task to Task & Region to Region

MRO, IPIC

Recorded in monitoring data

Platform, Application, Version (major.minor.micro), Operation

# Version

## Semantic versioning

major: backward incompatible change  
minor: backward compatible change  
micro: bug fix

## Resources

Application  
CICS bundle  
*OSGi bundle*

## Life-cycle

Development  
Deployment  
Operations  
Planning

<http://www.osgi.org/wiki/uploads/Links/SemanticVersioning.pdf>

# CICS Application vs. CPSM BAS

Simplified abstraction

Offline representation

Separation of DevOps\* roles

Complete lifecycle

Versions

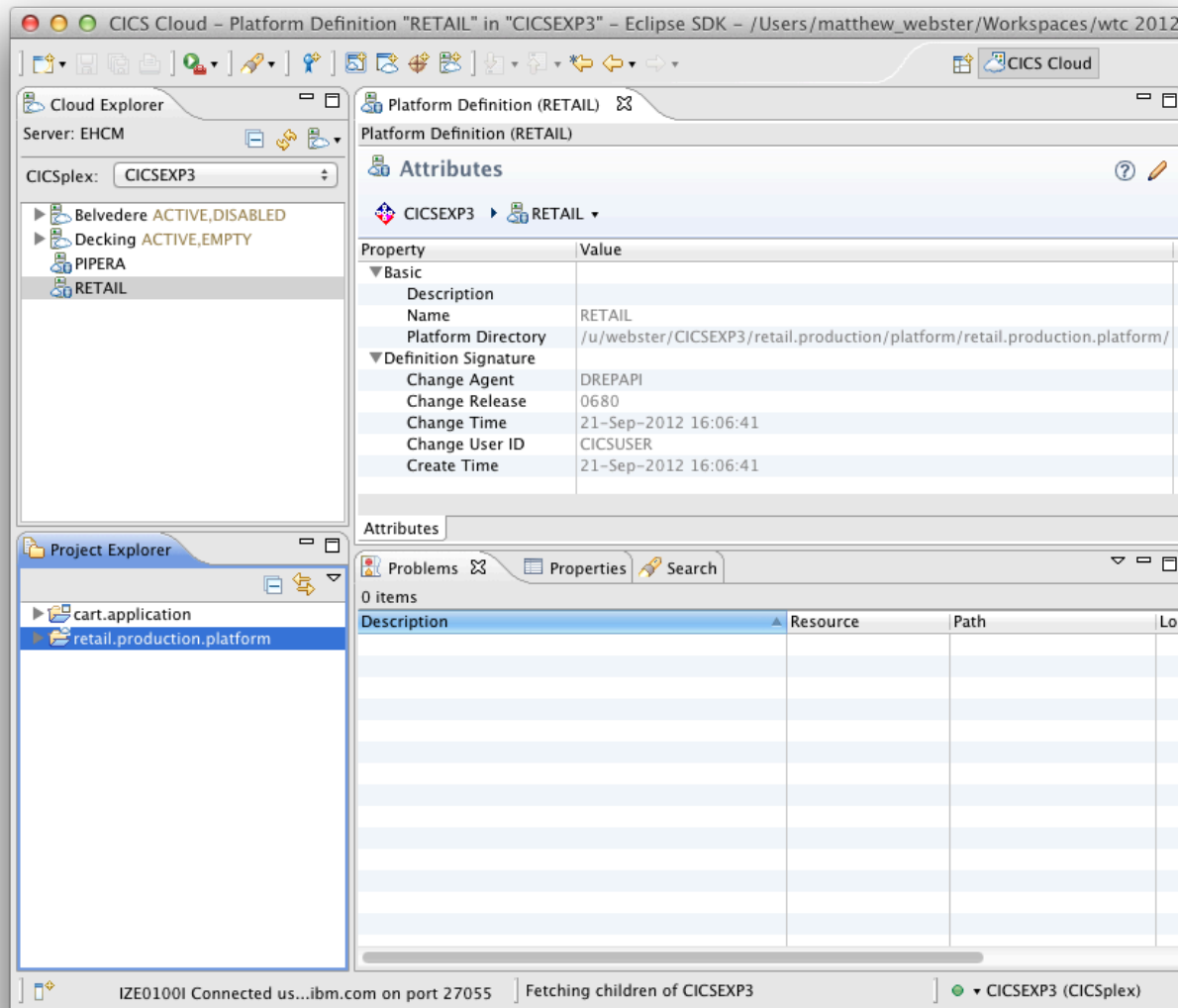
Security

Management, measurement and control

\* "... communication, collaboration and integration between software developers and information technology(IT) professionals ..."

