Session 9425:
What's New in Messaging from Hursley

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Agenda

- MQ Family
  - Roadmap
  - Recap of MQ 7 / MQ 7.0.1
  - Latest News
- Message Broker Family
  - Roadmap
  - Recap of MB 7.0
  - Latest News

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WMQ Family: Delivering Mission-Critical Messaging

- The Messaging Leader for more than 15 years
- Universal Support for all your systems
- Standards: JMS engine that can be used with any compliant JEE App Server
- Continued Innovation:
  - Governance of existing solutions via MQ Service Definition
  - Enables Web 2.0 to communicate to existing core systems
  - Reliable, time-independent Web services transport
  - Low Latency Messaging where extreme speed of delivery is paramount
  - File Transfer Edition for managed movement of files
  - Websphere MQ Telemetry

IBM WebSphere MQ V7.0 - recap

- Enhanced JMS
  - More applications being written to use this API
  - Underpins many SOA/ESB solutions needing access to messaging
  - Improved performance & ease-of-use
- Enhanced Publish-and-subscribe
  - Ease-of-use
  - New support for z/OS
- Extended verbs and behaviors for MQI programming interface
- Enhanced MQ clients for increased throughput resilience and availability
- Web 2.0 support to help create richer user experience
- Evolutionary – if you know V6, you will know V7

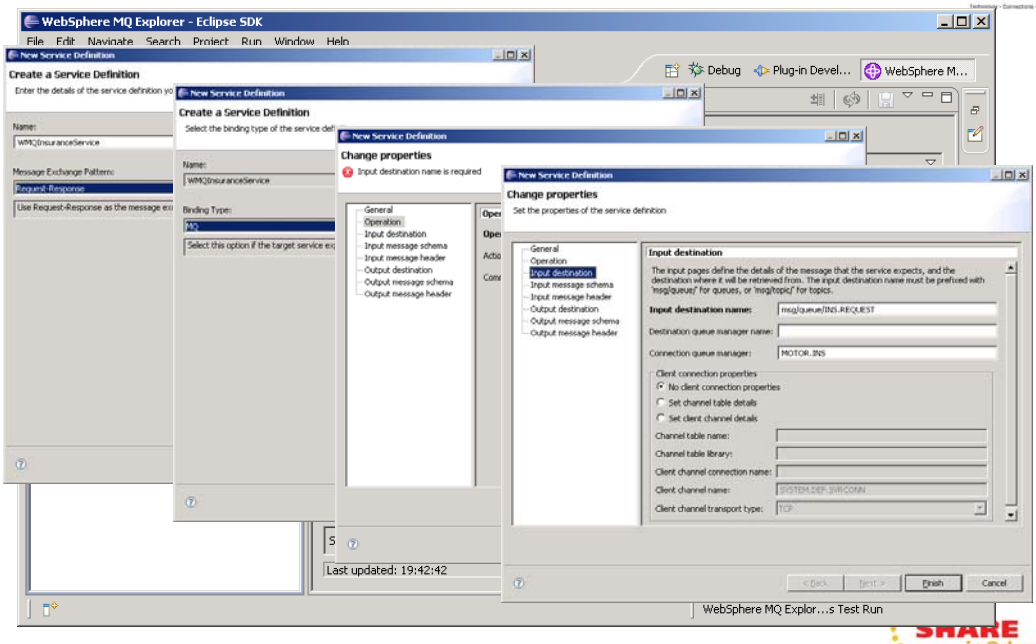
Initial V7 Updates (7.0.0.1)

- Complete some elements of V7 that didn't make GA
  - Migration/coexistence PTFs for z/OS
- Service Definition Wizard
  - Describing MQ applications in WSDL for better governance
- Standalone MQ Explorer download (SupportPac MS0T)
- XA-aware API Exit
- Continued performance enhancements
- SupportPac updates
  - MS81 (MQIPT)
  - Performance Reports
  - Various Cat2 packages: MS03, MA01, MS0P, MO71, MO72, MC91 …

Governance – MQ Applications are SOA Assets

- Web Services bring new expectations around application governance
  - It must be possible to treat traditional non-SOAP MQ applications as services
- WSDL gives a standard way to describe all MQ apps as SOA assets (services)
  - To be inventoried, catalogued and governed in a Registry
  - To be queried at runtime for routing decisions
  - To be re-used as services in composite SOA applications
  - To be managed and traced with SOA tools
- Public specification of the WSDL formats for MQ applications
- Support in WSRR
- Wizard in V7.0.0.1 to simplify generation

Service Definition Wizard: Creating the WSDL



WebSphere MQ V7.0.1

WebSphere MQ V7.0.1 Rationale

- Objectives
  - Early delivery of non-disruptive function
  - Providing platform for other products to build on
  - Minimise migration costs
- Major themes
  - Enhanced availability options on Distributed platforms
  - Constraint relief on z/OS
  - IBM portfolio exploitation, and extension of reach, for V7 features
  - Ongoing performance, consumability and serviceability enhancements
  - Keeping pace with industry evolution in areas such as platforms and SSL

WMQ V7.0.1 Content Summary

New Feature	*Benefits*	*Details*
Multi-Instance Queue Managers	Increases availability Does not require specialist skills Can help ease system maintenance	Enables automatic failover to a standby Queue Manager instance in the event of an incident or planned outage
Automatic Client Reconnect	Increases availability Simplifies programming	Provides Client-connected applications with automatic detection of failures and reconnects to alternative Queue Managers
Enhanced Governance	Increases visibility of changes Enables SOA Governance	Emits events whenever configuration changes are made or commands are run Service Definition wizard generates WSDL describing MQ apps
Enhanced SSL Security	Simplifies security certificate management	Supports certificate checks with Online Certificate Status Protocol (OCSP) as well as to Certificate Revocation Lists (CRL)
Enhanced .NET support	Increases ease-of-use for .NET developers	Provides IBM Message Service Client for .NET developers Supports use of WebSphere MQ as custom channel within Windows Communication Foundation
Increased 64-bit z/OS exploitation	Increased use of z/OS system resources Provides constraint relief for virtual storage	Extends use of 64-bit storage by Queue Manager enabling more capacity such as number of open queues
z/OS Log Compression	Increased use of z/OS system resources Increased log performance & bandwidth	Compresses message logs produced by persistent messages
z/OS Group Units of Work	Increased resilience	Enables Units of Work to be owned collectively by Queue Sharing Groups so that any Queue Manager in the group can process two-phase transactions from clients
Publish/Subscribe Interfaces	Additional control of pub/sub behaviour Simplified integration for Message Broker	Exit point to dynamically modify routing and content Tools to migrate pub/sub state from MB to MQ

Installation and Delivery

- WMQ V7.0.1 is a modification release on the V7 base
  - Which means limited scope for new objects/attributes
  - Minimises migration aspects
- On Distributed platforms, it is available in two ways
  - A fixpack for upgrade from existing V7 installations (which can be backed out)
  - A replacement V7 installation image
  - Customers ordering V7 will now get V7.0.1
  - Single service stream for V7.0.x.y
- On z/OS, it is available as a modification level release
  - Migration supported from V6 and from V7.0.0
  - Customers ordering V7 will now get V7.0.1
  - New ZPARM OPMODE option to control whether new function is available

Multi-instance Queue Managers

- Extends availability options for the Distributed platforms (Unix, Linux, Windows)
- Basic failover support without a separate HA coordinator
- Faster takeover: fewer moving parts
- Cheaper: no specialised software or administration skills needed

Distributed Platforms: Multi-instance Queue Managers

- Basic failover support without HA coordinator
  - Faster takeover: fewer moving parts
  - Cheaper: no specialised software or administration skills needed
  - Windows, Unix, Linux platforms
- Queue manager data is held in networked storage
  - NAS, NFS, GPFS etc so more than one machine sees the queue manager data
  - Improves storage management options: formal support for these even without failover config
- Multiple (2) instances of a queue manager on different machines
  - One is “active” instance; other is “standby” instance
  - Active instance “owns” the queue manager’s files and will accept app connections
  - Standby instance does not “own” the queue manager’s files and apps cannot connect
    - If active instance fails, standby performs queue manager restart and becomes active
- Instances share data, so it’s the SAME queue manager

