Slide 1

Migrating to JBoss?
Risks, Tips, Tricks, and the JBMS

- Mike Tria – Migration Lead Architect,
  Unisys Open Source Services

Slide 2

Unisys At A Glance

Outsourcing.
Systems Integration.
Infrastructure.
Server Technology.
Consulting.

Fortune 300 Status

$6 Billion in Revenues

Media
200 + Newspapers

Financial Services
2,200 clients

Business Solutions
Precision Thinking. Relentless Execution.

Transportation
200 Airlines
100 Airports
3500 Hotels

Communications
90+ providers

Public Sector
1,500 government agencies

37,500 Tenacious Professionals

Global Presence in 100+ Countries

Slide 3

Unisys and JBoss – A Deep Relationship

- Premier JBoss Certified Systems Integrator
  - Global Systems Integration Capability
  - Over 1000 J2EE Programmers and Architects
- Global JBoss Training Partner

- Premier Technology Partner
  - ES 7000 Intel-based Scalable Servers
  - ClearPath Servers – JBoss on Mainframes

- JBoss Authorized Service Partner
  - Providing Level 1 and Level 2 support for customers for the entire JEMS suite

- JBoss Certified Solution Partner
  - Building Mission-Critical Communications and Transportation products on Open Source JBoss

Premier
JBOSS
Certified
Systems Integrator

Slide 4

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Aspects of JBoss Migration Projects
Migration Triggers

Why Migrate to JBoss?

JBoss Migration Solution (JBMS)
The Vision and Value

JBoss Migration Solution (JBMS)
The Methodology and Toolkit

Summary and Next Steps

Slide 5

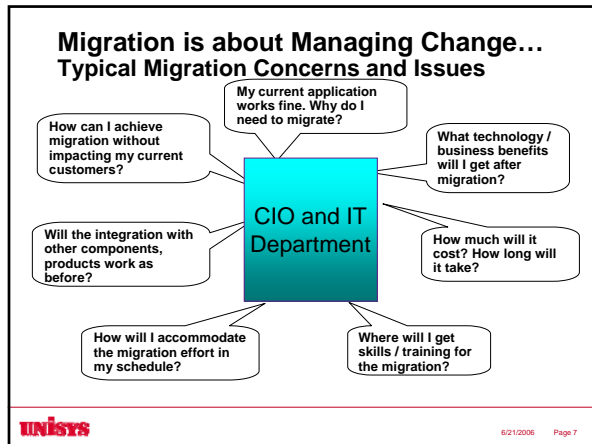### Why do Customers Migrate App Servers?

- **Reduced / No availability of support for current application server**
  - Older versions of WebLogic or WebSphere that are being sunset
  - Vendor has changed business model
- **Escape Vendor "lock-in" and control**
  - Get rid of expensive maintenance fees
  - Decouple from vendor to take advantage of new J2EE spec
- **Unplanned growth of systems**
  - Escalating app server growth or new Web-based applications
  - Unplanned growth of company (may have had a VERY good year)
- **Merger with another company (standardization effort of heterogeneous applications)**
- **Standardization with other IT applications or systems in company (support consolidation)**
- **Steadily rising Total Cost of Ownership (TCO)**

Slide 6

Who Should Migrate?

- Type A - Looking for New Ways to Save Money
  - Reduce your operational cost of your Java EE application…
  - Get long-term cost savings from product license and support…
  - Save in long-term hardware costs via improved server utilization…
- Type B - Looking for New Ways to "Future Proof"
  - Have plans to enhance your current application with Open Standards or new functionality...
  - Current application server vendor is phasing out support for the version running in your organization…
  - Save on future investments on upgrade of application infrastructure enhancements…

Migration is about Managing Change…
Typical Migration Concerns and Issues

My current application works fine. Why do I need to migrate?

How can I achieve migration without impacting my current customers?

What technology / business benefits will I get after migration?

CIO and IT Department

Will the integration with other components, products work as before?

How much will it cost? How long will it take?

How will I accommodate the migration effort in my schedule?

