

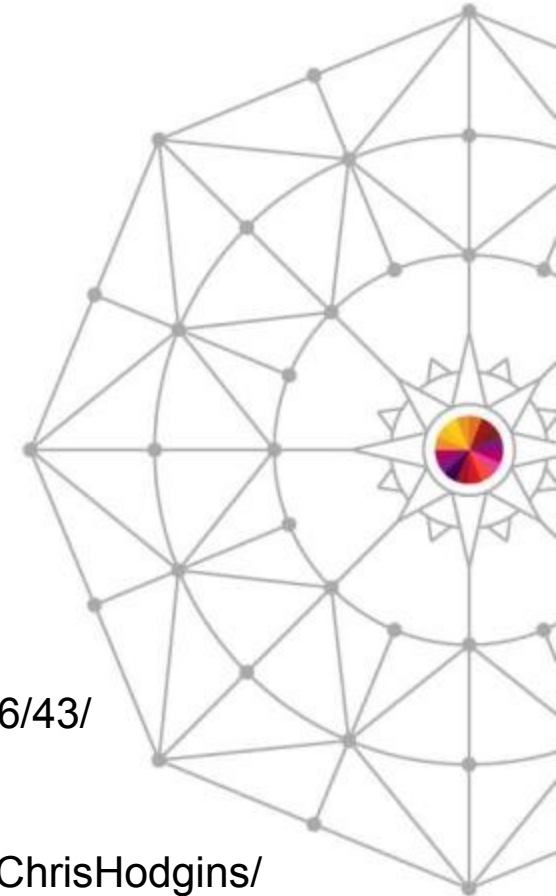
Re-inventing the CICS Application Lifecycle

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IBM

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Session 14902

Linkedin: <http://uk.linkedin.com/pub/chris-hodgins/1/866/43/>

CICSplex and the cloud blog:
<https://www.ibm.com/developerworks/mydeveloperworks/blogs/ChrisHodgins/>




Further sessions on Bundles and Cloud

- 15395 – Managing CICS Resources in a Unix File System
 - Monday 1:30pm Salon 2
- **14902 – Reinventing the CICS Application Lifecycle**
 - Tuesday 9:30am Salon 3
- 14829 – CICS as a Platform Service Provider
 - Tuesday 11:00am Salon 3
- 14912 – Managing CICS Resources and Bundles (Application multi-versioning)
 - Wednesday 1:30pm Salon 4

Announcing the new CICS TS V5.1 release

Operational Efficiency

- *Greater capacity* - achieve cost savings through consolidation
- *Managed operations* - control critical resource thresholds with policies
- *Increased availability* - reduce the need for planned downtime
- *Deeper insight* - extend performance and compliance information



100+
requirements
satisfied!

Service Agility

- *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

... with Cloud Enablement

Consistent with the IBM Cloud Computing strategy
Positioning customers for the next transformational era in technology
Moving towards a cloud oriented service delivery platform

Announcing the new CICS TS V5.2 Open Beta!



<http://www.ibm.com/software/htp/cics/openbeta/>

OPEN BETA

CICS TS V5.2 open beta shows how new workloads, such as those driven by mobile devices, can be quickly and efficiently incorporated into existing CICS systems. Participants in the open beta program may also get direct access to CICS development resources, with the opportunity to provide early feedback and are well-positioned to gain first-mover advantage.



It shouldn't be complicated to deploy and manage your Application!



- Create a single entity to contain and manage your Applications
- Move Applications between development, test and production with confidence
- Provision and detect changes in shared services Applications depend on
- Monitor Applications by operation rather than at the transaction level
- Deploy multiple versions of the same Application at the same time on the same region ***OPEN BETA***



Problems addressed

- Inconsistent application resource definitions
 - Managed individually rather than as a package
 - May change while the application is installed
 - Difficult to know exactly what resources an application contains
- Moving applications between different environments can be time-consuming
 - Difficult to see where resources should be deployed
 - Regions may not have the same capabilities
 - Application dependencies may have changed

Even more problems addressed

- Application dependencies can not be easily defined
 - Not possible to declare an application dependency
 - Not possible to view the health of an application or its supporting services
- Monitoring an application is an accumulation of the tasks it ran
 - Difficult to break down application performance by the actions it performed
 - Difficult to track application performance across multiple regions

Even even more problems addressed

- Risk involved rolling out a new version of an Application
OPEN BETA
 - Difficult, time-consuming and error prone to make sure the old version has been completely removed
 - Turning on the new version requires care
- Resource name clashes can prevent multiple Applications on the same region
OPEN BETA

What do I need to set this up?

- CICS Transaction Server V5.1 with CICSplex SM set up
 - With CICSplex SM set up
 - With APAR PM81540 applied (www-01.ibm.com/support/docview.wss?uid=swg1PM81540)
- CICS Explorer V5.1.1
- Access to zFS

Reduced effort for development

- Versioned Application/bundle for complete control over construction
- Applications can be stored in SCM and shared with others
- Applications can be quickly re-deployed to well-defined Platforms e.g. development, test, production
- Updates can be installed into a new version of the Application and installed side by side with the old version
OPEN BETA

Reduced effort for operations

- Review Application health in a single click
- Quickly provision an Application from test to production without fear of resource definition changes/inconsistencies
- Define dependencies between different Platforms that affect the Applications health
- Enforce expected Application behaviour with policies
- Monitor the performance of Applications rather than the resources

Enabling DevOps collaboration



First class applications

Create agile services from existing assets



First class platforms

Create agile service delivery platforms



"Hey Simon, I need to test my new version of the payroll **application**."

"Sure Abigail, you should get the latest payroll test **platform** from the repository, I'll send you a link."

"Thanks, I'll **deploy my app** onto that platform on the development plex later today."

"That should be fine, just check with Oliver that the **policies** on the plex are going to be OK for your app's changes."



FASTER

SIMPLER

User roles – System Programmer

- Platform provider
- Policy overlord
- Application and Platform health reviewer
- Collection and review of Application monitoring SMF 110 records
- Problem determination for Platforms and Applications

User roles – Application Deployer

- Defining an Applications deployment rules to target a specific Platform
- Defining Application dependencies
- Applying System Programmer defined policies to an Application

