



IBM Software Group

Business Rule Modernization Rational – ILOG Update



September 2010

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Agenda

- Business Rule Modernization Work flow
- Rule Mining Projects
- Business Rule Primer
- Rational Asset Analyzer Technology Preview



Why Business Rule Modernization & Why now?

- Business need: Business application “decision making” needs to adapt to changes in the marketplace, in time to make a difference
- Application Development drivers:
 - Cost savings
 - More effective application development & maintenance with less business risk
 - Consolidation/Restructure of existing applications, saving hardware & resources
 - Changing ratio of source inventory to development skills
 - Forcing need for formal processes with an on line electronic repository
 - Be able to react to changes requested by business in days, not months
- Business Rule Modernization: Applying technology and process to gain increased “decision making” agility for business applications



Rule Modernization: Business Perspective

Business and IT Value

- Business agility: Re-align applications to support emerging business requirements
- Business rules: Visible and easily maintained by business analysts and open to SOA enablement and other modernization strategies
- Knowledge base: Accessible for application understanding and ongoing management.

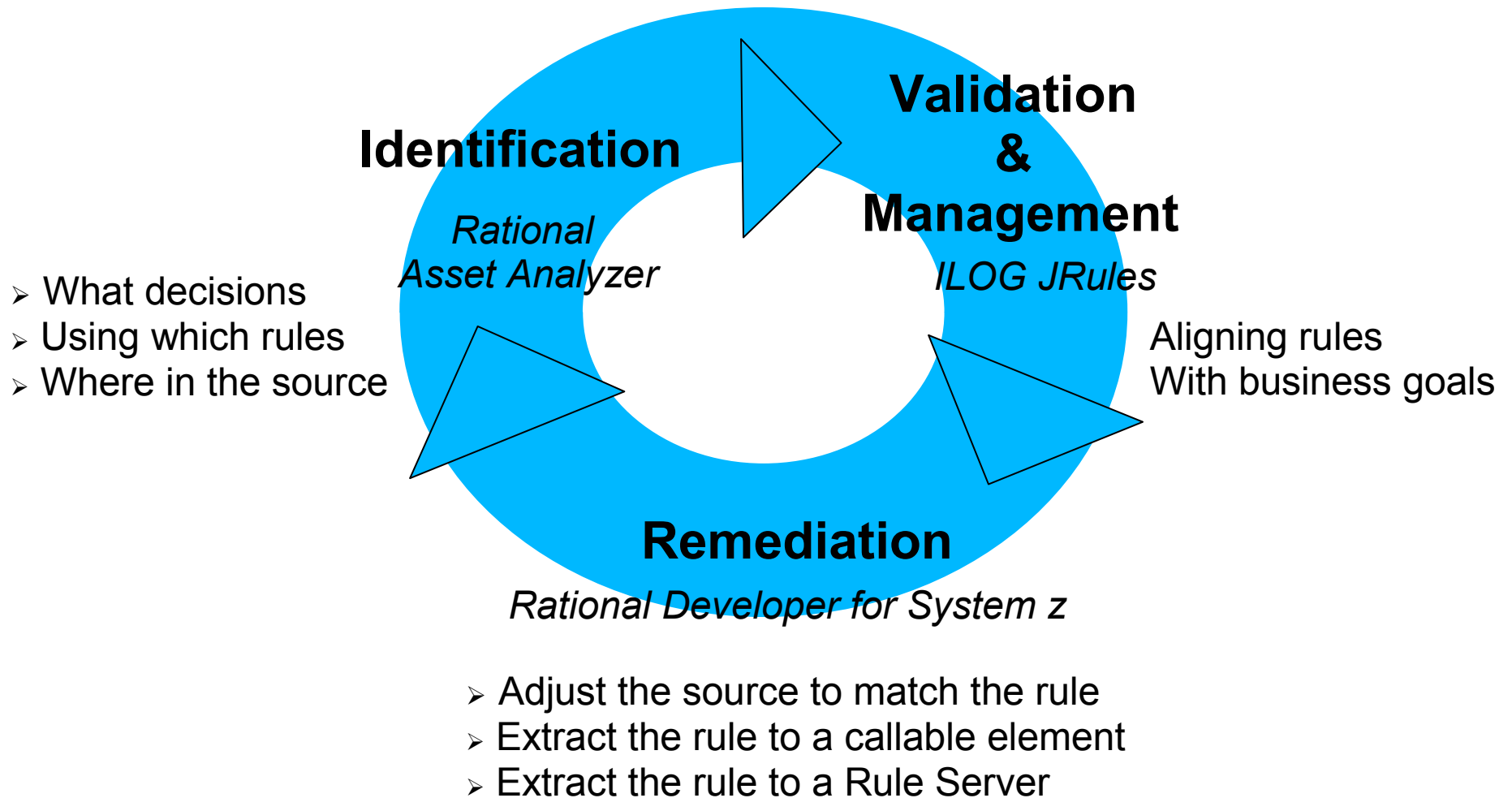


Cost Optimization & Agility

- **ROI** from effective, accelerated change management and governance of the rules that run your business
- **Risk Reduction** through reuse of proven, existing logic in a modernized architecture while rationalizing software assets that are misaligned with corporate priorities.



