IBM ESBs at the heart of Smart SOA on System z with new capabilities

Anthony O'Dowd
odowda@uk.ibm.com
Rob Phippen
phippen@uk.ibm.com

Agenda

- **ESB Overview**

- **WebSphere Message Broker 6.1**

- **WebSphere ESB 6.1**

- **WebSphere DataPower XI50 3.6.1**

ESB Overview

What is an Enterprise Service Bus?

- **An ESB** enables integration between loosely-coupled applications and services within and across
  - *Services oriented architectures* – where distributed applications are composed of granular re-usable services with well-defined, published and standards-compliant interfaces
  - *Message driven architectures* - where applications send messages through the ESB to receiving apps
  - *Event driven architectures* - where applications generate and consume messages anonymously
- **Mediations** within an ESB enable intelligent processing of service request/responses, events, messages
  - At application endpoints or distributed through the infrastructure of the Bus
  - Capabilities include:
    - Matching and routing of messages between services
    - Conversion of transport protocols between requestor and service
    - Transformations (e.g. XML to Binary translations, DB lookups, aggregations),
    - Distribution of business events from/to disparate sources.
- Enabling **simple application integration** across different platforms, programming models & messaging standards
  - underpinning Business Process and managed Business Partner integration

The Enterprise Service Bus

An Enterprise Service Bus (ESB) is a flexible connectivity infrastructure for integrating applications and services.
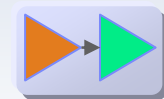
An ESB performs the following between requestor and service
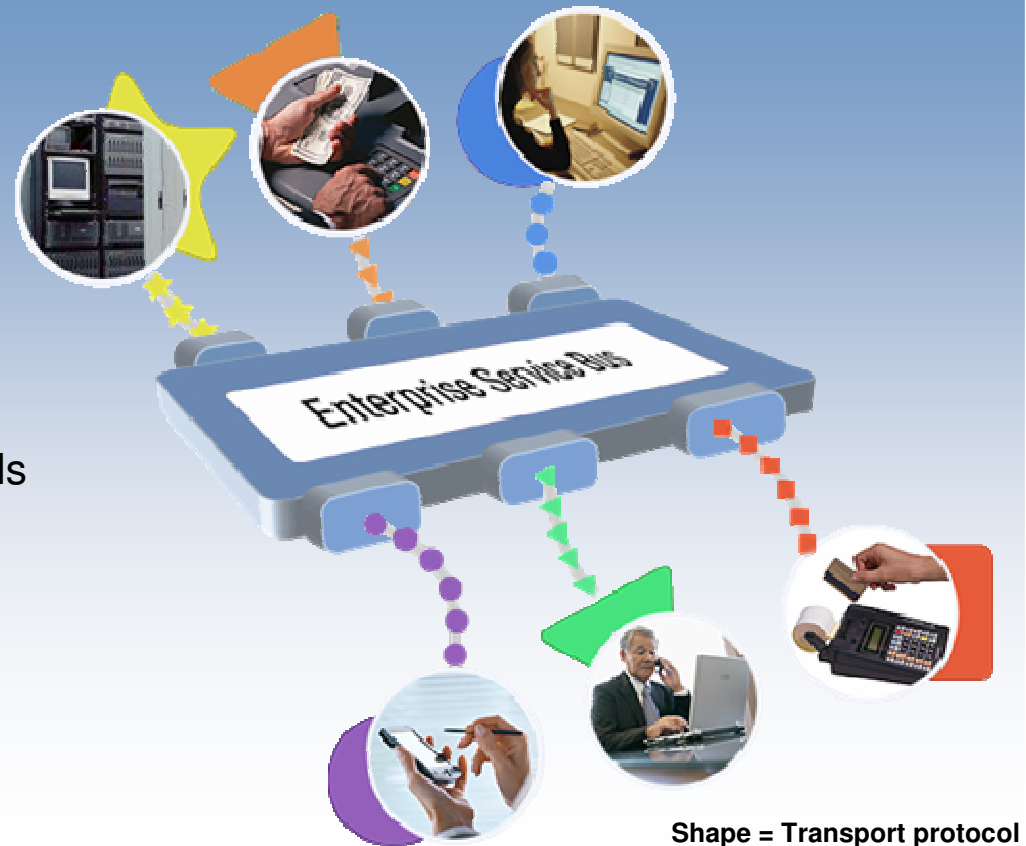
MATCHES & ROUTES
communications between services

CONVERTS
between different transport protocols

TRANSFORMS
between different data formats

IDENTIFIES & DISTRIBUTES
business events

Shape = Transport protocol
Color = Data format

ESB offerings from IBM WebSphere
IBM is the only vendor to deliver the most complete ESB Portfolio

Optimized with WebSphere Application server for an integrated SOA platform

WebSphere Enterprise Service Bus

Purpose-built hardware for simplified deployment and hardened security

WebSphere DataPower Integration Appliance XI50

Built for universal connectivity and transformation in heterogeneous IT environments

WebSphere Message Broker

*By 2009, Analysts state multiple ESBs will be required to grow your SOA!*

ESB offerings from IBM WebSphere
Each delivers a common set of ESB capabilities

WebSphere ESB

WebSphere Message Broker

ESB offerings from IBM WebSphere

WebSphere DataPower Integration Appliance XI50

- Mediations to enable common patterns

- Transformation of common data formats

- Connectivity via common protocols
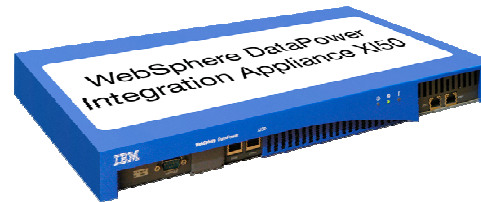
- Leading web services standards

- First class interoperability between ESB products

- Mission-critical qualities of service

WebSphere Message Broker

WebSphere Message Broker on System z

- Universal Connectivity
  - Simplify application connectivity to provide a flexible and dynamic infrastructure
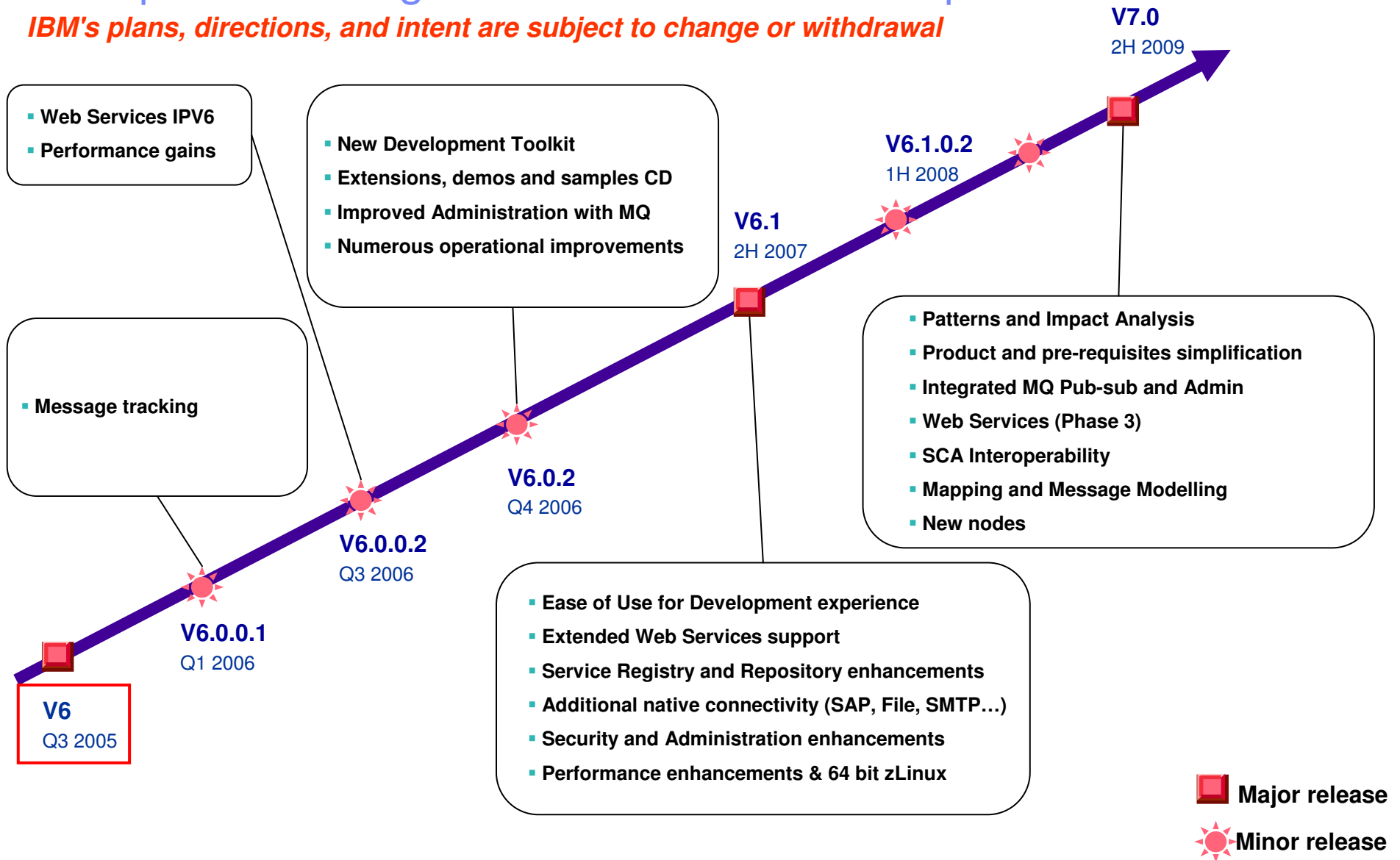
- Routes and transforms messages **FROM** anywhere, **TO** anywhere
  - Supports a wide range of protocols
    - MQ, JMS 1.1, HTTP(S), Web Services, File, EIS (SAP,PeopleSoft…), TCP/IP, User Defined
  - Supports a broad range of data formats
    - Binary (C/COBOL), XML, Industry (SWIFT, EDI, HIPAA…), User Defined
  - Interactions and Operations
    - Route, Filter, Transform, Enrich, Monitor, Distribute, Decompose, Correlate, Detect…

