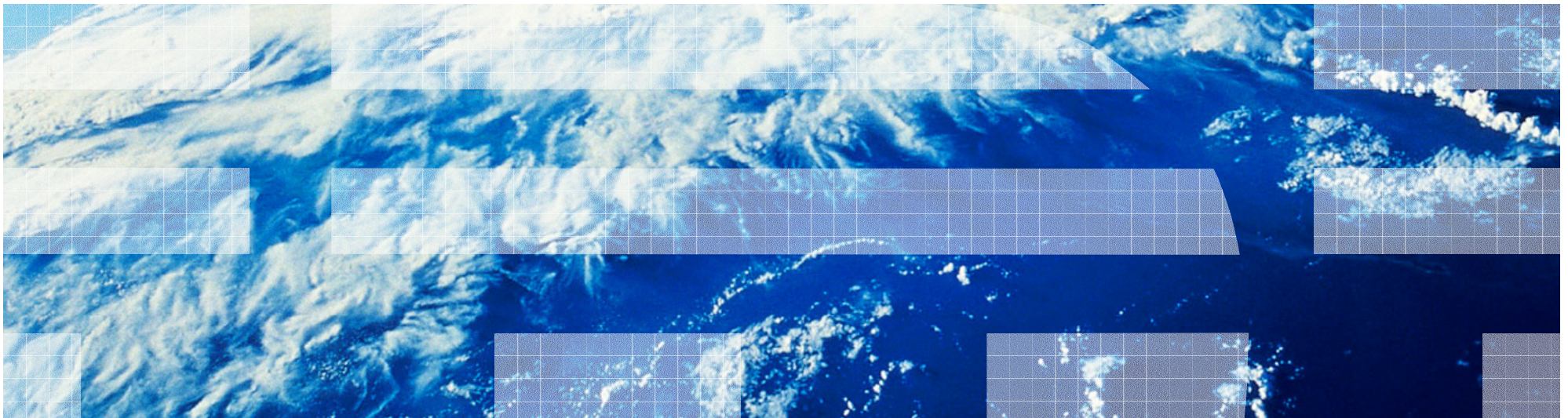


# WMQ for z/VSE and ESB integration



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# Topics

- **Fundamentals of Message Queuing**
- **WebSphere MQ for z/VSE Version 3.0**
- **WMQ Solutions and ESB options in a SOA environment**



# Topics

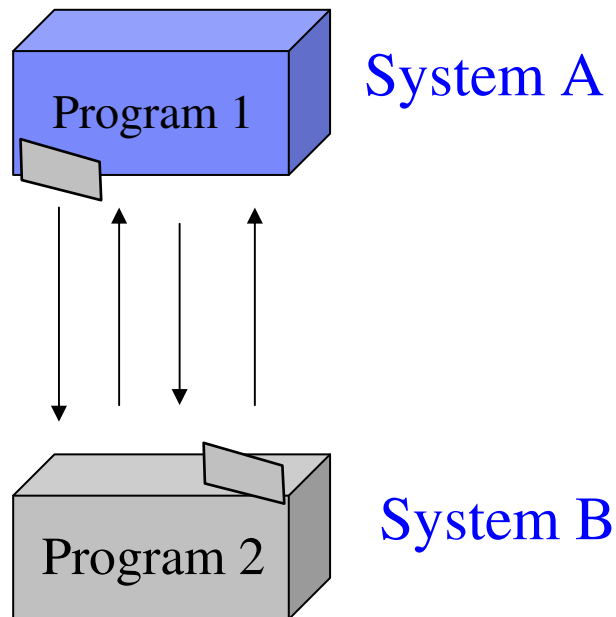
- ■ **Fundamentals of Message Queuing**
  - ▶ What is message queuing
  - ▶ Types of implementations
  
- **WebSphere MQ for z/VSE Version 3.0**
  
- **WMQ Solutions and ESB options in a SOA environment**



# The Inter Program Communication Methods

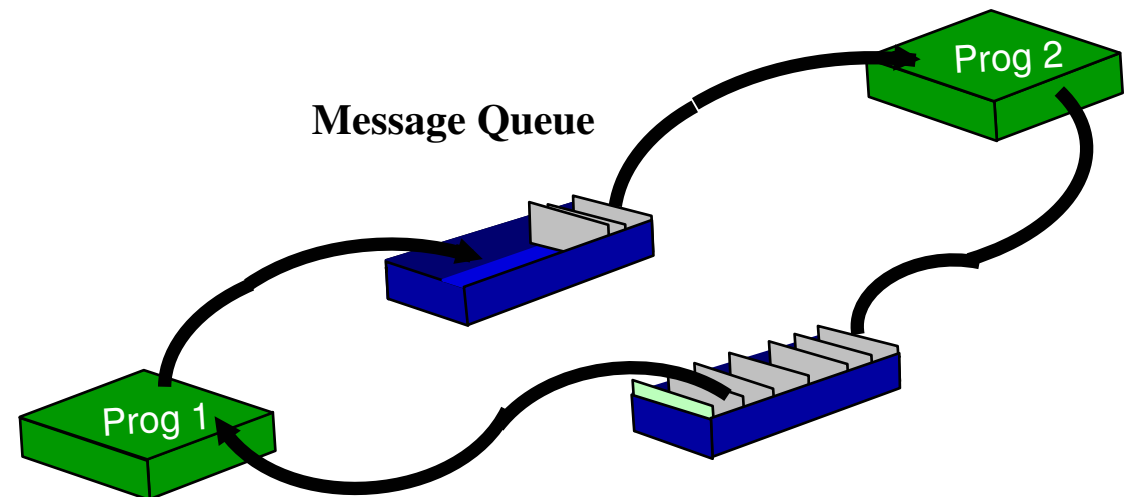
## Direct Communication

- Program Call / Response
- **RPC Remote Procedure Call**



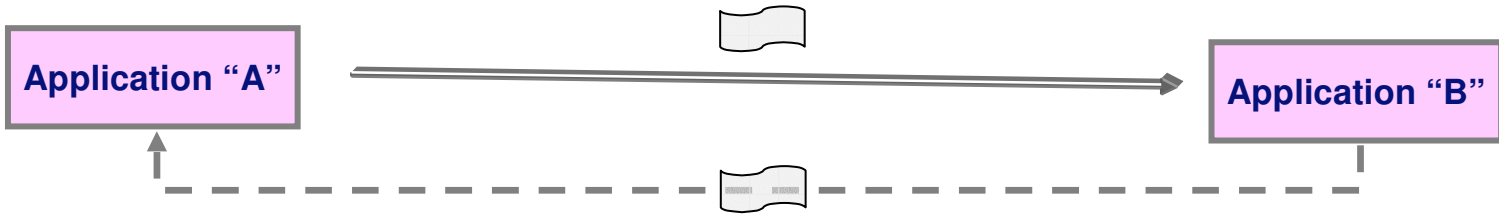
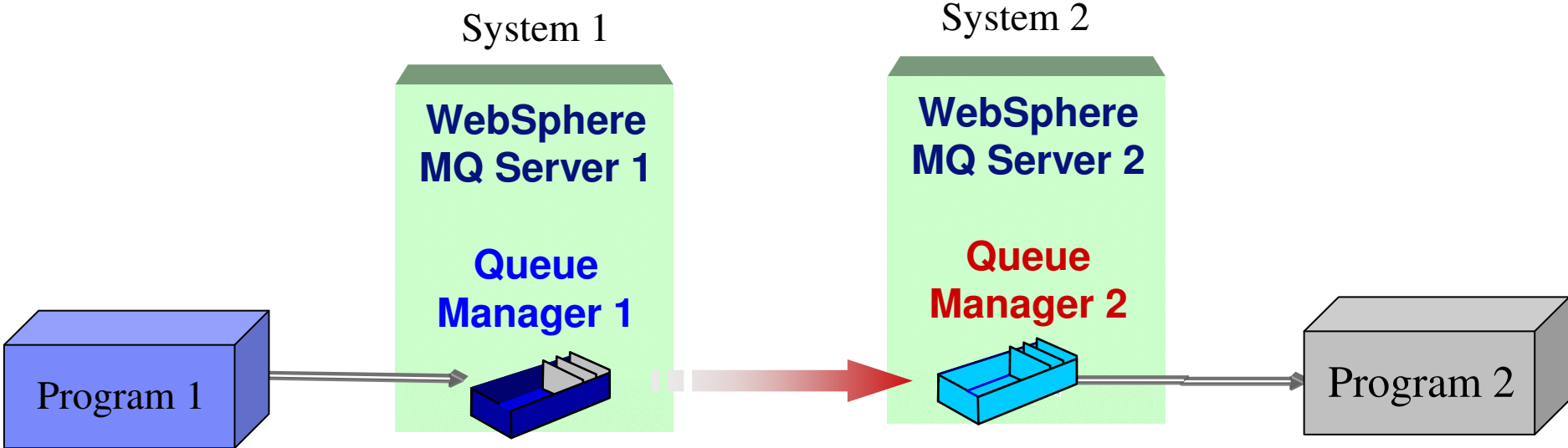
## Asynchronous Communication

- Using **Message Queuing**  
(no direct program invocation)



# Message Queuing Overview

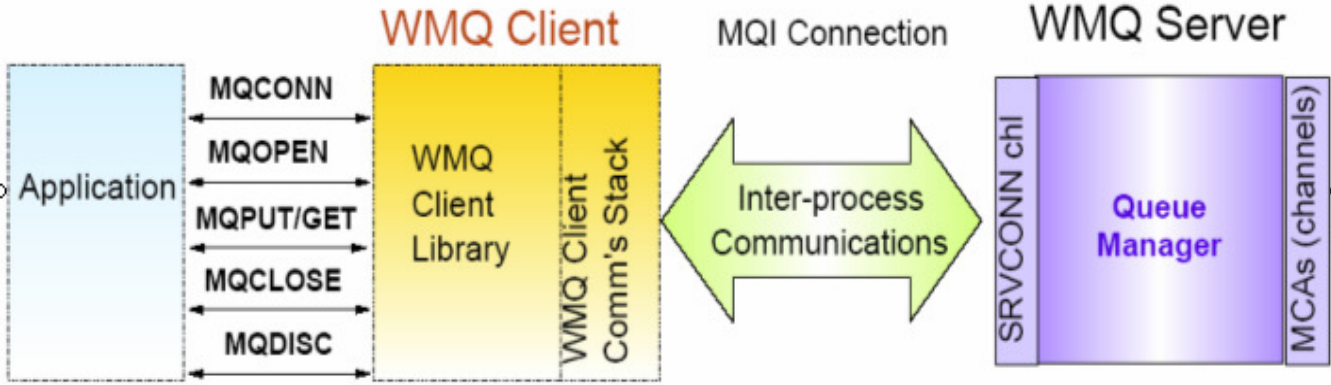
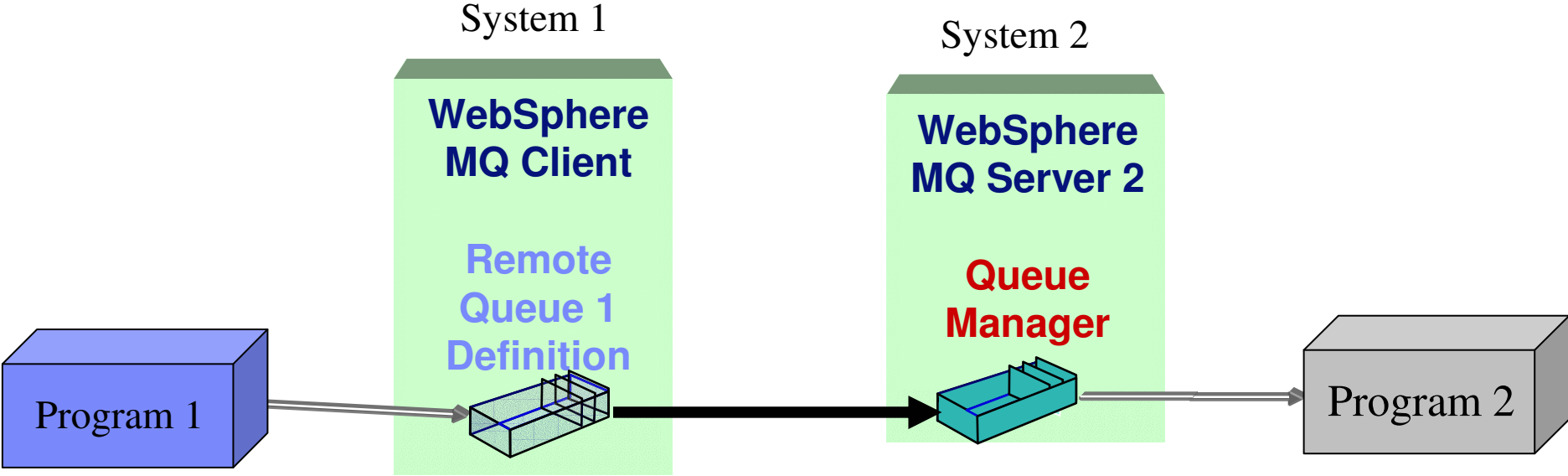
## (1) WebSphere MQ Server – Server scenario



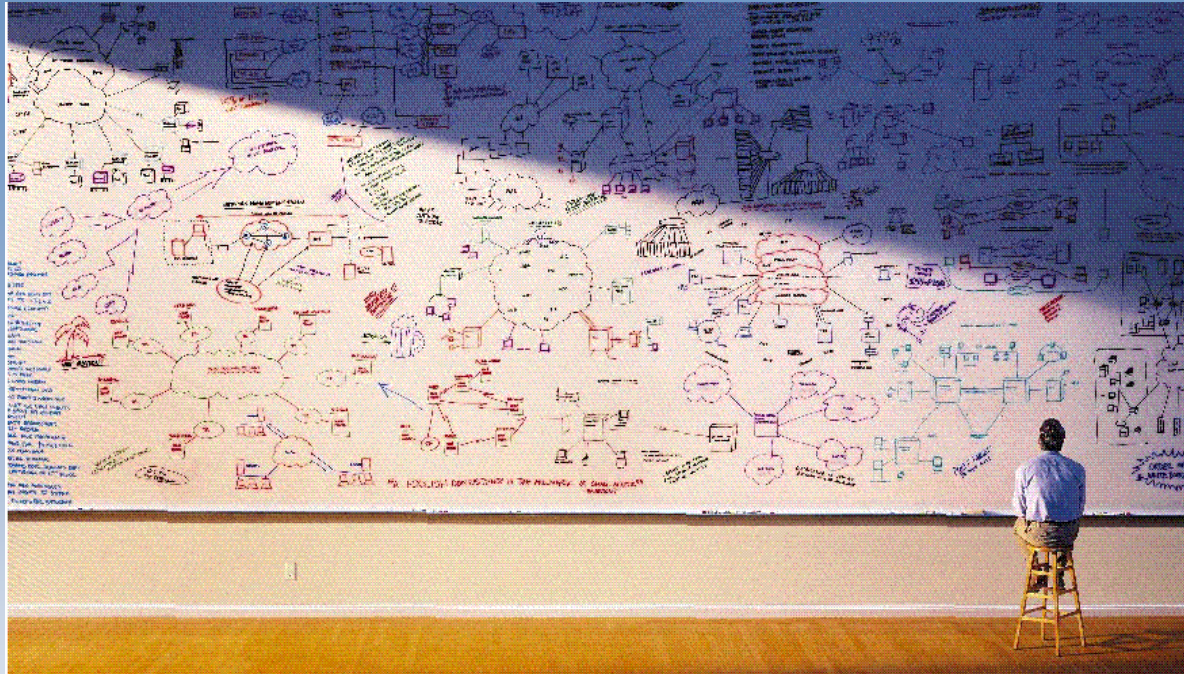


# Message Queuing Overview

## (2) WebSphere MQ Client – Server scenario



# Why are interfaces so expensive to build and maintain?



- Application interface logic is intertwined with business logic.
- The more tightly integrated the interface the more difficult the application is to change.
- The more interfaces that exist within a set of programs, the more complex the application becomes -- interface logic may, in many cases, exceed business logic.
- In such circumstances, re-use becomes difficult and impractical.



