

Modernization of Mainframe Applications with Business Rules and Events

Mark Hiscock
IBM

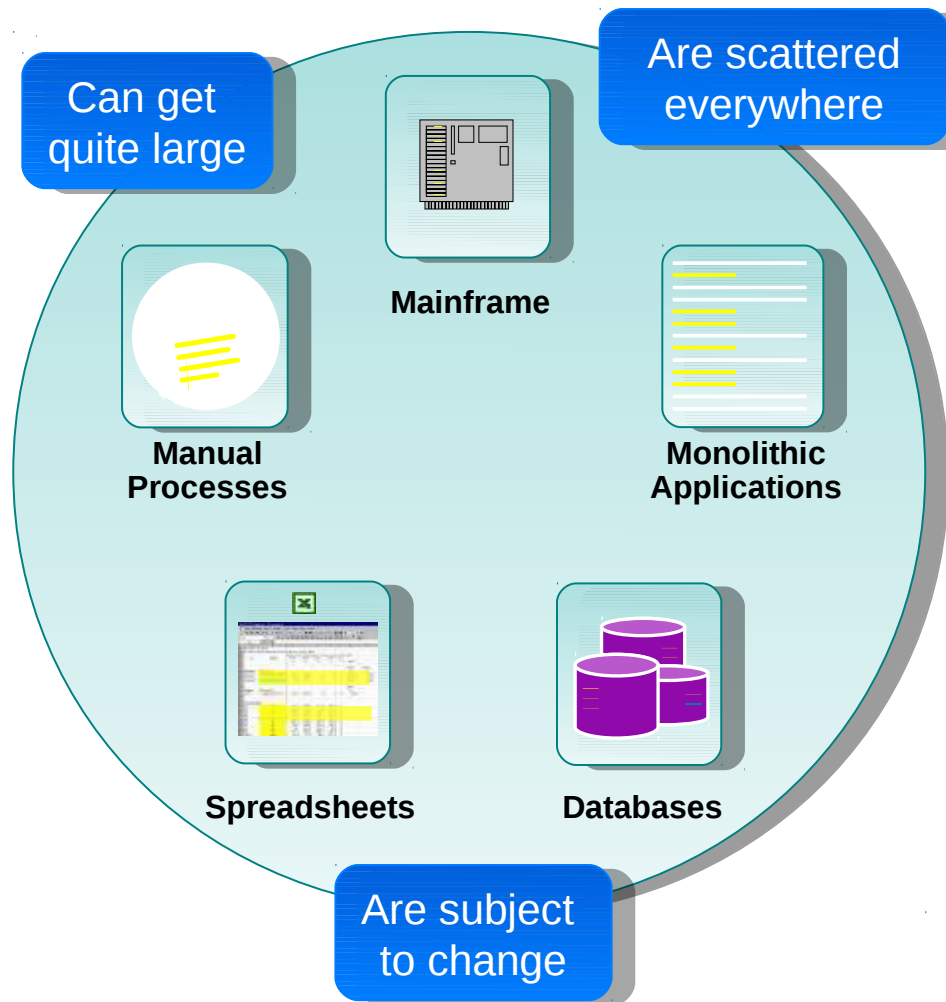
Thursday August 9th 2012
Session 11885



Agenda

- Concepts of Operational Decision Management (ODM)
- ODM Capabilities on z/OS
 - Decision authoring and Decision execution options
 - Decision management and lifecycle
- Rule discovery in existing applications

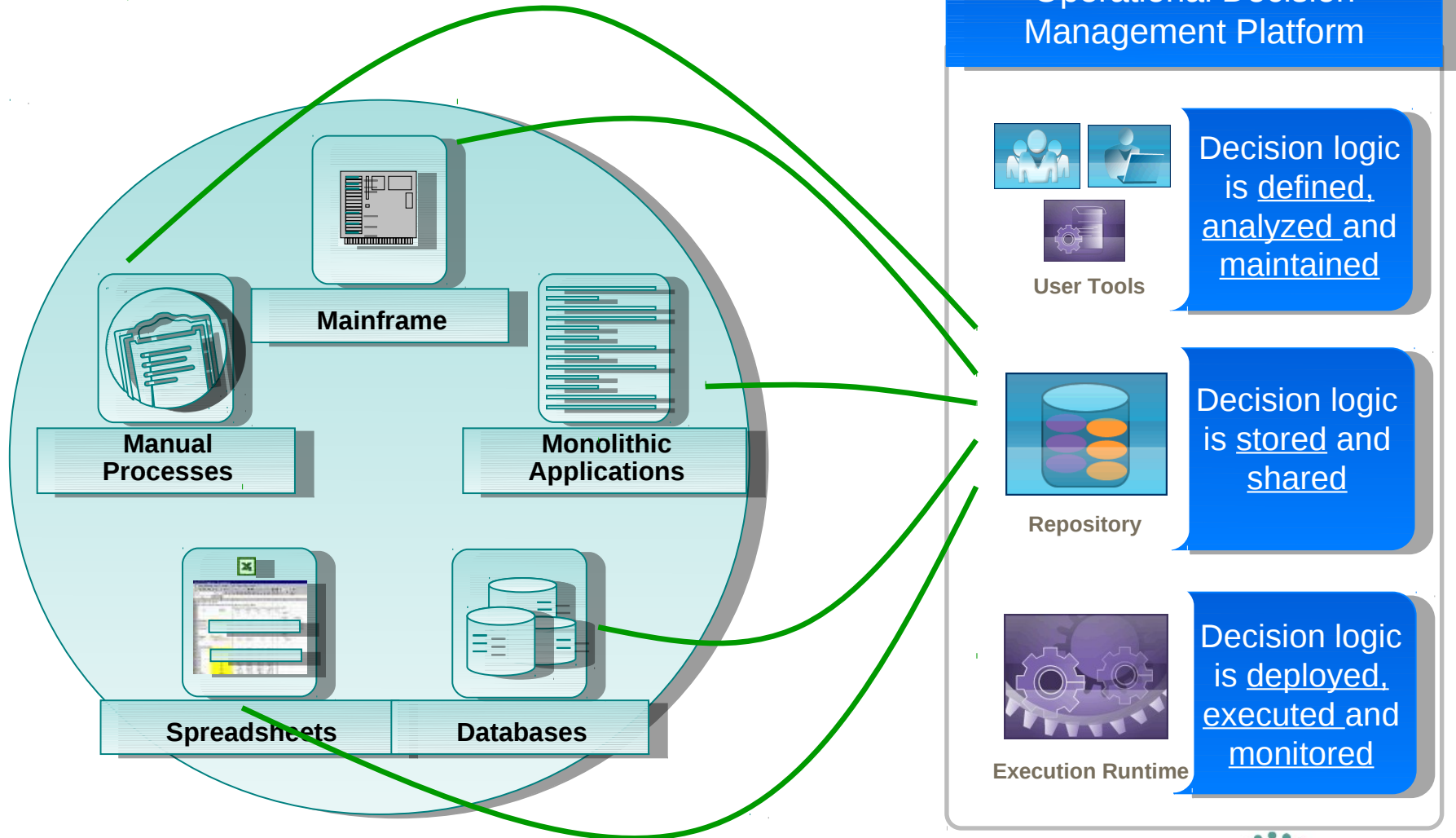
Operational Decisions in Organizations



Challenges for a Change Request

- Changes are costly, resource & time-intensive
 - Hidden in code
 - Most changes have to be programmed – costly
- Lack of consistency
 - No central management
 - No reuse of decision logic
- Gap between business analysts & IT administrators
 - Knowledge fades over time
- Lack of audit ability
- No easy way to test/simulate changes

Operational Decision Management Approach



IBM's Path to Operational Decision Management



Decision Management is an approach, combining software and expertise, to automate, improve and govern operational decisions across the enterprise

2009

ILOG BRMS

- Full featured rule management capabilities from IT to business teams
- Recognized performance and scalability

WebSphere Business Events

- Events accessible to business teams
- From event definition to correlation

2010

WebSphere ILOG BRMS 7.1

- What-if-analysis

WebSphere Decision Server 7.1

- First step to have rules and events working together
- 2 separate mgmt environments

Support Packs

- Import PMML as Decision tree and Runtime integration with SPSS C&DS
- WebSphere Business Monitor integration

2011

IBM Operational Decision Management

- Combined business rules and events management
- Consistent design tooling
- Centralized decision repository with single mgmt environment
- Extended governance capabilities
- Additional deployment options for z/OS

Operational Decision Management = ILOG + WBE



Business Rules

Primarily implements a decision model – given a snapshot view of data, determines best course of action at a specific point in a process or application

Main purpose is to automate a decision based on a combination of factors (business policies, regs, best practices)

If the **Passenger** is a **gold frequent traveler** and **flight distance** is more than 4000 miles and the **flight destination** is in Europe or Asia Then Add 10,000 points to the fidelity card of the **Passenger**

Business Events

Primarily implements a time-based pattern detection model – correlating events as data is in motion

Main purpose is to determine what of interest is transpiring and coordinate one or more responses by other systems or generate alerts to people

If more than 2 **customer withdrawals in an ATM** are done **in the same day** and the 2 ATMs are from 2 foreign countries Then **Investigate possible fraud** Reduce cash redraw max amount to 100\$

Gartner characterizes Rules and Complex Event systems as complementary notions. The combination being required to implement intelligent decision management programs.

