IBM Software Group

WebSphere Message Broker V6

Delivering new value on z/OS

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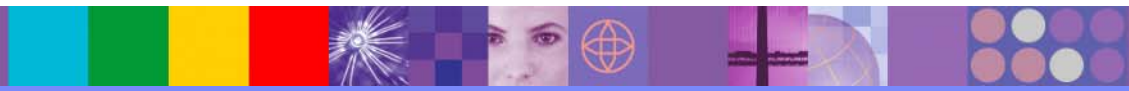
WebSphere software



ON DEMAND BUSINESS

Agenda

- Overview of Message Brokering
- WebSphere Message Broker V6 – an Advanced ESB
  - New features
- Exploiting z/OS capabilities with WebSphere Message Broker v6 for z/OS

Application Integration

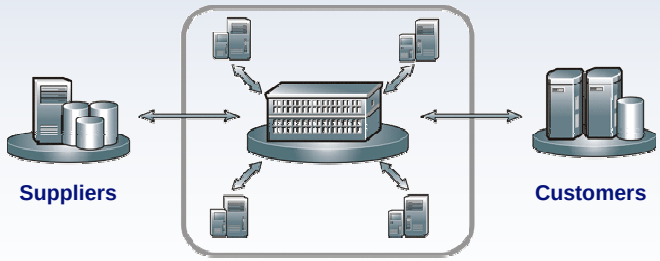
Assure reliable and flexible information flow between diverse applications and organizations

Challenges	Benefits
▪ Applications are not integrated in a flexible and reliable method across the enterprise, reducing business responsiveness ▪ Differences between many internal and partner applications must be managed ▪ Maintaining point to point or custom written integration interfaces is cost and time prohibitive	▪ Reliably and seamlessly exchange data between multiple applications ▪ Manage differences between multiple applications and business partners ▪ Adopt an enterprise wide, flexible, service oriented approach to integration

