IBM Software Group

z/OS Enterprise Modernization for SOA environment

Service Oriented Architecture

Updated March 31, 2008

Agenda for Enterprise Modernization Seminar - NYC

9:00 - 9:40 - Introduction to Enterprise Modernization & Scenarios – Regi Barosa (40 min)

9:40 - 10:00 - Scenario #1 - Creating of a Web Screen from existing terminal based CICS application WSAA/HATS – Zvi Weiss (20 min)

10:00 - 10:20 - Scenario #2 - Transform an existing COBOL program and create a called subroutine to isolate the business logic (WSAA Bridge/RTW) – Zvi Weiss (20 min)

10:20 – 10:35 – Break (15 min)

10:35 – 11:00 - Scenario #3 - Create CICS Web Service using the COBOL business logic from scenario 2 (RDz and z/OS Debug Tool) – Regi Barosa (25 min)

11:00 – 11:25 - Scenario #4 - Create a Web page to consume the Web Service created above (RBD/EGL)– Regi Barosa (25 min)

11:25 – 11:40 - Scenario #5 - Create new Web Service that aggregates other COBOL/CICS screen based application – Zvi Weiss (15 min)

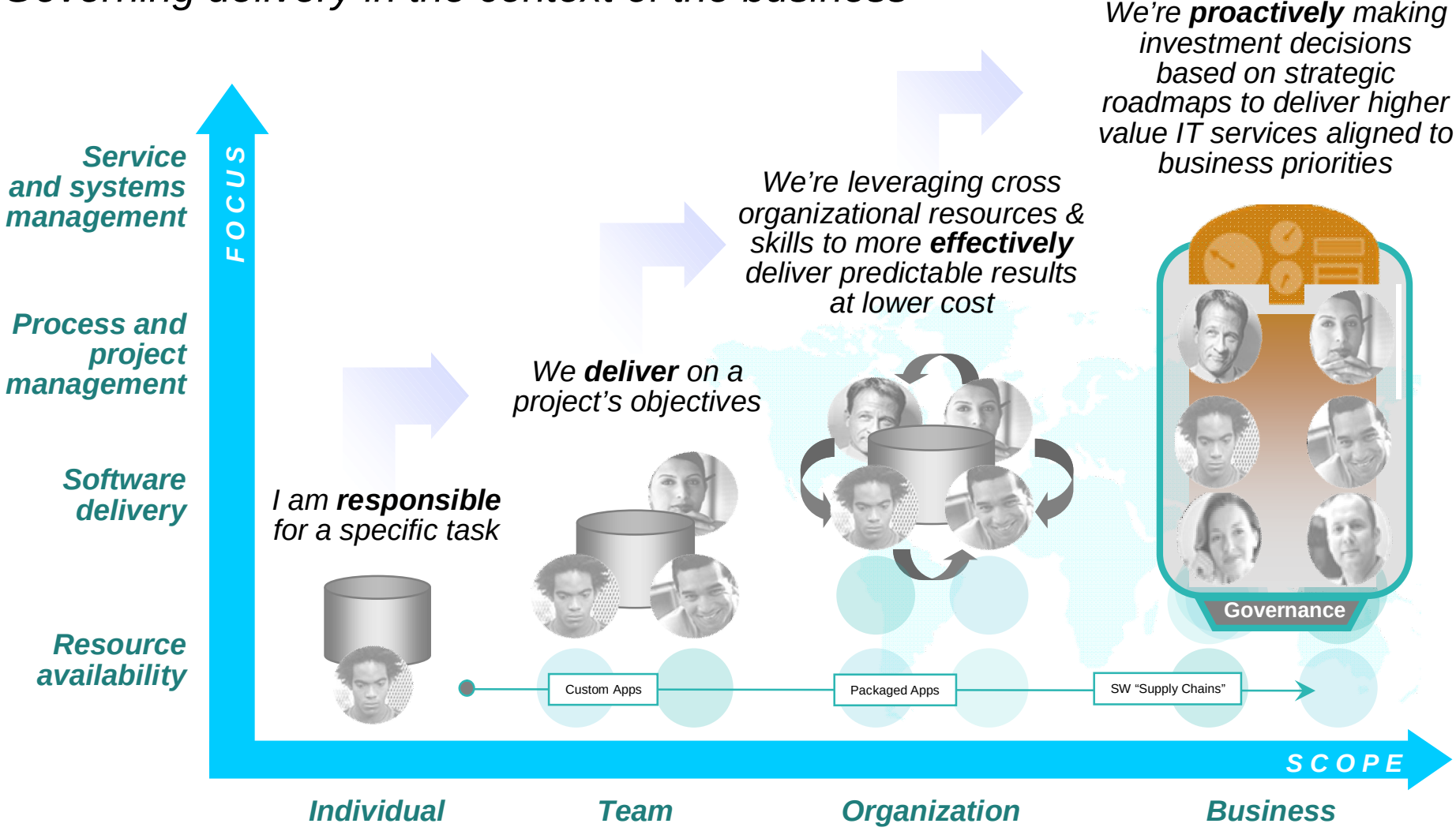
11:40 - 12:00 - Wrap-up Next Steps

Introduction to Enterprise Modernization

- The evolution of software delivery
- Key challenges
- Solution Overview
- Summary
- Q&A

The evolution of software delivery

Governing delivery in the context of the business

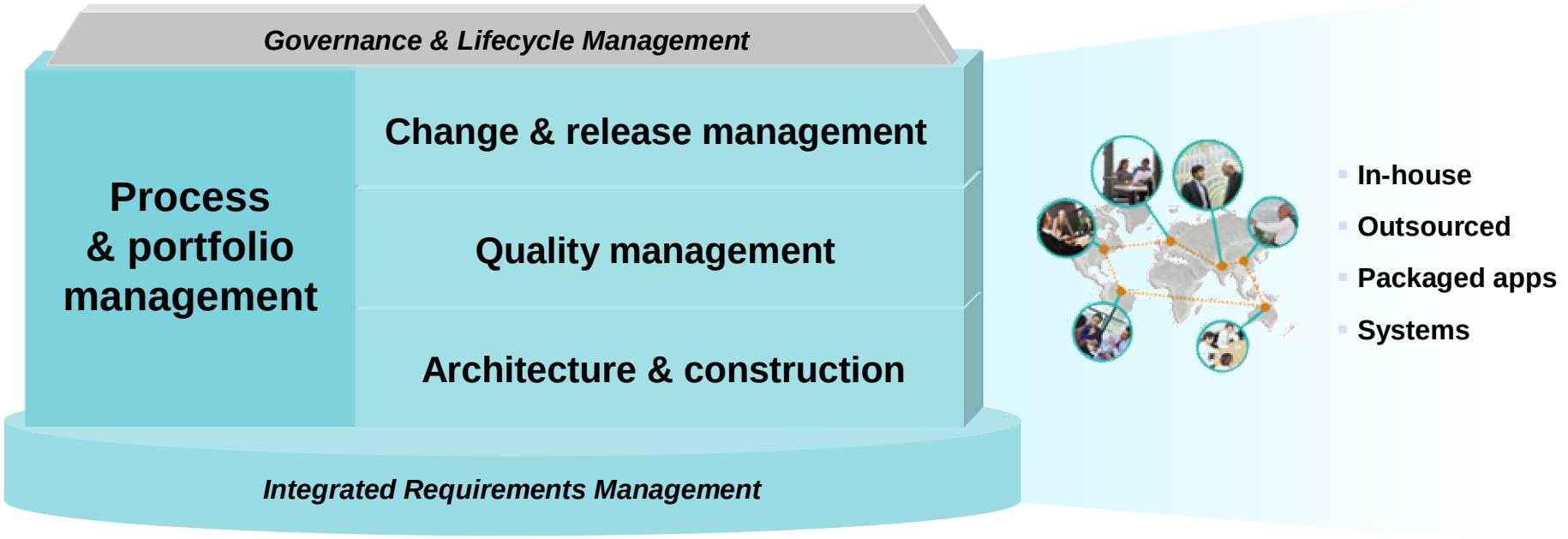


IBM Rational Software Delivery Platform

What we offer

Rational. software

Process design & implementation best practices based on a market leading solutions delivery platform



IT and Business Challenges Drive Software Delivery Requirements

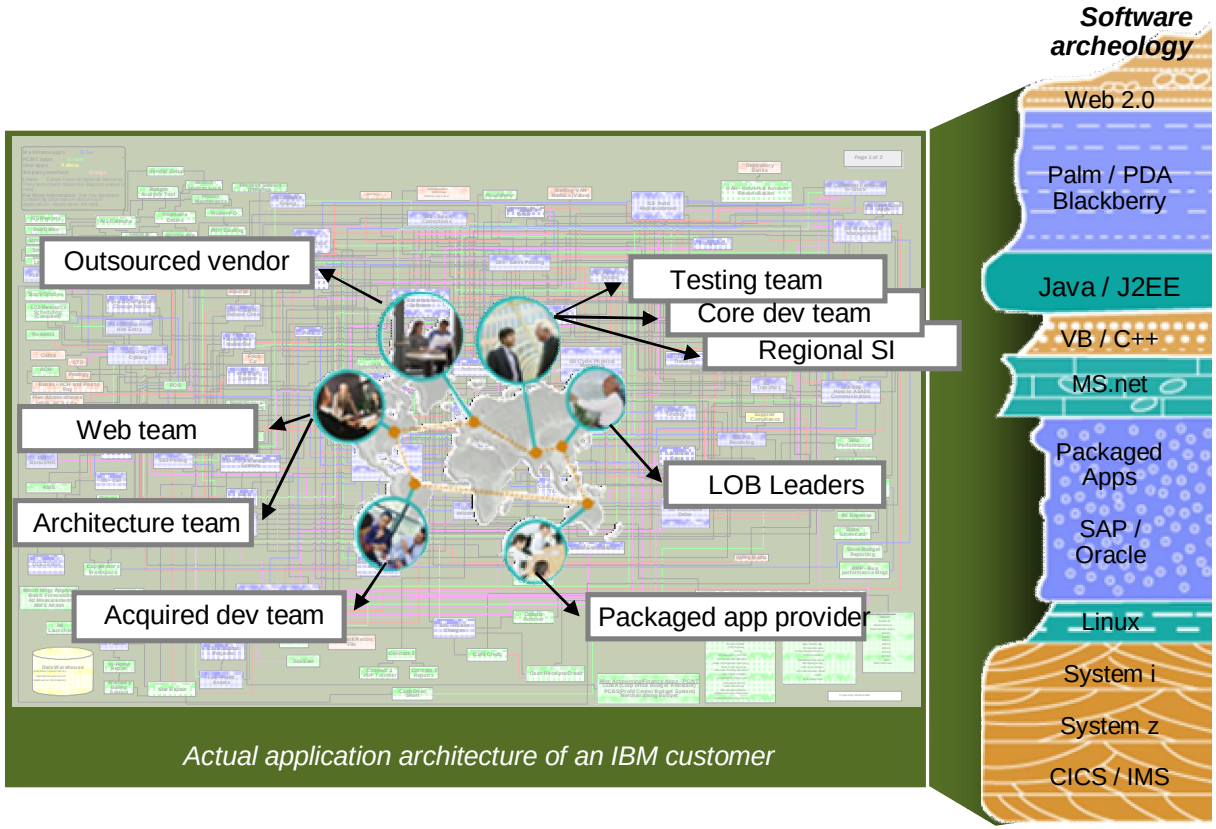
Assets
Gain business intelligence for application assets to improve ROI

Architectures
Create flexible information systems to achieve business agility

Skills
Improve team flexibility and skills to achieve higher productivity

Processes and Infrastructures
Modernize team infrastructure to improve collaboration and efficiency

Investments
Reduce maintenance costs and project risk



Actual application architecture of an IBM customer

Asset modernization

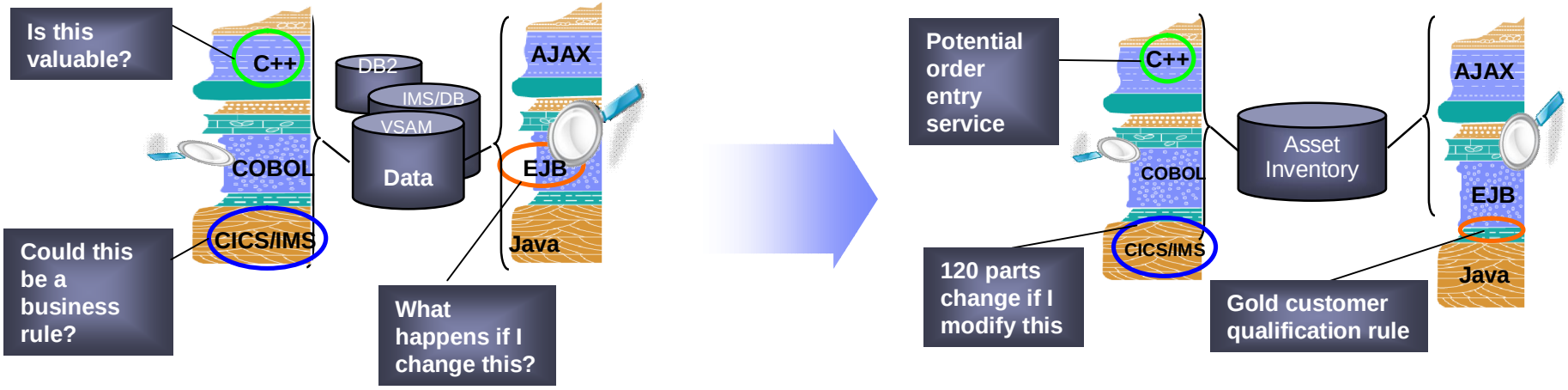
Challenge of managing knowledge assets

What you have...

- **A diverse application portfolio** evolved over many years and understood by few
- **Complexity** hindering the ability to gauge the impact of code changes resulting from new requirements
- **A lack of documentation** that limits reuse of existing business rules embedded within code

What you want...

- **An inventory** of existing highly stable code that embodies enterprise business intelligence
- **Ability to understand and manage** application complexity and change by making dependencies visible
- **Identify and document** existing business rules and business processes



Analyst studies have found it 5x less expensive to re-use existing applications than to write new applications.

Architecture modernization

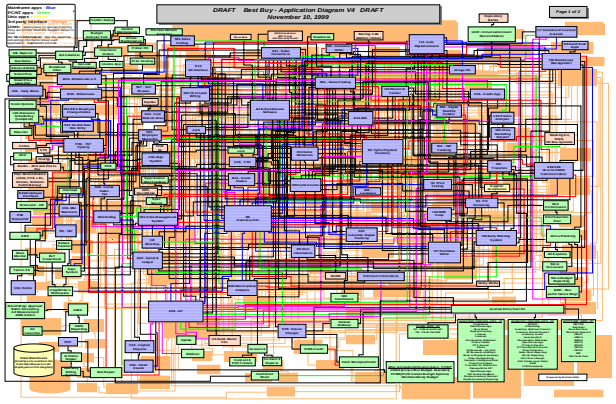
Challenge of tightly-coupled application architectures

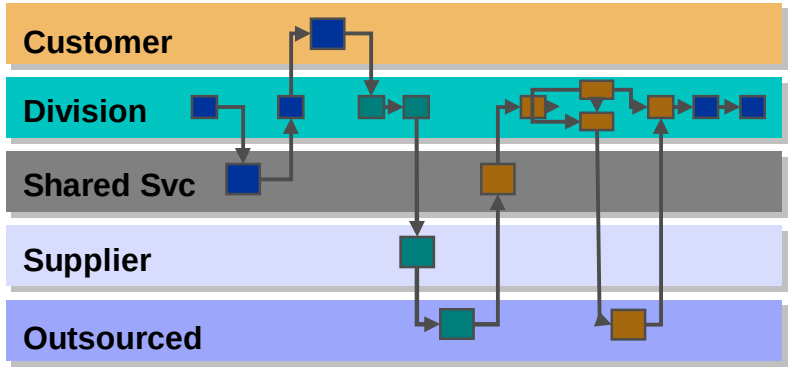
What you have...

- **Tightly-coupled architectures** reducing flexibility and speed in moving to new technologies
- **Complexity** that hampers the ability to reuse existing code for new projects
- **Multiple implementation technologies** and incompatible middleware limiting code mobility

What you want...

- **Services created** from existing business logic or user interfaces for wider use and value
- **Increased reuse** of existing highly stable code that embodies enterprise business intelligence
- **Service design separated from service implementation** to attain optimal flexibility





Skills modernization

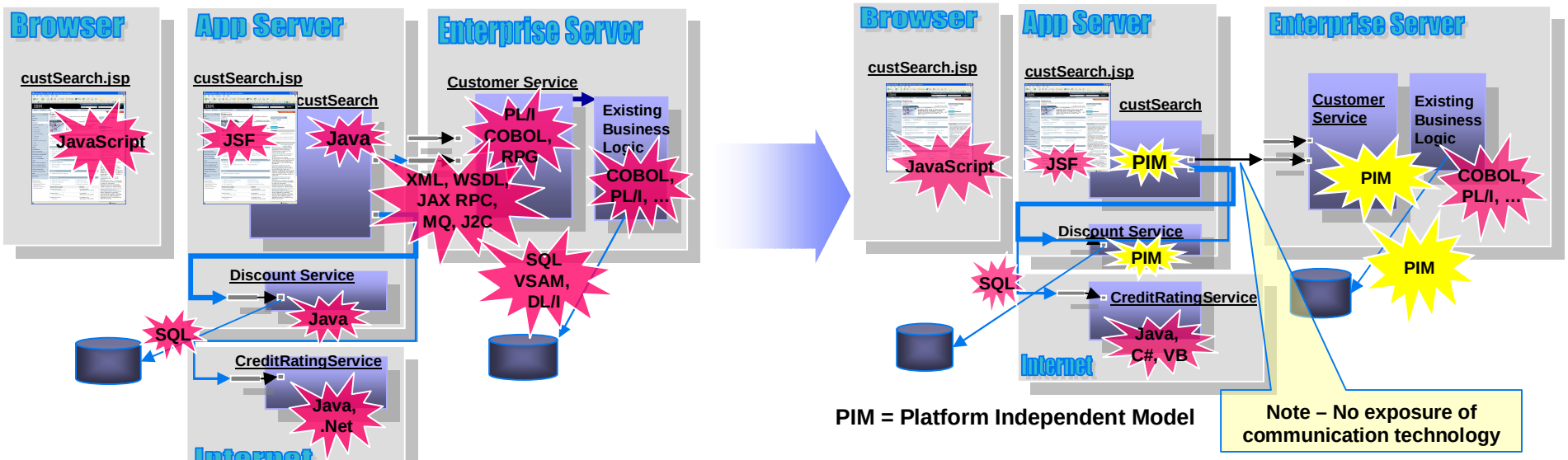
Challenge of IT skills shortage and silos

What you have...

- **Skills islands** preventing staff mobility and constrains IT flexibility resulting in application backlogs
- **Reduced capacity** due to dwindling IT skills and difficulty in attracting new development talent
- **Limited ability** to exploit technology innovations without retraining traditional developers to Java

What you want...

- **Increased mobility** of existing "business-knowledgeable" staff on multi-platform projects
- **Increased capacity** by deploying new employees on any project independent of target platform
- **Increased productivity** by leveraging solutions that hide underlying platform and technology complexity

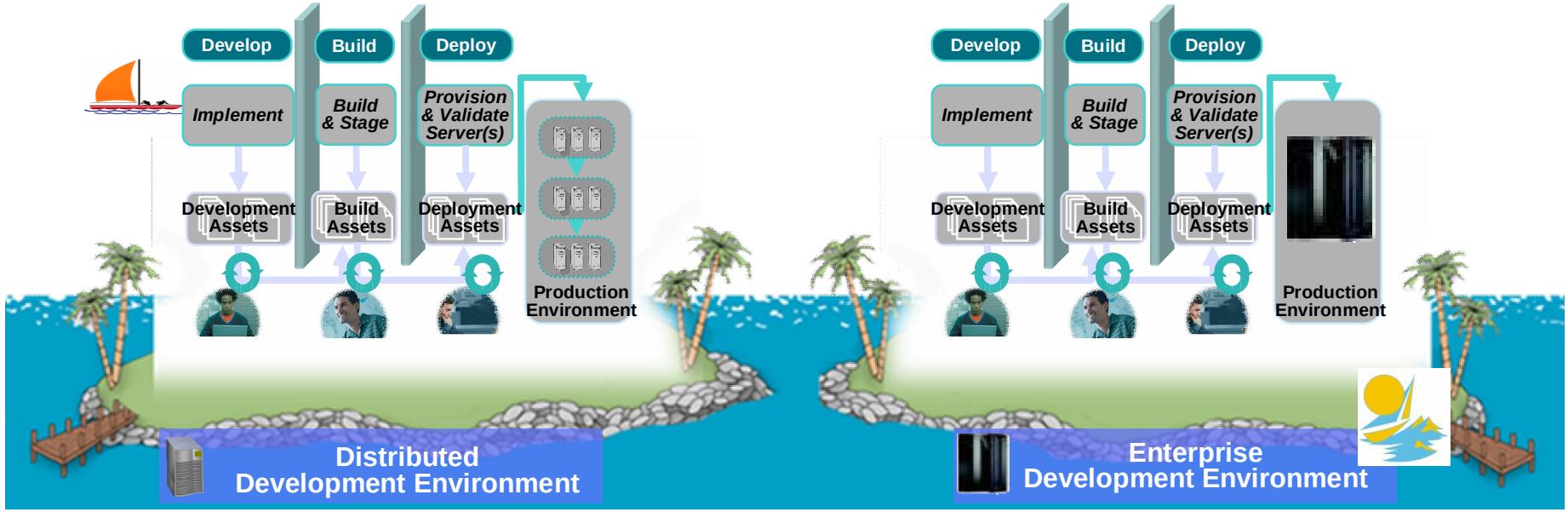


Processes and tools modernization

Challenge of IT development islands

What you have...

- **Different infrastructures** for host and distributed development limiting IT and staff flexibility
- **Increased costs** to support multiple infrastructures, with less capital available to invest in new projects
- **Lack of traceability** inhibiting end-to-end governance

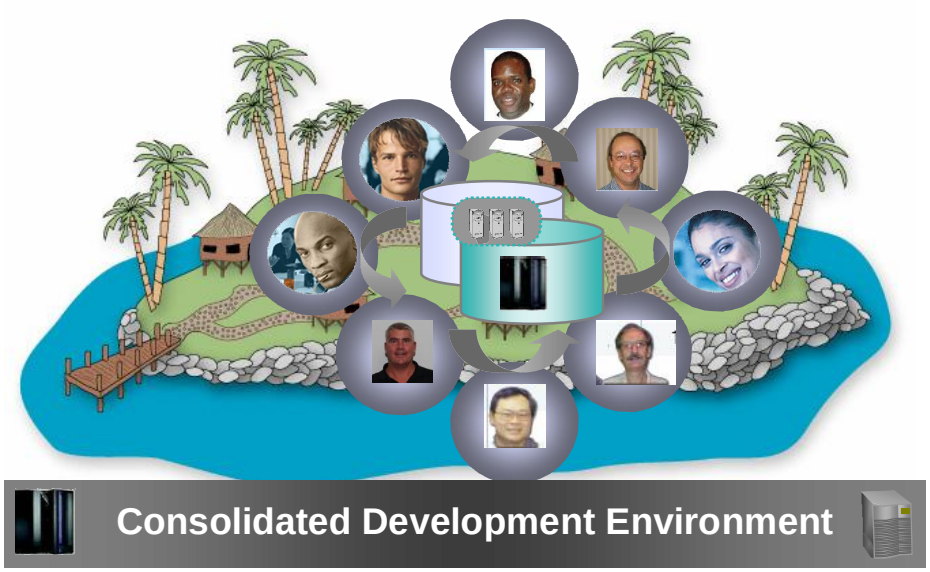


Processes and tools modernization

Challenge of IT development islands

What you want...

- **Consolidated** towards a single infrastructure for host and distributed development environments
- **Improved efficiency** and reduced costs by eliminating duplicate tools and processes
- **Improved governance** and traceability across the entire software lifecycle



Your governance solution needs to cover the entire topology as well as the entire lifecycle and all roles.

Investment modernization

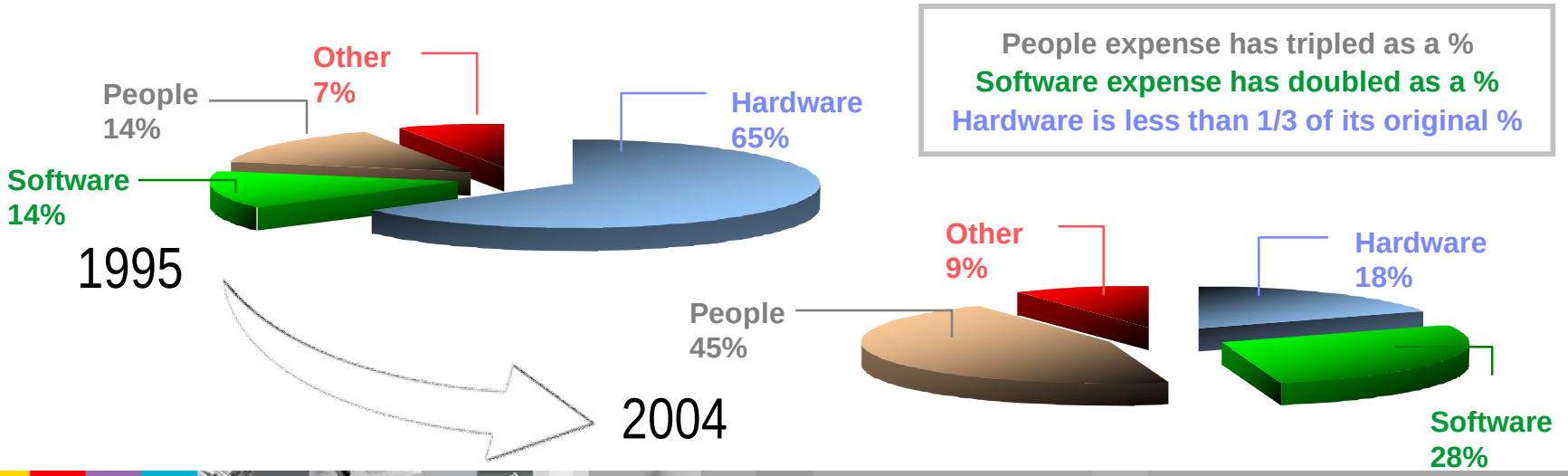
Challenge of lack of flexibility for new investments

What you have...

- **Shrinking IT budgets** with a significant % (~75-80) being applied towards maintaining existing systems
- **Outdated application development platforms** which cannot leverage modern technologies and middleware advances
- **An increasing application backlog** that limits ability to incrementally improve overall modernization posture

What you want...

- **Freed-up IT budgets** to help devote resources to new development rather than maintenance
- **Move to standard development platforms** that support enterprise as well as distributed teams
- **Make incremental improvements** within the context of a long-term strategic modernization plan



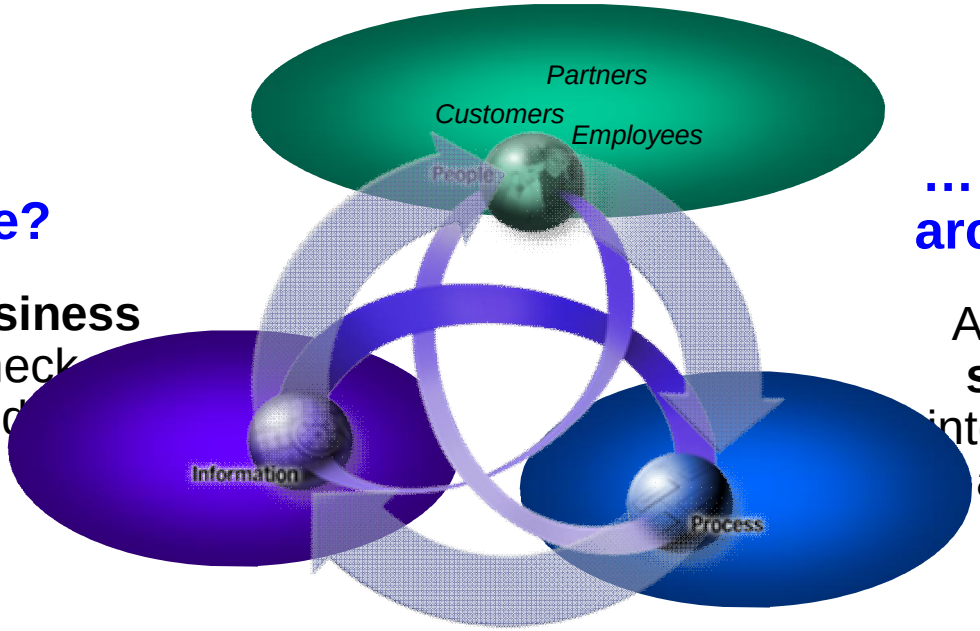
Over the past 10 years, the cost dynamics in IT has changed significantly.

Services Oriented Architectures (SOA)

Enabling business agility and IT flexibility

… a service?

A **repeatable business task** – e.g., check customer cred

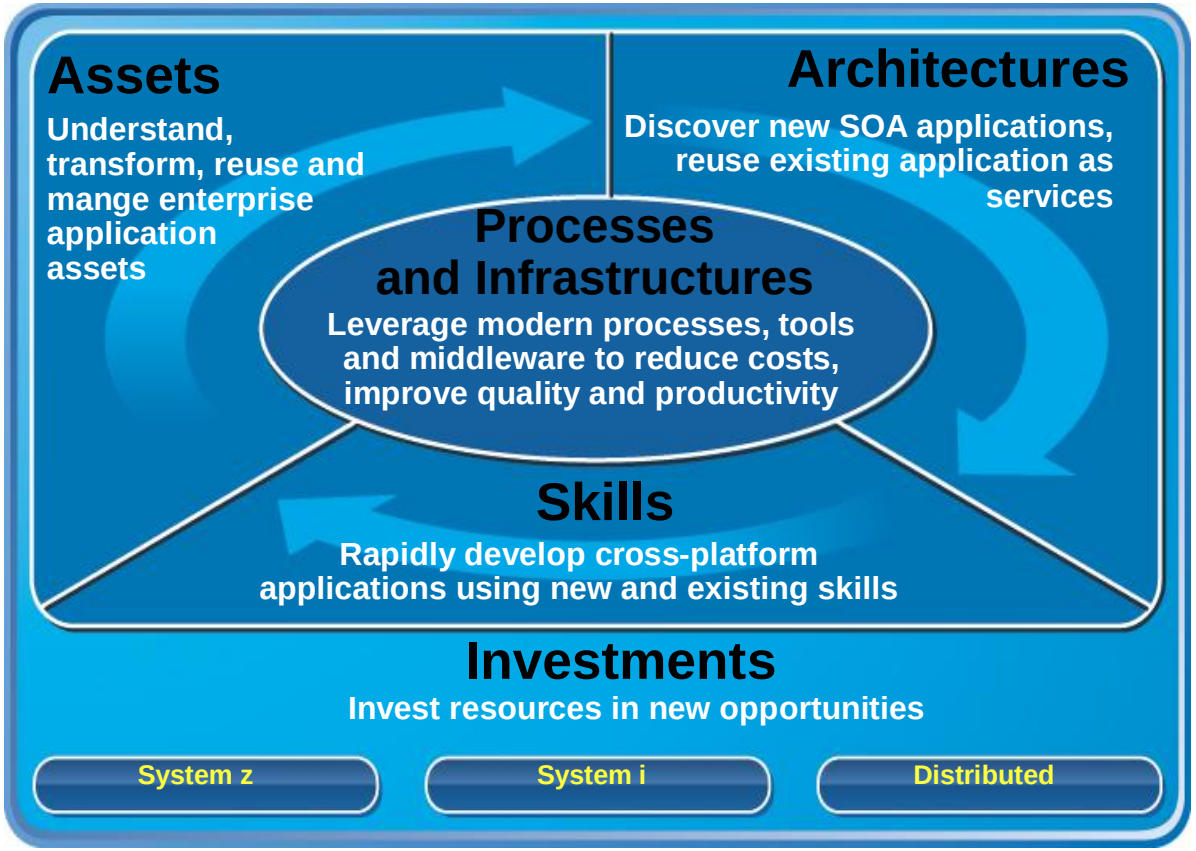


… service oriented architecture (SOA)?