## WebSphere MQ Series Characteristics.

- Helps to integrate platforms like CICS, DB2®, Microsoft® .NET and J2EE™ environments
  
- The most reliable method of program communications with:
  - ▶ asynchronous and synchronous communication mode
  - ▶ guaranteed delivery between WebSphere MQ Servers
  - ▶ ensured, only once delivery
  
- Support for more than 80 platform configurations, including native z/VSE and z/OS support

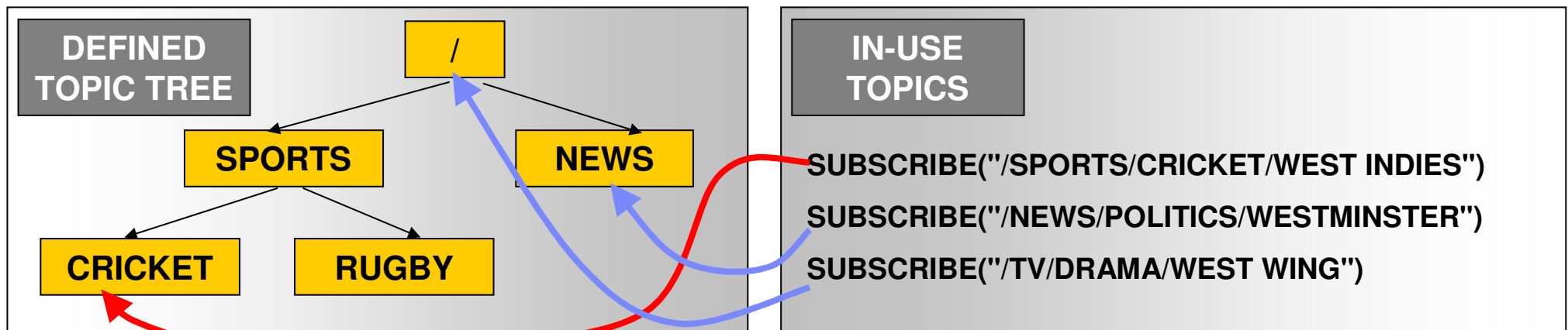
## WebSphere MQ Series Characteristics.

- Supports both de facto standard interfaces for message queuing:
  - ▶ [Message Queue Interface \(MQI\)](#) interface,
  - ▶ [Java Messaging Services \(JMS\)](#) interface,
- Supports [secure communication](#) with standard Secure Sockets Layer ([SSL](#))
- Integrated [publish-and-subscribe](#) support
- Includes [Eclipse tooling](#) to configure WebSphere MQ network remotely
- Integrated support for [Web services](#), to bring reliability, visibility and audit ability to SOAP interactions
- Provides a messaging backbone for deploying an [Enterprise Service Bus \(ESB\)](#) as the connectivity layer of an [Service Oriented Architecture \(SOA\)](#)

# Publish / Subscribe - Enabling Flexible Delivery

## Publish-and-Subscribe

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





# Topics

- Fundamentals of Message Queuing
- ■ WebSphere MQ for z/VSE Version 3.0+
- WMQ Solutions and ESB options in a SOA environment





# WebSphere MQ for z/VSE V3R0

- **New Version 3+: **WebSphere MQ for z/VSE V3.0****
  - ▶ **Version 3.0 available since 19 of December 2008**
  - ▶ **The program number is: 5655-U97-00-300**
  
  - ▶ **New Line items delivered on yearly base in 2009 and 2010**
  
- **Compatibility**
  - ▶ WebSphere MQ for z/VSE V3.0 can participate in distributed queuing solutions with all currently supported V5, V6, and V7 WebSphere MQ products on all supported platforms, and with MQSeries for VSE/ESA V2.1.2 product.

# What's new in WMQ for z/VSE V3R0

- **Software Requirements**

- ▶ z/VSE 4.2 or later
  - CICS/VSE 2.3 or CICS TS 1.1, or later
  - VTAM for z/VSE 4.2 or
  - TCP/IP for z/VSE 1.5F (or equivalent), or later
  - Language Environment for z/VSE 1.4.4 Runtime library, or later
- ▶ WebSphere MQ Clients:
  - WebSphere MQ for z/VSE V3.0 supports clients that connect using TCP/IP.

**Note:- The latest maintenance for these requirements is strongly recommended**

**- As prerequisite software levels become out-of-service, it is strongly recommended that customers upgrade to supported levels of all prerequisite software.**

# What's new in WMQ for z/VSE V3R0

- Server and Requester channels
  - ▶ **additional channel types to request messages from remote systems, rather than wait for those systems to activate the flow.**

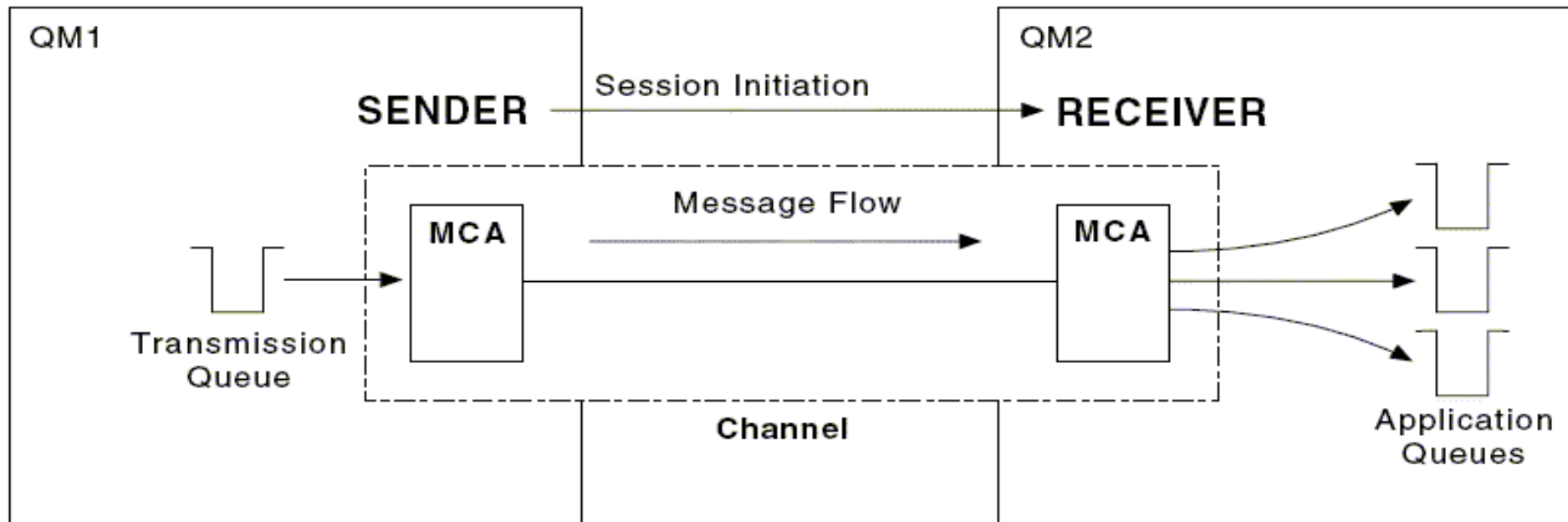
The following combinations of channels are valid:

Sender	->	Receiver
Server	->	Receiver
Sender	->	Requester
Server	->	Requester
Requester	->	Sender
Requester	->	Server
Client	->	Server-connection

# What's new in WMQ for z/VSE V3R0

## Sender and Requester channels

Sender -> Receiver



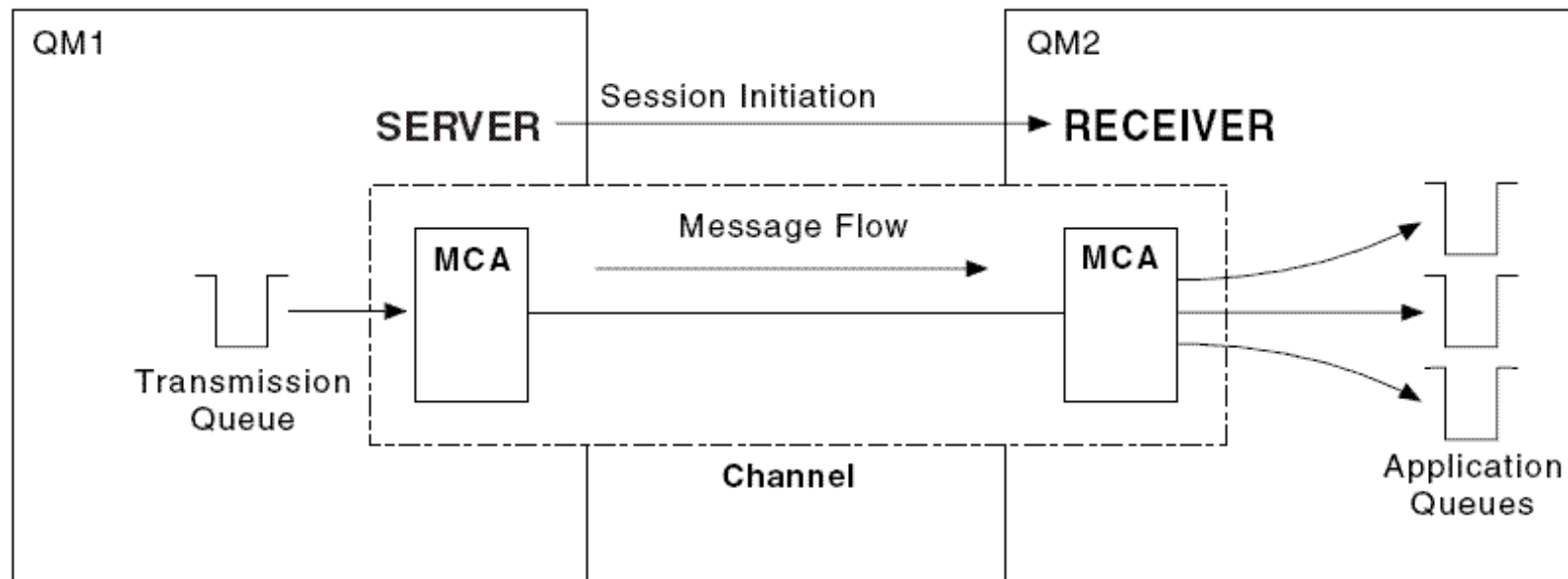
**Sender-receiver channels:** A sender in one system starts the channel so that it can send messages to the other system.

- The sender requests the receiver at the other end of the channel to start.
- The sender sends messages from its transmission queue to the receiver.
- The receiver puts the messages on the destination queue.

# What's new in WMQ for z/VSE V3R0

## Server and Receiver channels

Server -> Receiver



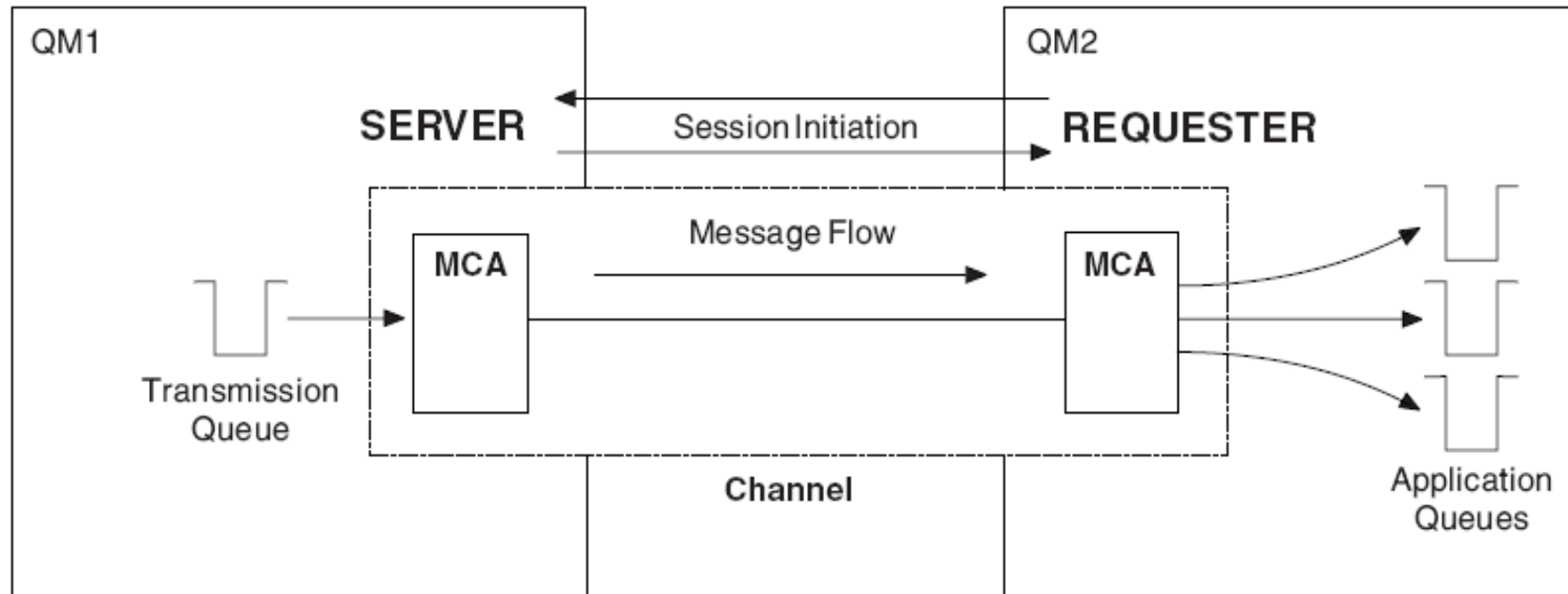
**Server-receiver channels:** This is similar to sender-receiver but applies only to fully qualified servers, that is server channels that have the connection name of the partner specified in the channel definition. Channel startup must be initiated at the server end of the link.



# What's new in WMQ for z/VSE V3R0

## Server and Requester channels

Requester can start a channel; the messages flow from server to requester



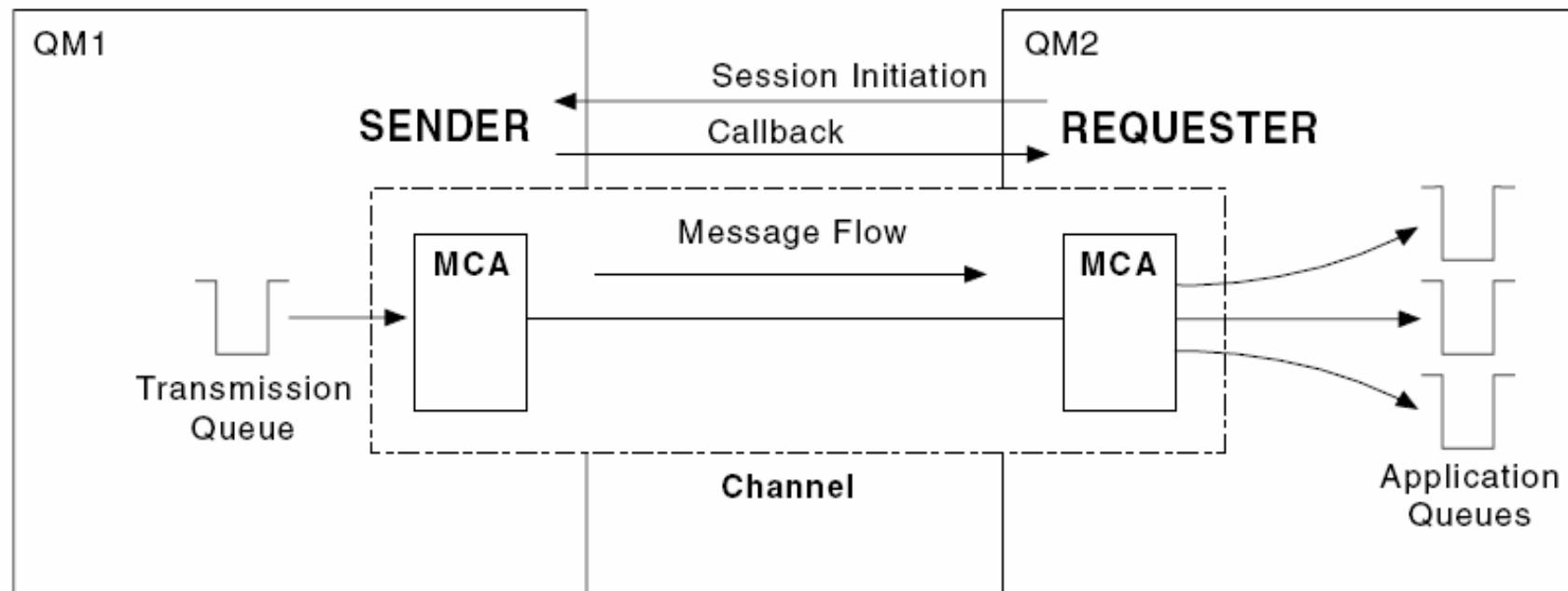
**Requester-server channels:** A requester in one system starts the channel so that it can receive messages from the other system.

