

IBM Software

# Impact2010

Comes to You



## Managing, Deploying and Securing the Messaging Infrastructure

WebSphere MQ and File Transfer Edition

If you have any question, please contact Vietnamese team:

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What is the most important application in the world?



# Smarter Connectivity

- Point to Point
- Many to Many
- File Transfers

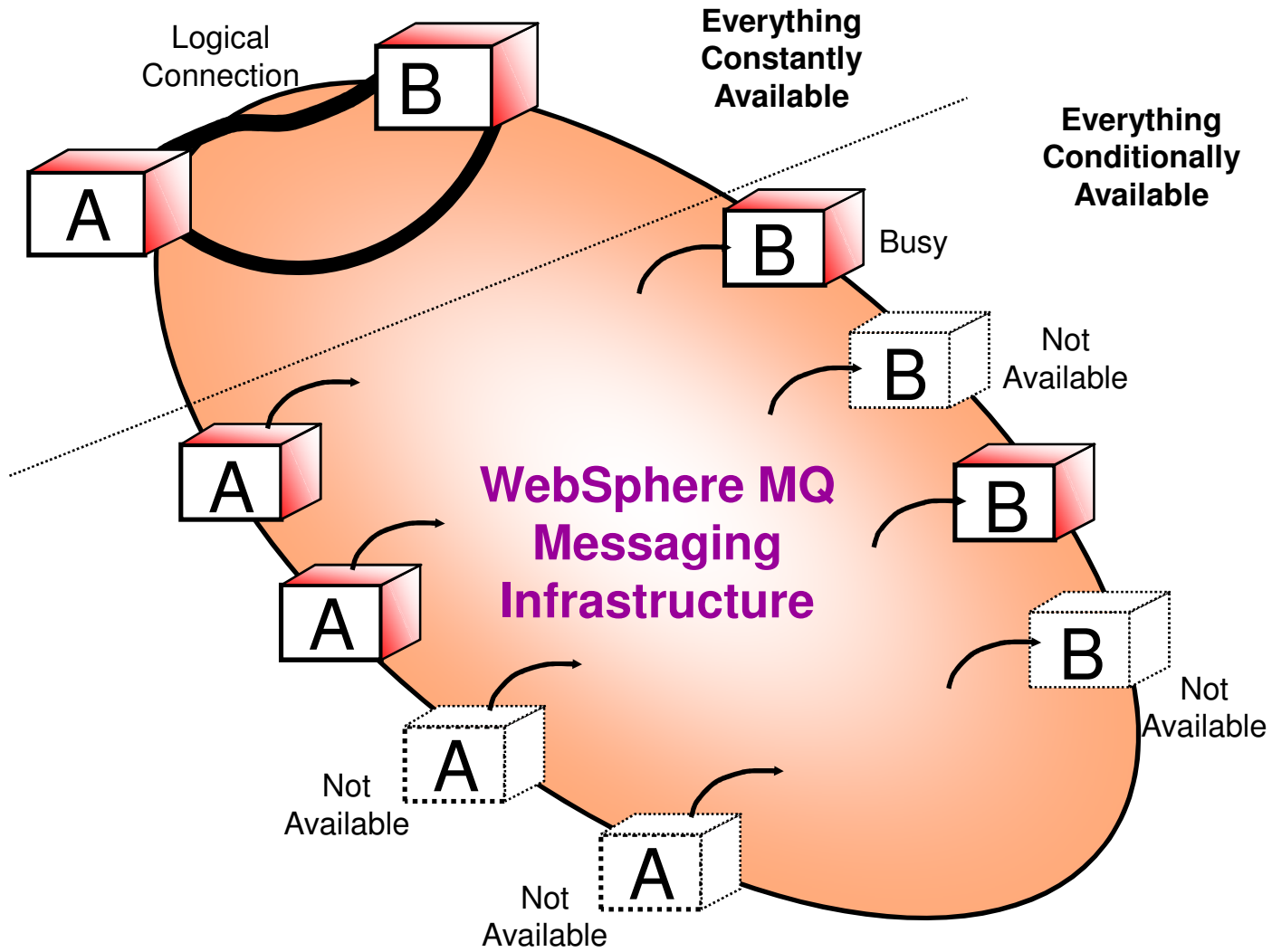


# Point-Point Application Connectivity challenges

- Availability of application
- Reliability and capacity of network
- Platform and Language compatibility
- Security

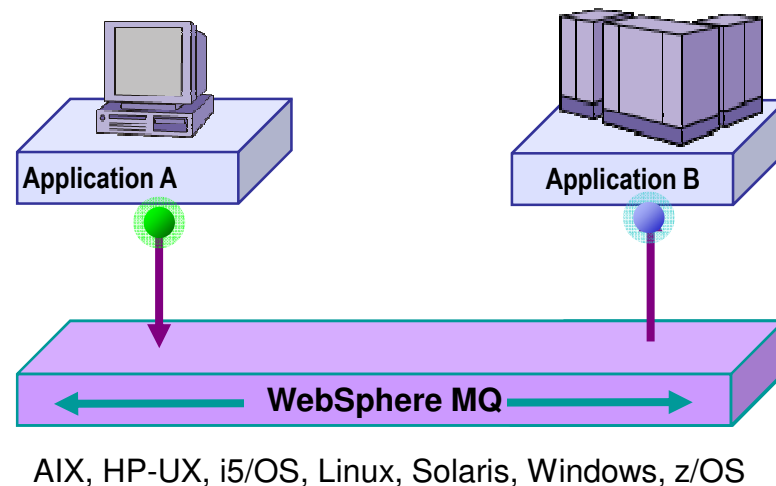


# The Value of Loose Coupling



## What does WebSphere MQ do?

- Provides **messaging services** to applications and Web services that need to exchange data and events with:
  - Proven reliability
  - Transactional integrity
  - Consistency
  - Time independence
  - Ease and Speed
  - Flexibility
  - High-performance
  - Security
  - Scalability
  - Auditability



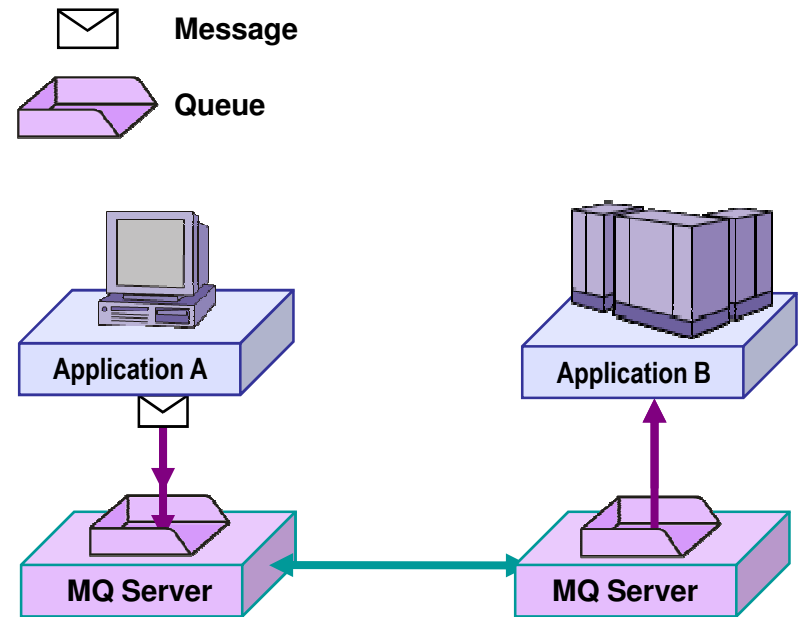
***WebSphere MQ is like email for SOA applications  
...but email that is reliable***

