Smart Connectivity:

SOA Enrichment with the Enterprise Service Bus

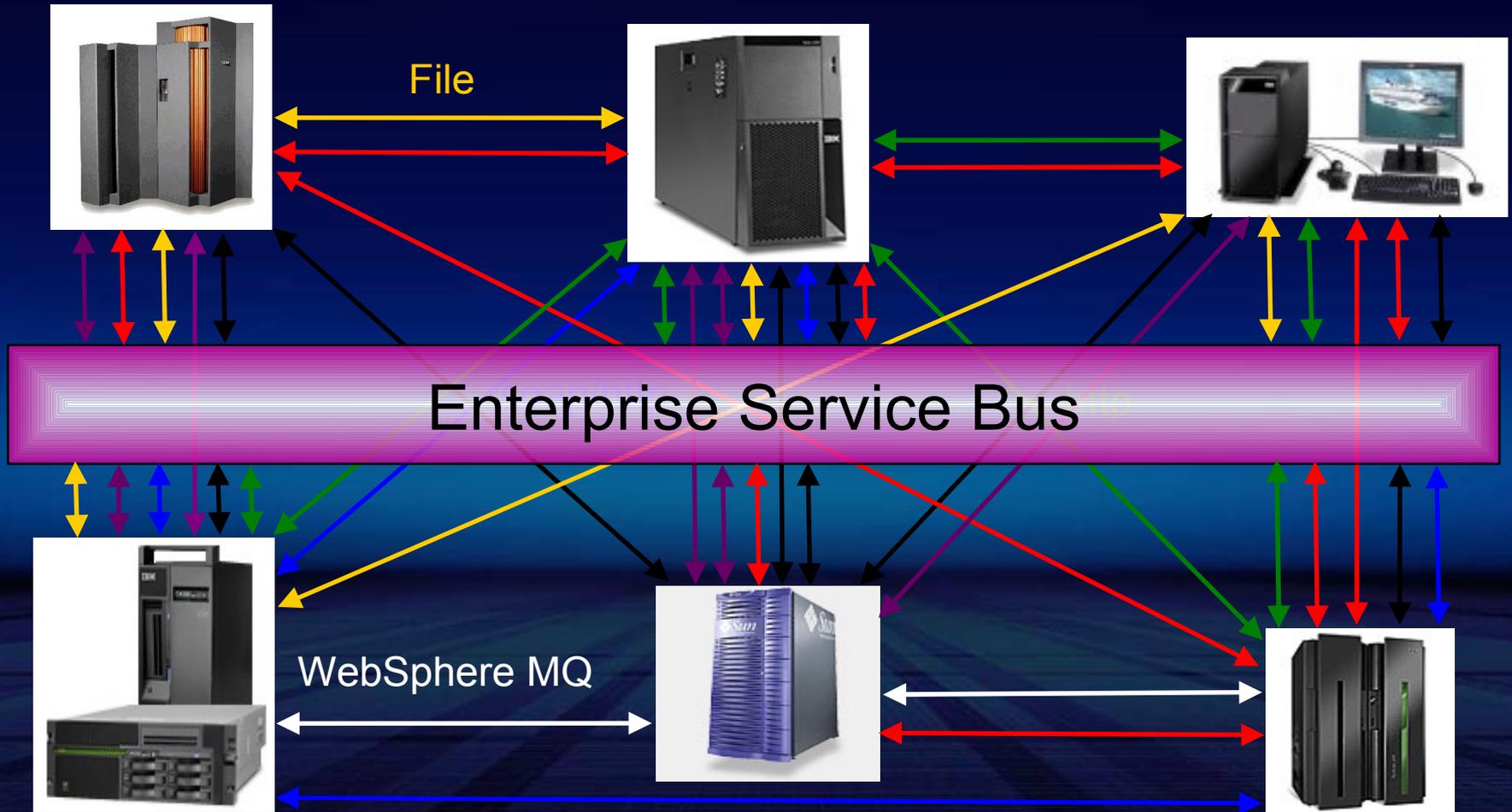Fatima Otori

System z WebSphere IT Specialist

footori@us.ibm.com

Agenda

- ESB and Connectivity Overview

- Processing Scenarios & Usage Patterns

- Pattern Technology Demonstration

- Product Overview and Roadmap

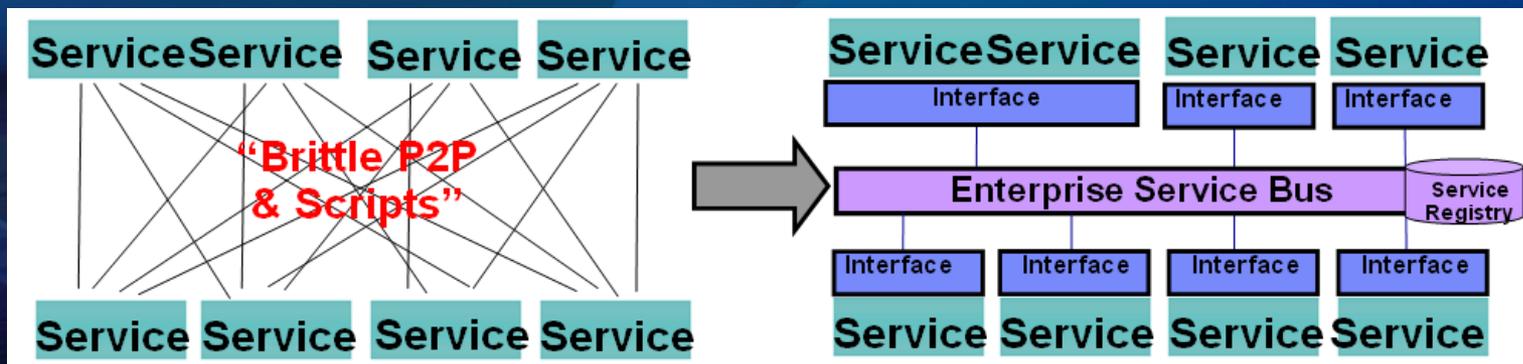# ESB and Connectivity Overview

ESBs Simplify Connectivity

Enterprise Service Bus

File

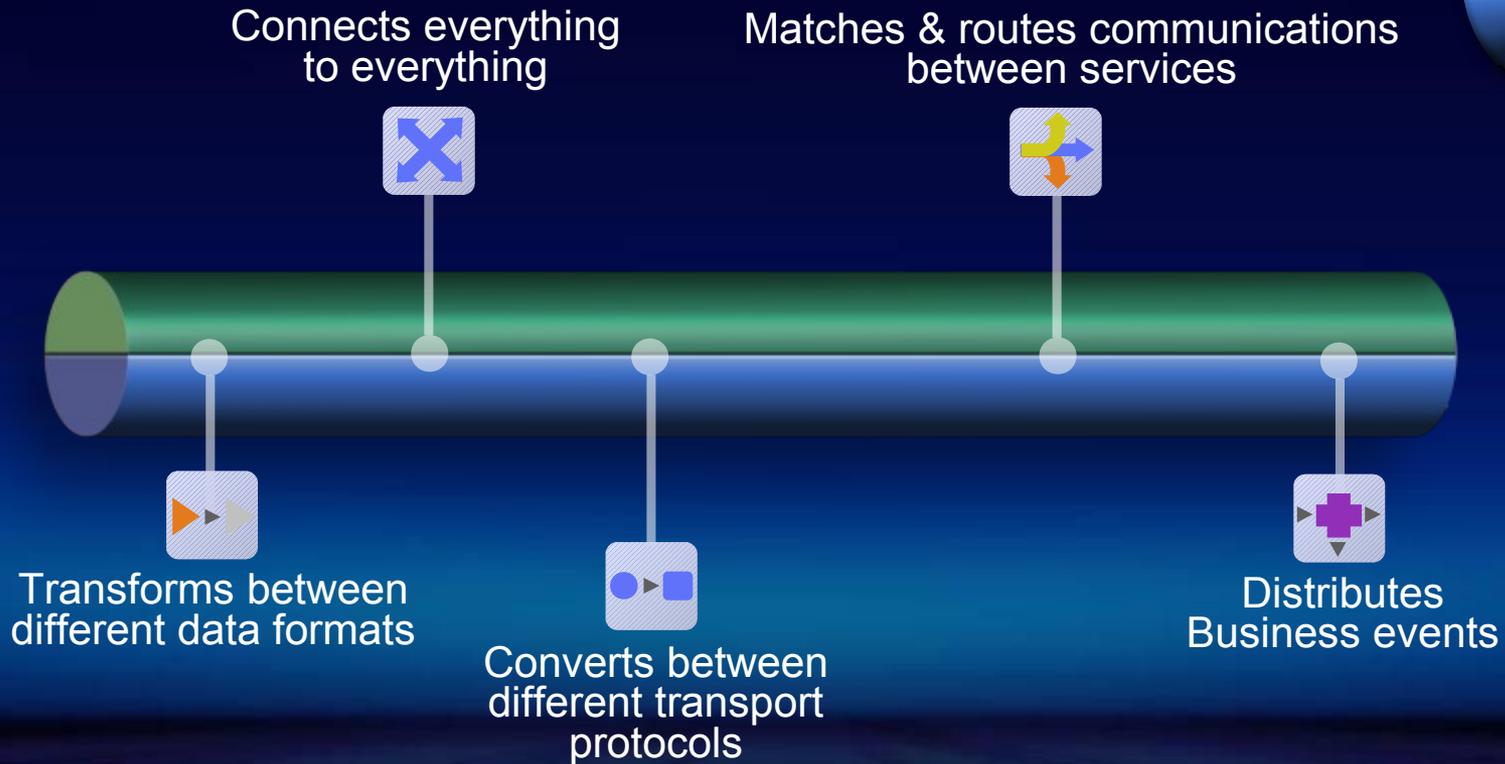WebSphere MQ

Enrich your SOA connectivity …

Service Enrichment

- *Match & Route communications between services*
- *Converts between transport protocols*
- *Transforms between data formats*
- *Identifies and distributes bus events*

## … simplifying the overall architecture and reducing IT cost

Left diagram:

Service Service Service Service

"Brittle P2P & Scripts"

Service Service Service Service

Right diagram:

Service Service Service Service
Interface Interface Interface

Enterprise Service Bus | Service Registry

Interface Interface Interface Interface
Service Service Service Service

Agile Connectivity:
The Enterprise Service Bus (ESB)

Smart
SOA

Service Enrichment
Messaging

Connects everything
to everything

Matches & routes communications
between services

Transforms between
different data formats

Converts between
different transport
protocols

Distributes
Business events

*An ESB enables flexible SOA connectivity for integrating
business applications, services and processes*

Two core principles enable flexibility

The ESB facilitates the *decoupling of interactions* between requestor(s) and provider(s)

Service Provider	Service Provider

Service Requestor	Service Requestor	Service Requestor	Service Requestor
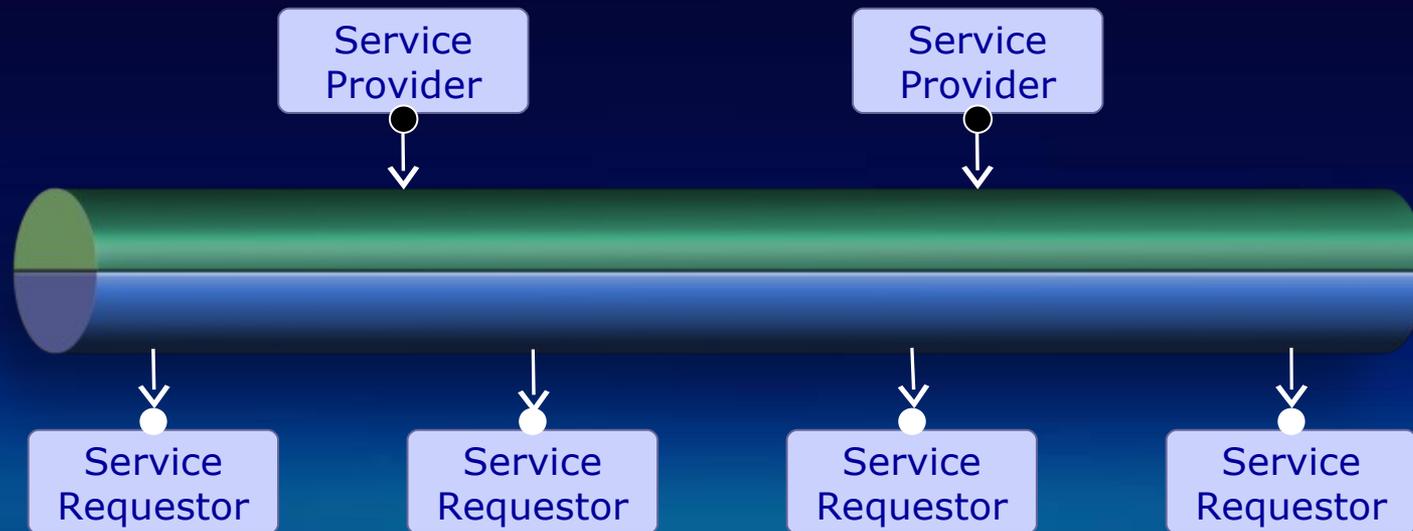
The ESB fulfils *two core principles* in support of *separation of concerns*