- Simple programming
  - Message Flows to describe application connectivity comprising…
  - Message Nodes which encapsulate required integration logic which operate on…
  - Message Tree which describes the data in a format independent manner
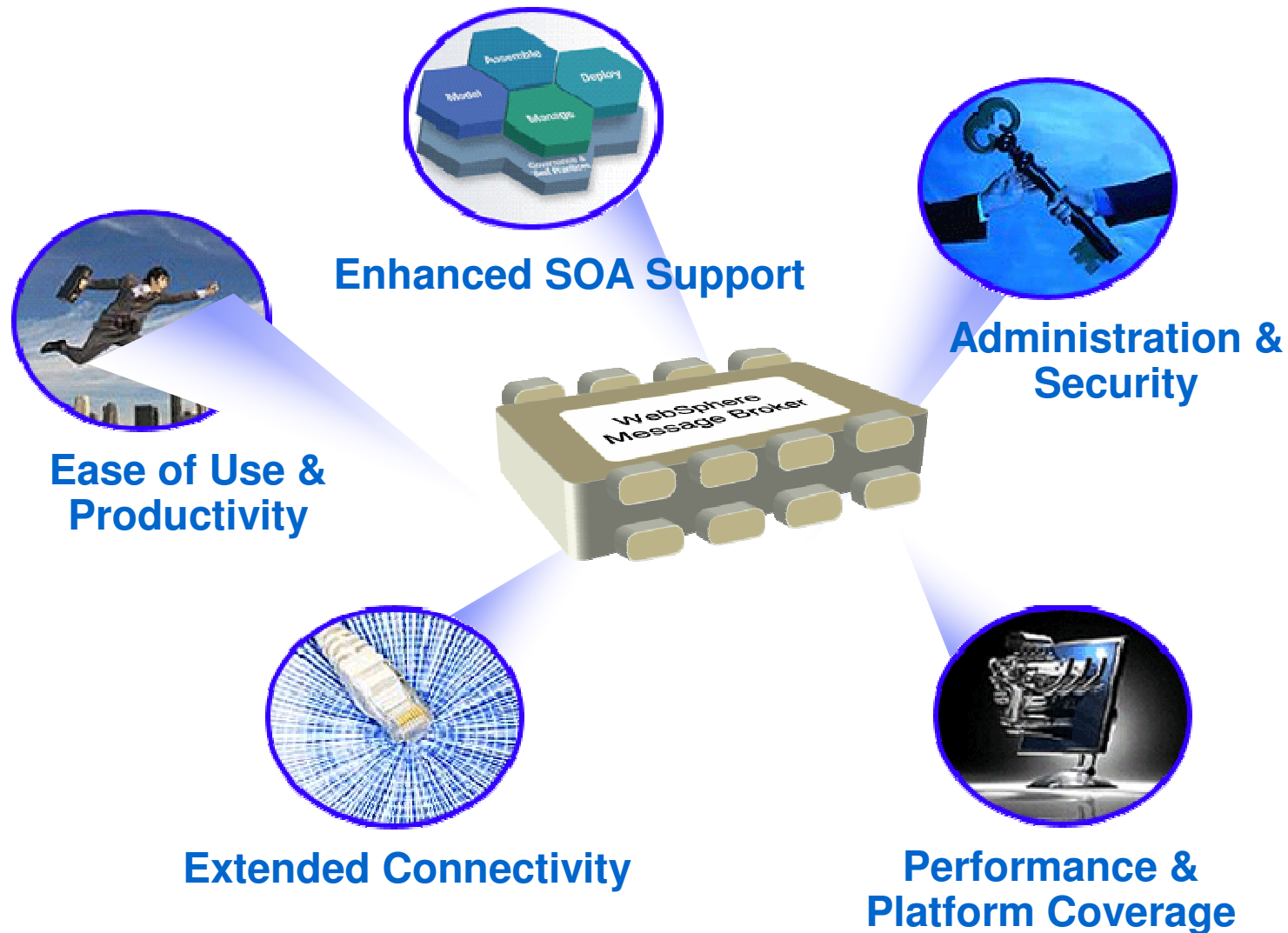 - Transformation options include Graphical mapping, Java, ESQL, XSL and WTX

- Operational Management and Performance
  - Extensive Administration and Systems Management facilities for developed solutions
  - z/OS and z/Linux natively supported
  - Offers performance of traditional transaction processing environments

WebSphere Message Broker Product Roadmap

IBM's plans, directions, and intent are subject to change or withdrawal

V7.0
2H 2009

- **Web Services IPV6**
- **Performance gains**

- **New Development Toolkit**
- **Extensions, demos and samples CD**
- **Improved Administration with MQ**
- **Numerous operational improvements**

V6.1.0.2
1H 2008

V6.1
2H 2007

- **Message tracking**

- **Patterns and Impact Analysis**
- **Product and pre-requisites simplification**
- **Integrated MQ Pub-sub and Admin**
- **Web Services (Phase 3)**
- **SCA Interoperability**
- **Mapping and Message Modelling**
- **New nodes**

V6.0.2
Q4 2006

V6.0.0.2
Q3 2006

- **Ease of Use for Development experience**
- **Extended Web Services support**
- **Service Registry and Repository enhancements**
- **Additional native connectivity (SAP, File, SMTP…)**
- **Security and Administration enhancements**
- **Performance enhancements & 64 bit zLinux**

V6.0.0.1
Q1 2006

V6
Q3 2005

■ **Major release**

☀ **Minor release**

Key Themes for WebSphere Message Broker V6.1

Enhanced SOA Support

Administration & Security

Ease of Use & Productivity

Extended Connectivity

Performance & Platform Coverage

Version 6.1 Feature Overview for System z

- **Ease of Use and Productivity**
  - Reducing the time to get started with Message Broker
  - Simplifying development tasks including debug; reducing the time to create working solutions

- **Enhanced SOA support**
  - Supporting Web Services natively with WS-Security and WS-Addressing
  - DataPower SOA appliance for WS-Security
  - Integration and enhancement of WSRR support

- **Extended Connectivity**
  - Built-in nodes for EIS access: SAP and PeopleSoft
  - Native support for very large file processing, including FTP
  - New SMTP and TCP nodes

- **Administration & Systems Management**
  - Enterprise-wide identity, authentication and authorization with Tivoli and LDAP
  - MB Explorer Eclipse administration
  - Numerous manageability improvements

- **Platform Support and Performance**
  - 64 bit zLinux; Java 5
  - Ultra High Performance XML parser including schema validation
  - Compacted memory footprint; Real-time graphical performance analysis
  - Performance improvements

Platform Support

- Simplified Offering
  - Single Message Broker Offering focussing on Advanced ESB functionality
  - Event Broker version 6 customers entitled to Message Broker 6.1
  - Rules and Formatter available for existing users only

- Operating system and hardware platform
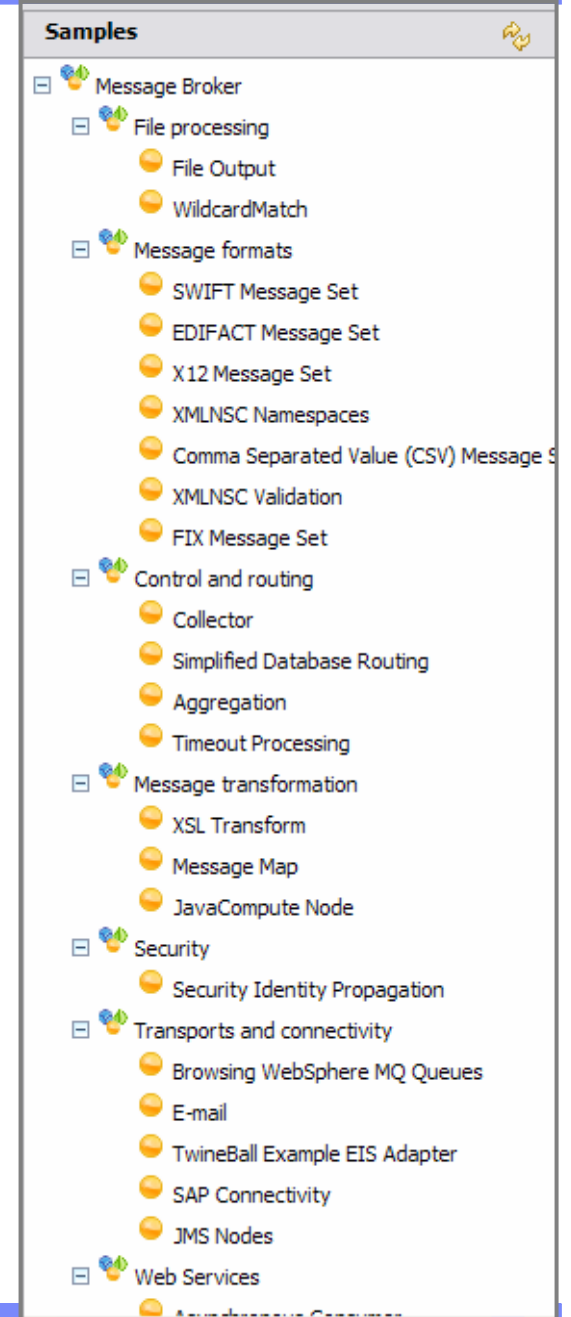 - Linux on zSeries and z/OS

