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## What's New in IBM Integration Bus and IIB on Cloud

Rob Convery     *IBM UK*  
[convery@uk.ibm.com](mailto:convery@uk.ibm.com)



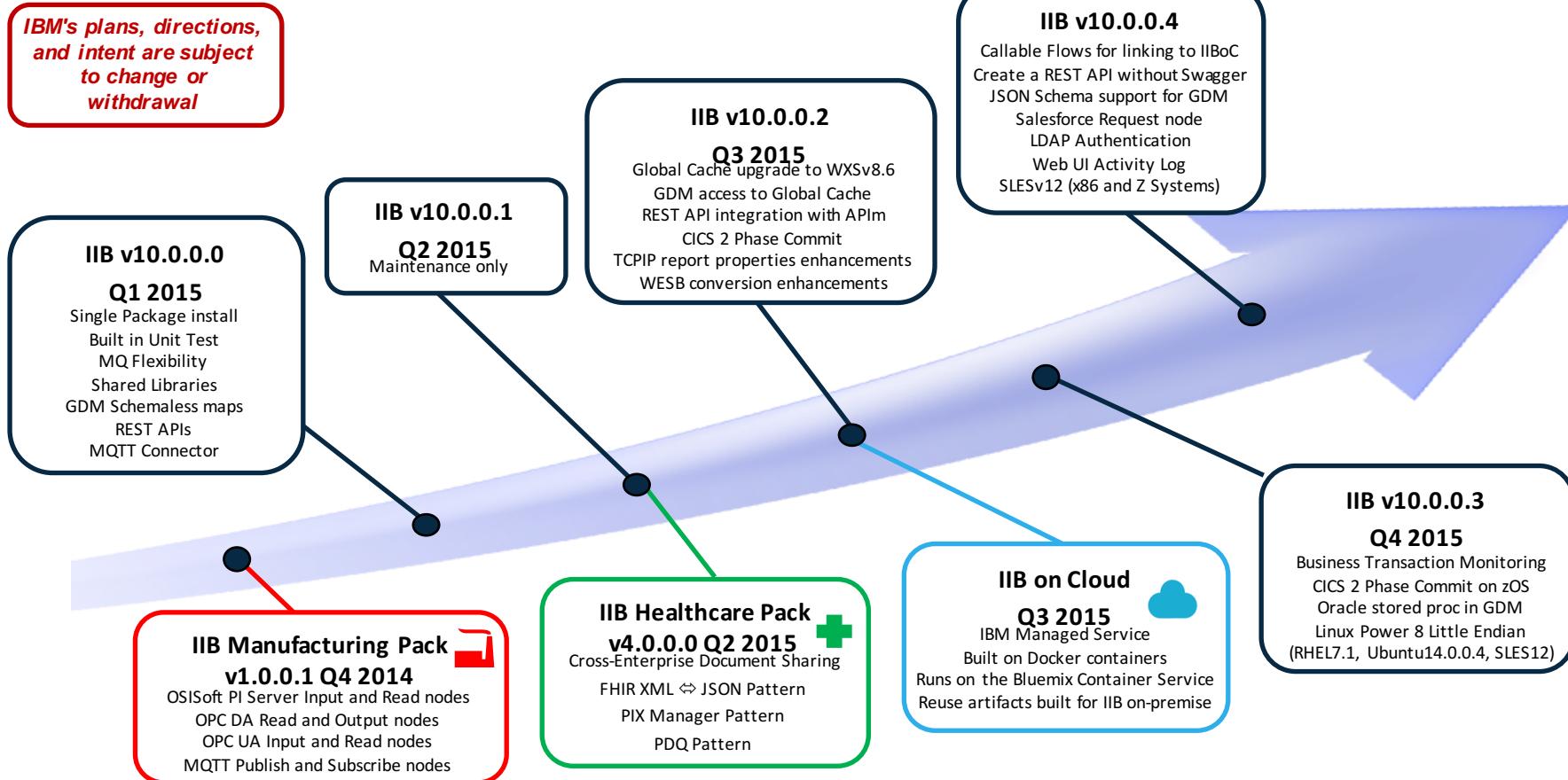
Session 18846  
Monday 29<sup>th</sup> February 2016

#SHAREorg  
   

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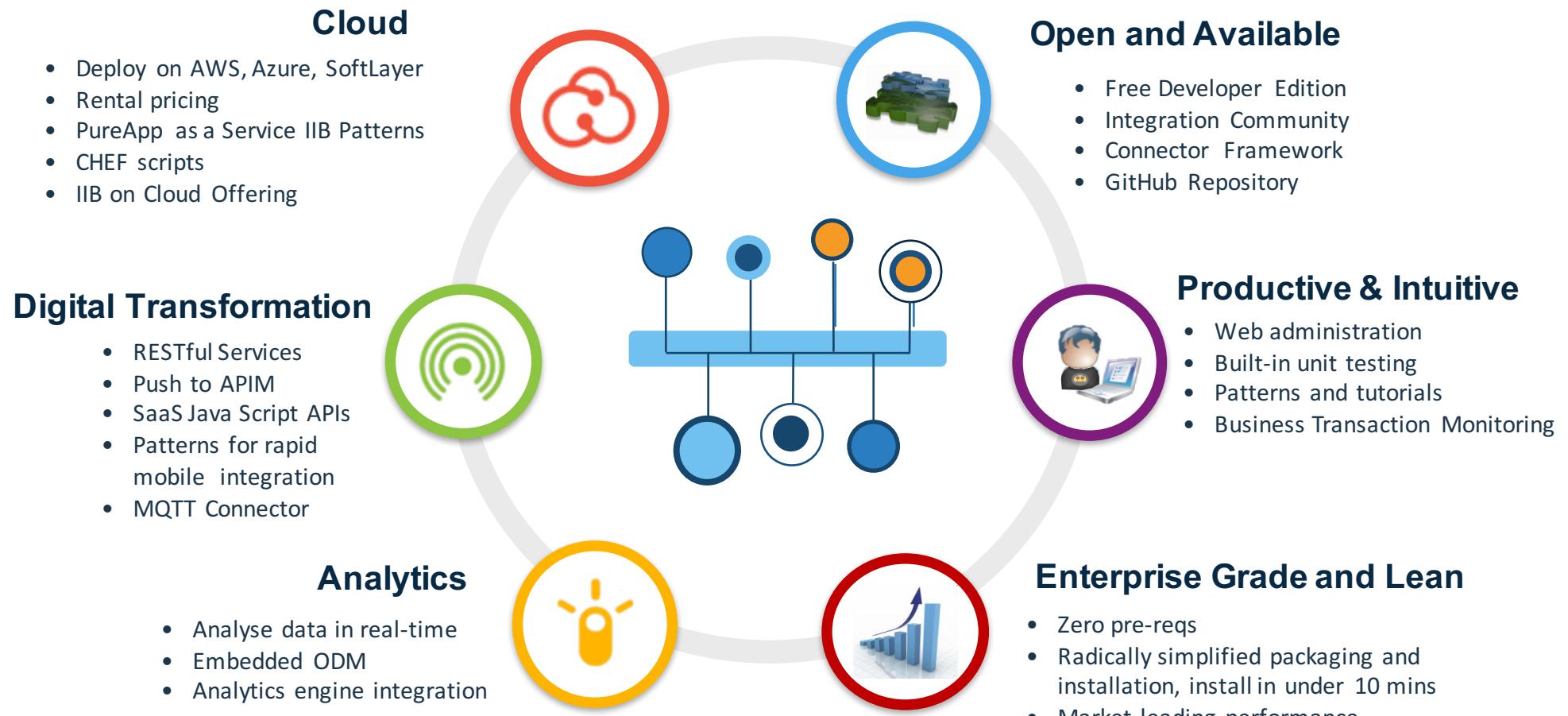
# Roadmap



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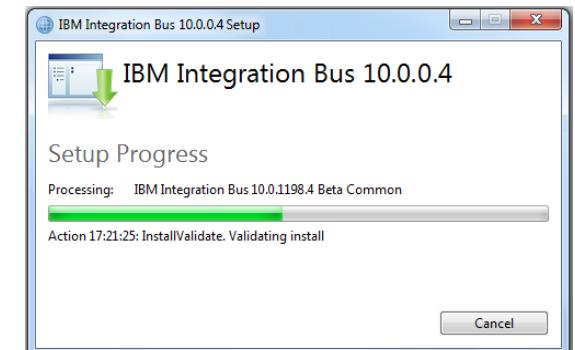
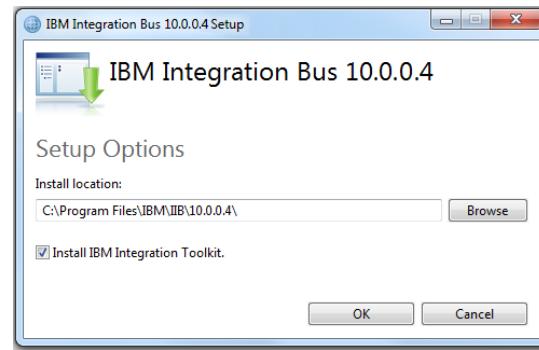
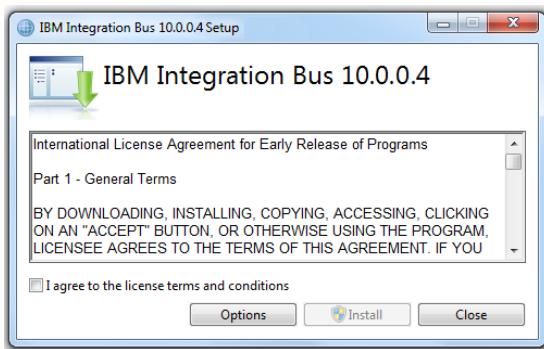
# IBM Integration Bus



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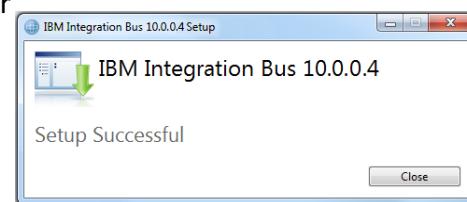
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# IIBv10 – Install Simply, Quickly & Get Productive!



## ▪ Radically Simplified Packaging and Installation

- Full function, simple, single package install
- Developer Operating Systems contain Toolkit and Server
  - Total size approx. 1.3 GB
- Server Operating Systems contain only server



## ▪ Other changes

- Full entitlement to MQ remains
- MQ no longer packaged
  - Default queue manager for IB node for backwards compatibility

## ▪ Built-in Unit Test Environment

- Developer tools have built-in unit test server
  - Fixed name of TESTNODE\_<userid>
- Started and stopped with tools
- Can still test / deploy to manually created local and remote servers

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Name	Date modified	Type
common	19/02/2016 17:21	File folder
license	19/02/2016 17:21	File folder
properties	19/02/2016 17:21	File folder
readmes	19/02/2016 17:21	File folder
server	19/02/2016 17:22	File folder
tools	19/02/2016 17:24	File folder
iib.cmd	18/12/2015 18:34	Windows ...