- The requester requests the server at the other end of the channel to start.
- The server sends messages to the requester from the transmission queue defined in its channel definition.

# What's new in WMQ for z/VSE V3R0

## Server and Requester channels

A Requester can start a Sender channel



**Requester-sender channels:** The requester starts the channel and the sender terminates the call. The sender then restarts the communication according to information in its channel definition (this is known as callback). It sends messages from the transmission queue to the requester.

# New items in 2010

Described in WMQ Systems Management Guide GC34-6981-01

- **SSL enhancements**
- SSL-enabled channels negotiated a secret key used to encrypt and decrypt data sent over a channel.
  - ▶ For long running channels, this may present a security exposure as the secret key may be discovered
  - ▶ New enhancement for WebSphere MQ for z/VSE, support of an SSL key reset feature where by the key can be renegotiated after a configurable number of bytes have flowed over the channel.
- **Generation of Accounting and Statistic information**
  - ▶ generated intermittently by queue managers
  - ▶ **Accounting** messages are used to record information about the MQI operations performed by WebSphere MQ applications.
  - ▶ **Statistics** messages are used to record information about the activities occurring in a WebSphere MQ system.

# New items in 2010

Described in WMQ Systems Management Guide GC34-6981-01

## ■ Real-time monitoring

- ▶ technique that allows to determine the current state of queues and channels within a queue manager
- ▶ the information returned is accurate at the moment the command was issued.
- ▶ commands are available to query real-time information about queues and channels
- ▶ Information can be returned for one or more queues or channels

## ■ Connection commands

- ▶ WebSphere MQ for z/VSE now supports connection commands.
- ▶ allow to view information about active connections to the queue manager, and stop connections
- ▶ Support extends to both PCF and MQSC commands.

---

# New items in 2011

Described in WMQ Systems Management Guide GC34-6981-02

## COMMAND, CONFIG, SSL events

- **Command events** are notifications
  - ▶ MQSC or PCF command run successfully
  
- **Configuration events** are notifications
  - ▶ generated when an object is created, changed, or deleted
  - ▶ can also be generated by explicit requests.
  
- **SSL events** are a type of channel event.
  - ▶ The only Secure Sockets Layer (SSL or TLS) event is the Channel SSL Error event.
  - ▶ This event is reported when a channel using SSL or TLS fails to establish an SSL connection.



# New items in 2011

Described in WMQ Systems Management Guide GC34-6981-01

## Listener and Service objects.

### ■ Listener

- ▶ A listener is a WebSphere MQ object that accepts network requests from other queue managers, or client applications, and starts associated channels.
- ▶ Listener processes can be configured
  - using the master terminal transaction (MQMT),
  - Programmable Command Format (PCF),
  - MQSeries Command (MQSC) requests.
- ▶ You can define more than one listener object and select whether the listener is automatically started when the queue manager is started.

# New items in 2011

## Listener and Service objects.

- **Service**
- A service is a WebSphere MQ object that identifies a user program that is to be started when the queue manager is started.
- Services fall into two categories:
  - ▶ **Servers**
    - A server service object is the definition of a program that is executed when a specified queue manager is started. Only one instance of a server process can be executed concurrently.
  - ▶ **Commands**
    - A command service object is the definition of a program that is executed when a specified queue manager is started or stopped. Multiple instances of a command process can be executed concurrently.
- Service objects can be created, modified, and deleted :
  - ▶ using the master terminal transaction (MQMT),
  - ▶ Programmable Command Format (PCF)
  - ▶ MQSeries Command (MQSC) requests.

# New items in 2011

Described in WMQ Systems Management Guide GC34-6981-02

## Message Monitoring

### ■ **Controlling queue managers for activity recording**

- ▶ to control whether queue managers are enabled or disabled for activity recording, use the queue manager attribute, ACTIVREC.
- ▶ You can change this by using:
  - The MQSC command, ALTER QMGR, specifying the parameter ACTIVREC
  - The PCF Change Queue Manager (MQCMD\_CHANGE\_Q\_MGR) command with the parameter identifier, MQIA\_ACTIVITY\_RECORDING.

### ■ **Controlling queue managers for trace-route messaging**

- ▶ to control whether queue managers are enabled or disabled for trace-route messaging, use the queue manager attribute, ROUTEREC.
- ▶ You can change this by using:
  - The MQSC command, ALTER QMGR, specifying the parameter ROUTEREC
  - The PCF Change Queue Manager (MQCMD\_CHANGE\_Q\_MGR) command with the parameter identifier, MQIA\_TRACE\_ROUTE\_RECORDING

---

# New items in 2011

## Monitoring and Recording

Valid values for recording settings are:

### Activity

- **M** - Activity reports are generated and sent to the reply queue specified by the originator in the message causing the report. This is the queue manager's initial default value.
- **Q** - Activity reports are generated and sent to the local `SYSTEM.ADMIN.ACTIVITY.QUEUE`.
- **D** - Activity reports are not generated.

### Trace Route

- **M** - Trace-route information is recorded and sent to the destination specified by the originator of the message causing the trace route record. This is the queue manager's initial default value.
- **Q** - Trace-route information is recorded and sent to `SYSTEM.ADMIN.TRACE.ROUTE.QUEUE`.
- **D** - Trace-route information is not recorded.

# New items in 2011

Described in WMQ Systems Management Guide GC34-6981-02

## Protect MQ Resources with BSM

- protect your WebSphere MQ subsystem from unauthorized access by activating the WebSphere MQ for z/VSE security feature
- with z/VSE 4.3 or later, the Basic Security Manager (BSM) can be used to secure WebSphere MQ for z/VSE.
  
- Use SYSIN.Z installation file from the WebSphere MQ installation library
  - ▶ adapt MQJSETUP.Z sample JCL file that processes the SYSIN.Z file
  - ▶ set values for QM-SUBSYSID and QM-STATUS-SECURITY contained in SYSIN.Z
    - set QM-SUBSYSID to 4-character value that uniquely identifies your queue manager
    - set QM-STATUS-SECURITY to ENABLED

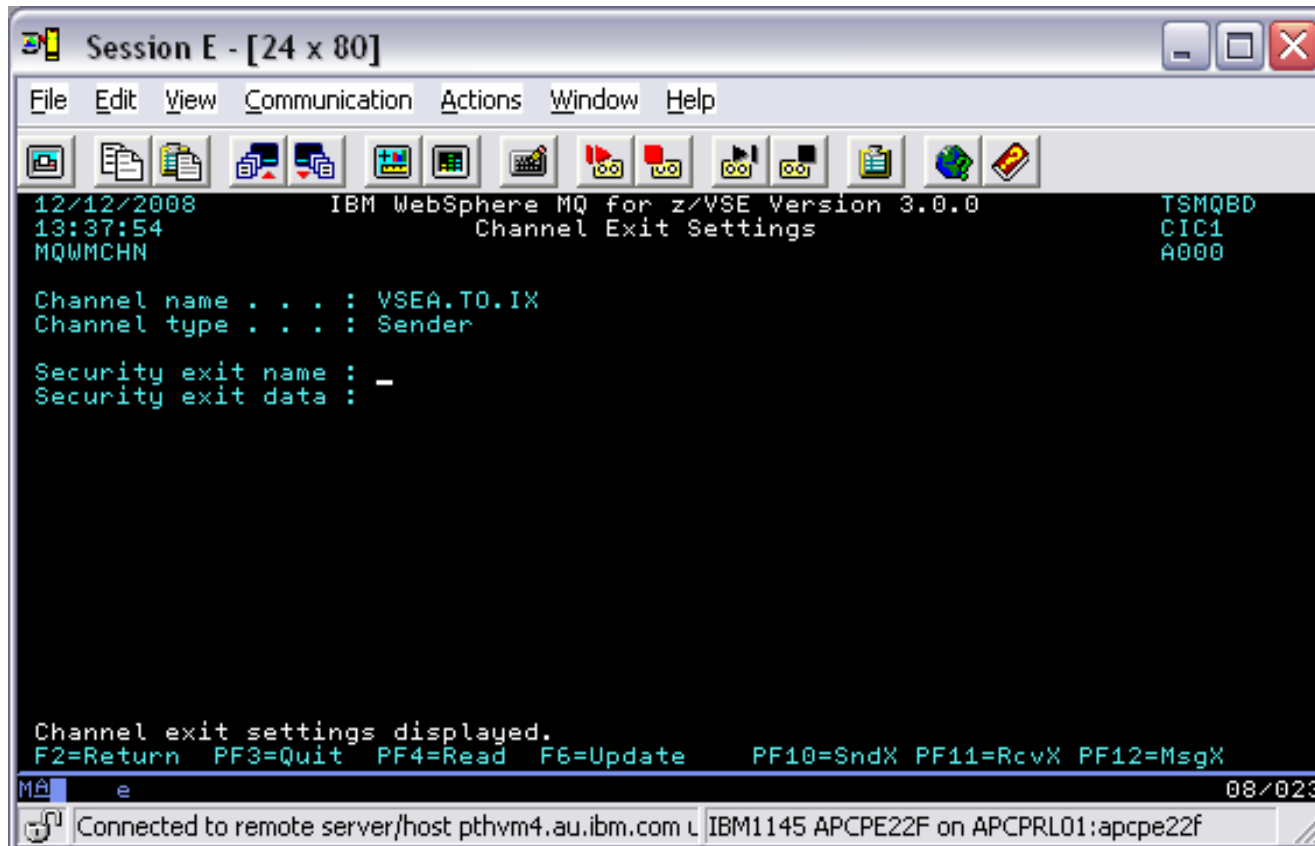


# New in WMQ for z/VSE V3R0

- Chained channel exits

- ▶ Channel-exit programs for Message Channel Agent (MCA) programs. These communications facilitate remote queuing and client connectivity.

WebSphere MQ for z/VSE supports a chain of up to eight send, receive, and message exits.



The channel definition screen now has additional PF key options to configure the chained exits



# New in WMQ for z/VSE V3

## Chained channel exits

```

12/12/2008      IBM WebSphere MQ for z/VSE Version 3.0.0      TSMQBD
13:44:03              Channel Send Exit Settings              CIC1
MQQMCHN                                               A000

Channel name . . . : VSEA.TO.IX
Channel type . . . : Sender

  Exitname      Exit Data
> MYEXIT1      < > My exit data      <
> MYEXIT2      < > More exit data for exit2 <
> -            < >
>
>
>
>
>
>
>
>
>
>

Channel exit settings displayed.
F2=Return  PF3=Quit  PF4=Read  F6=Update  PF10=SndX  PF11=SecX  PF12=MsgX
MÁ e 11/004
Connected to remote server/host pthvm4.au.ibm.com u IBM1145 APCPE22F on APCPRL01:apcpe22f

```

You can now configure up to 8 Send, receive and message exits with associated exit data.

# New in WMQ for z/VSE V3R0

## API exits

- ▶ Allow to change the behaviour of WebSphere MQ API calls, before or immediately after those calls. WebSphere MQ for z/VSE supports a chain of up to eight API exits.

```

Session E - [24 x 80]
File Edit View Communication Actions Window Help
12/12/2008 IBM WebSphere MQ for z/VSE Version 3.0.0 TSMQBD
13:50:35 Global System Definition CIC1
MQMMSYS Queue Manager Information A000
Queue Manager . . . . . VSEA.QM1
Description Line 1. . . . .
Description Line 2. . . . .

Queue System Values
Maximum Connection Handles.: 00000100 System Wait Interval : 00000030
Maximum Concurrent Queues .: 00000100 Max. Recovery Tasks : 0000
Allow TDQ Write on Errors : Y CSMT Local Code Page . . : 01047
Allow Internal Dump . . . . : Y Subsystem id . . . . : DEV1

Queue Maximum Values
Maximum Q Depth . . . . .: 00100000 Maximum Global Locks.: 00001000
Maximum Message Size. . . .: 00032768 Maximum Local Locks .: 00001000
Maximum Single Q Access . .: 00000080

Global QUEUE/File Names
Configuration File. : MQFCNFG
LOG Queue Name. . . : SYSTEM.LOG
Dead Letter Name. . : SYSTEM.DEAD.LETTER.QUEUE
Monitor Queue Name. : SYSTEM.MONITOR

Requested record displayed.
PF2=Return PF3=Quit PF4/Enter=Read PF6=Upd PF9=Com PF10=Log PF11=Evt PF12=Ext

MA e 04/031
Connected to remote server/host pthvm4.au.ibm.com t IBM1145 APCPE22F on APCPRL01:apcpe22f
  
```

API exits can be configured from the Global System Definition screen by using PF12



# New in WMQ for z/VSE V3R0

## API exits

You can configure up to 8 API exits which are called in the order listed. API exits are called when an application issues an MQCONN request.

```
12/12/2008      IBM WebSphere MQ for z/VSE Version 3.0.0      TSMQBD
13:54:42              Global System Definition              CIC1
MQUMSYS              API Exit Settings                      A000

Local API Exits
1. Name: MQ_API_EXIT
   Module: MQPSAXE      Data: DD:MQM.INBDAXE
2. Name:
   Module:              Data:
3. Name:
   Module:              Data:
4. Name:
   Module:              Data:
5. Name:
   Module:              Data:
6. Name:
   Module:              Data:
7. Name:
   Module:              Data:
8. Name:
   Module:              Data:
Requested record displayed.
PF2=Queue Manager details  PF3=Quit  PF4/Enter=Read  PF6=Update

MÁ e 08/014
Connected to remote server/host pthvm4.au.ibm.com u IBM1145 APCPE22F on APCPRL01:apcpe22f
```

---

## New in WMQ for z/VSE V3R0

### API exits

- ❖ Need to be configured in WMQ for z/VSE.
- ❖ Are called when an application issues an MQCONN call
- ❖ Each exit is expected to use the supplied MQXEP() call to register functions that are to be called before and/or after relevant MQI calls.
- ❖ An API exit environment exists for each active connection and is released when the application issues an MQDISC call.