Application Connectivity

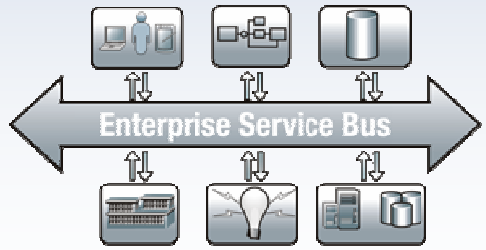
WebSphere MQ

Application and Partner Mediation



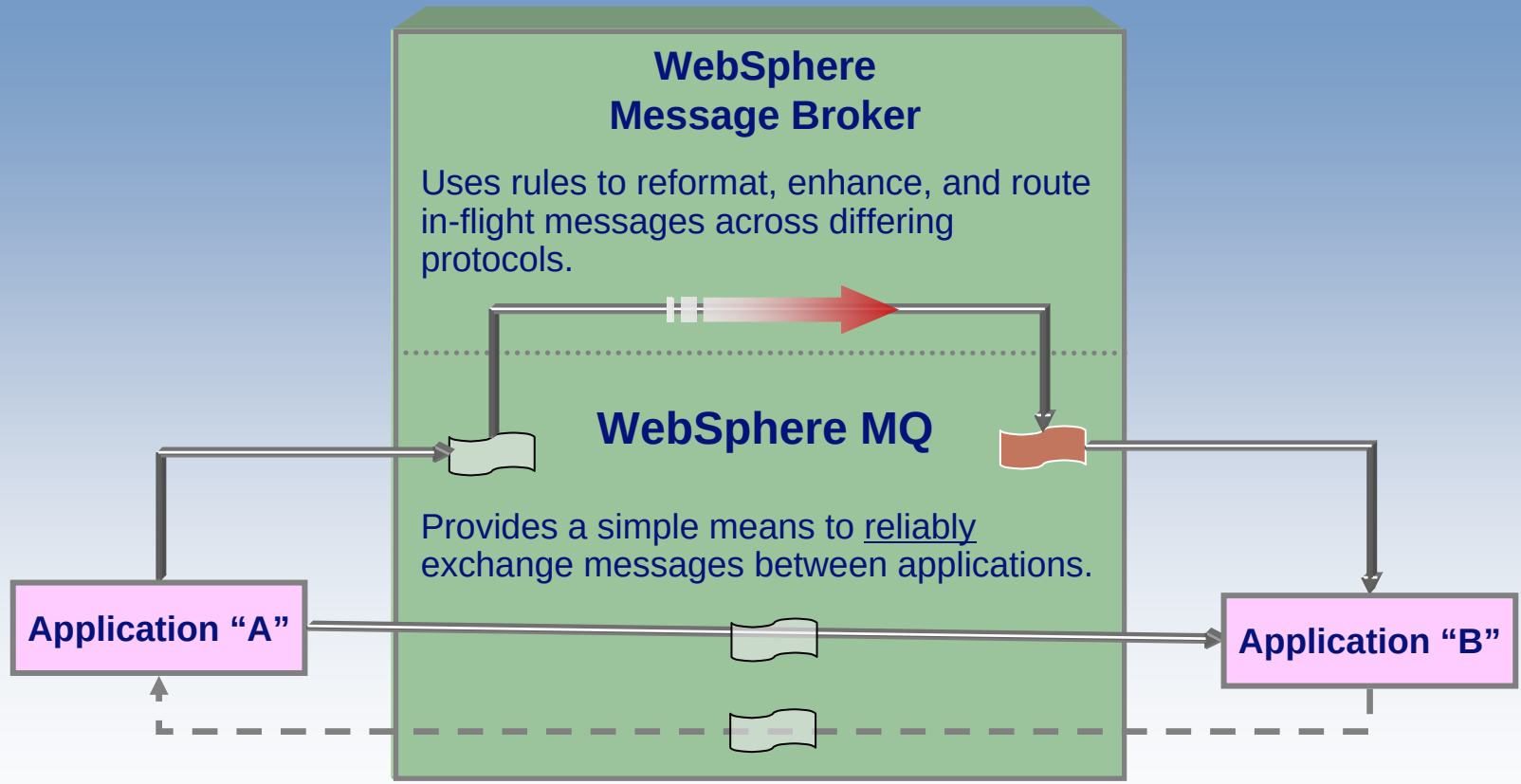
WebSphere Message Broker
WebSphere Partner Gateway

Enterprise Integration Backbone



WebSphere Message Broker
WebSphere ESB

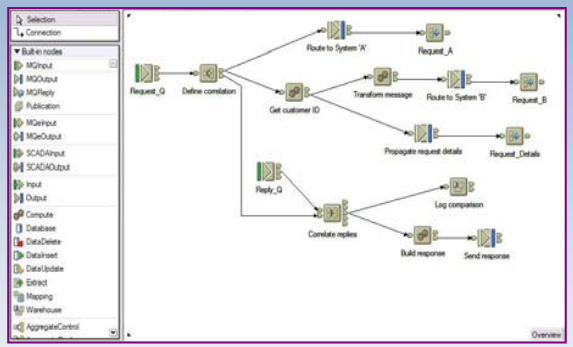
Messaging Overview



Event Notification (1 way communication), Request / Response (2 way communication)

What is WebSphere Message Broker?

1. **A framework for processing MQ messages and more**



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

3. **Broad support for transport protocols beyond MQ**

4. **Built on a platform for:**
   - ✓ End-to-end transactionality
   - ✓ Scalability
   - ✓ Load balancing
   - ✓ High availability
   - ✓ Manageability

WebSphere Message Broker design features

- Messaging styles
  - One way, Request response, Aggregation, Publish/Subscribe
- Protocol Support
  - WMQ, HTTP, JMS, Real-time and multicast, File, User Defined
- Message Format
  - Record based (COBOL, C), Industry (SWIFT, TLOG, EDI…), XML
- Transformation Languages
  - ESQL, Java, Mapping, XSLT, and more

