

1487: Effective Administration in IBM Integration Bus

Matthew Golby-Kirk, IBM UK

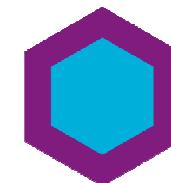
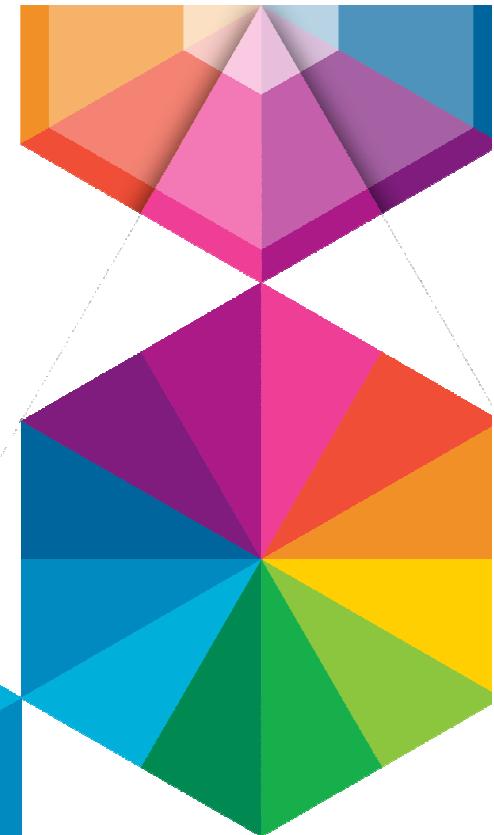


InterConnect 2015
The Premier Cloud & Mobile Conference

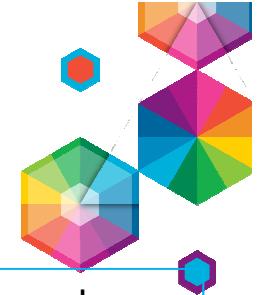
February 22 – 26

MGM Grand & Mandalay Bay | Las Vegas, Nevada

#ibminterconnect



© 2015 IBM Corporation

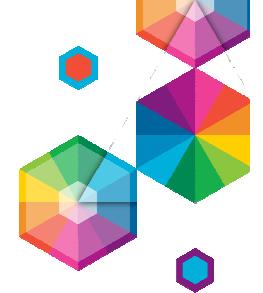


Please Note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

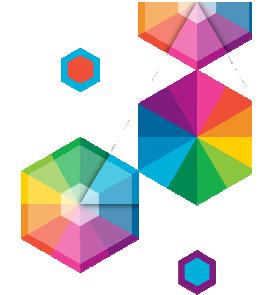
The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.



IBM Integration Bus – Session Highlights

- Monday
 - 11.00am: What's New in IIB (Mandalay Ballroom B)
 - 12.15pm: WESB Conversion (Surf C)
 - 2.00pm: Meet The IIB Experts (Forum 1)
 - 2.00pm: Intro - The Business Value of IIB (Surf C)
 - 3.30pm: Technical Introduction to IIB (Surf C)
 - 5.00pm: Integration in Healthcare (Surf C)
- Tuesday
 - 8.00am: IIB and Cast Iron (Surf C)
 - 9.30am: IIB in the Cloud (Surf C)
 - 9.30am: IIB Customer Feedback Roundtable (Topics A)
 - **11.00am: Effective Administration in IIB (Surf C)**
 - 12.30pm: IIB Designing for Performance (Mandalay Ballroom B)
 - 2.00pm: Integration Keynote
 - 3.30pm: Effective Application Development (Surf D)
 - 5.30pm: Flexible MQ Topologies (Surf C)
 - 5.30pm: IIB Customer Feedback Roundtable (Topics A)
- Wednesday
 - 8.00am: IIB APIs, Services, Applications and Libraries (Surf C)
 - 9.30am: Connecting to Software-as-a-Service (Surf C)
 - 11.00am: Integration in Manufacturing (Surf C)
 - 12.30pm: Integration Your Way (Surf C)
 - 2.00pm: IBM Integration Bus Lab (South Seas G)
- Thursday
 - 10.30am: IIB Customer Feedback Roundtable (Topics A)

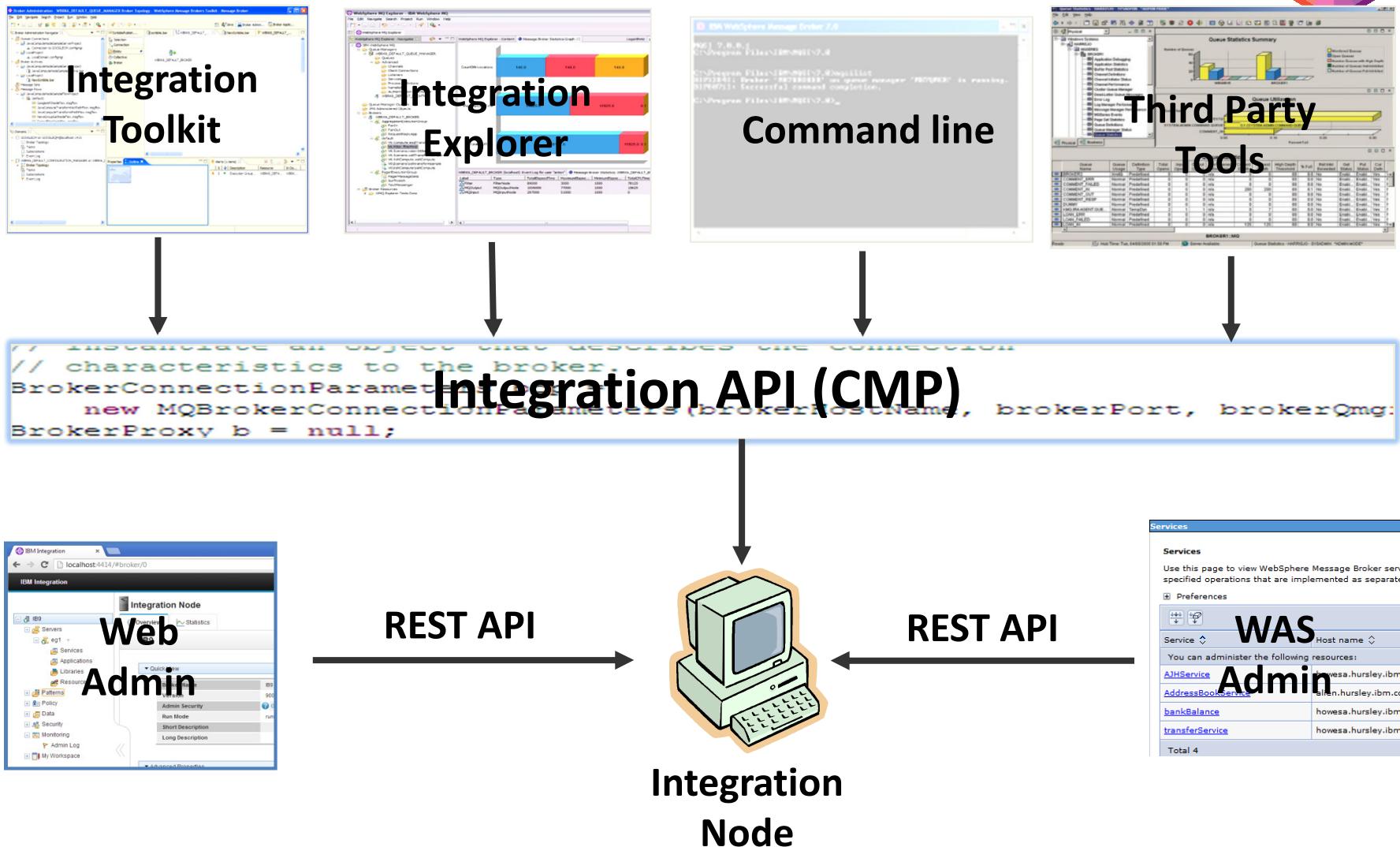
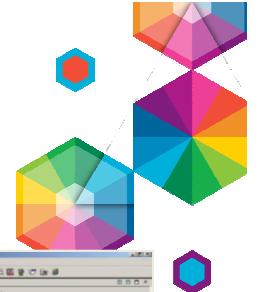


What will this session cover?

