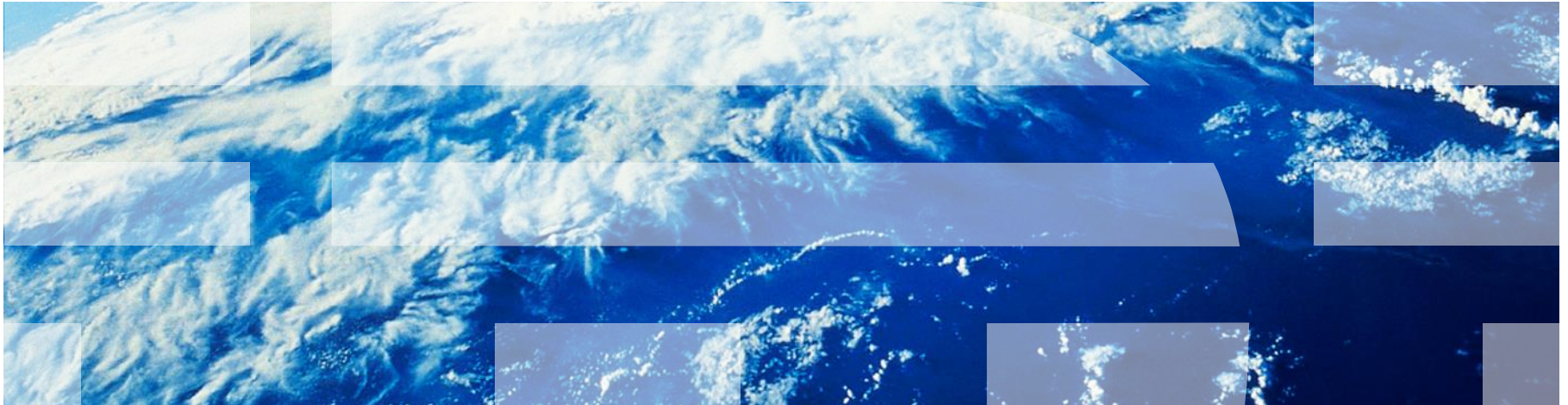


Using Operation Decision Manager for z/OS

- what every developer needs to know

Richard Szulewski - ODM for z/OS Product Manager

Chris Backhouse - ODM for z/OS Architect



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Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

Business Decisions are Everywhere



We need to add an eligibility check to meet the requirements of the new regulation.

Let's create a special promotion for our best customers.



Can we automate approvals for this type of order?

And They Change Frequently

Business Decisions are Everywhere



We need to add an eligibility check to meet the requirements of the new regulation.

Let's create a special promotion for our best customers.

Commissions / Royalties
Underwriting
Tax calculation
Billing
Fraud assessment
Documentation Requirements
Eligibility
Configuration
Accounting Disposition
Pricing
Product Selection
Benefit calculation

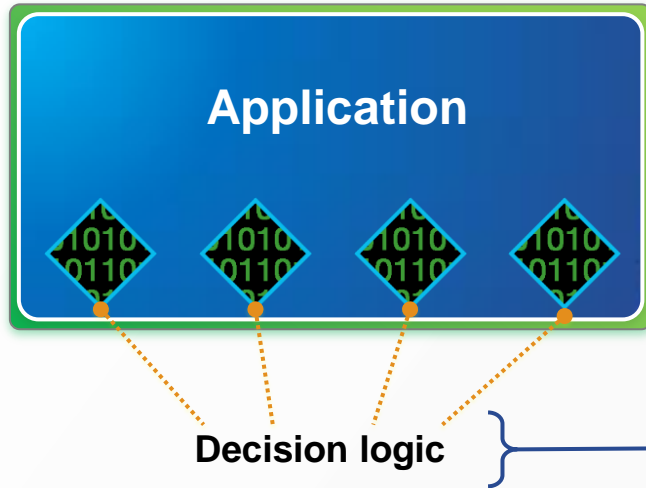
Can we automate approvals for this type of order?

And They Change Frequently

Externalize Decisions from Applications into Rules

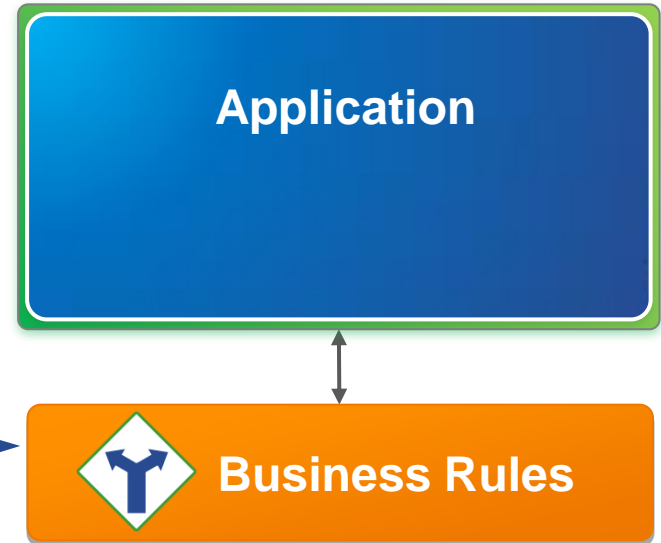
Manage decision logic independently from applications

Without Decision Management



- Rules written in software code cannot be read by business people
- Hard coded rules are difficult to change
- Rules intertwined within applications cannot be reused by other systems

With Decision Management



- Natural language rules can be easily read
- Externalized rules are easy to change
- Centralized rules enable reuse and consistency

Manage Decisions at the Speed of Business

Major system updates are not required for decision logic changes

1

- Customer searches for a price
- Insured members submit claims
- Brokers make trades

requests



Application

response

Why Decisions Change?

- Grow customer base
- Increase customer satisfaction
- Comply with regulatory changes



Business Rules

Decision Logic



Determine pricing & bundling



Approve filed claim



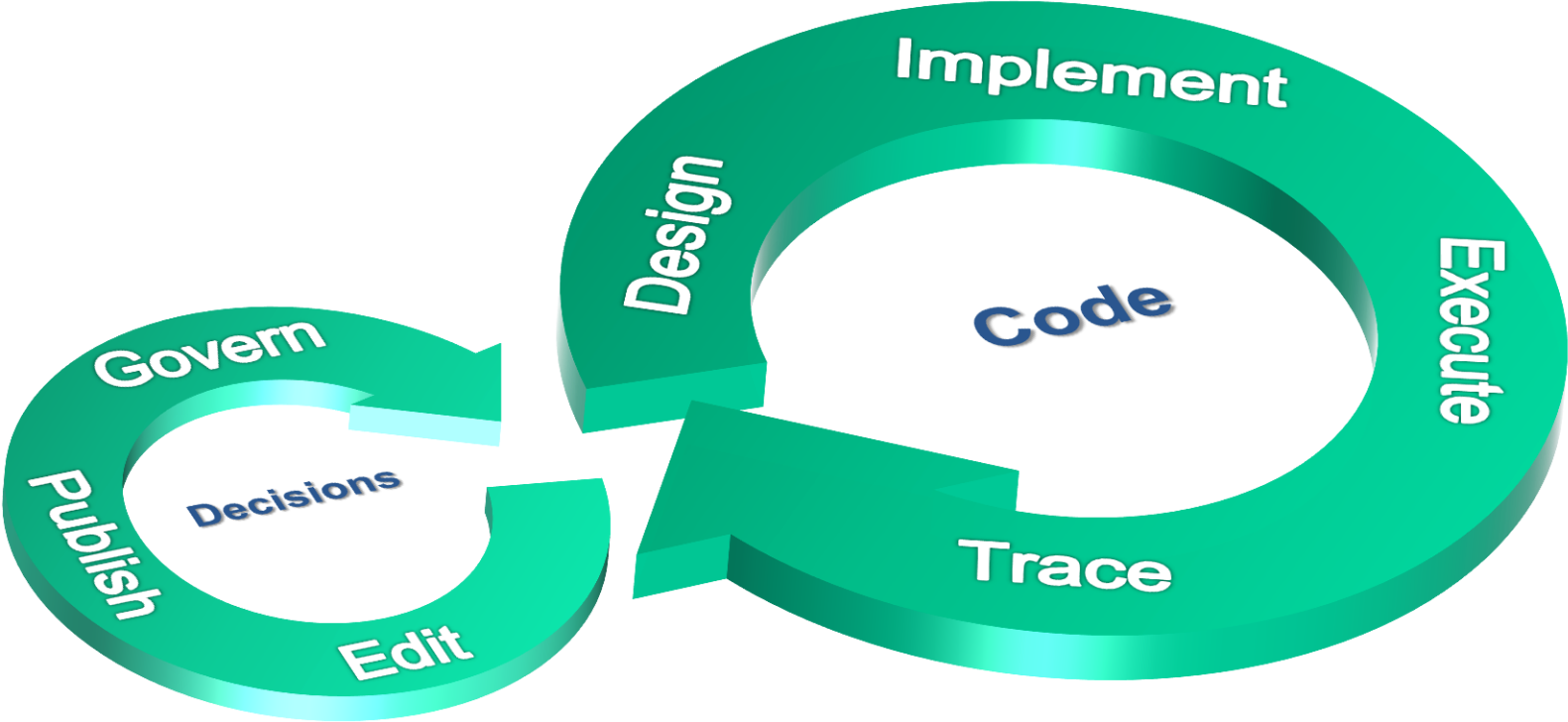
Detect fraudulent trades

Business Rule Updates



- New pricing promotion (*monthly*)
- Updated claims policies (*quarterly*)
- Tightened regulations on trading (*annually*)

2



Business - IT
Decisions / Policies
Days / Weeks

Developer
Functions / Tasks / Flow
Weeks / Months

Separate Application and Rule Lifecycles



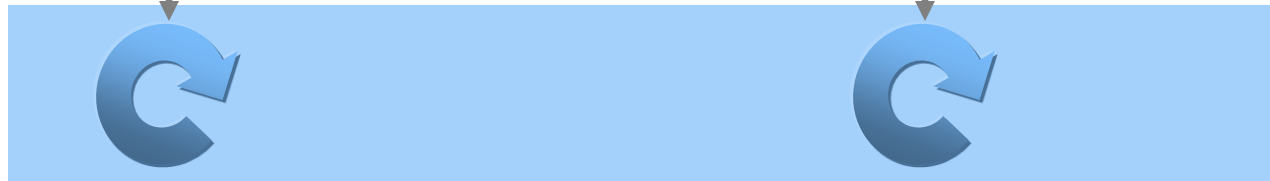
Functions / Tasks / Flow
changes in Weeks / Months