**Once and only once message delivery**



# How does WebSphere MQ work?

- Messaging services are based on **Queues** that store and forward data based on simple programming commands
- Uses the proven database technique of two-phase commit **transactions** to ensure messages are not lost or duplicated
- Uses **publish/subscribe** to route messages dynamically based on keywords or “topics”
- Uses multi-processor threading and **clustering** to accelerate throughput of messages



Once and only once message delivery



# Unified User Interface – WebSphere MQ Explorer

The screenshot displays the IBM WebSphere MQ Explorer interface. On the left, a tree view shows the hierarchy of queue managers and groups. The main pane shows the 'Repository data for queue manager red' with tabs for Cluster Queues, Cluster-sender Channels, and Cluster-receiver Channels. A diagram shows a cluster queue 'red' connected to a queue manager 'SASQUATCH.QM'. Below this, a table lists the cluster-sender channels.

Repository data for queue manager red

Cluster Queues Cluster-sender Channels Cluster-receiver Channels

red SASQUATCH.QM

Cluster-sender channels:  
SASQUATCH.QM - Full Repository

Xmit protocol	Cluster queue manager	Channel name	Definition type	Queue manager type
TCP	SASQUATCH.QM	TO.SASQUATCH.QM	Auto explicit cluster-sender	Repository

Scheme: Standard for Cluster Queue Managers - Distributed  
Last updated: 10:19:08





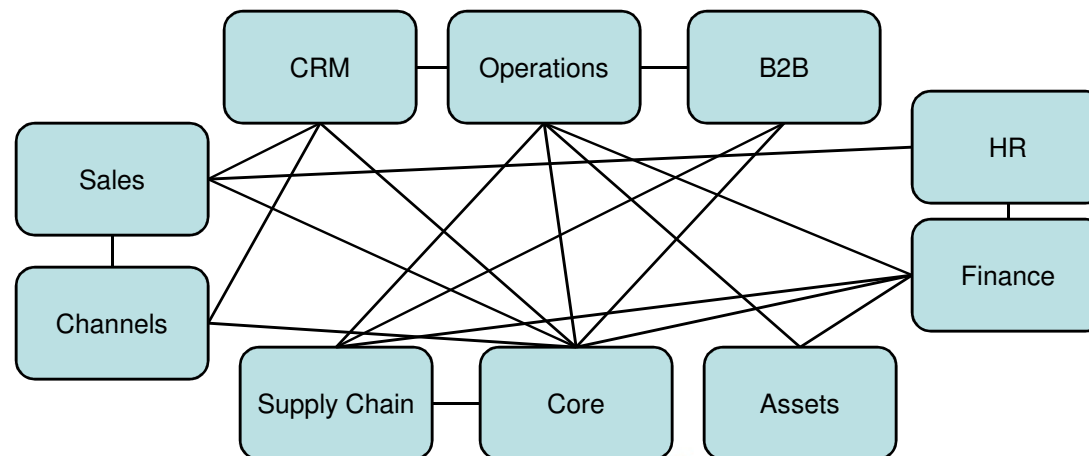
# Smarter Connectivity

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# Many-Many Application Connectivity Challenges

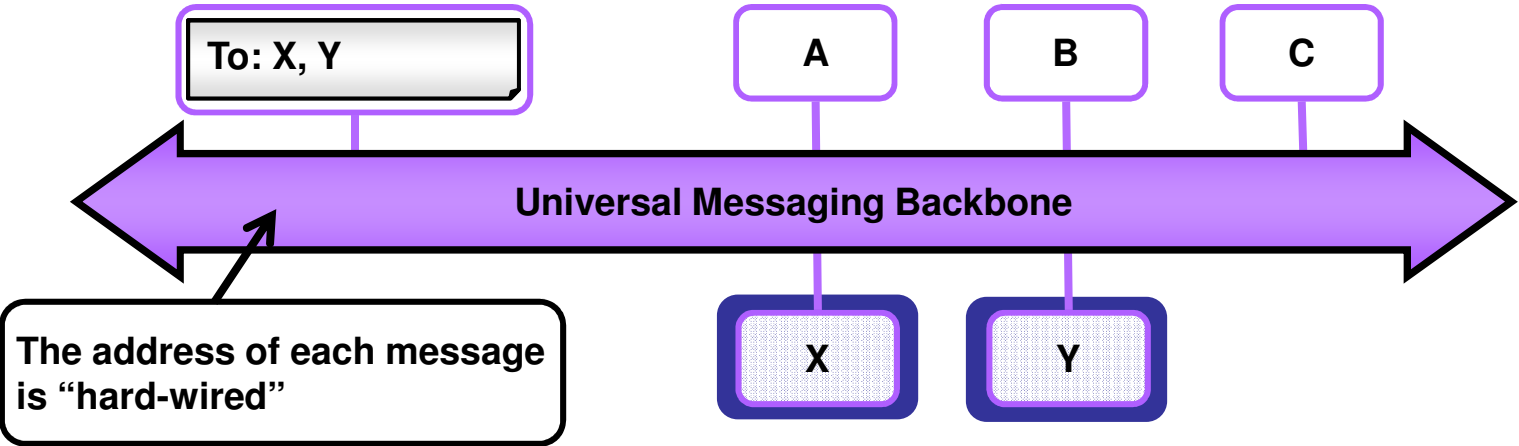
- Availability of application
- Reliability and capacity of network
- Platform and Language compatibility
- Security
- Need to know and maintain the connectivity details of corresponding applications



# Enabling Flexible Delivery on IBM's Universal Messaging Backbone

## Publish-and-Subscribe with WebSphere MQ

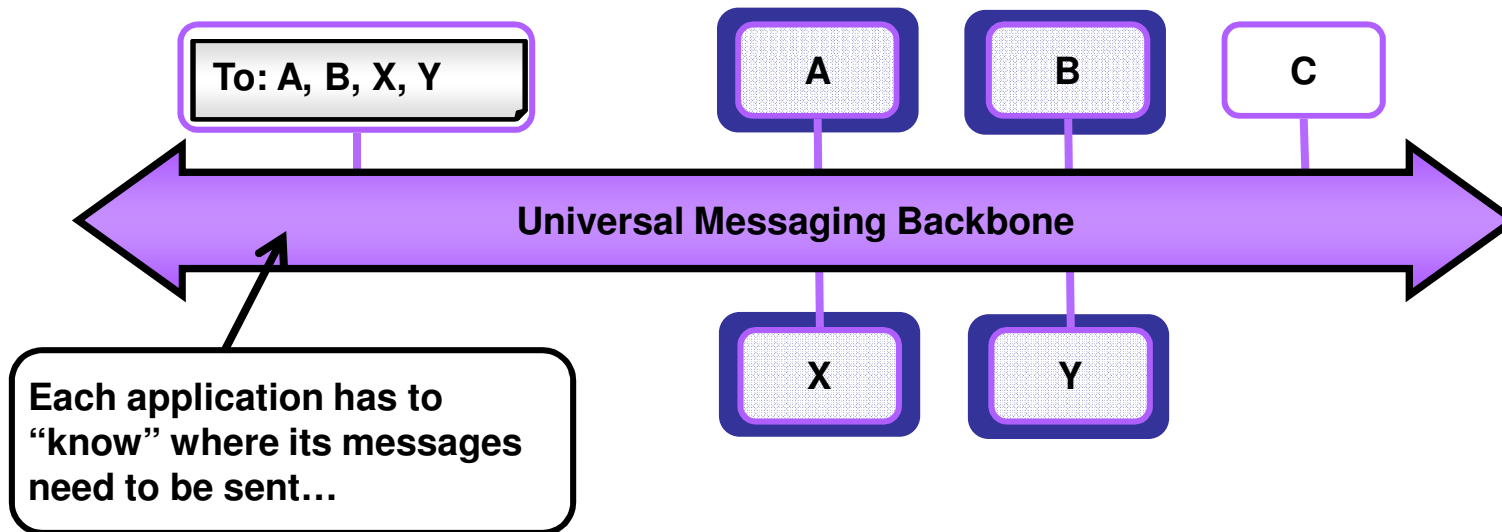
- Dynamic and flexible way of determining where messages are sent
- Helps reduce the cost, time and skills involved when changes are required
- Helps define new paths of information flow in an ad hoc manner



