Welcome

Marketing Team Slide

Business Agility Road Show

Introductions

Marketing Team Slide

Agenda

Marketing Team Slide

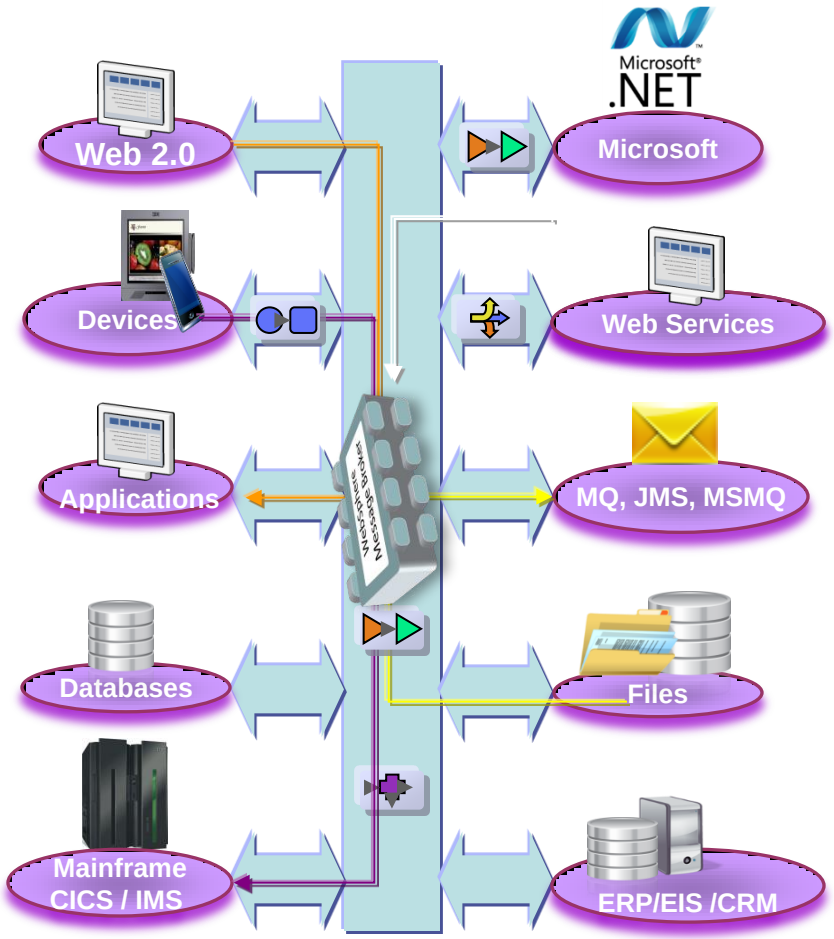
Enterprise Integration

Its not that hard

Why Add an ESB or Integration Layer?

- Point to point connectivity:
  - Hard to maintain, manage, govern and control
- An Integration layer Adds
  - Centralized common platform for transformation and routing

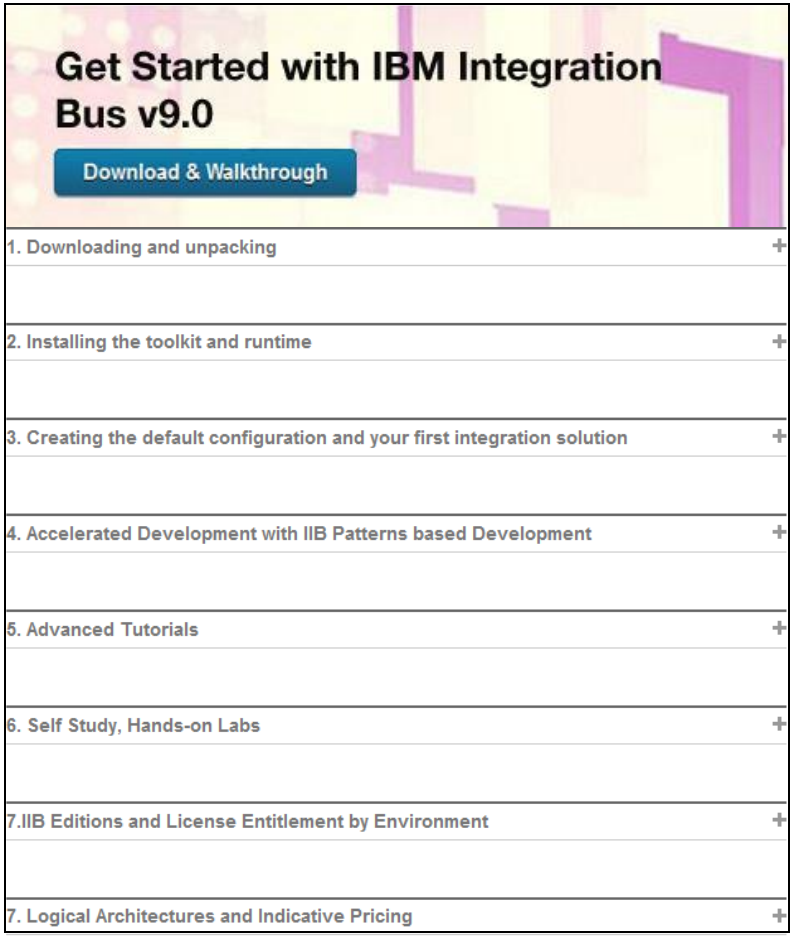
Introducing IBM Integration Bus V9.0

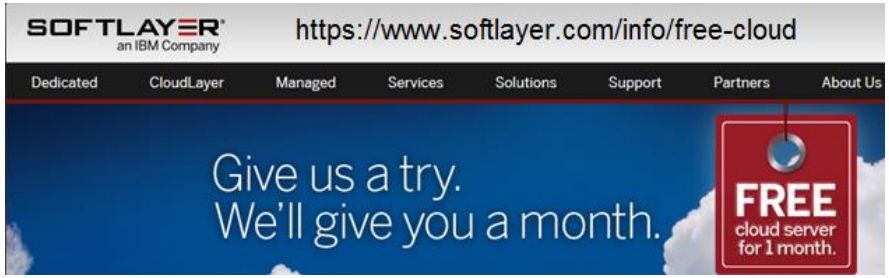


- Enterprise Class Integration for all
  - **Universal & Independent**
  - **Easy to use and manage**
  - **High Performing & Scalable**
  - **Broadly adopted and Bullet proof**
  - **Re-branded WebSphere Message Broker**

IBM Integration Bus – Easy to Engage

- Don’t Engage…. Go play!
- For Free without time limit
  - Evaluate, proof, pilot
  - IIB Developer Edition
- Getting Started
  1. Download and walkthrough
  2. Installation to deploy ***15 mins***
  3. Community and forums
     IBM Integration Community
     MQSeries.NET Forum
  4. Run IIB Dev Edition on IBM Softlayer
     Free for 1 month in the cloud





IBM Integration Bus – Easy to Acquire/Adopt

- OK, So I've had a play….. Can I afford it?