# Platforms and Operating Environments

- **Broad range of operating system and hardware platforms supported**
  - AIX, Windows, z/OS, HP-UX, Linux on xSeries, pSeries, zSeries, Solaris (x86-64 & SPARC), Ubuntu
  - Optimized 64-bit support on all platforms, developer OS and server OS
    - 32 bit Windows and 32 bit Linux no longer supported
  - Express, Standard, Advanced and Application Integration Suite editions
- **Virtual images for efficient utilization & simple provisioning**
  - Extensive support for virtualized environments, e.g. VMWare, AIX Hypervisor... any!
  - Pre-built images (Hypervisor editions) available on xLinux and AIX
  - Support for public and private clouds: Softlayer, Pure, non-IBM, RYO etc.
  - Chef scripts for automated building of flexible IIB images (see Github)
- **Technology components and pre-requisites**
  - Java 7.1 SR2 on all platforms
  - MQ is no longer required (depending on use case – see later slide)
  - MQ is still fully supported
  - MQ 7.1, MQ 7.5, MQv8
- **Includes access to full range of industry standard databases and ERP systems**
  - DB2, Oracle, Sybase, SQL Server, Informix, solidDB
  - Open Driver Manager support enables new ODBC databases to be accessed
  - JDBCType 4 for popular databases
  - SAP, Siebel, Peoplesoft, JDEdwards at no additional cost

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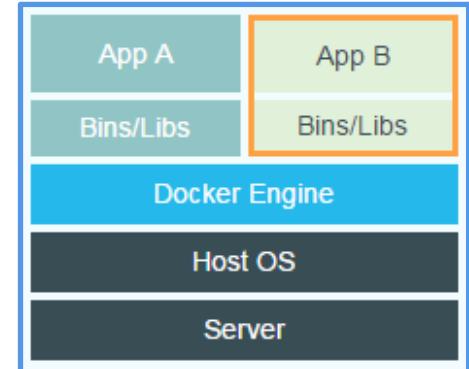
The Github Octocat logo advertises that IIB has built-in integration with code stored on Github repositories but does not imply Github endorsement whatsoever: <https://github.com/logos>



# IBM Integration Bus and Docker!

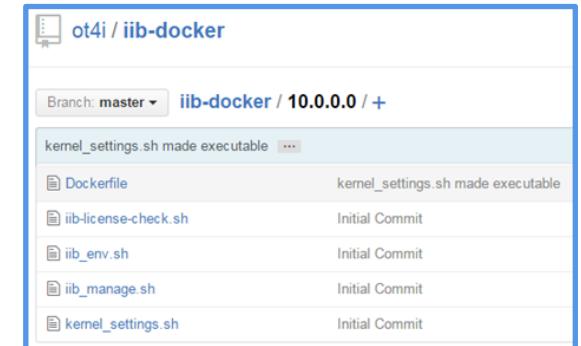
## ▪ Creating IIB Docker images

- Developer edition binaries are automatically linked from Github dockerfile)
- Docker containers securely isolate applications on a single host
- No need for an entire Hypervisor / Virtual Machine for each container
- Run many containers simultaneously and quickly scale
- Launch when needed and then shut down when not!
- Docker containers spawned from one image offer great consistency for solving problems at scale



## ▪ Running IIB in a Docker container

- Run iib commands against the running broker, eg use "docker exec bash -c mqsilist" with mqsiprofile set on login (or via ssh)
- Retain a means of syslog message capture
- Retain access to workpath directories for diagnostic purposes.
- Use docker volumes for persistent data independent of container lifecycle

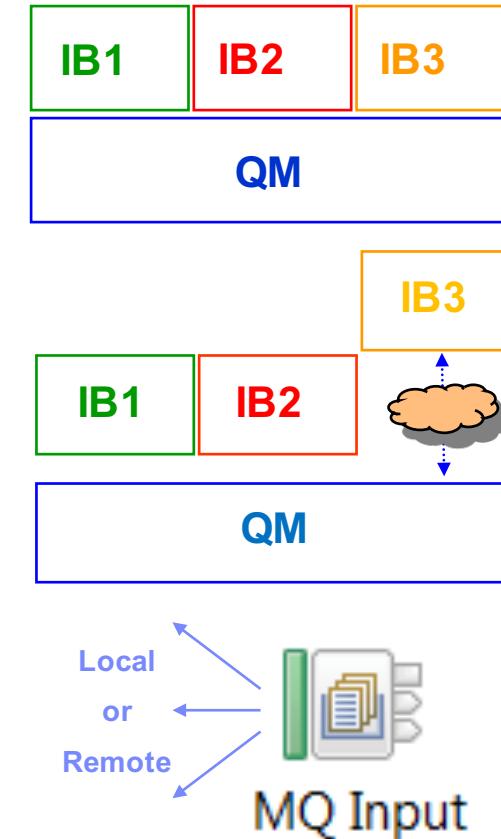


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# Flexible MQ Topologies

- **Provide more flexible topology options for MQ access**
  - Many benefits include simplicity, scalability, availability & migration
  - Relationship evolves to the same as other resource managers—i.e. optional
  - Multiple Buses connected to a single Queue Manager
  - Corresponding updates for commands, CMP & Admin tools
- **Automated installation simplified**
  - MQ resources will not be installed at the same time
  - Reduces dependency management
  - Simplifies cloud-based installs
  - If MQ is installed, then IIB will detect this and configure appropriately
- **IIB now supports Local and Remote queue managers**
  - Allows IIB to be remote from its queue manager
  - Works with single MQ IB support to further simplify MQ topology
  - Many other internal features within IIB can exploit this flexibility
- **Many MQ Node related Enhancements**
  - Input node to support both local & remote queue managers
    - Includes easy-change policy based control of sources
    - Also applies to MQGet and MQOutput/MQReply nodes
- **When a queue manager is not available...**
  - Connection management and retry

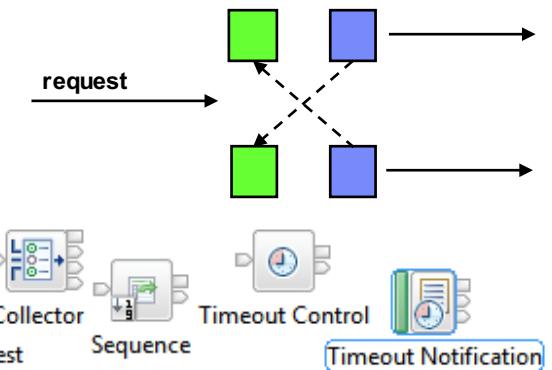
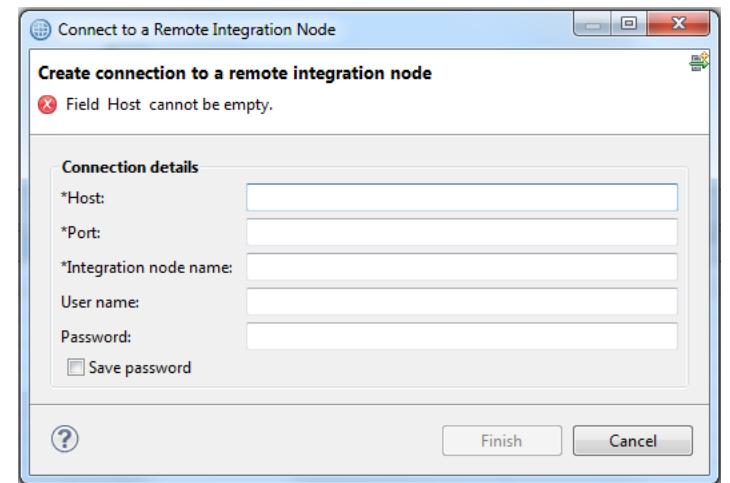


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# MQ – Other important considerations

- **Administration and Security**
  - IIBv9 relies on access Control Lists held as permissions on MQ queue objects
  - IIBv10 will offer a file-based equivalent out of the box
  - mqsichangeauthmode command to select queue or file based
- **Publish Subscribe**
  - Alternative embedded MQTT based capability
  - Still publish to a default queue manager via MQ if provided
  - No extra install or moving parts required
  - Resource Statistics continue to work without MQ
- **IIB Integration API**
  - Admin interface changed to use Web Sockets, not MQ
  - New Java class for describing the connection
  - Web admin port provides single entry point, consolidated security model
- **High Availability**
  - An Integration Node can be controlled as an MQ Service
  - More Active/Active architectures now Node and Queue Manager link no longer required
- **Transactionality**
  - IIB can manage transactions, or use MQ to provide two-phase (XA) coordination
  - IIB managed transactions will continue to support all resource managers
  - Global 2PC provided by MQ (distributed) will continue to be supported.
  - Coordinating Queue Manager must be local, and designated as the only MQ resource
- **Some WebSphere MQ uses still remain**
  - Record & Replay
  - EDA nodes
  - Script provided to optionally create required MQ objects



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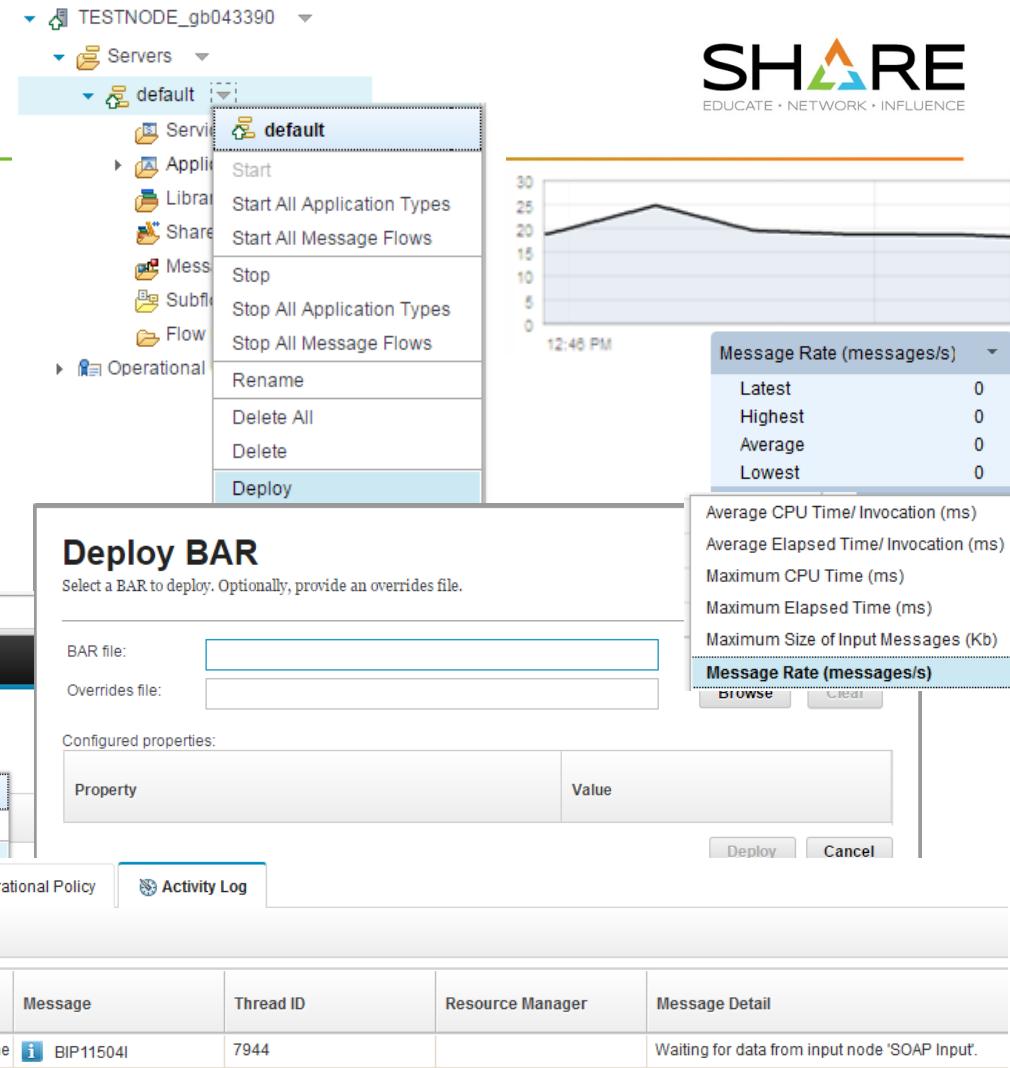
# Web UI Enhancements

- **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

The screenshot shows the 'IBM Integration' node administration interface. On the left, a sidebar lists 'Integration Nodes' and 'TESTNODE\_gb043390'. Under 'TESTNODE\_gb043390', there are options like 'New Integration Server', 'Stop', 'Refresh', 'Change', 'Delete', 'Start Web User Interface', and 'Open Policy Sets'. The main panel is titled 'Admin Log' and contains tabs for 'Overview', 'Statistics', 'Operational Policy', and 'Activity Log'. The 'Overview' tab is selected, showing a table with one row: Timestamp (2016-02-14 20:03:09.000 GMT Standard Time), Message (BIP11504I), Thread ID (7944), Resource Manager (empty), and Message Detail (Waiting for data from input node 'SOAP Input').

