



Advanced Technical Support – Washington Systems Center

WebSphere Message Broker on System z

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Agenda

- **Introduction**
- **Message Broker - what is it?**
- **Message Broker on System z - capability comparison**
- **Z/OS Specific Nodes**
- **Real Examples**
- **Summary**
- **Questions?**



Introduction - Who is ATS?

- **Advanced Technical Support**
- **AKA the Dallas or Washington Systems Center**
 - Providing technical support for pre and post sales, including
 - PoCs
 - Field Enablement
 - Sysplex Health Checks
 - Configuration and Implementation Reviews
 - Critical Situation assistance
 - Troubleshooting
 - Solution Assurance Reviews
 - ‘Other Duties as assigned’



What is WebSphere Message Broker?

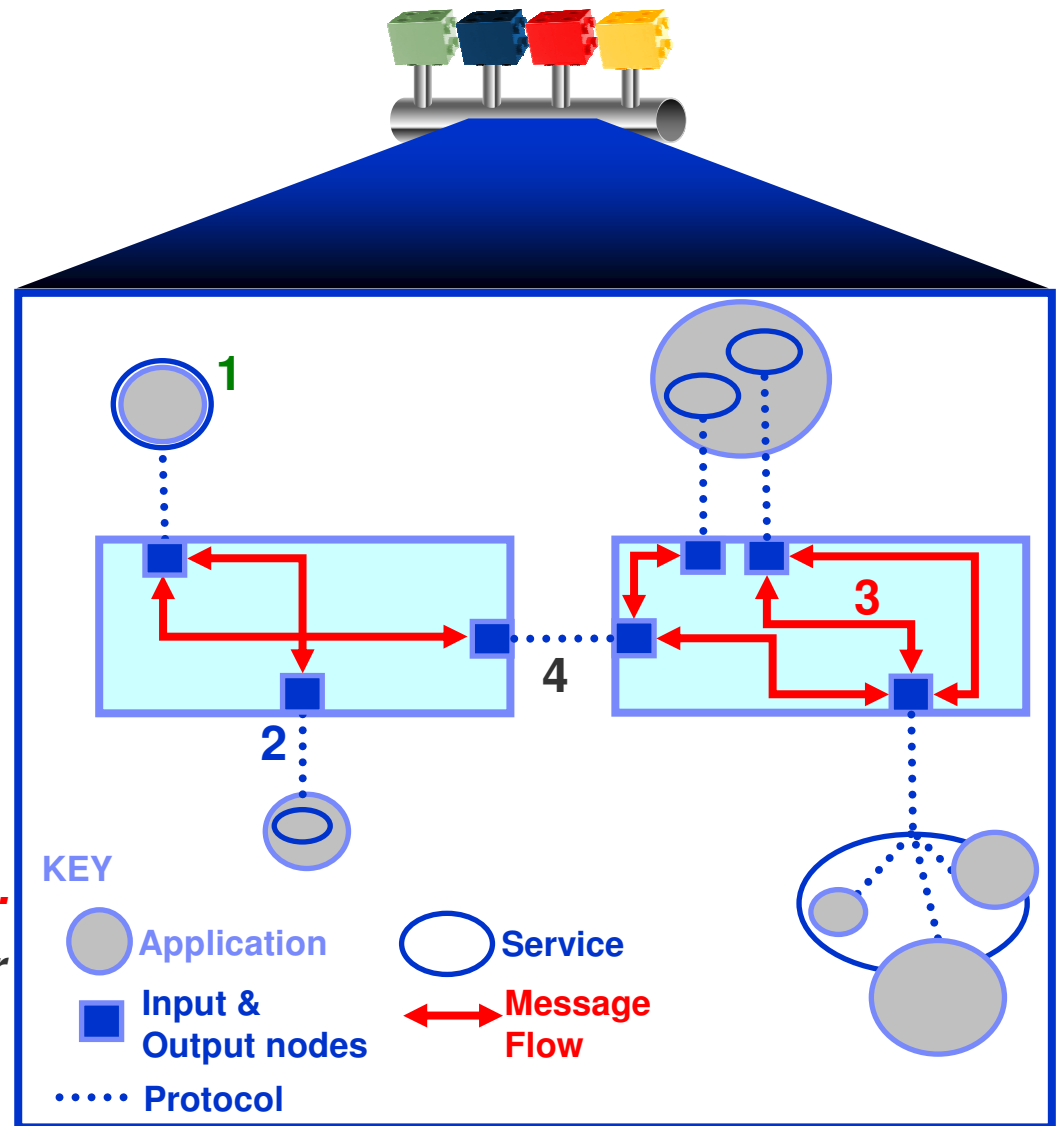
- **One of IBM's ESB Offerings**
- **Provides the four functions of an ESB**
 - Protocol support
 - Routing
 - Transformation
 - Event management
- **Other functions...**
 - And can assist with so much more...