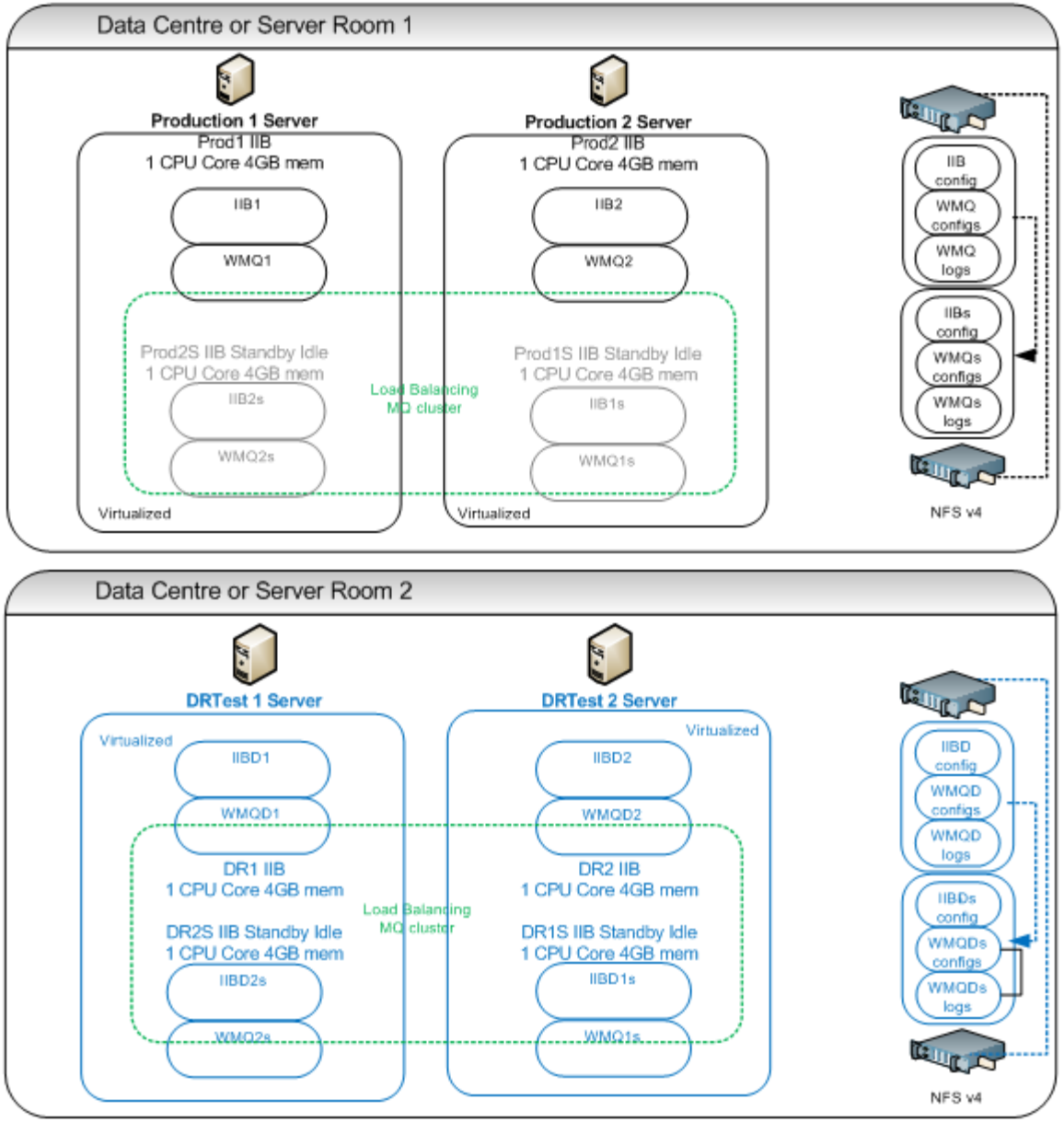
- IIB Express priced: **17,545** AUD (per core for 70 PVU rated processor)
- IIB Licensing
  - Entitlement required for production and performance test environments
  - Entitlements included
    - WebSphere MQ
    - WebSphere Extreme Scale Cache
    - *WebSphere Adapters for SAP, PeopleSoft, Siebel, JDEdwards
    - *Agents for C:D and WMQ MFT file transfer
  - Performance, do more with less
    - In many scenarios IIB out performs other integration products by 2:1

- IIB Express versus a S&S only open source model
  - Active/Active twin nodes of single core in production plus warm HA failover.
  - Matching performance test environment.
  - All Developer, Development, Test and System Test (non-perf) environments
  - Approximately **70,000** AUD license and 1st year S&S

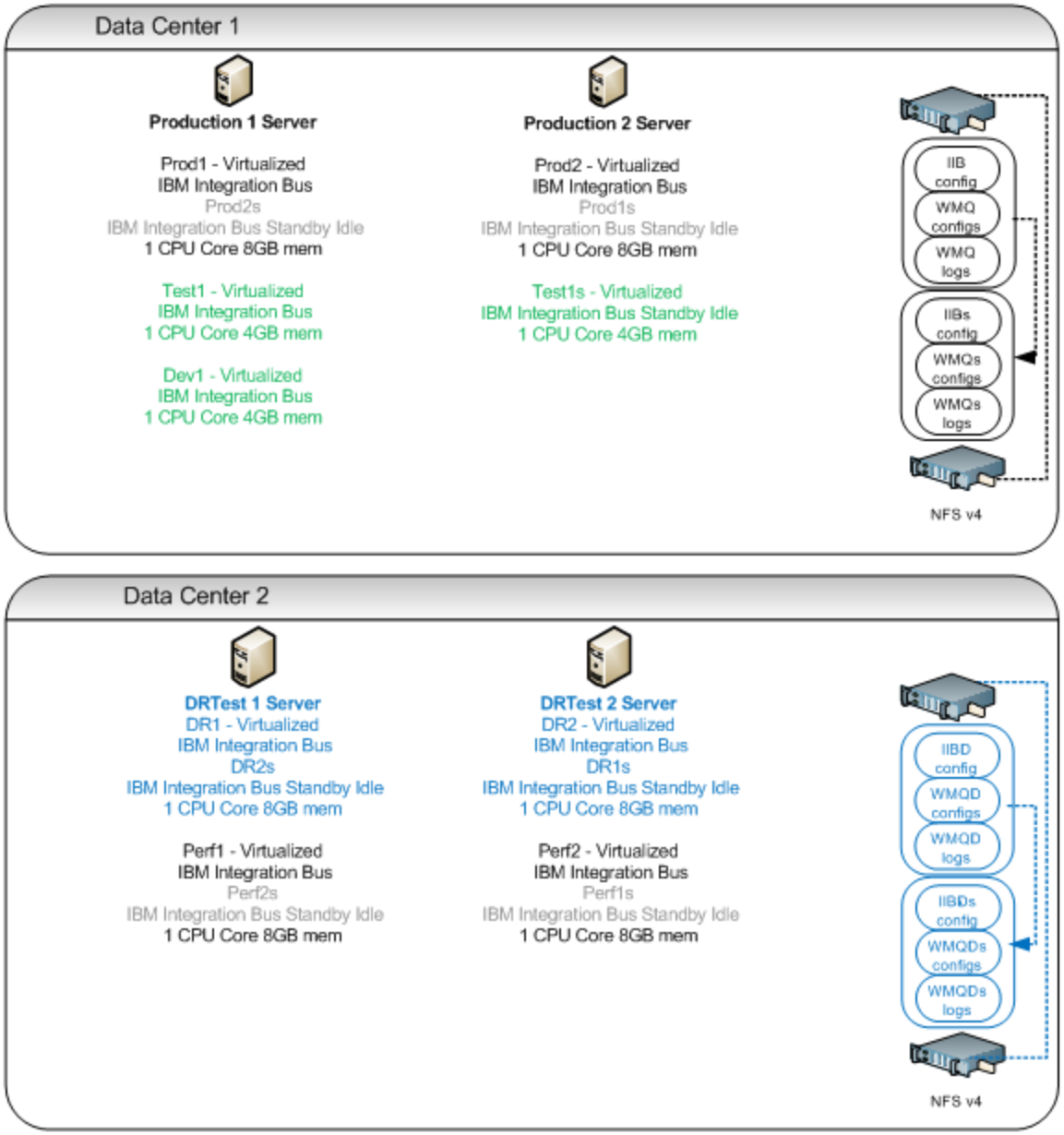
- IIB Express versus rental approach
  - IIB Express typically 17,000 AUD per core 1st year S&S
    - **1400** AUD per month per core for 1st 12 months
    - **300** AUD per month there after based on (3400 AUD follow year S&S)

* standard, advanced and remote adapter deployment editions

IIB Express – Active/Active with Local HA and Cold DR



IIB Express – Active/Active with Local HA and Cold DR



- All Environments
  - 4*70 PVU cores = 280 PVUs
  - **$70,182** AUD

IBM Integration Bus – Easy to Use (1)