Goal: Near universal connectivity and transformation

WebSphere Message Broker 6.0

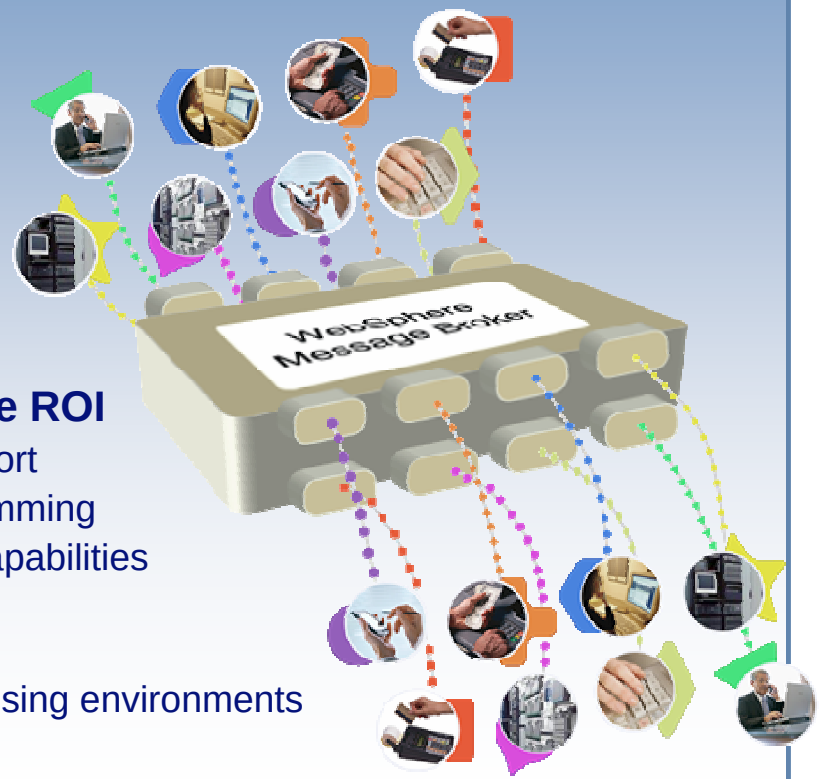
Delivering an advanced ESB to power your SOA

Provides universal connectivity

- Provides Web Services connectivity and non standard interface connectivity
- Unmatched ability in integrating many systems, platforms, devices, and APIs
- Facilitates service oriented integration

Provides universal data transformation

- Advanced message transformation, enrichment, and routing
- Support for industry standard data formats (AL3, HL7, SWIFT, HIPAA, EDI, etc.)



New & improved pre-built capabilities to improve ROI

- Leverage existing skills with rich Java and XML support
- Implement complex event processing with no programming
- Offers simple and easy to use tools with advanced capabilities

Leverage the performance

- Offers performance of traditional transactional processing environments

Integrate your existing environment with the world of web services

Platform coverage

Broker

Windows
- XP/2003
- z/OS
- HP-UX
- Solaris
- AIX
- Linux (Intel+)

Configuration Manager

Windows 2000/XP/2003
- z/OS
- HP-UX
- Solaris
- AIX
- Linux (Intel+)

Toolkit

Windows 2000/XP
- Linux (Intel)

✸= New Features

- Support for 64-bit Execution Groups (AIX, HP, Solaris)
- Support for Oracle databases on Linux platform

Now offering Linux support for all components

Deployment and administration options

New administration features include:

- Deploy complete environment on z/OS
  - Includes Broker Execution Groups as z/OS address spaces, as well as Configuration Manager and User Name Server
- New command line tools
  - Start/Stop message flows
  - Create/Delete execution groups
- Java administration API (“Configuration Manager Proxy”)
- Runtime versioning
- Full JCL customization for z/OS
- Restart database without restarting the broker

Messaging Processing Nodes Enhancements

New

- Java Compute node
  - Provide existing Compute node capability for Java programmers
  - Deploy Java JARs
- TimerControl node
  - One shot, Periodic, N shot (persistent and non persistent)
- MQGET node
  - Support for SOAP/JMS (MQ)
  - Simple aggregation and/or mechanism to hold state
- JMS Input/Output node
  - Native JMS Interoperability