# New in WMQ for z/VSE V3R0

- Channel batch interval

- ▶ The batch interval is a period of time, in milliseconds, during which the channel will keep a batch open even if there are no messages on the transmission queue.

```
12/12/2008      IBM WebSphere MQ for z/VSE Version 3.0.0      TSMQBD
14:48:34      Channel Record      DISPLAY      CIC1
MQWMCHN      A000
Channel : VSEA.SVR.IX
Desc. :
Protocol: T (L/T)  Type : V (S=Snd/R=Rcv/V=Srv/Q=Req/C=svrConn)  Enabled : Y

Sender/Server
Remote TCP/IP port . . . . . : 000000      Short/Long retry count . . . : 000000000
Get retry number . . . . . : 00000000      Short retry interval . . . . : 000000000
Get retry delay (secs) . . . : 00000000      Long retry interval . . . . . : 000000000
Convert msgs(Y/N) . . . . . : Y      Batch interval . . . . . : 000030000
Transmission queue name. . . : IX.XQ1
TP name. . . :

Sender/Receiver/Server/Requester
Connection :
Max Messages per Batch . . . : 000050      Message Sequence Wrap . . . : 999999999
Max Message Size . . . . . : 0004000      Dead letter store(Y/N) . . . : N
Max Transmission Size . . . : 032766      Split Msg(Y/N) . . . . . : N
Max TCP/IP Wait . . . . . : 000000

Channel record displayed.
F2=Return PF3=Quit PF4=Read PF5=Add PF6=Upd PF9=List PF10=SSL PF11=Ext PF12=Del
MA e 04/013
Connected to remote server/host pthvm4.au.ibm.com  IBM1145 APCPE22F on APCPRL01:apcpe22f
```

Batch interval is a new attribute on the channel definition screen.



---

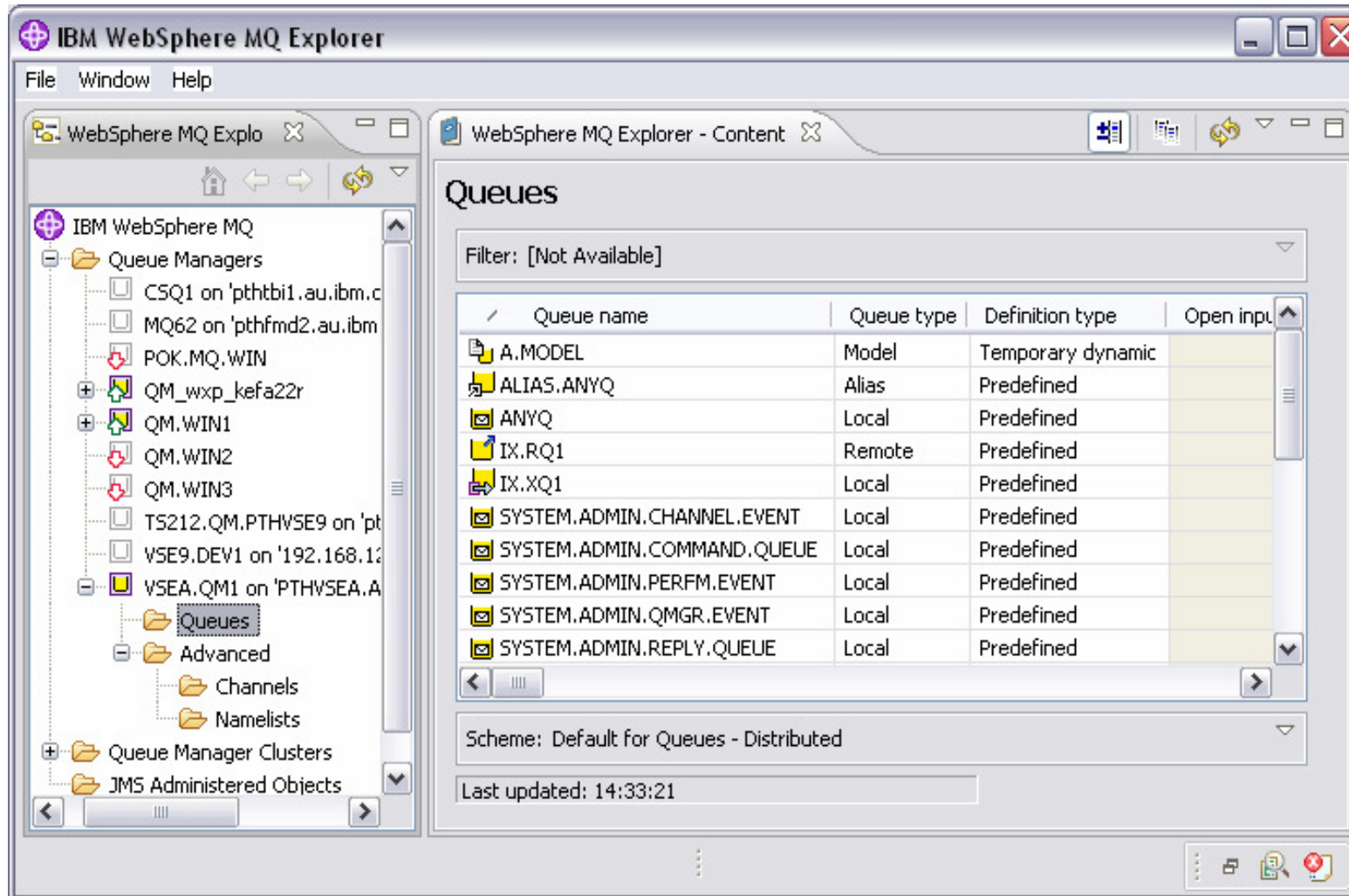
## New in WMQ for z/VSE V3R0

- Channel batch interval
  - ▶ The batch interval is a period of time, in milliseconds, during which the channel will keep a batch open even if there are no messages on the transmission queue.
  
- Performance improvements
  - ▶ Performance improvements were done specifically in the area of MQI operation. Logic paths and the use of resources have been reduced to improve message throughput.
  
- WMQ Explorer support
  - ▶ A graphical tool to perform administration tasks. It is in an style based on the Eclipse framework. This interface support now remote administration of both MQSeries for VSE V2.1.2 and WebSphere MQ for z/VSE V3.0.



# New in WMQ for z/VSE V3R0

## Graphical administration of WebSphere MQ for z/VSE Queues with WMQ Explorer



The screenshot displays the IBM WebSphere MQ Explorer interface. The left pane shows a tree view of the queue manager hierarchy, with 'Queues' selected under 'VSEA.QM1'. The main pane shows a table of queues with the following columns: Queue name, Queue type, Definition type, and Open input. The table lists several predefined system queues and one temporary dynamic queue.

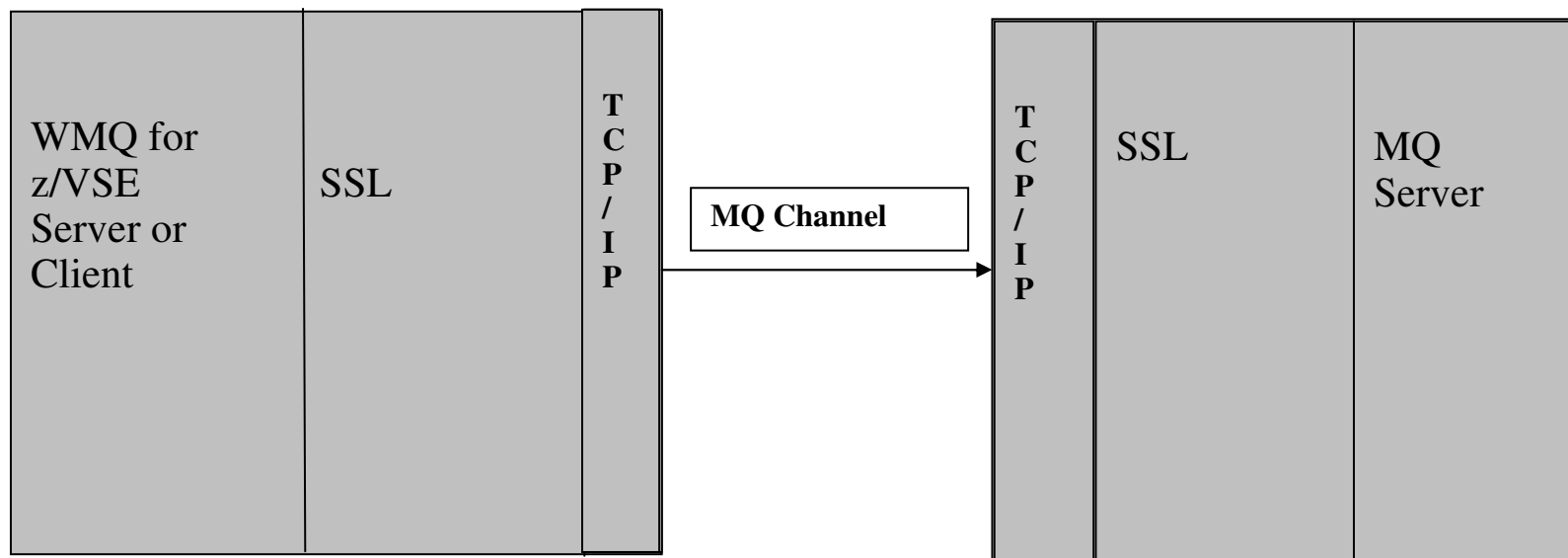
Queue name	Queue type	Definition type	Open input
A.MODEL	Model	Temporary dynamic	
ALIAS.ANYQ	Alias	Predefined	
ANYQ	Local	Predefined	
IX.RQ1	Remote	Predefined	
IX.XQ1	Local	Predefined	
SYSTEM.ADMIN.CHANNEL.EVENT	Local	Predefined	
SYSTEM.ADMIN.COMMAND.QUEUE	Local	Predefined	
SYSTEM.ADMIN.PERFM.EVENT	Local	Predefined	
SYSTEM.ADMIN.QMGR.EVENT	Local	Predefined	
SYSTEM.ADMIN.REPLY.QUEUE	Local	Predefined	

Below the table, the scheme is set to 'Default for Queues - Distributed' and the last updated time is '14:33:21'.

You can use Explorer to administer the z/VSE queue manager, its queues, channels and namelists, including create, delete, modify and display.

# Secured communication

- WMQ V3 for z/VSE can communicate secured via SSL connections



# Compatibility and migration

[WebSphere MQ for z/VSE V3.0](#) can participate in distributed message queuing solutions with all supported V5, V6, and V7 WebSphere MQ products and with the existing MQSeries for VSE V2.1.2 product.

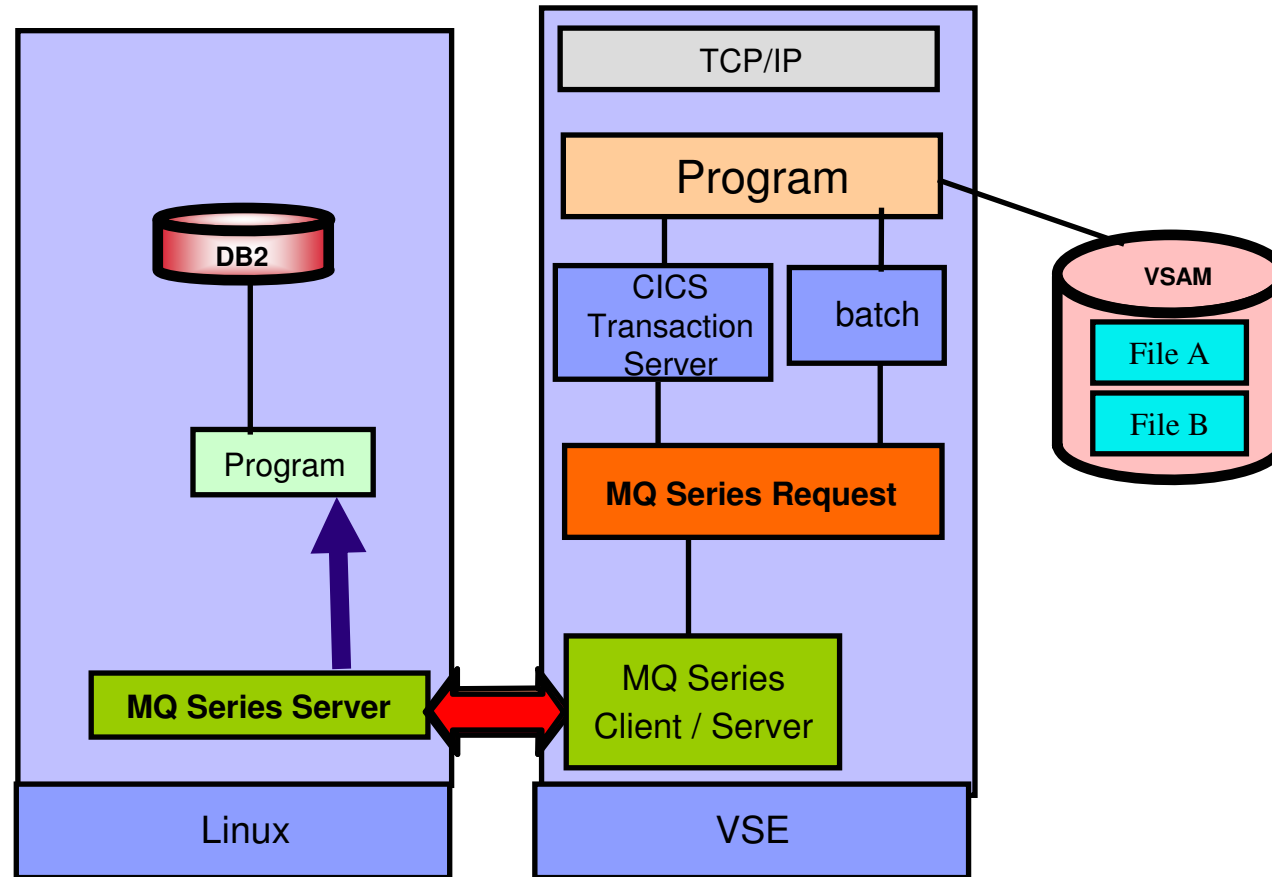
## [WebSphere MQ interfaces for z/VSE applications:](#)

- CICS MQI (this is the normal interface usable by CICS applications)
- Batch Interface (this is usable by applications running in a local non-CICS environment)
- MQ Client (this is usable by LE VSE applications running in CICS or non-CICS)
- MQ Client Bridge (this is for non-LE VSE applications running in a non-CICS environment)

## Note:

- Applications from MQSeries for VSE/ESA V2.1.2 can be migrated without change.
- Configurations from V2.1.2 can be used with V3, however, you must run the MQJSETUP.Z job followed by the MQSU transaction after installation of the V3 product.