<http://en.wikipedia.org/wiki/DevOps>

# Demonstration

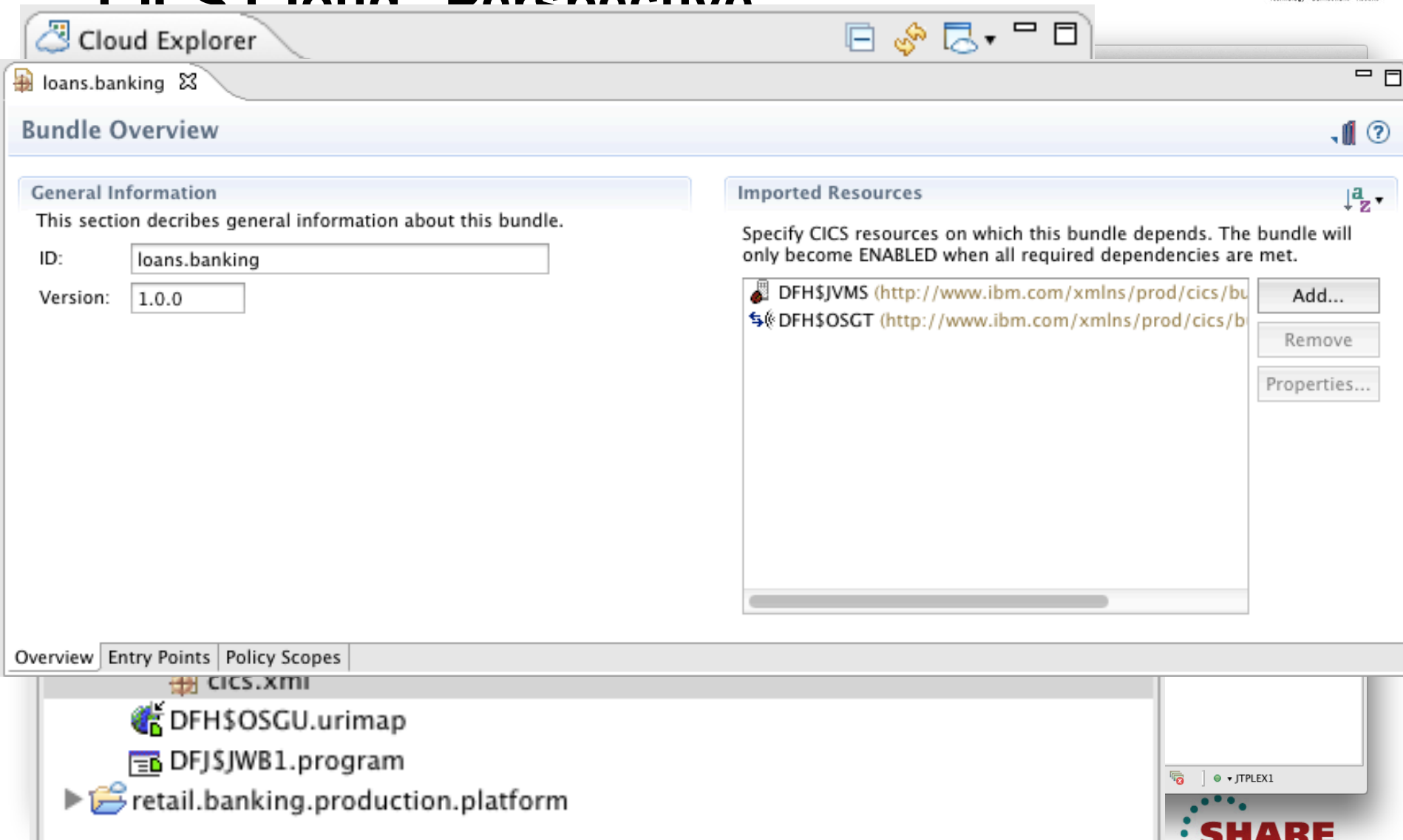


The screenshot shows the Eclipse IDE interface with the following components:

- Cloud Explorer:** Displays the CICSplex structure. The selected CICSplex is **CICSEXP3**. Under it, the following components are listed:
  - Belvedere **ACTIVE,DISABLED**
  - Decking **ACTIVE,EMPTY**
  - PIPERA
  - RETAIL** (selected)
- Platform Definition (RETAIL):** Shows the attributes of the selected platform definition.
 

Property	Value
<b>Basic</b>	
Description	
Name	RETAIL
Platform Directory	/u/webster/CICSEXP3/retail.production/platform/retail.production.platform/
<b>Definition Signature</b>	
Change Agent	DREPAPI
Change Release	0680
Change Time	21-Sep-2012 16:06:41
Change User ID	CICSUSER
Create Time	21-Sep-2012 16:06:41
- Project Explorer:** Shows the project structure. The selected project is **retail.production.platform**.
- Problems View:** Shows 0 items.
- Properties View:** Shows a table with columns: Description, Resource, Path, and Location. The table is currently empty.
- Status Bar:** Displays the following information:
  - IZE0100I Connected us...ibm.com on port 27055
  - Fetching children of CICSEXP3
  - CICSEXP3 (CICSplex)

# “CICS Cloud” Perspective



The screenshot displays the 'Cloud Explorer' application window. The main tab is 'loans.banking'. The 'Bundle Overview' section is active, showing 'General Information' and 'Imported Resources'. The 'General Information' section includes fields for 'ID' (loans.banking) and 'Version' (1.0.0). The 'Imported Resources' section lists two resources: 'DFH\$JVMS' and 'DFH\$OSGT', both with URLs pointing to 'http://www.ibm.com/xmlns/prod/cics/bu'. The bottom of the window shows a tree view with 'CICS.XML' expanded, revealing 'DFH\$OSGU.urimap', 'DFJ\$JWB1.program', and 'retail.banking.production.platform'.

**Cloud Explorer**

loans.banking

### Bundle Overview

**General Information**

This section describes general information about this bundle.

ID:

Version:

**Imported Resources**

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

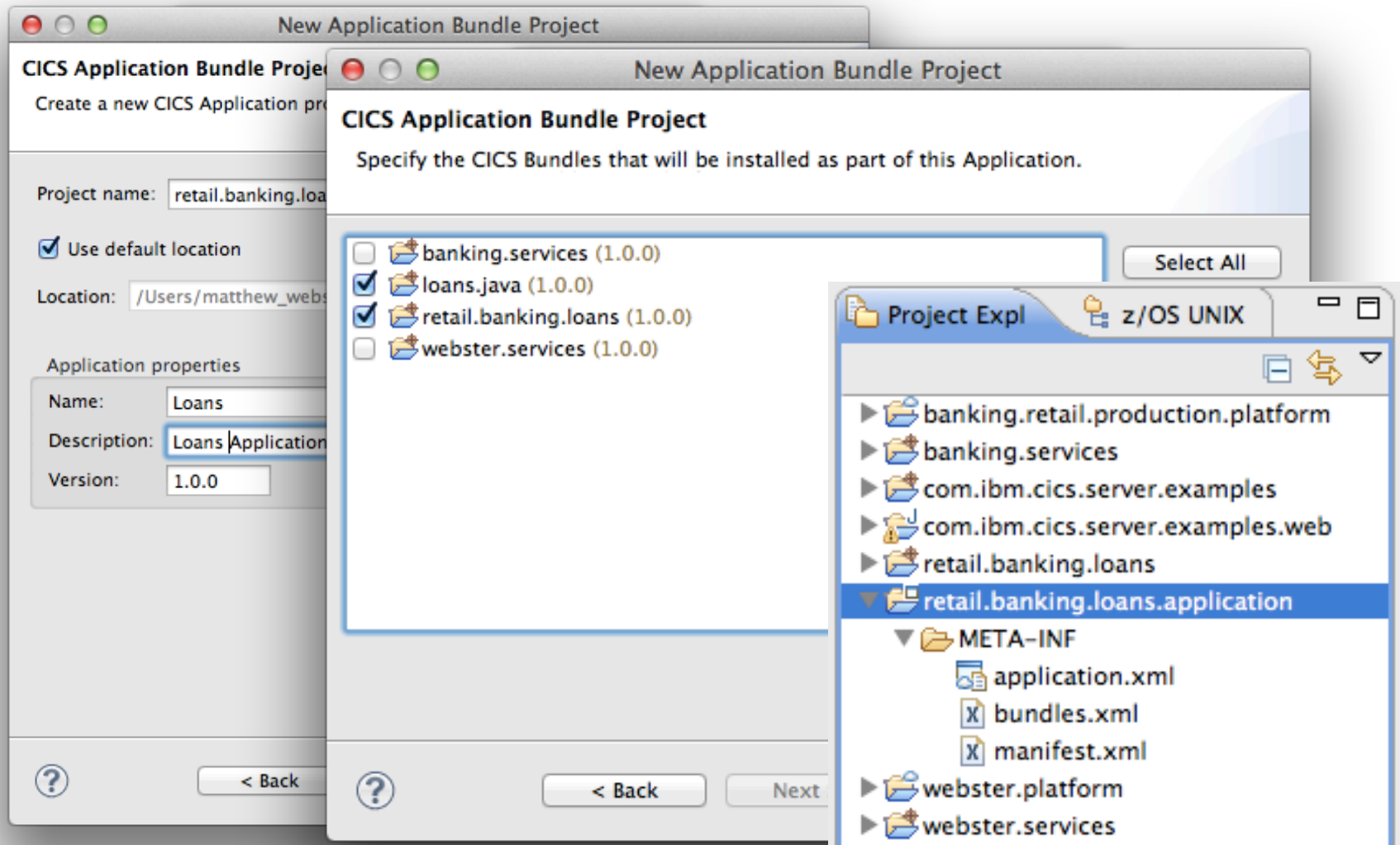
- DFH\$JVMS (<http://www.ibm.com/xmlns/prod/cics/bu>)
- DFH\$OSGT (<http://www.ibm.com/xmlns/prod/cics/bu>)

