



IBM Software Group

# Integrating DataPower with Websphere Service Registry and Repository

*Prasad Imandi, WSRR Level 2 Support &  
Chin Sahoo, DataPower Level 2 Support*



WebSphere® Support Technical Exchange



# Objectives

- This session discusses configuring DataPower with WebSphere® Registry and Repository (here after called WSRR) to achieve dynamic service integration. It shows the configuration steps required for integrating DataPower with WSRR, and discusses the error handling and trouble shooting functionality.
- Basic knowledge of DataPower and WSRR is assumed.

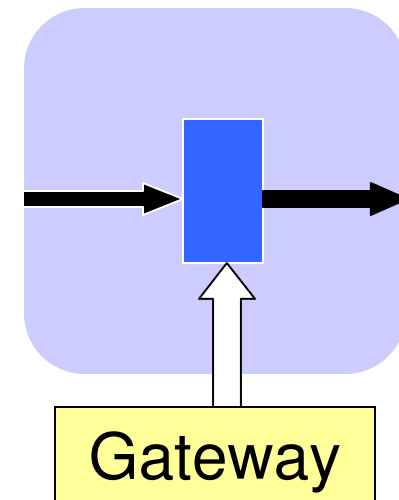
# Agenda

- ❑ Common Usage Pattern
- ❑ Configuration
- ❑ Error handling
- ❑ Troubleshooting
- ❑ Summary

# Common Usage Pattern

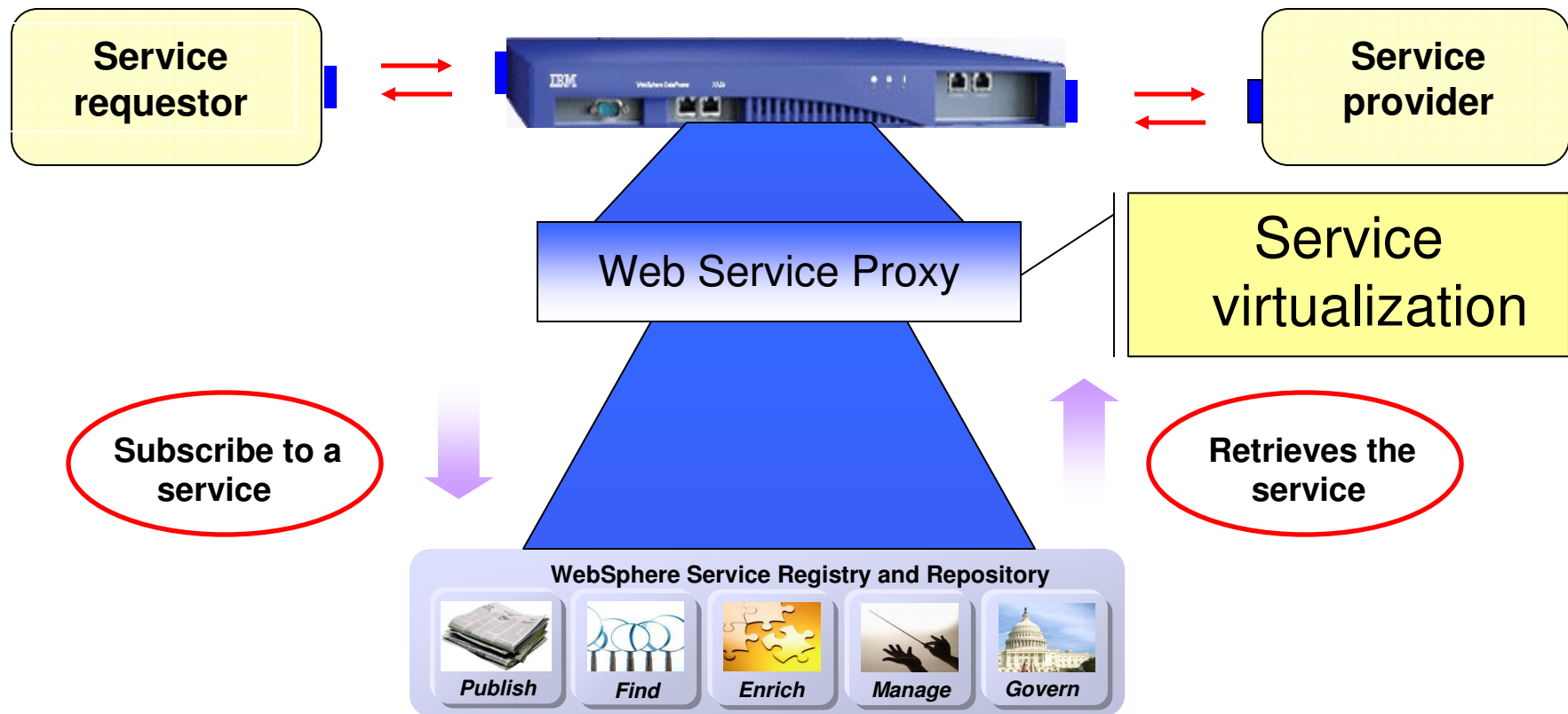
## □ ESB Gateway Pattern

- Controlling point to provide access to services
- Map service end points
- May provide security, logging and audit capabilities
- Incorporate mediation logic ?



# Common Usage Pattern

- ❑ Decoupling service requestors and service providers

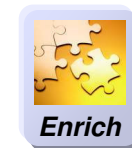


# WebSphere Service Registry and Repository



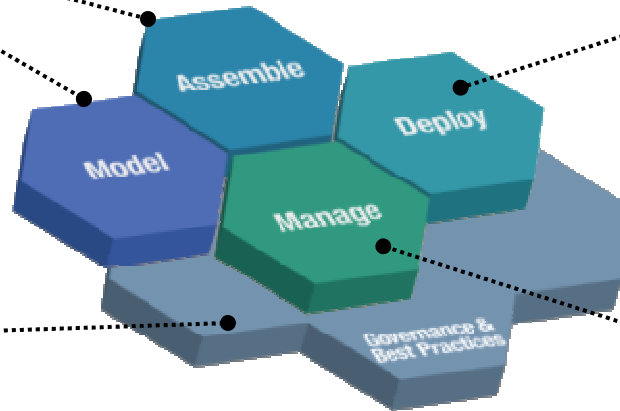
## Encourage Reuse

Find and reuse services for building blocks for new composite applications.



