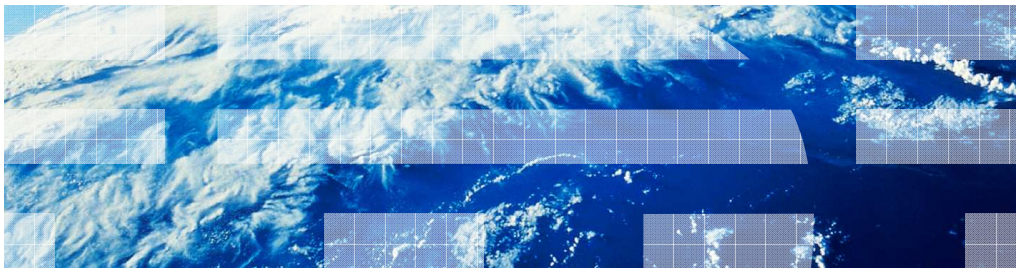
WebSphere ILOG BRMS V7.1

Release overview



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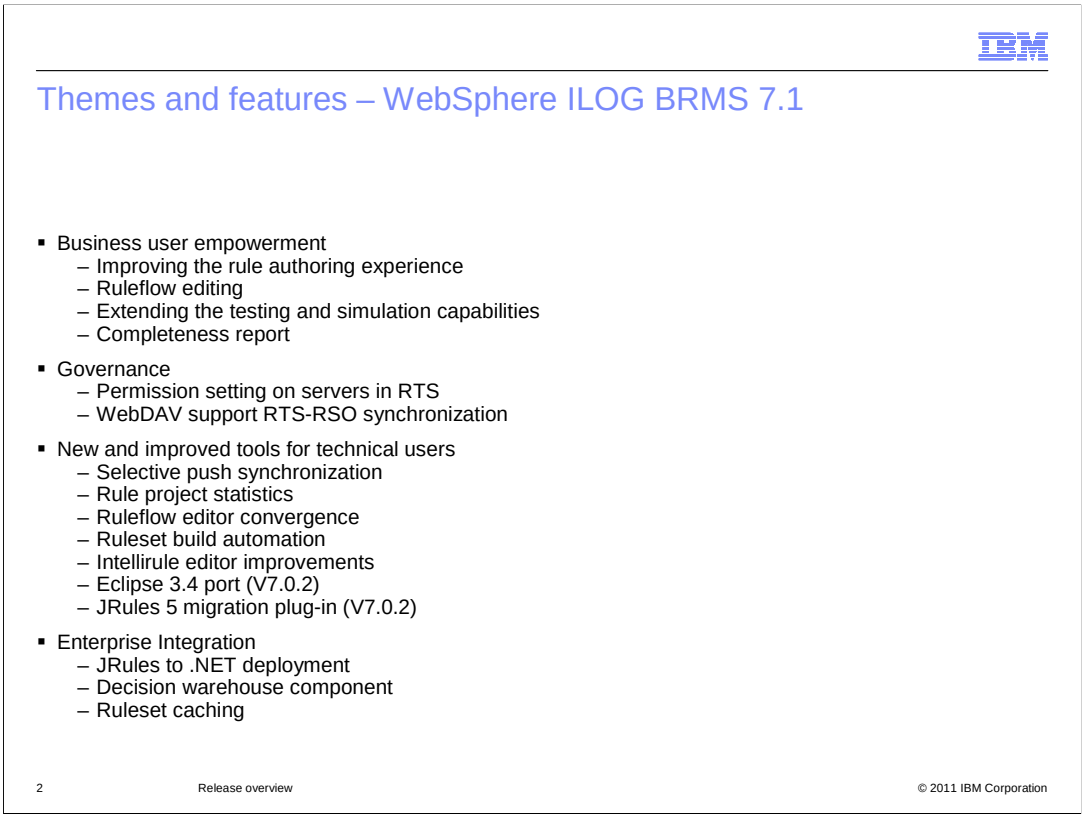
This presentation provides an overview of the new features in WebSphere® ILOG® Business Rule Management System Version 7.1.



For 7.1, ILOG BRMS continues to add new features and enhancements:

- Tools to empower business users

- Resource governance

- Tools for technical users

- Enterprise integration enablement.

Features and functional areas

- Rule team server
  - Intellirule editor
  - Single-click edit in RSO without publish/update
  - Completeness report
  - Permission setting on servers
- Rule solutions for office
  - Ruleflow editor
- Decision validation services
  - Domain support in Excel scenario provider
  - User-defined report name
  - Hyperlink on rules in test/simulation report
  - Side by side simulation (or test suite) comparison
- Decision warehouse
  - Rule session MDB
  - Decision ID support for rule session MDB, TDS
  - WebSphere 6.1, 7.0, WebLogic 10, JBoss 4.2, 5.0 Rule Session EJB
- Rule execution server
  - New maximum idle time ruleset property
  - Ruleset usage monitor
  - Profiling for estimated ruleset memory size
  - Ruleset caching extension point
  - New API to persist ruleset archive for custom encryption
- Synchronization
  - WebDAV support RTS-RSO synchronization
  - Selective push synchronization
- Rule Studio for Java™
  - Rule project statistics
  - Ruleflow editor convergence
  - Ruleset build automation
  - Intellirule editor improvements
  - SCA component export wizard
  - Eclipse 3.4 port (V7.0.2)
- JRules to .NET deployment
- Samples
  - Decision warehouse sample based on MDB

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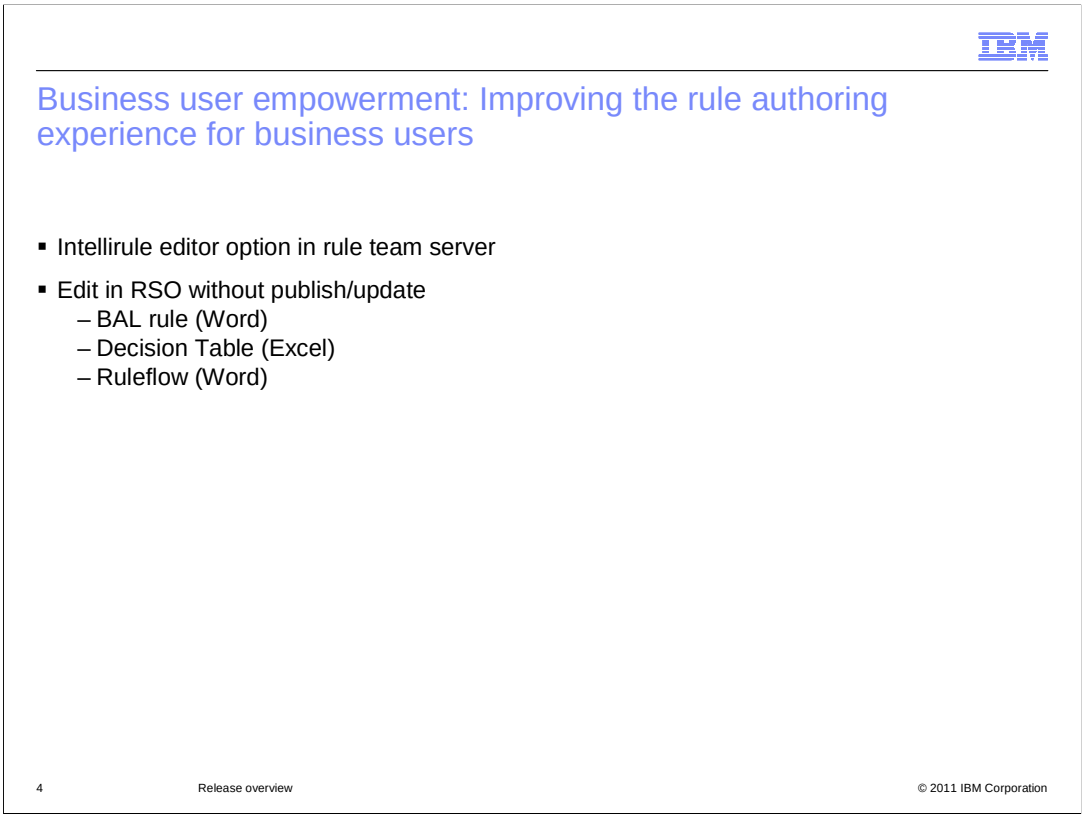
This slide is a more comprehensive view of the new 7.1 features and enhancements. The next slides will explain the changes in detail.

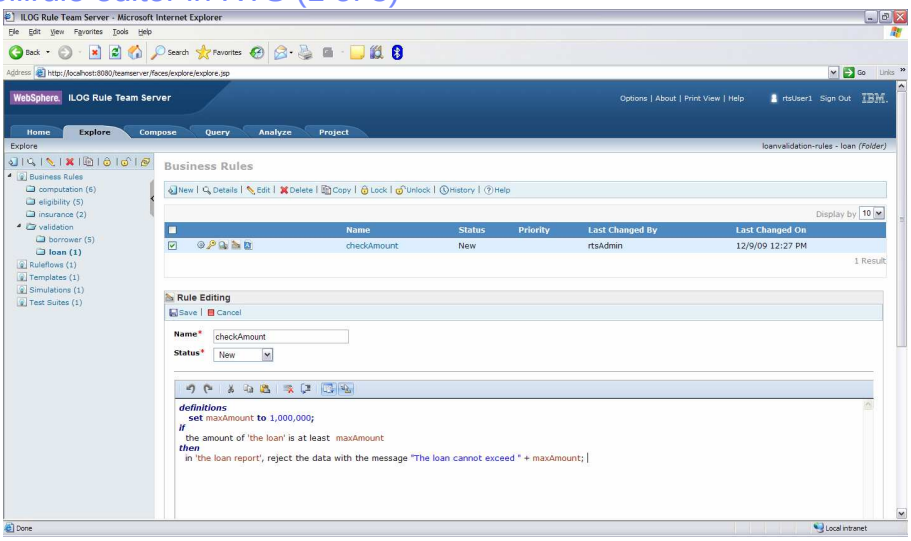


Improvements to rule authoring:

- The Intellirule editor is available as an option in Rule Team Server. The guided editor is still the default option.

- You can edit rules in Rule Solutions for Office without going through the publish/update process. You click a button and a single artifact rule document is created as needed. You go into Word or Excel, make your changes, save, and you are prompted to go through a save back to RTS process.