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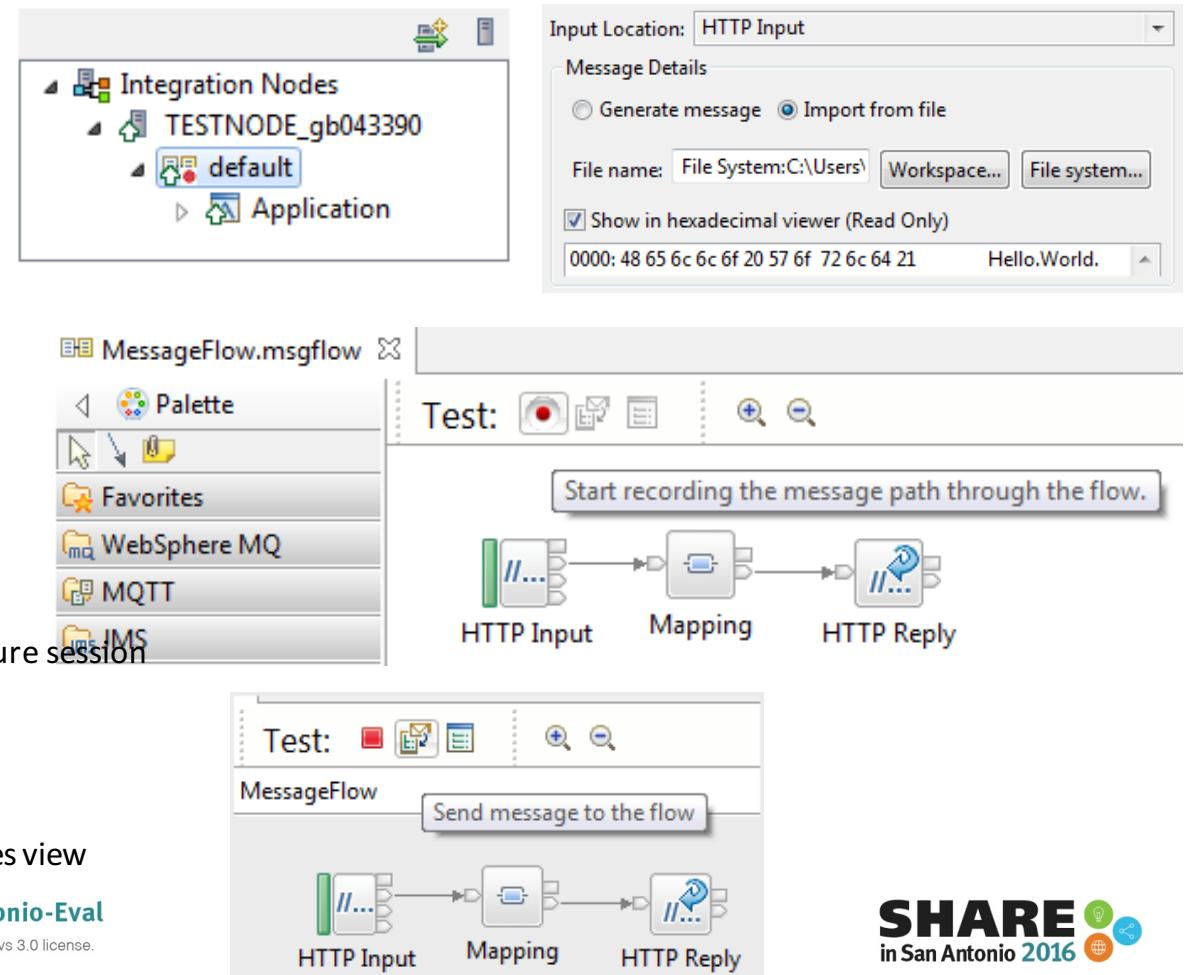


# Test Data Capture

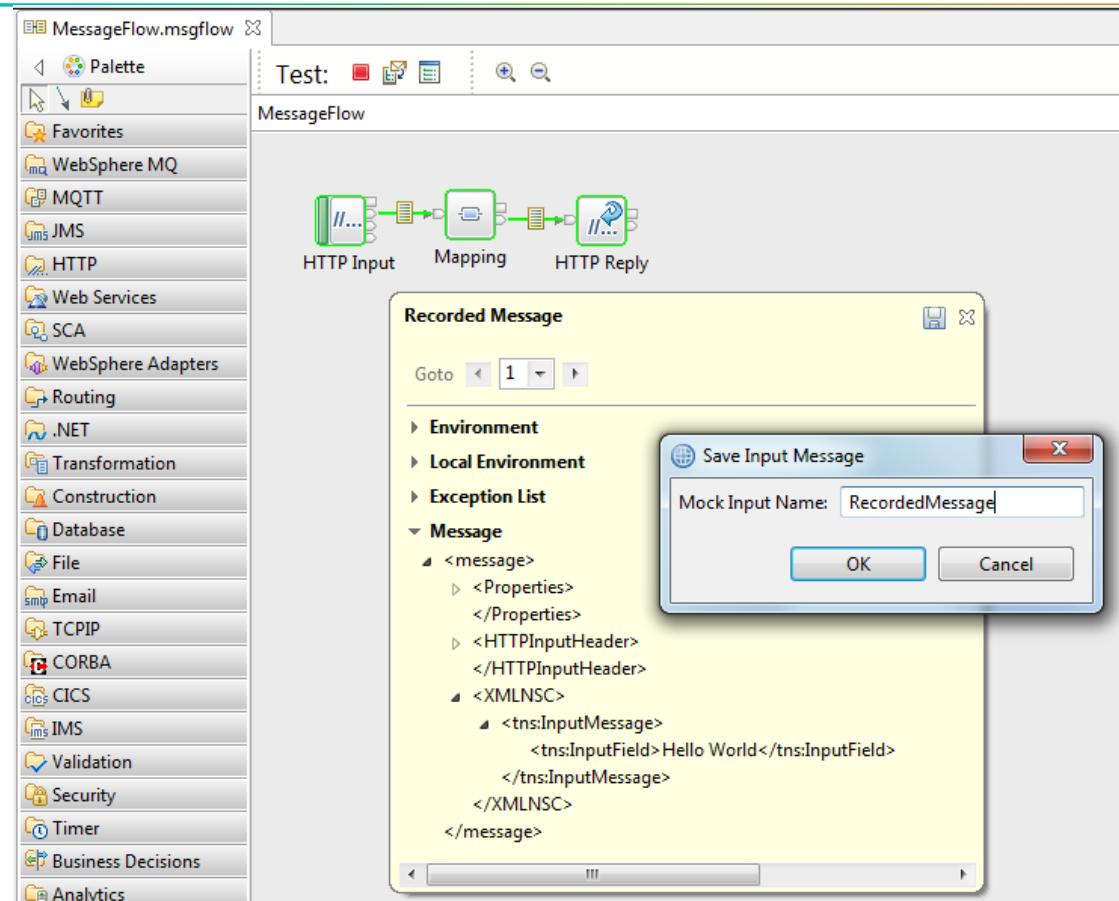
- **Improved Facilities for Unit Test and Regression Test**
  - Simple to understand
  - Fix and re-factor behaviour during development
  - Use to verify flow behaviours and migration
  - Continuous Integration with regression test
  - Invoke using Toolkit or via REST / JSON API
- **Client and direct injection options**
  - Import, view and edit test data
  - Inject messages over transports
  - Capture mock inputs for later replay
  - .ibtest client still supported but hidden
  - Build regression suites from test cases
- **Observe captured data paths**
  - Move back & forth (unlike real-time visual debuggers)
  - View all parts of the Message Assembly
  - Select from multiple injected messages in single data capture session
- **Exploits REST/JSON API**
  - Initial experience is developer toolkit
  - APIs are foundational for bulk operations
  - Tools Integration with Jenkins, Maven, Ant etc
  - View, start and stop data recording using Integration Nodes view

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# Test Data Capture



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# Shared Libraries

- Apps / Libs were major features introduced in V8 and V9

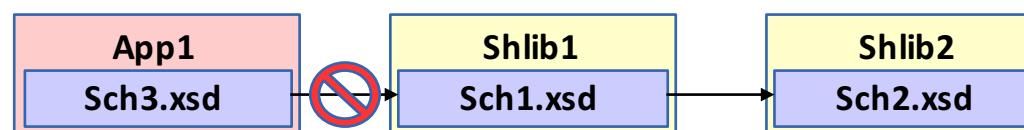
- Enhanced to fulfil most popular user requests
- Libraries can now be shared across multiple applications for a broad range of assets
- Sub-flows are now independent artefacts, significant storage reduction, consistency

- Shared Libraries

- Libraries can now be referenced by one or more applications
  - Libraries deployed independently of applications – “shared”!
  - Applications will not get “own copy”
  - Libraries can still reference other libraries
- Shared Library is the default library type
- Assets in multiple libraries within application are shared
  - Notably schemas, also Maps, ESQL, Java etc.

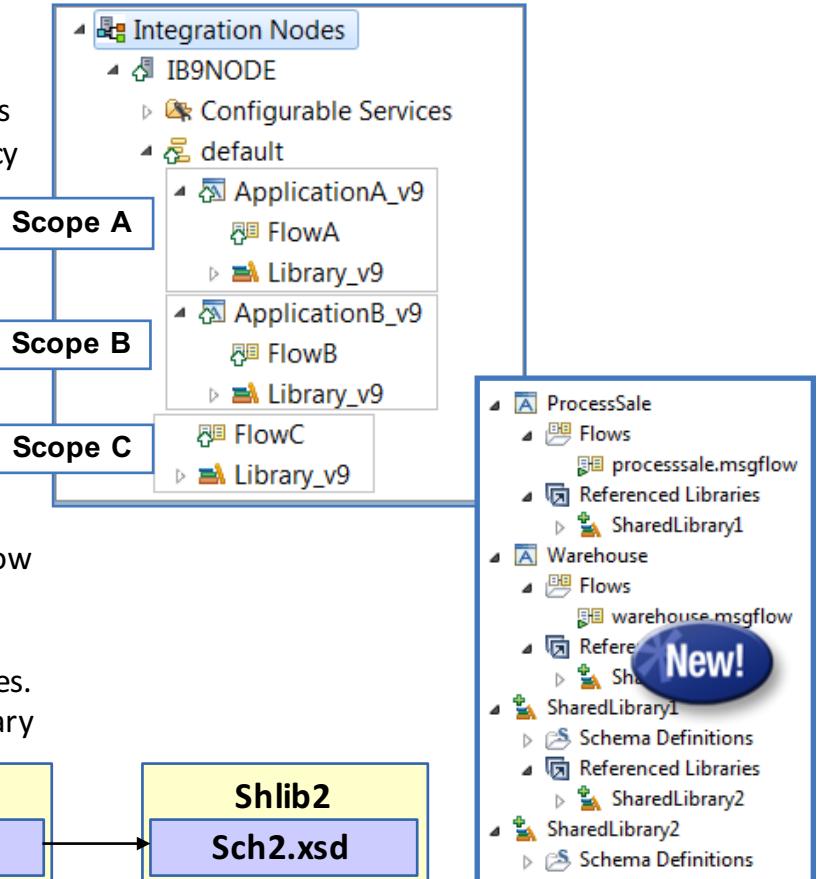
- Shared Library Restrictions

- Subflows but not message flows are allowed in shared libraries, other minor subflow restrictions
- Minor restrictions for ESQL (e.g. empty schema)
- Application hosted schemas cannot import or include schemas from shared libraries.
- Java classes in shared libraries are in separate classloaders (unless one shared library references another shared library)