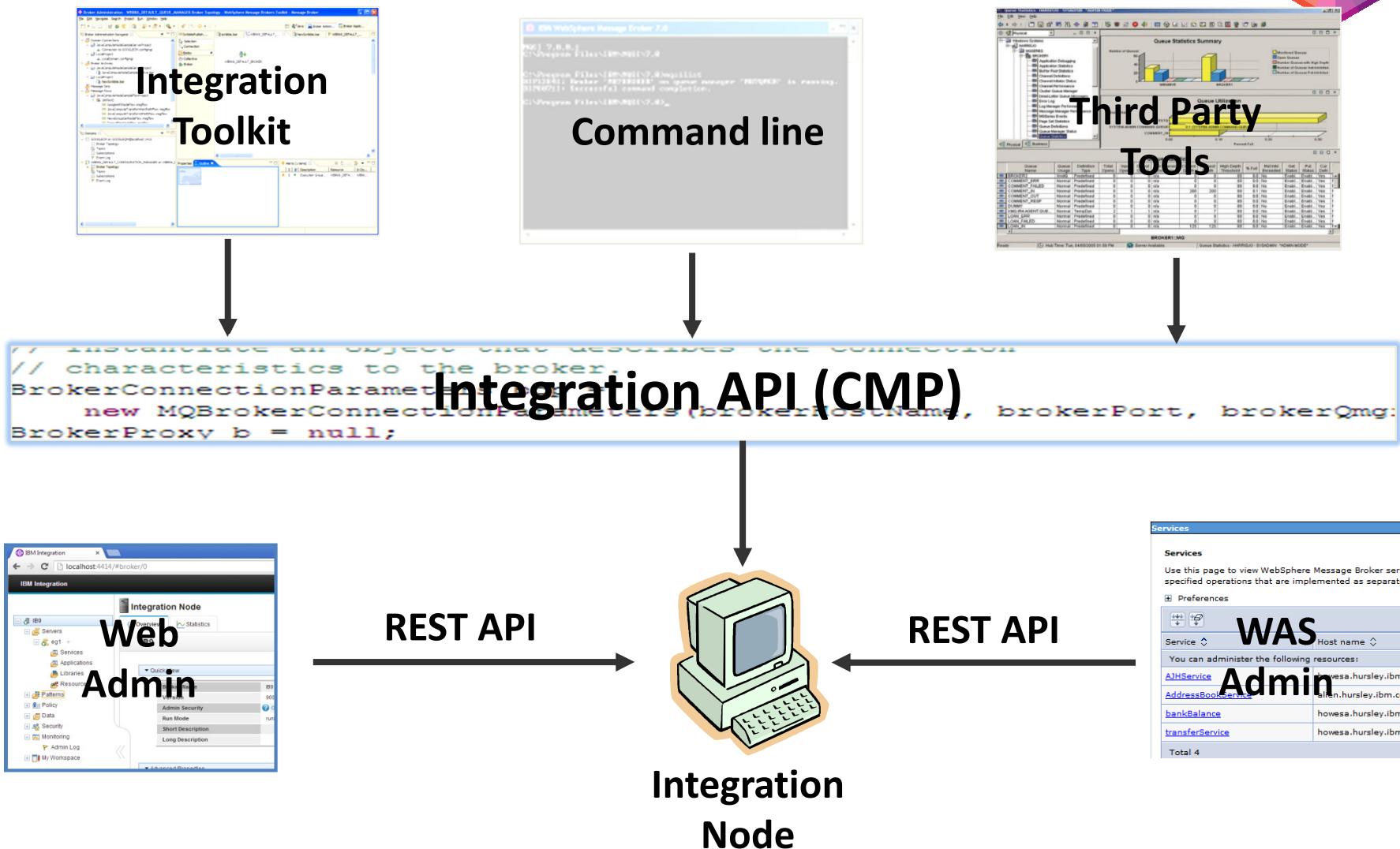
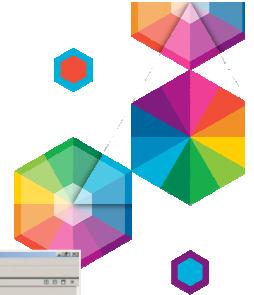
- **WMB and IIB have support for two main user roles**
 - Integration Developer
 - Administrator
- **This session will aim to cover accepted best practice for the most typical administrator tasks**
 - Including some essential “top tips” 
- **Topics to discuss**
 - Tools of the trade
 - Common administrative tasks
- **I'll focus on WMB V8 and IIB V9**
 - but will point out some V10 improvements too!