Application
Developer

Functional
Requirements

Functional
Enhancements /
Platform Upgrades



Application
Development



Business Rule
Management



Business
policies

Business policy
and rule
changes

Business policy
and rule
changes

Business policy
and rule
changes

Business policy
and rule
changes



Business & IT

Decisions / Policies
Changes in Days / Weeks

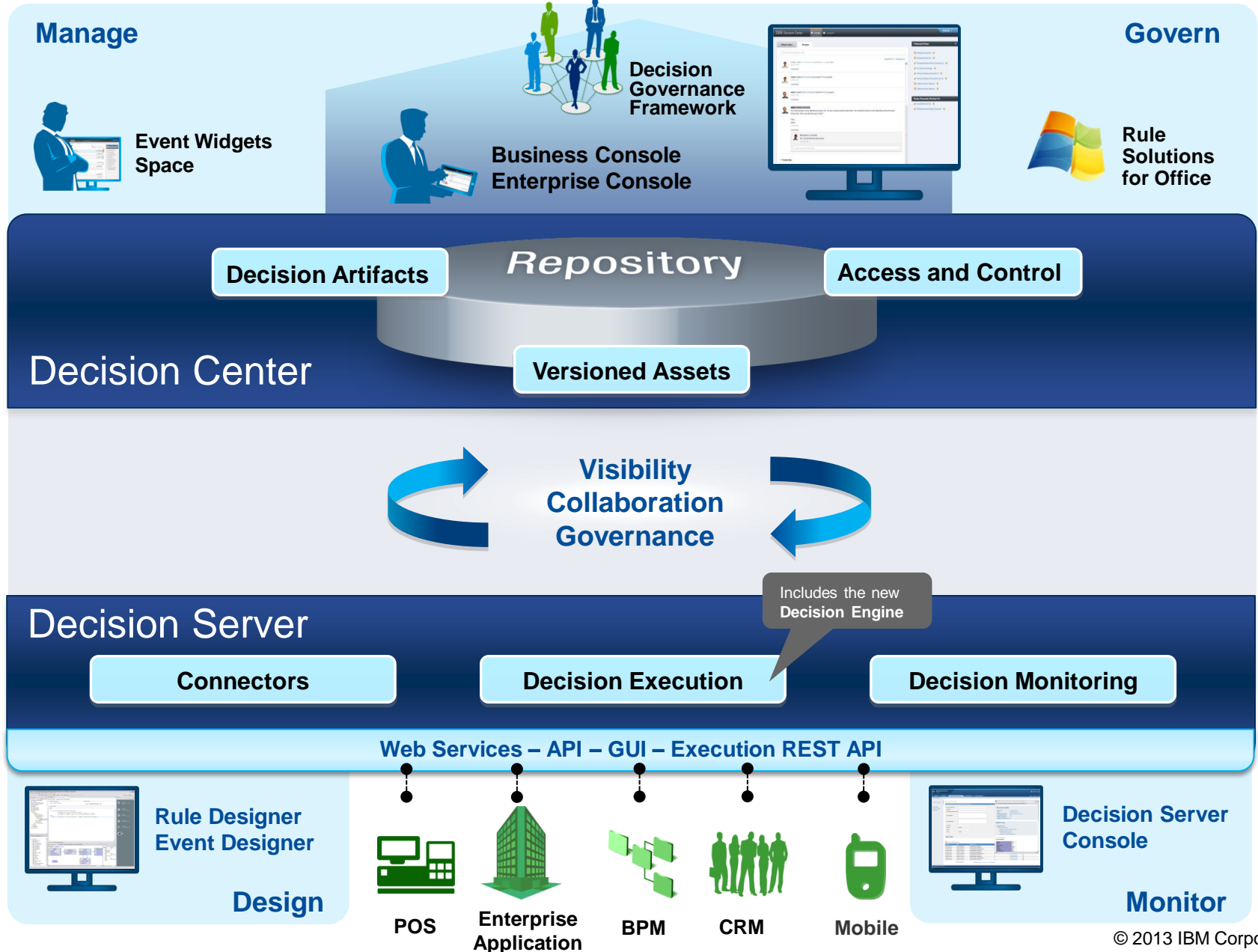
Challenges for Most z Clients

1. Consolidation, Isolation, Extension or Extinction of application portfolio
2. Be able to react to increasing variety and volume of change requests
3. Sharing business rules across platforms & channels
4. Ensuring seamless business experience in migration/ application evolution

Benefits of the ODM Approach

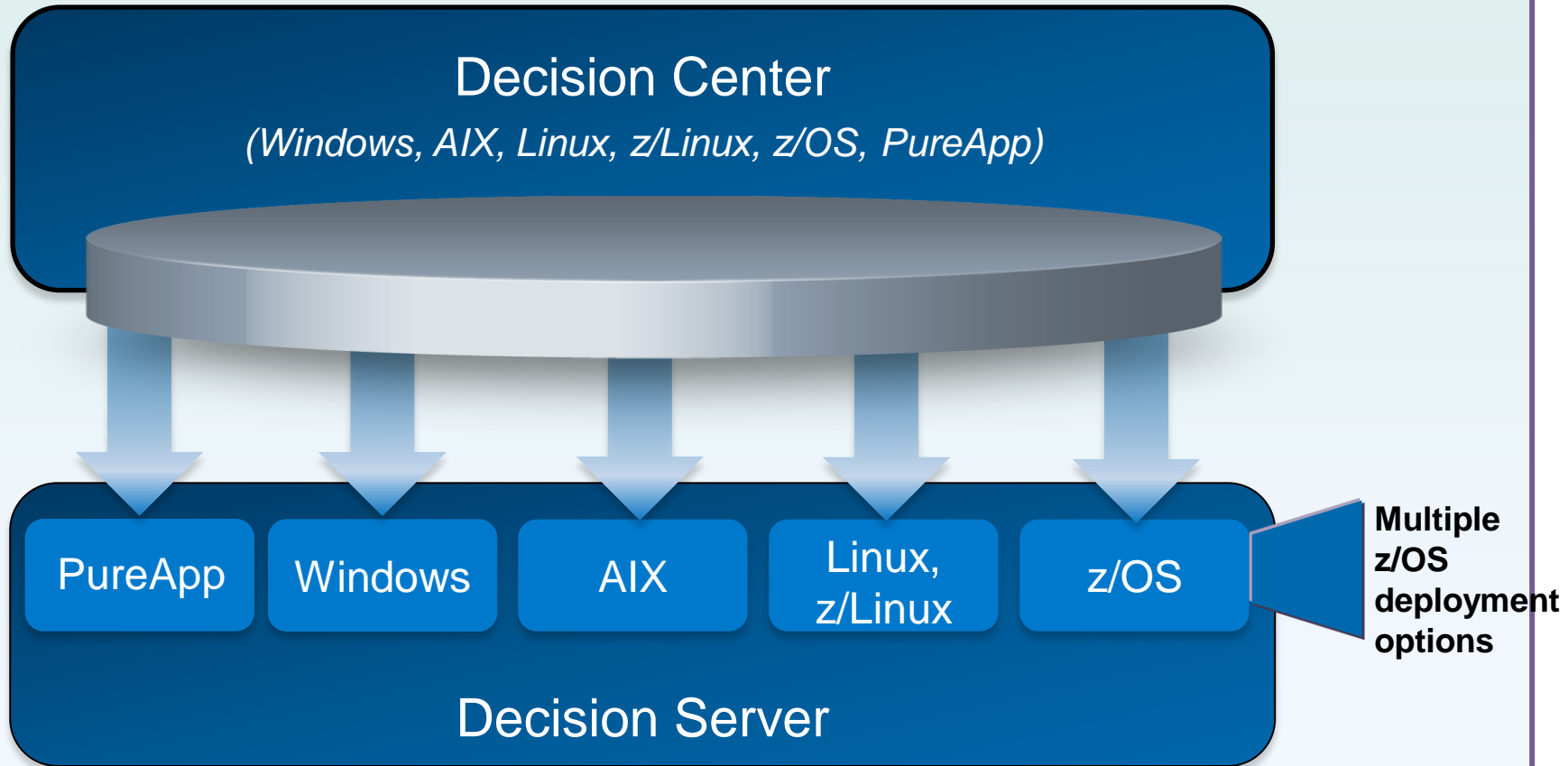
- ✓ **Cost savings**
 - Shorter change cycle, without increased business risk
 - Rule engine processing is zAAP eligible
- ✓ **Improved agility**
 - Improved Time to Market
 - Manage business decisions in natural language
 - Decouple development and business decision change lifecycles
- ✓ **Single version of the Truth**
 - Consolidated and shared expression of business policy
 - Maintainable with a Center of Competency model
- ✓ **Incremental Adoption**
 - Deploy decision methodology one decision at a time
 - Focus on decisions that need to change often & quickly
 - Expand adoption of “market validated” decisions

IBM Operational Decision Manager 8.5.1

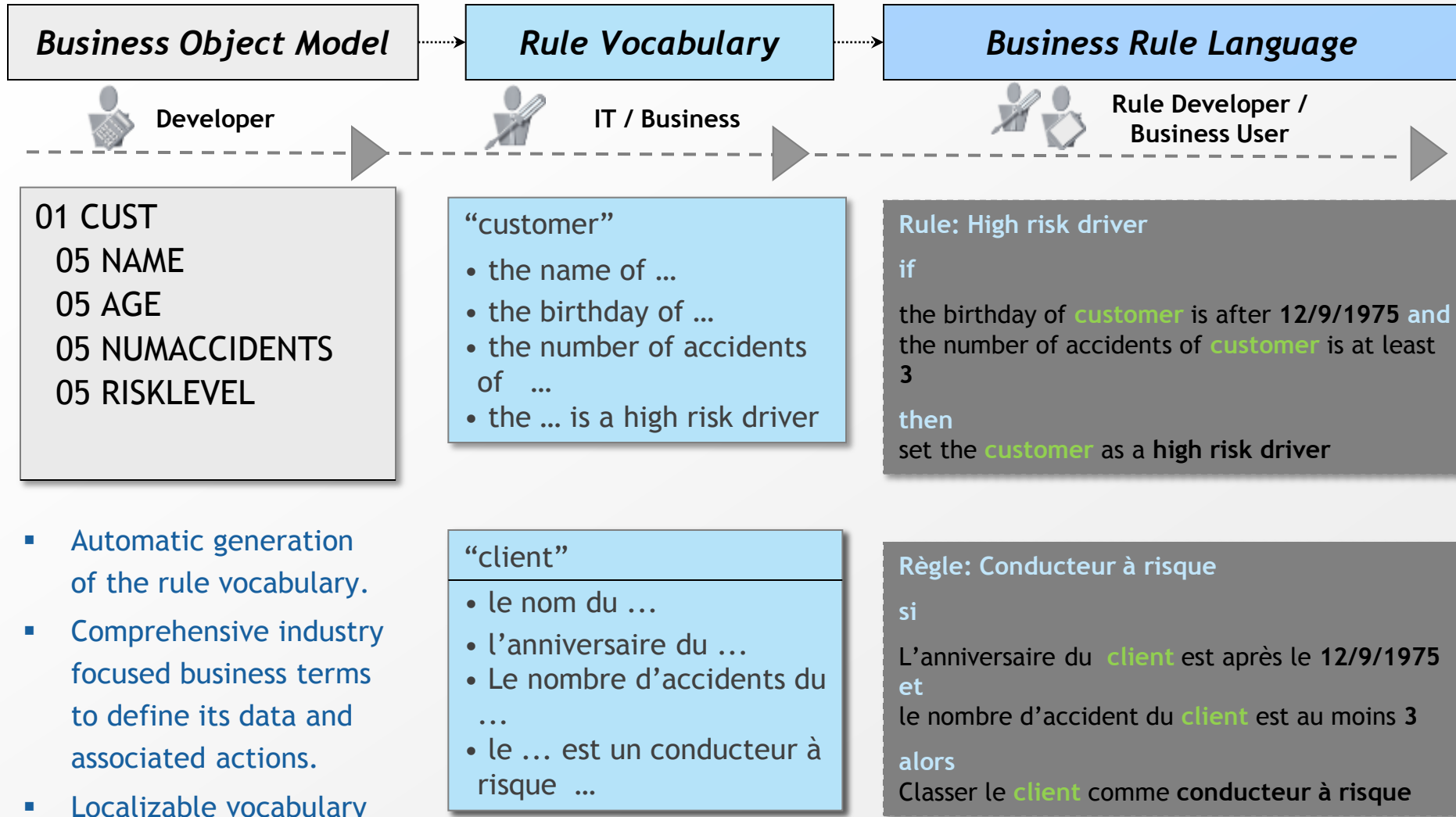


Runtime support

Leverage a wide range of platforms to meet the varying needs of enterprise architectures



ODM Brings the IT and Business World together



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

Rule and Event Designer

Comprehensive technical environment

Design

- Rules and events business objects
- Vocabularies
- Projects structure and organization
- Rule Templates

