



# ***JBoss Enterprise SOA Platform***

# ***JBoss Enterprise Data Services***

# ***Platform***

## ***V5.3 Technical Overview***

Ken Johnson, Director Product Management, JBoss Integration Products

May 2012

# Agenda

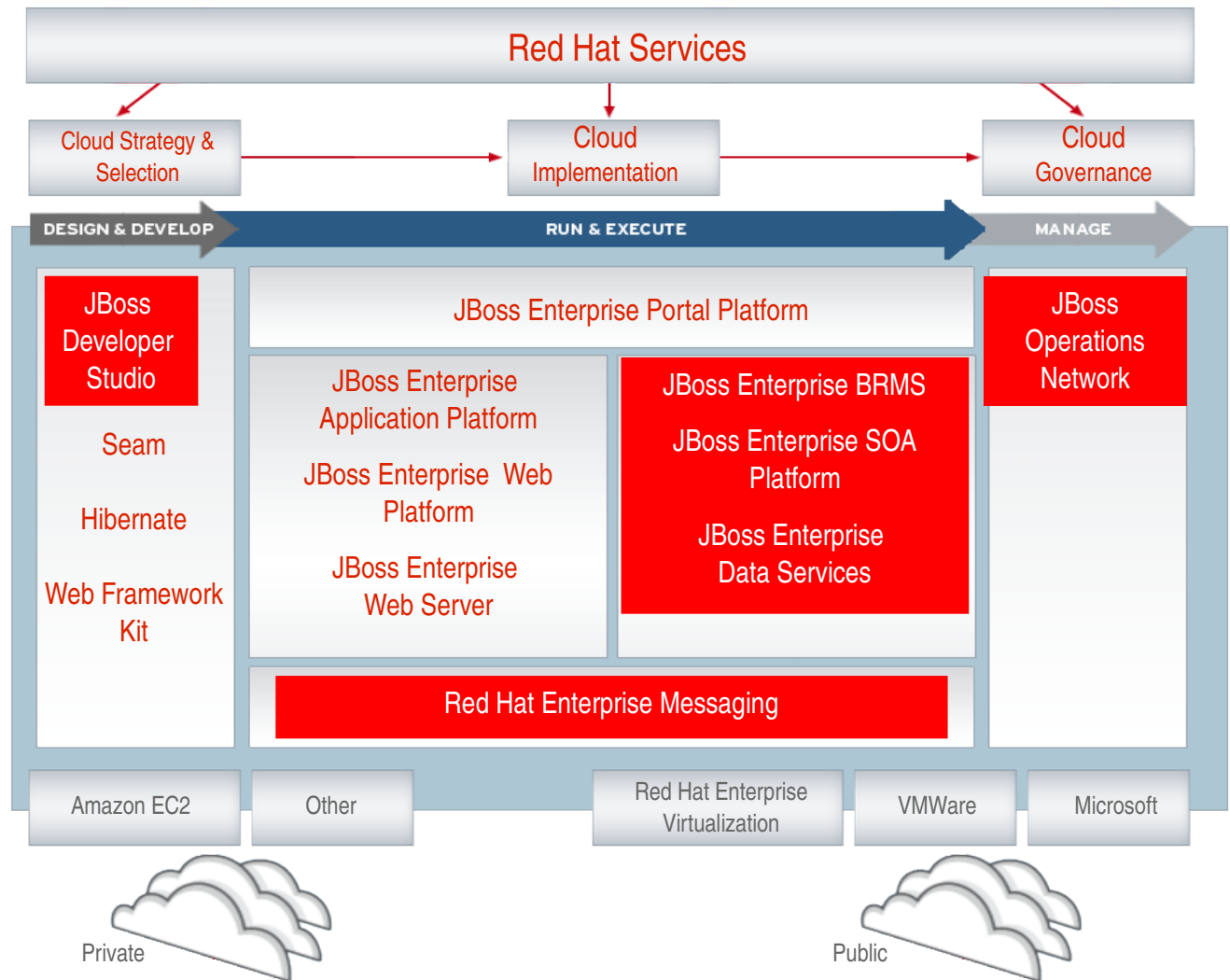
- Quick Summary / What's New in Integration Products
- JBoss SOA Platform 5.3 – Overview of Changes
- SOA-P 5.3 – Details
- SOA-P Wrap-up, Q/A
- --- Lunch/Break ---
- JBoss EDS Platform 5.3 – Overview of Changes
- EDS-P 5.3 – Details
- EDS-P Wrap-up, Q/A
- Overall Questions and Discussion



# Comprehensive Middleware Portfolio

Core Principles: Enterprise Class – Open Choice – Value

- Cloud & On-premises
- Rock-solid reliability, performance & long-term stability
- Exceptional support

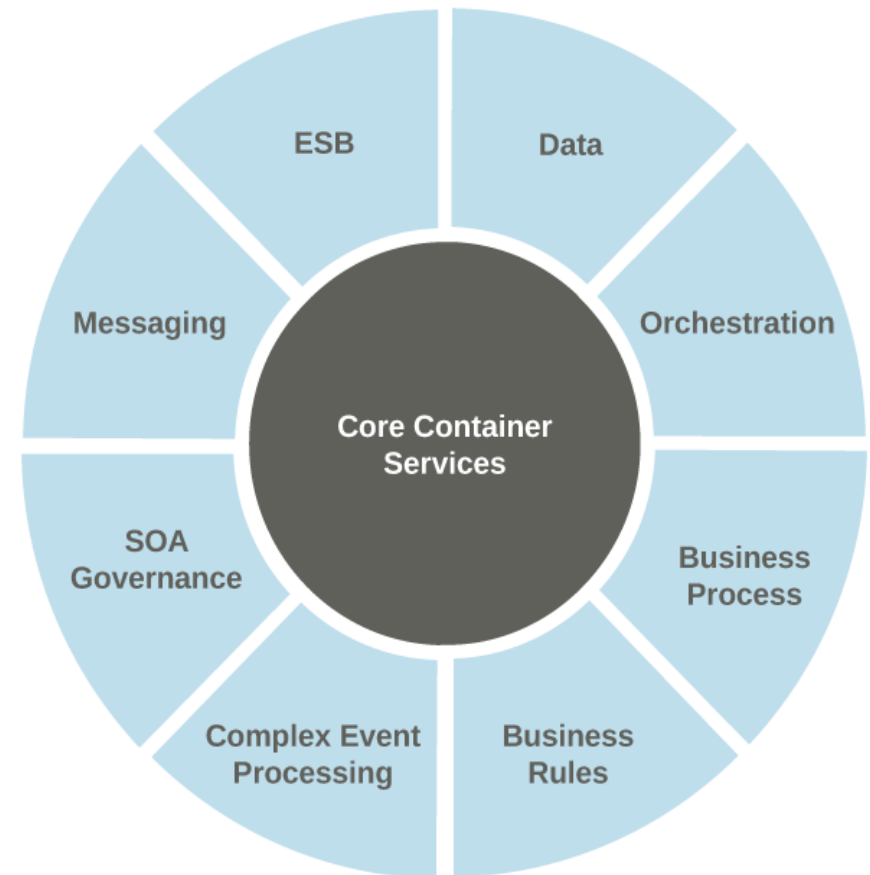


Red Hat Proprietary and Confidential



# Red Hat Integration Products Strategy

- Deliver enterprise-class SOA middleware to enable the Intelligent Integrated Enterprise
- Work with the open source community and customers to create technologies that:
  - offer significant value-adds to business and IT
  - build upon strong core services and ESB and extend with advanced data, process, messaging, event processing and decision services
- Provide a highly flexible platform portfolio from the highest quality and most innovative components

