IBM
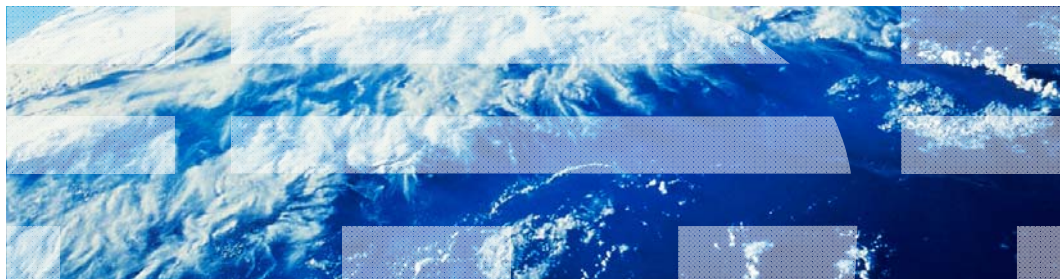
Business Process Management
IBM Business Process Manager V8.0.1

Web services enhancements

This presentation provides an overview of the web services enhancements in IBM Business Process Manager.

Agenda

- Provide web services error handling
- Provide snapshot independent web services target endpoint address
- Improve WSDL discovery in Process Designer

Web services enhancements

This presentation covers several new features for web services. There is new error handling. There is an improvement in how the web services target endpoint address is handled, and removing the dependence on the snapshot. And the WSDL discovery capability in Process Designer provides better feedback for error resolution.
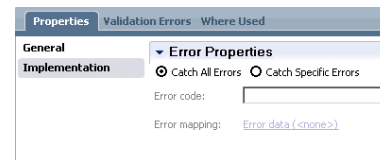
Error handling background

- Business Process Manager error handling before V8
  – The error event on a task acts as a "catch all"

- Business Process Manager error handling in V8
  – Provided capability in error events to distinguish between different declared exceptions (WSDL faults)
  – Provided capability to specify a "catch all" error event in the case where the error is not declared

- For this release, adding web services fault handling as a "catch all"
  – System runtime exception
  – Connectivity exception
  – Un-modeled faults
  – Modeled faults: <wsdl:fault>

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Errors are reported by a service or produced as an error end event in a process. You can handle the errors using an event sub-process or boundary event. In versions of Business Process Manager before version 8, you have to "catch all" and then parse the error payload to determine the type of error. In version 8, you can define error types, with error codes and payloads. Then you can handle them by error code, error payload or both.

Also in version 8, web service error handling has been added; the faults can be trapped as a "catch all." There are several types of web service faults. One type is system runtime error, for example a null pointer exception. Another type is connectivity exception, which occurs, for example, when an endpoint address is not reachable. Un-modeled faults are errors that are not explicitly defined as faults in the WSDL. Modeled faults are WSDL-defined faults that are modeled explicitly using the <wsdl:fault> tag in the operation definition.

Error handling details

Properties | Validation Errors | Where Used

General
Implementation

▼ Error Properties
⦿ Catch All Errors ○ Catch Specific Errors

Error code:

Error mapping: Error data (<none>)

- In this release, the web service errors are caught as a "catch all", but declared error types are not provided
- Specify an error intermediate event with 'Catch All Errors'
- Use script to parse tw.system.error XML string for fault information

```
▼ Script
41 try {
42    tw.local.soapError.faultCode =
43    tw.system.error.getElementByTagName("fault").item(0).getElementByTagName("faultCode").item(0).getText
44 } catch (err) {
45    log.error("Caught err getting faultDetail : " + err.toString());
46 }
```

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The integration service palette offers a web service integration step. If you use this web service integration step to call an outbound web service, then your step can catch and handle faults. To do this, attach an error intermediate event to the web service integration. The error intermediate event should be configured with the "Catch All Errors" option. This option will catch Modeled faults and other faults, such as system runtime exceptions and connectivity exceptions. To determine the specific error, use a script to extract the fault information from the XML string **tw.system.error**.