Business Rule Modernization



Business Rule Modernization: Identification

- Source scan scoped by vocabulary
 - Imported from ILOG JRules or defined by the client in RAA
 - Maps business terms to application terms
 - Focused effort for faster time to value
- Identify candidate business rules
 - Locate relevant code segments using terms
 - Tie in relevant data elements
 - Construct candidate rules mapped to code segments
- Capture candidate rules using ILOG technologies
 - Unstructured
 - Structured



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



Business Rule Modernization: Validation & Management

Validation

- Reconciling what the source code does with what the business wants
- Drive an objective discussion and agreement between Business and IT using ILOG JRules
- Adjust the rule definitions in ILOG to conform to the agreement
- Execution with the core business applications running on System z

Management

- On-going process of keeping the source in sync with business policy
- Business rules updates should be handled via the ILOG technologies
- Approved changes will drive source code remediation



Business Rule Modernization: Remediation

Bring the source code into compliance with business rule decisions

- Assess the complexity of the effort
 - a) Small changes or the rules do not change frequently
 - b) Need to modularize the rule code but constrained by performance requirements
 - c) Need to move rule management to the business teams

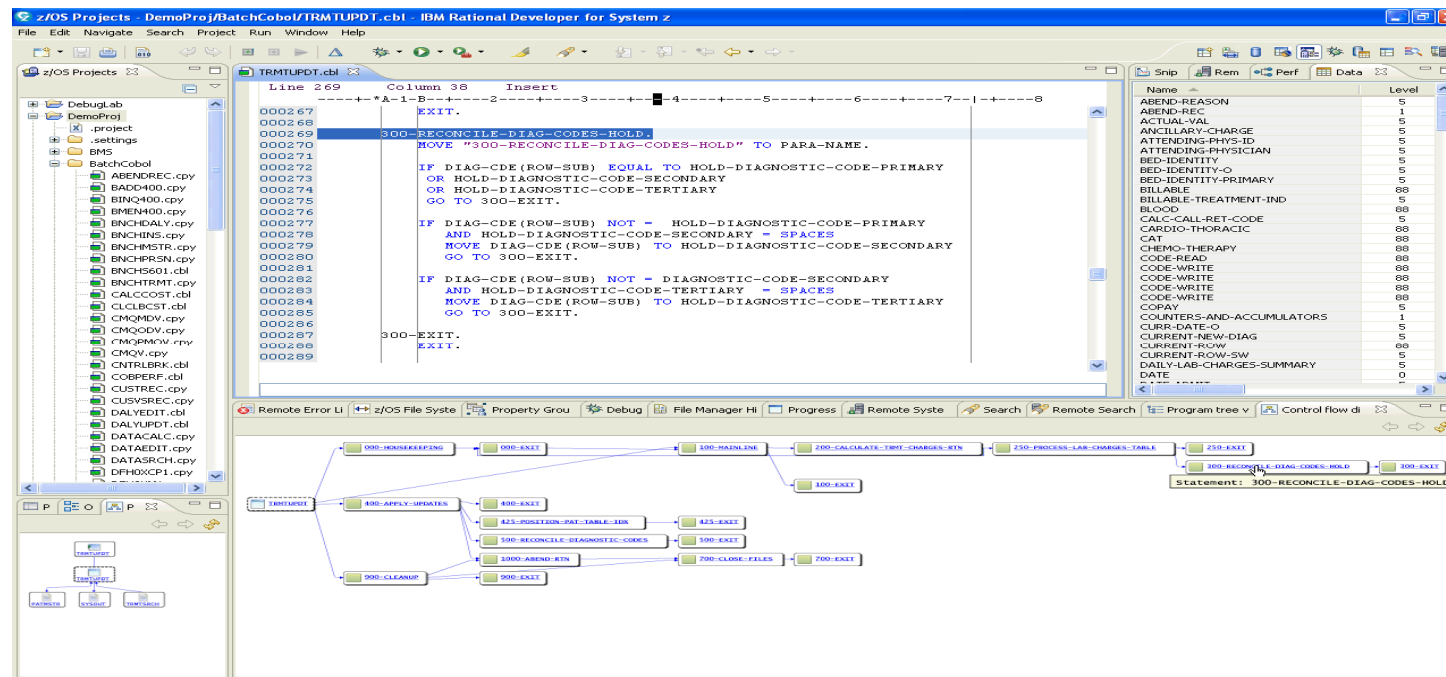
- Select the compliance approach based on the complexity
 - a) Adjust the source code
 - b) Extract the rule execution code into a callable module
 - c) Extract the rule execution code and replace it with calls to a Rule Server

Note: Compliance choices will drive how on-going rule updates will be handled



Business Rule Modernization: Remediation ...

- Prioritize and drive the application update projects
- Exploit RDz – RAA synergy using RAA Integration Eclipse Plug-in
- Leverage the “breadcrumbs” left by the Analysis (*expanded future effort*)
- Redesign rules using ILOG JRules Rule Editors
- Governance and change management of rules using ILOG JRules



The screenshot displays the IBM Rational Developer for System z interface. The main editor shows COBOL code for the program TRMTUPDT.cbl. The code includes a section for processing 300-RECONCILE-DIAG-CODES-HOLD, with conditional logic for holding diagnostic codes based on primary, secondary, and tertiary status. A control flow diagram at the bottom illustrates the program's execution path, starting from 300-RECONCILE-DIAG-CODES-HOLD and branching into various processing steps like 400-APPLY-UPDATES, 400-MAINLINE, and 400-CLEANUP.

```

000267          EXIT.
000268
000269          300-RECONCILE-DIAG-CODES-HOLD
000270          MOVE "300-RECONCILE-DIAG-CODES-HOLD" TO PARA-NAME.
000271
000272          IF DIAG-CDE (ROW-SUB) EQUAL TO HOLD-DIAGNOSTIC-CODE-PRIMARY
000273          OR HOLD-DIAGNOSTIC-CODE-SECONDARY
000274          OR HOLD-DIAGNOSTIC-CODE-TERTIARY
000275          GO TO 300-EXIT.
000276
000277          IF DIAG-CDE (ROW-SUB) NOT = HOLD-DIAGNOSTIC-CODE-PRIMARY
000278          AND HOLD-DIAGNOSTIC-CODE-SECONDARY = SPACES
000279          MOVE DIAG-CDE (ROW-SUB) TO HOLD-DIAGNOSTIC-CODE-SECONDARY
000280          GO TO 300-EXIT.
000281
000282          IF DIAG-CDE (ROW-SUB) NOT = DIAGNOSTIC-CODE-SECONDARY
000283          AND HOLD-DIAGNOSTIC-CODE-TERTIARY = SPACES
000284          MOVE DIAG-CDE (ROW-SUB) TO HOLD-DIAGNOSTIC-CODE-TERTIARY
000285          GO TO 300-EXIT.
000286
000287          300-EXIT.
000288          EXIT.
000289
  
