

2012

IBM System z Technical University

Enabling the infrastructure for smarter computing

CICS TS : Introduction to Applications as first class entities

zAI08

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CICS meets the cloud

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CICS Cloud Enablement

Monday

0830 *General Session*

Tuesday

1030 **CICS TS : Introduction to Applications as first class entities**

1300 CICS TS: Introduction to Platforms as deployment targets

Wednesday

0900 CICS TS: Application Management Update

1030 CICS TS: Platform Management Update

1300 *CICS in the Cloud: Hands-On Lab*

1615 *CICS Tools Family Update*

Thursday

Pain Points

- *Deploying and un-deploying applications is a high skill complex job due to the number of separate artifacts*
- *Customers would like to see usage / charging, availability / SLA at the application level*
- *Elastic scale is a requirement, but it needs to be managed within the constraints of the customers resources and business environment*

Pain Points

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zAI11 CICS TS : Application Management Update

- *Elastic scale is a requirement, but it needs to be managed within the constraints of the customers resources and business environment*

zAI12 CICS TS : Platform Management Update

Once upon a time things were simple

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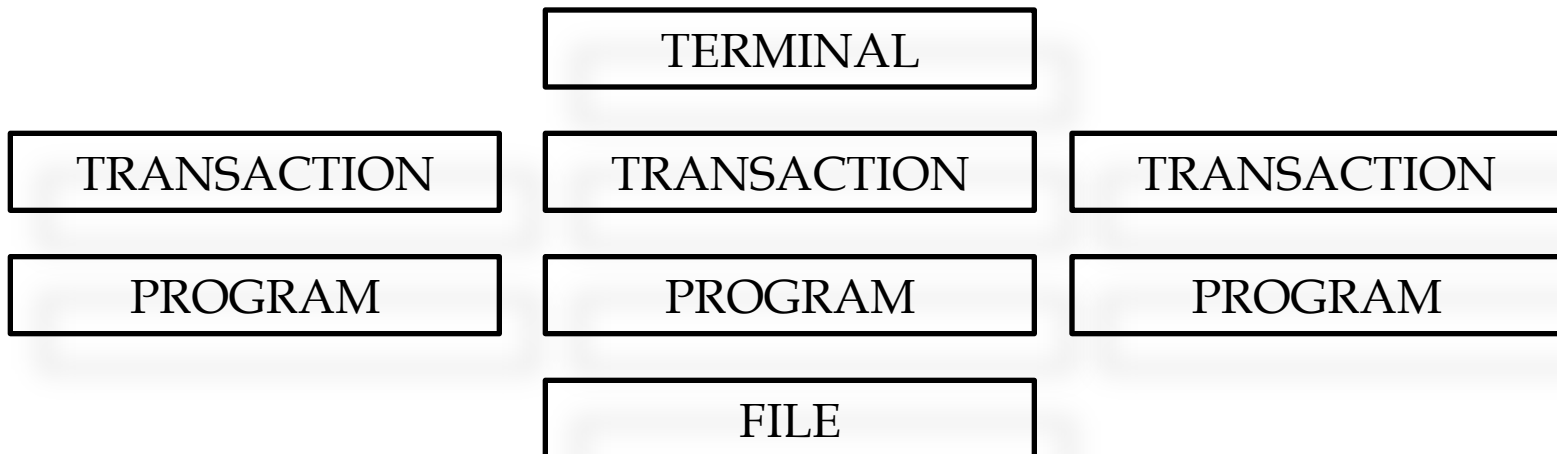
TERMINAL