- 64 bit Support
  - zLinux has 64 bit capability
    - Default execution group size is 64 bit & commands are all 64 bit
  - z/OS remains 31 bit for V6.1

- Databases
  - DB2 for z/OS, DB2 and Oracle for zLinux as broker databases

- Java
  - JDBC XA for z/Linux
  - z/OS RRS for JDBC XA to follow in future release
  - Java 5 on all platforms

Product Simplification

- Significantly reduced toolkit size

- Removal of RAC prerequisite – native debug

- Install
  - ISMP installer for zLinux, SMP/E for z/OS

- Default configuration
  - Allows you to understand broker components and configuration
  - Quickly create a working system for development

- Samples gallery
  - Comprehensive "Samples Gallery" for all new and existing function
  - Single click to install and run using default configuration
  - New sample message sets e.g. CSV
  - Learn how to use all 6.1 capabilities using realistic, working samples

- Product Prerequisites
  - MQ V6 or above
  - A production database
    - Cloudscape provided for development and test
    - DB2 supplied as production database

Samples

- Message Broker
  - File processing
    - File Output
    - WildcardMatch
  - Message formats
    - SWIFT Message Set
    - EDIFACT Message Set
    - X12 Message Set
    - XMLNSC Namespaces
    - Comma Separated Value (CSV) Message S
    - XMLNSC Validation
    - FIX Message Set
  - Control and routing
    - Collector
    - Simplified Database Routing
    - Aggregation
    - Timeout Processing
  - Message transformation
    - XSL Transform
    - Message Map
    - JavaCompute Node
  - Security
    - Security Identity Propagation
  - Transports and connectivity
    - Browsing WebSphere MQ Queues
    - E-mail
    - TwineBall Example EIS Adapter
    - SAP Connectivity
    - JMS Nodes
  - Web Services

Easy to Move to Version 6.1

- Migration
  - Support migration from V5 and V6
    - Event Broker V5 and V6 migrated to Message Broker 6.1
  - Compatibility
    - Message flows, message sets, ESQL, Java, Maps and XSLT run without change
      - Including 64 bit execution groups
  - Rollback support
    - Migrate back to previous release with single command if necessary

- Coexistence
  - V6.1 will co-exist with V5 and V6
  - Enables incremental migration

- Production ready at GA (Nov 2007)
  - Less defects than any existing version of Message Broker
  - Fewer regressions
  - Longer Mean Time To Fail

Powerful, Easy to Use Tooling

- Full function Toolkit in smallest ever install

- Builds on advances in Toolkit 6.0.2

- Wizards
  - Guides you through solution creation
  - Novice and expert modes

- WSDL Drag Drop
  - Quickly create Web Services solutions

- Drag and Drop Mapping
  - Now includes calling Java from map

- Many new ease of use features
  - "Message Viewer" visualizes expressions
  - Discovery wizards for SAP and PeopleSoft
  - BAR file rebuild

- Integrated Test Facility
  - Unit Test License included
  - Test Client to test flows
  - Direct debug using Java Debug Protocol
  - "Component Trace" to follow message path
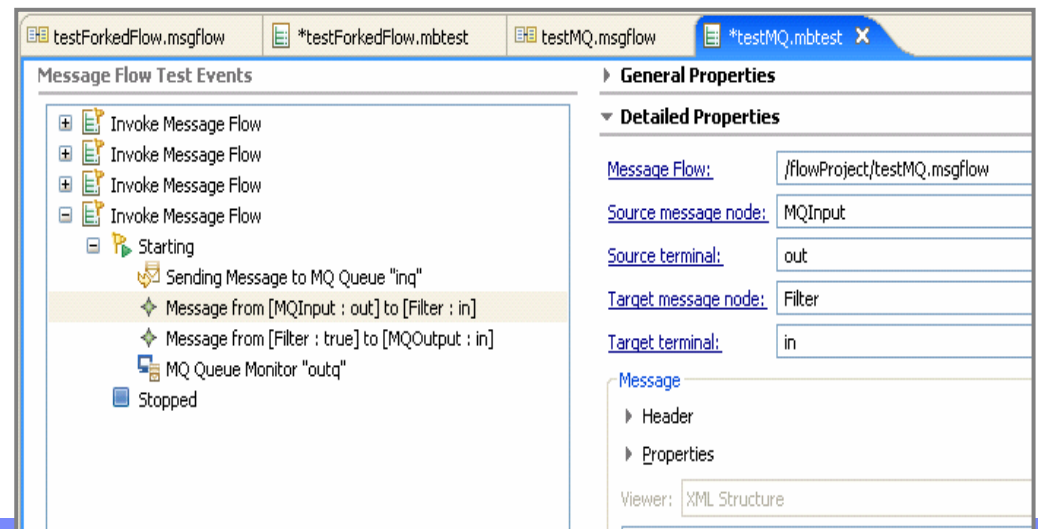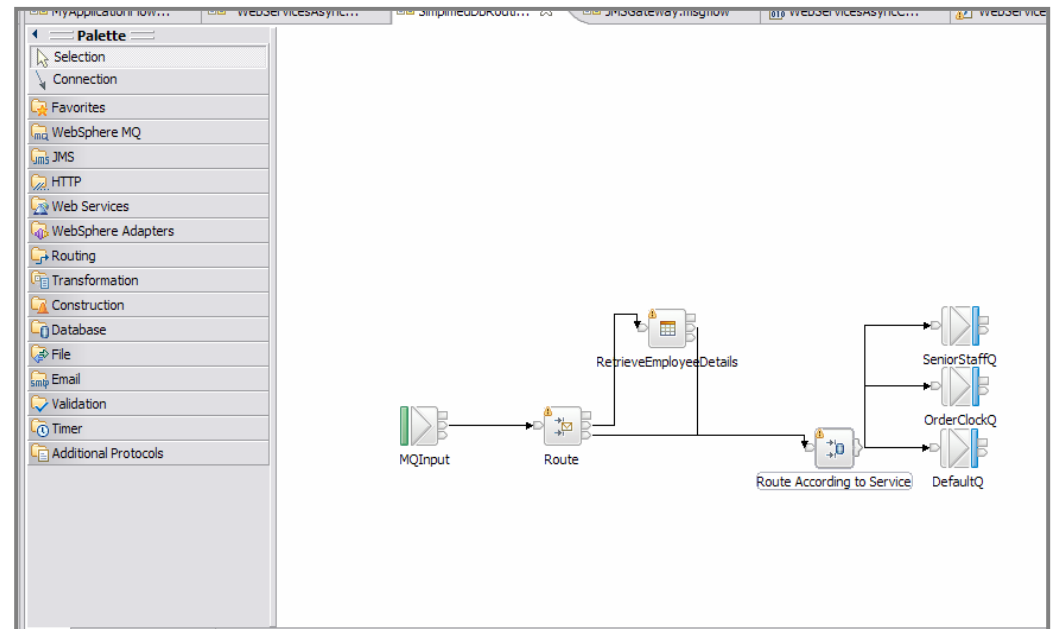
Support for Web Services

- Support provider and consumer scenarios
  - Provider:
    - SOAP input & SOAP reply
  - Consumer:
    - Synchronous SOAP request
    - Asynchronous SOAP request and reply
  - Can be combined to provide Web Service intermediary
  - SOAP Extract and SOAP Envelope nodes
    - Simplify processing of SOAP payload and headers

SOAP Input SOAP Reply

SOAP Request SOAP Asynchronous Request

SOAP Asynchronous Response

- Support WS-Security and WS-Addressing "out of the box"
  - Support for WS-Addressing Endpoint References and Message addressing properties
  - Support for WS-Security authentication, encryption and signing
    - Username password, X509 certificates for authentication
    - Comprehensive encryption and signing algorithms (from JSSE/JCE)
    - Configuration using Policy Sets
      - Policy Set editor enables declaration of WS-Security capabilities

DataPower Appliance

- Exploit DataPower for Web Services security
  - Single tool and security policy description
  - Security best practices
    - WS-Security at appropriate point in topology
    - Built-in XML threat protection; Hardened device
  - Built-in service level management
    - Manage traffic using policy; WSDM and WS-Man
  - Scale as volumes increase
    - Enhanced performance with SOA appliance
    - Add capacity when necessary

- Administration User Experience
  - Operational reconfiguration only
  - Applications and Message Flows unchanged
  - Right click on flow and select "Use DataPower"
    - DataPower performs WS-Security processing
    - Forwards processed request to MB

