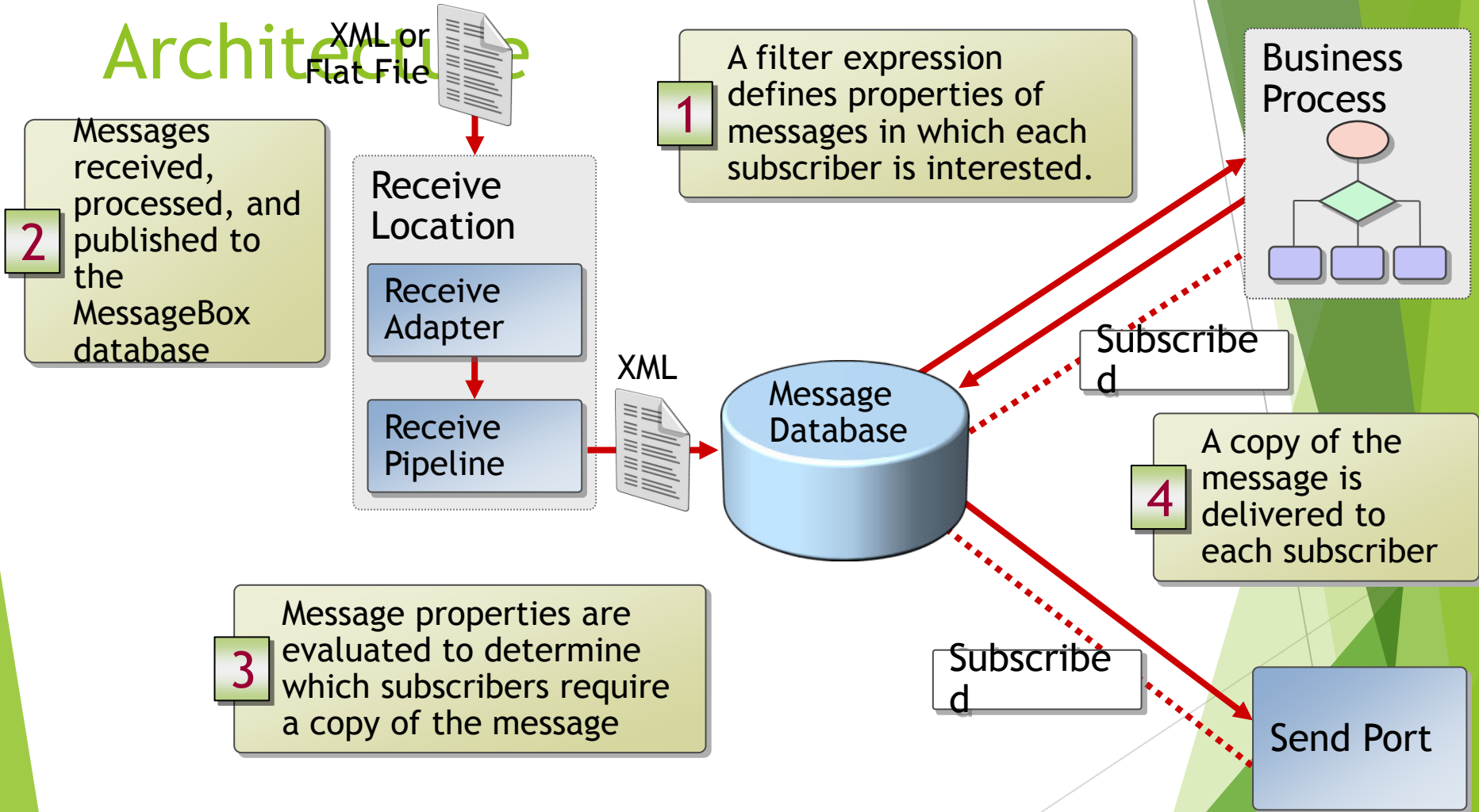


BizTalk Server 2013

: Routing BizTalk Messages

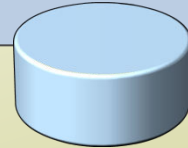
The Publish and Subscribe Architecture



What Is the MessageBox Database?

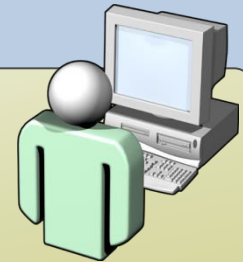
MessageBox Database

- Stores subscription information
- Delivers messages to subscribers
- Stores the queues and state tables for each BizTalk host
- Stores messages and message properties

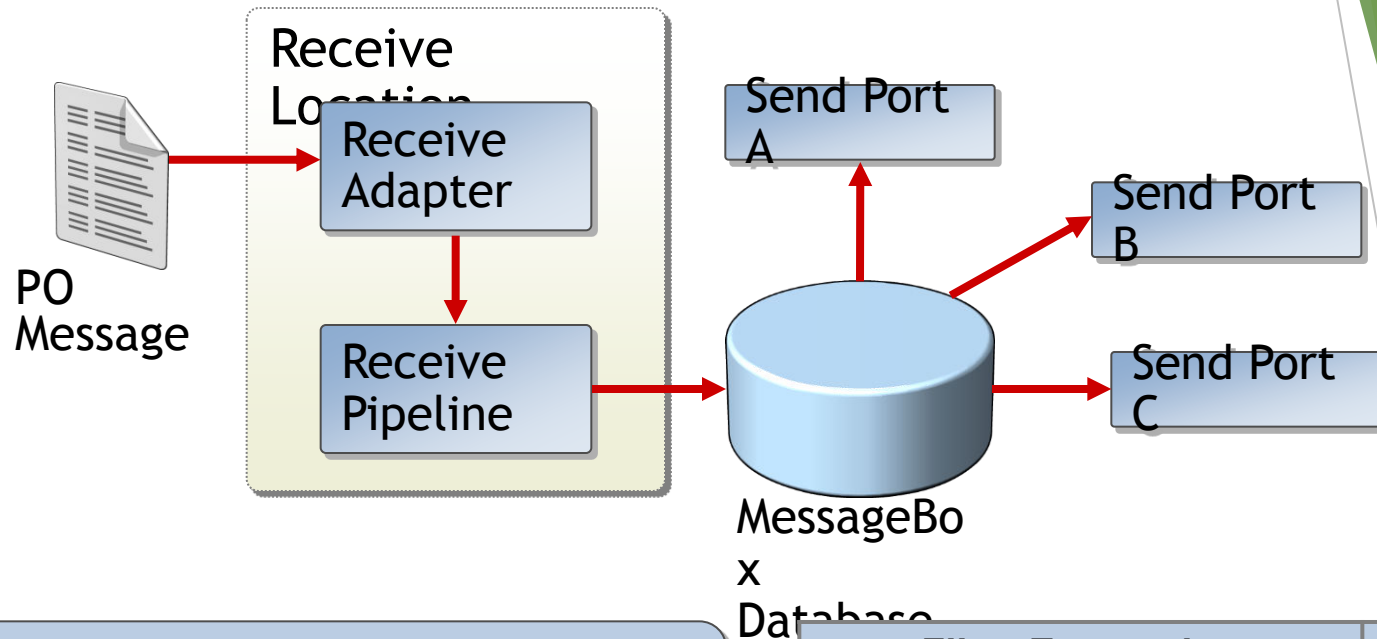


Administration Tasks

- Adding a new MessageBox database
- Disabling new message publication
- Deleting a MessageBox from a BizTalk group



What Is Message Routing?



