What's New in WebSphere Message Broker Version 7.0.0.1

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IBM

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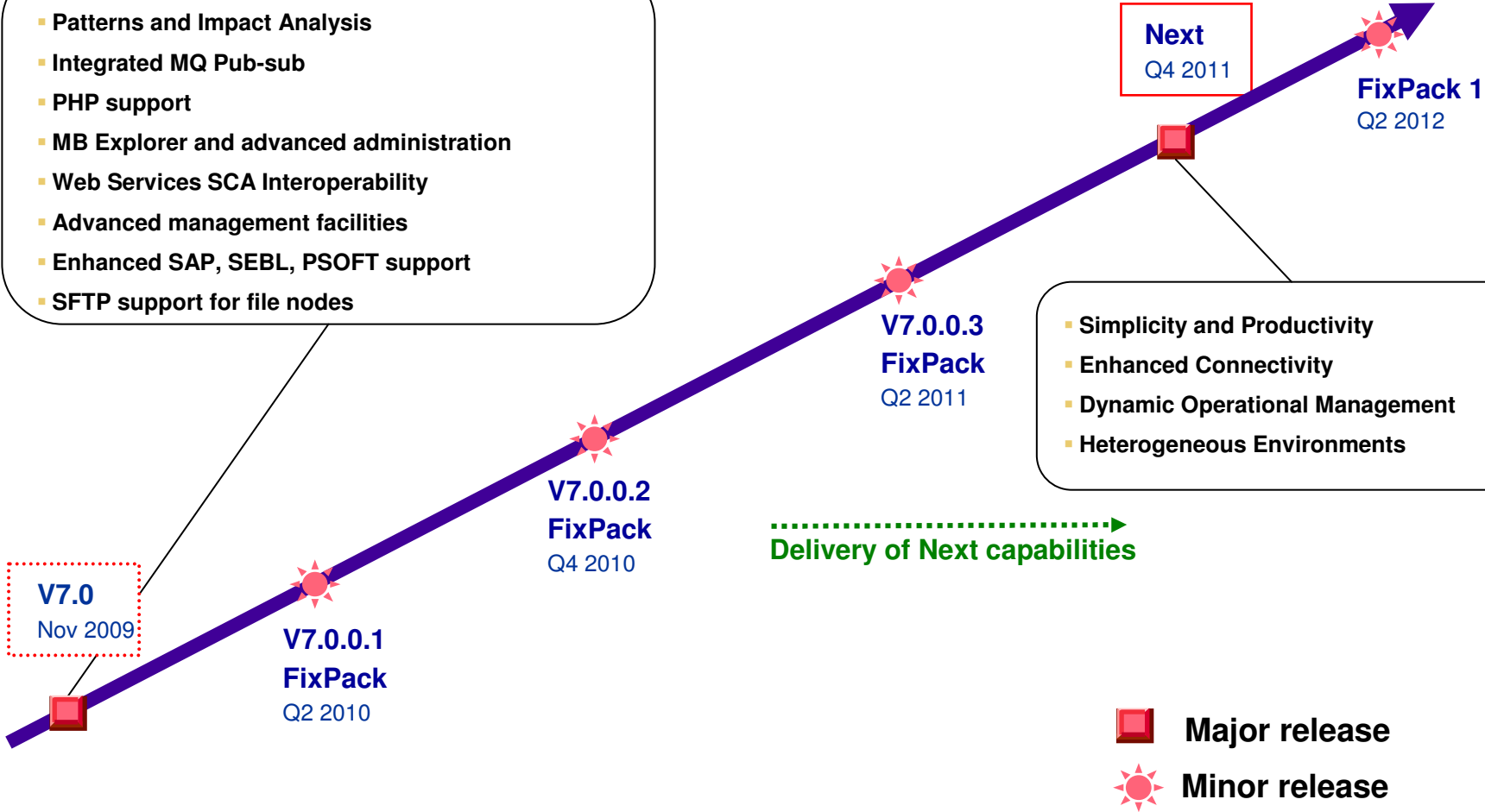
WebSphere Message Broker