Message Broker as an Advanced ESB

WebSphere Message Broker

- 1... **creates services from applications.**
- 2... **provides service interactions for a broad range of protocol endpoints, including MQ, JMS, HTTP(S) and several others.**
- 3... **provides flexible and dynamic connectivity between service endpoints.**
- 4... **combines easily with other ESB tools.**





WMB on System z capability comparison

- **WMB on z/OS is a complete offering**
 - Functionality is the same as on the distributed platforms
 - Customers often chose to develop and do unit tests on distributed platforms
 - The same message flow file can be deployed on z/OS



WMB on System z capability comparison

- **WMB on z/OS offers specific z/OS advantages**
 - Inherits the capabilities supplied by z/OS, including WMQ shared queuing
 - ESM security
 - RACF and other security subsystems
 - WLM resource optimization
 - SMP/E installation control
 - SMF performance recording
 - RRS transaction management for speed and reliability
 - ARM restart



WMB on z/OS Specializations

- **z/OS Specific nodes**
 - CICS Node
 - Uses EXCI to LINK to a CICS program from within a message flow
- **VSAM Nodes**
 - VSAM KSDS, ESDS and RRDS file manipulation
 - VSAM files may be used as input
- **QSAM Nodes**
 - z/OS sequential files can be used from within a flow
 - Sequential file input
- **These nodes provide substantial benefit to z/OS centric customers, or those coming back to z/OS**



WMB on System z capability comparison

- **WMB on Linux for System z**
 - The same as WMB for other Linux and UNIX platforms
 - Inherits all the capability of Linux on System z
 - One primary benefit is the ability to use hipersockets for communication with z/OS
 - Workload consolidation to reduce power and ‘footprint’ issues have found a natural home in Linux for System z



WMB on System z - Examples

- **The examples shown are from work performed in customer environments**
- **These are simplified, as WMB was often selected as the ESB and was part of a larger SOA project**
 - Projects often include WSRR, DataPower, WPS



WMB Examples – New Protocol Support

- **Customer uses a major service for credit card processing**
 - Dictated existing use of LU6.2 connections to be phased out in favor of HTTP
 - Wire format to be replaced by XML
 - Anticipated replacement of back-end processes not moving as quickly as they liked
 - Needed to be in a position to ‘swap out’ the back end when the replacements become available
 - Much of their processing is CICS/DB2 and CICS/VSAM