# Enabling Flexible Delivery on IBM's Universal Messaging Backbone

## Publish-and-Subscribe with WebSphere MQ

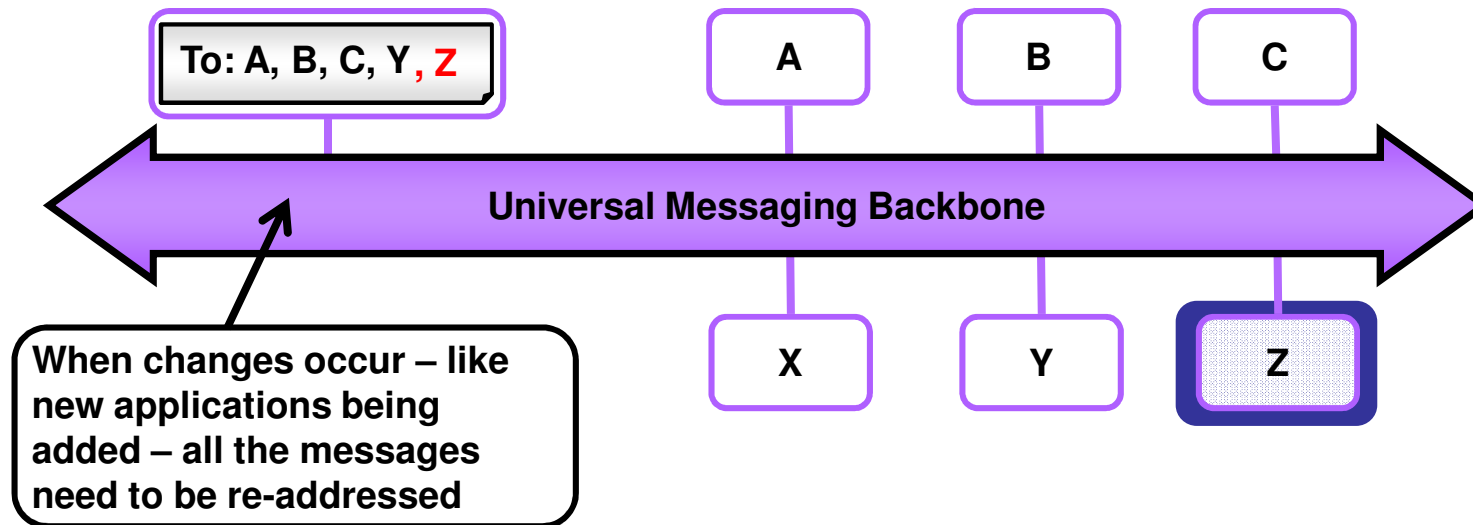
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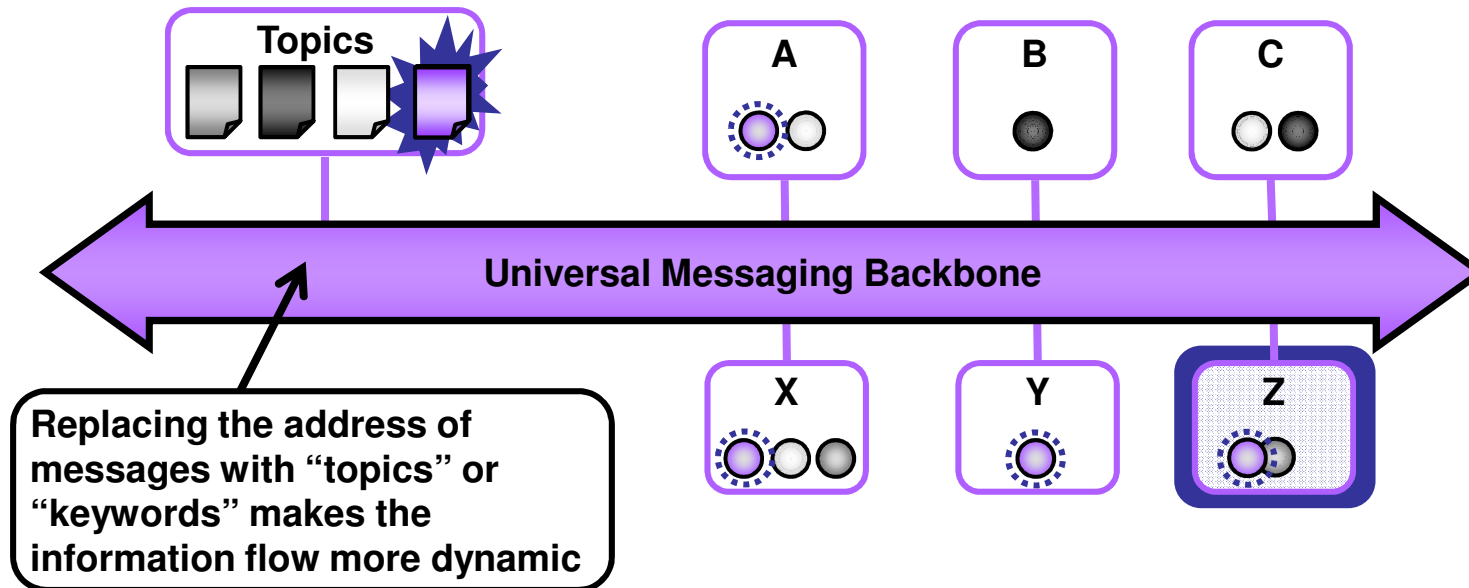
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## Publish-and-Subscribe with WebSphere MQ