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# IBM Integration Bus and Pure Application

## ▪ Pure Application Patterns for IIB

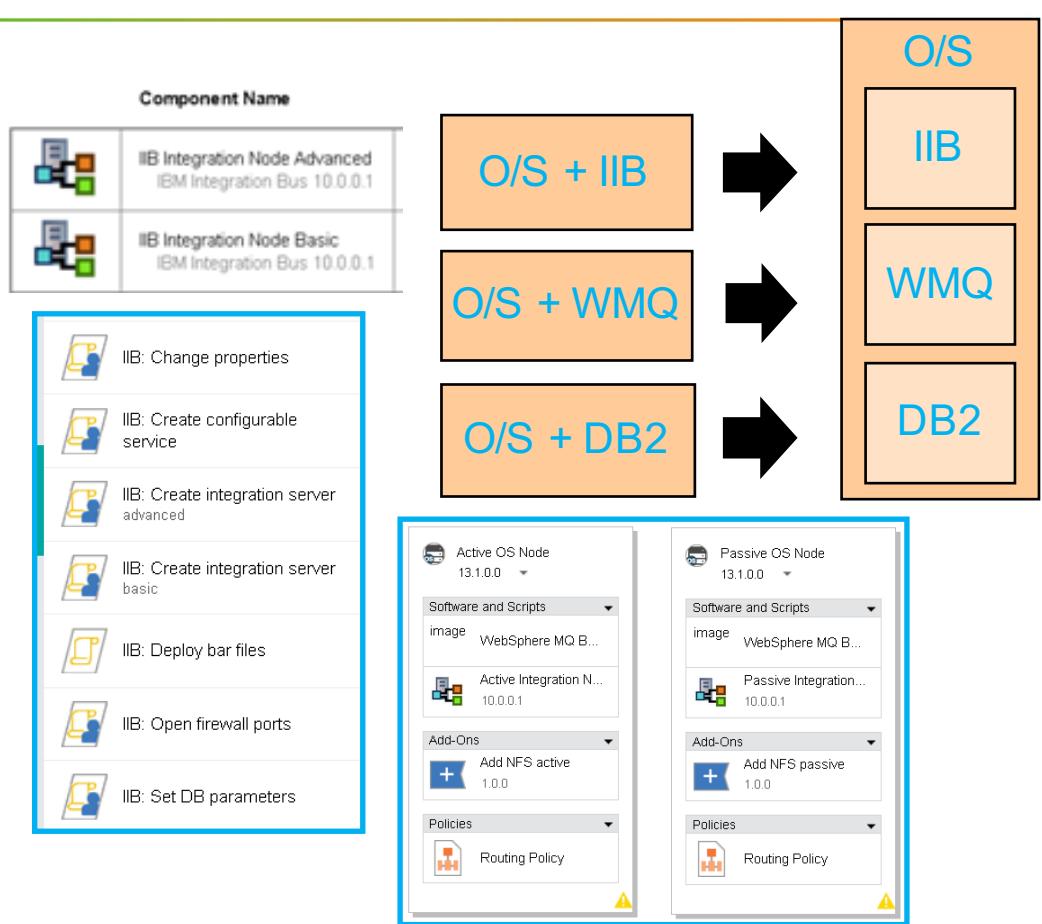
- Use with IBM PureApplication System
- Use with IBM PureApplication Service on SoftLayer
- Two PureApp “Components”: Basic and Advanced
- Two operating system / hardware combinations available:
  - Linux on x86-64
  - AIX on POWER

## ▪ IIBv10.0.0.x all provide PureApplication v2 System Patterns

- Allow you to combine software components *on one VM*
- One host O/S can include multiple software components
- Pattern engine handles dependencies, install ordering etc.
- IIB PureApp “software components” packaged as a “pattern type”
- Equivalent function to existing system pattern parts, but no need to carry O/S in each VM
- Same or enhanced supplied set of scripts and attributes
- IIBv10.0.0.2 System Pattern (includes HA support) available shortly after IIBv10.0.0.2 Generally Available

## ▪ Reminders about IIB and privately managed clouds

- WMBv8 and IIBv9 Hypervisor images available (RHEL and AIX)
- Chef (open source Opscode project) scripts and Urban Code Deploy plugin available for IIB
- OT4I Github project provides IIBv10 Docker file
- BYOSL in place for running IIB on Microsoft Azure or AWS

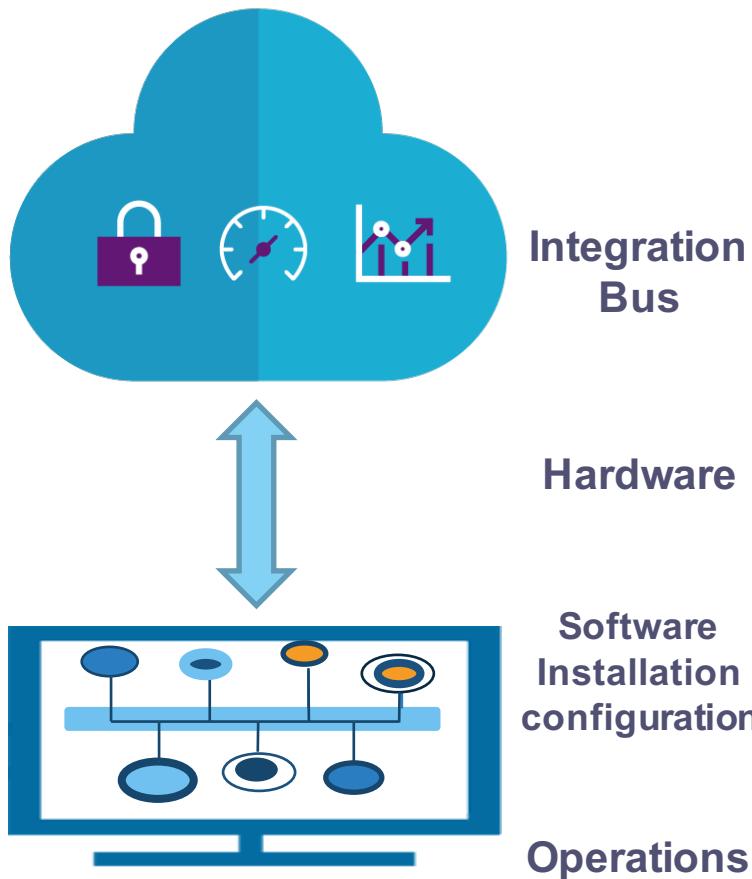


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# IIB On Cloud



	Integration Bus On-Premise	License Mobility to Cloud	PureApp Patterns	Integration Bus On Cloud
Integration Bus	IBM License + Support	IBM License + Support	IBM License + Support	IBM Service + Support*
Hardware	Client	Cloud Providers (SoftLayer, AWS, Microsoft Azure...)	Client (PureApp System) or IBM (PureApplication service on SoftLayer)	IBM (SoftLayer)
Software Installation configuration	Client	Client	Limited	IBM
Operations	Client	Client	Client	IBM (24/7 Operations)

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\*Support provided through online community-based forum for PAYGO clients

# IIB On Cloud nodes

- Compute
- Database
- DatabaseInput
- EmailInput
- EmailOutput
- Extract
- Filter
- FlowOrder
- HTTPAsyncRequest
- HTTPAsyncResponse
- HTTPHeader
- HTTPInput
- HTTPReply
- HttpServletRequest
- Input
- JavaCompute
- Mapping
- MQGet
- MQInput
- MQOutput
- MQReply
- Mapping
- Output
- Passthrough
- ResetContentDescriptor
- Route
- RouteToLabel
- SOAPAsyncRequest
- SOAPAsyncResponse
- SOAPIInput
- SOAPReply
- SOAPRequest
- Throw
- Trace
- TryCatch
- Validate
- XSLTransform



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# IIB On Cloud - Deployment



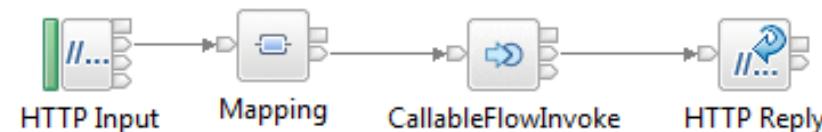
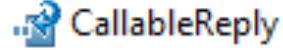
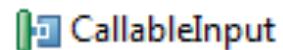
The screenshot shows a web browser window for the IBM Integration Bus on Cloud. The URL is <https://ibm-cloud-ui.ibmintegrationbus.ibmcloud.com/#/subscriptions/500829669/spaces/7d69bc92e73f763f695ccfc478685b1c/integrations>. The left sidebar shows 'IBM Integration Bus on Cloud' and 'default'. The main area shows 'CustomerDatabaseV1' which is 'Stopped'. It lists 'My first integration' and contains sections for 'Contents' (CustomerDatabaseV1.bar) and 'Public Endpoints'. Under 'Public Endpoints', it shows the host as <https://i8lt03l.ibmintegrationbus.ibmcloud.com>, a collapsible section for 'CustomerDatabaseV1' with endpoints like `/customerdb/v1/customers/{customerId}` and `/customerdb/v1/customers`, and a link to the full URL (<https://i8lt03l.ibmintegrationbus.ibmcloud.com/customerdb/v1/customers>). There are 'Show full URL' and 'Hide full URL' buttons next to the link.

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# Callable Flows



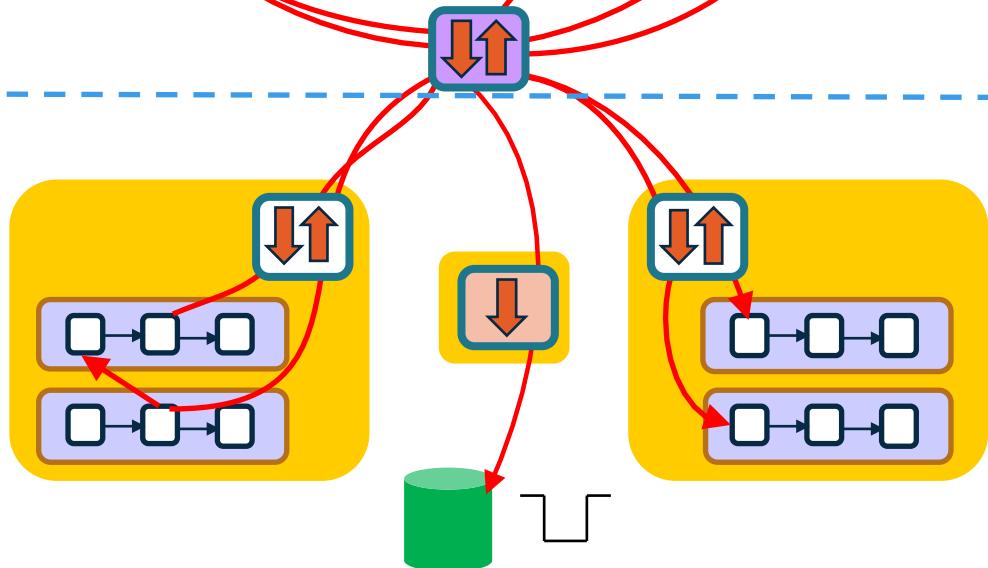
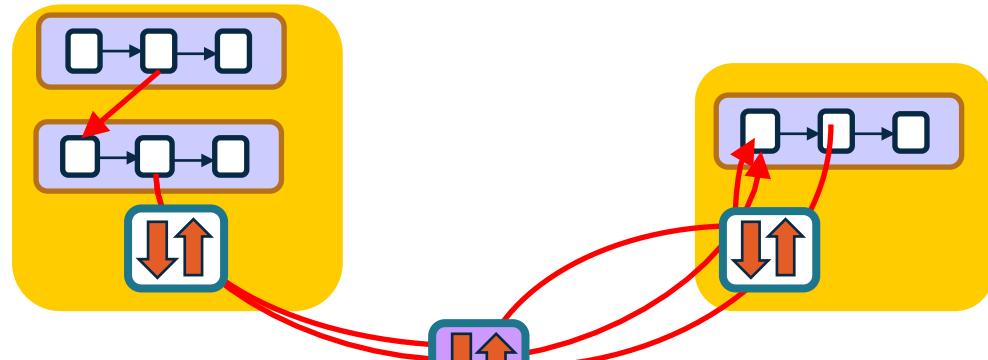
## CallableFlowInvoke Node Properties - CallableFlowInvoke

