WebSphere Business Process Management
IBM WebSphere BPM Feature Packs for V7

Overview of Feature Pack 1

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This module introduces you to the IBM WebSphere® BPM Feature Packs for V7, providing an overview of functionality delivered in Feature Pack 1 for selected products.

Section

Introduction and agenda

Overview of Feature Pack 1

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This section provides a brief introduction to the IBM WebSphere BPM Feature Packs for V7 and an agenda for the presentation.

Introduction

- IBM WebSphere BPM Feature Packs for V7 portfolio:
  - Provides several feature packs that enhance the products in the portfolio
  - The feature packs are focused on delivering new capabilities that enable:
    - Increased productivity
    - Smarter business insights
- Feature packs addressed in this presentation
  - WebSphere Process Server V7.0 Feature Pack 1
  - WebSphere Integration Developer V7.0 Feature Pack 1
  - WebSphere Adapters V7.0 Feature Pack 1
    - (only available with WebSphere Integration Developer V7.0 Feature Pack 1)
  - WebSphere Business Monitor V7.0 Feature Pack 1
- Feature packs not addressed in this presentation
  - WebSphere Service Registry and Repository V7.0 Feature Pack 1
  - WebSphere Industry Content Packs V7.0 Feature Pack 1
    - WebSphere Insurance Content Pack
    - WebSphere Banking Content Pack
    - WebSphere Telecom Content Pack

As the name suggests, the portfolio of IBM WebSphere BPM Feature Packs for V7 is a collection of feature packs for various products in the WebSphere Business Process Management V7 suite. Each of the feature packs is a separate product. A primary focus of the functionality provided by these feature packs is to enable increased productivity for developers and for business users. Additionally, another focus of the enhancements is to provide better and smarter business insights to enhance the effectiveness of business users.

There are several feature packs provided, however this presentation only addresses a subset of them. All of the feature packs have a suffix of V7.0 Feature Pack 1. This presentation addresses the feature packs for WebSphere Process Server, WebSphere Integration Developer, WebSphere Adapters, and WebSphere Business Monitor. Note that the WebSphere Adapters feature pack is only available from within the WebSphere Integration Developer feature pack.

Not addressed in this presentation are the feature packs for WebSphere Service Registry and Repository and the WebSphere Industry Content Packs. There are feature packs for the insurance, banking and telecom industries.

Agenda

- Installation of the feature packs overview
- WebSphere Process Server V7.0 Feature Pack 1 overview
  – Enhancements to business processes and human tasks
- WebSphere Integration Developer V7.0 Feature Pack 1 overview
  – Business vocabulary in XML Maps
  – Service virtualization patterns in the patterns explorer
- WebSphere Adapters V7.0 Feature Pack 1 overview
  – Common logging support for adapters
  – Enhancements to technology adapters
  – Enhancements to application adapters
- WebSphere Business Monitor V7.0 Feature Pack 1 overview
  – Cognos® Business Intelligence report integration
  – Ad hoc tasks and associated forms
- Summary and resources

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The presentation starts by providing some information about how to install the feature packs. It then goes on to provide an overview of four of the feature packs.

The feature pack for WebSphere Process Server provides several enhancements in the area of business processes and human tasks.

For WebSphere Integration Developer, the feature pack provides enhancements to XML maps for business vocabulary enablement. There are also enhancements to the patterns explorer, introducing two new patterns for service virtualization.

The feature pack for WebSphere Adapters introduces new functionality across many of the adapters. There is new logging support that is common to all of the adapters and there are other enhancements to both technology adapters and application adapters.

The WebSphere Business Monitor feature pack provides Cognos Business Intelligence report integration. There is also support for ad hoc tasks and associated forms.

There is a summary at the end of the presentation where you are also provided with a few links to additional resources to help you understand these feature packs.

Section

Installation of the feature packs

This section provides a high level overview of the installation of the feature packs.