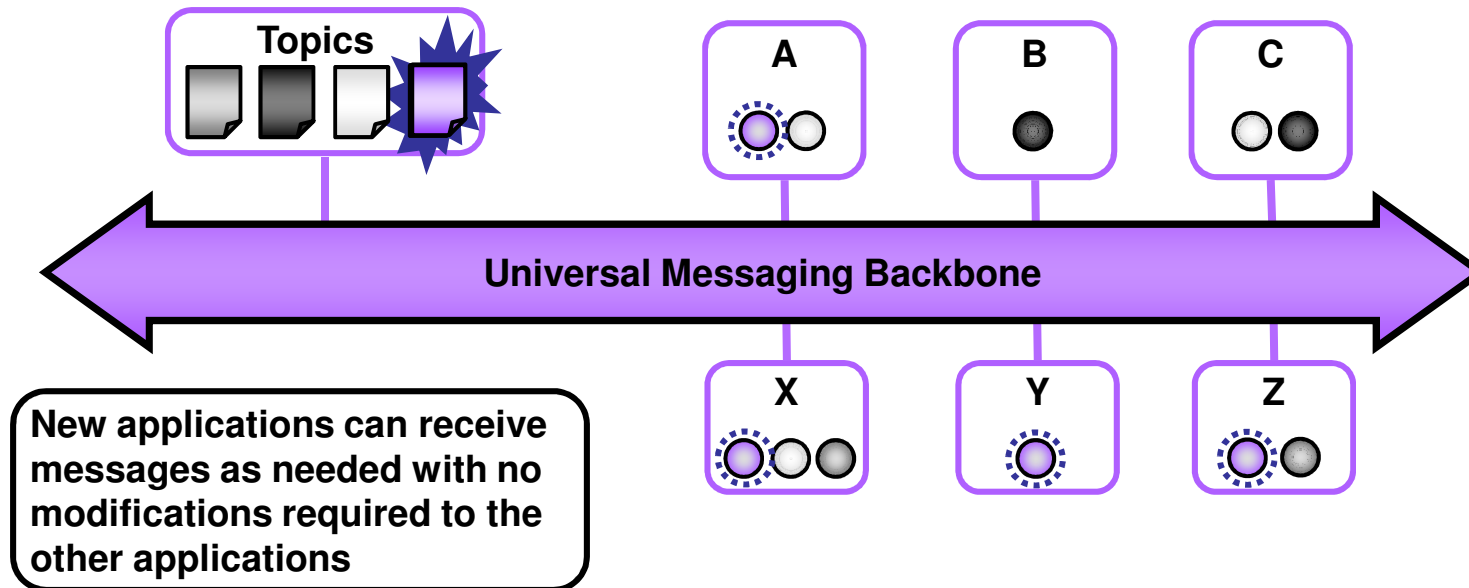
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# Enabling Flexible Delivery on IBM's Universal Messaging Backbone

## Publish-and-Subscribe with WebSphere MQ

- Dynamic and flexible way of determining where messages are sent
- Helps reduce the cost, time and skills involved when changes are required
- Helps define new paths of information flow in an ad hoc manner



# Topic administration

The screenshot shows a Windows-style dialog box titled "SPORT.FOOTBALL.RESULTS - Properties". On the left is a sidebar with "General" selected and "Statistics" below it. The main area is titled "General" and contains the following fields:

- Name:** SPORT.FOOTBALL.RESULTS
- Topic String:** sport/football/results
- Description:** (empty text box)
- Publish:** Allowed (dropdown menu)
- Subscribe:** Allowed (dropdown menu)
- Durable subscriptions:** As parent (dropdown menu)
- Default priority:** As parent (radio button selected), 0 (radio button unselected)
- Default persistence:** As parent (dropdown menu)
- Model durable queue:** (empty text box) with a "Select..." button
- Model non-durable queue:** (empty text box) with a "Select..." button
- Default put response type:** As parent (dropdown menu)

Buttons at the bottom include "Apply", "OK", and "Cancel".





# Topic status

Queue Manager: WMQ7      Topic Name: SPORT.FOOTBALL.RESULTS

Topic status for the topic "SPORT.FOOTBALL.RESULTS":

Topic String	Publish	Subscribe	Durable subscriptions	Default priority	Default persistence	Model durable queue
+ sport/football/results	Allowed	Allowed	Allowed	0	Not persistent	SYSTEM.DURABLE.M

Scheme: Default for Topic Status - Distributed

Table last refreshed: 10:23:33      Selected item last updated: 10:23:34

Refresh    Refresh All    Close



# Subscription administration

**New Subscription**

**Change properties**  
Change the properties of the new Subscription

General  
Extended

**General**

Name: FOOTBALL.RESULTS

Topic

Topic name:  Select...

Topic string: sport/football/results/#

Wildcard schema: Topic

Scope: All

Destination

Destination class: Provided

Destination queue manager:

Destination Name: RESULTS

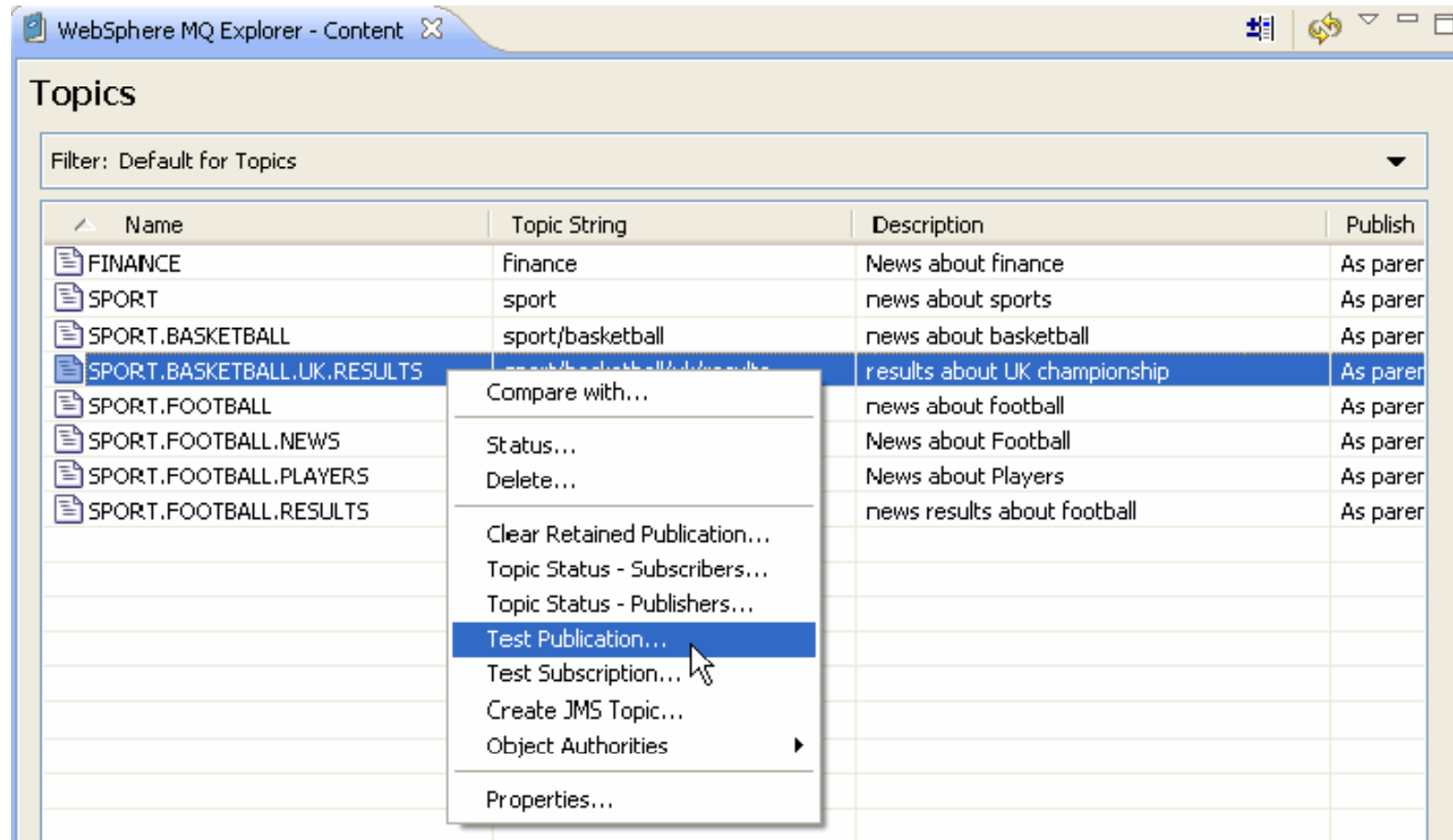
Properties: None

User data:

Selector:



# Test Publication



# Test Publication

**Publish Test Message**

Publish message to:

Queue Manager:  
WMQ7

Topic String:  
sport/basketball/uk/results

Message data:  
First publication about Basketball

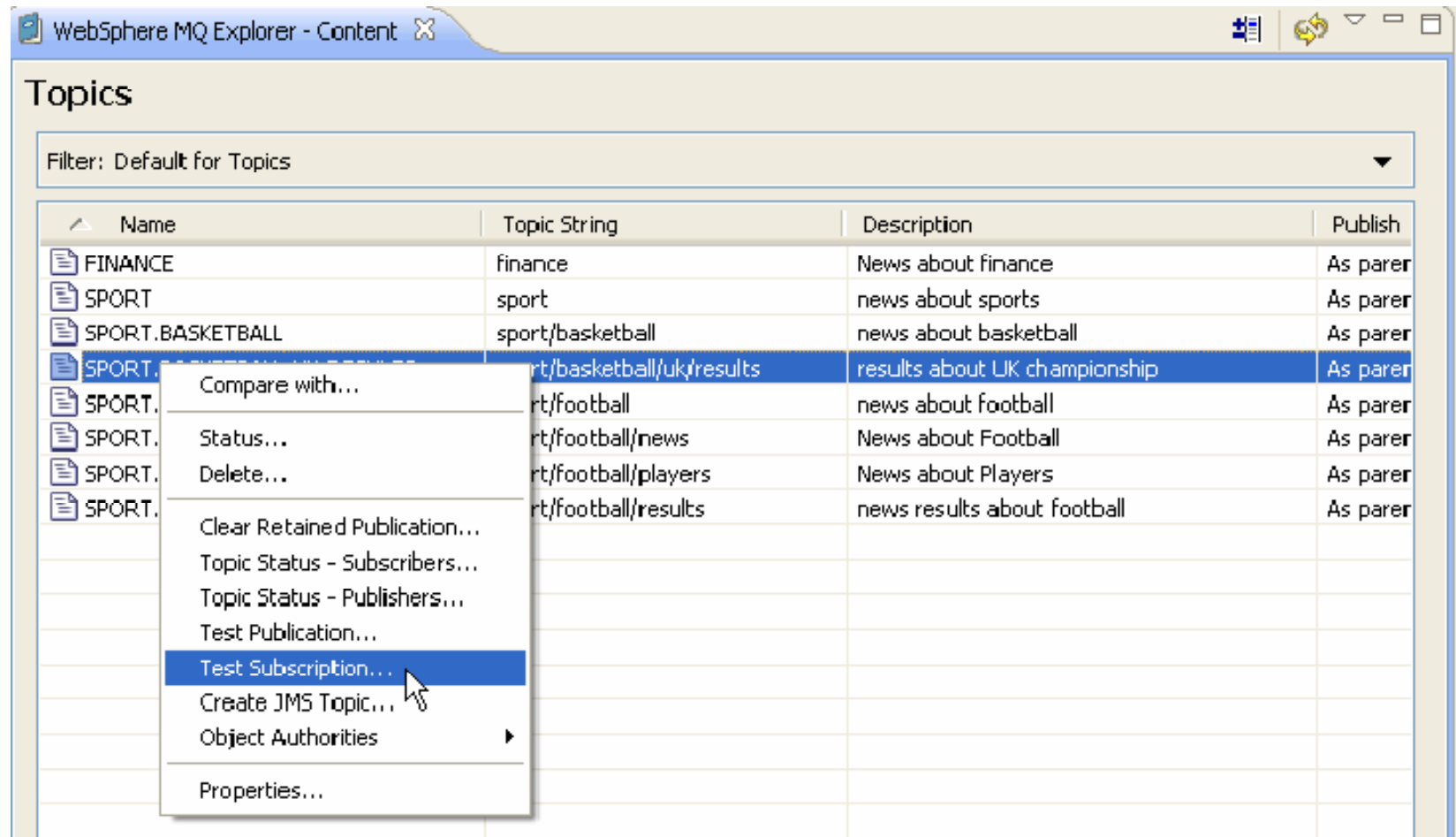
Retained message

*i* Publishing a retained message could overwrite an existing retained publication

Publish message Close



# Test Subscription



# Test Subscription

**Subscribe**

Subscribe to:

Queue Manager:  
WMQ7

Topic String:  
sport/basketball/uk/results

Wildcard Usage:  
Topic Level Wildcard

Subscribe Unsubscribe

Messages received:

Time: 15:01:40  
Topic String: sport/basketball/uk/results  
Message: Second publication about Basketball

Time: 15:01:51  
Topic String: sport/basketball/uk/results  
Message: Third publication about Basketball

Clear

Last subscribed at 14:58:44

Close



# Test Subscription

**BASKETBALL.UK.RESULTS - Status**

Queue Manager: WMQ7    Subscription Name: BASKETBALL.UK.RESULTS

Name	BASKETBALL.UK.RESULTS
Identifier	414D5120574D513720202020202020E5880
User	MUSR_MQADMIN
Durable	Yes
Type	Admin
Connection ID	46414B45000000000000000000000000C
Resume date	10-Oct-2007
Resume time	11:43:21
Date of last publication	10-Oct-2007
Time of last publication	12:04:37
Message count	3

Scheme: Standard for Subscription Status - Distributed

Last updated: 12:17:29

Refresh    Close

WebSphere MQ Explorer - Navigator

- IBM WebSphere MQ
  - Queue Managers
    - WMQ7
      - Queues
      - Topics
      - Subscriptions

WebSphere MQ Explorer - Content

### Queues

Filter: Default for Queues

Queue name	Queue type	Definition type	Open input count	Open output count	Current queue depth	Max k
BASKETBALL.UK	Local	Predefined	0	0	3	5000
QL01	Local	Predefined	0	0	0	5000



# Smarter Connectivity

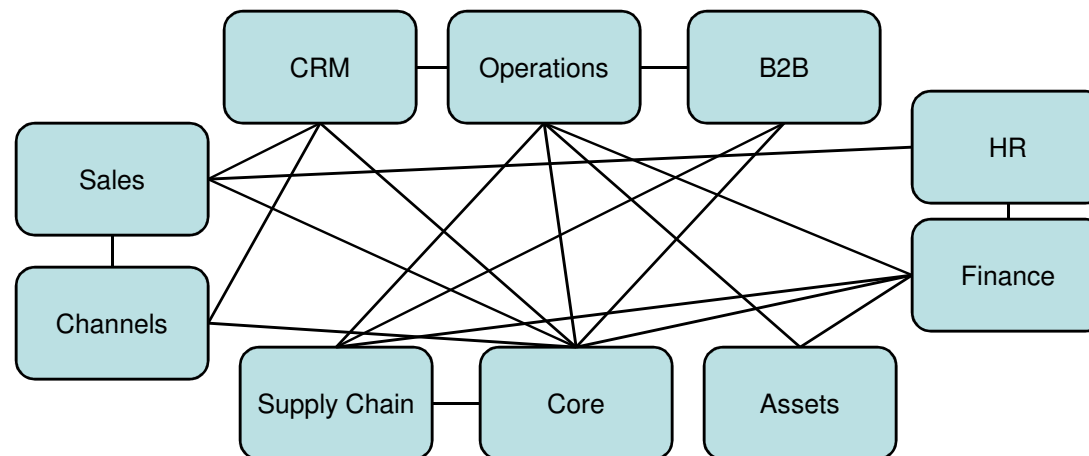
- Point to Point
- Many to Many
- File Transfers