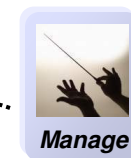
## Enhance Connectivity

Enable dynamic and efficient interactions between services at runtime.



## Enable Governance

Govern services throughout the service lifecycle



**Help optimize service performance**  
 Enable impact analysis  
 Enable policy enforcement  
 Collect performance & availability data



# Configuration

- ❑ Load the web service to WSRR
  - Use WSRR UI
- ❑ Subscribe to the service from DataPower
  - Create WSRR Object
  - Create Web Service Proxy using WSRR subscription
  - Create Local Endpoint (HTTP Front side handler)
  - Create Service Level Monitoring (SLM)

# Configuration

**WebSphere Service Registry and Repository**

Perspective: Administrator Go

- Home
- Search
- Business Metadata
- Service Documents**
  - Load Documents
  - Document Groups
  - WSDL Documents
  - XSD Documents
  - XML Documents
  - Policy Documents
  - Other Documents
- SCA Integration Modules
- Service Metadata
- Queries
- My Service Registry
- Administration

Welcome to IBM WebSphere Service Registry and Repository

WebSphere Service Registry and Repository provides clear visibility of service associations and relationships, encourages reuse of services, and enforces best practices and policies in your SOA deployment.

**Business Objects**

- EnterpriseApplication
- EnterpriseModule
- Manual Client ChannelTable MQ Endpoint
- Manual Client MQ Endpoint
- Manual MQ Endpoint
- Manual SOAP Address
- Message Schema

**Service Documents**

- Document Groups
- WSDL Documents
- XSD Documents
- XML Documents
- Policy Documents
- Other Documents
- SCA Integration Modules
- SCA Module Documents

**Load Documents**

This facility enables you to load one or more documents, with the option to save them as a group. Specify a file to load, select a document type and, optionally, enter a description and a version.

**Path to the Document**

Local file system

Specify path

Remote file location

Specify URL

**Document type**

Enter document description:

Enter document version:

WSRR  
Web UI



# Configuration

**Load Documents**

This facility enables you to load one or more documents, with the option to save them as a group. Specify a file to load, select a document type and, optionally, enter a description and a version.

**Path to the Document**

Local file system

Specify path

Remote file location

Specify URL

Document type

Enter document description:

Enter document version:

Load the web service into WSRR

Load dependencies

**Load Documents**

**Documents to be Loaded**

When all required documents are listed below select either 'Finish' to complete the load or 'Save as a group' if you want to refer to these documents as a document group.

**OrderService.wsdl** (ready to load) | [Remove](#) | [Replace](#) |

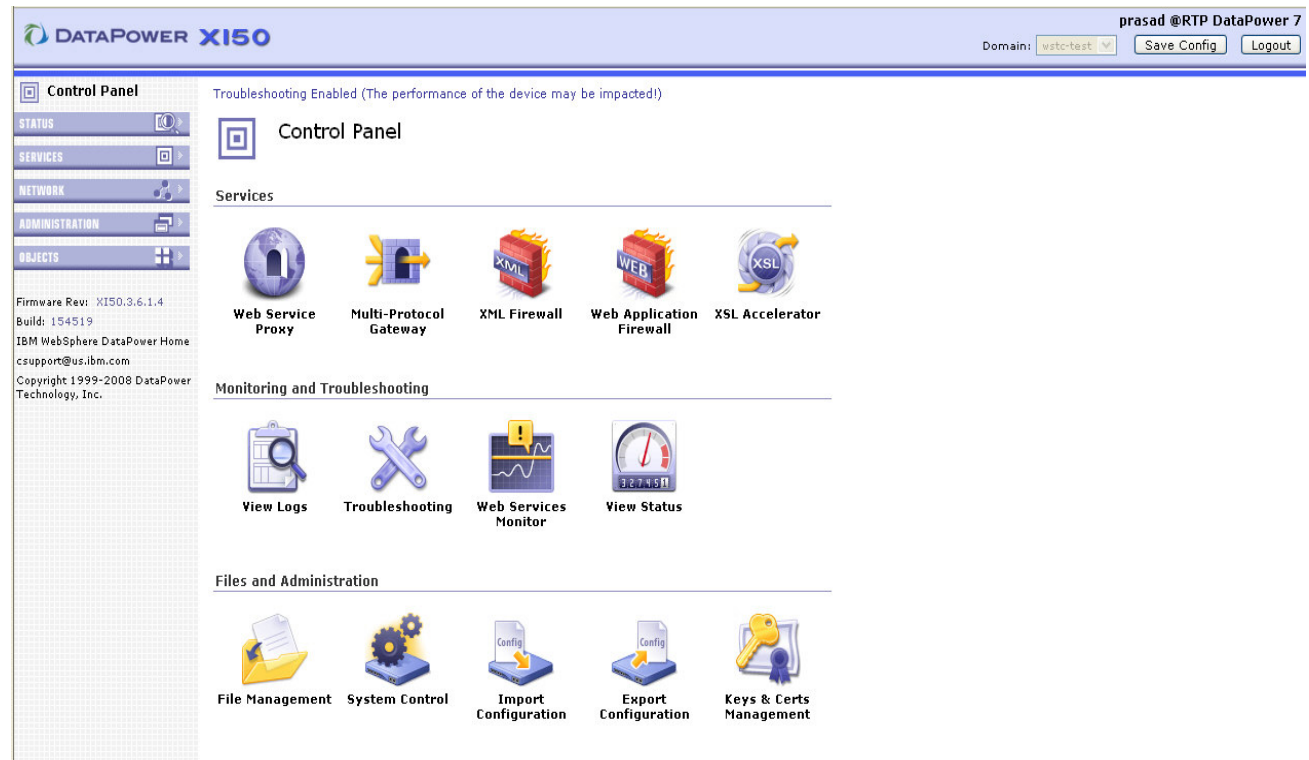
**Order.xsd** (in repository) | [Replace](#) |