Description		
Basic	Target Application*	App2
Monitoring	Target Endpoint Name*	UniqueEndpoint
	Request timeout (sec)	120
	Call Preference	<ul style="list-style-type: none"><li>Prefer local calls</li><li>Prefer local calls</li><li>Remote calls only</li></ul>

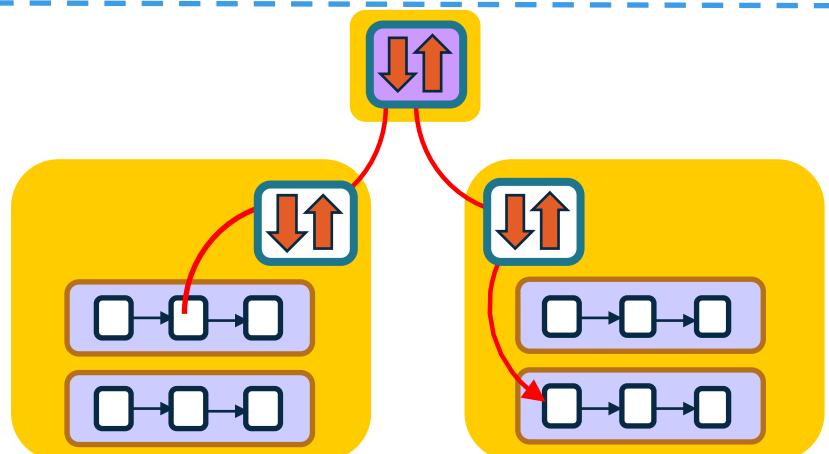
## CallableInput Node Properties - CallableInput

Description		
Basic	Endpoint Name*	UniqueEndpoint
Monitoring		

# Callable Flows



- Cloud to Ground (“port forwarding”)
- Ground to Cloud (“cloud bursting”)
- Cloud to Ground (“callable flows”)
- Cloud to Cloud (same container)
- Cloud to Cloud (different container)
- Ground to Ground (same container)
- Ground to Ground (different container, via cloud switch)
- Ground to Ground (different container, no cloud switch)



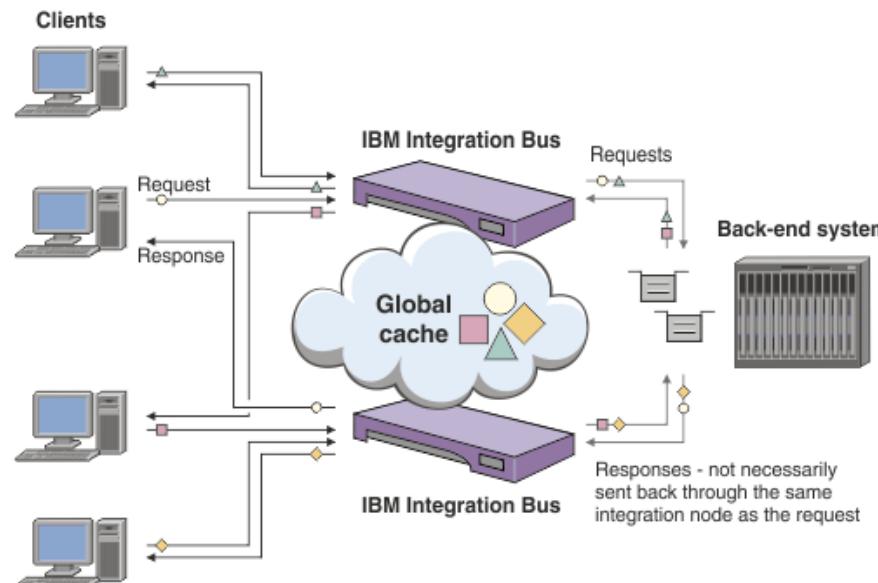
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# IBM Integration Bus Global Cache

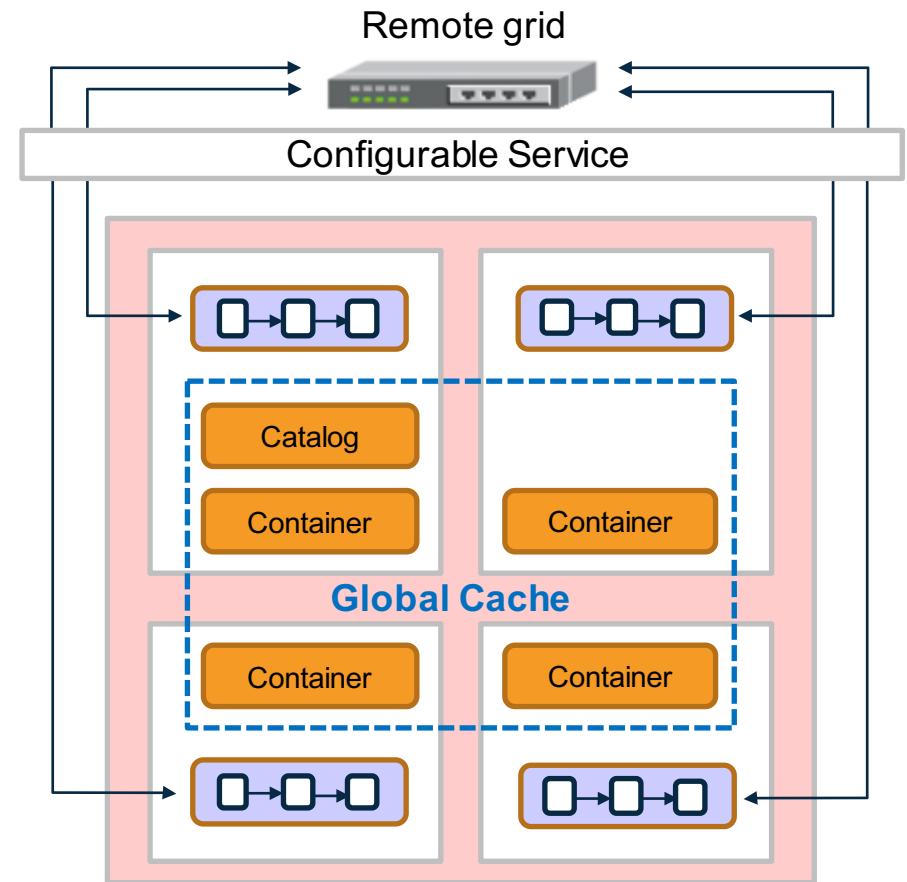
- IIB's embedded Global Cache provides an elastic, scalable, in-memory data grid for storing reusable data

- Share data across separate integration servers and integration nodes
- Frequently used for storing correlation information and for caching semi-static data
- The embedded cache is easier to administer than a full external WebSphere eXtreme Scale grid



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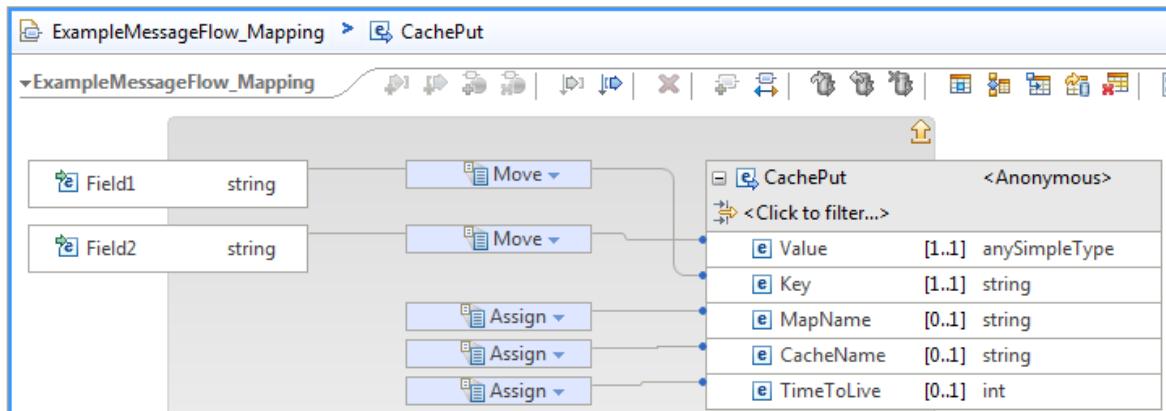
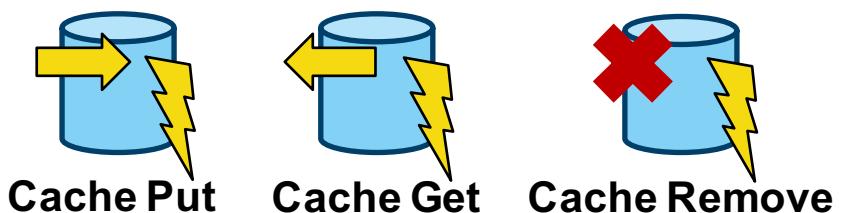
# Using the Mapping node to access Global Cache

- The Mapping node now provides interactions with the global cache

- Use a Cache Put transform to store data in the cache
- Use a Cache Get transform to retrieve data from the cache (eg for processing or routing)
- Use a Cache Remove transform to remove a key-value pair from the cache
- You can add a Cache Failure transform to handle any exceptions returned by the cache transforms

- The Mapping node now provides interactions with the global cache

- Input elements are dragged into the Cache transform
- Edit the nested map
- Output elements in Cache transform are prepopulated:
  - Key, MapName, CacheName and TimeToLive



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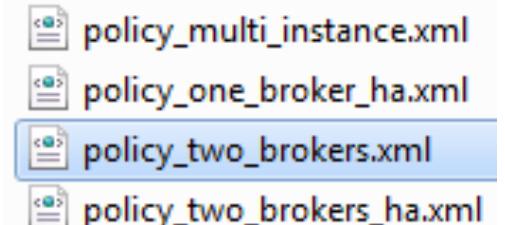
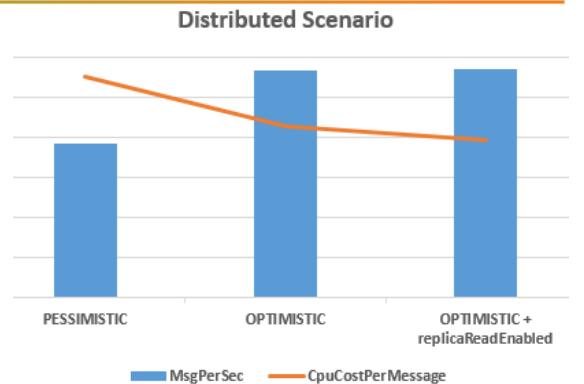
# Further Global Cache Enhancements