Feature pack installation

- Prerequisite
    - Upgrade tools and servers to fix pack V7.0.0.2
        - Includes fixes to server and tools
        - Updates the XML feature pack to V1.0.0.5
        - Updates the SCA feature pack to V1.0.1.3
        - Installation manager should be updated to V1.3.4.1
- Feature pack installation applies to
    - WebSphere Business Monitor V7
    - WebSphere Integration Developer V7
    - WebSphere Process Server V7
        - Including the WebSphere test environment in WebSphere Integration Developer
- Install feature packs with IBM Installation Manager
    - Feature pack is not an update, but an install
        - Default uses internet site to get install packages
        - Can use offline install using local repositories
    - Silent install option offered

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Before you can install the feature pack, you need to update your installation to V7.0.0.2. You can update your environment to the V7.0.0.2 fix pack using the IBM Installation Manager graphical user interface or using the silent installation option. If your Installation Manager is not at the V1.3.4.1 level, it needs to be updated before you can install the V7.0.0.2 fix pack. The fix pack provides fixes for WebSphere Process Server and updates the SCA and XML feature packs used by WebSphere Process Server.

The installation of the feature pack applies to WebSphere Business Monitor V7, WebSphere Integration Developer V7 and WebSphere Process Server V7, including the WebSphere test environment in WebSphere Integration Developer V7. Note that there are no updates to WebSphere Enterprise Service Bus in the feature pack. If you only have WebSphere Enterprise Service Bus in your environment, you do not need to install this feature pack.

You install the feature pack using IBM Installation Manager. Note that the feature pack is not an update but is an installation. When using the Installation Manager graphical user interface, make sure that you click the option to install and not the option to update. If you click the update option, the feature pack is not listed. You can install the feature pack interactively using the Installation Manager's graphical user interface or it can be installed silently using a response file.

Feature pack installation

- For server, existing profiles are not augmented to feature pack level
  - to update existing profiles
    - Invoke profile management tool or
    - Use manage profiles command to augment
  - Default option creates a stand-alone development profile augmented with feature pack functionality
- WebSphere Adapters V7 Feature Pack 1 is installed with WebSphere Integration Developer
- Not updated in the feature packs
  - WebSphere Enterprise Service Bus runtime
  - WebSphere Business Modeler
  - WebSphere Business Compass
  - WebSphere Dynamic Process Edition

As part of the server installation, you are given an option to create a new development stand-alone profile that is augmented with feature pack functionality. However, installation of the feature pack does not automatically augment existing profiles to the feature pack level. You can either use the profile management tool or the manage profiles command to augment existing profiles with feature pack functionality.

WebSphere Adapters also are part of the feature pack, but they are installed as part of WebSphere Integration Developer.

There are no feature packs for WebSphere Enterprise Service Bus, WebSphere Business Modeler, WebSphere Business Compass, or WebSphere Dynamic Process Edition.

Section

**WebSphere Process Server V7.0
Feature Pack 1**

The WebSphere Process Server V7.0 Feature Pack 1 is addressed in this section, providing an overview of enhancements it delivers for business processes and human tasks.

Work baskets are an organizing and routing concept for human tasks. The idea is to use work baskets to group available tasks into meaningful subsets based on responsibilities, organizational units, and topics. These are the same human tasks used in version 7, but more flexibility is provided for organizing and routing tasks. Work basket roles can be changed more dynamically than is possible with a post-processor plug-in. It works by users or groups transferring tasks from one work basket to another work basket. A user claims and completes tasks from a workbasket instead of using potential owners list. Previously, you had direct task assignment to people or groups based on fixed or dynamic people assignments, per task. Authorization needed to be defined on a per task basis and this was cumbersome if task transfer required the change of multiple dependent roles; for example, changing potential owner, reader, and administrator for a task. Now, work baskets bring an indirect task assignment concept to reality. People assignment can now be managed centrally on each work basket. This means individual task assignments are no longer required. Authorization is defined on the work basket and is automatically derived on the tasks in the work basket.