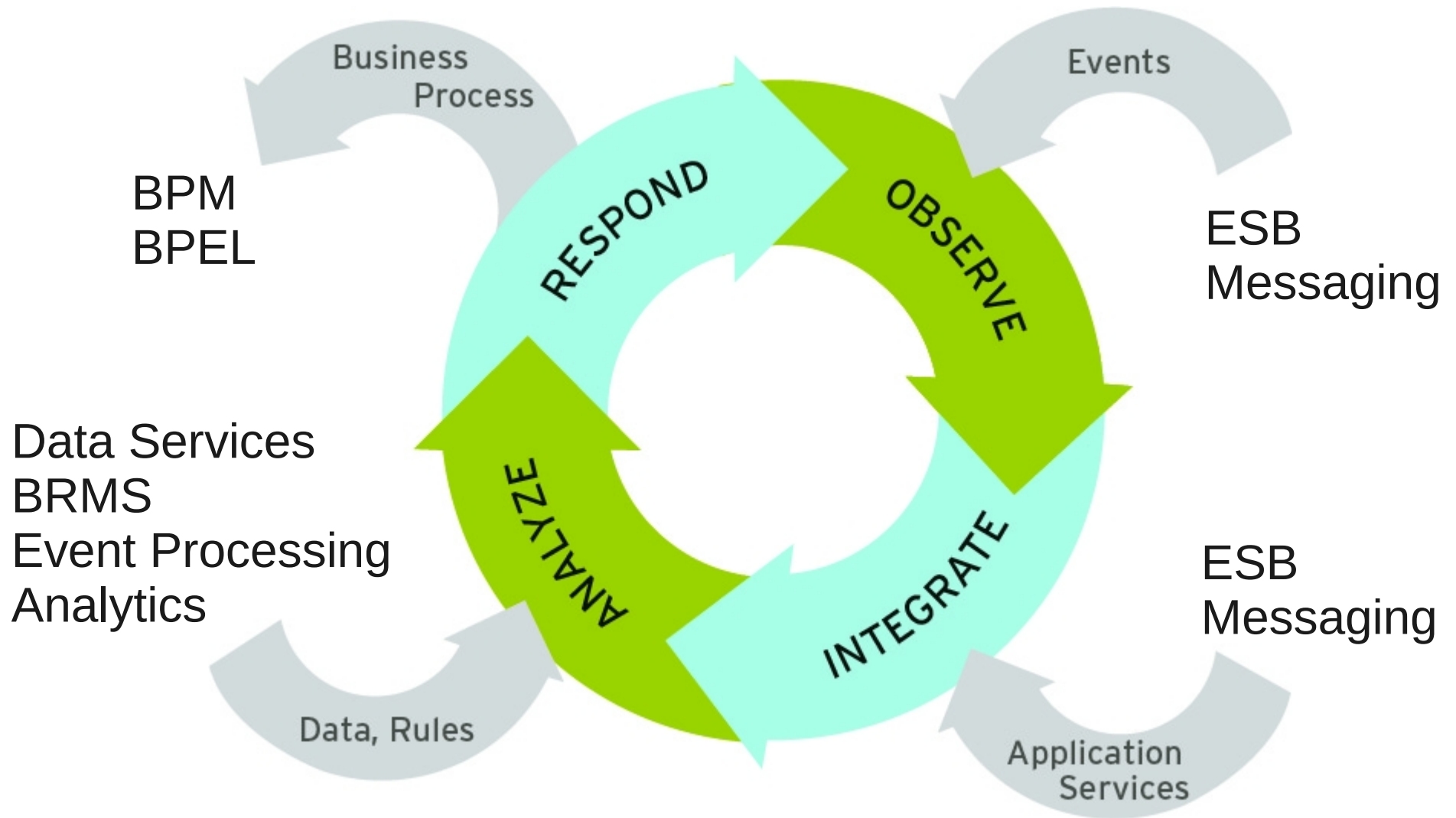


# What's New in Integration Products

- SOA-P, EDS-P, BRMS targeting June GAs for v5.3
- V6 targeting alpha late CY12, GA Q2/CY13 (JBW)
- MRG-M 2.1 shipped (finally!)
  - JCA Adapter
  - Java performance improvements
  - Pricing changes (64-cores, \$30K/\$45K)
  - Evaluating M-R-G breakup plan
  - Pilot GLS class
- First round of NA partner training nearly complete
- Intelligent Integrated Enterprise theme continues



# Intelligent, Integrated Enterprise





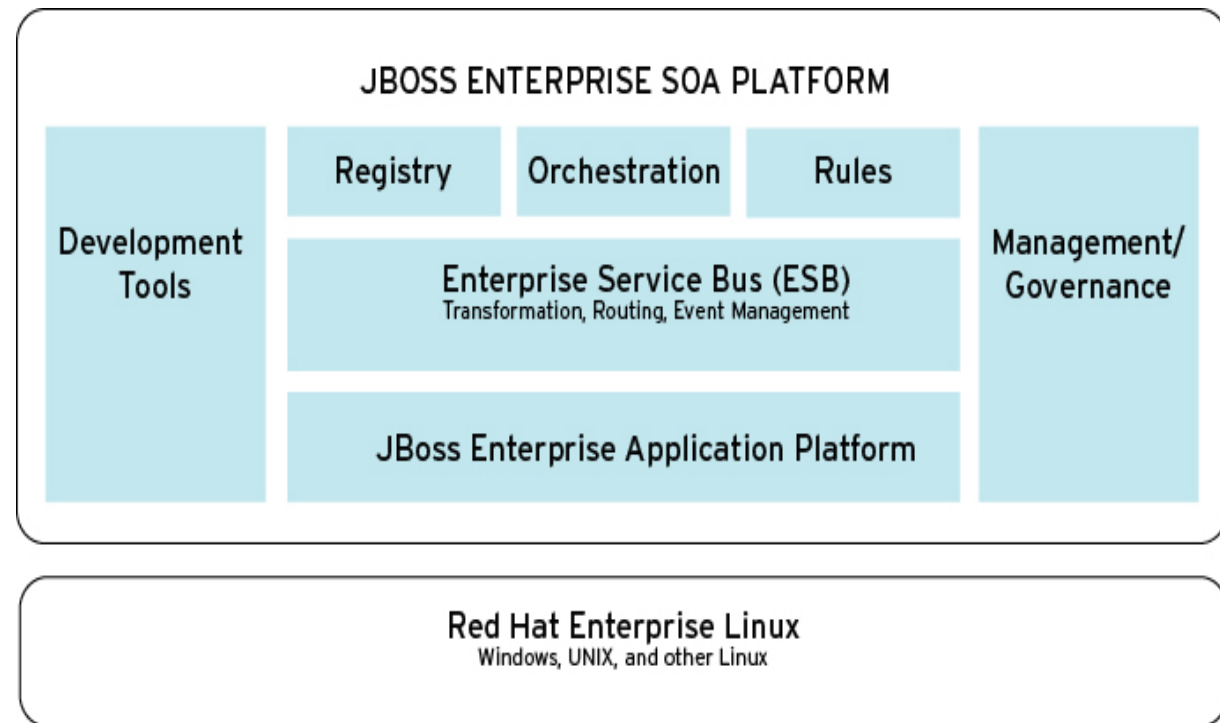
# **JBoss Enterprise SOA Platform**

## **5.3 overview**

# JBoss Enterprise SOA Platform 5.3

*A flexible, standards-based platform  
to integrate applications, SOA services,  
business events and automate business processes.*

- Open Choice Integration
  - Application/EAI
  - Service-oriented
  - Event-driven
  - Messaging
- Workflow
- Service Orchestration
- Intelligent routing
- Registry
- Rock solid enterprise-grade