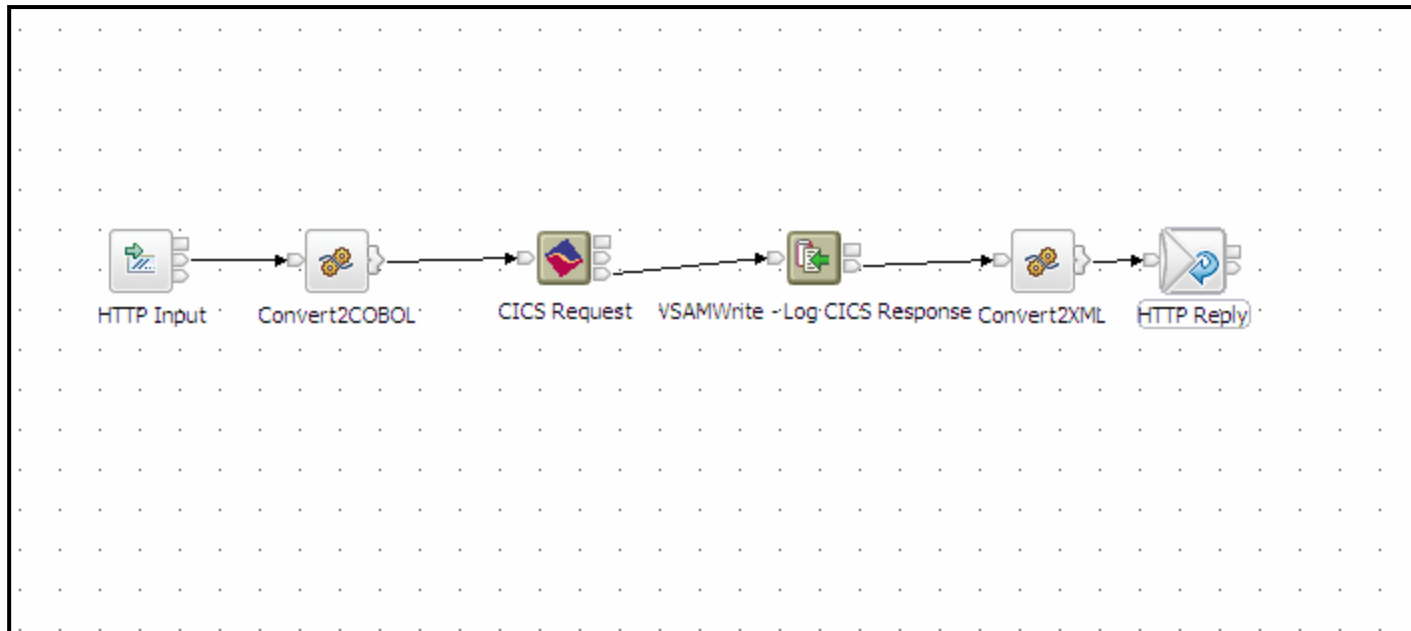


WMB Examples – New Protocol Support

- **Solution used HTTP input node, CICS node**
- **Flows developed, tested and deployed into production very quickly**
- **Customer is now looking at extending the solution and building a messaging backbone**



New Protocol – Flow Sample





WMB Examples – New protocol part II

- **Customer wants to expose existing CICS program as a service to business partners**
 - CICS program is DPL enabled
 - Already invoked internally via customer written WMQ program that logged selected transactions
 - Internal requests primarily from z/OS programs
- **Heavy use of WMQ backbone**
 - CICS MQ Bridge heavily used
 - CICS MQ Adapter also heavily used
- **Already using WMB on UNIX**
 - This was not a replacement, but an extension
 - Already had trained developers and administrators

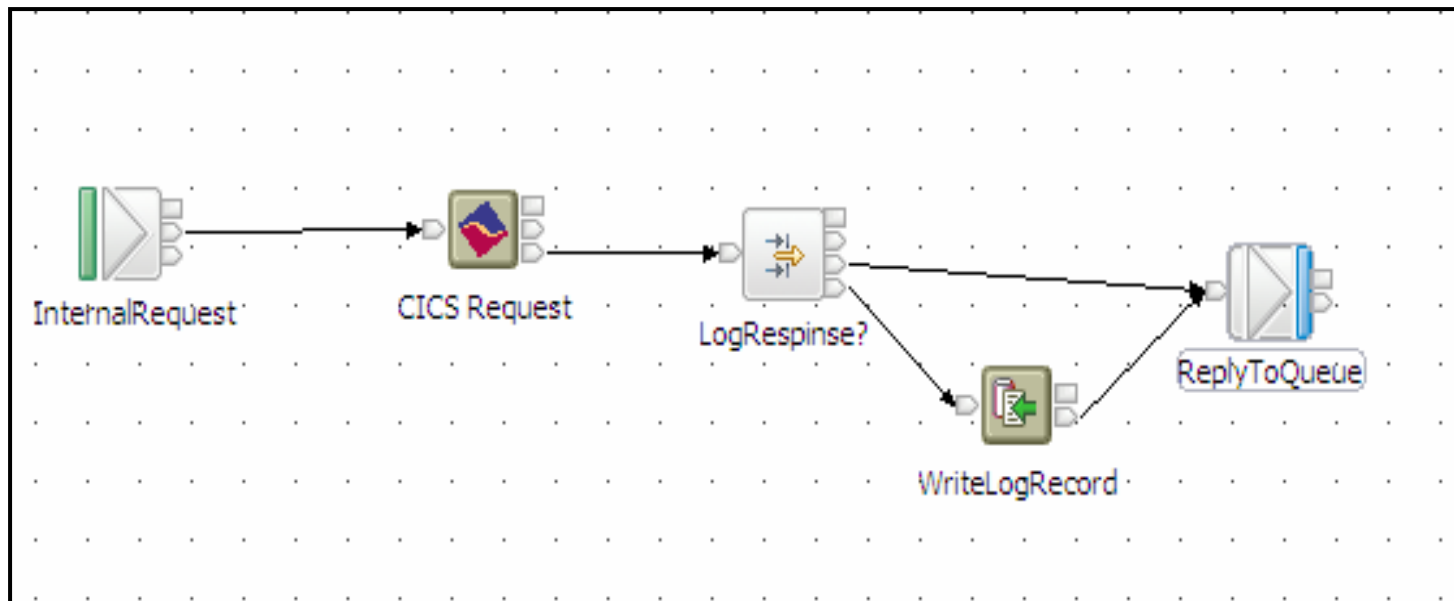


New Protocol Support – Part II

- **Solution was done in two parts**
 - Internal request flow
 - Service enablement changes
- **Internal request flow**
 - Due to the anticipated volume and the efficiency of the CICS Node, customer added a broker on z/OS
 - Existing MQ requests were handled by the MQInput node
 - **There were NO changes made to any of the front end or back end applications!**
 - Used the flow to create audit trail
 - Used CICS Node to link to CICS program – no data conversion required
 - Very simple flow, replaced the customer written program