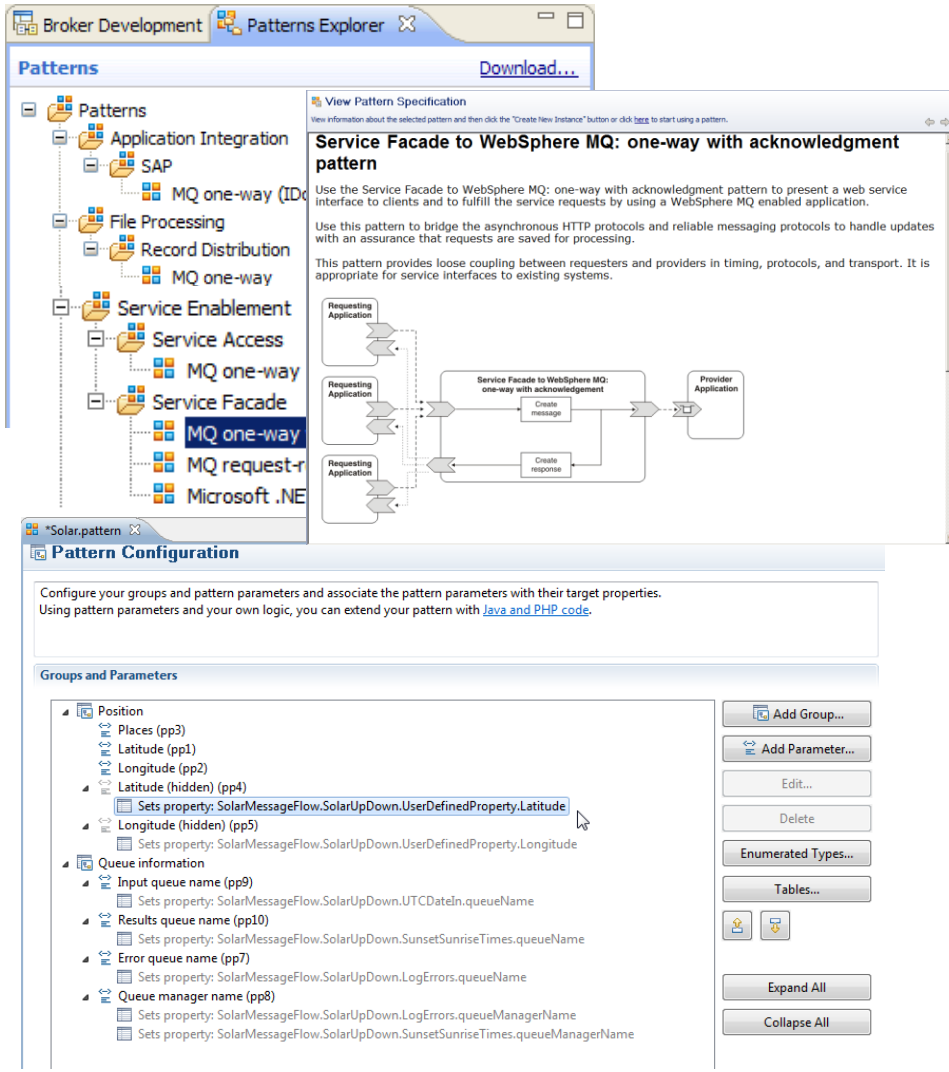
- OK, So I can afford it….. But can I consume the technology?

- Developer Experience
  - Leverage existing skills
    - Systems Programmers
    - DB Admins
    - .Net programmers
    - Java programmers
  - Patterns based development
    - 40+ Production ready templates for common integration tasks requiring configuration only
    - Patterns capture, create your own pattern templates
    - Accelerate delivery
    - Breed Re-use
    - Drive out errors – the template is the contract between designer and developer
  - Many wizards for acceleration – Web Service exposure and consumption for example

Accelerator – IBM Integration Bus V9.0 Patterns based development

Patterns Based Development to rapidly create and reuse common integrations

- Select a pattern
- Use a pattern
- Create new patterns
- Reuse everywhere



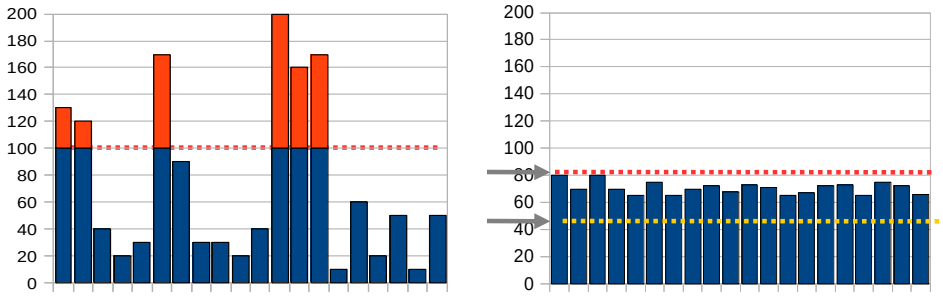
Patterns based Development – 2 Sides to the Coin

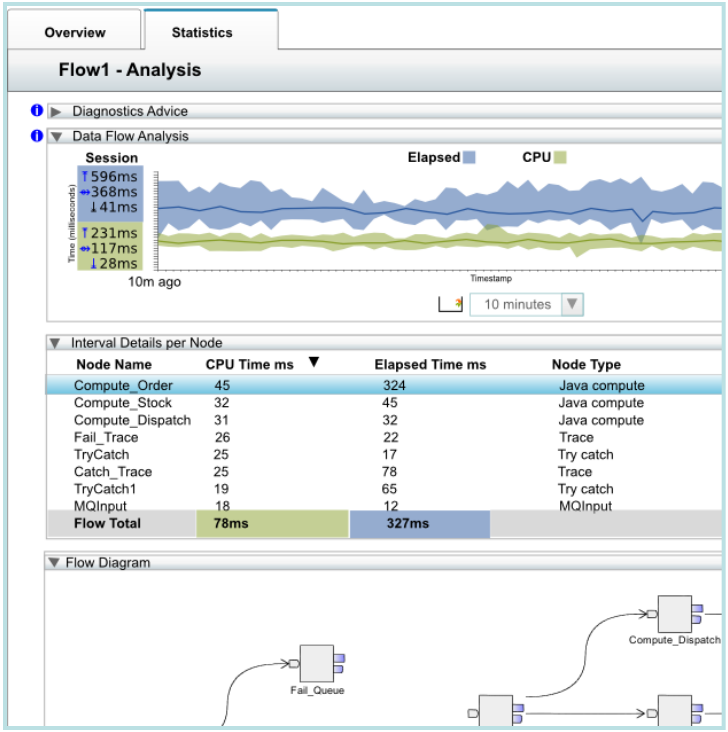
- Lead Integration Designer – Highly skilled IIB Developer
  - Produce Patterns of Integration
  - Developers are essentially “assemblers” of pre-canned integration logic
  - The pattern forms the binding contract between designer and developer
- Lead Integration Design – Solidly trained IIB Developer
  - Produced Patterns of Integration
  - The pattern forms the binding contract between designer and developer

IBM Integration Bus – Easy to Use (2)

- OK, So I can afford it….. But can I consume the technology?

- Administration and Management
  - Flexible Administration and management options
    - Multiple administration options to suit skill sets or existing admin approach
      - Eclipse based rich client, Web Browser WAS Admin Console
      - Command line utilities, Published APIs : REST and Java
    - Built in Auditing, Record and Replay with Web Browser based interface
    - Policy based Work Load Management
    - Web Based real time analytics
      - Production Ready
      - Debugging analysis aid at design time





IBM Integration Bus v9.0 – Accelerated Delivery Examples

- Example: An Australian Territory Whole of Government
  - 5 Day training class
  - zOS sys prog assumes lead WMB developer role
  - All government agencies connected through WMB in 3 years
  - IIB v9.0 on distributed platforms added for silo'd off mainframe requirements

- Example: University in Sydney
  - ½ Day introduction, ½ Day a week mentoring from IBM
  - 3 man team, only one experienced programmer (no previous WMB skills)
  - Acquisition to production in 4 months
    - 10 interfaces, Active/Active with HA via WMB Multi-instance support

- Example: Super Annuation company
  - 3 Days mentoring from IBM
  - 2 man team, only one experienced IIB developer provided by IBM BP
  - Acquisition to production in 4 months
    - 4 systems connected.

Summary

- Easy to Engage
  - Go play for Free
    - IBM Integration Bus Developers Edition – Full function, non-expiring
    - IIB Developers Edition on IBM Softlayers 1 month free trial
  - Wealth of simply to follow getting started material online

- Easy to Acquire/Adopt
  - IBM Integration Bus Express V9
    - 17K AUD per core (70 PVU) license
    - Active/Active plus warm HA nodes, all environments for 70K AUD

- Easy to Use
  - Equal appeal to a Java or .NET centric development team
  - Accelerate with Patterns based development
  - Flexible, lightweight administration options

Case Study & Demonstration

Superannuation

Case study slides here

- Meeting with Russell Gilbert on Thurs
- Notes
  - Problem space, catalyst to looking at IBM
  - Cover the engagement with IBM
  - Approach taken to assess and acquire
  - Bus Partner
  - Sandpit
  - PoC – 2 days
  - Cover Implementation
    - Architecture / environments
    - Systems connected
    - Parts of the product use
    - The Team
    - The results
    - What’s next
    - Quote