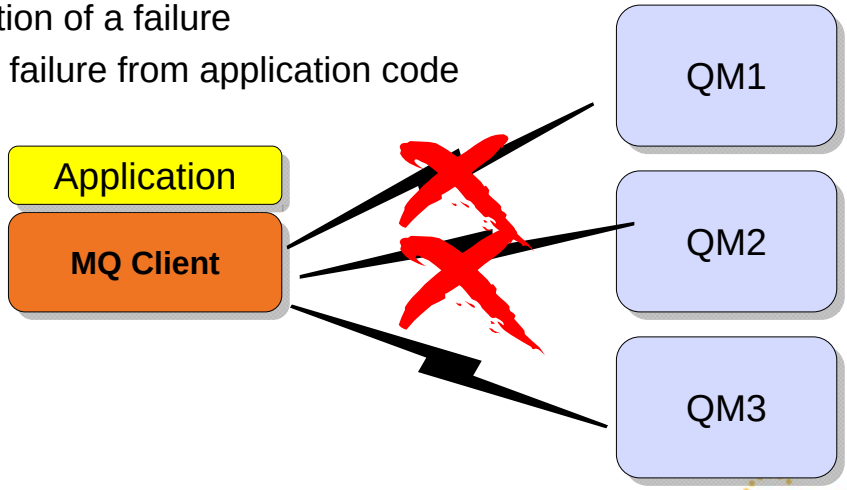
Multi-instance queue managers: Details

- MQ is NOT becoming an HA coordinator
  - Generally, if other resources also required, use an HA coordinator such as HACMP
  - Service objects can restart applications with qmgr but limited control
  - Message Broker V7 integrates with and exploits this MQ function
- The IP address is not taken over
  - Channel config needs all possible addresses unless you use external IPAT or intelligent router
  - CONNAME('host1(port1),host2(port2)') syntax extension on all platforms including z/OS
- Support for networked storage over modern network file system protocols
  - For example, NFS v4 (not v3)
  - Tool shipped to validate configuration

- New options for crtmqm/strmqm/endmqm to control operations
  - Cannot guarantee which instance becomes the primary
- Removes need for MC91, which has been withdrawn
  - crtmqm now does equivalent of MC91's hacrtmqm

Automatic Client Reconnection

- Client library provides necessary reconnection logic on detection of a failure
- Hides failure from application code



Automatic Client Reconnection

- Tries to hide queue manager failures by restoring current state automatically
- Uses the list of addresses in CONNAME to find queue manager
  - MQSERVER environment variable also understands list
  - MQSERVER=SYSTEM.DEF.SVRCONN/TCP/host1(1414),host2(1414)
- Can reconnect to the same or different Queue Manager
- Re-opens queues and other qmgr objects, re-establishes subscriptions
- Reconnection interval is backed off exponentially on each unsuccessful retry
  - Total timeout is configurable – default 30 minutes.

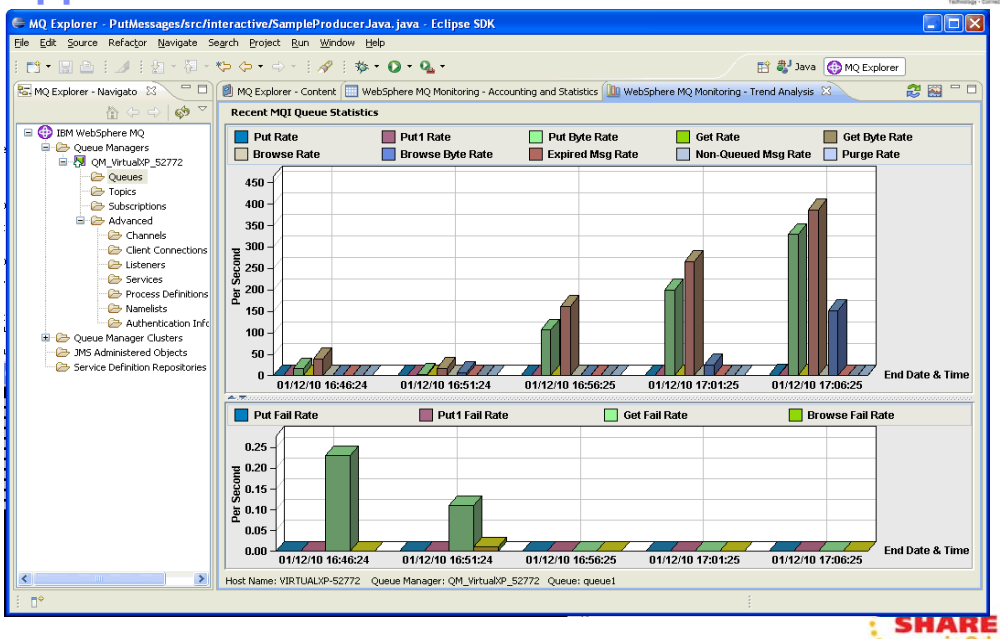
Automatic Client Reconnection: Details

- Enabled in application code or ini file
  - Event Handler callback shows reconnection is happening if app cares
- Tries to keep dynamic queues with same name
  - So replies may not be missed
- Not all MQI is seamless, but majority repaired transparently
  - eg a browse cursor would revert to the top of the queue, non-persistent messages will have been lost during restart, non-durable subscriptions may miss some messages, in-flight transactions backed out, hObj values maintained
- Some MQI options will fail if you have reconnection enabled
  - Using MQGMO_LOGICAL_ORDER, MQGET gives MQRC_RECONNECT_INCOMPATIBLE
- Initially just in MQI and JMS – not the other OO classes
  - Requires both client and server to be V7.0.1 level with SHARECNV>0
  - Server can be z/OS

Windows Communication Framework

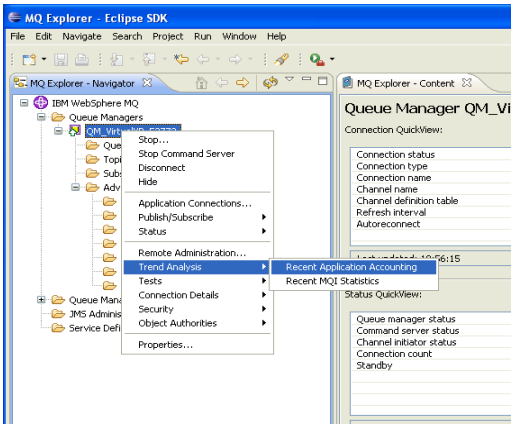
- Windows Communication Framework (WCF)
  - Underpins .NET Web Services and Messaging
  - Built-in Transports – e.g. MSMQ, HTTP(S), Named Pipes, TCP/IP, etc.
  - Transports can be extended with “custom channels”
  - Allows alternative transports (like MQ) to be slotted into WCF seamlessly
- WCF support now included in product
  - Previously an Alphaworks prototype
- Built on XMS .Net classes
  - Now shipped as part of the product instead of SupportPac
  - Internally, it exploits V7 API, in same way as JMS implementation

SupportPac MP08: Performance Monitor



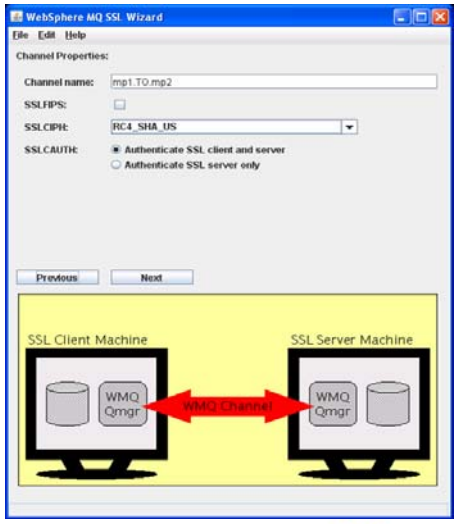
SupportPac MP08: Performance Monitor

- Initial release of Tivoli function in a new form
  - Performance Monitor agent for WebSphere MQ for Windows
  - Performance Monitor plug-in for MQ Explorer for Windows and Linux
- Invoke monitoring from content menus:
  - On a queue manager
  - On a queue
  - On a channel
- Opens and populates chart and table views
- Can filter chart view and export from table view



Security SupportPacs and Wizards

- SSL Wizard
  - Eases administration of SSL channels
  - Steps users through configuring channels
  - Recent enhancements for additional options
  - Out now as SupportPac MO04
- Security checker
  - Finds common security configuration pitfalls
  - Reports exposures with suggestions on fix
  - Example checks
    - Unprotected inbound channels
    - OAM not configured
    - Wrong permissions set on key database
    - Unexpected filesystem permissions
- Further configuration assistance
  - Enhanced MQ Explorer authorisation plugin shows command line for scripts
  - Wizard to create administrative roles



Publish/Subscribe Enhancements for Message Broker

- Message Broker V7 exploits and integrates with WMQ's pub/sub engine
  - Instead of having an independent implementation
  - Easily connects MB's wide range of connectivity and format support to WMQ backbone
  - Common topic domain
- V7.0.1 assists with migration for current users of MB's pub/sub
  - Both tools and documentation provided
  - Extracts lists of topics and subscriptions to automatically populate WMQ objects
    - Help also provided with authorisations
  - Purely administrative so that developers of message flows will not see any change
- Message Broker still used for selection based on message content
  - WMQ does the filtering of subscribers based on topic and message properties
  - Message Broker parses message content to do further level of filtering