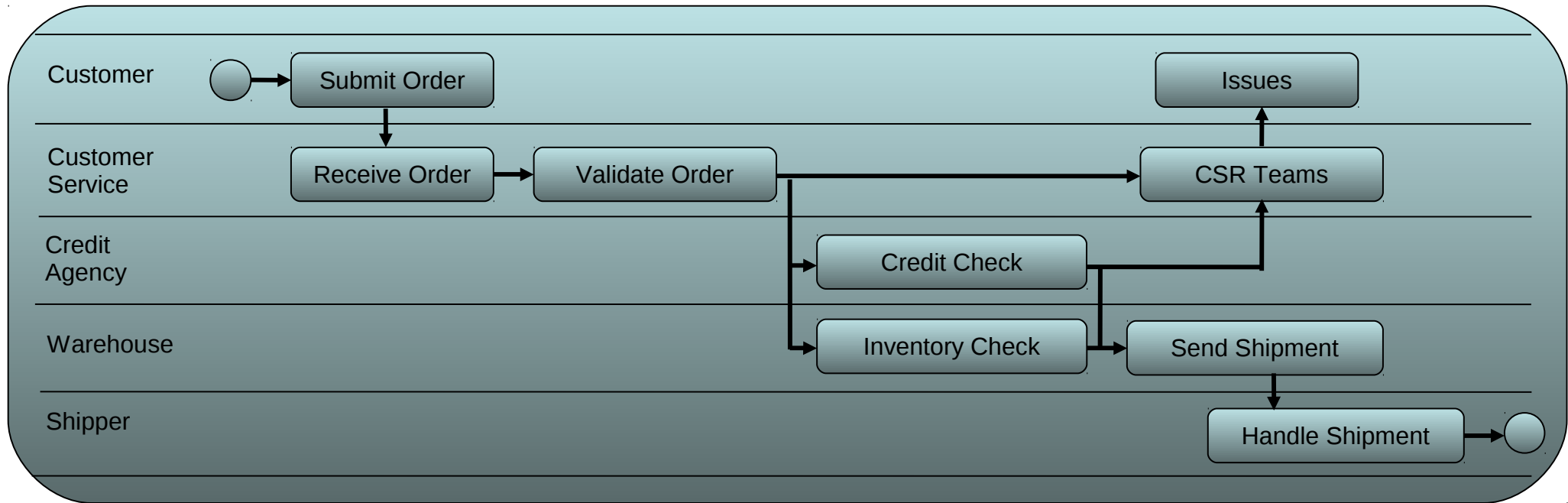


# SOA-P 5.3 Components

Component	Version
JBoss ESB	4.11
jBPM	3.2.12
Drools Expert (business rules engine)	5.3.0.BRMS
jUDDI	3.1.3
RiftSaw (BPEL)	2.3.3
JBoss Enterprise Application Platform	5.1.2
JBoss Messaging	1.4.8.SP5
HornetQ Messaging	2.2.10
JBoss Web Services	3.2.1.SP11
JBoss WS CXF	3.1.2.SP9
Camel	2.4
JBoss Developer Studio	5.0 or later



# Service Orientation



## Validate Order

- a Parse XML
- b Transform
- c Apply Business Rules

## Credit Check

- a Create Outbound Msg
- b Handle Response
- c Apply Business Rules

## Inventory Check

- a Send to N Warehouses
- b Handle N Responses
- c Determine Best WHSEs
- d Handle Drop-Ships

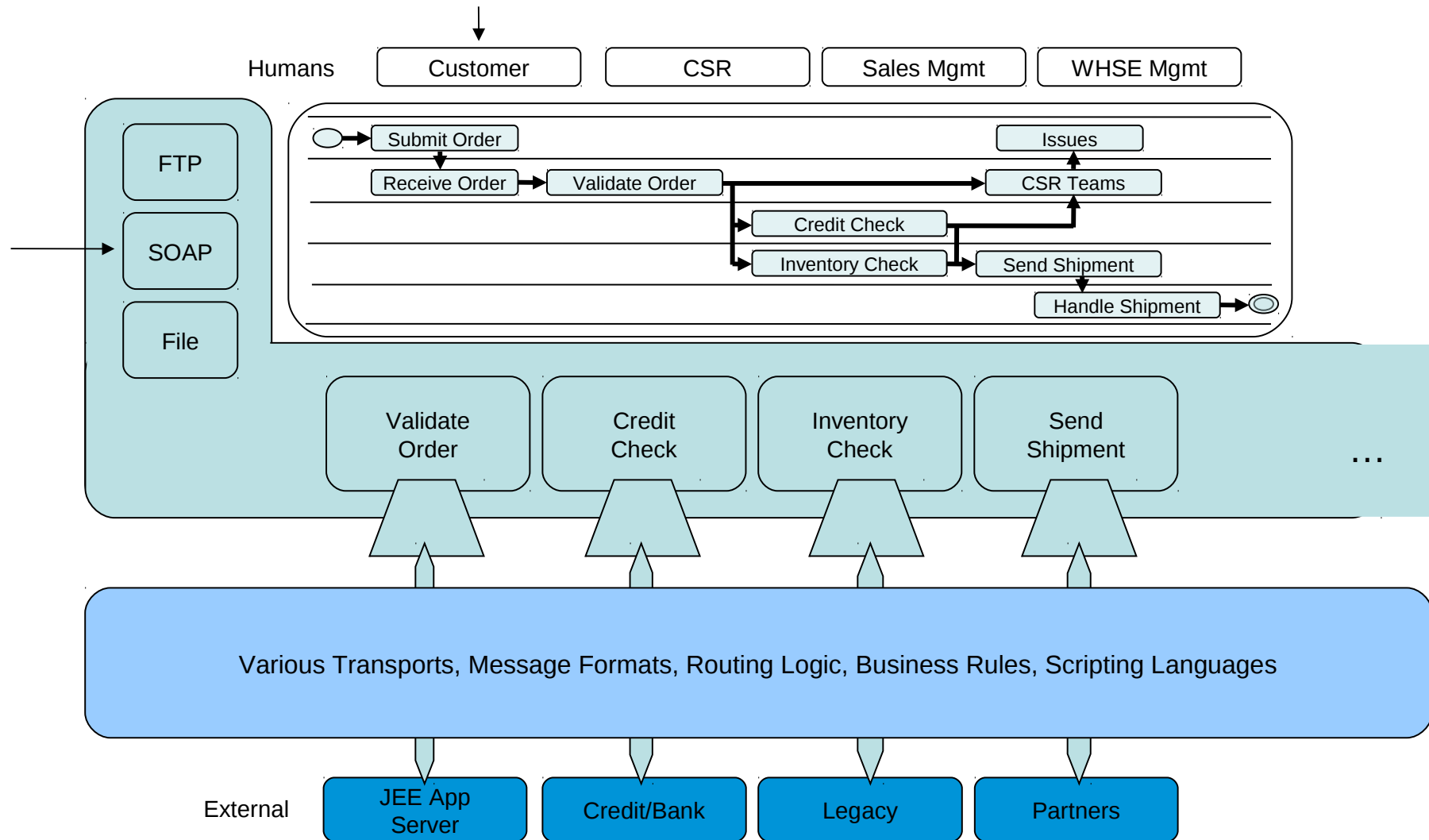
## Send Shipment

- a Determine Shipper(s)
- b Print Labels
- c Print Pick Tickets
- d Create & Send ASNs

**ESB Mediates  
& Provides Services**

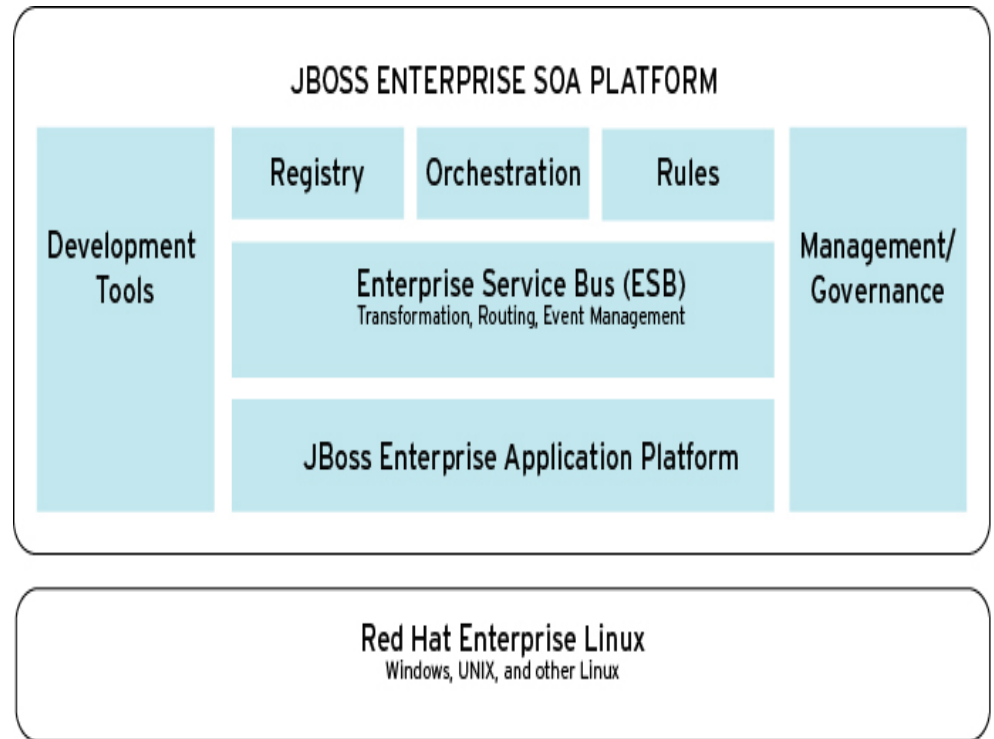


# SOA = ESB + Orchestration + Business Rules



# What's New – SOA-P 5.3

- EAP 5.1.2
  - HornetQ
  - PicketLink (SAML)
- PostgreSQL 9 (9.1)
- Apache Camel Gateway full support