User roles – Application Developer

- Design of business logic
- Code
- Test
- Application creation

Supporting the Application lifecycle

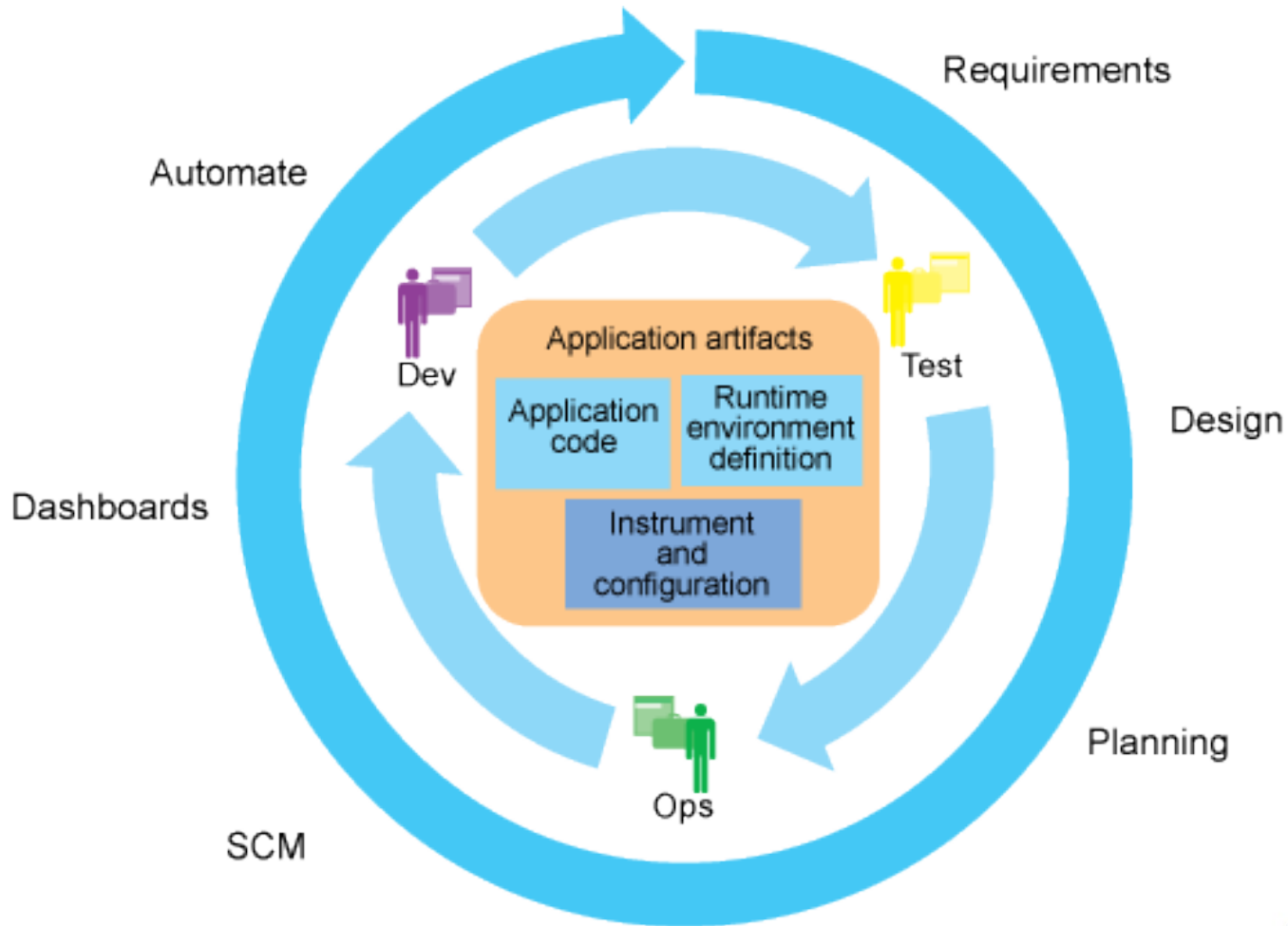


Image from: <http://www.ibm.com/developerworks/rational/library/puresystems-development-deployment-management-it-applications/>

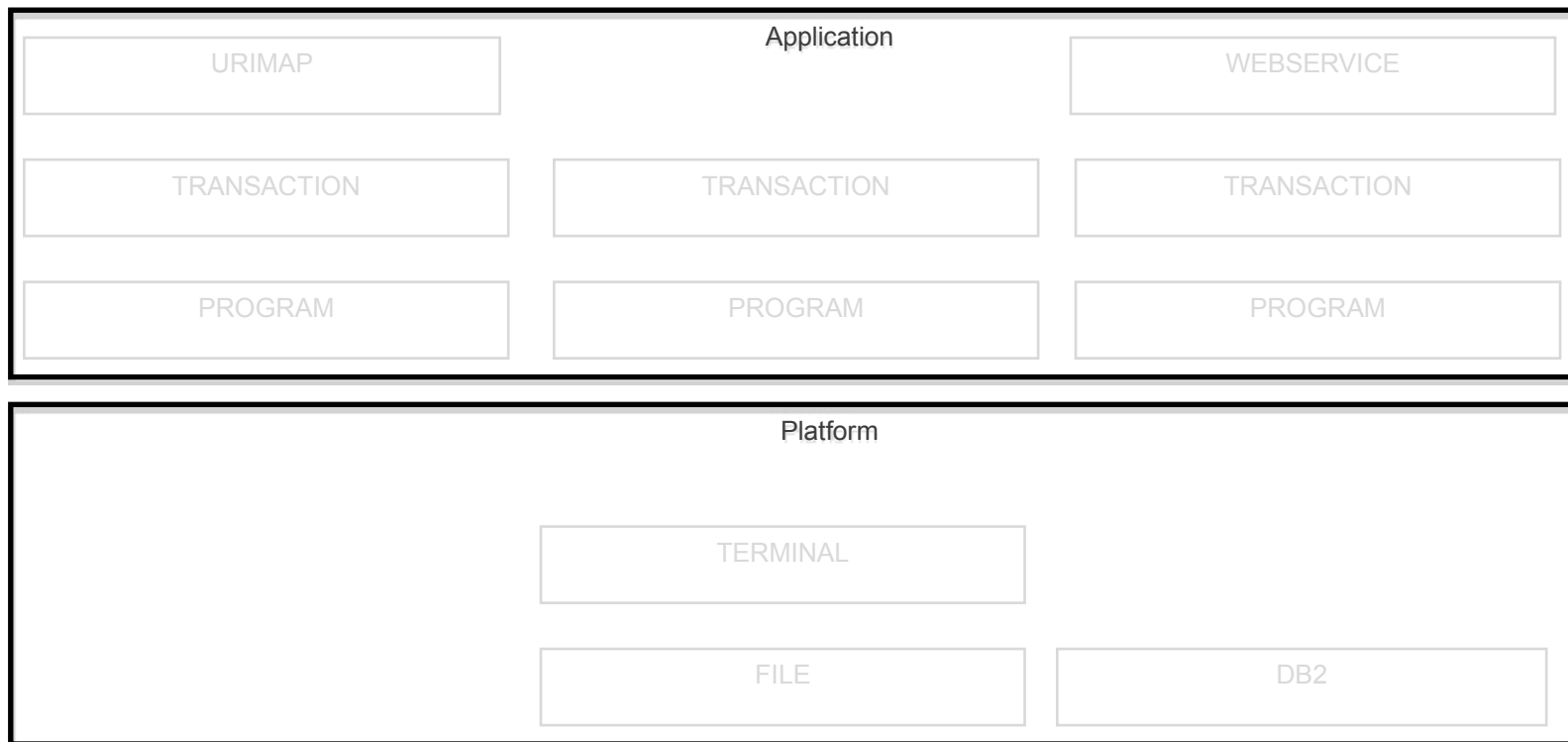
Value proposition for developers

- Versioned Application and bundles for complete control over construction
 - Long 64 byte names for clarity of purpose
 - Major.minor.micro versioning scheme used to denote the exact contents of the Application/bundle
- Applications can be stored in SCM and shared with others
 - Applications, Platforms and Bundles are all managed from the Explorer workspace
 - Use Eclipse SCM integration to quickly extract, modify, track and share