Complete your sessions evaluation online at SHARE.org/AnaheimEval

ODM – Precise, Automated Decisions



Horizontal: best/appropriate price, cross-sell/ up-sell recommendations, loyalty promotions, exception identification, risk/fraud assessment, straight-through processing approvals



Insurance

- Claim
 - Validation
 - STP approval
 - Exception routing
- Policy/
Underwriting
 - Eligibility
 - Risk
 - Pricing
- Annuity
 - Recommendation
 - Commissioning
 - Payout calc.

Banking

- Loan
 - Eligibility
 - Risk
 - Pricing
- Account
 - Cross-sell
 - Fraud/Alerts
- Credit Card
 - Mktg Offers
 - Fraud
 - Credit limit

Healthcare

- Patient Care
 - Drug interaction risk warnings
 - Follow-up alerts
- Member
 - Services recommendation
 - Eligibility
 - Benefit calculation
- Provider
 - Patient eligibility for services

Government

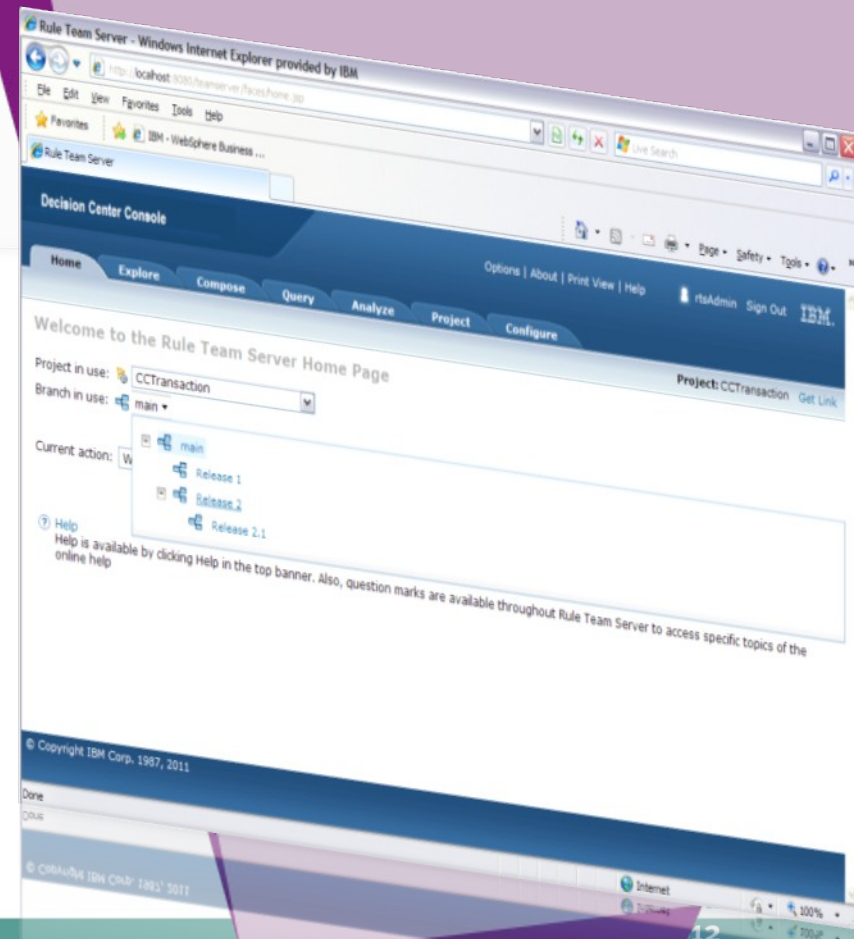
- Benefits
 - Eligibility
 - Calculations
- Tax Payer
 - Classification
 - Audit flagging
- Citizen
 - Program(s) recommendation

Energy/Utility

- Land/Permits
 - Conveyance processing
 - Contract compliance
- Service Mgmt
 - Service prioritization
 - SLA alerts
 - Maintenance alerts
 - Order configuration

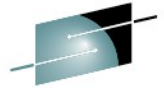
Modernising your Applications

- *Operational Decision Management enables organizations in every industry to make their business rules and business decisions clear, consistent and **expressed in business language** to be able to change when the business needs.*
- *Transformation or **modernization** of z/OS applications*
- *Ability to **react to change** (timely reaction to market and competitive changes)*
- *Overcome IT and Business mis-alignment – keep up and service **business requests***
- *Eliminate resource drain on application maintenance – **reuse of business decisions** across applications and platforms*



Operational Decision Management Capabilities – Rules

IBM ODM: Components



RE
ons • Results

Operational Decision Management

Decision Center



Decision Server

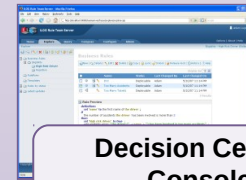
Rule Execution

Event Execution

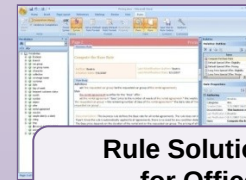
Decision Monitoring

Connectors

Management



Decision Center Console

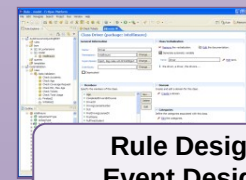


Rule Solutions for Office



Decision Center for Business Space

Design



Rule Designer Event Designer

Data Model - Verbalization

Business Object Model



Developer

01 CUST
05 NAME
05 AGE
05
NUMACCIDENTS
05 RISKLEVEL

- Automatic generation of the rule vocabulary.
- Comprehensive industry focused business terms to define its data and associated actions.
- Localizable vocabulary

Rule Vocabulary



IT / Business

“customer”

- the name of ...
- the birthday of ...
- the number of accidents of ...
- the ... is a high risk driver

“client”

- le nom du ...
- l’anniversaire du ...
- Le nombre d’accidents du ...
- le ... est un conducteur à risque ...

Business Rule Language



Rule Developer /
Business User

Rule: High risk driver

if

the birthday of **customer** is after
12/9/1975 and
the number of accidents of **customer** is at
least **3**

then

set the **customer** as a **high risk driver**

Règle: Conducteur à risque

si

L’anniversaire du **client** est après le
12/9/1975 et
le nombre d’accident du **client** est au
moins **3**

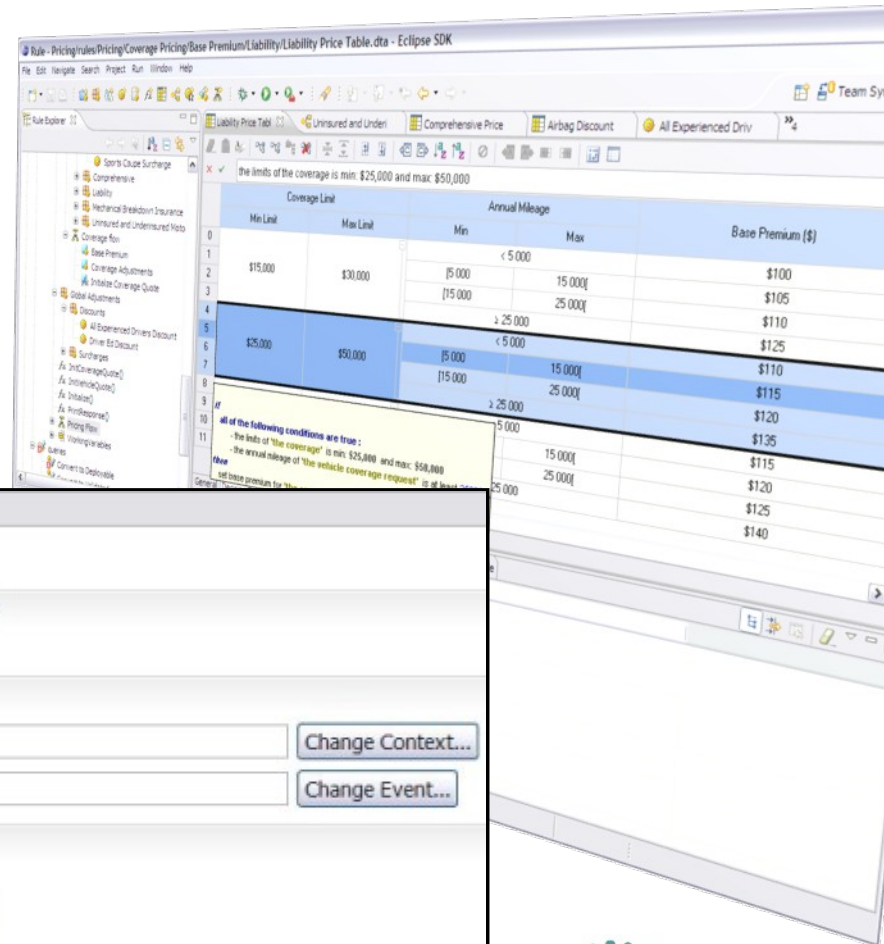
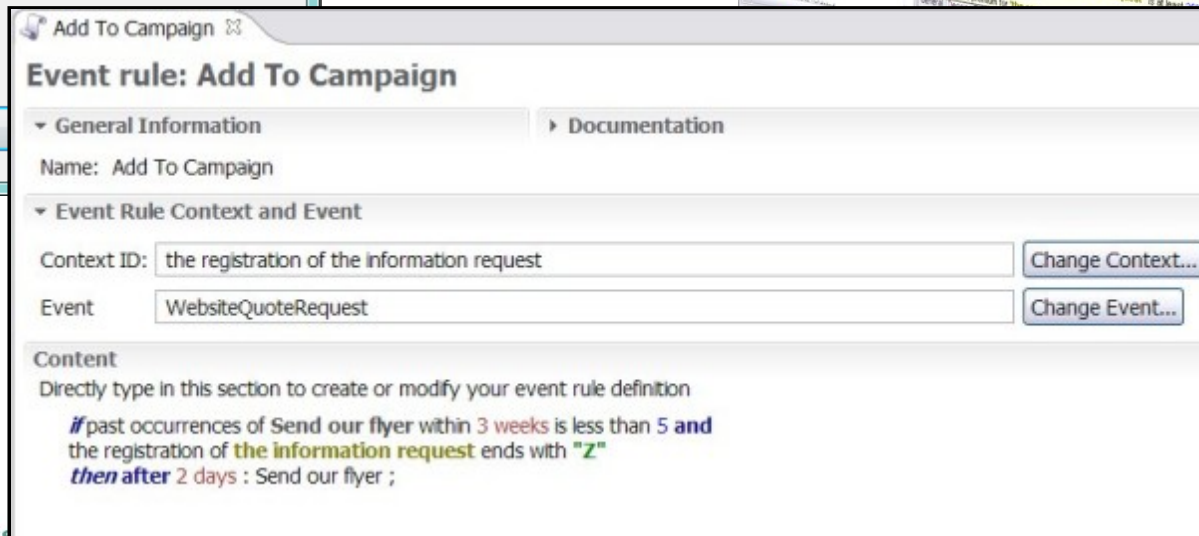
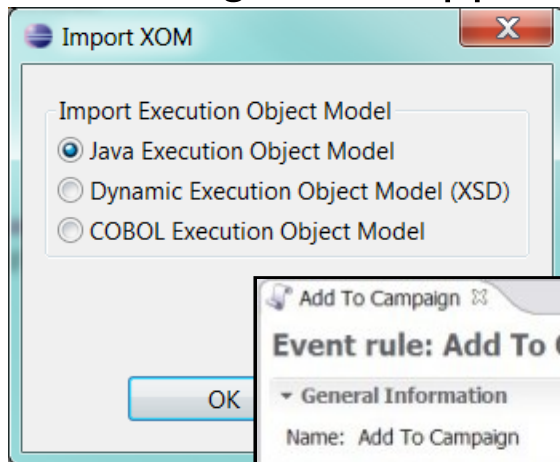
alors