Message Routing

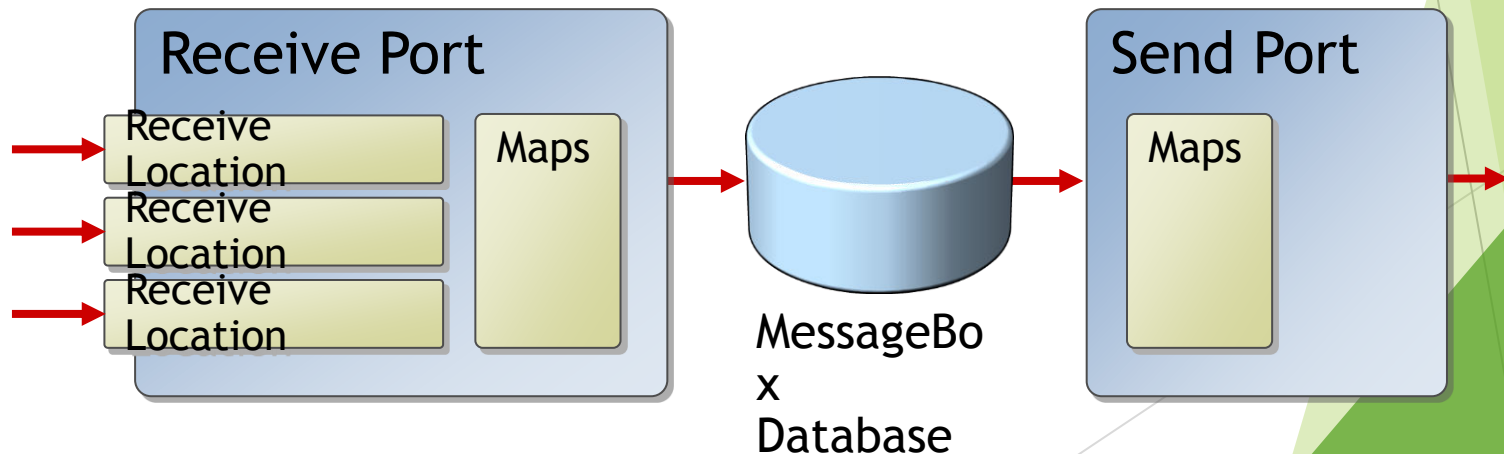
- Routes directly to a port
- Based on a filter expression
- Configured on the send port

Filter Expression	Port
If CustomerName = Contoso	A
If Price > 1000	B
If Qty > 500 and Price < 1000	C

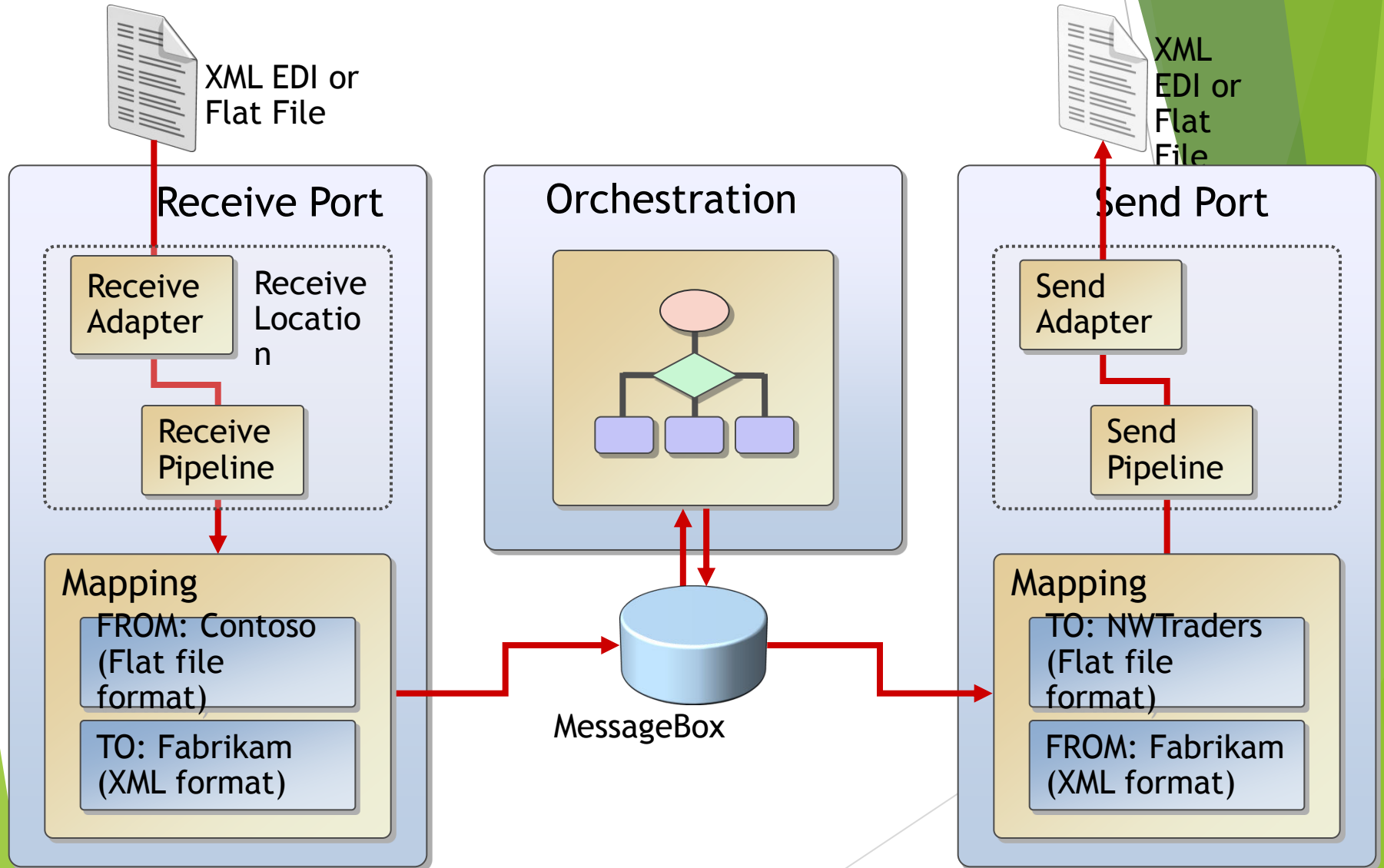
What Is a Port?