Buttons: Add..., Remove, Properties...

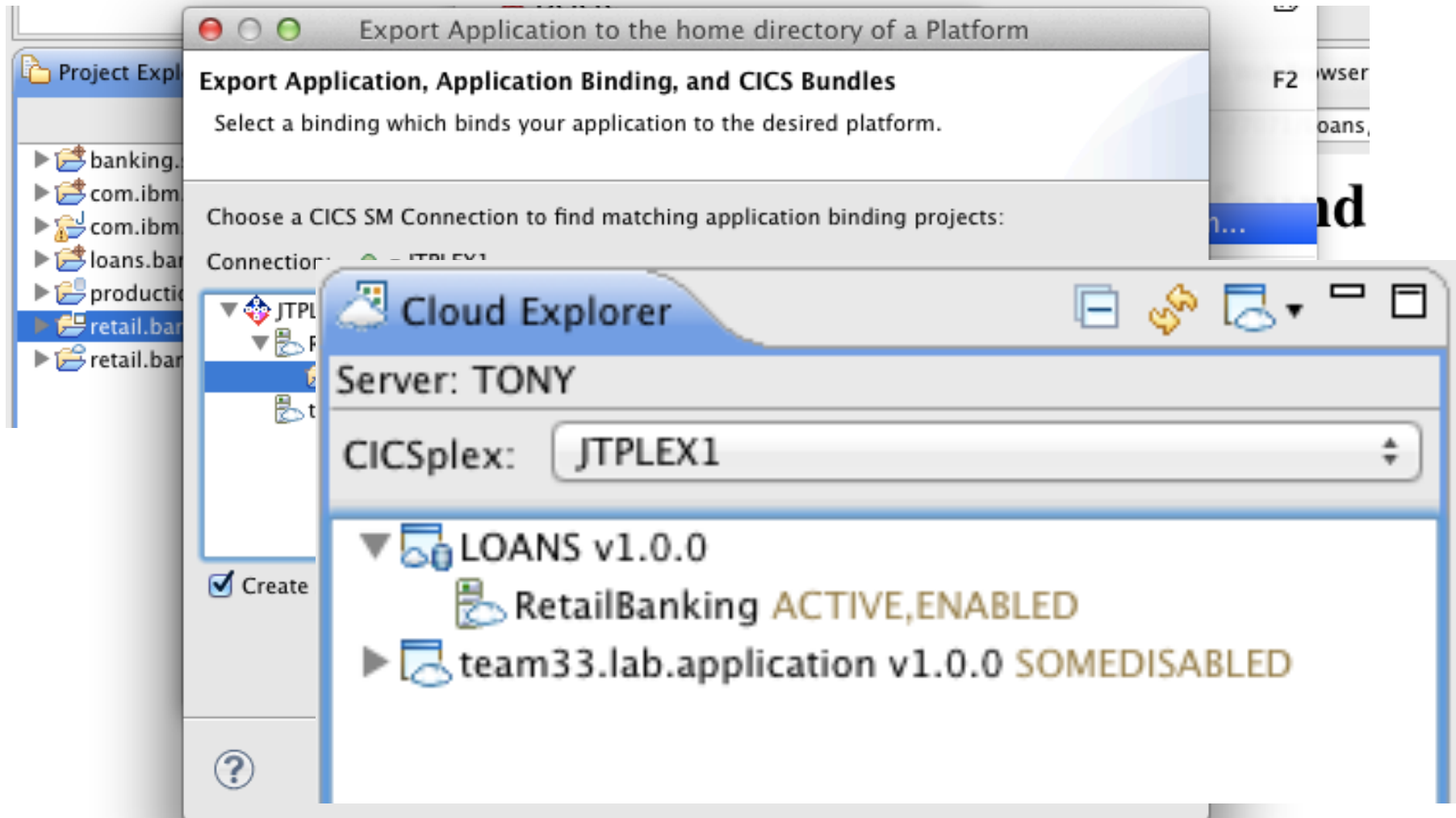
Overview | Entry Points | Policy Scopes

- CICS.XML
  - DFH\$OSGU.urimap
  - DFJ\$JWB1.program
  - retail.banking.production.platform