TRANSACTION

PROGRAM

FILE

Then capability was added



Then we started getting really clever

URIMAP

TERMINAL

WEBSERVICE

TRANSACTION

TRANSACTION

TRANSACTION

PROGRAM

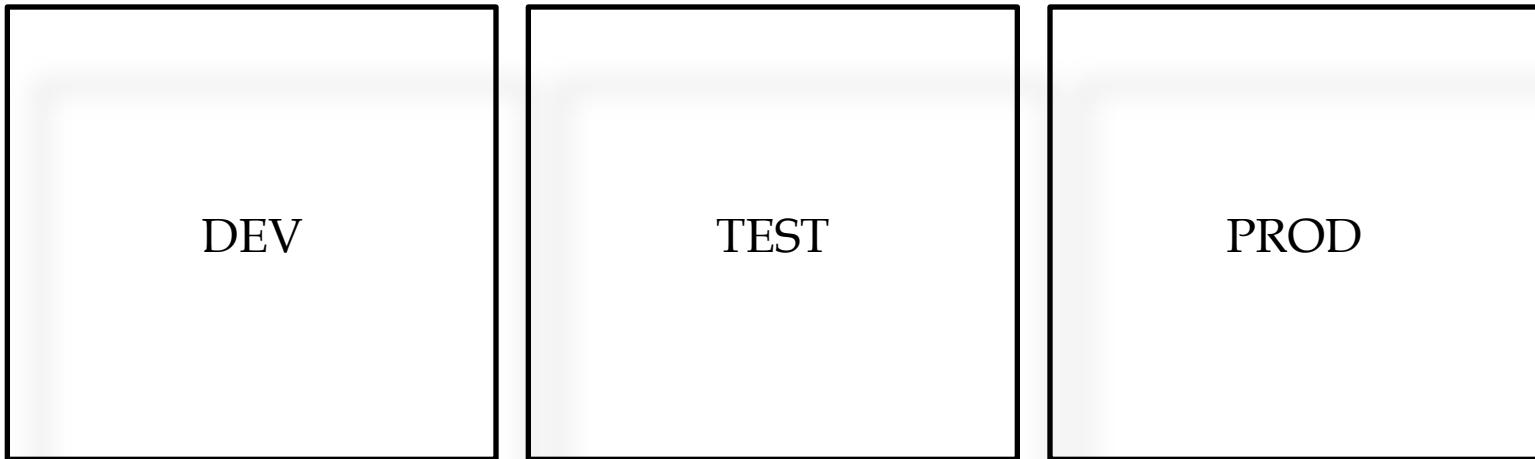
PROGRAM

PROGRAM

FILE

DB2

And what about those pesky* systems programmers



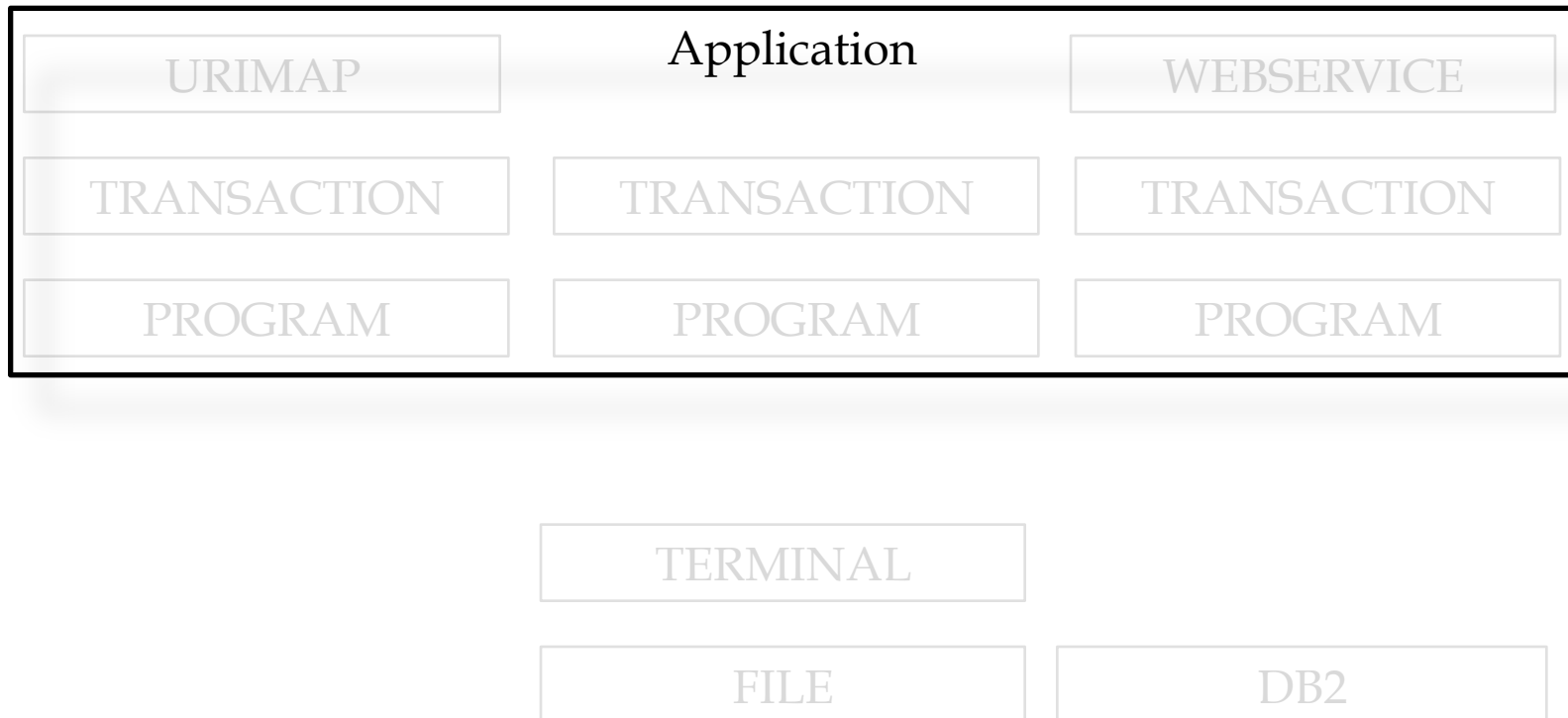
*Troublesome; annoying: *a pesky mosquito*