Business categories

- What is the enhancement?
  - Business categories are an extra identifier used to categorize human tasks and in work baskets
  - Assigned to human tasks either statically at modeling time or dynamically at runtime
    - Example: use business rules to dynamically create or assign business categories
- Benefits
  - Simplify searching and organizing human tasks
  - Provides a usable scope for filtering work
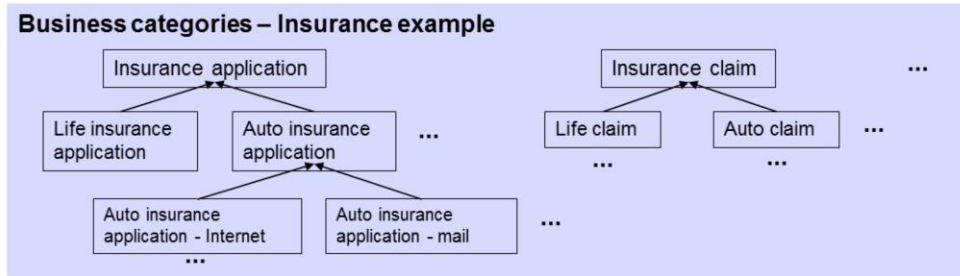
Business categories – Insurance example

Business categories are an extra identifier used to further improve categorization of human tasks. Business categories can be used with work baskets in order to create a very easy way to filter and view tasks. They can be assigned to human tasks either statically at modeling time or dynamically at runtime. For example, you can use business rules to dynamically create or assign business categories. When business categories are implemented in your human task application, they simplify searching and organizing human tasks and provide a usable scope for filtering work.

Free-form tasks allow you, as a business user, to create ad hoc tasks in business space for your colleagues or for yourself. Previous to this feature pack, you were unable to create an ad hoc task without having the task template. Free-form tasks allow you to easily create a flexible task dynamically. Free-form tasks are available in the Task Definitions List widget, My Work Organizer widget, and Task Information widget. You have several options when creating your free-form task, such as text fields, multiline text fields, URL, number, check box, and date picker. Each field can have a text label and you can specify which fields are required. In addition, you can add, reorder, and remove fields, and specify assignee, priority and due date.

Section

WebSphere Integration Developer V7.0 Feature Pack 1

Overview of Feature Pack 1

WebSphere Integration Developer V7.0 Feature Pack 1 introduces two new capabilities that are addressed in this section, specifically business vocabulary for XML maps and service virtualization patterns.

XML map alias support

- What is the enhancement?
  - Aliasing support in the XML Map Editor
  - Allows reuse of complex XPath expressions
  - Aliases defined in business items of a vocabulary
  - Infopop provided for automatic access to more information on the alias
- Benefits
  - Saves time by doing complicated functions in the alias
  - Reusable in maps
  - Removes the need for custom Java™ implementations within a POJO

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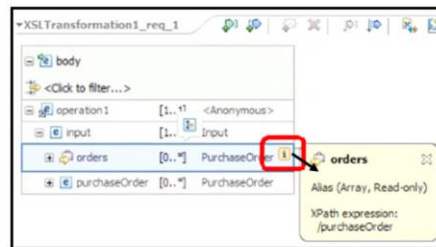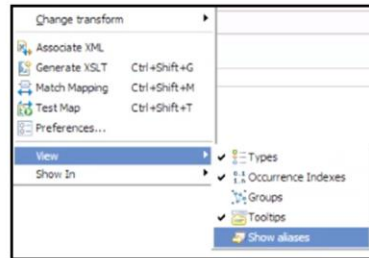
Common XPath expressions are often reused multiple times throughout a solution, and can be difficult to use within the XML mapping editor. Therefore alias support has been added to define a set of XPath expressions within a library to be used within the XML mapping editor. Aliases allow developers to reuse defined XPath expressions and to flatten multiple levels of nested repeatable nodes into a single node-set. The single node-set can then be used in an XML map transformation. Aliases help remove the need for custom Java implementations within a POJO and help speed development by saving the time of rebuilding complicated functions for each usage. Aliases are defined in a business item which is part of a vocabulary. As you can see in the lower screen capture, when hovering the mouse pointer over the alias an automatic dialog with information on the alias opens, providing automatic access to more information on the alias.