Ports specify:

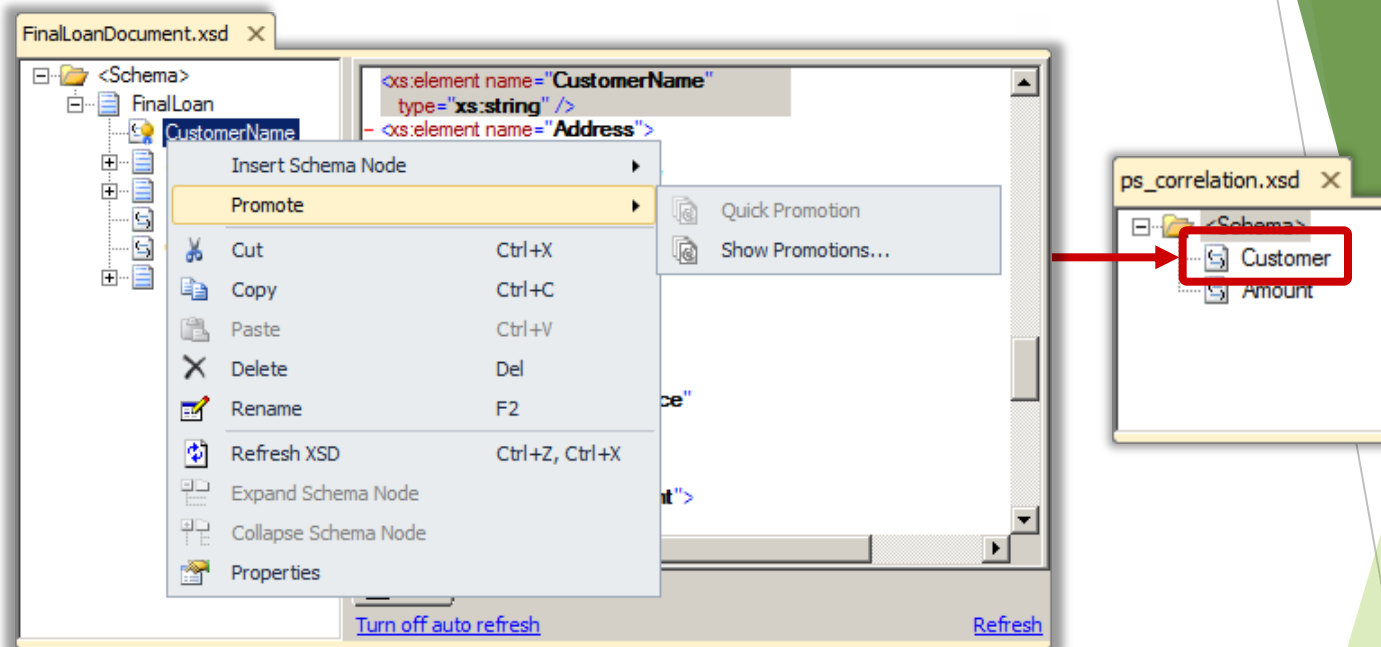
- How messages are sent and received by BizTalk
- The communication direction and communication pattern
- The location where messages are received or sent



BizTalk Message Flow



What Is Property Promotion?



Property promotion

- Fields that you choose to promote within a message instance
- Makes the data in the field accessible to BizTalk services
- Quick promotion automatically creates a property schema

Configuring Message Routing

- ▶ Steps for Enabling Message Routing
- ▶ Configuring a Receive Port and Receive Location
- ▶ Demonstration: Configuring a Receive Port and a File Receive Location
- ▶ Creating and Configuring a Send Port
- ▶ Configuring Send Port Filters
- ▶ Using a Send Port Group
- ▶ Enlisting and Starting a Send Port
- ▶ Demonstration: Configuring a Send Port and Send Port Group

Steps for Enabling Message Routing

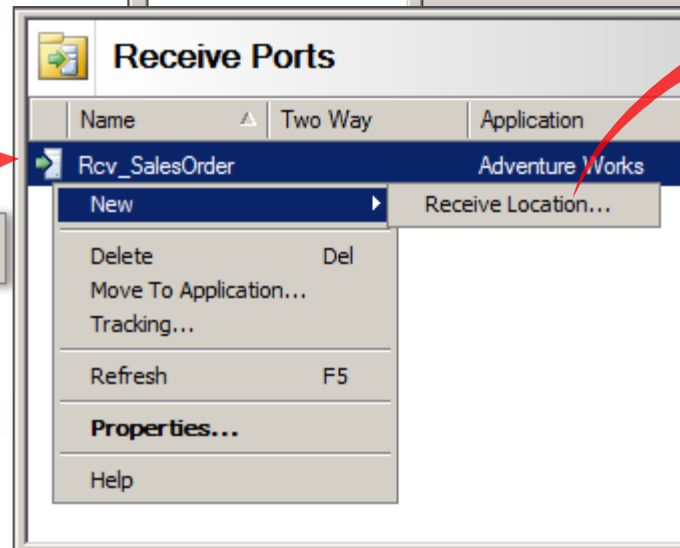
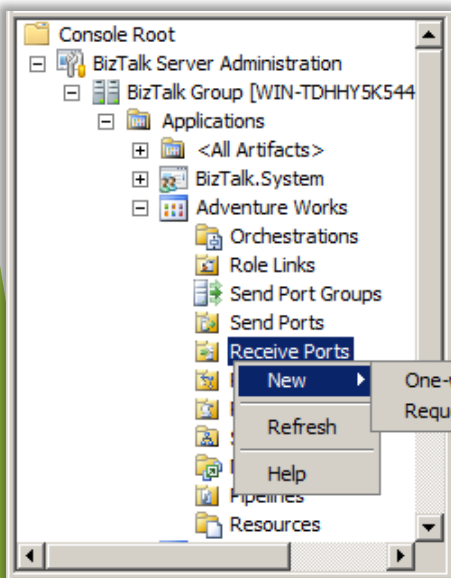
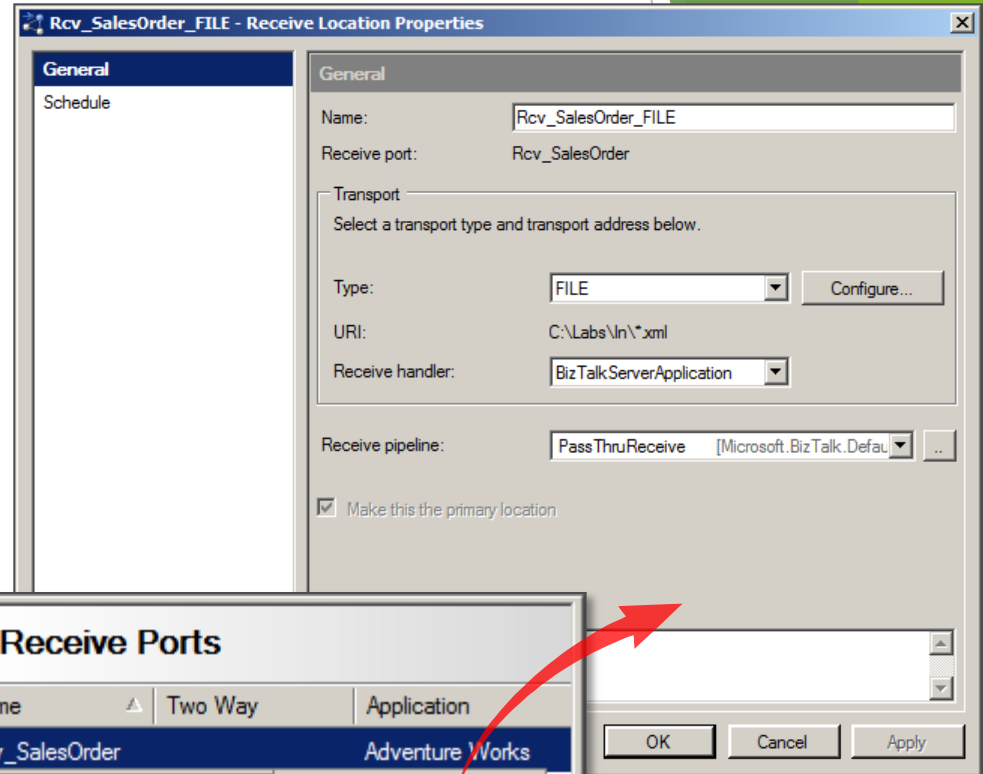
Steps:

- 1 Promote fields to be filtered
- 2 Create receive port and receive location
- 3 Create send ports or send port groups
- 4 Create and configure send port filters
- 5 Start and enable the newly created ports

Configuring a Receive Port and Receive Location

Receive location properties:

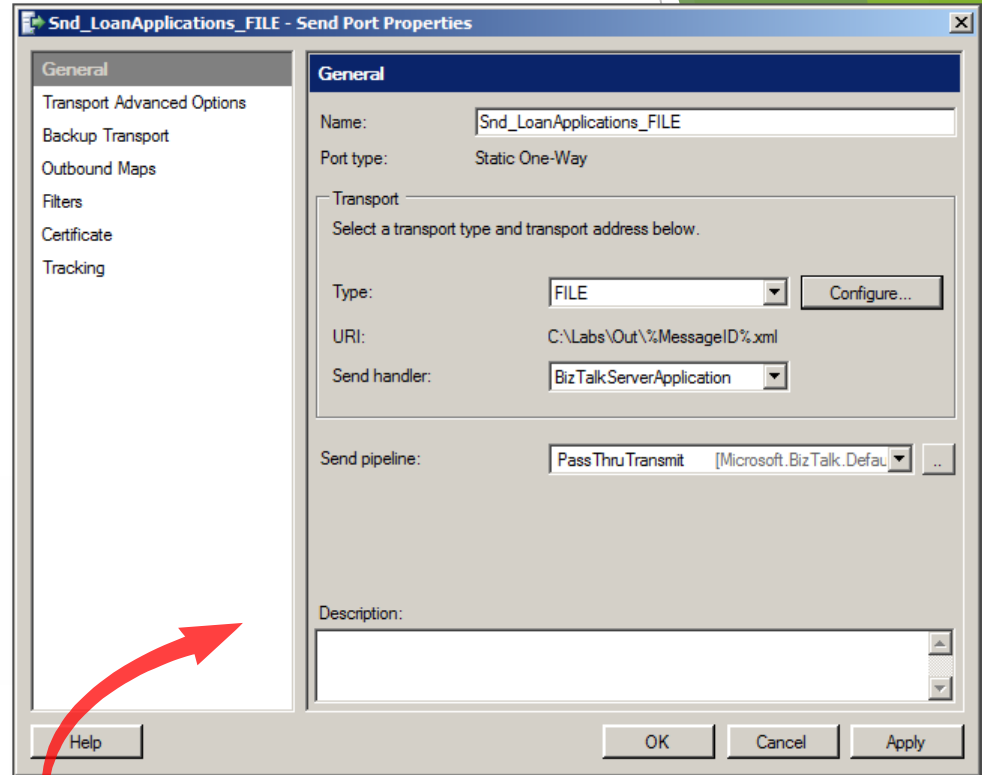
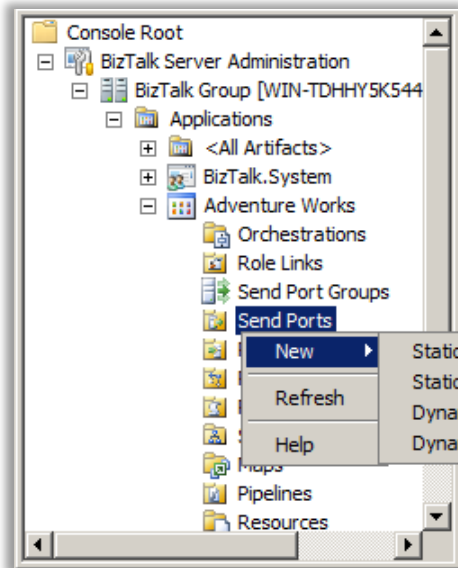
- Receive handler (host)
- Enabled or disabled
- Start/stop receiving (date)
- Operating window (time period)



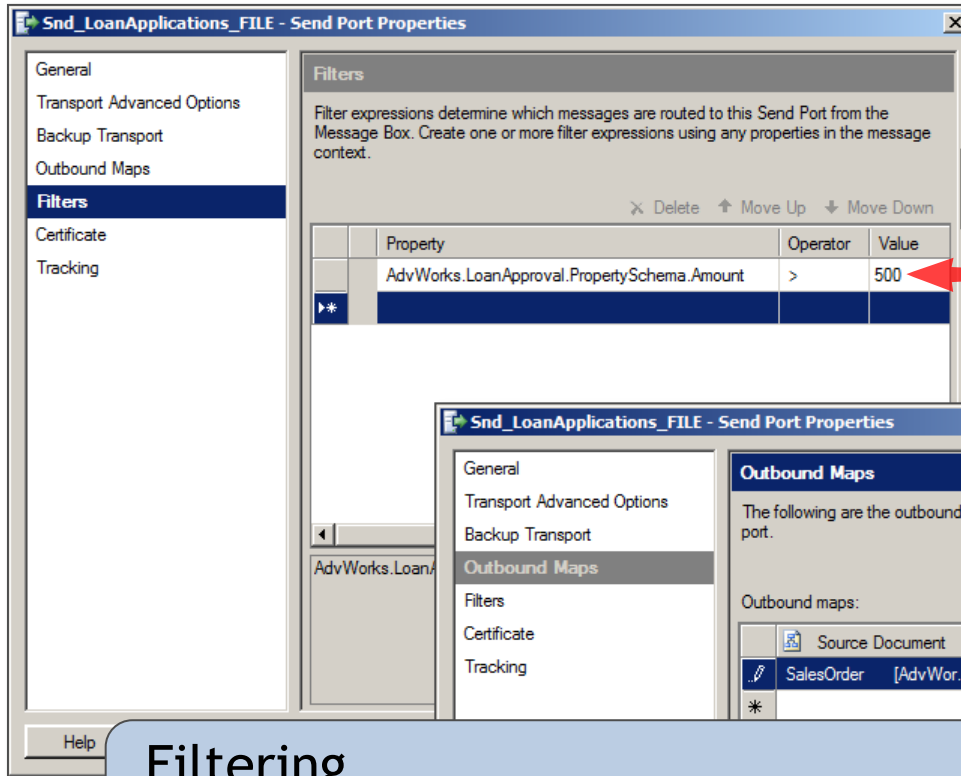
Creating and Configuring a Send Port

Send port properties:

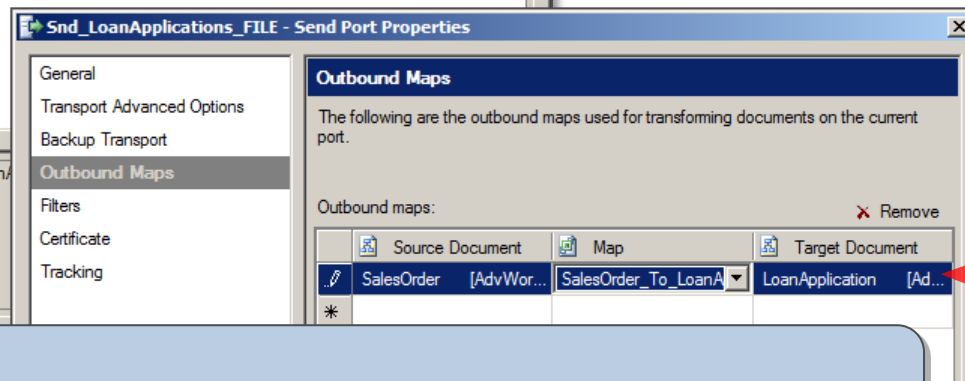
- Send port name
- Primary and secondary transport
- Address (URI)
- Retry count
- Service window enabled/disabled



Configuring Send Port Filters



1 Create filter expression



2 Specify map

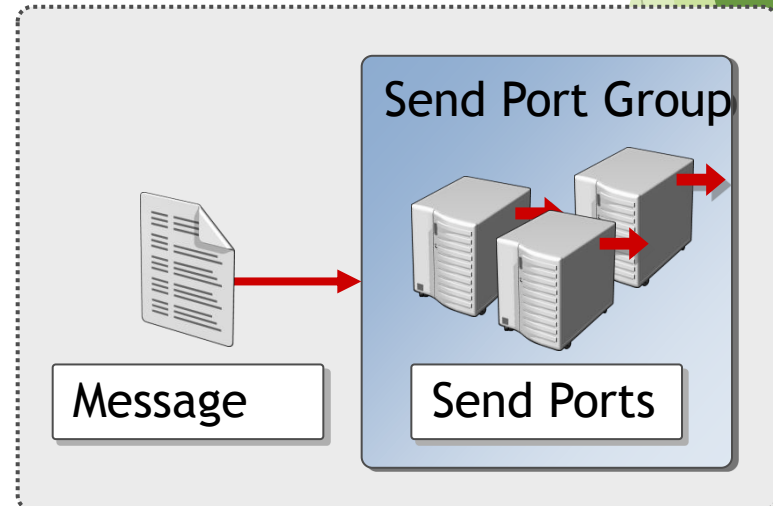
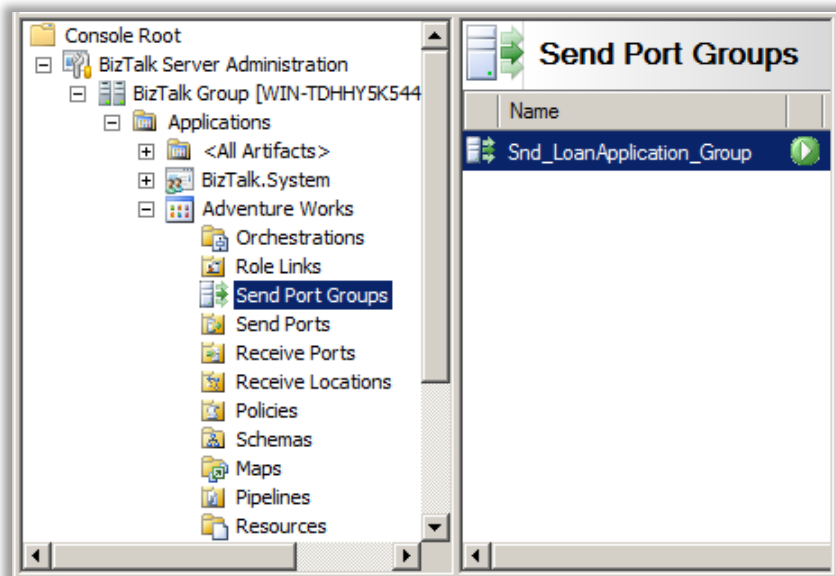
Filtering

- Filter messages based on an expression
- Route to a send port
- Example: If the Amount is greater than or equal to \$500, forward the message to a folder for approval
- Use to subscribe to failed messages

Using a Send Port Group

Send port group:

- A named collection of send ports
- Used to send the same message to multiple destinations
- Can be used to route based on message content by using a filter expression



Enlisting and Starting a Send Port

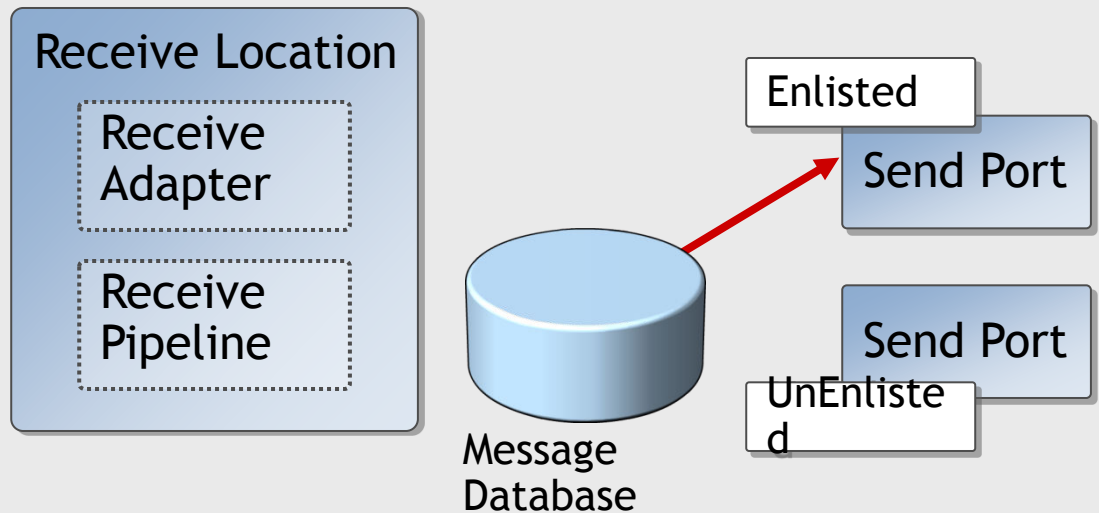
Enlistment:

- Port state determines if messages are to be routed
- Use BizTalk Explorer or BizTalk Administrator Console to change state
- Enlisting creates a subscription in the MessageBox database
- Starting implies enlistment and begins the processing of messages

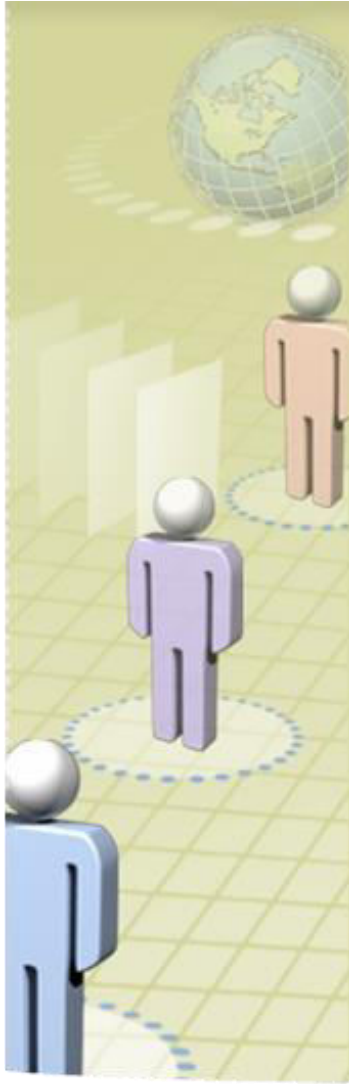
Port states:

- Bound - no subscription (default)
- Stopped - subscribed and not receiving messages
- Started - subscribed and receiving messages

Enlisting and Starting



Demonstration: Configuring a Send Port and a Send Port Group



In this demonstration, you will see how to:

- ▶ Create a send port
- ▶ Configure a send port
- ▶ Create a send port filter
- ▶ Create a send port group
- ▶ Change the state of a send port

Lesson 3: Monitoring Orchestrations and Messages

- ▶ What Is the BizTalk Group Hub Page?
- ▶ Running a Query in the Group Hub
- ▶ Identifying Events and Data that Can Be Tracked
- ▶ Viewing and Tracking Message Activity
- ▶ Demonstration: Tracking and Viewing Message Activity

What Is the BizTalk Group Hub Page?

The screenshot displays the BizTalk Server Administration Console interface. The main window is titled "Group Overview" and shows the configuration and status of a BizTalk Group. The left-hand navigation pane shows the "Console Root" with a tree view of the BizTalk Server Administration structure, including "BizTalk Group [WIN-TDHHY5K541]".

The main content area is divided into several sections:

- Configuration Overview:** Displays the Group name, Server, and Database. It includes links for "Applications", "Host Instances", and "Adapter Handlers".
- Work in Progress:** A table showing the status of service instances, including links for "Running service instances", "Dehydrated orchestrations", "Retrying and idle ports", "Ready service instances", and "Scheduled service instances".
- Suspended Items:** A table showing the status of suspended service instances, including links for "Suspended service instances", "Resumable", and "Non-resumable".
- Grouped Suspended Service Instances:** Two tables showing instances grouped by Application and Service Name, both displaying "No information has been coll...".
- Tracked Service Instances:** A table showing instances tracked by error code, including links for "Completed instances" and "Terminated instances".
- Tracked Message Events:** A table showing message events tracked by URI, including a link for "Transmission failure events".

The right-hand side of the console shows an "Actions" pane with a dropdown menu for "BizTalk Gro..." and "Selected IT...".

Group Hub

- Configuration overview
- Work in progress
- Suspended items
- Grouped suspended service instances

Running a Query in the Group Hub

The screenshot shows the BizTalk Server Administration Console. The left pane displays a tree view of the console structure, including BizTalk Server Administration, BizTalk Group [WIN-TDHHYS], Applications, and various artifacts like Orchestrations, Role Links, and Send Ports. The main pane is titled 'Group Overview' and shows a 'Query Expression' table with the following data:

Field Name	Operator	Value
Search For	Equals	All In-Progress Service Instances
Maximum Matches	Equals	50
*		

Below the query expression, there are buttons for 'Run Query', 'Save As...', and 'Open Query...'. The 'Query results (one item was found):' section shows a table with the following data:

Service Name	Application	Service Class	Status
Snd_LoanApplications_FILE	Adventure Works	Messaging	Suspended (resumable)

Query results

- View instance details
- Show message details
- View instance subscriptions
- Terminate and suspend instances

The screenshot shows the 'Message Details - Message ID: 1782748d-b643-4594-8cb6-4bb9d6578dd9' window. The 'General' tab is selected, showing the 'Context' section with the following data:

Name	Value
FileCreationTime	10/12/2010 10:03:47 PM
ReceivedFileName	C:\Labs\In\SalesOrder1.xml
PartNames	System.String[]
ActivityIdentity	{633044E3-EA4E-4825-9725-EE...}
AdapterReceiveCompleteTime	10/12/2010 10:03:47 PM
PortName	Rcv_SalesOrder

The 'Description' section contains the following text:

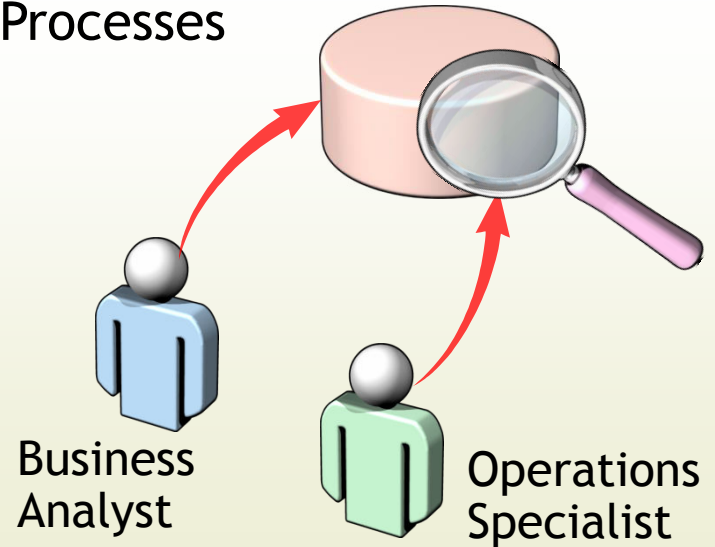
"FileCreationTime" contains creation time for the file from where the message has been read. This property is set by FILE adapter right after message has been read from the file and the file has been deleted.