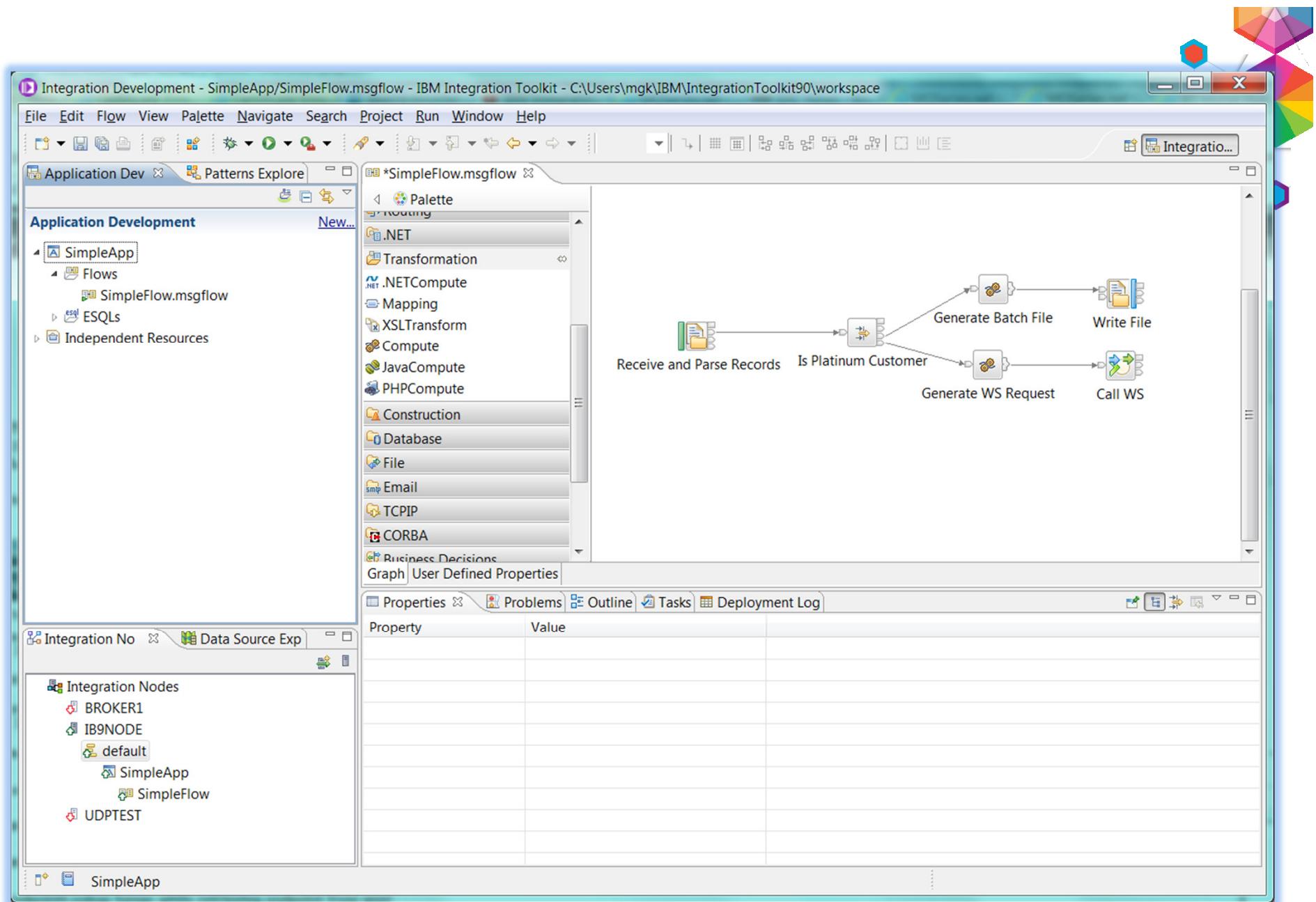


Interaction With Tools WMB V8 and IIB V9

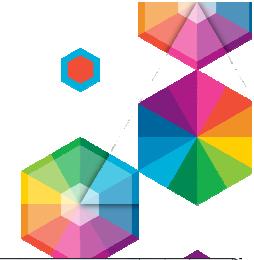


Interaction With Tools IIB V10

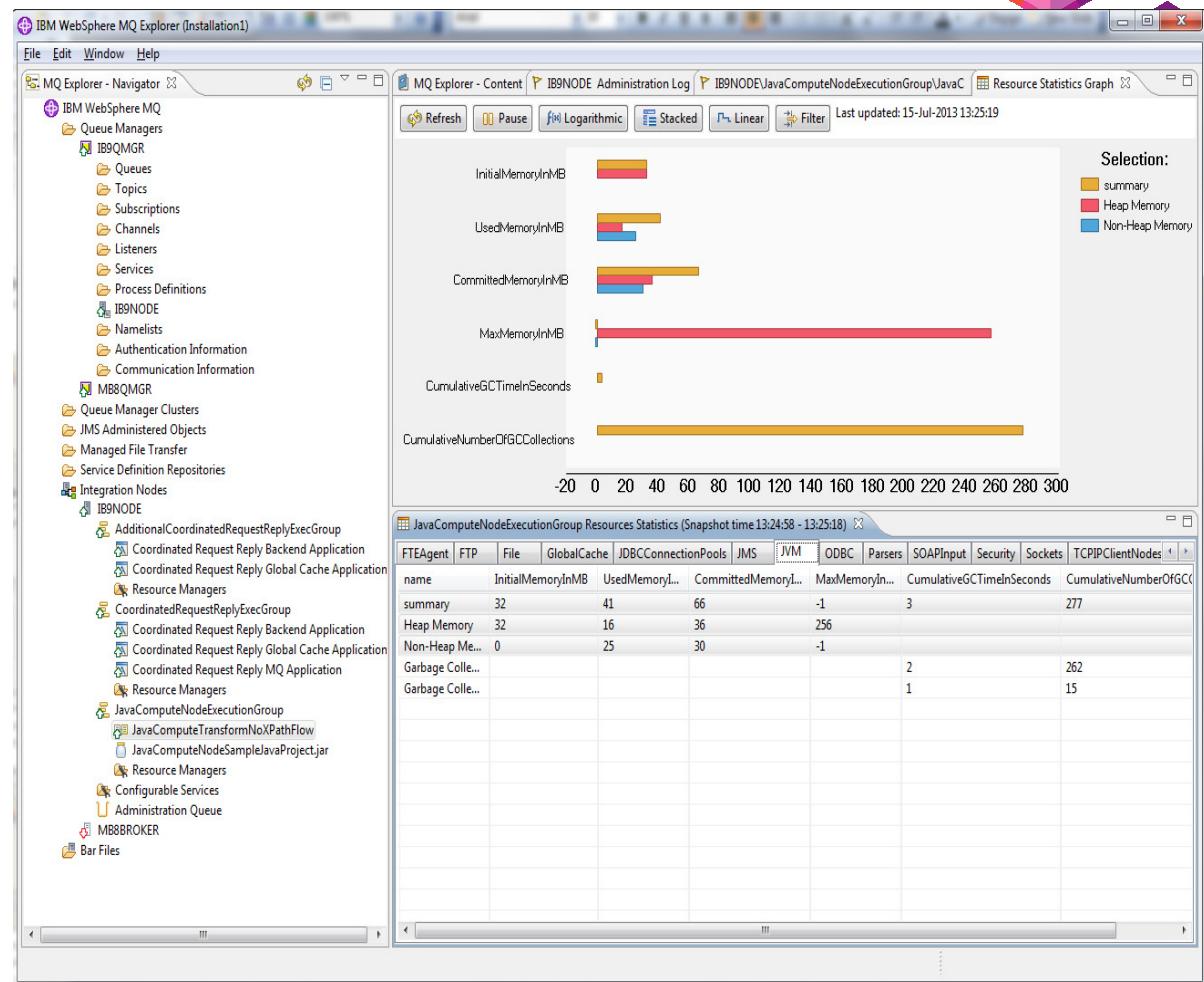




Integration Explorer



- Management option designed for administrators
- Plug-in to MQ Explorer
- Extra features
 - Create/Manage Configurable Services
 - Performance Views
 - Group integration nodes
 - Administration Log
 - Administration Queue
 - Manage statistics & tracing
- Replaced in v10 with Web UI





Command line tools

- A wide selection of tools for scripting actions
- Requires a configured environment
 - mqsiprofile or mqsicommandconsole (Windows)
mqsiprofile (Linux/UNIX)
JCL or ISPF (z/OS)
- Most commands work against local or remote integration nodes
- New “IIB” command in V10



BIP1121I: Creates an execution group.

Syntax:

```
mqsicreateexecutiongroup brokerSpec -e egName [-w timeoutSecs] [-v traceFileName]
```

Command options:

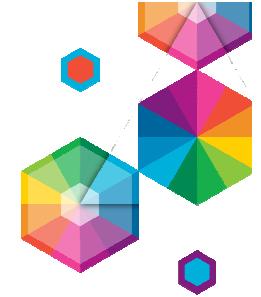
'**brokerSpec**' is one of:

- (a) 'brokerName' : Name of a locally defined broker
- (b) '-n brokerFileName' : File containing remote broker connection parameters (*.broker)
- (c) '-i ipAddress -p port -q qMgr' : hostname, port and queue manager of a remote broker

'-e egName' name of the new execution group

'-w timeoutSecs' maximum number of seconds to wait for the execution group to be created

'-v traceFileName' send verbose internal trace to the specified file.



Integration API (CMP)

- Java interface that enables the administration tools
- Use for custom administration requirements
- Fully documented and samples available

Screenshot of the WebSphere Message Broker Administration API documentation page for the `ExecutionGroupProxy` class.

Class ExecutionGroupProxy

```
com.ibm.broker.config.proxy
Class ExecutionGroupProxy
  ↳ com.ibm.broker.config.proxy.AdministeredObject
    ↳ com.ibm.broker.config.proxy.ExecutionGroupProxy
```

public class ExecutionGroupProxy
extends AdministeredObject

Each execution group associated with a broker can be represented by an `ExecutionGroupProxy`.

In order to use `ExecutionGroupProxy` objects, applications must first obtain handles to them. Here is an example of how to do this:

```
BrokerSelectionParameters bsp =  
  new BrokerSelectionParameters("localhost", 1414, "QSNB");  
BrokerProxy b = BrokerProxy.getInstance(bsp);  
ExecutionGroupProxy e = b.getExecutionGroupByName("default");
```

com.ibm.broker.config.proxy.ExecutionGroupProxy extends com.ibm.broker.config.proxy.AdministeredObject

Responsibilities	Acts as a container of deployed message flows. Provides the ability to deploy information to the execution group represented by each instance.
Internal Collaborators	com.ibm.broker.config.proxy.MessageFlow

Change Activity:

Reason:	Date:	Originator:	Comments:
25103.7	2004-03-18	HMPL	v6 release
45112.7	2007-07-30	HMPL	v7.1 released!

v7.1 introduced:
- Added methods to return generalized types where relevant
- Added getQueueName()
- Added setQueueName()
- Added getHandleNameProperty(String, String)
- Added setHandleNameProperty(String, String)
- Added getHandleNamePropertyNames()
- Added setHandleNamePropertyNames()
- Added getDeployedPolicySettingNames()
- Added setDeployedPolicySettingNames()
- Added start()
- Added stop()
- Added getResourceStatisticsEnabled()
- Added setResourceStatisticsEnabled()
- Added getDebugEnabled()
- Added setDebugEnabled()
- Added isDebugEnabled()

v7 release:
- Deprecated immediate parameter on `executeMessageFlow()`
- Deprecated methods related to ACLs
- Added `getLocalInstance()`
- Added `getLocalName()`

51419 2008-08-20 HMPL

Screenshot of the CMP API Exerciser tool showing a tree view of objects and a log window.

CMP API Exerciser

File View Scripting

MB7BROKER

- default
 - ...pager.bar
 - TextMessengers.cmf
 - PagerMessageSets.dictionary
 - ...SWIFT.bar
 - Swift_2002_MT103.dictionary
- Administration Log
- Administration Queue
- Configurable Services

BrokerProxy Method

BrokerProxy Method	Result
getBrokerLongVersion()	S000-L91002.1
getBrokerOSArch()	x86
getBrokerOSName()	Microsoft Windows XP
getBrokerOSVersion()	5.1 build 2600 Service Pack 3
getBrokerVersion()	7000
getConfigurationObjectType()	<Broker>
getConfigurationObjectTypeOfParent()	(null)
getExecutionGroups()	[1]
getHTTPListenerPropertyNames()	
HTTPConnector/acceptCount	
HTTPConnector/address	
HTTPConnector/allowTrace	
HTTPConnector/bufferSize	
HTTPConnector/compressableMimeTypes	
HTTPConnector/compression	
HTTPConnector/connectionLinger	

Log Window:

```
14:11:05 Successfully registered for updates to the log <Log>.
14:11:05 Successfully registered for <Administration Queue>.
14:11:05
14:11:05 Successfully connected. Click on an object to select it and display its properties.
Right-click a selected object to manipulate it.
14:11:05
14:11:05 The CMP API Exerciser is set to wait for requests to be fully completed by the broker before returning; expect pauses while the broker processes each request.
14:11:05 You can change this setting using File -> Set Timeout characteristics.
14:11:05 <---- cmp.exerciser.ClassTesterForBrokerProxy.testConnectToLocalBroker
14:11:05
Connected to broker 'MB7BROKER'.
```

- WMB v8 and later allows you to create and edit message flows too
 - Build your entire system programmatically!