Backup slides

IBM Integration Bus v9

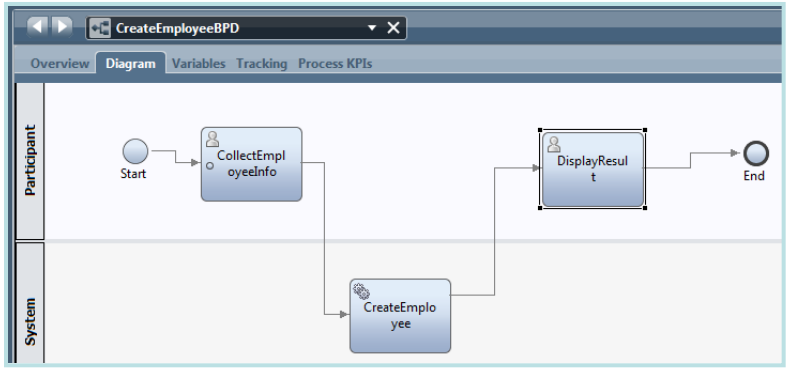
Technical High Lights

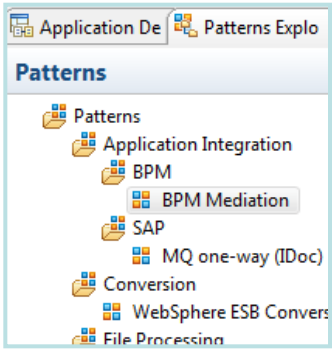
Synergy with BPM Express and Standard (Lombardi)

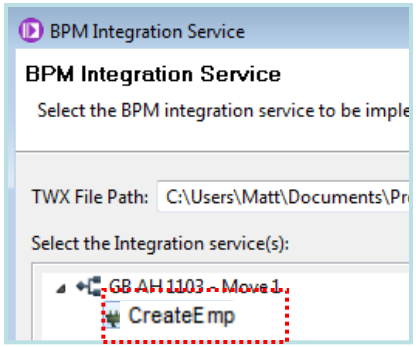
- IB provides powerful connectivity layer for BPM workflows
  - Allows BPM developer to exploit rich integration features
    - E.g. .NET, Healthcare Pack, TCP/IP, GDM, DFDL…
  - No changes required to existing BPM programming model
    - Helps maintain separation of concerns between roles
    - Process designer works with integration developer
  - Complements SCA nodes for BPM Advanced (WPS)

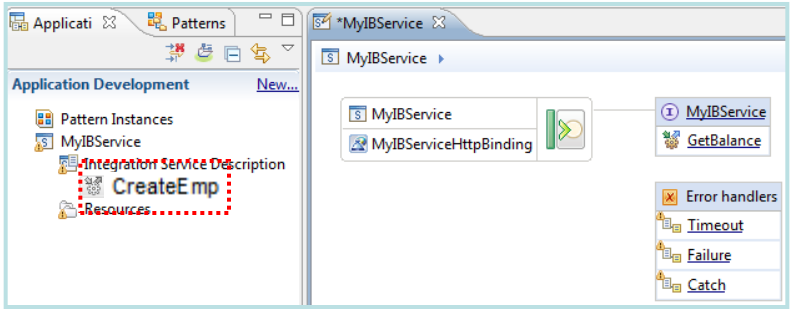
- Start with business process definition
  - Process Center snapshots provides integration handover
    - Snapshot can include multiple service definitions
    - Captured as .twx file
  - Integration developer imports snapshot from BPM
    - Provides implementation of selected definitions
    - Built-in integration tools simplify this activity (see below)
  - Process designer re-imports updated snapshot from IB
    - Completes business process definition
    - Calls integration service in BPM system activity

- New BPM pattern simplifies creation of integration solution
  - Start from Pattern Explorer, or right-click on existing service
    - Import .twx file to create skeleton integration flow
  - Customize created integration flow with IB capability…
    - All other IB features available
  - Deploy integration and pass back concrete references to BPM e.g. server IP address, etc.





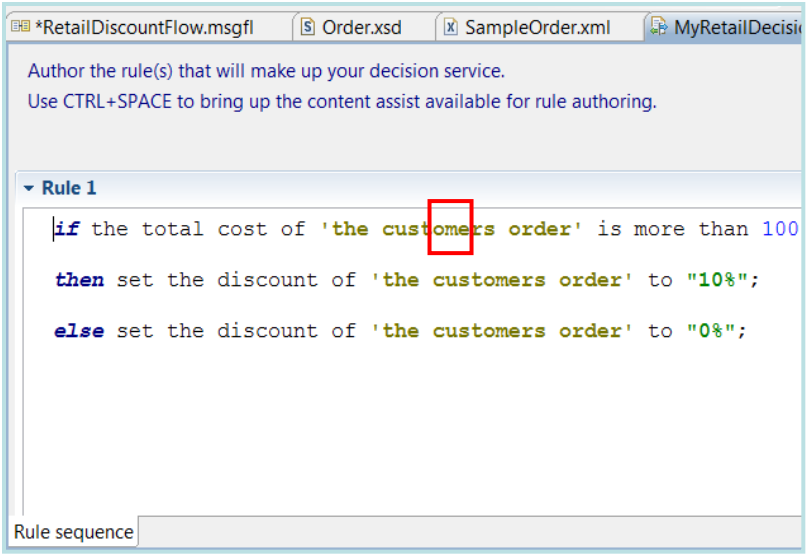


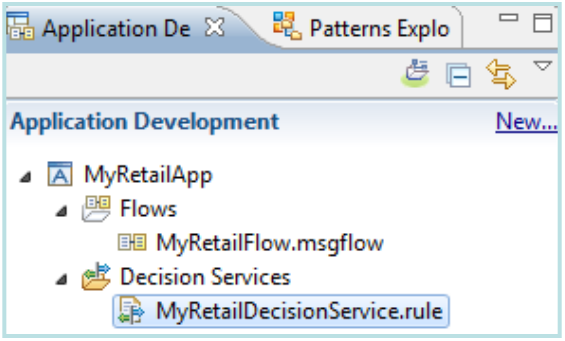


Understand and Act on In-flight data

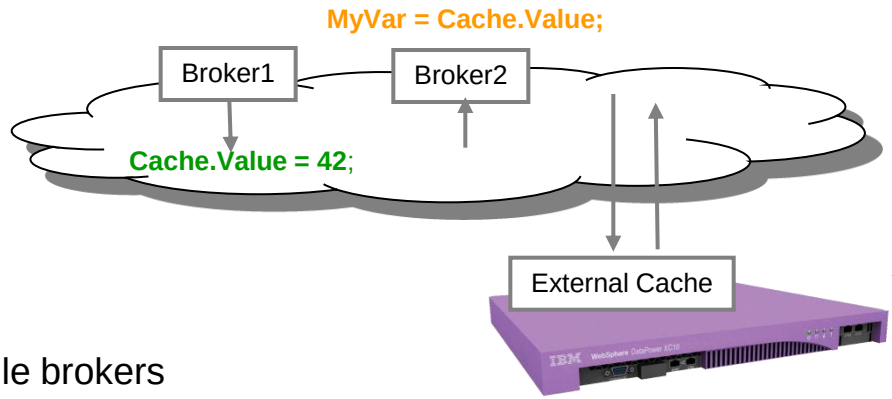
Decision Service

- Provide business insight during integration data flows
- New Decision Service node
- Create rules directly inside Integration Bus toolkit
- Embedded rules engine for high performance

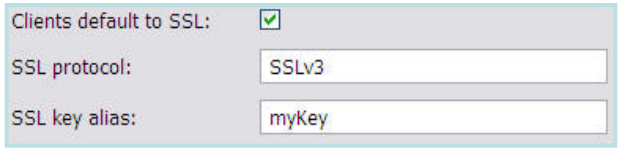




Global Cache

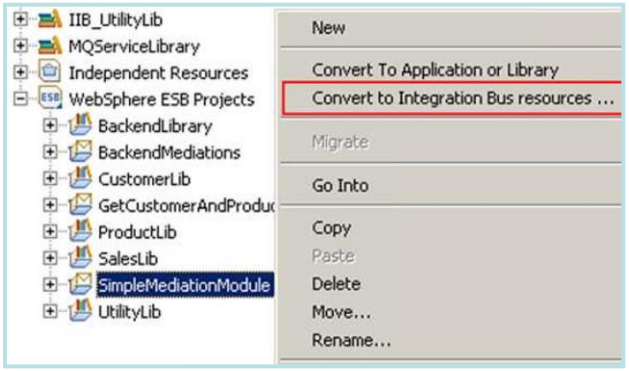


- IB contains a built-in facility to share data between multiple brokers
- Support for external software and hardware caches
- Client connectivity over SSL channels
- Cache Expiry options
- Support for arbitrary Java objects as map keys