- Common Drools runtime with BRMS
- ESB Integration with jBPM5 (via BRMS)
- ESB Enhancements
- Tooling – JBDS 5; Split of “Core” and “Integration”
- Minor Documentation refactoring



# Overview of Key Changes

## HornetQ support. Version 2.2.10.

- Installed separately, not enabled by default
  - `$ cd SOA_ROOT/jboss-as/extras/hornetq`
  - `$ ant`
- Helloworld quickstart (and others): `hornetq-jms.xml`

```
<?xml version="1.0"?>
<configuration xmlns="urn:hornetq"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:hornetq /schema/hornetq-jms.xsd">
  <queue name="quickstart_helloworld_Request_esb">
    <entry name="queue/quickstart_helloworld_Request_esb"/>
  </queue>
  <queue name="quickstart_helloworld_Request_gw">
    <entry name="queue/quickstart_helloworld_Request_gw"/>
  </queue>
</configuration>
```



# Overview of Key Changes

## Red Hat Enterprise (MRG) Messaging Support

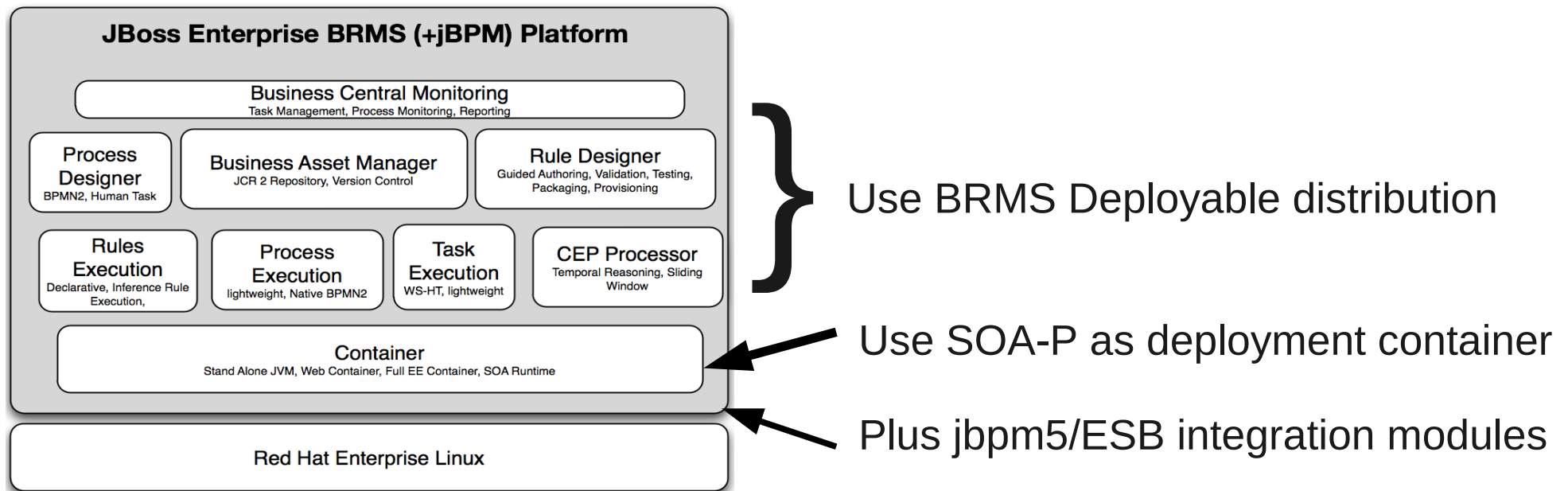
- See README-JBOSS.txt at the following locations:
  - `svn.apache.org/viewvc/qpidd/trunk/qpidd/java/jca/README-JBOSS.txt`
  - `svn.apache.org/viewvc/qpidd/trunk/qpidd/java/jca/example/README-JBOSS.txt`
- Also included with JCA adapter distro



# Overview of Key Changes

## JBPM 5 integration with ESB

- JBPM 3 (legacy) remains the workflow engine in SOA 5.3
- JBPM 5 (new) is delivered with BRMS 5.3
- Integration supported when both products installed together



# Overview of Key Changes

## JBPM 5 integration with ESB, cont'd

- New jBPM5Processor Action in ESB
  - Invoke and Signal jBPM5 processes
    - Requires co-installation for dependencies
    - Requires integration modules (jbpm5.esb, impl JAR)
- How does BPM call ESB service?
  - Still open item. Can be through gateway (web service). Investigating a tighter integration.
- Tooling limitations
  - JBPM5Processor action is supported in esb.xml but not in the ESB editor.





# Overview of Key Changes



## Camel Gateway – full support

- What is Camel – Enterprise Integration Patterns (EIP ) framework
- For SOA 5.3, Camel is positioned as extending the reach of SOA-P/ESB.
- Gateway based on Camel 2.4. Includes only Camel Core - not discrete components.
- Camel has large and growing set of components (analogous to adapters)
- Full support of Camel Gateway is **not** full support of all (or even any particular) Camel Components. The gateway supports **integration** with the ESB.



# Overview of Key Changes

## Camel Gateway – continued

- (diagram here)



# Overview of Key Changes

## ESB Enhancements

- Global Action Pipeline Interceptors
  - Generically intercept the action pipeline
  - Invoked at:
    - Service Instantiation
    - Service Start
    - Service End
    - Service Failure
  - Message and Service config passed
  - Configurable via jbossesb-properties.xml



# Overview of Key Changes

## ESB Enhancements – cont'd

- RecordRoute
  - Track history of message through a set of services
  - ServiceRouteFilter configurable withing jbossesb-properties.xml
    - Service level: recordRoute="true"
    - Message level: "service-record-route" property set to "true"
- Dynamic MessageAwareListener thread pool config (pending)
  - MessageAwareListener thread pool exposed through MBean
- JMS Message Priority (pending)
  - Gateway ability to setJMSPriority





# **JBoss Enterprise SOA Platform**

## **5.3 Detail**

# Key Changes/Enhancements - Details

- SOA 5.3/ESB + BRMS 5.3/jBPM5 integration
- Camel Gateway
- ESB Enhancements
- SAML/PicketLink
- Tooling Distribution



# Misc Topics

- Roll-up Patches
- 5.x Product Lifecycle
  - BRMS 5 EOL moves May 2014 --> May 2015
  - SOA/EDS 5 EOL moves Feb 2015 --> May 2015
- Java 1.7 Support
- Roadmap





# JBoss Enterprise SOA Platform

## 5.3 Q/A





# **JBoss Enterprise**

# **Data Services Platform**

## **5.3 Overview**

# JBoss Enterprise Data Services Platform 5.3

Real Time Data Services to Accelerate Superior Business Execution

**Turns the data you have into the information you need**

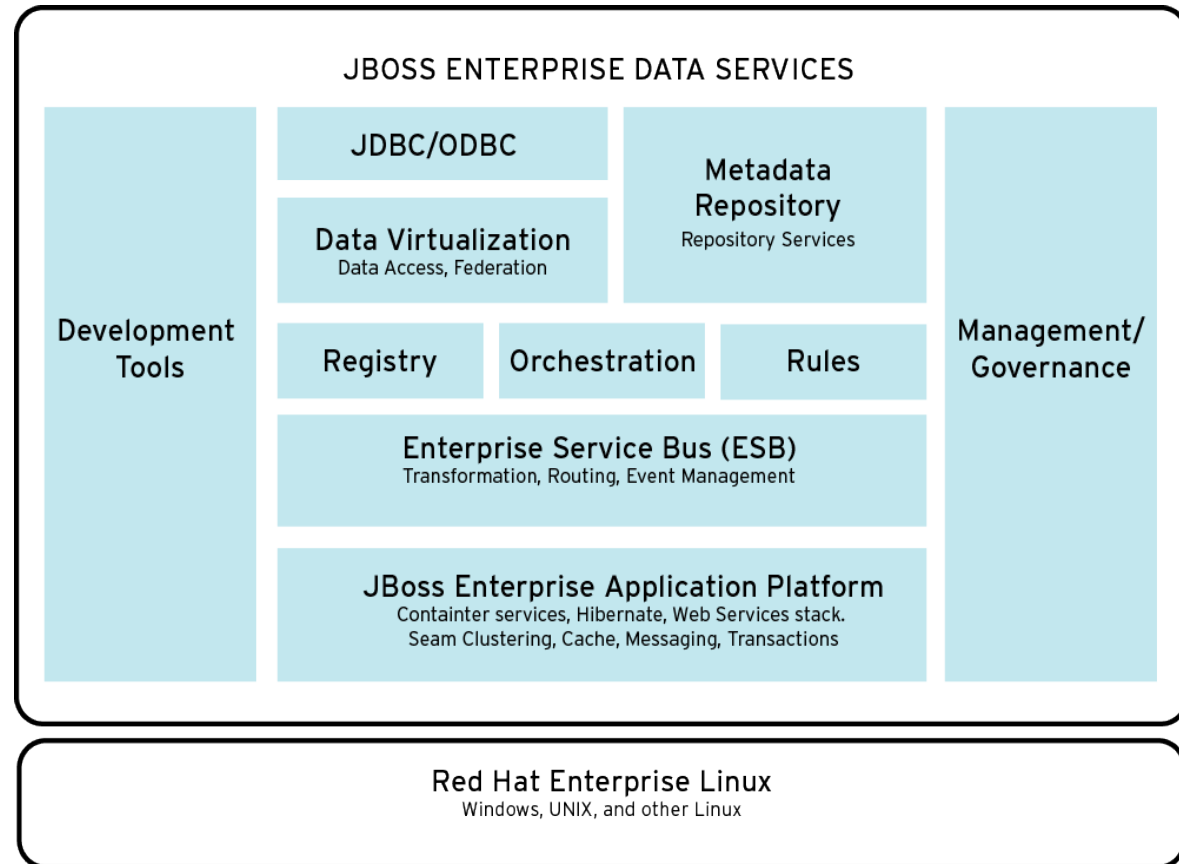
Augments and extends SOA Platform to address data access, integration and abstraction.