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

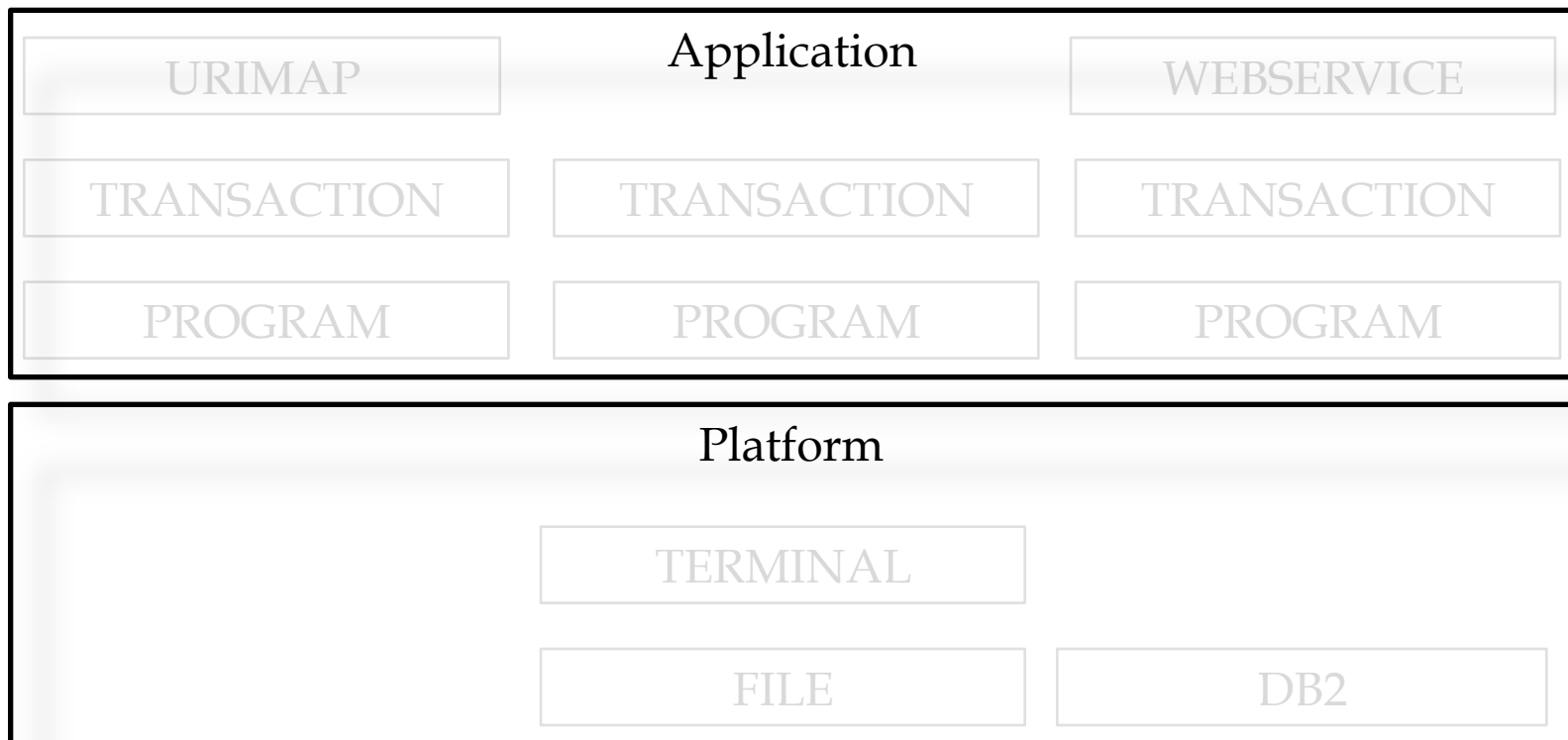
We need things to be simple again