# Configuration

## □ DataPower configuration

- GUI-based



- CLI-based commands

# Configuration

- Configure WSRR server object  
**OBJECTS/Configuration/WSRR Server**

**Configuration**

- Application Domain
- Import Configuration File
- Include Configuration File
- Shell Alias
- UDDI Registry
- WSRR Server**

**Configure WSRR Server**

[Refresh List](#)

Name	Status	Op-State	Logs	Admin State	Comments
chin-wstc2008	saved	up		enabled	Chin's Test WSRR
SKILLSWSRR	saved	up		enabled	Prasad Imandi's WSRR Server
wstc-wsrr61-service	saved	up		enabled	http://skills.raleigh.ibm.com:9087/WSRRCoreSDO/services/WSRRCoreSDOPort

**Add**

WSRR Server : wstc-wsrr61-service [up]

**Apply** **Cancel** **Delete** **Undo**

Admin State:  enabled  disabled

Comments:

SOAP URL:  \*

SSL Proxy Profile:

Username:

**http://<Hostname:9080/WSRRCoreSDO/services/WSRRCoreSDOPort**

# Configuration

- Configure WSRR subscription object  
 Describes target resource to retrieve from WSRR e.g., WSDL  
**OBJECTS/Services/WSRR Subscription**

## Configure WSRR Subscription

- Services**
- HTTP Service
  - Multi-Protocol Gateway
  - SSL Proxy Service
  - TCP Proxy Service
  - UDDI Subscription
  - Web Application Firewall
  - Web Service Proxy
  - WebSphere MQ Gateway
  - WebSphere MQ Host
  - WebSphere MQ Proxy
  - WSRR Subscription**
  - XML Firewall Service
  - XSL Coprocessor Service
  - XSL Proxy Service

Refresh

Name	Status	Op-State	Logs	Admin State	Comments	WSRR Server	
Census-Info-service	saved	up		enabled		chin-wstc2008	http://ws.cd
holiday-service	saved	up		enabled		chin-wstc2008	http://www.2
WSTC-2008-WSRR-Subscription	saved	up		enabled		SKILLSWSRR	http://wsrr.ir

Add

## Configure WSRR Subscription

Main

WSRR Subscription : WSTC-2008-WSRR-Subscription [up]

Apply Cancel Delete Undo Export View Log View Status Synchronize

Admin State	<input checked="" type="radio"/> enabled <input type="radio"/> disabled
Comments	<input type="text"/>
WSRR Server	SKILLSWSRR <input type="button" value="+"/> <input type="button" value="..."/> [up] *
Namespace	http://wsrr.integration/orderserv *
Subscription Object	WSDL Document *
Object Name	OrderService.wsdl *
Synchronization Method	Poll <input type="button" value="v"/>
Refresh Interval	120 seconds

WSDL or Concept

# Configuration

- Configure Web Service Proxy  
Control Panel/Web Service Proxy



Services

 **Web Service Proxy**
 **Multi-Protocol Gateway**
 **XML Firewall**
 **Web Application Firewall**
 **XSL Accelerator**



[Help](#)



Web Service Proxy Name	Op-State	Logs	Type	Req-Type	Back Side URL	Resp-Type
Holiday-WS-Proxy	up		static-from-wsdl	soap	NA	soap
Sample-Census-WS-Proxy	up		static-from-wsdl	soap	NA	soap
WSTC-2008-WS-Proxy	up		static-from-wsdl	soap	NA	soap

Web Service Proxy Name

 \*

Create Web Service Proxy

Add

# Configuration

## Configure Web Service Proxy

WSDLs | SLM | Services | Policy | Proxy Settings | Advanced Proxy Settings

Web Service Proxy Name [up]  
 \*

Apply | Cancel | Delete | Refresh

[View Log](#) | [View Status](#) | [View Operations](#) | [Show Probe](#) | [Validate Conformance](#) | [Help](#)

### Web Service Proxy WSDLs

- Edit WSDL/Subscription
- Add WSDL
- Add UDDI Subscription
- Add WSRR Subscription

**WSRR Subscription Parameters**

**WSRR Subscription Name**  
 New   
 Existing (none) \*

**Subscription Object**  
 WSDL Document \*

**Object Name**  
 \*

**Namespace**  
 \*

**WSRR Server**  
 + ... \*

**Synchronization Method**

**Refresh Interval**  
 \*

**Use WSDL Version**  
 on  off \*

**WSDL Version**

**Fetch Policy Attachments (WSRR 6.1 only)**  
 on  off

## WSDL Document in WSRR

### WSDL Documents > OrderService.wsdl

Details of the OrderService.wsdl WSDL document.

- Details | Content | Impact Analysis | Governance

#### General Properties

**Name**

**Location**

**Description**

**Namespace**

**Owner**

**Version**

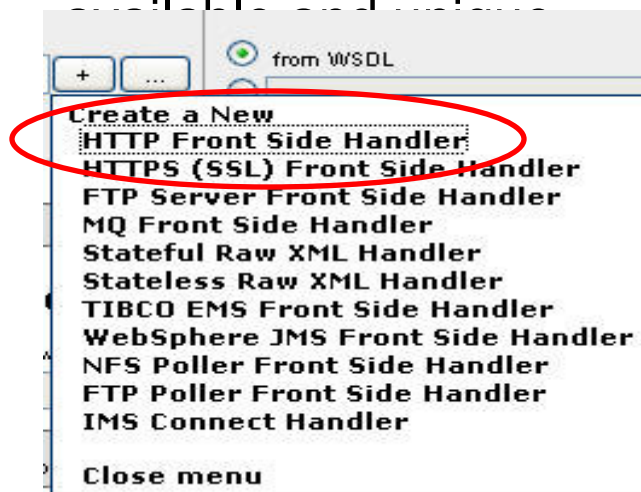
**Last modified**

**Encoding**



# Configuration

- ❑ Create local endpoint handler
  - HTTP front side handler
  - Provide the Local IP address
  - Port number must be