Intellirule editor in RTS (1 of 3)



- In Quick Edit or Compose Wizard
- Undo/Redo, Cut/Copy/Paste
- Sentence Completion option

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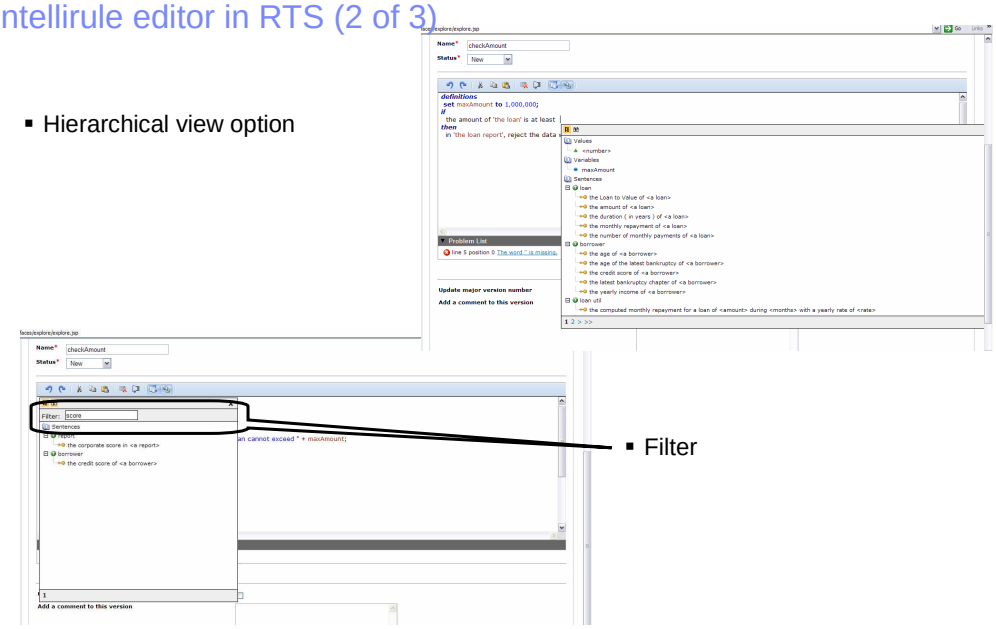
The Intellirule in Rule Team Server is available for Quick Edit, in the Compose wizard, and for queries. You can do everything with Intellirule that you can do with the Intellirule editors elsewhere in the product line: undo/redo, cut/copy/paste, type ahead. The option for sentence completion is particularly helpful to business users to help them transition from the guided editor to the Intellirule editor.

Intellirule editor in RTS (2 of 3)

- Hierarchical view option



- Filter

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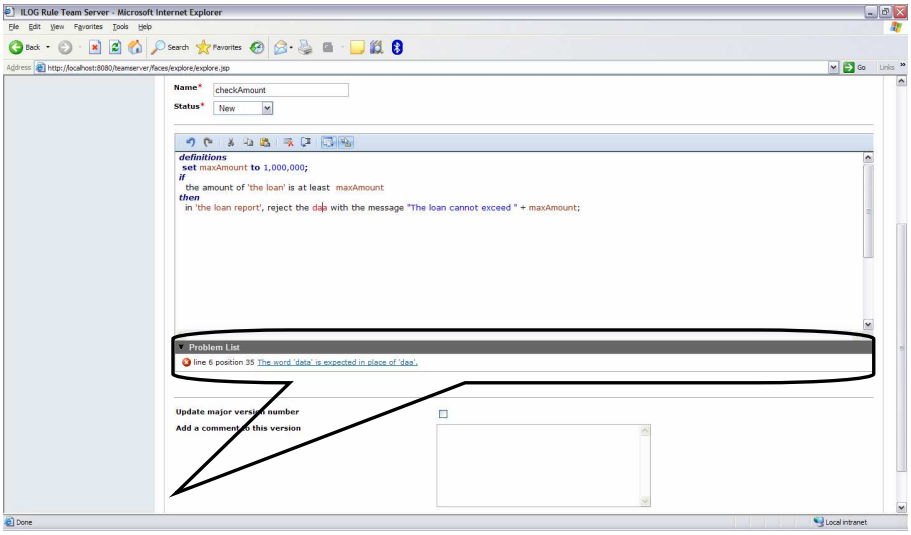
The Intellirule editor helps the user with a very long list of vocabulary. The hierarchical view option helps users find things by class and the filtering limits the number of choices considerably.

Intellirule editor in RTS (3 of 3)



- Problem list

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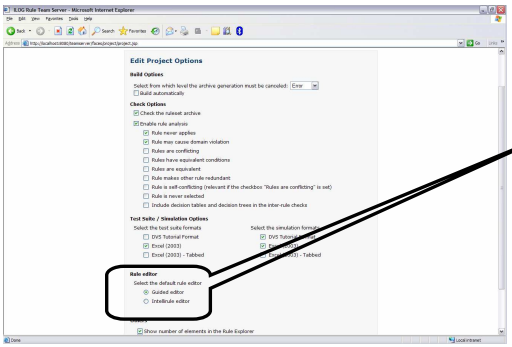
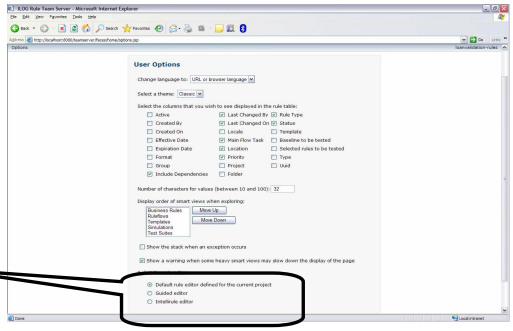
As with the Intellirule editors elsewhere, you have the problem list to fix the text of the rule.

Intellirule editor – on or off



- Project level option can be set by rtsConfigurator or rtsAdministrator user
  - Default = guided



- Any user can set own option
  - Default = project level setting

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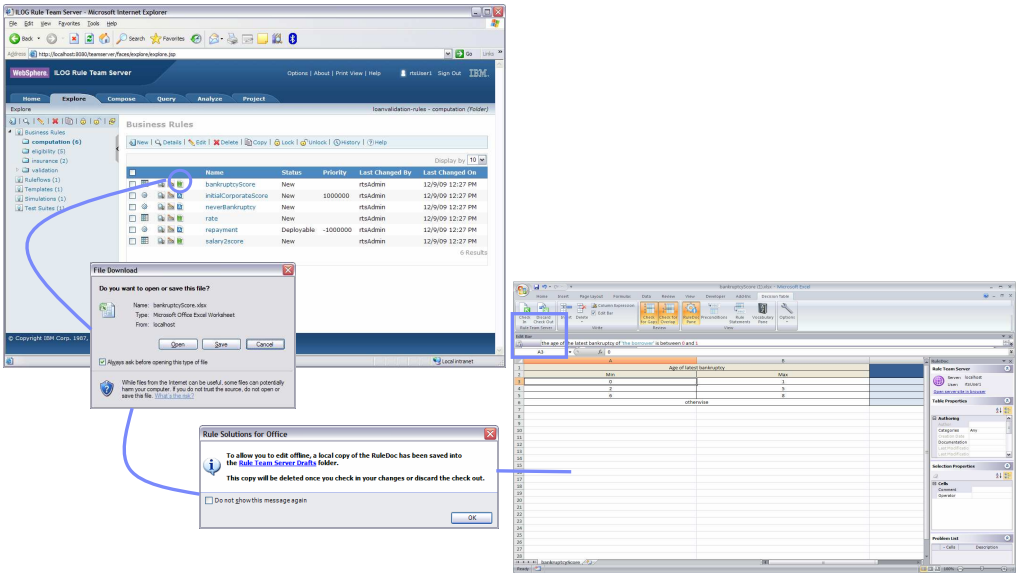
As mentioned previously, the Intellirule editor is an option in this release. To turn the Intellirule editor on for a given project, there is a setting in the project options page which requires rtsConfigurator user authority. A user can override the project setting for the Intellirule editor on the user options page. By default, the user's editor setting inherits the setting from the project options page.

Direct edit in RSO from RTS



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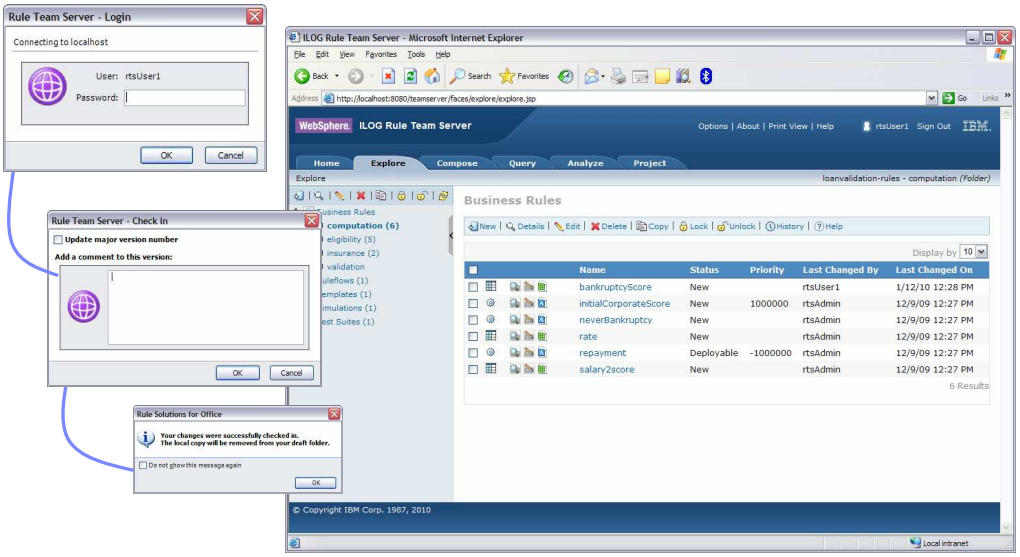
The direct edit in Rule Solutions for Office option now available in Rule Team Server allows you to edit a decision table in Excel, a BAL rule in Word, or a ruleflow in Word. This without having to go through the publish and update processes. In the Explorer page, Next to the Preview or Quick Edit icons there's now a Word or Excel icon to access this editor. You click the icon to open the rule document in Rule Solution for Office. Since you are working offline from Rule Team Server, while you are editing your Rule Solutions for Office document, a copy of the original gets stored. It is used when you come back to check into Rule Team Server. You have a couple of extra buttons in your Word and Excel tool bar, for checking in or discarding your check out.

This mode can only be used to edit an existing element and cannot create a new rule or decision table.