Service Virtualization

★ *Routing*

★ *Protocol and transports*

★ *Transformation of interfaces*

Aspect Oriented Connectivity

★ *Security* ★ *Log and Audit*

★ *Management* ★ *Event tracking*

etc ...
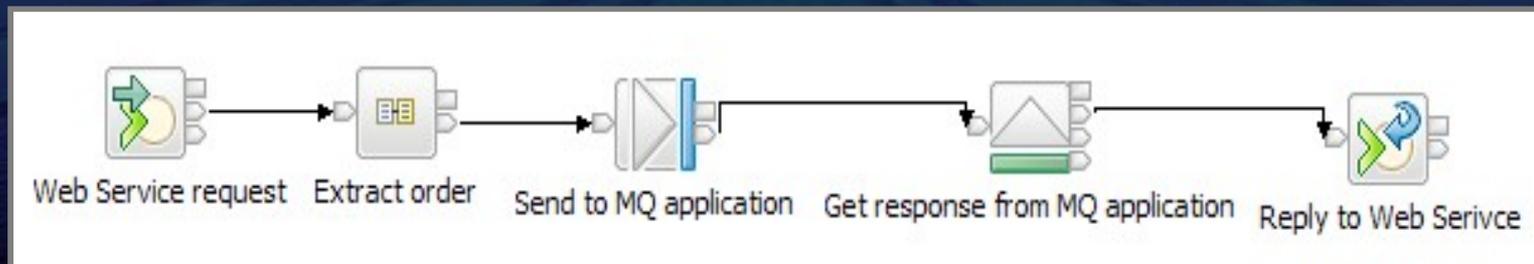
Processing Scenarios & Usage Patterns

Key Scenarios Deliver Significant Business Value

- Extend the Reach of Existing Applications: Multi-channel Processing

- Easily transform batch-oriented file work into online requests

- Get the Most from Packaged Applications

- Connect Devices to the Enterprise

- Provide a Policy Enforcement Point for secure application connectivity

- Make an Application Inventory and Govern Processing with a Registry

- Apply Business Rules to achieve Smart Connectivity

- Monitor your Business Activity and Act Intelligently

- Initiate and Support Business Processes

- A Flexible Infrastructure to Support Change

Extend the Reach of Existing Applications (1/2)

Smart SOA

***Provide and Consume Web Services***

- **Web services are now established as an interoperability standard**
  - Vitally important from a business to business connectivity perspective
  - Businesses to consume each others' services using these well defined standards
  - Internal standardization between parts of the same organization via Web Services

- **Adoption of Web Services by many subsystems is not universal**
  - ESB allows your existing applications to be exposed as web services
  - ESB 'universal translator' converts web service to existing formats and protocols
  - Existing applications can consume web services without change
    - Exploit web services with limited new development skills and platforms

Web Service request → Extract order → Send to MQ application → Get response from MQ application → Reply to Web Serivce