Test

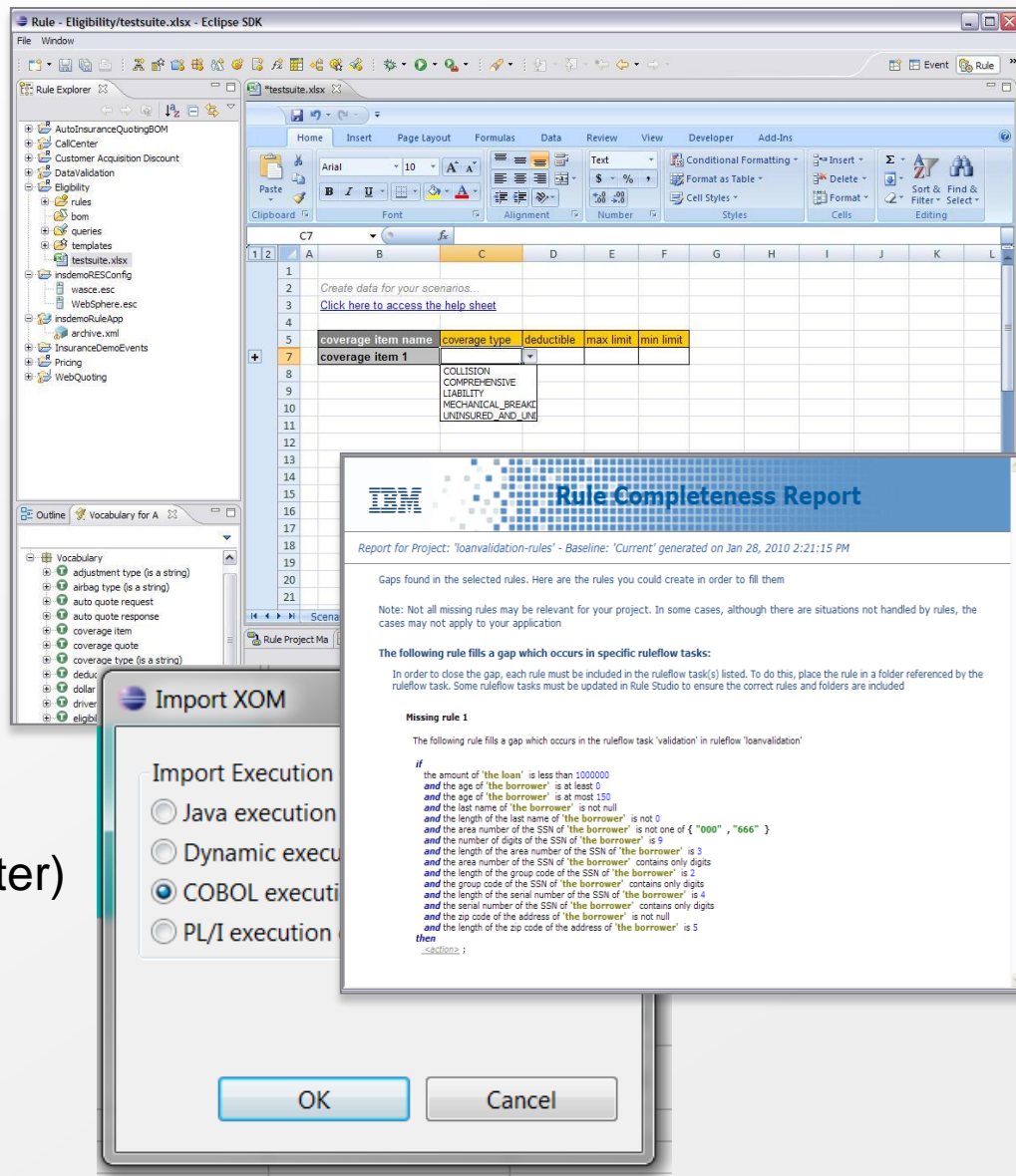
- Step by step debugging
- Value inspectors
- Test and simulation suites
- Completeness reports

Configure

- Business environment (Decision Center)

Deploy

- Rules and events projects to their respective execution environments



	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

Actions

Built-in Gap/Overlap checking

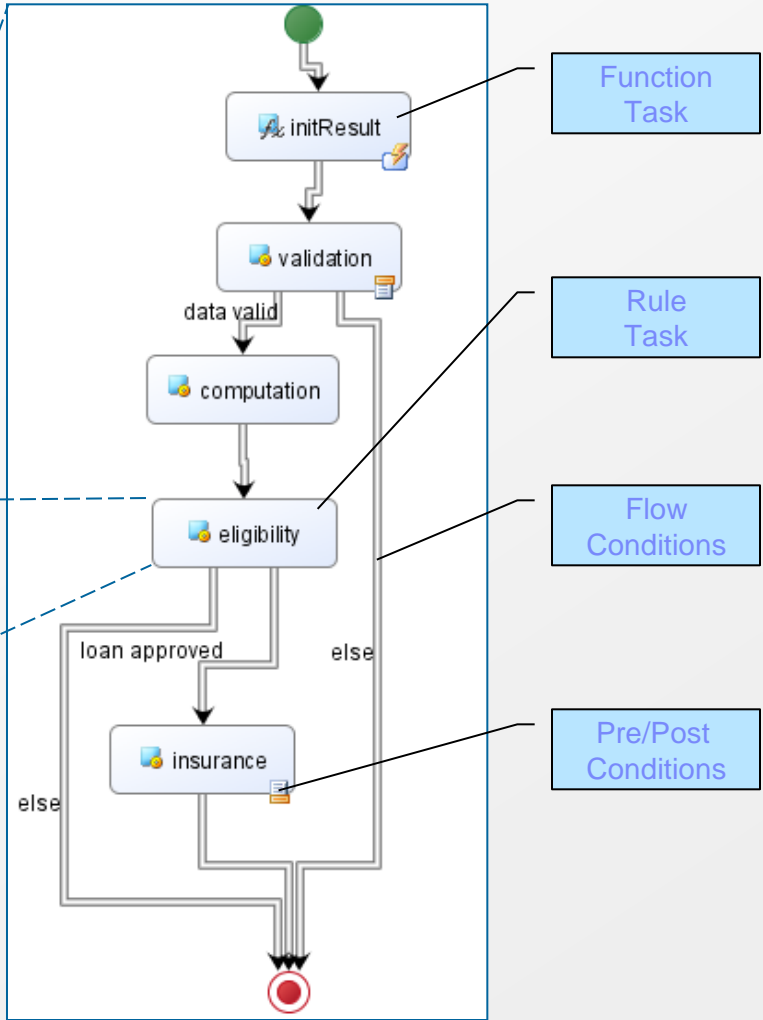
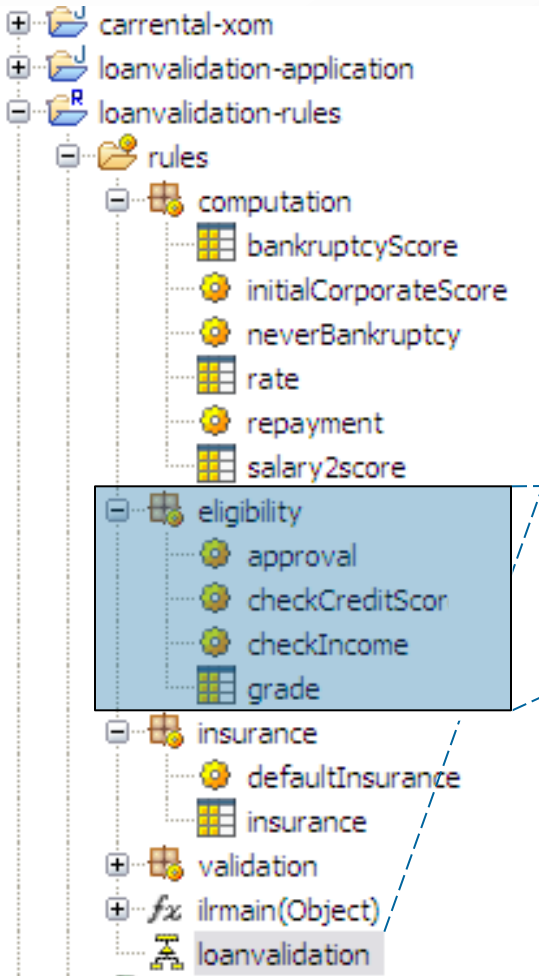
Automatic Rule generation

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** ;

Rule Authoring: Visual Decision Flow



Decision Center - Enterprise Console



Web-based Event and Rule Maintenance

- Access rule artifacts concurrently without conflict or delay
- Represent complex policies using rule overrides and hierarchies
- Take control of very large rulebases with Smart Views, easy search and reporting
- Get automatic notification of potential rule conflicts, redundancies
- See where rules are used across projects using queries
- Hot-deploy rule and event changes in minutes
- Secure, integrated with enterprise security facility including single sign-on
- Multiple release management supporting diff and merge

The screenshot displays the IBM Decision Center interface for rule maintenance. The breadcrumb trail is: Business Rules > Pricing > Coverage Pricing > Base Premium > Collision. The left sidebar shows a tree view of rule artifacts. The main content area shows a table of rule artifacts with columns: Actions, Name, Status, Priority, Last Changed By, and Last Changed On. A table preview is shown below, titled 'Collision Price Table', with columns: Vehicle Value, Deductible, and Base Premium. The table preview shows 18 rows of data.

Vehicle Value	Deductible	Base Premium
Lower		
	\$250	\$ 120
	\$500	\$ 110
	\$1000	\$ 100
	\$250	\$ 130
	\$500	\$ 120
	\$1000	\$ 110
	\$250	\$ 150
	\$500	\$ 145
	\$1000	\$ 140
	\$250	\$ 160
	\$500	\$ 150
	\$1000	\$ 140
	\$250	\$ 170
	\$500	\$ 160
	\$1000	\$ 150
	\$250	\$ 190
	\$500	\$ 180
	\$1000	\$ 165

The screenshot displays the IBM Decision Center interface for simulation results. The breadcrumb trail is: Explore > Details > Run > Report > Compare with... > Compare Reports. The main content area shows simulation details for 'Eligibility - Last year history - all rules (Simulation)'. It includes a summary section with 'Number of scenarios: 400' and 'Success Rate: 100%'. Below the summary are 'Key Performance Indicators' for 'Global eligibility results' and 'Eligibility results by states'. The global results show 77.0% Accepted and 22.0% Rejected. The state results show 81.0% Accepted for CA, 75.0% Accepted for NJ, and 77.0% Accepted for MA.

State	Accepted	Rejected
CA	81.0%	19.0%
NJ	75.0%	25.0%
MA	77.0%	23.0%

Decision Center – Business Console



Social Media Style Collaboration

- Built-in Decision Governance Framework methodology
- Maintain awareness across the team
- Ensure automatic notifications of changes
- Ensure team collaboration

The screenshot shows the IBM Decision Center Business Console interface. The top navigation bar includes 'HOME' and 'LIBRARY' tabs, and a user profile 'brandon'. The main content area is divided into several sections:

- What's New**: A 'Stream' tab is active, showing a list of 'New Business Rules' (e.g., 'An old car surcharge', 'Acquisition Promotion for NJ') and 'New Updates on Followed Rules' (e.g., 'Collision Price Table NY', 'SUV Surcharge NJ').
- Followed Rules**: A sidebar on the right lists rules like 'Airbag Discount', 'All Experienced Drivers Discount', and 'Collision Price Table'.
- Rules Recently Worked On**: A section indicating that no rules have recently worked on.
- Activity Stream**: A section showing user activity, such as 'Rachel created a new post' and 'adam created a new post'.

The screenshot shows a detailed view of a 'Comprehensive Price Table' in the IBM Decision Center. The interface includes a message: 'You are comparing initial Snapshot with current state. Close this message to return to the change activity.' Below this, there are filters for 'Project: Pricing' and a list of changes: 'Added (0)', 'Deleted (0)', 'Updated (2)', and 'Unchanged (22)'. The main content shows two side-by-side tables comparing 'version 3.0' (Created by Paul on Apr 12, 2013) and 'version 10.0 (current)' (Created by Bea on Apr 15, 2013). The tables have columns for 'Vehicle Value', 'Deductible', and 'Base Premium'.

	Vehicle Value	Deductible	Base Premium
1	\$ 0. \$ 5,000]	\$250	\$43
2	\$ 5 0. \$ 5,000]	\$500	\$40
3	\$ 5 0. \$ 5,000]	\$1000	\$26
4	5,000. \$ 10,000]	\$250	\$48
5	5,000. \$ 10,000]	\$500	\$42
6	5,000. \$ 10,000]	\$1000	\$33
7	10,000. \$ 20,000]	\$250	\$52
8	10,000. \$ 20,000]	\$500	\$45

	Vehicle Value	Deductible	Base Premium
1	\$ 0. \$ 5,000]	\$250	\$53
2	\$ 5 0. \$ 5,000]	\$500	\$50
3	\$ 5 0. \$ 5,000]	\$1000	\$38
4	0. \$ 10,000]	\$250	\$48
5	0. \$ 10,000]	\$500	\$42
6	0. \$ 10,000]	\$1000	\$33
7	0. \$ 20,000]	\$250	\$52
8	0. \$ 20,000]	\$500	\$45

Decision Governance Framework



All Changes and Deployments Relate to a Specific Release



The screenshot shows the IBM Decision Center interface. The top navigation bar includes "Decision Center", "HOME", "LIBRARY", and "WORK". The main content area displays a list of activities under the "Activities" tab. Two activities are visible: "Create Roadside Product" (Due Date: Jun 21, 2013, Owner: jack) and "Update Comprehensive Product" (Due Date: Jun 21, 2013, Owner: joe). The right sidebar shows the details of a release, including "Created by Abu Apr 19, 2013", "Goals", "Decision Servi... Pricing", "Due Date Jun 21, 2013", "Status In Progress", "Owner Paul", and "Approvers" (william, averell).