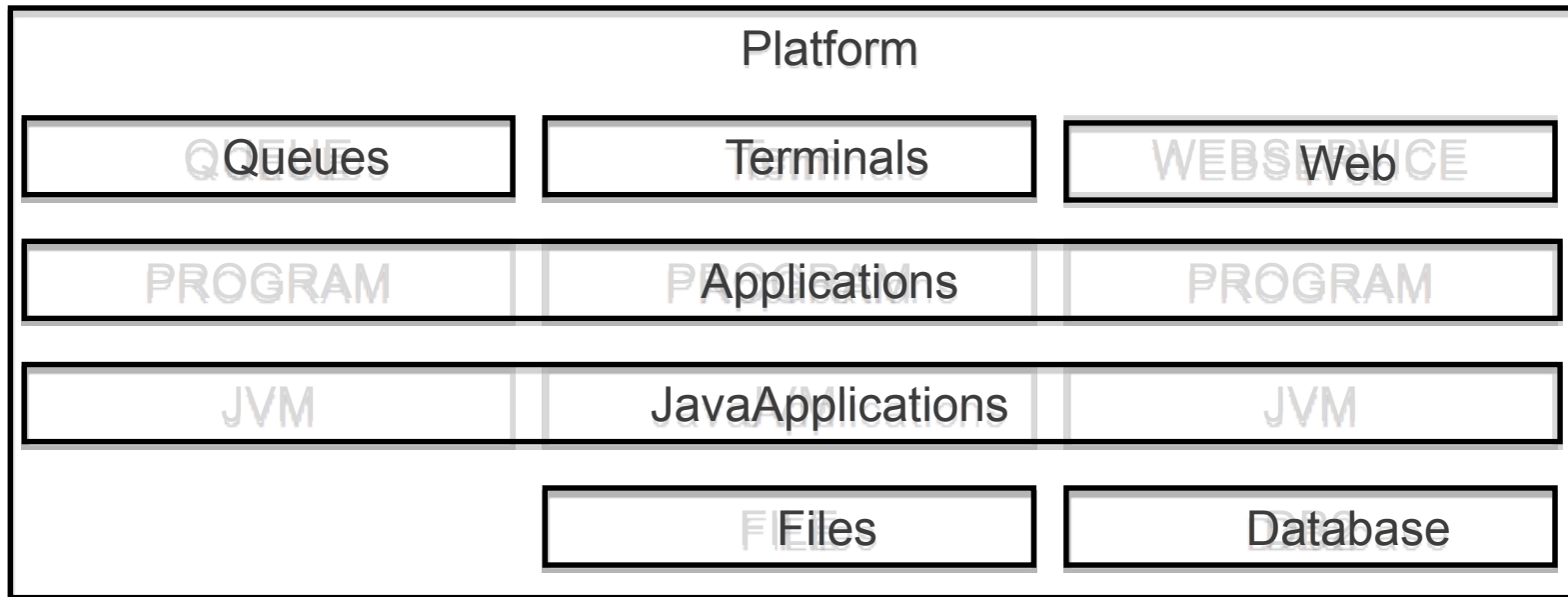
Value proposition for developers

- Applications can be quickly re-deployed to well-defined Platforms e.g. development, test, production
 - Use Application bindings to:
 - Map Applications to a specific Platform
 - Define Application dependencies to shared Platform resources or non-Platform resources

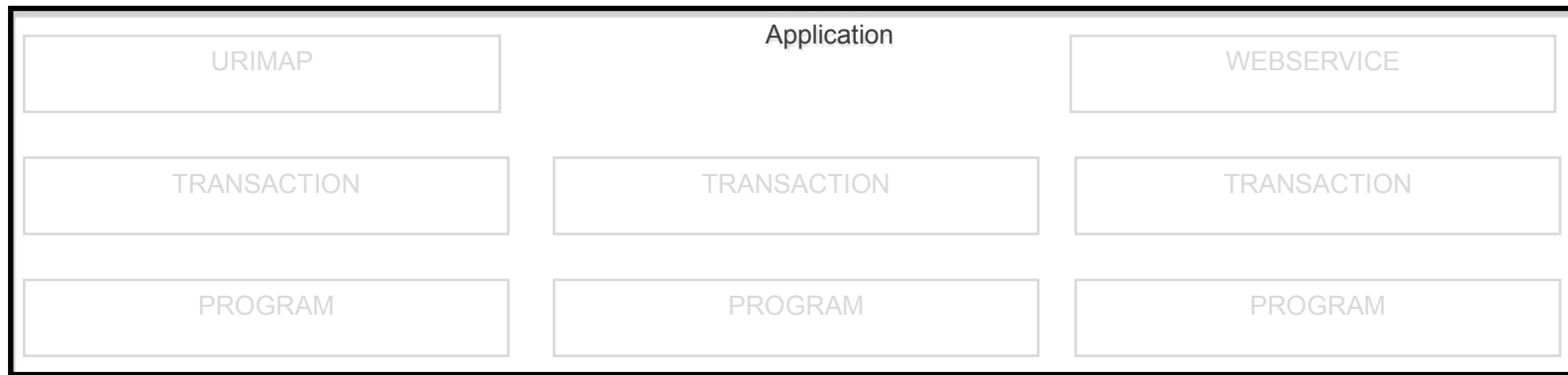
We need things to be simple again: Platform