Extend the Reach of Existing Applications (2/2)
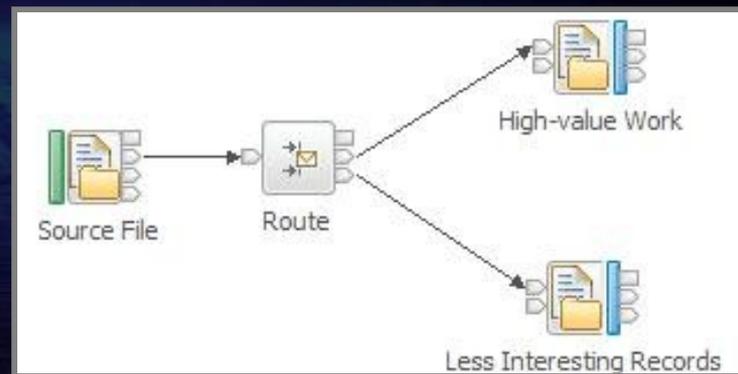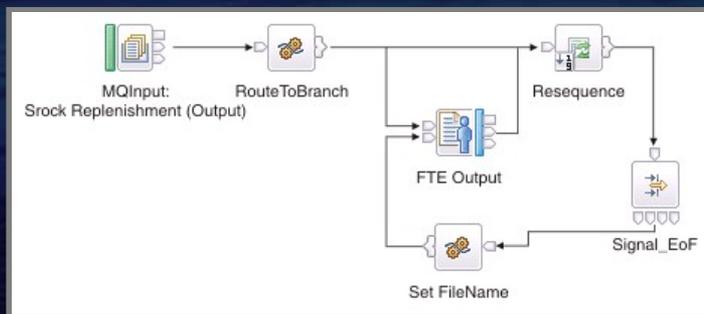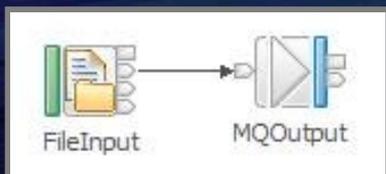
MQ enable all your applications

- **ESBs allows you to use MQ technology to the fullest extent**
  - Robust, transactional, reliable, high-performance messaging
  - ESB provides an incredibly broad range of connectivity mechanisms available to MQ
  - Any application can easily connect to the MQ infrastructure inbound or outbound

- **Examples**
  - Transform a TCP/IP based application by allowing it to consume regular MQ messages
  - MQ applications access an external Web Services provided by a Business partner
  - MQ applications access ERP systems such as SAP, SEBL, PeopleSoft…

- **The Goal: Multi-Channel Connectivity**
  - Consuming Services and Applications independent of client implementation
  - Increasingly relevant in world of device proliferation
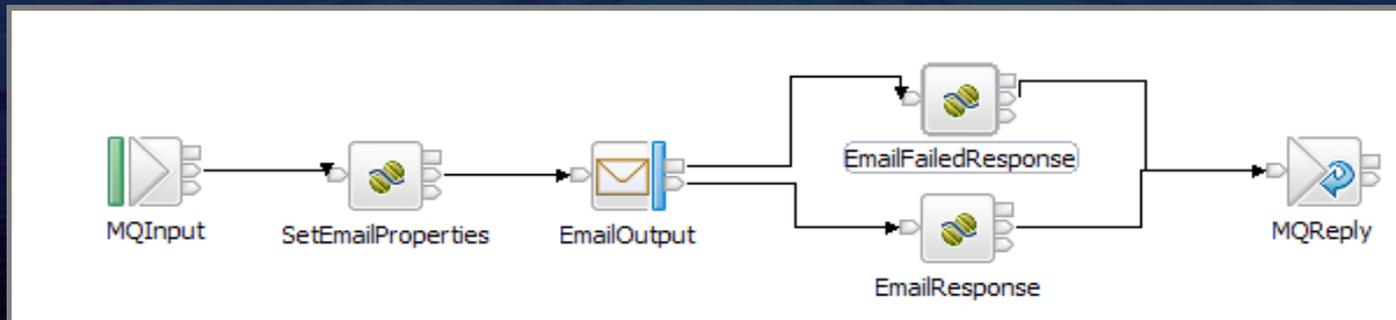
Combine File-based and On-line Processing

Unlock the valuable business data in your files

- **Files exchange between applications still popular and effective**
  - Flexible method of exchange: Neither enterprise has to mandate technology

- **There are legitimate reasons for using files to exchange information**
  - Usually relate to the way businesses run or physical processes occur

- **Examples**
  - A cargo ship has thousands of containers each with hundreds of palettes
  - Reduce unit transaction costs by aggregating numerous clients requests

- **End to End File Movement and File Processing**
  - Reliable and secure delivery File Transfer with MQ FTE
  - File processing allows clients to get file/batch work online, easily

FileInput → MQOutput

MQInput: Srock Replenishment (Output) — RouteToBranch — Resequence — FTE Output — Signal_EoF — Set FileName

Source File — Route — High-value Work / Less Interesting Records

Get the Most From Packaged Applications

Move information to and from packaged applications

- Packaged applications play a vital role
  - SAP for purchasing, sales, inventory…
  - SEBL for Sales, PeopleSoft for HR
  - Oracle, JDEdwards…

- Interfaces are often non standard: e.g. SAP BAPIs, IDOCs
  - Processing and data are isolated from other applications
  - Result: packaged apps have difficultly using/generating information for other apps
  - Inhibits adoption of a best of breed philosophy

- Support for SAP, SEBL, PeopleSoft, inbound and outbound
  - Adapter components built-in to ESB
  - Drive new work into its packaged application from any other supported source
  - Can send information from packaged application to any other supported target
  - Packaged applications can focus on what they do best **and** be integrated

Connect Devices to the Enterprise

To and from a broad range of devices

- Industry Observation
  - "How to I get information from everywhere, understand it, and act?"
  - Medical, Energy and Utilities, Distribution, Transport, Gaming…
  - Issues based e.g. traffic congestion, efficient energy, timely supply…

- A Smarter Planet is full of devices
  - Data is generated *outside* the enterprise
    - Typically very large numbers of devices
    - Often concentrator technology; differentiate, integrate & forward
  - MQTT for standards based device integration
    - Small footprint client, embeddable
    - Lightweight protocol for bandwidth cost (by-the-byte)
    - Fragile network support for hostile environments

- Connect Devices, Apply Intelligence
  - ESB connects devices to enterprise systems
  - Apply intelligence in near real-time
    - Passive and active systems

IBM is working with Brisbane, London, Singapore and Stockholm to deploy smarter traffic systems. Stockholm has seen approximately 20 percent less traffic, a 12 percent drop in emissions and a reported 40,000 additional daily users of public transportation.

Provide a PEP for Secure Application Connectivity

Secure application identity, authentication and authorization

- Application connectivity => security domain changes
  - Identity management, access control, authorization, and authentication mechanisms (AAA) are essential
  - ESB support many protocols and transports
    - Web Services, MQ, JMS, HTTP and HTTPS
  - ESB supports a broad variety of security tokens
  - Userid/pw, X509, SAML, Kerberos, LTPA...

- ESB performs role of Policy Enforcement Point (PEP)
  - PDP combination provides a secure infrastructure
  - Ensures conformance to centralized security policy
  - Many different PDP technologies supported
    - Lightweight Directory Access Protocol (LDAP)
      - Microsoft Active Directory, Open LDAP...
    - Tivoli Federated Identity Manager (TFIM)
    - zOS SAF including RACF
  - Security hardened DMZ device strengths

Configure LDAP Search Parameters

Main

LDAP Search Parameters

Apply   Cancel

Name		*
Admin State	⦿ enabled ◯ disabled	
Comments		
LDAP Base DN		*
LDAP Returned Attribute	dn	
LDAP Filter Prefix		*

MQInput Node Properties - MQInput

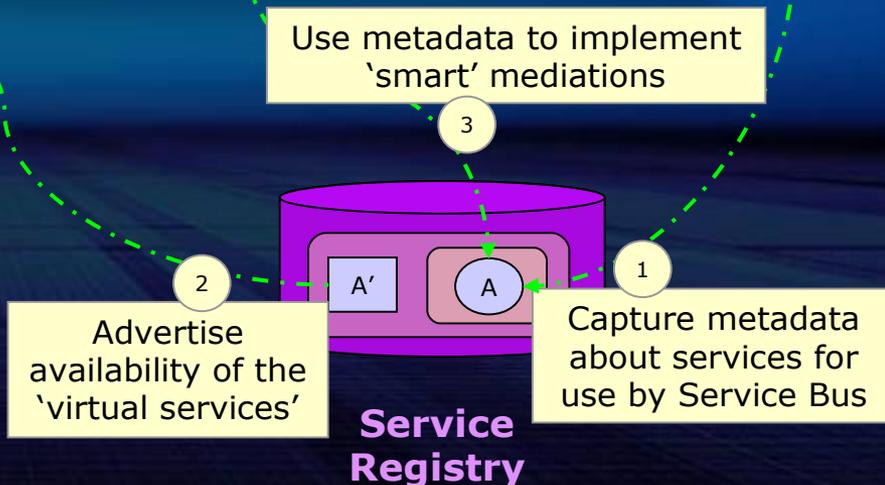| Identity token type	Username
Identity token location	$Root.MDMD.UserIdentifier
Identity password location	
Identity issuedBy location	<optional, specify a string or path exp
Treat security exceptions as normal exceptions	☑

