Automated Migration from Proprietary Integration Platforms to Red Hat JBoss Fuse

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Background
Open Source - Significant Enterprise IT Asset

**Middleware**
- Leads the adoption @ No.2
- A key role in achieving business goals called for open source

**Based on Open Source Era - Oxford Economics Study in Collaboration with Wipro, 2015**
Wipro’s Focus on Migration to Open Source

Application
• Web Application & Portal Migration
• Middleware Migration
• Containerization

Data
• Big Data Migration
• DB Migration – RDBMS & NoSQL
• Reports Migration

Infrastructure
• Operating System Migration, Virtualization
• Migration to Open Monitoring
• Migration to Software Defined Infrastructure

Cloud Migration
Red Hat and Wipro Alliance:
Overcome problems with proprietary middleware

- Red Hat JBoss Middleware
  - Lowers cost with a flexible subscription model
  - Deploys across traditional data center, virtualized and cloud environments
  - Easily scales to meet growing demands
  - Ensures continuous innovation with a basis in community-powered open source code

- Wipro Migration Solution
  - Lowers risk with proven tools and methodology
  - Provides faster time to deployment
  - Improves standardization with pre-tested templates and workflows
Migration Drivers
Challenges in Legacy/Proprietary Middleware

Cost
• High annual support costs
• Expensive upgrades that impact new application budgets

Product Life
• Products nearing End of Life, Outdated versions no longer supported

Scalability
• Difficult to deploy across traditional data center, virtualized and cloud environment
• Difficult to scale for growing demands

Innovation
• Difficult to cater to unforeseen emerging requirements
Future Ready?

Implications on Middleware

- Cloud deployment Support
- Light Weight
- Ease of SaaS Integration

Integration Middleware

- Service Orchestration
- Process Orchestration
- API Management
- Messaging
- Caching
- Mediation

Enterprise Applications

- Custom Applications
- Mainframe Applications
- COTS
How Automation Can Help
Migration - Risks & Challenges

Knowledge
- Lack of documentation or documentation not up to date
- Availability of SME with source platform knowledge

Logistics
- Effort estimation and Migration planning

Compliance
- How do I ensure all logic is migrated over?
- Ensure everything works as before

Impact
- Minimize consumer impact

And I have to Migrate ASAP!
Key Automation Strategies

- Analyze existing code base
- Auto generation of code for target middleware
- Minimize backend dependency via virtualization
- Test case reuse & test automation
Migration Scenarios
Scenario – Platform Migration

Context
• ESB/EAI platform is changed
• No change

Automation Possibilities
• AS-IS interface analysis
• Mediation

Case Example
• Leading Energy
Scenario – Partial Migration (Layer)

Context
- Multiple products used to perform service mediation

Automation Possibilities
- AS-IS interface analysis

Case Example
- A leading Insurer in UK is replacing their ESB

Web | Mobile | BPM | Things (IoT)
---|---|---|---
Service Orchestration
Service Mediation
ESB
Application Services

Web | Mobile | BPM | Things (IoT)
---|---|---|---
Service Orchestration
Service Mediation
ESB
Application Services
Scenario – Platform Migration and Simplification

**Context**
- ESB platform is fully migrated

**Automation Possibilities**
- AS-IS interface analysis

**Case Example**
- A leading mobile
Scenario – Migration & SOA Adoption

Context
• ESB platform is fully migrated

Automation Possibilities
• AS-IS interface analysis

Case Example
• A leading utility major
Scenario – Restification

**Context**
- No platform change

**Automation Possibilities**
- Automation of WADL/Swagger generation

**Case Example**
- A leading financial services firm is...
Solution – Migration Automation Tool Set
Wipro Migration Solution
A Comprehensive Offering

One of the most comprehensive kits of specialized migration & assessment tools that simplifies the migration process, reduces risk and adds predictability

Intellectual property based tool, which enables cost and time savings

Rationalizing assistants which act as a catalyst to simplify and accelerate migration during the life cycle of middleware project
Wipro Migration Framework

Key Benefits

- **Optimize Time and Effort:** Automated tools reduce migration time. Up to 30% in time & effort savings
- **Error & Risk Reduction:** Automated tools facilitate artifact migration
- **Improved Reliability:** Proven Methodology addresses Key Critical Success Factors

Source Platform

- Inventory Assessment Reports
- Source Scanner Tool
- Platform Independent Model

Migration Accelerators

- Templates, Best Practices
- Methodology
- Rationalization Assistants
- Cookbooks, Guides

Target Artifact Generator Tool

- Platform Independent Model
- Target Artifacts

Testing Tools

- Red Hat JBoss Fuse Platform

Source Artifacts

- Target Artifacts

Platform Independent Model

- Source Scanner Tool
Middleware Products Supported

FUSE

Source Middleware

Target Middleware

IBM

Web Methods

Tibco

JCAPS
Automation – Concepts Migrated

Service Orchestration
- Service Exposure
- Service Flow Logic
- Routing
- Control Structures
- EAI Patterns

Service Mediation
- Custom component (Callouts)
- Message Transformer
- EAI Patterns
- Adapters
- Protocol Transformation
- Service Mapping

Source Code
Camel DSL
Pom files
Middleware Migration – Test Solution Highlights

- Early Testing
- Dedicated Technical Coverage
- Functional End to End Coverage
- Security and Performance
- Scientifically Proven Coverage

Higher Quality

- DevOps integrated automation
- Automated Regression and Progression
- Code Coverage Report Automation
- Automated Test Data by Virtualization

Automation

- Service Virtualization
- Reduce Data Preparation overhead
- Continuous Build & Validation
- Reduced Defect Leak

Time to Market

- Reduces Test Effort by 40%
- Reduces Cost of Quality
- Reduced Defect Ratio
- Higher Reusability of existing assets

Cost Efficiency
Migration Approach - Overview

I. CONSULTING

Assess
As-Is Platform Analysis
As-Is Operating Model Assessment
High Level Migration Roadmap Definition

Plan & Design
Reference Architecture
To-Be Operating Model Definition [If Needed]
Detailed Migration Roadmap Definition

II. MIGRATION

Migrate
To-Be Platform Setup
Set-up Operating Model [If Needed]
Rationalization & Service Migration
Service Virtualization
Testing
Cutover Preparation

Operate
Deployment
Cutover/ Go-Live
Environment Tuning
Warranty Support
Decommissioning

Iterate As Needed

DELIVER:
ASSESSMENT REPORT
DELIVER:
ARCHITECTURE & PLAN
DELIVER:
MIGRATED PLATFORM
DELIVER:
OPERATING PLATFORM
Demo Overview
### Scenario Overview

#### Typical business service used in telecom scenarios like

- Number Portability
- Number Assignment & Lifecycle management
- Customer information management

#### Service gets the following details based on ICCID (SIM Chip identifier)

- Customer & Product information
- SIM Information
- Mobile operator & Network information
Use Case Overview

Demo addresses
- Migration from Web Methods to Fuse covering
  - File/DB/Queue/Service Adapter
  - Transformation
  - Control Logic
  - Flow & Sub Flow
  - Coding standards
  - Ingestion

Middleware Flow

ICCID Request

Generate UID

Audit Logging

Validate Request

Get IMSI

Get SIM

Get Domain Name

Other

Request Routing?

Providers simulated as CXF endpoints & JMS Queues

Service Provider

CRM

Inventory Management

Network Management
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