

WCF send adapters

Connecting BizTalk with external services



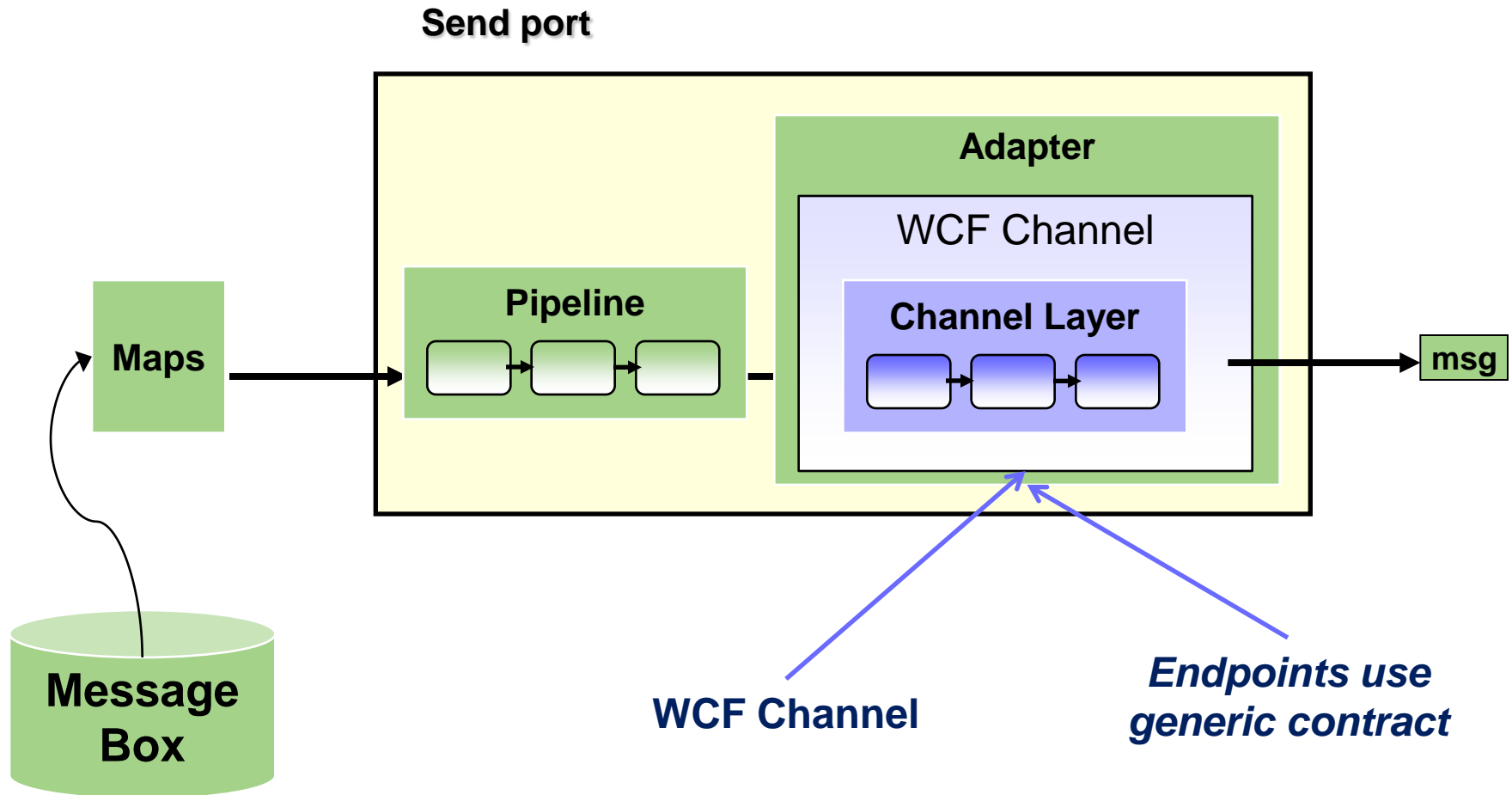
Overview

- **WCF send adapter architecture**
- **Consume WCF service wizard**
- **Configuring bindings and behaviors**
- **Configuring security**
- **Configuring message handling**
- **Using context properties**

WCF adapters and BizTalk

- **Enable BizTalk to consume services using WCF**
 - Consume wide type of services (replace SOAP adapter)
- **Used from orchestration or messaging layer**
 - Enables messaging only scenarios
- **All send adapters are in-process adapters**

WCF send adapter architecture



Adding a Service Reference

- **You must consume the service reference first**
 - *Add Generated Items / Consume WCF Service* from Project menu
 - Enter the URL for the WSDL you wish to consume
- **This imports the types found in the referenced WSDL and XSD**
 - Empty orchestration created from WSDL
 - A *Port Type* is created to represent the service contract
 - The imported XSD types create corresponding *Message Types*
 - Definitions can't be modified, although promotion is possible
 - Local definitions stored in *Reference.map*
- **Wizard generates binding file(s)**
 - Easily create send port by importing in administration console
 - Typed binding file when the adapter can be inferred
 - Custom binding file always available using WCF-Custom adapter