- Initial focus is on XML and WS-Security processing
  - June 2007 preview
  - Other functions may follow
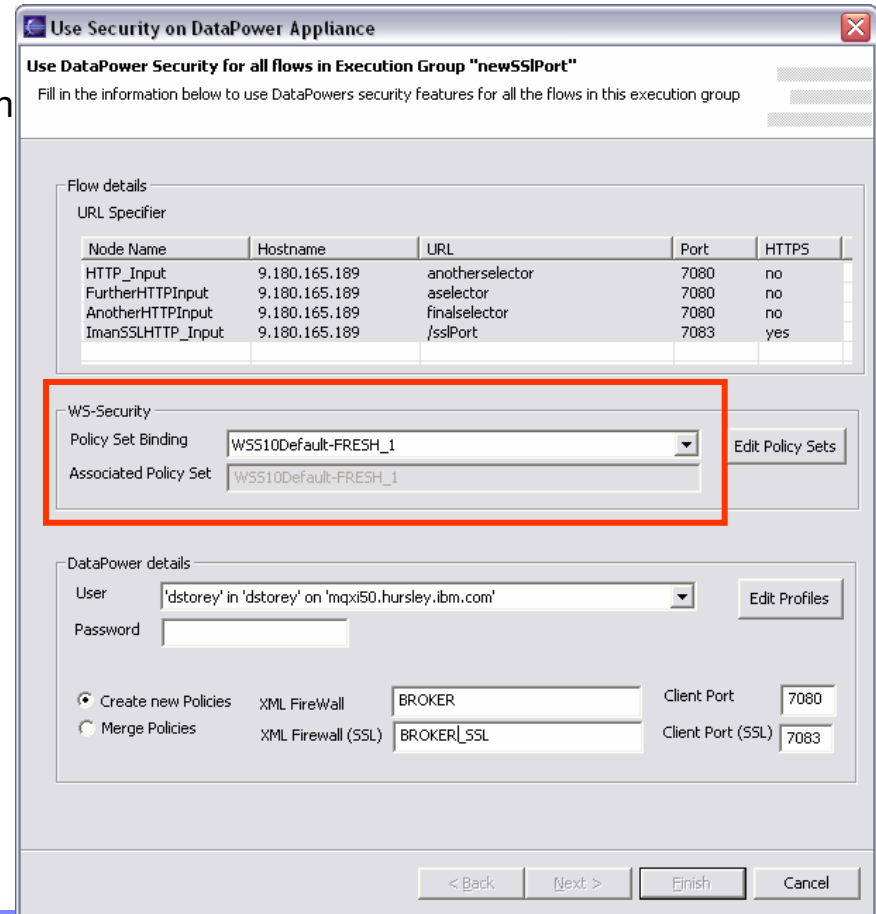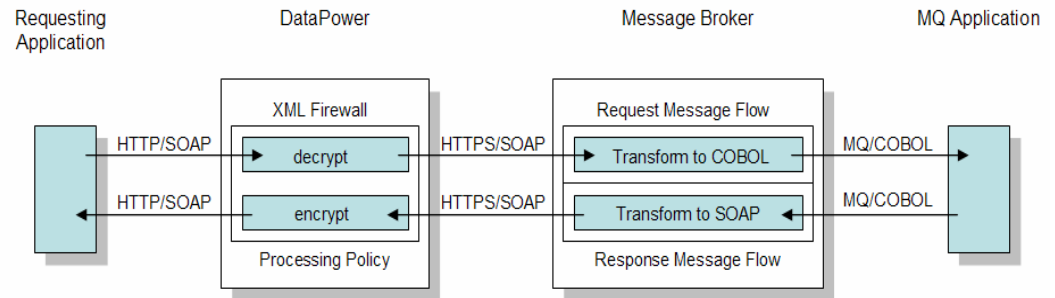
WebSphere Service Registry and Repository

- Integrated support for WSRR
  - Registry contains variety of "entities" (documents) such as WSDL, XSD…
    - Includes entity category, its relationships and its associated user properties
  - True governance achieved through registry determining MB processing
  - Development and runtime usage aspects which can be used together

- Development Activity
  - Use WSRR AD plug-in to search registry for particular entity
  - Entity can "kick start" message flow and message set creation
    - E.g. Retrieve WSDL and drag-drop to configure external Web Service call

- Runtime interactions
  - Message flows can query and/or select specific registry entities
    - Information cached for high performance access
    - Registry changes result in cache refresh via built-in PubSub mechanism
  - 2 new nodes to support most popular processing scenarios
    - Query – retrieve entity details; other nodes can act on this
    - Select – choose a specific service instance via node matching criteria
  - WSRR interactions can be overridden dynamically based on message content
    - Expanded expression support to include literals and variables

RegistryLookup

EndpointLookup

Integrated Support for Major EIS Systems

SAP Input

- SAP for z/OS, SAP and PeopleSoft for zLinux

- WebSphere Adapters delivered "out of the box" as built-in nodes
  - Simplifies management and improves performance for key integration scenarios
  - These are the JCA based WebSphere adapters
  - Adapter license still required

- Support for inbound and outbound scenarios
  - Message-to-EIS and EIS-to-message scenarios
  - Adapter nodes integrate with all built-in MB nodes

- Enterprise Metadata Discovery (EMD)
  - Significant tooling support
    - Simplify for key data structure discovery
    - Accelerates generation of message sets

- High Performance access
  - Adapters access native message broker tree

Adapter Connection

Adapter Style
Select the style of this adapter

⦿ **Inbound**
Inbound adapters allow data to be passed from the EIS system to the Message Broker

○ **Outbound**
Outbound adapters allow data to be passed from the Message Broker to the EIS system

< Back   Next >   Finish   Cancel
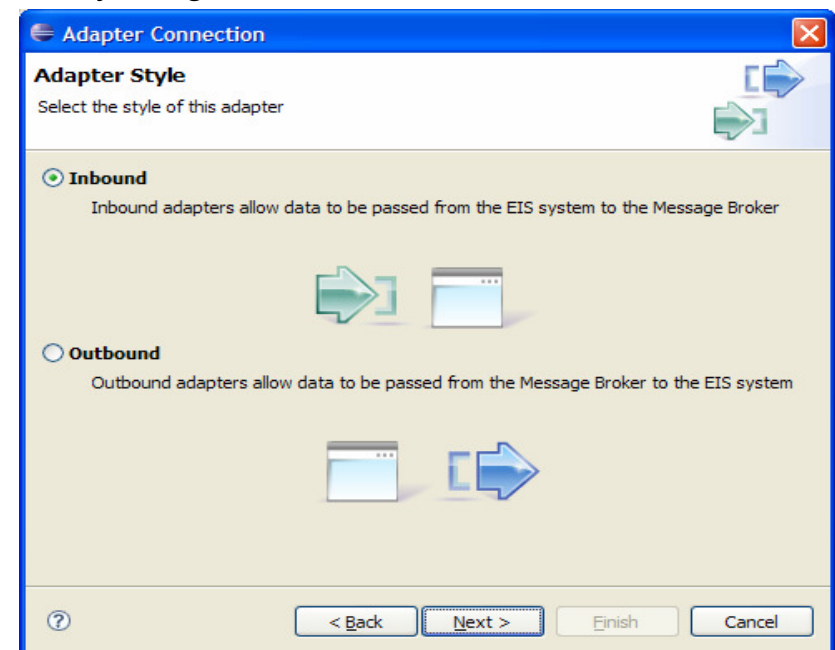
PeopleSoft Request

File Processing Built-in

- Local and remote (FTP) files

- Advanced file processing within ESB
  - File input and File output nodes
  - Combine with other MB nodes
    - (e.g.) File to MQ, File to database, File record filtering

- Large file handling
  - Allows very large files (gigabyte) to be processed without using excessive storage
  - Appropriate broker parsers have been enhanced to request data on demand

- Comprehensive support for record detection
  - Simple: LF, EOL, CRLF, Fixed Length, Whole-file, User-defined
  - Parser: Use an existing message definition to identify record boundaries

Properties ⊠ **Problems**

| Description |
| Basic |
| Input Message Parsing |
| · Parser Options |
| Polling |
| Retry |
| Records and Elements |
| Validation |
| FTP |

FileInput Node Properties - FileInput

Record detection	Delimited
Length (bytes)	80
Delimiter	DOS or UNIX Line End
Custom delimiter (hexadecimal)	C8A499A29385A840A281A8A240C8894F
Delimiter type	Postfix
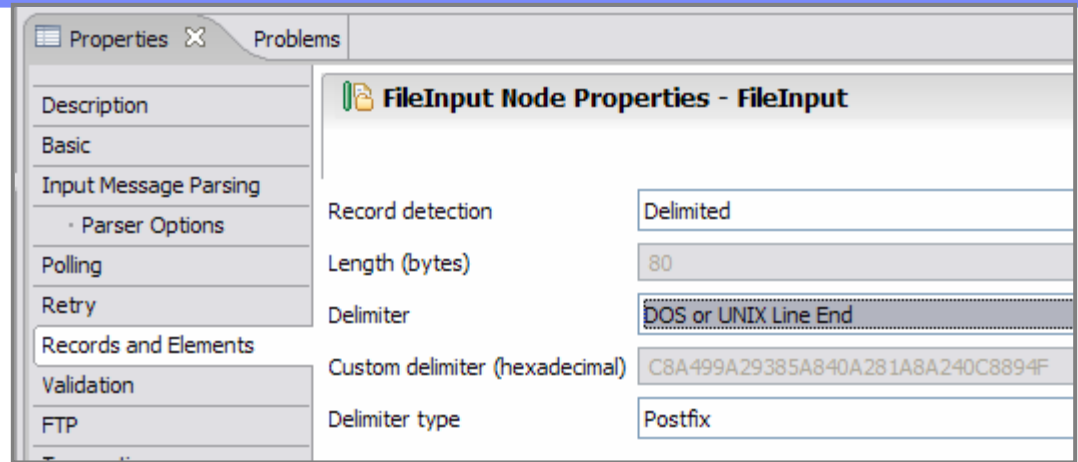
FileInput

FileOutput

Transport Headers and Triggering

- Process Transport headers without programming (6102)
  - Shows most common transport header properties for MQ, JMS and HTTP
  - New users can easily understand and modify common transport properties

- SMTP node for email generation
  - e.g. "operator" notification of alert conditions