Derive Value from a Service Inventory

Understand your application assets and control their access dynamically

- **Catalog application and service assets using a registry, e.g. WSRR**
  - Web Service and MQ Service definitions
  - Classifications: by function, owning department
  - Relationships: applications dependencies for lifecycle management, versioning
  - User defined properties (metadata): Application=GOLD or Service=SILVER

- **Use registry information in ESB routing**
  - Built-in facilities allow ESB to access registry
  - Enables policy based processing

Service Provider

Virtual Service

Service Requestor
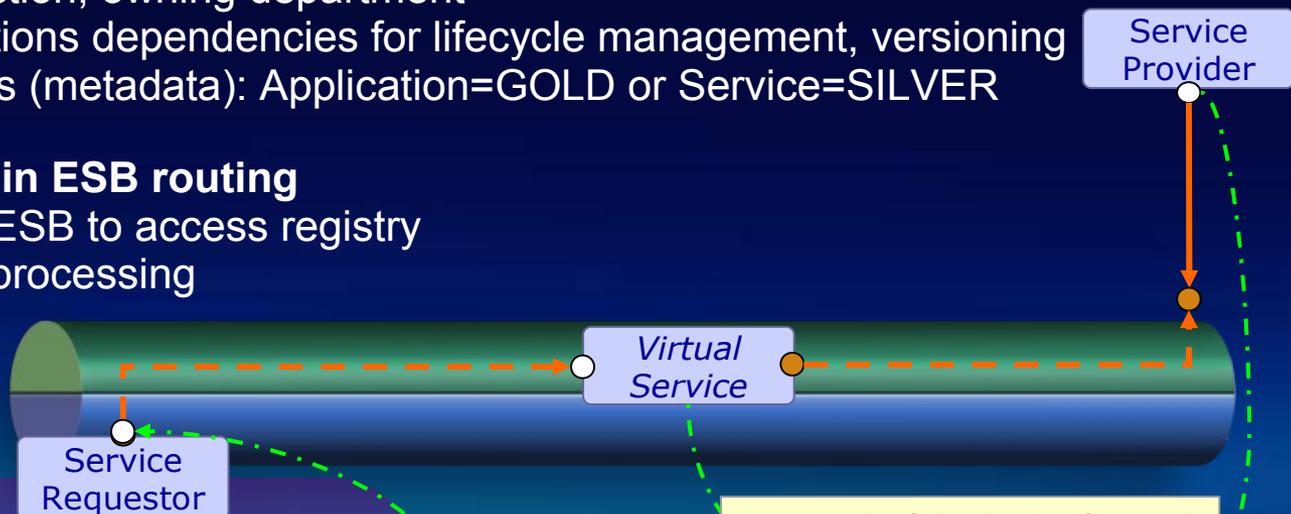
Primary use cases:

- **Visibility:** application catalog & relationships

- **Governance**: who accesses which applications/services

- **Dynamicity**: update registry to change ESB behavior without redeploy

- **Policy based Processing:** policy enforcement and policy based service selection

Use metadata to implement 'smart' mediations

3

Advertise availability of the 'virtual services'

2

A'   A

1

Capture metadata about services for use by Service Bus

Service Registry

A Flexible Infrastructure to Support Change

Enable Application and Service Replacement with minimum risk

- ESB creates a Virtual Service
  - Implementation details of a service to be hidden
  - Flexibility in implementation; change implementations without affecting consumers
  - Introduce new interfaces to existing service in parallel with new interfaces

- Examples include M&A, Decommissioning & External partner communication
  - Connect newly acquired systems, particularly relevant in M&A
    - Formats and Protocols of acquired technology differ from current systems
    - ESB provides managed interface to acquired systems for in-house systems
      - Provides new interface for acquired systems
  - Staged decommission of legacy implementations
    - Maintain existing interface to new implementation
      - Allows Managed risk of client migration
      - Often combined with new interface definition, often to enable service orientation
  - External partner communication
    - ESB provides interface to external systems
    - Allows partners to be swapped in and out without affecting consumers
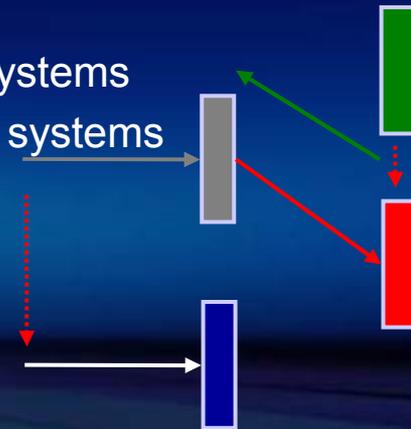
Business Rules for Smart Connectivity

Apply rules to ESB data in-flight

Rule-based Decision Service

Inputs

Outputs

Rule-based Decision Services render decisions on input data
Most often this data comes from a variety of data sources
i.e. aggregation, transformation is needed

Rule-based Decision Services send outcome decisions to other systems
Output data needs to be transported and dispatched to one or many systems

- Automate decisions
- Implement, manage & share decisions services across IT infrastructure
- ILOG JRules for Embedded rules and ILOG Rules Server subsystem

Business Activity Monitoring & Event Intelligence

Understand the importance of ESB data and detect business situations

- **ESB connectivity allows processing of events from many sources, targets**
  - Capture business relevant information to feed to WebSphere Business Monitor
    - Examples: total dollar trade value per day, total number of orders per hour
  - Capture business events for correlation using WebSphere Business Events
    - Look for correlations in data, e.g. fraud, Up-sell and Cross-sell opportunities, CRM
  - Audit, Repair and Replay transported events

- **Generate Business Monitoring Events from existing connectivity**
  - Enables integration with WebSphere Monitor to display and analyze KPIs
  - Design time and operational time event activation
  - Notification via CEI & Publish subscribe

- **WebSphere Business Events**
  - Capture events from ESB and other sources
  - Analyze to generate interesting new event
    - Stimulus for business process

- **Capture Events for Audit and Logging**
  - Verify transport of traffic; dates and payloads
  - Replay recorded messages to consumers
    - Includes replay to ESB for reprocessing

Initiate and Support Business Processes

Compose existing applications and services to create new value

- **ESB Event Capture and Process Initiation**
  - Breadth of ESB connectivity enables multiple business process starting points
    - Identify event and initiate business process
    - e.g. message, file, web service, device endpoints can start business process
  - Synchronous and asynchronous invocation for short & long running transactions
    - Multiple options with Process Server, Lombardi, FileNet…

- **Business Process Connectivity**
  - Exploit range of ESB connectivity to abstract and simplify BPM
  - Process focus on WHAT rather than ESB focus on WHERE, HOW concerns
  - ESB receives service request and routes, re-formats, interacts with provider

Business Process — ESB

Business Process — ESB

Web Service, SAP, MQ, File…

WebSphere Dynamic Process Edition — Process — Information — People — FileNet Business Process Manager — Lombardi — Business Process Management
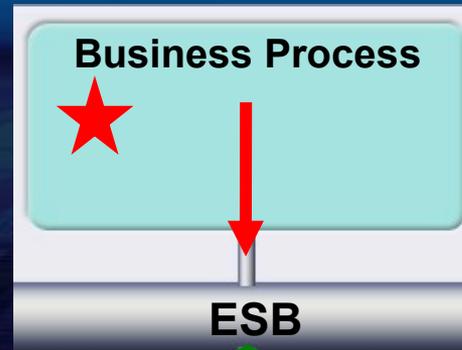
Pattern Technology Demonstration