Classifier le **client** comme **conducteur à
risque**

Rule and Event Designer

■ Eclipse-based Development Environment

- Rule Designer Perspective
- Event Designer Perspective
- Integrated support for COBOL



Decision Tables

Actions

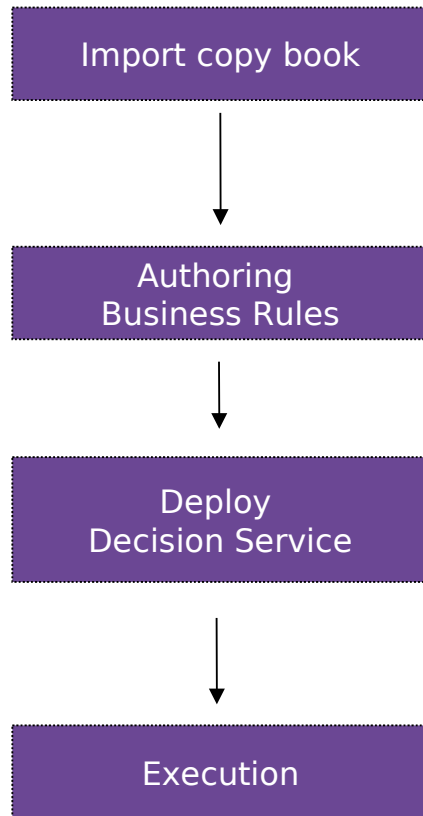
	Grade	Amount of loan ✘		Insurance required	Insurance rate
		Min	Max		
0	A	< 100,000		false	∅
1		100,000	300,000	true	0.001
2		300,000	600,000	true	0.003
3		≥ 600,000		true	0.005
4	B	< 100,000		false	∅
5		100,000	300,001	true	0.0025
6		300,000	600,000	true	0.005
7		≥ 600,000		true	0.0075
8	C	< 100,000		true	0.0035
9		100,000	300,000	true	0.006
10		300,000	600,000	true	0.0085
11		≥ 600,000		true	0.0145
12	Otherwise			true	0.022

Built-in Gap/Overlap checking

Automatic Rule generation

if
all of the following conditions are true :
 - the loan grade in 'the loan report' is "C"
 - the amount of 'the loan' is at least 600000 ,
then
 set insurance required in 'the loan report' to *true* ;
 set the insurance rate in 'the loan report' to 0.0145 ;

Starting from a COBOL Copybook



Scenario

- Existing COBOL containing business rules
- Data model defined in COBOL copybook
- Use ODM to modernize the business policy

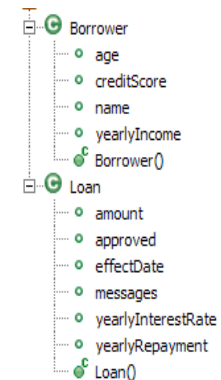
Benefits

- Modernize business policies in ODM
- Rules can be invoked 'naturally' from existing COBOL application
- Business policy/rule lifecycle detached from application lifecycle

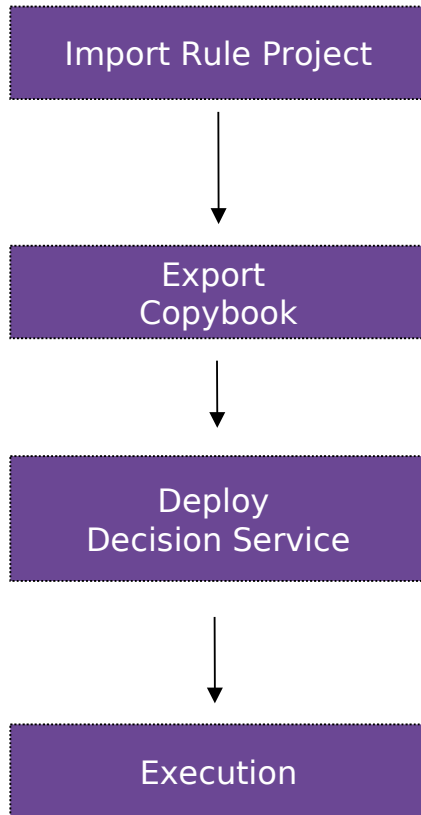
Rule Authoring – COBOL Copybook XOM

- Support Enterprise COBOL 3.4, 4.1 & 4.2
- Java is created from the copybook structure
 - Java XOM & Java code to marshal between COBOL <-> Java
 - 01 level structures mapped to class in BOM
- Redefines statements supported
 - Select which redefines structure to import
- COBOL Table support
 - Mapped to Java **List<type>** structures
- COPY statements supported
- Level 88 supported
 - Mapped to methods in BOM

```
01 Borrower.  
05 name PIC X(20).  
05 creditScore PIC S9(10).  
05 yearlyIncome PIC 9(10).  
05 age PIC 9(3).  
01 Loan.  
05 amount PIC 9(10).  
05 yearlyInterestRate PIC 99.  
05 yearlyRepayment PIC 9(10).  
05 effectDate PIC X(8).  
05 approved PIC X.  
05 messageCount PIC 9(2).  
05 messages PIC X(60)  
OCCURS 0 TO 99 TIMES  
DEPENDENT ON messageCount.
```



Starting from an existing Rule Project



Scenario

- Existing rule projects exist that are currently in use on distributed platforms
- Concurrent execution of rules is required on System Z