# Traditional File Transfer Challenges

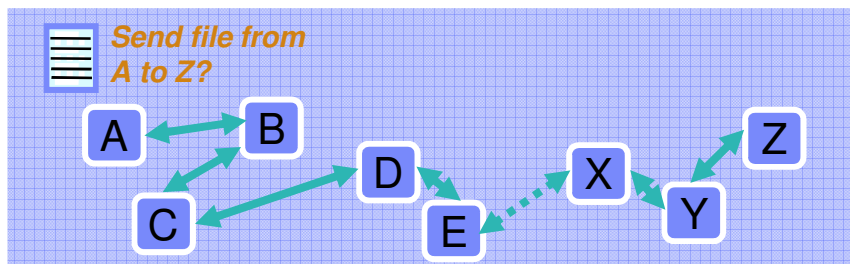
- Limited reliability
- Limited visibility and traceability
- Limited flexibility
- Limited management
- Custom coding and scripting



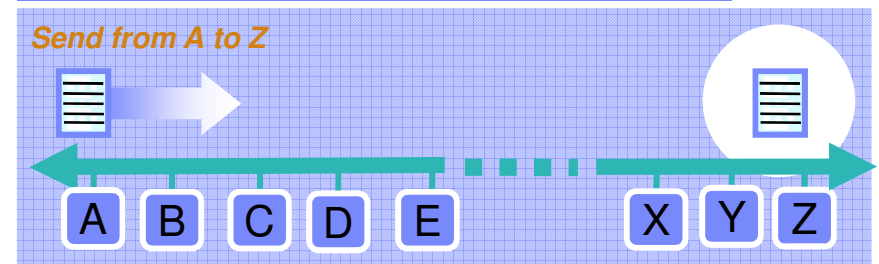
# Robust File Transfer Backbone based on WebSphere MQ

- **WebSphere MQ File Transfer Edition** will provide a file transfer *backbone*
  - ▶ Source and target systems do not need to be directly connected
  - ▶ Backbone determines path across network between Source and Target
  - ▶ Utilizes this built-in characteristic of WebSphere MQ transport
  - ▶ Time-independent, reliable and secure file transfers
- Simplifies transfer configuration, administration & auditing
  - ▶ Transfer files from any point on the Backbone to any other point
  - ▶ Enables multi-hops across Backbone – as opposed to coordinating a series of single-hops
  - ▶ Control, monitor from any point – even via intermediate points
  - ▶ Audit log of transfers at actual, logical Source and Target
    - Rather than having to piece audit trail together from a series of disconnected transfers