```

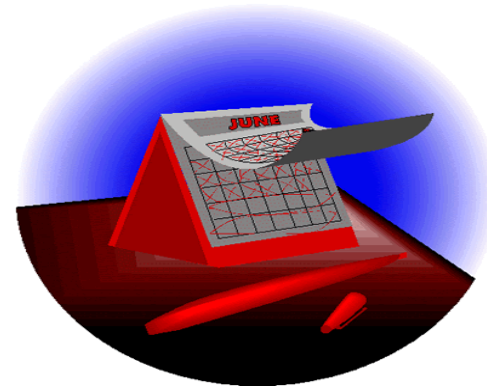
Agenda

- Business Rule Modernization Work flow
- **Rule Mining Projects**
- Business Rule Primer
- Rational Asset Analyzer Technology Preview

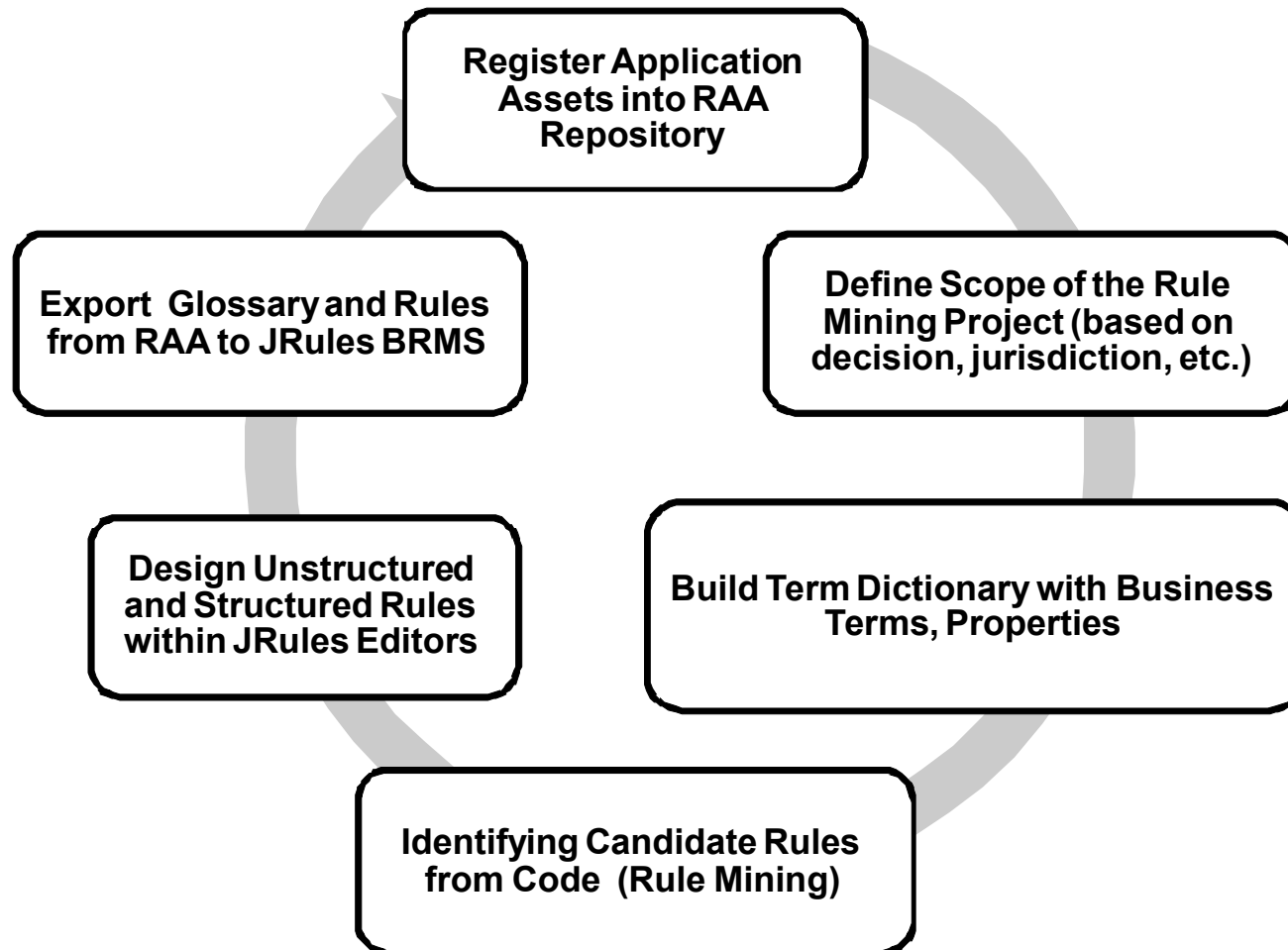


Starting a Business Rule Mining Project

- The IT community wants answers to:
 - ▶ "How do I maximize what I have?"
 - ▶ "How do I get from here to there?"
- Top driver's determining the Solution
 - ▶ Access the business value
 - ▶ Reduce application maintenance costs
 - ▶ Avoid cost of replacement
 - ▶ Increase innovation and productivity
- Recommended Rule Mining Project Characteristics
 - ▶ Start Small – Defined Scope
 - ▶ Rule Mining by:
 - Business decision
 - Function
 - Jurisdiction
 - Output Field(s)
 - Input Field(s)