Many Defined Patterns for ESB-based Solutions

http://www.ibm.com/developerworks/wikis/display/esbpatterns/
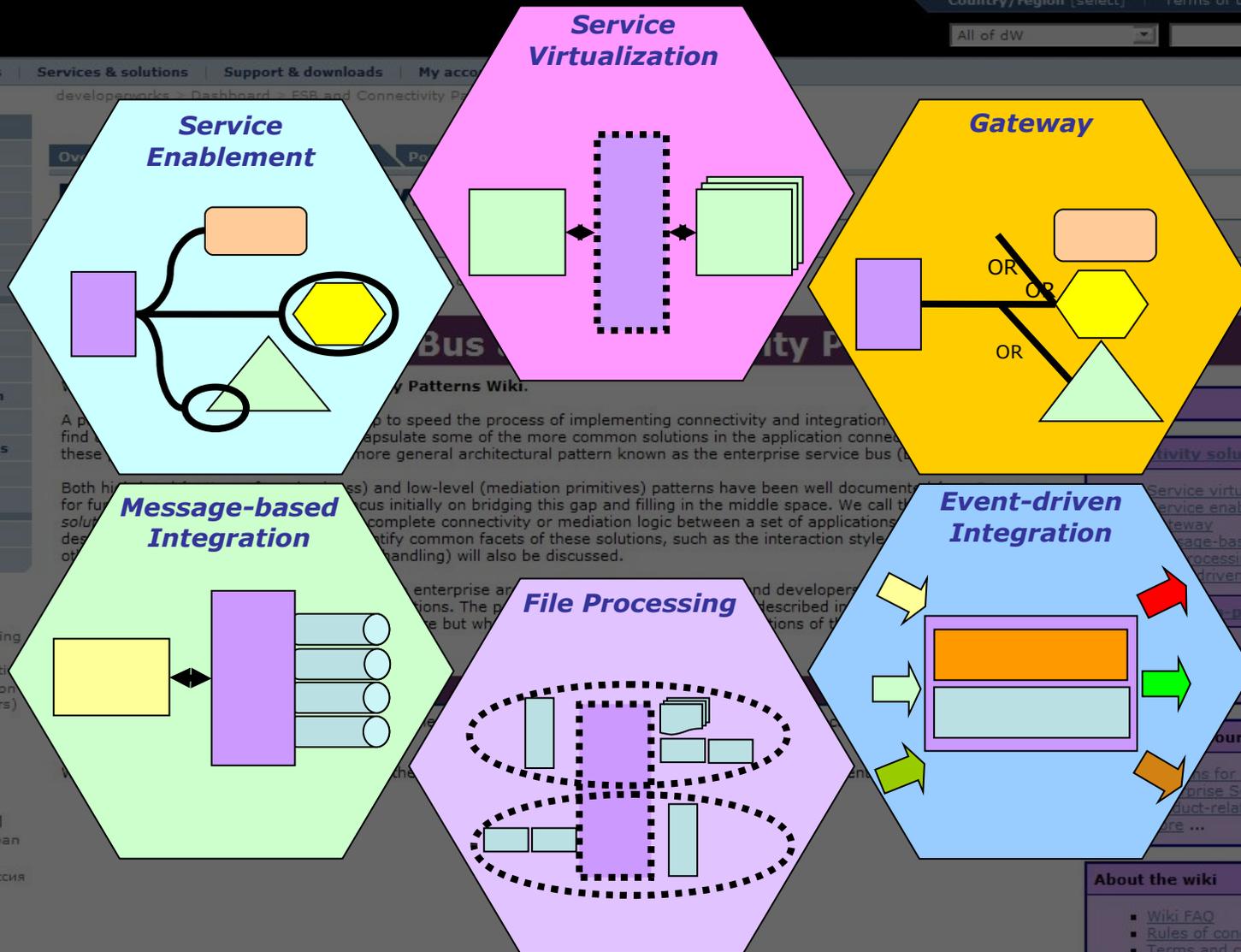
Patterns for Simplified Development

- **Patterns Based Development**
  - Create top-down, parameterized connectivity solutions
    - e.g. Web Service façades, Message oriented processing, Queue to File
  - IBM pre-supplied patterns
    - Simplifies creation of most common scenarios according to best practices
  - Complements existing bottom-up constructional approach for bespoke connectivity

- **Patterns Explorer**
  - Inventory of key patterns available for solution generation
  - Each pattern contains clear help to explain context and applicability

- **Pattern Generation**
  - Enables simple creation of solution artefacts from pre-supplied pattern
  - Pattern Properties allow configuration of behaviour
  - Solutions can be modified and/or regenerated

- **Evolution**
  - Pattern Capture creates user patterns from solution artefacts
  - Pattern Management: provides post deployment customization and operation of solutions

Pattern Technology Demo (1/3)

Pattern Technology Demo (3/3)

Product Overviews

Multiple ESB offerings
Solutions to Meet Any and Every Demand

ESB
offerings from
IBM WebSphere
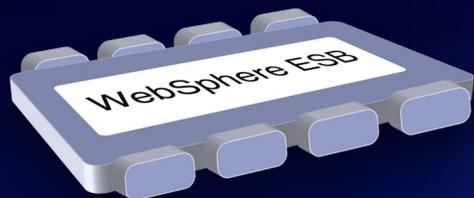
Platform Based

WebSphere Enterprise Service Bus

- Optimized with WebSphere Application server for an integrated SOA platform
- Shares common registry, security, administrative and development tools
- Services hosted on the application server

Appliance Based

WebSphere DataPower Integration Appliance XI50

- Hardware built for simplified deployment and hardened security
- Functions developed in one device

Integration Based

WebSphere Message Broker

- Built for universal connectivity and transformation in heterogeneous IT environments
- Message transformation developed to accommodate disparate service interfaces
- Adapters, protocol bridges packaged with applications and legacy platforms

IBM WebSphere Enterprise Service Bus
Built on WebSphere Application Server for an integrated SOA platform

- **Seamless integration** with the industry leading WebSphere platform

- **Delivers** business-critical qualities of service

- **Easily extended** to WebSphere Process Server

- **Continued Innovation:**
  - Delivers new policy-driven connectivity
  - Enhanced web services standards support
  - Enhanced service mediation capabilities

Smart SOA

Service Enrichment

Messaging

WebSphere Process Server

WebSphere ESB

WebSphere Application Server ND

WebSphere Application Server
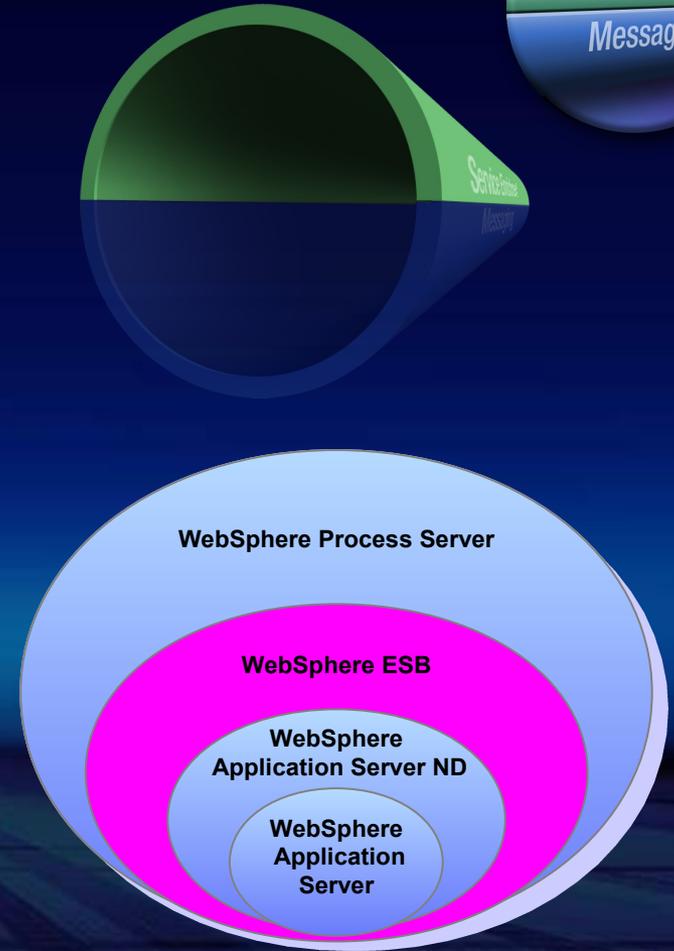
WebSphere ESB V7