New Protocol Support – Part II



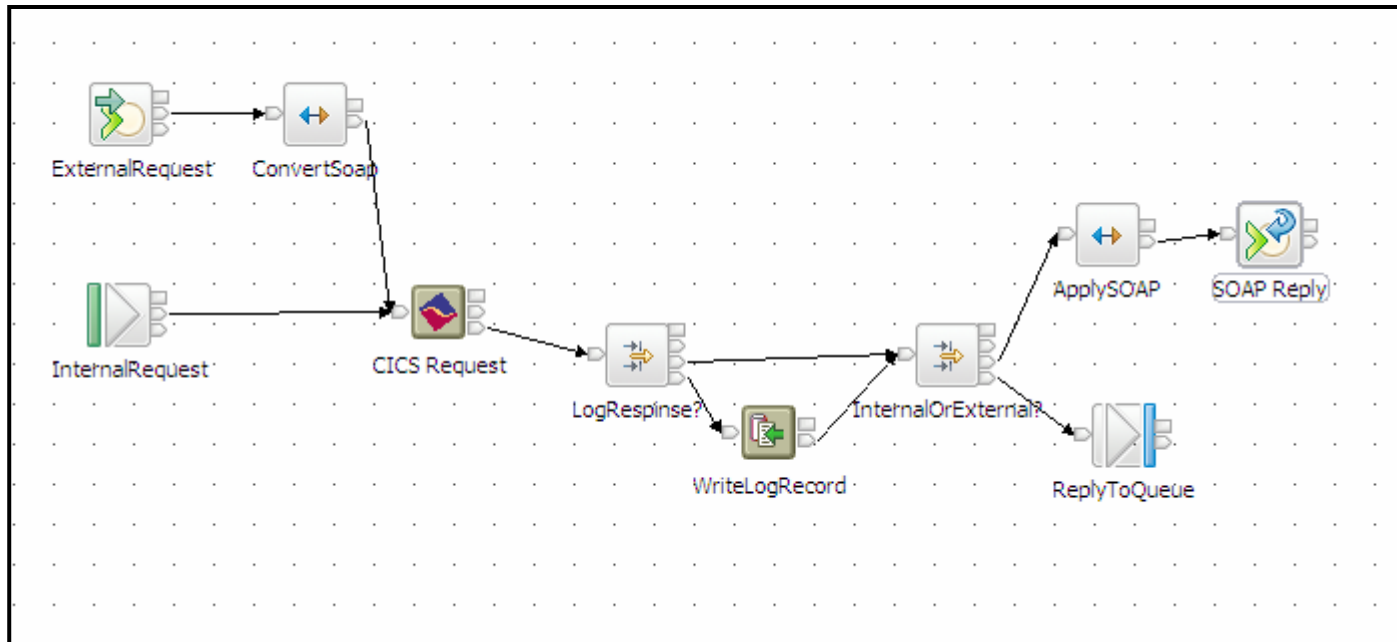


New Protocol Support – Part II

- **Service enablement changes**
- **The existing flow was altered to support the new input**
 - SOAP Input and output node
 - Mapping nodes to covert data
 - No changes to existing programs
 - Internal customers noticed no differences



New Protocol Support – Part II





WMB Examples – WMB on Linux for System z

■ Customer requirements

- To integrate distributed applications often using data from DB2 on z/OS
- To replace numerous ‘one off’ integration programs and processes with a consistent methodology
- To provide a high level of availability
- To ensure SLAs are met – timeliness
- To create the flexibility to quickly use different protocols and data formats



WMB Examples – WMB on Linux for System z

■ Solution

- Customer implemented distributed WMQ to handle the transport layer
 - They plan on implementing other protocols later
- A mixture of WMQ clients and servers
- Standard WMQ clustering, Client channel tables, and distributed availability techniques were implemented at all levels
- WMB on Linux for System z flows
 - Two primary drivers for the System z decision
 - Ability to participate in their DR solution
 - Higher response rate for the DB2 on z/OS access required by some of the most time critical flows



WMQ on System z

■ Other implementations

- Batch modernization projects
 - VSAM and QSAM Input nodes are often used here
- Federated ESBs
 - DataPower often used for WS Security layer
- JMS conversions
 - Message broker can transform between multiple JMS formats
- Access to other datastores
 - Java compute nodes often used



WMQ on System z

■ Other implementations – continued

- Still many uses for the basic mediation features of WMB:
 - Intelligent Routing
 - Ensuring qualities of service for high value requests
 - Transformation
 - WMB is the leader in any-to-any transformations
 - Publication
 - Publishing data in multiple formats based on the contents



WMB on System z - Summary

- **Message Broker on System z**
 - *Delivers universal connectivity and transformation*
 - *Provides a flexible solution to address a wide range of requirements*
 - *Optimized to accommodate any IT environment*
 - *Offers unique quality of service and connectivity on z/OS*



WMB on System z

- **Questions?**