Rule management activities occur in the context of a release

Release objectives are documented

Release has

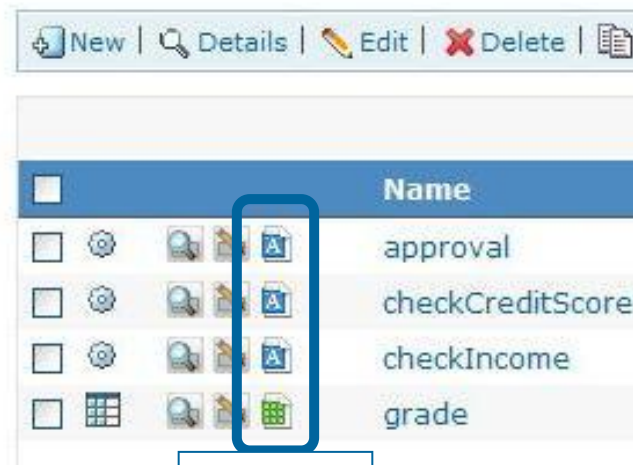
- A due date
- A status
- An owner

To complete, a Release must be reviewed and approved

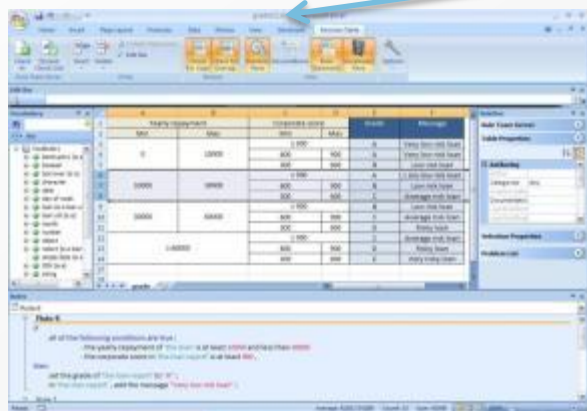
Extended Rule Authoring Experience

- Direct access to MS editing
- Ruleflow editing thru Word
- Automatic synchronization
- Automatic lock of edited elements

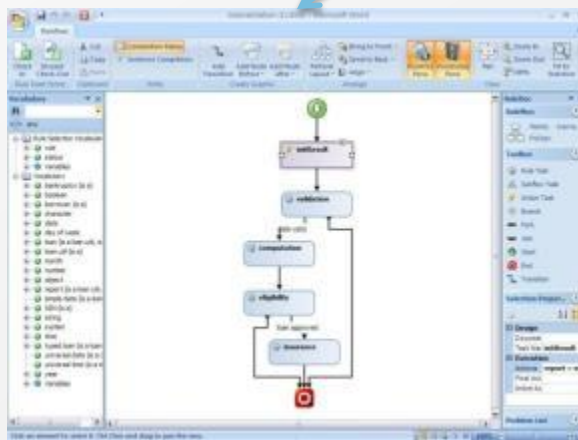
Business Rules



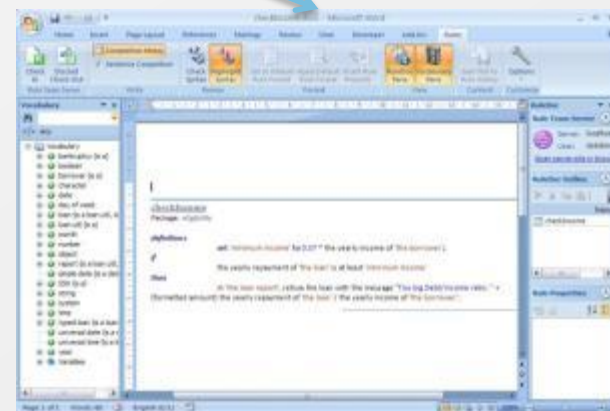
One click



Decision Table in MS Excel

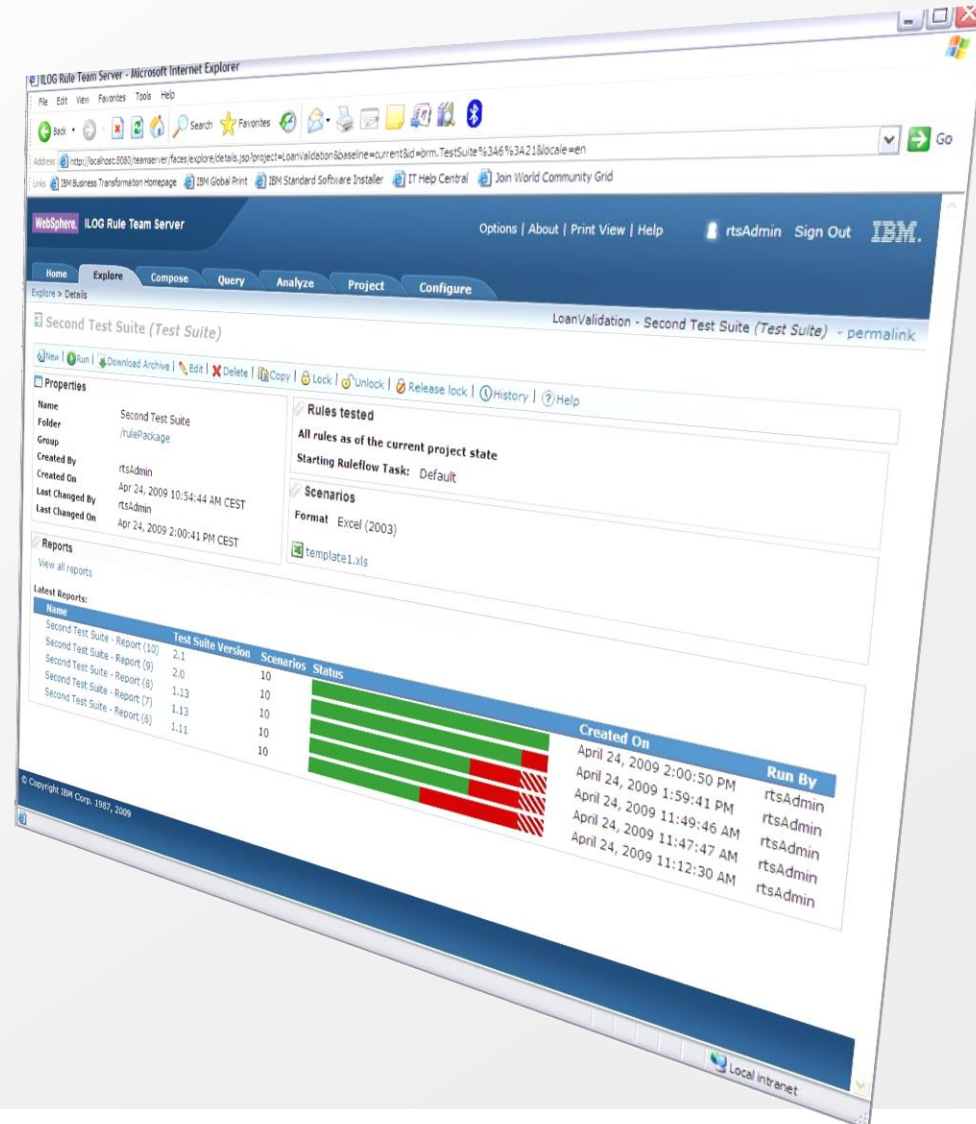


Rule Flow in MS Word



Action rules in MS Word

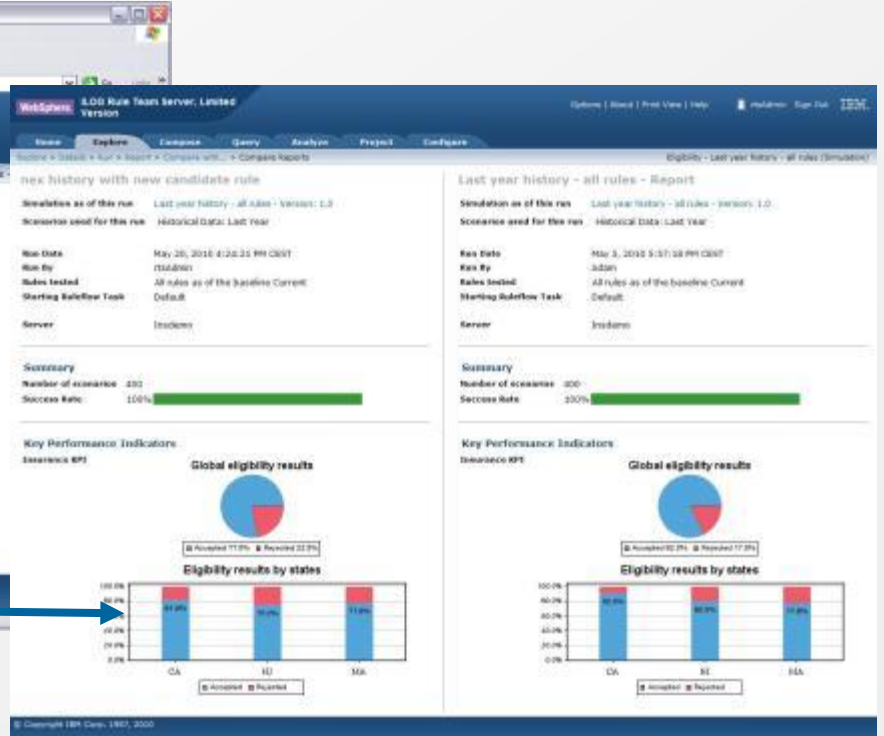
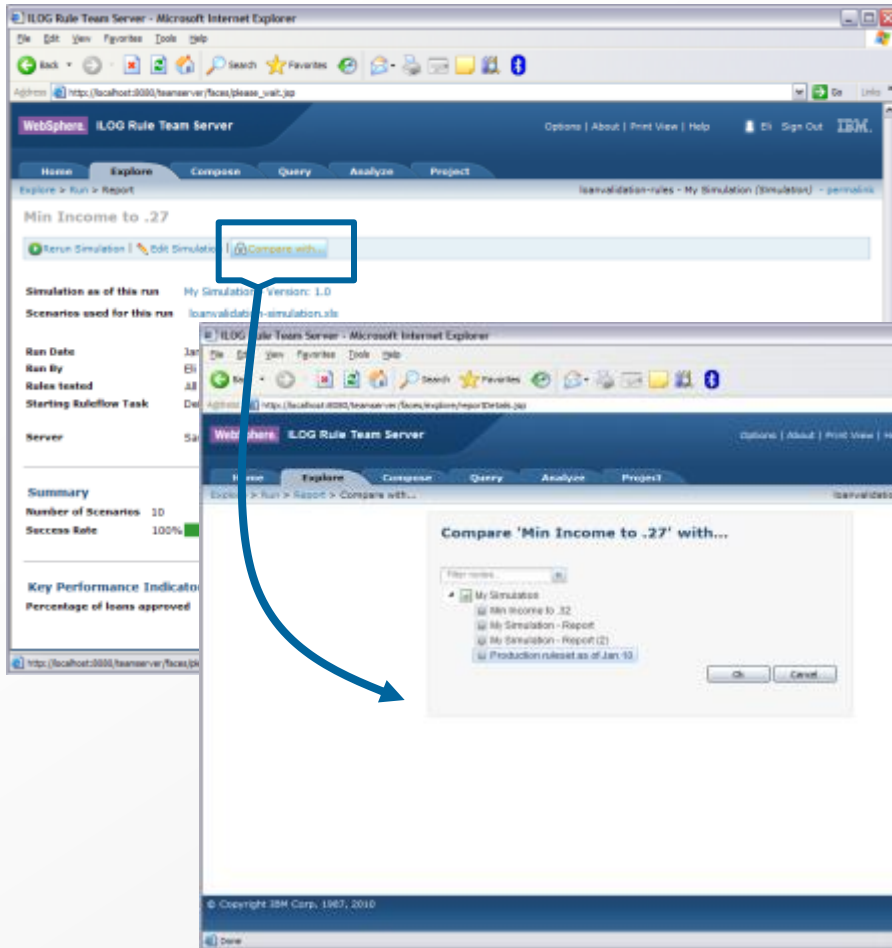
- The feature formally know as Decision Validation Services
- Functionality Overview
 - Out-of-the-box ruleset testing in Decision Center
 - Business impact simulation in Decision Center
 - Scenario configuration and customization in Rule Studio
 - Audit - Decision Warehouse in Rule Execution Server