Web Visualisation and Analytics

▪ A comprehensive tool for web management

- Manage all integration resources from zero-footprint client
- Analyze integration performance in real-time
- Supported on a variety of browsers: IE10, Firefox, Safari...
- Complements MQ Explorer and WAS Admin consoles

▪ Managing Integration Resources

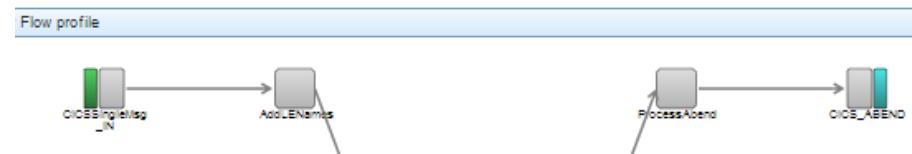
- View top-level integration node properties
- Add/remove/change integration servers
- Start/Stop integration data flows
- Role based access to control usage
- Advanced options include data replay, policy & monitoring
- Exploits underlying public REST/JSON API

▪ Integration Performance Analysis

- Operational experience; no developer intervention required
 - New and existing flows can exploit without change
- Many metrics of integration flow available in real-time
 - CPU & I/O time shown by default in integration analyzer
 - Other metrics include thread, data sizes, errors...
- Flexible display includes data tables and flow profile
 - Drill down to understand detailed behaviour
- Exploits underlying MQTT web sockets technology
 - Asynchronous notification at low CPU cost



Node	Average Elapsed Time (ms)	Average CPU Time (ms)	Node type
CICS Request	21.6	14.7	CICSPICRequestNode
CreateCollection	6.7	2.8	ComputeNode
ProcessChannel	2.0	0.3	ComputeNode
CICS_OUT	1.3	0.1	MQOutputNode
CICS_IN	0.7	0.1	MQInputNode
AddLENAMES	0.0	0.0	ComputeNode
CICSSingleMsg_IN	0.0	0.0	MQInputNode
CICS_ABEND	0.0	0.0	MQOutputNode
ProcessAbend	0.0	0.0	ComputeNode



IBM Integration IBM.

localhost:4414/?logging=all#messageFlow/1/executiongroups/default/messageflows/CICSChannelSample

IBM Integration

Welcome, pmasters

Data Flow - CICSChannelSample

Detail

Session started 12:44:35 GMT Daylight Time (2 minutes ago). Last updated at 12:46:56 GMT Daylight Time

Time range: 5 mins

Message Rate (messages/s)

Latest	28.10
Average	22.32
Highest	28.32
Lowest	3.00

Average Elapsed Time/ Invocation (ms)

Latest	32.1
Average	33.8
Highest	39.8
Lowest	32.0

Average CPU Time/ Invocation (ms)

Message Rate (messages/s)
Average Elapsed Time/ Invocation (ms)
Average CPU Time/ Invocation (ms)
Total CPU Time Waiting for Input Message (ms)
Total Elapsed Time Waiting for Input Message (ms)
Maximum CPU Time (ms)
Maximum Elapsed Time (ms)
Maximum Size of Input Messages (Kb)
Minimum CPU Time (ms)
Minimum Elapsed Time (ms)
Minimum Size of Input Messages (Kb)
Number of Threads in Pool
Times Maximum Number of Threads Reached
Total CPU Time (ms)
Total Elapsed Time (ms)
Total Input Messages
Total Number of Backouts
Total Number of Commits
Total Number of Errors Processing Messages
Total Number of Messages with Errors
Total Number of MQ Errors
Total Aggregation Timeouts
Total Size of Input Messages (Kb)

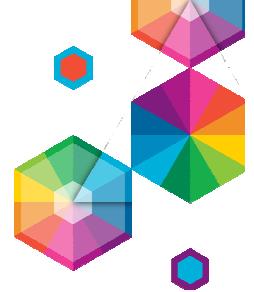
Latest data per node

Node	Average Elapsed Time (ms)	Average CPU Time (ms)	Node type
CICS Request	21.6	14.7	CICSPICRequestNode
CreateCollection	6.7	2.8	ComputeNode
ProcessChannel	2.0	0.3	ComputeNode
CICS_OUT	1.3	0.1	MQOutputNode
CICS_IN	0.7	0.1	MQInputNode
AddLENames	0.0	0.0	ComputeNode
CICSSingleMsg_IN	0.0	0.0	MQInputNode
CICS_ABEND	0.0	0.0	MQOutputNode
ProcessAbend	0.0	0.0	ComputeNode

Flow profile

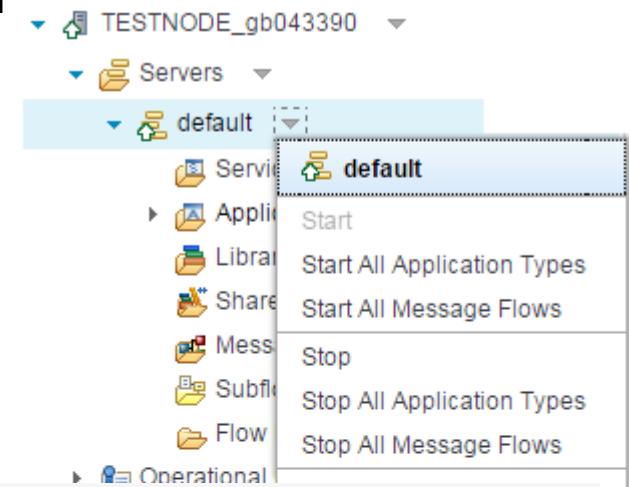
```

graph LR
    CICSSingleMsg_IN --> AddLENames
    AddLENames --> ProcessAbend
    ProcessAbend --> CICS_ABEND
    
```



V10 Web UI Administration Improvements

- IIB Web UI becomes the primary means of runtime administration
 - Browser approach is lightweight and universal
 - Integration Bus Explorer no longer provided as part of IIBv10
- Programmatic intervention using public Java and REST APIs
- Integration Bus Explorer admin capabilities re-located
 - Policy Set configuration moved to the IIB Toolkit
 - Export Port Configuration for external HTTP listeners in Web UI
 - Integration Server Create, Rename and Delete added to Web UI
 - BAR file deployment added to Web UI

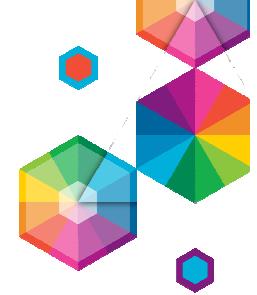


Screenshot of the IBM Integration Bus Web UI showing the 'Deploy' dialog, 'Admin Log' panel, and a floating context menu with port export options.

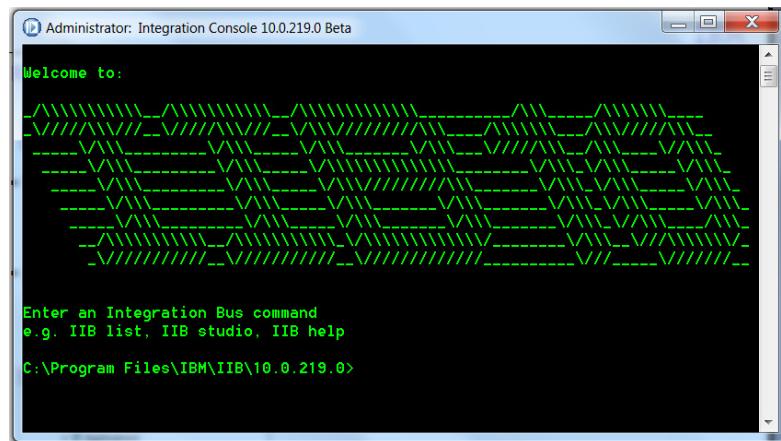
The 'Deploy' dialog shows a 'Select a BAR to dep...' dropdown and a 'BAR file:' field. The 'Admin Log' panel shows a log entry for 'TESTNODE_gb043390' with a timestamp of 'BIP2871I' and a source of 'Administration Request'.