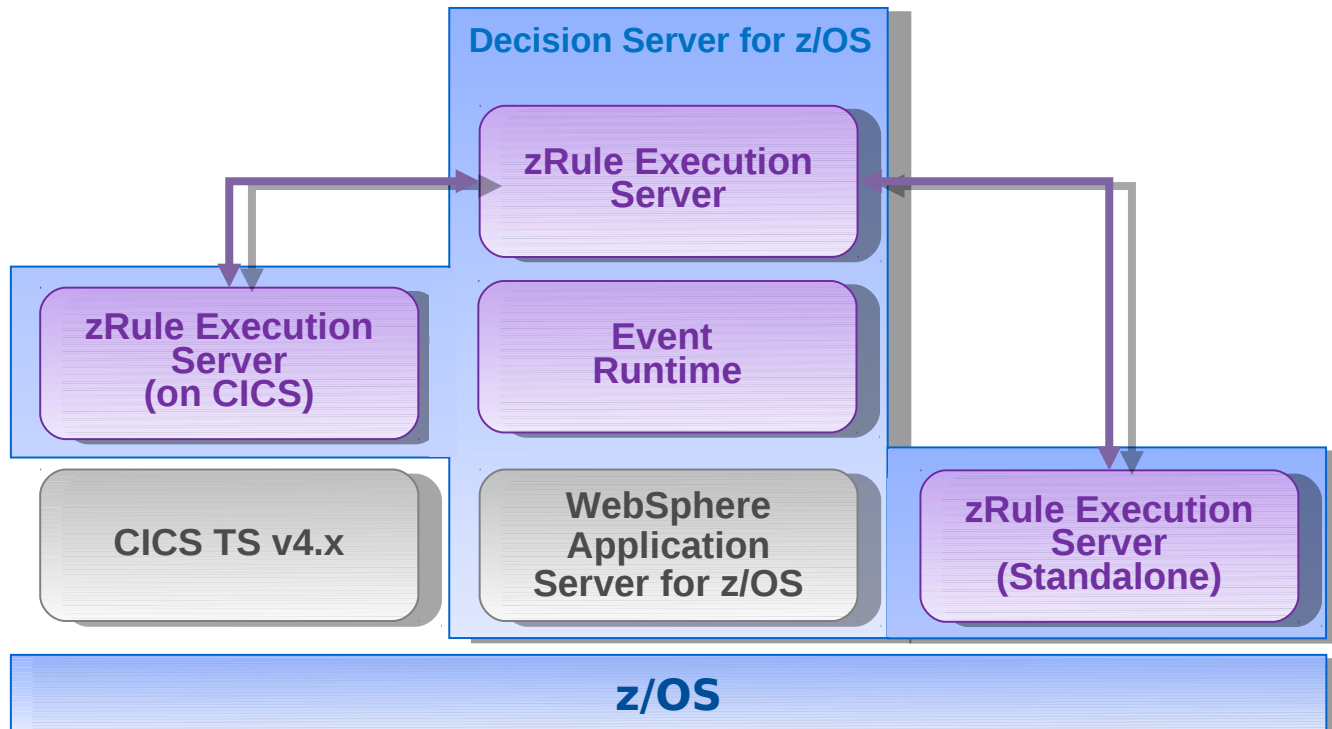
Benefits

- Consistent decision rules wherever they are executed
- Rules can be invoked 'naturally' from existing COBOL application
- Enables central rule management across System Z and Distributed platforms

Operational Decision Management on System z



- Decisions can be invoked from existing CICS, IMS and batch applications
- Runtime support for COBOL data types
- Flexible runtime deployment to fit any System z environment:
 - Deployed on WebSphere Application Server for z/OS
 - Deployed standalone to z/OS
 - Deployed in CICS TS 4.x JVM Server environment



New COBOL Programming API



■ HBRCONN

- Connect to the rule engine using conn area

■ HBRRULE

- Run the rules copying in the rule name and data

■ HBRDSC

- Disconnect from the rule engine

```
01 HBRA-CONN-AREA.  
 10 HBRA-CONN-EYE          PIC X(4) VALUE 'HBRC'.  
 10 HBRA-CONN-LENTH       PIC S9(8) COMP.  
 10 HBRA-CONN-VERSION     PIC S9(8) COMP VALUE +2.  
 10 HBRA-CONN-RETURN-CODES.  
   15 HBRA-CONN-COMPLETION-CODE PIC S9(8) COMP.  
   15 HBRA-CONN-REASON-CODE   PIC S9(8) COMP.  
 10 HBRA-CONN-FLAGS       PIC S9(8) COMP VALUE +1.  
 10 HBRA-CONN-INSTANCE    PIC X(24).  
 10 HBRA-CONN-RULE-COUNT  PIC S9(8) COMP.  
 10 HBRA-CONN-RULE-MAJOR-VERSION PIC S9(8) COMP.  
 10 HBRA-CONN-RULE-MINOR-VERSION PIC S9(8) COMP.  
 10 HBRA-CONN-RULEAPP-NAME PIC X(256).  
 10 HBRA-RESPONSE-AREA.  
   15 HBRA-RESPONSE-MESSAGE  PIC X(512).  
 10 HBRA-RA-PARMETERS.  
   15 HBRA-RA-PARMS OCCURS 32.  
     20 HBRA-RA-PARAMETER-NAME PIC X(48).  
     20 HBRA-RA-DATA-ADDRESS  USAGE POINTER.  
     20 HBRA-RA-DATA-LENGTH   PIC 9(8) BINARY.  
 10 HBRA-RESERVED.  
   15 HBRA-RESERVED02        PIC X(12).  
   15 HBRA-RESERVED03        PIC X(64).  
   15 HBRA-RESERVED04        PIC X(64).  
   15 HBRA-RESERVED05        PIC X(128).  
   15 HBRA-RESERVED06        PIC X(128).
```