Save back to RTS



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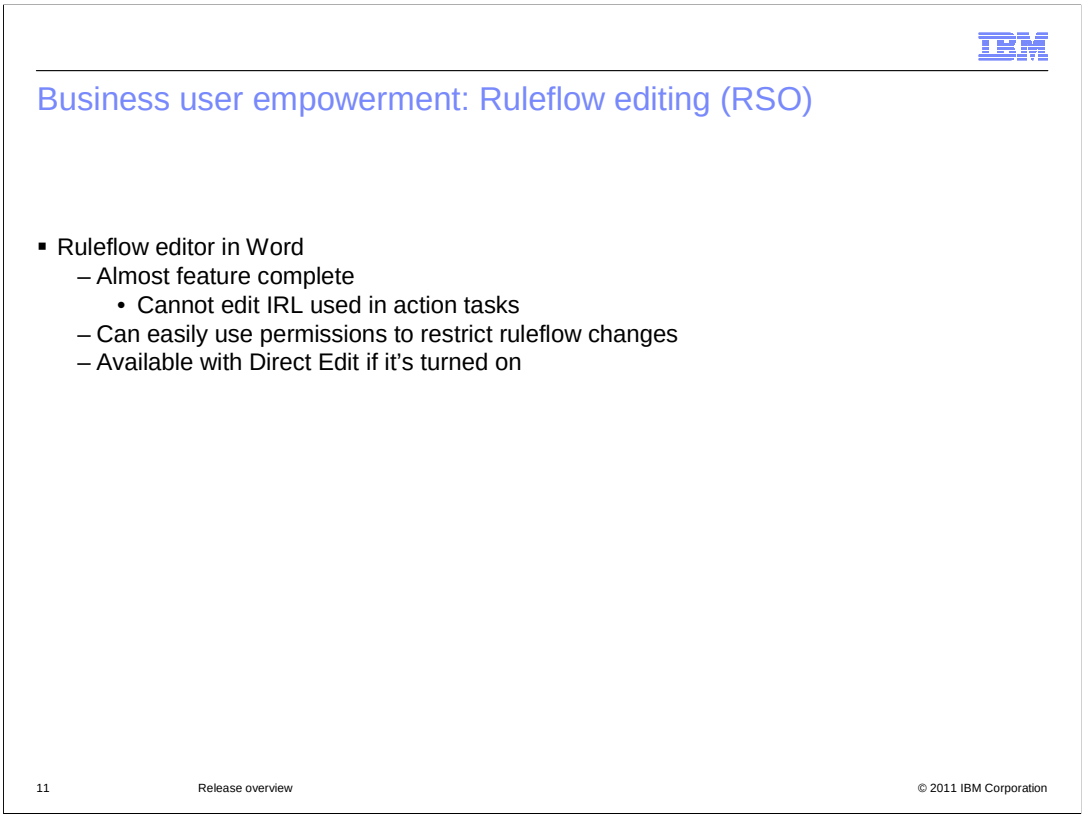
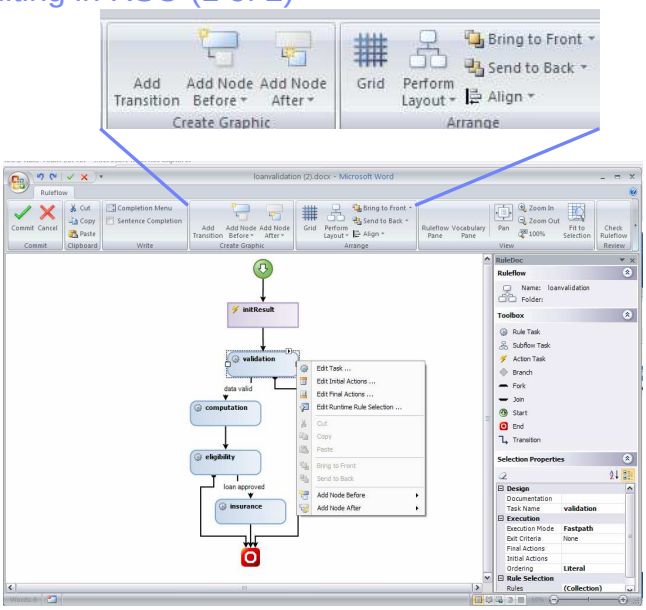
After you click the check in button in Rule Solutions for Office, you are prompted to login to Rule Team Server. You can add a version comment for these changes and at the end you get a message that your changes have been checked in and the draft that was stored when you checked out is discarded. Then you can return to Rule Team Server. You have to refresh your Explorer page to see that a change has been made, since the Rule Team Server client does not know that Rule Solutions for Office saved something back to the Rule Team Server repository.



JRules 7.1 now has a rule flow editor in Rule Solutions for Office. In Word, there is a rule flow editor. The only restriction for this editor is IRL editing.

You can easily restrict saving rule flow changes back to Rule Team Server using permissions because, while this is very important for some companies, others really do not want their business users to modify rule flow. It is also available with Direct Edit as mentioned previously.

Ruleflow editing in RSO (1 of 2)



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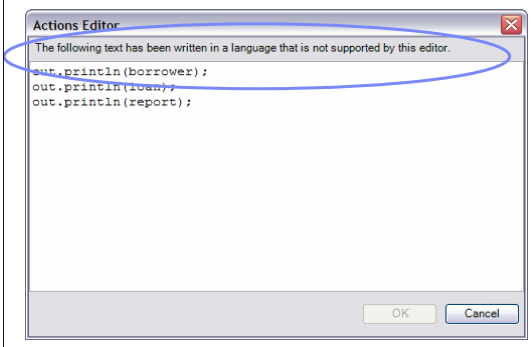
When you open a rule flow for editing, a dedicated tool bar for rule flow editing is provided. It is similar to going into edit picture mode, because you are dealing with graphics rather than document text. You commit your changes back to the document and then you can view the rule flow while you edit the rest of the document.

Ruleflow editing in RSO (2 of 2)

- IRL - Not editable
- BAL action statements are editable



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You can view the IRL in the Actions editor but you get a message saying that this text is written in a language that is not supported by this editor and it's just not editable.

Business user empowerment: Extending the testing and simulation capabilities

- Domain support in Excel scenario providers
- User-defined report name
- Hyperlink on rules in test/simulation report
- Side by side simulation (or test suite) comparison

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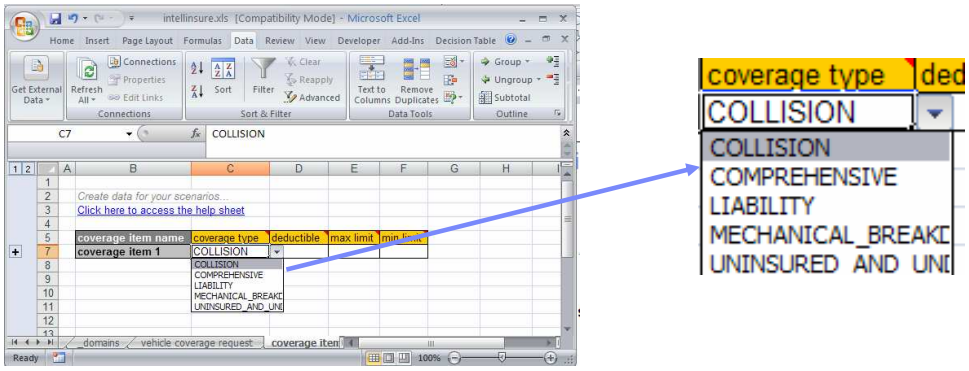
JRules Version 7.1 provides improvements in the test and simulation areas. The domain support in Excel scenario,

the ability to name reports, direct links between reports and rules in Rule Team Server and comparison of Simulation and test suites.

Domain support in Excel scenario providers

- BOM member, not verbalization
- Works for static reference, literal and dynamic domains



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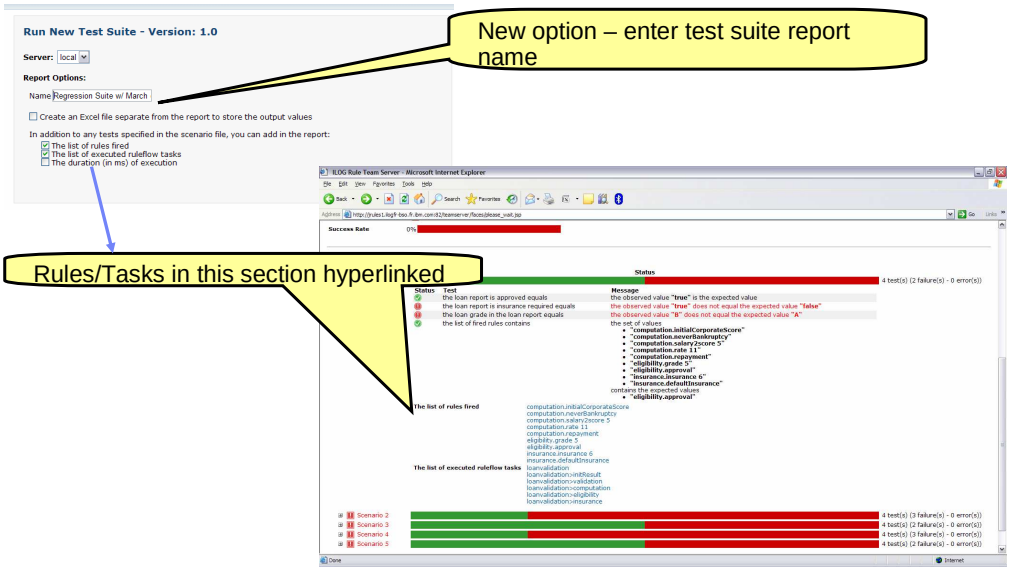
There is now a BOM-level domain support in the default scenario Excel providers. If you have a domain established in a BOM, when you generate the Excel template, you will get a drop-down list of the items in the domain.