EmailOutput

- TCPIP nodes for legacy integration (6102)
  - Client and server side sockets support, inbound and outbound

- Collector node for more advanced triggering scenarios
  - Coordinate message from multiple, disjoint sources
  - Wait for multiple input conditions
  - Process when all satisfied

MQInput

FileInput

Collector

DataInsert when both conditions
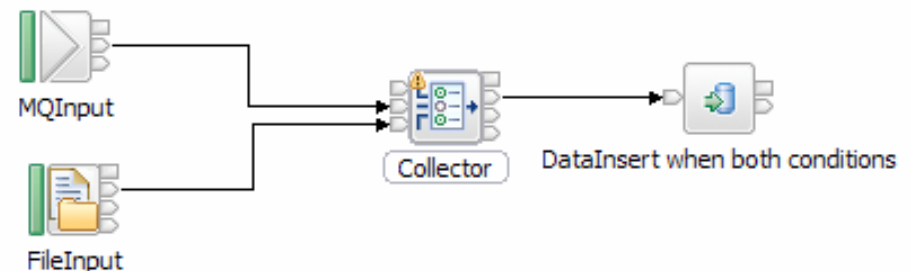
Collector Node Properties - Collector

Collection definition

Terminal	Quantity	Timeout	Correlation path	Correlation pattern
MQInput	1	0	$Root/MQMD/CorrelId	
FileInput	1	0	$LocalEnvironment/File/Name	

IBM ESBs at the heart of Smart SOA on System z with new capabilities

MB Explorer Eclipse Administration

- Alternative MQ Explorer based administration
  - Simplifies administration of MQ,MB networks in single Explorer console
  - Uses MQ Eclipse 'extension points' to provide seamless experience

- Comprehensive administration facilities
  - All features in Broker Administration
  - Also includes new features such as multi Execution Group deploy

- IS02 Cat 3 support Pac
  - Fully supported in productio
  - Initial release July 2006

- Performance Monitor
  - Easily view CPU, IO and other metrics in Eclipse
  - Available March 2007

- Strategic
  - Becomes Admin perspective for MB7
  - Toolkit and standalone
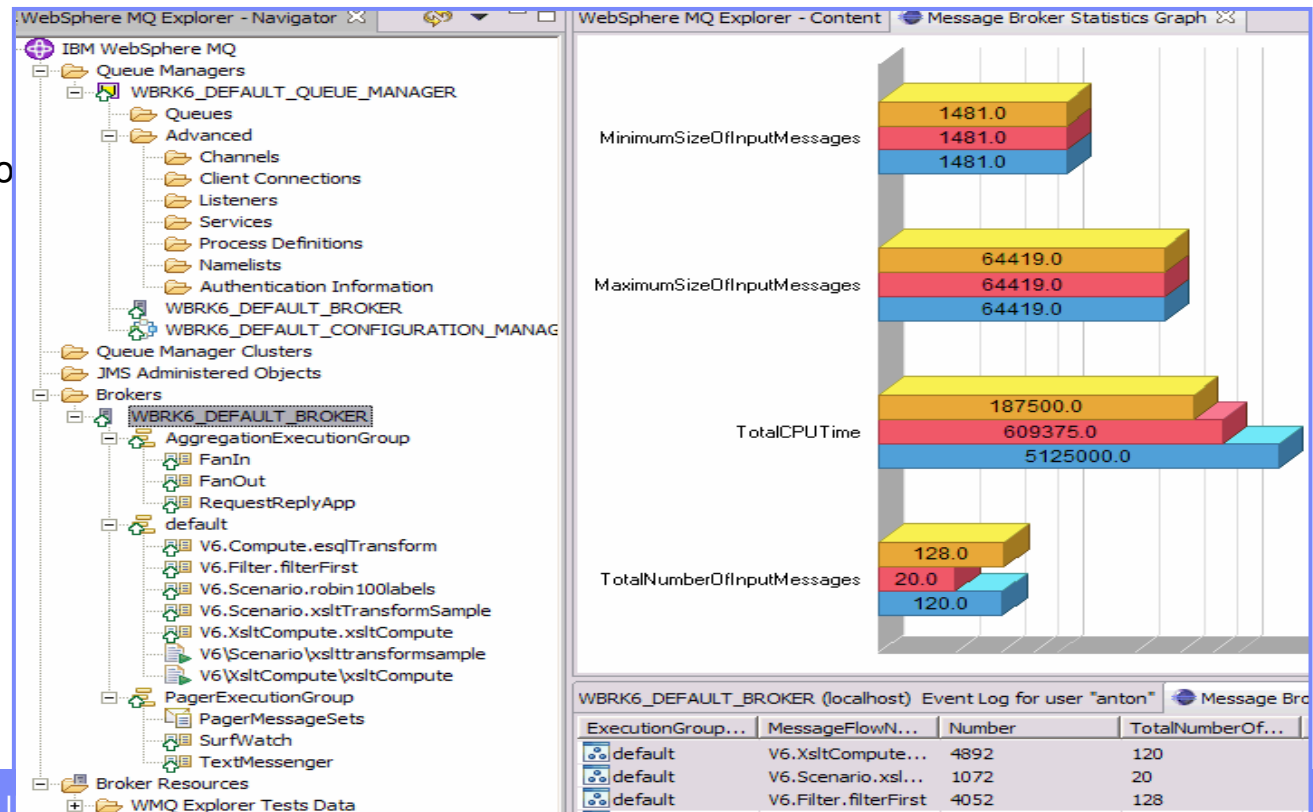
Advanced Security Features

- Message Broker now has powerful runtime security model
  - Supports cross domains security processing
  - Identity, Authentication and Authorization are native capabilities
  - MQ, HTTP, JMS, Web Services transports can all provide identity
    - Attributes on input and output nodes
  - Eclipse editor for security profile administration

- Policy decision points technologies: LDAP, TFIM

	TFIM	LDAP
Authorization	Yes	Yes
Authentication	Yes	Yes
Identity mapping	Yes	No

- Rich identity context supported
  - Type can be Username/password or X509 certificates
  - Token from default or user defined message location
  - e.g. {**type**=USERNAME, **token**=user, **issuedBy**=org, **appliesTo**=flow}
  - IssuedBy can be default or user defined
  - AppliesTo is fully qualified flow name resource Broker.ExecutionGroup.Flow
  - Identity appears in Message Tree

- ALSO in 6.1: Simplified Basic Authentication for WS and HTTP request nodes
  - TFIM can add username/password certificate to request

MQInput Node Properties - MQInput

| Identity token type | Username |
| Identity token location | $Root.MDMD.UserIdentifier |

Identity password location

Identity issuedBy location — <optional, specify a string or path exp>

Treat security exceptions as normal exceptions ☑

MyApplicationFlow.cmf

Additional Instances
Commit Count
Commit Interval
Consumer Policy Set
Consumer Policy Set Bindings
Coordinated Transaction ☐
Provider Policy Set
Provider Policy Set Bindings
Security Profile Name — DefaultLDAP

High Performance

- Significant Performance improvements on ALL platforms
  - Major throughout improvement across a broad range of scenarios
  - Builds on real world, customer-verified, scenarios on version 6 usage
  - No need to change flows or assets to receive gains – "for free"

- Highlights
  - Significant XML performance
    - Up to 150% improvement processing more complex XML documents
  - XML validation performance
    - Up to 3 times improvement validating XML documents
  - Binary and String parsers improved
    - Industry and legacy message formats will benefit
  - XSLT performance
    - Solid improvements

- Storage reduction
  - Compacted runtime storage, significant reduction in runtime footprint

WebSphere Message Broker Summary

- Message Broker is a key IBM integration technology
  - Industry leading performance in a broad range of scenarios
  - Unparalleled range of integration options and capabilities
  - Supports users' range of experience and needs

- Five key themes satisfying a broad range of customer requirements
  - Ease of Use and Productivity
  - Enhanced SOA support
  - Administration & Systems Management
  - Extended Connectivity
  - Platform Support and Performance

- Builds on success of Version 6
  - Introduces significant new opportunities for high performance integration

WebSphere ESB

Agenda and Contents

- Introduction
  - ▶ 2 Chart Summary of WebSphere ESB

- WebSphere ESB 6.1 Update
  - ▶ Basics
  - ▶ WESB Core:
    - Fundamental Capabilities and Bindings
  - ▶ WESB Mediations:
    - New and Updated Primitives
  - ▶ Deployment
  - ▶ Tooling:
    - WebSphere Integration Developer Update Summary