Business Rule Modernization Project Flow



Business Rule Mining: Before and After

- **Agility**
 - Business managers held back by long system change waiting periods, often measured in months
 - **Usage of IT resources**
 - Typically, 40-50% of IT resources are deployed on application maintenance
 - **Consistency**
 - Business logic reuse is impossible across applications, enterprise consistency suffers
 - **Transparency**
 - Inability for managers and users to understand or trust the systems they depend upon, reducing competitiveness, efficiency and quality of customer service
 - **Auditability**
 - Difficult to track what decisions were made and why
- **Agility**
 - Change request implemented in a matter of hours or days
 - **Usage of IT resources**
 - Changes can be enacted by business organizations
 - **Consistency**
 - Rule services can be reused across channel and organization
 - **Transparency**
 - Business rules are accessible to anybody; what you see is what you get – traceability
 - **Auditability**
 - Built-in auditability at management time and at run time

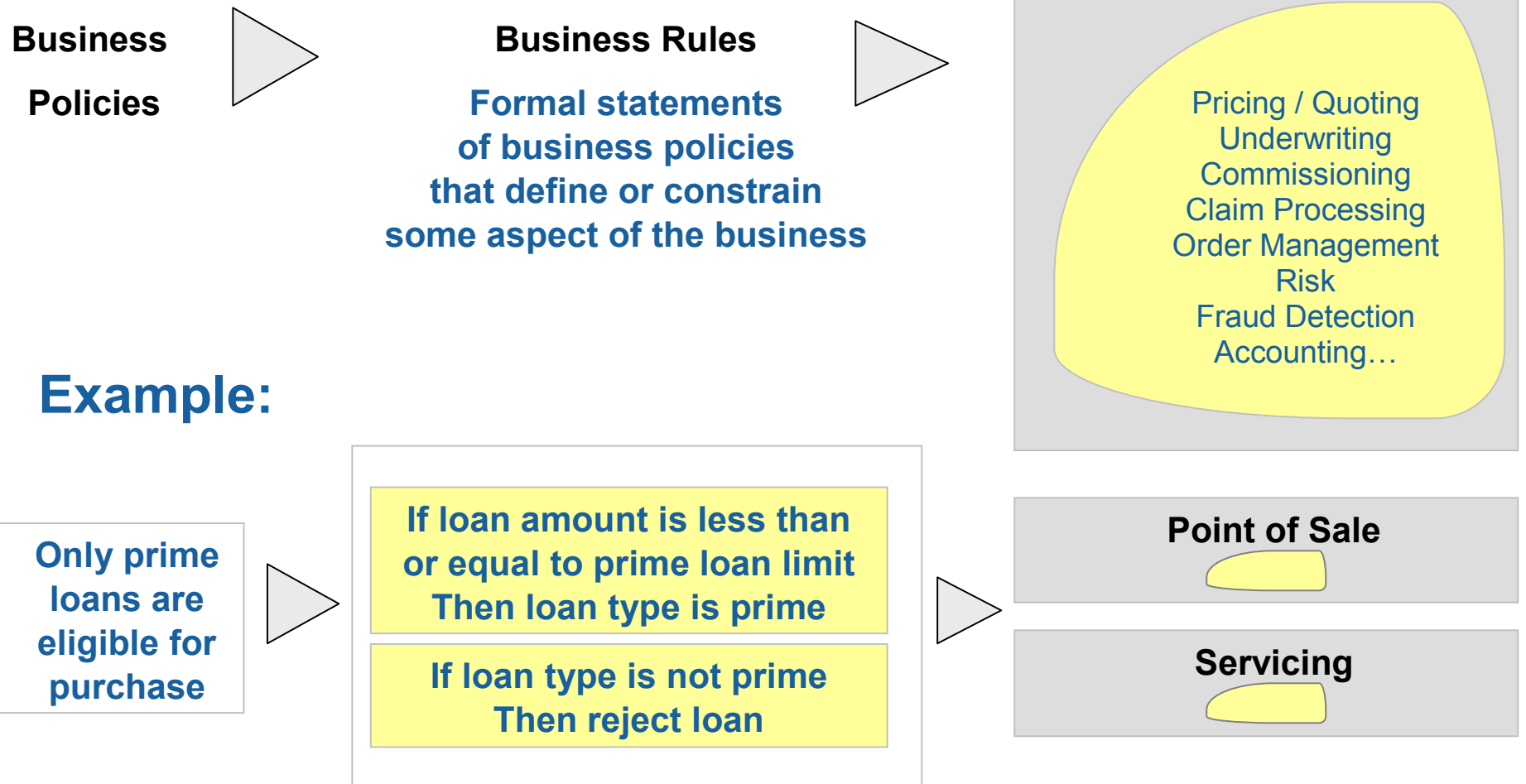


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Business Policies and Business Rules



Traditional Approach for Managing Decision Change

The traditional (ad hoc) approach of dealing with rule changes leads to...

