WebSphere Adapters V7.0

What is new - Overview

This presentation provides a general overview of the IBM WebSphere® Adapters V7.0.

Agenda

- IBM WebSphere Adapters V7.0 portfolio
- Common new features and enhancements
- Common problem termination
- Technology adapters
- Application adapters
- Adapter toolkit
- Summary

This presentation covers a general overview of the IBM WebSphere adapters. It starts with a recap of the previously available adapters and then introduces the new adapter. The presentation also reviews common and detail enhancements to the existing adapters. Then it discusses business objects and goes through some of the generic configuration for all adapters. At the end, there is an overview of problem determination.

Section

WebSphere Adapters V7.0 portfolio

What is new - Overview

This section recaps all of the available WebSphere Adapters in V7.0 and introduces the new adapter.

Overview – available in V7.0

- IBM WebSphere Adapters
  - Technology
    - IBM WebSphere Adapter For Flat Files V7.0
    - IBM WebSphere Adapter for FTP V7.0
    - IBM WebSphere Adapter for JDBC V7.0
    - IBM WebSphere Adapter for E-Mail V7.0
    - IBM WebSphere Adapter for IBM i V7.0
    - **IBM WebSphere Adapter for Lotus® Domino® V7.0**
  - Application
    - IBM WebSphere Adapter for SAP Applications V7.0
    - IBM WebSphere Adapter for PeopleSoft Enterprise V7.0
    - IBM WebSphere Adapter for Siebel Business Applications V7.0
    - IBM WebSphere Adapter for JD Edwards EnterpriseOne V7.0
    - IBM WebSphere Adapter for Oracle E-Business Suite V7.0
  - Toolkit V7.0
- Implement Java™ EE Connector Architecture (JCA 1.5)
- Integrated with WebSphere Process Server and WebSphere Enterprise Service Bus V7.0
- Use Adapter Foundation Classes that enhance JCA 1.5 and encapsulate many common adapter functions

Here is the list of the adapters that are available for version 7.0. They include the Flat File, FTP, JDBC, E-mail, and IBM i technology adapters along with the SAP, PeopleSoft, Siebel, JD Edwards, and Oracle E-Business application adapters. In addition, a new IBM WebSphere Adapter for Lotus Domino V7.0 is introduced as one of the technology adapters. The IBM WebSphere Adapter Toolkit V7.0 has also been enhanced. To recap, these are all based on a set of foundation classes that enhance the JCA 1.5 specification. These foundation classes contain many new features for the 7.0 release.

Section

**New features and enhancements
common for all adapters**

What is new - Overview

This section covers new features and enhancements for all WebSphere Adapters.

Iterative application development

- Previously
  - Not able to add/modify/delete adapter related artifact generated by EMD
  - Changes to existing artifacts required reconfiguration and regeneration
- In V7.0
  - Supports inbound and outbound
  - Add/modify/delete existing interface and business objects
  - Successive business scenarios include
    - Rediscover existing objects to synchronize with updated objects from back-end system
    - Modify the configuration of a particular object
    - Modify the configuration of entire object set
    - Remove a discovered object from the object set
    - Add a new object to the object set

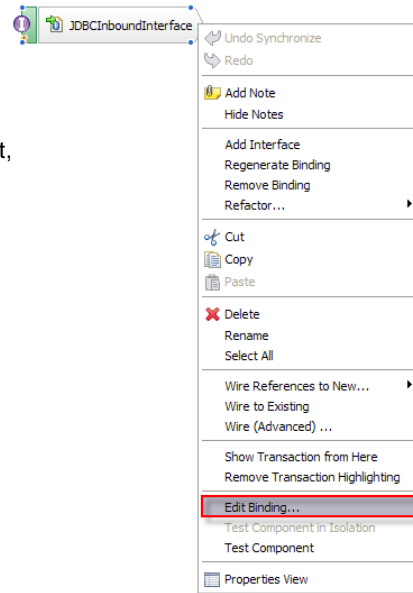What is new - Overview © 2009 IBM Corporation

Often business requirements mandate changes to the backend enterprise information system data structures. Previously, these changes required complete regeneration and reconfiguration of both import and export artifacts that were previously generated using the external service wizard. With this enhancement, you can now modify any existing interface and business objects in both inbound and outbound scenarios.