DVS report enhancements



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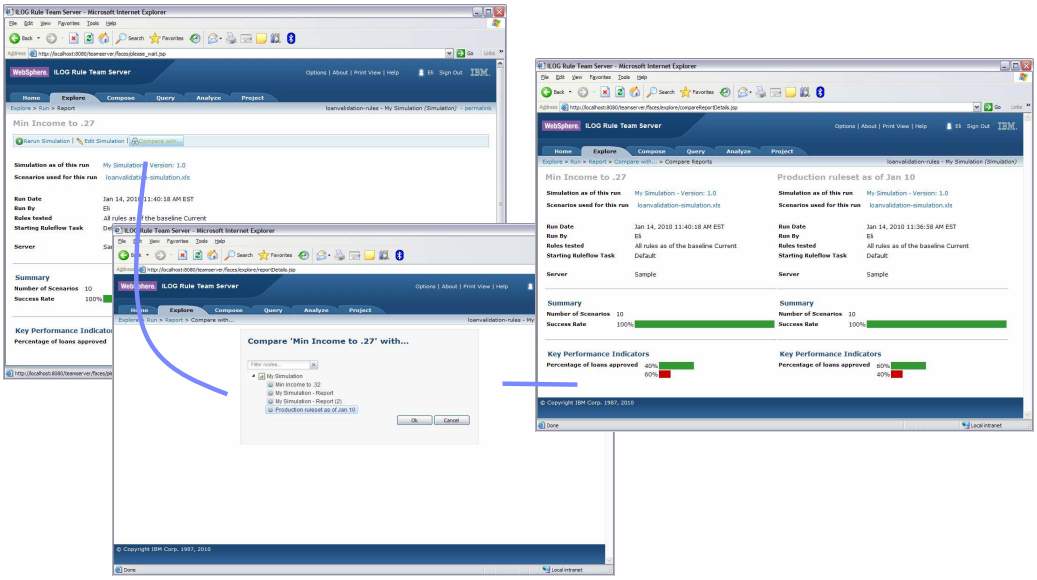
You can now name your test suite or simulation report instead of having the name generated automatically for you.

The rules and tasks listed in the details for each scenario are hyperlinked so you can go directly to the artifact to view or edit it.

Side by side simulation (or test suite) comparison



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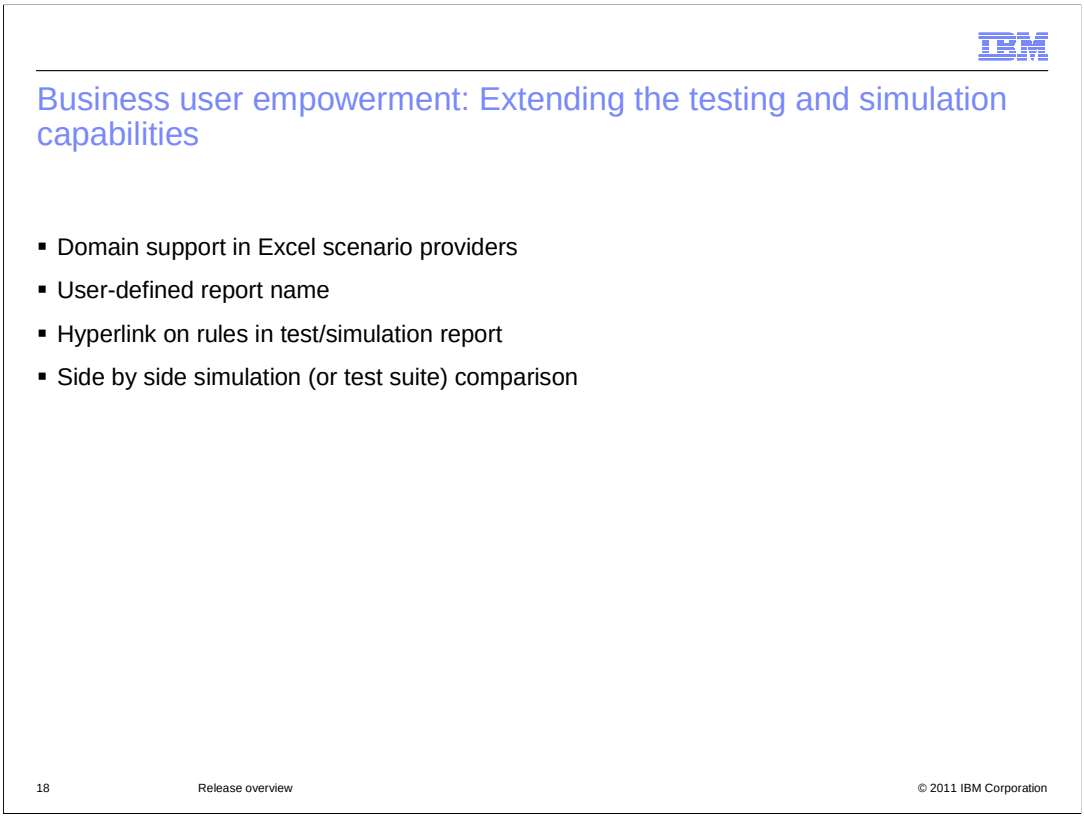
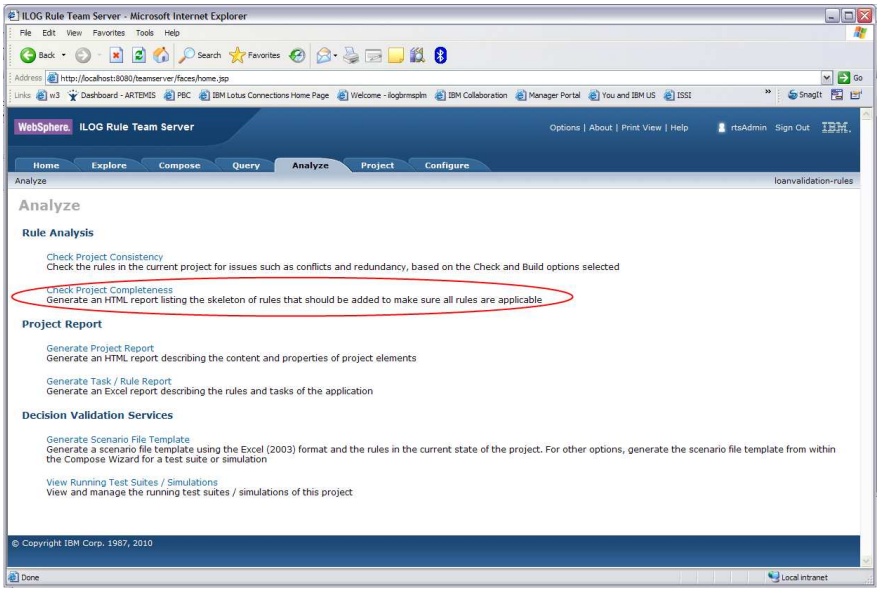
This slide covers side-by-side comparison of simulation or test suite reports. After you have run a test suite or simulation, a button is displayed at the top of the screen that indicates that you can compare it with another one. You select another report you want to compare this one with and you get a side-by-side comparison. You can go back and pick another one and keep comparing until you are satisfied and you know what you want to do or you have verified the results you want.



In summary those changes around testing and simulation make the testing of rules easier. The BOM-level domain support in the Excel scenario providers make it easier to create input data. Being able to define your own name for your reports helps identify the test you run and combined with the new side-by-side comparison will help make better decisions. Finally the hyper linking of the rules in the details section of the reports gives you direct access to analyze the execution.

Business user empowerment: Completeness report (1 of 3)



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The completeness report is a new project analysis tool. It analyzes the condition part of each rule in the rule set and detects whether there are cases where no rule applies, which is then identified as a gap. If the rule project contains a rule flow, the completeness mechanism checks that each rule task in the rule flow is complete. If the rule project does not contain any rule flows, the completeness mechanism checks that all rules in the project are consistent.

Business user empowerment: Completeness report (2 of 3)

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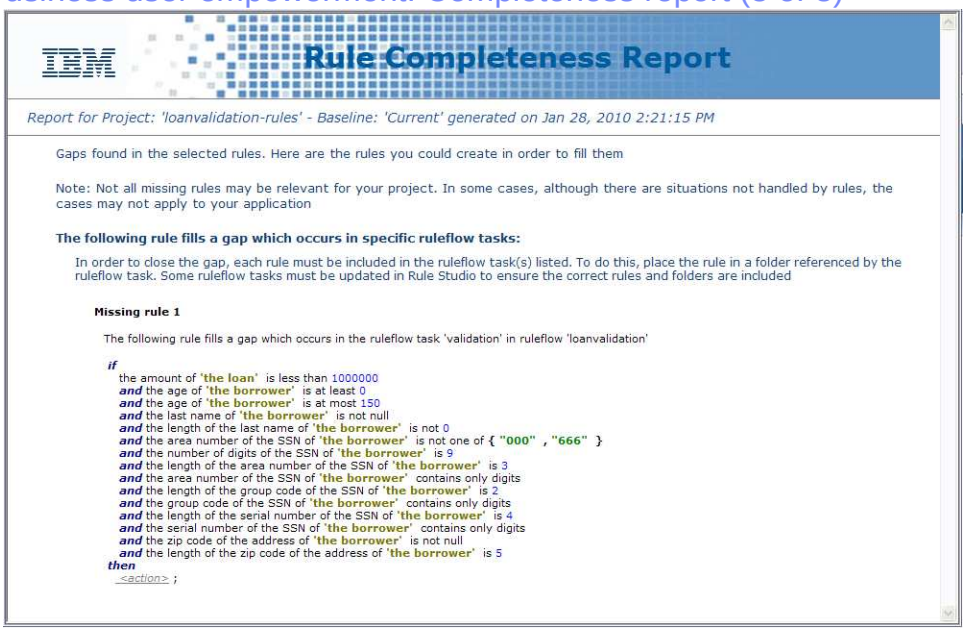
You can also limit the scope of a completeness report using a query.

Business user empowerment: Completeness report (3 of 3)



Rule Completeness Report

Report for Project: 'loanvalidation-rules' - Baseline: 'Current' generated on Jan 28, 2010 2:21:15 PM

Gaps found in the selected rules. Here are the rules you could create in order to fill them

Note: Not all missing rules may be relevant for your project. In some cases, although there are situations not handled by rules, the cases may not apply to your application

The following rule fills a gap which occurs in specific ruleflow tasks:

In order to close the gap, each rule must be included in the ruleflow task(s) listed. To do this, place the rule in a folder referenced by the ruleflow task. Some ruleflow tasks must be updated in Rule Studio to ensure the correct rules and folders are included