We need things to be simple again: Region Types



We need things to be simple again: Application

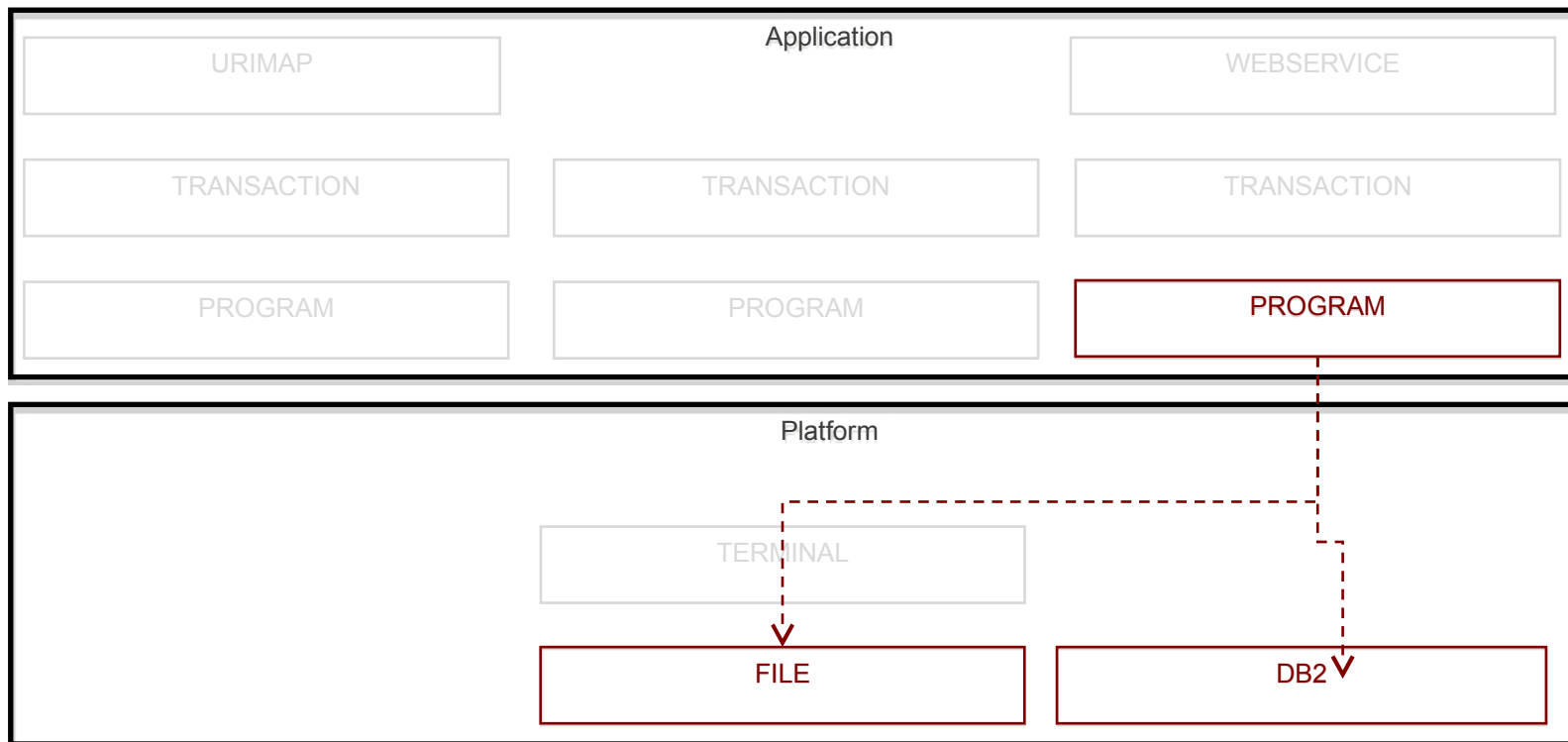


TERMINAL

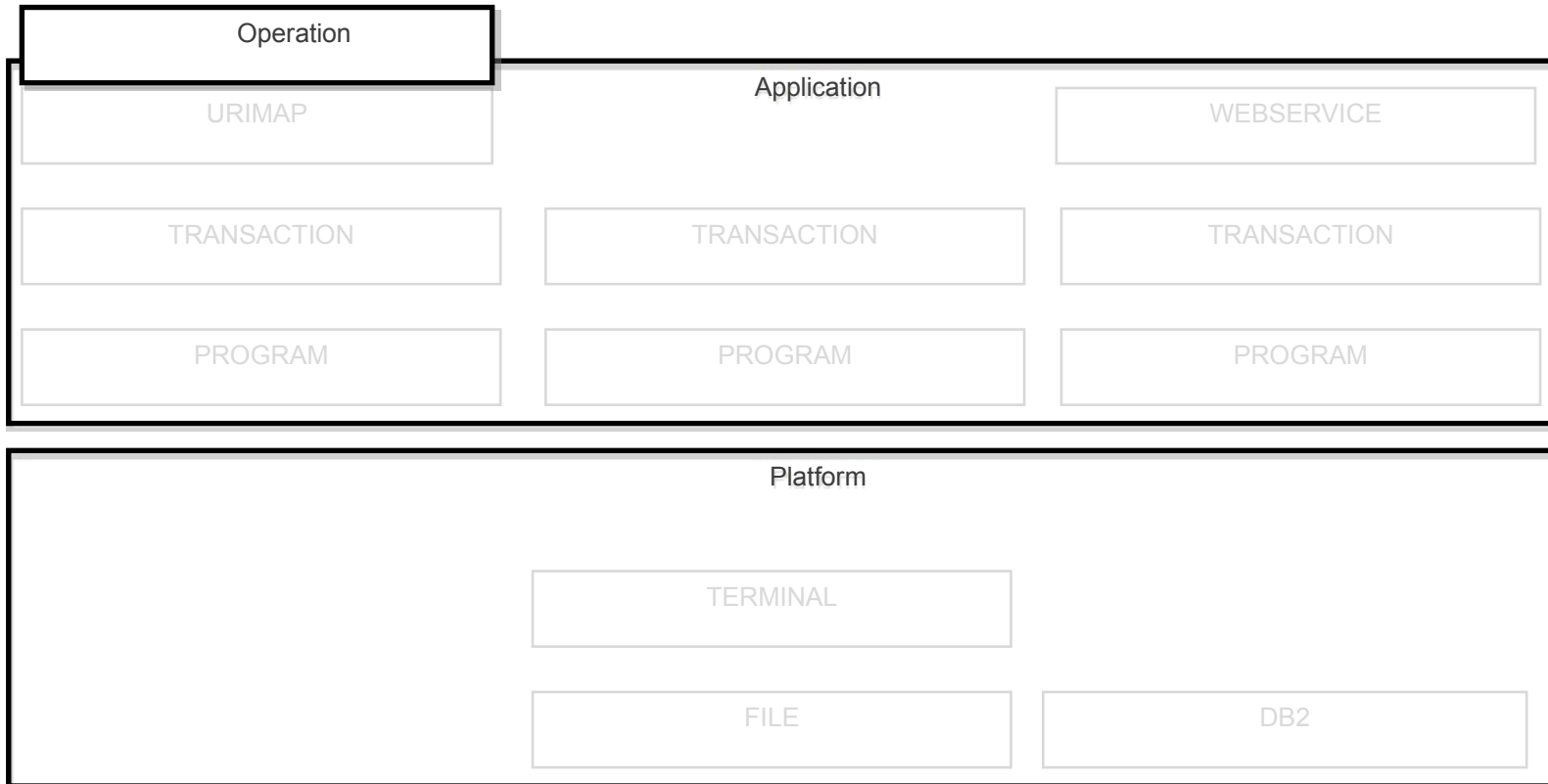
FILE

DB2

We need things to be simple again: Dependencies



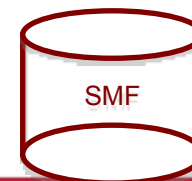
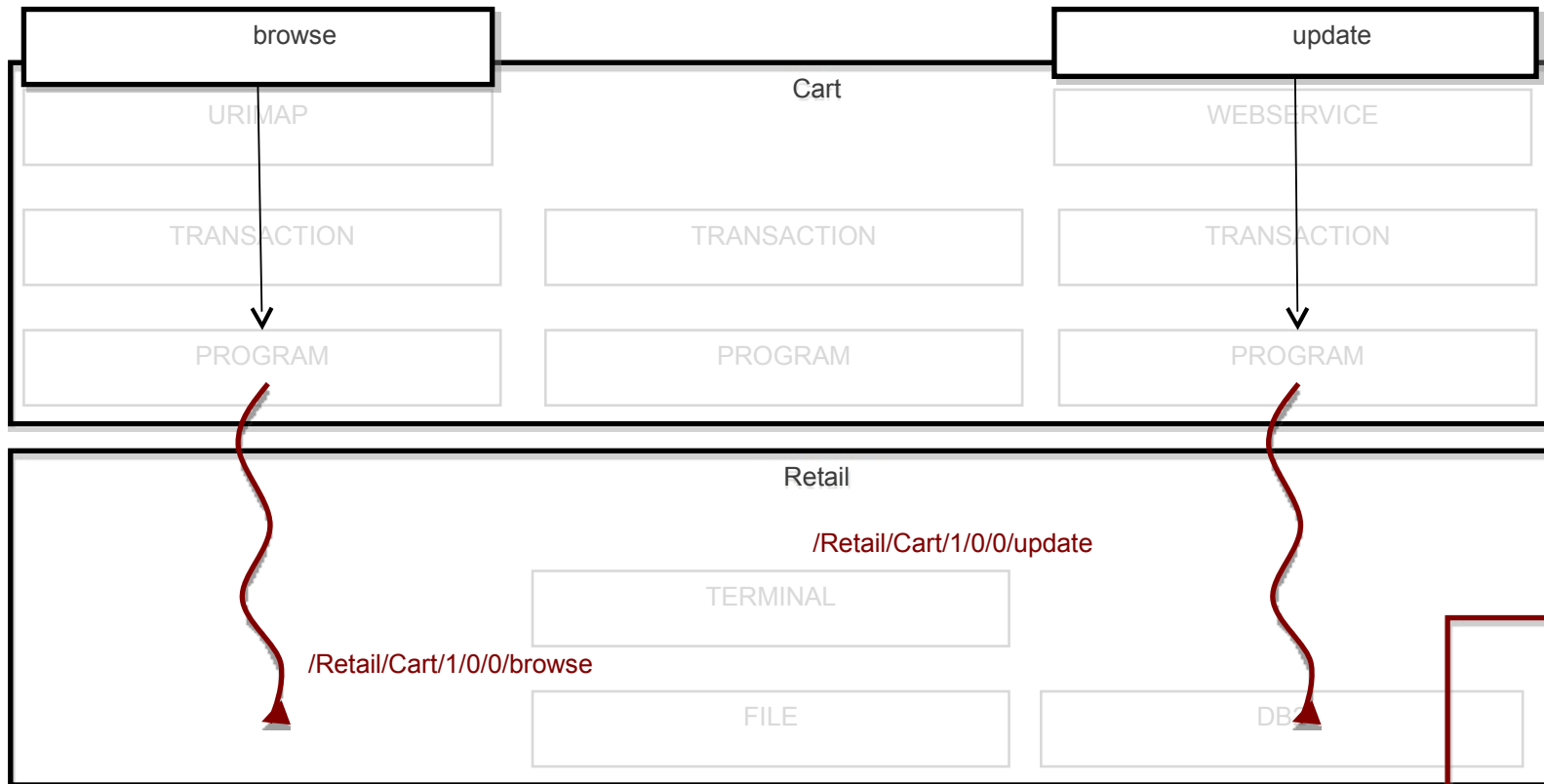
We need things to be simple again: Operation



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, URIMAP (Open Beta)

Policy

Application Lifecycle

Package CICS bundle(s)

Create Application bundle project

Create Binding bundle project

Export Application package to zFS

INSTALL Application onto a Platform

ENABLE/AVAILABLE/UNAVAILABLE Application

DISABLE/DISCARD Application

Status (ENABLED | DISABLED | SOMEDISABLED)

Availability (AVAILABLE | UNAVAILABLE | SOMEAVAILABLE)