Simulation Capabilities



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



Side by side comparison

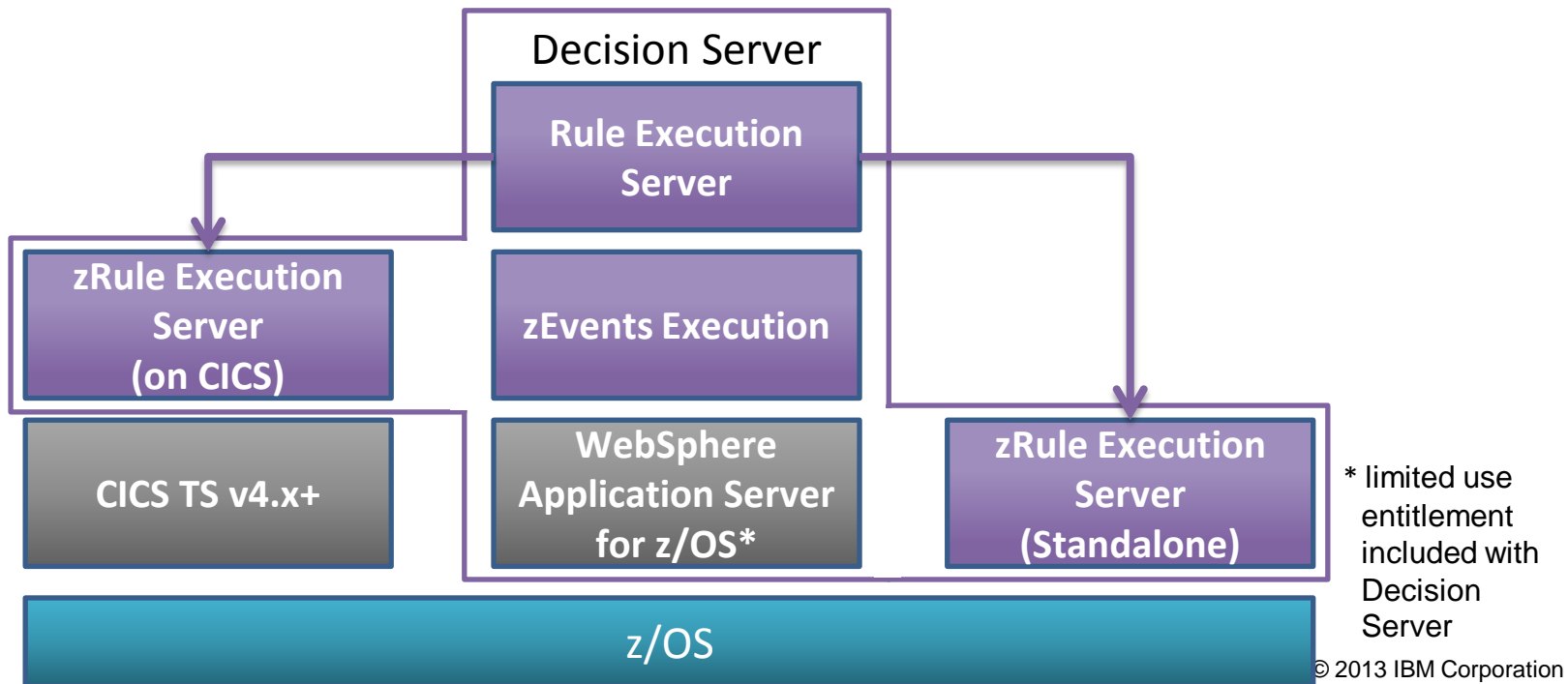
Today

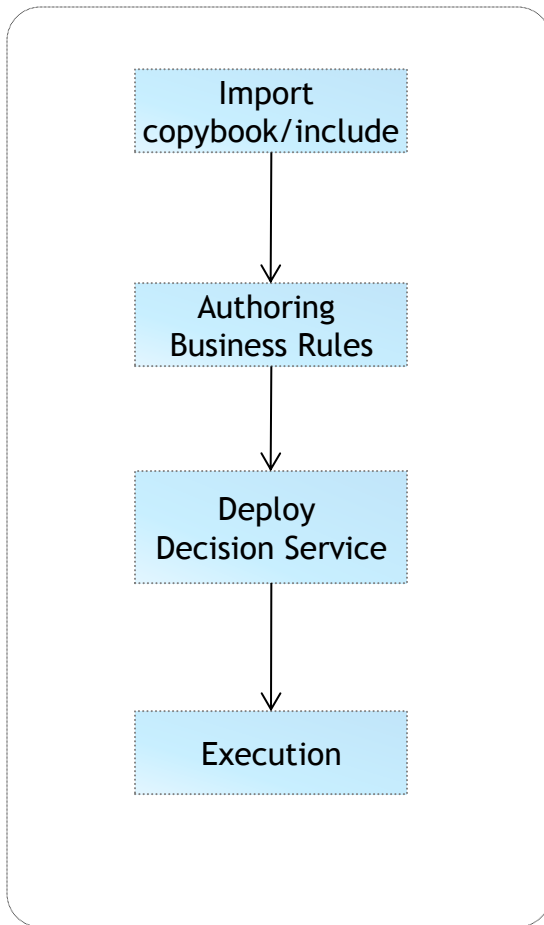
Tomorrow

Rule Execution Server Options on z/OS

Decision Server Runtime Options

- Decisions can be invoked from existing CICS, batch and IMS applications
- Runtime support for COBOL and PL/I data types
- Flexible runtime deployment to fit any z/OS environment:
 - Deployed on WebSphere Application Server for z/OS
 - Deployed standalone to z/OS
 - Deployed in CICS TS 4.2 and above JVMServer environment





Scenario

- Existing application containing business rules
- Data model defined in COBOL copybook or PL/I Include file
- Use ODM to modernize the business policy

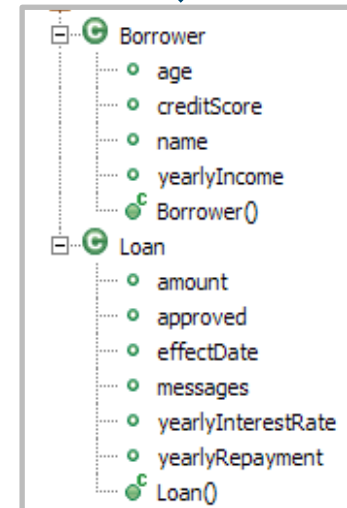
Benefits

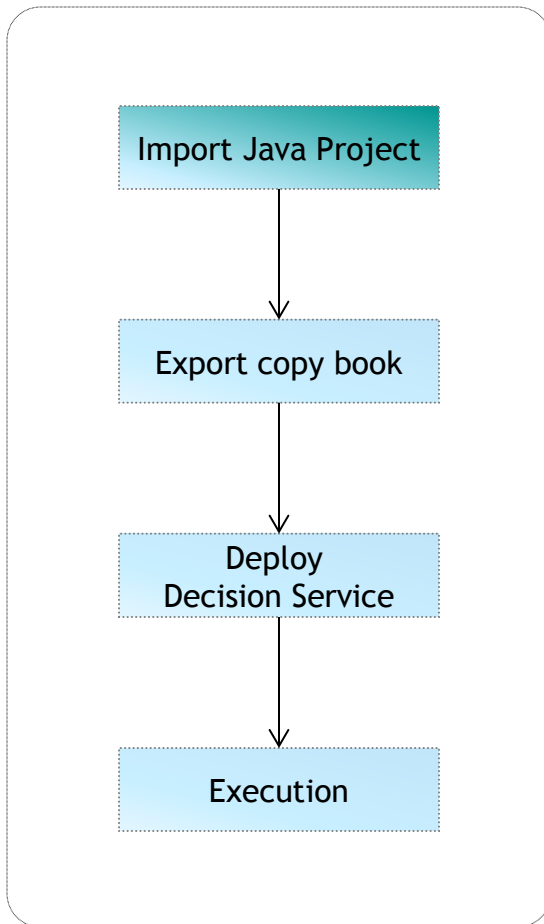
- Modernize business policies in ODM
- Rules can be invoked 'naturally' from existing application
- Business policy/rule lifecycle detached from application lifecycle

Note: The PL/I Include to XOM tooling is not available until V8.5

- Support Enterprise COBOL & PL/I
- Java is created from the copybook or include structure
 - Java XOM & Java code to marshal between COBOL or PL/I <-> Java
 - 01 level structures mapped to class in BOM
- Redefines statements supported
 - Select which redefines structure to import

```
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.
```





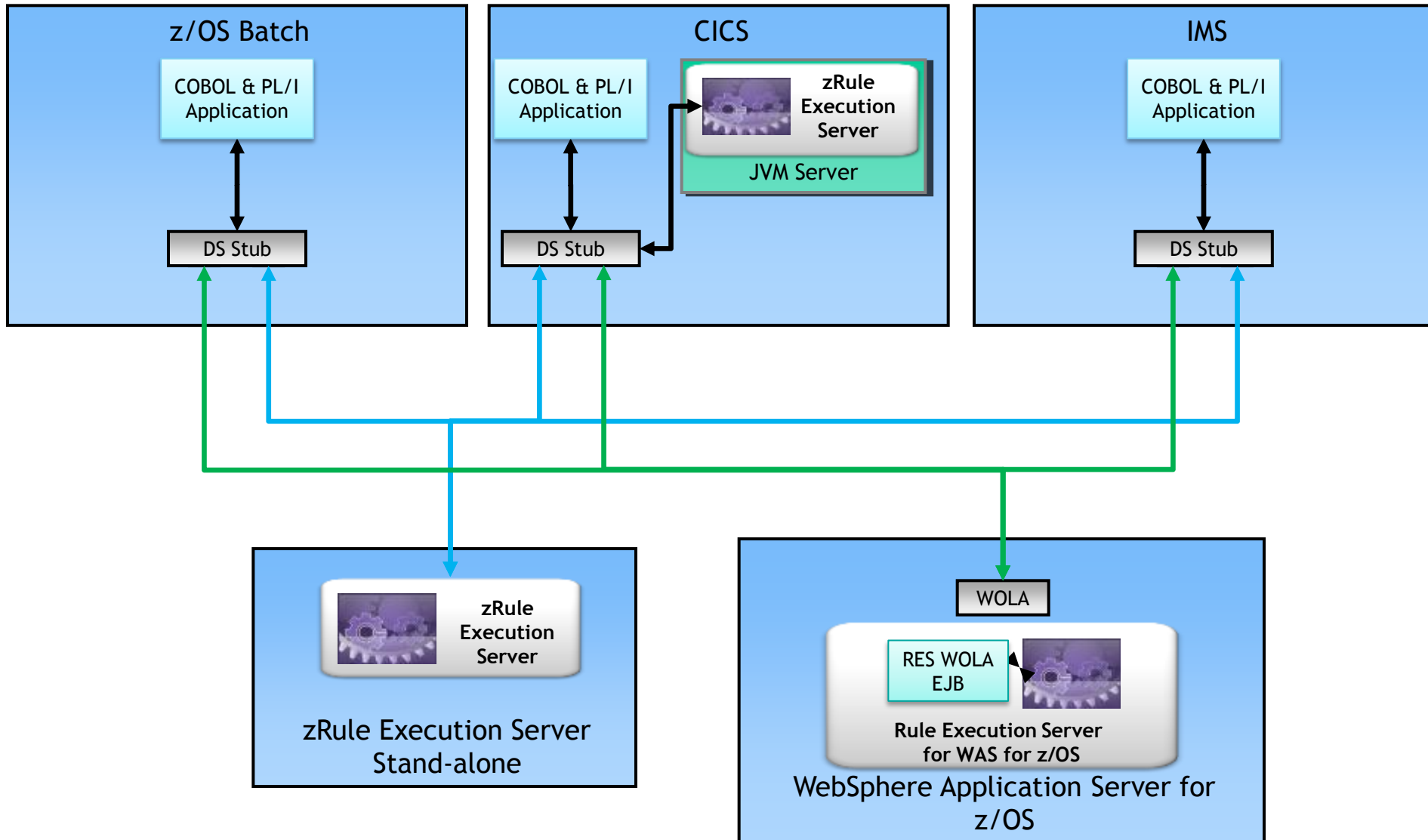
Scenario

- Existing Rule projects exist that are currently in use on distributed platforms
- Concurrent execution of rules required on z/OS from COBOL applications