## Configure HTTP Front Side Handler

Main

HTTP Front Side Handler

Apply Cancel

Name	wstc-2008-ws-proxy-http-fsh *
Admin State	<input checked="" type="radio"/> enabled <input type="radio"/> disabled
Comments	
Local IP Address	0.0.0.0 <span>Select Alias *</span>
Port Number	5080 *
HTTP Version to Client	HTTP 1.1 <span>▼</span>
	<input checked="" type="checkbox"/> HTTP 1.0
	<input checked="" type="checkbox"/> HTTP 1.1
	<input checked="" type="checkbox"/> POST method
	<input type="checkbox"/> GET method
	<input checked="" type="checkbox"/> PUT method
	<input type="checkbox"/> HEAD method

# Configuration

- ❑ Save Web Service Proxy configuration

## Configure Web Service Proxy

[←](#)
[WSDLs](#)
[SLM](#)
[Services](#)
[Policy](#)
[Proxy Settings](#)
[Advanced Proxy Settings](#)
[Headers/Params](#)
[→](#)

**Web Service Proxy Name** [up]  
 \*

[View Log](#) | [View Status](#) | [View Operations](#) | [Show Probe](#) | [Validate Conformance](#) | [Help](#)

### Web Service Proxy WSDLs

- Edit WSDL/Subscription
- Add WSDL
- Add UDDI Subscription
- Add WSRR Subscription

WSDL Source Location	Endpoint Handler Summary	WSDL Status	WS-I BP Status	Action
WSTC-2008-WSRR-Subscription	1 up / 1 configured	Okay		Remove



# Configuration

## ❑ Subscription Status

**STATUS/Web Service/WSRR Subscription Status**

**Web Service**

- UDDI Subscription Key Status
- UDDI Subscription Service Status
- UDDI Subscription Status
- Web Services Operation Metrics
- Web Services Operations
- Web Services WSDLs
- WSM Agent Status
- WSM Agent Subscribers
- WSRR Subscription Service Status
- WSRR Subscription Status**

### WSRR Subscription Status

[Help](#)

Subscription	Status	Last Refresh	Synchronization Method	Refresh Interval (sec)	WSDLs	
Census-Info-service	Okay	Fri Apr 11 00:54:45 2008	poll	600	1	<input type="button" value="Synchronize"/>
holiday-service	Okay	Fri Apr 11 00:54:45 2008	poll	600	1	<input type="button" value="Synchronize"/>
WSTC-2008-WSRR-Subscription	Okay	Fri Apr 11 00:54:45 2008	poll	120	1	<input type="button" value="Synchronize"/>



# Configuration

- ❑ Subscription Status
  - Subscription Name
  - Status
    - Error – local resource may be out of synch with WSRR
    - Okay
    - Synchronizing
  - Synchronization Method – Poll vs. Manual
  - Refresh Interval
  - WSDLs – Number of WSDLs related to this subscription

# Configuration

## ❑ Subscription Service Status

**STATUS/Web Service/WSRR Subscription Service Status**

**Web Service**

- UDDI Subscription Key Status
- UDDI Subscription Service Status
- UDDI Subscription Status
- Web Services Operation Metrics
- Web Services Operations
- Web Services WSDLs
- WSM Agent Status
- WSM Agent Subscribers
- WSRR Subscription Service Status**
- WSRR Subscription Status

Subscription	bsrURI	WSDL Name	Location	Description
Census-Info-service	43007a43-1a11-417d.a10c.f3b56ff30cd4	demografix.wsdl	demografix.wsdl	Provides Demographic info 0 WSTC Demo
holiday-service	4ba28c4b-0a4a-4a64.bf44.20005c2044e6	holidays.wsdl	holidays.wsdl	Provides US Holidays - WSTC demo
WSTC-2008-WSRR-Subscription	50a89450-6399-4912.8200.814df98100a4	OrderService.wsdl	OrderService.wsdl	Ordering Service

# Configuration

- ❑ Subscription Service Status
  - Subscription Name
  - bsrURI – specific URI assigned to each WSDL doc
  - WSDL Name – logical WSDL name as stored in WSRR
  - Location – File name
  - Description

# Configuration

## □ Testing the Web Service Proxy:

```
Input: curl.exe -v --data-binary @wstc-input2.xml -i http://dp7:5090/services/OrderService -H "Content-Type: text/xml"
```

Output:

```
HTTP/1.1 200 OK
```

```
X-Backside-Transport: OK OK
```

```
Connection: Keep-Alive
```

```
Transfer-Encoding: chunked
```

```
Content-Type: text/xml
```

```
Content-Language: en-US
```

```
Date: Wed, 16 Apr 2008 12:43:58 GMT
```

```
Server: WebSphere Application Server/6.1
```

```
X-Client-IP: 9.67.168.116
```

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

```
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
```

```
<soapenv:Header/><soapenv:Body><p618:placeOrderResponse xmlns:p618="http://wsrr.integration/orderservice">
```

```
<orderID>ID_123456</orderID></p618:placeOrderResponse></soapenv:Body></soapenv:Envelope>
```

## Error Handling

- WS-Proxy supports error handling at all levels
- May differentiate Error Handling by Level
- User can control Error Messages returned by Service, Operation or Port
- Two Methods of Error Handling
  - On-error action is used to catch errors in standard processing rule (request or response)
  - Error rule is used to catch errors when error is encountered by the service

# Error Handling

- ❑ Configuring Error rule:
  - Click the Policy Tab on the WS-Proxy
  - Select “Add rule” button from the WS-Proxy level

**Configure Web Service Proxy**

WSDLs | SLM | Services | **Policy** | Proxy Settings | Advanced Proxy Settings | Headers/Params

Web Service Proxy Name [up]  
WSTC-2008-Example-WS-proxy \*

Apply | Cancel | Delete | Refresh | [View Log](#) | [View Status](#) | [View Operations](#) | [Show Probe](#) | [Validate Conformance](#) | [Help](#)