An IT **architectural style** that supports integrating businesses as linked services

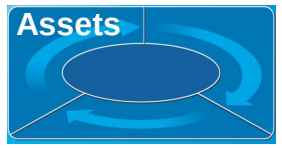
- ✓ **Enables business flexibility**
- ✓ **Better aligns *IT* & business investments**
- ✓ **Enables Adaptive business processes**
- ✓ **Lowers cost of *IT***

Enterprise Modernization



- ✓*Leverage value in existing assets*
- ✓*Drive innovation with technology advancements*
- ✓ *Leverage existing and new skills*
- ✓*Improve responsiveness of systems & people*

Asset modernization: Enhancing Our Portfolio



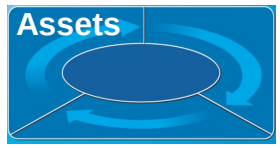
Comprehensive inventory of assets for reuse and modernization

Discover, document and transform legacy assets	Control asset change across lifecycle	Manage, govern & share assets across lifecycle
• Reduce cost and time of maintenance activities • Shorten the learning curve for new developers • Speed up and reduce risk in key transformation initiatives	• Enforce SOA governance policies and procedures • Unify diverse and geographically distributed teams • Control software asset changes	• Enable governance of enterprise assets across lifecycle • Promote reuse and eliminate redundancies • Enhance architectural integrity through reuse of software assets
WebSphere Studio Asset Analyzer **Rational Transformation Workbench** **Rational RequisitePro**	**Rational ClearQuest** **Rational ClearCase**	**- Rational Asset Manager** **- WebSphere Services Registry and Repository**

An IBM roadmap to help organizations discover, transform and manage applications and services

Deliver application visibility across the enterprise

Speed composite and traditional discovery, understanding and asset reuse for System z



Development-time

Rational. software

Rational Asset Manager (RAM)

ClearQuest

Automated processes for asset change and defect management

ClearCase

Version and configuration management including traceability

RequisitePro

Requirement management and traceability

Federated Search & Publish

WebSphere Studio Asset Analyzer Rational Transformation Workbench

Discover, analyze and modernize assets on mainframe

Deployed Run-time

WebSphere

WebSphere Service Registry & Repository (WSSR)

CICS

CICS Web services publishing capability

Generic Client (.Net or other)

Web services client can publish and search

Process Server or ESB

Mediations for dynamic endpoint selection and binding

CREATION

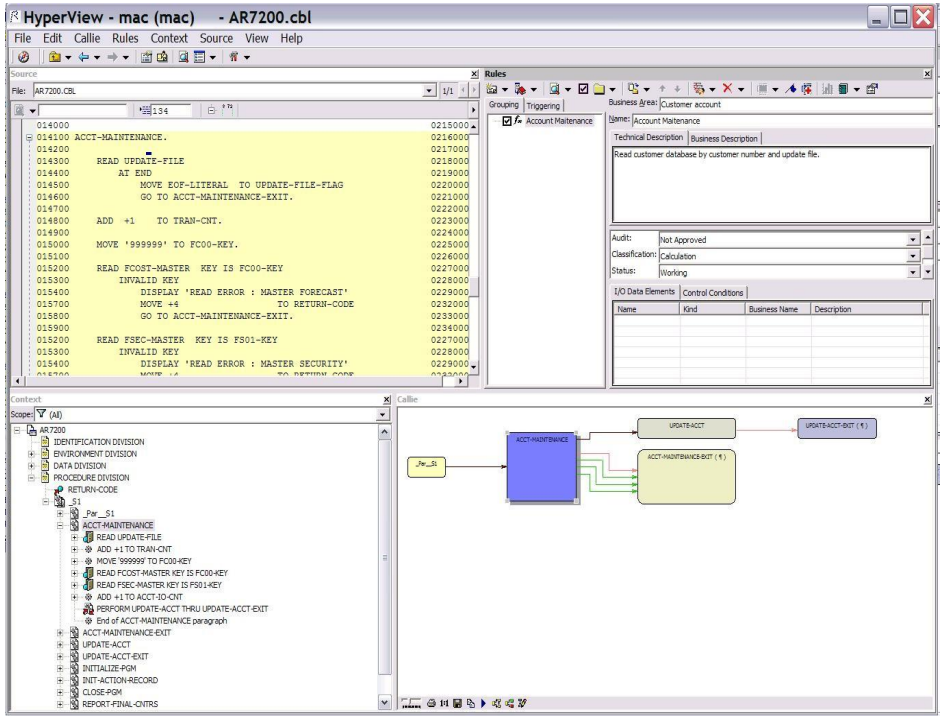
Manages information that is useful for the creation and reuse of all types of reusable assets

CONSUMPTION

Manages information that is useful for the discovery and consumption of operational runtime services

IBM Rational Transformation Workbench (RTW)

Accelerate your path to reuse and SOA-readiness



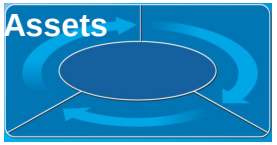
The new business rules extension can help speed the identification of your company valuable business rules

- Demystify enterprise applications and their inter- and intra-relationships
- Gain intellectual control; make fact-based decisions; develop transformation roadmap.
- Identify key assets and restructure for reuse in SOA; reduce cost and time of modernization projects
- Reduce cost and time of on-going application maintenance

New and Enhanced!

- New system level, source level and application glossary information to users
- Business rule extension improved usability, productivity, automation, auto-detection, visualization, reporting, abstraction and analytics
- Improved executive reports and additional report customization. Key reports available in batch mode

Modernizing existing systems to offer more higher-margin accessories



Multinational auto manufacturer

Challenge

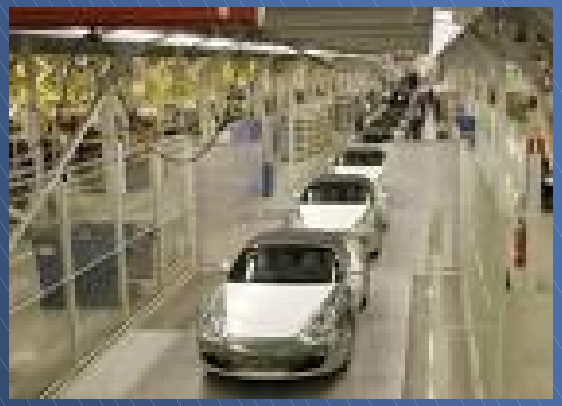
- Expand existing systems to offer more higher-margin accessories; requires change to field used by >1300 programs
- Identify obsolete code within their automotive systems and begin a “decommissioning” process

Solution

- Performed impact analysis with WebSphere Studio Asset Analyzer, coupled with GBS Test Environment Builder to accelerate system verification
- Now employing Rational Transformation Workbench to start decommissioning” process

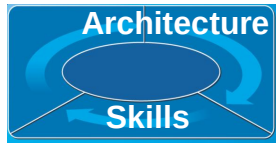
Products include:

- WebSphere Studio Asset Analyzer
- IBM Rational Transformation Workbench



Architecture & skills modernization: Enhancing Our Portfolio

Accelerate your path to reuse and service-oriented architectures



Transform green screens to modern user interfaces	Extend core business functions as services	Accelerate cross-platform application development
• Access to web, with lower cost and lower risk • Improve appearance, usability and productivity • Reduce transaction costs, training costs and employee turnover	• Expose key transaction capabilities as services • Meet highest QOS requirements • Reduce time to market and increased responsiveness	• Apply existing "business-knowledgeable" and new staff on multi-platform projects • Break skills silos • Reduce retraining costs • Accelerate adoption of modern architectures and technologies
- Host Access Transformation Services for Multiplatforms **- Host Access Transformation Services for 5250**	**Rational Developer for System z** **Rational Developer for System i**	**Rational Business Developer** **Rational Developer for System i for SOA Construction**

An IBM roadmap to help organizations create new SOA applications and reuse existing applications as services

Improving customer satisfaction and reducing costs

Architecture

Bank in Brazil

Has 200 branches across many regions of the country

Challenge

Help developers integrate the bank's .NET applications with its OS/390 environment.

Solution

Use IBM modernization tools to effectively bridge the gap between Mercantil do Brasil's .NET applications and its OS/390 operating environment.

Products include:

- Host Access Transformation Services
- WebSphere Application Server for z/OS

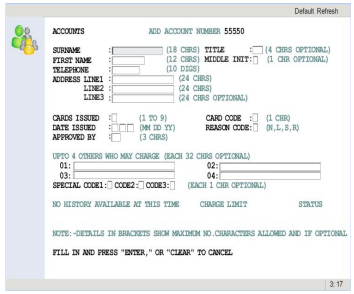
Rational Host Access Transformation Services (HATS)

Modernize user interfaces and create Web Services

Architecture

- Modernize and streamline “green screen” applications
- Combine data from multiple screens, applications and databases
- Non-invasive

Rich Client



- Integration at the desktop with other Eclipse applications
- Client side processing
- Rich set of user interface widgets
- Built on the standard, open Eclipse foundation
- 3270e print directly to end user’s printer

Example: CICS App

3270 or 5250 Data stream

Web

- Zero footprint
- View through your favorite browser

Portal

- Integration at the glass
- Click-to-Action support

Web Service

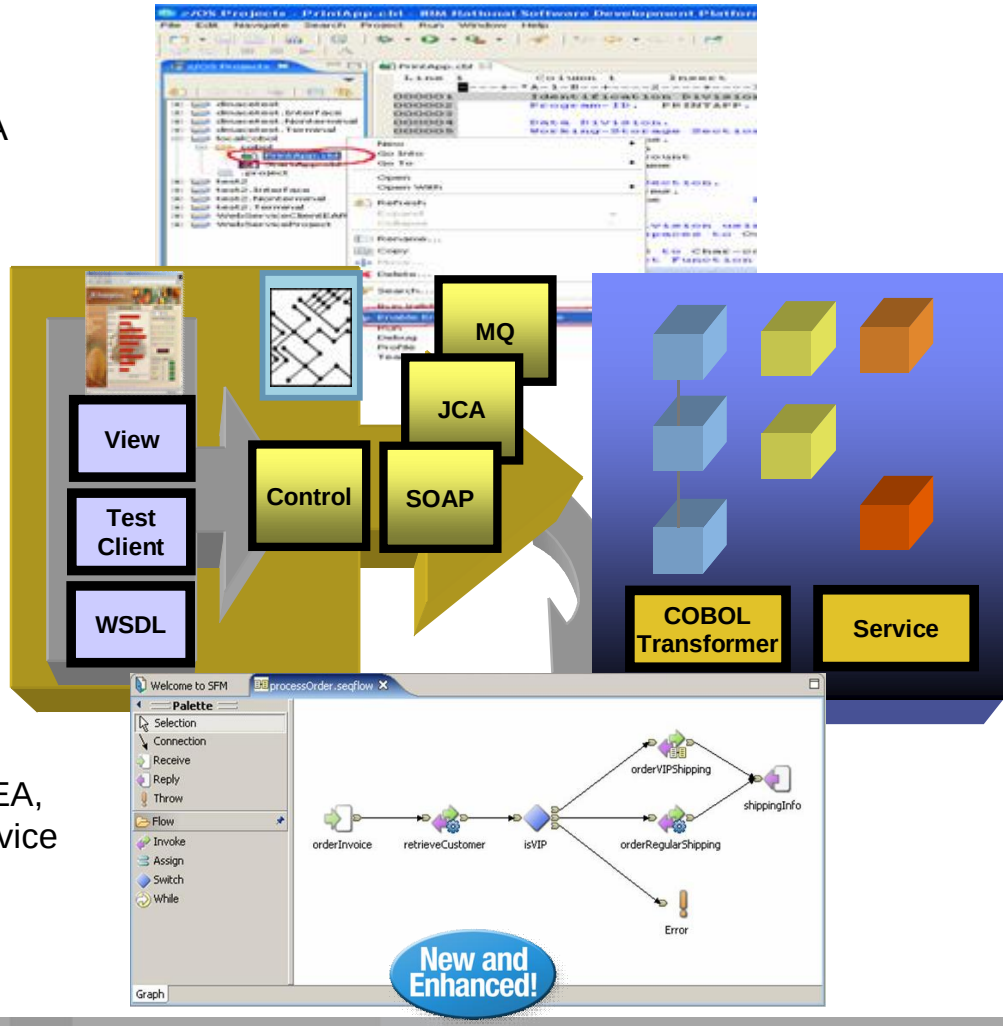
- Build self-service transactions

IBM Rational Developer for System z

Preserve System z investment – and leverage existing assets

Architecture

- An intuitive, visual construction based on open standards (J2ee, Java® Server Faces)
- Broad SOA support through Web Services and JCA with specialized System z capabilities
- Build Web services from existing CICS or IMS applications
- Comprehensive state-of-the-art facilities for developing, debugging and deploying COBOL, PL/I, C, Java, CICS, IMS, Batch, DB2 processing



Service Flow Feature and Modeler for CICS v3.2

- Build CICS Web services
  - Aggregates multiple CICS transactions into high-level business processes through visual modeling
  - Supports BMS (terminal-based), CICS COMMAREA, and CICS Channel/Container, and CICS Web Service applications
  - Highly optimized CICS runtime supporting Web services and XML interfaces

Extending COBOL applications for online banking

Large Bank in Europe

One of the largest European insurance provider
Worldwide operations and clients

Challenge

- Upgrade teller workstations and ensure they continue to work with an existing third-party COBOL run-time environment

Solution

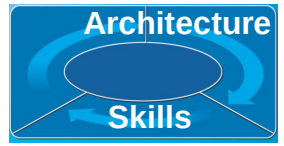
- Develop new application framework based on IBM COBOL
- Leverage single development that support both host and distributed platforms

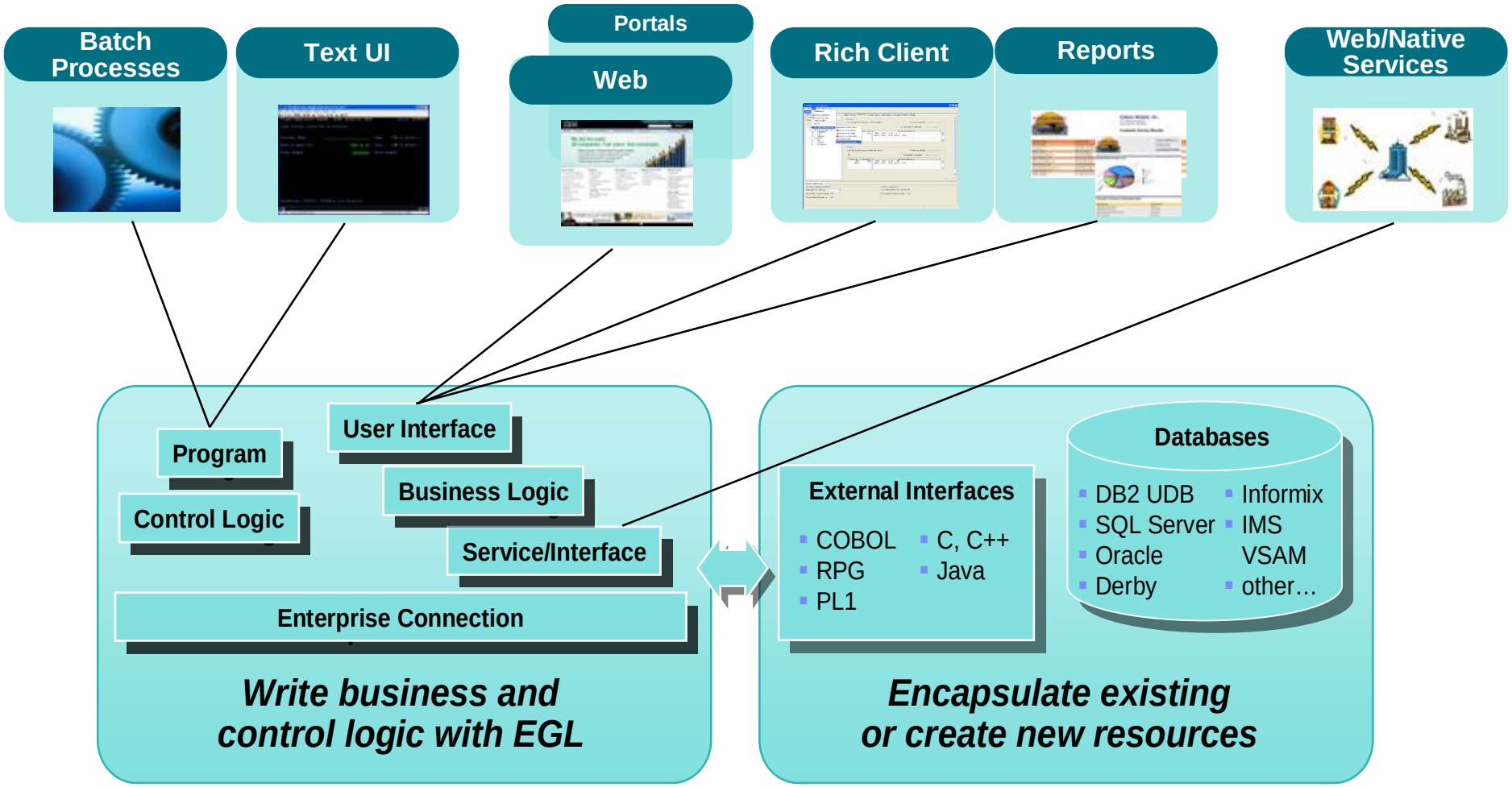
Products include:

- IBM Rational Developer for System z

IBM Rational Business Developer

Unified approach to end-to-end construction that shields developers from intricacies of runtimes and middleware





Improving productivity by breaking skills silos

Bank and Insurance company in Belgium

Belgian bank and insurance company that has 50,000 employees, 12 million clients across Central Europe

Challenge

- Leverage existing “business-knowledgeable” IT staff to create business services without dealing with platform and technology complexities

Solution

- Unify application development across all platforms and transaction managers (e.g. WAS, IMS)

Products include:

- IBM Rational Business Developer Extension
- IBM Rational Developer for System z

Processes and tools modernization: Enhancing Our Portfolio

Shared development platform enterprise and distributed teams

Manage application portfolio, requirements and processes

- Align organizational and business needs to prioritize investments
- Ensure modernization efforts align with business goals and requirements
- Govern service lifecycle within a clearly articulated decision framework

Rational RequisitePro
Rational Method Composer

Enhance collaboration and traceability across teams

- Enforce development processes for better insight and predictability
- Establish shared repository for asset reuse and traceability
- Automate build management across platforms

Rational ClearQuest
Rational BuildForge
Rational CleaseCase
SCLM for z/OS

Test service functionality and scalability

- Save time and guarantee repeatability by automating tests
- Validate the scalability and reliability of services before deployment
- Manage service test scenarios for multiple projects and teams

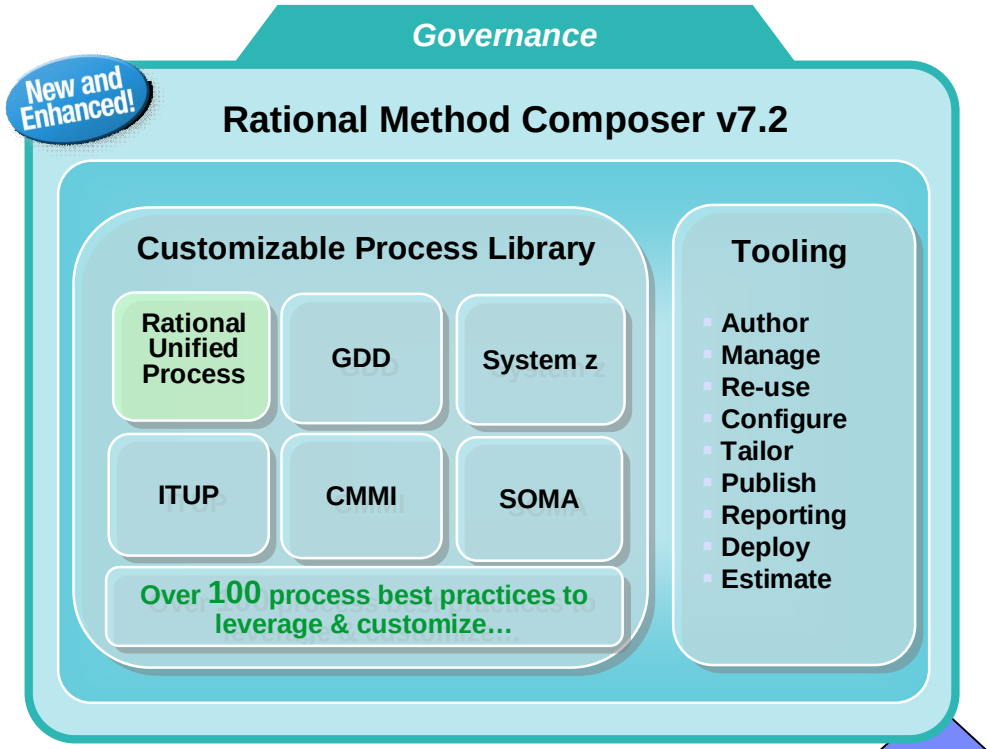
Rational Functional Tester
Rational Performance Tester

An IBM roadmap to help organizations enhance team productivity and collaboration by sharing a common development platform across teams

Rational Process Management

Putting process best practices to work

Processes and Infrastructures



Now a library of over **100 !**

Examples of process best practices

- Rational Unified Process for System z
- IBM Tivoli Unified Process (ITUP) & Rational Unified Process (RUP) integration
- RUP for global distributed development
- CMMI level 2 with CMMI & RUP mapping
- Asset Based Development (ABD) process for producing and consuming assets
- Plug-in to govern asset investments
- SOA design and construction

Result: Easier, more effective deployment of customized and adaptable process best practices for enterprise-wide application development

WebSphere

WebSphere Business Modeler integration to analyze & simulate processes

Unifying enterprise and distributed teams

Processes and Infrastructures

Large European insurance provider

Worldwide operations and clients

Challenge

- Spiraling maintenance and resource costs constrained the development organization

Solution

- Move to a standardized solution to improve developer productivity and flexibility for delivering software solutions

Products include:

- IBM Rational ClearCase

Investments modernization: Enhancing Our Portfolio

Redirect people and budget to pursue new opportunities

Take control of your assets

- Dramatically improve change estimate accuracy
- Reduce application maintenance time
- Reduce complexity and increase maintainability
- Componentization increases reusability, and enables SOA

Leverage modern architectures

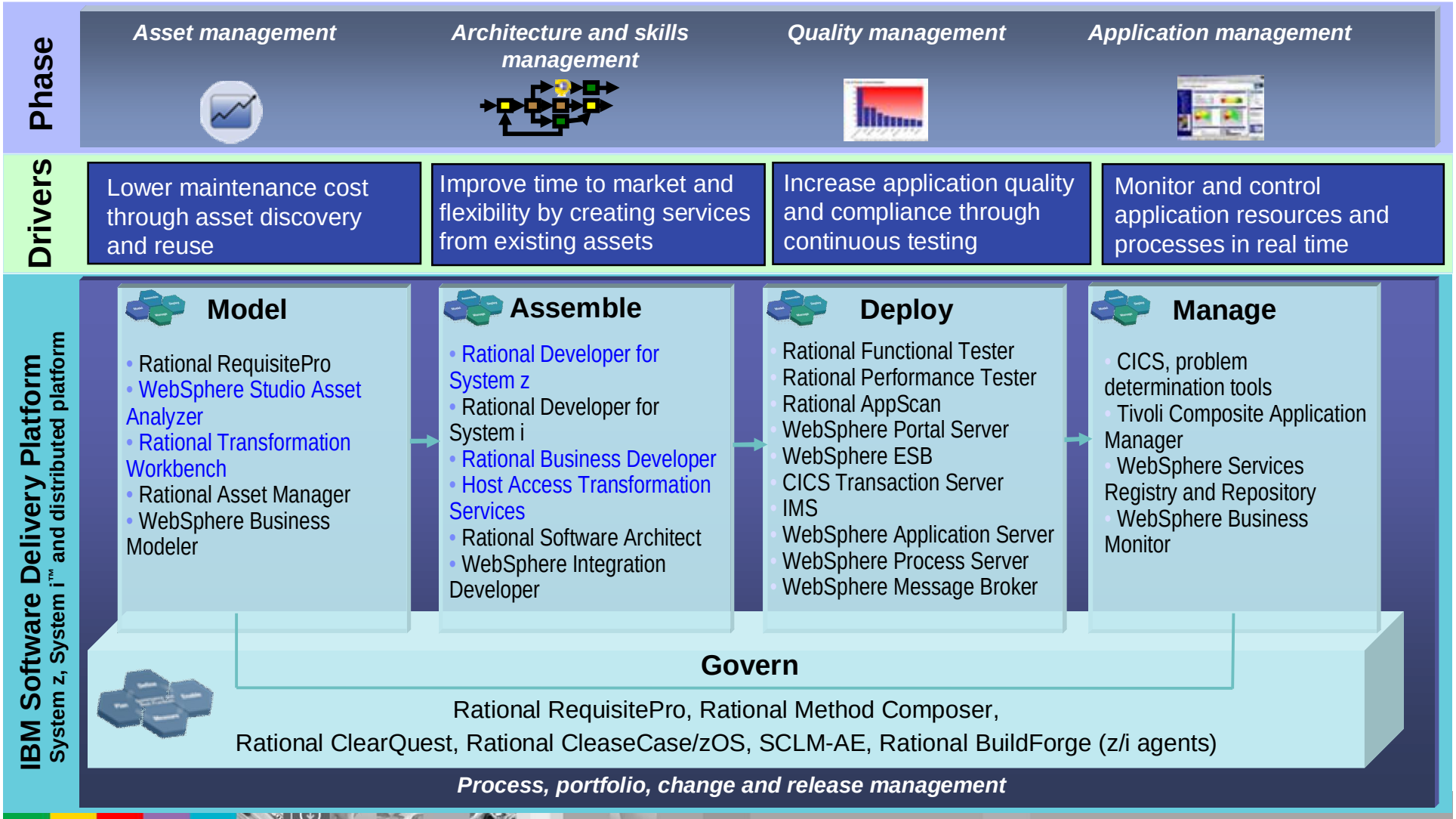
- Quickly extend existing applications to the web
- Increase developer productivity and reduce manual coding
- Save time by automating application testing
- Verify application scalability

Transition to a standard software delivery platform

- Reduce expenditure by eliminating obsolete technologies or platforms
- Reduce risk by reusing proven assets
- Leverage existing IT staff for new development
- Simplify application development

The IBM Rational Software Delivery Platform offers leading-edge, high-productivity solutions to address your enterprise modernization and SOA needs!

*Accelerating **Enterprise Modernization** towards an SOA with the IBM Rational Software Delivery Platform*



Enterprise Modernization Summary

Building tomorrows applications with today's IT organization

Leverage value in existing assets
- ✓ Accelerate application discovery, understanding and asset reuse across the enterprise

Drive innovation with technology advancements
- ✓ Transform, extend and integrate core business functions and new workloads

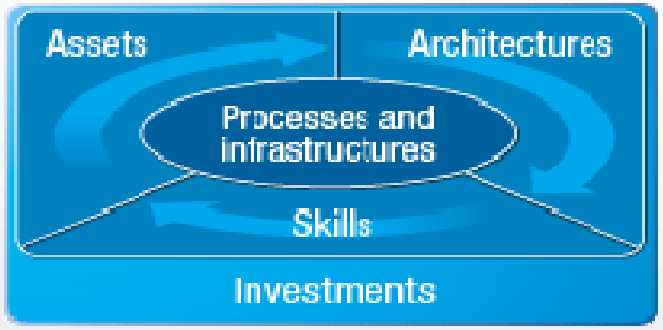
Leverage existing and new skills
- ✓ Leverage IBM's newest business language "EGL" improve team flexibility, skills and achieve higher productivity

Improve responsiveness of systems & people
- ✓ Improve efficiency, quality and productivity by simplifying processes, tools, and infrastructures

Reduce maintenance cost
- ✓ Move to supported platforms and fully leverage the capabilities of the IBM Software Delivery Platform!

A comprehensive approach to managing the delivery of modern applications using proven solutions and driving integration across applications and teams

Over time ...