Reduced organizational agility
 Reduced employee productivity
 Increased load on IT

Where Business Rules Exist

```

#ifdef __WIN__
/*
 * Before performing any socket operation (like retrieving hostname
 * in init_common_variables we have to call WSASStartup
 */
{
    WSADATA WsaData;
    if (SOCKET_ERROR == WSASStartup (0x0101, &WsaData))
    {
        /* errors are not read yet, so we use english text here */
        my_message(ER_WSAS_FAILED, "WSASStartup Failed", MYF(0));
        unreg_abort(1);
    }
}
#endif /* __WIN__ */

if (init_common_variables(MYSQL_CONFIG_NAME,
                        argc, argv, load_default_groups))
    unreg_abort(1); // Will do exit

init_signals();
if (!opt_specialflag & SPECIAL_NO_PRIOR)
    my_pthread_setprio(pthread_self(), CONNECT_PRIOR);
    
```

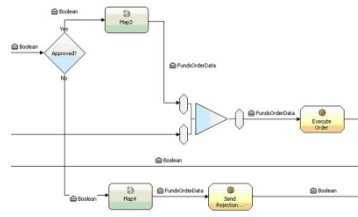


Documents

Applications



People



Processes

Issues

- **Rules are hidden in code or isolated within the organization**
- **Changes are hard to track and maintain over time**
- **Rules used by systems have to be programmed and require IT resources**
- **Duplication and multiple versions of the same rules**
- **Lack of auditability, traceability**
- **Decision changes cannot be easily tested or simulated**

Agenda

- Business Rule Modernization Work flow
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- Business Rule Primer
- Rational Asset Analyzer Technology Preview



Rational Asset Analyzer Technology Preview

- Rational Asset Analyzer Development team would like your feedback
- *The Development team has been working on an number of technology improvements for the Asset Analyzer products, both the Rational Asset Analyzer (RAA) and the WebSphere Studio Asset Analyzer WSAA). Beyond the usual work that improves the product's performance and the “user experience”, the team has been adding capabilities for practical business rule mining in concert with the WebSphere ILOG team using enhanced web interface technologies. The Web Services interfaces in RAA and WSAA are being displaced by comprehensive RESTful access protocols. The integration with Rational Developer for System z (RDz) is being expanded with Remote Project support. To allow more comprehensive analysis, the team is adding the ability to scan for just about any token or symbol in a broad set of files, incorporating the results into the RAA meta data repository. The Windows instance of these technology efforts is being made available as a Technology Preview for IBM and client feedback.*
- **Caveat**
- *Previews provide insight into IBM plans and direction. Availability, prices, ordering information, and terms and conditions will be provided when the product is announced.*
- *All statements regarding IBM future direction and intent represent goals and objectives only and are subject to change or withdrawal without notice. The information on the new product is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information on the new product is for informational purposes only and may not be incorporated into any contract. The information on the new product is not a commitment, promise, or legal obligation to deliver any material, code or functionality. The development, release, and timing of any features or functionality described for our product remains at our sole discretion.*



Rational Asset Analyzer Technology Preview - Logistics

Driver is available from the Rational Asset Analyzer Support Portal

▪ <http://www.ibm.com/support/docview.wss?uid=swg24027557>

- Driver is “as is” - no formal support
- Documentation is limited to the Help files
- Development will answer questions on a “best can do” basis

Feedback is encouraged

DeveloperWorks forum:

▪ <http://www.ibm.com/developerworks/forums/forum.jspa?forumID=2046&cat=24>

Support & downloads >

IBM® Rational® Asset Analyzer Technology Preview

Downloadable files

Abstract

This IBM® Rational® Asset Analyzer Technology Preview provides an insight into the technology being developed for a future release of RAA.

Download Description

The Development team has been working on a number of technical improvements for the Asset Analyzer products, both the Rational Asset Analyzer (RAA) and the WebSphere Studio Asset Analyzer (WSAA). Beyond the usual work that improves the product's performance and the “user experience”, the team has been adding capabilities for practical business rule mining in concert with the WebSphere ILOG team using enhanced web interface technologies. The Web Services interfaces in RAA and WSAA are being displaced by comprehensive RESTful access protocols. The integration with Rational Developer for System z (RDz) is being expanded with Remote Project support. To allow more comprehensive analysis, the team is adding the ability to scan for just about any token or symbol in a broad set of files, incorporating the results into the RAA meta data repository.

The Windows instance of these technical efforts is being made available as a Technology Preview for IBM and client feedback.

Prerequisites

Rational Developer for System z v7.6 for use with the RDz integration plugin.

Download package
RAATechPreview.zip

Installation Instructions

To install the technology preview, first download the RAATechPreview.zip package and unzip it in a local directory. Then, refer to the readme (readmeTechPrev.htm) and installation guide (admins.pdf) files located in the /documentation directory for specific installation instructions.



Document information

Product categories:

Software
Software Development
Analysis, Modeling, Design & Construction
[Rational Asset Analyzer](#)

Operating system(s):

Windows

Software version:

5.5.1

Reference #:

4027557

IBM Group:

Software Group

Modified date:

2010-08-10

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Rational Asset Analyzer Technology Preview

- Key new/updated technologies include
 - Business Rule Mining
 - RESTful Interface
 - RAA Integration - RDz Remote z/OS Project Support
 - Unstructured “token” scan support in Inventory, custom queries and relationships
 - Significant speed, memory usage, and scalability improvements in JEE analysis along with simplification of the scanning of JEE artifacts
 - Support for Windows 7 - COBOL and PL/I compiler front-ends included eliminating an RDz dependency
 - Incremental User Interface enhancements – including case insensitive search support
 - Customer requested functions and enhancements



Technology Preview – Business Rule Mining

- 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 seven new asset types:
 - ▶ Business activity (activity)
 - ▶ Business category (category)
 - ▶ Business process model (process model)
 - ▶ Business rule (rule)
 - ▶ Business rule mining project (BRM project)
 - ▶ Business term (term)
 - ▶ Business term property (property)
- New dialogs, Source views and relationship detection
- Leveraging Web 2.0 technologies
- Import function for WebSphere ILOG JRules vocabulary

The screenshot displays the Rational Asset Analyzer web application. The main heading is "Explore rule mining assets". Below this, there is a search bar with the text "Search names: A" and a "Go" button. To the right of the search bar, there is a "Actions" dropdown menu set to "Select an action", a checked "Ignore case" checkbox, and a link for "Advanced search".

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

The interface also shows a navigation menu with "Home", "Explore", "Impact analysis", and "Database". 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.