Publish/Subscribe Enhancements

- Option to discover if no subscribers (user or proxy) during MQPUT/PUT1
  - MQPMO_WARN_IF_NO_SUBS_MATCHED
  - MQRC_NO_SUBS_MATCHED
- Will guarantee that no one has received the publication
  - But does NOT guarantee that anyone will definitely receive the publication
  - For example, it is not returned if the target queue is full
- Publish Exit
  - When a publication is made, this exit is invoked for each valid subscriber
    - Runs "inside" the queue manager
  - Can change routing destination
  - Can change contents of message
  - Can change contents of message descriptor
  - Can inhibit publication

Security & Monitoring

- "Who did what to my system"?
  - Command and Configuration Events now on all platforms
  - Successful commands – MQSC or PCF – recorded as event messages
  - Configuration changes report "before" and "after" definitions of objects
  - Provides a record of administrative operations

```
display qmgr event
AMQ8408: Display Queue Manager details.
   QMNAME(V7) CMDEV(ENABLED) CONFIGEV(ENABLED) …
```

- SSL OCSP Support
  - Now commonly used as alternative to LDAP-based CRLs
  - Simpler to manage as no need to have an LDAP server
  - Can use details provided in inbound certificate
  - Also can be configured within queue manager or by application code

z/OS Constraint Relief

- In V7.0, the queue manager started to exploit 64-bit addressing
  - New Pub/Sub features
- In V7.0.1 more Queue Manager storage moves to 64-bit
  - 64-bit Queue Indices
  - 64-bit Lock Manager
- Can have more open queues, more messages on indexed queues etc
- Small message storage changed
  - One message per page instead of fitting multiples into single page
  - May increase DASD use, especially if messages not quickly retrieved
  - But typical workloads show improved performance and reduced CPU

z/OS Log Compression

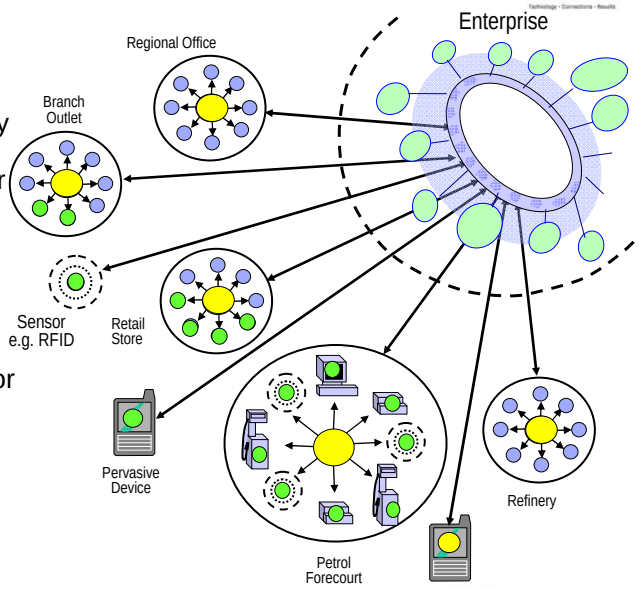
- Can increase the throughput possible for persistent messages
- May reduce the size of your logs
  - Dependent on your message content
  - Useful if you are DASD constrained.
- RLE (run-length encoding) of “insert” log records for private queue messages
  - Will not compress shared queue log records
  - SMF 115 records updated to show compression rates achieved etc
- Controlled via zPARM option at queue manager level.
  - COMPLOG(NONE) or COMPLOG(RLE) in CSQ6LOGP
  - Can also be viewed/controlled via DISPLAY LOG / SET LOG

End of Service and Component Deprecation

- V6 End of Service: ~~September 2011~~ **September 2012**
  - Distributed and z/OS
- Components being removed in “Next”
  - File Transfer (Windows/Linux utility) – not to be confused with FTE product
  - API exerciser, Windows performance monitor integration
- C++ API (the Imq classes) to be stabilised
  - Cannot extend current code while maintaining application compatibility
  - Many C++ applications use the C MQI today.
- SupportPac **MA0F** (AMI) will inherit EoS for V6
- SupportPac **MS0E** (Admin Wrapper) will inherit EoS for V6
- “Next” will not support HP-UX on PA-RISC hardware

A Universal Messaging Backbone for a Smarter Planet

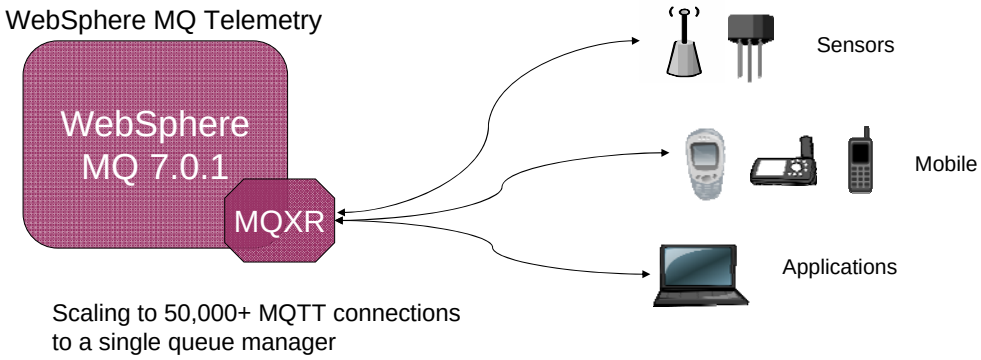
- Extend the reach of the MQ Universal Messaging Backbone by providing appropriate messaging technology for Interconnectivity for a Smarter Planet
- Provide zero-administration capability where appropriate
- Provide Enterprise Data Access for new deployments
- Provide extended Business Data Access for Enterprise Systems



WebSphere MQ Telemetry

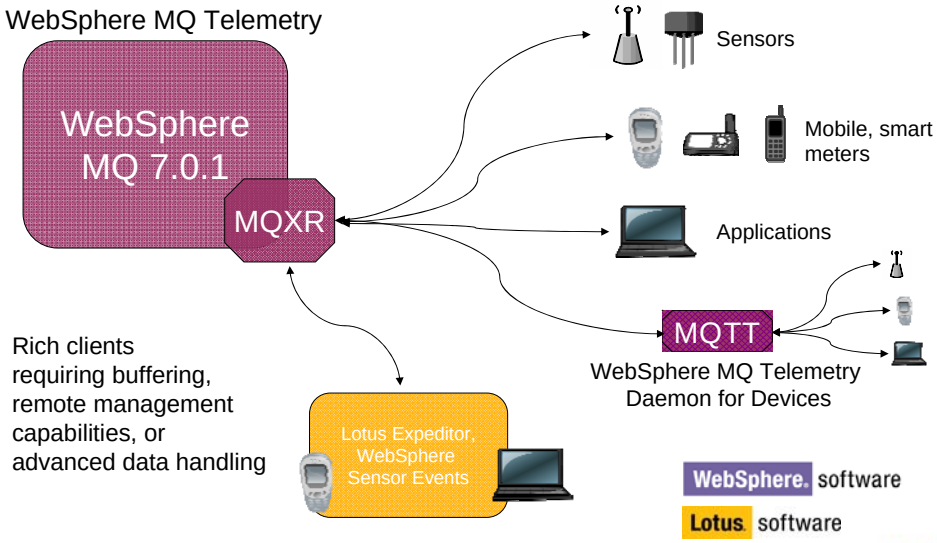
- New WMQ feature
  - Separate purchasable extension
  - Initially available on Windows and Linux
- Fully integrated / interoperable with WMQ
  - Publishers and subscribers can exchange messages with MQI and JMS applications
- Telemetry channels enable MQTT connections to queue manager
- Supports MQTTv3 protocol
- Ships with reference Java (for MIDP upwards) and C clients
- MQTT Protocol
  - Publish/subscribe messaging paradigm
  - Minimise the on-the-wire footprint.
  - Built for low bandwidth, high latency, unreliable, high cost networks
  - Expect client applications to have very limited processing resources available
  - Provide traditional messaging qualities of service where environment allows
  - Publish the protocol for ease of adoption by device vendors and third-parties