- Master Data Services
- Data Governance, Compliance
- Reporting/Analytics enablement

Real-time read/write access to heterogeneous data stores

Speeds application development by simplifying access to distributed data

Centralized access control, auditing



# EDS-P 5.3 Components

Component	Version
Teiid	7.7.1
ModeShape	2.8.1
JBoss ESB	4.11
JBoss jBPM	3.2.12
Drools Expert (business rules engine)	5.3.0.BRMS
jUDDI	3.1.3
RiftSaw (BPEL)	2.3.3
JBoss Enterprise Application Platform	5.1.2
JBoss Messaging	1.4.8.SP5
HornetQ Messaging (tech preview)	2.2.10
JBoss Web Services	3.2.1.SP11
JBoss WS CXF	3.1.2.SP9
JBoss Developer Studio	5.0 or later

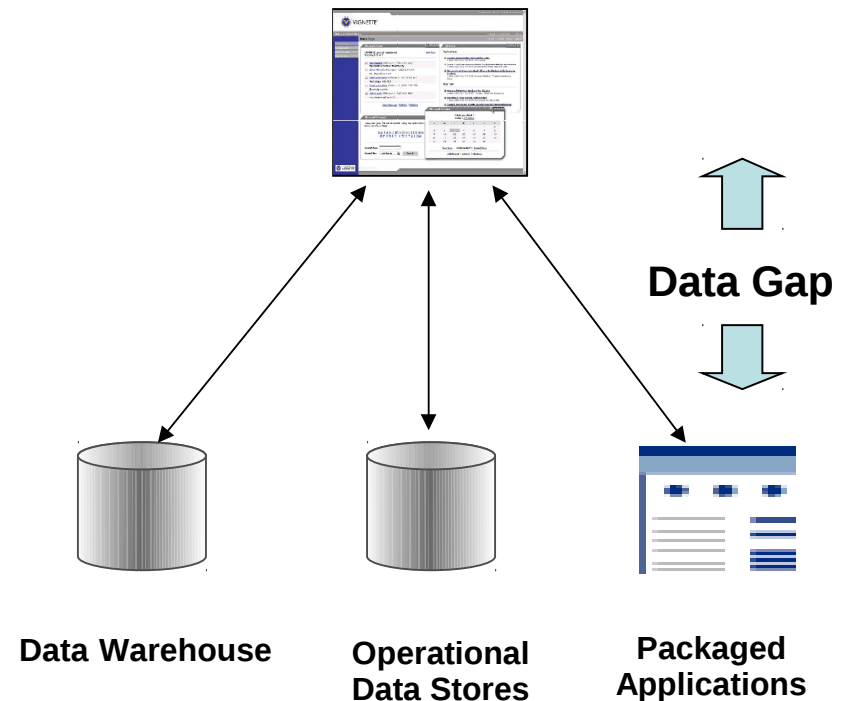


# Problem: Data Challenges

*Tremendous value in existing information assets, but...*  
*Time consuming and costly to implement new applications that leverage this information*

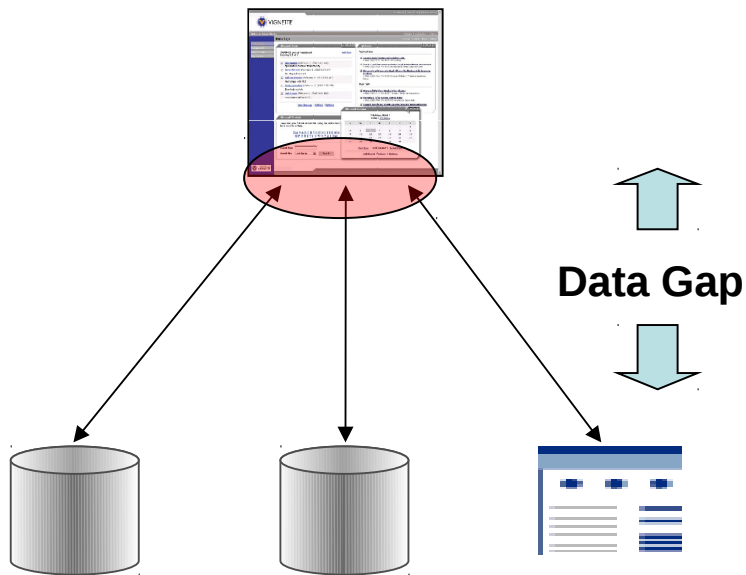
## Challenges

- Different physical structure
- Different terminology and meaning
- Different interfaces
- May need to federate/integrate
- May be “locked in” to database
- Must ensure performance
- Maintain/Improve security



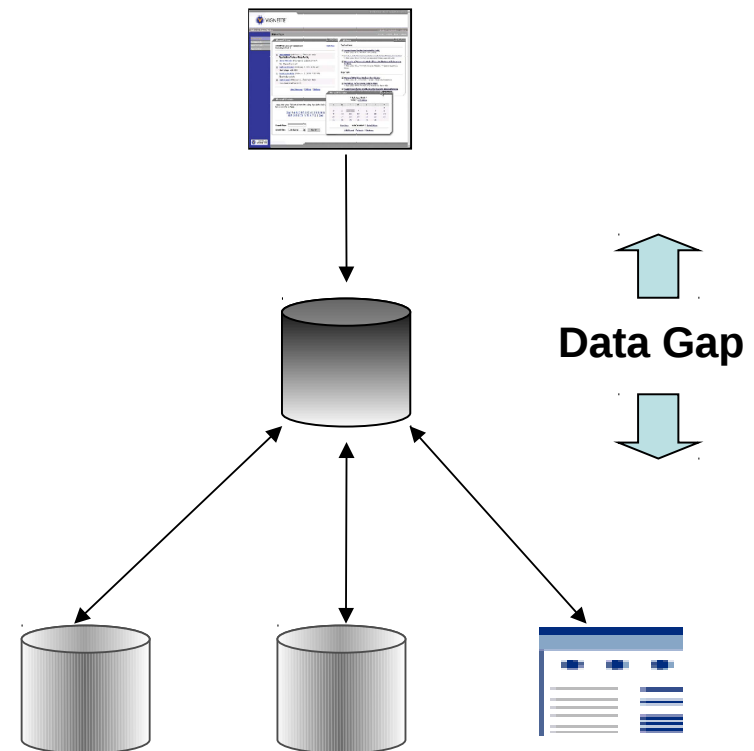
# Problem: Data Challenges – Alternatives

## Hard Code



- Time consuming – difficult/costly
- No re-use of data logic
- Any changes break the application