- **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), SOAP, REST, File, Database, ERP (SAP, SEBL…), TCP/IP, SCA…
  - Supports a broad range of data formats
    - Binary (C/COBOL), XML, CSV, Industry (SWIFT, EDI, HL7…), IDOCs, User Defined
  - Message Processors
    - 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
  - Easy to get started with Trial, Remote Deployment, GetStarted and Enterprise deployment options

Message Broker Product Roadmap

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

- Product and pre-requisites simplification
- Patterns and Impact Analysis
- Integrated MQ Pub-sub
- PHP support
- MB Explorer and advanced administration
- Web Services SCA Interoperability
- Advanced management facilities
- Enhanced SAP, SEBL, PSOFT support
- SFTP support for file nodes

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**

Version 7.0 Overview

- **Simplicity and Productivity**
  - Radically streamlined product
  - IBM pre-supplied patterns
  - Impact Analysis for development artefacts
  - MB Explorer for dedicated administration tooling
  - SCA nodes for WPS Interoperability

- **Universal Connectivity for SOA**
  - Extended & integrated MQ publish subscribe
  - PHP nodes for Web 2.0 support
  - Enhanced SAP, Siebel, PeopleSoft ERP support
  - New Sequence and Re-sequence nodes
  - Industry Samples for Healthcare and Retail

- **Dynamic Operational Management**
  - Facilities for audit and monitoring, WBM
  - Enhanced performance statistics and reporting
  - Enhancements for WSRR processing
  - Exploit Multi-instance MQ for software HA

- **Platforms, Environments and Performance**
  - Exclusively 64bit Broker support
  - Performance monitoring tools; reduced footprint
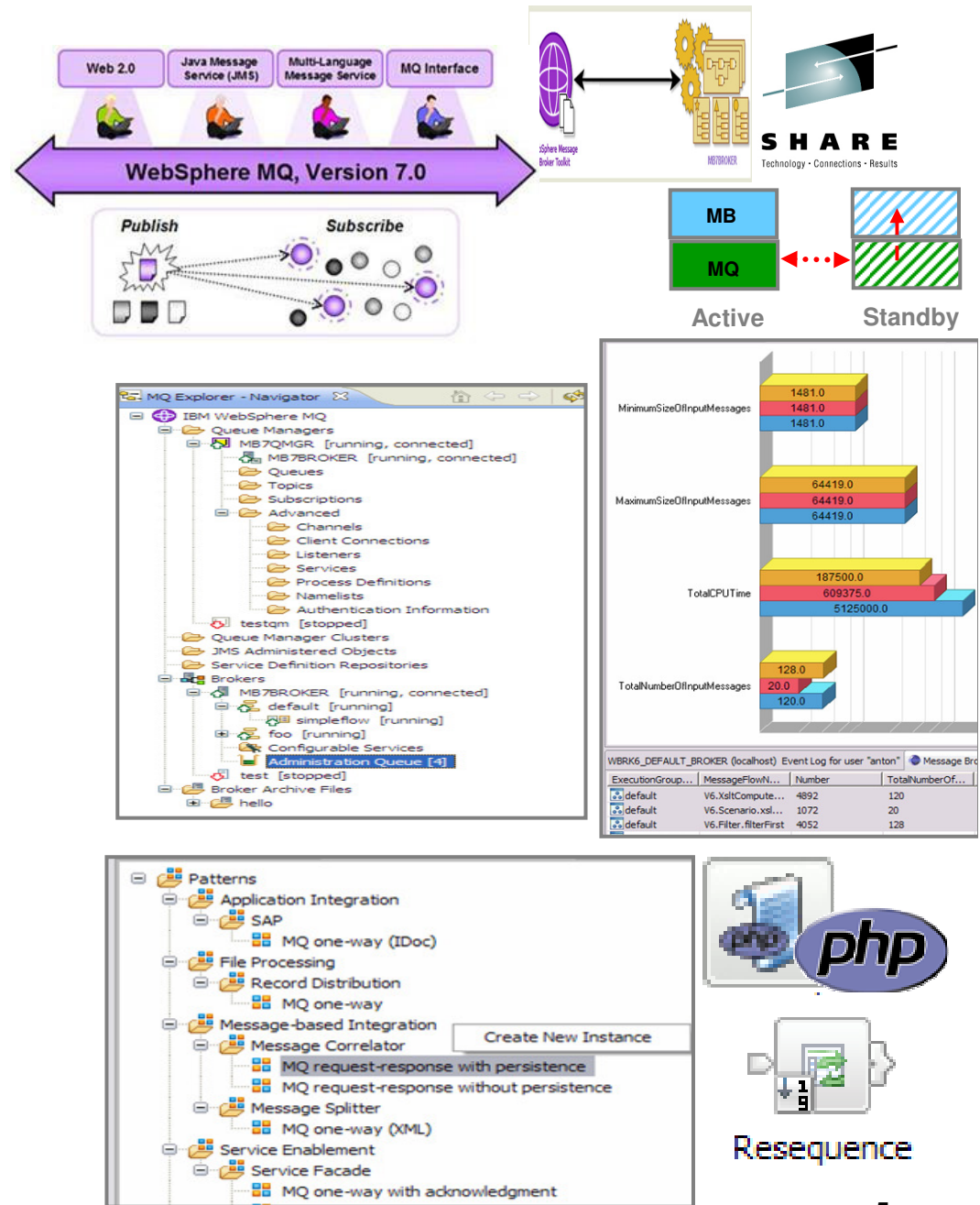
Message Broker 7001 Content