Where will I get skills / training for the migration?

The Typical Migration

A typical migration or upgrade project is:
– "Artifact-less" – Lots of re-learning and retraining each time
– Manual - Developers forced to perform menial migration tasks
– Time/Resource Intensive - Needed to research, assess, migrate, test, then integrate
– Error-prone - Considering the amount of research involved
– Poorly Communicated - Scope of the migration is never made clear to all participants

Bottomline: Migrations can be risky and costly endeavors, since they are usually isolated projects; and not an on-going effort.

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Why Customers are Migrating to JBoss?

- JBoss Economics
  ➤ Low-cost with Equivalent Functionality
  ➤ Open Source Community – Globalization at its best
- JBoss Non-stop Innovation
  ➤ JBoss: Application Server is part of a suite of products -- Apache Tomcat, Hibernate, JBoss Portal, JBoss jBPM, JBoss Cache, JBoss Eclipse IDE.
  ➤ Innovation -- JBoss is the first open source app server to pass J2EE 1.4 Certification.
- JBoss Business Advantage
  ➤ Avoid vendor lock-in -- Middleware is core to modern business processes
  ➤ Elimination of future software licensing costs – especially important for ISVs and evolving companies
  ➤ Reduced TCO for a key IT budget item -- middleware infrastructure

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## JBMS Vision & Value Proposition

- **Flexible Migration between app server brands and versions – Horizontal and Vertical (upgrades), Hybrid migration**
- **Reduce Migration LOE (Cost & Time)**
- **Provide a standardized and consistent platform for middleware migrations – people, tools, processes, and knowledge**
- **Leverage Unisys domain/technical knowledge – experienced migration specialists armed with best practices**
- **Evolution of Migration Kit based on industry projects/experience – Industry-tested tools – "eating our own dog food"**
- **Configurable Migration Blueprints - Migration by server, application, single XML file, Web Services**

Bottomline: JBMS reduces the risk and cost of performing a migration. Enterprises can more quickly adopt Open Source JBoss, ultimately providing greater flexibility at a lower TCO.
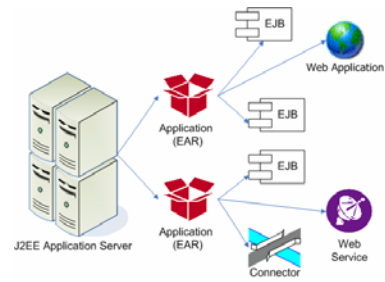
J2EE Migration – What is Involved? Simple and Complex considerations

- No two migrations are the same. A good methodology must consider:
  – Scope
  – Level of Complexity
  – Size
  – Time
  – Cost
  – Deliverables
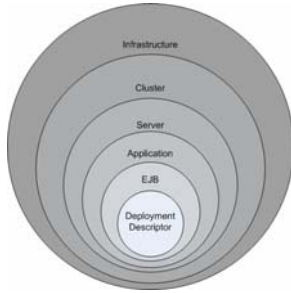
Migration from 30,000ft – Applications
- Standards Compliance, Portability, Vendor Lock-in

Migration from 30,000ft – App Server
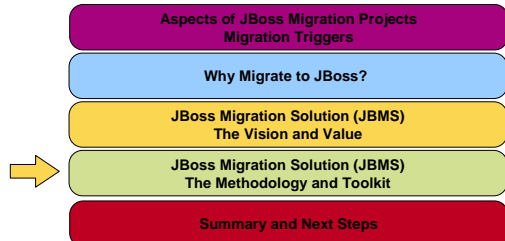- Separation of Concerns, but Lack of Portability

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Migration from 30,000ft – Organization
- Reduce risk here

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- **Aspects of JBoss Migration Projects Migration Triggers**
- **Why Migrate to JBoss?**
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- ➡ **JBoss Migration Solution (JBMS) The Methodology and Toolkit**
- **Summary and Next Steps**

JBMS – What is it?