IBM Rational Software Delivery Solution

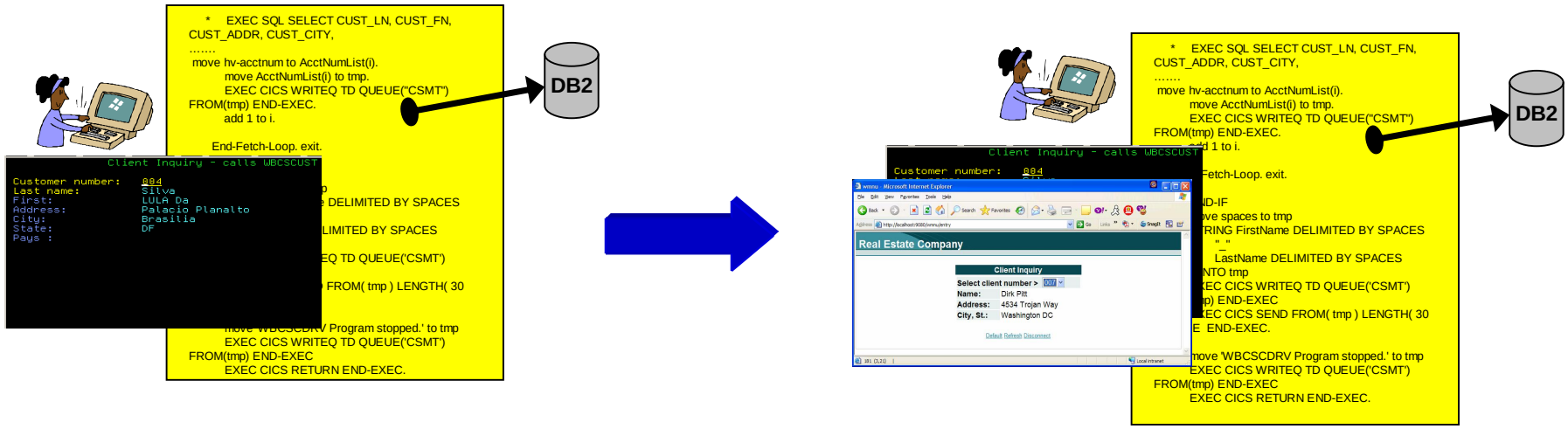
Learn more at:

- IBM Enterprise Modernization Solutions
- IBM Rational Software Delivery Platform
- Process and portfolio management
- Change and release management
- Quality management
- Architecture management
- Rational trial downloads
- developerWorks Rational
- IBM Rational TV
- IBM Rational Business Partners

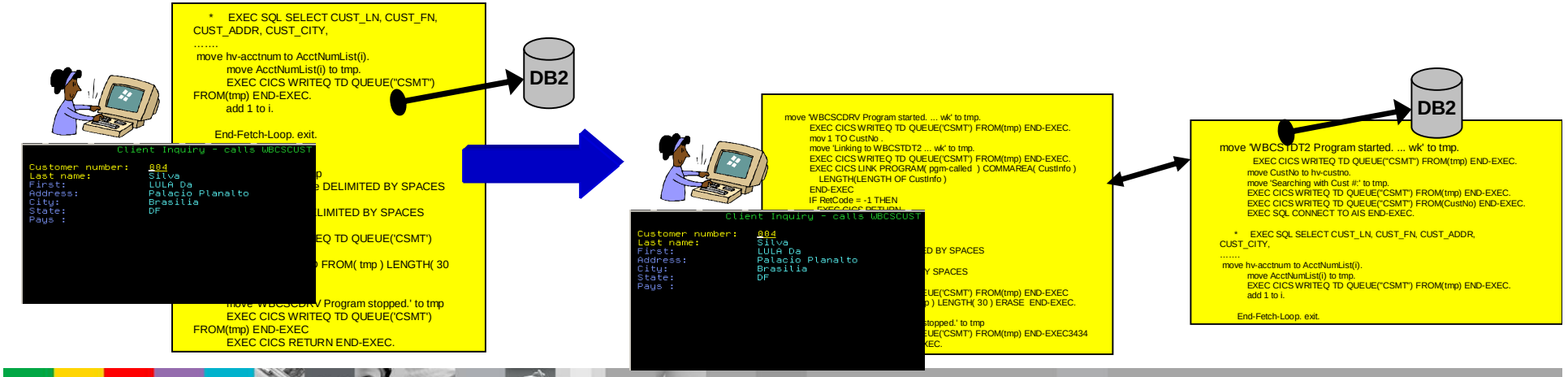
→ New IBM Enterprise Modernization Sandbox

Case study – Scenarios 1 and 2

Scenario #1. Keep CICS green screens (BMS), but moving the presentation screen to the Web

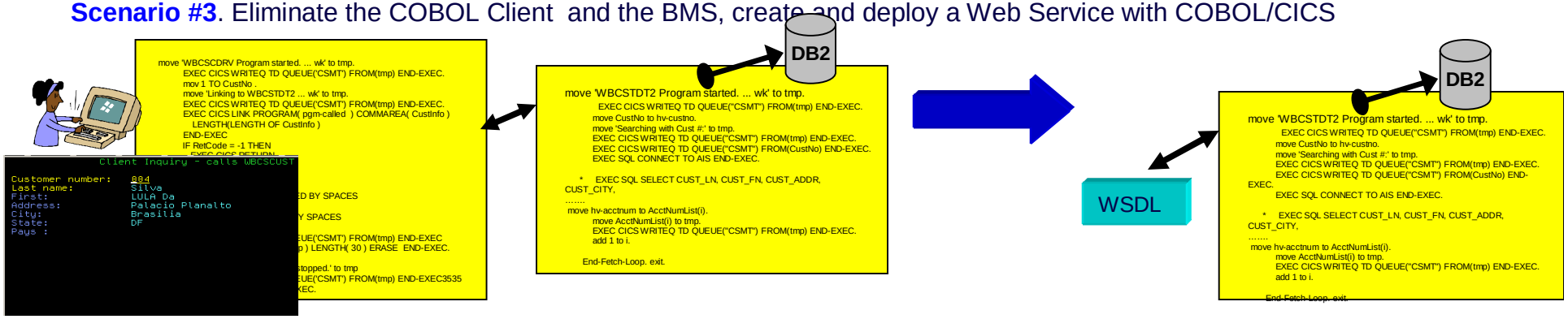


Scenario #2. Split the program in two pieces: Client (no logic) that shows the BMS map and Server (with all Business Logic)

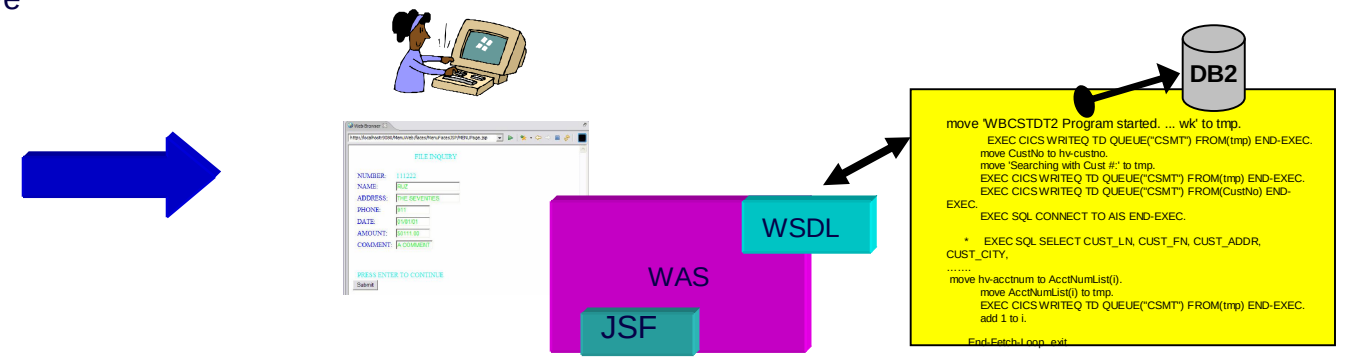


Case study – Scenarios 3 and 4

Scenario #3. Eliminate the COBOL Client and the BMS, create and deploy a Web Service with COBOL/CICS

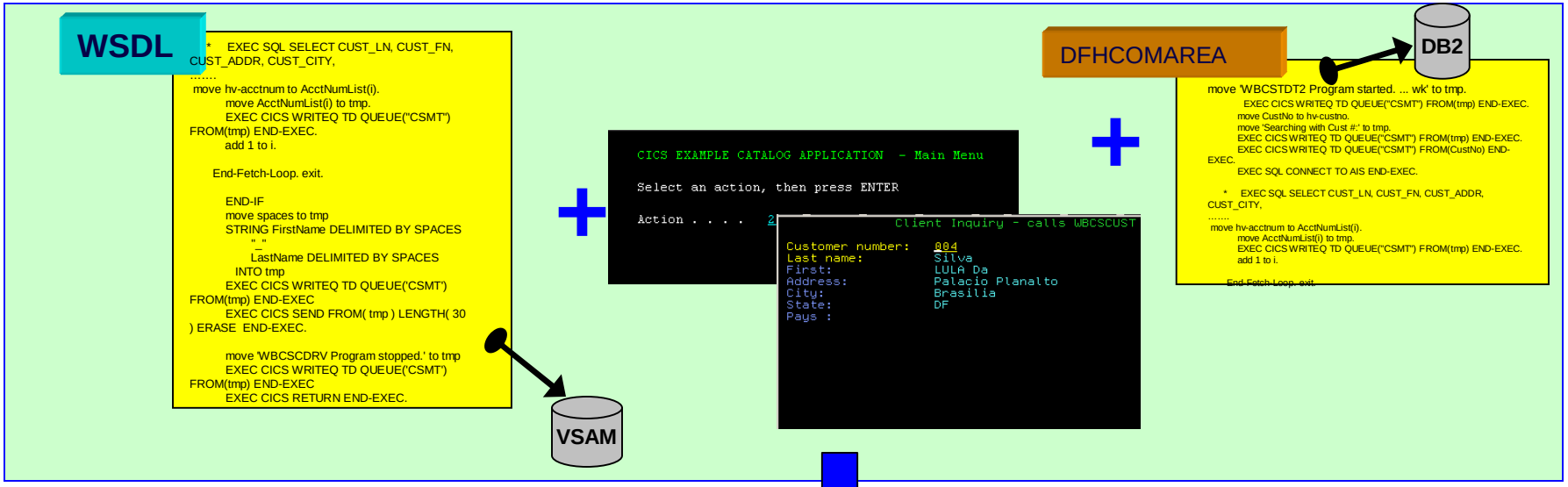


Scenario #4. Create a Web Interface with Java Server Faces (JSF) and Java Server Pages (JSP) to invoke the Web Service created above



Case study – Scenario 5

Scenario #5. Create new Web Services that aggregates other COBOL/CICS components (terminal screens, CICS programs and CICS Services)



We will not demo this Scenario. Presentation only.

Agenda for Enterprise Modernization Seminar - NYC

9:00 - 9:40 - Introduction to Enterprise Modernization & Scenarios – Regi Barosa (40 min)

9:40 - 10:00 - Scenario #1 - Creating of a Web Screen from existing terminal based CICS application
WSAA/HATS – Zvi Weiss (20 min)

WebSphere Studio Asset Analyzer introduction .. Why do I need ?

Demo #1 – (5 Min) Considering the above scenario and given a DB2 table name, use WebSphere Studio Asset Analyzer to find the CICS screens, transaction and its components.

Host Access Transformation Services introduction

Demo #2 - (5 Min) Use Host Access Transformation Services to create/deploy a simple Web Page. Test it using WebSphere Application Server under Rational Developer for System z.

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11:40 - 12:00 - Wrap-up Next Steps

IBM Software Group

z/OS Enterprise Modernization for SOA environment

WebSphere Studio Asset Analyzer Introduction

Challenge: Application complexity

It's hard to find the "needles in the haystack

… the pieces affected by a proposed change

… the service "jewels" to move to SOA

But you need this information in order to …

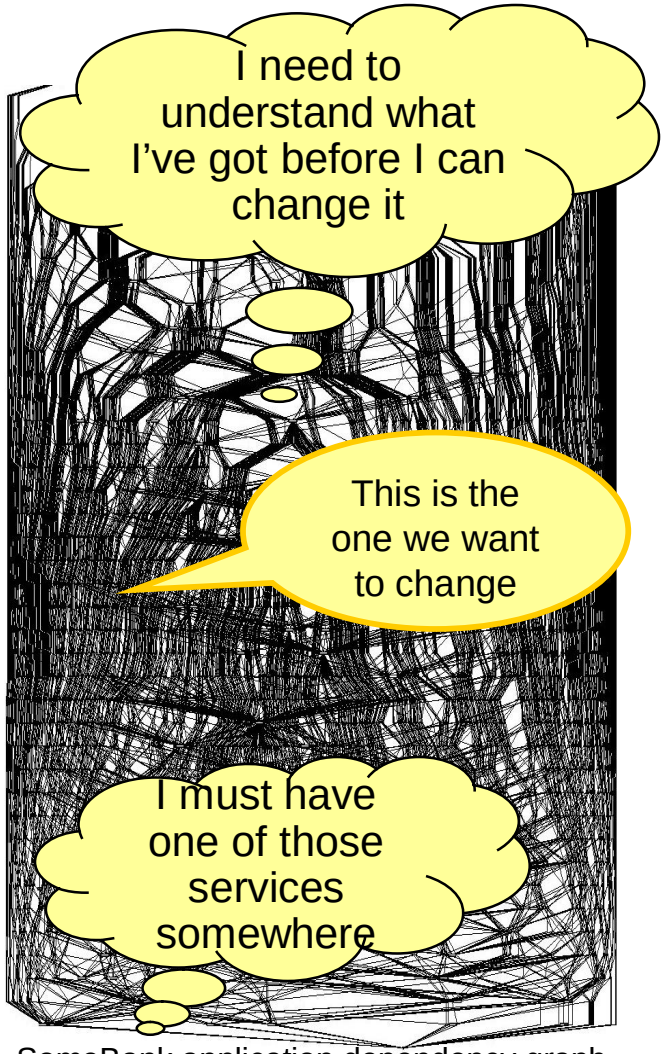
- scope the effort and cost of a change
  - and then actually make the change
- Re-architect your applications to remain competitive

Composite applications add complexity and risk

- Yet they are unavoidable

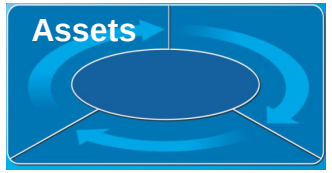
Complexity increases the cost, risk

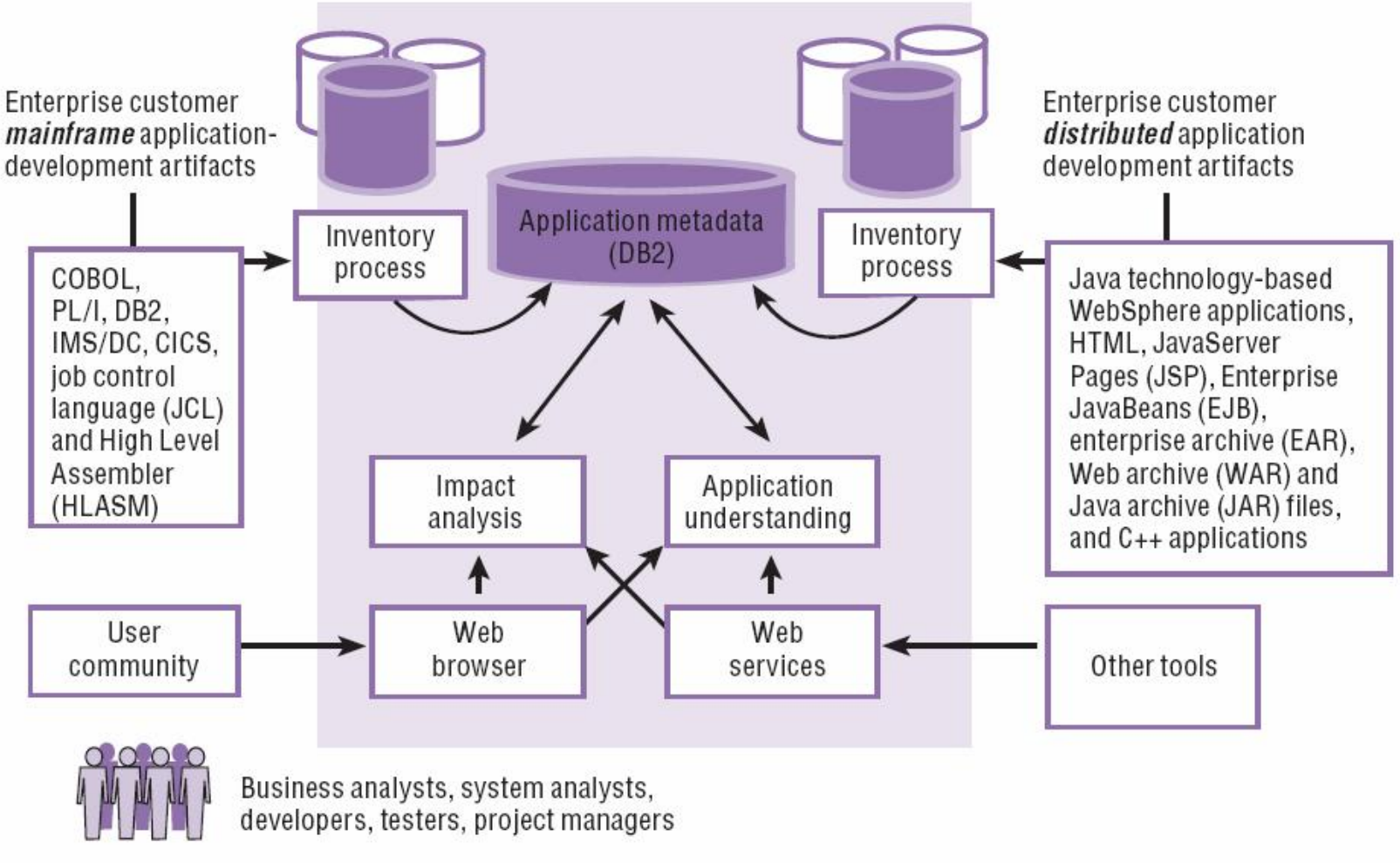
- and fear of making application changes



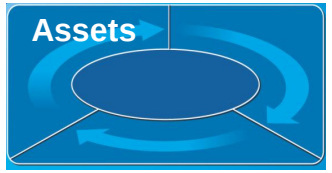
SomeBank application dependency graph
217 applications, 1,700 unique application-application pairs

What is… WebSphere Studio Asset Analyzer





WebSphere Studio Asset Analyzer – Designed for the enterprise



Industrial strength scalability

- One company's metadata: 200K programs, 140K batch jobs, 126K DB2 columns, 2.4M program literals, 81M data elements

Web browser client delivers …

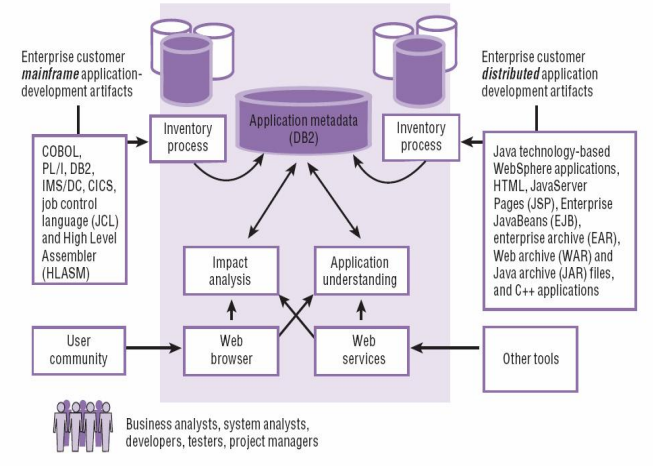
- Simple user interface
- Low admin & incremental user cost

Open architecture enables customization/ integration

- Data in DB2; documented data model
  - Add your own tables to customize
- Web services interface for tool integration
- Custom queries , SPUFI, programs

Language coverage

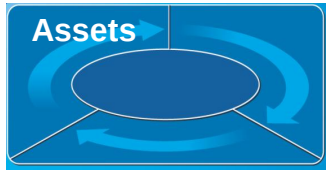
- Strong COBOL, PL/I , JCL support
- Java
- Composite Application support (Java ←→ Mainframe)



Open to Integration with other tools

- Today / future / services
- Rational Developer for System z
- Rational Transformation Workbench
- Rational Asset Manager
- Flashline Registry™
- CICS Interdependency Analyzer
- Tivoli Application Dependency Discovery Manager / CCMDB
- Others

“What for”… Asset Analyzer



Common questions that confront the developer every day

- Answered by simple navigation

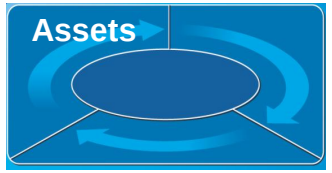
Eliminate tedious research time on the green screen

- No more ISPF library searches looking
- No more jumping through to different sources to gather and relate information
  - source libraries, CICS CSD, DB2 catalog, etc
- No more scribbling tidbits on the notepad for hours to come

Quick navigation from problem seed to answer

- Direct to the point
- From some lateral knowledge (JOB →DD →Dataset →Tran →Data Store →I/O REC)
- Many starting points to arrive to the answer

“What for”… Asset Analyzer



“What if change” impact analysis for deeper change evaluation and planning

- View components affected
- Direct vs. indirect impact
- Applications affected?
- Jobs, Transactions
- Data elements, Data stores, Data sets?

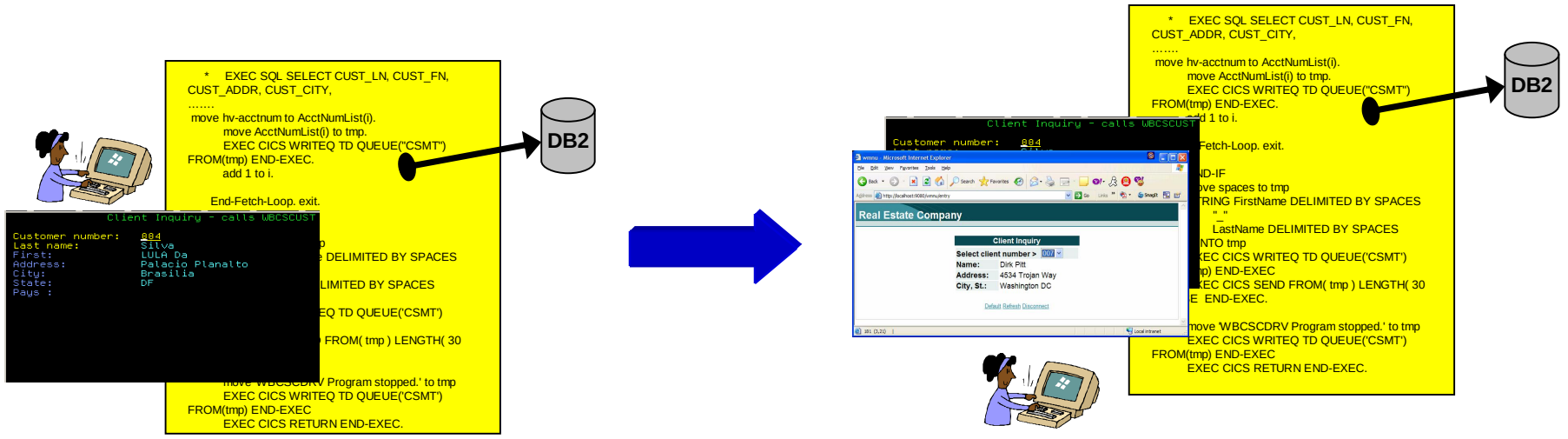
Locating reusable components as possible SOA candidates

- Locate low hanging fruit service candidates
- Useable with minimum or no rework needed

- One such case could be:
  - “Popular” CICS programs that are called by many others
  - Do not perform terminal operations

Case study – Scenario #1

Scenario #1. Keep CICS green screens, but moving the presentation screen to the Web



No Changes in the existing applications

Scenario #1 – Find the components that uses the DB2 customer table named **EOTCUST** and move the existing CICS transaction that uses green screen to the web.

Task: Find components and transform a green screen to a web page from existing COBOL/CICS/BMS
Solution: Use **WebSphere Studio Asset Analyzer** to find the components,
Use Host Access Transformation Services to create/deploy the Web Page

- Which COBOL/CICS Programs access the DB2 table **EOTCUST** ?
- What is the BMS map being used?
- What is the CICS transaction Name that invokes this program ?

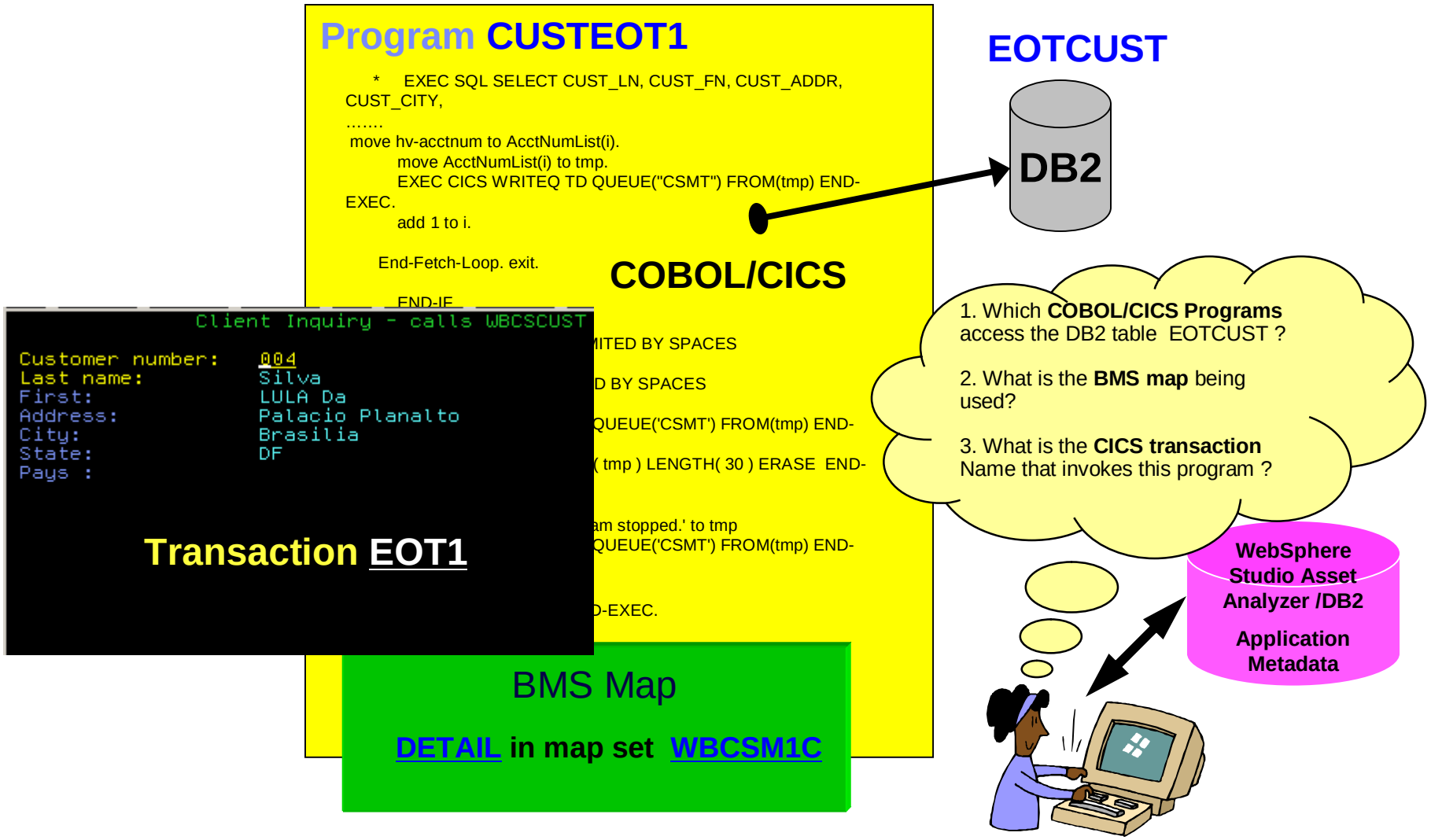
We will use WebSphere Studio Asset Analyzer to locate:

→ Programs that access the DB2 table

→ BMS map

→ CICS transaction

Results after using WebSphere Studio Asset Analyzer



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IBM Software Group

z/OS Enterprise Modernization for SOA environment

Host Access Transformation Services Introduction

Case study – Scenarios 1

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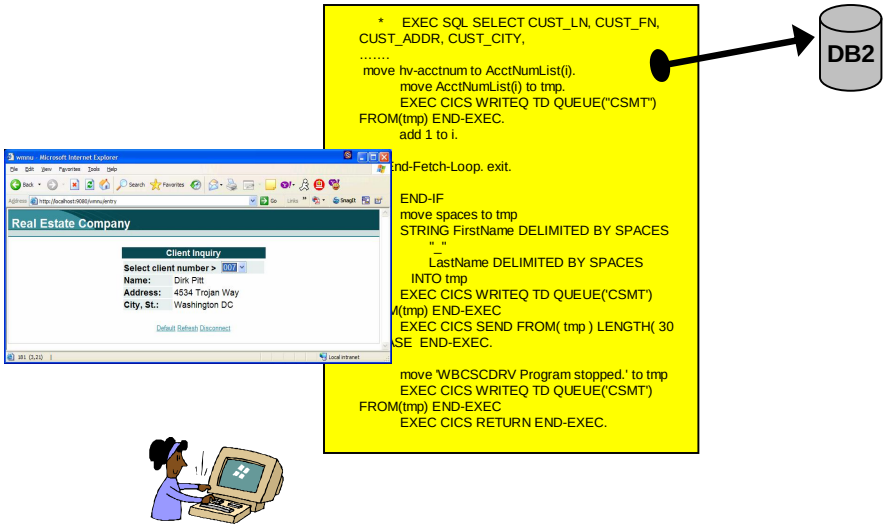


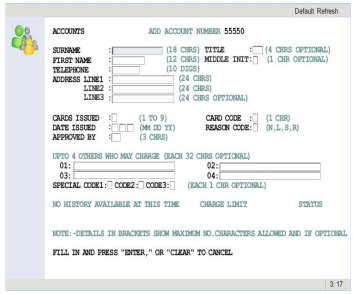
Rational Host Access Transformation Services (HATS)

Modernize user interfaces and create Web Services

Architecture

- Modernize and streamline “green screen” applications
- Combine data from multiple screens, applications and databases
- Non-invasive

Rich Client



- Integration at the desktop with other Eclipse applications
- Client side processing
- Rich set of user interface widgets
- Built on the standard, open Eclipse foundation
- 3270e print directly to end user’s printer

Example: CICS App

3270 or 5250 Data stream

Web

- Zero footprint
- View through your favorite browser

Portal

- Integration at the glass
- Click-to-Action support

Web Service

- Build self-service transactions

Host Access Transformation Services example

zserveros

File Edit View Communication Actions Window Help

PrtScn Copy Paste Send Recv Display Color Map Record Stop Play Quit Clipbrd Support Index

Client Inquiry - calls WBCSCUST (WBCSM1C)

Customer number: 007
Last name: Pitt
First: Dirk
Address: 4534 Trojan Way
City: Washington
State: DC
Pays :

MA a

Connected to remote server/host zserveros.dfw.ibm.com using lu/pool TCP00022 and port 23

wmnu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://localhost:9080/wmnu/entry Go Links

Real Estate Company

Client Inquiry

Select client number > 007

Name: Dirk Pitt

Address: 4534 Trojan Way

City, St.: Washington DC

Default Refresh Disconnect

181 (3,21)

Scenario #1 – Find the components that uses the DB2 customer table named **EOTCUST** and move the existing CICS transaction that uses green screen to the web.