- **2010 Early Experience Beta Program in Progress**
  - All features under development were shared with clients on MB's 2010 program
  - Contact Anthony O'Dowd or David Hardcastle for more information

- **Simplicity and Productivity**
  - User Defined Patterns allowing users to create their own patterns alongside built-in suite
  - User Defined Sub flows to encapsulate user logic and simplify distribution
  - Expanded Patterns Explorer for more built-in patterns

- **Universal Connectivity for SOA**
  - SOAP/JMS and other Web Service related enhancements
  - Database input node for database driven message flows
  - Multi-platform CICS node for direct region connectivity
  - FTE file input and output nodes for end-to-end file processing
  - CORBA request node to facade CORBA systems

- **Dynamic Operational Management**
  - Extended security tokens including SAML, Kerberos, LTPA and RACF pass tickets
  - PEP node for mid-flow security processing
  - Comprehensive operational statistics to understand resource utilization and behaviour
  - Web Services Policy Analytics for WSRR

- **Platforms, Environments and Performance**
  - Windows 7 and Server 2008 support, including 64 bit execution groups
  - More databases: solidDB, SQL Server z/Linux & DB2 9.7

# Enhanced Patterns Support

- **User Defined Patterns**
  - Add your own patterns to Patterns Explorer
    - Complements IBM supplied patterns
  - Create reusable assets according to best practices
    - Typically performed with Enterprise Architect