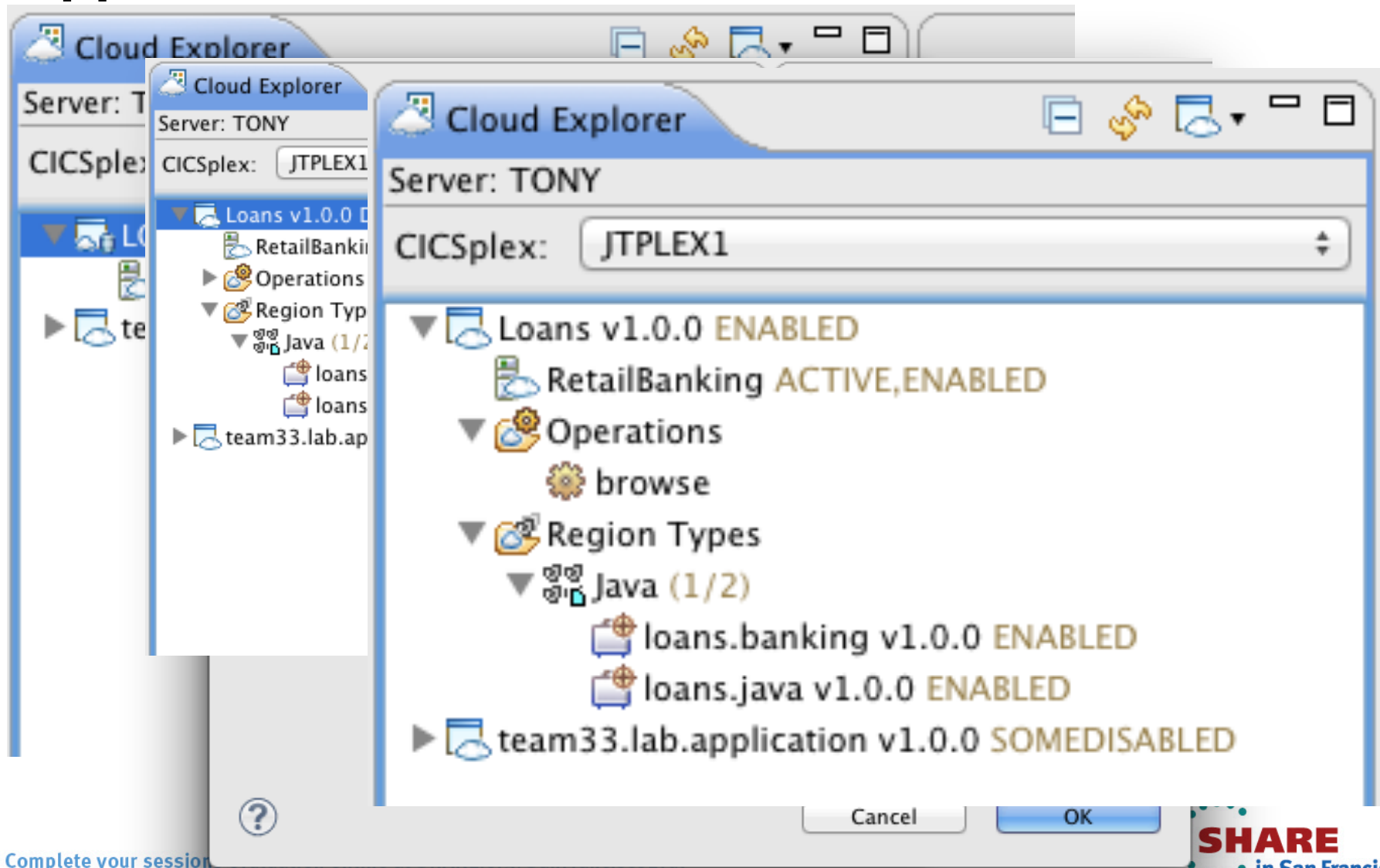
# Create “Loans” Application



# Deploy Loans Application



# INSTALL and ENABLE the Loans Application





# Manage Loans Application

Cloud Explorer

Server: TONY

CICSplex: JTPLEX1

Loans v1.0.0 **ENABLED**

RetailBanking **ACTIVE,ENABLED**

---

Problems Properties Search Internal Web Browser Console Bundles

CNX0211I Context: JTPLEX1. Resource: BUNDLE. 1 records collected at 15-Oct-2012 13:33:52

Region	Name	Bundle ID	Major Version	Minor Version	Micro Version	Status	Ir
IYK2Z2G1	\$0591589	loans.banking	1	0	0	✓ ENABLED	1

loans.java v1.0.0 **ENABLED**

---

Problems Properties Search Internal Web Browser Console Bundles Bundles Bundle Parts

CNX0211I Context: JTPLEX1. Resource: BUNDPART. 5 records collected at 15-Oct-2012 13:36:15

Region	Bundle	Bundle Part	Enable Status	Meta Data File	Part Class	Part Type
IYK2Z2G1	\$0591589	DFH\$JVMS	✓ ENABLED		IMPORT	http://www.ibm.com/xmlns/prod/cics/bundle/JVMSEVER
IYK2Z2G1	\$0591589	DFH\$OSGT	✓ ENABLED		IMPORT	http://www.ibm.com/xmlns/prod/cics/bundle/TCIPSERVICE
IYK2Z2G1	\$0591589	DFH\$OSGU	✓ ENABLED	DFH\$OSGU.urimap	DEFINITION	http://www.ibm.com/xmlns/prod/cics/bundle/URIMAP
IYK2Z2G1	\$0591589	DFJ\$JWB1	✓ ENABLED	DFJ\$JWB1.program	DEFINITION	http://www.ibm.com/xmlns/prod/cics/bundle/PROGRAM
IYK2Z2G1	\$0591589	DFJ\$JWB1	✓ ENABLED		ENTRYPOINT	http://www.ibm.com/xmlns/prod/cics/bundle/PROGRAM