New programming API within a COBOL program



```
Line 33      Column 12      Insert      139 changes
---+*A-1-0-+---2-+---3-+---4-+---5-+---6-+---7-
IDENTIFICATION DIVISION.
PROGRAM-ID. HBRMINC.
...

WORKING-STORAGE SECTION.
...

* Parameter Data
COPY MINILOAN.
* Return Code definitions
COPY HBRC.
* HBR Header structure
COPY HBRWS.
...

PROCEDURE DIVISION.

* Connect to zRES
  call 'HBRCONN' using HBRA-CONN-AREA

  IF HBRA-CONN-COMPLETION-CODE NOT EQUAL HBR-CC-OK THEN
    perform onFailedCall
  END-IF

* Initialize call parameters
  MOVE ALL SPACES TO Borrower Loan
  MOVE ALL LOW-VALUES TO HBRA-RA-PARMETERS
  MOVE "/zRulesMiniLoanDemoRuleApp/zRulesMiniLoanDemo" TO
    HBRA-CONN-RULEAPP-NAME

  move LENGTH OF Borrower to HBRA-RA-DATA-LENGTH(1)
  move "borrower" to HBRA-RA-PARAMETER-NAME(1)
  set HBRA-RA-DATA-ADDRESS(1) to address of Borrower

  move LENGTH OF Loan to HBRA-RA-DATA-LENGTH(2)
  multiply length of messages by 10 giving WS-maxMessageLen
  add WS-maxMessageLen to HBRA-RA-DATA-LENGTH(2)
  move "loan" to HBRA-RA-PARAMETER-NAME(2)
  set HBRA-RA-DATA-ADDRESS(2) to address of Loan

  move 'F' to approved
```

```
Line 81      Column 12      Insert      144 changes
---+*A-1-0-+---2-+---3-+---4-+---5-+---6-+---7-
* Read scenario data
  MOVE ALL LOW-VALUES TO WS-IN
  UNSTRING SCENARIO-DATA DELIMITED BY ','
  INTO
    WS-IN-data(1) WS-IN-data(2) WS-IN-data(3)
    WS-IN-data(4) WS-IN-data(5) WS-IN-data(6)
* Populate the borrower from scenario data
  move WS-IN-data(1) to name
  Compute creditscore = Function numval(WS-IN-data(2))
  Compute yearlyIncome = Function numval(WS-IN-data(3))
* Populate the loan from scenario data
  Compute amount = Function numval(WS-IN-data(4))
  Compute yearlyRepayment = Function numval(WS-IN-data(5))
  Compute yearlyInterestRate = Function numval(WS-IN-data(6))

* Invoke the rule
  call 'HBRRULE' using HBRA-CONN-AREA

  EXEC CICS SUSPEND END-EXEC

* Display rule responses, or error code, as appropriate
  if HBRA-CONN-COMPLETION-CODE = HBR-CC-OK then
    display 'HBR CALL Successful'

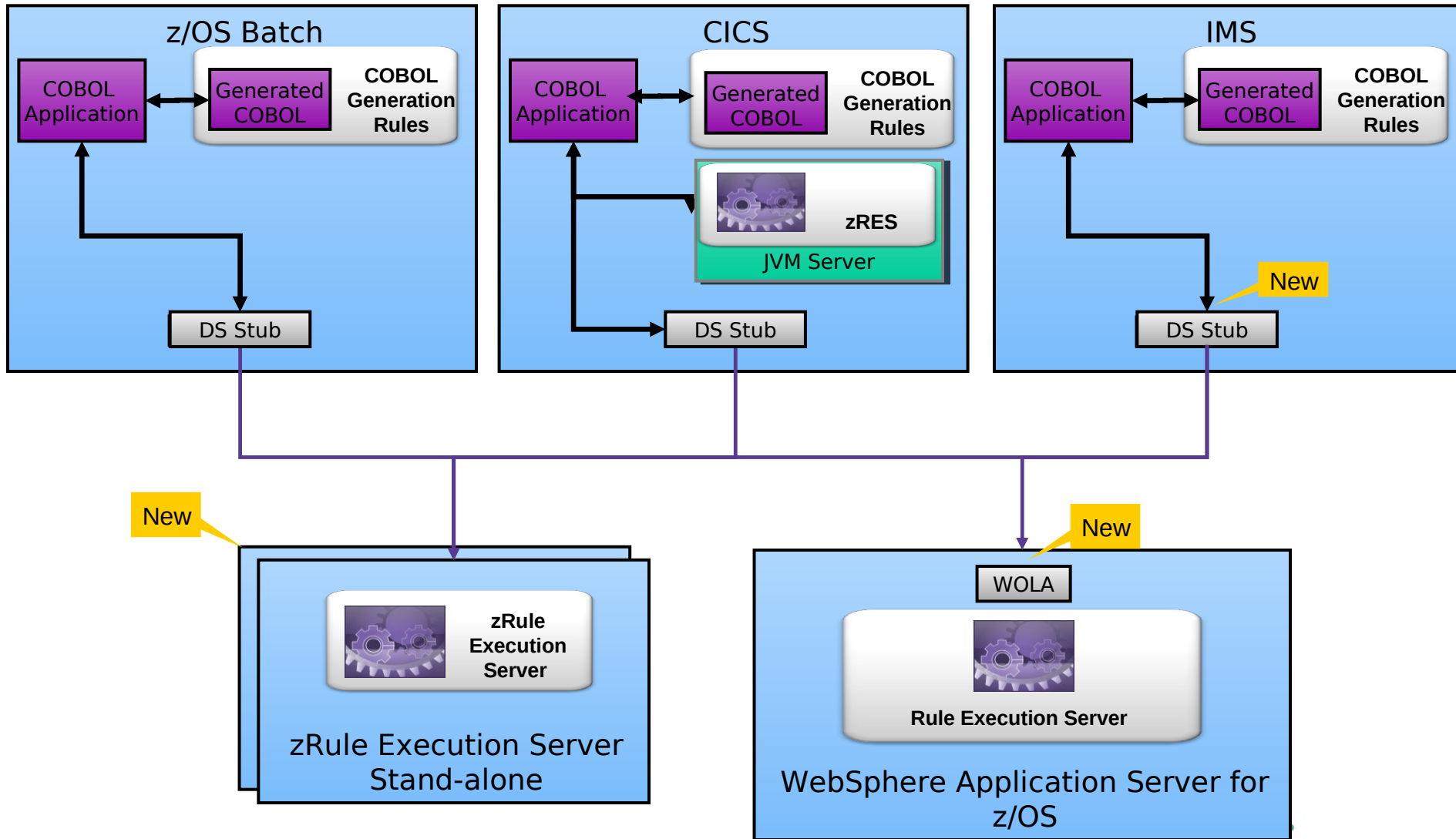
* Disconnect
  call 'HBRDISC' using HBRA-CONN-AREA

  IF HBRA-CONN-COMPLETION-CODE NOT EQUAL HBR-CC-OK THEN
    perform onFailedCall
  END-IF

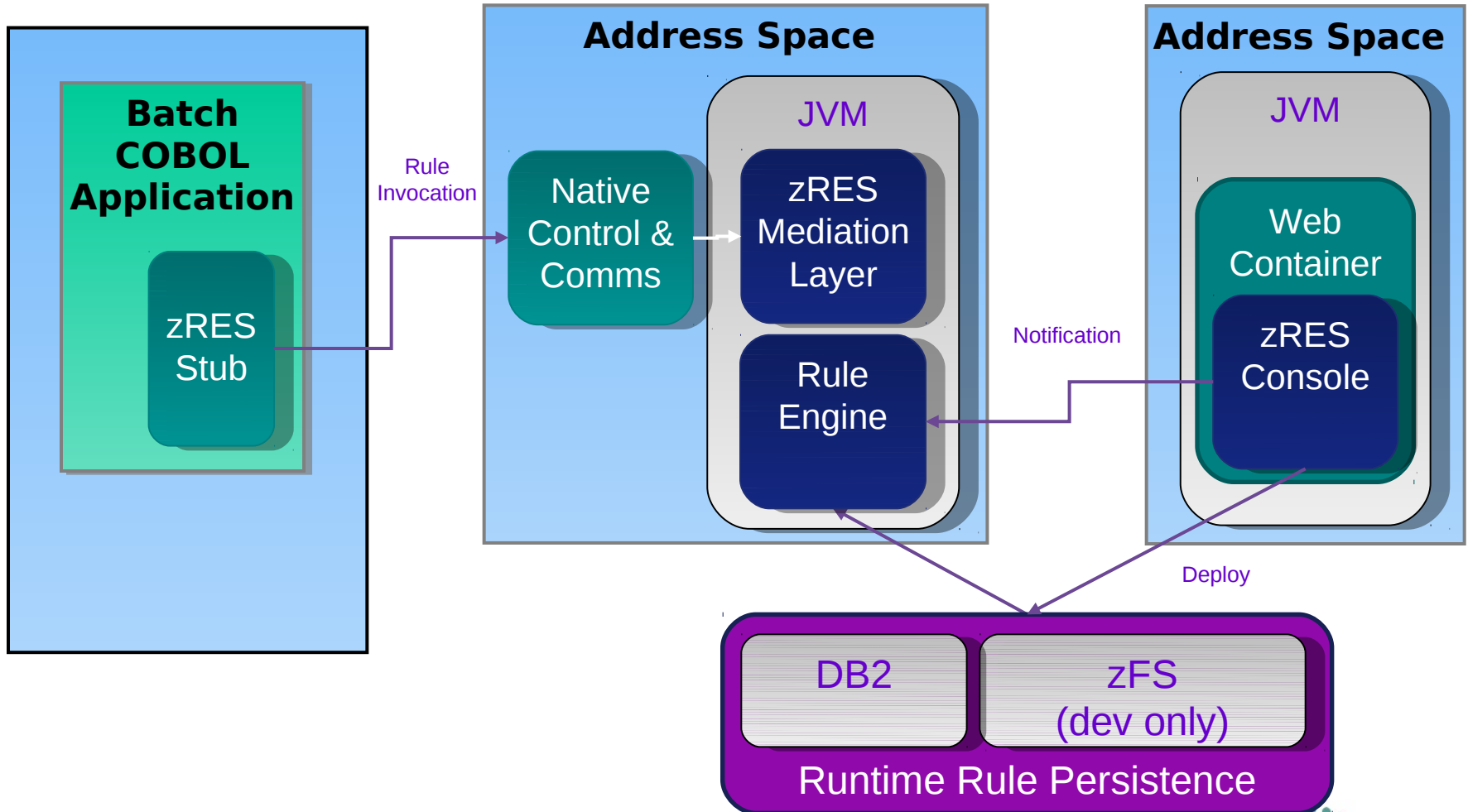
  perform prtDemoText

  EXEC CICS RETURN END-EXEC
  GOBACK.
```

Rule Invocation Options in 8.0



zRule Execution Server for z/OS



Decision Server Options Summary

	zRule Execution Server deployed in WebSphere Application Server for z/OS	zRule Execution Server deployed as a Standalone environment	zRule Execution Server deployed in CICS TS v4.x JVM Server environment	COBOL Generation Rules
OTTB integration with COBOL applications	✓	✓	✓	✓
Full support for all rule authoring constructs	✓	✓	✓	
Business Event Execution Support	✓			
Hot deployment support for new decision versions	✓	✓	✓	
Integration with Decision Center business tooling	✓	✓	✓	✓
Testing and simulation support	✓	✓		
Decision Warehousing rule auditing support	✓	✓		
Easy sharing of rules with distributed deployments	✓	✓	✓	
Local execution support for CICS TS v4.x			✓	✓
Full HA & transactional support	✓		✓	

Deployment Options for ODM on System z

Decisions can be invoked from existing CICS, Batch, IMS batch applications

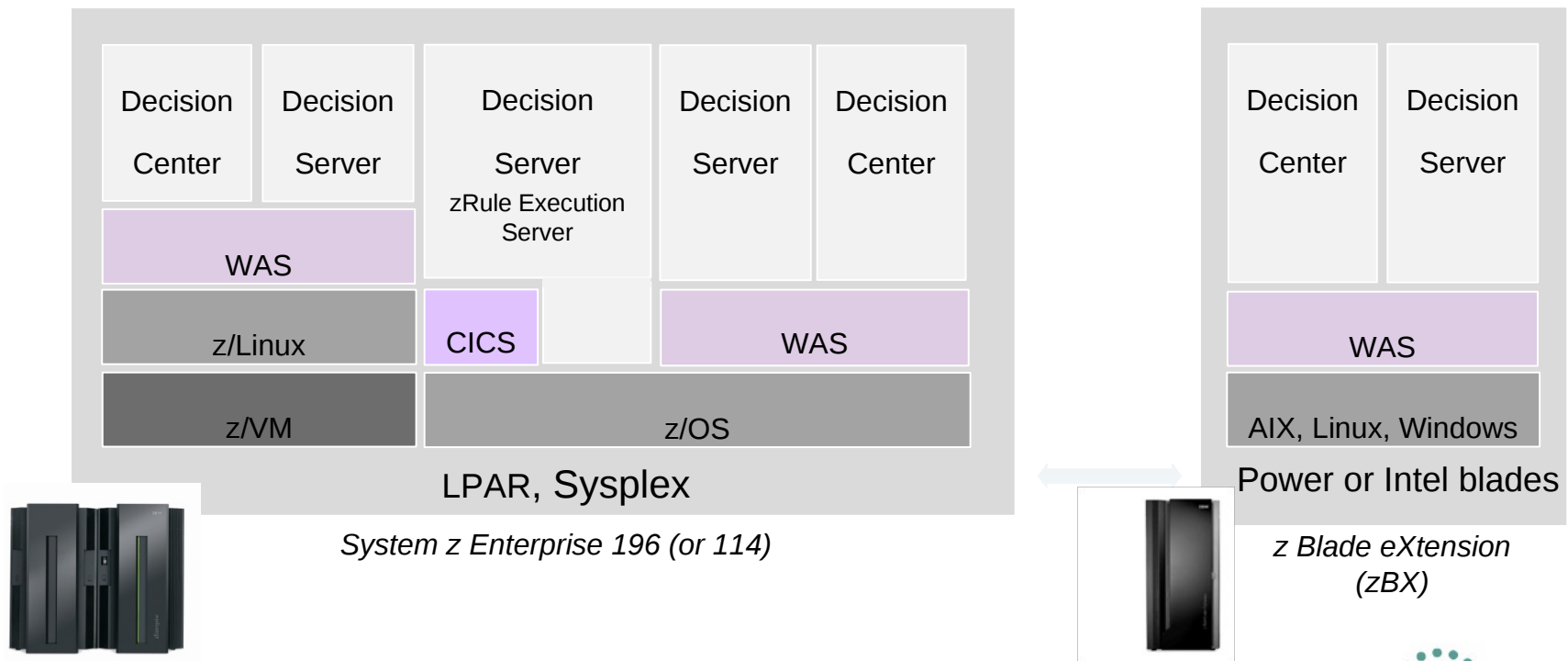
Runtime support for COBOL data types

Flexible runtime deployment to fit any System z environment:

Deployed on WebSphere Application Server for z/OS

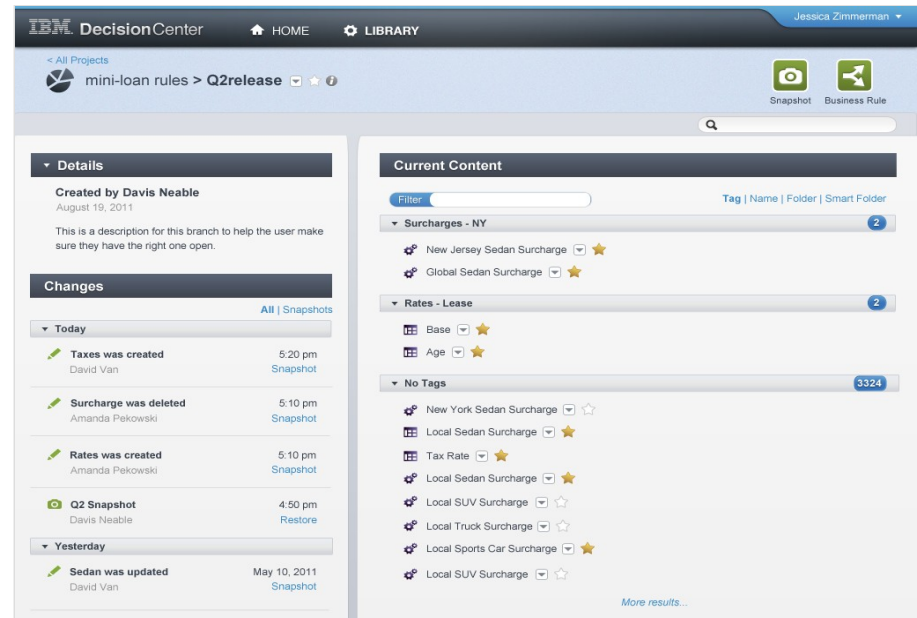
Deployed on CICS TS 4.x (JVM server environment)

Deployed standalone to z/OS



Decision Center: Web-based Console

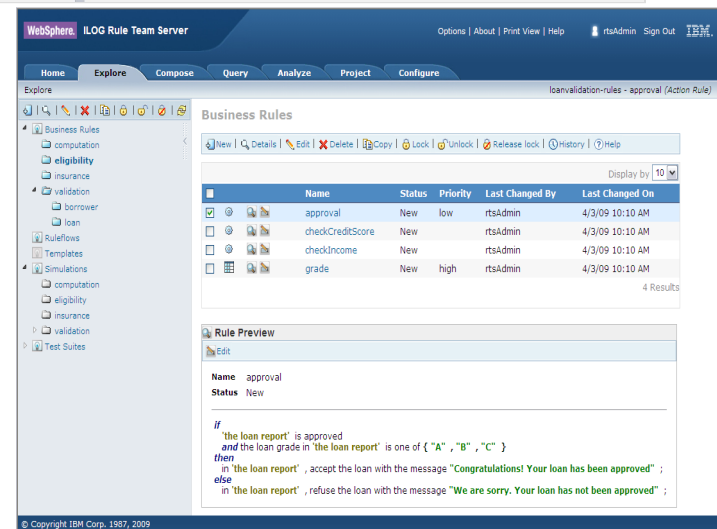
- Access rule artifacts concurrently without conflict or delay
- Take control of very large rulebases with Smart Views, easy search and reporting
- Get automatic notification of rule conflicts, redundancies
- See where rules are used across projects using queries
- Hot-deploy rule changes in minutes
- Secure, integrated with enterprise security facility including single sign-on



The screenshot shows the IBM Decision Center interface. The top navigation bar includes 'HOME' and 'LIBRARY'. The main content area is divided into two panels. The left panel, titled 'Details', shows information about a rule artifact created by Davis Neable on August 19, 2011. Below this is a 'Changes' section with a table of recent events:

Today	Yesterday
Taxes was created David Van 5:20 pm Snapshot	Sedan was updated David Van May 10, 2011 Snapshot
Surcharge was deleted Amanda Pekowski 5:10 pm Snapshot	
Rates was created Amanda Pekowski 5:10 pm Snapshot	
Q2 Snapshot Davis Neable 4:50 pm Restore	

The right panel, titled 'Current Content', displays a list of rule artifacts under various categories like 'Surcharges - NY', 'Rates - Lease', and 'No Tags'. Each artifact includes a name, a status icon, and a star icon for favorites.



The screenshot shows the WebSphere ILOG Rule Team Server interface. The top navigation bar includes 'Home', 'Explore', 'Compose', 'Query', 'Analyze', 'Project', and 'Configure'. The main content area is divided into two panels. The left panel, titled 'Business Rules', displays a table of rules:

Name	Status	Priority	Last Changed By	Last Changed On
approval	New	low	rtsAdmin	4/3/09 10:10 AM
checkCreditScore	New		rtsAdmin	4/3/09 10:10 AM
checkIncome	New		rtsAdmin	4/3/09 10:10 AM
grade	New	high	rtsAdmin	4/3/09 10:10 AM

The right panel, titled 'Rule Preview', shows the logic for the 'approval' rule:

```

if
  'the loan report' is approved
  and the loan grade in 'the loan report' is one of { "A", "B", "C" }
then
  in 'the loan report', accept the loan with the message "Congratulations! Your loan has been approved";
else
  in 'the loan report', refuse the loan with the message "We are sorry. Your loan has not been approved";
  
```


Testing and Simulation



- Out-of-the-box ruleset testing
- Business impact simulation
- Scenario configuration and customization
- Auditing using Decision Warehouse

The screenshot shows the ILOG Rule Team Server interface in Microsoft Internet Explorer. The browser address bar shows the URL: http://localhost:8080/teamserver/faces/explore/details.jsp?project=LoanValidation&baseline=current&id=brm.TestSuite%3A6%3A21&locale=en. The page title is 'WebSphere. ILOG Rule Team Server'. The main content area displays the details for the 'Second Test Suite (Test Suite)'. The 'Properties' section shows: Name: Second Test Suite, Folder: /rulePackage, Group: (empty), Created By: rtsAdmin, Created On: Apr 24, 2009 10:54:44 AM CEST, Last Changed By: rtsAdmin, Last Changed On: Apr 24, 2009 2:00:41 PM CEST. The 'Rules tested' section indicates 'All rules as of the current project state' and 'Starting Ruleflow Task: Default'. The 'Scenarios' section shows 'Format: Excel (2003)' and a file 'template1.xls'. The 'Reports' section includes a table of 'Latest Reports'.

Name	Test Suite Version	Scenarios	Status	Created On	Run By
Second Test Suite - Report (10)	2.1	10		April 24, 2009 2:00:50 PM	rtsAdmin
Second Test Suite - Report (9)	2.0	10		April 24, 2009 1:59:41 PM	rtsAdmin
Second Test Suite - Report (8)	1.13	10		April 24, 2009 11:49:46 AM	rtsAdmin
Second Test Suite - Report (7)	1.13	10		April 24, 2009 11:47:47 AM	rtsAdmin
Second Test Suite - Report (6)	1.11	10		April 24, 2009 11:12:30 AM	rtsAdmin

Scenario Definition

A19

		borrower			loan			
Scenario name	Description	yearly income	credit score	name	amount	approved	yearly interest rate	duration
Scenario 1	Good credit; get rate with insurance	75000	600	John Simons	250000	FALSE	0.0625	120
Scenario 2	Good credit; get higher rate	110000	700	Jane Howe	300000	FALSE	0.0575	120
Scenario 3	Good credit; get rate	125000	750	Isaac Mintner	500000	FALSE	0.0625	120
Scenario 4	Great credit; get lower rate	100000	800	Fernando Rodriguez	300000	FALSE	0.075	120
Scenario 5	Good credit; loan too high	90000	700	Jaclyn Perkins	500000	FALSE	0.0775	120

Input Data

L15

		loan	
Scenario name	Approved	Yearly Repayment	
Scenario 1	TRUE	1595.45	
Scenario 2	TRUE	1755.45	
Scenario 3	TRUE	3190.9	
Scenario 4	TRUE	1755.45	
Scenario 5	FALSE	0	