    - Developers always create conforming logic
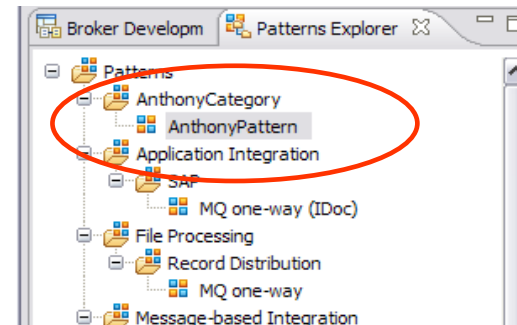
- **Generate pattern from an existing message flow**
  - Identify key message flow (node) properties
  - Create pattern parameters & property mappings
  - Create pattern documentation and help; Preview
  - Add your pattern to Patterns Explorer for reuse
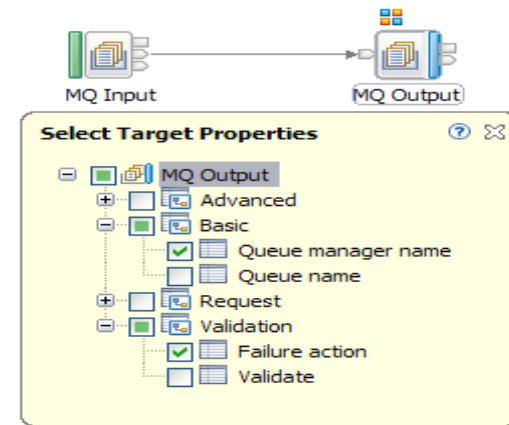
- **User-defined subflows for black-box style reuse**
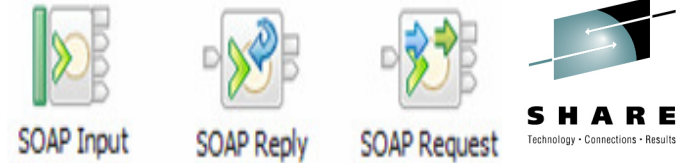 - Create user-defined node packages from subflows
    - Implementation remains opaque
    - Excellent for library style node reuse
  - Distribute & share via any Library Control System

- **Patterns Explorer Expansion**
  - New Service Access pattern
  - 1-way MQ reliable invocation of Web Service
    - Includes error handling

Web Service Enhancements

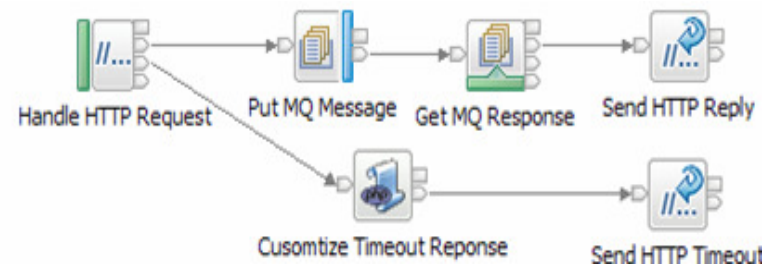SOAP Input SOAP Reply SOAP Request
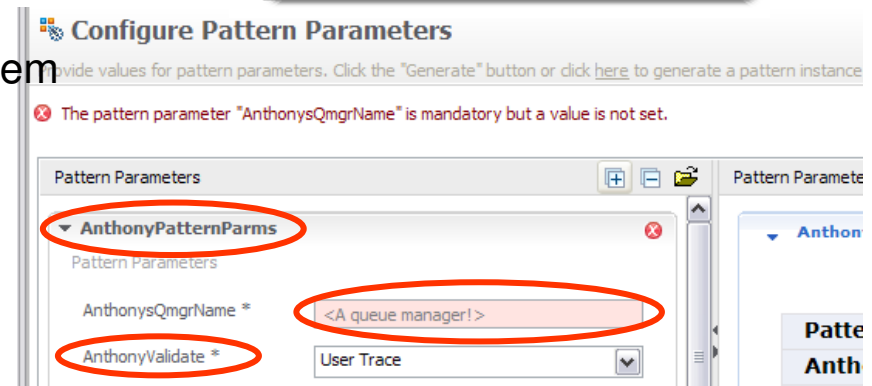
- **SOAP/JMS transport**
  - SOAP nodes now support JMS transports in addition to HTTP
  - Synchronous provider and consumer scenarios
  - All other JMS 1.1providers supported (MQ default), allowing effective SOAP/JMS bridging
  - Provides WS-Security, WS-Addressing, incl. transport switching SOAP/JMS to SOAP/HTTP
  - Handles W3C and other variants, including WAS, CICS, MQ, WPS, WSIF…
  - Full interoperability with WCF MQ channel and XMS
  - Current design allows for async requests/responses & transactional enhancements