- The JBMS is one of many services provided by Unisys in the Open Source arena
- Integrates into our other Open Source Services
- Comprises many services:
  – Migration Assessment
  – Migration Workshop
  – Migration Implementation
- Quickly tailored to each client – no more than what you need

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JBMS Components

- Trained Migration Implementers
- Knowledge Base
- Migration Toolkit
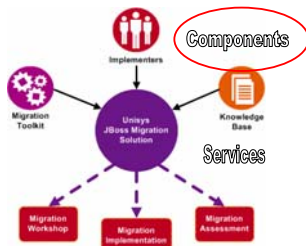
- Migration Methodology
  - Migration Processes

Migration Implementers

- Experienced J2EE architects
- JBoss Certified Consultants
- Contributors to the Knowledge Base
- Resources:
  - Internal Unisys Training
  - External J2EE/JBoss Training
  - Migration Support
    - Available to all Unisys architects/developers
    - JBMS Knowledge Base
   - JBoss ASSIST Team

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JBMS Knowledge Base

- Tasks are reusable artifacts
  - Automated (executed by the Transformation Engine)
  - Manual (step by step instructions provided)
- Migration Scenarios/Blueprints
- Process Documentation
- Migration Questionnaire
- Past Projects/Estimates
- Global – Unisys
- Best Practices

JBMS Migration Toolkit

- Generic, Powerful Transformation engine
- Task/Resource separation
- Eclipse Plug-in
- Knowledge Base Integration
- Pluggable/Extensible Architecture
- Migration Task Automation
- Report Generation
- Deployable out of the box
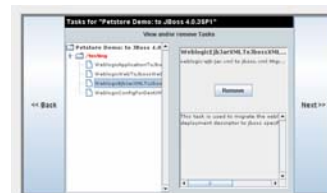
Migration Toolkit – Tasks

- Scenarios contain Tasks
  - WebLogic 8.1 to JBoss 4.0.2
    - Migrate EJB DD's
    - Migrate JMS destinations
  - WebSphere 5.0 to JBoss 3.2.6
    - Migrate J2EE Security settings
    - Migrate Web Services
- WebLogic tasks
- WebSphere tasks
- JBoss tasks (vertical migration)

JBMS Methodology and Services

- Estimating the Effort
  - Questionnaire
  - Estimation Tools
- Assessment Workshop
  - Process
  - Report/Recommendation
- Migration Implementation
  - Optional use of customer resou
  - Offshore possibilities (for large
  - Reusable tasks
- Verification & UAT
- Deliverables

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Migration Assessment Service

- Information gathered via "migration questionnaire"
- Client completes migration questionnaire themselves –OR-
- Engagement can be performed on-site directly with Unisys assistance

Goal: the Assessment Service determines the scope and level-of-effort of a Migration

The JBMS Migration Assessment Process

Scope Migration Project → Capture/Assess Current Environment → Prepare Target Environment → Determine Migration Paths/ Tasks → Estimate & Summarize

Iterative

Migration Assessment Service

- **Questionnaire addresses key impact areas in migration**:
  - Hardware
  - Software
  - JVM
  - Database
  - Build
  - Implementation
  - Deployment
  - Testing
  - Transition
  - Servlet/JSP
  - EJB
  - JNDI
  - Security
  - JMS
  - JTA
  - Refactoring

Questionnaire Excerpt

Software Considerations

Questions	Answers	Comments
How many 3rd party JARs are deployed as part of the application (EAR, WAR, or EJB Jar)? Please list with versions.		
Are you using Log4j and what version in your application?		
Are you using Apache SOAP and what version in your application?		

What is the Cost of Migration? Effort Sheet from a Large Migration

PROJECT INVENTORY	
Applications	10
JSP	1,300
Stateless EJB	150
Entity Beans	200

PROJECT TEAM		
TYPE	NUMBER	INVOLVEMENT
Project Manager	1	20%
Architect	1	30%
Team Lead	1	100%
Developers	2	100%
Testing and QA	1	70%

EFFORT ESTIMATES	
Calendar Days	2 man months
Person Days	184

Facts:
- This product's original architecture was carefully designed to be vendor independent.
- No change in functionality, no refactoring
- The migration developers and team lead were part of the core development team.
- Source Environment: BEA WebLogic 5.1, Oracle 8i.
- Source Architectural Layers: JSP->Java->Session EJB->Custom DAO->Database.
- Target Environment: JBoss 4.0.2, Oracle.
- Target Architectural Layers: JSP->Java->Session EJB-> Custom DAO ->Database.