- **Embedded global cache capability (client and embedded grid) is upgraded to use WXSv8.6.0.8**
  - eXtreme IO transport (XIO). XIO replaces the Object Request Broker (ORB) protocol which was bound to native Java client apps. XIO offers better performance and throughput.
  - eXtreme Data Format (XDF). When using the XIO transport, XDF becomes the default serialization technology when storing keys and values in the data grid: Map copy mode is set to COPY\_TO\_BYTES in object\_grid\_xio.xml
- **From IIBv10.0.0.2, the embedded global cache can use an “Enterprise Data Grid” (XIO+XDF).**
  - Integration node must be at function level 10.0.0.2 or later.
  - If you have a multi-node cache topology – it is all or nothing; all nodes must be set to use an enterprise data grid, or all nodes must be set not to use the enterprise data grid.
  - Backwards compatibility to use ORB still available for existing IIB grids defined pre-10.0.0.2
- **From IIBv10.0.0.4:**
  - Change the lockStrategy property for a backingMap – PESSIMISTIC/OPTIMISTIC/NONE
  - Change the replicaReadEnabled property for a set of Maps
  - Compelling performance improvements possible with these new configuration options

Component Properties	
Security Cache - Cache Sweep Interval	300
Security Cache - Cache Timeout	60
Cache Manager - Policy	default
Cache Manager - Port Range	2920-2939
Cache Manager - Listener Host	

```
mqsichangebroker TESTNODE_v10
-b C:\policy_two_brokers.xml
```

```
mqsichangebroker TESTNODE_v10 -f 10.0.0.2
```



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# Using the Mapping node without metadata

- GDM is now embedded in a wide range of IBM tools**

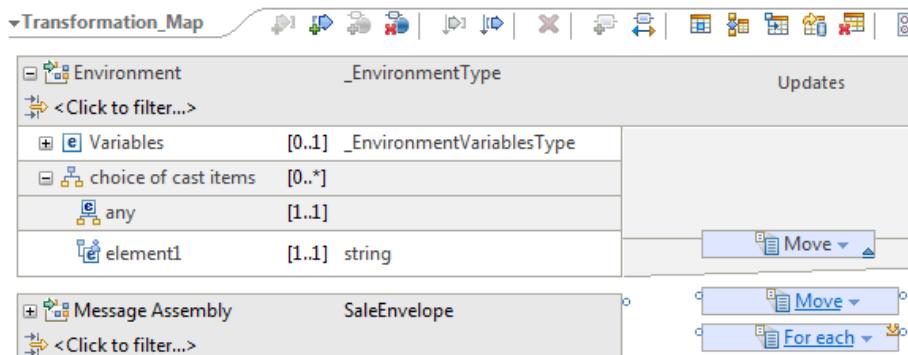
- IIB, MDM, RAD, RSA, IID  
Default transformation tool for IB; investment priority
- Combination of power, performance, & ease-of-use

- “Schema-less” Mapping**

- Allows Mapper to be used for arbitrary data structures
- Philosophy is to allow user to create schemas dynamically, and easily, inline!
- Benefits are easy schema creation and reuse
- Focus on JSON, LocalEnvironment, Environment, xs:any

- JSON mapping**

- JSON is typically schema-less (will consider JSON schemas for future)

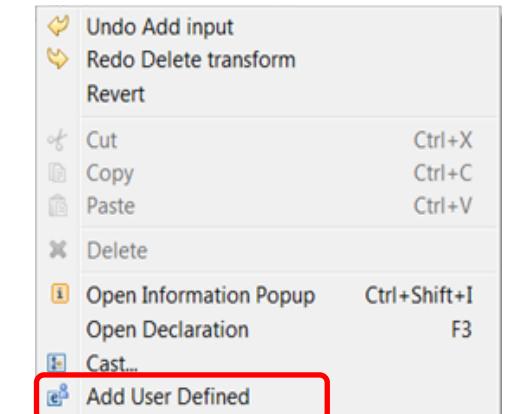


## Select the domain to create the output

Set the output domain of main map called by a message flow node

Output domain: **JSON**

Message Assembly		JSON
<Click to filter...>		
Properties	[0..1]	PropertiesType
JSON	[1..1]	JSONMsgType
Padding	[0..1]	string
choice of cast items	[1..1]	
Data	[1..1]	anyType
Data	[1..1]	JSONObject
any	[0..*]	



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# New and Improved Nodes and Connectors

- **(S)FTP support has been added to the FileRead node**

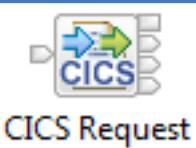
- FileRead extended to match FileInputStream and FileOutputStream and provide remote transfer of files into IIB via FTP and SFTP

- **MQTT Connectors**

- Delivered and supported by IIB in v10
- Easy to use input and output connectors to MQTT servers
- Uses open framework for platform independent connectors
- V9 Source freely available on Github website under flexible EPL

- **Design, Deploy and Operational Policy**

- Node properties form policy e.g. connection details, host, topic etc.
- Generate Policy from node properties
  - Operationalized via Web UI and Commands
  - Store as document with URL
  - Save to IIB runtime from IIB Toolkit

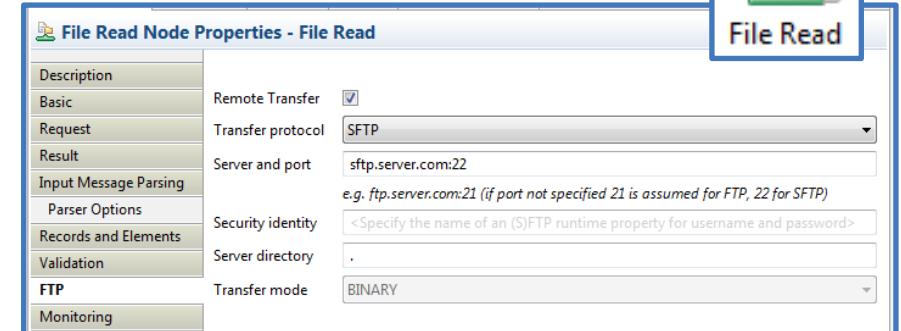


- **CICS 2 Phase Commit support on distributed and z/OS platforms**

- Configurable service of type CICSConnection controls how the connection to CICS is established for XA recovery

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**MQTTPublish Node Properties - MQTTPublish**

Description

Basic

Validation

**Policy**

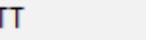
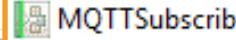
Monitoring

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

Policy URL:  Generate new policy

**MQTTPublish Node Properties - MQTTPublish**

Client ID*	Client001
Topic name*	Topic001
Host name*	BenLaptop
Port*	1883
Quality of service	0 - At most once



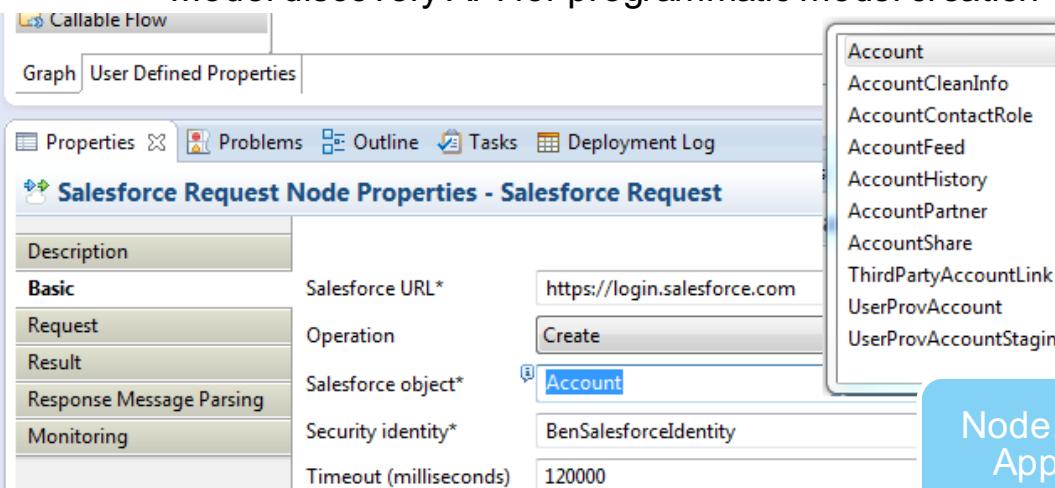

MQTTPublish MQTTSubscribe





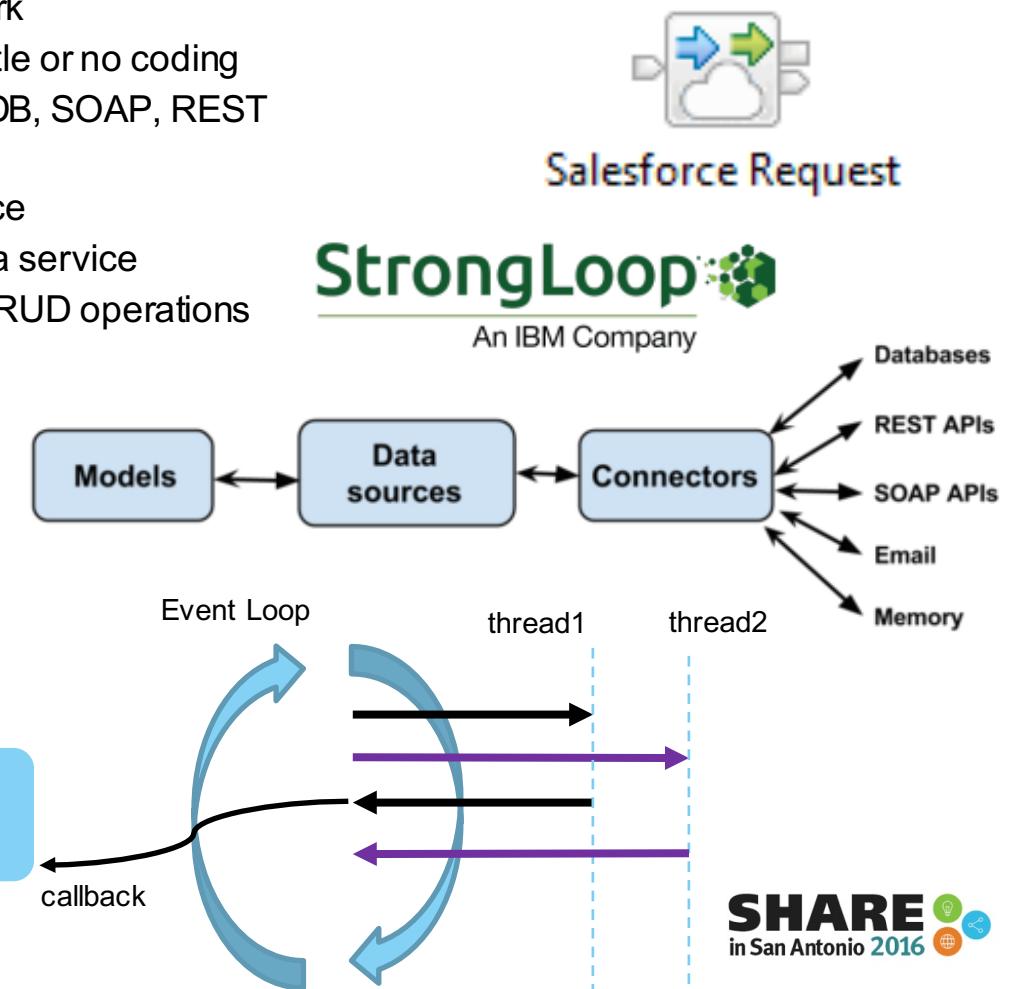
# Salesforce Request node

- LoopBack is an extensible open-source Node.js framework
- Create dynamic REST APIs for back-end services with little or no coding
- Built-in access to data from relational databases, MongoDB, SOAP, REST
- Create custom connectors for other services
- A ‘datasource’ json file defines the connectivity to a service
- A ‘model’ json file defines the data to be exchanged with a service
- Each model comes with a predefined REST API for full CRUD operations
- Model discovery API for programmatic model creation