- **Accelerates productivity across user roles**
  - Developers, Systems Administrators, Operations
- **Exploits and extends WebSphere Application Server V7**
  - Enhanced standards, administration, and integration
- **Enables advanced ESB scenarios**
  - Service Federation Management and value-add QoS
- **Enhances support for open standards**
  - Java, Web services, SCA

Optimized with WebSphere Application Server for an integrated SOA platform

eGA 4Q/2009

z/OS GA 4Q/2009

Service Monitor

WID Task Flow View

Module Administration

What's Next in WebSphere ESB

v.NEXT+1

- Service Gateway Scenario Support
- Mediation Policy
- Multiple MFCs in a module
- DataHandler Primitive for dynamic format handling
- Header manipulation primitives for: WMQ, JMS, HTTP
- Type Filter Mediation Primitive routing based on message type
- Web Services Standards: SOAP 1.2, ws-RM support
- Improved trace

v7

- Further WAS version support
- Message format support
- Simple "human readable" flow format
- Comprehensive pattern support

WPS/WESB Featurepack 2Q09

V6.2.0.1 April 2009

- WAS V7 Support
- XML performance and fidelity enhancements
- Endpoint-based mediation policy
- Gateway scenario usability and functional enhancements
- Custom Mediation Primitive Installer
- Initial Pattern support
- Event sequencing
- Store and forward
- Federated Connectivity Management
- EJB binding enhancements

V6.2
Dec 2008

- Mediation Policy Governance
- SOAP/Attachments

- Mediation Policy Admin Widget for IT Space
- Mediation promoted property control widget
- Samples for policy, gateway

■ **Major release**

✷ **Minor release**

The information on the new product is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information on the new product is for informational purposes only and may not be incorporated into any contract.
The information on the new product is not a commitment, promise, or legal obligation to deliver any material, code or functionality.
The development, release, and timing of any features or functionality described for our products remains at our sole discretion

Continued Confirmation of WESB Success Stories

Smart SOA

Service Enrichment
Messaging

Government

- manages 10,000 transactions per day at the top five U.S. state agencies.

Banking

- Is used worldwide in more than 50 banking institutions across 3 continents and in over 20 countries

"We also have more flexibility and we can change configurations – that was something that we couldn't put a dollar value on. Now we can change the location of databases or servers, or add more servers in an effort to load balance, or have a backup site without making any changes to the business logic or actual code."

IT architect,
Retail

IBM WebSphere Message Broker Product Line
Built for universal connectivity and transformation in heterogeneous IT environments

- **Endless integration** to virtually any platform, operating system or device

- **Exploits** the industry-leading WebSphere MQ messaging infrastructure

- **Easily handles** complex messaging structures delivering extensive administration and systems management facilities

- **Continued Innovation:**
  - Over 100 nodes for connectivity, integration, and transformation
  - Starter to full enterprise versions
  - Works with the latest implementations of standards
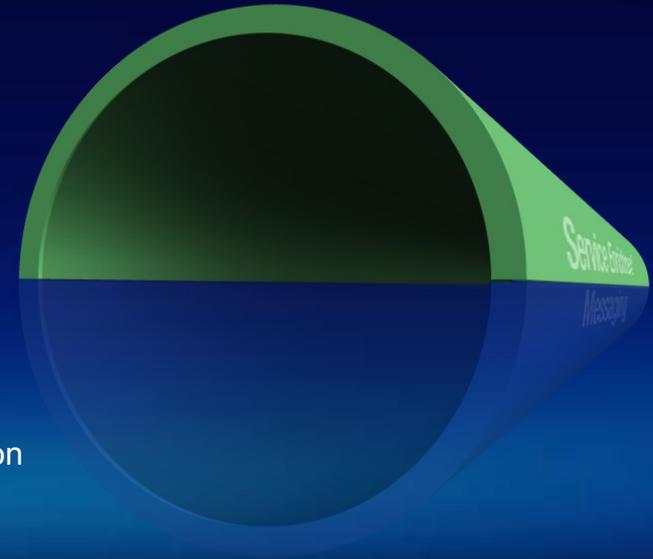
- WebSphere Message Broker Starter Edition
- WebSphere Message Broker for Remote Deployment
- WebSphere Message Broker
- WebSphere Message Broker for Retail Store Edition

WebSphere Message Broker

- **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 (SOAP, REST), File, ERP (SAP, SEBL…), TCP/IP, SCA
  - Supports a broad range of data formats
    - Binary (C/COBOL), XML, SOAP, CSV, Industry (SWIFT, EDI, HL7…), IDoc, User Defined
  - Interactions and Operations
    - Route, Filter, Transform, Enrich, Monitor, Distribute, Decompose, Sequence, Correlate, Detect

- **Simple programming**
  - Patterns based for top-down, parameterized connectivity of common use cases
    - e.g. Web Service façades, Message oriented processing, Queue to File…
  - Construction based for bottom-up assembly of bespoke connectivity logic
    - 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, PHP, Java, ESQL, XSL and WTX

- **Operational Management and Performance**
  - Extensive Administration and Systems Management facilities for developed solutions
  - Wide range of operating system and hardware platforms supported
  - Offers performance of traditional transaction processing environments
  - Available in Trial, Remote Deployment, Get Started and Enterprise deployment options

WebSphere Message Broker: Overview

Universal connectivity and transformation in heterogeneous IT environments

- ✓ Simple and flexible programming: message flows, message nodes and message model, patterns
- ✓ Multiple transformation options: including Graphical mapping, PHP, Java, ESQL, XSL and WTX
- ✓ Comprehensive data formats: Binary (C/COBOL), Text (XML/CSV/…), Industry (SWIFT/EDI/…), User Defined

WebSphere Message Broker

Transformation Node

Transformed Message — Format 1

Augmented Message — Format 2

Input Node

Database Node

Output Nodes

Original Message

App. A

Q 1

Q 2 → App. B

Q 3 → App. C

Log

Warehouse Node

Message Warehouse

Content accessed from database

Graphical, ESQL, Java, PHP, XPath/XSL

MQ
JMS
HTTP
Files (incl VSAM)
(S)FTP
Database
EIS (SAP, Siebel, Peoplesoft)
TCP/IP (sockets)
Timer
Telemetry/SCADA
SCA

MQ
JMS
HTTP
Files (incl VSAM)
(S)FTP
Database
EIS (SAP, Siebel, Peoplesoft)
TCP/IP (sockets)
Timer
CICS (z/OS only)
Telemetry/SCADA
IP Multicast
Email (SMTP)
SCA

Message Broker 7 Overview
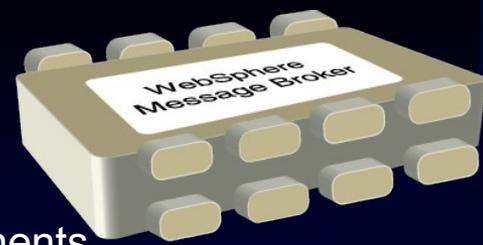
- **Simplicity and Productivity**
  - Radically streamlined product prerequisites and components
  - Simplified connectivity development using IBM pre-supplied patterns
  - MB Explorer for dedicated administration tooling
  - SCA nodes for WPS Interoperability

- **Universal Connectivity for SOA**
  - IPHP nodes for Web 2.0 support
  - New Sequence and Resequence nodes

- **Dynamic Operational Management**
  - Enhanced statistics to understand broker performance
  - Improved user trace to easily understand message flow behaviour
  - Enhancements for WSRR processing: Service Federation Management
  - Software HA Multi-instance Queue Managers and Brokers

- **Platforms, Environments and Performance**
  - Exclusively 64bit Broker support, including z/OS
  - Performance monitoring tools and very reduced memory footprint
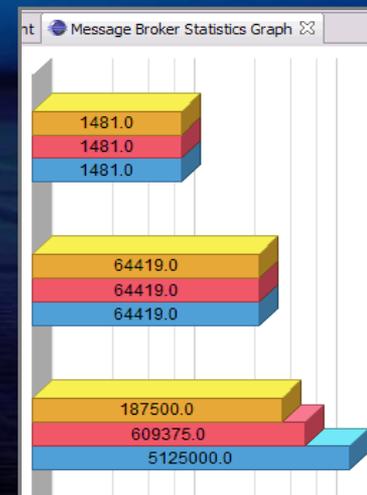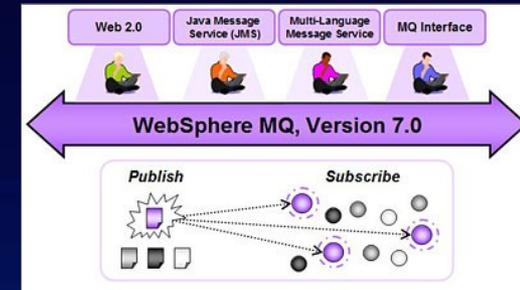
What's Next in WebSphere Message Broker?