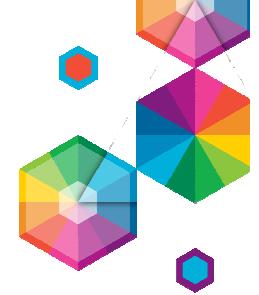
A floating context menu is open, listing 'Export Port Configuration as Websphere Application Server Plugin' and 'Export Port Configuration as mod_proxy Module'.

Significant Tool changes in V10



- **Single install package and single installed component**
 - Unit test integration node automatically started with IIB development tool
 - Can create additional integration nodes as required
 - **No longer any MQ pre-requisite**
 - All existing MQ use-cases still work (and now support remote MQ connections)
 - All administration done through the web UI rather than the Integration Explorer
 - Remote administration commands need to point at the integration node's administration port rather than the queue manager
 - **New “IIB Console”**
 - e.g. iib tools, iib help
 - All mqsi* commands continue to work
(noting remote administration caveat above)





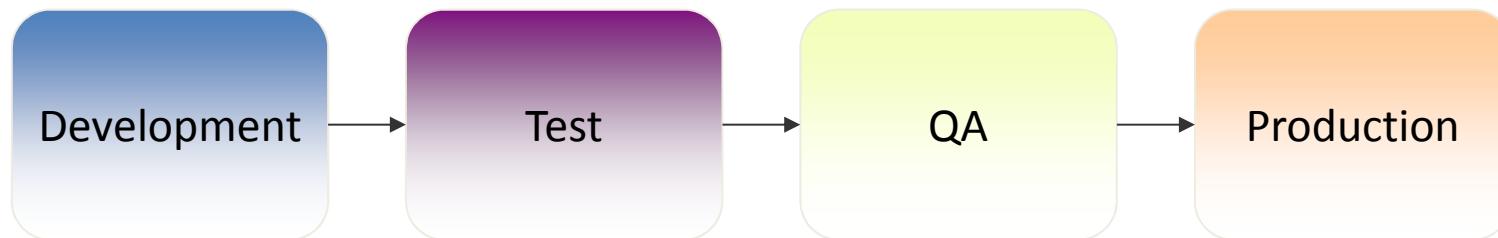
Development Lifecycle and Environments

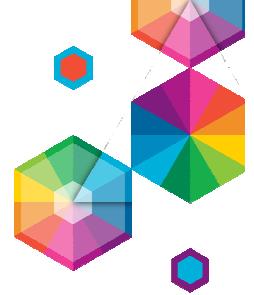
- **Integration Developer**

- Develops message flows, message models etc.
- Unit Tests on local machine
- Creates archive (BAR) files containing required artefacts

- **Administrator**

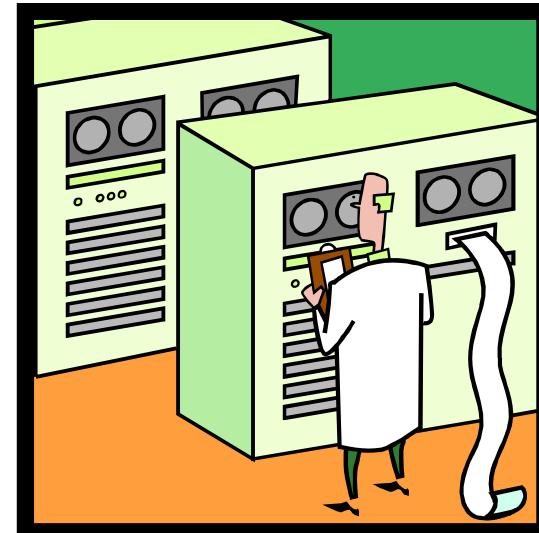
- Customizes BAR for target environment (message flow properties including queues, database names etc.)
- Deploys BAR to target environment
- Management and operational control

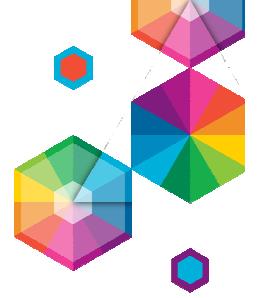




Common Administrative Tasks

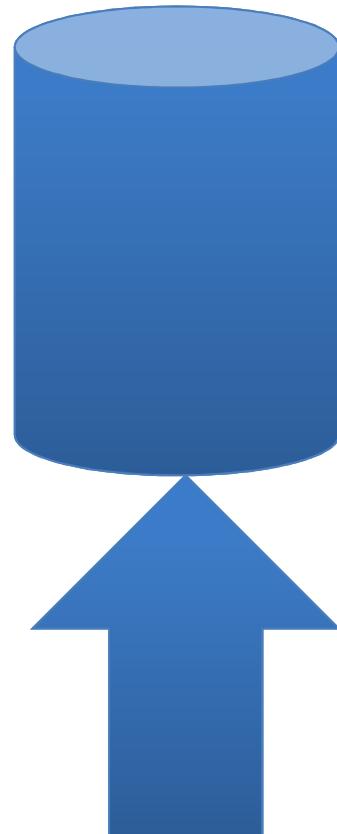
- **Planning and configuration**
 - Bringing a new integration node online
 - Making an integration node highly available
 - Planning for disaster recovery
 - Securing an integration node
- **Managing integration nodes**
 - Deployment and redeployment
 - Understanding behaviour
 - Optimizing and tuning
 - Migration
 - Maintenance

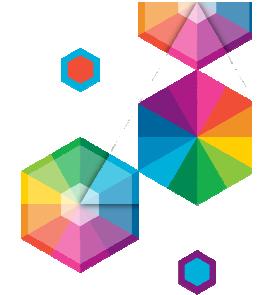




Bringing a new integration node online

- **Typical steps required**
 - Preconfiguration (e.g. OS, userids)
 - Installation (IIB, additional software)
 - Creating the integration node
 - Creating integration servers
 - Creating Configurable Services
 - Deploying BAR files
 - Additional configuration (e.g. security, userids)
- **And don't forget:**
 - Documentation
 - Scripting
 - Virtualization



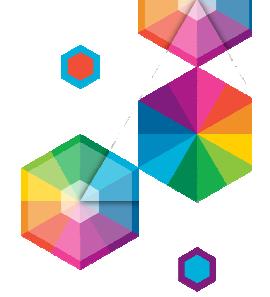


Scripting and Automation

- Four general approaches for IIB provisioning
 - Creating and configuring brokers manually
 - Use of commandline tools from within scripts (e.g. shell scripts, Jenkins, Ant, Maven...)
 - Hypervisor images for deployment directly on public or private cloud
 - Use of technologies such as Chef and Puppet for all environments (cloud, non-cloud)
- Choose an approach that enables your environment to be reproduced easily 

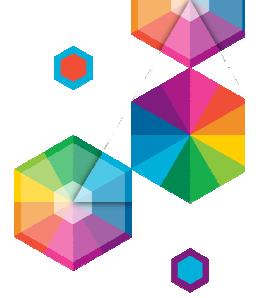
```
<project>
  <target name="deploy">
    <cvs command="checkout" ... />
    <mqsipackagebar ... />
    <mqiapplybaroverride ... />
    <mqsideploy ... />
  </target>
</project>
```





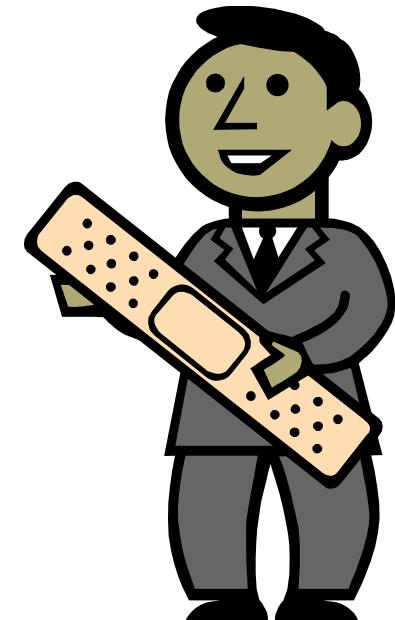
Making the integration node highly available

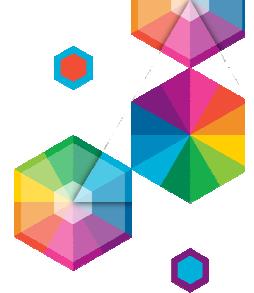
- **How do I ensure that the integration node is continually processing messages?**
 - Active/Active vs. Active/Passive
 - Agree SLAs with the business (% uptime)
- **The integration node includes restart recovery of integration servers**
 - But this is usually not sufficient on its own
 - Does not cover machine restart
- **Two main options**
 - Third-party solutions (e.g. VCS/HACMP/MSCS)
 - Multi-instance queue managers and integration nodes
- **Distributed Cache**
 - Built in cache support in 8.0.0.1 and later.
 - Enables HA scenarios