Technology Preview – Business Rule Mining Asset Types

- Business activity (activity)** - a named, structured process or task that produces a specific service or product for a particular customer or customers of a business. A business activity may be a collection of related business activities.

The screenshot shows the Rational Asset Analyzer interface. The context is 'Explore rule mining assets' and the view is 'Business activity summary'. The table below displays the results of a search for business activities.

| Row | Name | Parent activity | Process model | Description |
|-----|----------------------------|-----------------|---------------|--|
| 1 | Create the RentalAgreement | | Rent a car | This is what happens in order to actually rent a car |
| 2 | Return the car | | Rent a car | This is what happens when the car is returned |

- Business process model (process model)** - a named collector of business activities used to represent a core aspect of a business.

The screenshot shows the Rational Asset Analyzer interface. The context is 'Explore rule mining assets' and the view is 'Business process model summary'. The table below displays the results of a search for business process models.

| Row | Name | Description | Business activity |
|-----|------------|-------------|--|
| 1 | Rent a car | | Create the RentalAgreement Return the car |

Technology Preview – Business Rule Mining Asset Types ...

- Business term (term)** - a noun representing a concept used in the business.

Business term summary

| Row | Name | Definition | Categories |
|-----|----------------------|---|-------------|
| 1 | Branch | A physical location in the country | Car rentals |
| 2 | CarGroup | A classification of cars having the same rental properties | Car rentals |
| 3 | Collection | | any |
| 4 | Customer | A consumer of products | any |
| 5 | CustomerDiscountInfo | A reduced rate for a Customer | any |
| 6 | Invoice | A detailed list of goods or services rendered | any |
| 7 | LineItem | A particular good or service rendered | any |
| 8 | Offer | An opportunity for renting at a reduced rate | Car rentals |
| 9 | RentalAgreement | An agreement to rent a car to a Customer for some period at some rate | Car rentals |
| 10 | Session | | any |

Business Term Dictionary

age
Type: Number
Description:
Used by: CustomerDiscountInfo

CustomerDiscountInfo
Description: A reduced rate for a Customer
Properties: age, customerNumber, discountPercent, location, region, status

customerNumber
Type: String
Description:
Used by: CustomerDiscountInfo

discountPercent
Type: Float
Description:
Used by: CustomerDiscountInfo

Float
Properties of this type: discountPercent

location
Type: String
Description:
Used by: CustomerDiscountInfo

Number
Properties of this type: age

region
Type: String
Description:

- Business term property (property)** - a noun, of a specific type, representing an attribute or abstract quality associated with a business term. The relationships between business terms and business term properties are most often stated with the verb *has* (for example, *car has driver*) or the preposition *of* (for example, *driver of car*).

Business term property summary

| Row | Name | Business term | Type | Definition |
|-----|-----------------|----------------------|----------|------------|
| 1 | actualCarGroup | RentalAgreement | CarGroup | |
| 2 | address | Customer | String | |
| 3 | age | CustomerDiscountInfo | Number | |
| 4 | amount | LineItem | Float | |
| 5 | assigned | RentalAgreement | Boolean | |
| 6 | bestOffer | RentalAgreement | Offer | |
| 7 | birthDate | Customer | Date | |
| 8 | birthDayOfMonth | Customer | Number | |
| 9 | birthMonth | Customer | Number | |
| 10 | birthYear | Customer | Number | |
| 11 | carGroup | RentalAgreement | CarGroup | |
| 12 | carGroupUpgrade | Offer | Number | |
| 13 | city | Customer | String | |
| 14 | coverages | RentalAgreement | String | |
| 15 | customer | RentalAgreement | Customer | |



Technology Preview – Business Rule Mining Asset Types ...

- Business rule (rule)** - a named statement, or set of statements, that defines or constrains some aspect of a business. Business rules can be captured in RAA in either an unstructured or structured form, or both.

The screenshot displays the Rational Asset Analyzer (RAA) interface. The main window shows a 'Business rule summary' view with a search bar and a table of assets. A context menu is open over a selected asset, offering options like 'Relate statement to a business rule' and 'Relate data element to a business term or property'. Two dialog boxes are overlaid: 'Relate to a Business Rule' and 'Add a Business Rule'.