Shown here are a few business scenarios where the output from one enterprise service discovery flow can be reused in successive flows. One of the scenarios is to rediscover existing objects in the service to synchronize the service if the objects in the back-end system have been updated, or to add or modify or remove the configuration of a particular object or entire object set.

In iterative enterprise metadata discovery, or EMD, there is now an option to modify the deployment configuration. The purpose of this new feature is to allow you to add some new business object structure and operations into existing projects. For deployment configuration changes, you can make changes through the Properties view of the module.

Iterative application development

- Supports iterative EMD development
  - Invoke the wizard in one of following ways
    - From assembly editor, select the component, right-click and select 'Edit Binding'
    - From Business Integration view, select the component, right-click and select 'Edit Binding'
    - From Properties view of the component, select 'Edit' link in the Binding tab
  - Edit binding option is available for artifact generated using V7.0 only
    - No 'Edit binding' option for migrated project
    - Run EMD overwrites prior manual changes to the configurations

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To modify existing artifacts, you can invoke the wizard in one of three ways. In the assembly editor, select the component you want to modify, right-click, and select Edit Binding. In the Business Integration view, select the component you want to modify, right-click, and select Edit Binding. Or you can select the component in the assembly editor, select the Properties view, and click the Edit link in the Binding tab. The external service wizard is initialized with previously configured settings.

The Edit Binding option is available for artifacts generated using WebSphere Integration Developer 7.0 only. If you are migrating a project interchange from an earlier version of WebSphere Integration Developer, the Edit Binding option is not available. And if you have made any manual changes to the configuration, running the wizard again will overwrite these changes.

Iterative application development

- Available for this release

WebSphere adapters	Iterative application development
Flat Files	
FTP	
Email	
JDBC	X
IBM i	X
Lotus Domino	X
Oracle EBS	X
JD Edwards	X
SAP	X
Siebel	X
PeopleSoft	X

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Here is the list of adapters that support iterative application development enhancement for this version.

Migration

- Provide a first-class migration solution for migrating from
  – WebSphere Business Integration adapters → JCA V7.0 Migration
  – JCA V6.2 → JCA 7.0 Migration
  – JCA V6.1 → JCA V7.0 Migration
- Adapter migration tasks
  – Update the connector project with V7.0 Adapter RAR
  – Update the module project, .import/.export/.wsdl files
  – Automate enablement of fault bindings

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In V7.0, WebSphere adapters provide a first class migration solution for migrating from WebSphere Business Integration adapters to JCA and from JCA to JCA adapters. The adapter migration wizard has been enhanced to provide support for both WebSphere Business Integration adapters and previous JCA adapter projects to be at the latest version. Some of the adapter migration tasks include providing the ability to update the connector project to V7.0, converting ASI in business object schemas, and updating the bindings and .wsdl files.

One major enhancement for migration is the automation of fault bindings enablement. This applies to both WebSphere Business Integration adapters to JCA migration and JCA to JCA migration.

Section

Problem determination and error handling common for all WebSphere adapters

What is new - Overview

This section covers common problem determination and error handling for all WebSphere adapters.

Problem determination: log and trace files

- WebSphere Process Server
  - <WPS_Home>\profiles\<profile>\logs\<server>\SystemOut.log
  - <WPS_Home>\profiles\<profile>\logs\<server>\SystemErr.log
  - <WPS_Home>\profiles\<profile>\logs\ffdc\xxxxxx.log
- Adapter Logs and Traces Files
  - Messages and Exceptions logged in these files
- Enterprise metadata discovery logs, specified during discovery
  - Default: <WID_workspace>\.metadata\<Adapter>MetadataDiscovery.log
- WebSphere Integration Developer
  - <WID_workspace>\.metadata\.log

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The locations of the log and trace files are specified here. The WebSphere Process Server log files are the System out and System error log files in the profile logs directory of the server.

Then there are the adapter log and trace files. The trace file locations are specified using the log and trace file attributes on the adapter. In addition, the trace files location and trace strings are specified in the administrative console of the Process Server for the server's change log and trace file option.

While running the enterprise metadata or service discovery tools, the log file is within the WebSphere Integration Developer workspace in the directory specified.

The overall log file for WebSphere Integration Developer is in the workspace metadata log file.