- **Web Services functional enhancements**
  - ?wsdl /?xsd support allows client query of web service definitions at runtime
  - gzip, zlib and deflate compression now handled SOAP inbound and outbound
  - New Base64Encode and Base64 Decode functions complement compression

- **Enhanced HTTP Input nodes**
  - HTTP Input listeners embedded in execution groups
    - Improves scalability and performance
    - Single per-broker HTTP listener optional
  - New terminal for user configurable timeout processing
    - Users handles timeout asynchronously to mainline

Handle HTTP Request Put MQ Message Get MQ Response Send HTTP Reply
Cusomtize Timeout Reponse Send HTTP Timeout

- **SOAP based statistics**
  - SOAP based statistics for MB Explorer
  - WSRR Analytics: invocations, success/failure counts

name	InitialMemoryInMB	UsedMemoryIn...	CommittedMemoryInMB	MaxMemor
summary	32	23	46	-1
Heap Memory	32	13	32	256
Non-Heap Mem...	0	10	14	-1
Garbage Collect...				

FTE Nodes for Enhanced File Processing

- **New FTE nodes for End-to-End Transactional File Processing**
  - FTE Input and FTE output nodes allow MB to receive and send FTE transfers
  - Sophisticated file processing includes timely in/outbound transfers & intelligent metadata
  - Typical scenarios are reliable file to queue, database to file, file to file

- **FTE Input node**
  - Message flow starts processing message as soon as FTE agent notifies of complete file transfer
  - FTE Metadata provided in `LocalEnvironment` allowing intelligent processing of transfers & scripting
  - File can be processed as whole file or record-at-a-time; simple & user records – per existing file nodes

- **FTE Output node**
  - Creates file output records and requests FTE transfer with appropriate metadata
  - `LocalEnvironment` allows users to specify transfer overrides and customizable metadata

- **FTE Agents are automatically Installed, Configured and Managed**
  - Installed seamlessly as part of regular install, auto configured client name, transfer directories etc.
  - FTE agents are started with MB execution groups when message flows are started and stopped
  - Execution Group Properties for custom configuration (e.g. different coordination queue manager)
  - MB Explorer resource statistics per file; sizes (max, min, average), records processed

- **Other File Node Enhancements**
  - Named transit directories for local and FTP transfers to allow multiple file input nodes

FTE Input

FTE Output

Database Input Node

- **Database Input node**
  - Allows database tables to be treated as input source for message processing
    - Selection criteria include multiple tables, complex joins, and other database oriented semantics
  - Changes (Insert Update, Delete) occur to database tables; database trigger records in Event Table
    - Polled queries from database start a message flow: design allows for future triggered starts

- **Node Properties Identifies Key Processing steps**
  - Notification: Timer expires to start processing
  - Read Events: User Event table determines changed data
  - Build Message: Propagate message through flow
  - End Event: Delete or Archive event
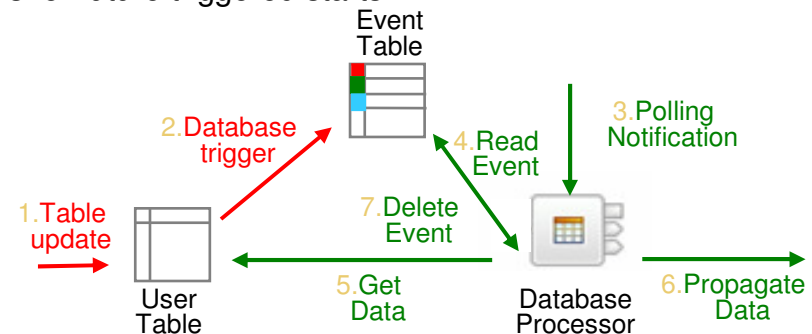
- **Data Tools simplify SQL query generation**
  - RAD tools construct skeleton database queries to simplify user experience
  - Power users can create sophisticated ReadEvent, BuildMessage & EndEvent SQL routines