Consuming services from orchestration

- **A *Port* represents a connection to a service endpoint**
 - Right click on the Port Surface and select *New Configured Port*
 - Choose *Use an existing Port Type*
 - Select the Port Type imported using Consume Service Reference
 - Finish the wizard
- **Define message variables using new message types**
- **Add Send/Receive shapes to your orchestration**
- **Connect the send / receive shapes to the port**

Mapping operations to actions

- Adapter needs SOAP:action for message
- Multiple message may use same port
- Map *OperationName* to *Action*
- Operation name
 - ❑ Orchestration port (automatic)
 - ❑ Context property

Action
mapping



WCF-WSHttp Transport Properties

General | Binding | Security | Proxy | Messages

Endpoint Address

Address (URI):

Example:
• http://host[port]/path

Endpoint Identity

Optional: the expected service identity.

SOAP Action header

Action:

Single action example:
• http://www.northwindtraders.com/Service/Operation

Action mapping example (using BTS.Operation property):

```
<BtsActionMapping>  
<Operation Name="Operation1" Action="Action1" />  
<Operation Name="OperationN" Action="ActionN" />  
</BtsActionMapping>
```

Message handling

- **Send BizTalk Message as body (default)**
- **Template**
 - Define XML template for wrapping the message
 - Use `bts-msg-body` element to specify location of message body
 - Specify encoding
- **Propagate fault messages**
 - If unchecked, faults terminate at the adapter
 - Only generic fault details will reach the orchestration / receive adapter

Response message handling

- **SOAP:Body (default)**
 - Xml in the body is published to the message box
- **SOAP:Envelope**
 - Entire SOAP message is published
 - Encryption / signing remain intact
 - Use with PassThrough Pipeline or body will be extracted
- **XPath (relative to SOAP:body)**
 - No namespace prefixes
 - Specify node content type