## FTP-based Transfers

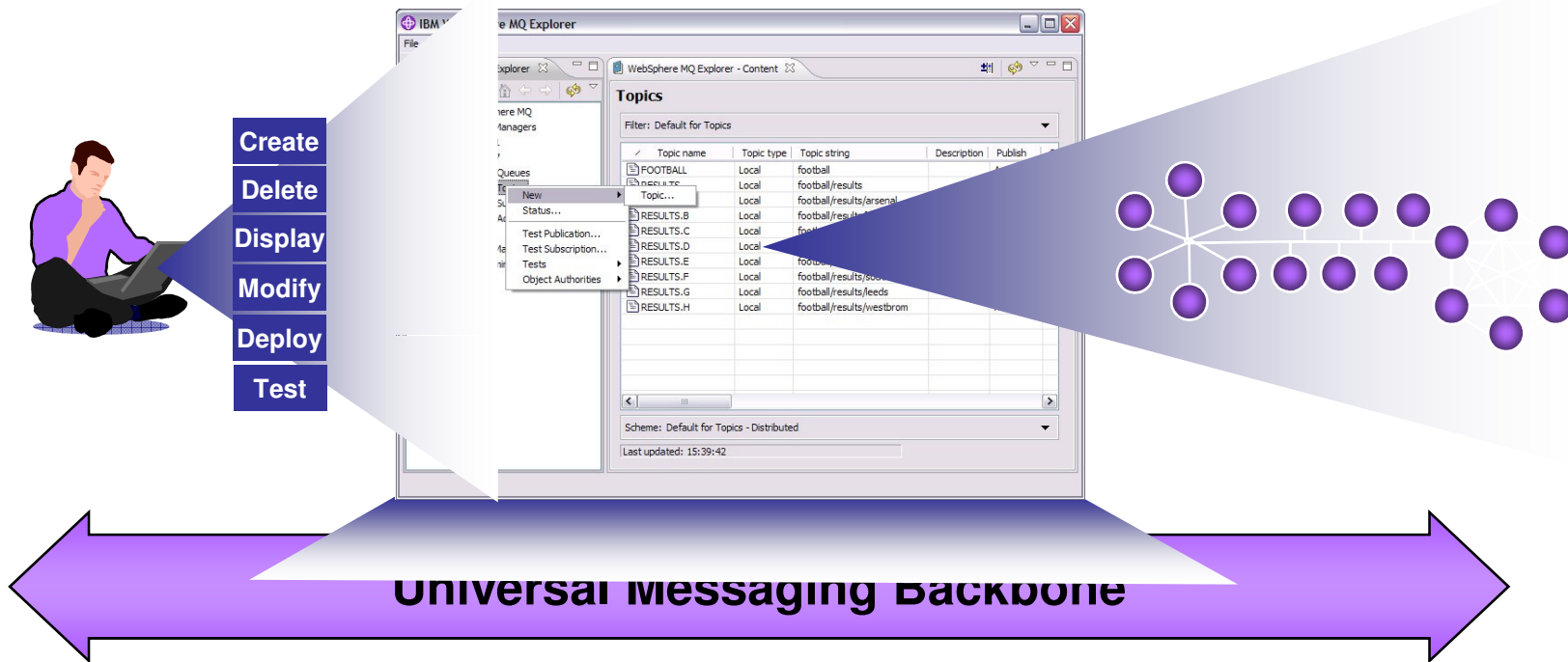


## Managed File Transfer Backbone



# Centralized Configuration & Administration

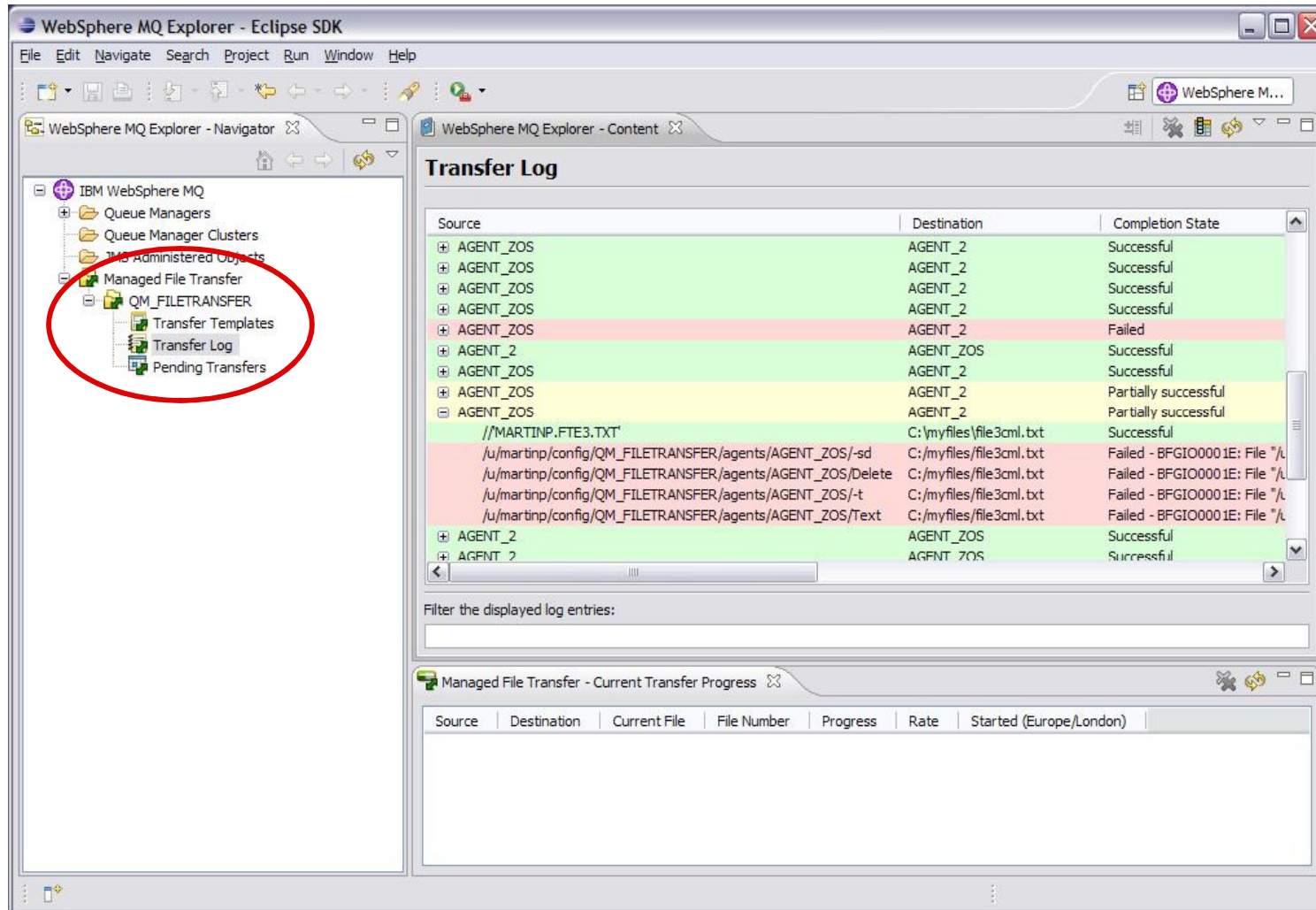
- Logically centralized configuration of remote, distributed backbone
- Remotely view & configure entire backbone – Windows, UNIX, i5/OS, z/OS



- Visual display at a glance
- Eclipse-based environment
- Extensible and customizable
- Remote connection from Linux x86 and Windows
- SSL secured connections
- Granular permissions



# Centralized Configuration via MQ Explorer



# Creating File Transfers

**Create New Managed File Transfer**

**New Transfer**  
Enter source agent, destination agent, and all files to create a transfer.

**Basic** | **Advanced**

**From:**

Agent: AGENT1 (dhcp-9-20-96-178.hursley.ibm.com.)  
File: C:/files/files2send/FTE.pdf  
 Include subdirectories

**To:**

Agent: AGENT4 (9.146.209.200)  
Directory: C:/files/files2get/  
File name: FTE.pdf  
Append:

**Basic Settings**

Mode:  
 Text transfer (ASCII/EBCDIC & CR/LF automated)  
 Binary transfer (no conversion)

List of sources and targets is built automatically  
Specify directory and file name

Choose advanced options

Choose mode (Binary or Text with automatic conversion)  
Add each individual transfer to a group of transfers

Deploy file transfer to network

**Create New Managed File Transfer**

**New Transfer**  
Optionally configure advanced options for the transfer.

**Basic** | **Advanced**

A failure of any file in a group means that the group has failed

On fail, write error to audit stream and leave transferred files on target  
 On fail, write error to audit stream and remove transferred files from target

Overwrite files on the target file system that have the same name  
 Append source file content to file of same name on target

Lock all files in a group at the start of the group transfer  
 Keep source file's attributes (owner, group, timestamp, permission)  
 Remove source files after completion

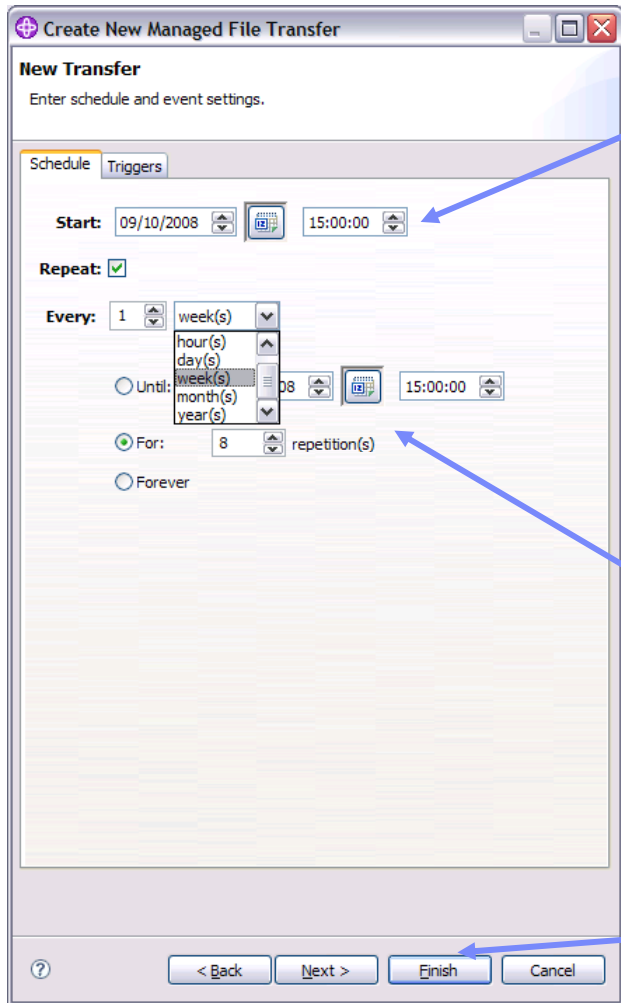
Successful completion of whole group  
 Successful completion of each file

Transfer Priority: Highest  
Additional Overrid... limited by ":"