# Integration of VSE Programs with MQ Series



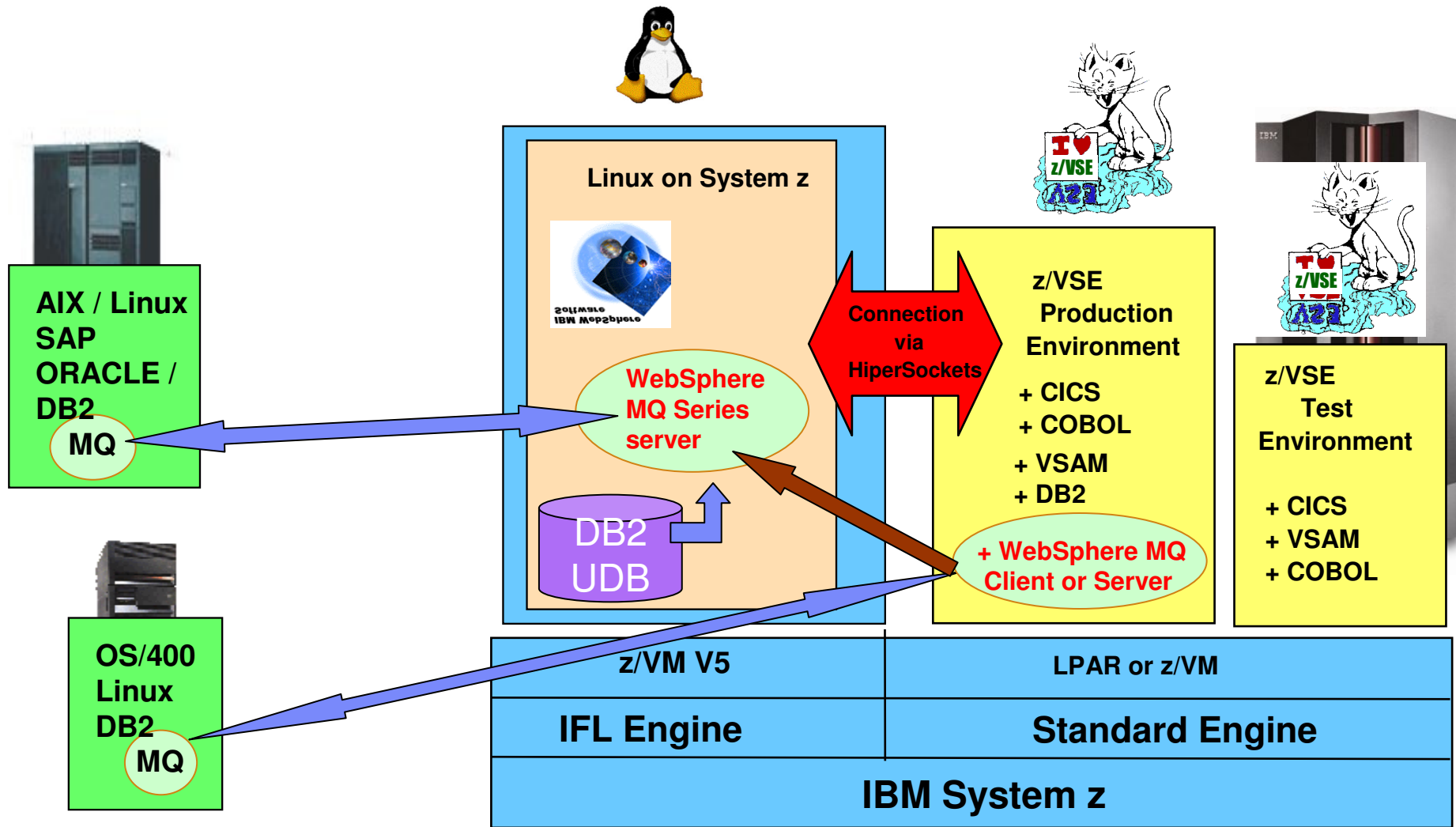
- ▶ Data distribution via MQ Series technology
- ▶ VSE programs have to write MQ messages
- ▶ WebSphere MQ Series Client for VSE – cost effective enablement for MQ environments and modern solutions

# Topics

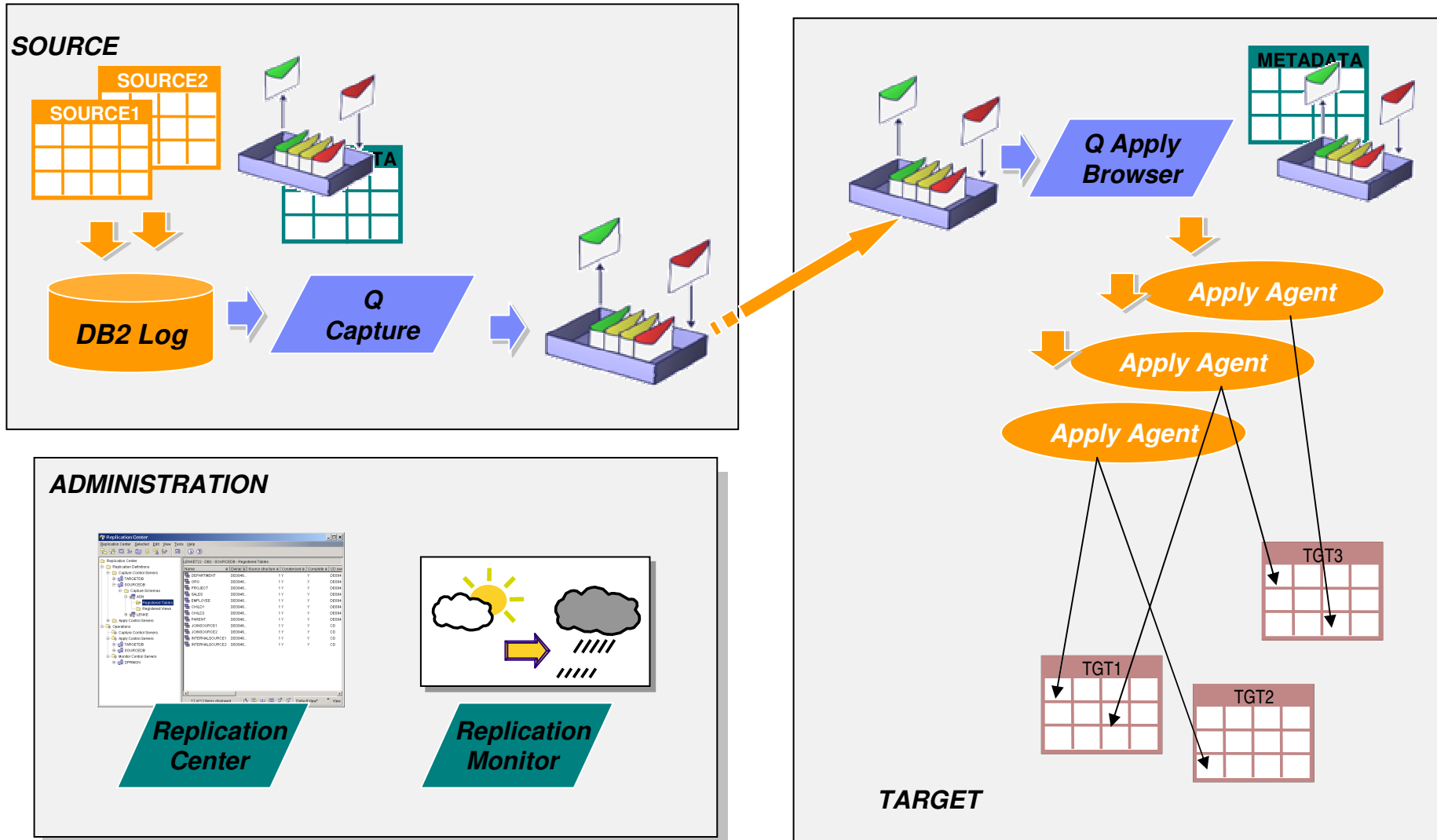
- **Fundamentals of Message Queuing**
- **WebSphere MQ for z/VSE Version 3.0**
- ▪ **WMQ Solutions and ESB options in a SOA environment**
  - ▶ **DB2 Replication**
  - ▶ **VSAM Replication with WebSphere MQ**
  - ▶ **SOA Backbone solutions**



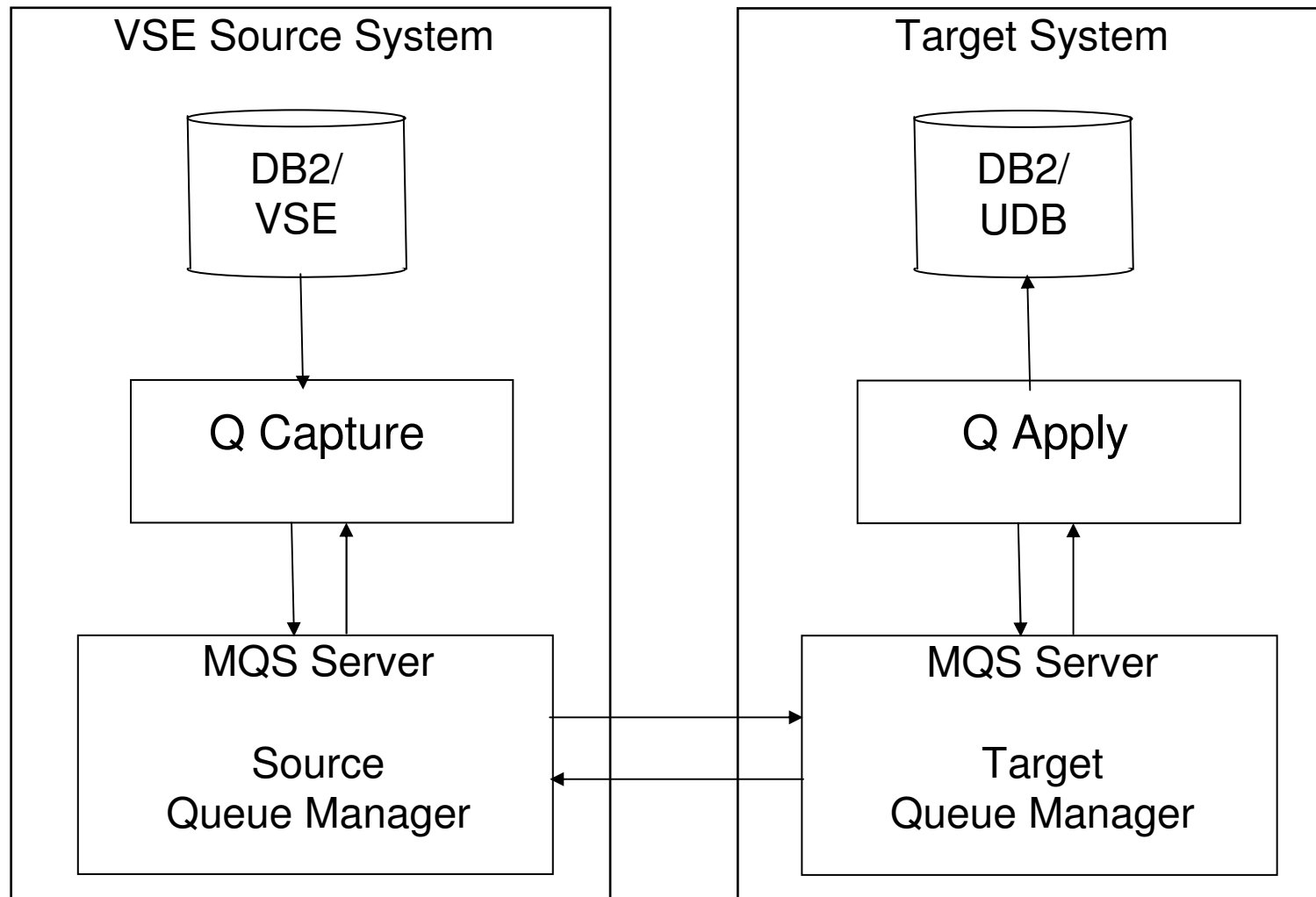
# Application Integration with WebSphere MQ Series Solutions



