BizTalk Adapters

## Connecting to systems from BizTalk

Outline

- **Adapter fundamentals**
- **Configuring adapters**
- **Securing adapters**
- **Writing custom adapters**

Receiving Messages

- **Adapter receives raw document/data and submits message**
  - Message passes through pipeline
  - Message is processed by a matching map on the port
  - Message type is used to match source of the map
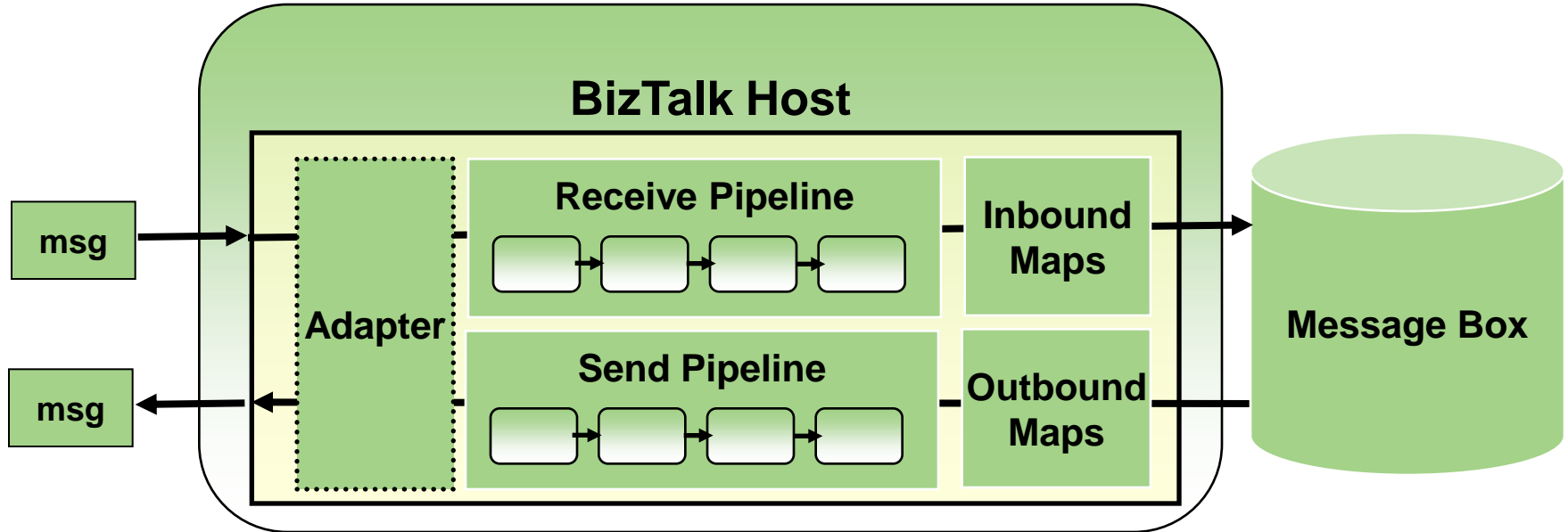

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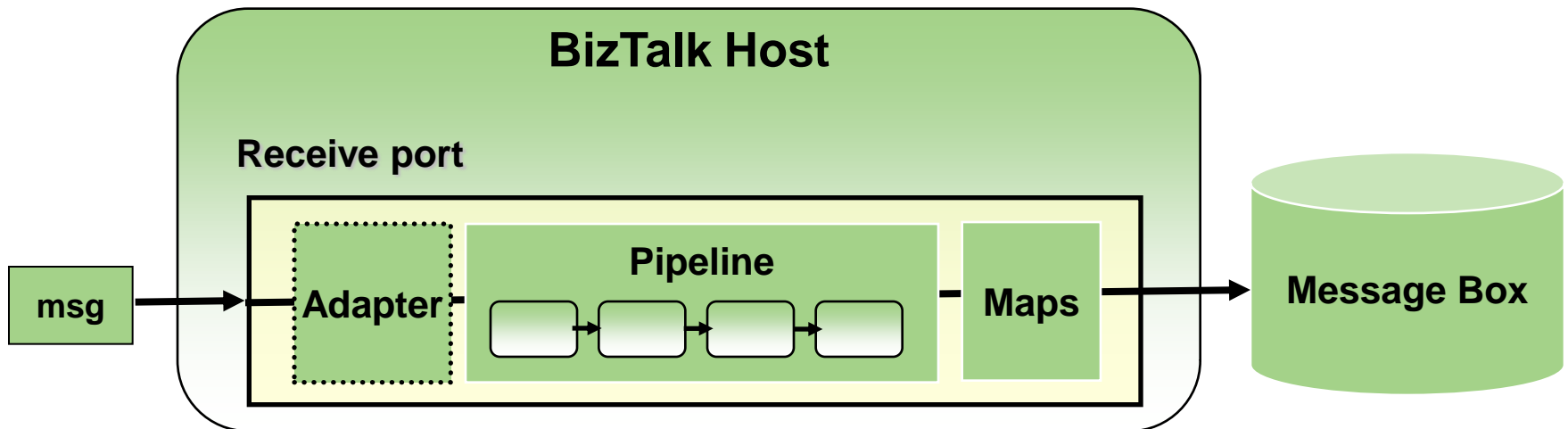
Sending Messages