Topology example: “simple” clients

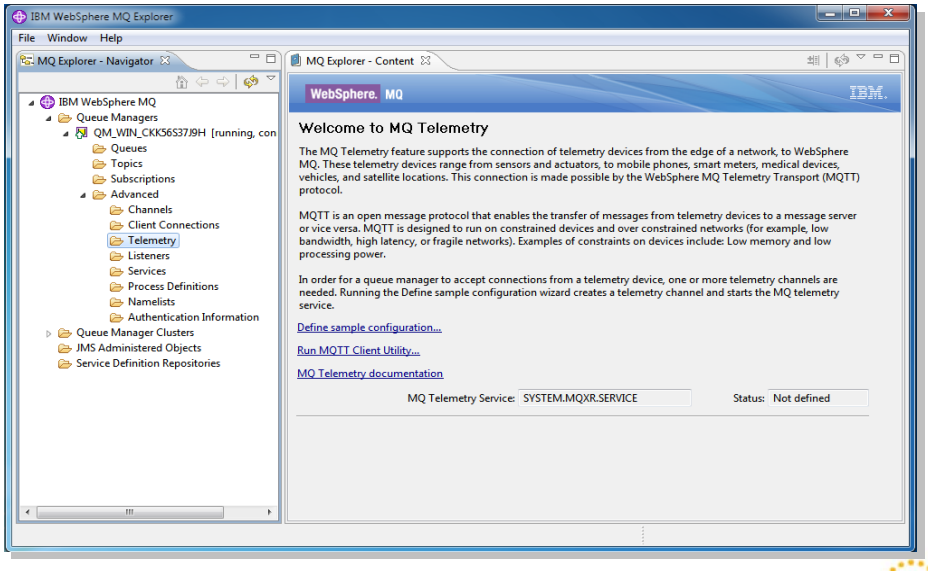


Scaling to 50,000+ MQTT connections to a single queue manager

Topology example: “advanced” clients



MQ Explorer integration



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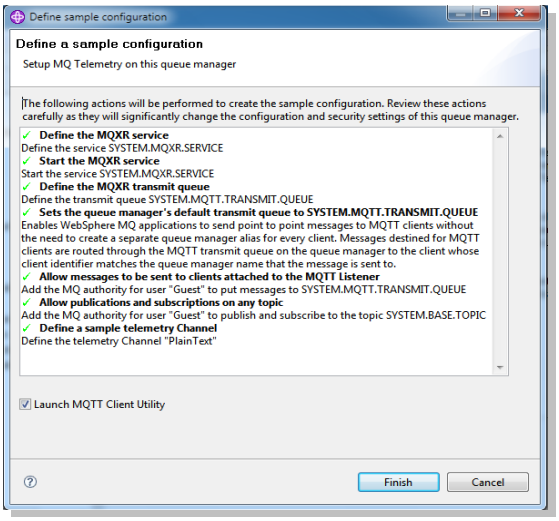
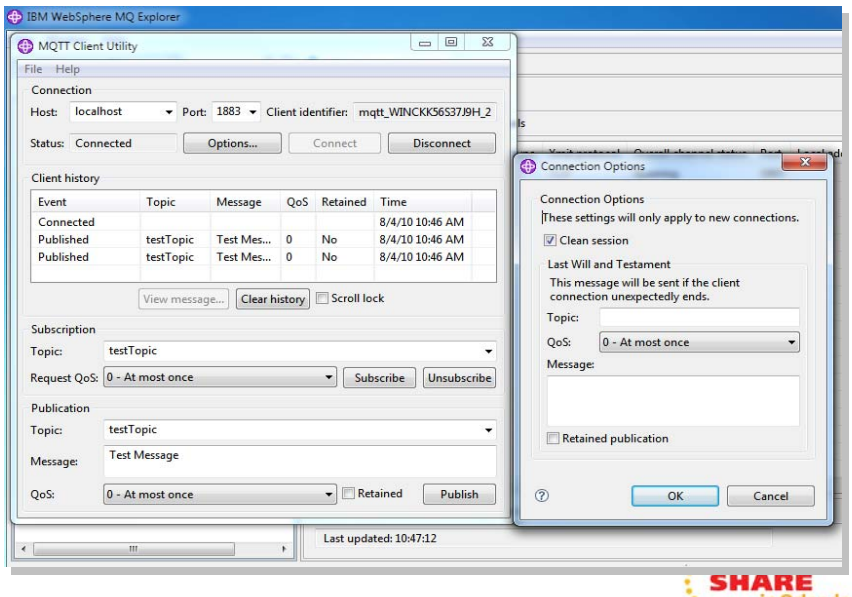
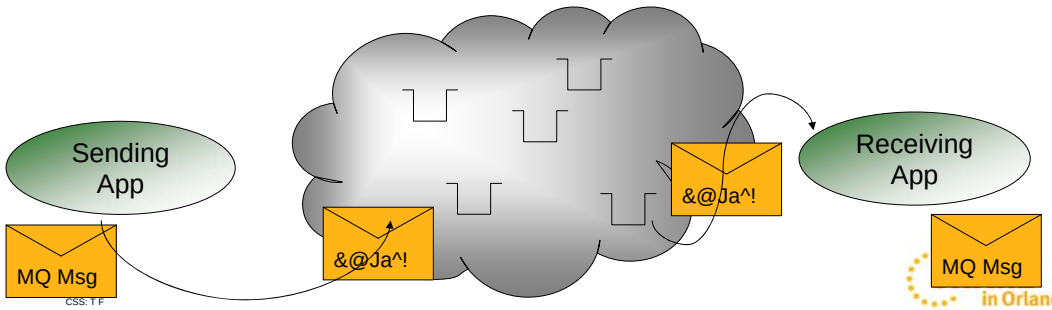


MQ Explorer integration



WMQ Advanced Message Security: What is it?

- New (separately priced) product that further enhances WMQ security processing
  - Designed to assist with requirements such as PCI DSS compliance
- Enables secure message transfers at application level
- Assurance that messages have not been altered in transit
- Assurance that messages originated from the expected source
  - When processing messages, validate the sender
- Assurance that messages can only be viewed by intended recipient(s)
  - When sending confidential information.



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WMQ Advanced Message Security: Highlights

- No prereq products
  - Significantly simplified installation and configuration compared to predecessor product
  - Up and running in minutes …
- Works in conjunction with SSL
  - Can choose to use either or both depending on your requirements
- Works in conjunction with WMQ authorisation model (OAM and SAF)
- No changes required to WMQ applications
  - Works with local applications and clients, including Java
  - Support for WMQ V6 and V7
- No changes required to existing object definitions
- Fine-grained policies to define which queues are protected and how
  - Asymmetric cryptography used to protect individual messages
- Administratively controlled policies
  - Command line
  - MQ Explorer

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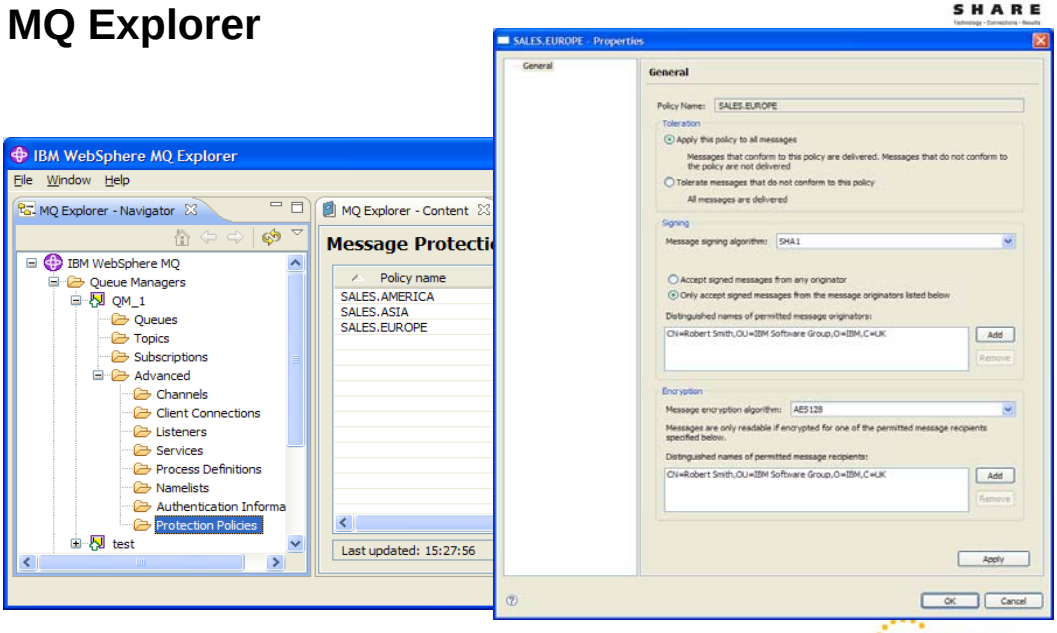
MQ Explorer



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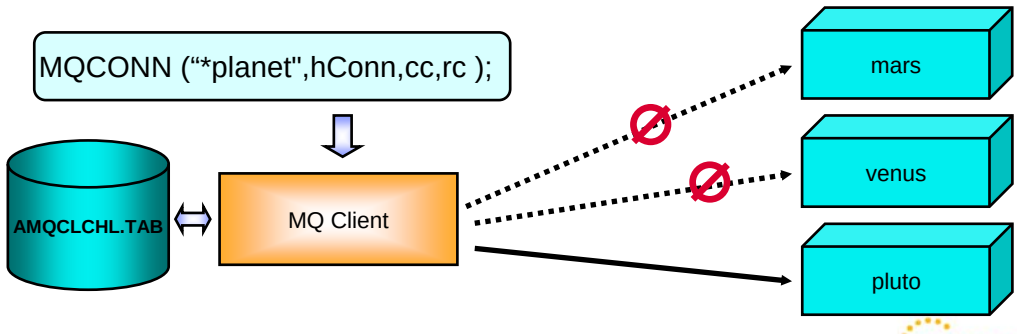
WebSphere MQ V7.0.1.4