**Web Service Proxy Policy**  
Open tree to: Proxy | WSDLs | Services | Ports | Operations

proxy: WSTC-2008-Example-WS-proxy  
WS-Policy: (default) | WS-I Conformance: (none) | Priority: Normal  
WSTC-2008-Example-WS-proxy\_defau... (request-rule) | WS-I Conformance: (none) | Priority: Normal  
WSTC-2008-Example-WS-proxy\_defau... (response-rule) | WS-I Conformance: (none) | Priority: Normal  
**+ Add Rule**  
subscription: WSTC-2008-WSRR-Subscription | WS-I Conformance: (none) | Priority: Normal  
+ Add Rule  
wsdl: 50a89450-6399-4912.8200.814df98100a4 | WS-I Conformance: (none) | Priority: Normal  
+ Add Rule  
service: OrderService | WS-I Conformance: (none) | Priority: Normal  
+ Add Rule  
port: OrderPort | WS-I Conformance: (none) | Priority: Normal



# Error Handling

## ❑ Configuring Error Rule

The screenshot displays the configuration interface for a proxy policy. The top section shows a tree view with the following items:

- proxy: WSTC-2008-WS-Proxy**
  - WS-Policy: (default) | WS-I Conformance: (none) | Priority: Normal
  - WSTC-2008-WS-Proxy\_default\_reque... (request-rule)
  - WSTC-2008-WS-Proxy\_default\_respo... (response-rule)
  - WSTC-2008-WS-Proxy\_default\_error... (error-rule)**
  - Add Rule
- subscription: WSTC-2008-WSRR-Subscription**
  - WS-Policy: (default) | WS-I Conformance: (none) | Priority: Normal

The bottom section shows the configuration for the selected rule:

- Rule:** WSTC-2008-WS-Proxy\_default\_error\_rule | Rule Direction: Error | Delete Rule
- Create rule: Click New, drag action icons onto line. Edit rule: Click on rule, double-click on action**
- Action Palette:** Filter, Sign, Verify, Validate, Encrypt, Decrypt, Transform, Route, AAA, Results, SLM, Advanced, and a trash icon.
- Flow Diagram:** Shows a sequence of actions between an ORIGIN SERVER and a CLIENT. The actions are: Filter, Verify, Transform, and Results.
- Create Reusable Rule** button.



# Error Handling

- ❑ Configure Set Variable Action  
Control Panel/Web Service Proxy/Policy/

https://dp7:9090 - RTP DataPower 7 - Configure Set Variable Action - Mozilla Firefox

Configure Set Variable Action

Basic Advanced

**Input**

Context | INPUT | INPUT

**Options**

▲ Set Variable

var://service/error-protocol-resp | Var Builder

Variable Name

Variable Assignment | 200 | Var Builder

Asynchronous |  on  off

Done | dp7:9090

**Custom User Variable**

▼ Service Variables

var://service/error-protocol-response	Protocol Error Response
var://service/error-subcode	Error Subcode
var://service/expiry	MQ Expiry
var://service/format	MQ Format
var://service/lbhealth/	Loadbalancer Group Member State

► Extension Variables

► System Variables

# Error Handling

- ❑ Configure Transform Action  
Control Panel/Web Service Proxy/Policy/

https://dp7:9090 - RTP DataPower 7 - Configure Transform Action - Mozilla Firefox

DATAPOWER X150

Configure Transform Action

Basic Advanced

Input

Input INPUT INPUT

Options

Transform

Use Document Processing Instructions

- Use XSLT specified in this action
- Use XSLT specified in XML document processing instructions, if available
- Use XSLT specified in this action on a non-XML message

Processing Control File

local:///soapfault.xsl \*

local:/// soapfault.xsl Upload... Fetch... \*

URL Rewrite Policy (none) + ...