- **Transactions and Performance**
  - Separate event cache and build message transactions minimize lock contention
  - Excellent performance characteristics: exploits existing MB SQL engine

- **Operational Control**
  - Will exploit all supported Message Broker databases, Oracle and DB2 initially prioritized
  - MB Explorer ODBC resource statistics includes database input node operations

- **Exploit existing Event Tables Technologies**
  - Most existing Event table and data table structures supported without change
    - e.g. Database input node can easily exploit WBIA Event tables and preserve BOs

Event Table

2.Database trigger

3.Polling Notification

4.Read Event

1.Table update

7.Delete Event

5.Get Data

6.Propagate Data

User Table

Database Processor

Database Input

CICS Request Node

- **New CICS Request Node**
  - Allows Message flows to call CICS programs and handle responses
  - Typical scenarios include WebService->CICS, File->CICS, SAP->CICS, IMS->CICS
  - Provides high performance, synchronous, multi-platform access to CICS
  - Complements MQ bridge and Web Services currently accessible via MB
  - Subsumes functionality of IA12 CICS Support Pac on z/OS

- **Synchronous Invocation of CICS Program**
  - Node supports specification of COMMAREA request and response
  - Timeouts, APPLIDs, SYNCONRETURN also provided
  - Current design allow future support for channels and containers & 2PC transactions

- **Security**
  - Link level via SSL, and Message Level Identity via security profiles

- **Flexible Topology Support**
  - Currently supports 2 tier topologies: MB->CICS
  - Current design allows future support for 3 tier (MB->CTG->CICS) topologies
    - CTG enables advanced HA and WLM options

- **Configurable Service**
  - Override timeouts, CICS URL, APPLIDs as required without redeploy
  - MB Explorer resource statistics by Program, bytes in, bytes out, success, failure…

CICS Request

CORBA Request Node

- **CORBA Applications Accessed from the non-CORBA World**
  - Typical scenarios include Web Service to CORBA, MQ to CORBA…

- **CORBA Request node**
  - Issues CORBA request and handles response
    - Identifies IDL in and inout parameter location in incoming request
    - Identifies result location for IDL out and inout parameters
  - `LocalEnvironment` overrides for per-message interface and operations names
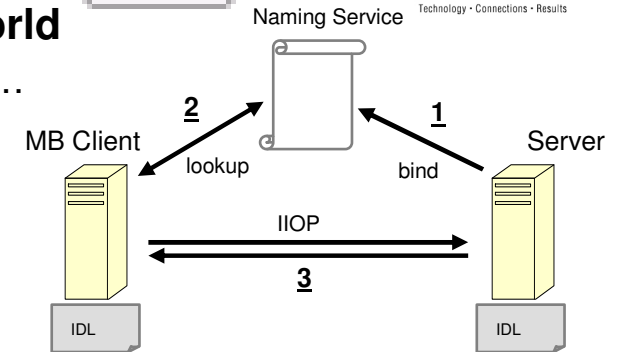
- **Sophisticated Tooling Simplifies Development**
  - IDL Importer automatically creates Message set definition
    - Broad range of CORBA types supported, including modules
    - Multipart includes supported
 - IDL Drag&Drop automatically creates skeleton message flow

- **Configurable Service for Operational Overrides**
  - Change naming service & object references without redeploy
  - MB Explorer resource statistics

- **Broad range of ORBs supported**
  - ORB version 2.3.1 is built-in to MB as part of Java 6
  - Interoperable with wide range of industry ORBs

```
IDL
Interface {
    string sayHello(in string sayHello)
}
```
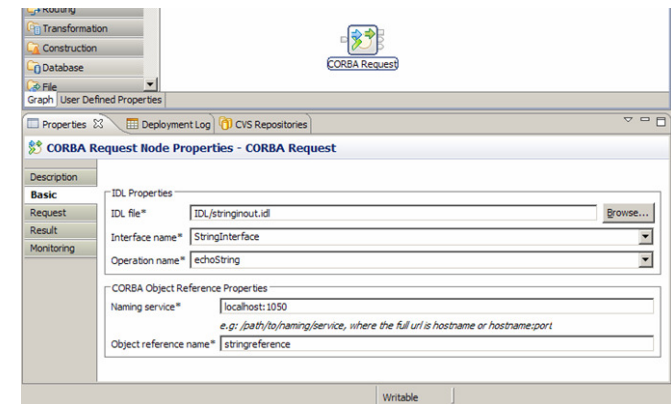
Enhanced Security Processing