- New features shipped through service in January 2011
- Additional SSL encryption algorithms available through gskit8
  - "Alternate" SSL provider for Unix and Windows
  - Includes SHA-2 algorithms
  - Enabled through ini file attribute
- Pre-connect Exit for clients
  - Making it simple for clients to find a server, no matter where it runs
  - Extend Active Directory channel definitions to a general solution for all C clients
    - JMS/XMS already have central admin via JNDI
  - Central administration of where clients connect with no need to distribute CCDT to each client
  - Can rapidly change where MQ applications run
  - Client requests connection to a service rather than a specific queue manager

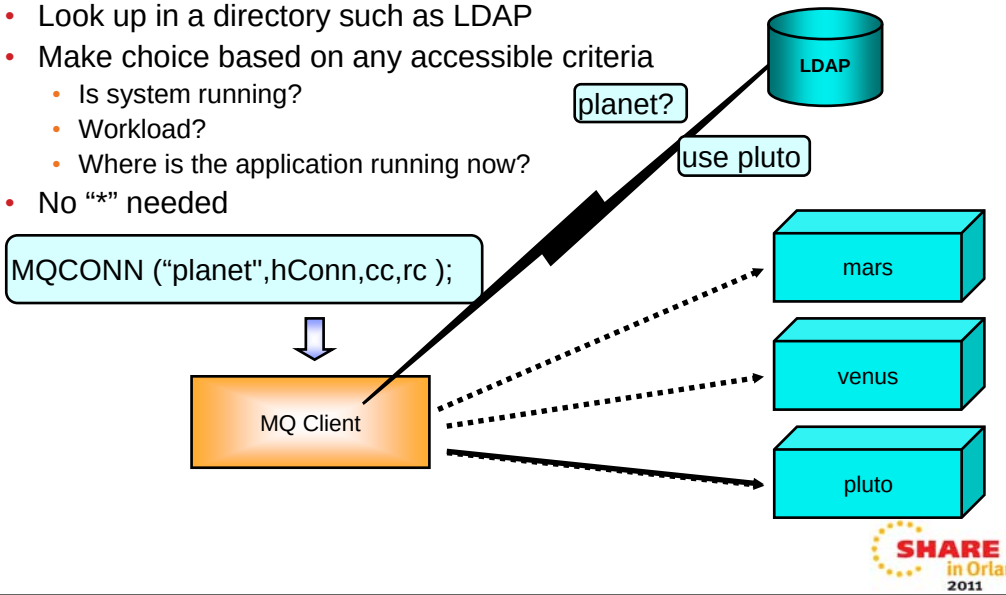
Client Connection Using Channel Definition Tables

- The CCDT is used to select a queue manager from a list
  - Based on a pseudo-queue manager name prefixed with "*"
  - CCDT is a locally-accessible file



Client Connection Using Pre-Connect Exit

- Look up in a directory such as LDAP
- Make choice based on any accessible criteria
  - Is system running?
  - Workload?
  - Where is the application running now?
- No "*" needed



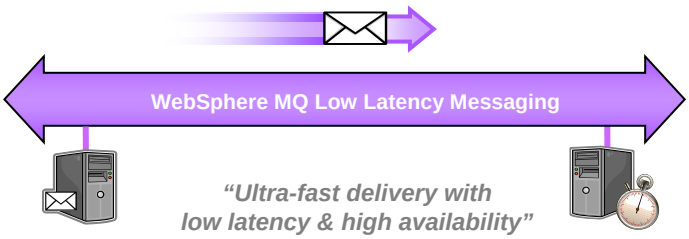
WebSphere MQ Low Latency Messaging

IBM WebSphere MQ Low Latency Messaging

- Messaging transport optimized for low latency, high-throughput delivery
- Ultra Low Latency, high-throughput messaging
- Capable of over 91 million messages per second over Native InfiniBand

•Low Latency capabilities

- Less than 200 microsecond latency at high throughput rates
- Stream failover for high availability
- Dynamic congestion traffic control
- Flexible message filtering
- Multicast & Unicast distribution
- Message store for reliable delivery
- Highly configurable API
- Ordered (FIFO) delivery
- Infiniband & 10GbE support



"Ultra-fast delivery with low latency & high availability"

Recent Highlights – V2.4 2Q2010

- Intelligent Self-Management
  - Ability to add/remove reception ports dynamically, including shared memory
  - Extended topic mapping of transport protocol including Infiniband and shared memory
  - Extended topic mapping of topic properties including destinations and reliability
  - Support for distributed topic mapping
  - Ability to change N dynamically for Wait-N ACK
- Enhanced Persistent Messaging
  - Message store late join support
- Extended Platform Support
  - Solaris support for Message Store & Topic Mapping Server
  - Windows and Solaris support for thread priority and affinity services
  - RUM support for HP-UX and zLinux
- High Performance Networking
  - Multi switch and Multi subnet manager IB network failure/failover
  - IB to IP network routing

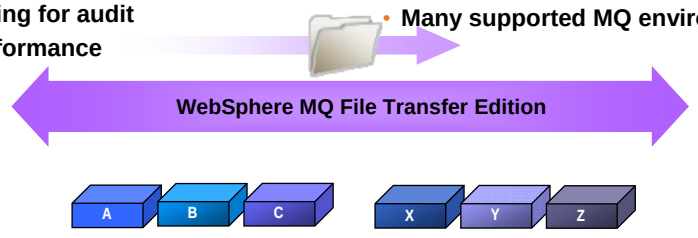
WebSphere MQ File Transfer Edition

WebSphere MQ File Transfer Edition

- A new (**separate**) product adding managed file transfer services to MQ
- Enables reliable, secure and traceable file transfers
- Replaces costly, ad hoc solutions that lack management controls

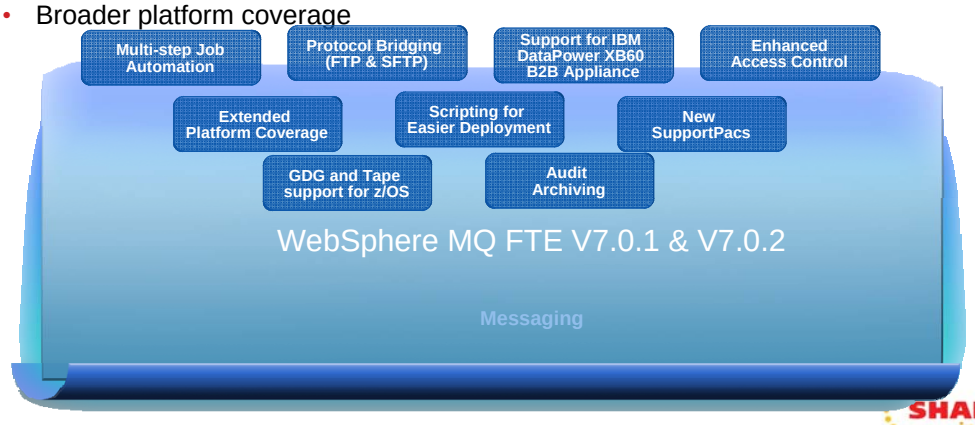
File transfer capabilities

- **Any file size (KB, MB, GB…)**
- **Powerful graphical tooling**
- **No need for programming**
- **Reliability leveraging MQ**
- **Full logging for audit**
- **High-performance**
- **Code page conversion**
- **SSL security**
- **Distributed job automation**
- **Multi-purpose solution – transports both messaging and files**
- **Many supported MQ environments**



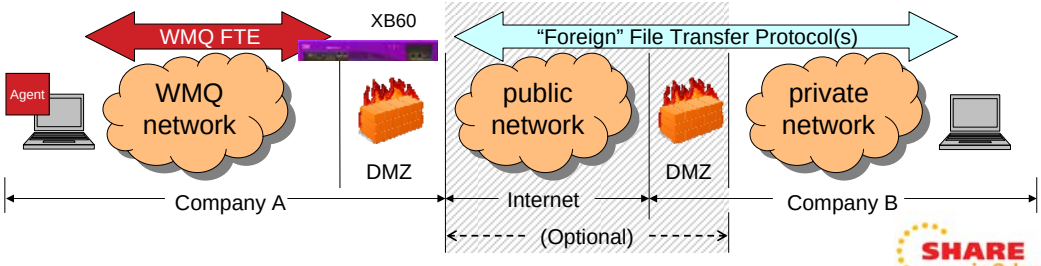
WebSphere MQ File Transfer Edition V7.0.2