Migration Workshop

- A customized workshop that provides the customer with a clear migration strategy
- Process
  - Questionnaire and interviews – determine need
  - Adaptation of workshop to the customer's needs
  - Perform live Migrations
    - Show the process by demonstrating on POC
  - Recommendations based on the assessment
    - Process and Plans (how to migrate)
    - Migration Paths/Strategies

"*The benefits of the Unisys workshop were muti-faceted. This is the kind of value-added training and knowledge transfer that jump-started our efforts in the usage of JBoss*"

-Jason Miller
Manager, The Institute for Genomic Research

Migration Implementation

- **Types of Migrations (Who is migrating?)**
  - Customer migrates the system
    - Unisys supplies training, a plan and processes
  - Unisys and the customer migrates the system together
    - Unisys supplies training, a plan, processes, and guidance
  - Unisys migrates the complete system

- Migration Plan
  - Iterations based on architecturally significant applications

- Deployment
  - Into the target environment

- Verification
  - Iterative, testing and tuning to ensure pre-migration performance

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Services Deliverables

- Depending on the services rendered, deliverables include:
  - Migration Assessment Document
    - Contains Scope, Environment Models, and Migration Paths
  - Migration Workshop Notes/Slides
    - Class notes from training tailored to the customer
  - Migration Summary
    - Comparison with Migration Assessment Document
    - Migration Tasks (what was done)
    - Future Considerations/Issues

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Unisys Migration Delivery and Economics Keep the Costs under Control

On-site

Solution Center

Solution Center backed by Offshore

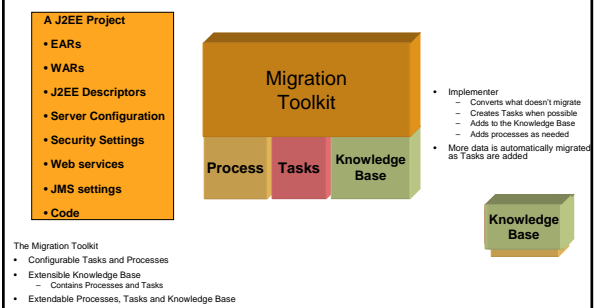For small projects or prototypes the work can be done on-site.

Off-site – Onshore.

For large projects the work is most economically done in a solution center – Atlanta, Nice, Milan

Off-site – Onshore backed by Offshore.

For large scale enterprise application migration projects, it is economical to do a bulk of the work offshore in India, China or Brazil.

Putting it all together – JBMS from Unisys

A J2EE Project
- **EARs**
- **WARs**
- **J2EE Descriptors**
- **Server Configuration**
- **Security Settings**
- **Web services**
- **JMS settings**
- **Code**

Migration Toolkit

Process | **Tasks** | **Knowledge Base**

Knowledge Base

- Implementer
  - Converts what doesn't migrate
  - Creates Tasks when possible
  - Adds to the Knowledge Base
  - Adds processes as needed
- More data is automatically migrated as Tasks are added

The Migration Toolkit
- Configurable Tasks and Processes
- Extensible Knowledge Base
  - Contains Processes and Tasks
- Extendable Processes, Tasks and Knowledge Base

Next Steps – Embarking on the Journey

- If you are a customer of BEA WebLogic or IBM WebSphere, start a pilot JBoss Migration for one application
  - Validate Value Proposition
  - Build the ROI

- If you are an ISV, migrate your solution to JBoss Application Server
  - Cost savings and performance of Open Source JBoss may surprise you

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  - For more information: **open.source@unisys.com**
  - Check out **www.opensourcetrends.com** for updates and trends

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