Problem determination: Logging

- User messages and language translated

Logging level	Content
Fatal	Task cannot continue. Component cannot function.
Severe	Task cannot continue. Component can still function. This also includes conditions that indicate an impending unrecoverable error, that is, reporting on situations that strongly suggest that resources are on the verge of being depleted.
Warning	Potential error or impending error. This also includes conditions that indicate a progressive failure, that is, the potential leaking of resources.
Audit	Significant event affecting server state or resources
Info	General Information outlining overall task progress
Config	Configuration change or status

The different logging levels are specified here. These messages are translated and they appear in the WebSphere Process Server system out log files.

IBM

Problem determination: Tracing

- Service level information for IBM Support
  - Not translated
  - Specified at the Adapter level through its custom properties

Tracing level	Content
Fine	Trace info – general trace, plus method entry / exit / return values
Finer	Trace info – detailed trace
Finest	Trace info – most detailed trace Includes all detail needed to debug problems

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The trace strings are more geared towards IBM Support. The different tracing levels are specified on this page. These are specified at the Adapter through its custom properties.

Section

Technology adapters

What is new - Overview

This section covers the details of the features and enhancements for technology adapters

Lotus Domino adapter

- WebSphere Adapter for Lotus Domino provides bidirectional exchange of business data between SCA applications and Domino server
- Provide different business object types
  - Basic, complex, rich text fields, and attachment
- Provide different operations for outbound and inbound
- Support fault business objects for outbound
- Support event delivery for inbound events
  - WebSphere Adapter for Lotus Domino inbound extension manager

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In V7.0, the IBM WebSphere Adapter for Lotus Domino is being introduced in the WebSphere JCA adapters portfolio. With WebSphere Adapter for Lotus Domino, you can create modules that include the exchange of information with a Lotus Domino server. The adapter provides bidirectional exchange of business data between SCA applications and the Domino server.

The adapter has built-in mechanisms to support enterprise metadata discovery, complex and rich text fields, and attachments in a document. It supports different operations for both outbound and inbound. Similar to other adapters, the Lotus Domino adapter supports enablement of fault binding for outbound and ensures event delivery for inbound using the WebSphere adapter for Lotus Domino inbound extension manager.

JDBC adapter

- Flexible type mapping for SQL date types
  - Capability to specify the mappings for SQL date types
- Support inbound wrapper business object
  - Encapsulate to have multiple business objects in one single inbound event
- Support inbound complex types
- Enhance validation push button
- Allow to return all records for RetrieveAll operation

What is new - Overview

This slide introduces new features and enhancements for the JDBC adapter. The adapter now supports flexible type mapping for SQL date types. This means you can now specify the mapping type for SQL date types without the requirement of data format conversions during business scenarios.

Another new feature is to allow inbound wrapper business objects to encapsulate multiple business objects in a single inbound event. The adapter also supports inbound complex types in table business objects for Oracle databases. This means no extra stored procedure is required to support complex types. Some of the enhancements include a new validation push button instead of a check box. Finally, the adapter can now return all records for a RetrieveAll operation without specifying the value.

E-mail adapter

- Automate faults enablement
  - Generates the fault bindings during EMD
  - Response business object

What is new - Overview

One major enhancement for the e-mail adapter in V7.0 is to support business faults enablement caused by a business rule violation or a constraint violation. These fault response business objects are generated during enterprise metadata discovery and then return a response when the adapter encounters certain business errors.

Flat file and FTP adapters

- Common enhancements
  - Enhanced support for editing rules in assembly editor
  - Supports for global elements
- FTP adapter specific enhancements
  - Remote verification of host
  - Explicit mode for FTP over SSL/TLS

What is new - Overview

This slide summarizes the enhancements made for flat file and ftp adapters in V7.0. Some of the common enhancements include the support for global elements in the xml schema files that can be used to define the structure of the data. In versions before 7.0, if the schema file contains global elements, the external service wizard is not able to generate a wrapper on top of the business object generated to represent that schema. Without the wrapper on top of the business object, the protocol specific information like the host name, directory name and other attributes required by the adapters cannot be specified.

Another major enhancement is the ability to use the same table format based editor to modify rules specified at design time in the external service wizard to pick event files. In previous versions, you have to specify the rules as text in a property field, which is prone to semantic and syntax errors. In V7.0, a rules editor similar to the one in the external service wizard is added in the properties field of the assembly editor, making it easy to edit the rules.