# Solution 1: DB2 Replication with WMQ using Queue Subscription

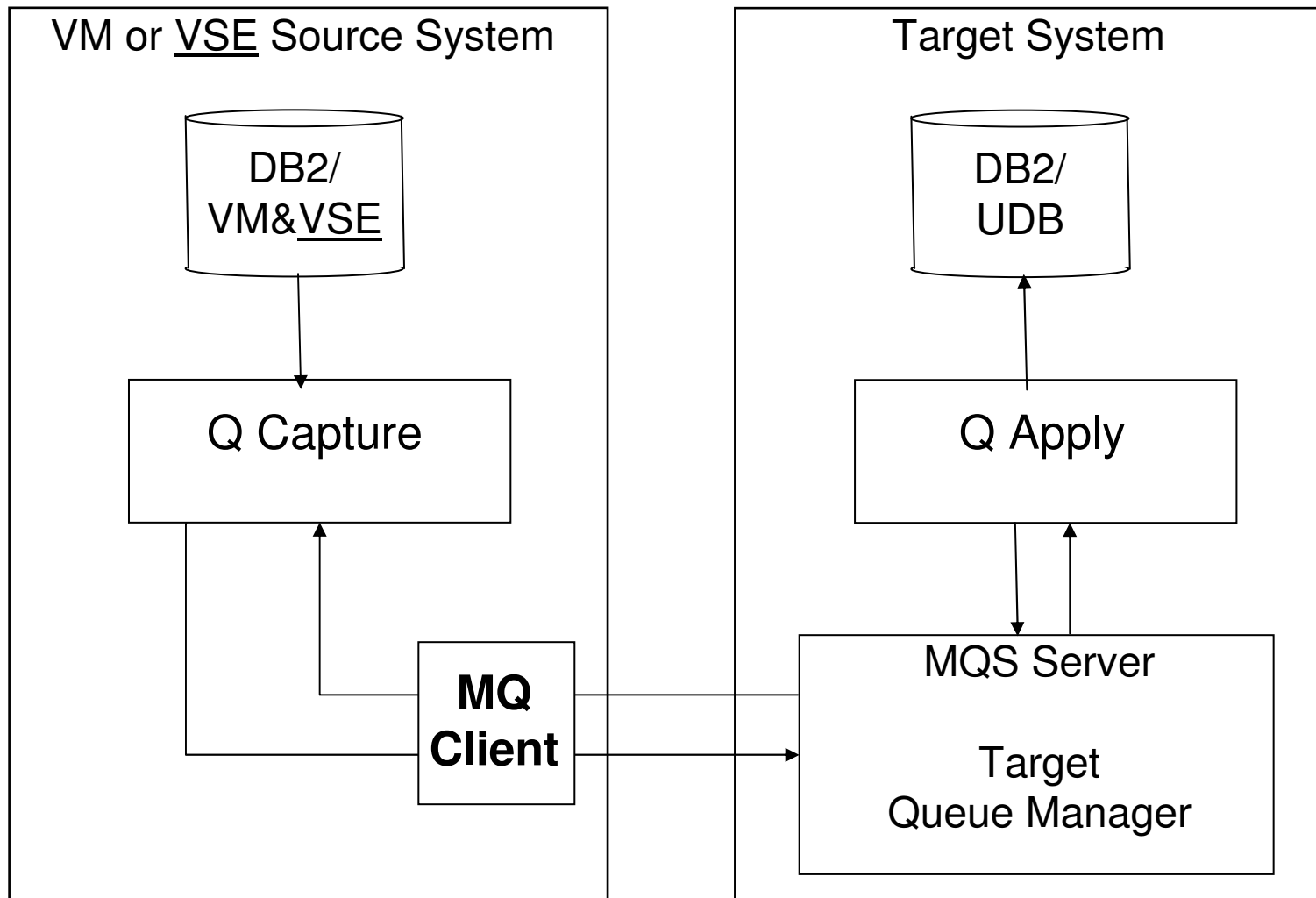


# Implementation for 'Q Replication' in VSE

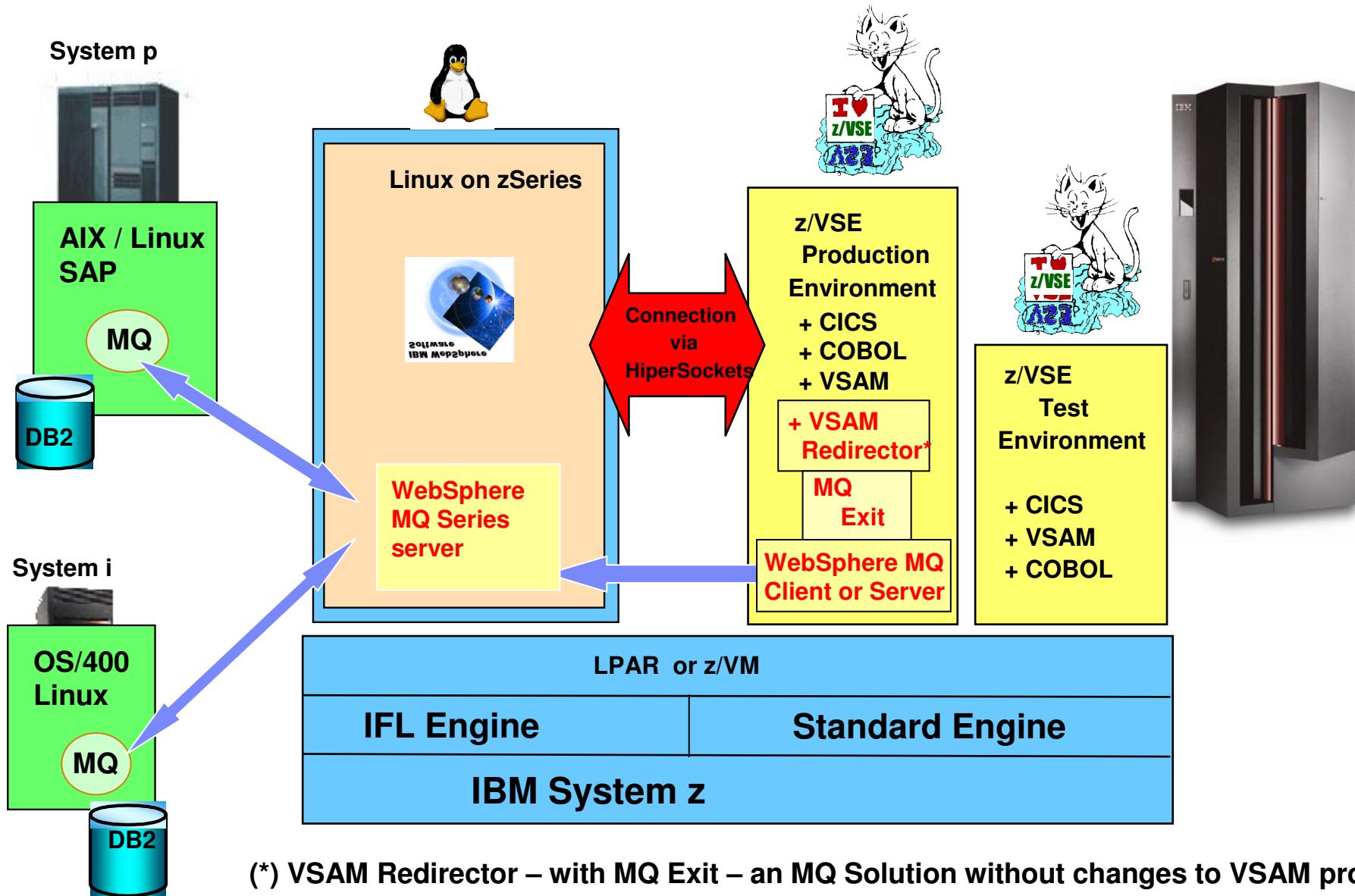




# Implementation of 'Q Replication' in VM & VSE

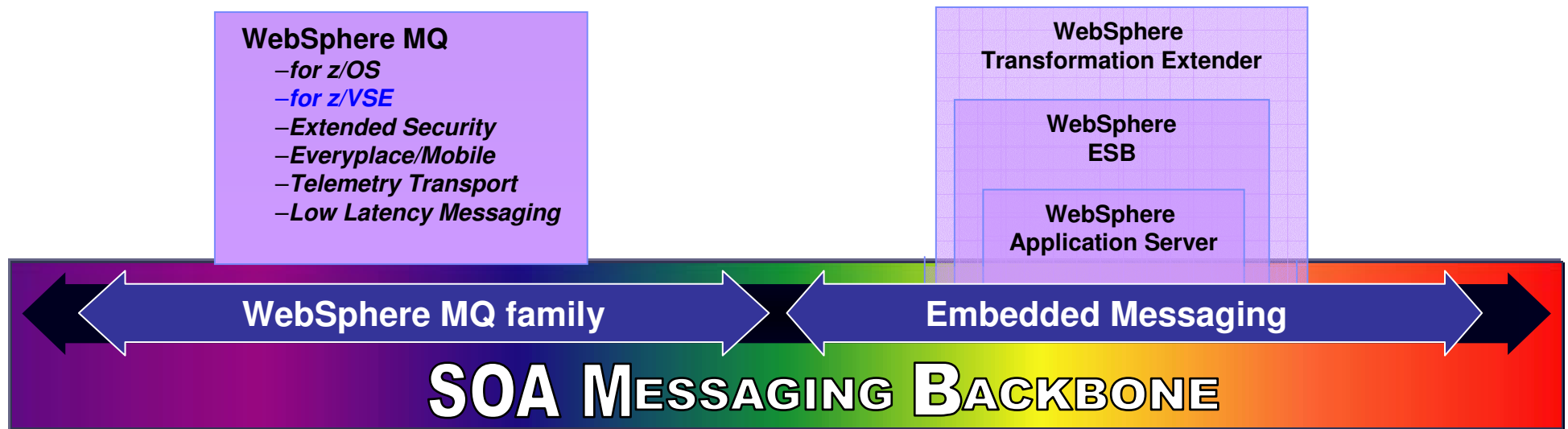


# Solution 2: VSAM programs enablement for MQ solutions



# SOA Solutions: IBM delivers *the SOA Messaging Backbone*

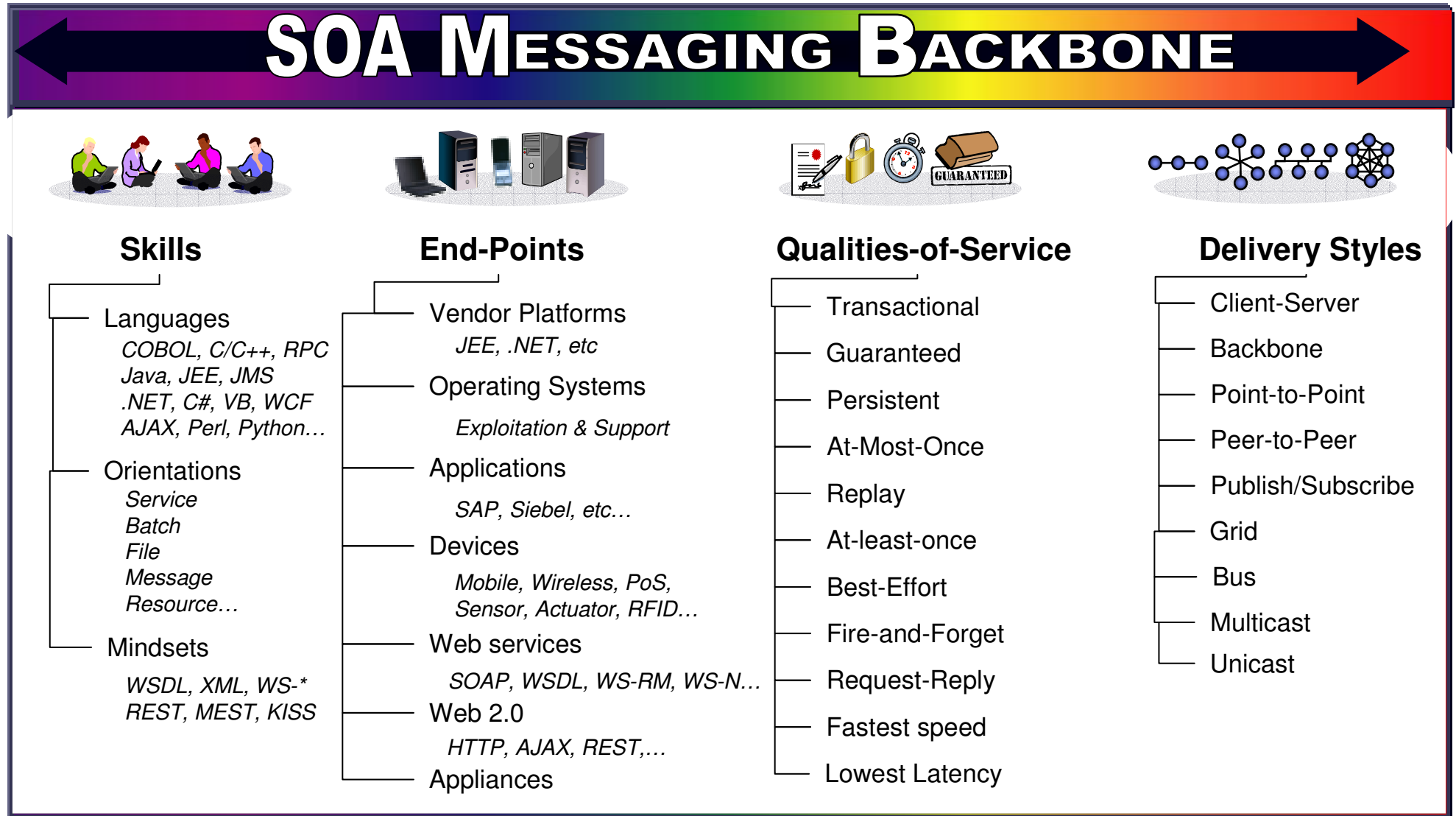
- Via messaging portfolio of standalone and embedded services
  - ▶ Core is WebSphere MQ family
  - ▶ Continually evolving and expanding
  - ▶ Extensive IT environment coverage
  - ▶ Provides “MQ inside” SOA portfolio
  - ▶ Offers an integrated JEE experience
  - ▶ Shared within stack of SOA products



- Seamless bridging and native links within messaging portfolio
  - ▶ Preserving reliability, transactionality and publish-and-subscribe spaces

# IBM's Vision – Messaging Backbone

- Addressing the full spectrum of transport requirements

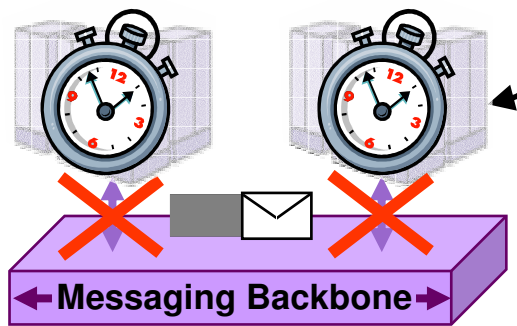


# SOA Messaging Backbone supporting range of Qualities-of-Service

## SOA MESSAGING BACKBONE

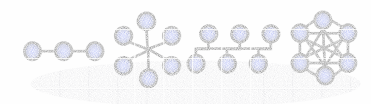
Guaranteed delivery helps overcome availability losses and helps free up busy resources

*Time-Independent (Asynchronous) Delivery helps overcome all these situations*



### Qualities-of-Service

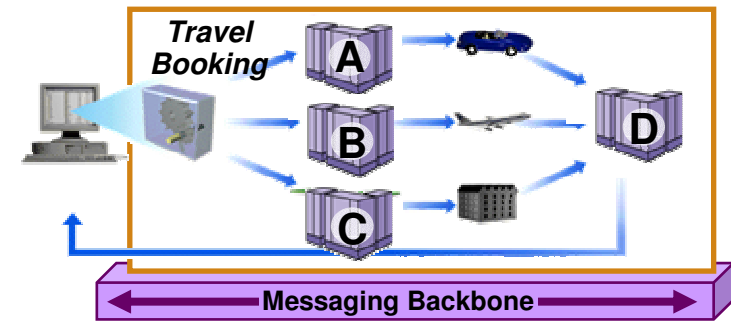
- Transactional
- Guaranteed
- Persistent



### Delivery Styles

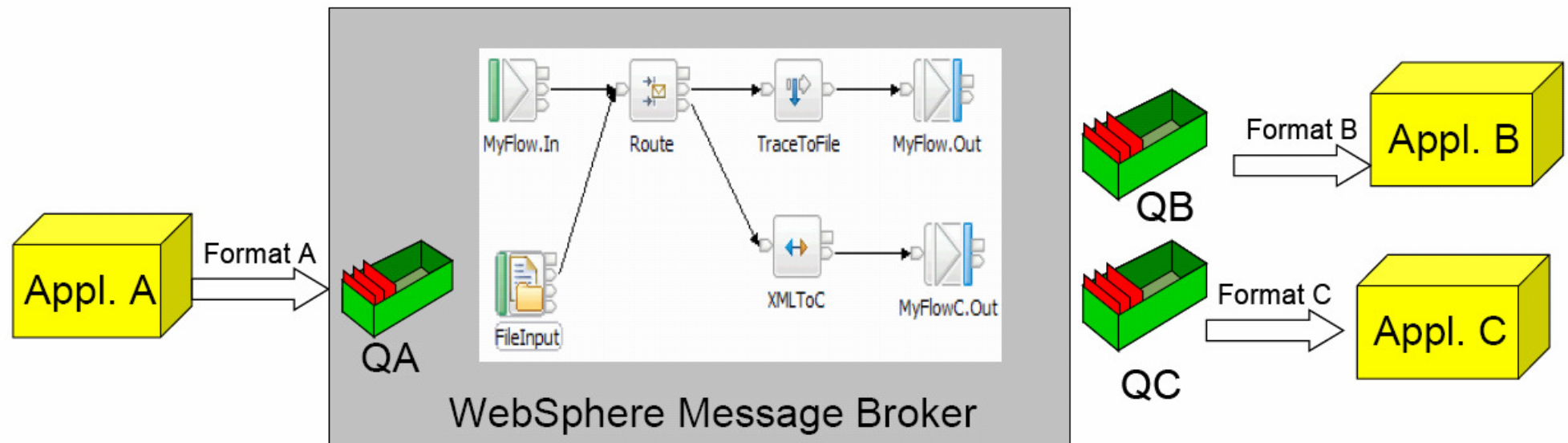
- Client-Server
- Backbone
- Point-to-Point
- Peer-to-Peer

Transactionality preserves the integrity of applications and data

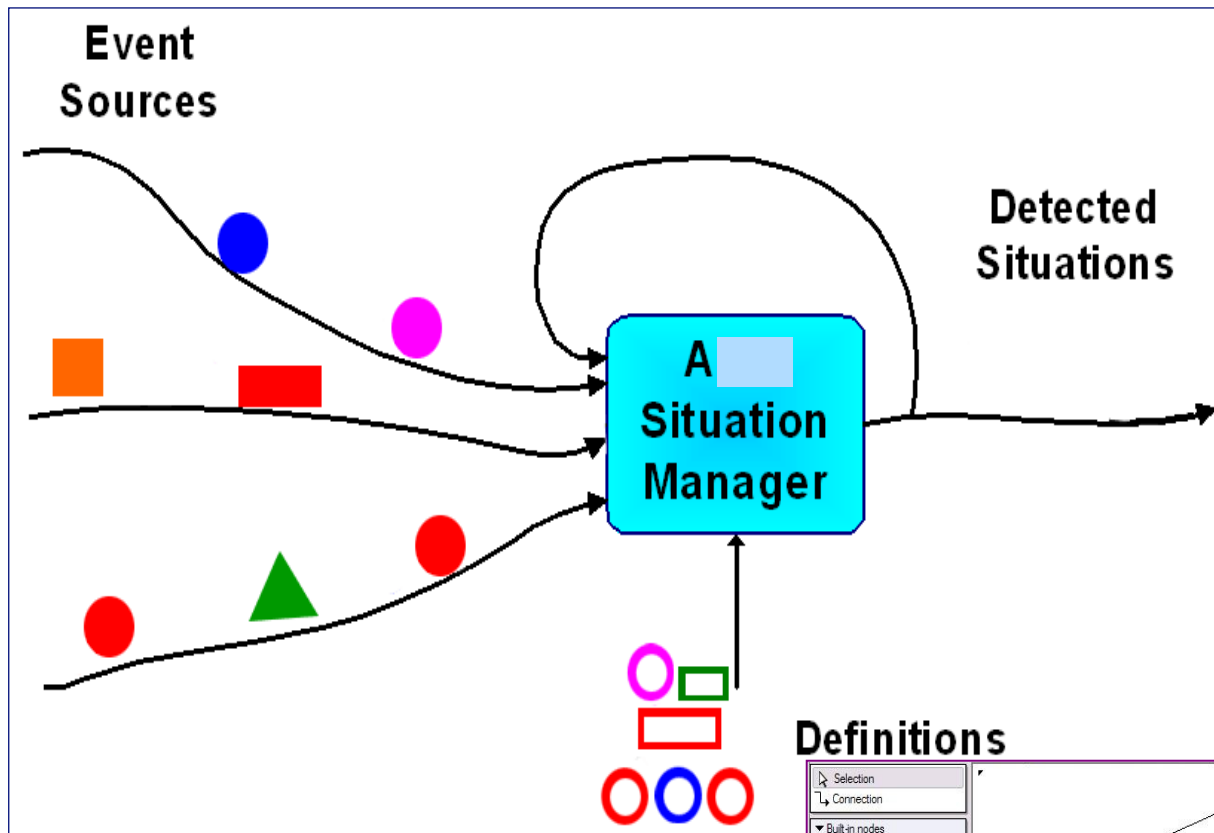


## Solution 3: Message Workflow handling The Message Broker

- Distributes information and data generated by business events in real time to applications, and devices throughout your enterprise and beyond.
- Using WebSphere Message Broker decouples the applications.
  - ▶ Application A writes a message into a queue QA.
  - ▶ Application B reads its messages from the queue QB and application C reads its messages from the queue QC.
  - ▶ These applications do not have to be aware of each other and their used format. The message mediation, routing and transformation is done by the WebSphere Message Broker.