- **New PEP node for Authentication, Authorization and Identity Mapping**
  - Can be placed anywhere in message flow to perform security functions
    - Additional flexibility adds to existing input node security
  - Subsumes functionality of popular IA9X Support Pac

- **Enhanced Security Token Support for PEP and Input nodes**
  - SAML, Kerberos, LTPA & RACF PassTickets complement existing user, password & X509 tokens
  - PEP node: all new tokens available
    - Users can easily extend to support custom and non-standard tokens
      - *e.g. LTPA v1.1, Liberty tokens, TAM credentials…*
  - SOAP nodes: adds support for SAML, Kerberos & LTPA tokens
    - SAML WS-Security supports Passthrough/'Bearer' scenarios
    - Implementation allows for future addition of Sender Voucher & Holder of Key authentications
  - MQ/HTTP nodes: adds SAML support to existing tokens

- **Security Policy Decision Point (PDP)**
  - WS-Trust 1.3 for token authentication & authorization
  - TFIM and LDAP PDPs also supported out-of-the-box
  - Kerberos WS-Security will exploit Key Distribution Cache
    - e.g. Active Directory on Windows…

rh Administration Log	default Resources Statistics (Snapshot time 13:07:08		
JVM	Security	Sockets	
name	TotalRequests	TotalSuccess	TotalCached
summary	13	10	12
LDAP	2	2	1
WS-Trust v1.3 S…	11	8	11

- **Operational Control**
  - Security Profiles allow operational reconfiguration of PDP without redeploy
  - Resource manager security statistics; totals, passes, exceptions, cached

Platforms, Environments and Performance

- **Windows 7 /Server 2008 64 bit**
  - A new offering for MB7 fully integrated with Windows 7
  - Windows 7 32 bit and 64 bit execution groups processes (Server 2008 provides 64 bit only)
    - 2 separate offerings; either 32 bit or 64 bit execution groups
  - Significantly increases virtual storage for Server 2008 platform

- **Extended User Database Support**
  - MB7 no longer requires a database, but database access is more popular than ever!
  - solidDB, SQL Server z/Linux & DB2 9.7 databases now supported
    - solidDB provides high performance in-memory database option
  - Simple configuration as per current big 5 databases
  - `mqsicvp` command extended to provide informational odbc reports: helpful database diagnostics
  - `mqsisetdbparms` supports per execution DSN definition for multi-tenancy scenarios
  - ODBC Resource statistics for all SQL and mapping nodes – understand ODBC database impact

- **JDBC Connection Pooling**
  - Database connections can be pooled to help with high volume, multi-threaded flow scenarios
  - JDBC activity can be constrained to separate thread pool independent of message flow thread
  - Allows message flow threads to scale independently of database access threads
  - JDBC Resource manager statistics – understand JDBC database impact

Other Enhancements Our Users Requested (1/2)

- **TCP/IP Node**
  - Send and Receive timeouts via `LocalEnvironment` overrides and node expression
- **Retail Sample**
  - Support ACE V7 formats
- **Healthcare Sample**
  - Support for HL7 2.5 and 2.5.1
- **JMS Node Enhancements**
  - Batch non transactional messages by count and time to improve performance throughput
  - Expose JNDI bindings in configurable service for customizable lookups at runtime
- **SOAP and HTTP URL Promotion**
  - Allow URL to be promoted and shared across nodes
- **SAP Enhancements**
  - Support for multiple logon groups and message level security
- **IMS Node Security Enhancements**
  - Support for SSL session security
  - Message level security