# Loans Application Available



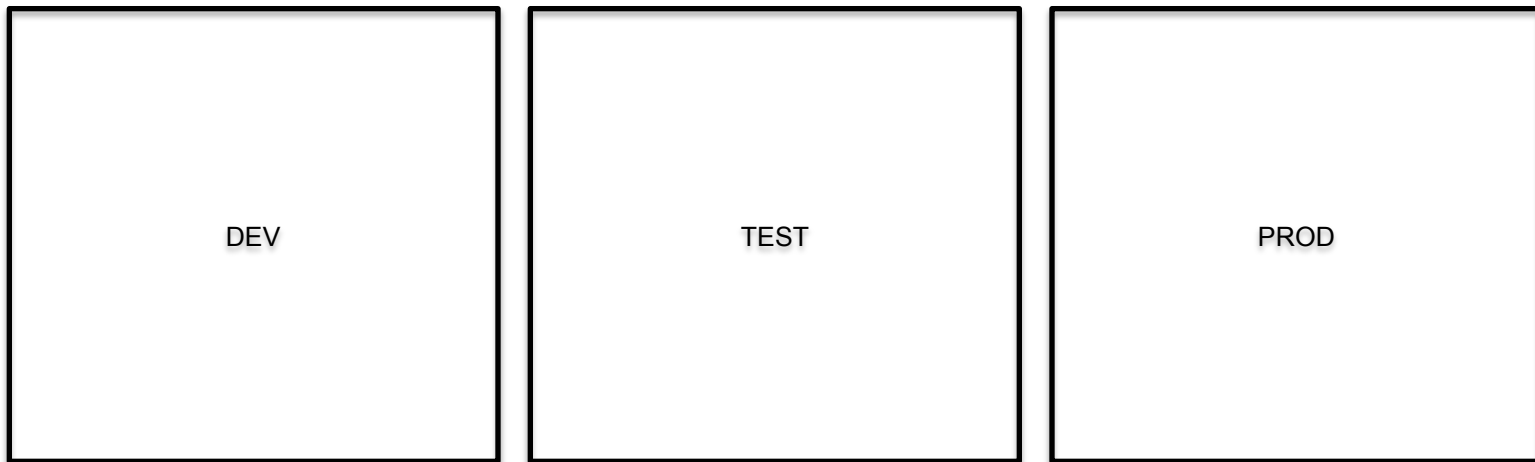
The screenshot shows a web browser window with tabs for Problems, Properties, Search, Internal Web Browser, and Console. The address bar displays the URL `http://winmvs2c.hursley.ibm.com:27071/Loans/browse`. The main content area displays the following information:

## Web Sample1

### Inbound Client Request Information:

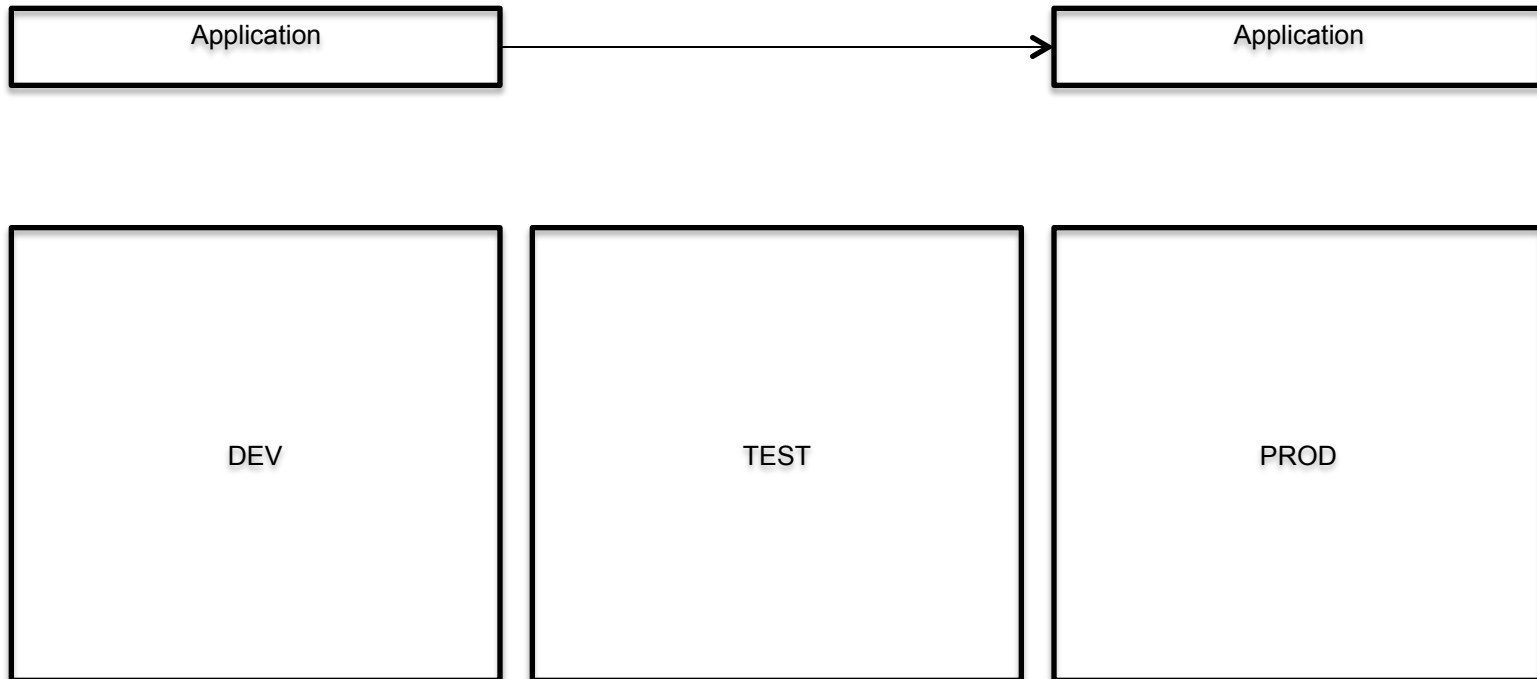
Method: GET  
Version: HTTP/1.1  
Path: /Loans/browse  
Request Type: HTTPYES  
Query String: null