- Summary and Conclusion

WebSphere Application Server, ESB, and Process Server

WebSphere Process Server

WebSphere ESB

WebSphere Application Server ND

WebSphere Application Server

Choreography And Solution Viewpoint

Mediation

Clustering

App Server
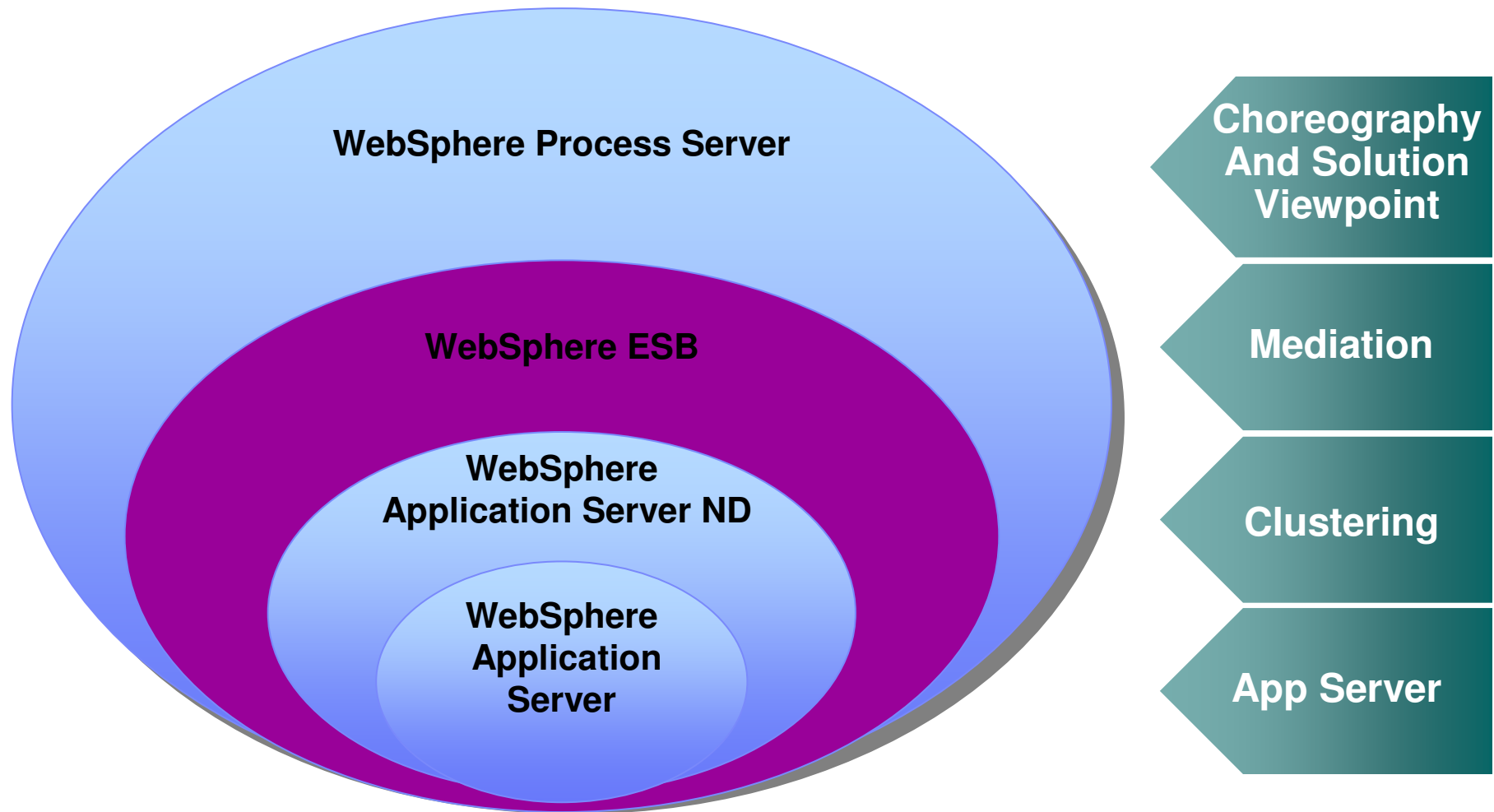
WebSphere ESB: ...the story so far

Messaging:

MQ interoperability

JMS 1.1

Adapters*

Email

Flat File

JDBC

*Licence to use. Adapters packaged with WID

WebSphere ESB

JMS

JMS

JMS JMS

JMS

Mediate Message

1..1

1..1

Web Service

Mediation Function

WebSphere Integration Developer

WebSphere Service Registry and Repository

WebSphere Adapter Support

WebSphere Application Server

Tivoli Access Manager   DB2 Universal Database

Edge Components   UDDI   Web Services Gateway

SCA Programming Model:

SOAP/ HTTP

SOAP/ JMS

WS-*

UDDI Registry 3.0

SMO

SDO

SCA

Basics

Platform Support and Install

WebSphere software

WebSphere ESB 6.1 for z/OS Fundamentals

- Announcement
  - ▶ October 9th 2007

- Planned availability date
  - ▶ February 1, 2008

- Key prerequisites
  - ▶ z/OS V1.7, or later

WebSphere ESB Core

Fundamental Services and Connectivity

WebSphere software

HTTP Export / Import [New]

- HTTP 1.0 and 1.1

- SSL over HTTP

- Request/Response invocation

- Static header setting in WID and Admin

- Dynamic header setting via SMO in mediation modules

- Binary, XML and SOAP payloads
  - ▸ Plus custom data bindings

- Custom HTTP methods in Import

- Specifiable Content and Transfer encodings

- Endpoint based routing in Export

CustomerOrderImport

| Undo Update Display Name |
| Redo |
| Add Interface |
Generate Binding... ▸	HTTP Binding
Remove Binding	SCA Binding
	Stateless Session Bean Binding
Copy	Web Service Binding
Paste
Delete
Rename
Select All
Wire References to New ▸
Wire to Existing
Wire (Advanced) ...
Test Component
Show in Properties

Build Activities | Properties ✖ | Problems | Servers

Import: CustomerOrderImport (HTTP Binding)

| Description |
| Details |
| Binding |
| · Method bindings |
| · Advanced configuration |
| · Summary |

Endpoint URL: * http://temp.url

Data Binding: com.ibm.ws.sca.databinding.impl.DataBindingImplXML

HTTP Version: 1.1

HTTP Method: GET

Binding description:

Generic JMS Export / Import Bindings [New]

- Simplify definition of JMS Export/Import binding
  - ▶ For 3rd-party JMS 1.1 ASF-compliant providers
    - Oracle AQ, TIBCO, SonicMQ, WebMethods, BEA WebLogic, etc.
  - ▶ Avoids Deployment Descriptor editing
  - ▶ Automatic setup of WAS Generic JMS resources
    - Manual setup of provider's JMS resources
- Admin visibility and modification of binding properties
  - ▶ Now available across all JMS and MQ bindings
- Dynamic JMS header updates via SMO
- Works with existing JMS Data Bindings

WTX Data Bindings [New]

- **WebSphere Transformation Extender Integration**
  - ▶ Tooled Data Bindings
  - ▶ Semi-structured to Business Object Transformations

- **WPS/WESB & WTX**
  - ▶ WPS/WESB will provide the data bindings
  - ▶ WTX 8.2 must be installed in order to use the data binding

- **Exports & Imports**
  - ▶ JMS, MQ, HTTP, EIS
  - ▶ Flexible bindings (any data any format)

WTX Data Bindings
Any Business Object, Any Format

SCA Module

JMS Export

HTTP Export

MQ Export

EIS Export

WTXJMS DataBinding

WTXHTTPBody DataBinding

WTXMQBody DataBinding

WTXEIS DataBinding

Well Known Header

Name
DataBindingDescriptor (for HTTP, MQ, and EIS)
JMSType (for JMS)

Value
1) databinding://WTX/map?name=CustomerDelimitedToXML
2) databinding://WTX/map?businessObject=Customer&streamType=Delimited

WTX Maps

AddressDelim

CustomerCOBOLToXML.mmc

OrderFixedWidthToXML.mmc

Mediation Updates

New and changed mediation primitives

Service Message Object Updates

WebSphere software

WESB Enhancements
BO Map Primitive

- Enable use of Business Object Maps in Mediation modules
  - An alternative to XSLT transforms
  - Supports relationship based mapping
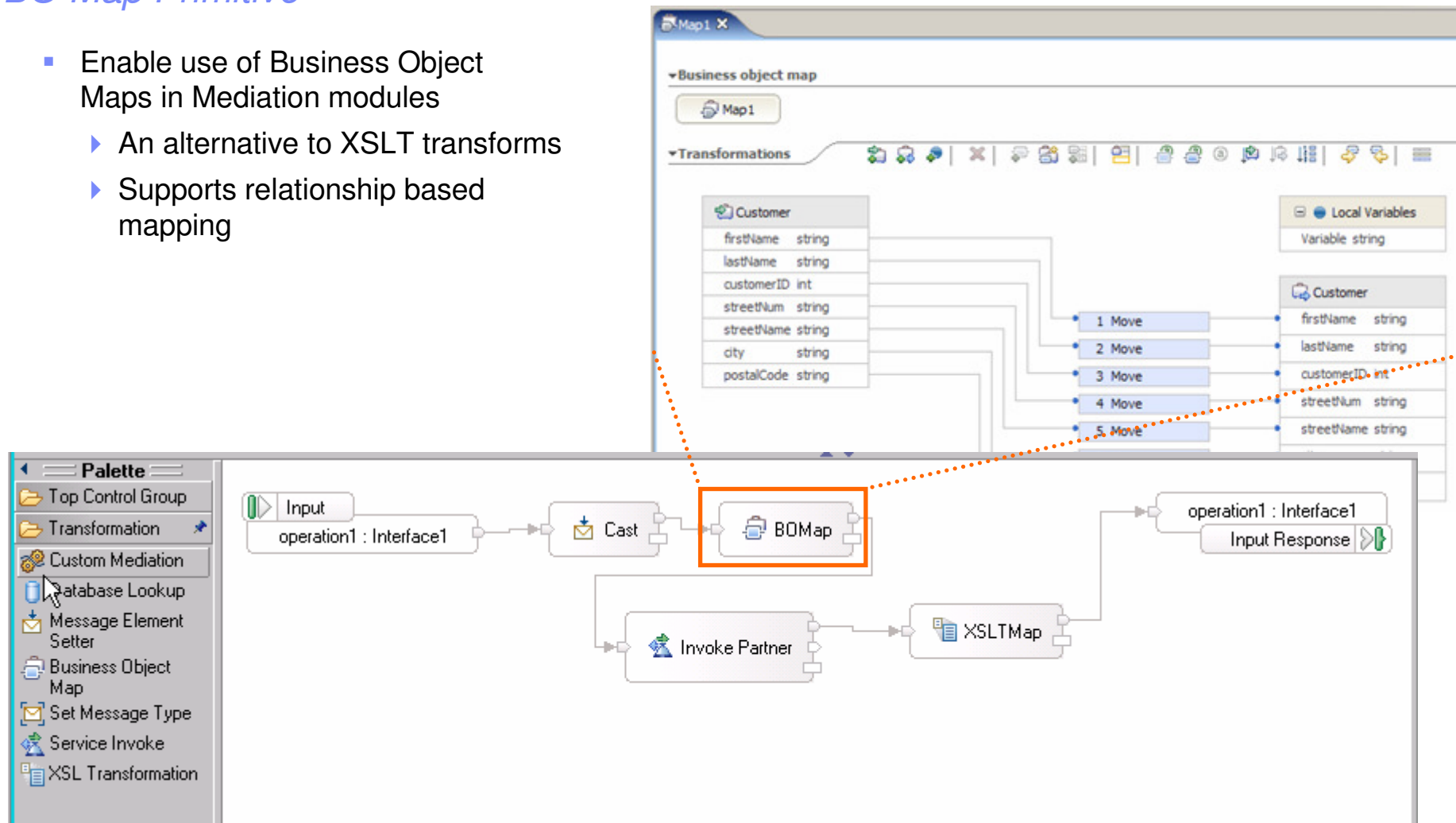
Mediation Flow Component
Type Refinement [New]