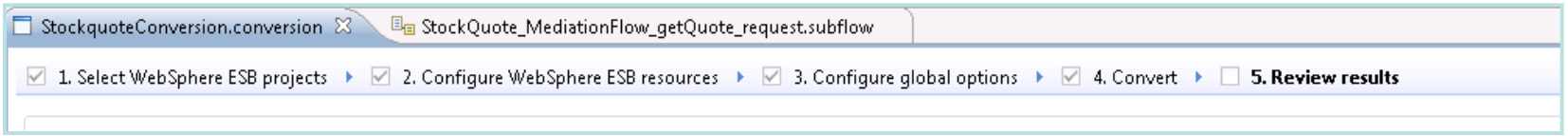


Conversion from WebSphere Enterprise Service Bus

- Built-in conversion tools for WESB source assets
  - Initial emphasis on web services use cases (e.g. StockQuote)
  - Advanced use cases over time; convert when appropriate for your instal
  - Open framework for user and partner extensions



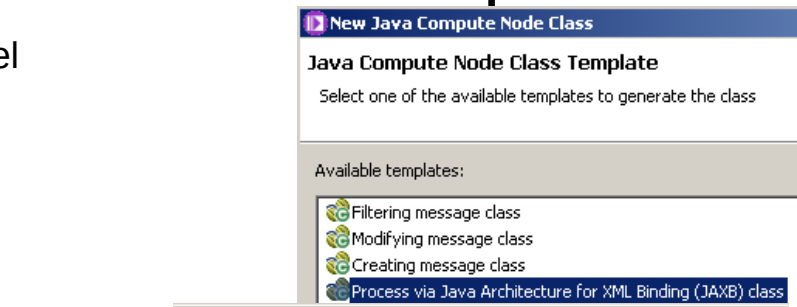
- **Simple workflow creates IB resources**
  1. Export WESB PI from IID
  2. Import mediations into Eclipse Toolkit
  3. Right-click “convert” task to start conversion
  4. Follow guided editor to generate resources
  5. Task List will identify remaining manual steps
  6. Iterate as necessary

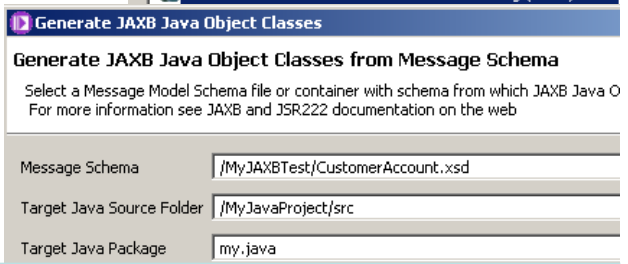


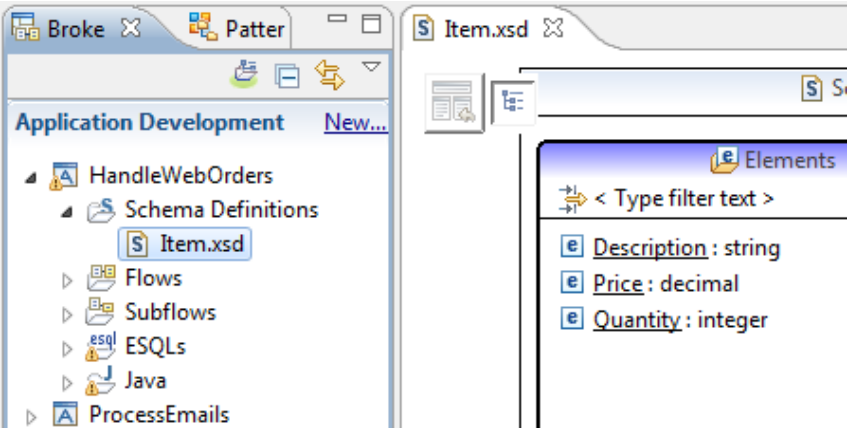
- **Open Conversion Framework**
  - Extensibility means more WESB primitives and resource types can be converted over time
    - No minimum version requirement of WESB source
    - Builds directly into WESB conversion editor
  - Design allows for future assisted resource creation from non-Integration Bus sources, e.g.
    - eGate Java collaborations and Event Type Definition, exploiting existing JAXB support
    - ICS collaborations, including ASBO and GBO model, exploiting new GDM pattern enablement

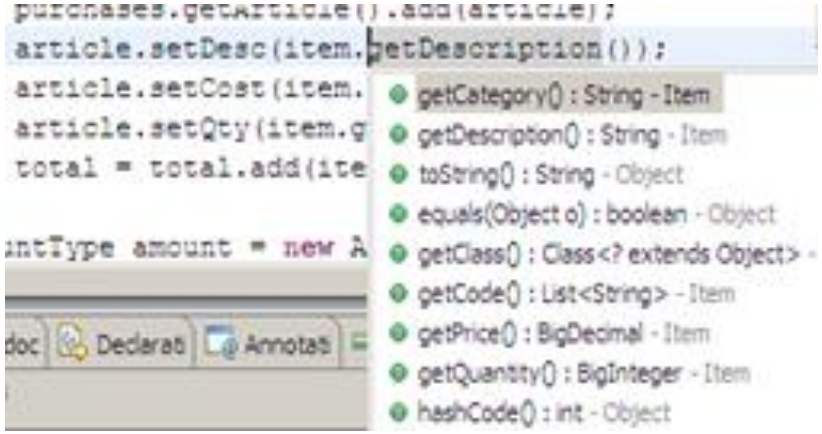
JAXB – Natural Java Environment for Developers

- Write Java transformations using simple JAXB-style object model
  - Getter and setter methods are used to traverse, modify and build messages
    - Uses JavaBeans style of getFieldName() / setFieldName()
    - e.g. `myItem.setPrice(200);`
  - Natural conversion between XML schema types and Java data types
    - e.g. `xsd:int`, `xsd:string`, `xsd:dateTime`, `xsd:any`
  - Useful for writing code for use across multiple products, or migrating existing code into MB
  - Complements and extends existing `MBElement` class
- Comprehensive tooling support
  - New wizard option when implementing a JavaCompute node
  - Full content assist available (e.g. Ctrl+Space)
- Multiple Entry points: Start from model or Start from Java
  - Schema compiler – generates a set of Java assets from an XSD
    - JavaCompute node unmarshals corresponding Java objects from `MbMessage`
    - Call getters and setters directly using this simplified node
  - Schema generator – generates an XSD from Java classes
    - JavaCompute node marshals modified Java objects back into the MB tree



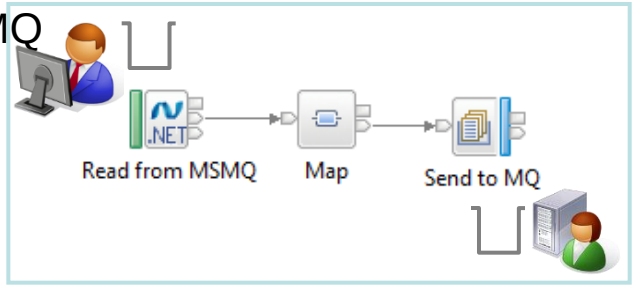




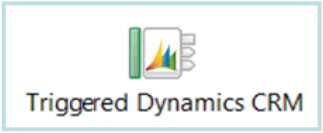


Comprehensive .NET Support

- New patterns and samples for MS Dynamics CRM and MSMQ
  - SAP CRM pattern for customer account synchronization
    - Map account operations between BAPI & CRM Entities
  - Advanced CRM pattern enables dynamic graphical mapping
  - New customizable sample for 2-way MSMQ and MQ exchange



- New and enhanced nodes for .NET programmers
  - .NET Input node allows developers to initiate integration logic from any .NET system
    - e.g. receive request from Dynamics CRM, AX, periodically read EXCEL file…
    - Highly customizable polling and trigger mechanisms
  - CLR V4.5 runtime embedded within the integration server provides .NET technology foundation
    - Languages include C#, VB .NET (COM), JScript & F#, with full range of .NET data types
    - Also includes app domains for isolation
    - Exploited by .NET Compute node and .NET Input node
  - Further extensions include Visual Studio 2012, Windows 8/Server 2012 and Azure Cloud compatibility



SimpleFilterNode.cs | Object Browser

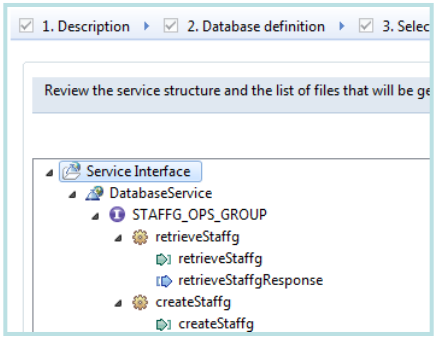
SimpleFilterNodes.SimpleFilterNode | Evaluate(NBMessageAssembly assembly)