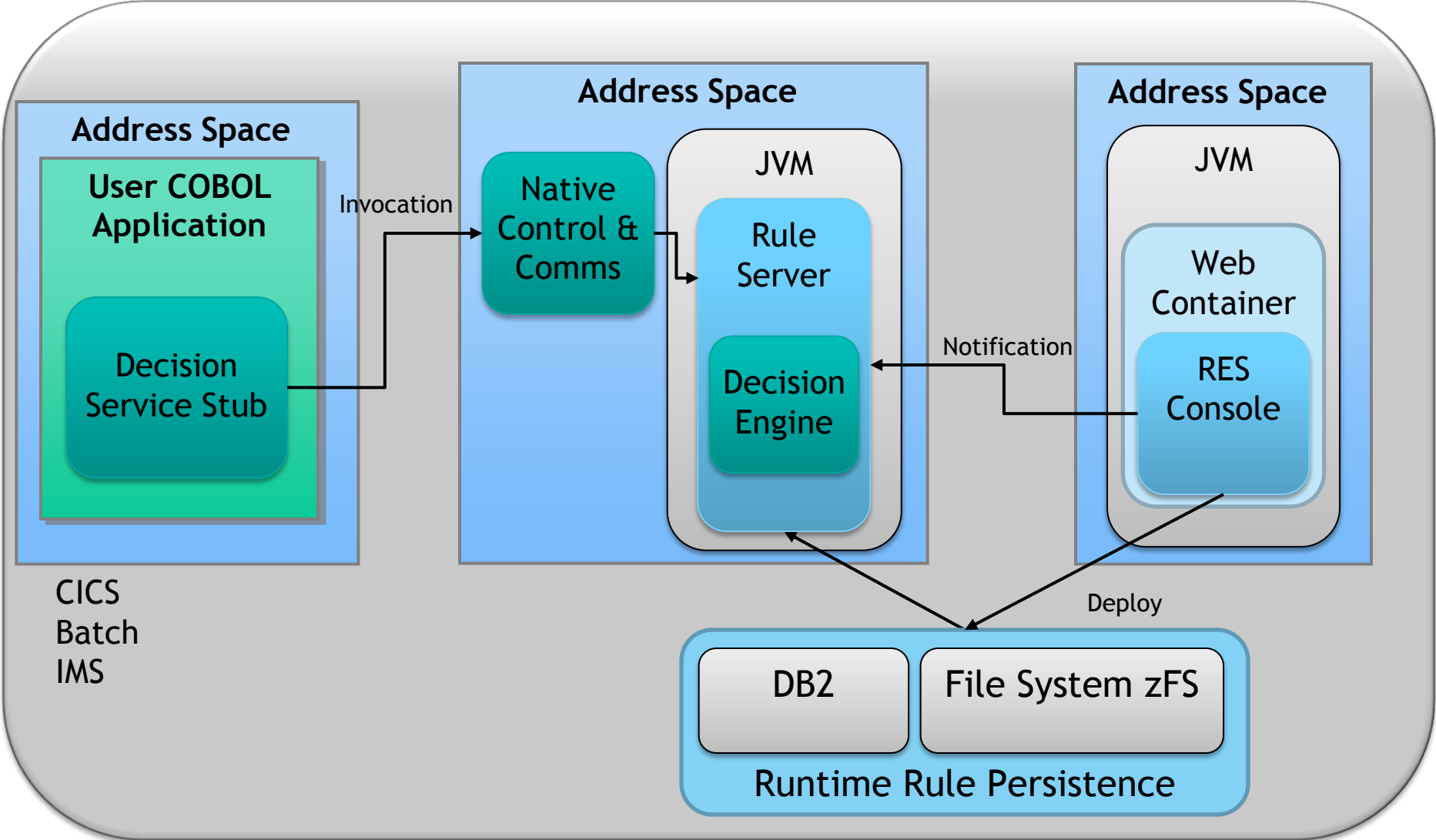
Benefits

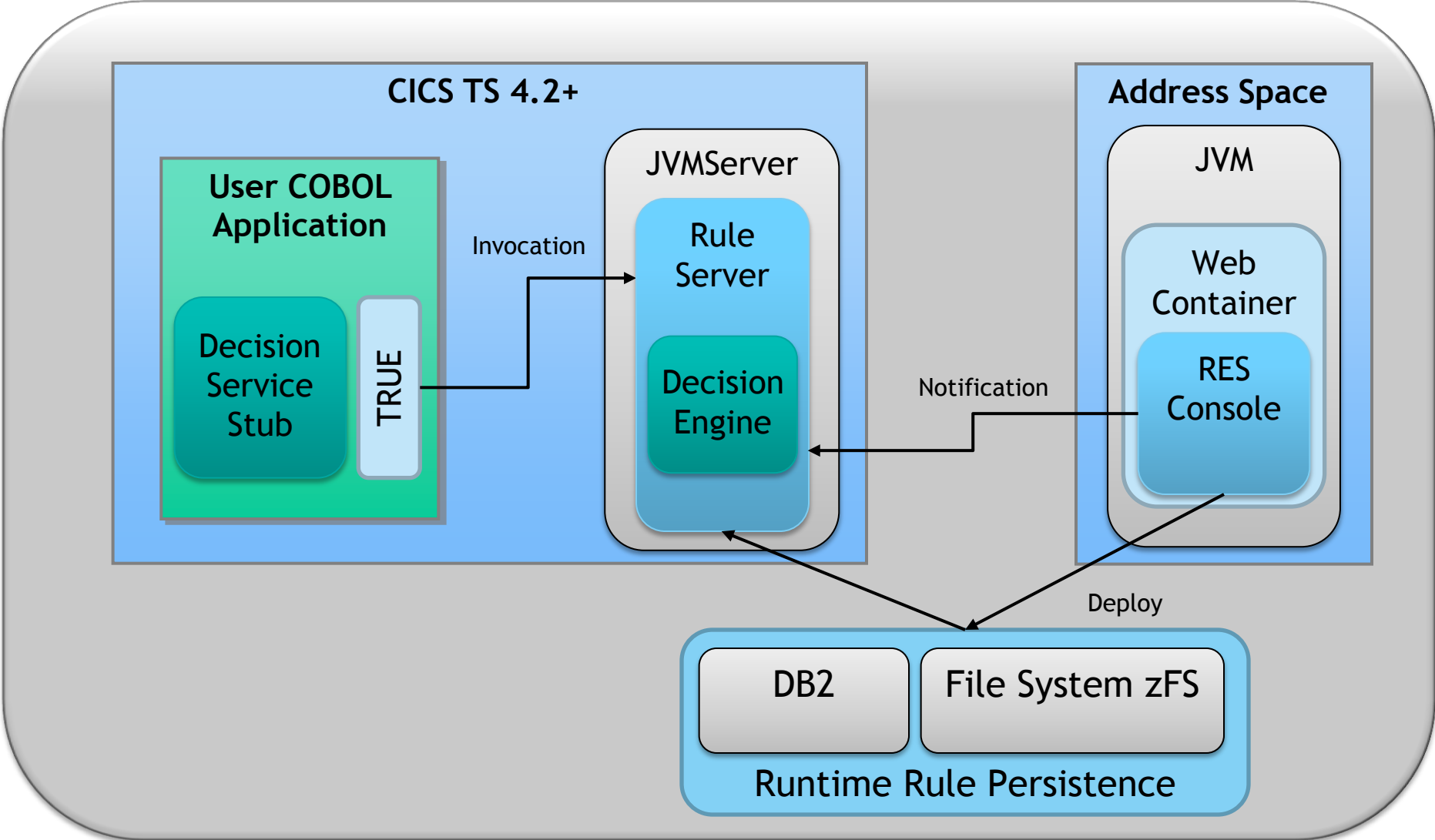
- Consistent decision rules where ever executed
- Rules can be invoked ‘naturally’ from existing applications on all platforms
- Enables central rule management across System z and distributed execution
- Business policy/rule lifecycle detached from application lifecycle