Other Enhancements Our Users Requested (2/2)

- **Impact Analysis**
  - Show all references of object to understand impact of change
  - Manage impact analysis output results sets

- **User Defined Configurable Service**
  - Allows users to create their own configuration files for managed deployment and update
  - Name/value pairs can be accessed at runtime to control user behaviour e.g. HTTP request timeout

- **Shell Sharing**
  - WID and Modeller 7.0.0.2 shell sharing

- **Microsoft High Availability**
  - MB7 now supports MSCS in addition to Windows 32 and 64 bit Multi-instance Broker

- **Support Updates**
  - See **http://www.ibm.com/software/integration/wbimessagebroker/requirements/** for details
  - WSRR 7 and WPS 7 now formally supported
  - DB2 9.7 formally supported

Message Broker 7 FP1

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

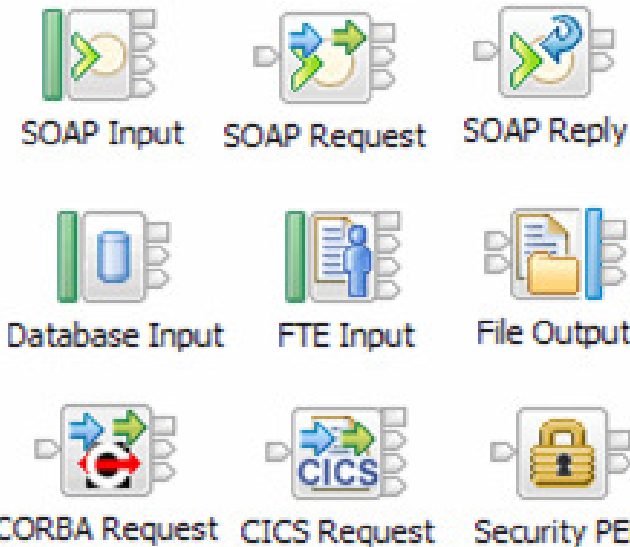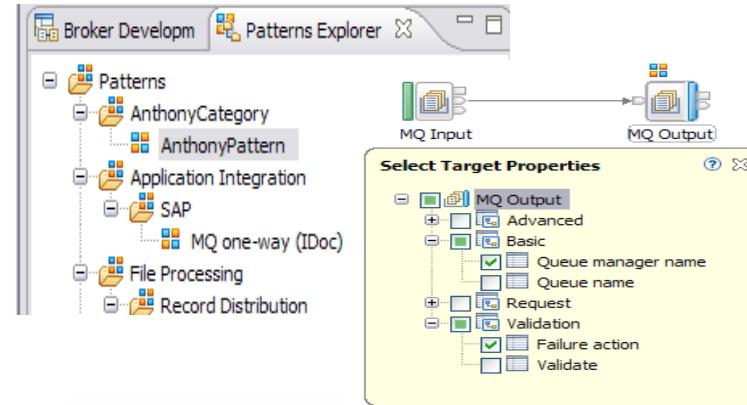- **Universal Connectivity for SOA**
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  - Database input node processing of relational data
  - Multi-platform CICS node for direct connectivity
  - FTE file nodes for end-to-end file processing
  - CORBA request node to facade CORBA systems

- **Dynamic Operational Management**
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- **Platforms, Environments and Performance**
  - Windows 7, Server 2008 with 64 bit processes
  - More databases: solidDB, SQL Server z/Linux

WebSphere Message Broker 2010 Summary

- **Message Broker in 2010**
  - WMB7 FP1 is the first significant update since GA
  - Builds on continued success of Version 7
  - Enhances and extend universal connectivity capabilities for wide range of scenarios
  - Expect more nodes in 2010 and 2011!

- **Broad range of themes to appeal to diverse user community**
  - Simplification & Productivity
  - Universal Connectivity for SOA
  - Dynamic Operational Management
  - Platforms, Environments & Performance

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