PROGRAM

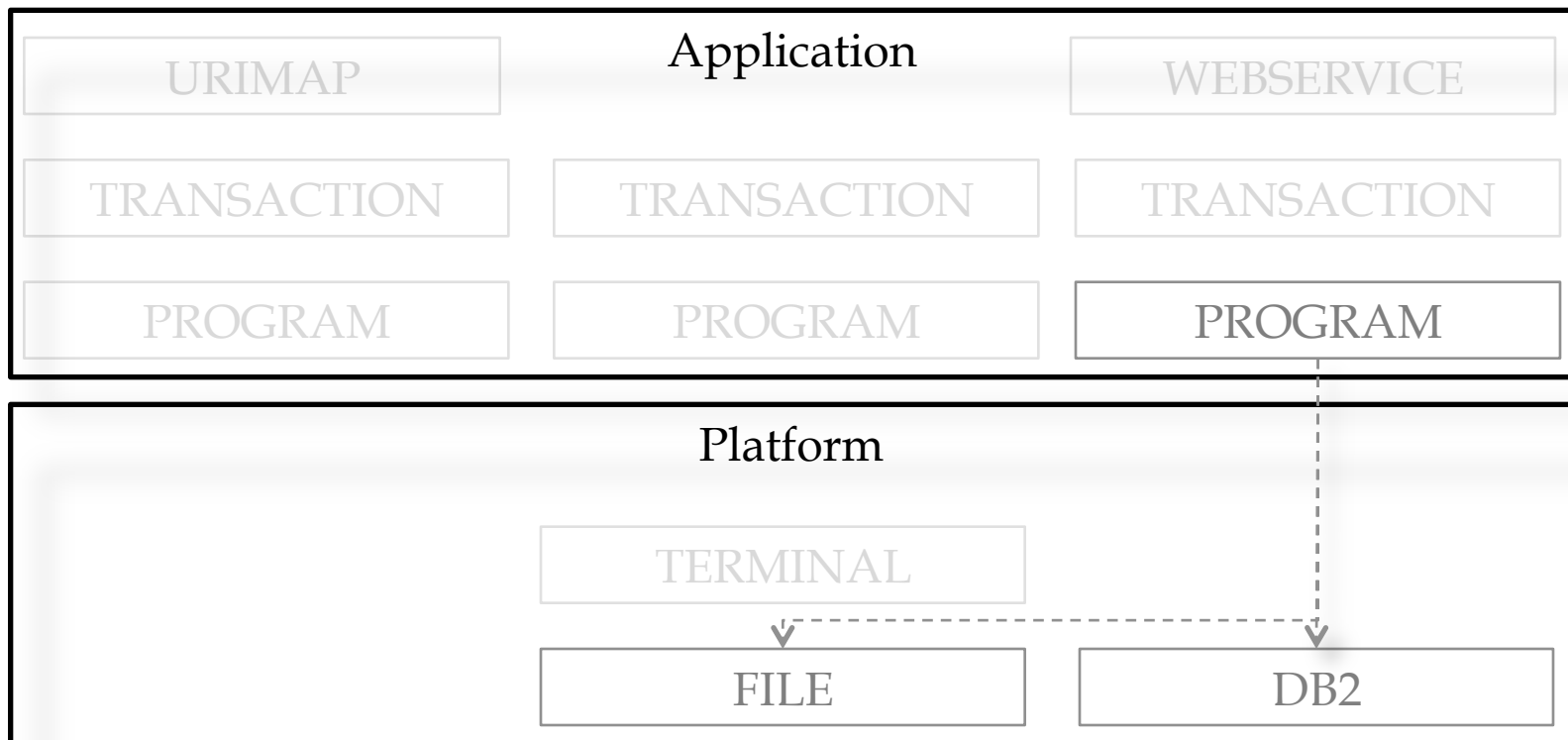
We need things to be simple again: Application