Decision Invocation Options on z/OS



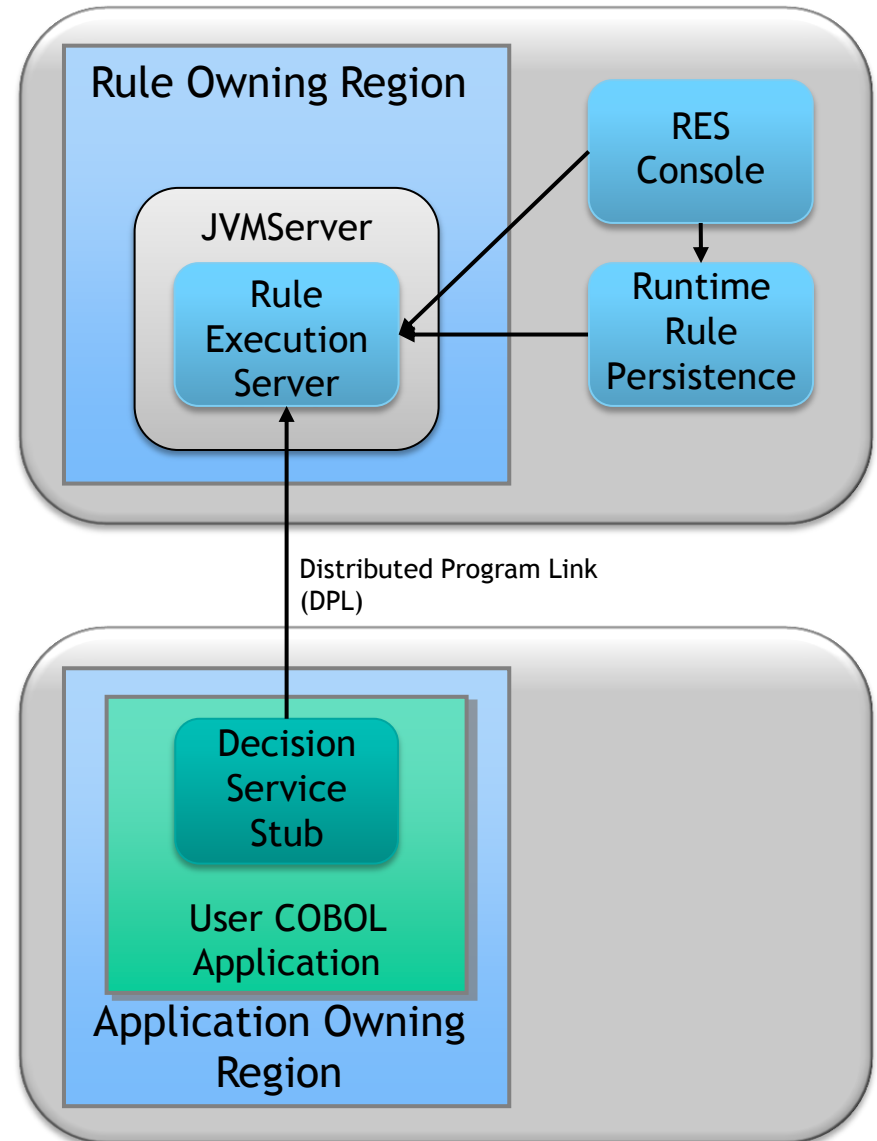
zRule Execution Server – Stand Alone



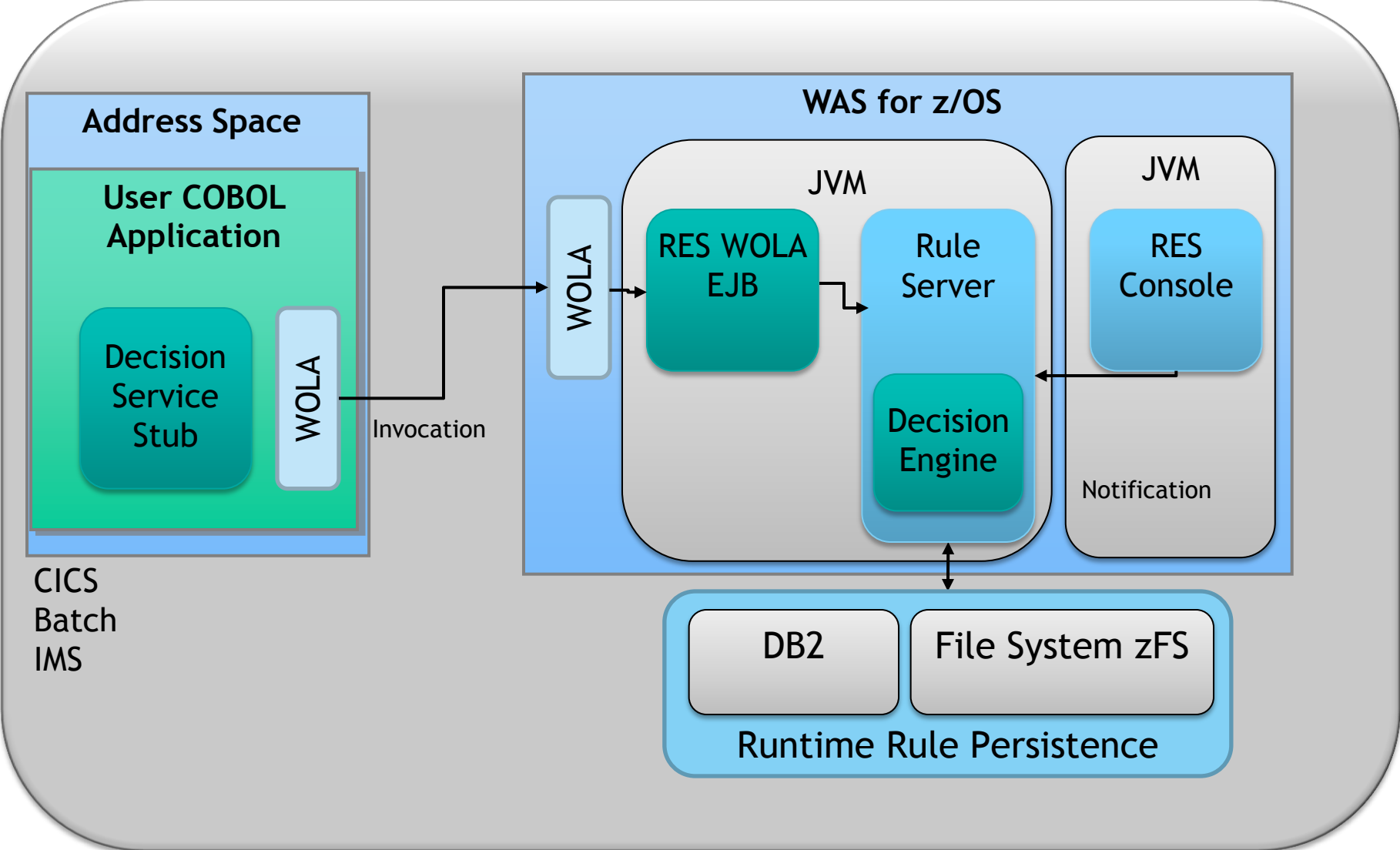


CICS Rule-Owning Regions (ROR)

- A CICS rule-owning region allows centrally hosted rules to be called by multiple CICS regions
- The rule-owning region hosts a zRule Execution Server for z/OS instance that runs locally in the CICS JVM server.
- The application-owning region uses a CICS Distributed Program Link (DPL) to run rules in a rule-owning region
- CICS DPL supports the ability for CICS to work load balance by having multiple rule-owning regions



zRule Execution Server for z/OS for WAS on z/OS



- **Increased Performance**
 - More transactions per seconds (up to +60% for very big projects)
 - Reduced ruleset loading time (up to 17 times)
- **Enhanced Scalability**
 - Ability to better leverage technical resources
 - Decisions can now involve thousands of rules with confidence and performance
- **Reduced Consumption**
 - Requires less memory even for big rulesets
 - Up to 30 times less memory required in very large decisions
- **Compatibility**
 - Decision Engine is compatible with existing rulesets
 - Classical rule engine remains the default execution engine

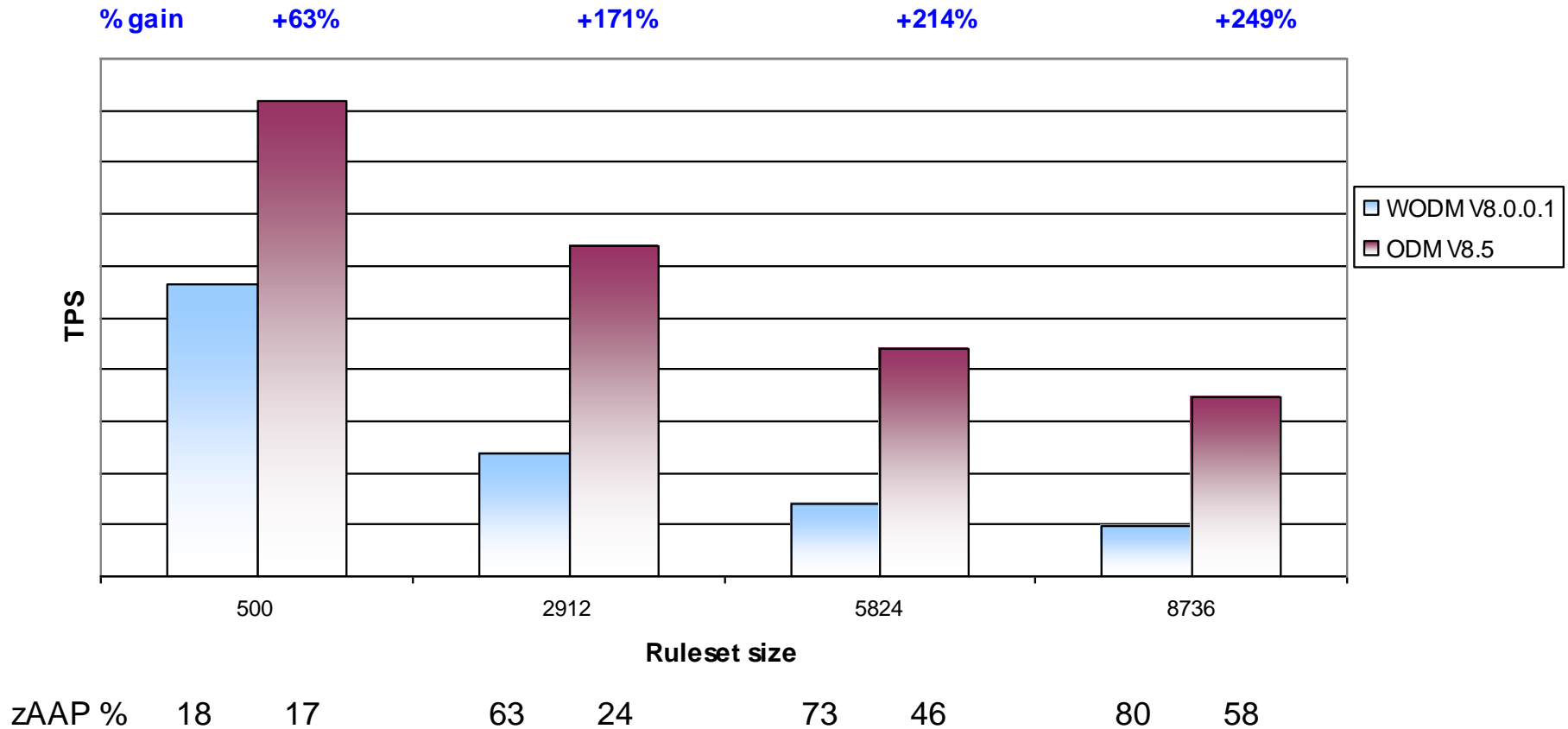
Disclaimer: All figures measured during IBM internal benchmarks made on June 2013 comparing v8.0 legacy engine with the new v8.5.1 Decision Engine installed on similar configurations. Figures are for information purpose only and are not contractual.

- zRES Stand Alone
 - The examples have shown throughput increased 103% - 348%
- zRES memory requirement significantly reduced
 - The examples have shown all performance benchmarks were able to run in 32MB heap
- zRES on CICS
 - The examples have shown throughput increased 25% - 253%
- In test runs we have achieved 27,424 rule invocations per second
 - 4 CPU EC12 (500 rule ruleset, using fastpath algorithm)

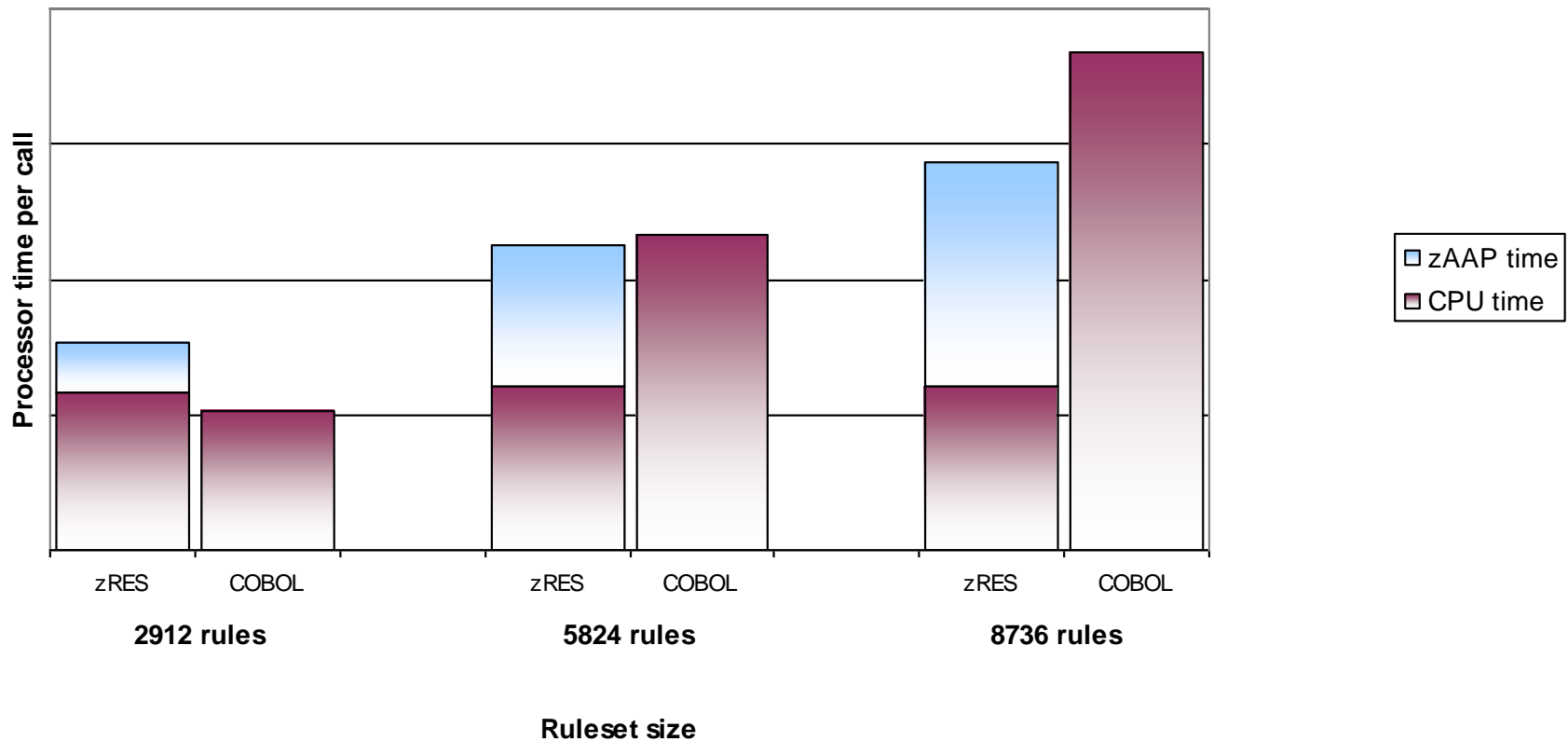
Decision Engine z/OS Performance Highlights