▸ Ability to assert concrete types for message elements described by 'weak types' such as *anyType, anySimpleType* or *any*

▸ New SetMessageType mediation primitive

- Conceptually performs a 'cast' operation on any part of the message

- Works with other primitives and XPath support to provide full access to weakly typed message content in mediation flows

- Weakly typed content can be visualized, mapped and manipulated as if its structure were fully defined in the original BO definition
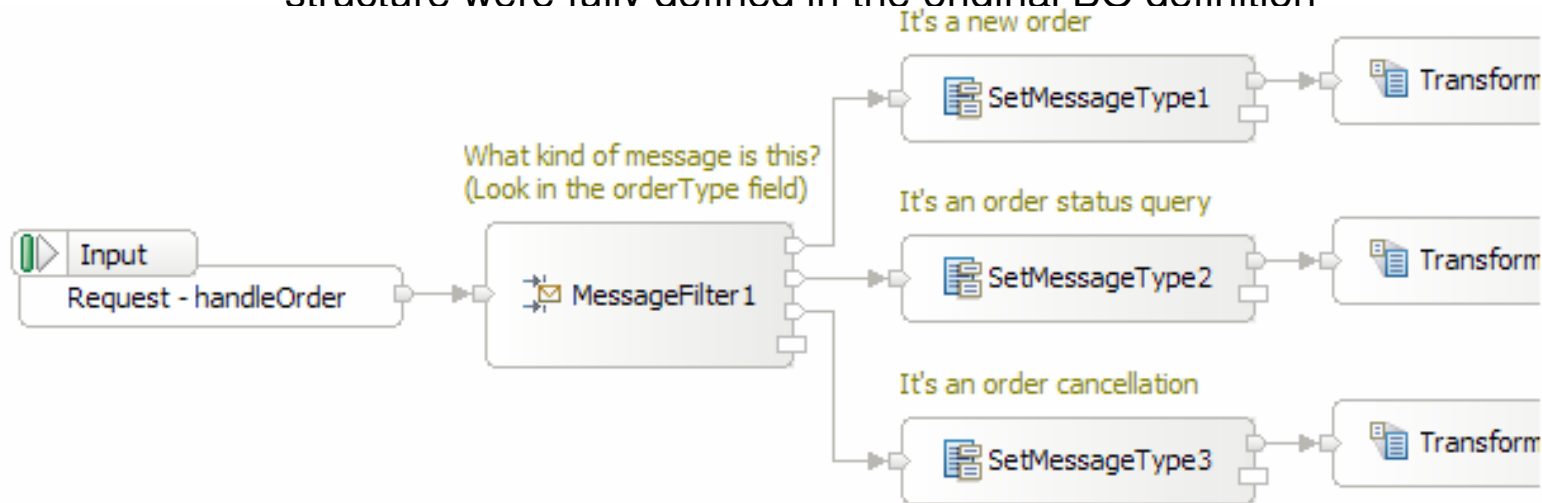
WESB Enhancements
Service Invocation and Retry Primitive

▸ Invokes a target service from within a request or response flow

▸ Includes built-in retry capability; retries x times in event of failure

▸ Can try/retry a list of target endpoints in turn until success
- Can exploit multiple endpoints returned from the Endpoint Lookup primitive for this purpose

▸ Also acts as a building block for aggregating content from more than one service

▸ Capability similar to existing Callout, but flow continues inline (no switch to response flow)

▸ New context area in the SMO contains invocation request/response body content

▸ Service A invocation can be asynchronous

New: FanOut and FanIn Mediation Primitive

- Messages can be split for further processing

- Results can be aggregated
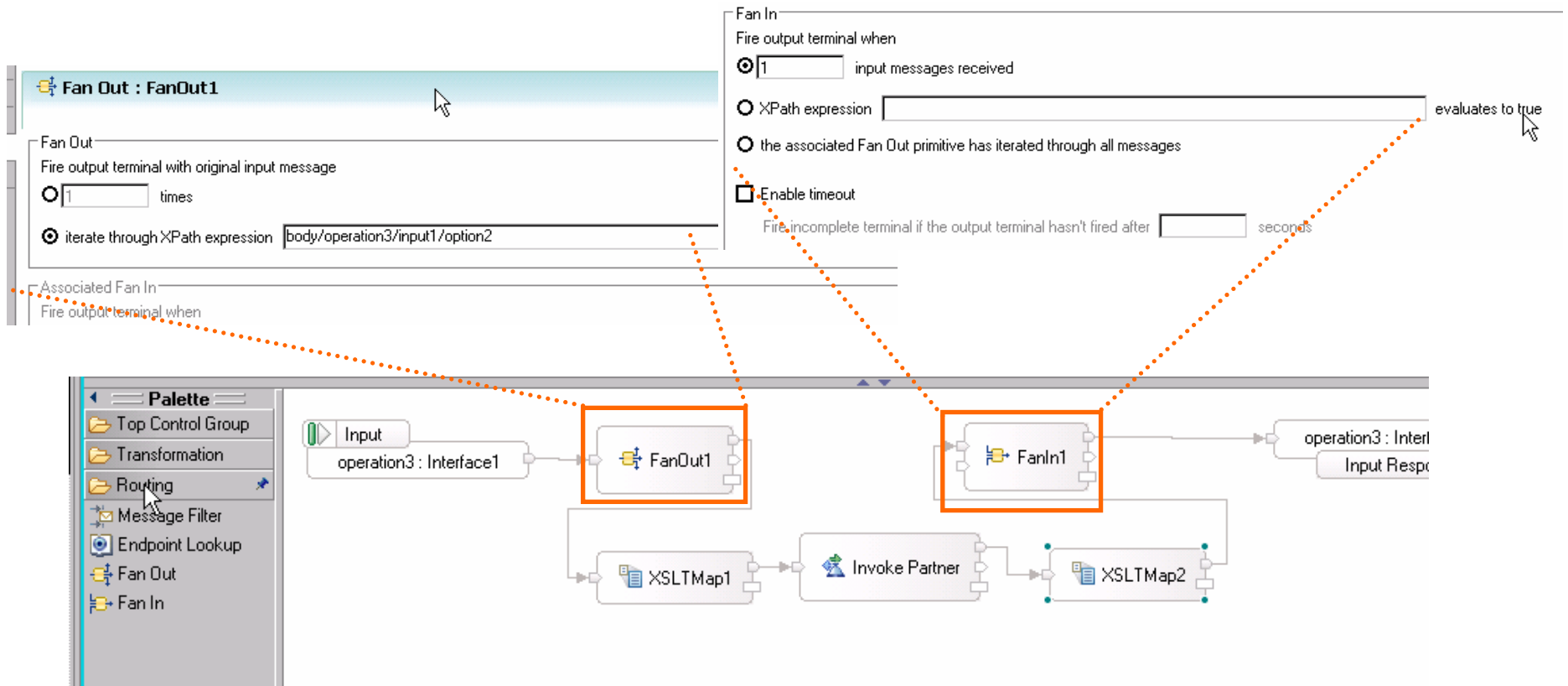
Splitting and Aggregating - details

- **New FanOut and FanIn primitives**
  - FanOut splits an incoming message based upon a repeating element
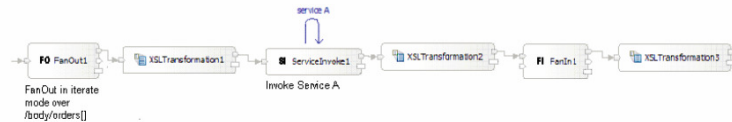
  - ...or sets up branching paths that are later joined by FanIn
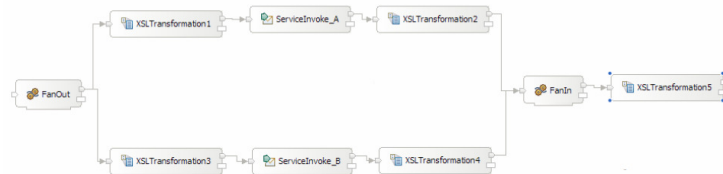
  - Allows composite messages to be split up for individual processing of the parts; and assembly of composite messages
- **Aggregation supported using ServiceInvoke primitive**
  - Invoke multiple services and combine the results

WESB Enhancements
Custom Mediation Primitive

- Multiple input and output terminals

- User-defined properties

- Easy access to ESB mediation primitive programming model

ND Topology Configuration

Ease of Use Updates

WebSphere software

ON DEMAND BUSINESS™

Template-driven ND topology

- Wizard driven approach to configuring your ND topology
  - ▶ Install support
  - ▶ Administration support
- Three primary roles nodes can play
  - ▶ Customer applications
  - ▶ WPS/WESB Support applications
  - ▶ Messaging (Destinations)
- Option to configure everything into a single database

Choosing your topology

Separate Application & Support Clusters?