Task: Find components and transform a green screen to a web page from existing COBOL/CICS/BMS

Solution: Use WebSphere Studio Asset Analyzer to find the components,

Use **Host Access Transformation Services** to create/deploy the Web Page

WebSphere Application Server

Host Access Transformation Services

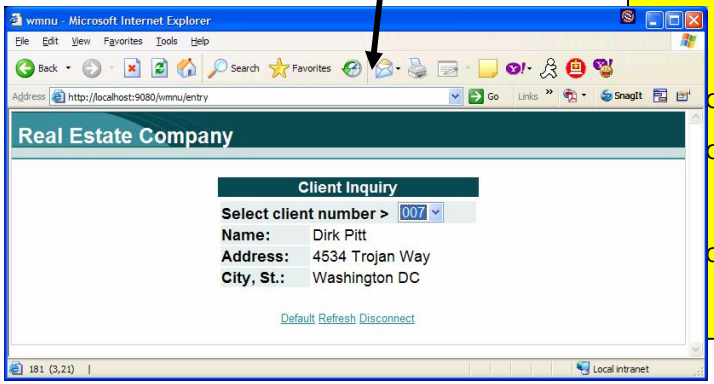
Program CUSTEOT1

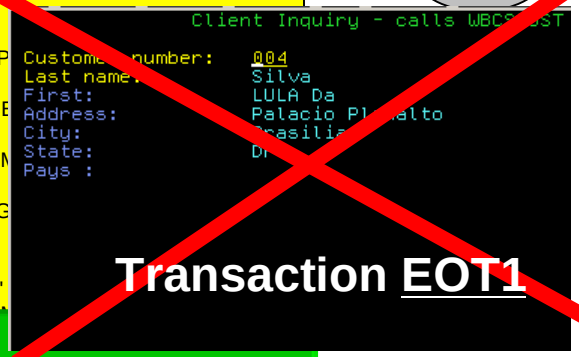
```
     *    EXEC SQL SELECT CUST_LN, CUST_FN, CUST_ADDR,
CUST_CITY,
.......
 move hv-acctnum to AcctNumList(i).
         move AcctNumList(i) to tmp.
         EXEC CICS WRITEQ TD QUEUE("CSMT") FROM(tmp) END-
EXEC.
         add 1 to i.

      End-Fetch-Loop. exit.

         END-IF
         move spaces to tmp
         STRING FirstName DELIMITED BY SP
                " "
                LastName DELIMITED BY SPACE
           INTO tmp
         EXEC CICS WRITEQ TD QUEUE('CSM
C
         EXEC CICS SEND FROM( tmp ) LENG
C.

         move 'WBCSCDRV Program stopped.'
         EXE
C

         EXE
```

COBOL/CICS

EOTCUST

DB2





Transaction EOT1

BMS Map

DETAIL in map set WBCSM1C

4:30 Min

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WebSphere Studio Asset Analyzer Bridge and Rational Transformation Workbench introduction

Demo # 3 - (7 min) – Use Rational Transformation Workbench to extract the business logic and create a COBOL subroutine to be used later.

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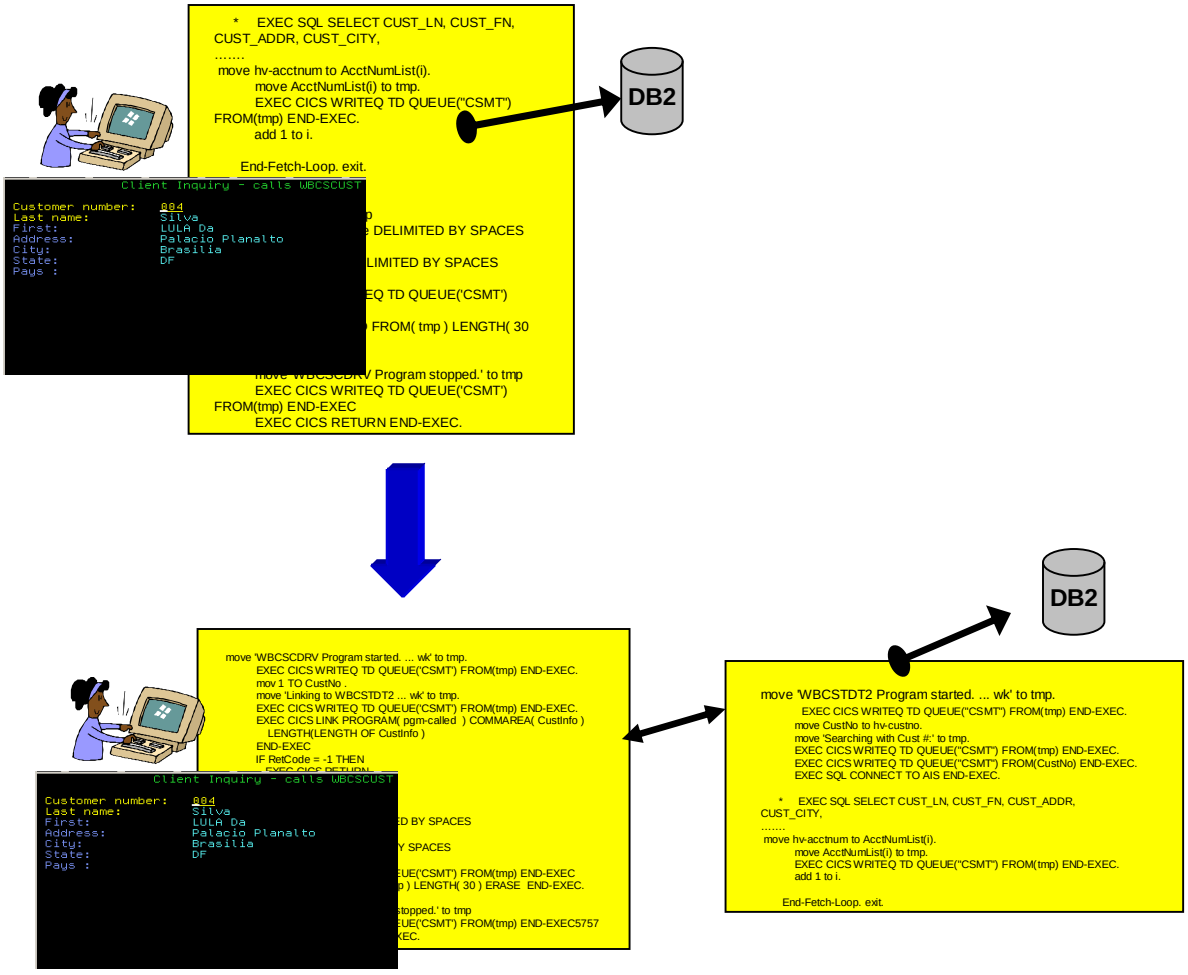
IBM Software Group

z/OS Enterprise Modernization for SOA environment

Rational Transformation Workbench Introduction

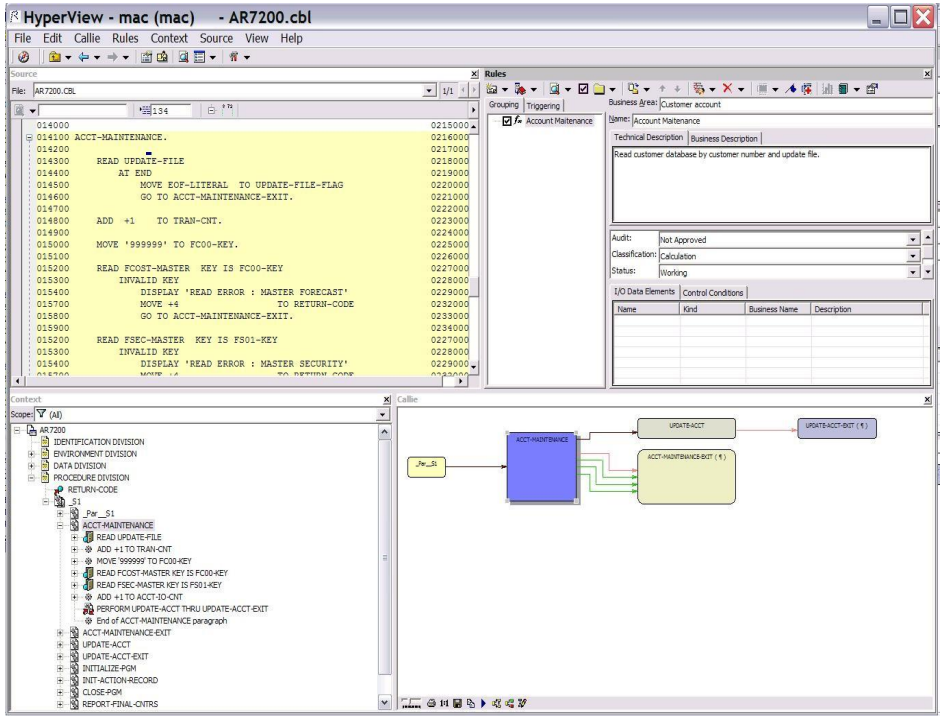
Case study – Scenario #2

Scenario #2. Split the program in two pieces: Client (no logic) that shows the BMS map and Server (with all Business Logic)



IBM Rational Transformation Workbench

Accelerate your path to reuse and SOA-readiness



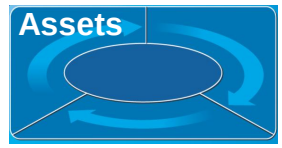
The new business rules extension can help speed the identification of your company valuable business rules

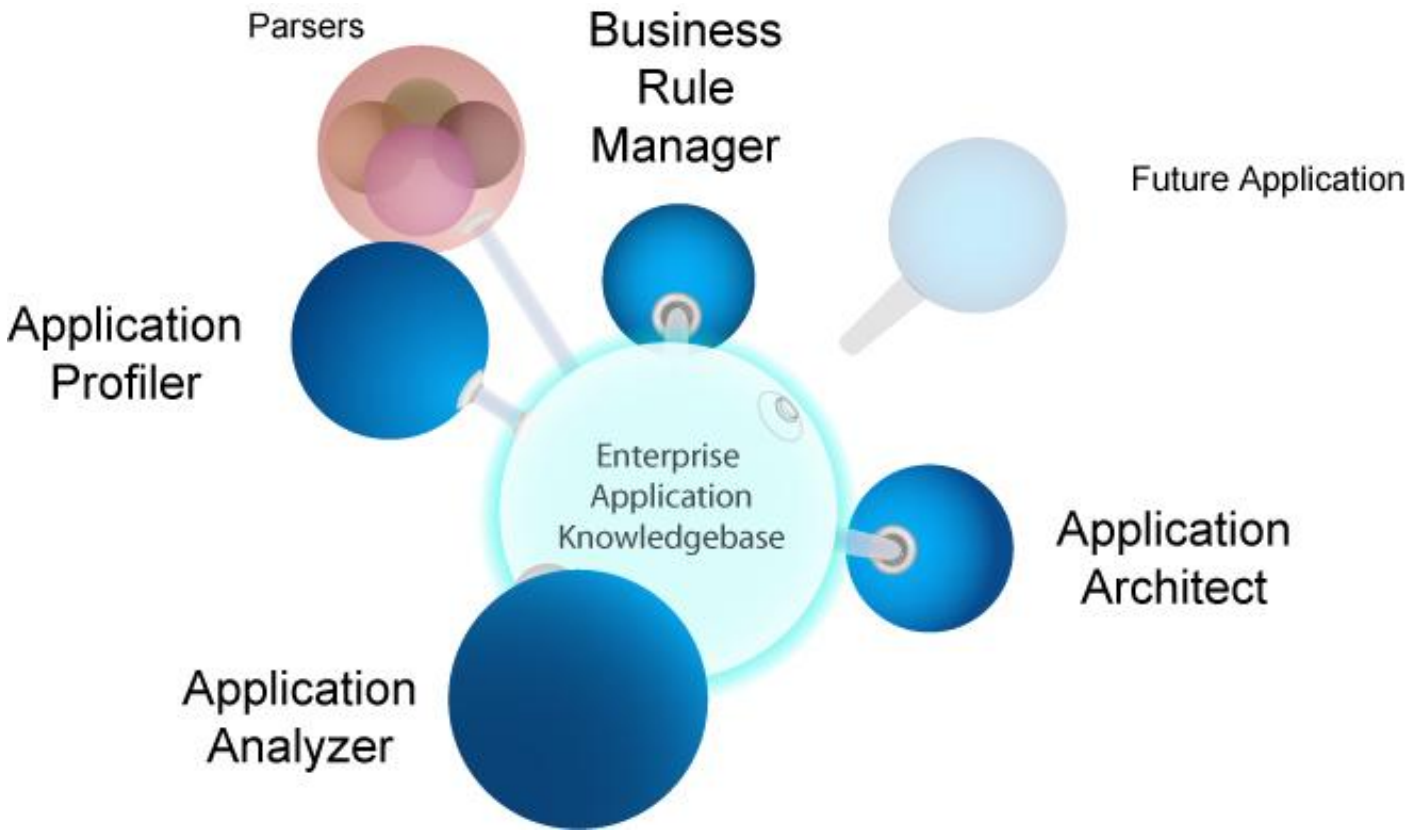
- Demystify enterprise applications and their inter- and intra-relationships
- Gain intellectual control; make fact-based decisions; develop transformation roadmap.
- Identify key assets and restructure for reuse in SOA; reduce cost and time of modernization projects
- Reduce cost and time of on-going application maintenance

New and Enhanced!

- New system level, source level and application glossary information to users
- Business rule extension improved usability, productivity, automation, auto-detection, visualization, reporting, abstraction and analytics
- Improved executive reports and additional report customization. Key reports available in batch mode

Rational Transformation Workbench

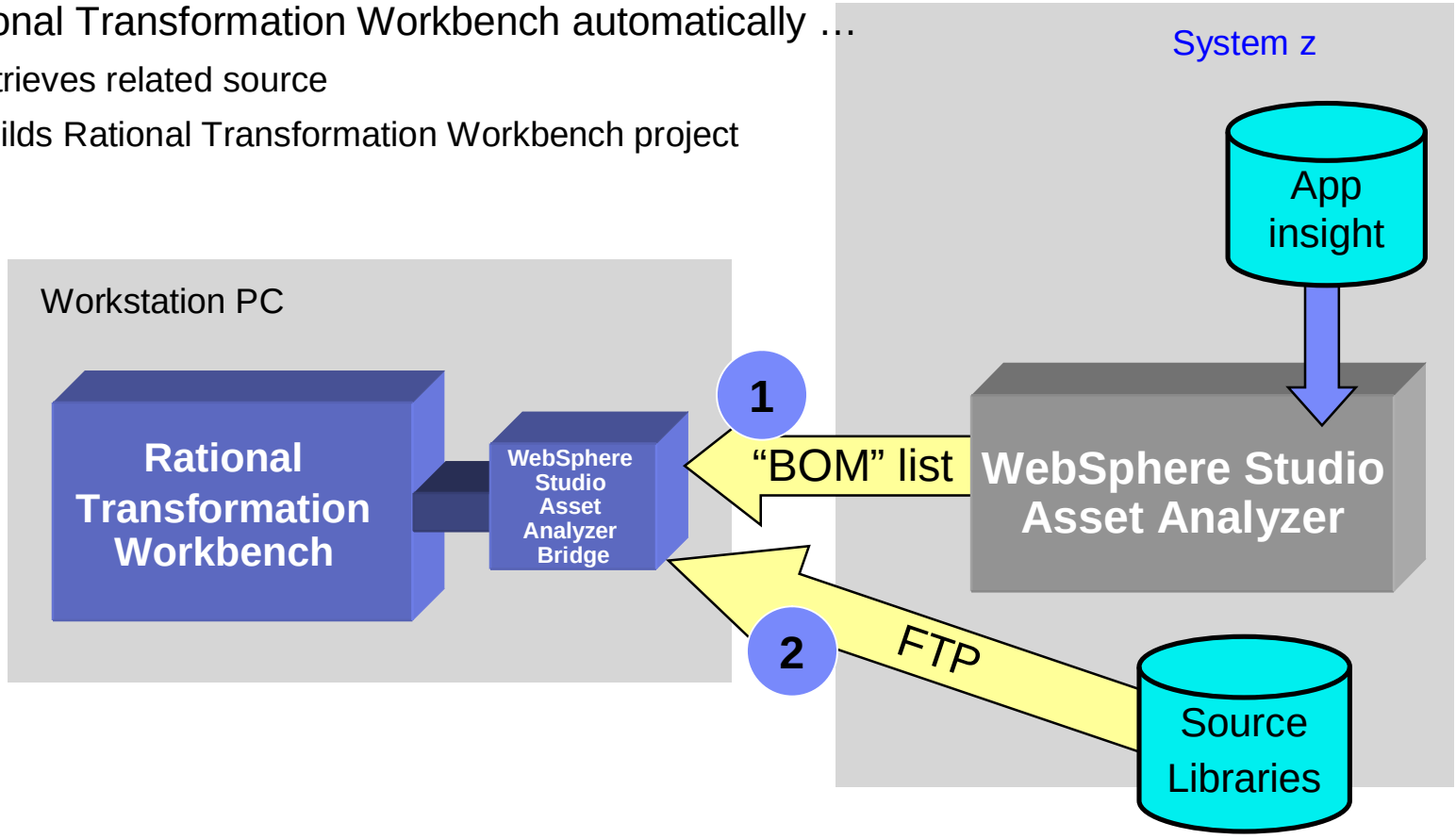




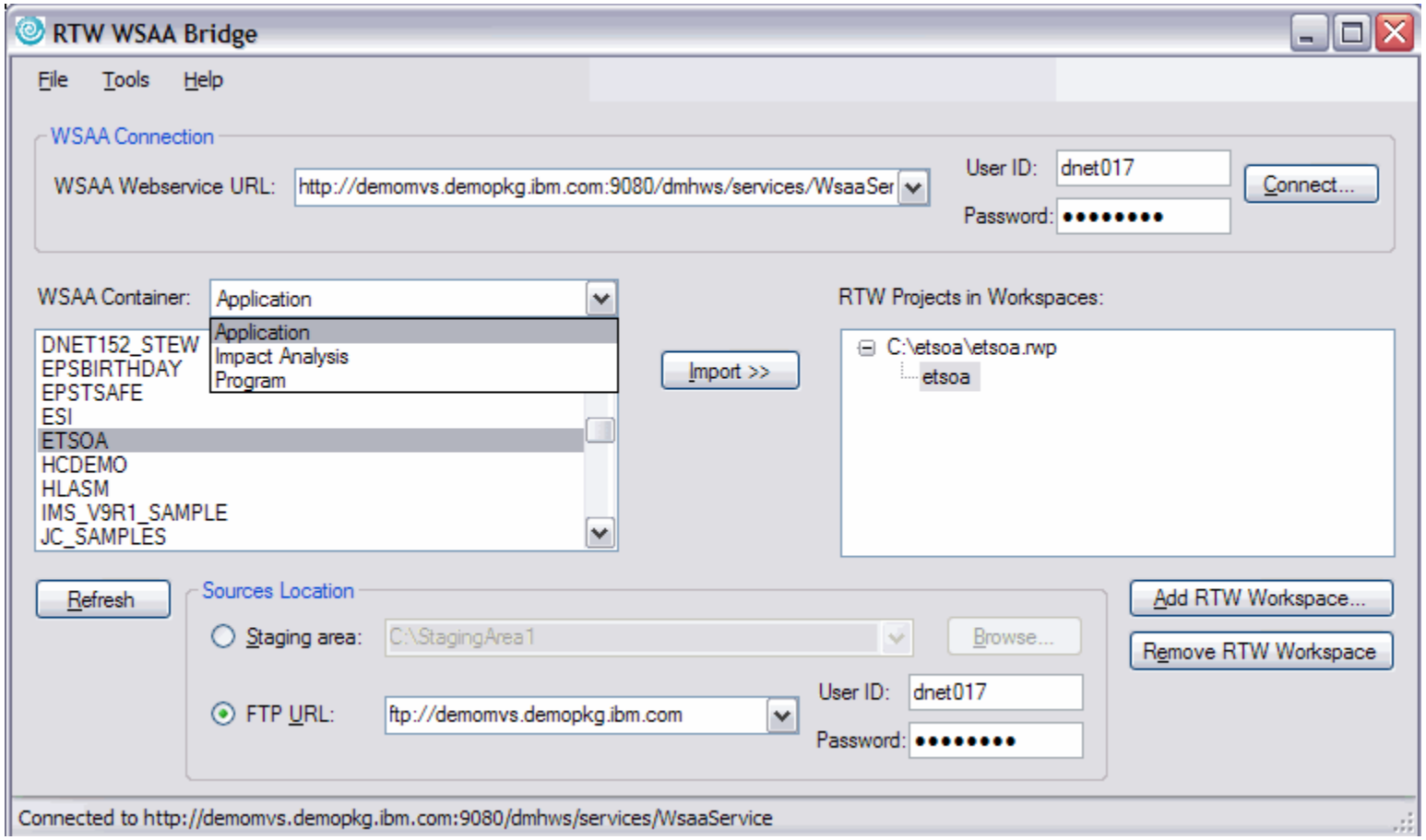
The Rational Transformation Workbench drives down the cost and accelerates the transformation and maintenance of business-critical enterprise applications

WebSphere Studio Asset Analyzer bridge

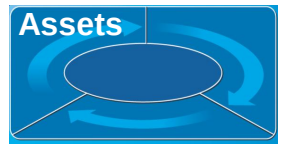
- Find an interesting set of enterprise assets in WebSphere Studio Asset Analyzer
- Download the results as a “Bill of Materials” (BOM) to Rational Transformation Workbench
- Rational Transformation Workbench automatically …
  - retrieves related source
  - builds Rational Transformation Workbench project



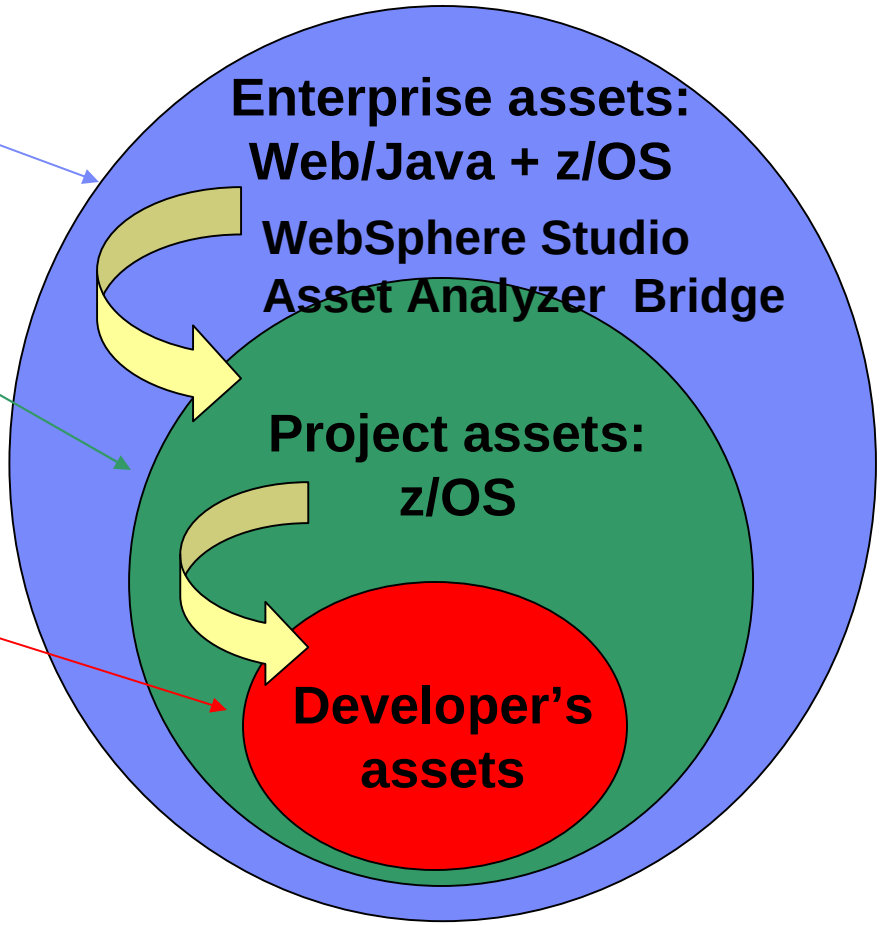
Rational Transformation Workbench
WebSphere Studio Asset Analyzer Bridge



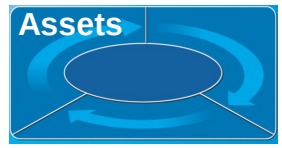
How They Work Together



- WebSphere Studio Asset Analyzer
  - Application understanding
  - Application Impact Analysis
- Rational Transformation Workbench
  - WebSphere Studio Asset Analyzer Bridge
  - Deep, interactive analysis
  - Business rules mining
  - Component creation
- **Analyzer for Eclipse + Rational Developer for System z**
  - Program understanding
  - Program analysis
  - Traditional, web, Services development



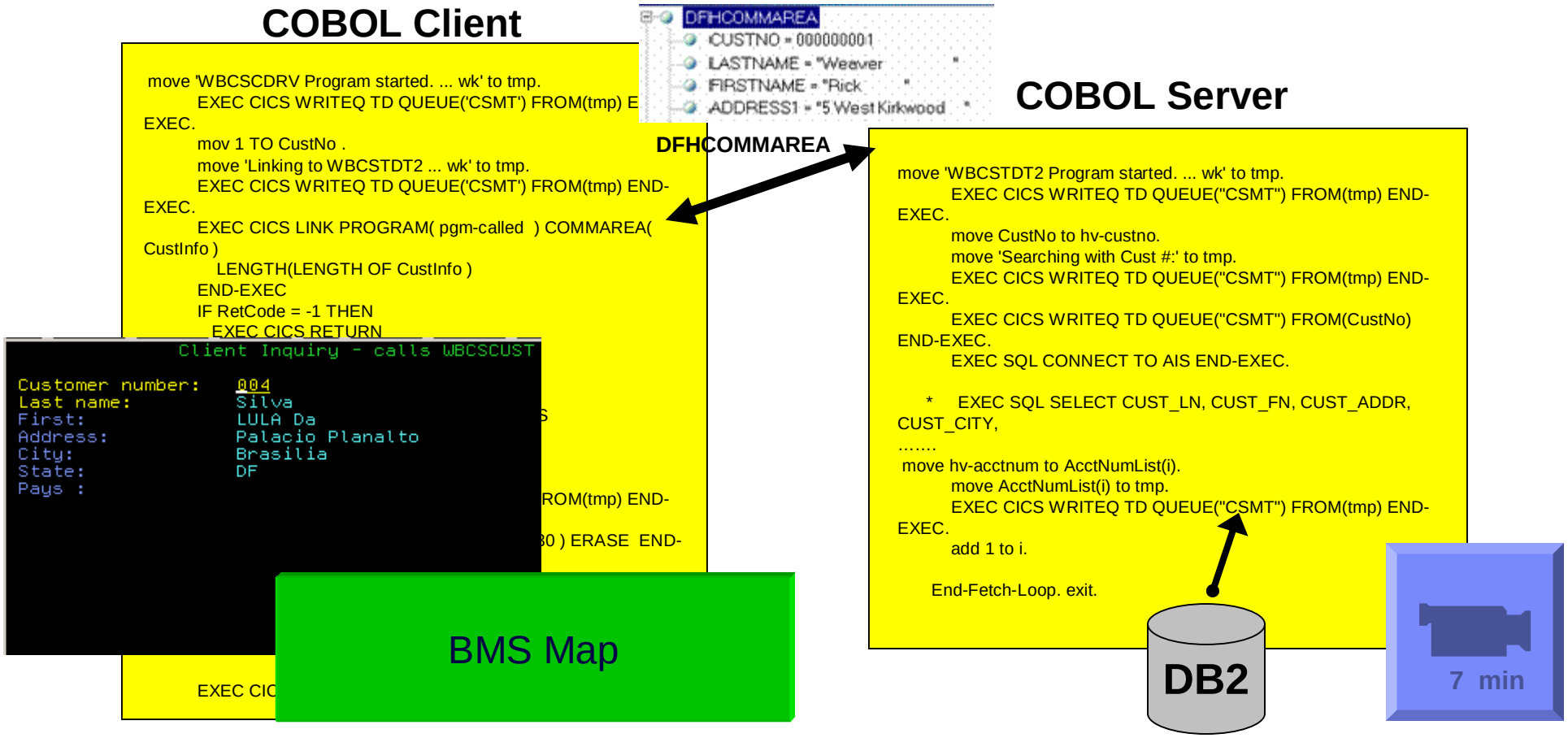
For more information



- Product home pages
  - www.ibm.com/software/awdtools/rtw/
  - www.ibm.com/software/awdtools/wsaa/
- System z Application developer Portal page
  - www.ibm.com/software/websphere/zadportal

Scenario #2 – Make the program callable

Task : Transform the program CUSTEOT1 making it a callable program.
Solution: Split the program in Client (no logic) and Server (with all Business Logic).
Using **WebSphere Studio Asset Analyzer Bridge** move it to the desktop and using **Rational Transformation Workbench** extract the business logic from the server and create client/server components..



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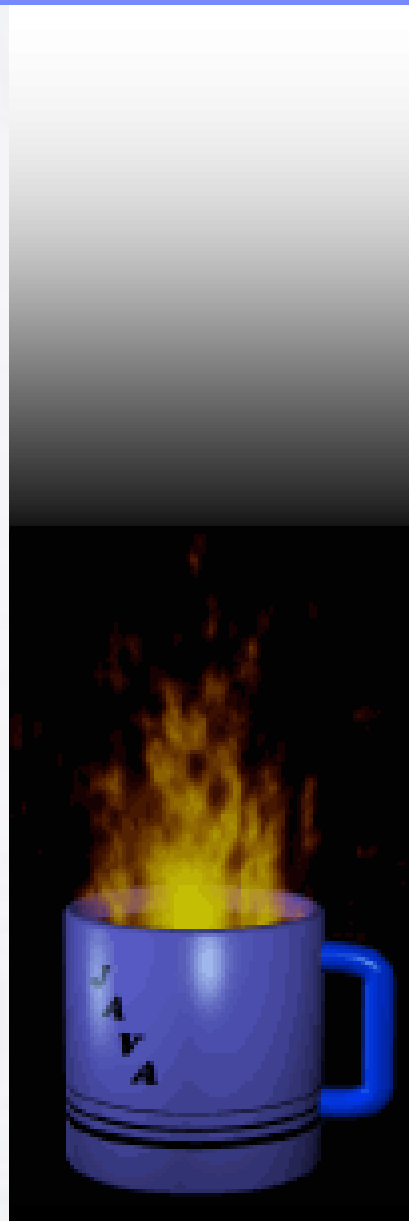

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Rational Developer for System z introduction

Demo # 4 - (6 min) - Use Rational Developer for System z to Create and deploy a CICS Services. Test it using Rational Developer for System z.