Planning for disaster recovery

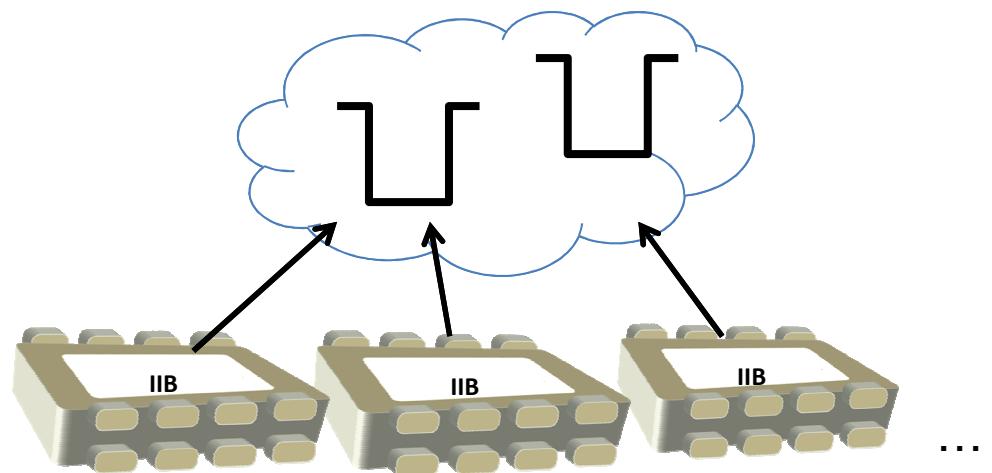
- **What would you do if your primary IIB location goes down?**
- **Distribute IIB to multiple sites if possible**
 - This introduces data replication and latency concerns
- **Keep DR concerns separate from HA!**
 - HA: Systems at a single site with a single configuration
 - DR: Systems at multiple sites with replicated configurations
 - An HA failover can be a planned activity
 - DR is unplanned.





Another approach to disaster recovery...

- Consider an architecture where no one service was taken for granted...
 - Treating all elements of a system, regardless of business utility, as 'disposable'
 - Forces you to design in a way that enforces resilience and scalability
 - Requires up-front effort, but takes many concerns off the table (e.g. backup)



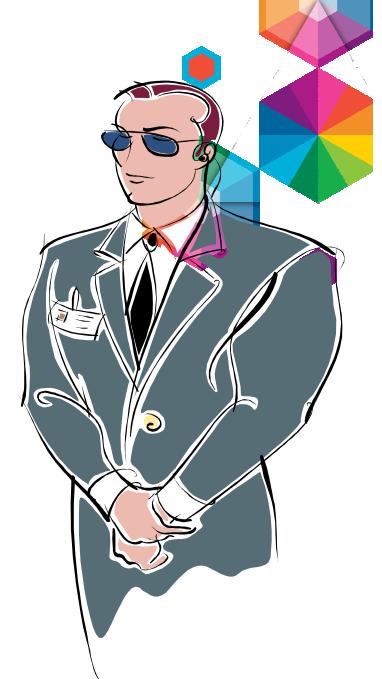
- IIB enables an architecture that removes single points of failure
 - Even easier with IIB V10 due to remote queue manager support

Cloud Integration

- **The idea of disposability is facilitated by cloud...**
 - Treating computing resources like utilities such as gas, electricity
 - Pay for only what you use
- **IIB has a range of IaaS cloud options**
 - Private Cloud
 - IBM Integration Bus Hypervisor Edition
 - IBM Workload Deployer
 - Pure Application Systems Pattern
 - Chef scripting
 - Public Cloud
 - Support for public cloud providers, e.g. Softlayer
 - Chef scripting
 - Future plans around Cloud
 - See statement of direction for IIB Cloud
- **Consider virtualization for new environments**
 - Makes it easy to provision systems (and restore known state!)
 - Understand maintenance and performance aspects



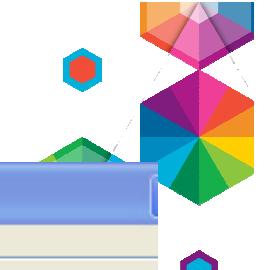
Securing WMB and IIB



- **Simplified administrative security**
- **3 levels of authorisation for administrative actions**
 - Reading (e.g. View integration node properties - mqsilist)
 - Writing (e.g. Change integration node properties - mqsicreateexecutiongroup)
 - Executing (i.e. starting and stopping)
 - See IIB Knowledge Center topic bp43540 for more details
- **On two object types:**
 - “Integration node” and “Integration servers”
- **Administrative Security is not enabled by default**
 - Enable through mqsicreatebroker / mqsicreatechangebroker
- **Access controlled using MQ queues on the integration node’s queue manager**
 - Give authority to users or groups
- “FileAuth” addition in V10

Security Queues

SYSTEM.BROKER.AUTH
SYSTEM.BROKER.AUTH.<egname>



MB7QMGR - SYSTEM.BROKER.AUTH - Manage Authority Records

Specific Profiles
SYSTEM.BROKER.AUTH
Generic Profiles

Groups Users

Name	Browse	Change	Clear	Delete	Display	Get	Inquire	Put	Set	S
Matt@LUCAS	✓	✓	✓	✓	✓	✓	✓	✓	✓	
LUCAS							✓	✓	✓	

New Authorities

Entity type: User
Entity name: MyBrokerUser
Object type: Queue
Profile name: SYSTEM.BROKER.AUTH
Queue manager name: MB7QMGR

Authorities

Administration

Change
 Clear
 Delete
 Display

Context

Pass all context
 Pass identity context
 Set all context
 Set identity context

MQI

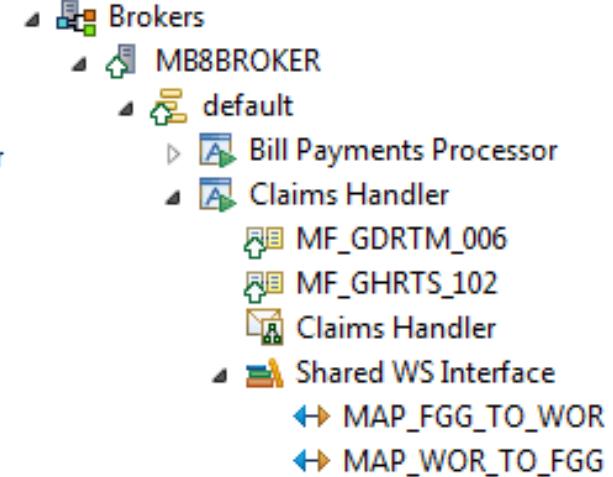
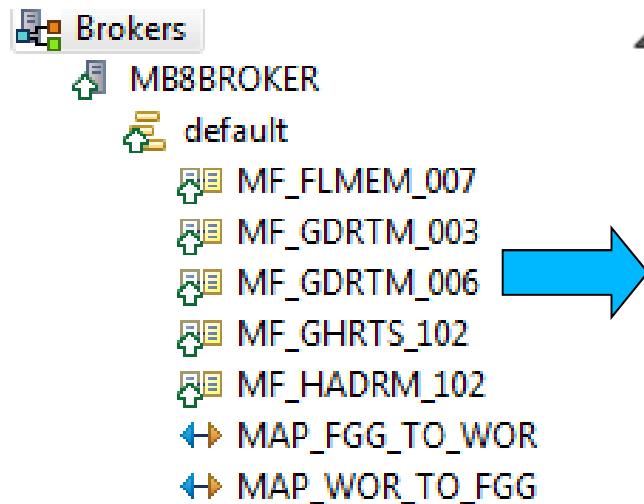
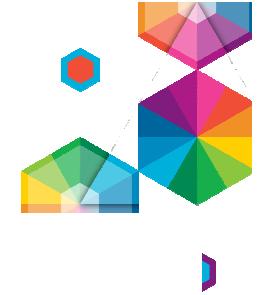
Browse
 Get
 Inquire
 Put
 Set