## Replicate/Data Mart

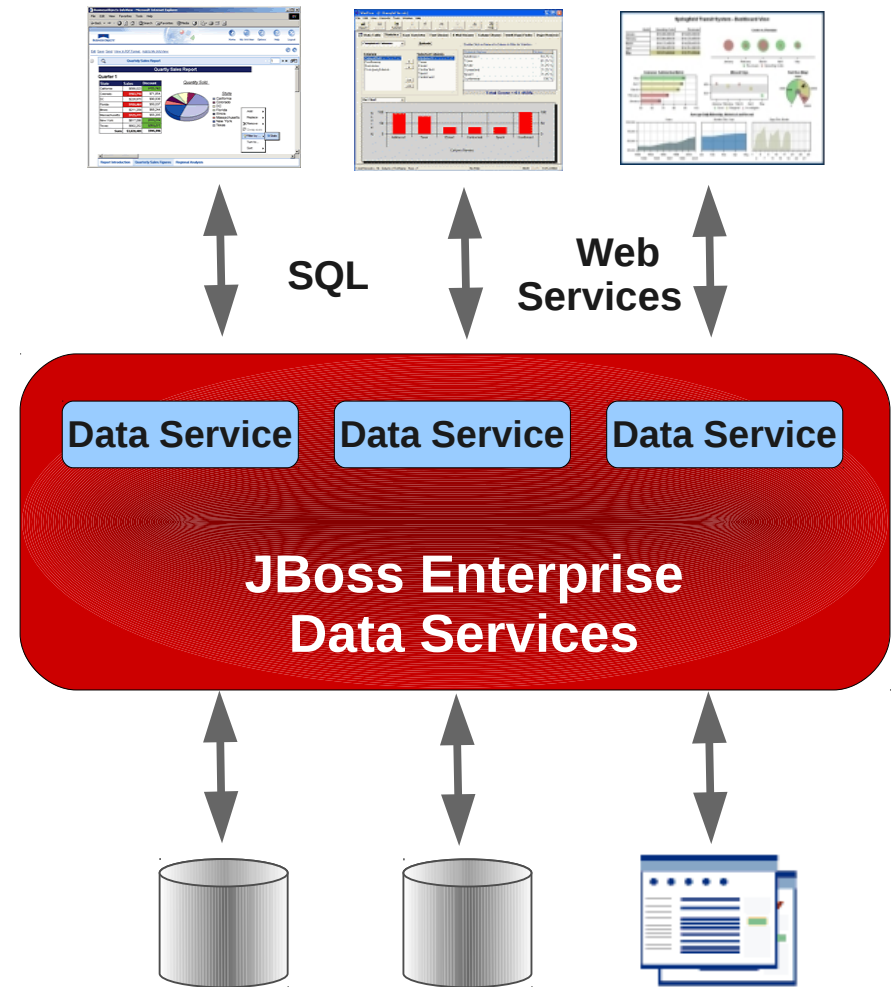


- Data not fresh
- Costly – additional licenses
- More copies of data = more silos
- Lack of agility

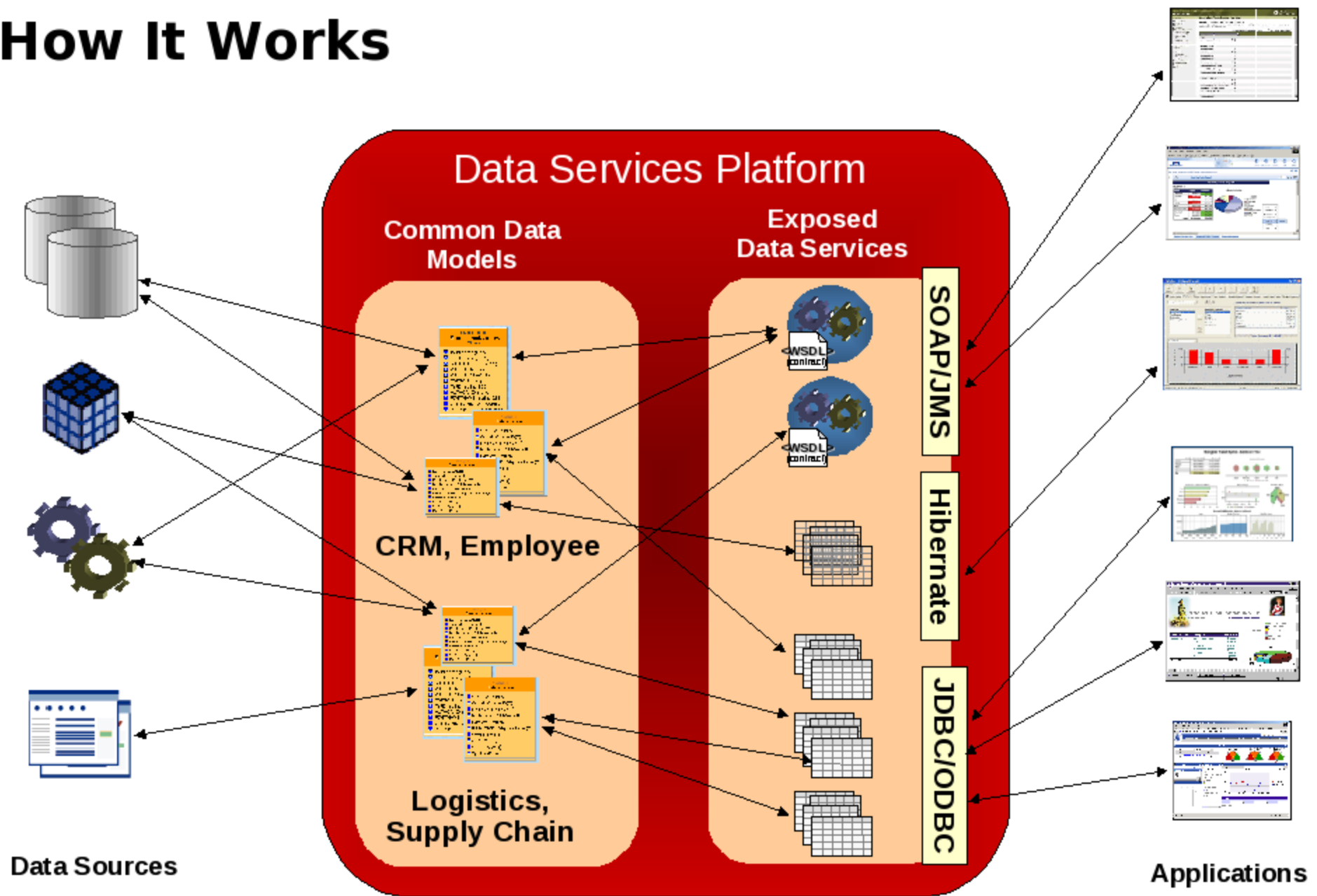


# Solution: JBoss Enterprise Data Services

- **Turn the data you have into the information you want.**
- Standards-based read/write access to heterogeneous data stores in real time.
- Speeds application development by simplifying access to distributed data.
- Transforms data structure and semantics through data virtualization.
- Consolidates data into a “single view” without the need for more data.
- Centralized access control, auditing through robust security infrastructure.
- Creates services that provision data to business process in your SOA.
- Enterprise-proven – flexible, scalable, high-performance.