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

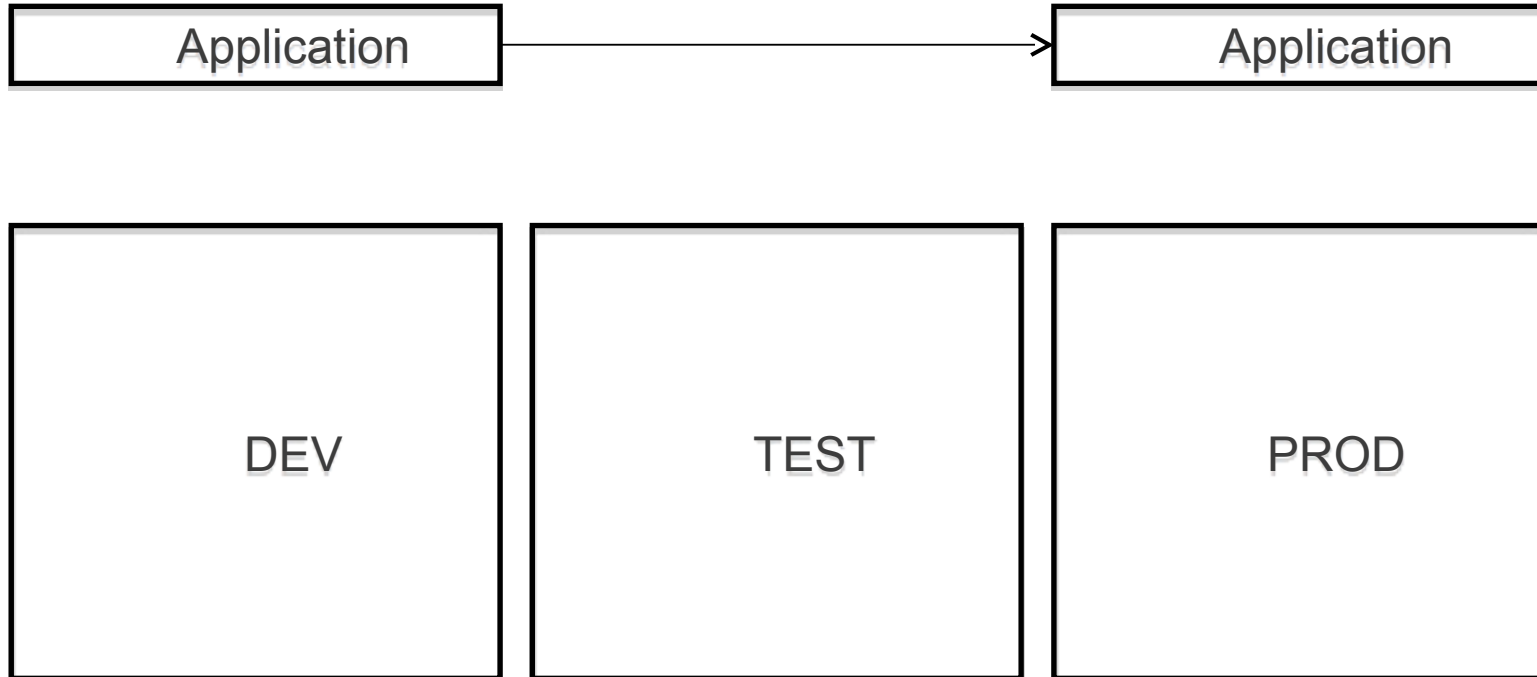
Resources

Application
CICS bundle
OSGi bundle

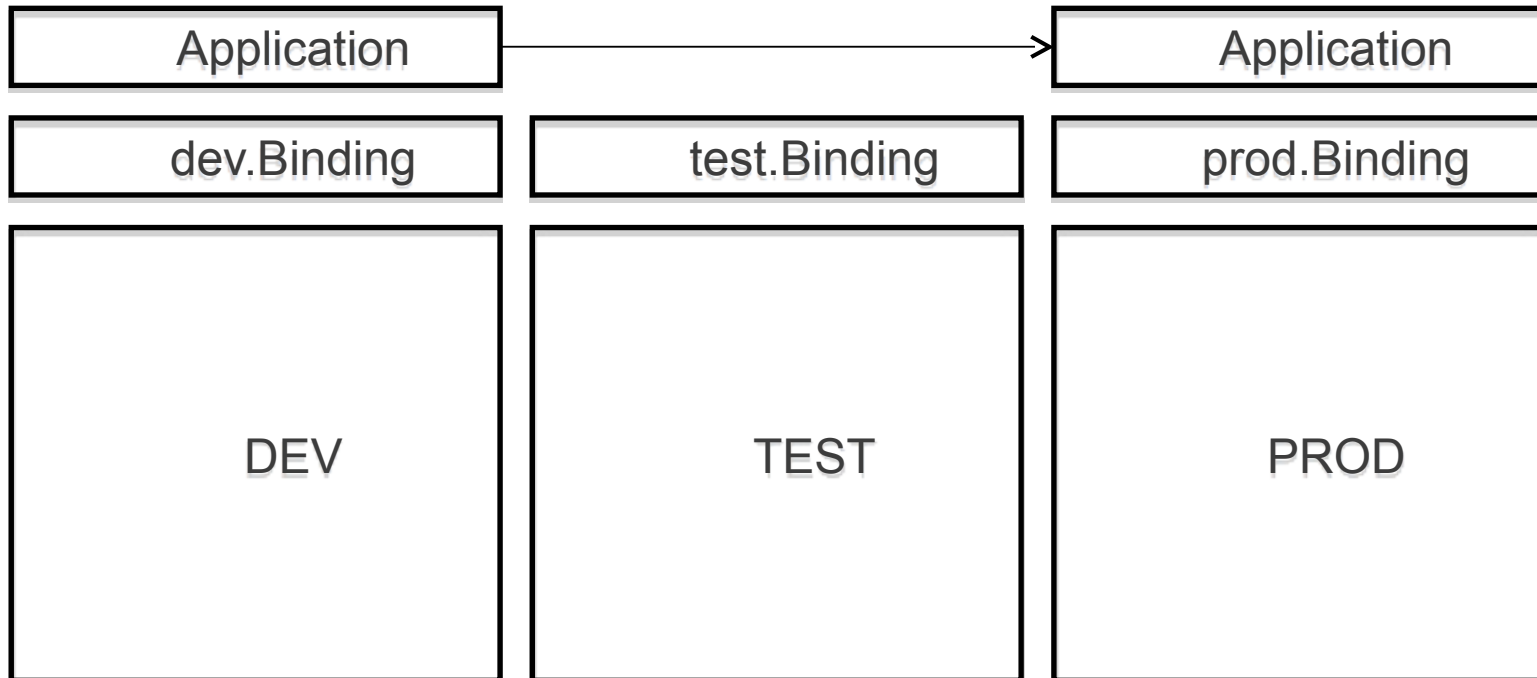
Life-cycle

Development
Deployment
Operations
Planning

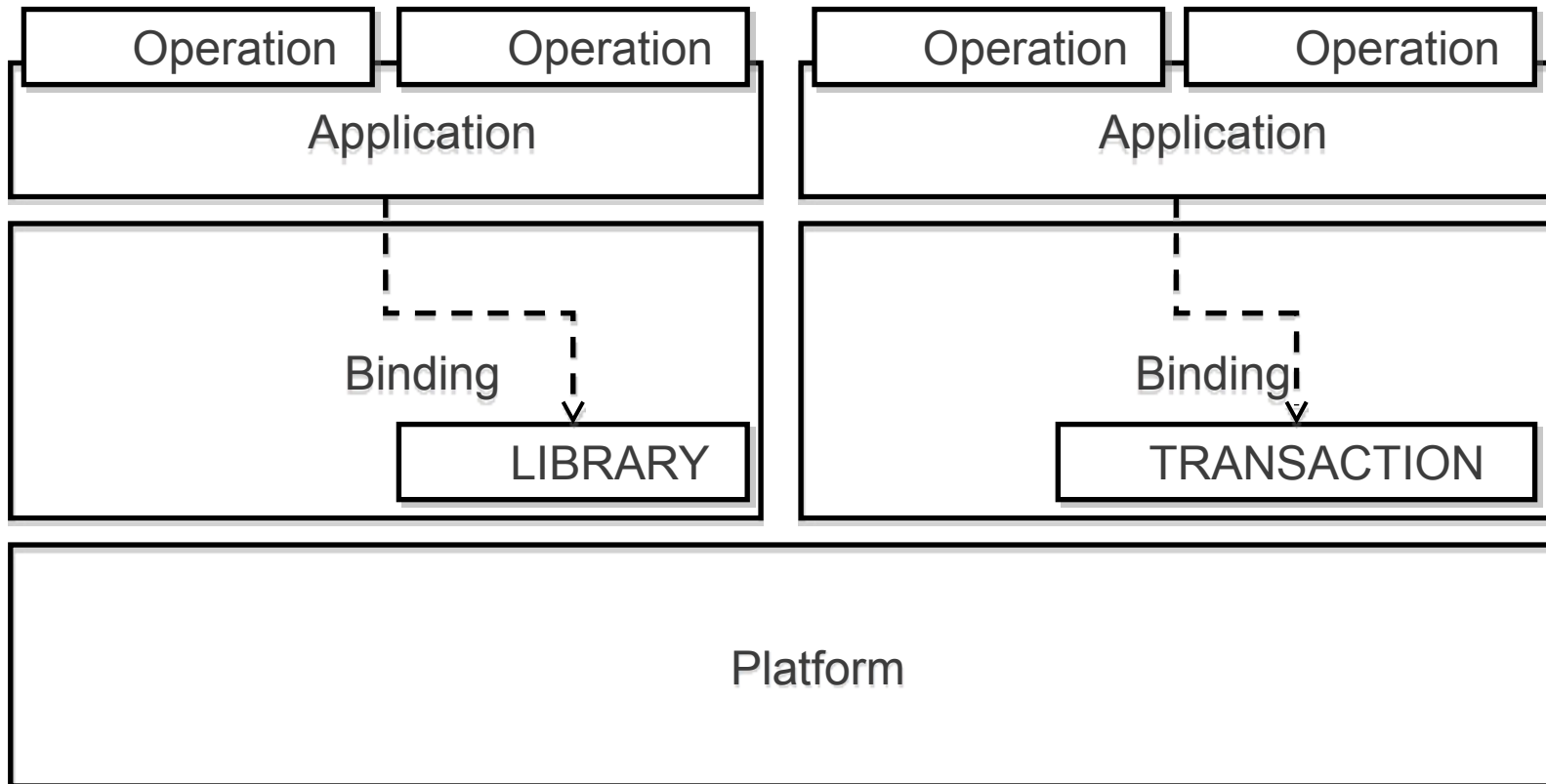
How do I move an Application from Development through Test to Production (without changing it)?