# Now back to those pesky\* developers



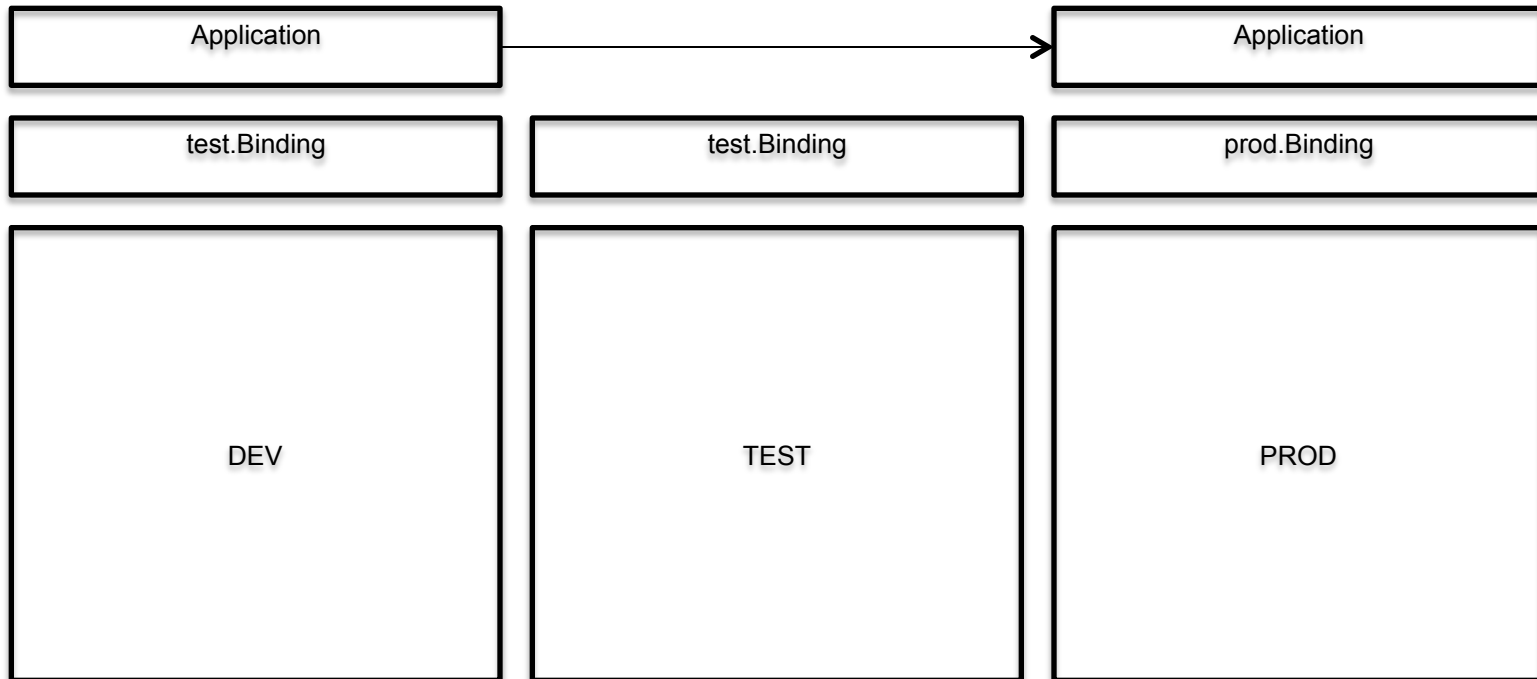
\*Troublesome; annoying: *a pesky mosquito*

# How do I move an Application from Development through Test to Production (without changing it)?



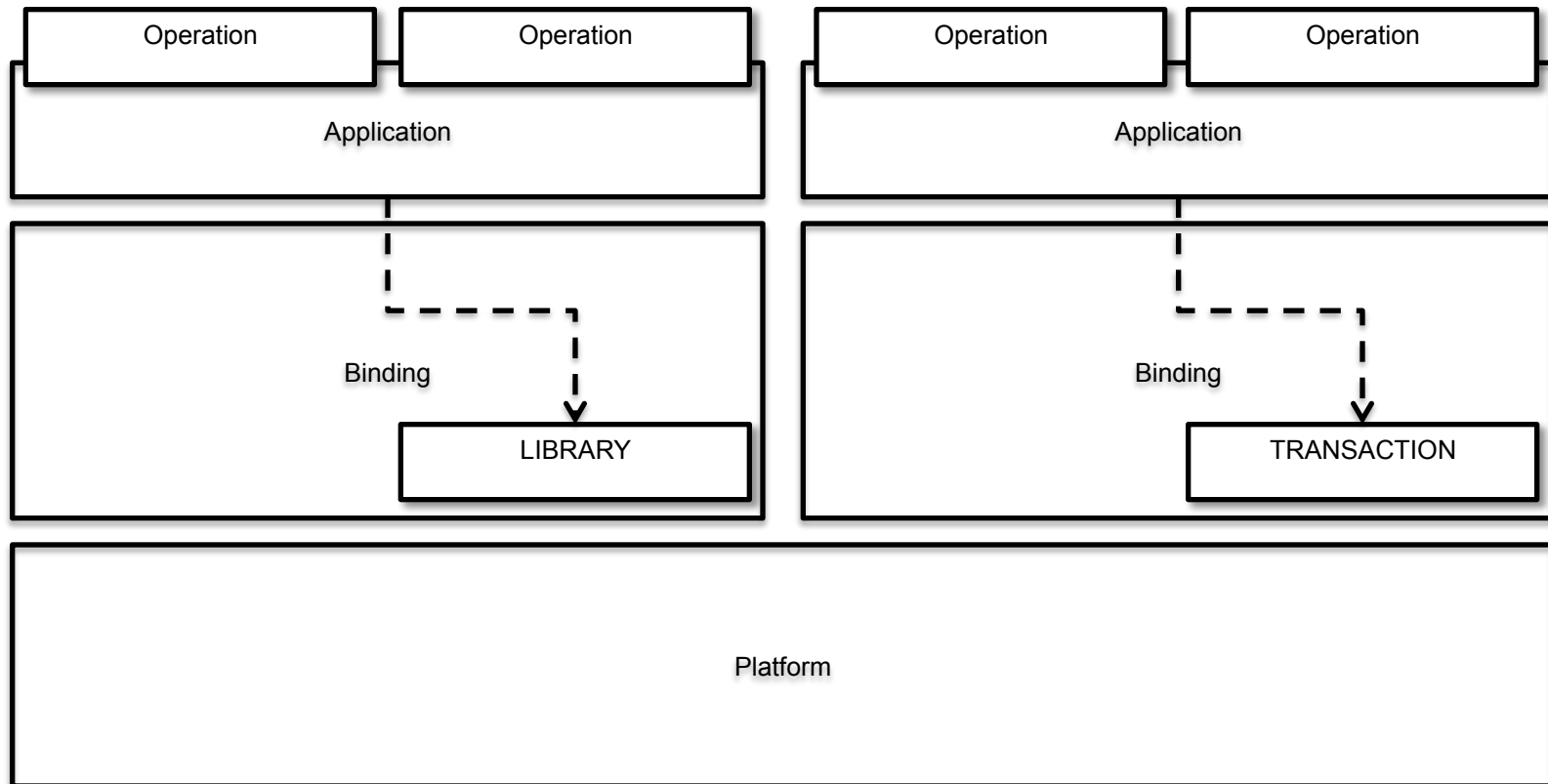
\*Troublesome; annoying: a *pesky mosquito*