- Advanced transfers with multi-step, scripted jobs
- Enhanced directory monitoring
- Enhanced management and audit capabilities
- Increased ability to transfer across range of protocols
- Increased access control
- Broader platform coverage



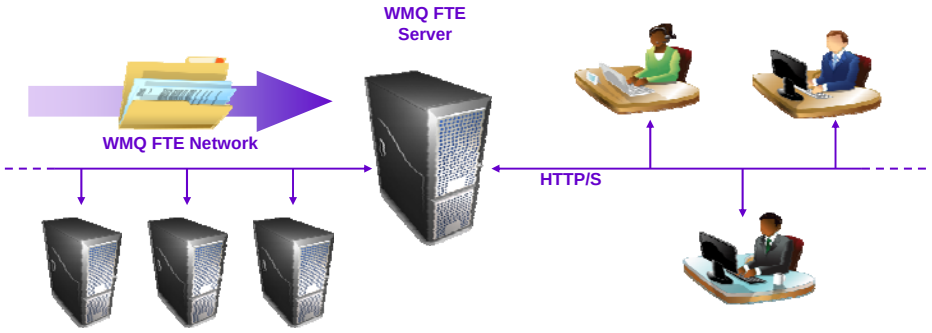
Support for IBM DataPower B2B Gateway

- Documented and tested configurations for integrating WMQ FTE with DataPower appliances
  - IBM WebSphere DataPower XB60 B2B Appliance – for B2B connectivity
  - IBM WebSphere DataPower IX50 Integration Appliance – for ESB connectivity
- Enables file transfers to be sent from WMQ FTE to trading partners via DataPower XB60 B2B Gateway across a range of B2B protocols e.g. AS2
- Sample configuration files supporting documented reference implementations



New SupportPac FO02

- Web based “ad hoc” File Transfers
  - Reliable secure file transfer for Web users
  - Auditable transfer and large file support
  - Zero-footprint file transfer support without the need to provision and install code
  - Interfaces for embedding into third party and custom user applications



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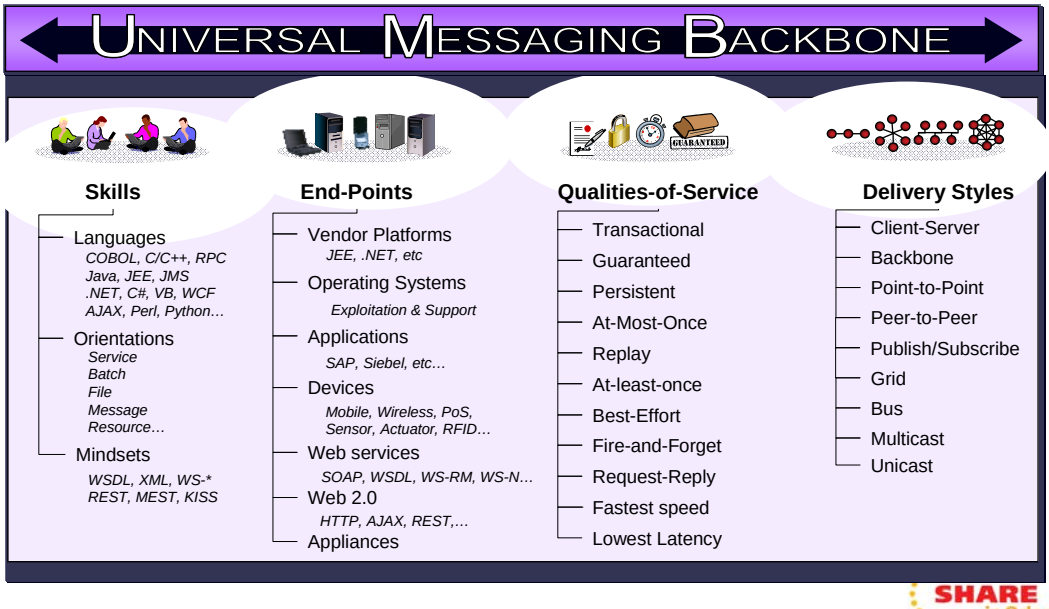
The MQ Vision – Universal Messaging Backbone

- Addressing wide spectrum of speed and availability transport requirements



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Message Broker Latest News

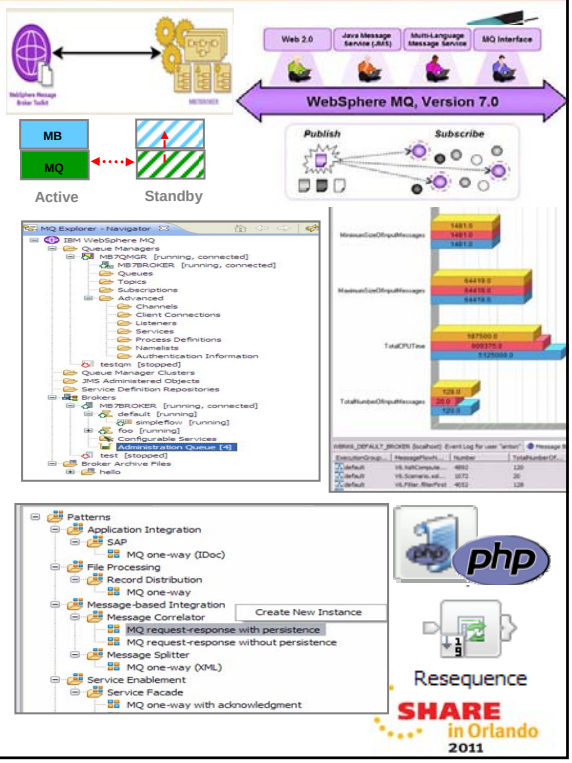
CSS: T F

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 transports, protocols & systems
    - MQ, JMS 1.1, HTTP(S), SOAP, REST, File (incl. FTP & FTE), Database, TCP/IP, MQTT…
    - CICS, IMS, SAP, SEBL, PeopleSoft, JDEdwards, SCA, CORBA, email…
  - 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, including virtual & WCA Hypervisor
  - Offers performance of traditional transaction processing environments
  - Deployment options include Trial, Remote Deployment, GetStarted, Enterprise

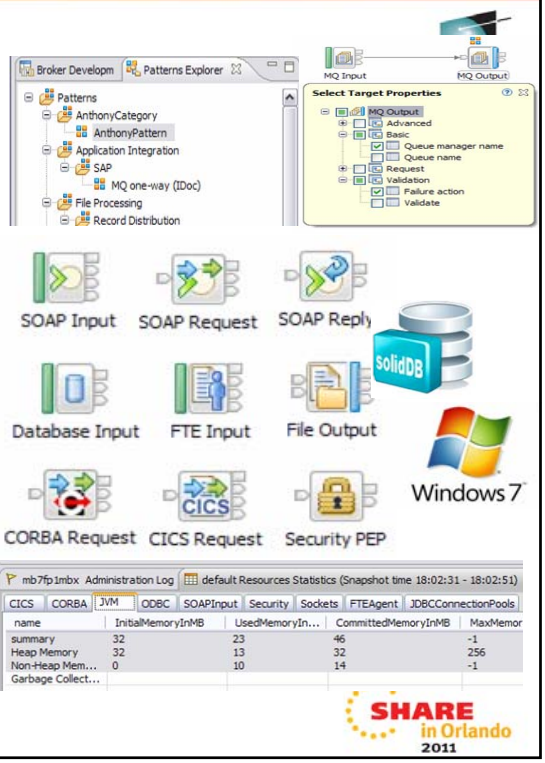
Version 7.0 Overview

- **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



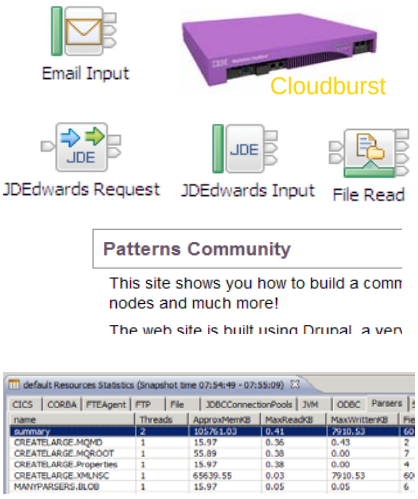
Message Broker 7 FP1

- **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**
  - 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
- **Dynamic Operational Management**
  - SAML, Kerberos, LTPA and RACF pass tickets
  - PEP node for mid-flow security processing
  - Comprehensive operational resource statistics
  - Web Services Policy Analytics for WSRR
- **Platforms, Environments and Performance**
  - Windows 7, Server 2008 with 64 bit processes
  - More databases: solidDB, SQL Server z/Linux