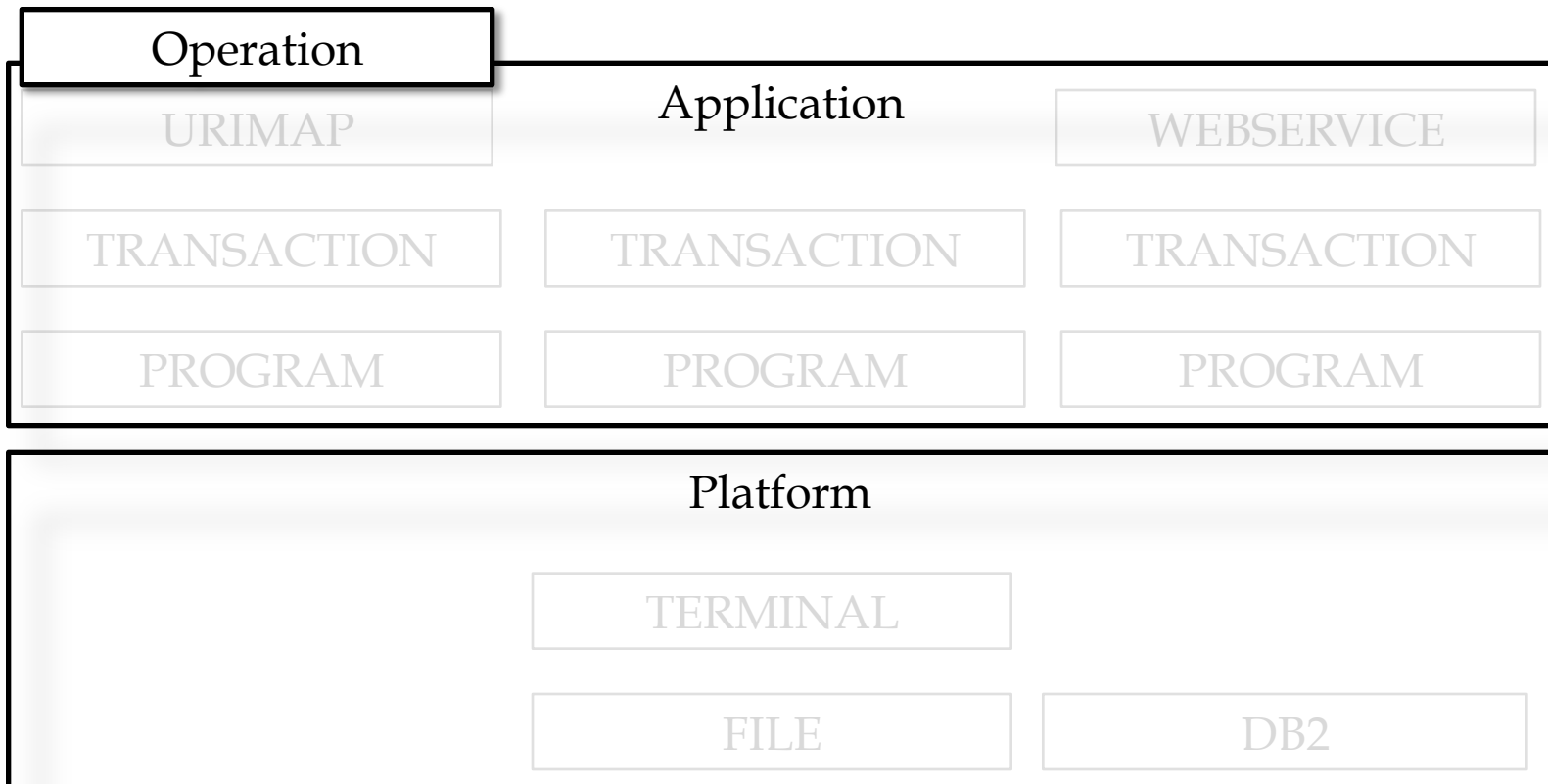
We need things to be simple again: Platform