Asynchronous  on  off

Output

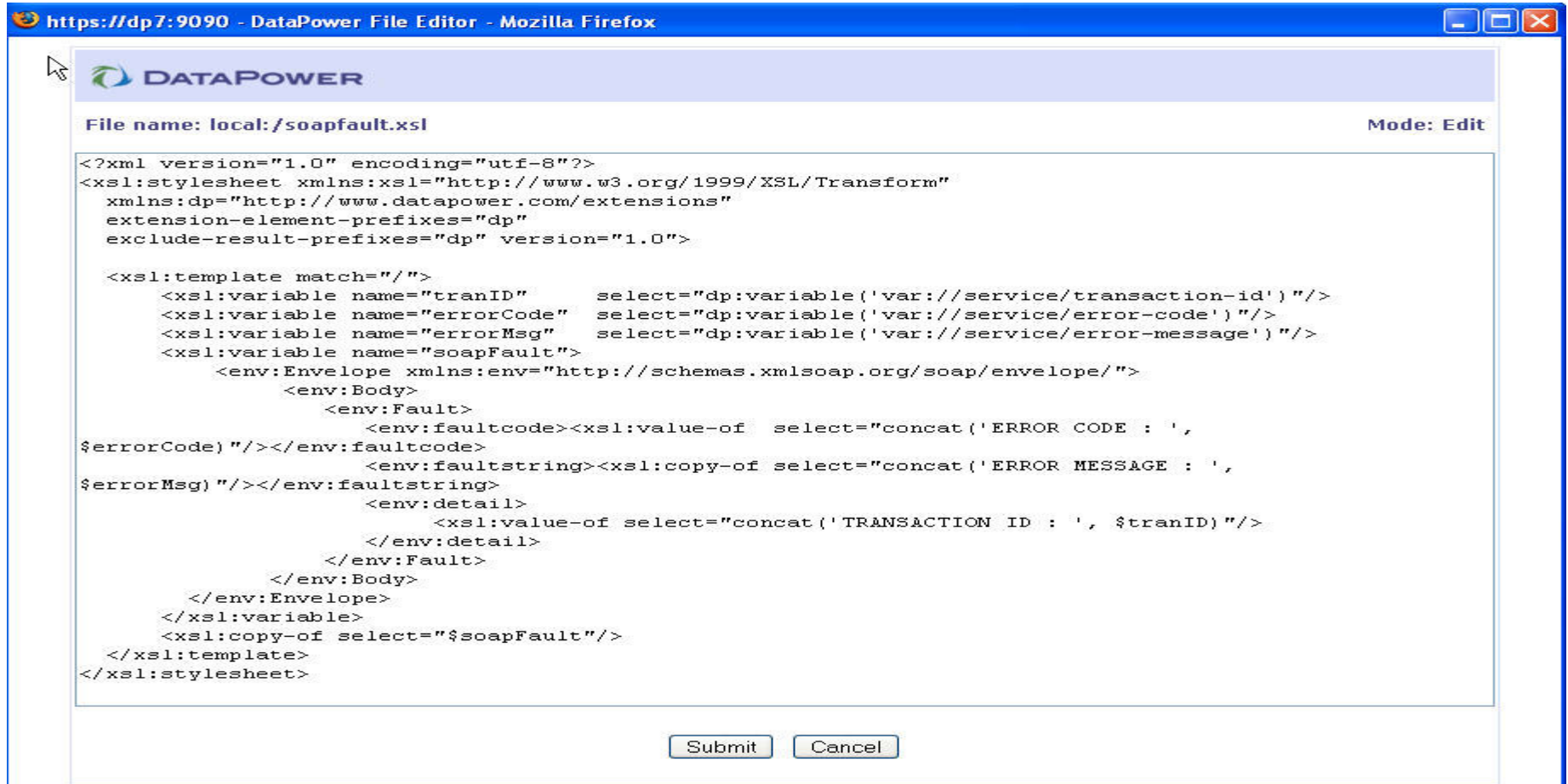
Output OUTPUT OUTPUT

Delete Done Cancel

Done dp7:9090

# Error Handling

- ❑ The contents of the “**soap-fault.xsl**” file.



The screenshot shows a web browser window titled "https://dp7:9090 - DataPower File Editor - Mozilla Firefox". The main content area displays the XML code for the "soap-fault.xsl" file. The code defines an XSLT stylesheet with a single template that generates a SOAP fault envelope. It uses variables for transaction ID, error code, and error message, and constructs the fault details accordingly.

```
<?xml version="1.0" encoding="utf-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:dp="http://www.datapower.com/extensions"
  extension-element-prefixes="dp"
  exclude-result-prefixes="dp" version="1.0">

  <xsl:template match="/">
    <xsl:variable name="tranID"      select="dp:variable('var://service/transaction-id')"/>
    <xsl:variable name="errorCode"   select="dp:variable('var://service/error-code')"/>
    <xsl:variable name="errorMsg"    select="dp:variable('var://service/error-message')"/>
    <xsl:variable name="soapFault">
      <env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
        <env:Body>
          <env:Fault>
            <env:faultcode><xsl:value-of select="concat('ERROR CODE : ',
$errorCode)"/></env:faultcode>
            <env:faultstring><xsl:copy-of select="concat('ERROR MESSAGE : ',
$errorMsg)"/></env:faultstring>
            <env:detail>
              <xsl:value-of select="concat('TRANSACTION ID : ', $tranID)"/>
            </env:detail>
          </env:Fault>
        </env:Body>
      </env:Envelope>
    </xsl:variable>
    <xsl:copy-of select="$soapFault"/>
  </xsl:template>
</xsl:stylesheet>
```

At the bottom of the editor, there are "Submit" and "Cancel" buttons.

## Error Handling

- Change the Rule Type to Error rule.
- Drag the Advanced action icon and select set variable to assign “200” for the DataPower’s built-in variable “var://service/error-response-protocol.”
- Double-click the Match action, select matching type as “**errorcode**”, Error-codes as “\*” for the Matching rule and save the changes.
- Drag the transform action icon to the processing line.

## Error Handling

- Double-click the highlighted Transform icon.
- Upload the processing control file ***soap-fault.xsl***.
- Set ***INPUT*** in the input context and ***OUTPUT*** as the output context.
- Click Done. The Transform configuration window closes.
- Click Apply to save the changes.
- Return to Policy Page to verify change.
- Submit faulty request to get the custom error message.

# Error Handling

- ❑ Output from the custom error rule.

```
curl.exe --data-binary @err-in1.xml -i "http://dp7:5090/services/OrderService" -H "Content-Type: text/xml"

HTTP/1.0 200 Internal Server Error
Content-Type: text/xml
X-Backside-Transport: FAIL FAIL
Connection: close

<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"><env:Body><env:Fault>
<env:faultcode>ERROR CODE : 0x00230001</env:faultcode>
<env:faultstring>ERROR MESSAGE : http://9.42.115.49:5090/services/OrderService: cvc-particle 2.1: in element order of type
<http://wsrr.integration/order>Order, found &lt;/order> (in default namespace), but next item should be items
</env:faultstring>
<env:detail>TRANSACTION ID : 424402</env:detail>
</env:Fault>
</env:Body></env:Envelope>
```

# Troubleshooting

## □ Trouble Shooting

[Control Panel/Troubleshooting/....](#)

- DataPower System Log
- DataPower Probe
- DataPower File Captures
- DataPower Statistics
- Sanity Checks for WS-Proxy logs

# Troubleshooting

## ❑ Set log level to debug

Troubleshooting Enabled (The performance of the device may be impacted!)



### Troubleshooting Panel

← Main Debug Probe Conformance Validator →

#### Networking

**Ping Remote**  
Remote Host  \*

**TCP Connection Test**  
Remote Host  \*  
Remote Port  \*

#### Logging

**Set Log Level**  
View System Logs   
Log Level  \*

**Generate Log Event**  
Log Type  + ... \*  
Log Level  \*  
Log Message  \*

#### Reporting

**Generate Error Report**  
No Error Report Available for Viewing  
Include Internal State  on  off

**Send Error Report**  
SMTP Server  \*  
Location  \*  
Email Address  \*



# Troubleshooting

- Check default system log messages
- Enable probe

Troubleshooting Enabled (The performance of the device may be impacted!)