Select all Deselect all

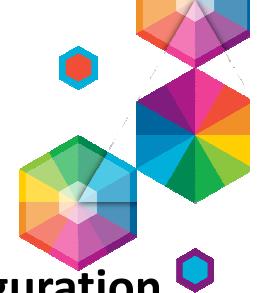
OK Cancel

+inq = Read
+put = Write
+set = Execute

Managing what's deployed

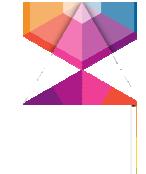


- **It can be difficult to understand what individual deployed resources are used for**
- **Applications and libraries can allow you to understand why each file is there**
 - Application: Encapsulates a single use case or scenario
 - Library: Promotes re-use of a shared set of files
 - Libraries are statically bound to the application (V8, V9, V10 OB) or shared (V10 only)
- **Concepts are shared between developers and administrators**
 - The developer chooses to create an application or library; the collection is then carried all the way through to the runtime



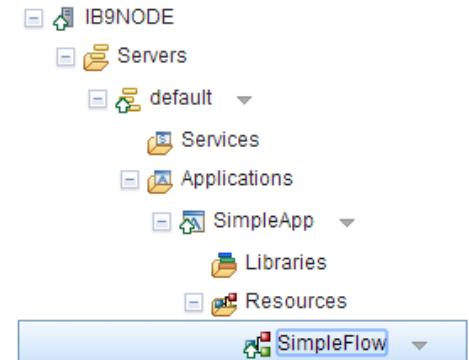
Backing Up

- Consider using *mq\$ibackupbroker* to backup the integration node's configuration
 - Ideally, after all configuration changes
 - Best run when stopped
 - But can be used whilst active as long as not undergoing configuration changes
- Also consider any other required resources, for example:
 - Database tables
 - Source artefacts (message flows, BAR files)
- Ensure regular restore testing
 - Prove your process works
- Pattern to reconstitute message flows from a running integration node
 - Available on MQSeries.net



Understanding integration node behaviour

- The tools include a lot of information that is useful to the administrator
 - Administration queue and log, Message flow and resource statistics
 - Warnings when features that affect performance are enabled



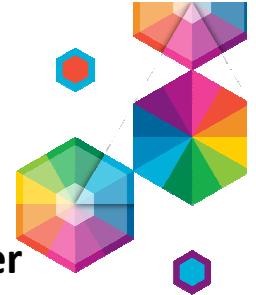
The screenshot shows the Admin Log interface. The title bar says "Admin Log". Below it is a toolbar with a magnifying glass icon and the word "Overview". On the right side is a "Refresh" button. The main area has a table with columns: "Message", "Source", "Timestamp", and "Message Detail". A single row is visible:

Message	Source	Timestamp	Message Detail
BIP2881I	Change Notification	2014-04-24 09:51:11.528	The resource 'SimpleApp' of type 'Application' was created on object 'default' of type 'ExecutionGroup' with parent '

PagerExecutionGroup Resources Statistics (Snapshot time 16:13:31 - 16:13:51)																	
CICS	CORBA	FTEAgent	FTP	File	JDBCConnectionPools	JVM	ODBC	parsers	SOAPInput	Security	Sockets	TCPIPClientNodes	TCPIPServerNodes				
name		Threads		ApproxMemKB		MaxReadKB		MaxWrittenKB		Fields		Reads		FailedReads		Writes	
		summary	1		111.78		0.54		0.43		93		24		0		16
		TextMessenger.MQMD	1		15.97		0.36		0.43		2		8		0		4
		TextMessenger.MQROOT	1		55.89		0.54		0.00		25		4		0		4

- Use this information to understand recent configuration changes
 - How the integration server is performing, connected endpoints, etc.

Understanding integration node behaviour

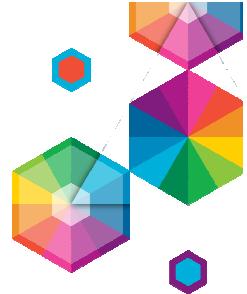


- The Activity Log shows you all recent activity on a message flow or resource manager
 - For example, “Show me all recent JMS activity”
- Visible in Integration Explorer and/or written to a file
- Customisable rotation rules (based on age or size) and content

The screenshot shows the IBM Integration Bus (IB9NODE) Integration Explorer interface. On the left, the tree view shows nodes like BROKER1, IB9NODE, and SimpleApp. In the center, a context menu is open over the SimpleFlow node under SimpleApp, listing options: Start, Stop, Refresh, Open Activity Log, Statistics, User Trace, Trace Nodes, Service Trace, Properties..., and Delete. To the right, a detailed Activity Log window is displayed for the SimpleFlow node. The log table has columns for Message, Timestamp, RM, MSGFLOW, and Message Summary. It lists 26 entries from April 25, 2013, at 21:03:05 BST to 21:15:20 BST, all categorized under SimpleFlow, showing various transactional events related to MQ Input.

Messa...	Timestamp	RM	MSGFLOW	Message Summary
i BIP115...	25-Apr-2013 21:03:05.000 BST		SimpleFlow	Waiting for data from input node 'MQ Input'.
i BIP115...	25-Apr-2013 21:15:17.000 BST		SimpleFlow	Received data from input node 'MQ Input'.
i BIP115...	25-Apr-2013 21:15:17.000 BST		SimpleFlow	Committed a local transaction.
i BIP115...	25-Apr-2013 21:15:19.000 BST		SimpleFlow	Received data from input node 'MQ Input'.
i BIP115...	25-Apr-2013 21:15:19.000 BST		SimpleFlow	Committed a local transaction.
i BIP115...	25-Apr-2013 21:15:20.000 BST		SimpleFlow	Received data from input node 'MQ Input'.
i BIP115...	25-Apr-2013 21:15:20.000 BST		SimpleFlow	Committed a local transaction.

Optimizing and tuning



- The tools allow you to modify the configuration operationally
- These tweaks more efficient to make than modifying message flows
- Encourage developers to create message flows that enable operational tweaks to be made
 - User-defined properties, Configurable Services, User-defined configurable services, Policies

File Input Node Properties - File Input

Remote Transfer

Transfer protocol **FTP**

Server and port **MY_FTP_CONFIGURABLE_SERVICE**
e.g. `ftp.server.com:21` (if port not specified 21 is assumed for FTP, 22 for SFTP)

Configurable Service

Configurable Service
Create a new Configurable Service and set its attributes

*Name **MY_FTP_CONFIGURABLE_SERVICE**

*Type **FtpServer**

Template **None**

Key	Value
serverName	ftp.example.com

Policies

Overview

WorkloadManagement

Values that you do not define on this page are inherited from the message flow, if they are present.

Policy Name **BatchWorkloads**

▼ Targets and Limits

Notification Threshold **100** messages

Maximum Rate **300** messages

▼ Additional Instances

MQ Output Node Properties - MQ Output

Description

Basic

MQ Connection

Advanced

Request

Validation

Policy

Monitoring

Use a policy to control the operational behavior of the node at run time. Select from the options below to use a policy with this node. By default, the properties defined on the node in the Integration Studio are used to determine the deployment settings at run time.

[More...](#)

[View the runtime properties](#) [Generate new policy](#)

Use properties on the node
 Override node properties with a policy

Policy URL [Browse](#) [Edit](#)

Controlling Integrations with Policy

▪ Integration Workload Management

- Provide intelligent mechanisms to control processing speed
- Most common scenario is to reduce back-end server load
- Design allows more policy-based processing over time
- Can be applied to new or existing integration data flows

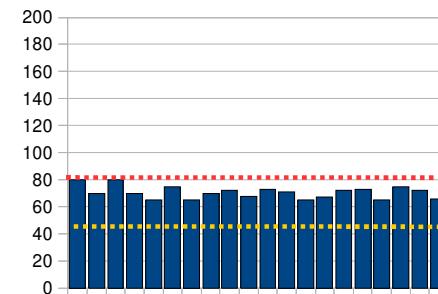
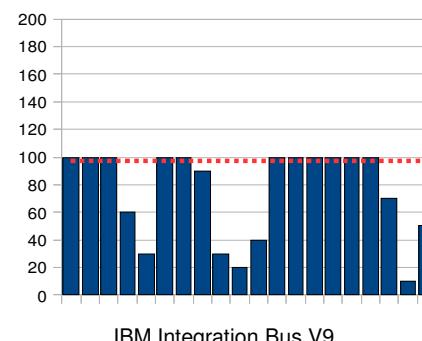
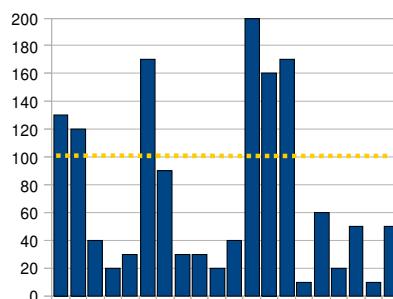
▪ Policy defines threshold limits and relevant actions