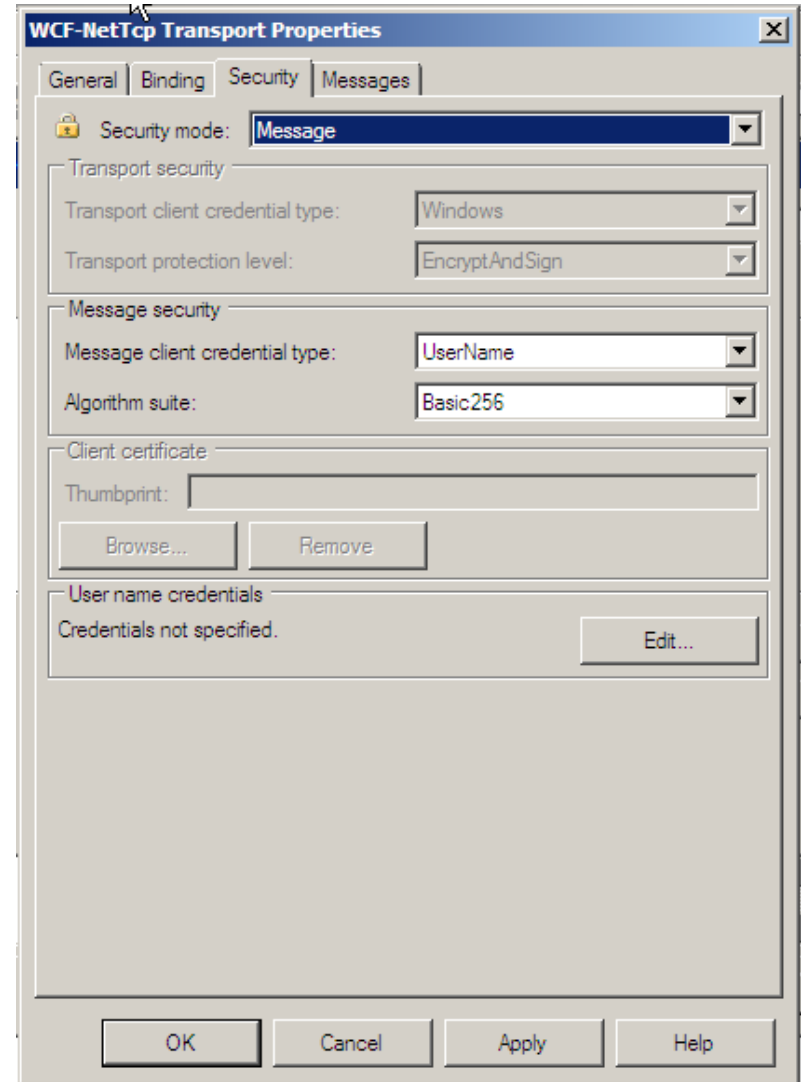
Send adapter security

- **Security tab**

- Transport specific adapters
- Choose mode
- Configure mode properties

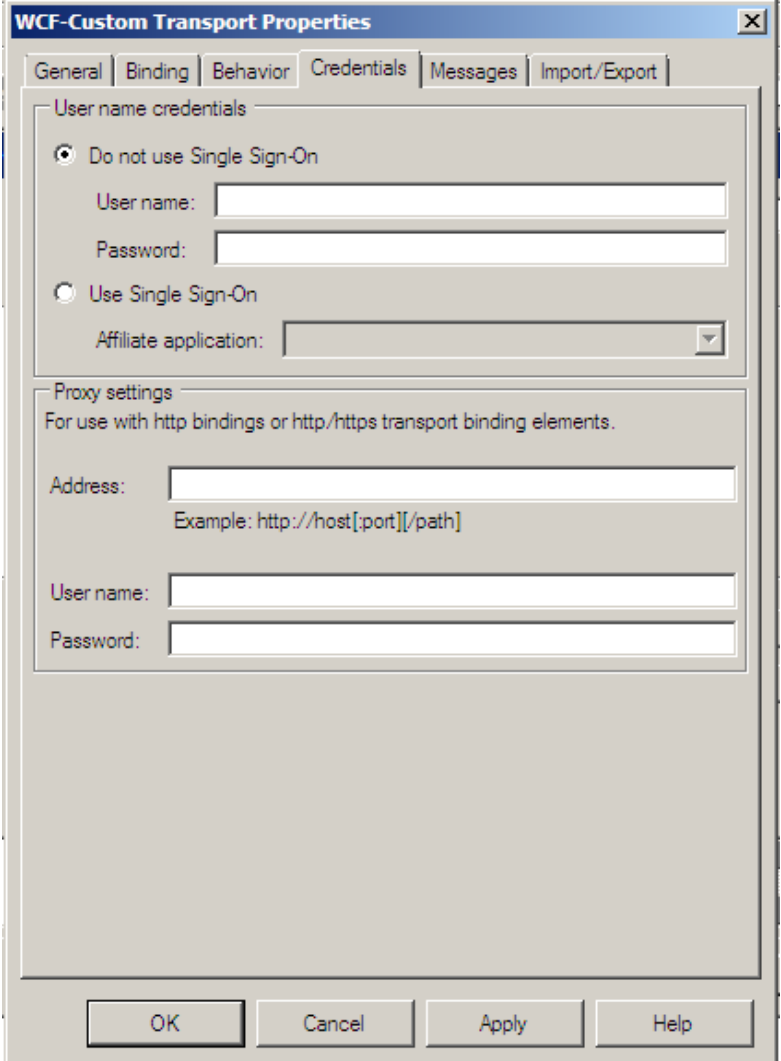
- **Credentials**

- Single sign on
- Static credentials



Send adapter security – custom adapter

- **Credentials tab**
 - User name and password
 - Single sign-on
 - Proxy credentials for http(s)
- **Other client credential types**
 - Use behavior tab
 - Configure endpoint behavior



The image shows a screenshot of the 'WCF-Custom Transport Properties' dialog box, specifically the 'Credentials' tab. The dialog has a title bar with a close button and several tabs: 'General', 'Binding', 'Behavior', 'Credentials' (selected), 'Messages', and 'Import/Export'. The 'User name credentials' section contains two radio buttons: 'Do not use Single Sign-On' (selected) and 'Use Single Sign-On'. Below the first radio button are text boxes for 'User name:' and 'Password:'. Below the second radio button is a dropdown menu for 'Affiliate application:'. The 'Proxy settings' section is for use with http bindings or http/https transport binding elements. It includes an 'Address:' text box with an example 'http://host[:port]/[path]', and 'User name:' and 'Password:' text boxes. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Using context properties

- **Set properties in orchestration or pipeline components**
 - Used primarily by dynamic ports
- **Simple settings (e.g.)**
 - Action
 - ProxyToUse
 - BindingType
- **XML-based settings**
 - OutboundCustomHeaders
 - EndpointBehaviorConfiguration

Dynamic port configuration

- **HTTP transport used by multiple adapters**
 - Use Microsoft.XLANGs.BaseTypes.TransportType to differentiate
- **Setting the SOAP:Action**
 - Use the WCF.Action context property – leave Action Mapping blank
 - Set the BTS.Operation context property – define Action Mapping on port

```
DynamicSendPort(Microsoft.XLANGs.BaseTypes.Address)=  
    "http://localhost:8001/someservice";  
DynamicSendPort(Microsoft.XLANGs.BaseTypes.TransportType)=  
    "WCF-BasicHttp";  
  
MessageOut(WCF.Action) = "urn:pluralsight:service:operation";
```

Summary

- **WCF Send adapters enable consuming services from BizTalk**
- **BizTalk Consume Service Reference wizard generates artifacts**
- **Orchestration uses standard messaging to consume services**
- **Action mapping or props required to correctly send messages**
- **Adapters can use SSO or binding specific security options**