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

- User Defined Patterns for custom reuse
- User Defined Sub flows: encapsulate & distribute
- Expanded Patterns Explorer: more built-in patterns

- SOAP/JMS & more Web Service enhancements
- Database input node processing of relational data
- Multi-platform CICS node for direct connectivity
- FTE file nodes for end-to-end file processing
- CORBA request node to facade CORBA systems

- Extended security: SAML, Kerberos, LTPA, RACF tickets
- PEP node for mid-flow security processing
- Comprehensive operational resource statistics
- Web Services Policy Analytics for WSRR

- Windows 7, Server 2008 with 64 bit processes
- More databases: solidDB, SQL Server z/Linux

Next
Q4 2011

FixPack 1
Q2 2012

V7.0.0.3
FixPack
Q2 2011

- Simplicity and Productivity
- Enhanced Connectivity
- Dynamic Operational Management
- Heterogeneous Environments

V7.0.0.2
FixPack
Q4 2010

Delivery of Next capabilities

V7.0
Nov 2009

V7.0.0.1
FixPack
Q2 2010

■ Major release

✹ Minor release

37
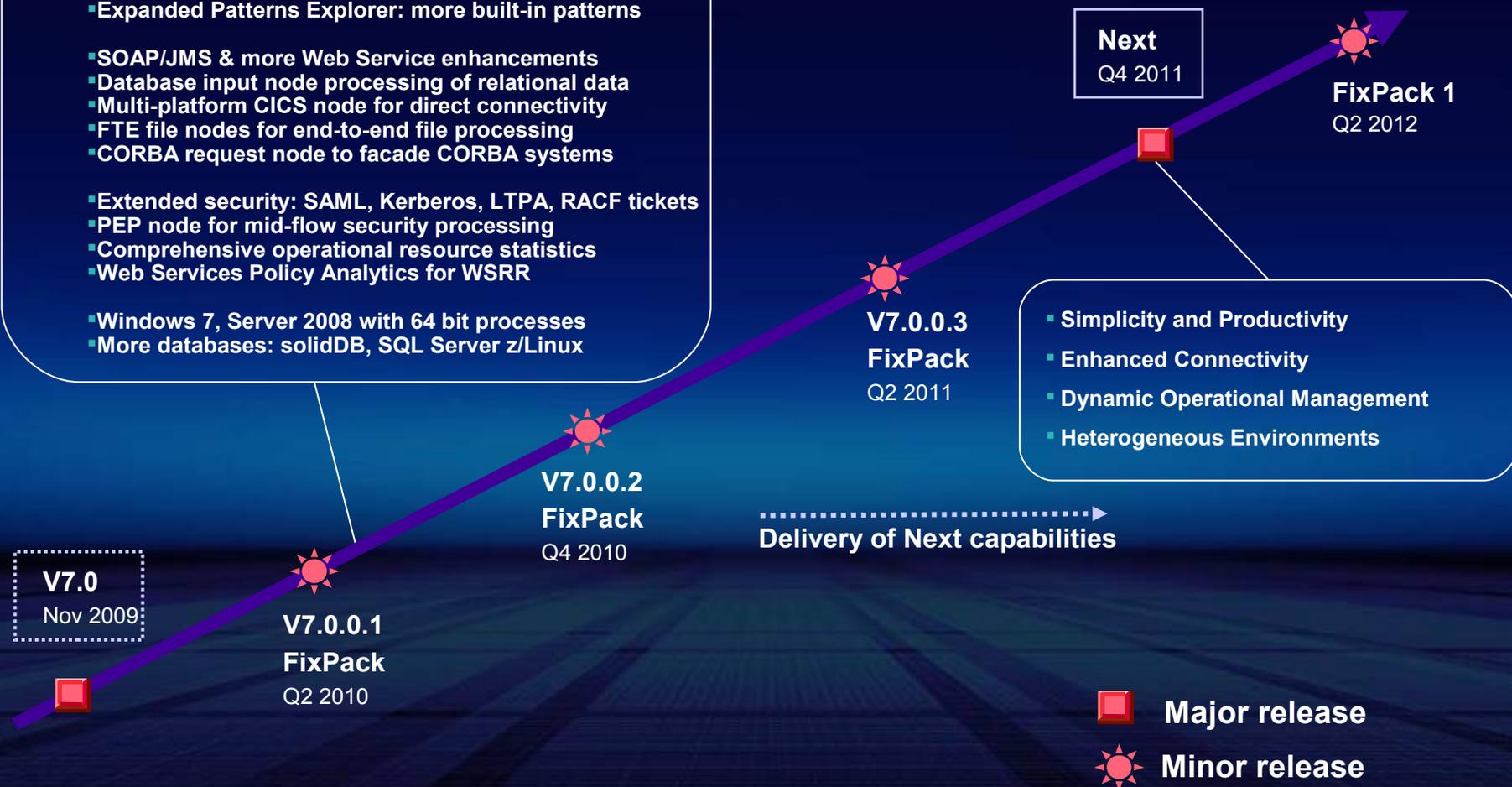
WebSphere Message Broker Continued Success

Service Enrichment
Messaging

Financial Services

- 80% of the top 10 banks in America use Message Broker
- Millions of transactions per day

Insurance and Healthcare

- 90% of the top insurances companies use Message Broker
- One company handled 42% more transactions per day

Automotive

- Used in 9 of the top automotive companies
- Integrates supply chain management system with critical production data

"It's going to give us unprecedented agility. We'll be able to re-merchandise our Web stores on the fly in response to competitive offers. That will make us much more relevant to the customer, which is critical.."

CIO,
Retailer

MB Hypervisor Edition

HVE → Config pattern → **configure** → **deploy**

- **A New Feature to simplify provisioning MB (and MQ)**
  1. Simplify initial system deploy resulting in quicker time to solution value
  2. Simplify fix pack deploy to reduce recurring maintenance cost for existing systems
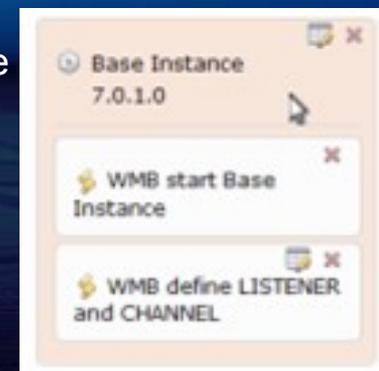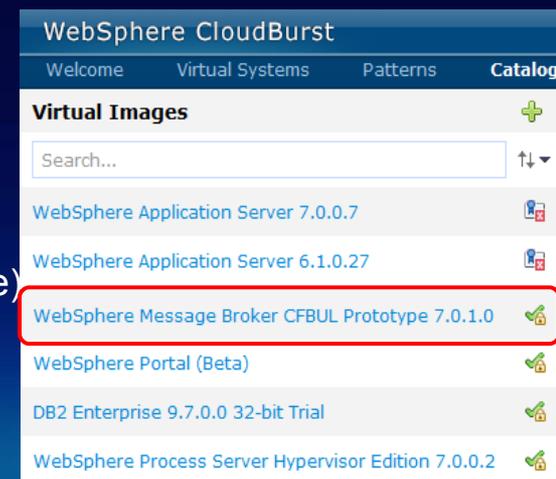
- **2 key components to Cloudburst**
  - Hyper Visor Image (HVE) – a pre-built VM installed image
    - Provides OS+HW combination, e.g. RHEL 5.5 for VMWare ESX
  - HVE Scenario Configuration Information ("CB Pattern")
    - Technical (e.g. Multi-instance HA) or business oriented (Healthcare)

- **Hyper Visor Edition Packages**
  - A new set of packages for MQ and MB forming part of SOE
    - RHEL for VMWare ESX x86-64 initial release
  - Updated when new fix pack levels released
    - Downloaded to customer site Cloudburst when required, iFixes also possible

- **Configuration Patterns**
  - Create most popular MQ and MB topology configurations
    - e.g. Standalone broker, HA Multi-instance MB+MQ cluster, Starter Edition…
  - Includes customization scripts required for operational system, e.g. listeners

WebSphere CloudBurst

Welcome | Virtual Systems | Patterns | Catalog

Virtual Images

Search...