zRES performance V8.0.0.1 Vs V8.5



**Comparison of zRES execution with a
COBOL rule subprogram
CPU/zAAP time**



Decision Engine Feature Comparison

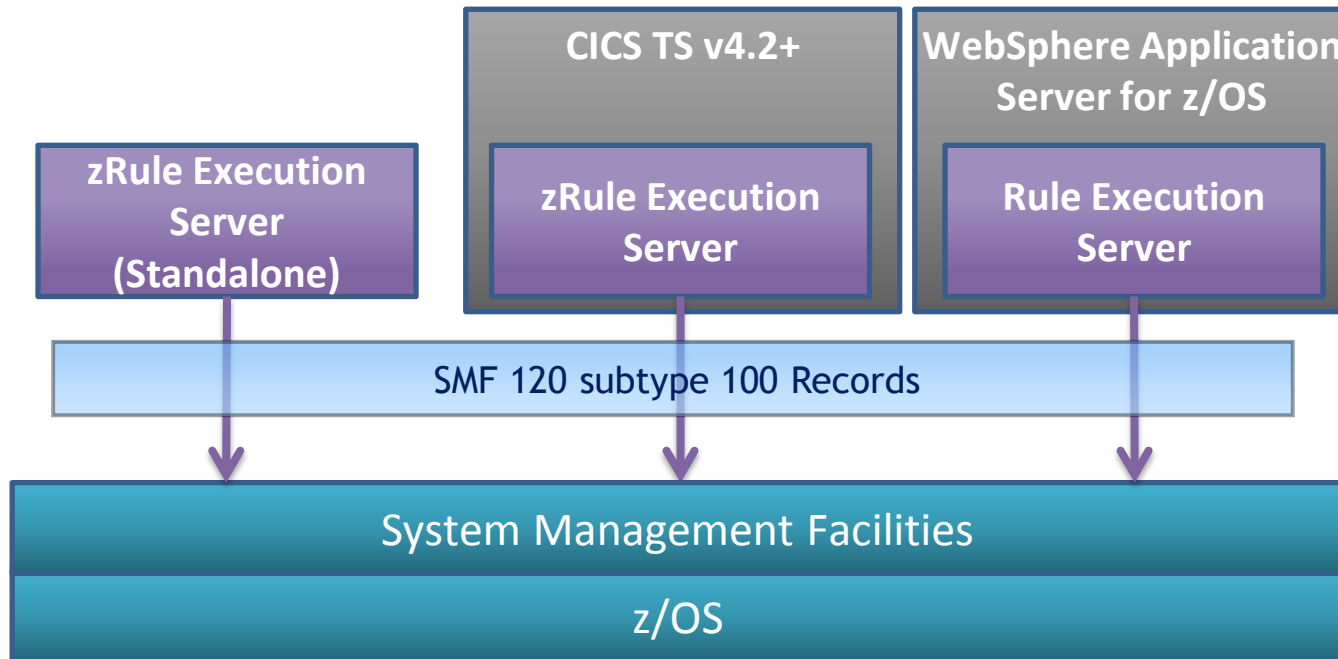


	Supported Features		
	Rule Classic Engine	Decision Engine v8.0.1	Decision Engine v8.5.1
Available for zRES stand alone and CICS deployments	✓	✓	✓
Available for RES in WebSphere AS for z/OS deployments	✓		✓
Develop Rule Projects in Rule Designer	✓	✓	✓
Testing and simulation support	✓	★	★
Support for Web Service invocation (HTDS & MTDS)	✓		✓
Integration with Decision Center business tooling	✓		✓
Build and deploy rulesets from Decision Center	✓		✓
Decision Warehousing rule auditing support	✓		✓
Remote and local debugging of ruleset execution	✓		✓
Full support for low level programming in native IRL	✓		

★ Testing converts ruleset back to Classic engine support.
Decision engine architected to give same results as Classic engine

Monitoring Decision Execution

- Decisions monitoring can be enabled all z/OS environments including:
 - zRule Execution Server stand alone deployments
 - zRule Execution Servers deployed in a CICS TS Environment
 - Rule Execution Servers deployed in a WebSphere Application Server for z/OS
- Usage records written as standard z/OS SMF 120 subtype 100 records
- Can be used to track
 - Number of times a particular decision is invoked
 - Total number of rules fired for a particular decision



- Each record contains
 - Standard SMF Header
 - ODM Header
 - Zero to many Execution Segments Records
- Execution segment record contains data collected for each decision defined by a unique ruleset path
 - E.g. `/MiniLoanDemoRuleApp/1.0/MiniLoanDemo/2.0`



- The SMF record structures are provided as a sample with ODM 8.5.1
 - `++HBRHLQ++.SHBRXLCH(HBRSMF)`

- One segment is created for each unique ruleset path
 - Decision must have been invoked during the interval
- Contains
 - The unique ruleset path that identifies the decision
 - The number of times the decision has been successfully invoked
 - The number of times the decision has been invoked but execution has failed
 - The sum of the rules fired for this decision

```
typedef struct {  
    uint32_t RULEXNUM;    /* Ruleset successful execution count */  
    uint32_t RULEXBAD;   /* Ruleset failed execution count */  
    uint32_t RULEXFSUM;  /* Ruleset sum of fired rules */  
    char RULEXPATH[256]; /* Ruleset execution path */  
} HBRSMF120ST100RecordExec;
```

Printing ODM Execution Data



- ODM 8.5.1 provides a sample utility for printing the SMF 120 subtype 100 records
- Sample source for the utility
 - ++HBRHLQ++.SHBRXLCS(HBRSMFP)
 - ++HBRHLQ++.SHBRXLCH(HBRSMF)
- Sample JCL to run the utility
 - ++HBRHLQ++.SHBRJCL(HBRSMFP)

```
*****  
* SMFRecordHeader *  
*****  
SMF120RTY = 120  
SMF120SID = MVGA  
SMF120STY = 100  
SMF120HDV = 1  
SMF120HDO = 36  
SMF120HDL = 140  
SMF120HDN = 1
```

SMF Header

```
*****  
* HBRSMF120ST100RecordHeader *  
*****  
SMF120VER = 8.5.1.0  
SMF120XUL = BRAV  
SMF120XUT = zRule Execution Server  
SMF120SDT = 10/11/13  
SMF120STM = 1:22:00 PM  
SMF120EDT = 10/11/13  
SMF120ETM = 1:33:00 PM  
SMF120EXO = 172  
SMF120EXL = 536  
SMF120EXN = 2
```

ODM Header

```
* HBRSMF120ST100RecordExec *  
*****  
RULEXNUM = 6  
RULEXBAD = 0  
RULEXFSUM = 5  
RULEXPATH = /MiniLoanDemoPLIRuleApp/1.0/MiniLoanDemoPLI/1.0
```

Execution Segment

```
*****  
* HBRSMF120ST100RecordExec *  
*****  
RULEXNUM = 6  
RULEXBAD = 0  
RULEXFSUM = 5  
RULEXPATH = /MiniLoanDemoRuleApp/5.0/MiniLoanDemo/1.0
```


* Connect to Execution Region

call 'HBRCONN'
using HBRA-CONN-AREA

* Populate Header with parameter data

* Connect to Execution Server

call 'HBRRULE'
using HBRA-CONN-AREA
IF HBRA-CONN-COMPLETION-CODE = HBR-CC-
OK
THEN
...

* Disconnect from Execution Region

call 'HBRDISC'
using HBRA-CONN-AREA

```

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).
    
```

zRES API Within a 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 Execution Server Deployment Options



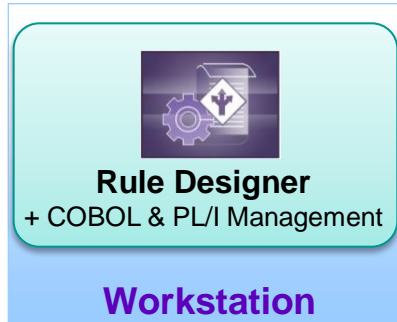
- ✓ Since v7.5
- ✓ New in v 8.0
- ✓ New in v 8.5

	<i>zRule Execution Server deployed in WebSphere Application Server for z/OS</i>	<i>zRule Execution Server deployed as a Standalone environment</i>	<i>zRule Execution Server deployed in CICS TS v4.x JVMServer environment</i>
Full support for all rule authoring constructs	✓	✓	✓
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	✓		✓
Support for new optimized Decision Engine	✓	✓	✓

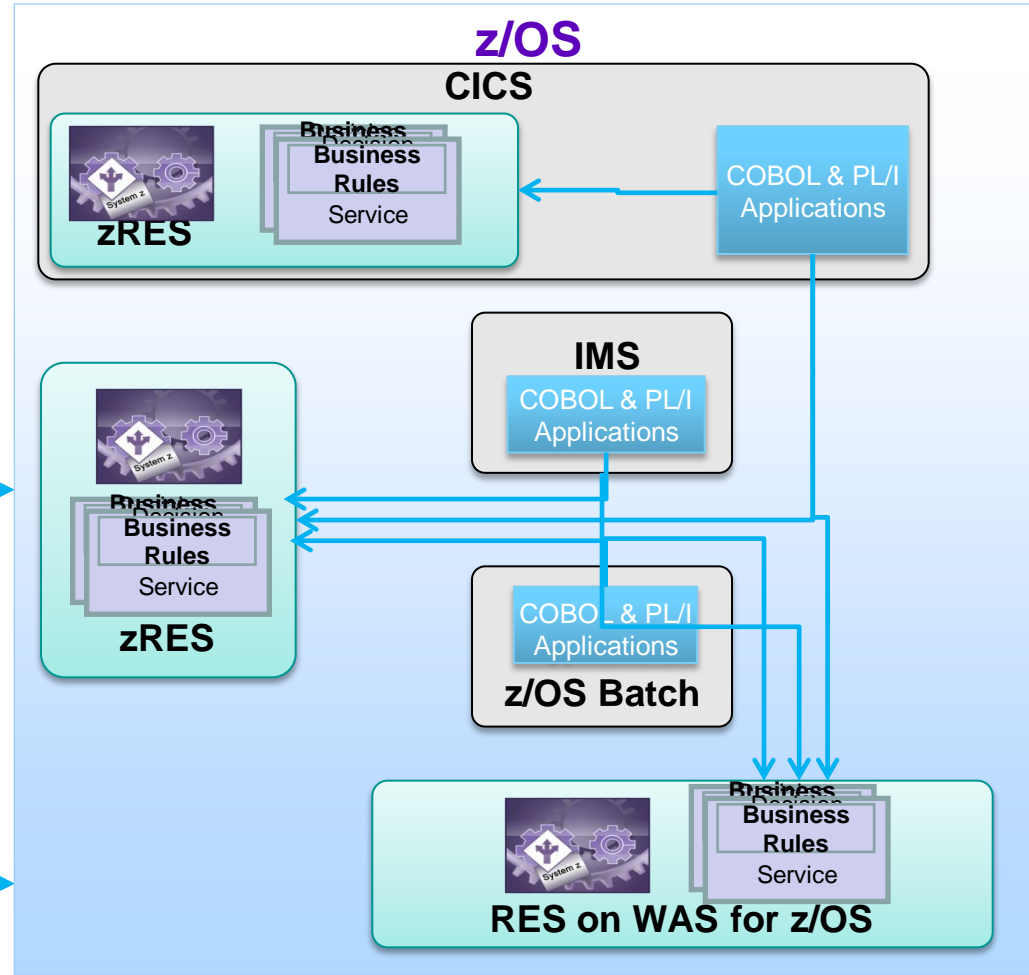
Decision Management: Comprehensive Flexibility



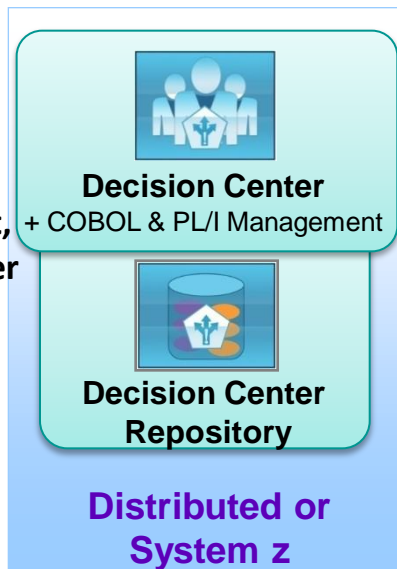

**Architect,
Application
Developer**



Deploy




**Business Analyst,
Business Manager**



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

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 - Leading to improvement operational efficiency and total cost of ownership
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 - Leading to improvement to better corporate governance
- **Ability to implement the best rules for the best outcome**
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- **Ability to manage and document business decisions executed in System z applications**
 - Authoring rules for COBOL & PL/I applications in business terminology
 - Ability to share business rules with Java and other COBOL & PL/I applications
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- <http://www.ibm.com/operational-decision-management>
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You



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