No

SCA Asynchronous Activity?   Yes

No   Yes

Topology 1   **Topology 2**   **Topology 3**

	Node 1	Node 2
Cluster 1	Application A1 A2 •••	Application A1 A2 •••
	Support S1 S2 •••	Support S1 S2 •••
	Messaging M1 M2 •••	Messaging M1 M2 •••
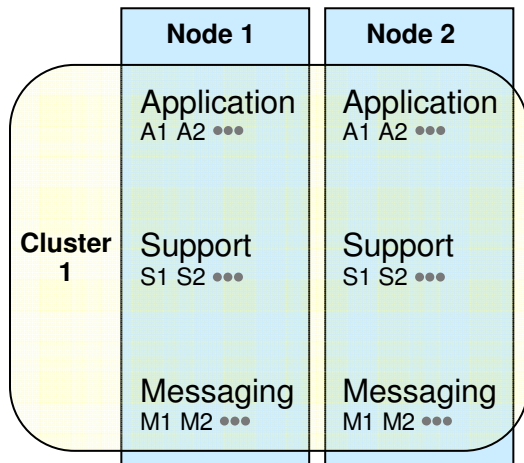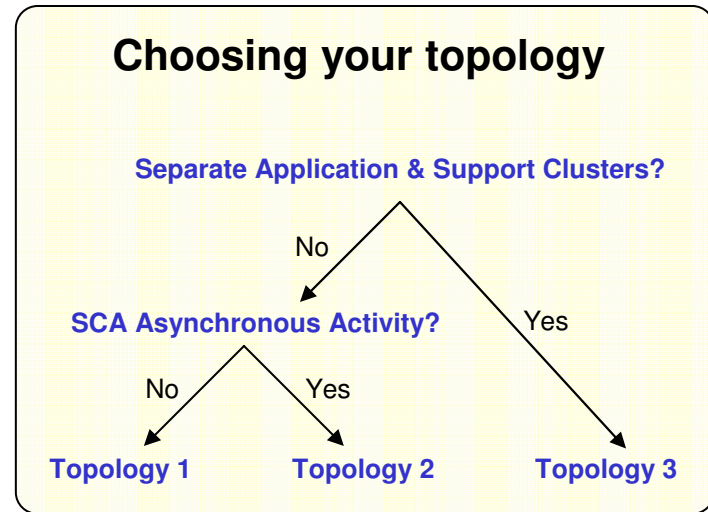
Topology 1: Single Cluster

	Node 1	Node 2
Cluster 1	Application A1 A2 •••	Application A1 A2 •••
	Support S1 S2 •••	Support S1 S2 •••
Cluster 2	Messaging M1 M2 •••	Messaging M1 M2 •••
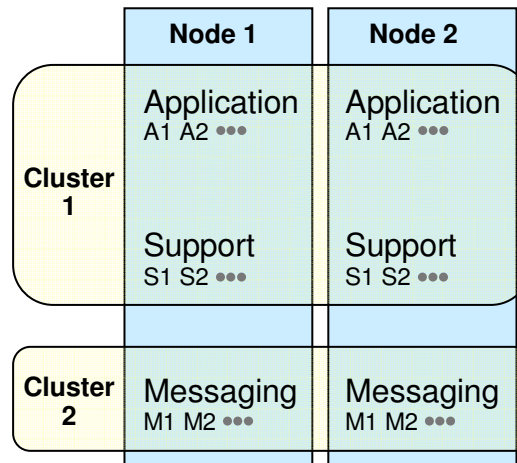
Topology 2: Remote Messaging

	Node 1	Node 2
Cluster 1	Application A1 A2 •••	Application A1 A2 •••
Cluster 2	Support S1 S2 •••	Support S1 S2 •••
Cluster 3	Messaging M1 M2 •••	Messaging M1 M2 •••
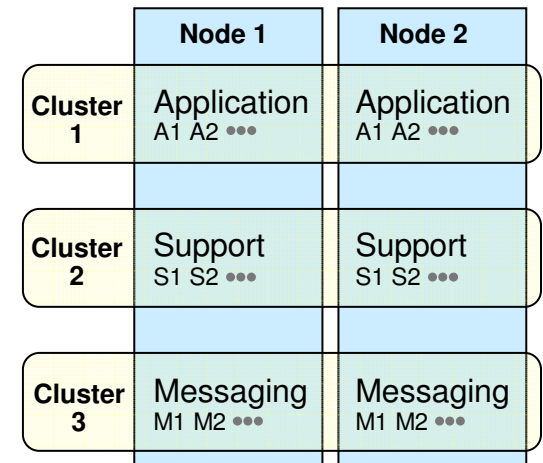
Topology 3: Remote Messaging and Support

Summary and Conclusion

WebSphere software

Conclusion

- Key evolution in 6.1, centering on

  - Consumability

    - both administration and development interfaces

  - Completeness of capability

    - Additional connectivity

    - Additional mediation function

- Continued maturation and evolution

WebSphere DataPower XI50

WebSphere DataPower Integration Appliance XI50
*Purpose-built hardware ESB for simplified deployment and hardened security*

- Redefines the boundaries of middleware with specialized hardware

- Many functions integrated into a single device

- Simplified deployment and ongoing management
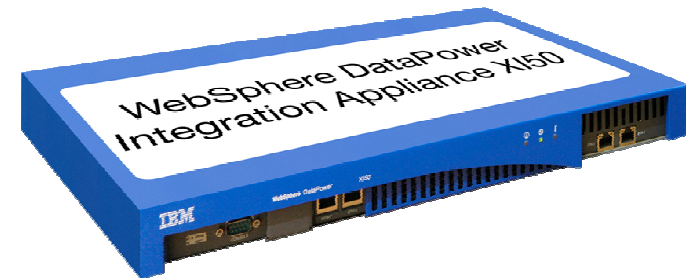
Secures services on the network with sophisticated web services access control, policy enforcement, message filtering, and field-level encryption
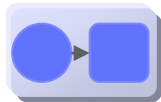
Optimized to bridge between leading standard protocols at wirespeed, including web services, messaging, files, and database access
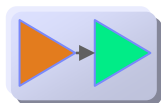
Enables transformation between a wide range of data formats, including XML, legacy, and industry standards, and custom formats
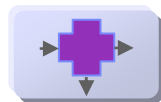
Captures and emits events to facilitate web services management and enable business visibility in Business Activity Monitoring solutions

DataPower and System z Integration

- Web Services enablement and security for CICS and IMS applications

Client — SOAP/HTTP → [DataPower] — CCB/MQ → System z

System z: MQ Series → IMS, CICS

- DataPower XI50 acts as a services gateway to host-based applications
  - Web Services and XML security
  - Web Services management and service level agreements
  - Tight integration with WebSphere MQ on Z for connectivity and reliability
  - Any-to-any transformation (e.g. SOAP/XML to Cobol Copy Book) for simplified legacy integration
  - Protocol mediation and bridging – variety of inbound/outbound protocols – HTTP, HTTPS, MQ, WAS JMS, Tibco EMS, FTP, FTP/SSL, NFS, Database
  - Easy Configuration & Management:

    - WebGUI, CLI, IDE and Eclipse configuration to address broad organizational needs (Architects, Developers, Network Operations, Security)

DataPower for CICS and IMS Web Services

- **Web Services Security and Management for CICS and IMS web services**

SOAP/HTTP

Client

System z

IMS SOAP Gateway

CICS Web Services

- **Content-based Message Routing**

- **Protocol Bridging (HTTP, MQ, JMS, FTP, etc.):Request-response and sync-async matching**

- **XML/SOAP Firewall: Filter on <u>any</u> content, medata or network variables**

- **Data Validation: Approve incoming/outgoing XML and SOAP at wirespeed**

- **Field Level Security: WS-Security, encrypt & sign individual fields, non-repudiation**

- **XML Web Services Access Control/AAA: SAML, LDAP, RADIUS, etc.**

- **Web Services Management: Centralized Service Level Management, Service Virtualization, Policy Management**

- **Easy Configuration & Management:**

– WebGUI, CLI, IDE and Eclipse configuration to address broad organizational needs (Architects, Developers, Network Operations, Security)

What's New in WebSphere DataPower Integration Appliance XI50 v3.6.1

- **Expanded integration and connectivity**
  - Enhanced MQ support
  - Full support for WS-ReliableMessaging (WS-RX)
  - Additional support for VLAN and NFSv4
  - Enhanced support for WSRR and UDDI v3 registries
  - Full support for SOAP 1.2, WS-Security 1.1 updates
  - Integration with DB2 V9 pureXML

- **Enhanced governance capabilities**
  - Dynamic Web Services policy framework (WS-Policy and WS-Security Policy)
  - WS-I Basic Profile and Basic Security Profile support

- **Breakthrough enhancements for ease of use**
  - Streamlined Multi-step Transaction Processing
  - Expanded Quality of Service (QoS) support

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