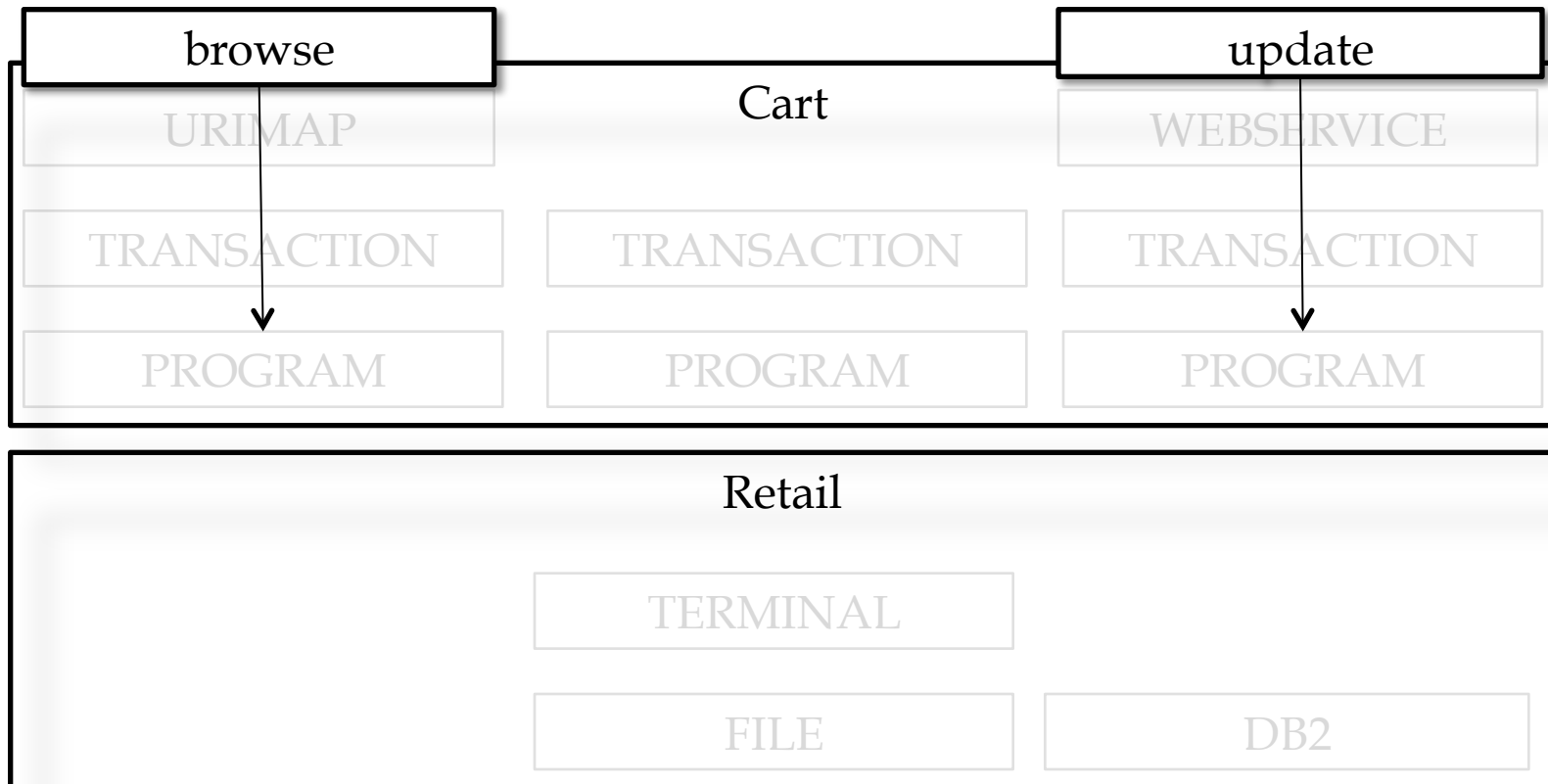
We need things to be simple again: Dependencies