## Troubleshooting Panel

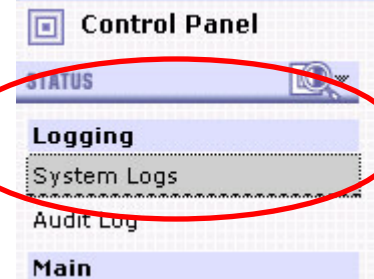
← Main **Probe:**

### Web Service Proxy

Name	Op-State	Probe	Disable Probe
------	----------	-------	---------------

ServiceOrderProxyWS ▼

Add Probe



# Troubleshooting

## □ Probe Output

https://dp7:9090 - Transaction List for WSTC-2008-WS-Proxy - Mozilla Firefox

**DATAPOWER**

Refresh Flush Disable Probe Export Capture View Log Send Message Close

view	trans#	type	inbound-url	outbound-url
+	6802	request	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/
-	8465	request	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/
	8465	response	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/

Done dp7:9090

# Troubleshooting

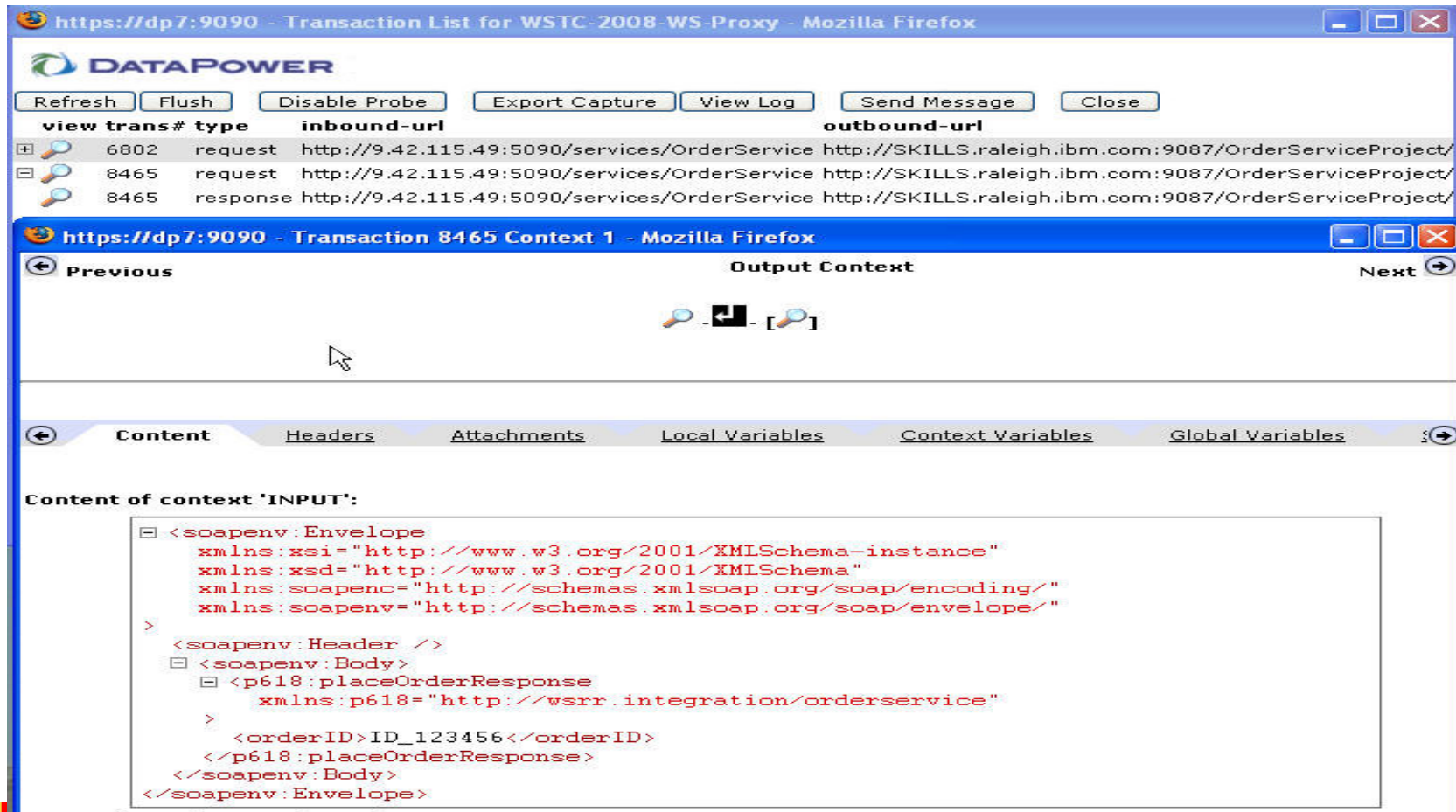
- Probe Data from the **INPUT** context

The screenshot displays the DataPower web interface. The top window shows a transaction list with columns for view, transaction ID, type, inbound URL, and outbound URL. Transaction 8465 is selected. The bottom window shows the 'Input Context 'INPUT' of Step 1' for transaction 8465. The 'Content' tab is active, displaying the following XML content:

```
<SOAP-ENV:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:q0="http://wsrr.integration.orderservice" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Body>
    <q0:placeOrder>
      <order>
        <customer>
          <firstName>Peter</firstName>
          <lastName>Jones</lastName>
          <id>2838382128</id>
        </customer>
        <items>
          <articleID>837228304</articleID>
          <quantity>3</quantity>
        </items>
        <items>
          <articleID>8272666333</articleID>
          <quantity>4</quantity>
        </items>
      </order>
    </q0:placeOrder>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

# Troubleshooting

- Probe Data from the **OUTPUT** context



The screenshot shows two browser windows from the DataPower interface. The top window, titled "Transaction List for WSTC-2008-WS-Proxy", displays a table of transactions:

view	trans#	type	inbound-url	outbound-url
+	6802	request	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/
-	8465	request	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/
-	8465	response	http://9.42.115.49:5090/services/OrderService	http://SKILLS.raleigh.ibm.com:9087/OrderServiceProject/

The bottom window, titled "Transaction 8465 Context 1", shows the "Output Context" view. The "Content" tab is selected, displaying the XML content of the context 'INPUT':

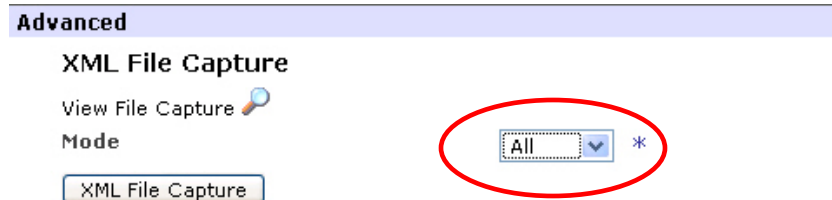
```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header />
  <soapenv:Body>
    <p618:placeOrderResponse xmlns:p618="http://wsrr.integration/orderservice">
      <orderID>ID_123456</orderID>
    </p618:placeOrderResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