Snapshot independent web services target endpoint address

- In previous versions, snapshot names are in the WSDL URL, web service target address and target namespace
  – http://srv.ibm.com:9080/teamworks/webservices/CAT/**SnapV2**/testwebserv.tws

- In this release, snapshot names are optional in the web service target addresses
  – http://srv.ibm.com:9080/teamworks/webservices/CAT/testwebserv.tws

When defining a web service in versions of Business Process Manager before version 8, the snapshot name was included as part of the WSDL addresses and namespaces. This can be a problem for administration because, when a new snapshot is installed, the web service client applications need to be updated with the new web service address. To alleviate this issue, in version 8, the target web service addresses can be set up without the snapshot name.

Snapshot independent web services target endpoint address

- When creating a web service, list 'Target namespace scheme' provides options for setting the target namespace
  - Per Process App/Toolkit settings
  - Per snapshot name
  - Custom

▼ **Web Service Definition Usage**
A Web Service Definition exposes a IBM BPM service (or a set of IBM BPM services) as a SOAP-callable Web service. This allows enterprise applications to access business process management applications developed in IBM BPM.

▼ **Behavior**
Protected: ☐
WSDL URI: http://wac130.austin.ibm.com:90...rvices/CAT/testwebserv.tws?WSDL
Target namespace scheme: Per snapshot name
Target namespace:
   Per Process App/Toolkit settings
   Per snapshot name
   Custom

▼ **Operation Detail**

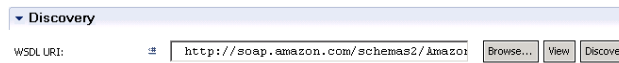6   Web services enhancements   © 2012 IBM Corporation

The 'Target namespace scheme' drop-down list provides options for setting the target namespace.

The default option is "Per Process App/Toolkit settings." This option uses the namespace from the "Advanced XML Settings" section of the 'Process App Settings' page and does not include the snapshot name. This is the recommended setting because the target namespace will remain the same even when you use multiple snapshots. Note that you need to set the namespace before selecting this option. If the namespace has not been set, then the option 'Per snapshot name' is used.
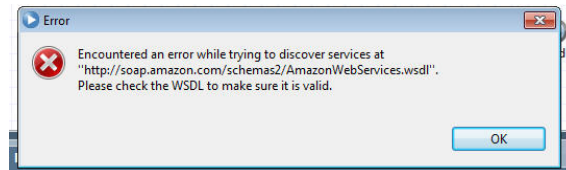
The option "Per snapshot name" uses the snapshot name, plus the namespace from the "Advanced XML Settings" section of the "Process App Settings" page, if set. Note that the target namespace value in your web service client is different each time a snapshot is taken. This option is the default when migrating a process application or toolkit from a previous version of Business Process Manager.

The "Custom" option allows you to create your own target namespace in the Target namespace field.
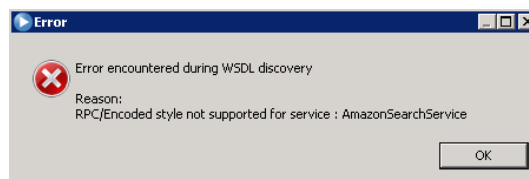
Improve WSDL discovery in Process Designer

▼ Discovery

WSDL URI: ⬚ http://soap.amazon.com/schemas2/Amazon   [Browse...] [View] [Discover]

■ In previous release, you get a general
exception about WSDL discovery and
you need to check the log

Error

❌ Encountered an error while trying to discover services at
"http://soap.amazon.com/schemas2/AmazonWebServices.wsdl".
Please check the WSDL to make sure it is valid.

[OK]

■ In this release, improve the feedback to
better indicate the type of issues
  – Unsupported data types
  – Unsupported WSDL constructs
  – Namespace conflicts
  – Missing file references
  – Missing type definitions

Error

❌ Error encountered during WSDL discovery

Reason:
RPC/Encoded style not supported for service : AmazonSearchService

[OK]

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WSDL discovery in Process Designer is another area that has been improved. In versions of
Business Process Manager before version 8, if there is an error in the WSDL, the pop-up
doesn't provide a specific error message; you need the log to determine the details. In version 8,
the pop-up includes a specific error message to help you to diagnose the problem. Examples of
errors in the WSDL are unsupported data types or WSDL constructs, conflicting namespaces
and missing WSDL elements.

Summary

- Covered the enhancements to web services including error handling, endpoint addresses and WSDL discovery

Web services enhancements

In summary, you have learned about the new web services capabilities provided by version 8 of IBM Business Process Manager.

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