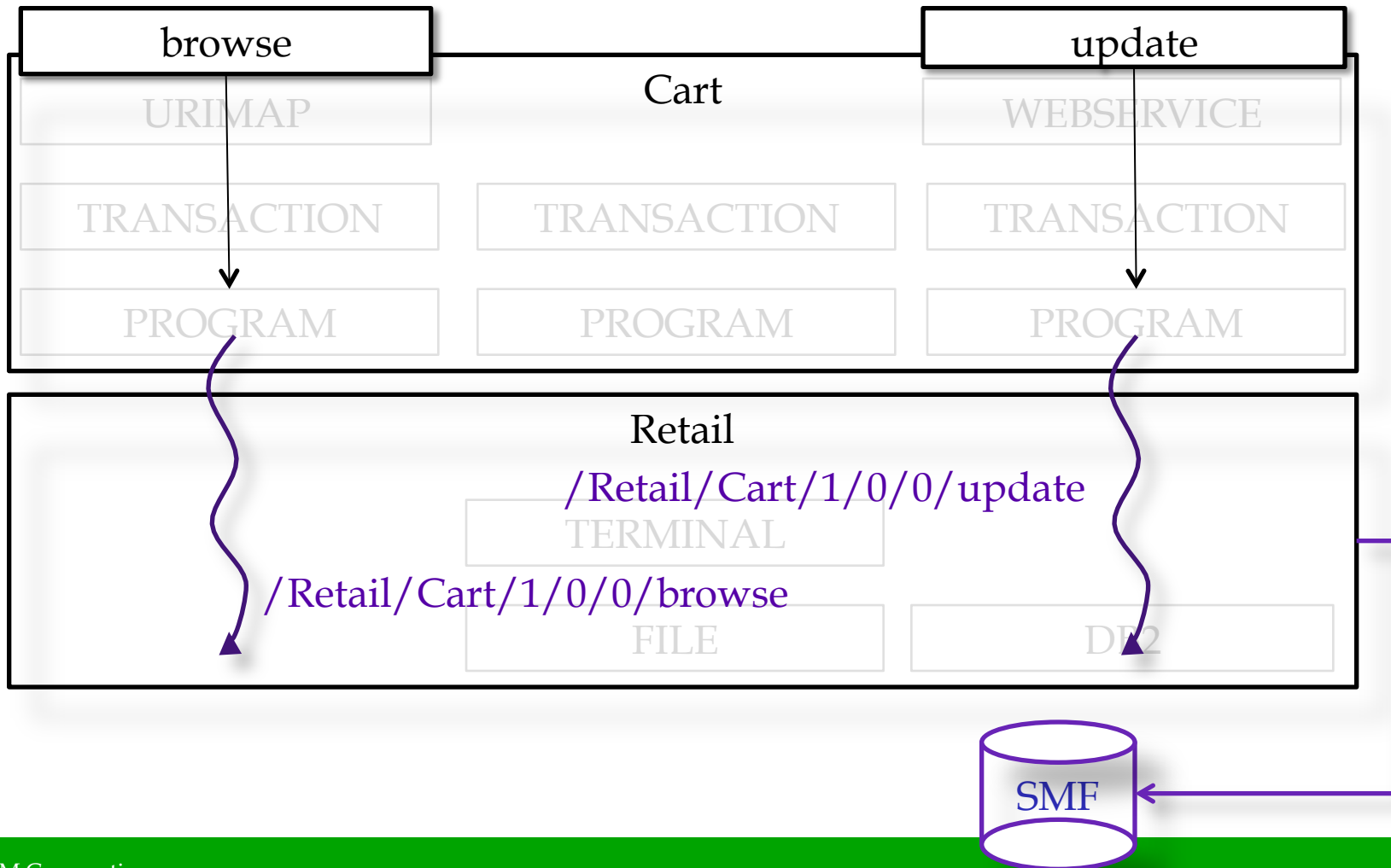
We need things to be simple again: Operations