Missing rule 1

The following rule fills a gap which occurs in the ruleflow task 'validation' in ruleflow 'loanvalidation'

```
if
   the amount of 'the loan' is less than 1000000
   and the age of 'the borrower' is at least 0
   and the age of 'the borrower' is at most 150
   and the last name of 'the borrower' is not null
   and the length of the last name of 'the borrower' is not 0
   and the area number of the SSN of 'the borrower' is not one of { "000" , "666" }
   and the number of digits of the SSN of 'the borrower' is 9
   and the length of the area number of the SSN of 'the borrower' is 3
   and the area number of the SSN of 'the borrower' contains only digits
   and the length of the group code of the SSN of 'the borrower' is 2
   and the group code of the SSN of 'the borrower' contains only digits
   and the length of the serial number of the SSN of 'the borrower' is 4
   and the serial number of the SSN of 'the borrower' contains only digits
   and the zip code of the address of 'the borrower' is not null
   and the length of the zip code of the address of 'the borrower' is 5
then
   <action> ;
```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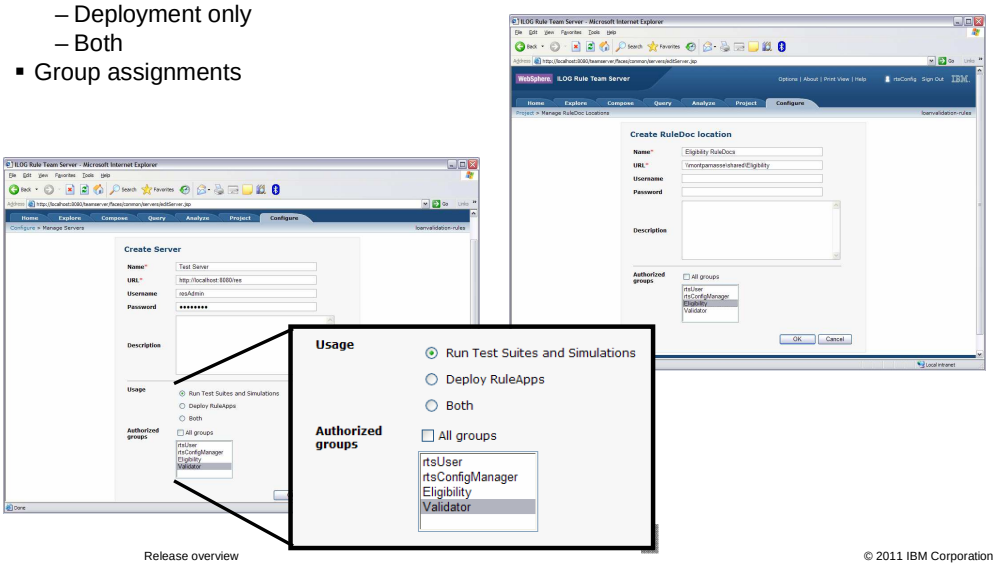
This is an example of a report. When a gap is detected, an example of the missing rule is proposed to the user.

Governance: Permission setting on Servers (RTS)

- RES Servers
- Usage
  - Testing only
  - Deployment only
  - Both
- Group assignments

- RuleDoc Locations
- Group assignments



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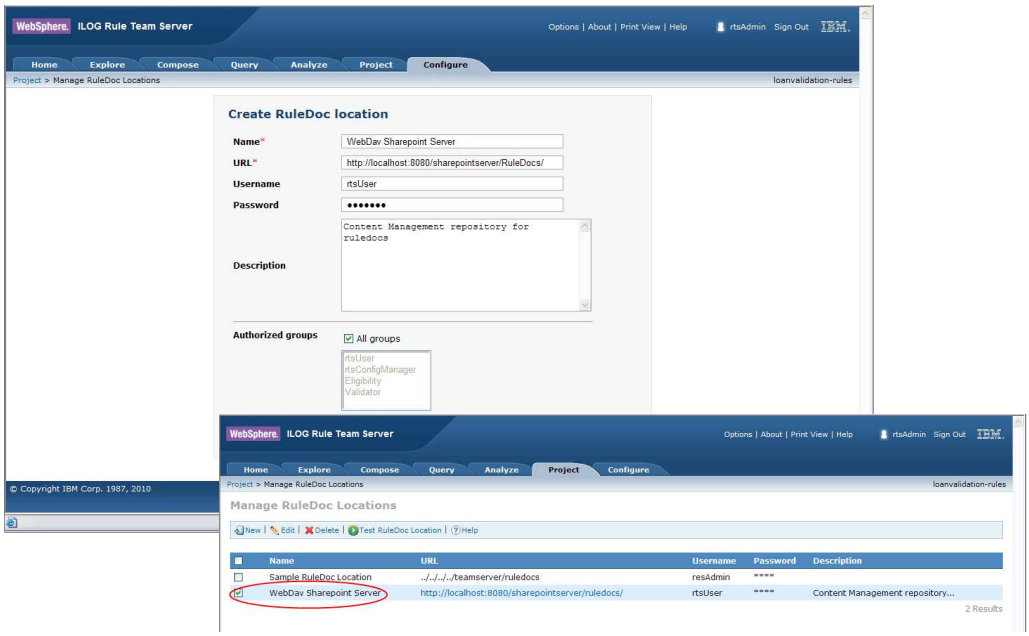
Because Rule Execution Servers set up can be used for both real deployment and for testing or simulation, Rule Team Server now provides a way to specify for each server usage. It can either be just for testing and simulation, just for deploying RuleApps, meaning to real production or staging environments, or it can be used for both. In addition, you can specify that only certain groups can access a given server, given those usage assignments.

Since the RuleDoc locations are set up essentially the same way, Rule Team Server provides the same ability there for group assignment of where the RuleDoc location should be.

Governance: WebDAV support (RTS-RSO Synchronization)



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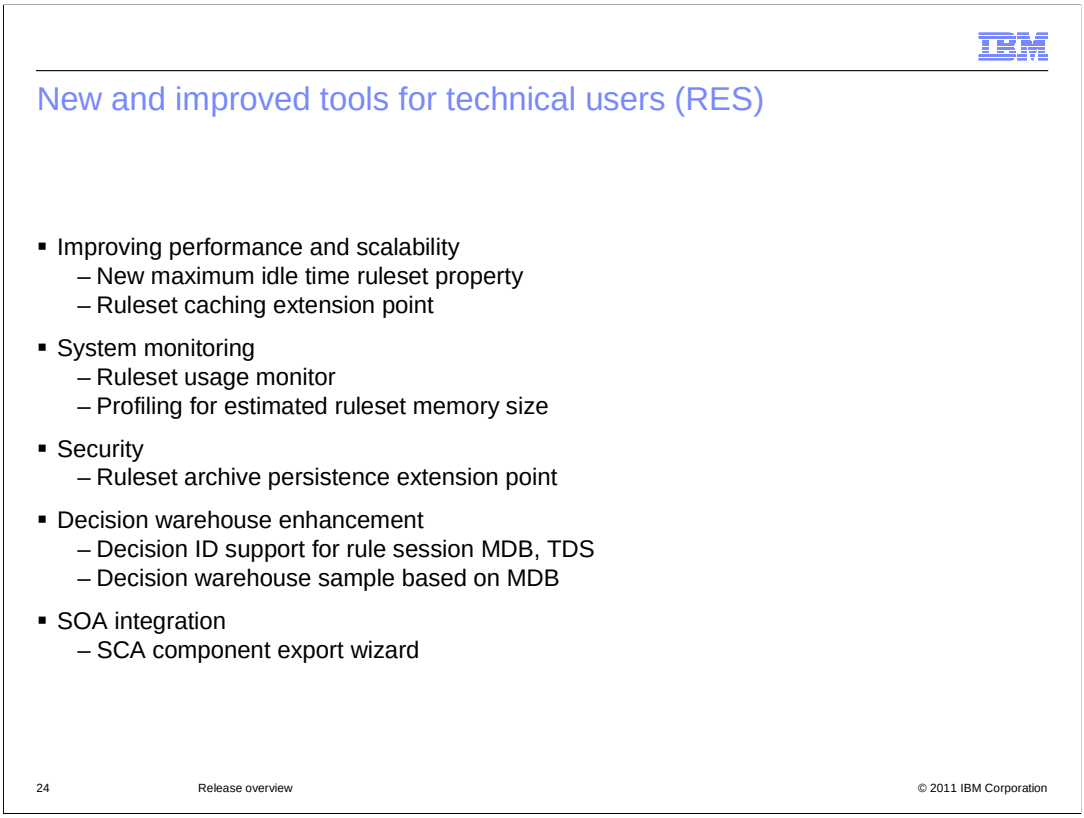
This is a new feature of RTS-RSO synchronization. You can now set up a WebDAV server such as SharePoint, FileNet®, or IS as your RuleDoc location. The WebDAV protocol provides many services that help collaboration, enabling you to expand the governance provided in RTS to the RuleDoc location. WebDAV supports authentication and permissions, and manages conflicts. When an RTS user tries to publish to a location where the RuleDoc is locked, the publishing is interrupted with an error message. In the same way, the publishing process locks the document so a SharePoint user trying to edit the document that is being updated will see it locked.



In order to improve scalability for a large number of rulesets, a new ruleset property and an extension point for ruleset caching have been added.

In addition, much more information is available to monitor the usage of the rulesets and their memory consumption for diagnostics and system failure prevention.

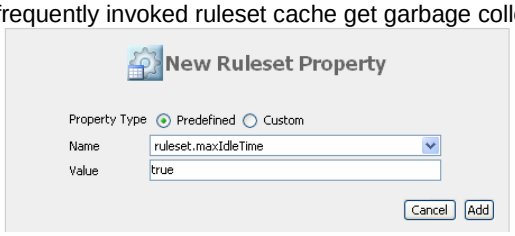
Rule Execution Server Version 7.1 also introduces a new ruleset archive persistence extension point for customers who want to encrypt their ruleset archive that is installed on a file system.

The Decision Warehouse improvements includes the decision ID available to all rule session components, including transparent decision services and MDB. The Decision Warehouse Center uses MDB as a reference architecture.

Finally Rule Execution Server provides an SCA component export wizard for WebSphere 7.0 in Rule Studio and replaces the previous SCA wizard.