- **Orchestration or messaging engine sends message**
  - Matching map applied to the data
  - Pipeline executed on the message
  - Adapter given message to transmit
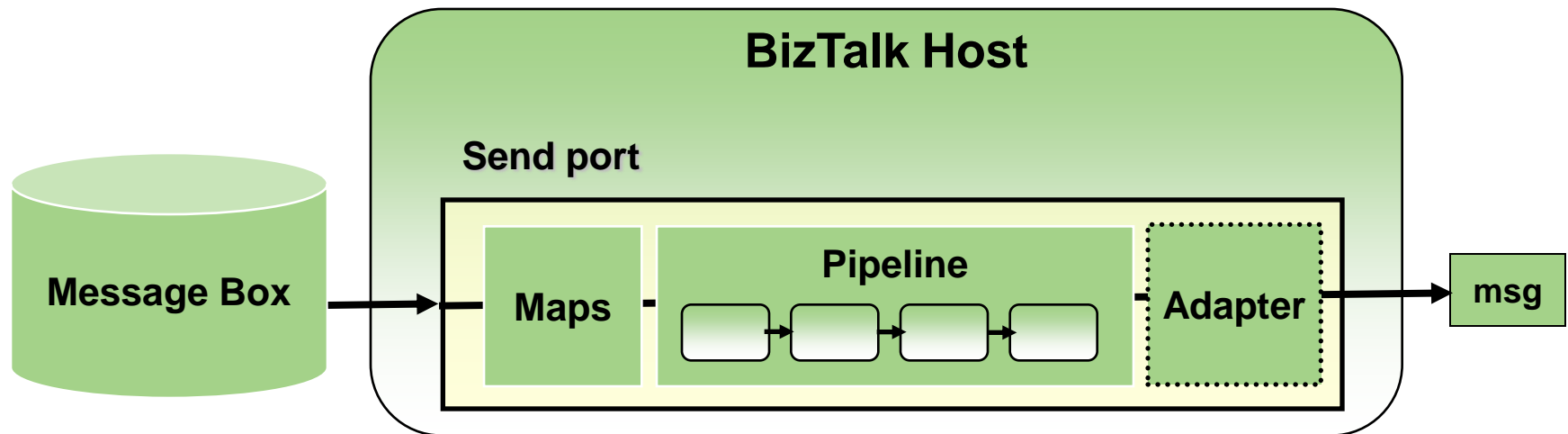
Two-way ports

- **Receive = Request / Response**
- **Send = Solicit / Response**

Static vs. dynamic ports

- **Adapter details can be specified statically or dynamically**
    - Determined by how you configure the port
- **Static ports**
    - Adapter is chosen and specified in the port configuration
    - Transport/address details configured on port
- **Dynamic ports**
    - Address carried in message context determines adapter
    - Transport can be configured via various message properties

Adapters included with BizTalk

- **Adapters can be categorized based on their communication**
  - *Transport adapters* focus on a network API
  - *Application adapters* focus on connecting to an application

▪ File	▪ JD Edwards One World	▪ DB2
▪ MSMQ	▪ JD Edwards Enterprise One	▪ CICS
▪ FTP	▪ Oracle E Business Suite	▪ IMS
▪ SMTP	▪ Oracle Database	▪ RPG
▪ HTTP	▪ Peoplesoft	▪ VSAM
▪ SOAP	▪ Siebel eBusiness Applications	▪ Other host files
▪ WCF (7)	▪ Tibco Messaging	
▪ POP3	▪ Tibco Rendezvous	
▪ WSS	▪ MySAP	
▪ Websphere MQ		
▪ SQL		