Expanded process instance migration support

- What is this enhancement?
  - To have a way to plan process instance migration for processes imported from WebSphere Business Modeler

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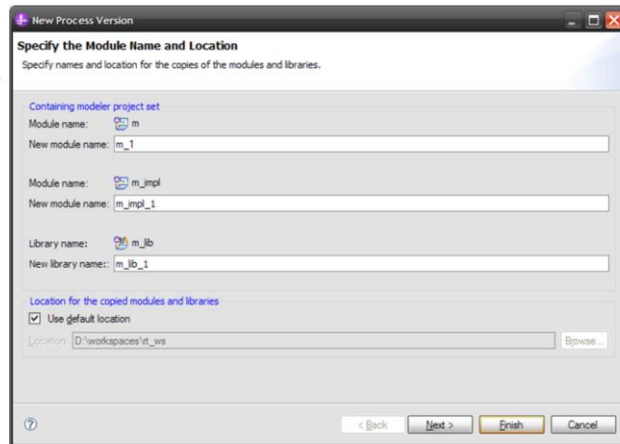
Process instance migration was introduced in V7, however there was not a way for WebSphere Business Modeler users to integrate process instance migration into the model. With the feature pack, WebSphere Business Modeler users now have a way to plan process instance migration for processes exported from WebSphere Business Modeler. When exporting a project from WebSphere Business Modeler, use the "Enable generated BPEL for process versioning" option.

Service virtualization patterns
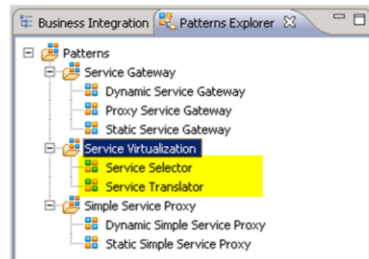
- Patterns explorer enhancement
  – Reminder - Patterns are used to generate partially completed module implementations

- Service virtualization patterns introduced
  – Service selector
  – Service translator

- No server runtime enhancements required, works with:
  • WebSphere Process Server 7.0.0.2
  • WebSphere Enterprise Service Bus 7.0.0.2

The screen capture on this slide shows the patterns explorer view. If you are not familiar with the patterns explorer, it is used to generate partially completed module implementations based on common patterns, which you then further customize, resulting in a complete implementation.

You can see the two highlighted patterns, service selector and service translator, that are added by this feature pack. They are categorized as service virtualization patterns.

For practical purposes, these patterns can be thought of as enhancements to mediations support in WebSphere Enterprise Service Bus and WebSphere Process Server. However, no new runtime support is required as these new patterns are a development time only enhancement and make use of capabilities provided by the server runtime in V7.0.0.2.

Service virtualization patterns - service translator

WebSphere Enterprise Service Bus

Service requester — Service Translator — Service provider
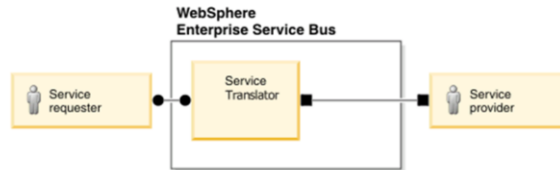
- Service translator
  - Enables a service to be made available with a different interface.
  - Operations on the interface can be restructured or hidden
- Possible uses for this pattern:
  - Support internal and external clients differently
  - Wrapper service implementations in an industry standard
  - Support different versions of the same service that have differing interfaces
  - Support localization/personalization of:
    - Data formats, such as units of measure
    - Language translation of data values

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The diagram here illustrates the service translator pattern. This pattern is used when you need to make a service available with a different interface, possibly restructuring or hiding some of the operations the target service provides.

There are several possible uses for a pattern like this, such as those suggested on the slide. You might have a requirement to provide the same service to both internal and external clients, but with differing levels of support, such as increased security or hiding some operations from external users. Another possible use is to expose functionality provided by an internally defined service using an industry standard interface. In can also be used to handle a new version of a service whose interface has been modified, allowing clients using the older interface to continue to function. This pattern can also be used for localization or personalization of data formats, units of measure or language translation.

Obviously, this is only a sample listing of possible use cases for this pattern, as this pattern is very typical of many enterprise service bus applications. When you recognize that you have requirements that fit this pattern, you can use it to generate the starting point for your implementation.