Improved

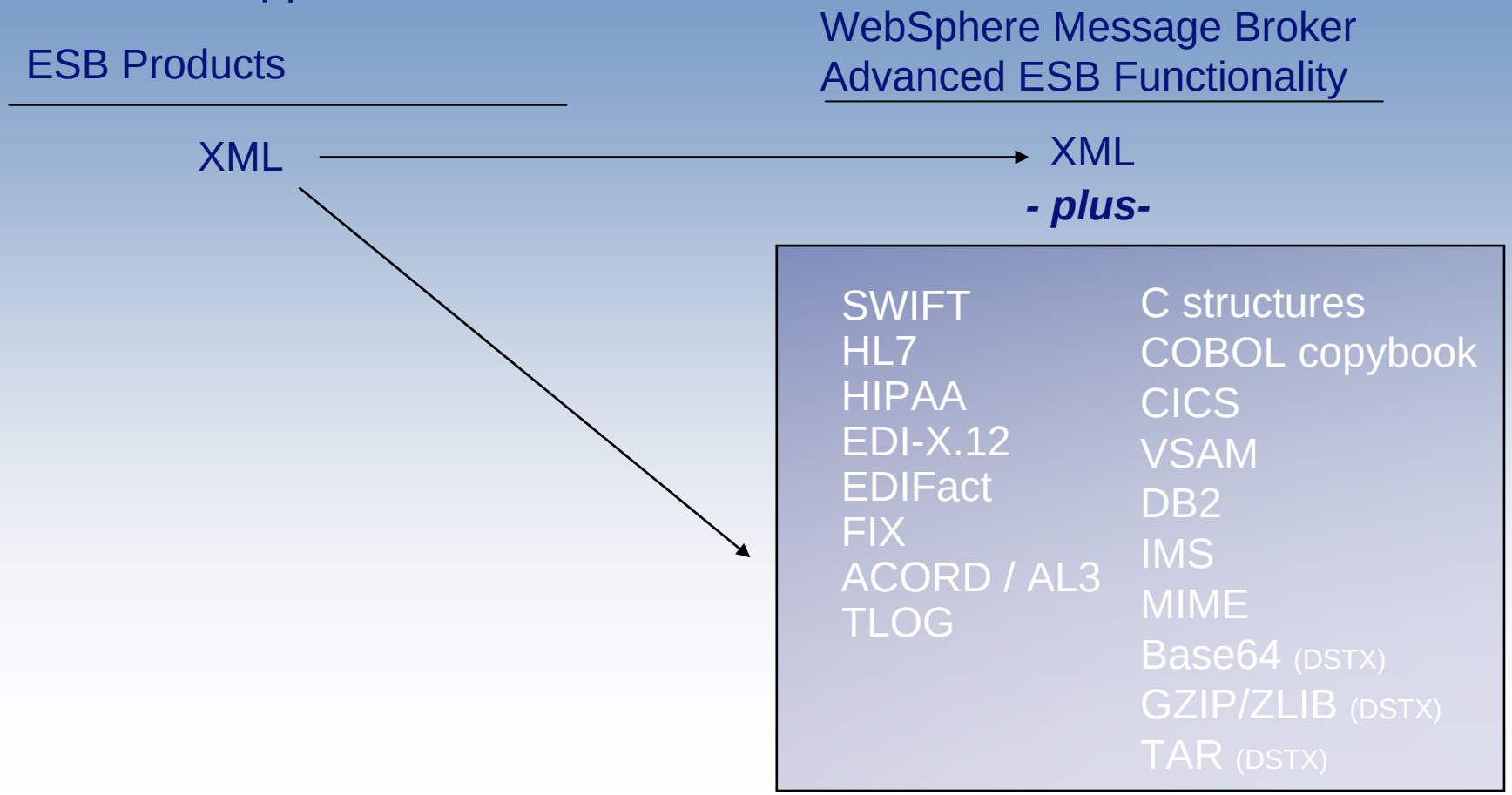
- Web Services node
  - HTTPS support
- Aggregation node
  - MQ based implementation
  - Delivers improved performance
- XSLT node
  - Deployed style sheets
  - Compiled style sheets
- Publication node
  - Support for Multicast PGM

Now Available

- DataStage TX node
  - Run existing DSTX/Mercator maps unchanged
  - Leverage extended capabilities
- File node
  - ability to process data held in files

Payload Transformation:

WebSphere Message Broker goes beyond what most ESB products deliver for supported data formats



Offering Java as a first-class transformation language

- General purpose programmable node
  - Java programming language
  - Standards based - J2SE 1.4.2
  - Offloaded processing on z/OS via zAAP
  - High Performance for processing logic and tree access
- Offers “Compute node” alternative for Java programmers
  - Similar “look and feel”
  - No ESQL skill or experience required
- Extra convenience methods have been added
  - The message tree can be queried and traversed using XPath 1.0 syntax
  - Extensions to allow new elements to be created in message structure
  - Also Provides full access to the existing Java plug-in API
- Databases can be accessed via two supported routes
  - JDBC type 4 drivers - standard Java, non-transactional
  - MbSQLStatement - uses broker’s ESQL syntax, fully transactional