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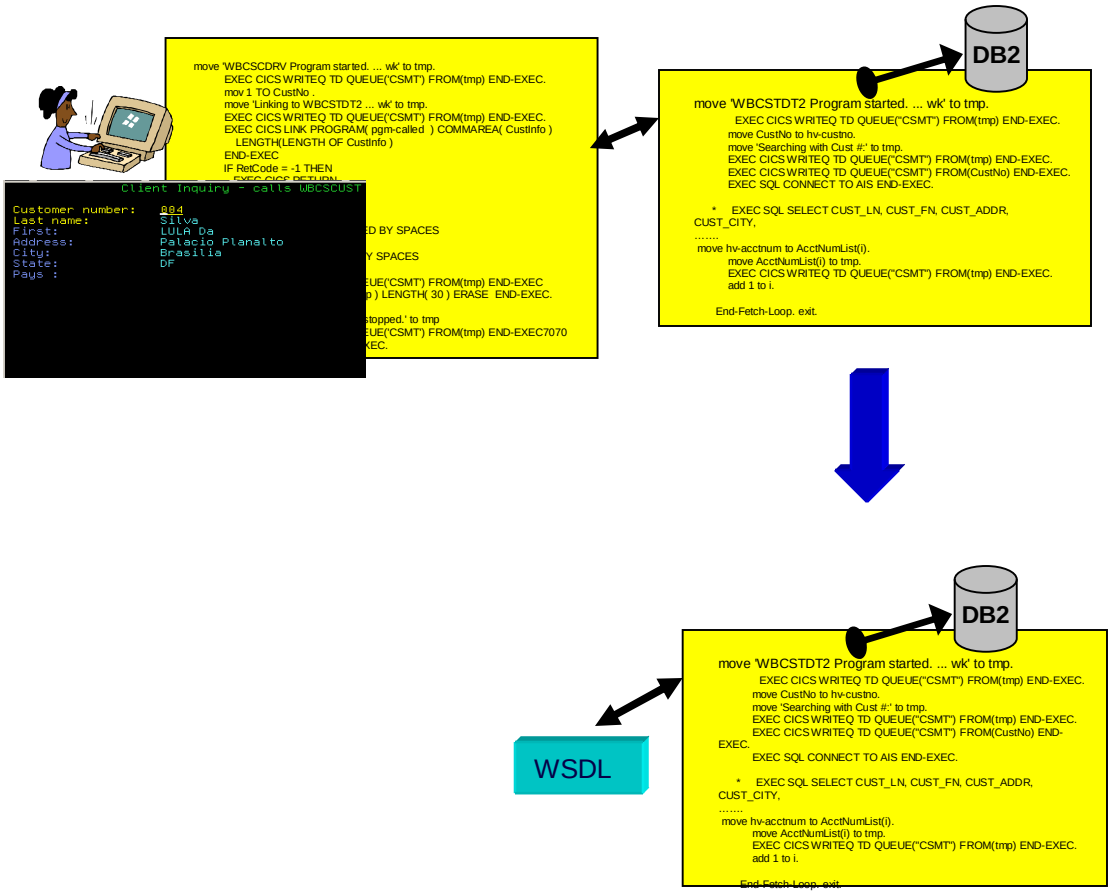
IBM Software Group

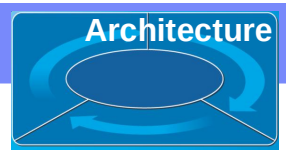
z/OS Enterprise Modernization for SOA environment

Rational Developer for System z Introduction

Case study – Scenario #3

Scenario #3. Eliminate the COBOL Client and the BMS maps, create and deploy a Web Service with COBOL/CICS





IBM Rational Developer for System z

XML Services for the Enterprise
- SOA access to CICS V3.x and IMS V9 or V10 COBOL/PLI applications
- Bottom-up/Top-down or meet-in-the-middle COBOL/PLI to XML mapping support
- meet-in-the-middle development scenario tooling wizards. for CICS, IMS, and batch applications

DB2 Stored Procedure for COBOL and PL/I
- Create DB2 stored procedures on z/OS in either COBOL or PL/I
- Build and catalog support for the DB2 stored procedure
- Debug z/OS based stored procedures from workstation

z/OS Tooling Integration
- Read/Write/Update VSAM datasets via integration with IBM File Manager
- Access IBM Fault analyzer reports for analyzing ABENDS and associating back to source code

z/OS Application Development
- Connect to z/OS remote systems
- Work with z/OS resources like COBOL, PL/I , C, C++, JCL, etc.
- Interact with the Job Entry Subsystem (JES) to submit jobs, monitor jobs, and review job output
- Perform dataset management actions like allocating datasets and migrating datasets
- Perform typical edit, compile, and debug tasks on remote z/OS resources from the workstation

CICS BMS/ IMS MFS Map Support
- Visually create and modify BMS Map sets or IMS/MFS
- Generates JCL
- Work with local or remote maps

Database App Generator wizard
- Ability to generate WSDL and CICS COBOL program to access DB2
- Generate CRUD DB2 program code from UML, which can also be integrated into web service applications

CICS Service Flow Feature
- Implements SOA and Web Services
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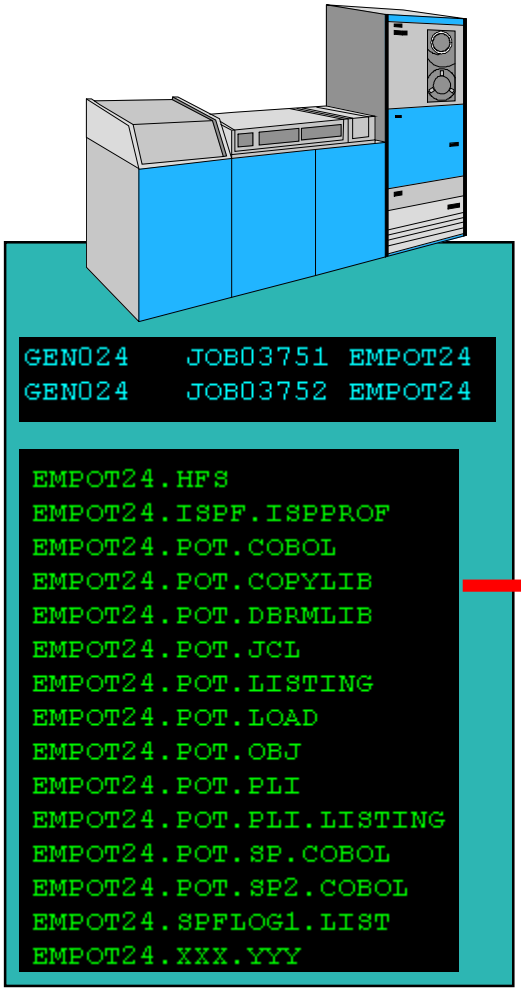
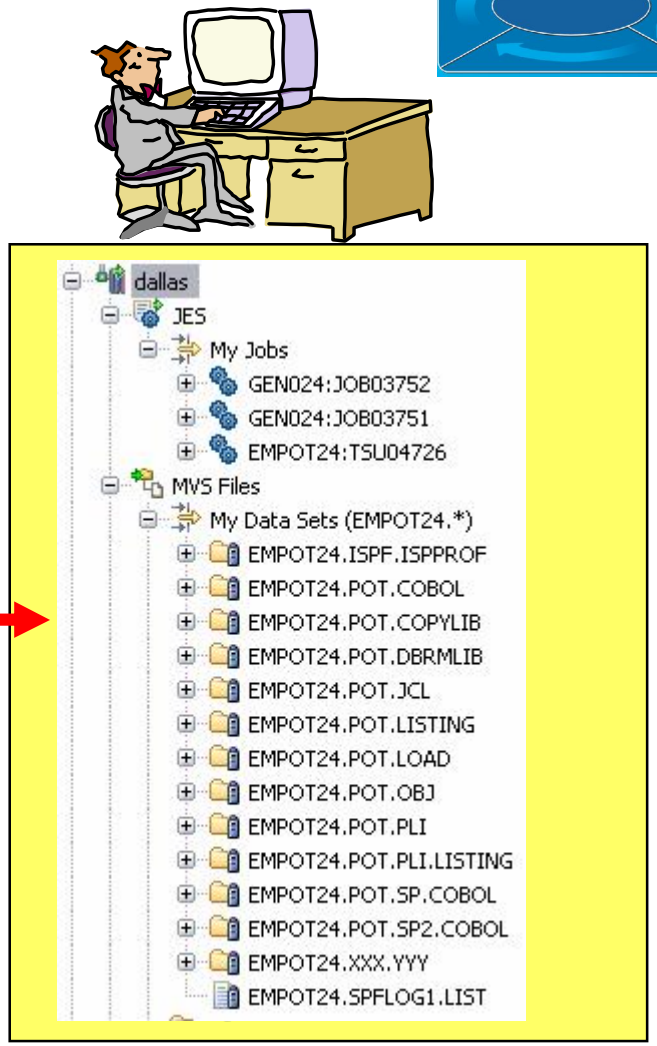
Host → Workstation Overview



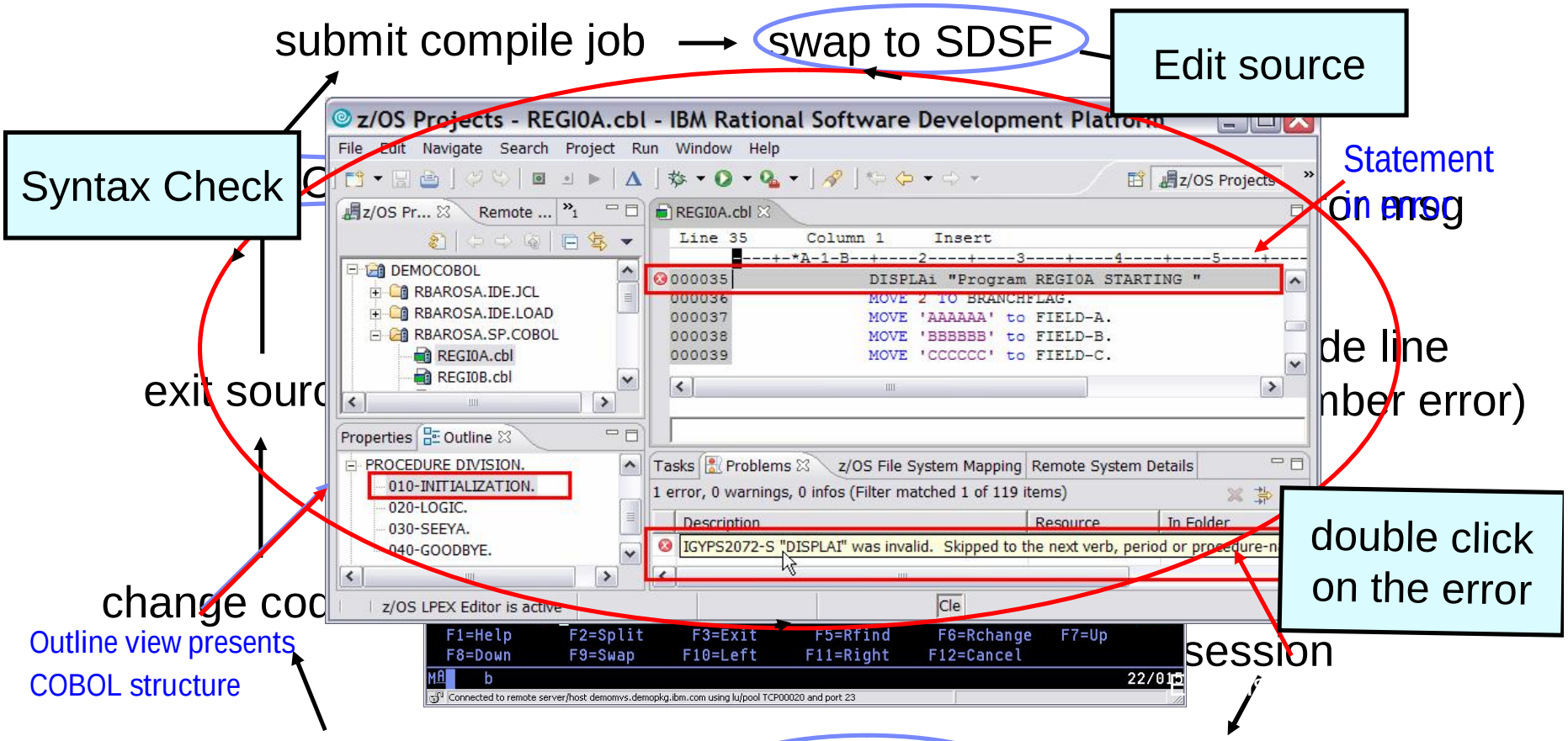
'Magic'



Files on the host look as though they are workstation files

ISPF based Development
Eclipse based development

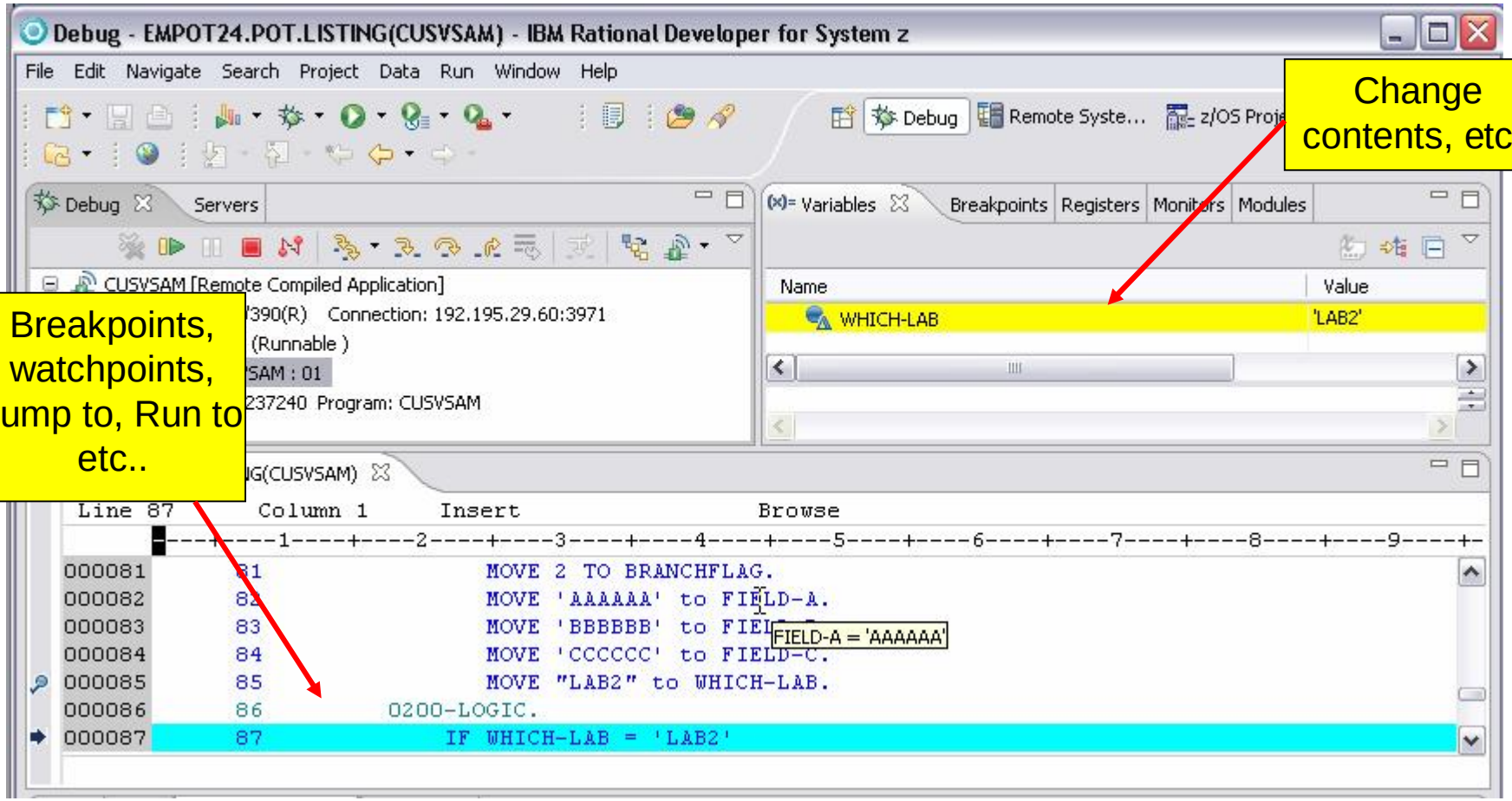
Architecture



Benefit: Simplified development for COBOL, PL/I, C and C++ on a common development environment

Remote and Local debug

→ Debug z/OS applications from workstation as they execute live in the remote runtime



Benefit: Same Debug Perspective used for COBOL, PL/I, C, C++, Java, JSP, etc..

→ END to END Debug

Needs z/OS Debug product installed.

IBM Rational Developer for System z

XML Services for the Enterprise (XSE)
- SOA access to CICS V3.x and IMS V9 or V10 COBOL/PLI applications
- Bottom-up/Top-down or meet-in-the-middle COBOL/PLI to XML mapping support
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z/OS Tooling Integration
- Read/Write/Update VSAM datasets via integration with IBM File Manager
- Access IBM Fault analyzer reports for analyzing ABENDS and associating back to source code

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- Connect to z/OS remote systems
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Database App Generator wizard
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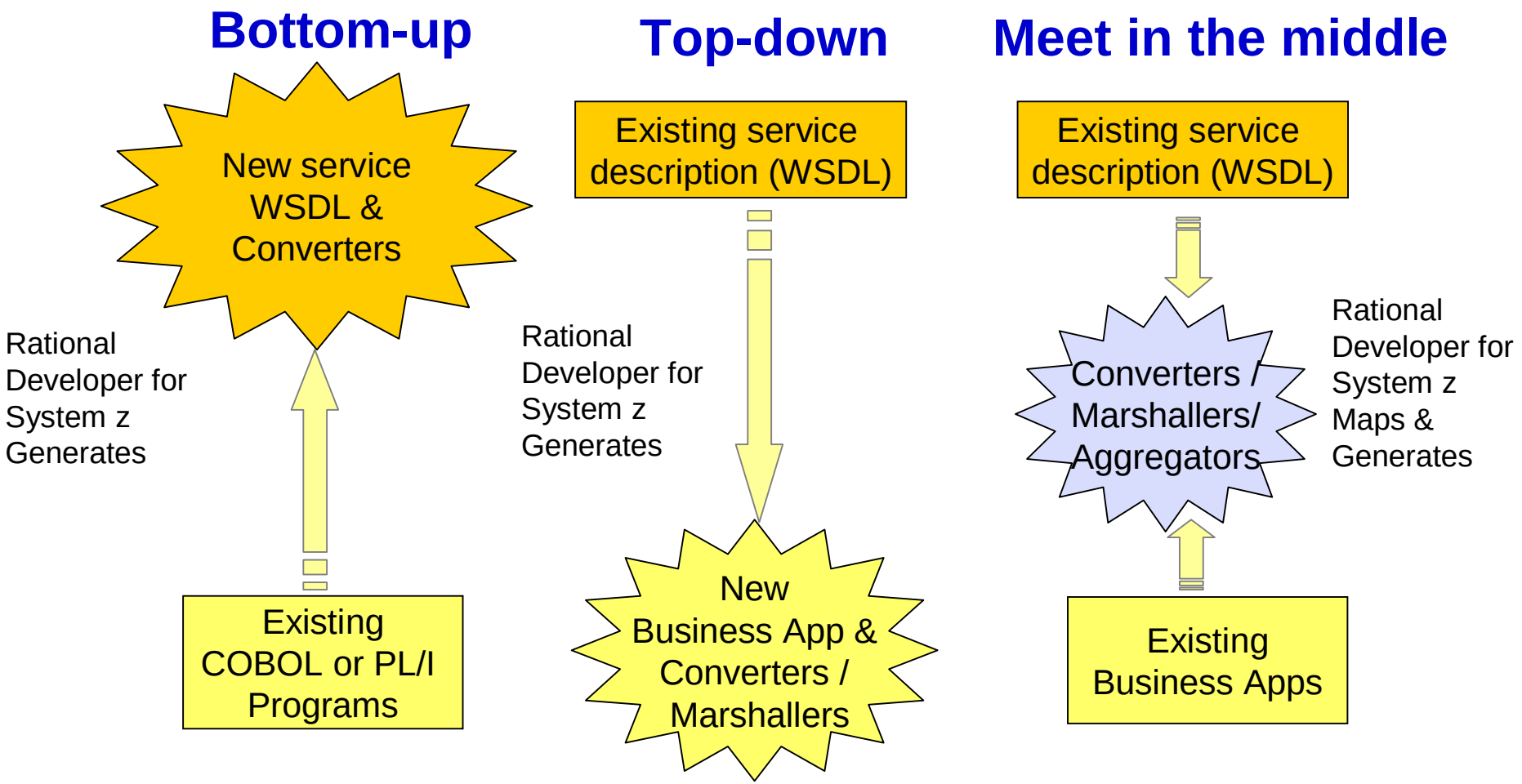
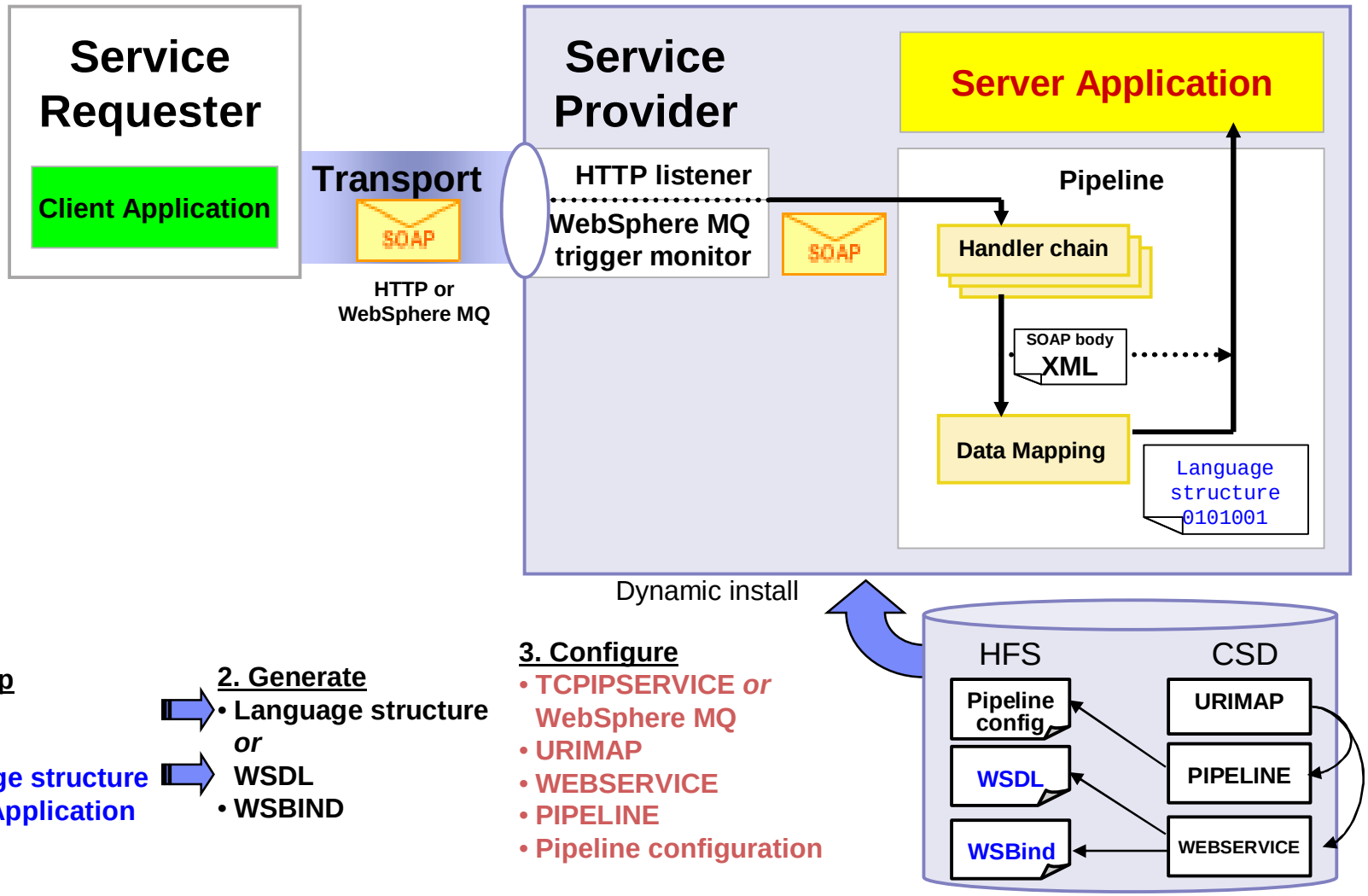
XML Services for the Enterprise (XSE) Web Service Enablement Styles



CICS as a Web service provider

Architecture

CICS TS V3.x



1. Develop
- WSDL
  or
  Language structure
- Server Application

2. Generate
- Language structure
  or
  WSDL
- WSBIND

3. Configure
- TCPIPSERVICE *or* WebSphere MQ
- URIMAP
- WEBSERVICE
- PIPELINE
- Pipeline configuration

IBM Rational Developer for System z

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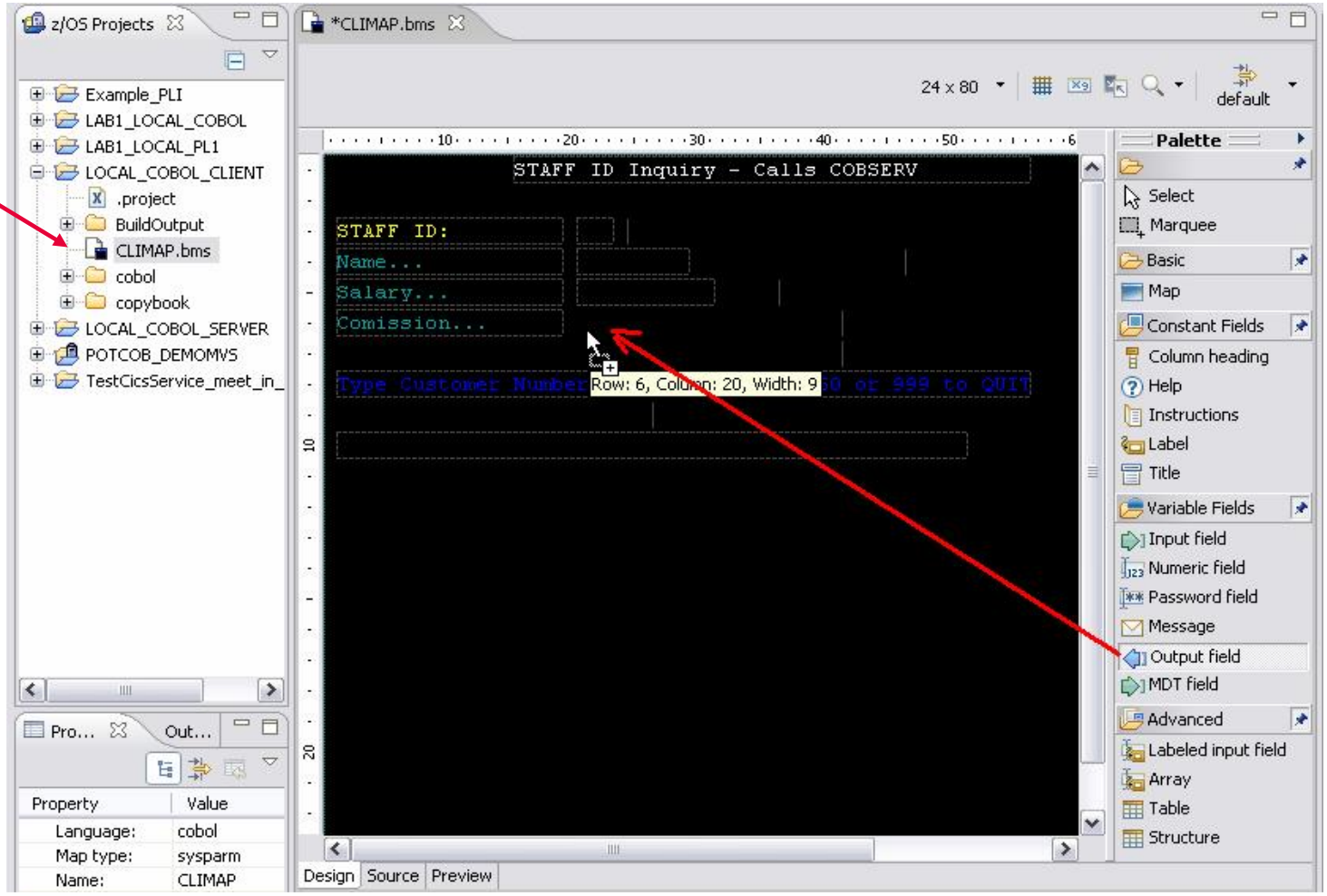
CICS or IMS Map Support

Architecture

BMS file

- Wizard for creating new BMS map set files
- Drag & Drop BMS editor
- Design, Source and Preview views
- Create new or import/edit existing BMS maps
- Works with local and remote scenarios



IBM Rational Developer for System z

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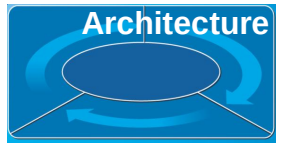

z/OS-based DB2 Stored Procedure Support

- Provides Wizard
  - Creates Stored Procedures that reside on a DB2 zOS server.
    - Generate SQL for the definition of the stored procedure
    - Generate the **PL/I** and **COBOL** stored procedure program
- Provides build environment
  - COBOL and PL/I editor
  - Builds and registers it on a DB2 Universal Database server
- Provides debug environment
  - Debug from the workstation

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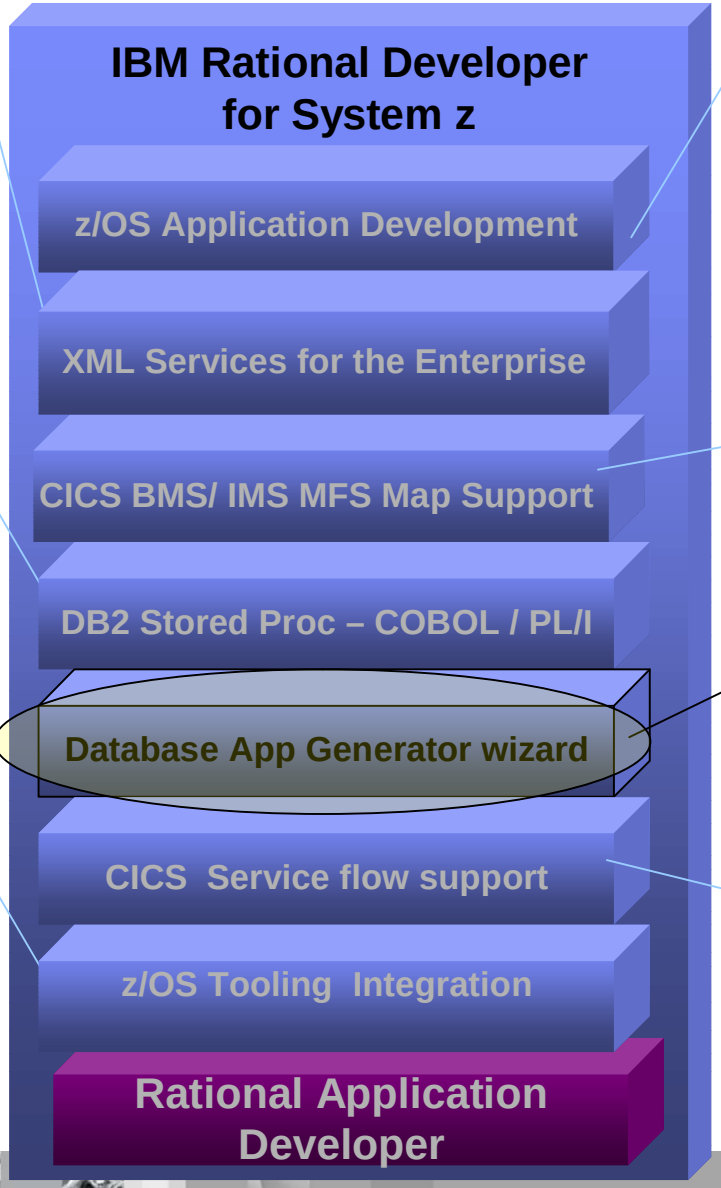