Answer: use Application Bindings



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

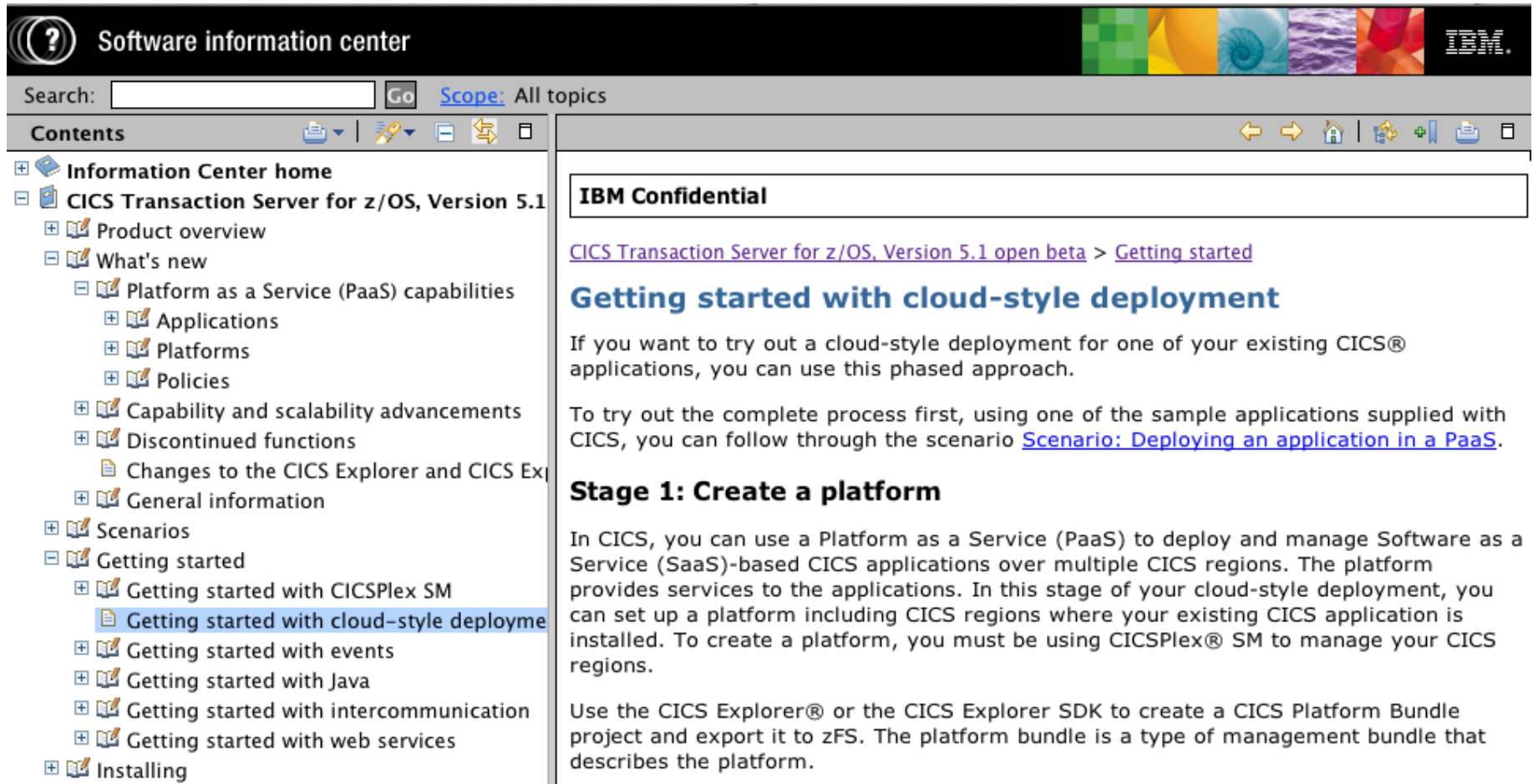
CICS bundle -> region type

Policy

Incremental approach for existing Application adoption

- 1) Create a Platform to allow management of the topology lifecycle
- 2) Create an Application containing CICS bundles with imports of existing resources
- 3) Add Operations through entry points in the CICS bundles
- 4) Replace bundle imports with real resources in the CICS bundles
- 5) Apply policies to the Application

Information Center



Software information center

Search: 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.

Demonstration

Check out the CICS TS V5.1 demos!