ESQL 'External' functions in Java

- Allows extension of ESQL environment with libraries of Java functions
- Java methods can be called wherever an ESQL function or procedure can be called

Definition:

```
CREATE PROCEDURE myProc1(IN P1 INT, OUT P2 INT, INOUT P3 INT)
RETURNS INTEGER
LANGUAGE JAVA
EXTERNAL NAME "com.ibm.broker.MyClass.myMethod1";
```

```
package com.ibm.broker;

class MyClass {
  public static void myMethod2(Long P1, Long[] P2, Long[] P3) {
    ...
  }
}
```

Invocation:

```
CALL myProc1( intVar1, intVar2, intVar3) INTO intReturnVar3;
-- or
SET intReturnVar3 = myProc1( intVar1, intVar2, intVar3);
```

Increased standards support

Message Broker 6.0 offers greater connectivity through improved standards support, including:

- Improved support for modelling and working with SOAP messages
  - Pre-defined message definitions for SOAP
  - Support for SOAP with Attachments via new MIME parser
- Greater flexibility in generating WSDL
  - Single/multi-file formats, rpc and document styles
- A mechanism for importing an existing WSDL definition
  - A new WSDL importer wizard, accepting a variety of WSDL styles as above
- More flexible HTTP support
  - Support for SOAP 1.1 and SOAP 1.2, and for HTTP 1.1
- Built-in WS-I Compliance checking
  - Automatically validates WSDL against the WS-I Basic Profile

Exploiting z/OS capability with WebSphere Message Broker

- High Availability
  - Parallel Sysplex
  - Automatic Restart Manager
  - WebSphere MQ clustering
- Workload Management
  - Resource Allocation
  - Workload Scaling
  - Workload Isolation
- Reporting and Chargeback
  - SMF
  - Coordinated Reporting

WebSphere Message Broker Cost of Ownership on z/OS

- zSeries Application Assist Processor (zAAP) Exploitation
  - Java Compute Node
  - XSLT Node
  - JMS Real-time and Multicast Nodes
- Performance Improvement with WebSphere Message Broker V6
  - Up to 50% performance improvement
    - In addition to benefits of zAAP exploitation
  - Focus on
    - Parser; ESQL; Locking & Scalability; Aggregation; z/OS exploitation
- New features for more effective processing
  - Java Compute Node; Transformation Enhancements; Semi-persistent environment; MQGET node; XML compact parsers; UNICODE support
- New pricing for z/OS

Operational Characteristics of WebSphere Message Broker V6 on z/OS

- Installation and customization
  - SMP/E
  - Fixes delivered as PTFs (always cumulative)
  - JCL based configuration and administration
- Command and Console Support
  - Broker commands in JCL and via MVS console
  - Command Output written to JES SPOOL
  - MVS Console on MVS Log
  - Problem Determination as standard
- Migration from previous versions
  - Upgrade Support from V2.1 and V5
  - Co-existence
- Security
- Resource Recovery Services

z/OS specific nodes for WebSphere Message Broker

- VSAM nodes
  - 5 nodes to allow users process record-oriented VSAM files
    - Input, Read, Write, Update, Delete
  - Integrate VSAM processing with other functions
- QSAM nodes
  - Sequential file processing
- CICS node
  - Drives CICS program synchronously within message flow
  - Simplifies flow design
  - Improves performance up to 300%
  - Commit transaction either immediately or via RRS

Other miscellaneous enhancements

- RealTime/Multicast
  - PGM
- z/OS
  - Full use of JES spool for consolidated message output
  - z/OS 1.5 and XML Toolkit
  - Deployment audit trail messages
- Database
  - Unicode support
- Publish Subscribe
  - Performance
  - Literal topic ‘+’ ‘#’ support
- Internal runtime changes
  - Overall performance improvement

Next steps and more information

- Talk with your IBM representative and IBM Business Partners to identify ways to help achieve your business goals with WebSphere Message Broker 6.0
- More information about WebSphere Message Broker can be found here
  - http://www-306.ibm.com/software/integration/wbimessagebroker/
  - http://www-306.ibm.com/software/integration/wbimessagebroker/v6/zos.html


Thank
You