We need things to be simple again: Entry Points



We need things to be simple again: Application Context



New First Class ~~Concepts~~ Resources

- **Application**
- 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

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*

Application Lifecycle

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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*
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- 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>

Application Questions

Can I define single application package that moves from development, through test to production unchanged?

Yes

Can I tell what's changed between two versions of the same application at any point in the life-cycle?

Yes

Can I use source code management (SCM) to manage application lifecycle?

Yes

DevOps Roles

- **Application Developer**
- **System Programmer**
- *Application Deployer*

DevOps Roles

- **Application Developer**

- Resources
- Dependencies
- Entry points
- Policy

- **System Programmer**

- Topology
- Services
- Policy

- *Application Deployer*

- Deployment*
- Resources*
- Policy*

Demonstration

The screenshot displays the Eclipse IDE interface for the CICS Cloud Platform Definition 'RETAIL' in the 'CICSEXP3' workspace. The main window shows the 'Platform Definition (RETAIL)' configuration with the following details:

| Property | Value |
|-----------------------------|--|
| Basic | |
| Description | |
| Name | RETAIL |
| Platform Directory | /u/webster/CICSEXP3/retail.production/platform/retail.production.platform/ |
| Definition Signature | |
| 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 |

The 'Project Explorer' on the left shows the project structure:

- Belvedere ACTIVE,DISABLED
- Decking ACTIVE,EMPTY
- PIPERA
- RETAIL

The 'Project Explorer' also shows the project structure:

- cart.application
- retail.production.platform

The 'Problems' view at the bottom shows 0 items. The status bar at the bottom indicates: IZE0100I Connected us...ibm.com on port 27055 | Fetching children of CICSEXP3 | CICSUSER (CICSEXP3)

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 Ex
 - + 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.

Getting started with cloud-style deployment

- **Stage 1:** Create a platform
- **Stage 2:** Create an application
- **Stage 3:** Add application entry points
- **Stage 4:** Add resources for the application
- **Stage 5:** Add a policy

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Stage 2: Create an application

Single description of an Application: capabilities, composition and dependencies

Shared concept between all user roles (stakeholders): developer, system programmer, end user

Simplify management of resource and service status

Stage 3: Add application entry points

Declare end-user value

Measure Application resource consumption

Prepare Application for Policy

Stage 4: Add resources for the application

Use Application artifacts in a workflow to manage the development lifecycle

Simplify resource deployment and undeployment

Allow Application and Platform to evolve independently (DevOps)

Summary

New Application resource

Simplified development and deployment lifecycle

Simplified management of runtime status

Questions?

More Information

- “CICS TS”
 - <http://www.ibm.com/cics/>
- developerWorks Community
 - <https://www.ibm.com/developerworks/mydeveloperworks/blogs/cicsdev/>
- “Did you say mainframe?! ” Podcasts
 - <http://itunes.apple.com/us/podcast/did-you-say-mainframe-!/id275831334>

CICS TS Highlights

Monday

1030

CICS Portfolio update

1300

CICS TS: A Technical Overview

Tuesday

0900

CICS TS: Touching the Cloud - Introducing Enterprise Services

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CICS in the Cloud: Hands-On Lab

1615

CICS Tools Family Update

Thursday

1030

CICS TS: Support for WebSphere Application Server Liberty profile

1300

CICS TS: Java and the JVM Server

1430

CICS TS: Scalability Enhancements