# WebSphere Message Broker Flow

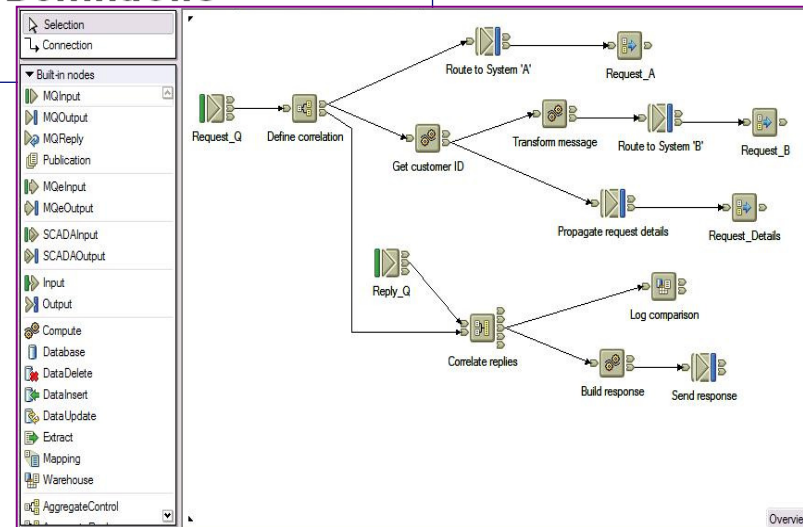


1. A framework for processing MQ messages

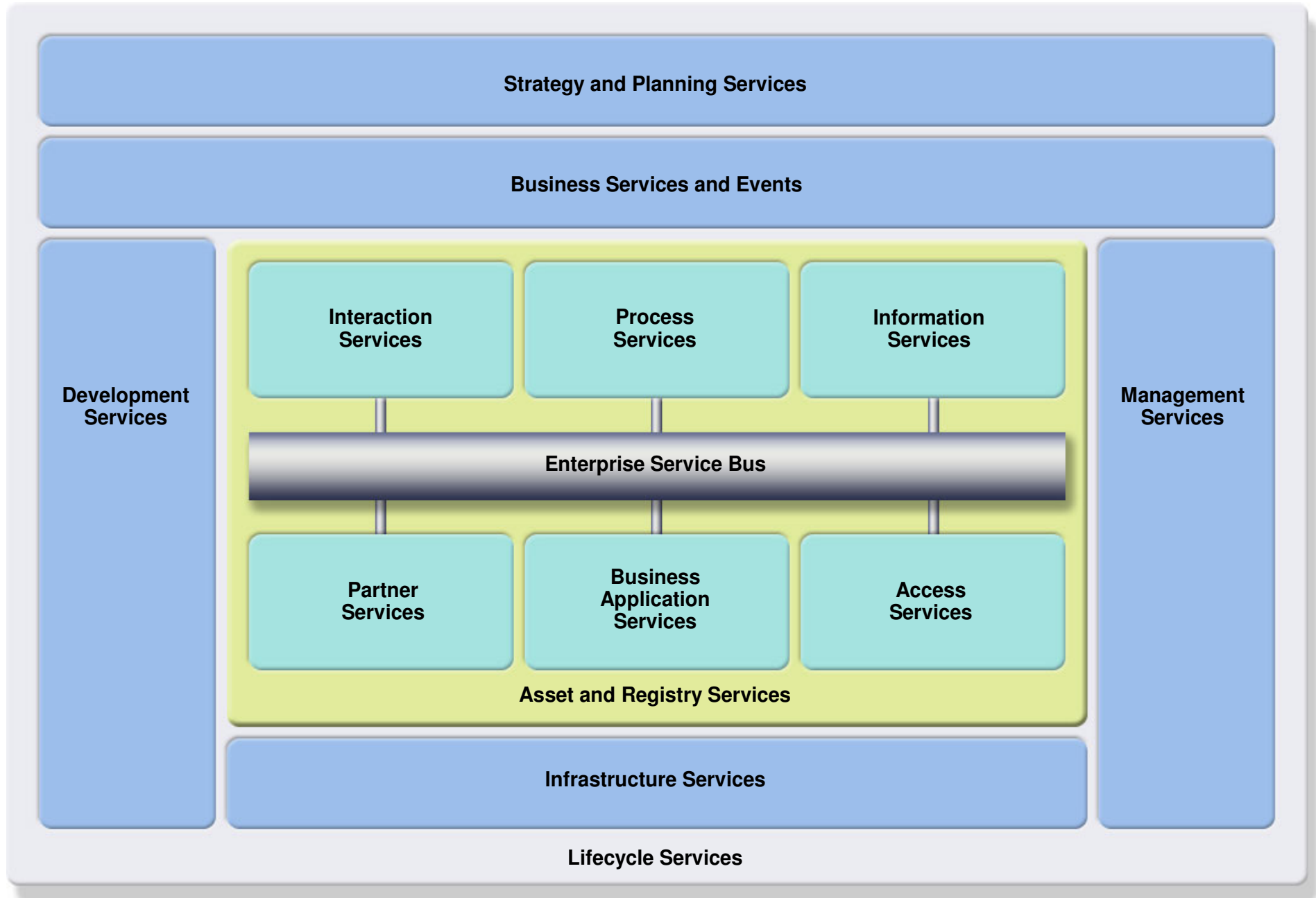
2. A robust hosting environment for:

- ✓ Transforming data
- ✓ Enriching data
- ✓ Interacting with databases
- ✓ Routing messages based on content
- ✓ Detecting complex combinations of messages
- ✓ Interacting existing applications with Web Services

## Definitions



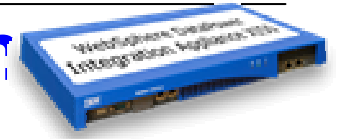
# SOA Foundation Reference Model



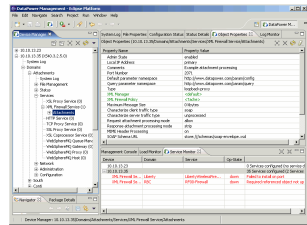


# Integrated SOA Tooling Across ESB Runtime

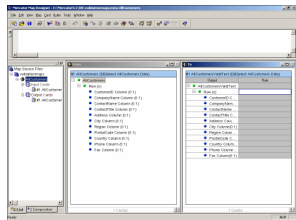
All 3 ESBs integrate with Eclipse, WTX, ITCAM for SOA and WSRR



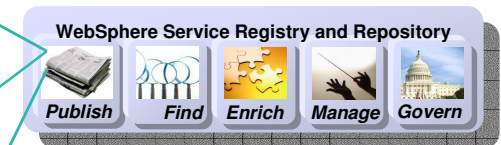
Legacy Mapping Tool:  
**WebSphere TX**  
(Transformation Extender)



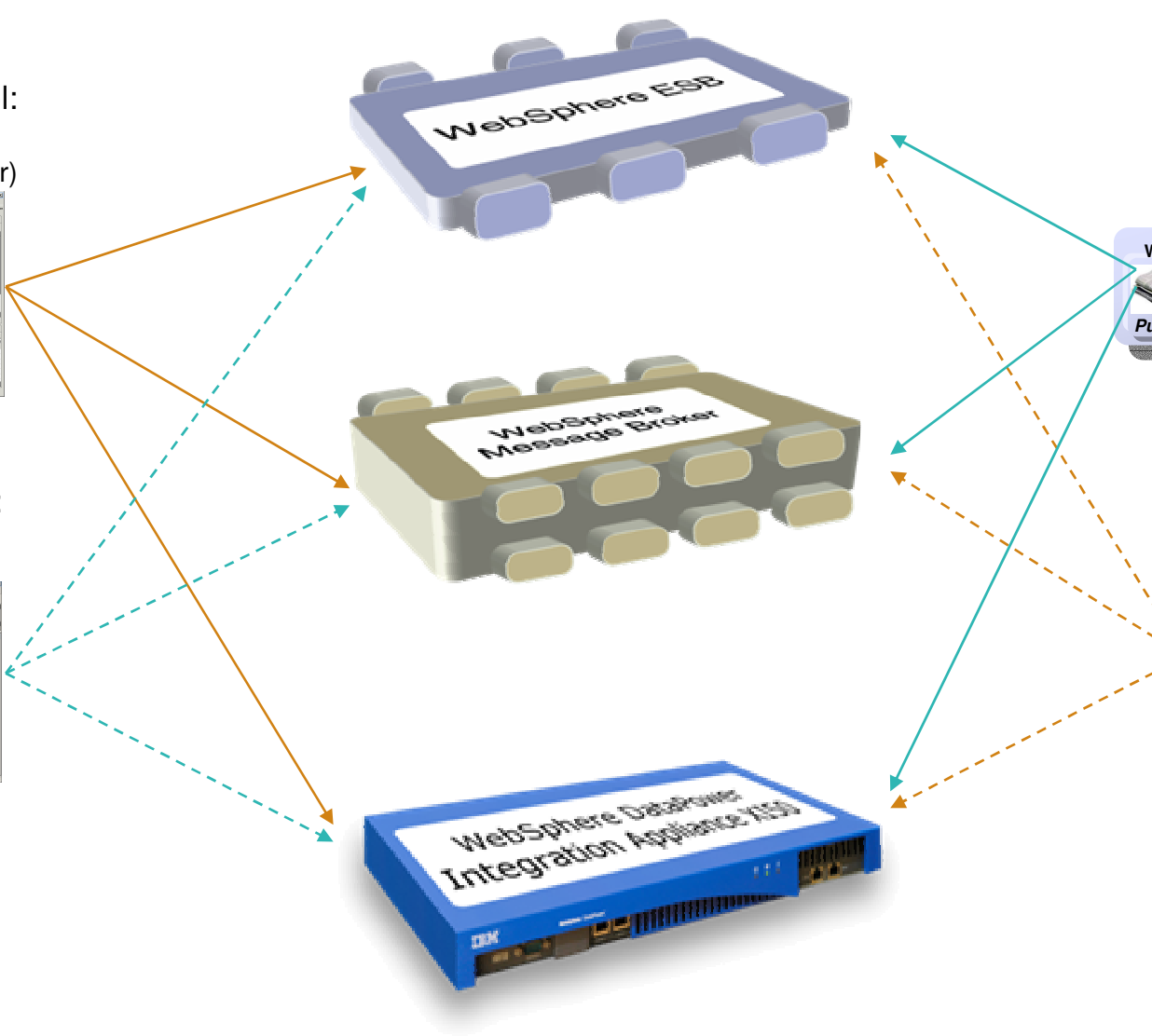
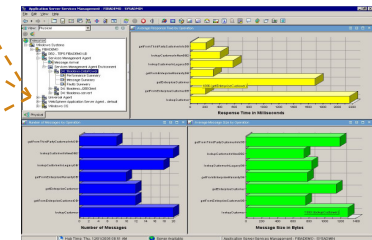
Development Tools:  
**Eclipse/RAD/RDz**



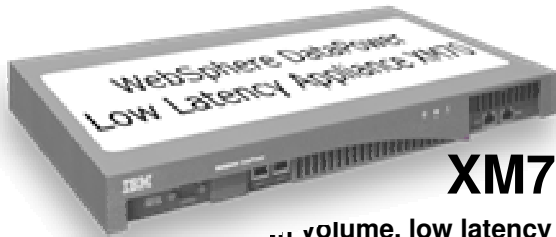
SOA Registry:  
**WSRR**



SOA Management:  
**ITCAM for SOA**



# WebSphere DataPower SOA Appliance Product Line



## XM70

High volume, low latency messaging

- ▶ Enhanced QoS and performance
- ▶ Simplified, configuration-driven approach to LLM
- ▶ Publish/subscribe messaging
- ▶ High Availability



## XB60

Business-to-business messaging (AS2/AS3)

- ▶ Trading Partner Profile Management
- ▶ B2B Transaction Viewer
- ▶ Unparalleled performance
- ▶ Simplified management and configuration



## XI50

Software ESB

- ▶ “Any-to-Any” Transformation at wire-speed
- ▶ Bridges multiple protocols
- ▶ Integrated message-level security



## XS40

Advanced Security Capabilities

- ▶ Centralized Policy Enforcement
- ▶ Fine-grained authorization
- ▶ Rich authentication



## Solution 4: WebSphere ESB and WebSphere Message Broker

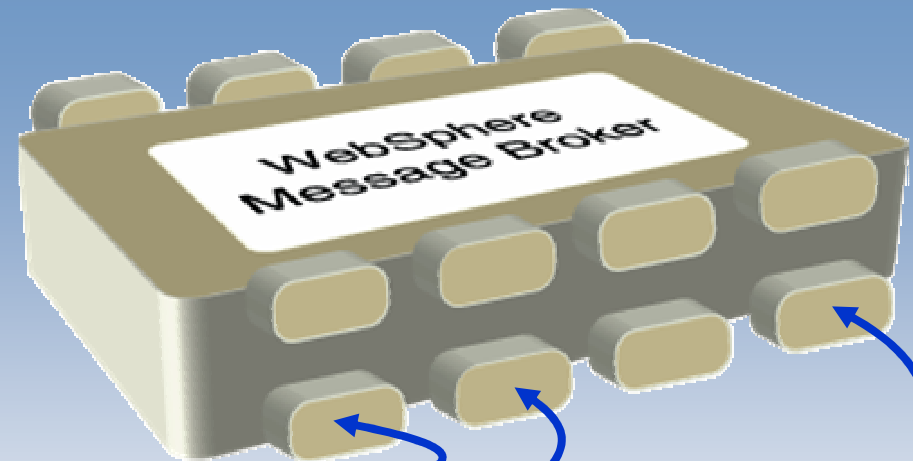
**Challenge:** Retail Stores, Inc. faced three integration headaches:

- Integration efforts at the corporate data center,
- a new store system scheduled for introduction required integration at the store level,
- each of the over 500 store locations had to be seamlessly linked to the corporate data center.