# Troubleshooting

- If problem still persists, switch to default domain and enable File Capture



- **Control Panel/Troubleshooting/Advanced**
- Change mode to “All”, click on XML File Capture to enable
- Save config



- Submit request to generate traffic and examine the input and output contents.

# Troubleshooting

## □ Sanity Check

- WS-Proxy Active and Listening on Port
- Local endpoint URI Correct
- WS-Proxy Service Received Request
- SOAPAction and Operation Agreement
- Passed Automatic Schema Validation
- Backend Service Active and Available
- Request Transmitted to Correct Back End URL
- Response Received
- Response Passed Automatic Schema Validation
- Response Transmitted Completely to Client

# Summary

- Service virtualization
- WSSR configuration
- DataPower configuration
  - WebGUI based
  - CLI based
- Error Handling
- Troubleshooting

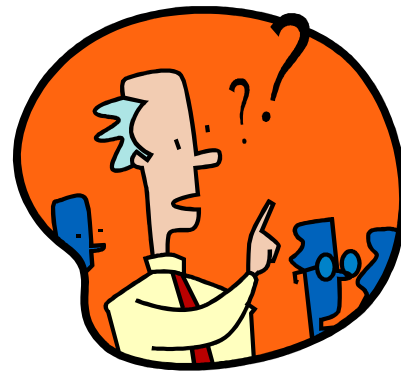


# References

- ❑ **Managing services dynamically using WebSphere DataPower SOA Appliances with WSRR:**  
[http://www.ibm.com/developerworks/websphere/library/techarticles/0802\\_rohmann/0802\\_rohmann.html](http://www.ibm.com/developerworks/websphere/library/techarticles/0802_rohmann/0802_rohmann.html)
  
- ❑ **Using DataPower SOA Appliances to query WebSphere Service Registry and Repository:**  
[http://www.ibm.com/developerworks/websphere/techjournal/0805\\_peterson/0805\\_peterson.html?ca=drs-](http://www.ibm.com/developerworks/websphere/techjournal/0805_peterson/0805_peterson.html?ca=drs-)
  
- ❑ **IBM WebSphere DataPower SOA Appliances Part IV: Management and Governance:**  
<http://www.redbooks.ibm.com/redpieces/abstracts/REDP4366.html?Open>
  
- ❑ **WebSphere Service Registry and Repository Handbook**  
<http://www.redbooks.ibm.com/abstracts/SG247386.html?Open>



# Questions and Answers



## Configuration - CLI

- Create WSRR server object
- Establish Configuration Mode for that object
- Provide URL to access remote WSRR Server

### Example:

```
xi50(config)# wsrr-server wstc-wsrr61-service
New WSRR Server configuration
xi50(config wsrr-server businessRegistry-1)# soap-url
http://<WSRR Server hostname>:9080/WSRRCoreSDO/
services/WSRRCoreSDOPort
xi50(config wsrr-server businessRegistry-1)# exit
xi50(config)#
```

# Configuration - CLI

- Create WSRR subscription object
- Establish Subscription Configuration Mode for that object
- Identify remote WSRR Server by its object name
- Specify subscribed Object Type (e.g., WSDL file)
- Identify subscribed Object Name and Namespace
- Specify Synchronization Method
- Exit WSRR Subscription Configuration Mode
- Enter Web Service Proxy Configuration Mode
- Specify the previously created subscription as the source of configuration data for the Web Service Proxy

# Configuration - CLI

## ❑ Subscription Example

```
xi50(config)# wsrr-subscription WSTC-2008-WSRR-Subscription
New WSRR Subscription configuration
xi50(config wsrr-subscription update-WS-Proxy-1)# server wstc-wsrr61-service
xi50(config wsrr-subscription update-WS-Proxy-1)# object-type wsdl
xi50(config wsrr-subscription update-WS-Proxy-1)# object-name OrderService.wsdl
xi50(config wsrr-subscription update-WS-Proxy-1)# namespace http://wsrr.integration/orderservice
xi50(config wsrr-subscription update-WS-Proxy-1)# method poll
xi50(config wsrr-subscription update-WS-Proxy-1)# refresh-interval 3600
xi50(config wsrr-subscription update-WS-Proxy-1)# exit
xi50(config)# wsgw WSTC-2008-WS-Proxy
New Web Service Proxy configuration
...
xi50(config wsgw WS-Proxy-1)# wsrr-subscription WSTC-2008-WSRR-Subscription...
...
xi50(config wsgw WS-Proxy-1)# exit
xi50[chin-test](config)# write mem
Overwrite previously saved configuration [y/n]? y
```

# Additional WebSphere Product Resources

- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:  
<http://www.ibm.com/developerworks/websphere/community/>
- Learn about other upcoming webcasts, conferences and events:  
[http://www.ibm.com/software/websphere/events\\_1.html](http://www.ibm.com/software/websphere/events_1.html)
- Join the Global WebSphere User Group Community: <http://www.websphere.org>
- Access key product show-me demos and tutorials by visiting IBM® Education Assistant:  
<http://www.ibm.com/software/info/education/assistant>
- View a Flash replay with step-by-step instructions for using the Electronic Service Request (ESR) tool for submitting problems electronically:  
<http://www.ibm.com/software/websphere/support/d2w.html>
- Sign up to receive weekly technical My support emails:  
<http://www.ibm.com/software/support/einfo.html>