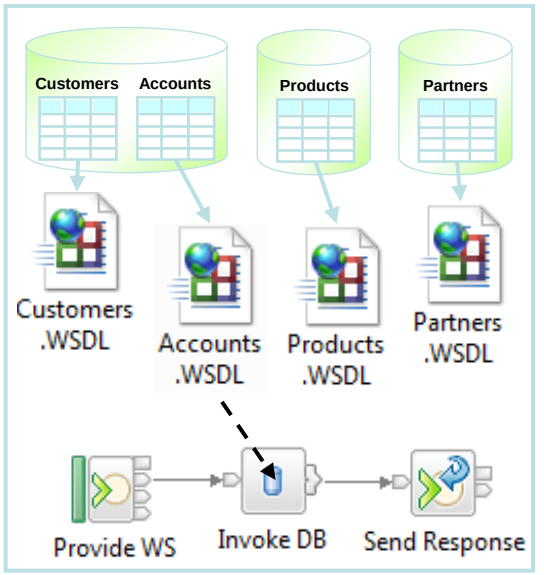
```
6   using IBM.Broker.Plugin;
7   [assembly: CLSCompliant(true)]
8   namespace SimpleFilterNodes
9   {
10    public class SimpleFilterNode : NBComputeNode
11    {
12      public override void Evaluate(NBMessageAssembly assembly)
```

- Developer Customizations
  - Personalize .NET nodes
    - Easy to understand, consume and reuse
  - Custom user properties
    - Expose key properties
    - e.g. CRM IP address
  - Simple node capture
    - User-defined icons
    - .NET Toolkit drawer

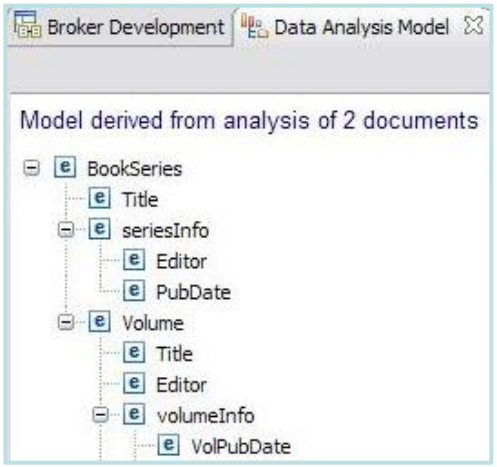
Database Service Discovery and Data Analysis

- DBMS represents system of record for key business entities
  - Customers, accounts, partners, products… all stored in databases
  - Integration Bus tools discover and represent these key data
  - Integration services extends access to end-user applications
- New integration tools discover key database assets
  1. Connect to DBMS (e.g. Oracle, DB2, etc)
  2. Discover source artefacts (tables, views, etc.)
  3. Map CRUD operations to service interface
  4. Save in canonical WSDL document
     - Custom bindings for SQL access
  5. Re-use database WSDL in multiple scenarios





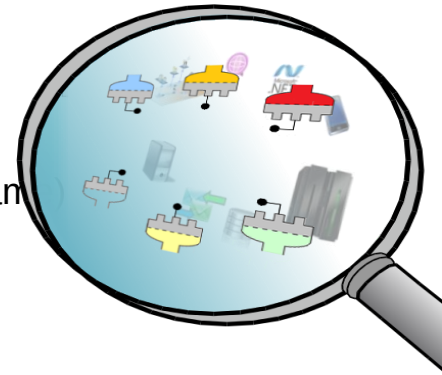
- Many uses for database service definition
  - WSDL contains both logical and physical database information
  - Drag and drop WSDL to automatically create SQL access methods
  - Create new integration service to exploit customized database access
    - End-user application consumes as regular (e.g.) web service



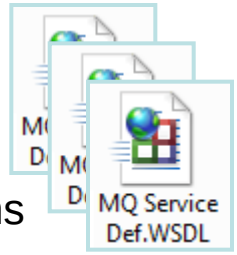
- Customize integration services with data analysis
  - Tools for solving the problem of XML document understanding
    - XML message formats can be structurally diverse
    - Often useful to semantically interpret related elements, e.g. healthcare CDA exchange format
  - New Data Analysis Perspective provides a collection of useful data views
    - Model data based on input element XML; understand and visualise related elements
    - Generate resources (subflows, maps) that allow transformation between modelled elements

MQ Service Discovery

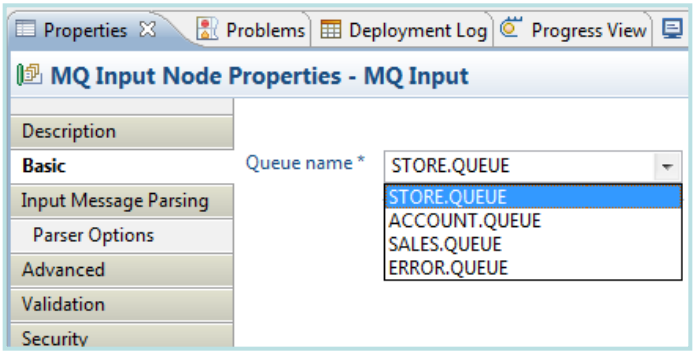
- Service definitions allow you to make best use of available resources
  - Facilitates sharing of service information between users and systems
  - Allows users to understand interfaces (e.g. CustomerAddress.Update operation)
  - Provides a connector with which to exchange technical configuration (e.g. hostnam
  - Provides attachment points for associated policies (e.g. authorization)



- New framework enables discovery, cataloguing and re-use of services
  - Discovery connectors translate the service provider description to a common model
  - Interrogate IT systems for definition of technical assets – objects, functions and interaction points
  - User selects and refines definition of technical assets
  - Service definitions created and associated with technical assets
  - Discovered service definitions stored in embedded registry
  - Use catalogued services to configure integration solutions



- Initial implementation discovers and catalogs MQ service definitions
  1. Discover queues from referenced queue manager endpoint
  2. IB develops MQ service definition and stores in registry
  3. Use service definitions to configure MQ nodes



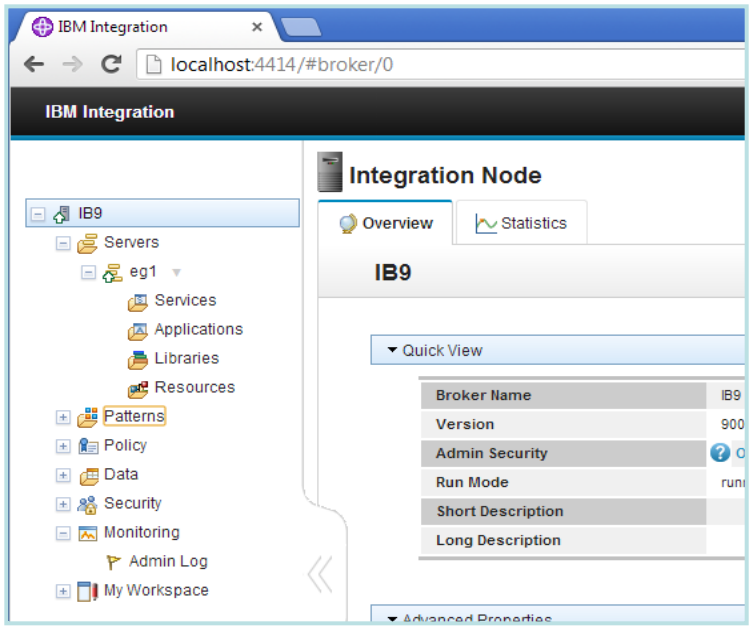
- New and existing nodes will be updated over time
  - Completely aligned with runtime connector framework
    - Simple protocol points appropriate for style of interaction
    - Allows for simple development of custom connectors