- Set thresholds for integration data flow throughput
- Specify actions at threshold, for example:
 - NOTIFY: Higher (or lower) than threshold generates publication
 - DELAY: Excessive workload will have latency added to shape throughput

▪ Web Console used to manage WLM policy

- Sophisticated behaviour controllable by broker WLM policy
- Workload can be managed across classes of message flows (e.g. batch vs. online)
- Policies stored in local registry, and dynamically configurable
- Developer can also specify limits as integration data flow properties

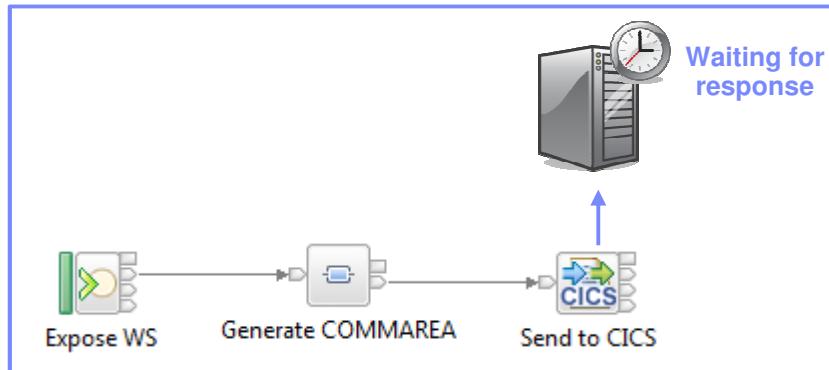
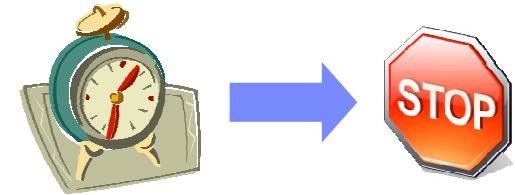
The screenshot shows the 'Policies' section of the IBM Integration Bus web console. Under 'WorkloadManagement', there is a note: 'Values that you do not define on this page are inherited from the message flow, if they are present'. A 'Policy Name' field is set to 'BatchWorkloads'. Under the 'Targets and Limits' section, 'Notification Threshold' is set to 100 messages and 'Maximum Rate' is set to 300 messages per second. In the 'Additional Instances' section, 'Additional Instances' is set to 1, and 'Start additional instances when flow starts' is set to 'Yes'.



Managing Unresponsive Integration Flows



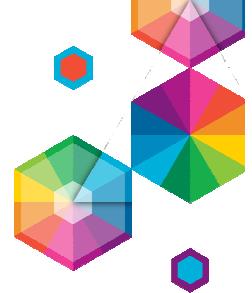
- Target unresponsive flows through policy to improve overall system reliability
 - Additional WLM option aimed at unresponsive integration flows
 - An integration flow can become unresponsive for multiple reasons
 - e.g. Waiting for external system, infinite loop, deadlock, malformed XML



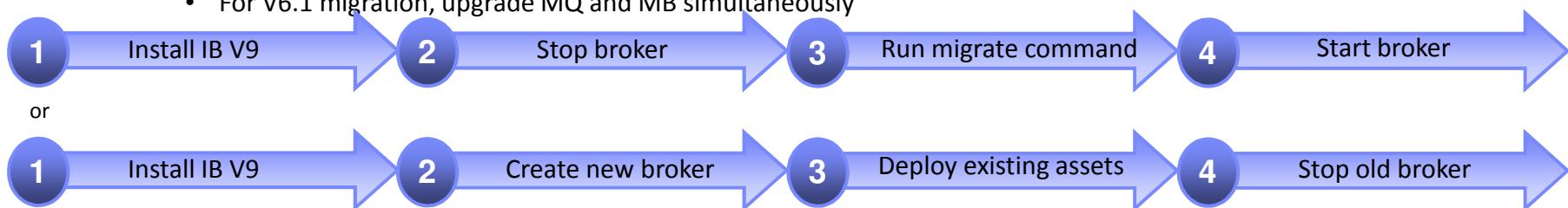
Processing timeout action	Restart execution group
Processing timeout	30

- Flexible configuration, actions and reporting options
 - Specify threshold at which flows are considered unresponsive, e.g. 30 seconds for processing
 - Configured via WLM policy, or directly on the flow in the BAR file
 - Define action to trigger when flow considered unresponsive
 - Administrative notification through a new “timeout exceeded” event message
 - If flow eventually continues through to completion, a second event is published
 - Restart the integration server (execution group) on which the unresponsive flow is running
 - New command option to forcibly stop integrations manually: `mqsistopmsgflow -f`

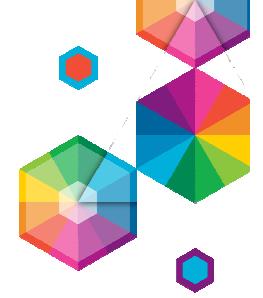
Version-to-Version Migration



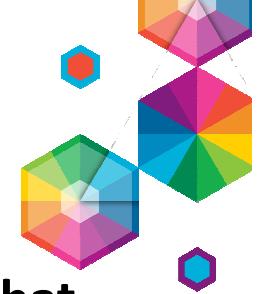
-
- **Migration to IIB V9 from WMB V6.1, V7 and V8**
 - **Migration to IIB V10 from WMB V7, V8 and V9**
 - All development assets (e.g. message flows, ESQL, DFDL, Java, Maps and XSLT) import directly
 - Right-click convert action for pre-V8 maps; some manual tasks may be required
 - Migrate brokers using a single command, or create new integration nodes for phased migration
 - No redeployment necessary when using built-in migrate command
 - All existing BAR files can be deployed to IB V9 integration nodes without change
 - **Migration commands for in-place migration**
 - Includes migration of configuration data including databases, queues and registry
 - Forwards and backwards migration of existing components, in situ
 - `mqsimigratecomponents` command (includes `-t` option for rollback to V7 and V8)
 - **Flexible co-existence options remove the need for additional hardware when migrating**



Maintenance



- **Schedule regular maintenance windows**
 - IBM recommends that you are on the latest maintenance level
 - Plan exactly what will be applied and when
 - A highly available environment ensures that there is no downtime



Summary

- We have discussed a number of different ways that help ensure that administration is trouble-free
- My Top Tips
 - Always ensure your environment is reproducible
 - Treat DR and HA separate
 - Ensure regular backups
 - Encourage developers to create message flows that enables operational tweaks to be made
 - Schedule regular maintenance windows

Questions?



InterConnect 2015

The Premier Cloud & Mobile Conference

#ibminterconnect





Notices and Disclaimers

Copyright © 2015 by International Business Machines Corporation (IBM). No part of this document may be reproduced or transmitted in any form without written permission from IBM.

U.S. Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.

Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IN NO EVENT SHALL IBM BE LIABLE FOR ANY DAMAGE ARISING FROM THE USE OF THIS INFORMATION, INCLUDING BUT NOT LIMITED TO, LOSS OF DATA, BUSINESS INTERRUPTION, LOSS OF PROFIT OR LOSS OF OPPORTUNITY. IBM products and services are warranted according to the terms and conditions of the agreements under which they are provided.

Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.

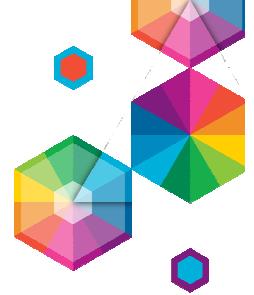
Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.

Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.

It is the customer's responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer is in compliance with any law.

Notices and Disclaimers (con't)



Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. IBM EXPRESSLY DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.

- IBM, the IBM logo, ibm.com, Bluemix, Blueworks Live, CICS, Clearcase, DOORS®, Enterprise Document Management System™, Global Business Services ®, Global Technology Services ®, Information on Demand, ILOG, Maximo®, MQIntegrator®, MQSeries®, Netcool®, OMEGAMON, OpenPower, PureAnalytics™, PureApplication®, pureCluster™, PureCoverage®, PureData®, PureExperience®, PureFlex®, pureQuery®, pureScale®, PureSystems®, QRadar®, Rational®, Rhapsody®, SoDA, SPSS, StoredIQ, Tivoli®, Trusteer®, urban{code}®, Watson, WebSphere®, Worklight®, X-Force® and System z® Z/OS, are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml.

#ibminterconnect

Thank You

Your Feedback is
Important!

Session #1487

Access the InterConnect 2015 Conference CONNECT Attendee Portal to complete your session surveys from your smartphone, laptop or conference kiosk.



InterConnect 2015

The Premier Cloud & Mobile Conference