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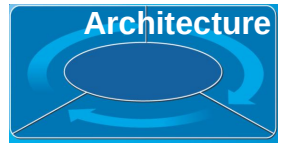
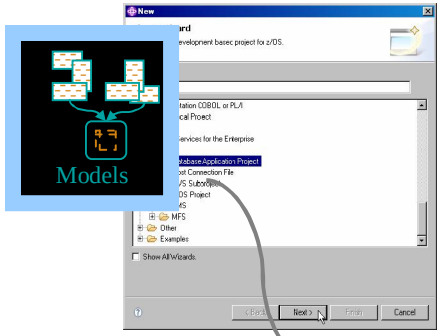
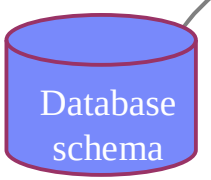
Database Application Generator wizard Architecture



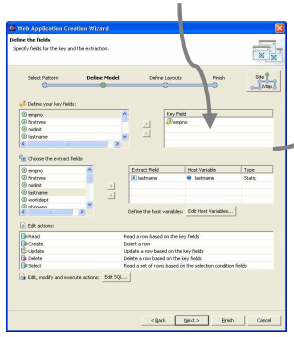
UML
(Unified Model Language)

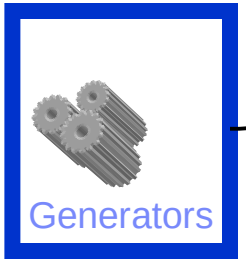
Rational Developer for System z Wizard



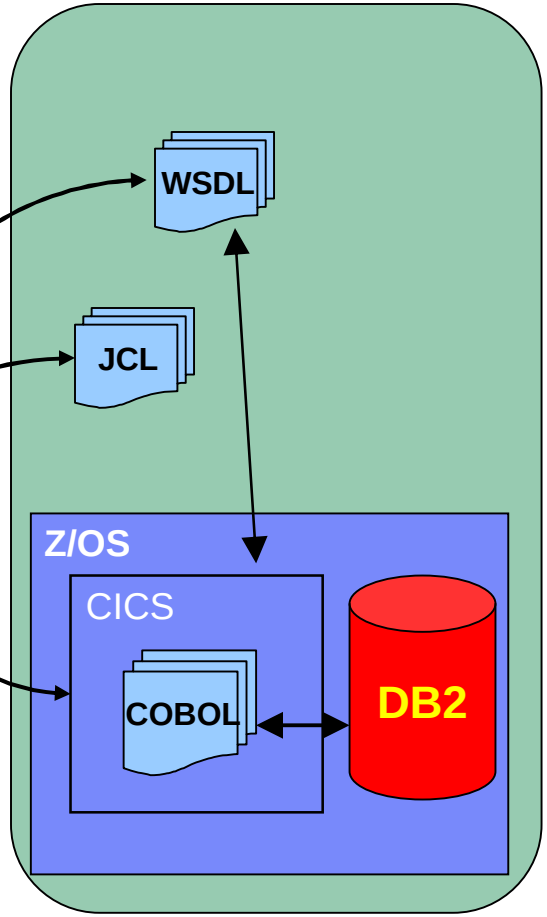


z/OS DB2





generate



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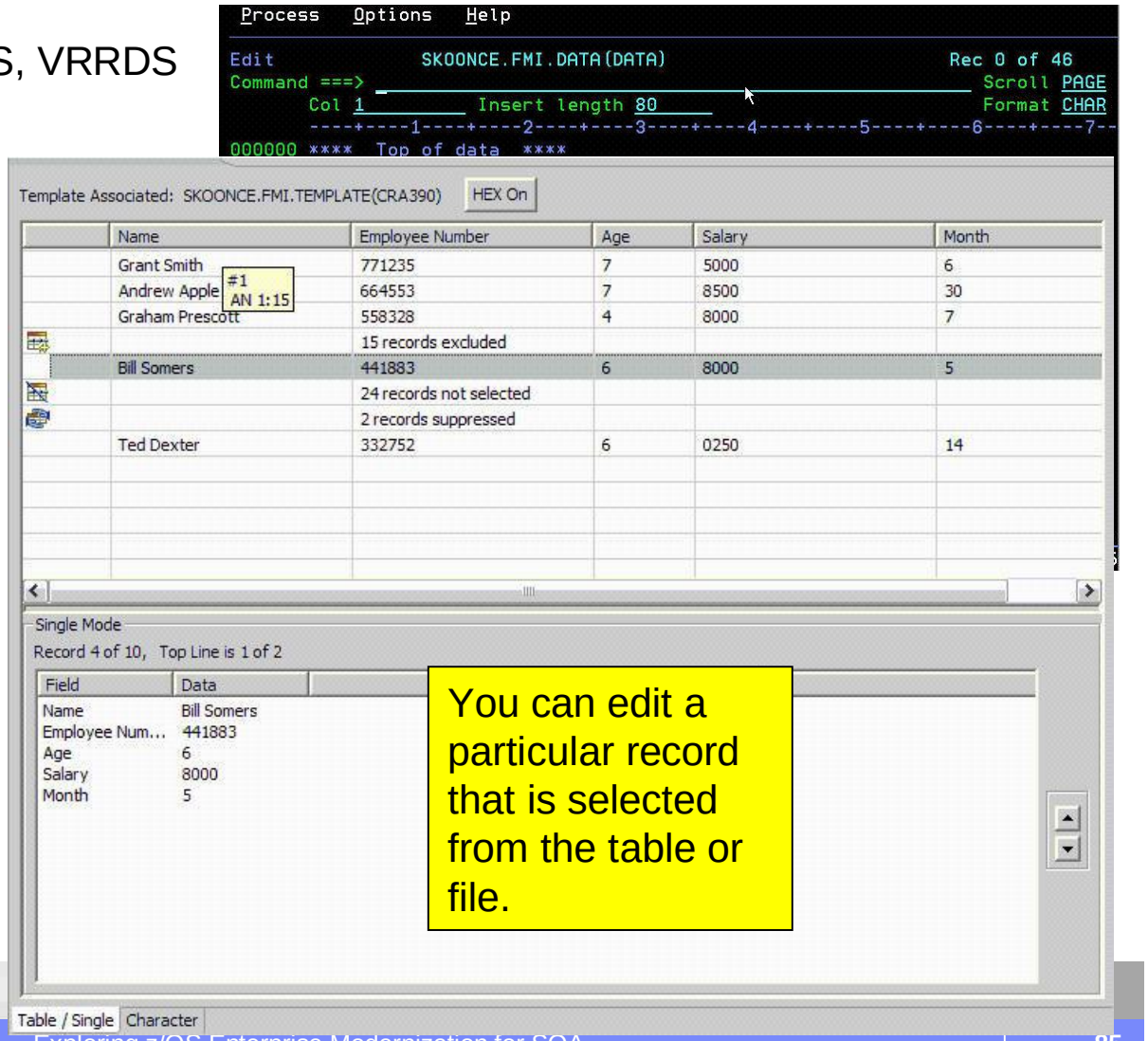
File Manager Integration

Architecture

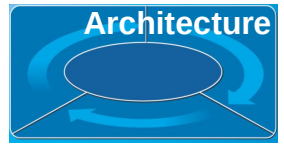
- Allows for a formatted edit session of many dataset types. Among the options are:
  - VSAM - KSDS, ESDS, RRDS, VRRDS
  - QSAM – PDS, SDS

- Multiple views of the data within the formatted edit session:
  - Table
  - Single Character
- Browse and alter VSAM data easily without having to leave your development environment

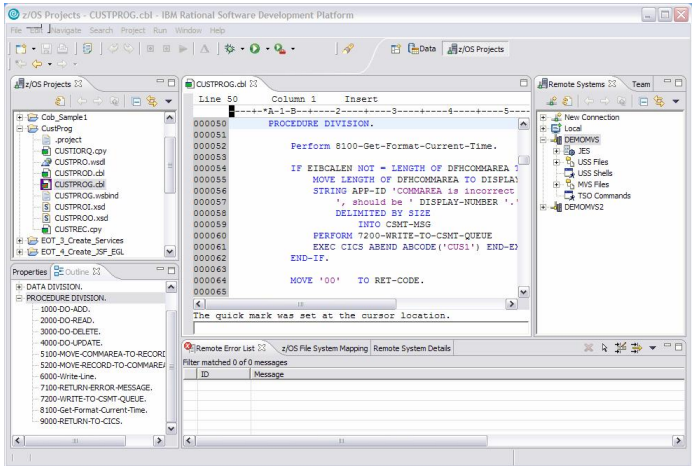


→ Depends on IBM File Manager V7.1 installed on z/OS

Why Rational Developer for System z



- Increase developers **productivity:**
  - Better code quality, less syntax errors, etc
  - Better program understanding, editing, building, debugging



- **TSO/ISPF/SDSF are not easy** for new developers.. Rational Developer for System z is an eclipse based product.

- Support for **COBOL, PL/I, C/C++, Assembler, Java, JSP, HTML, XML, etc**.. on a common development environment

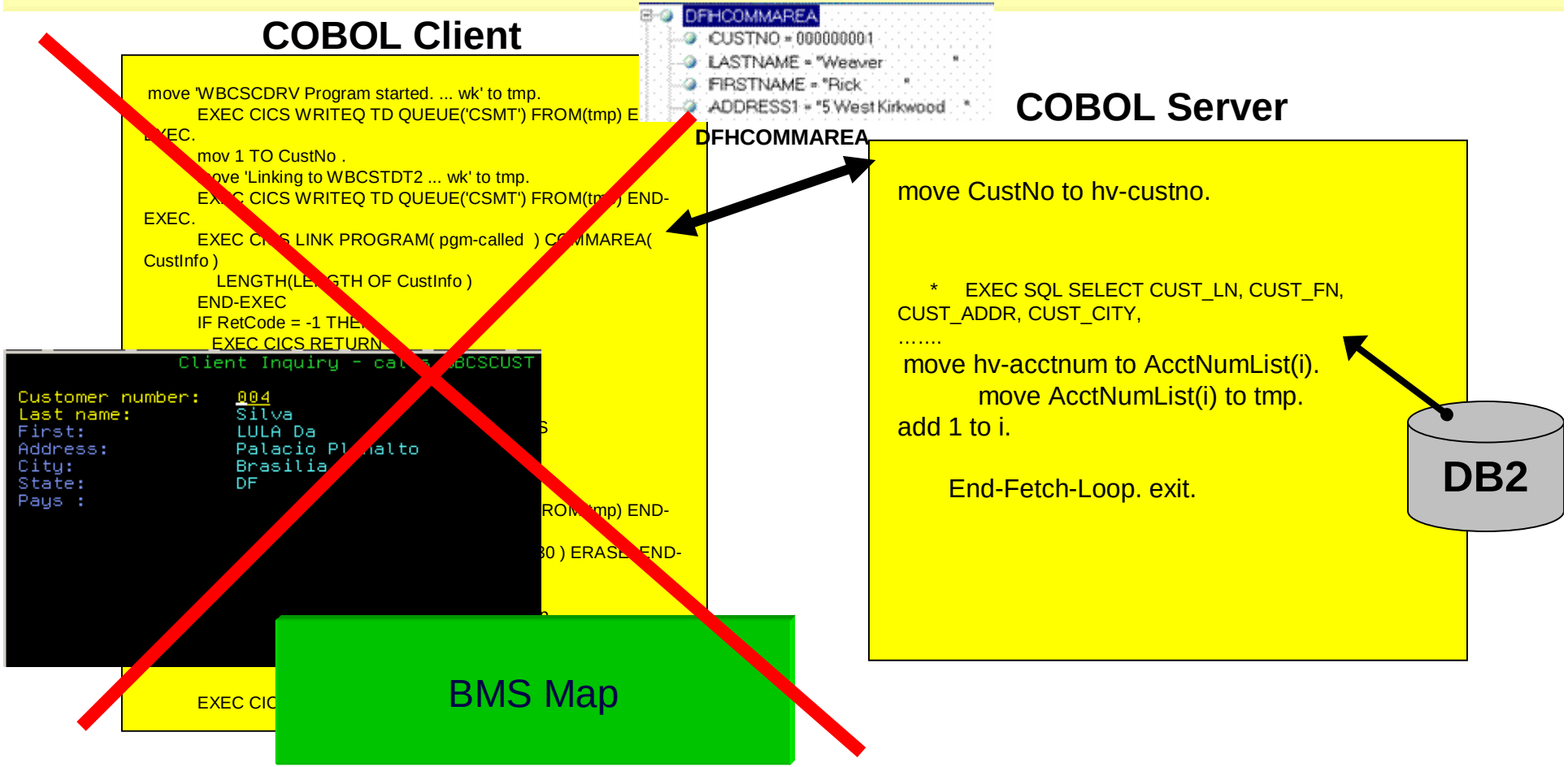
- **End-to-End debugging** environment for COBOL, PL/I, C/C++(*), Java, JSP, HTML etc… since they use the same Debug perspective

- Provide **tools for SOA on z/OS**, like CICS Services, IMS for SOAP, Service Flow Modeler, etc..

- **More z/OS tools will be integrate** in future versions

Scenario #3 – Create CICS Web services

Task : Create a Web Service with the COBOL/CICS Server. Generate a WSDL to invoke it.
Solution: Use **Rational Developer for System z** and XSE services to Create and deploy a CICS Services. Test it using Rational Developer for System z.



Scenario #3 – Create CICS Web services

Task: Eliminate the COBOL Client and the BMS, create a Web Service using the COBOL/CICS Server. Generate a WSDL to invoke it.
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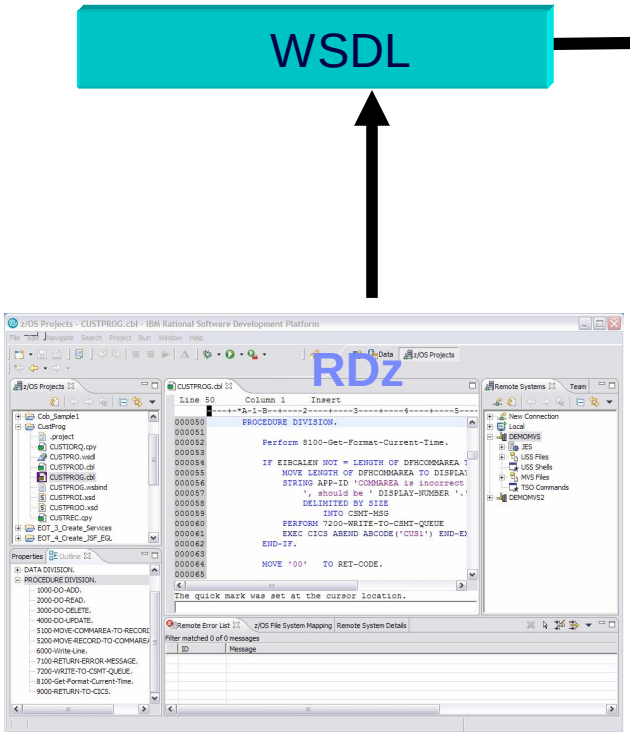
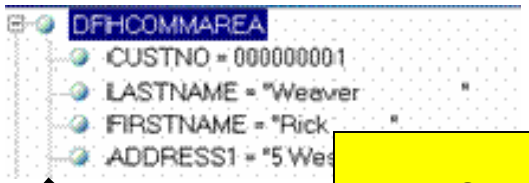




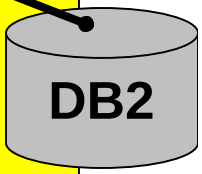
DFHCOMMAREA

COBOL Server

move CustNo to hv-custno.

* EXEC SQL SELECT CUST_LN, CUST_FN, CUST_ADDR, CUST_CITY,
…….
move hv-acctnum to AcctNumList(i).
move AcctNumList(i) to tmp.
add 1 to i.

End-Fetch-Loop. exit.



Agenda for Enterprise Modernization Seminar - NYC

9:00 - 9:40 - Introduction to Enterprise Modernization & Scenarios – Regi Barosa (40 min)

9:40 - 10:00 - Scenario #1 - Creating of a Web Screen from existing terminal based CICS application WSAA/HATS – Zvi Weiss (20 min)

10:00 - 10:20 - Scenario #2 - Transform an existing COBOL program and create a called subroutine to isolate the business logic (WSAA Bridge/RTW) – Zvi Weiss (20 min)

10:20 – 10:35 – Break (15 min)

10:35 – 11:00 - Scenario #3 - Create CICS Web Service using the COBOL business logic from scenario 2 (RDz and z/OS Debug Tool) – Regi Barosa (25 min)

11:00 – 11:25 - Scenario #4 - Create a Web page to consume the Web Service created above (RBD/EGL) – Regi Barosa (25 min)

Rational Business Developer introduction

Demo #5 – (7 min) - Use Rational Business Developer to consume the CICS Web Service and create a JSF/JSP Page

11:25 – 11:40 - Scenario #5 - Create new Web Service that aggregates other COBOL/CICS screen based application – Zvi Weiss (15 min)
11:40 - 12:00 - Wrap-up Next Steps

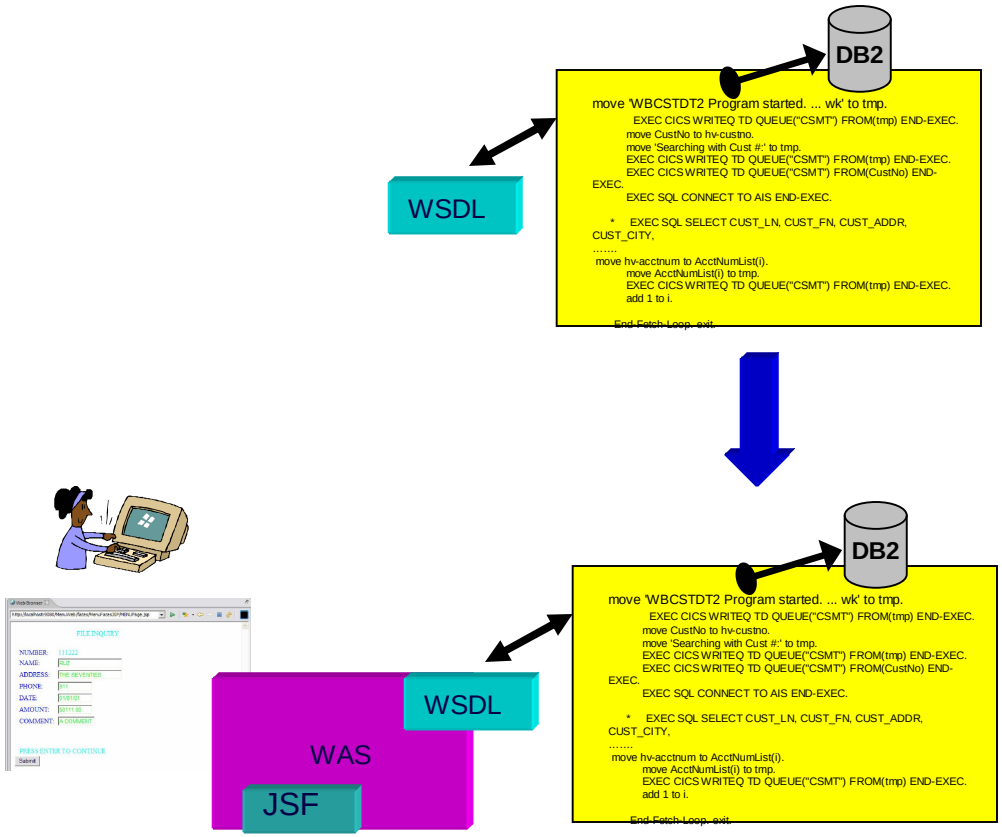
IBM Software Group

z/OS Enterprise Modernization for SOA environment

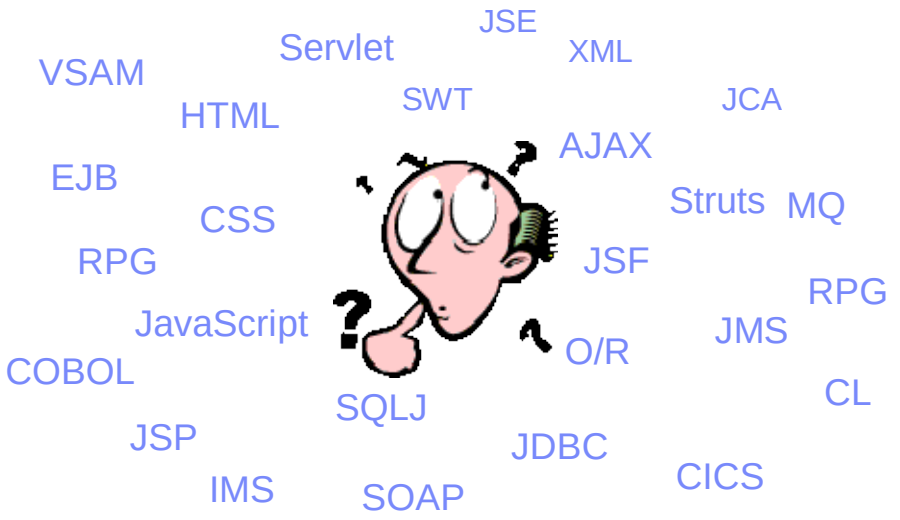
Rational Business Developer Introduction

Case study – Scenario #4

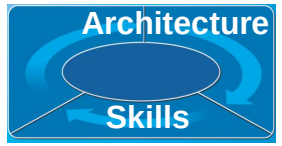
Scenario #4. Create a Web Interface with Java Server Faces (JSF) and Java Server Pages (JSP) to invoke the Web Service created above



Is retraining an option?

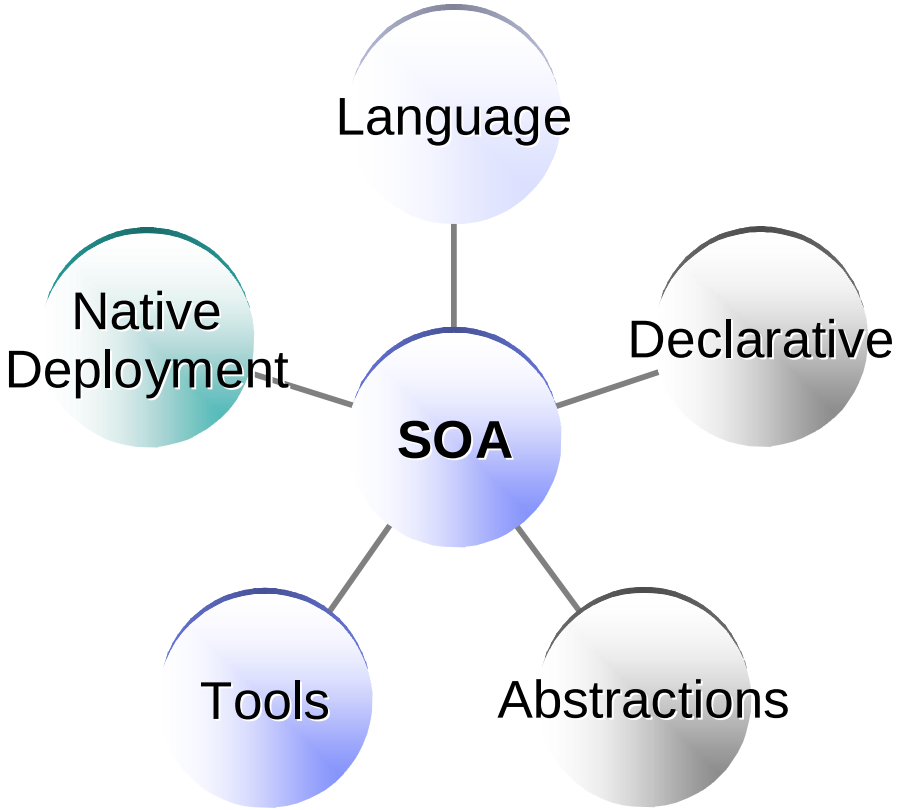


- High costs
- Business pressure may not afford time
- Results may be sub-optimal
- Some may not make it
- End up with poorly written applications



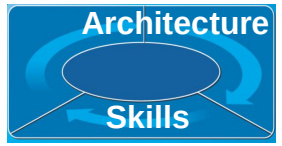
Rational Business Developer

Empowering developers to quickly become productive with EGL



The power of the Language

Simple and familiar



Hello World

Basic EGL Program

```
hello.egl
1  // Hello World basic program
2
3  program hello type BasicProgram
4
5      // Data Declarations
6      name string = "World";
7
8      function main()
9          writeStdOut("Hello " +name);
10     end
11
12 end
13
```

Comments

Declare program type and name

Declare a variable and assign a value

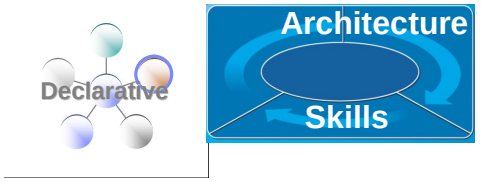
EGL Function

EGL Built-in Function

End of Program

Literal

Variable



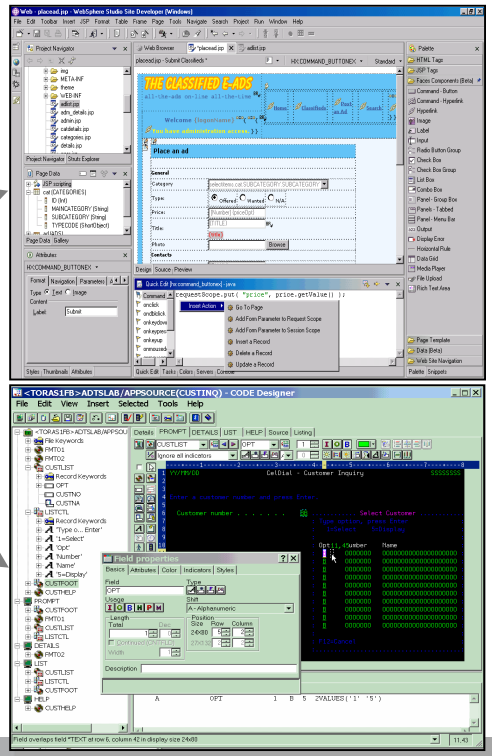
The Power of Declarative Programming

Annotations apply semantics in multiple contexts

- Validation and Editing Rules
  - Set properties in “Data Items”
  - Define formatting & validation rules in a common place
  - Reuse data items for Records, screens, web pages, reports

*sampleProgram.egl

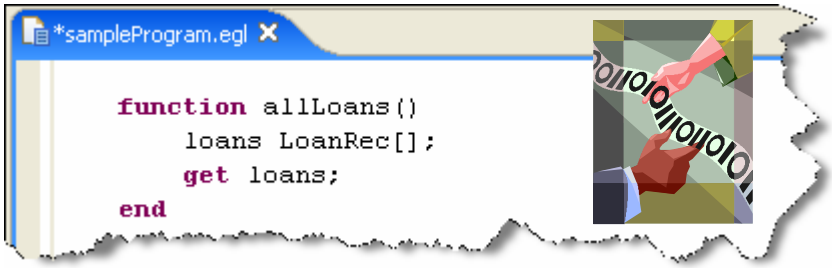
```
DataItem SSN Password char(9) {
    validatorFunction = "ValidateSSN()",
    displayUse = secret,
    pattern = "XXX-XX-XXXX",
    displayName = "Social Security No",
    inputRequired = yes}
end
```



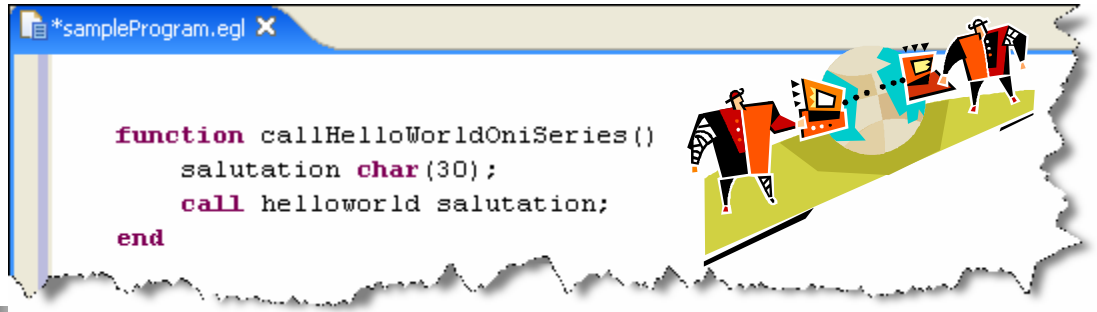
Validation is consistently applied whether the data is bound to a field in a JSF-based web page or a field on a 3270 screen.

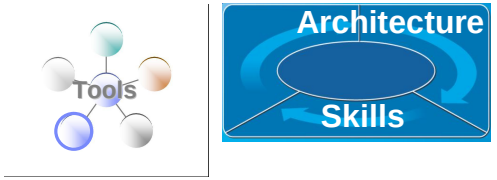
The Power of Abstractions

- Data access
  - Access SQL, Indexed, Relative, Serial, DL/I, and Service data through “Records”
  - Use common Verbs for data access (**Get, Add, Replace, Delete**)
  - Use common Error Handling



- Remote Invocation
  - Call COBOL, RPG, C, Java
  - Keep linkage info separated from code
  - Resolve data mapping and protocol invocation at runtime… NO code necessary!