Improve performance and scalability of RES

- New Maximum Idle Time ruleset property
  - Define the lifespan of a cached ruleset
  - Avoid ruleset reparsing when
    - The number of rulesets is more than the XU connection pool size
    - Less frequently invoked ruleset cache get garbage collected



Ruleset cache snapshot view

Ruleset Cache

Size: 6
- Hide details

Canonical RulesetPath	Ref	XML Object Service			
/MortgageRuleApp/1.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@199c199c	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1
/MortgageRuleApp/2.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@16881688	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1
/MortgageRuleApp/3.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@ae60ae6	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1
/MortgageRuleApp/4.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@7b047b04	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1
/MortgageRuleApp/5.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@588c588c	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1
/MortgageRuleApp/6.0/Mortgage/1.0	ilog.rules.res.xu.ruleset.impl.IlrXURulesetImpl@16ec16ec	XML Driver Pool Size: -1	WSDL Driver Pool Size: -1	Pool Max Size: -1	Reserve Timeout: -1

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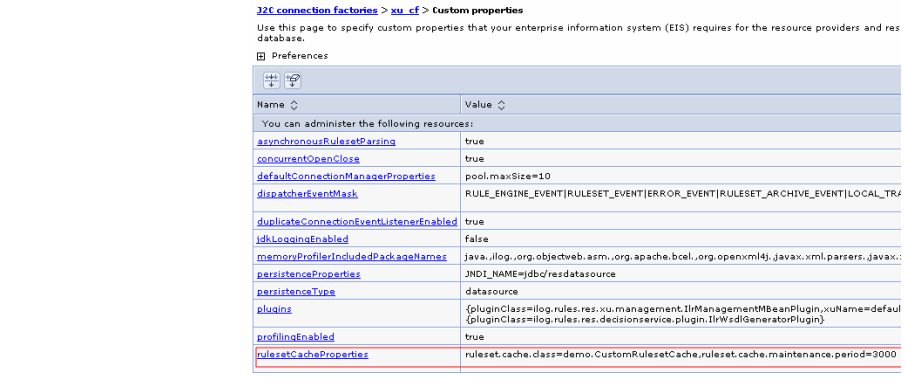
A new ruleset property, Maximum Idle Time is introduced in this release. This ruleset property controls how long the ruleset cache will stay in memory. By default, all the cached rulesets stay in memory permanently. You can also specify the duration a ruleset will remain in the cache when it is not used. This property addresses performance issues when a lot of rulesets are deployed to Rule Execution Server. Without this property, rulesets may be reparsed when the number of rulesets is greater than the actual connection pool size. Or, less frequently, invoked rulesets get garbage collected. To monitor the rulesets that are cached on the server, and control the memory impact, the administrator can go to the RES console and see a snapshot of the ruleset cache.

Introducing ruleset caching extension for performance fine-tuning




```
public class CustomRulesetCache implements IlrRulesetCache {

    protected HashMap<String, IlrXURuleset> cache = new HashMap<String, IlrXURuleset>();
    private IlrRulesetUsageInformationMonitor rulesetUsageInformationMonitor;
    protected int maxCacheSize = 5;

    public void addRuleset(IlrXURuleset ruleset) {

    public void clear() {

    public IlrXURuleset getDeprecatedRuleset(String rulesetPath,

    public IlrXURuleset getRuleset(String rulesetPath, ClassLoader arg1) {

    public void initialize(Logger arg0, Map<String, String> properties,

    public void rulesetChanged(String ruleset) {
```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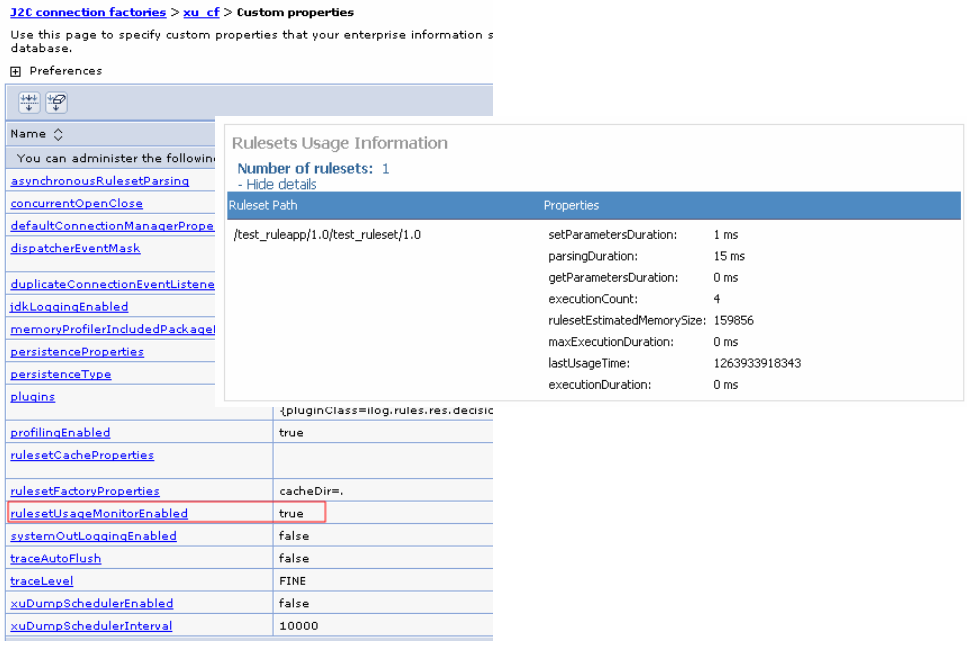
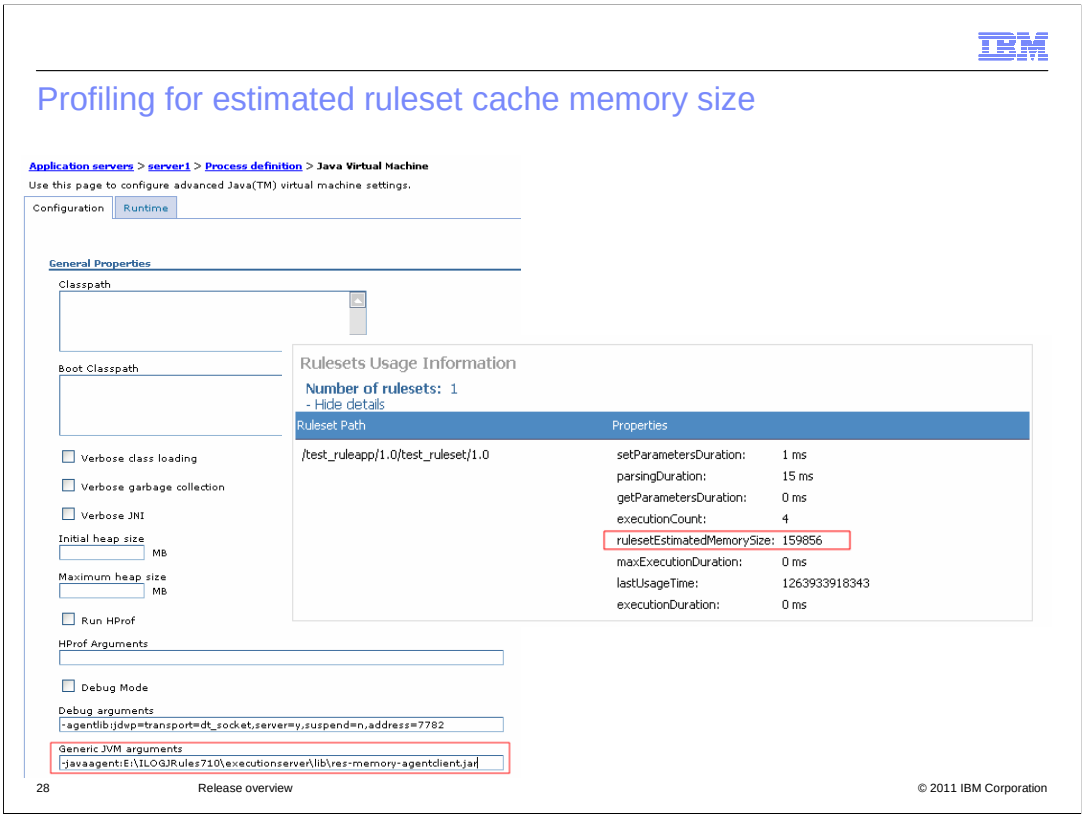
In some cases, you might want to define your own caching strategy. For example, removing the least used ruleset from the cache when you deploy a new rule set, in order to control the memory consumption. The XU provides an extension point for you to do that. This screen capture shows you what the interface looks like.

Providing detailed ruleset usage statistics for administrator



More ruleset usage information is provided. You can view details such as the last usage time of a ruleset, the parsing duration of a ruleset, and in some cases, the maximum execution duration. The information can be accessed through the RES console. You can easily turn off this feature by configuring the XU property as illustrated in this page.

Profiling for estimated ruleset cache memory size



Ruleset memory size can become a concern, particularly when the number of rulesets is large. You want to know whether your systems reach physical memory limitation, which can result in slow execution. By turning on the XU profiling feature, your administrator can get the estimated memory size of a cached ruleset. This information can help detect memory bottlenecks in the system.

Ruleset archive file persistence extension point

- Extensible API for specifying how ruleset archive is persisted and read
- Useful for enhancing security with encryption

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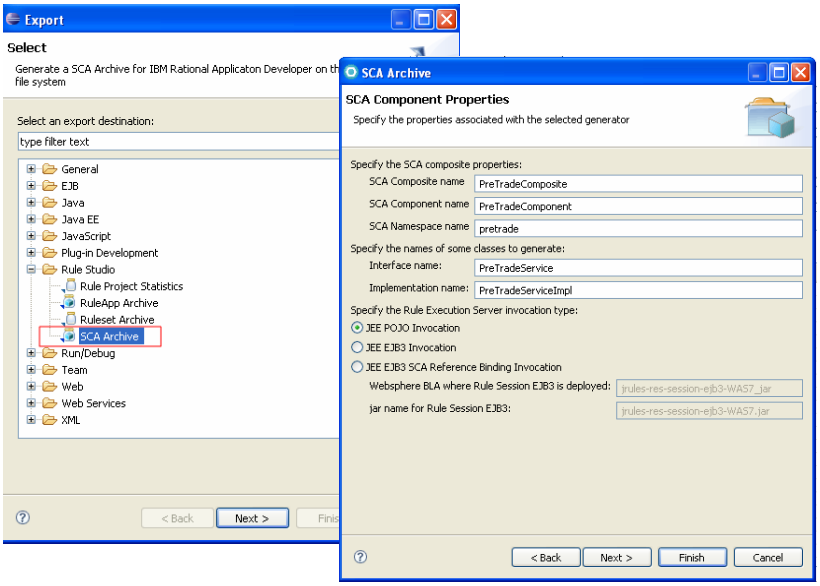
A ruleset archive file persistence extension point has been added. You can use this extension point to specify how the ruleset archive should be persisted and read. It is useful if you are using a file-based persistence for ruleset archive that requires a high level of security.