Code Snippet:

```

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 to a Business Rule Dialog:

Relate the IF Statement to a business rule.

Business rule:
 Provide discount for seniors

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

| Data element | Term or term property |
|--------------|-----------------------|
| C-AGE | age |

Buttons: Relate, Cancel

Add a Business Rule Dialog:

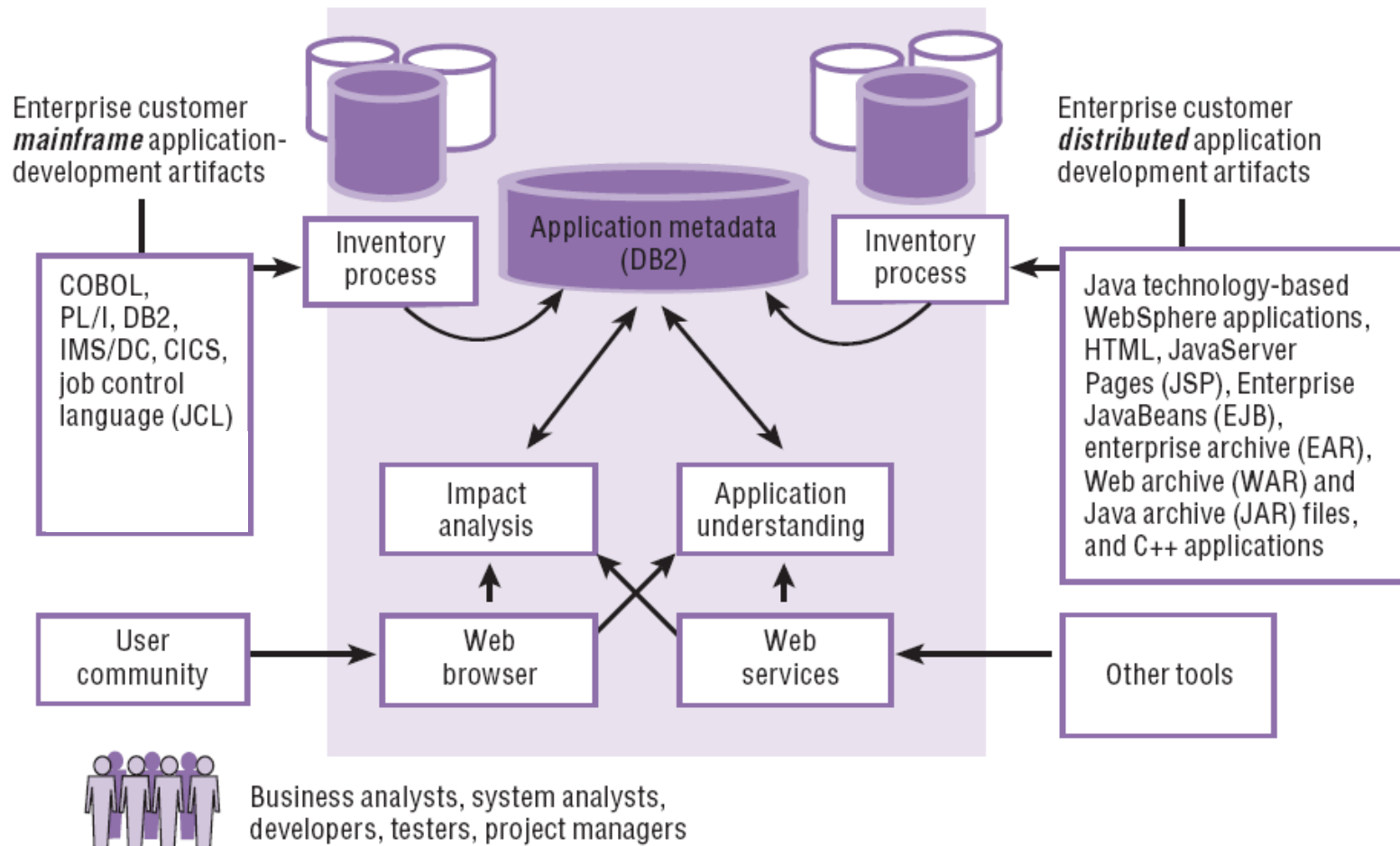
Name of the business rule:
 Provide discount for seniors

Documentation (optional):
 If a person's age is over some threshold, give them a discount.

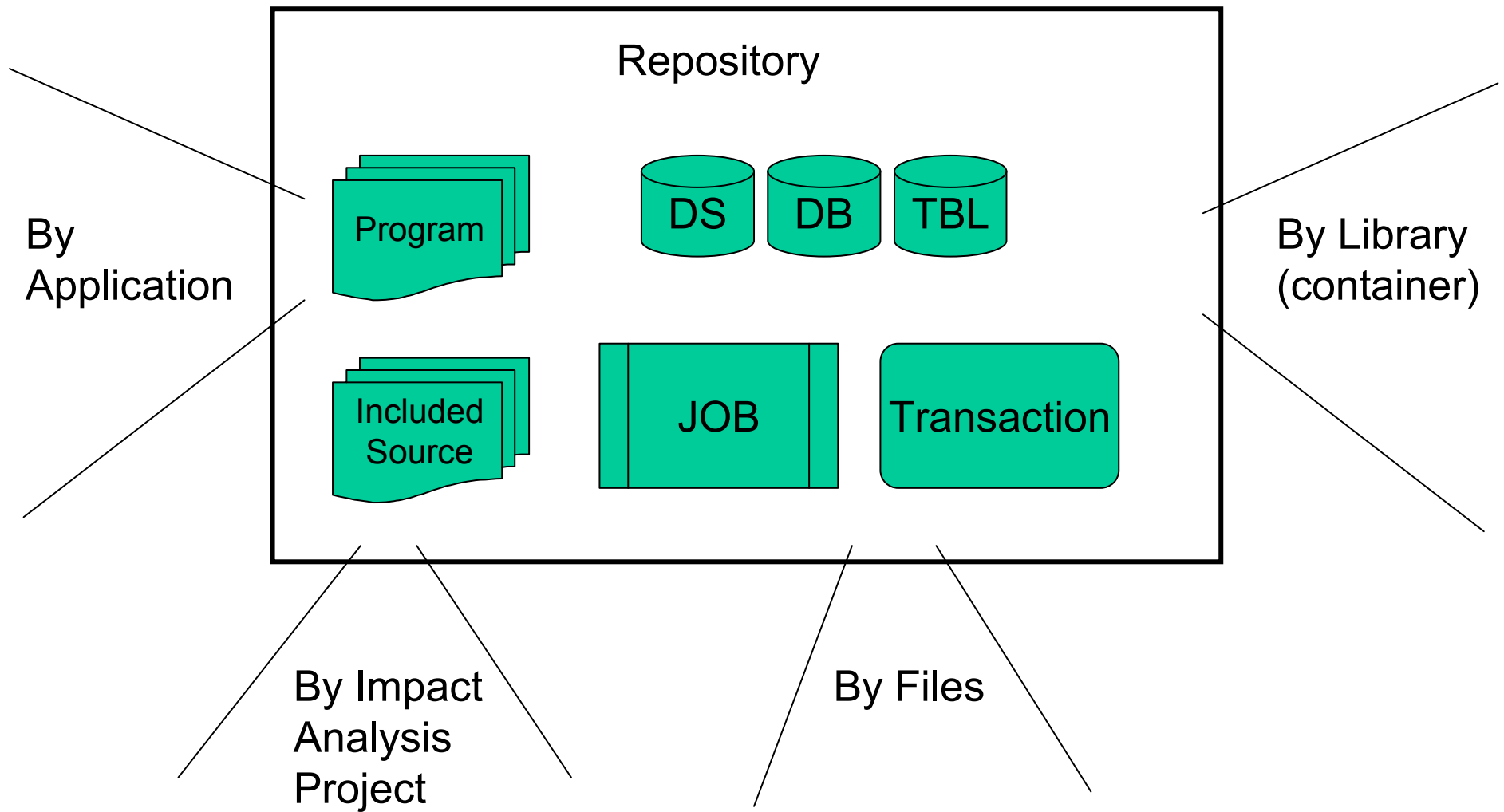
Buttons: Add, Cancel

Bottom right of RAA window: Aug 10, 2010 5:31:21 PM

Rational Asset Analyzer Overview