<http://www-01.ibm.com/software/http/cics/tserver/v51/library/demos.html>

Application Discovery using CICS IA



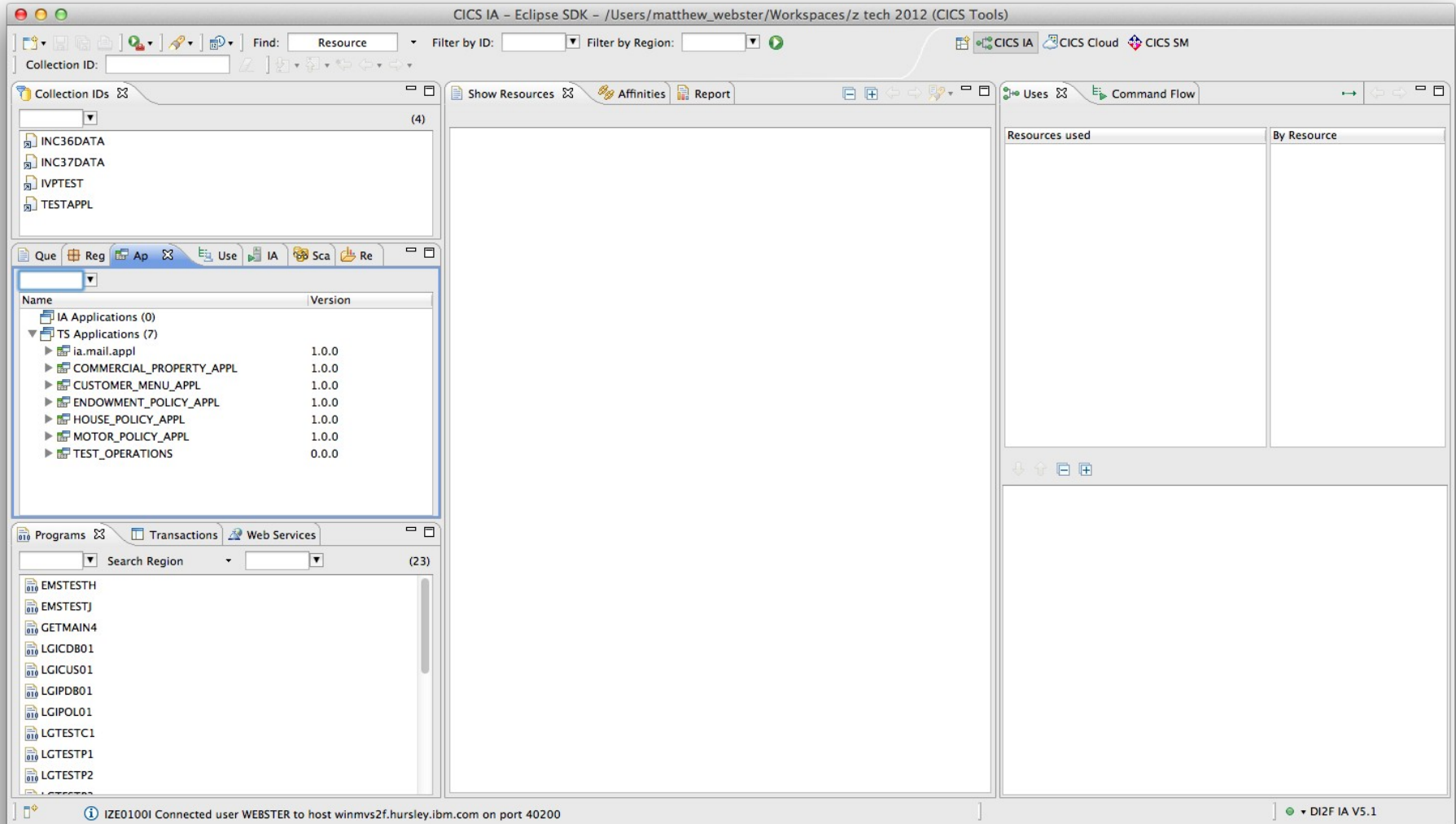
Discover entry points, resource and dependencies

Collect information about Applications

“Used by application”

“Collect by Application”

“CICS IA” Perspective

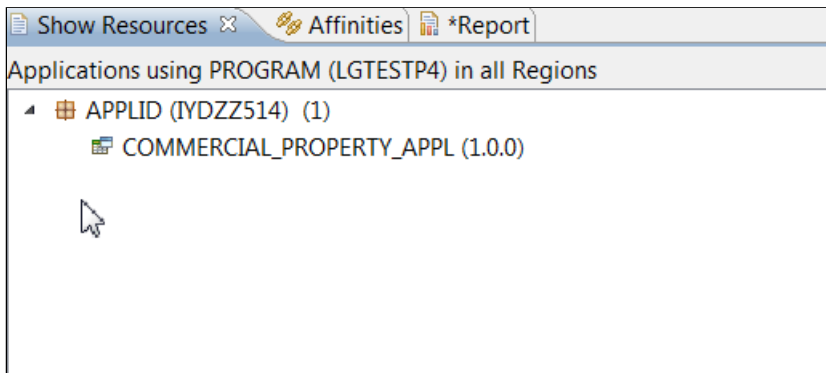
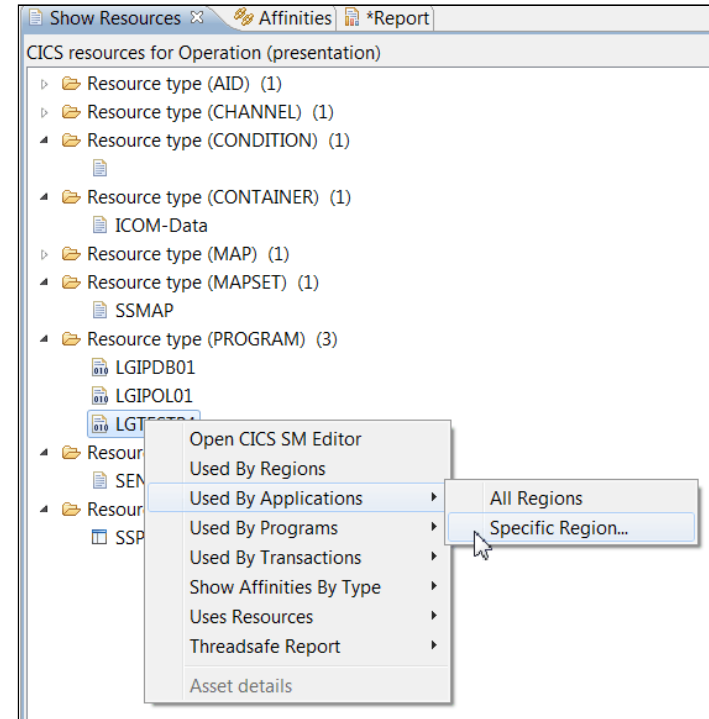
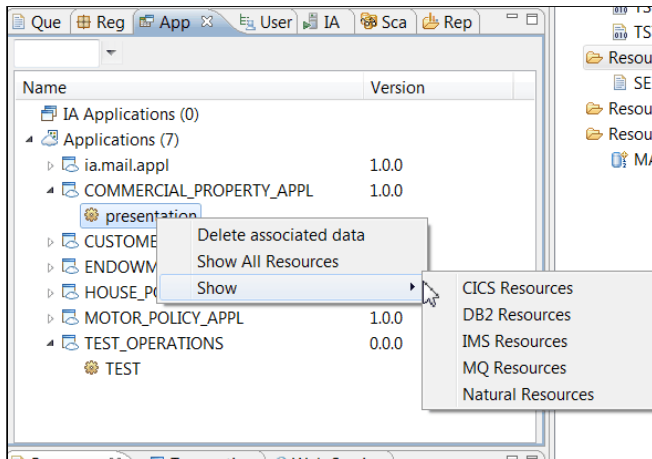


The screenshot displays the Eclipse IDE interface for CICS IA. The title bar reads "CICS IA - Eclipse SDK - /Users/matthew_webster/Workspaces/z tech 2012 (CICS Tools)". The interface includes several panels:

- Collection IDs:** Lists folders such as INC36DATA, INC37DATA, IVPTST, and TESTAPPL.
- Que:** A table listing applications and their versions.

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 various programs including EMSTESTH, EMSTESTJ, GETMAIN4, LGICDB01, LGICUS01, LGIPDB01, LGIPOLO1, LGTESTC1, LGTESTP1, and LGTESTP2.
- Command Flow:** A panel on the right with sub-sections for "Resources used" and "By Resource".
- Status Bar:** Shows "IZE0100I Connected user WEBSTER to host winmvs2f.hursley.ibm.com on port 40200" and "DI2F IA V5.1".

CICS IA Application support: Collect/display data for a deployed application



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

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 session evaluations online at www.SHARE.org/AnaheimEval