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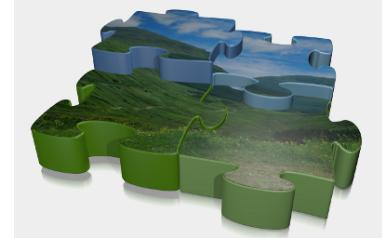


# DFDL and Data Enhancements

- **Inline with open DFDL 1.0 standard (and errata)**
  - Wide IBM adoption strategy, and beyond
  - DFDL re-distributable library, including developer edition
- **Seeding commercial and scientific Formats**
  - Can be used within application with DFDL libraries
  - Included in Industry Packs, others via GitHub, or on request
  - TLOG 4690 (ACE and SA), Oracle ReSA RTLog 14, ISO8583 (1987), ISO8583 (1993), NACHA, HL7v2.x, vCard, EDIFACT, X12, SWIFT MT, HIPAA 5010, SAP IDoc (ALE and File), PADIS (IATA) & more coming soon
- **DFDL Functional Enhancements**
  - DFDL Model Editor Copy / Paste support (v9)
  - Unordered sequences (v9.0.0.2)
  - dfdl:occursCountKind 'parsed' (v9.0.0.2)
  - Asserts with recoverable exceptions (v9.0.0.2)
  - Direct dispatch choices (v10)
  - Truncate fixed length strings (v10)
  - Fold Upper-case COBOL Field names (v10)
  - Stand-alone DFDL SAX Sample (v10)
  - Stand-alone now compatible with the Oracle JVM (v10.0.0.2)
  - Improved usability in the DFDL editor and new DFDL Tutorials
  - Incorporation of DFDL 1.0 revised spec into Knowledge center
- **Extended Performance**
  - DFDL already 2x faster than MRM, objective to improve further



 OT4I: Open Technologies for Integration



**Show Me**

Here you can explore and learn about IBM Integration Bus using tutorials. What are you interested in?

Tool Capabilities

Explore Integration Bus concepts by following

- Transformation using XSL in a message flow
- Transformation using .NET in a message flow
- Large messaging
- HTTP Input to drive a message flow
- Receiving MQTT messages by subscribing to MQTT topics
- Modeling CSV data by using DFDL
- Modeling COBOL data by using DFDL
- Modeling EDIFACT data by using DFDL
- Modeling HL7 data by using DFDL
- Modeling Toshiba 4690 TLog data by using DFDL
- Modeling ISO 8583 data by using DFDL
- Integration using TCP/IP nodes

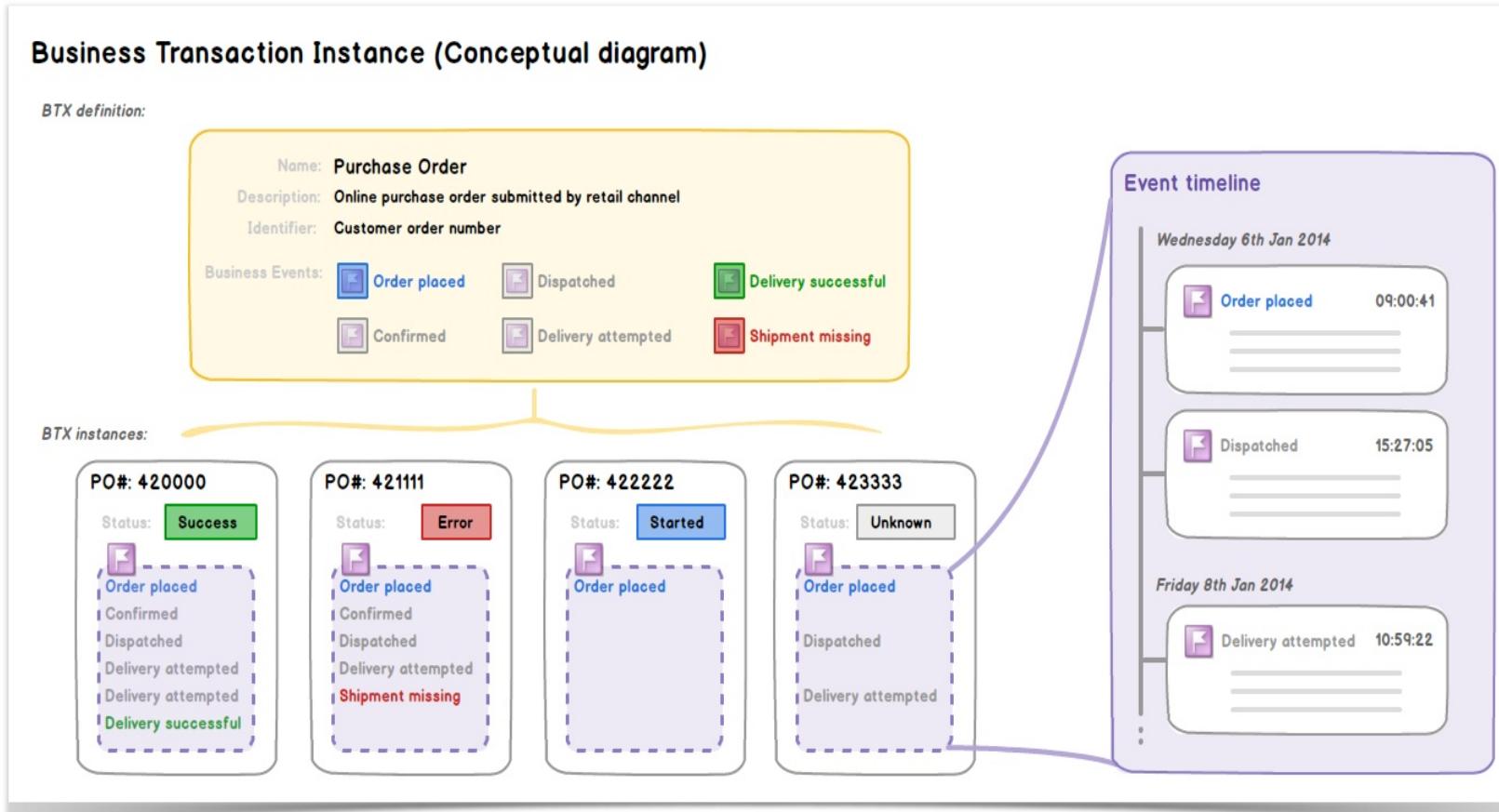
Learn how to use a Compute node to transform data using ESQL in an IBM Integration example.

[View Details](#) [Start T](#)

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# Business Transaction Monitoring – conceptual model



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# Business Transaction Monitoring

The screenshot shows a web-based application for managing business transactions. At the top, there's a navigation bar with tabs for 'Define' and 'Monitor'. Below this, a section titled 'Business Transaction' displays a flow diagram with four nodes: 'TotalPurchaseOrderFlow' (highlighted in yellow), 'RequestReplyApp', 'CheckAddress', and 'CheckAddress' (duplicated). A tooltip for 'TotalPurchaseOrderFlow' indicates it has an error. Below the diagram, a message states 'No flow selected'. Under 'Business Transaction Event Definitions', there's a table listing monitoring events for the 'TotalPurchaseOrderFlow'. The table columns are 'Message Flow', 'Event Source Address', 'Flag as', and 'Event Filter'. The 'Flag as' column for the first row shows a dropdown menu with options: Progress, Progress, Start, End, and Failure. The 'Start' option is currently selected. The 'Event Filter' column contains several XPATH-like expressions related to purchase orders and customer types.

- **Tracking Business Transactions**
  - Web UI views to define contributing flows and event chronology
  - Runtime Data Recorder component
  - Visualisation of status

- Business Transaction Monitoring tracks a message across multiple message flows
  - Report on the lifecycle of a message payload through an end-to-end enterprise transaction
  - Defines flows contributing to the transaction, and monitoring events for start, end or failure.
  - Aggregated view of business information on bus
  - Link flows and events to owning business transactions
  - Easily configured by developers or operators
  - Significant evolution of Record and Replay & WESB FEM

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# IIB REST APIs

## Header

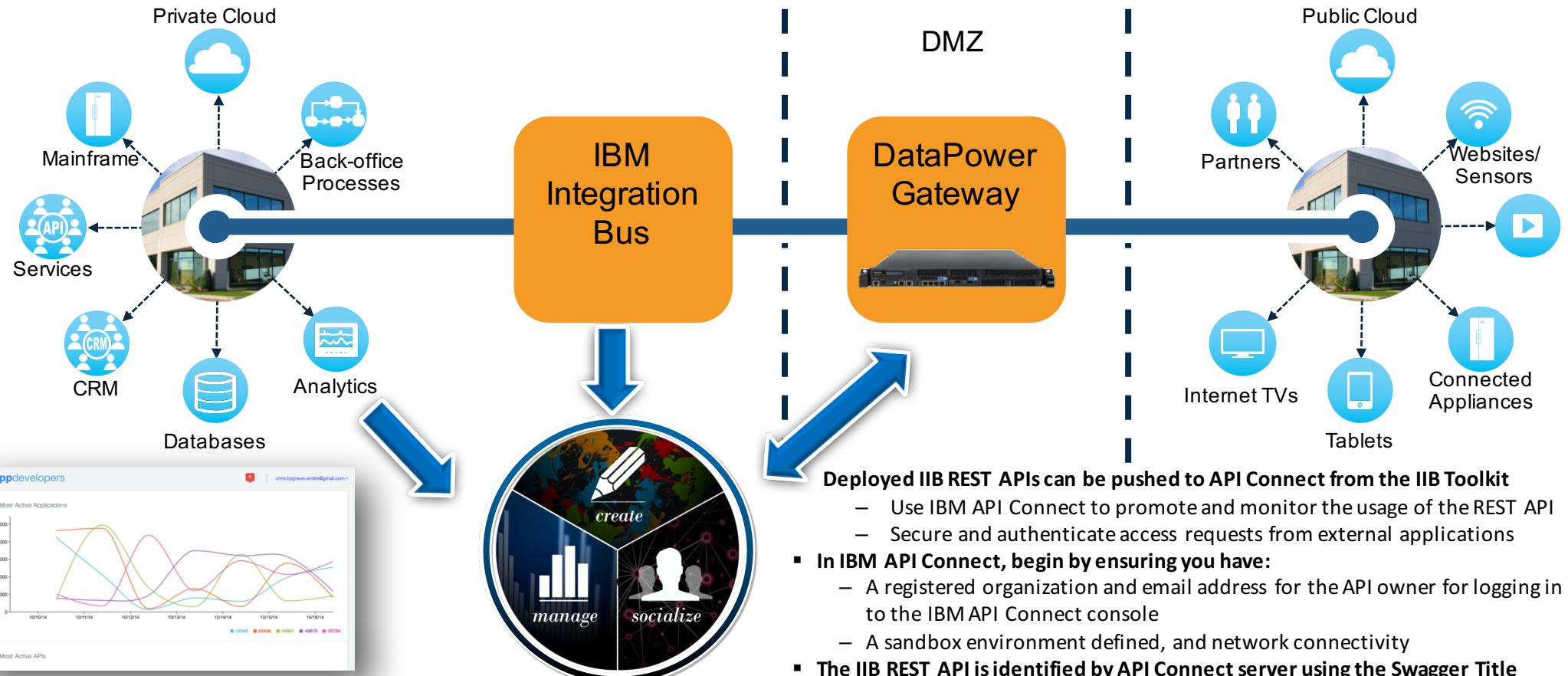
The screenshot shows the IIB Integration interface. On the left, the navigation tree is expanded to show 'TESTNODE\_10005' and its sub-components like 'Servers', 'REST APIs', and 'CustomerDatabaseV1'. The main panel displays the 'CustomerDatabaseV1 - REST API' configuration. It includes sections for 'Overview', 'API', and 'Statistics'. Under 'API', it lists the base URLs for remote and local invocations, and the remote URL for REST API definitions. Below this, the 'customers' resource is detailed with its operations: 'POST addCustomer' (Implemented), 'GET getAllCustomers' (Implemented), 'DELETE deleteCustomer' (Implemented), 'GET getCustomer' (Implemented), and 'PUT updateCustomer' (Implemented).