Service virtualization patterns - service selector
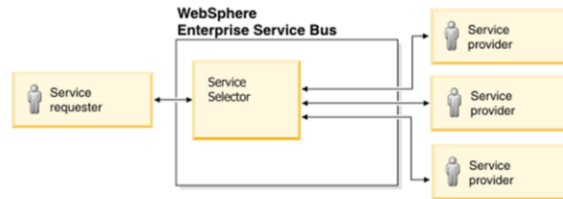
- Service selector
  - Enables multiple implementations of the same service interface to be grouped behind a single endpoint address.
  - Service implementations can offer different qualities of service
  - Client requests can be matched to a particular implementation according to their requirements or priority
- Possible uses for this pattern
  - Load balancing across multiple implementations/deployments
  - To support higher quality of service for 'preferred' clients
  - Data partitioning, such as on a geographical basis

The service selector pattern allows multiple implementations of the same service interface to be grouped behind a single endpoint address. The different implementations might offer different qualities of service or behaviors where each client request can be matched to a particular implementation according to one of several factors. These might be the particular needs of the client, the value of the client to the organization, some geographical consideration, or the current workload profile of the system.

Possible use cases for this pattern include load balancing within the system, where the service selector is able to make routing decisions based on current overall system state. Another possibility is to provide higher qualities of service to preferred clients. In some cases, it is required to route requests based on geographical considerations, such as routing to a specific bank branch based on the home branch for the account in a transaction.

This pattern provides the basic structure needed to implement a service selector, but the selection logic needs to be implemented after the generation of the pattern.

Section

**WebSphere Adapters V7.0
Feature Pack 1**

An overview of the WebSphere Adapters V7.0 Feature Pack 1 is presented in this section.

WebSphere adapters – common logging enhancement

- Provide additional information in the trace and log files
  - Adapter version including interim fix level
  - Any vendor library name and version
  - Assist IBM support during problem analysis

- Display only at INFO during server start in SystemOut.log

- Setting the log level to FINEST traces to trace.log
  - *=info:com.ibm.j2ca.*=finest
  - doExecute of outbound
  - getEvents of inbound

```
[3/22/10 12:35:41:671 GMT+05:30] 00000123 EMARA001 3
com.ibm.j2ca.email.EmailEventStore getEvents IBM WebSphere Adapter for Email,
Version = 7.0.1.0
Version of Thirdparty library: JavaMail API = 1.4
Version of Thirdparty library: JavaActivation Framework = 1.1.1
```

As a common logging enhancement, this feature pack supports logging the adapter foundation class version, including the interim fix level and any vendor version artifacts. These are logged at INFO during server start in the SystemOut.log. This enhancement allows IBM support to know, while performing problem analysis, which of the adapter versions is being used. You can also set the log level to FINEST, which traces to the trace.log file. This will print the same information in the doExecute for outbound and getEvents for inbound.

WebSphere adapters – technology adapters (1 of 3)

- JDBC adapter
  - Custom format for Date/Time/Timestamp types
    - Manually edit from application info for the attribute
  - Support xml data type in table business object
    - XML parameter is set to true if the table column in the database is of the XML type
  - Automatic discovery of parent-child relationships in tables when configuring business objects
  - Support outbound user-defined types or complex data types and resultset in query business object
    - Applies to Oracle database only

The next few slides cover the enhancements the feature pack provides for the technology adapters, starting with the WebSphere Adapter for JDBC.

The first enhancement allows you to customize the format of the Date, Time, and Timestamp data types using the DateFormat parameter. The adapter uses this parameter when the SQL Date, Time, or Timestamp data type is being converted to or from a string.

Another enhancement is to support the XML type in table business objects. If the table column in the database is of the XML type, the XML application-specific information is set to true. The XML metadata type maps to the business object attribute type of string.

The next enhancement is the automatic discovery of parent-child relationship in tables when configuring a business object. If you have defined a foreign key reference in the database, the adapter automatically discovers and displays the parent-child relationship between the tables after you select the parent table. If the table has a single-cardinality relationship with the parent table, the single cardinality check box is automatically selected.