Message Tracking

Capabilities:

- View processing steps and history
- Retrieve by data or system properties
- Monitor and track in real time
- Track archived data
- Limit access by using permissions
- Modify tracking properties without redeployment
- Debug orchestrations

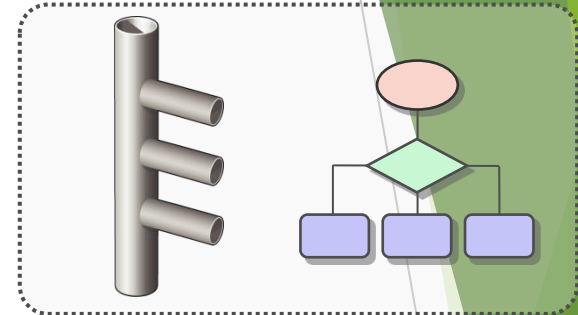
Track Business Processes



Identifying Types of Events and Data that Can Be Tracked

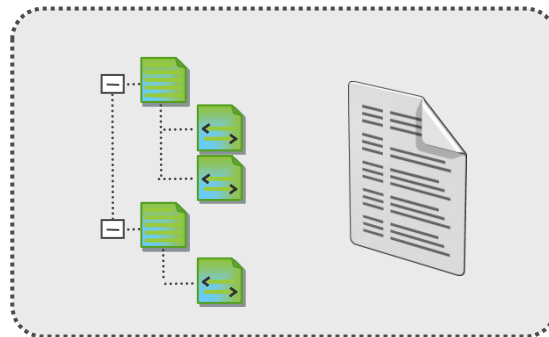
Event Tracking

- Start and end of a service
- Sending or receiving of a message
- Start and end of a pipeline
- Start and end of an orchestration
- Execution of each orchestration shape



Data Messaging contents

- Promoted properties
- Routing information
- Partner data
- Schema information
- Strong name used



Viewing and Tracking Message Activity

View Message Activity

- List and run queries
- Search a schema for promoted properties
- Debug orchestrations

The screenshot displays the 'Message Flow' application interface. The top section shows details for a service instance named 'Microsoft.BizTalk.DefaultPipelines.PassThruTransmit'. Below this, a table titled 'Message Activity for the Service Instance' lists two message instances, both of which are 'Serialized Interchange' and have a status of 'OK'. The first message instance is timestamped at 10/12/2010 6:11:54 PM, and the second is at 10/12/2010 6:11:55 PM. Each message instance entry includes a list of properties: Message ID, Size (1491), Parts (1), Adapter (FILE), URL (C:\Labs\Out\%MessageID%.xml), and Port (Snd_LoanApplications_FILE).

Message Flow

File Help

Message Flow

Service Name: Microsoft.BizTalk.DefaultPipelines.PassThruTransmit

Activity ID: {32887c61-5ce9-4b92-b0ba-f14f9583e71e}
Instance ID: {dc467ba5-1ab7-46cf-b2ee-3de498b92af5}
Host: BizTalkServerApplication
Type: Pipeline
Version ID: {a4e8afc9-5374-4068-9337-31995977480}
Deployment Time: 9/8/2010 1:26:53 PM
State: Completed
Start Time: 10/12/2010 6:11:54 PM
End Time: 10/12/2010 6:11:55 PM
Duration: 00:00:00.2000000
Exit Code: 0x0
Error Info:
Exceptions:

Message Activity for the Service Instance

In/Out	Message Instance	Status	Timestamp
	Serialized Interchange	OK	10/12/2010 6:11:54 PM
	Message ID {1782748d-b643-4594-8cb6-4bb9d6578dd9} Size 1491 Parts 1 Adapter FILE URL C:\Labs\Out\%MessageID%.xml Port Snd_LoanApplications_FILE		
	Microsoft.BizTalk.DefaultPipelines.PassThruReceive		
	Serialized Interchange	OK	10/12/2010 6:11:55 PM
	Message ID {31437964-b276-449e-b582-84c18266b46b} Size 1491 Parts 1 Adapter FILE URL C:\Labs\Out\%MessageID%.xml Port Snd_LoanApplications_FILE		

Routing BizTalk Messages

Lesson 1: Introduction to Business Activity Monitoring

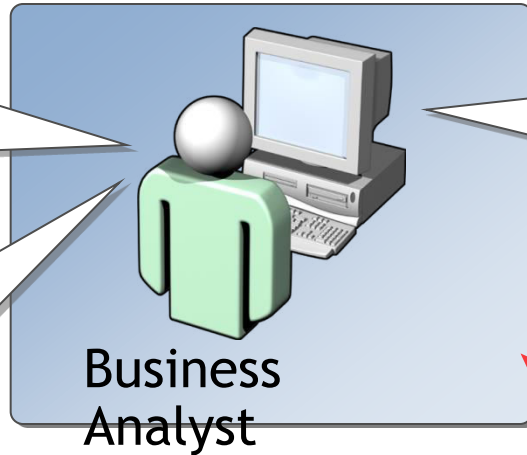
- ▶ Gaining Visibility into Business Processes
- ▶ What Is Business Activity Monitoring (BAM)?
- ▶ Business Activity Monitoring Components

Gaining Visibility into Business Processes

How many orders processed were over \$10,000?

What is the order trend for product XYZ over the past 24 hours?

What is the average cycle duration per order?

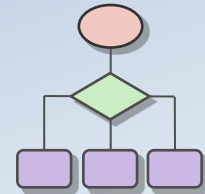
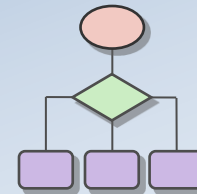
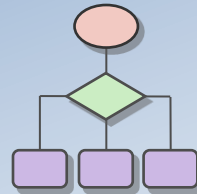
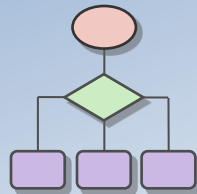
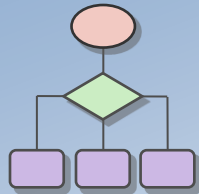


Order Process Milestones

Received Order

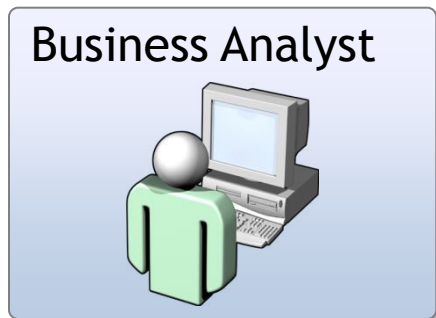
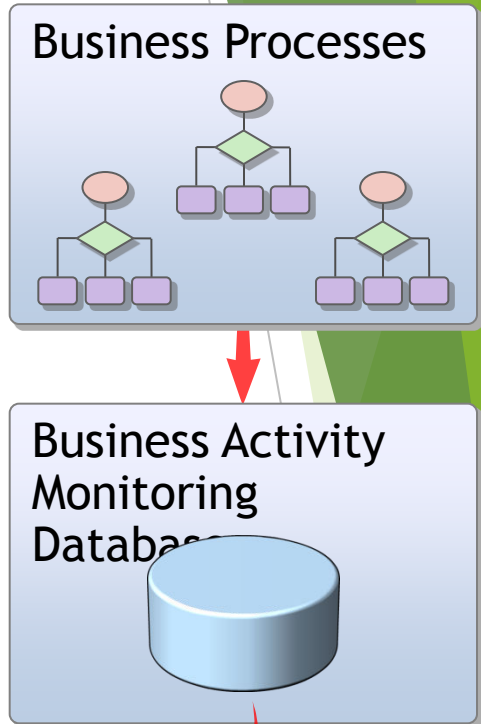
Cancelled Order