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- IIBv10 introduced a new REST API first class construct
- Provides a simple way to receive JSON / HTTP and expose a REST API
- Create a new REST API in the IIB Toolkit
- Drag and drop the REST API to deploy
- Administer REST APIs as a first class IIB construct in the Web UI
- Base URL, Version and Title all become general editable properties of the REST API
- Add, Modify and Delete the operations and resources defined in a REST API
- Edit Parameters and models

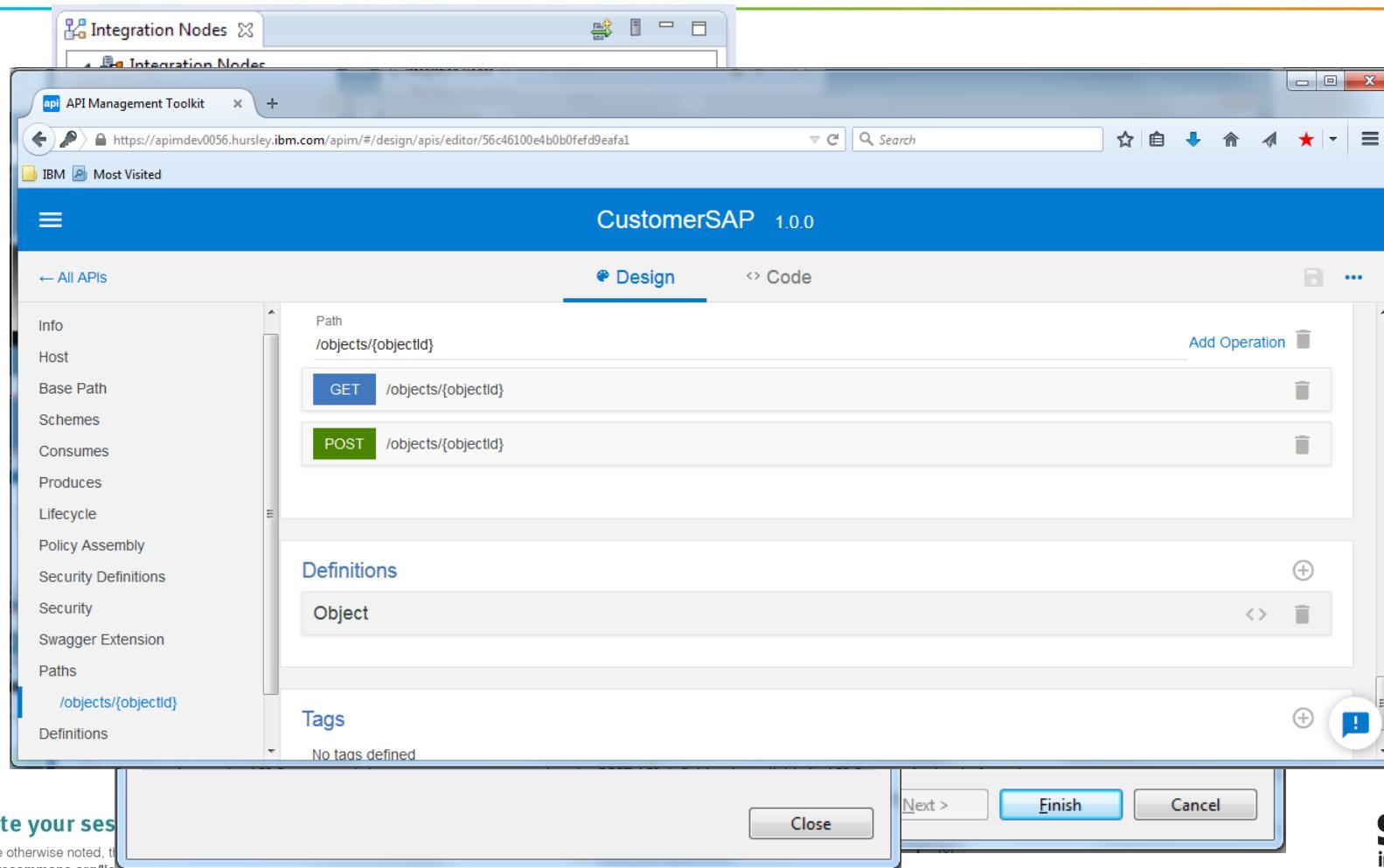
# IIB and API Connect



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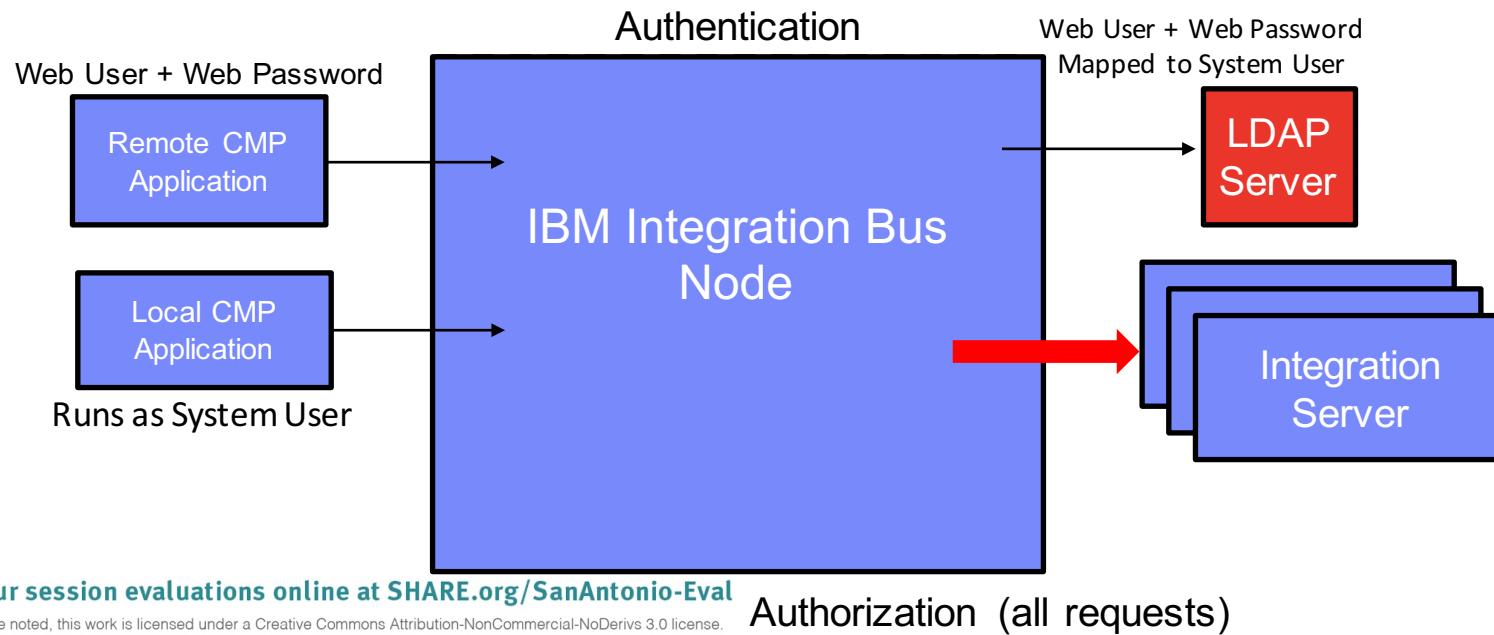
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# Pushing IIB REST APIs to APIConnect



# LDAP Authentication for IIB Administration

- **All remote access to IIBv10 through the web port (REST, Toolkit, Web UI)**
  - Use the `mqsichangeauthmode` command to enable / disable administration security
  - Choose queue or file based authorization
- **Authenticate users against LDAP**
  - LDAP can help centralise user accounts for multiple applications, can control password complexity, timeout, invalidity etc.
  - Password parameter on the `mqsiwebuseradmin` command becomes optional
  - Location of LDAP endpoint is supplied via `mqsichangeproperties` command



## Other Recent Enhancements

- Microsoft SQLServer support is added for Record & Replay databases
- ESQL memory usage has been significantly reduced for deployable ESQL which contains heavy usage of DECLARE and FieldReference.
- Compute node has been extended to a single Compute node to interact with multiple different databases *of different types*
- Resequence node Failure Retry mechanism added for Store & Forward use cases
- New mqswireportdbparms command to help identify defined security credentials
- Integrated Windows Authentication
  - Configure HTTP and SOAP nodes to use the transport-level security protocols NT Lan Manager (NTLM), Kerberos, and Simple and Protected Negotiation (SPNEGO).
- SSL and Kerberos support for connections to SQLServer
- SQLServer 2014 support is added to our Supported Environments
- mqswireportproperties enhancements for TCPIP
- Oracle Stored Procedure support now available in Graphical Mapping node (from 10.0.0.2)
- Linux Power 8 Little Endian (RHEL7.1, Ubuntu14.0.0.4, SLES12)
- SLESv12 support on x86-64 and zLinux
- MacOS Beta



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## This was Session 18846. The rest of the week .....

Day	Monday	Tuesday	Wednesday	Thursday	Friday
8:30			Nobody Uses Files Any More Do They? New Technologies for Old Technology, File Processing in MQ MFT and IIB <b>Room 225D</b>	Common Problems and Problem Determination for MQ z/OS	MQ and CICS - Integration Options and Costs <b>Room 302B</b>
10:00	Introduction to MQ - Can MQ Really Make My Life Easier?	Introduction to the New MQ Appliance	DevOps : Using z/OSMF to Provision MQ for z/OS	MQ for z/OS: The Insider Story	MQ for z/OS, Using and Abusing New Hardware and the New v8 Features
11:15	Introduction to IBM Integration Bus on z/OS	MQ Security Bootcamp: Understanding SSL/TLS Principles - Taking You from Beginner to Expert, Part 2 of 3		MQ Labs - <b>Room 303A</b> <b>OR</b> Giving It the Beans: Using IBM MQ as the Messaging Provider for JEE Applications in IBM WebSphere Application Server	
13:45	What's New in the Messaging Family - MQ v8 and More [z/OS & Distributed]		Thoughts on MQ Architecture & Design	DevOps : IIB Administration for Continuous Delivery and DevOps <b>Room 304B</b>	
15:15	What's New in IBM Integration Bus and IIB on Cloud	IBM Integration Bus MQ flexibility [z/OS & Distributed]	MQ Security Bootcamp: Security Features Deep Dive - Securing your Enterprise, Part 3 of 3	IBM MQ: Are z/OS & Distributed Platforms Like Oil & Water? <b>OR</b> DevOps : Empowering the Delivery of Data Centre Operations Through Increased Automation and Cloud [Distributed] <b>Room 304B</b>	
16:30	MQ Security Bootcamp: Securing MQ from End to End, Part 1 of 3	Digging into the MQ SMF Data	Programming with PCF Messages	Monitoring and Auditing MQ	

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