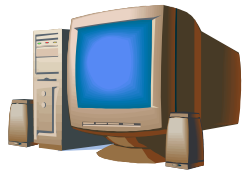
Assets are viewed through different “prisms”



RAA Architecture

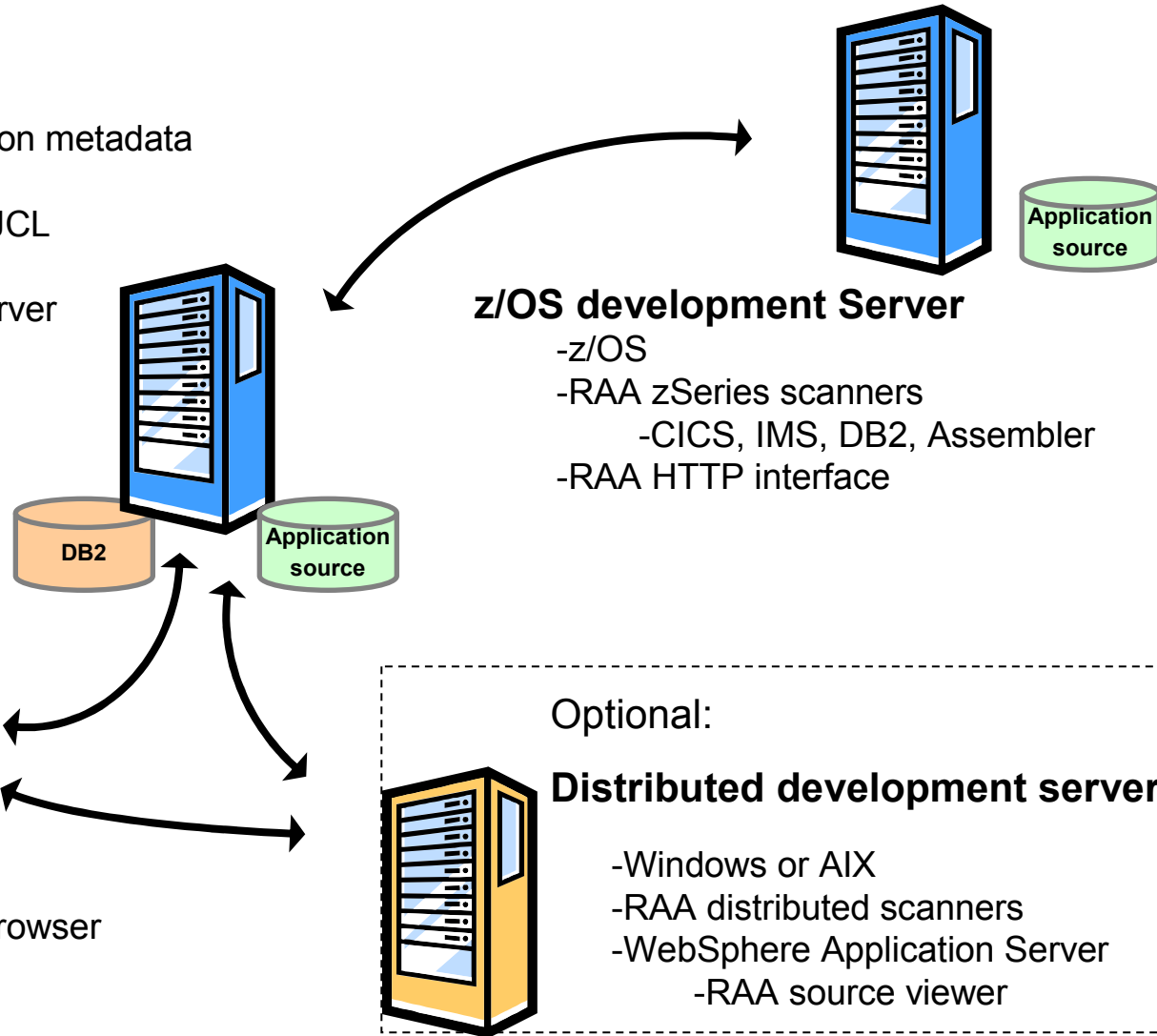
RAA Server

- Windows
- DB2: Stores RAA application metadata
- RAA scanners
 - zSeries: Cobol, PL/I, JCL
 - distributed scanners
- WebSphere Application Server
- RAA functions:
 - inventory,
 - search,
 - understand,
 - analyze,
 - source viewer



Windows Client

- Internet Explorer browser
- Adobe SVG



z/OS development Server

- z/OS
- RAA zSeries scanners
 - CICS, IMS, DB2, Assembler
- RAA HTTP interface

Optional:

Distributed development servers

- Windows or AIX
- RAA distributed scanners
- WebSphere Application Server
- RAA source viewer



Questions