Choose priority of transfer



# Scheduling & Triggering File Transfers

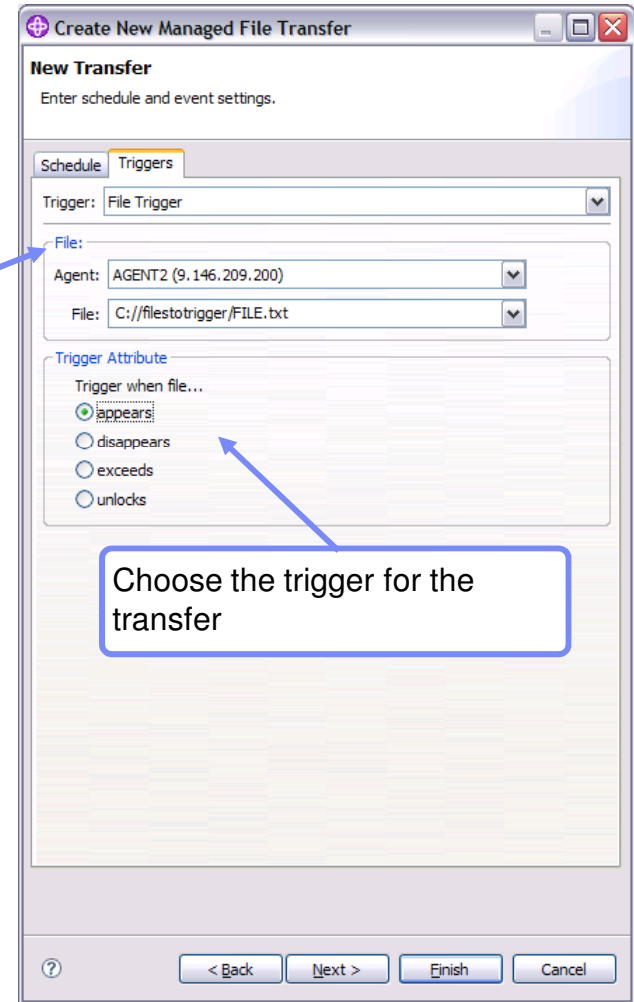


Choose when to start the scheduled transfer

Choose advanced options

Choose when to repeat the scheduled transfer and how often

Deploy file transfer to network



Choose the trigger for the transfer



# Auditing & Monitoring File Transfers

View or cancel transfers that will run by schedule and/or are triggered

The screenshot shows the 'Pending Transfers' window in WebSphere MQ Explorer. It contains a table with the following data:

Name	Source	Destination	Scheduled Start (Europe/London)	Repeat Every	Repeat Type	Repeat Until
2	AGENT_2	AGENT_ZOS	2008-10-23 12:52 BST	1	weeks	
3	AGENT_2	AGENT_ZOS	2008-12-10 17:00 GMT	6	hours	2009-12-07T11:00+0

View audit log of all transfers and groups of transfers

The screenshot shows the 'Transfer Log' window in WebSphere MQ Explorer. It contains a table with the following data:

Source	Destination	Completion State
AGENT_ZOS	AGENT_2	Successful
AGENT_ZOS	AGENT_2	Successful
AGENT_ZOS	AGENT_2	Successful
AGENT_ZOS	AGENT_2	Successful
AGENT_ZOS	AGENT_2	Failed
AGENT_2	AGENT_ZOS	Successful
AGENT_ZOS	AGENT_2	Successful
AGENT_ZOS	AGENT_2	Partially successful
AGENT_ZOS	AGENT_2	Partially successful
//MARTINP.FTE3.TXT	C:/myfiles/file3cm1.txt	Successful
/u/martinp/config/QM_FILETRANSFER/agents/AGENT_ZOS/-sd	C:/myfiles/file3cm1.txt	Failed - BFGIO0001E: File */
/u/martinp/config/QM_FILETRANSFER/agents/AGENT_ZOS/Delete	C:/myfiles/file3cm1.txt	Failed - BFGIO0001E: File */
/u/martinp/config/QM_FILETRANSFER/agents/AGENT_ZOS/-t	C:/myfiles/file3cm1.txt	Failed - BFGIO0001E: File */
/u/martinp/config/QM_FILETRANSFER/agents/AGENT_ZOS/Text	C:/myfiles/file3cm1.txt	Failed - BFGIO0001E: File */
AGENT_2	AGENT_ZOS	Successful
AGENT_2	AGENT_ZOS	Successful

Below the log is a 'Managed File Transfer - Current Transfer Progress' window with the following data:

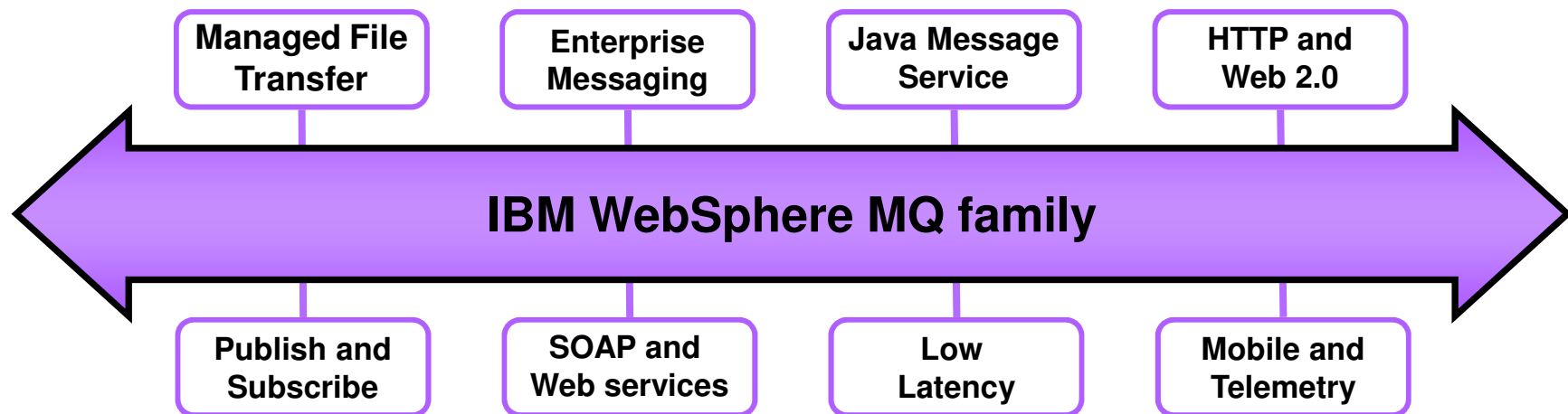
Destination	Current File	File Number	Progress	Rate	Started (Europe/London)
AGENT_2	fte.txt - (12KB / 12KB)	1 / 1	100%	53 KIB/s	2008-12-01 10:24:01 G
AGENT_2	wmq fte.zip - (487MB / 706MB)	1 / 1	69%	5714 KIB/s	2008-12-01 10:27:00 G

View progress of all transfers currently taking place



# Consolidated Transport Backbone with WebSphere MQ

- Combined solution for transferring messages and files via a single consolidated infrastructure
  - ▶ Supports point-point, many-many and multi-platform application connectivity
  - ▶ Unified administration GUI tool i.e. WebSphere MQ Explorer
  - ▶ Reducing operational costs through synergies and lowering skills requirements
- WebSphere MQ messaging infrastructure that can be leveraged in SOA
  - ▶ A one-two punch – Solve today's file/message problems while building a foundation for the future
  - ▶ Single Universal Connectivity solution bringing together file- message- service- and event-oriented applications and Web 2.0 traffic
  - ▶ Add ESB capabilities to file or message data – transformation, mediation, content-based routing





Cám ơn  
Thank You



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