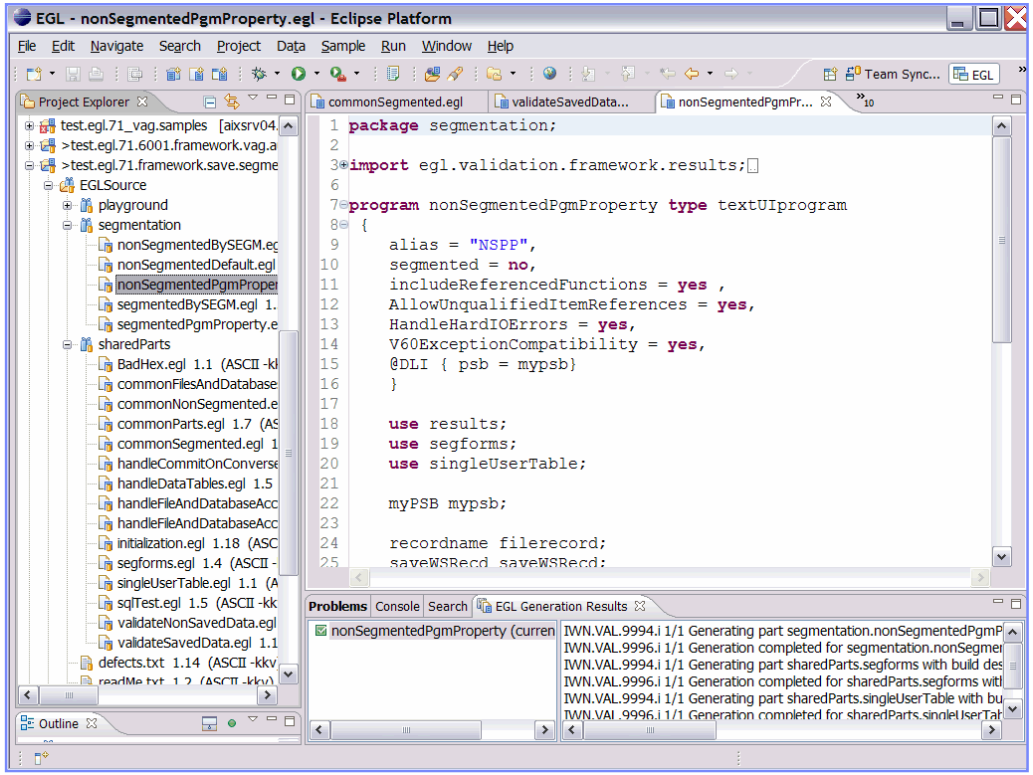


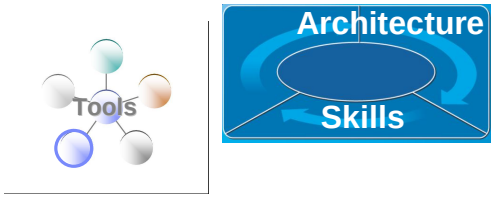


The Power of Tools

First class Eclipse workbench

- Folders and views
- Smart EGL editor
- Code templates and snippets
- Code completion
- Import data items from tables
- SQL visualization and editing
- SQL validation
- References and declarations
- Open on selection
- Refactoring
- Cheat sheets and Dynamic help

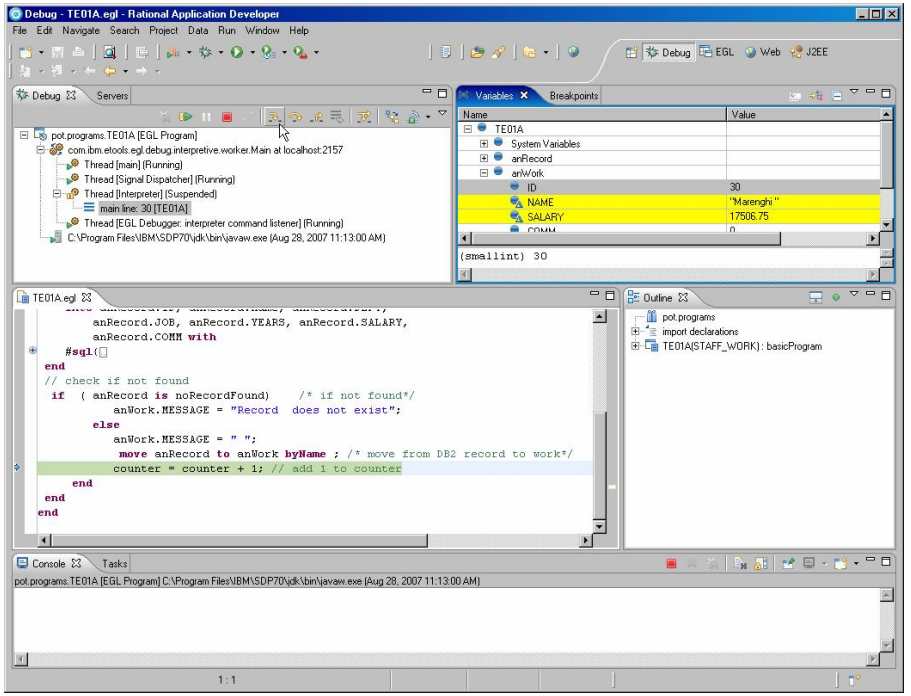


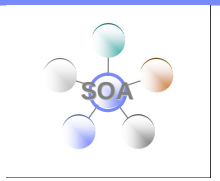


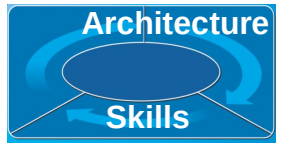
The Power of Tools

Integrated debug environment

- Debug entire application regardless of ultimate deployment targets
  - Debug EGL, JSP, Java, etc.
- Use features of the EGL source debugger
  - Set breakpoints
  - Watch variables
  - Change variable values
  - Dynamic re-positioning
- Additional EGL features
  - Remote VSAM access





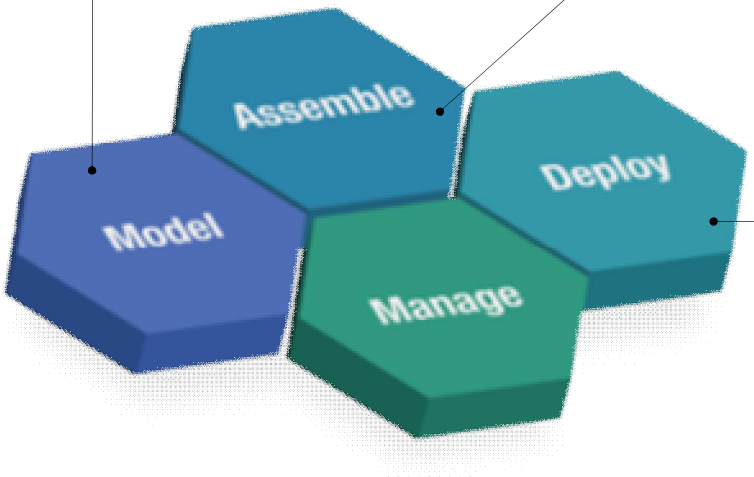


The Power of Services

Cross platform language for business oriented services development

At development time…

- Focus on the business logic
- Implement SOA design elements (services and interfaces)
- Leverage existing business developers for new SOA development
- Ignore deployment targets/technologies while coding/testing



Leverage external web services…

- EGL Interfaces represent external web services
  - Import WSDL to generate web service client
  - Allow the EGL developer to stay within the context of the EGL programming model

Deploy EGL services…

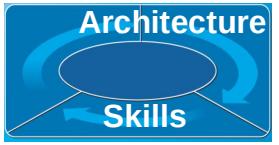
To any platform…

- Java to WAS, Tomcat, etc.
- COBOL to CICS, iSeries (2007)
- COBOL to IMS (1H 2008)

As…

- A Web service (uses SOAP)
- A private service (uses CICS ECI or TCP)
- Other SOA runtimes when they reach critical mass

Respond to Broadest Application Needs



Batch Processes

Text UI

Portals
Web

Rich UI

Reports

Web/Native Services

Program

Control Logic

User Interface

Business Logic

Service/Interface

Enterprise Connection

Write business and control logic with EGL

External Interfaces

- COBOL
- C, C++
- RPG
- Java
- PL1

Databases

- DB2 UDB
- Informix
- SQL Server
- IMS
- Oracle
- VSAM
- Derby
- other…

Encapsulate existing or create new resources

Windows, Linux, Unix

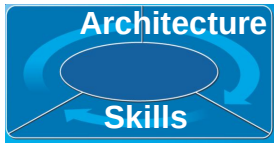
- WebSphere
- Tomcat
- Native

System z

- WebSphere
- USS
- Linux
- Batch
- CICS
- IMS

System i

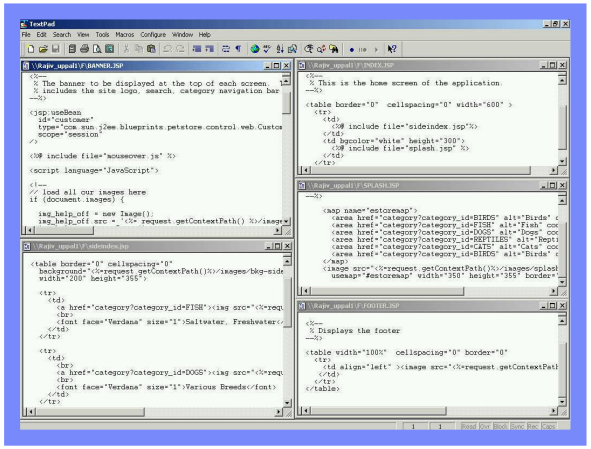
- WebSphere
- Native i5OS
- Native i5OS



Accelerate Application Delivery

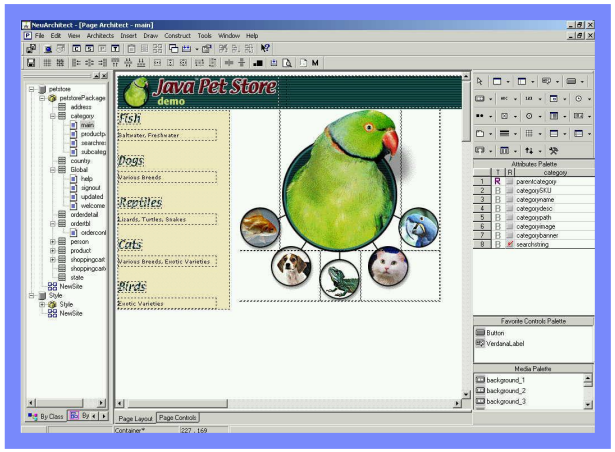
Internal productivity benchmark for Sun PetStore reference application

Hand-Coded



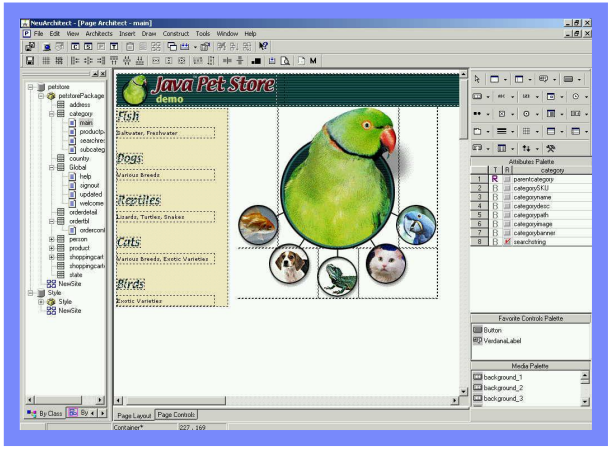
507 Hours

Java/J2EE IDE



330 Hours

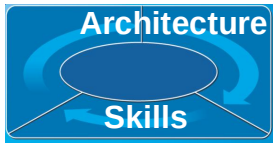
Rational Business Developer

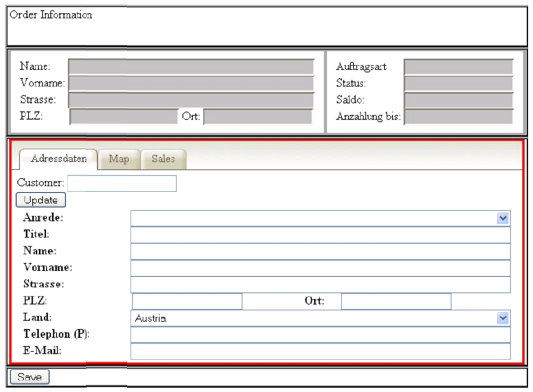


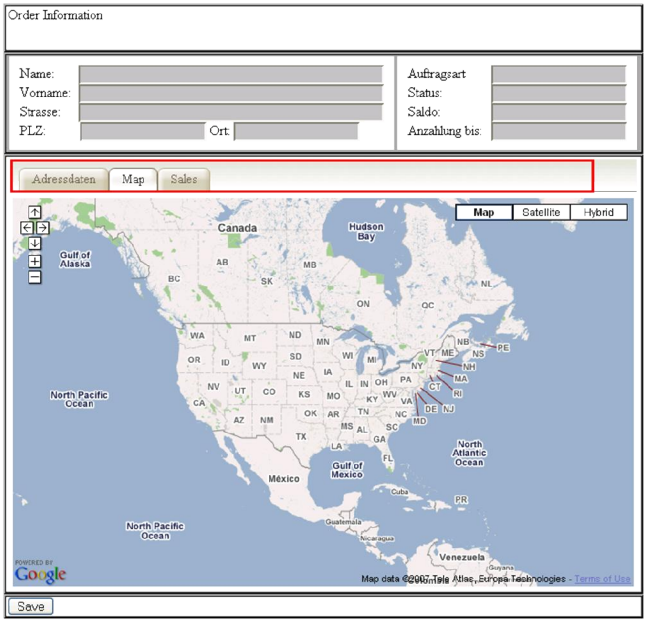
60 Hours

Rational Business Developer and EGL/JSF is **dramatically faster** than traditional development

Coming soon.. Technology innovation: EGL Rich UI *



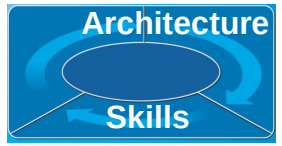




An Example: Rich UI

- Takes the EGL abstraction and programming model to Web 2.0
  - Generates JavaScript
  - Hides the Ajax complexity
- Integrates external REST or SOAP services with EGL Rich UI
- Integrates EGL generated services with state-of-the art UI (z, i , LUW)

(*) UI = User Interface



Summary

EGL & Rational Business Developer - A powerful extension to IBM Rational Development Platform that builds on 27 years of customer success.

- Break the skill silos and leverage business know-how of all developers
- Build innovative state-of-the-art solutions without skill ramp up and high costs
  - Lower risk and increase project success rate
  - Lower costs of training
  - Lower cost of development
- Deliver projects faster

- For More information

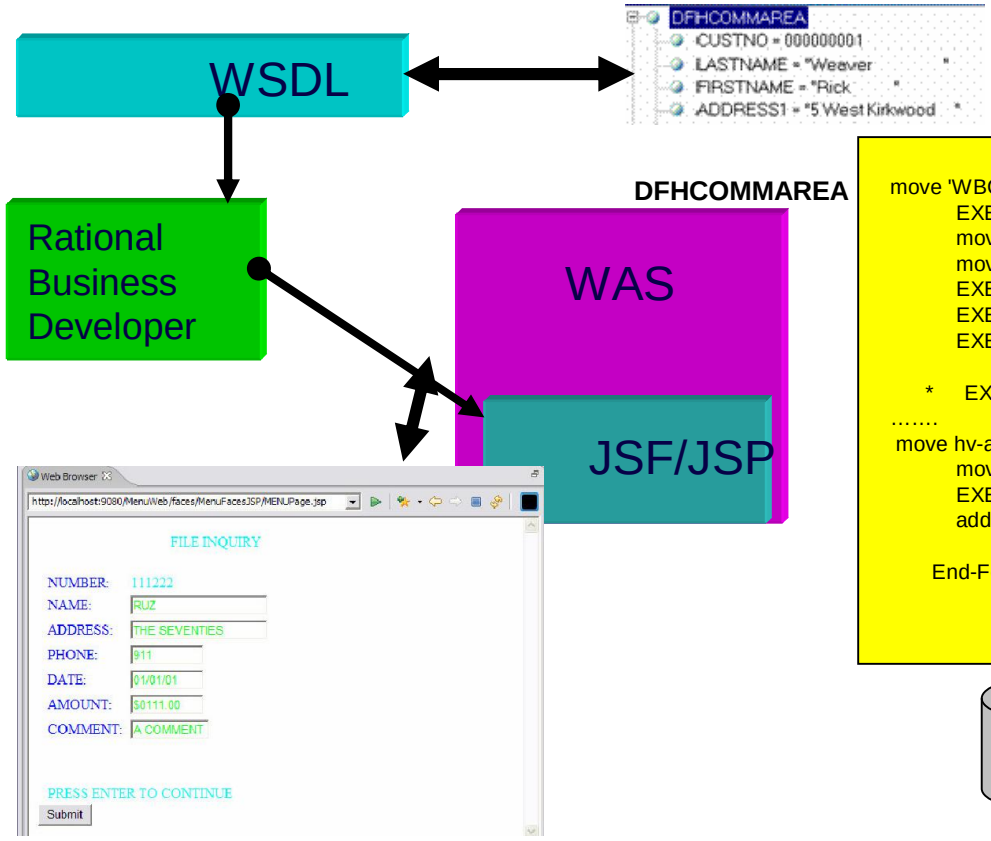
  product website
  http://www.ibm.com/software/awdtools/developer/business/

  developerWorks – Rational Business Developer zone
  http://www.ibm.com/developerworks/rational/products/rbde

Scenario #4 – Create a Web page using JSF

Task : Create a Web Interface with JSF/JSP to invoke the Web Service

Solution: Use **Rational Business Developer** to consume WSDL service and create a JSF/JSP Page



COBOL Server

```
move 'WBCSTDT2 Program started. ... wk' to tmp.
        EXEC CICS WRITEQ TD QUEUE("CSMT") FROM(tmp) END-EXEC.
        move CustNo to hv-custno.
        move 'Searching with Cust #:' to tmp.
        EXEC CICS WRITEQ TD QUEUE("CSMT") FROM(tmp) END-EXEC.
        EXEC CICS WRITEQ TD QUEUE("CSMT") FROM(CustNo) END-EXEC.
        EXEC SQL CONNECT TO AIS END-EXEC.

     *    EXEC SQL SELECT CUST_LN, CUST_FN, CUST_ADDR, CUST_CITY,
.......
 move hv-acctnum to AcctNumList(i).
        move AcctNumList(i) to tmp.
        EXEC CICS WRITEQ TD QUEUE("CSMT") FROM(tmp) END-EXEC.
        add 1 to i.

      End-Fetch-Loop. exit.
```

DB2

7:05 Min

Agenda for Enterprise Modernization Seminar - NYC

9:00 - 9:40 - Introduction to Enterprise Modernization & Scenarios – Regi Barosa (40 min)

9:40 - 10:00 - Scenario #1 - Creating of a Web Screen from existing terminal based CICS application WSAA/HATS – Zvi Weiss (20 min)

10:00 - 10:20 - Scenario #2 - Transform an existing COBOL program and create a called subroutine to isolate the business logic (WSAA Bridge/RTW) – Zvi Weiss (20 min)

10:20 – 10:35 – Break (15 min)

10:35 – 11:00 - Scenario #3 - Create CICS Web Service using the COBOL business logic from scenario 2 (RDz and z/OS Debug Tool) – Regi Barosa (25 min)

11:00 – 11:25 - Scenario #4 - Create a Web page to consume the Web Service created above (RBD/EGL) – Regi Barosa (25 min)

11:25 – 11:40 - Scenario #5 - Create new Web Service that aggregates other COBOL/CICS screen based application – Zvi Weiss (15 min)

Rational Developer for System z and CICS Service Flow Modeler Introduction

11:40 - 12:00 - Wrap-up Next Steps

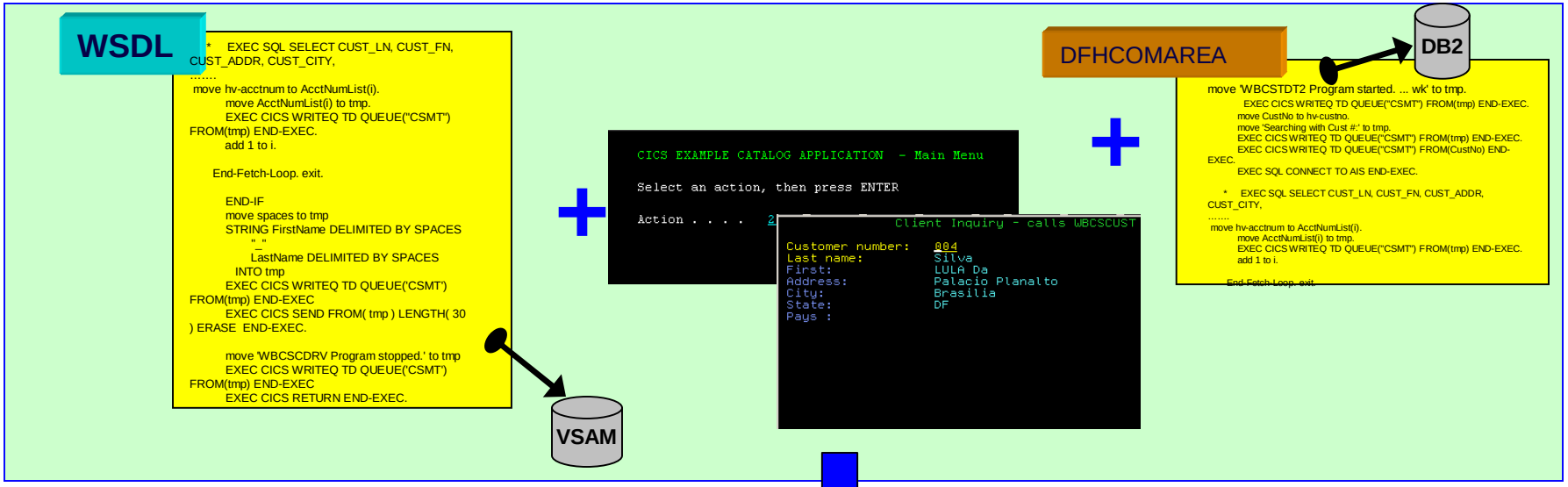
IBM Software Group

z/OS Enterprise Modernization for SOA environment

Service Flow Introduction

Case study – Scenario 5

Scenario #5. Create new Web Services that aggregates other COBOL/CICS components (terminal screens, CICS programs and CICS Services)



We will not demo this Scenario. Presentation only.

IBM Rational Developer for System z

XML Services for the Enterprise
- SOA access to CICS and IMS COBOL applications
- Bottom-up/Top-down or meet-in-the-middle COBOL to XML mapping support
- Integrated COBOL XML converters, XML schemas, and WSDL generation

DB2 Stored Procedure for COBOL and PL/I
- Create DB2 stored procedures on z/OS in either COBOL or PL/I
- Build and catalog support for the DB2 stored procedure
- Debug z/OS based stored procedures from workstation

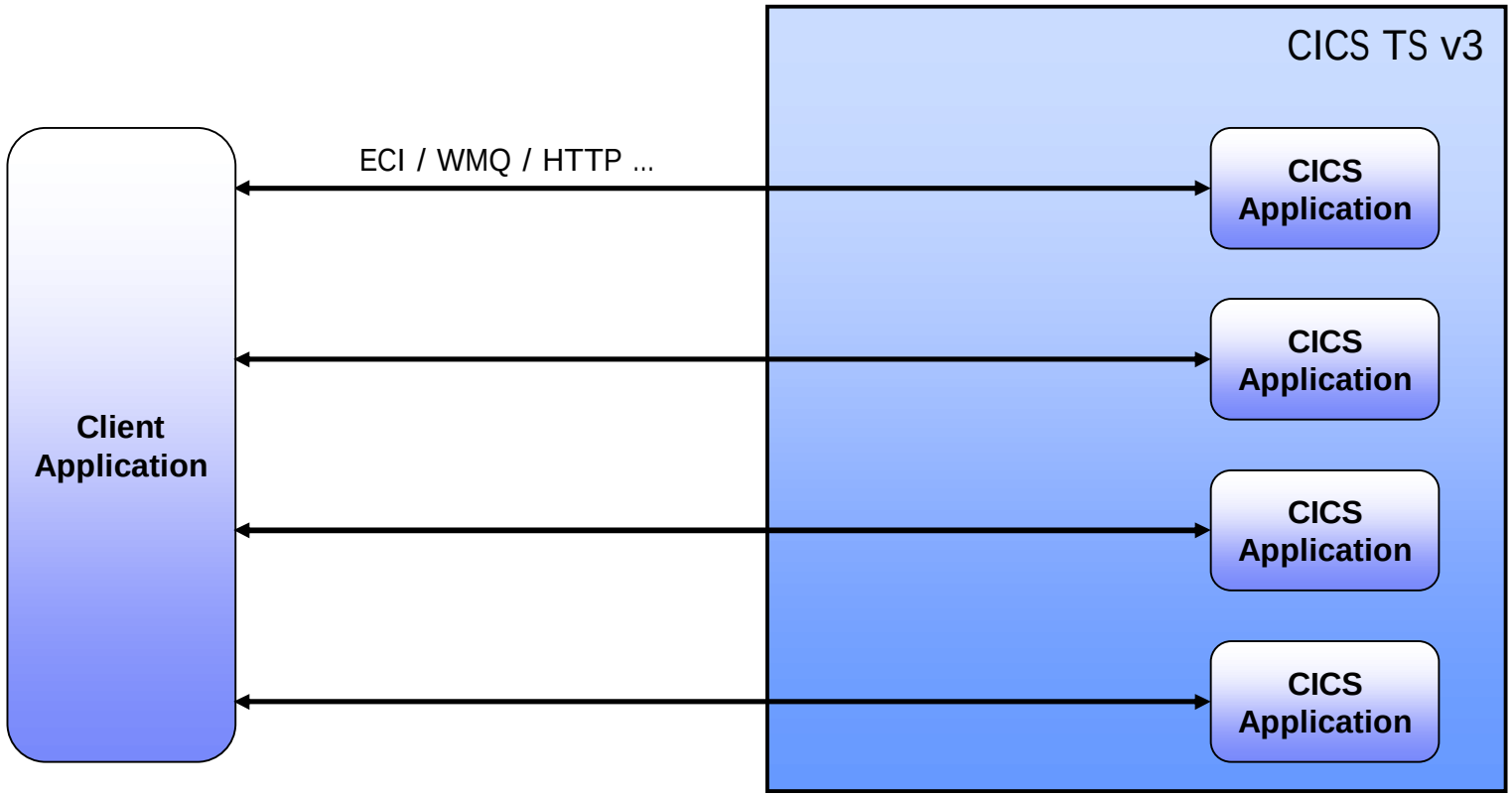
z/OS Application Development
- Connect to z/OS systems
- Work with z/OS resources like COBOL, PL/1 , JCL, etc.
- Interact with the Job Entry Subsystem (JES) to submit jobs, monitor jobs, and review job output
- Perform dataset management actions like allocating datasets and migrating datasets
- Perform typical edit, compile, and debug tasks on remote z/OS resources from the workstation

CICS BMS / IMS MFS Map Support
- Visually create and modify BMS Map sets
- Generates JCL
- Work with local or remote maps

Rapid Appl Development Tool
- Ability to generate WSDL and CICS Cobol program to access DB2
- CRUD operations
- Can be added to SFM flow

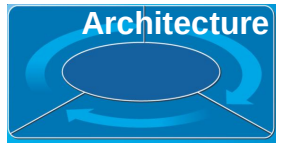
Service Flow Support
- Implements SOA and Web Services
- Service Flow Modeler is a tool to build service flows out of your existing Commarea and Terminal based CICS applications.

Traditional Access

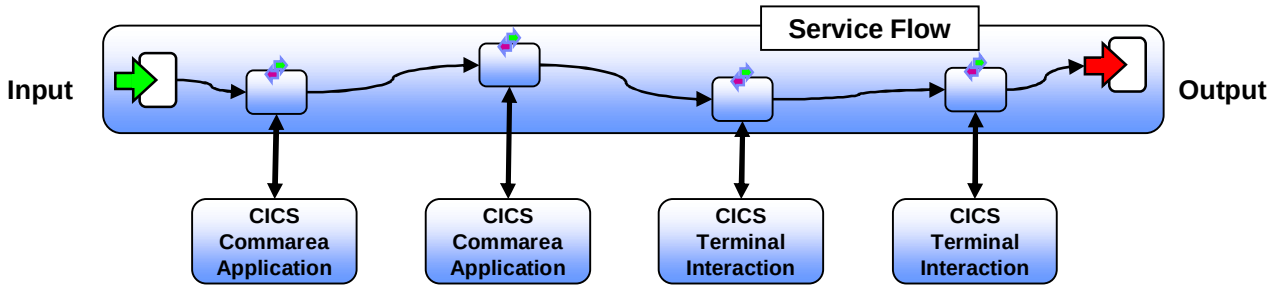


- Multiple requests from client application
  - Expensive
  - Low potential for reuse

What is the Service Flow Feature?