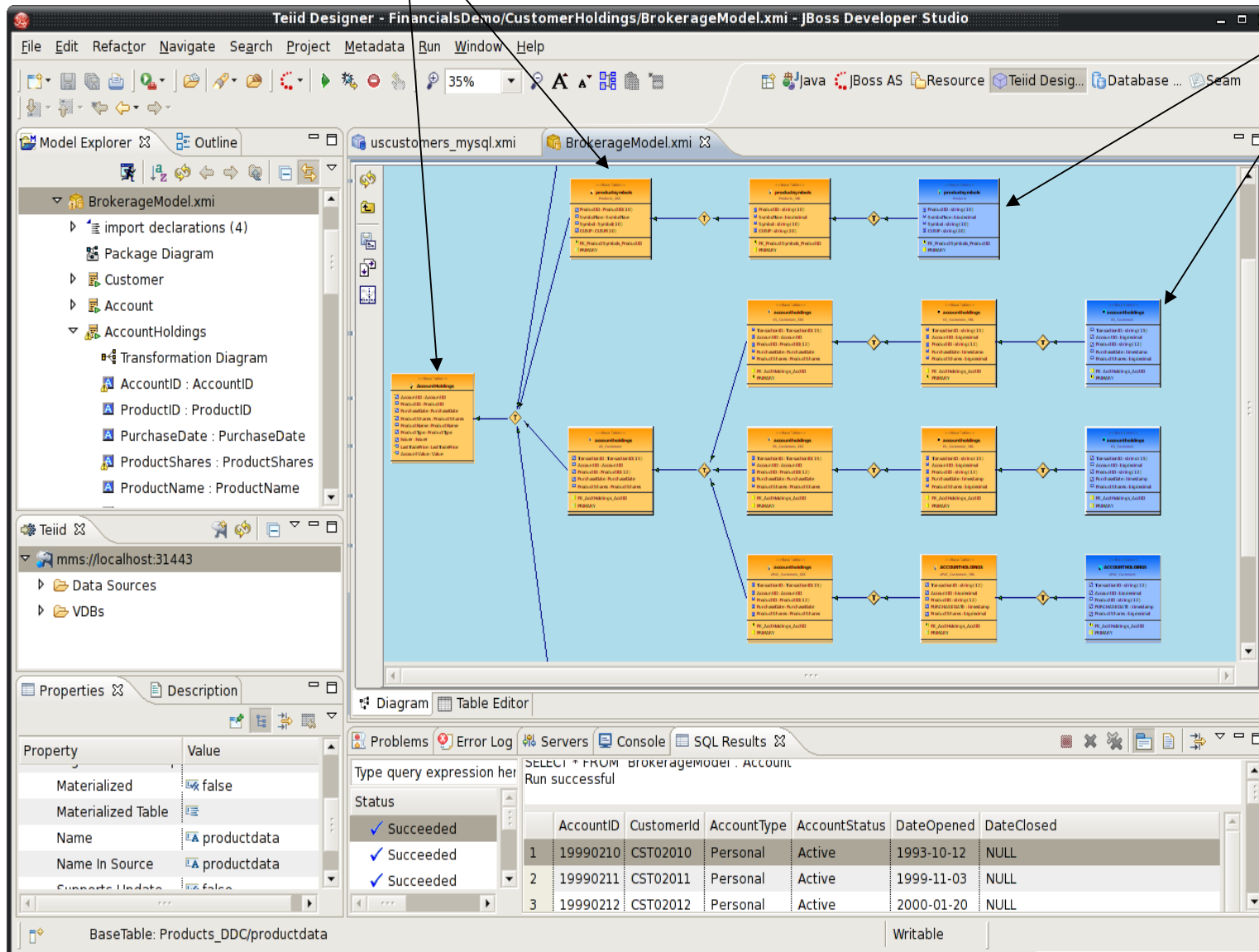
# How It Works



# JBoss Developer Studio - Designer Tooling

Logical Models

Physical Models representing  
actual data sources



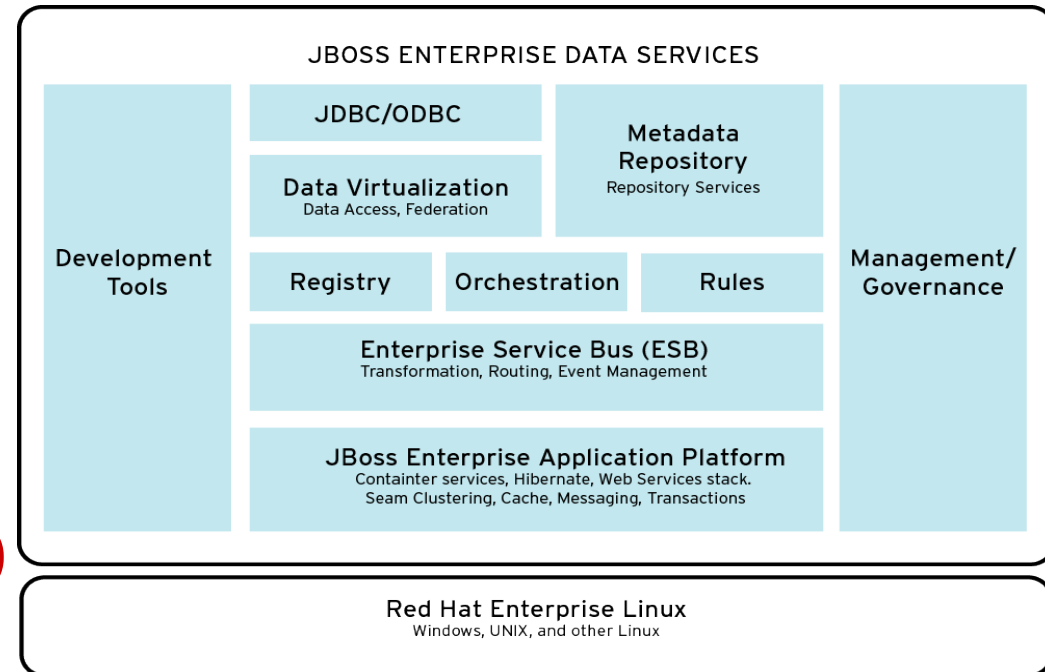
- Shows structural transformations
- Defines transformations with
  - Selects
  - Joins
  - Criteria
  - Functions
  - Unions
  - User Defined





# What's New in EDS-P 5.3

- SOA-P 5.3/EAP 5.1.2
- New Data Sources:
  - Greenplum 6
  - PostgreSQL 9
  - Apache Hive 0.7.1 (TP)
  - JBoss Data Grid (TBD/TP)
- Data Source Enhancements
  - Excel translator, SF.com aggregates, Fixed-width files
- Buffering Enhancements: performance, off-heap buffer
- GSSAPI support
- Tooling – JBDS 5; Split of “Core” and “Integration”
  - Guides, cheatsheets; XML source modeling updates



# What's New In EDS Tooling (Teiid Designer)

- Usability Improvements
  - Action Guides View
  - Cheat Sheets
  - Project Status View
- XML Source Modeling
  - XML local and remote files
    - REST import capability (initial SAP integration)
  - Re-vamped WSDL importer (SOAP)
    - Handles complex schema
    - Single queryable procedure



# Teiid Designer – Guides View

The diagram illustrates the Teiid Designer Guides View, which is a central hub for accessing various actions and guides. It is divided into several sections:

- Modeling Actions...**: A dropdown menu that can be expanded to show a list of actions. A blue arrow points from this section to the **Categorized Action Menu**.
- Action Sets**: A section containing a list of actions, including "Create Teiid Model Project", "Create Web Services (SOAP) connection", "Generate relational models from WSDL", "Preview Data", "Create VDB", and "Execute VDB". A blue arrow points from this section to the **Categorized Action Menu**.
- Description**: A section providing a description for the selected action, such as "Create an ODA Web Services connection profile".
- Cheat Sheets**: A section containing a list of cheat sheets for Teiid Designer use cases, including "Create Model from JDBC Source", "Create Model from Flat File Source", "Consume a SOAP Web Service", "Create Model from XML Local File Source", "Create Model from XML Remote Source", "Create multi-source VDB", and "Create and test a VDB". A blue arrow points from this section to the **Cheat Sheets** panel.

**Categorized Action Menu**

This menu is organized into categories, with "Model Data Sources" highlighted. The actions listed include:

- Manage Model Projects
- Define Models
- Manage Connections
- Model Data Sources
  - Create source model from DDL file
  - Create source model from local flat file source
  - Create source model for JDBC data source
  - Create source model from Salesforce data source
  - Consume Web Service WSDL
  - Create source model from XML file source
  - Preview Data
- Consume a SOAP Web Service
- Manage VDBs
- Teiid Server
- Test
- Teiid Cheat Sheets

**Cheat Sheets**

Cheat sheets for Teiid Designer use cases

- Create Model from JDBC Source
- Create Model from Flat File Source
- Consume a SOAP Web Service
- Create Model from XML Local File Source
- Create Model from XML Remote Source
- Create multi-source VDB
- Create and test a VDB

**Create New Teiid Model Project**

Follow the steps below to create a Teiid Model Project

Launch New Teiid Model Project Wizard

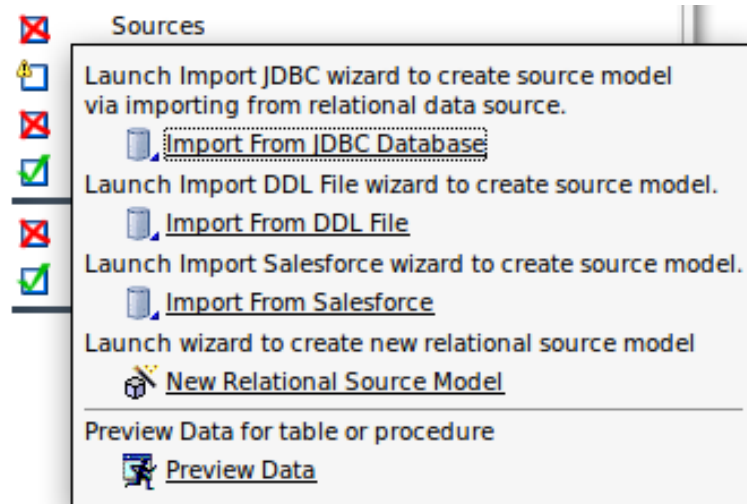
- 1) Specify unique project name
- 2) Click **Next** > twice to get to **Model Project Options** page
- 3) Check folders you wish the wizard to create in your project
- 4) Click **Finish**