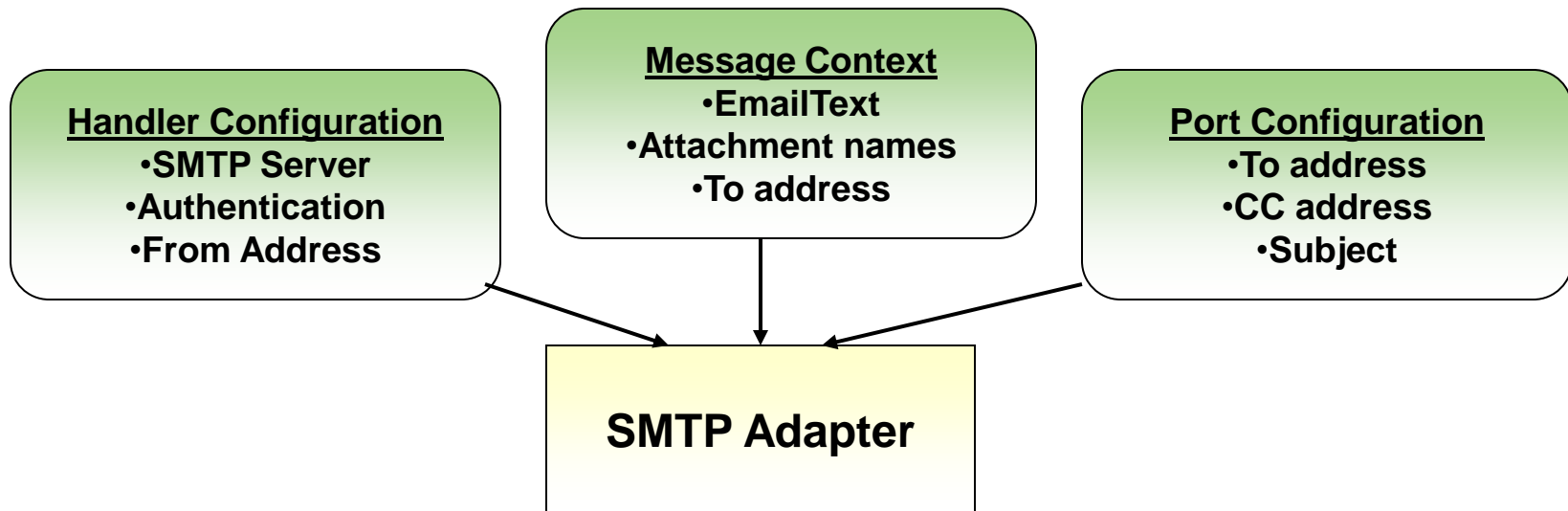*See http://www.microsoft.com/biztalk/en/us/adapters-included.aspx for current list*

Adapter hosting

- **Adapters are hosted in a process**
  - The can be hosted in-process or in an external process (IIS)
- *Adapter handlers* **tie adapters to hosts**
  - Adapters can have multiple handlers
  - Send handlers distinguished from receive handlers

Configuring adapters

- **Adapter configuration is defined at three levels**
  - Handler – information relevant to all instances in that host
  - Port – information relevant to the individual port
  - Dynamic – message context properties
- **Adapter receives all configuration information**