# Answer: use Application Bindings



\*Troublesome; annoying: a *pesky mosquito*

# A Binding allows additional resource dependencies to be created



# Application Binding

An Application Binding bundle

A collection of zero or more CICS bundles

A set of deployment rules

Life-cycle with Application as a single entity

Removes direct dependency between Application and Platform

# Application Binding Package

## Name

org.maw.banking.binding.Loans

## Version

1.2.1

## Binding

Application name & version

Platform name & version

## Additional CICS bundles

Resources

Dependencies

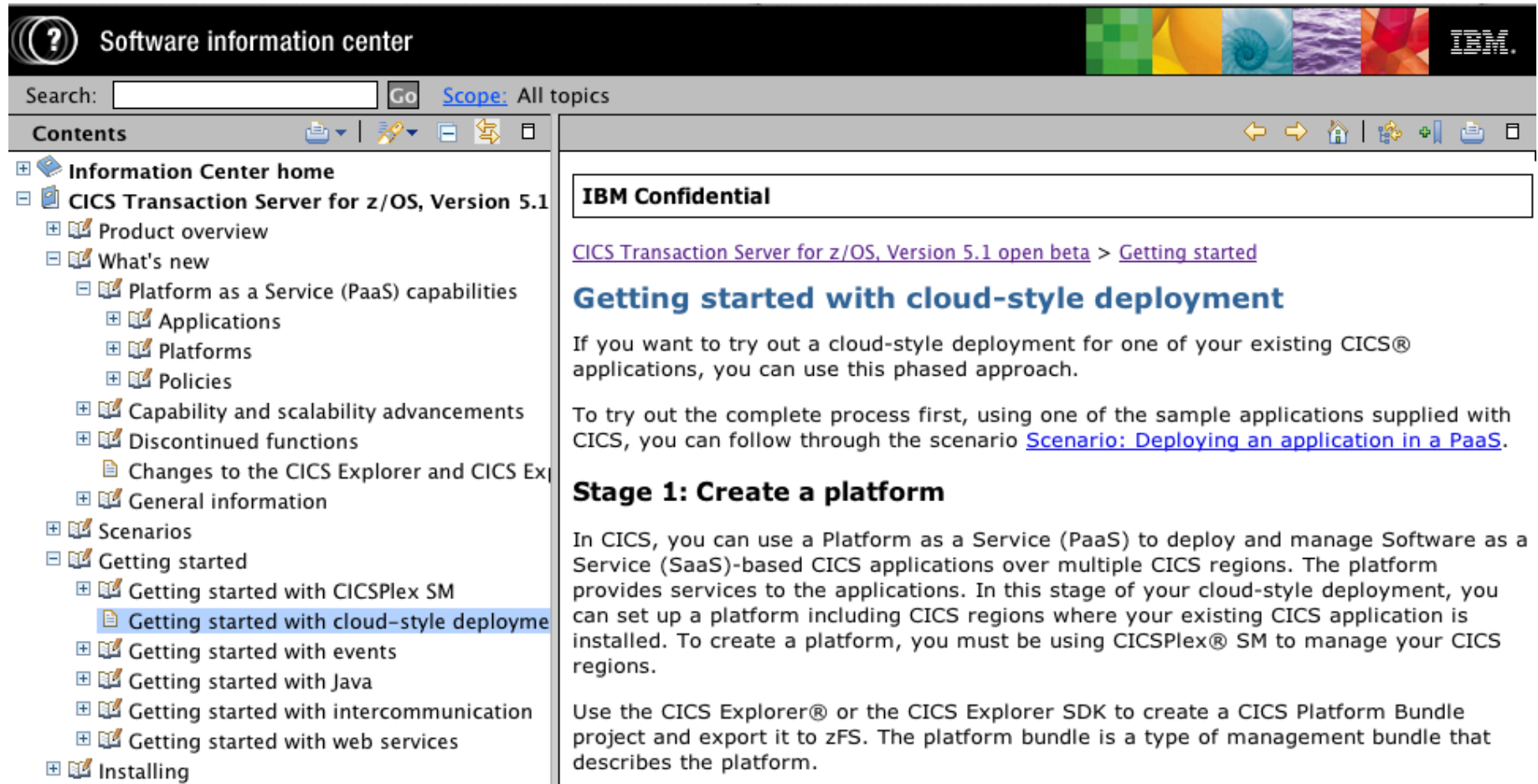
## Deployment Rules

CICS bundle -> region type

## Policy



# Information Center



The screenshot shows the IBM Software Information Center interface. The top navigation bar includes a search field, a 'Go' button, and a 'Scope: All topics' dropdown. Below the navigation bar is a 'Contents' sidebar on the left and a main content area on the right. The sidebar lists various topics, with 'Getting started with cloud-style deployment' highlighted. The main content area displays the title 'IBM Confidential' and the article 'Getting started with cloud-style deployment'.

**Software information center**

Search:  Go Scope: All topics

**Contents**

- Information Center home
- CICS Transaction Server for z/OS, Version 5.1
  - Product overview
  - What's new
    - Platform as a Service (PaaS) capabilities
      - Applications
      - Platforms
      - Policies
    - Capability and scalability advancements
    - Discontinued functions
      - Changes to the CICS Explorer and CICS Explorer
    - General information
  - Scenarios
  - Getting started
    - Getting started with CICSplex SM
    - Getting started with cloud-style deployment**
    - Getting started with events
    - Getting started with Java
    - Getting started with intercommunication
    - Getting started with web services
  - Installing

**IBM Confidential**

[CICS Transaction Server for z/OS, Version 5.1 open beta](#) > [Getting started](#)

## Getting started with cloud-style deployment

If you want to try out a cloud-style deployment for one of your existing CICS® applications, you can use this phased approach.

To try out the complete process first, using one of the sample applications supplied with CICS, you can follow through the scenario [Scenario: Deploying an application in a PaaS](#).