Steps to follow:

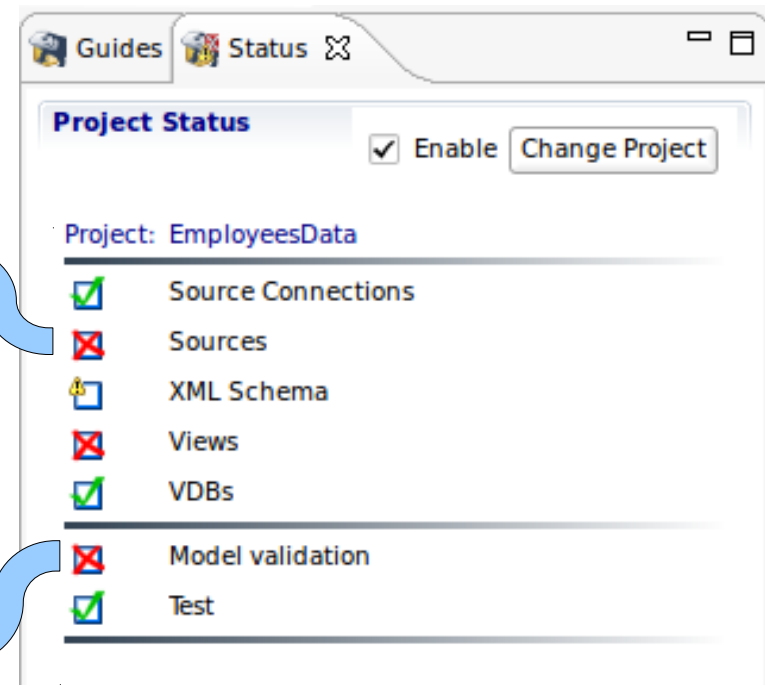
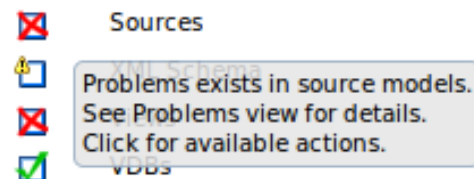
- Create New Flat File Source Connection
- Create Source From Flat File Connection
- Test Flat File Data
- Create VDB
- Test VDB

# Teiid Designer – Project Status View

## Click for applicable actions

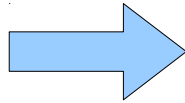


## Hover for status summary

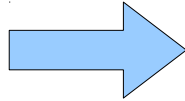


# Consume SOAP WS – Source Definition

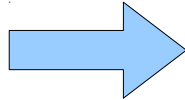
WSDL Source  
Connection Profile



Select Port  
Default Service Mode



Select Operations



**Create Relational Model from Web Service**

**Source and WSDL Operations Definition**  
Press the "Next >" button to continue.

**Connection Profile**  
ConvertTemp [New... Edit...]

**WSDL URL or Location:**  
http://webservices.daehosting.com/services/TemperatureConversions.wso?WSDL [Validate WSDL]

**Select Port** TemperatureConversionsSoap

**Binding** SOAP11 **Service Mode** PAYLOAD

**Select the desired WSDL Operations**

Select All Deselect All

Operation
<input checked="" type="checkbox"/> CelciusToFahrenheit
<input checked="" type="checkbox"/> FahrenheitToCelcius
<input checked="" type="checkbox"/> WindChillInCelcius
<input checked="" type="checkbox"/> WindChillInFahrenheit

**Selection Details:**

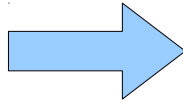
Operation: WindChillInCelcius  
binding: TemperatureConversionsSoapBinding  
port: TemperatureConversionsSoap  
service: TemperatureConversions  
id: { http://webservices.daehosting.com/temperature } TemperatureConversionsSoapBinding  
input-message: WindChillInCelciusRequest

[?] < Back Next > Cancel Finish

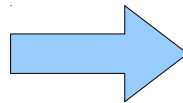


# Consume SOAP WS – Procedure Definition

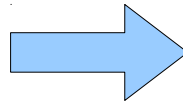
Choose Operation



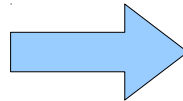
Request and Response  
Procedure Definition



Define Input Elements  
And Output Columns



Choose Operation



**Create Relational Model from Web Service**

**Procedure Definition**  
Press the "Finish" button to finish.

**Operations**  
WindChillInFahrenheit  
☐ Overwrite existing procedures for this operation

**Request** | **Response** | **Wrapper Procedure**  
Generated Procedure Name: WindChillInFahrenheit\_request

**BODY** | **HEADER**

**Schema Contents**  
WindChillInFahrenheit.\_type  
sequence  
nFahrenheit  
nWindSpeed

**Element Info**  
Add | Delete | Up | Down  
Name  
nFahrenheit  
nWindSpeed

**Generated SQL Statement**  
CREATE VIRTUAL PROCEDURE  
BEGIN  
SELECT  
XMLELEMENT(NAME WindChillInFahrenheit, XMLNAMESPACES(DEFAULT 'http://  
webservices.daehosting.com/temperature'),  
XMLELEMENT(NAME nFahrenheit,  
TemperatureConversionsView.WindChillInFahrenheit\_request.nFahrenheit),  
XMLELEMENT(NAME nWindSpeed,

**Buttons:** ? | < Back | Next > | Cancel | Finish

# What's New In EDS – Data Sources

- Excel Translator
  - Dedicated translator for Excel for use with JDBC-ODBC driver
- Salesforce.com aggregate support
  - GROUP BY, HAVING, standard aggregate functions (more)
- Fixed width record support in TEXTTABLE
  - [http://documentation-stage.bne.redhat.com/docs/en-US/JBoss\\_Enterprise\\_Data\\_Service](http://documentation-stage.bne.redhat.com/docs/en-US/JBoss_Enterprise_Data_Service)
  - [http://documentation-stage.bne.redhat.com/docs/en-US/JBoss\\_Enterprise\\_Data\\_Service](http://documentation-stage.bne.redhat.com/docs/en-US/JBoss_Enterprise_Data_Service)



# What's New In EDS – Data Sources

- Greenplum
  - Popular data warehouse, open core, customer driven request
  - Based on Postgres
- PostgreSQL 9.1
- JBoss Data Grid (pending, tech preview)
  - TBD





# What's New In EDS – Data Sources:

## Apache Hive

- Hive is a data warehouse system for Hadoop that facilitates easy data summarization, ad-hoc queries, and the analysis of large datasets stored in Hadoop compatible file systems.
- Hive provides a mechanism to project structure onto this data and query the data using a SQL-like language called HiveQL



# What's New In EDS – Data Sources: Hive

- Hive provides relational interface on top of HDFS
- Hive provides access through JDBC driver
- Not JDBC complaint driver
- No DatabaseMetadata information
- Hive provides limited facilities to define schema in DDL
- Provides a way to define a custom map-reduce job

## Hive Support in EDS: Tech Preview

- Translator only. No direct tooling support.
- Limited/nascent uptake in community



# What's New In EDS – Other Changes

- Server-side query timeouts
  - Per VDB via query-timeout VDB property
  - Server-wide via `teiid-jboss-beans.xml`
- GSSAPI Support
  - Enables single sign-on (SSO) support for Java apps
  - JDBC and ODBC supported
- Memory Management enhancements
  - `MemoryBufferSpace` controls buffer/cache memory
  - Option to allocate `memoryBufferSpace` OFF heap
    - Suitable for large system RAM scenarios





# **JBoss Enterprise Data Services Platform 5.3 Detail**

# Key Changes/Enhancements - Details

- Apache Hive
- GSSAPI
- Memory Management
- Tooling Enhancements
  - Cheat Sheets, Guides
  - XML source modeling
  - New initiatives
- JON updates



# Misc Topics

- Salesforce AppExchange, certification
- Labs/tutorials status
- Java 1.7 Support
- Roadmap





# **JBoss Enterprise Data Services Platform 5.3 Q/A**



**Questions  
and  
Discussion**