Expected Results

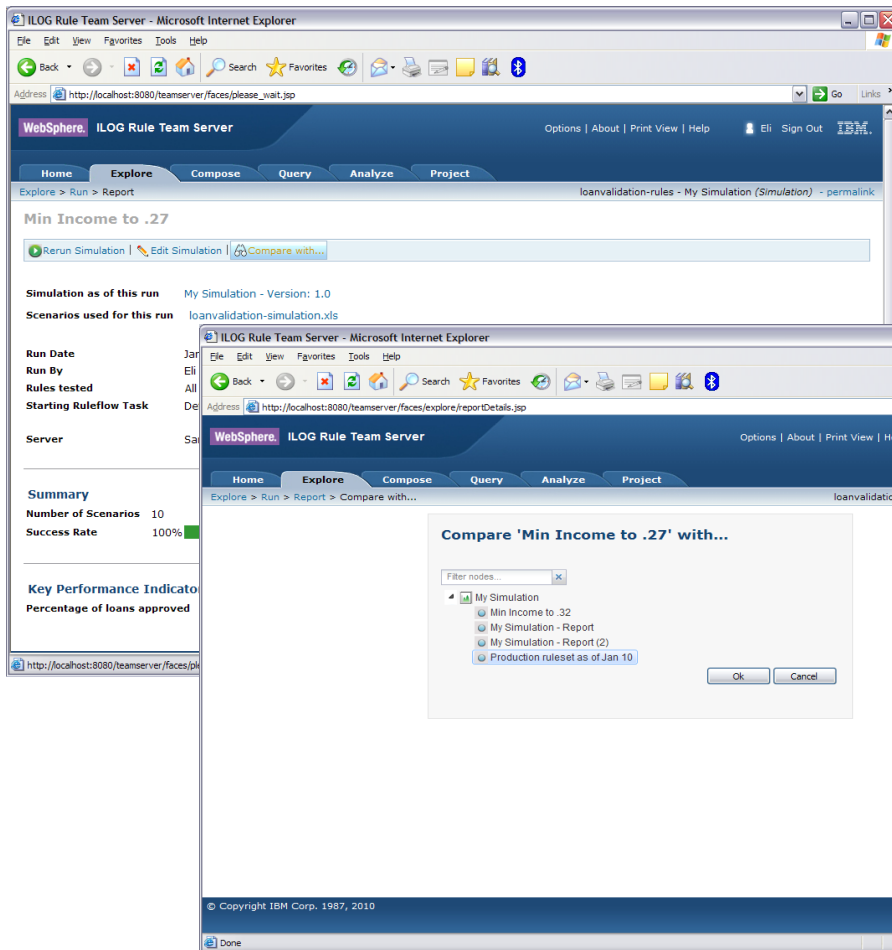
F9

		Number of ruleflow tasks executed		Number of rules fired	
Scenario name	is	is			
Scenario 1		4		15	
Scenario 2		4		16	
Scenario 3		4		14	
Scenario 4		4		15	
Scenario 5		3		5	

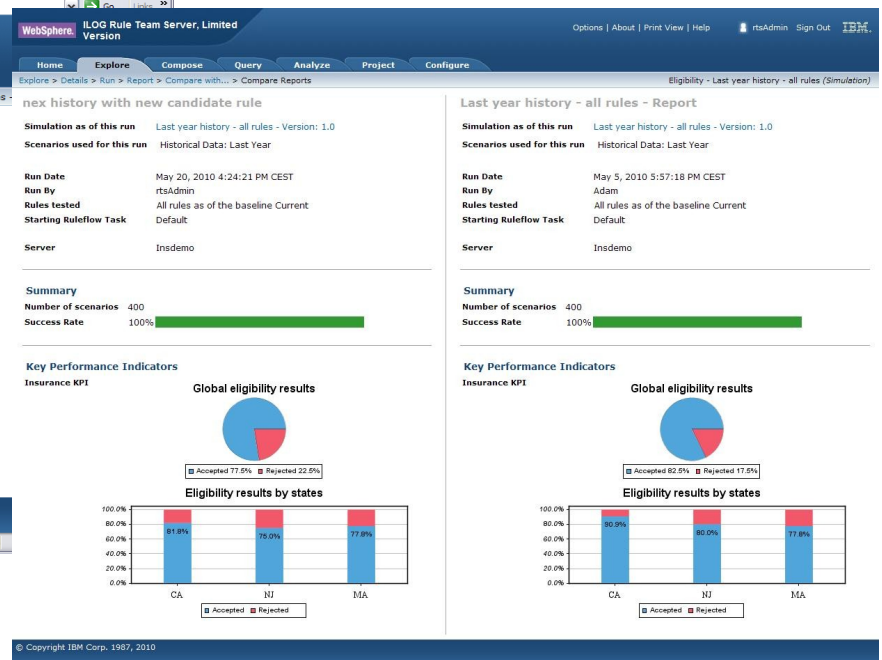
Ruleset Tests

Simulation Capabilities

- Test suite comparison
- Simulation suite comparison
- Champion and challenger scenario
- Allows what if analysis



The screenshot shows the ILOG Rule Team Server interface. The main window displays simulation details for 'Min Income to .27'. A dialog box titled 'Compare 'Min Income to .27' with...' is open, showing a tree view of nodes to compare: 'My Simulation', 'Min Income to .32', 'My Simulation - Report', 'My Simulation - Report (2)', and 'Production ruleset as of Jan.10'. The interface includes a navigation menu (Home, Explore, Compose, Query, Analyze, Project) and a summary section with 'Number of Scenarios: 10' and 'Success Rate: 100%'.



This section provides a side-by-side comparison of simulation results for two scenarios: 'Today' and 'Tomorrow'.

Today Scenario:

- Simulation as of this run: Last year history - all rules - Version: 1.0
- Scenarios used for this run: Historical Data: Last Year
- Run Date: May 20, 2010 4:24:21 PM CEST
- Run By: rtsAdmin
- Rules tested: All rules as of the baseline Current
- Starting Ruleflow Task: Default
- Server: Insdemo
- Summary: Number of scenarios: 400, Success Rate: 100%
- Key Performance Indicators: Insurance KPI
- Global eligibility results: Accepted 77.5%, Rejected 22.5%
- Eligibility results by states: CA (91.9%), NJ (75.0%), MA (77.8%)

Tomorrow Scenario:

- Simulation as of this run: Last year history - all rules - Version: 1.0
- Scenarios used for this run: Historical Data: Last Year
- Run Date: May 5, 2010 5:57:18 PM CEST
- Run By: Adam
- Rules tested: All rules as of the baseline Current
- Starting Ruleflow Task: Default
- Server: Insdemo
- Summary: Number of scenarios: 400, Success Rate: 100%
- Key Performance Indicators: Insurance KPI
- Global eligibility results: Accepted 82.5%, Rejected 17.5%
- Eligibility results by states: CA (90.0%), NJ (80.0%), MA (77.8%)

Side by side comparison
Complete your sessions evaluation online at SHARE.org/AnaheimEval