Message Broker V7 FP2

- **Simplicity and Productivity**
  - Patterns Refinement to create highly customizable user defined patterns
  - Patterns Communities for packaging, sharing, uploading and rating
  - Tooling enhancements for Mapping, Unit Test & Debugging
- **Universal Connectivity for SOA**
  - Async and transactional SOAP/JMS; New JSON parser for Web 2.0
  - File Read node and other file processing enhancements
  - Email input node to retrieve data from POP and IMAP mail systems
  - JD Edwards nodes to extend ERP processing, and other ERP node enhancements
  - CICS and TCP/IP node enhancements
  - Database input node enhancements for code-free query and WBIA migration
- **Dynamic Operational Management**
  - WCA Hypervisor edition to simplify provisioning of new and updated brokers
  - Web Services Gateway function for more manageable processing
  - Per Execution Group Profiles for multi-tenancy configuration
  - Resource Manager Statistics for parsers storage usage
- **Platforms, Environments and Performance**
  - Enhanced platforms: AIX 7.1, Oracle 11gR2, Informix XA,
  - New support for Oracle AQ and JBoss JMS providers



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Announcing mqseries.net Patterns Community

- **MQSeries.net Patterns Community**
  - A new website featuring patterns created, rated & used by the mqseries.net community
  - An intimate link to the mqseries.net community; hosted at same location & used by them
  - A natural extension to the current help & support forums, oriented towards best practices
- **Pattern Contributions, Usage and Feedback**
  - Users develop their own patterns in Message Broker, and package, ready for sharing
  - Users upload their patterns package to **mqseries.net** Patterns site
  - Pattern metadata (e.g. diagrams, tags) used to generate content dynamically
  - Users can download patterns, install them on their local broker, and go!
  - Double-click on an mqseries.net pattern to download into your Toolkit Patterns Explorer!
- **Thanks to the folks at Cressida and Zystems for setting this up for the mqseries.net community**

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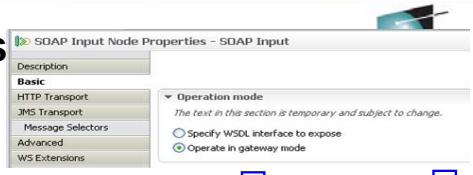
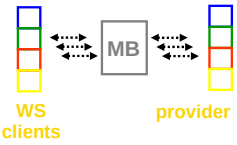
Web Services Enhancements



- **Web Services Gateway**
  - Simplify large network web services proxy scenarios
    - Flexibly process inbound & outbound WS-* requests
  - Gateway functionality perform generic SOAP processing
    - Complements current 1 WSDL per SOAP node approach
  - Intelligent Default Processing
    - Auto-detect 1-way requests using WS-Addr or JMS-Reply
    - Dynamic validation using deployed schema definition
    - Default Operation name to first message element
  - Full sample for common security processing and/or transport switching



- **JSON Parser**
  - Built-in JSON parser via **`JSON`** domain, including JSONP
    - Complements existing RESTful support in HTTP nodes
  - Simplifies processing of JSON data streams inbound and outbound
    - JSON parser reads and writes data stream to and from message tree
    - Fully supports JSON data types, including arrays, objects and nulls
  - Typical scenarios: RESTful enablement of SAP, MQ, File transfers etc…

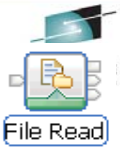
```
{
"firstName": "John",
"lastName": "Smith",
"age": 25,
"address": {…
```

- **SOAP/JMS transport & HTTP Enhancements**
  - Now support SOAP/JMS async request and response nodes
    - Message flow thread not held during external SOAP/JMS invocation
  - SOAP/JMS operations (optionally) now included in message flow transaction
    - e.g. Transact SOAP/JMS request & response with database update
  - Tooling support for WS-JAX binding
    - Includes SCA nodes to simplify WPS import/export
  - gzip, zlib and deflate compression now handled for HTTP & SOAP nodes


SOAP Asynchronous Request


SOAP Asynchronous Response

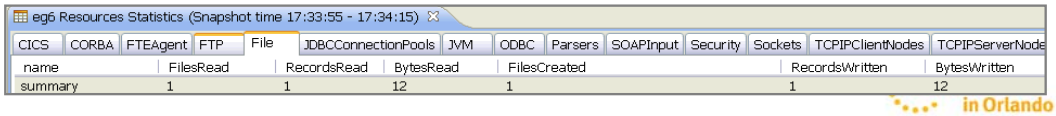
New File Read Nodes and Other Enhancements



- **New File Read Node**
  - Get a single record from a file, or whole file, in the middle of a message flow
  - Typical scenarios include in-flow transformation and routing
    - e.g. Web service request identifies file to be transformed
    - e.g. Route MQ message based on file table data
  - Combine with other MB nodes including FTE for sophisticated 'in-flow' processing
  - Significant addition to existing local, network, SFTP, FTP, and MQFTE file support

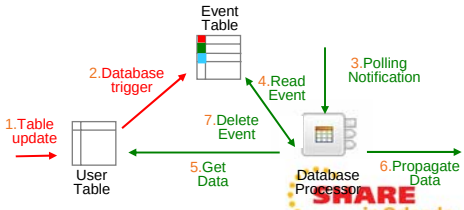
- **Supports Advanced Features for in-flow file processing**
  - Dynamic file identification allows file read to change on per request basis
  - Define where record starts, ends and where to place result in message tree
  - Records parsed as per file input node, fixed, delimited and parsed
  - Includes 'Read by key' allowing user to determine exact record e.g. **`\record\field4='special'`**
  - 'Read by byte offset' allows user to locate exact position in file
  - Extracted data (including partial record) can be placed anywhere in propagated output message
  - Stream based processing means whole record is not kept in memory
  - Disposition of none, delete, rename, archive when file finished processing

- **File Node Enhancements, including FTP**
  - 'Skip First Record' simplifies CSV header records
  - (S)FTP Server timeout configurable service
  - Resource Statistics now available to understand file processing



Database Input Node Enhancements

- **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
- **Code-free Query Generation Enhancements**
  - Development tools complete database queries without user requiring any SQL knowledge
    - Power users can exploit custom ReadEvent, BuildMessage & EndEvent SQL routines
  - Table schemas (XSDs) automatically generated for 3rd party tooling imports
- **Extended Database support**
  - Full range of support across all supported databases
  - DB2 & Oracle augmented with Informix, Sybase, SQL server and solidDB
- **Exploit existing Event Tables Technologies**
  - Standard usage sample
    - Learn how to use database node with database trigger
    - Illustrates basic & extended usage scenarios
  - WBIA JDBC Adapter migration sample
    - Replace MQ input node with database input node
    - Reuses existing WBIA event tables
    - Preserves existing message sets



New Connectivity Nodes and Updates

- **JDEdwards**
  - Connects JDE systems to wider enterprise applications
  - Built-in input and output nodes exploits JDEdwards JCA adapter
  - Complements existing SAP, SEBL, PSOFT ERP nodes
  - Typical scenarios include MQ, File, Web Services <->JDE and SAP, CICS, IMS<->JDE…
  - Contains operational sophistication of these ERP nodes, e.g. incremental discovery and deploy
    - JDEdwards persistence available IC74252

Email Input

- **Email Input node**
  - Supports processing email input from common email systems
  - Various candidate protocols (POP3, IMAP)
  - Complements existing email output node
  - Input email properties can be described at design time, and overridden dynamically at runtime

CICS Request

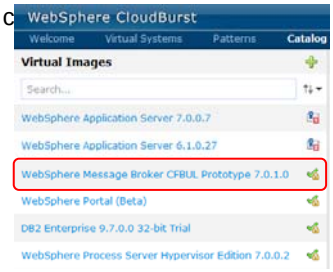
- **CICS Node Enhancements**
  - 3 tier topologies (MB->CTG->CICS) now supported for advanced HA and WLM optior
  - Channels and containers now supported with full built-in sample
    - Supports >32K COMMAREA, different model to COMMAREA
    - Easy to construct using CICS node tooling and/or runtime collections
- **TCP/IP Node Enhancements**
  - Enable SSL for TCP/IP nodes – for secure socket connectivity inbound and outbound
    - Configured as other SSL transports
  - SSL Security populates **`LocalEnvironment`** to enable client filtering scenarios
    - Distinguished name provided for filtering, e.g. use in conjunction with FileRead node

Hypervisor Edition V7.0

- **A New Feature to simplify provisioning MB (and MQ)**
  1. Initial system deploy resulting in quicker time to solution value
  2. Fix pack deploy reduces existing system recurring maintenance c

1. Hyper Visor Edition Packages

- Pre-built installed VM image for OS+HW combination
  - RHEL 5.5 for VMWare ESX x86-64 initial release adds to SOE
  - Package includes all MQ & MB components
  - Includes regular VMWare image & WCA image
- Updated when new fix pack levels released
  - Download to customer site from IBM web
  - Uploaded to WCA using CLI scripts or Image Loader tool