### Stage 1: Create a platform

In CICS, you can use a Platform as a Service (PaaS) to deploy and manage Software as a Service (SaaS)-based CICS applications over multiple CICS regions. The platform provides services to the applications. In this stage of your cloud-style deployment, you can set up a platform including CICS regions where your existing CICS application is installed. To create a platform, you must be using CICSplex® SM to manage your CICS regions.

Use the CICS Explorer® or the CICS Explorer SDK to create a CICS Platform Bundle project and export it to zFS. The platform bundle is a type of management bundle that describes the platform.

# Application Discovery using CICS IA

Discover entry points, resource and dependencies

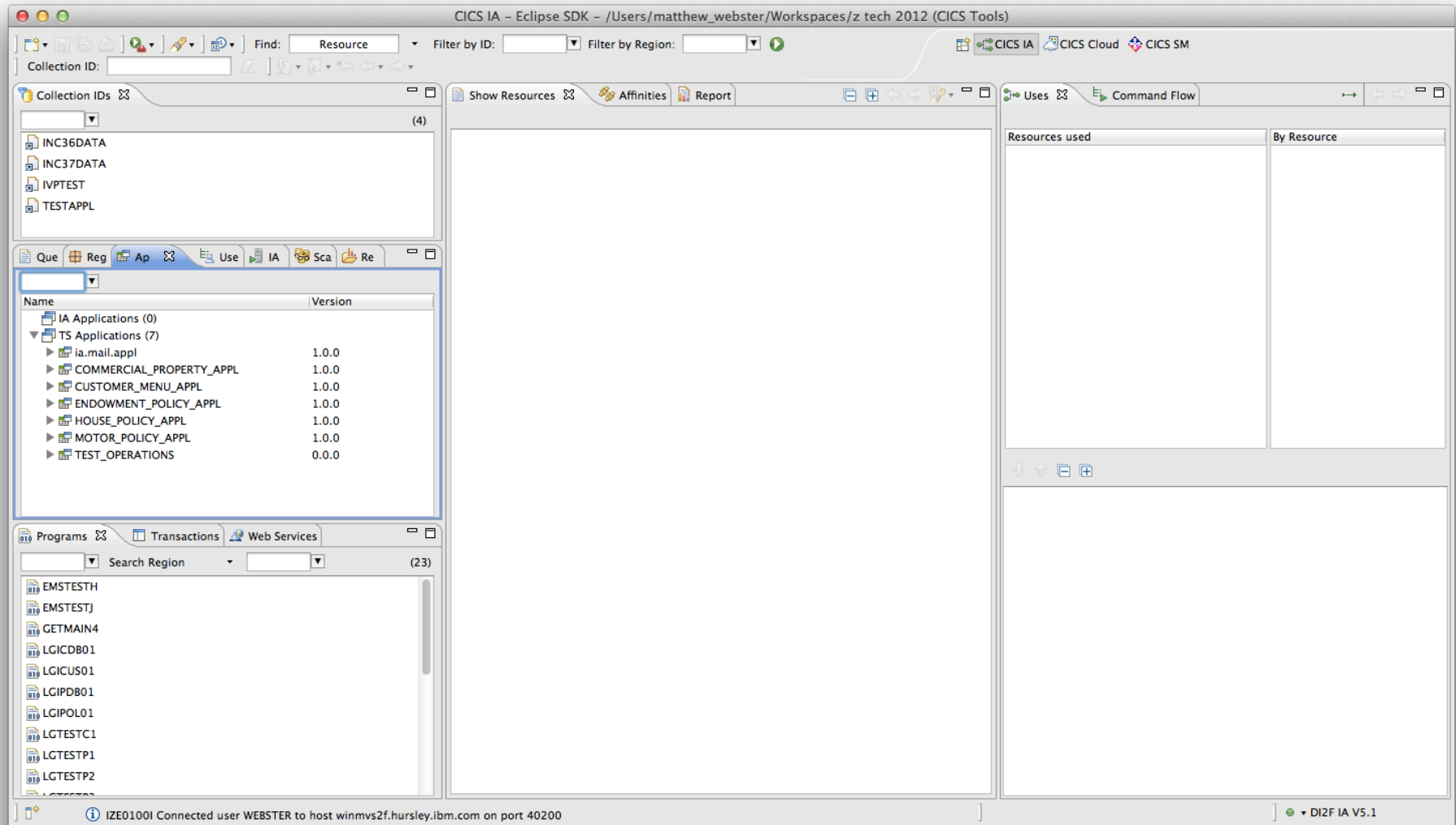
Collect information about Applications

Set temporary entry points

“Used by application”

“Collect by Application”

# “CICS IA” Perspective



The screenshot displays the Eclipse IDE with the CICS IA perspective. The title bar indicates the workspace path: `/Users/matthew_webster/Workspaces/z tech 2012 (CICS Tools)`. The interface includes several tool panes:

- Collection IDs:** Lists four collections: INC36DATA, INC37DATA, IVPTST, and TESTAPPL.
- Queues:** A table showing application details.
 

Name	Version
IA Applications (0)	
TS Applications (7)	
ia.mail.appl	1.0.0
COMMERCIAL_PROPERTY_APPL	1.0.0
CUSTOMER_MENU_APPL	1.0.0
ENDOWMENT_POLICY_APPL	1.0.0
HOUSE_POLICY_APPL	1.0.0
MOTOR_POLICY_APPL	1.0.0
TEST_OPERATIONS	0.0.0
- Programs:** Lists 23 programs, including EMSTESTH, EMSTESTJ, GETMAIN4, LGICDB01, LGICUS01, LGIPDB01, LGIPOL01, LGTESTC1, LGTESTP1, and LGTESTP2.
- Central Workspace:** Contains tabs for 'Show Resources', 'Affinities', and 'Report'. The 'Show Resources' tab is active.
- Right Panel:** Divided into 'Resources used' and 'By Resource' sections, both currently empty.
- Status Bar:** Shows 'IZE0100I Connected user WEBSTER to host winmvs2f.hursley.ibm.com on port 40200' and 'DI2F IA V5.1'.

# Summary

New Application resource simplifies development and deployment lifecycle

Application binding allows an application to be deployed to different Platforms without change

Application context simplifies management of runtime status and measurement of resource consumption

# Questions?



As a reminder, please fill out a session evaluation

Complete your sessions evaluation online at [SHARE.org/SanFranciscoEval](https://SHARE.org/SanFranciscoEval)

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