Handler Configuration
- •SMTP Server
- •Authentication
- •From Address

Message Context
- •EmailText
- •Attachment names
- •To address

Port Configuration
- •To address
- •CC address
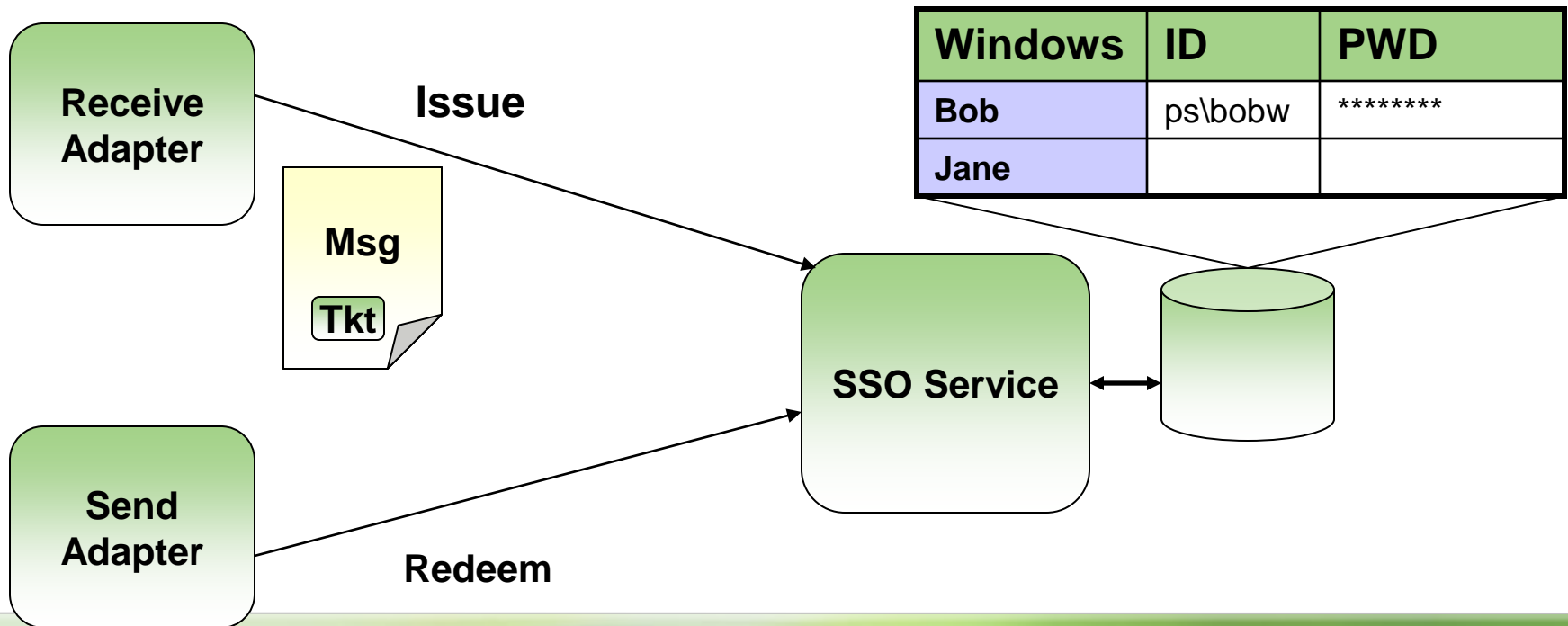- •Subject

SMTP Adapter

Generating items

- **Some adapters require metadata to use various features**
  - Adapters can support generating artifacts
  - Accessed using the *Add Generated Items* wizard in VS.NET
  - Most common with application adapters
- **Other generated items available**
  - Consuming WCF Services
  - Consuming WCF LOB Adapter SDK adapters

Securing adapters

- **Adapters become a security barrier for BizTalk Server**
  - Receive and send require different security considerations
- **Receiving**
  - Authentication for message submission
  - Party resolution
  - Data security (signing and encryption)
- **Sending**
  - Authentication to external systems
  - Identity of caller
  - Data security

Adapter security with SSO

- **Use *SSO* to authenticate to external system as interactive user**
  - User's Windows credentials collected when message submitted
  - SSO Ticket created and added to the message context
  - Send port redeems ticket to get credentials for the application

Windows	ID	PWD
Bob	ps\bobw	********
Jane		

Receive Adapter

Issue

Msg

Tkt

Send Adapter

Redeem

SSO Service

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Custom adapters

- *Adapter framework* **can be used to build custom adapters**
    - Connect to internal LOB applications
    - Provide support for custom transport
    - Add or change features in a current adapter
- **New WCF LOB adapter SDK to simplify adapter development**
    - Simplified API for connection management/pooling
    - Optionally support metadata browsing
    - Built on the WCF channel model (future direction for messaging at MS)
    - Adapters can be used from any WCF capable client

Custom adapters with adapter framework

- **Design time component**
  - Create XSD for handler and port configuration
  - Create WSDL or dynamic UI to support adding generated items
- **Run time component**
  - Create send adapter
  - Create receive adapter
- **Deployment**
  - Deploy assemblies
  - Update registry with metadata
  - Add adapter to BizTalk Server Administration console
  - Configure handler properties

Custom adapters with WCF LOB SDK

- **Design time component**
  - Implement metadata browsing and/or searching
  - Metadata is exposed via interfaces and objects (XSD is handled for you)
- **Run time component**
  - Implement appropriate inbound and outbound handlers
  - Manage connections / pool
- **Deployment**
  - Deploy assemblies
  - Update machine.config with binding extension
  - Use WCF-Custom adapter to consume using the custom binding

Summary

- **Adapters deal with receiving and transmitting messages**
- **Artifacts can be generated for messages and ports**
- **Common transport adapters provide a broad range of options**