Today

Tomorrow 
in Anaheim
2012

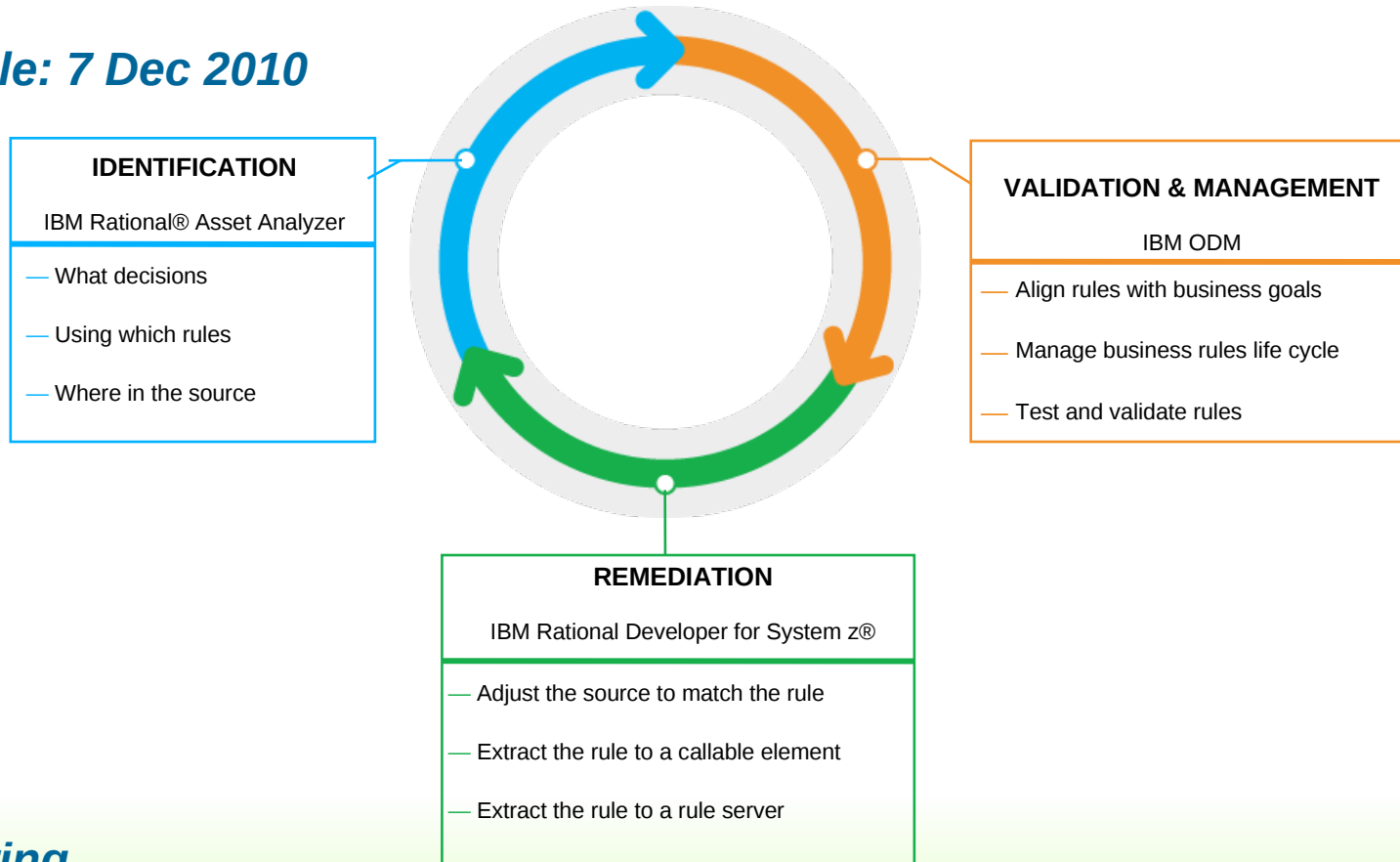
Rational Asset Analyzer Rule Discovery

Rational Asset Analyzer and Rational Asset Analyzer for System z V6.0

Now integrates with WebSphere Operational Decision Management

Announce: Oct. 26 2010 Business rule modernization

Available: 7 Dec 2010



Delivering...

The essentials for business rule mining of existing software assets enhancing the ability to capture, maintain and take advantage of application knowledge that can provide insight into an application's structure and its interactions with business data.

Business Rule Mining Capabilities

New functionality to assist clients in their business rule mining efforts

- Allows you to identify, capture and relate business rule assets to its existing set of IT assets.
- Introducing new asset types:
 - ▶ Business term (term)
 - ▶ Business term property (property)
 - ▶ Business rule (rule)
 - ▶ Business category (category)
 - ▶ Business process model (process model)
 - ▶ Business activity (activity)
- New dialogs, Source views and relationship detection
- Leveraging Web 2.0 technologies
- Import/Export function with WebSphere ILOG BRMS



The screenshot shows the Rational Asset Analyzer interface. The title bar reads 'Rational Asset Analyzer' with the user 'boyerpl' and a help icon. The navigation menu includes 'Home', 'Explore', 'Impact analysis', and 'Database'. The main content area is titled 'Explore rule mining assets' and features a search bar with the text 'Search names: A', a 'Go' button, a checked 'Ignore case' checkbox, and a link for 'Advanced search'. Below the search bar is a table titled 'Rule mining assets Total' with the following data:

Rule mining assets	Total
Business activity	2
Business process model	1
Business rule	1
Business term	10
Business term property	53

The IBM logo is visible in the bottom left corner, and the date and time 'Aug 10, 2010 5:23:09 PM' are shown in the bottom right corner.

Business Rule Modernization: Identification ...

Rational Asset Analyzer Administrator | ?

Home Explore Impact analysis Database

Context : [Explore rule mining assets](#) [Business term summary](#) [Business term details](#)

Business term details

Actions ▼

Details

Name: Total Patient Billable Amount
 Type: Object
 Definition: The total cost to the patient
 Categories: any

Properties (0)

None

Related data elements (13)

Data element	Program	Relationship type	Source location	Site
PATIENT-TOT-AMT	CALCCOST	User-asserted	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/CALCCOST.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	CALCCOST	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.SRCELIB/CALCCOST	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	DALYEDIT	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/DALYEDIT.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	DALYEDIT	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.SRCELIB/DALYEDIT	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	DALYUPDT	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/DALYUPDT.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	MSTRUPDT	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/MSTRUPDT.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	PATLIST	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/PATLIST.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	PATSRCH	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample App/DDS/DDS0001.TEST.COBOL/PATSRCH.cbl	RAASAMPLEAPPLICATION
PATIENT-TOT-AMT	TFSTDATA	Discovered	C:/RSSz/RAA Preq-reqs/Sample Source/Sayles Sample	RAASAMPI FAPPI ICATION

Business Rule Modernization: Identification ...

```

31. 003100
32. 003200     IF HI
33. 003300         COMPUTE CUST-DISC-PCT = F1 + F2
34. 003400     ELSE
35. 003500         DISPLAY "NO DISCOUNT".
36. 003600
37. 003700     GOBACK.
38. 003800/
39. 003900 100-FACTOR2.
40. 004000
41. 004100     IF C-AGE > 55
42. 004200         COMP
43. 004300     ELSE
44. 004400         SET
  
```

- Relate statement to a business rule
- Relate data element to a business term or property**
- Show data element details

Relate to a Business Rule

Relate the IF Statement to a business rule.

Business rule:

The statement has the following data elements with related terms and term properties:

Data element	Term or term property
C-AGE	age

Add a Business Rule

Name of the business rule:

Documentation (optional):

Rational Asset Analyzer boyerpl | ?

Home Explore Impact analysis Database

Context: [Explore rule mining assets](#) [Business rule summary](#) [Business rule details](#)

Business rule details Actions:

Details

Name: Provide discount for seniors
 Documentation: If a person's age is over some threshold, give them a discount.

Related statements (1)

Statement	Program	Relationship type	Source location	Site
IF	DISCOWE	User-asserted	C:/brm/testdata/BusinessRuleMining/src/DISCOWE.CBL line 41	MYSITE

User-related assets (0)

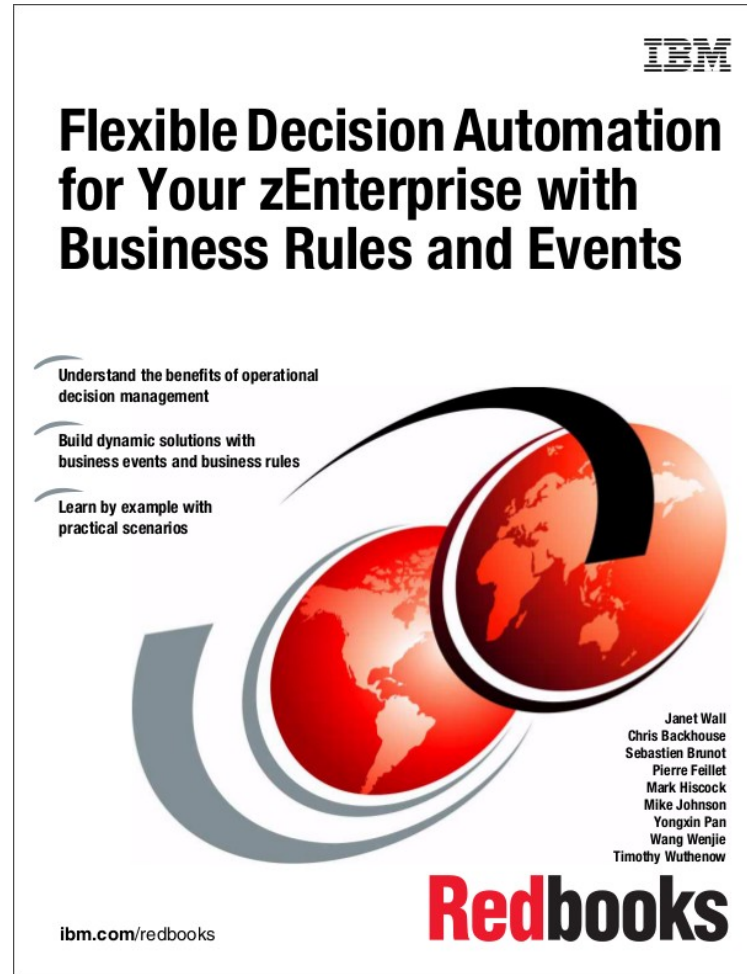
IBM Aug 10, 2010 5:37:20 PM

ODM for System z enables smart organizations to capitalize on modernization and innovation



- *Faster Time to Market:*
New products or changes implemented in days vs. months
 - Ability to react to changes in a fast pace competitive marketplace
- *Lower cost of maintenance*
 - Leading to improvement operational efficiency and total cost of ownership
- *Better visibility and control*
 - Leading to improvement to better corporate governance
- *Ability to implement the best decisions for the best changes and for the best outcome*
 - Business users can see, understand and have the appropriate tools to support the needs of the organization by maximizing their IT investment
- *Ability to manage and document business decisions executed in System z applications*
 - Ability to generate native COBOL from rules within the WODM Rule Designer
 - Authoring rules for COBOL in business terminology
 - Ability to share business rules with Java and other COBOL applications

IBM ODM for z/OS Redbook



<http://www.redbooks.ibm.com/abstracts/sg248014.html>

Thank You !
Any further questions?