Improving SOA support - SCA component archive export wizard



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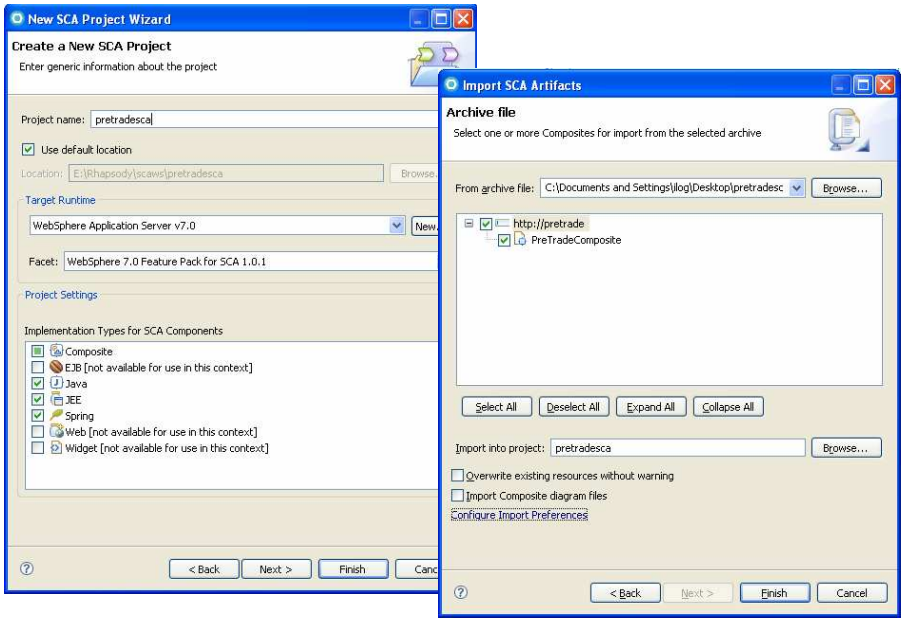
In this release, The SCA Tuscany M1 generator is replaced with the SCA service pack for WebSphere Application Server version 7. A new SCA Archive wizard in Rule Studio allows you to generate an SCA archive that can readily be imported into IBM Rational® Application Developer 7.5. It requires the SCA service pack installed on IBM Rational Application Developer 7.5.

Import generated SCA archive file in IBM Rational Application Developer



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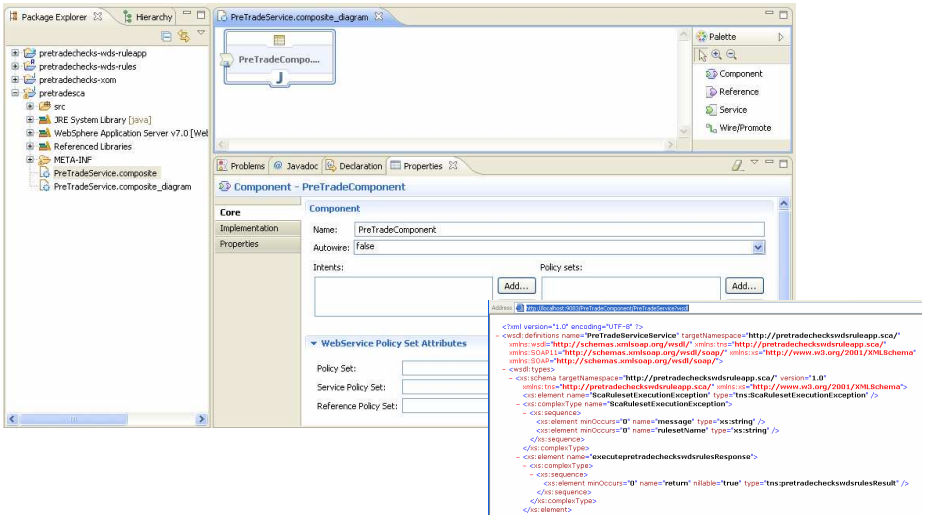
This slide shows you how you can create a new SCA project in IBM Rational Application Developer 7.5 and then import the generated archive file from Rule Studio into that project.

Support Java XOM based ruleset and web service

- Require IBM Rational Application Developer 7.5 and SCA 1.0.1 SupportPac for WebSphere Application Server 7.0



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This feature requires IBM Rational Application Developer 7.5 and SCA 1.0.1 Support Pack for WebSphere Application Server 7.0. The generated SCA archive supports web services and Java XOM-based rulesets only.

New and improved tools for technical users (Rule Studio)

- Selective push synchronization
- Ruleset build automation
- Ruleflow editor convergence
- Intellirule editor improvements
- Eclipse 3.4 port (since V7.0.2)

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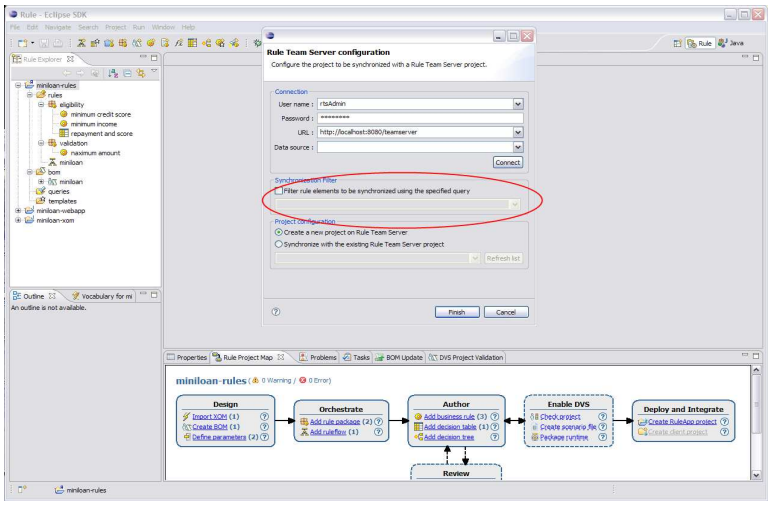
This slides and the following introduces the improvements in Rule Studio from a technical user perspective, In addition to the SCA component export wizard, mentioned earlier. Rule Studio brings a new option for the synchronization, a new method to automate ruleset generation, an updated ruleflow model and editor, an improved Intellirule editor. All of this on the release of Eclipse 3.4

Selective push RS-RTS synchronization (1 of 2)



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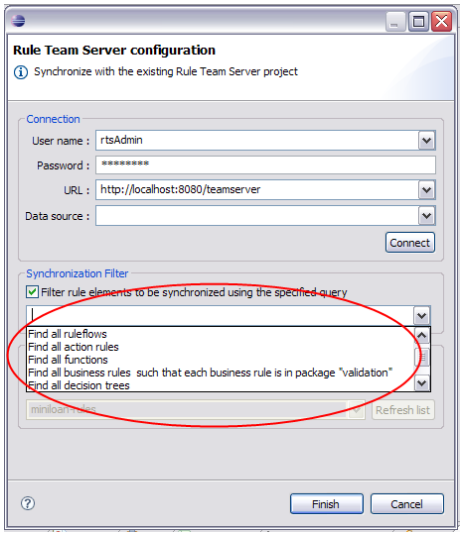
JRules 7.1 improves the performance and scalability of the Rule Studio and the synchronization module for large projects or large artifacts .

The synchronization of Rule Studio and Rule Team Server introduces a filtering feature. You can now filter the scope of the synchronization so that the collection of artifacts synchronized is limited. This can be used to avoid synchronizing unchanged, very large artifacts. For example a very big decision table. It can also be used to push some content from Rule Studio to Rule Team Server without collecting all business artifacts from the RTS repository. You can enable a filter using a check box in the synchronization wizard.

Selective push RS-RTS synchronization (2 of 2)



Select based on
- Artifact type
- Query results

Also available for headless synchronization

"-selector [query] : BQL Query to select rules to be synchronized\n"

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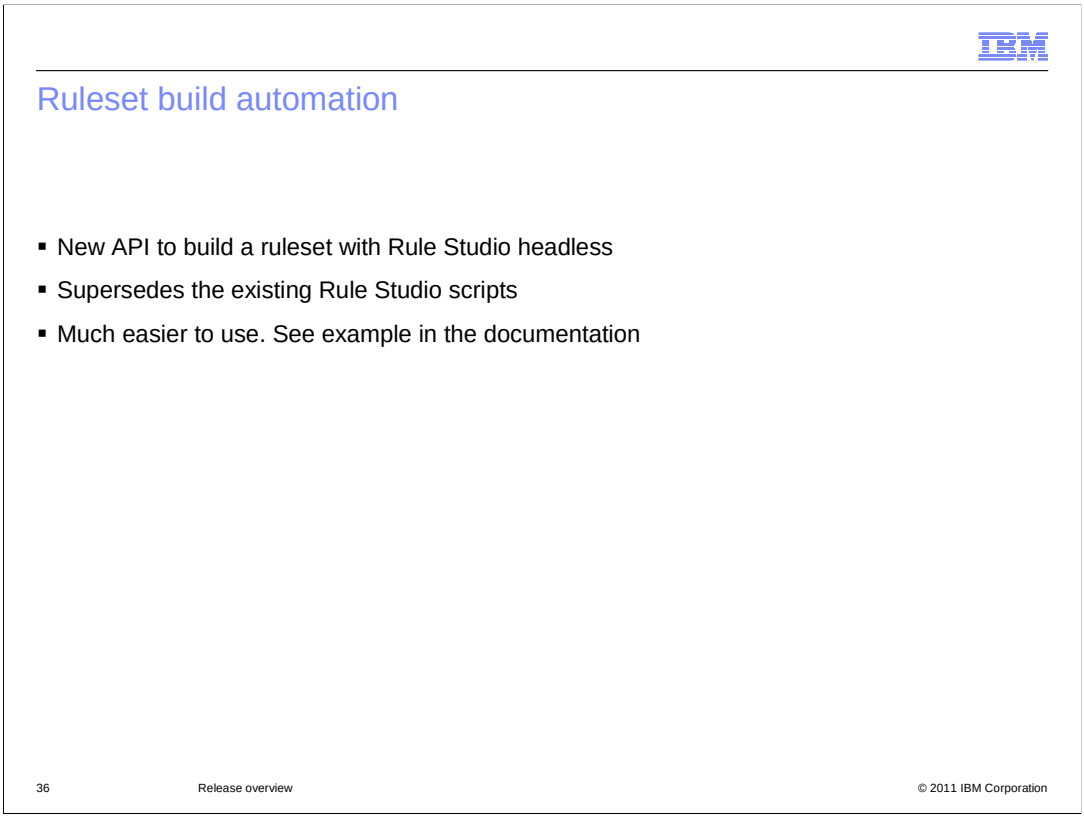
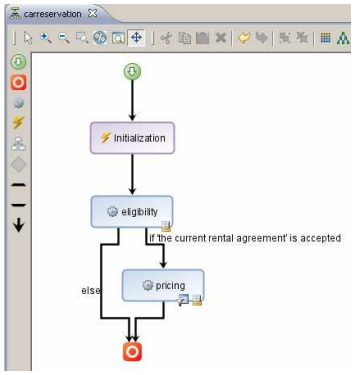
You can select artifacts based on the artifact type or based on query results. For example, if all rule artifacts are stored on the RTS side, but the technical user needs to change the rule flow in Rule Studio, he can choose to publish only the rule flow without collecting all the business user artifacts. Another example, is that of an ISV who wants to push new content, like a new product, to his customer's instances of RTS without having to collect and then ignore their proprietary content. Note that this new selection parameter is also supported in the headless synchronization.