Apart from the common enhancements for the FTP adapter, support for remote verification of host and for explicit mode of FTP over SSL is added. With the support for remote verification, the server will check to make sure that the data connection came from the same host as the control connection.

IBM i adapter

- Enhancements
  - Support for faults
  - Support binary message content for (PutQueue and GetQueue) operations on IBM i data queues
  - Support for Service programs (SRVPGM) and COBOL programs
  - Support for execution of pre-commands and post-commands for program calls
  - Support for 'struct' and 'array' data types as parameters to program calls

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This slide lists the enhancements for the IBM i adapter. Automatic generation of bindings for faults has been added. You can now retrieve binary content from the IBM i data queues and place binary content in the data queues using the put queue and get queue operations on outbound. Support to call COBOL and service programs has been added for outbound. Functionality to call RPG programs was already supported in V6.2. You can also specify pre- and post- commands when calling the RPG, service, and COBOL programs. Another major enhancement is the support for calling programs with parameters of type struct and array. In previous versions, the adapter did not support calling programs with parameters of type array or struct.

Section

Application adapters

What is new - Overview

This section covers the details of the features and enhancements for application adapters
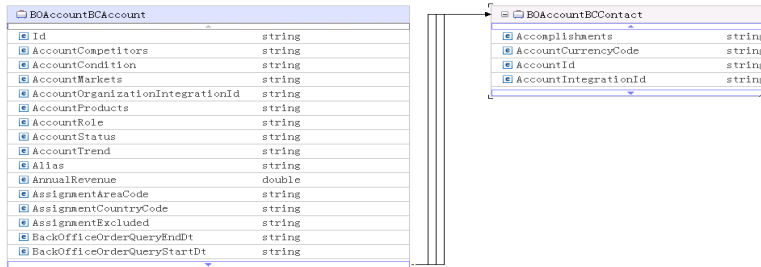
IBM

Siebel adapter

- Enhancements
  - Support business objects without primary business component
  - Support multi value link fields on primary business component

What is new - Overview

For the Siebel adapter, the enhancements include the support to work with business objects that have no primary business component defined, and support for business components with multi-valued link fields. The business object definition generated will contain attributes for the multi-value link fields defined in the Siebel business component instead of as separate business objects. The linked values can be retrieved during runtime.

Example

- Before V7.0

☐ BOAccountBCAccount	
⊡ Id	string
⊡ AccountCompetitors	string
⊡ AccountCondition	string
⊡ AccountMarkets	string
⊡ AccountOrganizationIntegrationId	string
⊡ AccountProducts	string
⊡ AccountRole	string
⊡ AccountStatus	string
⊡ AccountTrend	string
⊡ Alias	string
⊡ AnnualRevenue	double
⊡ AssignmentAreaCode	string
⊡ AssignmentCountryCode	string
⊡ AssignmentExcluded	string
⊡ BackOfficeOrderQueryEndDt	string
⊡ BackOfficeOrderQueryStartDt	string

⊟ ☐ BOAccountBCContact	
⊡ Accomplishments	string
⊡ AccountCurrencyCode	string
⊡ AccountId	string
⊡ AccountIntegrationId	string

- Now

☐ BOAccountBCAccount	
⊡ TypeLIC	string
⊡ UseContractedProductsOnlyFlag	string
⊡ VATregistrationnumber	string
⊡ ValueProposition	string
⊡ AddressActiveStatus	string
⊡ AddressId	string
⊡ AddressIntegrationId	string
⊡ AgreementEndDate	string
⊡ AgreementName	string
⊡ AgreementStartDate	string
⊡ AgreementStatus	string
⊡ AlgorithmType	string
⊡ AssignmentDenormFlag	string
⊡ AssignmentManualFlag	string
⊡ AssignmentSystemFlag	string
⊡ BackOfficeDistributionChannel	string

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This slide shows an example of the generated business object for a Siebel business component that has multi-value link fields. In versions before V7.0 you can see the business component is a separate business object instead of fields being embedded in the primary business component.