2. Configuration Patterns and Scripts

- HVE Scenario Configuration Information
  - WCA Base Pattern with configuration script packages
- Base WCA Pattern for most popular MQ and MB topology configurations
  - *Basic Broker, Advanced Broker*, *<User Pattern>*
- Script Packages configure base pattern
  - *Create Exec Group, Deploy BAR, Run MQSC, <User Script>*
  - Emergency Fix also possible: iFix binary + script package to drive installer

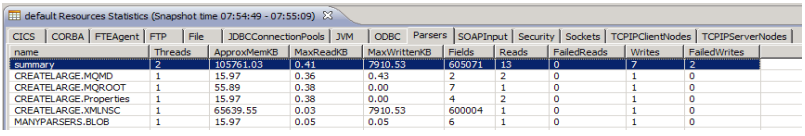
- **Full Function Deployed Configuration**
  - Interaction with deployed MQ, MB components as per regular deployment

Platforms, Environments and Performance

- **Multi-tenancy Runtime Profiles**
  - Allows different mqsiprofile per install, per broker & per execution group
  - e.g. per execution group JVM properties, isolate WTX plug-ins by execution group
- **JMS Node Enhancements**
  - Support JBoss asynchronous exceptions to handle JBoss sever outages gracefully
  - Support for Oracle AQ and JBoss JMS 1.1
- **New Database Data types**
  - XML and BIGINT data types now supported for Oracle, in addition to existing DB2 support
    - GRAPHIC data type supported
- **MQ Input node Enhanced Sequencing**
  - Allows MQ Input node to Order flow thread on arbitrary message content. e.g. **`\body\msgGroup`**
    - 'Next' message not processed until 'previous' committed
  - Example: Processing all account updates in order
  - NOT single threaded - different sequences can be processed in parallel!
- **Support Updates**
  - See http://www.ibm.com/software/integration/wbimessagebroker/requirements/ for details
  - AIX 7.1 formally supported
  - Oracle 11gR2 formally supported
  - Java 6 SR8
  - DB2 8.1 on z/OS 64 bit ODBC databases

Other Enhancements Our Users Requested

- **Resource Manager Statistics for Parser Memory Usage**
  - Full resource manager statistics to report and understand main memory usage in MB
  - Thread, memory, maxBytesRead, maxBytesWritten, Fields, Reads, Writes…



name	Threads	ApproxMemKB	MaxReadKB	MaxWrittenKB	Fields	Reads	FailedReads	Writes	FailedWrites
summary	2	105761.03	0.41	7910.53	605071	13	0	7	2
CREATELARGE.MQMD	1	15.97	0.36	0.43	2	2	0	1	0
CREATELARGE.MQROOT	1	55.89	0.38	0.00	7	1	0	1	0
CREATELARGE.Properties	1	15.97	0.38	0.00	4	2	0	1	0
CREATELARGE.XMLNSC	1	65639.55	0.03	7910.53	600004	1	0	1	0
MANYPARSERS.BLOB	1	15.97	0.05	0.05	6	1	0	1	0

- **Enhanced Audit and Monitoring Sample**
  - Includes monitoring for fan-out, fan-in scenarios
- **64 bit VSAM Nodes**
  - 64bit VSAM processing nodes, for VSAM input, read, update, delete processing scenarios
  - For IA13 Support Pac functionality updated for MB7 and included in the product
- **RTC Co-existence**
  - Formal support for shell shared RTC
- **Operational Enhancements**
  - BAR editor enhancements to refresh Compiled Message Flow in rename scenarios
  - Toolkit users can secure connectivity to target Brokers using via SSL
  - Preserve *exact* execution environment for brokers created at different FixPack levels
- **Unit Test and Debugger Enhancements**
  - Simpler to unit test message flows, including RFH2 header support

WebSphere Message Broker Summary

- **Message Broker in 2010/11**
  - WMB7 FP2 is second significant update since GA
  - Builds on continued success of Version 7, 7.0.0.1
  - Enhances and extend universal connectivity capabilities for wide range of scenarios
  - Message Broker next release Early Program started early 2011!
  - WMB7 delivered integration with Sterling Connect Direct via APAR IC75621

- **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

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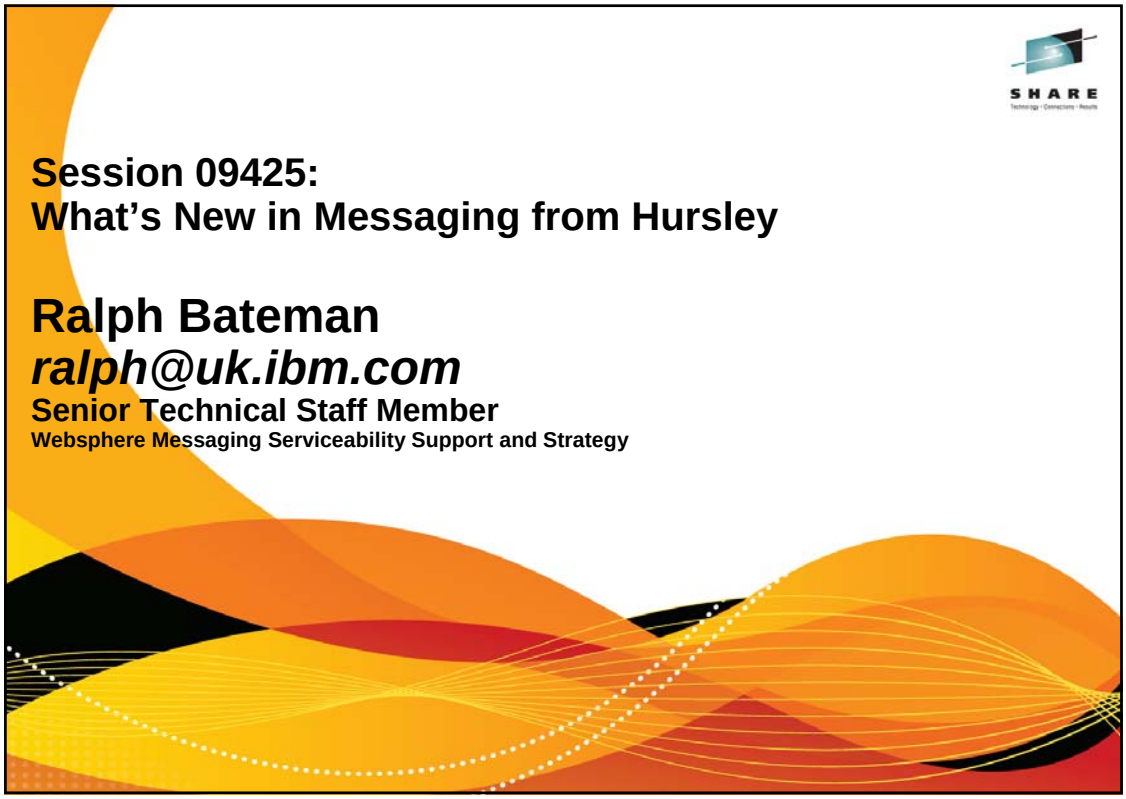
This was session 09425 – This is what you missed ☺

	Monday	Tuesday	Wednesday	Thursday	Friday
08:00			More than a buzzword: Extending the reach of your MQ messaging with Web 2.0	Batch, local, remote, and traditional MVS - file processing in Message Broker	Lyn's Story Time - Avoiding the MQ Problems Others have Hit
09:30		WebSphere MQ 101: Introduction to the world's leading messaging provider	The Do's and Don'ts of Queue Manager Performance	So, what else can I do? - MQ API beyond the basics	MQ Project Planning Session
11:00		MQ Publish/Subscribe	The Do's and Don'ts of Message Broker Performance	Diagnosing problems for Message Broker	What's new for the MQ Family and Message Broker
12:15	MQ Freebies! Top 5 SupportPacs	The doctor is in. Hands-on lab and lots of help with the MQ family		Using the WMQ V7 Verbs in CICS Programs	
01:30	Diagnosing problems for MQ	WebSphere Message Broker 101: The Swiss army knife for application integration	The Dark Side of Monitoring MQ - SMF 115 and 116 record reading and interpretation	Getting your MQ JMS applications running, with or without WAS	
03:00	Keeping your eye on it all - Queue Manager Monitoring & Auditing	The MQ API for dummies - the basics	Under the hood of Message Broker on z/OS - WLM, SMF and more	Message Broker Patterns - Generate applications in an instant	
04:30	Message Broker administration for dummies	All About WebSphere MQ File Transfer Edition	For your eyes only - WebSphere MQ Advanced Message Security	Keeping your MQ service up and running - Queue Manager clustering	
06:00			Free MQ! - MQ Clients and what you can do with them	MQ Q-Box - Open Microphone to ask the experts questions	



Session 09425:
What's New in Messaging from Hursley

Ralph Bateman
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Senior Technical Staff Member
Websphere Messaging Serviceability Support and Strategy