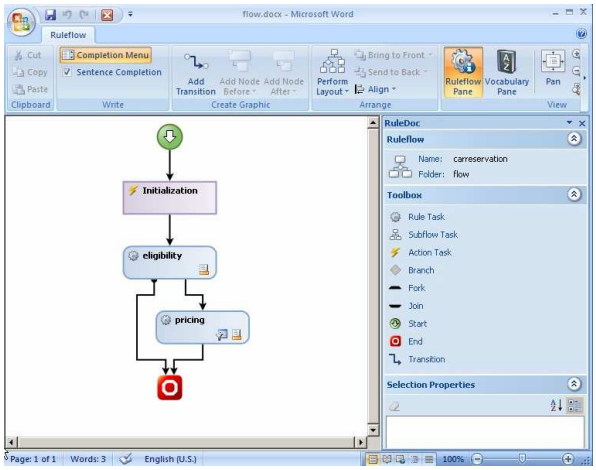
Ruleset build automation. There is already a way to generate a ruleset through a batch action. This works currently by running a script file in a headless Rule Studio and it is illustrated in a sample.

In JRules 7.1, a new tool to generates a ruleset through a batch command. This new ruleset build tool is not based on a script but on the Java API that can be easily invoked on the command line.

Ruleflow graphics



In JRules Rule Studio…



and in RSO ruleflow editor

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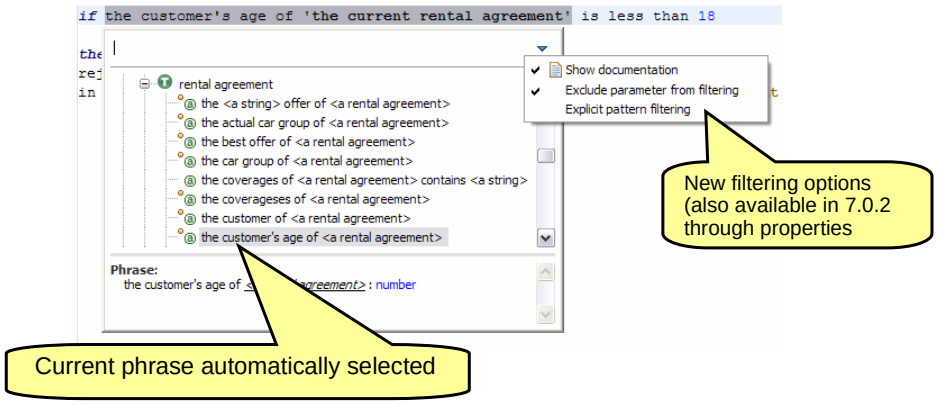
JRules 7.1 brings new icons to represent the ruleflow. This allow for a unified representation across the Ruleflow editors.

On this slide, you see on the left a rule flow as it looks in Rule Studio for Java and in Rule Team Server. \And, on the right, you see a rule flow open this time in Rule Solutions for Office in the domain editor. Graphics between these two editors are now much closer. One thing to be noticed is in JRules Rule Studio the position and size of the nodes are the same as in JRules 7.0 so that existing rule flow layouts are not modified.

Intellirule editor improvements

- When using the Tree completer mode:



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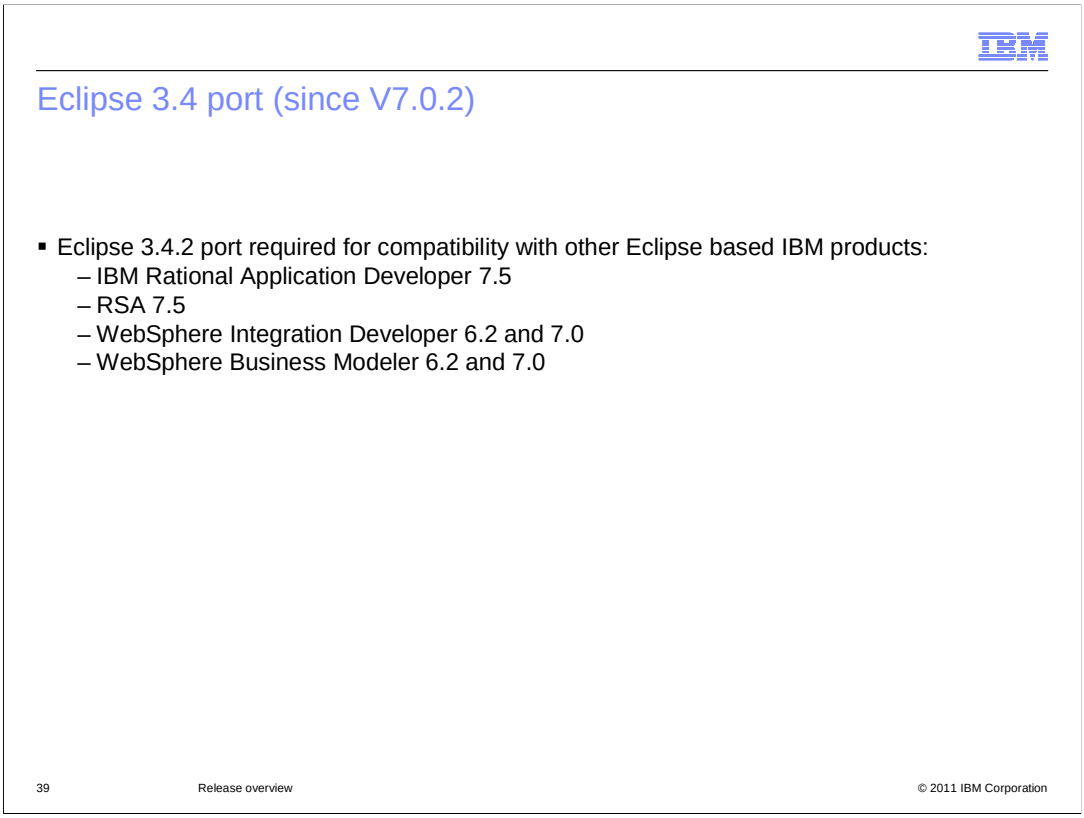
Another area of improvement in BRMS for Java 7.1, concerns the Intellirule editor in Rule Studio. When the tree completer mode is activated in the Intellirule editor, the current phrase is automatically selected when a user double-clicks on a term in a rule. Two new filtering options have also been added when searching for phrases in the Intellirule drop-down menu.



Eclipse 3.4 support is available since JRules 7.0.2. This support provides compatibility between Rule Studio and other Eclipse-based products such as IBM Rational Application Developer and IBM Rational Software Architect 7.5, and WebSphere Integration Developer and WebSphere Business Modeler. The documentation now describes how Rule Studio can be added to the Eclipse environment of these IBM products.

New platform support

- JRules
  - WebSphere Application Server Community Edition (WASCE) 4.2.3
  - Internet Explorer 8.0
  - IBM Derby 10.3
  - Newly added platform support since 7.0.2
    - WebSphere Process Server 7.0
    - WebSphere Integration Developer 7.0, 6.2
- Rules for .NET
  - WebSphere Application Server Community Edition 4.2.3
  - Internet Explorer E 8.0
  - IBM Derby 10.3
  - 64 bits support for Rule Team Server .NET and Rule Studio .NET

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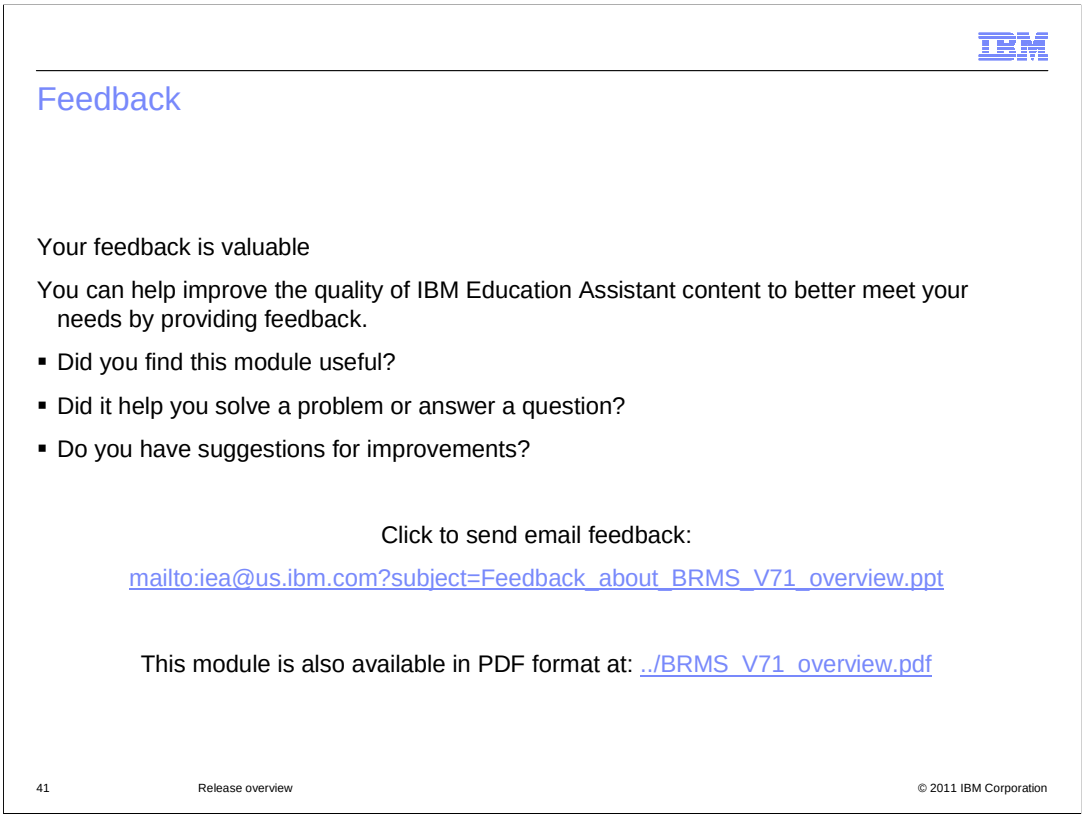
Several new platforms are supported in this release.

First of all, the Tomcat sample server has been replaced by WebSphere Application Server CE 4.2.3.

Internet Explorer V8 is now supported across the modules in .NET and Java.

The Sample Console is now using IBM Derby.

64-bit support for Rule Team Server .NET and Rule Studio .NET has been added.



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