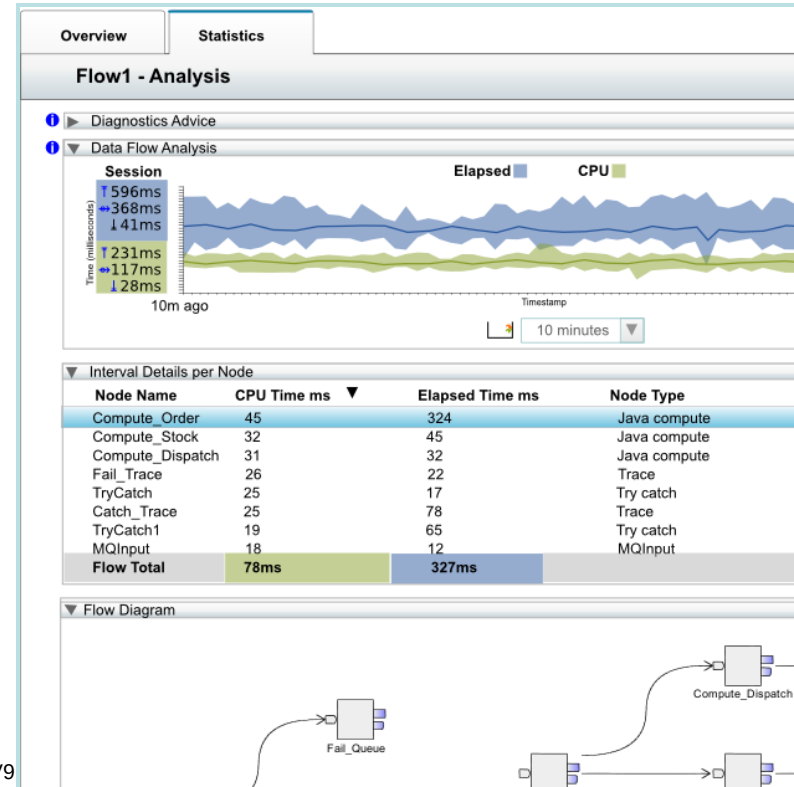
Web Visualisation and Analytics

- 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 and monitoring
  - Exploits underlying public REST/JSON API

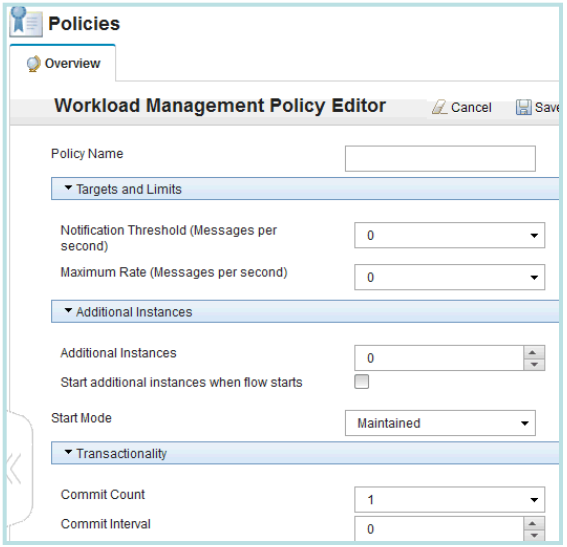
- Integration Performance Analysis
  - Operational experience; no developer intervention required
    - New and existing flows can exploit without change
  - View integration data flow metrics in real-time
    - CPU & I/O time shown by default in integration analyzer
  - Flexible display includes integration diagram & data tables
    - Drill down to understand detailed integration behavior
  - Export collected data as CSV for Excel import etc.
    - Enables offline processing
  - Exploits underlying MQTT web sockets technology
    - Asynchronous notification at low CPU cost





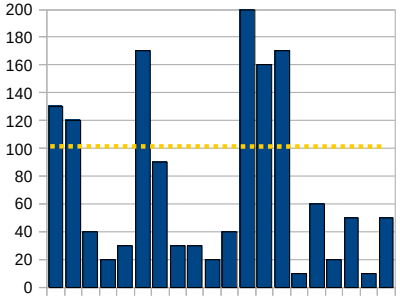
Controlling Integrations with Policy

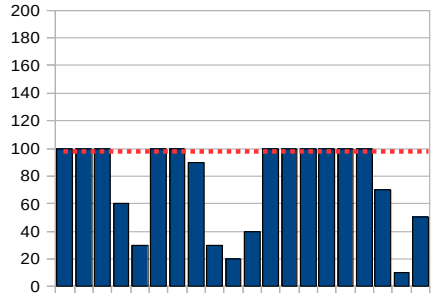
- Integration Workload Management
  - Provide intelligent mechanisms to control processing speed
  - Most common scenario is to reduce back-end server load
  - Design allows more policy-based processing over time
  - Can be applied to new or existing integration data flows

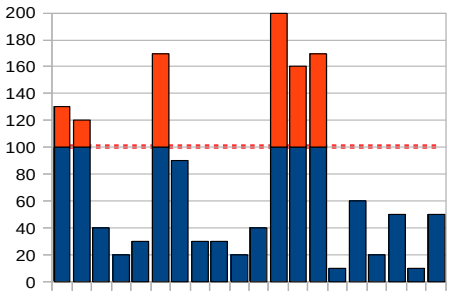


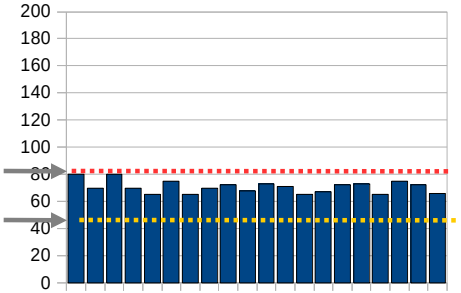
- Policy defines threshold limits and relevant actions
  - Set thresholds for integration data flow throughput
  - Specify actions at threshold, for example:
    - NOTIFY: Higher (or lower) than threshold generates publication
    - DELAY: Excessive workload will have latency added to shape throughput
    - REDIRECT: At threshold, send workload to input node's failure terminal, backout if not wired
  - Options for 'unresponsive message flow management

- 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





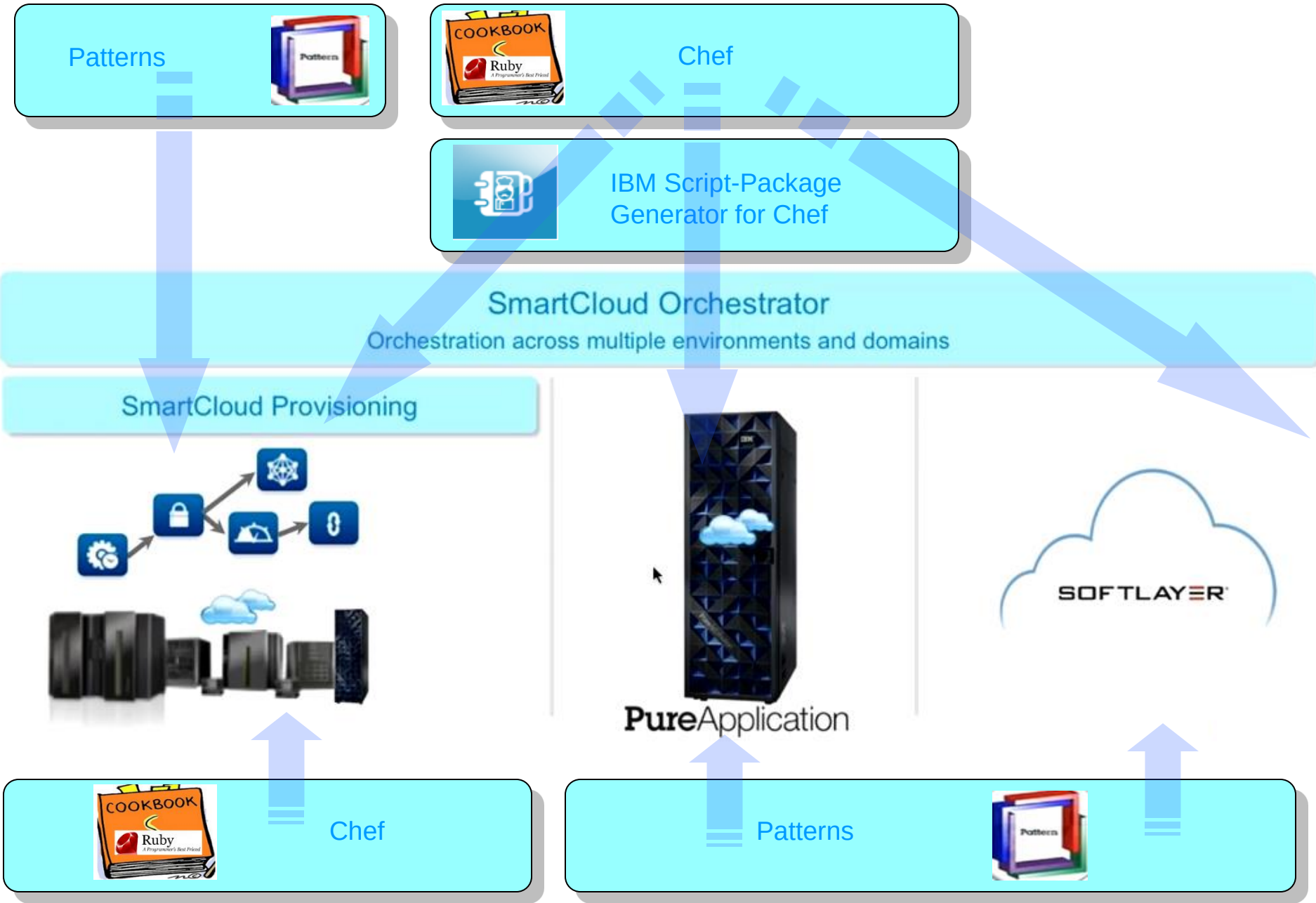




IBM Integration Bus

IIB in the cloud for small to medium sized businesses

Provisioning – Portability and consistency of approach



IBM Integration Bus in the Cloud

IaaS

IIB Developers Edition
IIB Express Edition

IIB Standard Edition
IIB Advanced Edition

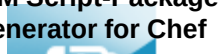
Available from:
https://Github.com/ot4i-cookbooks/ibm_integration_bus

Pre-packaged Image Editions
IIB HyperVisor Edition for RHEL
IIB HyperVisor Edition for AIX

IBM Script-Package Generator for Chef

IBM Script-Package Generator for Chef

IBM Script-Package Generator for Chef



IBM Workload Deployer

Chef

Chef

Chef

On Prem VM Farm

On Prem private cloud

IBM Public Cloud

Public Cloud

Evaluation Integration Sandpit – IIB in the cloud?