### WebSphere Message Broker at corporate data center

- Connectivity hub for distributing information to the store locations
- Transforms messages between various applications and systems

### Corporate Data Center



### WebSphere ESB at each store location

- Links multiple J2EE applications in addition to linking to Point of Sale terminals

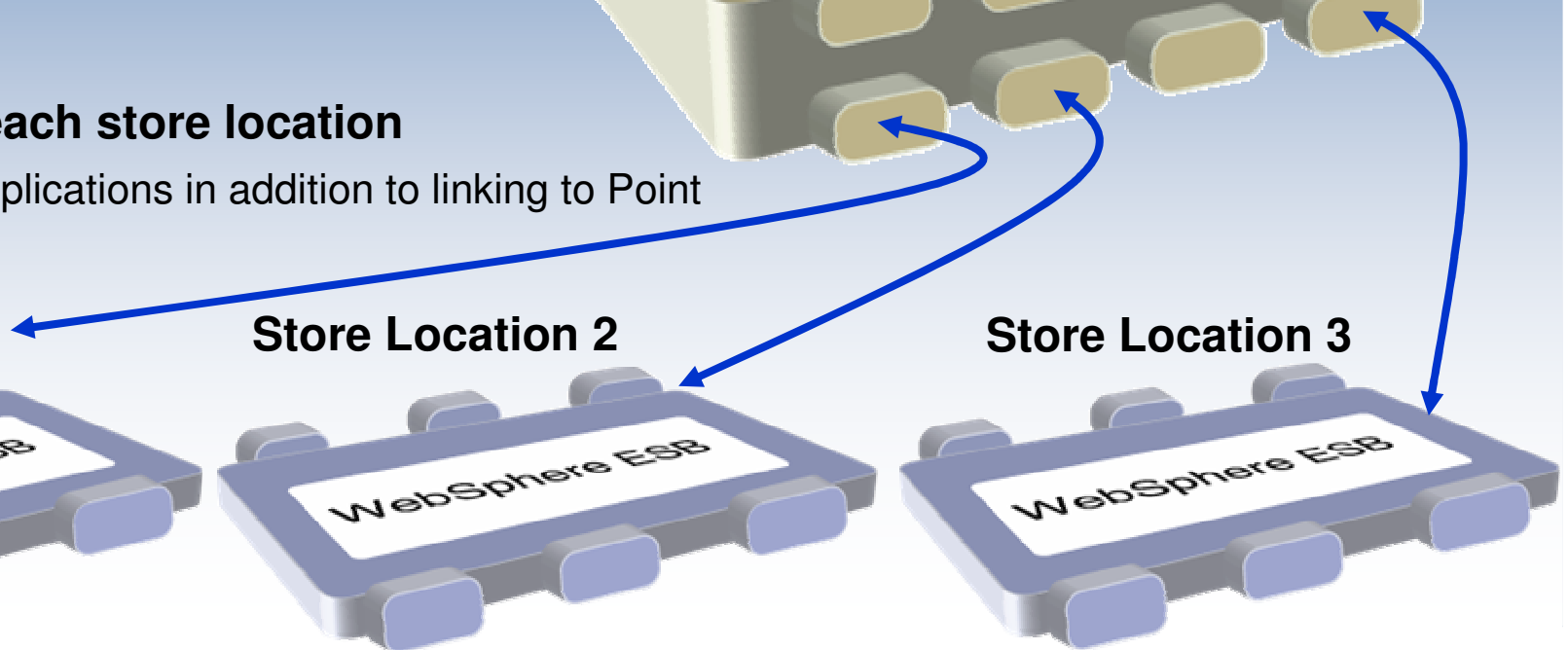
### Store Location 1



### Store Location 2

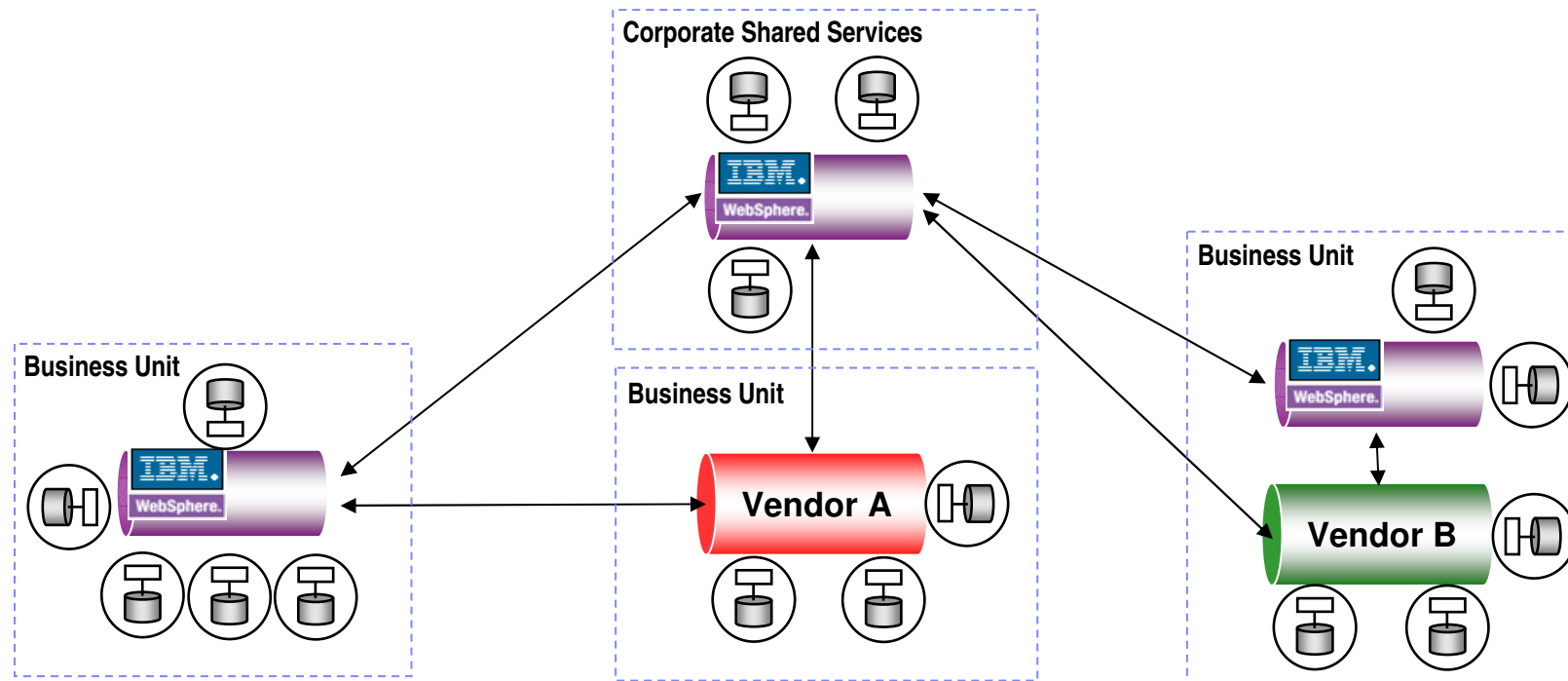


### Store Location 3



# Federated ESB Topology Patterns

***A single enterprise-wide ESB is rarely attainable – most businesses will have multiple ESBs across business units***



**WebSphere Services Registry and Repository**

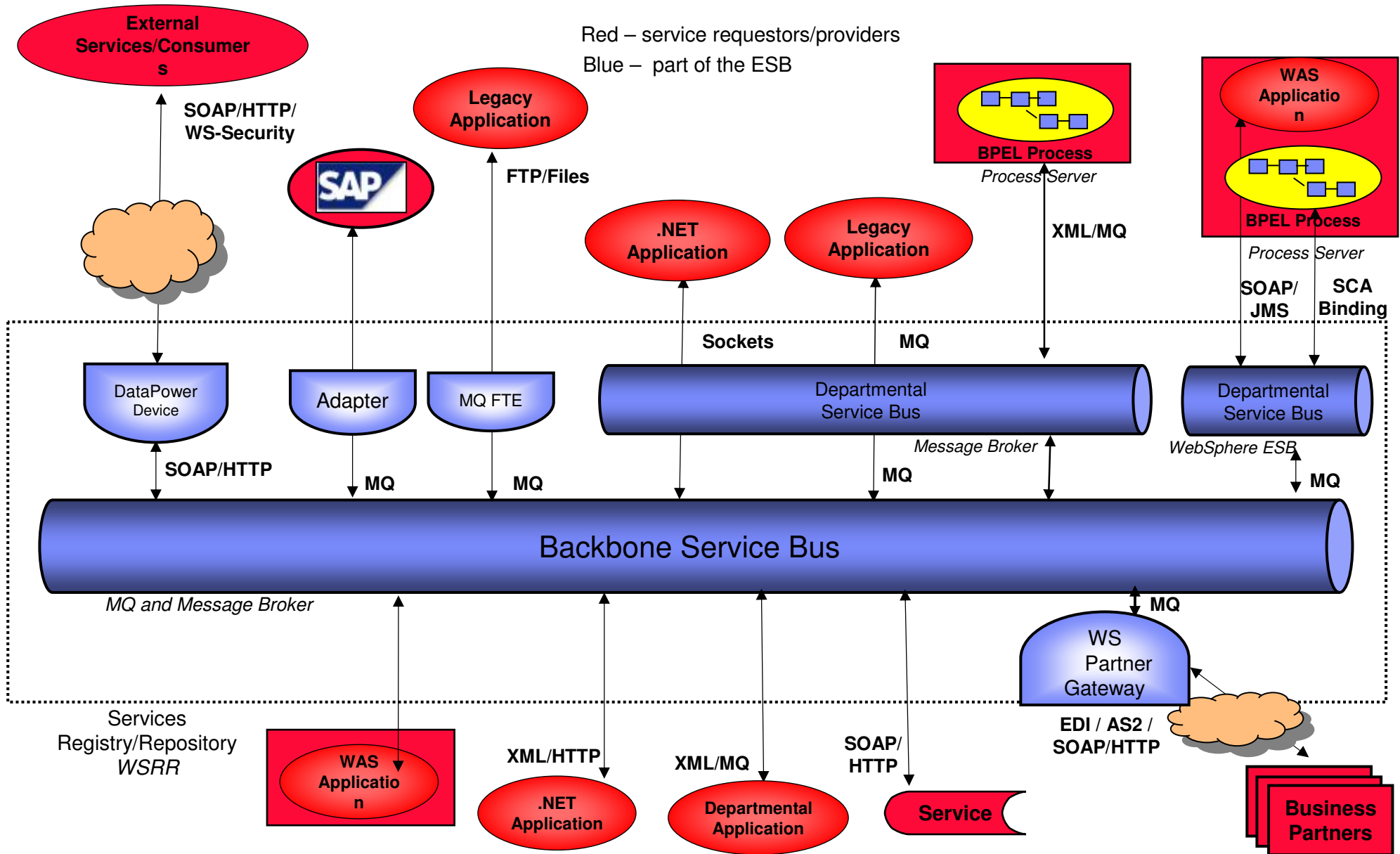
**Tivoli Composite Application Management for SOA**

**Federated Security**

# Example of Federated ESB

Red – service requestors/providers

Blue – part of the ESB



## The integration of System z and distributed technologies into a revolutionary combination



### IBM zManager

- Unifies resources, extending System z qualities of service across the infrastructure
- Install, Monitor, Manage, Optimize, Diagnose & Service

### IBM zEnterprise

- The industry's fastest and most scalable enterprise server
- Ideally suited for large scale data and transaction serving and mission critical enterprise applications



### IBM zBX BladeCenter Extension

#### Application Server Blades

- Runs applications unchanged and supports what you know. Logical device integration between System z and distributed resources

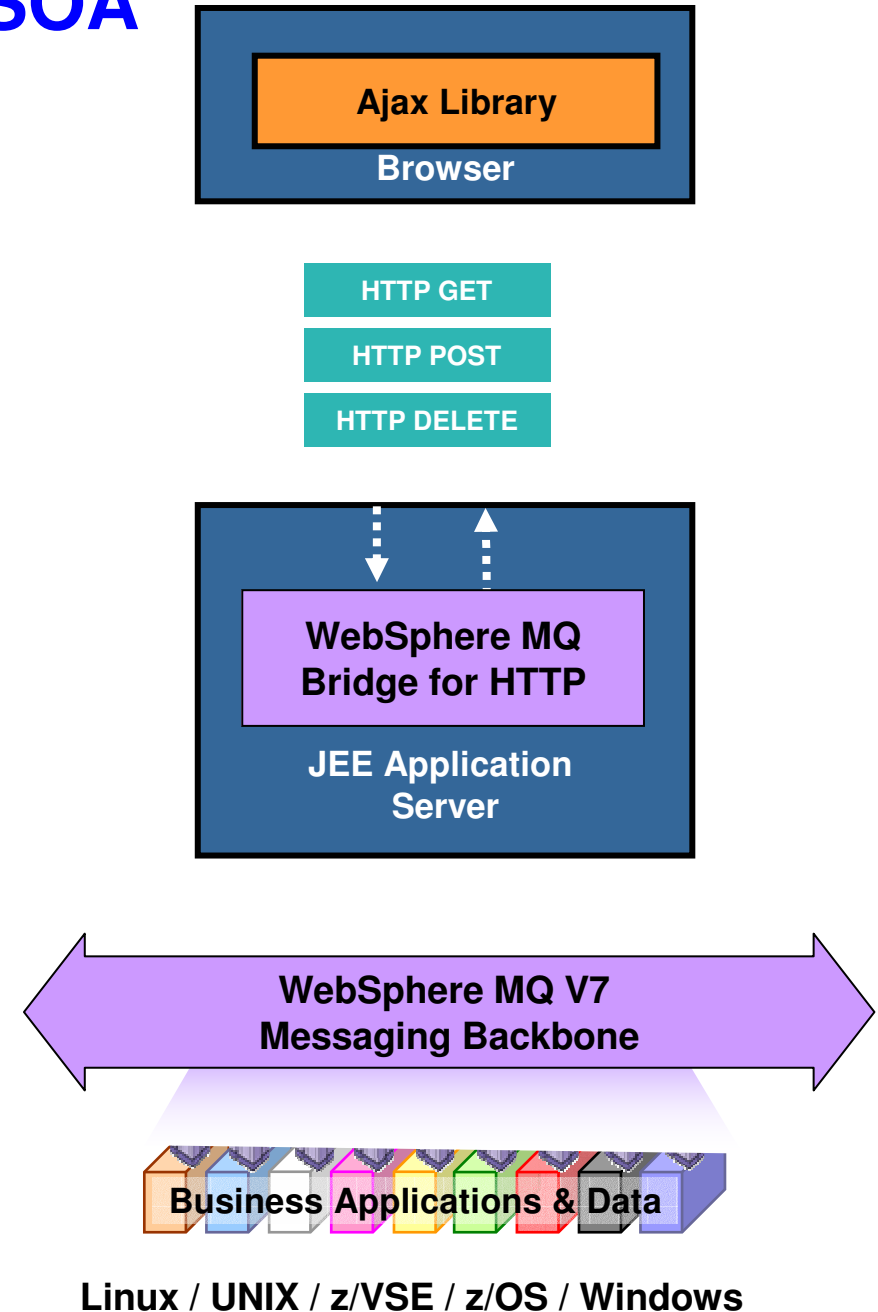
#### Optimizers

- Workload specific accelerators to deliver significant performance and/or lower cost per transaction

# Web 2.0 Connectivity for IBM's SOA

WebSphere MQ and Web 2.0!

- ▶ **Helps enrich Web 2.0 applications with real business data**
  - **Distributed and z/VSE platforms**
  
- ▶ **Developer needs no MQ skills**
  - **Uses Ajax and simple interface to access data by URIs**
  
- ▶ **Helps simplify deployment and maintenance of large scale distributed applications**
  - **Enables simple access to MQ without need to install MQ clients**



# Enabling Features in WMQ V3 for z/VSE

- The following list indicates the APAR prerequisites for certain enhancement features:
  
- WebSphere MQ Explorer support requires one of:
  - ▶ WebSphere MQ Explorer V6.0.2.6, or later.
  - ▶ WebSphere MQ Explorer V7.0.0.1, or later.
  - ▶ WebSphere MQ Explorer Supportpac MS0T.
- SSL key reset requires PK84111.
- Accounting and statistics messages requires PK94386.
- Real-time monitoring requires PM01079.
- PCF and MQSC connection commands requires PM03429.
- Command, configuration and SSL events requires PM09189.
- Listener and service object support requires PM16320.
- Command filtering requires PM23573.
- Message monitoring support requires PM29937.



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## More Information

- WebSphere MQ Application Integration
  - <http://www-01.ibm.com/software/websphere/products/appintegration/>
- [How to install and setup WebSphere MQ for z/VSE with Security](ftp://ftp.software.ibm.com/systems/z/os/zvse/pdf3/How_to_setup_SSL_with_MQ.pdf)
  - [ftp://ftp.software.ibm.com/systems/z/os/zvse/pdf3/How\\_to\\_setup\\_SSL\\_with\\_MQ.pdf](ftp://ftp.software.ibm.com/systems/z/os/zvse/pdf3/How_to_setup_SSL_with_MQ.pdf)
- Product Documentation for WMQ for z/VSE V3:
  - WMQ for z/VSE System Management Guide (GC34-6981-02)
  - Using MQSeries for VSE Redbook (SG24-5647-01)

Note: WMQ for z/VSE V3.0 does not have a Program Directory. Chapter 2 of the System Management Guide contains installation instructions, and is shipped with the V3 product.