- WebSphere Application Server 7.0.0.7
- WebSphere Application Server 6.1.0.27
- WebSphere Message Broker CFBUL Prototype 7.0.1.0
- WebSphere Portal (Beta)
- DB2 Enterprise 9.7.0.0 32-bit Trial
- WebSphere Process Server Hypervisor Edition 7.0.0.2

- Base Instance 7.0.1.0
- WMB start Base Instance
- WMB define LISTENER and CHANNEL

Selecting your Connectivity platform:
System z is uniquely capable of ensuring QoS

- Up to 99.999% availability in a Parallel Sysplex to avoid planned and unplanned outages
- Change management and rolling maintenance reduces planned outages
- GDPS enables recovery of whole systems across vast distances in split second time
- Component level recovery for both hardware and software
- Automated recovery response to failures including restart and isolation, as appropriate
- Dynamic workload balancing across systems and logical partitions for 24x7 operations

A large bank running their ESB on System z has seen 99.99% availability since their initial deployment two years ago.

End-to-end Process Integration

Connectivity

Process Automation

Quality of Service

Introduction to a DataPower Appliance

- *Redefines the boundaries of middleware with specialized hardware.*

- *XML processing at price & performance levels not possible with software.*

- *Drop-in solution to minimize development costs, accelerate time to market.*

- *Wide adoption among Global 1000 firms.*

- *Many functions integrated into a single device.*

Secures services on the network with sophisticated web services access control, policy enforcement, message filtering, and field-level encryption
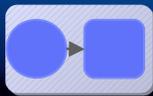
Optimized to bridge between leading standard protocols at wirespeed, including web services, messaging, files, and database access
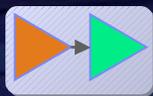
Enables transformation between a wide range of data formats, including XML, legacy, and industry standards, and custom formats

Captures and emits events to facilitate web services management and enable business visibility in Business Activity Monitoring solutions

WebSphere DataPower Appliances meet your connectivity needs

XM70

- Extreme volume at microsecond latency
- Extended messaging protocol bridging
- Enhanced QoS and performance

XB60

- Unparalleled B2B performance
- Secure B2B messaging (AS1, AS2, AS3)
- Trading partner profile management
- B2B Transaction Viewer

XI50

- Consumable hardware ESB
- "Any-to-any" conversion at wire-speed
- Dynamic routing; intelligent load distribution

XS40

- Web Services security
- Rich authentication and authorization
- Centralized policy management

Introducing the WebSphere DataPower XI50z for zEnterprise

New Offering!

- XI50 features optimized in a dense, high compute **IBM zEnterprise BladeCenter Extension (zBX)** form-factor

- Supports all ESB, Security, and Integration capabilities of **DataPower XI50** v3.8.1

- **Purpose-built** Integration Appliance

  - Sysplex, CICS, IMS, DB2, SAF, RACF integration

- **Highest capacity** DataPower appliance for SOA workloads optimized for zEnterprise environments

- Tightly **integrated** with zEnterprise

  - Unified hardware and firmware management through the Hardware Management Console (HMC)

  - Inherits serviceability, monitoring and reporting capabilities of zEnterprise

The thought behind IBM BladeCenter: Integration of components leads to lower-cost and simplicity

IBM BladeCenter is a simple integration of servers, storage and networking. Its innovative, open design offers a true alternative to sprawling racks and overheated server rooms

- Built on the IBM X-Architecture
- Five different yet compatible chassis to choose from
- Broad variety of processor blades including specialty blades and expansion modules to match application needs
- An expansive I/O portfolio with simplified deployment and failover capability
- Software for systems, energy and virtualization management
- IBM services and support

Background/Context

IBM zEnterprise 196, (short name z196) introduced last year, latest generation

Offers an optional infrastructure called the IBM zEnterprise BladeCenter Extension(zBX)

Consists of 1 to 4 42U racks that can each contain 1 or 2 BladeCenter Chassis, each chassis having 14 slots

Therefore up to 112 BladeCenter slots are available in a zBX configured with the maximum of 4 racks with 2 chassis in each rack

zEnterprise Unified Resource Manager (short name zManager), is a firmware component that manages the entire zEnterprise (the z196 and the zBX) from a single point

This simplified management is one of the key value propositions of the zEnterprise

When IBM announced the zBX last year they announced a Statement of Direction (SOD) for supporting a WebSphere DataPower in the zBX with the intent to fulfill the SOD in 1H2011. Announcement mid-February 2011

WebSphere DataPower Appliance in the zBX
Purpose-built hardware for simplified deployment and hardened security

What is it?

The IBM WebSphere DataPower appliance integrated in the zEnterprise System (XI50z), can help simplify, govern, and enhance the security of XML and IT services by providing connectivity, gateway functions, data transformation, protocol bridging, and intelligent load distribution.

How is it different?

Security: VLAN support provides enforced isolation of network traffic with secure private networks. And integration with RACF® security. IEDN - "integrated ensemble data network" - is a 10gige network with VLANs provisioned to ensure fine-grained access to services between the zBX and z itself. This is great for both performance (lower latency for sure) as well as for security. DataPower management is integrated with the Hardware Management Console on a secure network isolated from data traffic.

Improved support: Monitoring of hardware with "call home" for current/expected problems and support by System z Service Support Representative.

System z packaging: Increased quality with pre-testing of blade and zBX. Upgrade history available to ease growth. Guided placement of blades to optimize.

Operational controls: Monitoring rolled into System z environment from single console. Time coordination with System z. Consistent change management with Unified Resource Manager.

From a DataPower perspective - no new functionality other than extending the SOMA/AMP interfaces to allow the z HMC (hardware management console) to manage the appliances

For the existing XI50B BladeCenter product, TIBCO, Database Connectivity, Application Optimization (AO) and Tivoli Access Manager (TAM) are all options

For the XI50z product, TIBCO and Database Connectivity are options, but Application Optimization and Tivoli Access Manager are standard

AO and TAM may still have feature codes for the XI50z but the user of eConfig either will not see them or won't be able to fiddle with them
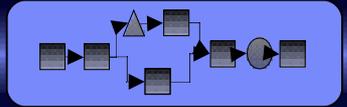
The ESB …
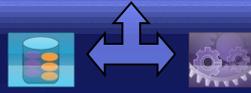## *at the heart of a smart connectivity 'ecosystem'*

Service Monitoring
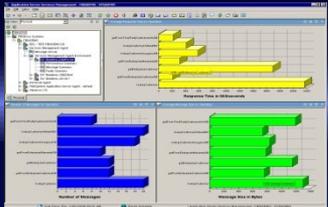
Tivoli CAM for SOA

Service Orchestration and BPM

WebSphere Process Server

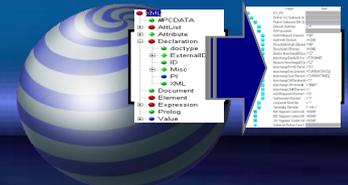**Business Rules**

WebSphere iLog JRules WebSphere Event Server

Service Security

Tivoli Security Products

WebSphere ESB

WebSphere Message Broker

ESB
Offerings from
IBM WebSphere

Universal Transformation

WebSphere Transformation Extender

Service Registry

Publish Find Enrich Manage Govern

WebSphere Services Registry and Repository

WebSphere DataPower Integration Appliance XI50

Messaging Backbone for SOA

| MQI | Java JMS | XMS for .NET C# | XMS for C/C++ |

WebSphere MQ messaging backbone

WebSphere MQ

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Whitepaper for you

- Everyone will receive a copy of "Considerations for making System z your ESB deployment platform"

- System z might the right platform for your ESB because:
  - Enables cost-effective reuse of z assets
  - Offers significantly improved ESB execution characteristics with proximity to data

- Read more!

Thank you!!
Questions?