Delivered Order



BAM allows users to:

- View aggregate data related to thousands of instances of a business process
- View a single instance of a business activity
- Browse to related instances of business activities
- Search for instances of a specific business activity
- Browse aggregations by using key performance indicators (KPIs)
- Filter activities at a given stage of completion
- Define charts, reports, KPIs, and alerts



Business Activity Monitoring

C

BAM Components

- Primary Import database
- BAM activity aggregations and OLAP cubes
- Real-Time Aggregations
- BAM Interceptors
- Tracking Profile Editor

Lesson 2: Enabling Business Activity Monitoring

- ▶ Enabling Business Activity Monitoring (Analyst)
- ▶ Enabling Business Activity Monitoring (Administrator)
- ▶ Enabling Business Activity Monitoring (Developer)
- ▶ What Is the BAM Portal?
- ▶ Demonstration: Monitoring Business Activity

Analyst defines:

- Events and data to be tracked
- Logical groupings and aggregations of tracked data views

Use BAM Activity Wizard to

- Activities
 - Milestones
 - Data points
- Views
 - Durations
 - Dimensions
 - Measures

Select the base data item and add or remove the available ranges.

Dimension name:
Debt Ratio Range

Dimension type:
Numeric Range Dimension

Base data item:
Debt Ratio (Loan Processing)

Available ranges:

Name	From(Incl.)	To(Excl.)
Low	0	28
Medium	28	37
High	37	40

New Range...
Edit...
Delete...

Help OK Cancel

Enabling Business Activity Monitoring (Administrator)

Administrator:

- Deploy the BAM definition to create the BAM database structure

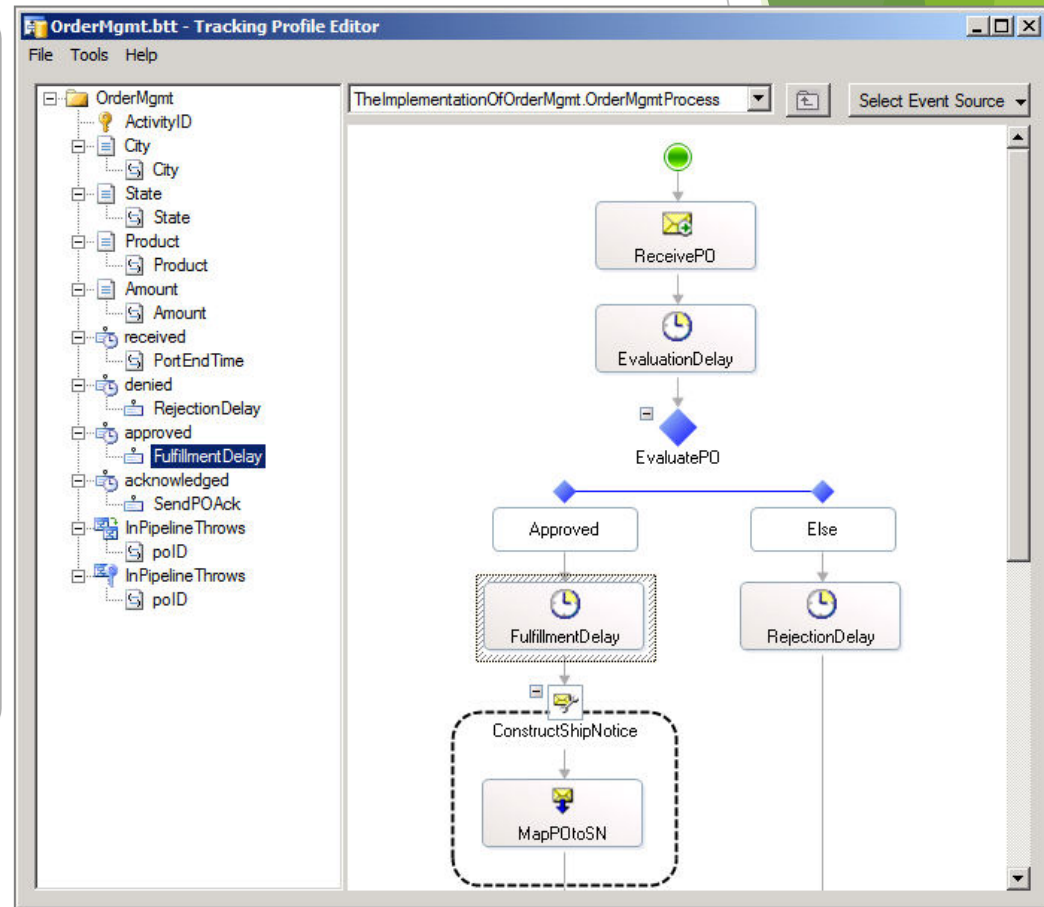
```
C:\> BM deploy-all -DefinitionFile:OrderManagement.xml
```

Tracking Profile:

- Has characteristics that define a business-related process
- Contains a mapping between an orchestration and activity definition

Use Tracking Profile Editor to:

- Create and modify tracking profiles
- Select orchestration shapes
- Select schema elements
- Link multiple activities together
- Modify existing tracking profiles as long as the activity has not changed



What is the BAM Portal?

Business Activity Monitoring

Business Activity Monitoring

Activity Search: OrderMgmt

Help

My Views

- SalesManager
 - Activity Search
 - OrderMgmt**
 - Aggregations
 - Order Progress

Browse... Open Query Save Query Set Alert Execute Query

Query

Column Chooser

Results

Rows per page: 20

City ▲	OrderProgress	Amount	Product	State
Bellevue	DeliveredAck	4094.04	Flash MC	WA
Bellevue	DeliveredAck	1346.38	Infrared Decoder	WA
Bellevue	DeliveredAck			
LosAngeles	DeliveredAck			
LosAngeles	DeliveredAck			
LosAngeles	DeliveredAck			
Redmond	DeliveredAck			
SanJose	DeliveredAck			
Seattle	DeliveredAck			

Activity Status

Milestones

received: 11/17/2010 4:26:30 PM

approved: 11/17/2010 4:27:25 PM

acknowledged: 11/17/2010 4:27:25 PM

denied:

Data

ActivityID: 198d832c-a564-4aa4-af56-5752f491f591

Amount: 3779.79

City: LosAngeles

CycleDuration (Second): 54.3599998578429

OrderProgress: DeliveredAck

Product: Firewire 6ft.

State: CA