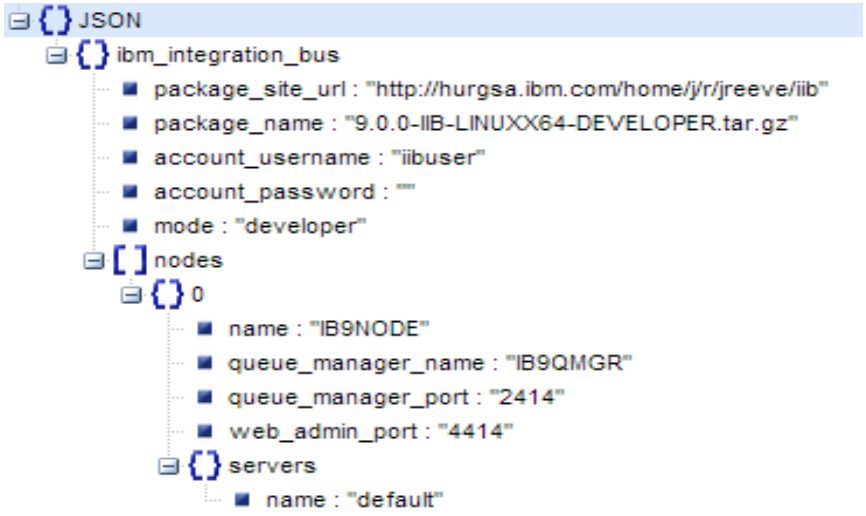
IIB Developers Edition – *Free public download, full function, limited throughput. Switchable to fee based edition*

Choose between two recipes:

Chef

Ubuntu 64-Bit in the cloud

Default recipe – Toolkit, runtime and setup default configuration
Runtime recipe – Runtime and setup default configuration



- No software rental required
- No software to purchase
- Automated provisioning
  - Ready to develop
  - Ready to test and run

Low Cost Start Up Integration Project – IIB in Cloud?

IIB Express Edition – *Core ESB functionality, low cost of entry, license required for prod and performance only*

Exactly the same cookbook and the same two recipes:

Chef

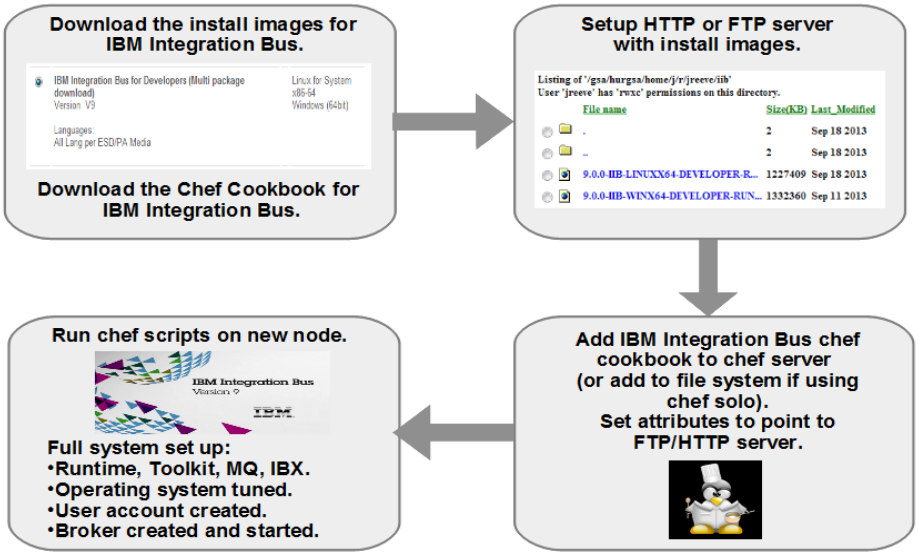
Ubuntu 64-Bit
RHEL 64-Bit
in the cloud

default – installs everything
runtime – installs everything except the toolkit

Controlled through attributes and databag items

Operations mode (Edition) can be chosen:

Express, Standard or Advanced Editions



- IIB Express typically 17K AUD per core
  - 1400 AUD per month for 1st 12 months
  - 300 AUD per month there after
- Automated provisioning
  - Ready to develop
  - Ready to test and run

Dev Ops – IIB in the Cloud?

IIB Any Edition – *Quickly stand up and tear down non-production environments on shared infrastructure*

Exactly the same cookbook and the same two recipes:

Chef

Ubuntu 64-Bit
RHEL 64-Bit
in the cloud

default – Developer Sandpits
runtime – non-prod test environments

DEV_NODE_1

Server_1 Server_2 Server_3 Server_4

DEV_NODE_2

Server_1 Server_2 Server_3 Server_4

QA_NODE_1

Server_1 Server_2 Server_3 Server_4

QA_NODE_2

Server_1 Server_2 Server_3 Server_4

Chef definition role

Add integration capacity for known peaks – IIB in the Cloud?

IIB Any Edition – *Makes most financial sense for Standard and Advanced due to Express low cost.*

Exactly the same cookbook and the same two recipes:

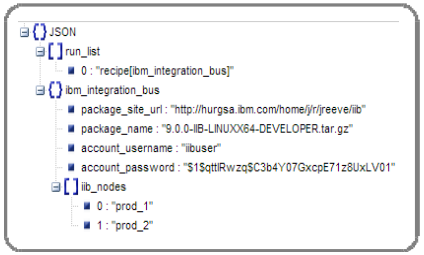
Chef

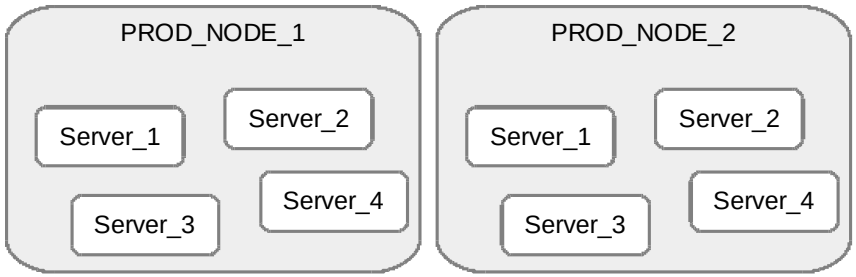
Ubuntu 64-Bit
RHEL 64-Bit
in the cloud

default – installs everything
runtime – installs everything except the toolkit

Add capacity to existing node or add a node

Operations mode (Edition) set to match existing investment





- On Off Capacity on Demand
  - Approximate costs:
    - IIB per processor day =1300 AUD
    - 2 weeks = 18,000 AUD
- Automated provisioning
  - Ready to join cluster and execute

Try it out for free – IIB for Developers on Softlayer

Install IBM Integration Bus v9 Developer Edition on a SoftLayer Cloud Computing Instance instructions

https://www.ibm.com/developerworks/community/blogs/c7e1448b-9651-456c-9924-f78bec90d2c2/entry/iib_on_softlayer?lang=en

1. Create a SoftLayer Server
2. Get IBM Integration Bus Developer Edition
3. Transfer files to the SoftLayer server
4. Install IBM Integration Bus runtime on the SoftLayer server
5. Create a simple MQ and Integration Bus configuration on the SoftLayer server
6. Deploy to and manage the Integration Bus runtime

IBM Integration Bus v9.0

Useful Links

Important Links page

- Getting started
- Dev Download
- Integration Commnity
- MQseries.Net forum
- Youtube channels
- Softlayers artcale
- PVU chart for processors
- IIB Licensing Ts and Cs