SAP adapter

- Provide option for selecting unreleased segments
- Support SAP JCo 3.0 library
- BAPI interface
  – number of possible operations not be limited to the create, retrieve, update, and delete operations
  – Support for wait() on the BAPI commit.
- ALE interface
  – Audit Support for Pass-through IDocs
  – Split IDoc packets using ALE passthorugh interface on outbound
  – Ability to select an operation for all permutations of message type and receiver for an IDoc
  – no limitation of only three operations in the inbound ALE modules

What is new - Overview

There are several enhancements that are made to the SAP adapter in V7.0 . This slide lists some of these enhancements. With V7.0 the adapter now uses the SAP JCo 3.0 library to interact with the SAP system.

There are business scenarios where you want to use unreleased segments that allow you to share more information. With V7.0, the adapter automatically detects if the selected IDoc has unreleased segments and generates the appropriate business object. Previous versions of adapter do not automatically detect unreleased segments. You have to make sure that the right parameters are set to generate the right business object.

For outbound simple BAPI interface, in previous versions you can only configure four BAPIs as you can only map them to four operations - Create, Update, Retrieve, or Delete. With V7.0, the default operation now is 'process', so this feature removes the limitation on the number of BAPI business objects that can be configured for one import.

For BAPI and BAPI work unit interfaces, the adapter provides a Boolean option for you to configure. This option determines if adapter has to WAIT on Commit or to run COMMIT without waiting for all the processing within transaction to be completed.

For the ALE interface, in an unparsed scenario you can configure audit support for the whole IDoc packet or for each individual IDoc in the packet. You can assign more than one combination of receiver and message type for an incoming IDoc to one operation. Also, the limitation of being able to map the incoming IDoc type to three operations (Create, Update, or Delete) has been removed. You can specify your operation type and map a receiver and message type to that method name.

Oracle E-Business Suite adapter

- Discover and display complex data type in stored procedure parameter list automatically
- Support PL/SQL RECORD type with wrapper SP/SF
  - Create a wrapper SP/SF to convert the RECORD data type to JDBC driver supported type OBJECT automatically
- Flexible type mapping for SQL date types
  - Capability to specify the mappings for SQL date types

What is new - Overview   © 2009 IBM Corporation

This slide shows new features and enhancement for Oracle E-Business Suite adapter. The adapter can now automatically discover and display complex data types in stored procedure parameter lists. Previously, you had to input exact type names for stored procedures and function parameters. This new enhancement can eliminate manual configuration.

The adapter also supports the Oracle PL/SQL data type with wrapper stored procedure or stored function. If the stored procedure contains an Oracle PL/SQL data type such as Record, the adapter creates a wrapper package with a wrapper stored procedure that converts the Record data type to an Object data type.

Another enhancement is to allow flexible type mapping for the SQL date type. You have the option to map SQL date types to either String or Date types.

Section

Adapter toolkit

　　　What is new - Overview　　　　　　　　　

The next section will provide an overview of adapter toolkit.

WebSphere adapter toolkit overview

- Part of WebSphere Integration Developer installation
- Provides developments tools, libraries, and sample code
  - Based on JCA 1.5 specification
  - Extended foundation classes library
- Provides a project creation wizard to generate code for implementation
- Provides a specialized editor to create and configure deployment descriptor

What is new - Overview

In V7.0, the adapter toolkit is now part of WebSphere Integration Developer installation. This toolkit provides the development tools, libraries, and sample code to assist you in creating JCA resource adapters. With the toolkit, you can create either a resource adapter based on the JCA 1.5 specification or a resource adapter that extends the WebSphere adapter foundation classes library.

In either case, the toolkit provides a project creation wizard that generates the code that you then implement. In addition, the toolkit provides a specialized editor that facilitates the task of creating and configuring a resource adapter deployment descriptor.

Summary

What is new - Overview

The next section provides the Summary.

Summary

- This presentation covered an overview of the new and enhanced IBM WebSphere Adapters V7.0
  - Supported iterative application development
  - Migration
  - Technology adapters
  - Application adapters
  - Adapter toolkit

What is new - Overview

This presentation covered an overview of the new and enhanced IBM WebSphere Adapters for the 7.0 release. You have reviewed new features and enhancements, including iterative application development support and migration. It also covered what is new in each specific technology and application adapter. It introduced the new technology adapter. Finally, the overview of adapter toolkit in V7.0 was presented.

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