Finally, the JDBC adapter is now supporting user-defined types in Oracle tables and query business objects for outbound. This feature is already supported for the inbound process in V7.0. With this feature pack, it extends to support for an outbound process. You can now discover and display the complex types in table business objects and in resultsets of query business objects, without any extra workaround such as having to provide a stored procedure.

WebSphere adapters – technology adapters (2 of 3)

- Lotus® Domino® adapter
  - Support for searching in the retrieveAll operation
    - By fields with numbers and date values
    - By text keywords in fields with rich text values
    - By fields with multiple values
    - By combination of multiple fields
  - Support for running inbound extension manager in 32-bit Domino on Linux® and Solaris
- Email adapter
  - Support for receiving undeliverable email notifications
    - Specify alternate email address for receiving bounced email notification

With this feature pack, the WebSphere Adapter for Lotus Domino supports new search query types in the retrieveAll outbound operation for retrieving documents from the Domino server. You can search using single values such as word, number, or date values, and multiple values in the search field. You can also specify the text keywords in order to search documents that have rich text contents, or specify search values in multiple fields in a single search query. The Lotus Domino adapter also expanded its support for running inbound extension manager for 32-bit Domino servers on Linux and Solaris operating systems.

The Email adapter now supports the use of an alternate email address for receiving bounced emails. You can specify an email address to receive a bounced email notification in case of delivery failure due to an incorrect To address in an email message. This email address can be a different email address than the one you specified in the From email address. You can configure this enhancement while using the external service wizard.

WebSphere adapters – technology adapters (3 of 3)

- Flat File adapter
  - Poll files with any content changes from last poll cycle in the event directory
    - Deliver only the appended file contents at the end of the file
  - Poll files which have not been modified for a specific time interval
- FTP adapter
  - <HOME_DIR> automatically populated for directory attributes
    - Applies for both inbound and outbound operations
  - Renaming files after you create them on the FTP server
  - Ability to run ftp scripts during inbound
    - Before or after polling
  - Resuming transfer of files after reconnection to FTP server
- IBM i adapter
  - Adapter can generate program call markup language (PCML) files automatically for report program generation (RPG) and COBOL programs

Overview of Feature Pack 1

The Flat File adapter enhancements include the option to poll any files that have been modified from the last poll cycle. You can also configure the adapter to deliver only the appended content. Another enhancement during polling is the ability to poll for files that have not been modified for a specific time interval.

For the FTP adapter, enhancements include the usage of users home directory by default if you do not provide a different value in the directory attributes for any inbound and outbound operations. You can configure the adapter on outbound to create a file with a temporary name and then change it to the original name after creation so partial files are not used. The FTP adapter now supports executing FTP scripts during inbound operations. These scripts can be run before or after polling and the adapter processes the files downloaded by the scripts. Another enhancement that applies to both inbound and outbound operations is the ability to resume a download or creation of a file from its last state. This is helpful in the case of a network failure, enabling the adapter to resume from its last state rather than having to start over.

For the IBM i adapter, the program call markup language (PCML) is automatically generated. When using the interface for report program generation (RPG) or COBOL programs, you no longer have to provide the program call markup language file to the adapter. The adapter can discover the programs, and based on your selection in the external service wizard, will generate the program call markup language files for the selected programs.

WebSphere adapters – application adapters

- SAP adapter
  - Support for SAP specific date formats
    - Applies to all outbound/inbound BAPI interfaces
  - Trimming leading white spaces in IDoc data records
    - By default trims the trailing spaces
    - Applicable to ALE inbound interface
  - Support sending empty tags for fields in business objects having no data
  - Support for BAPI having fields of TableType, DataElement and predefined subtypes
- Oracle EBS adapter
  - Support outbound user-defined types or complex data types and resultsets in query business objects
    - Applies to Oracle database only
  - Return all records for RetrieveAll operation
    - Checkbox to allow all records for RetrieveAll operation

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The SAP adapter now supports certain SAP specific date formats which are otherwise non-standard. The adapter converts the Date object to string before processing.