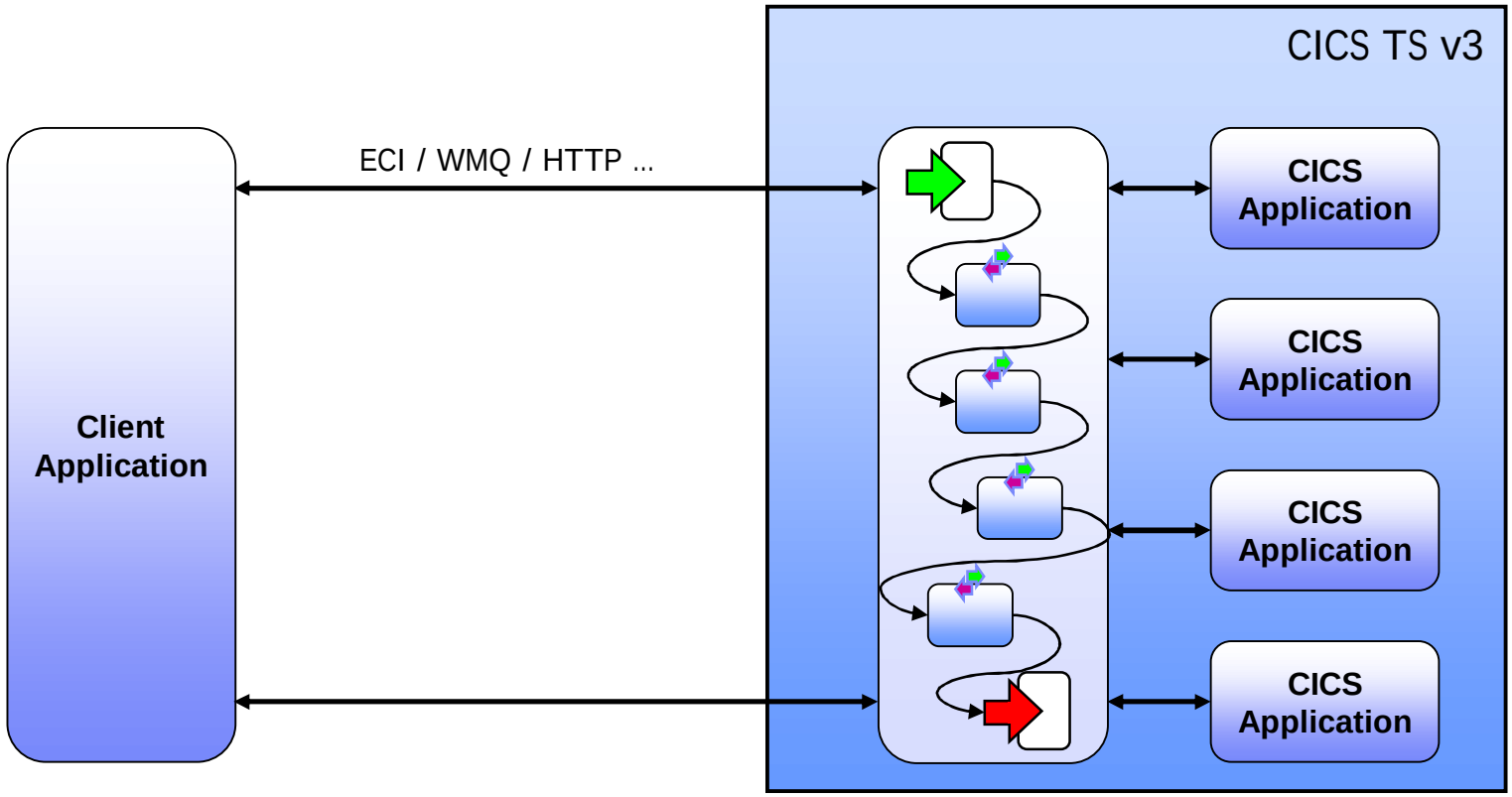


- CICS Service Flow Feature provides capability to aggregate existing CICS applications into composed business services which may be integrated into an SOA environment
  - Aggregate multiple calls to CICS applications in one business level service call
  - Automate the interaction with 3270 terminal based applications and expose as a business level service



- The CICS Service Flow Feature is a no-charge, orderable feature for CICS TS v3.2

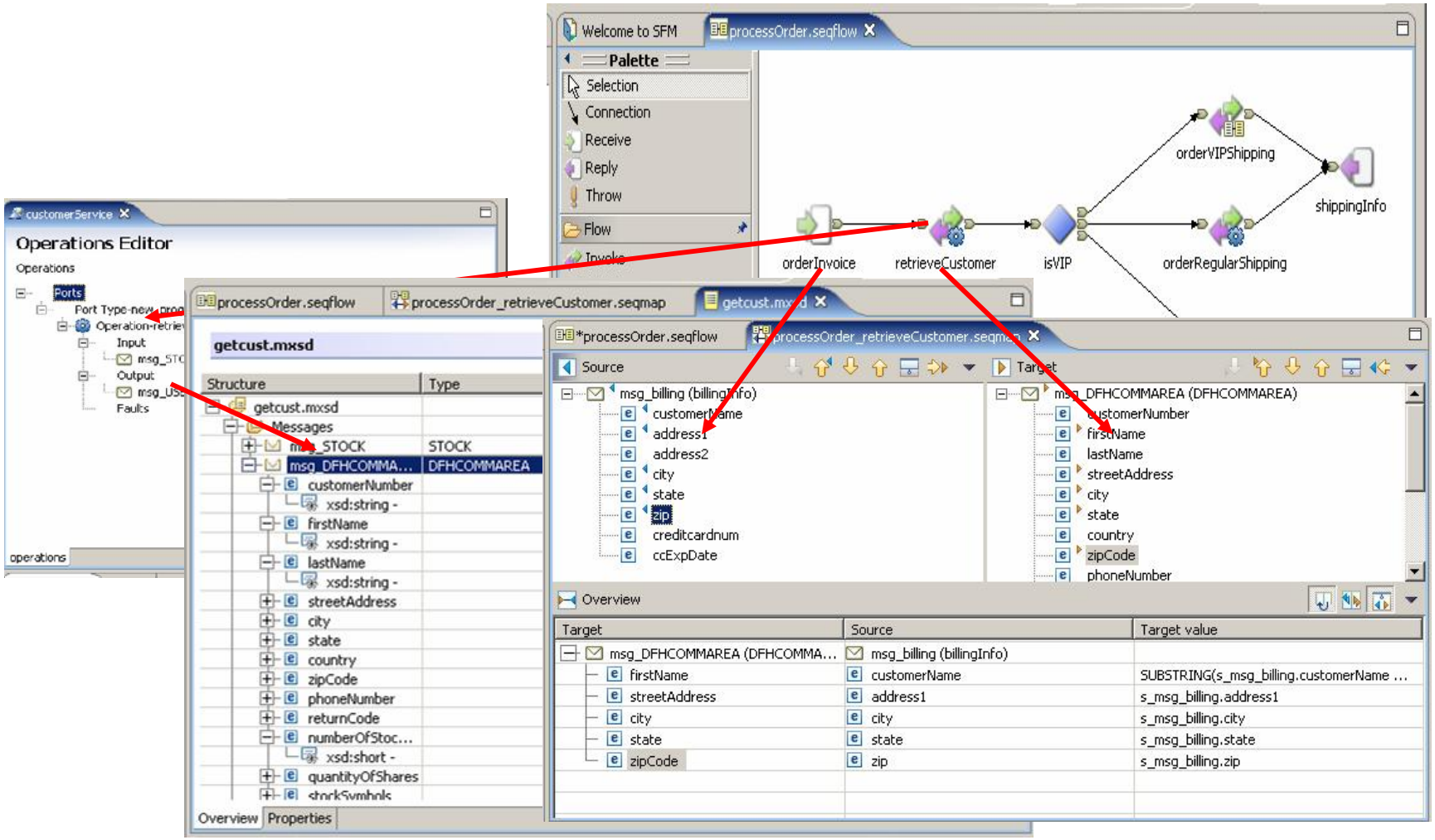
Aggregated Access



- Single request from client
  - Potentially reusable component
  - More efficient

Development Tools

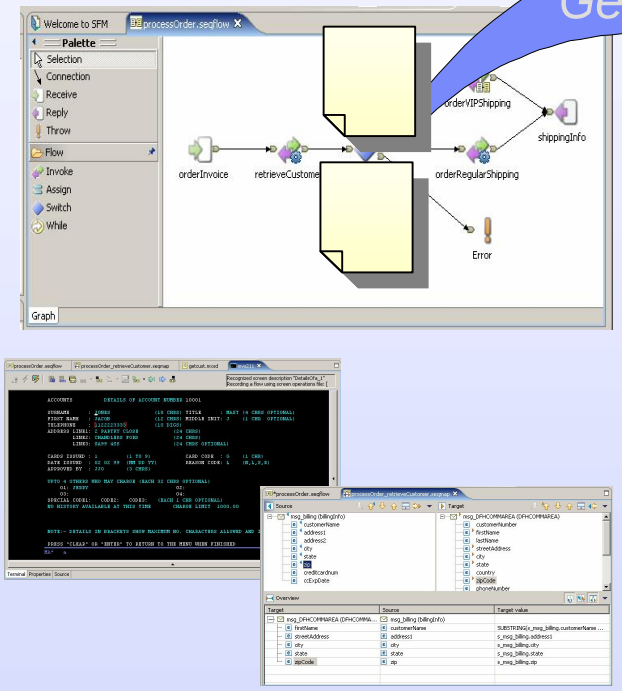
Architecture



Deploy Service Flow to Runtime

Architecture

Service Flow tools



Rational Developer for System z

Generate

FlowFile.sfp

Generated Service Flow

Deploy

Service Flow Runtime

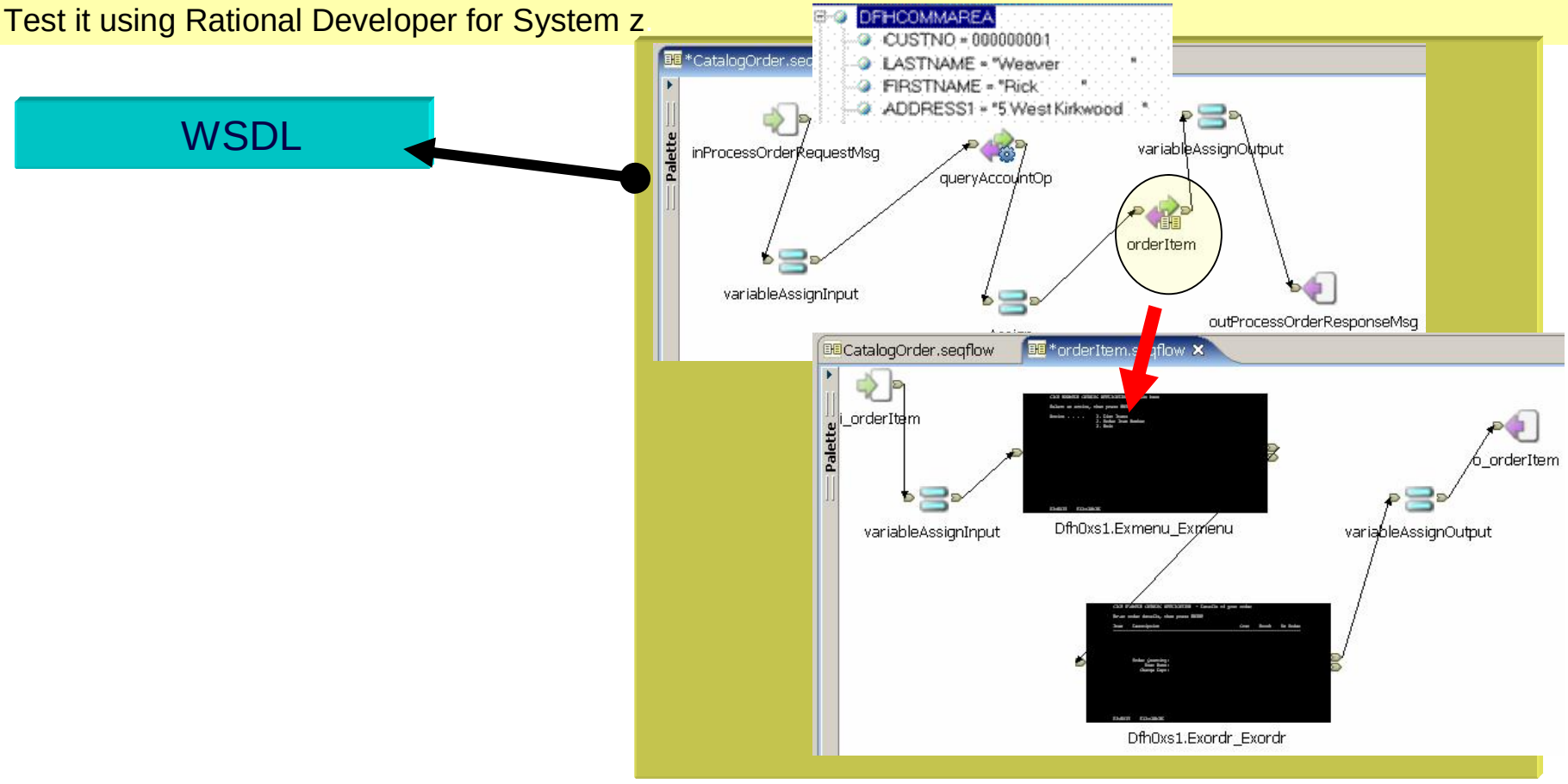
Generated Service Flow Code

EIS Applications

CICS TS v3.2

Scenario #5 – Aggregates screen and callable programs

Task : Create new services that aggregates other COBOL/CICS components (terminal applications and COBOL programs)
Solution: Use Rational Developer for System z and its Service Flow capabilities to Create and deploy the CICS Service.
Test it using Rational Developer for System z



Conclusions?... What is next?

IBM Software Group

Enterprise Modernization Sandbox

Accelerating Software innovation on System z and System i

Enterprise Modernization Sandbox

Easy and fun to quickly try practical scenarios guided by self-paced exercises

System z Sandbox

New!

Launched 2/26

Examples and best practices provide low-risk, practical, hands-on path to understanding. Includes:

- Rational Developer for System z v7.1
- Rational Business Developer Extension v7.0
- Rational Transformation Workbench v3.1
- Host Access Transformation Services

Full version software trials

'Try online' hosted environments

Tutorials

Online Resources

System i Sandbox

New!

Scheduled for 04/08

Examples and best practices provide low-risk, practical, hands-on path to understanding. Includes:

- WebSphere Development Studio Client
- Rational Business Developer Extension
- Host Access Transformation Services

Full version software trials

'Try online' hosted environments

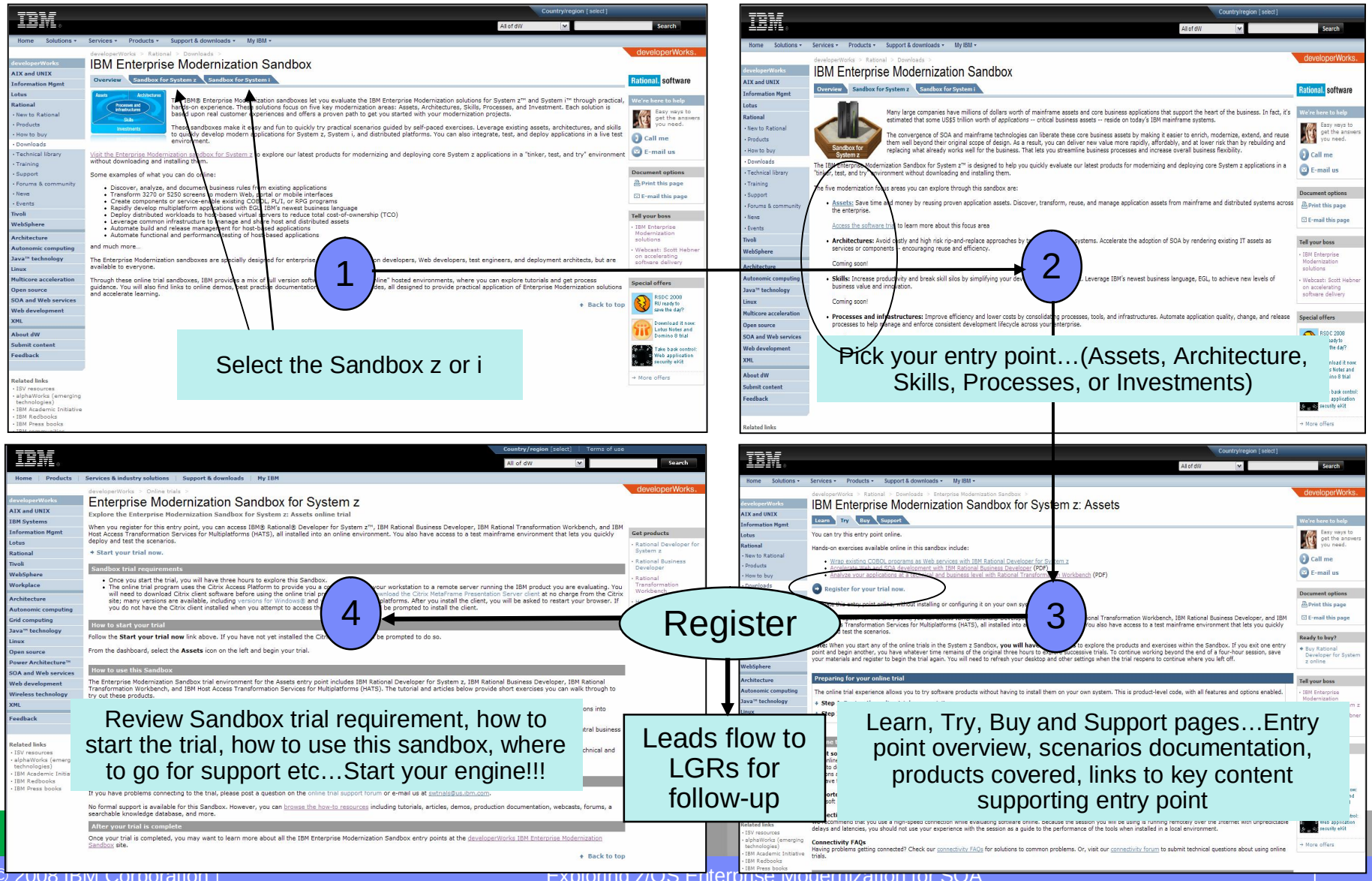
Tutorials

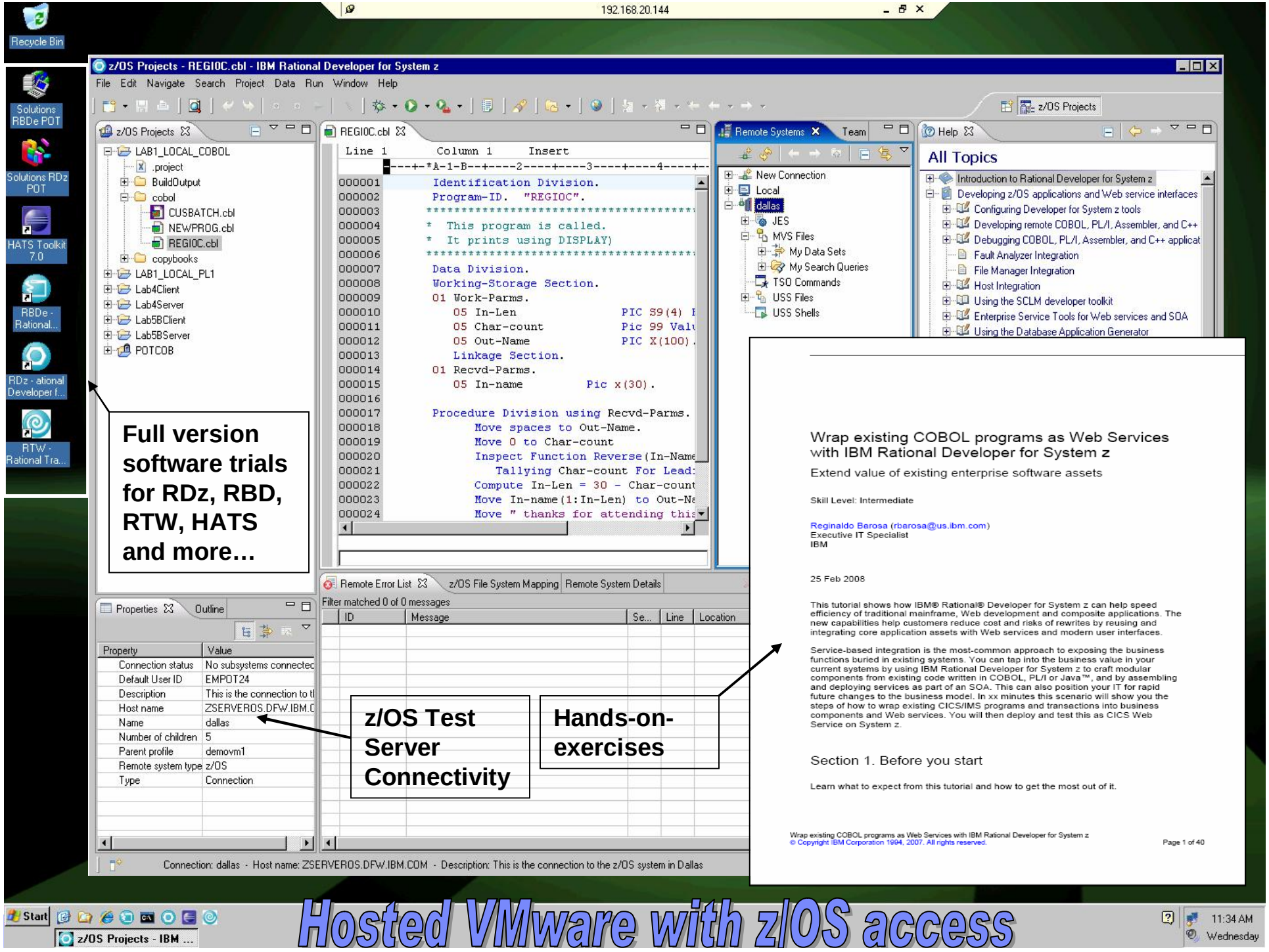
Online Resources

http://www.ibm.com/developerworks/downloads/emsandbox/

Enterprise Modernization Sandbox

developerWorks pages




192.168.20.144
z/OS Projects - REGIOC.cbl - IBM Rational Developer for System z
File Edit Navigate Search Project Data Run Window Help
z/OS Projects
LAB1_LOCAL_COBOL
.project
BuildOutput
cobol
CUSBATCH.cbl
NEWPROG.cbl
REGIOC.cbl
copybooks
LAB1_LOCAL_PL1
Lab4Client
Lab4Server
Lab5BClient
Lab5BServer
POTCOB
REGIOC.cbl
Line 1 Column 1 Insert
000001 Identification Division.
000002 Program-ID. "REGIOC".
000003 **
000004 * This program is called.
000005 * It prints using DISPLAY)
000006 **
000007 Data Division.
000008 Working-Storage Section.
000009 01 Work-Parms.
000010 05 In-Len PIC S9(4)
000011 05 Char-count Pic 99 Valu
000012 05 Out-Name PIC X(100).
000013 Linkage Section.
000014 01 Recvd-Parms.
000015 05 In-name Pic x(30).
000016
000017 Procedure Division using Recvd-Parms.
000018 Move spaces to Out-Name.
000019 Move 0 to Char-count
000020 Inspect Function Reverse(In-Name
000021 Tallying Char-count For Lead:
000022 Compute In-Len = 30 - Char-count
000023 Move In-name(1:In-Len) to Out-Na
000024 Move " thanks for attending this
Remote Systems
Team
New Connection
Local
dallas
JES
MVS Files
My Data Sets
My Search Queries
TSO Commands
USS Files
USS Shells
Help
All Topics
Introduction to Rational Developer for System z
Developing z/OS applications and Web service interfaces
Configuring Developer for System z tools
Developing remote COBOL, PL/I, Assembler, and C++
Debugging COBOL, PL/I, Assembler, and C++ applicat
Fault Analyzer Integration
File Manager Integration
Host Integration
Using the SCLM developer toolkit
Enterprise Service Tools for Web services and SOA
Using the Database Application Generator
Remote Error List
z/OS File System Mapping
Remote System Details
Filter matched 0 of 0 messages
ID
Message
Se...
Line
Location
Properties
Outline
Property
Value
Connection status
No subsystems connectec
Default User ID
EMPOT24
Description
This is the connection to tl
Host name
ZSERVEROS.DFW.IBM.C
Name
dallas
Number of children
5
Parent profile
demovm1
Remote system type
z/OS
Type
Connection
Connection: dallas - Host name: ZSERVEROS.DFW.IBM.COM - Description: This is the connection to the z/OS system in Dallas
Wrap existing COBOL programs as Web Services with IBM Rational Developer for System z
Extend value of existing enterprise software assets
Skill Level: Intermediate
Reginaldo Barosa (rbarosa@us.ibm.com)
Executive IT Specialist
IBM
25 Feb 2008
This tutorial shows how IBM® Rational® Developer for System z can help speed efficiency of traditional mainframe, Web development and composite applications. The new capabilities help customers reduce cost and risks of rewrites by reusing and integrating core application assets with Web services and modern user interfaces.
Service-based integration is the most-common approach to exposing the business functions buried in existing systems. You can tap into the business value in your current systems by using IBM Rational Developer for System z to craft modular components from existing code written in COBOL, PL/I or Java™, and by assembling and deploying services as part of an SOA. This can also position your IT for rapid future changes to the business model. In xx minutes this scenario will show you the steps of how to wrap existing CICS/IMS programs and transactions into business components and Web services. You will then deploy and test this as CICS Web Service on System z.
Section 1. Before you start
Learn what to expect from this tutorial and how to get the most out of it.
Wrap existing COBOL programs as Web Services with IBM Rational Developer for System z
© Copyright IBM Corporation 1994, 2007. All rights reserved.
Page 1 of 40
Full version software trials for RDz, RBD, RTW, HATS and more…
z/OS Test Server Connectivity
Hands-on-exercises
Hosted VMware with z/OS access
Start
z/OS Projects - IBM ...
11:34 AM
Wednesday

Proof of Technology:

- A Proof of Technology, is designed to give attendees a "deep dive" of the technology through demonstration, presentation, and hands on labs in a controlled environment.
- PoTs can run from one to three days in length, are held in a Technical Exploration Center.
- The objective is to expose the usability, documentation, and manageability of an IBM product.

Discovering the value of WebSphere Studio Asset Analyzer for your organization PoT

This Proof of Technology helps customers understand the product with hands-on labs. Participants look at the high level program structure, then drill down into the details, including asset inventory and component reuse.

Description
WebSphere Studio Asset Analyzer provides a web-based graphical and text-based insight into your applications something like on-line mapping programs. Look at high-level program structure and then drill into the details in your "neighborhood" of interest. Point click and search your way to greater productivity and quality.
Objectives
• The WSAA PoT session enables customers to gain understanding and hands-on with the WebSphere Studio Asset Analyzer
Prerequisites
• None

Duration : 1 day

Discovering the value of IBM Host Access Transformation Services (HATS) V7

This PoT will demonstrate how easy it is to use Host Access Transformation Services V7.0 to create a Web application that extends your 3270 and 5250 host applications to the Intranet, Extranet, and Internet.

Description

The Host Access Transformation Services V7 PoT uses presentations and labs to demonstrate the basic capabilities of the product.
The objectives of this session are to define Host Access Transformation Services (HATS), identify at least six solutions provided by HATS, describe the basic steps to develop and deploy HATS Web applications, list the products required to develop and deploy HATS Web applications, and validate basic HATS functions through lab exercises.

Objectives

- The objectives of this session are to define Host Access Transformation Services (HATS), identify at least six solutions provided by HATS, describe the basic steps to develop and deploy HATS Web applications, list the products required to develop and deploy HATS Web applications, and validate basic HATS functions through lab exercises.

Prerequisites

- There are no prerequisites for attending this PoT.

Additional information

Duration : 1 day

POT Link

Discovering the value of IBM Rational Developer for System z version 7.1

Rational Developer for System z V7.1 makes traditional mainframe development, Web development, and integrated mixed workload or composite development faster and more efficient.
COBOL, PL/I, C, C++ and Java developer communities are more productive when they take advantage of Rational Developer for System z functions.
Rational Developer for System z consists of a common workbench and an integrated set of tools that support end-to-end, model-based application development, runtime testing, and rapid deployment of On Demand applications.

Additional information

Attendees will complete structured walk through labs that demonstrate the major features and new functionality of RDz. The labs also provide an introductory hands-on experience to using RDz on building a zSeries-based Service Oriented Architecture (SOA).
The main points to be covered are:

- How to code test and debug a simple COBOL or PL/I program that access DB2 without connection to the mainframe using RDz
- How to code compile and debug using a remote connection to z/OS eliminating the need for TSO/ISPF.
- How to create a Java client from existing z/OS CICS or IMS COBOL programs using J2C connectors and then test it.
- How to transform and test existing COBOL programs to understand XML enabling service-oriented architecture (SOA) access to CICS Transaction Server and IMS.
- How to create test and debug z/OS DB2 Stored Procedures using COBOL or PL/I
- How to use the BMS Editor for CICS or MFS Editor for IMS with RDz.
- How to use the Enterprise Service Tools Service Flow modeling capability of RDz to create a business service that may be deployed to CICS and invoked as a Web service
- How to generate COBOL/CICS/DB2 COBOL program from existing z/OS DB2 tables using RDz wizard.

Duration : 2 days

Discovering the value of **Rational Business Developer extension** (EGL) to develop Java or COBOL Applications and implement SOA Proof of Technology

Asset materials

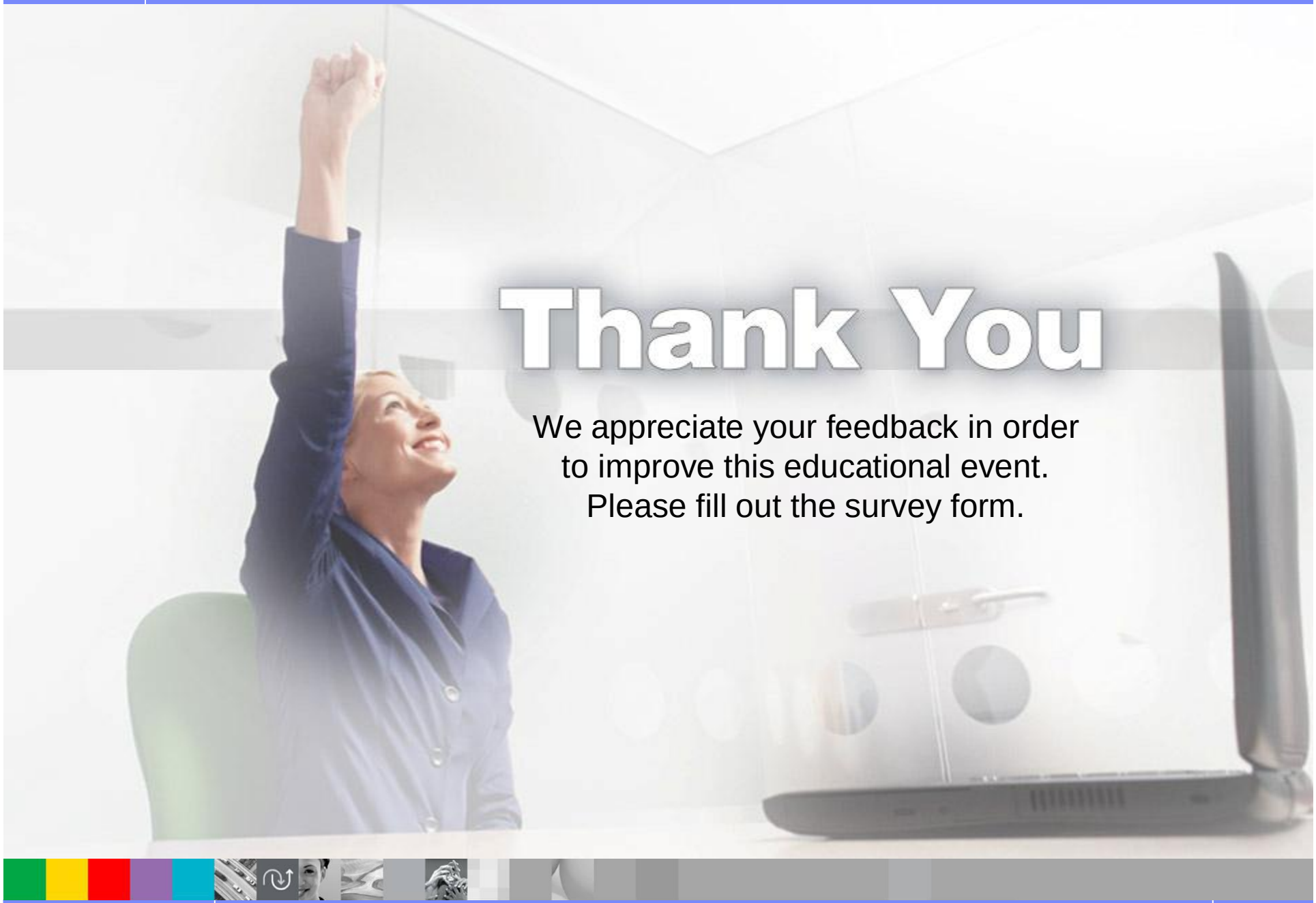
Presentations

- *** Day 1 Presentation topics ***
- - Introduction
- - IBM Rational Business Developer extension and EGL Overview
- - EGL Details
- - Using Rational Business Developer in the Web
- - Generating Java or COBOL
- *** Day 2 Presentation topics ***
- - Integrating with existing Legacy systems (Java, COBOL/CICS, RPG, etc..)
- - Rational Business Developer extension and SOA (Service Oriented Architecture)
- - Rational Business Developer extension and UML (Unified Modeling Language)
- - Future direction, Conclusions

Workbooks

- *** Day 1 Labs ***
- - LAB 1 - Create, test and debug an EGL Server program.
- - LAB 2 - Using JSF with EGL to call the Server program built on lab #1.
- - LAB 3A - Generating Java from JSF/EGL Client and Server programs).
- Or
- - LAB 3B - Generating COBOL from EGL Server program.
- *** Day 2 Labs ***
- - LAB 4 – Using a wizard to create a Web application that accesses a databases.
- - LAB 5 – Calling COBOL from EGL – An example using COBOL CICS.
- Or
- - LAB 6 - Calling Java from EGL.
- – Creating and Consuming Web Services with RBDe.
- – UML to EGL Transformation, using Rational Software Architect and Rational Business Developer extension.

Duration : 2 days



Thank You

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to improve this educational event.
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