Another enhancement that is applicable to the ALE interface is the ability to trim leading white spaces in IDoc data records. You can configure this property in the external service wizard.

When sending a processed business object to an endpoint, the adapter can now send empty tags for fields in the business object that have no data. This new feature is enabled using the new activation specification property IDoc empty tags.

The adapter now supports BAPIs containing table type fields of either TableType or DataElement subtype. The adapter also supports table type fields of the predefined subtypes. With this added feature, BAPIs containing any of these types can be discovered using WebSphere Adapter for SAP Software.

The Oracle EBS adapter now supports user defined types in an Oracle table and in query business objects for outbound. This feature is already supported for the inbound process in V7.0. With this feature pack, it extends to support for an outbound process. You can now discover and display the complex types in table business objects and in resultsets of query business objects, without any extra workaround such as having to provide a stored procedure.

The Oracle EBS adapter also supports returning all records for the retrieveAll operation. You can allow all records to be returned by selecting the check box "Return all records for RetrieveAll operation" when running the external service wizard.

Section

WebSphere Business Monitor V7.0 Feature Pack 1

Overview of Feature Pack 1

Enhancements provided by the feature pack for WebSphere Business Monitor are introduced in this section.

Cognos Business Intelligence 8.4.1 integration

- As a process developer, you want access to Cognos report data when authoring my processes
  - New external service wizard

- As a task owner, you want to view Cognos reports when deciding whether to approve or reject a task
  - Click button on form

- As a business dashboard user, you want to view Cognos reports to see more information about a process instance
  - Click metric link in instances widget

IBM Cognos Business Intelligence provides business intelligence and performance management solutions to report, analyze, monitor, and measure your company data. The reports are imported into WebSphere Integration Developer and the report data can be used by a process application for use with business rules or other process components. The reports can also be retrieved using a button on a task form so that you can do some analysis before approving or rejecting a task. You can also view reports from a link on the monitor instances widget so that you can see more information about data relating to the process instance.

You can view ad hoc tasks in the instances widget either using the global process monitor model or by using your own custom monitor model. You can also wire the instance widgets to other widgets in business space so that there is interoperability between the widgets. You can wire instances to widgets such as the process list, task list, and task information widget. The instances widget user interface has been updated too. You can set data filters on each column to restrict the records that are displayed. As you drill down into different monitoring contexts, there is a breadcrumb trail that shows you where you are in the hierarchy. Also, there are now icons that quickly show the state of the process instance. Two business space templates have been updated and the instances widgets and dimensions widgets are preconfigured to show the ad hoc tasks. Use the template 'Initiating process improvements' to see where in a process ad hoc tasks are being created so as to identify areas for improvement. Use the template 'Managing my team's tasks' to gain insight about a team's work and its use of ad hoc tasks.

Section

Summary and resources

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The presentation summary and additional resources are provided in this section.

- Summary of presentation
    - Introduction to the IBM WebSphere BPM Feature Packs for V7
    - Installation of the feature packs
    - Overview of new function introduced by the feature packs
        - WebSphere Process Server V7.0 Feature Pack 1
        - WebSphere Integration Developer V7.0 Feature Pack 1
        - WebSphere Adapters V7.0 Feature Pack 1
        - WebSphere Business Monitor V7.0 Feature Pack 1
- Links to additional resources:
    - Announcement:
        - http://www-01.ibm.com/common/ssi/rep_ca/3/897/ENUS210-133/ENUS210-133.PDF
    - Landing page for feature packs:
        - http://www-01.ibm.com/software/integration/featurepacks/

Overview of Feature Pack 1

The presentation started with an introduction to the portfolio of IBM WebSphere BPM Feature Packs for V7, providing some background and listing the included feature packs. Installation of the feature packs was then discussed, followed by an overview of function provided by some of the feature packs. Specifically addressed were the feature packs for WebSphere Process Server, WebSphere Integration Developer, WebSphere Adapters, and WebSphere Business Monitor.

There are a couple of links provide to enable you to further understand these feature packs. The first is to the announcement, which provides an excellent overview, and the second is to the landing page for the feature packs.

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