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ClearPath Secure Java Overview
For ClearPath Libra and Dorado Servers

Technical Presentation
Agenda

ClearPath Java for Core Business Transformation

• Overview
• Architectural Flexibility
• Integration
• Application Development
• Open Source
• New Features
• Java Run-Time Environment
• Security
• Java Services
• Benefits for the ClearPath clients
• Summary
Service Oriented Architecture, SOA - the Mega Trend of IT Infrastructure!

Benefits

- Business and IT alignment
- Agility
- Evolutionary rather than Rip-and-Replace approach
- Fastest time to market with new products and services
- Reuse and integration of current assets and resources
- Shifting IT investments from maintenance to innovation

ClearPath Java enables ClearPath applications & data to participate in SOA frameworks
ClearPath Secure Java Overview
ClearPath Secure Java Overview

- Evolution towards SOA or Java
- Application modernization and integration
- ClearPath skills / industry standard skills
- Secure business environment

Secure environment

Fast to market with new products and services

ClearPath Java Portfolio

- Transaction Integration
- Database Integration
- Eclipse IDE
- Java Run-Time with JBoss or JVM
- Dedicated Java Processors
- Java Services

Secure environment

Fast to market with new products and services

ClearPath Java Skills / Industry Standard Skills

Secure business environment

Evolution towards SOA or Java

Application modernization and integration

Secure environment
ClearPath Java Solution Portfolio

Industry Standard Skills

Application Development: Eclipse IDE and a large number of qualified Open Source tools

ClearPath Skills

ClearPath Core Business Applications

ClearPath Databases

ClearPath Java Components

Run-Time: JBoss, JVM

Dedicated Java processors

Database Connectors

Transaction Connectors

Server farm: Java based applications

Key ClearPath Java elements
Available Today: What You Can Do With ClearPath Java

- Develop **composite applications** (Composite = Existing applications + packages + new Java or .Net components)
- **Integrate** existing ClearPath applications and Java applications
- **Develop new** ClearPath–based Java EE applications or components
- **Integrate** ClearPath-based **applications** and **data** from Java applications on any platforms
- **Access** external databases from ClearPath applications
- **Participate in SOA** evolution
- Use **industry standard skills and tools** to develop ClearPath Java solutions
Architectural Flexibility - Distributed and Centralized
ClearPath Java: Total Flexibility Mix and Match Tiers

Centralized

All tiers on one ClearPath infrastructure

or

Distributed / Composite

Applications and data distributed across multiple ClearPath systems

- Web server
- App server
- Data server

Web server
App server
Data server
Web server
App server
Data server
Web server
Data server
Choice of Centralized and Distributed Heterogeneous Java Environments

**Centralized**
- All tiers on one ClearPath infrastructure

<table>
<thead>
<tr>
<th>Web server</th>
<th>App server</th>
<th>Data Server</th>
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<tr>
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<td>ES7000</td>
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**Distributed / Composite**

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or


ClearPath Multi-Tier Java Architecture Options

- **n-tier**: spread across multiple servers
  - WebSphere, WebLogic, JBoss

- **3-tier**: Tomcat or Windows IIS with JBoss on ClearPath
  - Web Server
  - ClearPath
  - EIS tier
  - Database
  - Transactions

- **3-tier**: J2EE server & ClearPath
  - Any Server
  - ClearPath
  - EIS tier
  - Database
  - Transactions

- **2-tier**: ClearPath direct to client
  - Any Server
  - ClearPath
  - EIS tier
  - Database
  - Transactions

Unisys
‘Keep Your Friends Close, Keep Your Data Closer’

When your Java applications are as close as possible to your ClearPath data and transactions,

You get maximum efficiency and security

- Full OS 2200 or MCP based Java EE runtime environment with true and proven RAS
- Simplified administration
Integrate and Reuse
ClearPath Java Connectors: Integrate and Reuse

Standard Connectors For:

- ClearPath transactions (TIP, HVTIP, Open/DTP, COMS)
- ClearPath databases (RDMS, DMS, DMSII, BIS)

and

Unisys Value Add:

- Java extensions to tightly integrate with ClearPath transactions and data
- ClearPath Open Source qualification

Available today: All key connectors, rich functionality
Integrate Existing ClearPath Assets with Any Java Applications on Any Platform

ClearPath Environments

Benefits

- Maximize the return of your investments
- Reuse existing solutions
  - ClearPath and non-ClearPath
- Fastest time to market with new functionality

Any Platform

Any Database
Local or Remote

Java Applications & Components

ClearPath Java Connectors
Rapid Application Development with Industry Standard Tools
Develop ClearPath Java Applications - Use Industry Standard Skills and Tools

Eclipse IDE:
- Open Source - free
- Most popular Java IDE

Unisys Value Add:
Tight integration with ClearPath non-Java Applications and Data

Easy with Eclipse plug-ins:
1. Unisys-built plug-ins
2. Hundreds of Open Source plug-ins
3. 3rd Party plug-ins
### Rapid Development: Comprehensive Unisys All-in-One Package

#### Industry Standard Skills and Tools

<table>
<thead>
<tr>
<th>Unisys ClearPath OS 2200 / MCP IDE for Eclipse</th>
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<tr>
<td><strong>Open Source Elements:</strong></td>
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<tr>
<td>• Many Open Source products including Eclipse</td>
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<tr>
<td><strong>Unisys Developed:</strong></td>
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<tr>
<td>• A comprehensive set of tools for easy development for ClearPath OS 2200</td>
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<tr>
<td>• Tested, qualified, integrated, supported and released by Unisys</td>
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<tr>
<td>• Released with OS 2200 Software Release 11.1 in November 06</td>
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<tr>
<td>• Released with MCP Software Release 11.1 in April 07</td>
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</tbody>
</table>
ClearPath OS 2200 IDE for Eclipse
ClearPath MCP IDE for Eclipse

Major benefits

• Tested and integrated All-in-One releases
• Fast to install
• Automatic update service for unsynchronized release schedules of Open Source
• Reduces the complexities of using open source
• Easy and fast use of Eclipse IDE for ClearPath Java development
• Unisys OS 2200 plug-ins automatically generates Java code to access ClearPath assets
• Click here to download: Eclipse™ IDE for OS 2200
  ClearPath MCP IDE for Eclipse™

• **OS 2200**: Fast development of ClearPath Java, COBOL and C/C++
• **MCP**: Fast development of ClearPath Java
Available Today: Standard Development Tools - with Unisys Value Add

- **Standard**
  - Standard PC-based Java EE development
  - Unisys pre-integrated *All-in-one* package (Eclipse plus Open Source plug-ins)
    - SQL Explorer for browsing RDMS
    - Web Tools Platform for Java deployment

- **Unisys value add**
  - Comprehensive OS 2200 Eclipse plug-ins for easy development
  - PC-based COBOL and C development
  - Java Application Integrator to create composite applications
  - Open-DTP COBOL to Java mapping tools
  - Generation of Java code to access DMS
  - Automatic SQL generation for RDMS
Available Today: Standard Development Tools - with Unisys Value Add

• **Standard**
  – Standard PC-based Java EE development
  – Unisys pre-integrated *All-in-one* package
  – Query Design Center for browsing DMSII

• **Unisys value add**
  – COMS & Open-DTP COBOL to Java mapping tools
  – Programmer’s Workbench for COBOL and C
  – Query Design Center for interactive SQL commands
  – Relational Design Center for creating SQL databases and mapping non-relational DMSII databases to SQL
  – Eclipse interface for SURE

• **Future**
  – MCP Eclipse plug-ins
  – Adding more Open Source development tools
Open Source
ClearPath Embraces Open Source – With Unisys Value Add

Unisys Value Add:

• Testing
• Qualification
• Integration
• Packaging
• Support
• Unisys value add features
• Mission critical environments

Unisys developed features provide additional value:

• Ease of use
• Tight Integration with ClearPath applications and data
• Easy development of ClearPath-based Java
### Available Today:

- Any Java-based Open Source product
- JBoss Application J2EE app server qualification
- Eclipse IDE
- Hibernate Dialect for RDMS
- ClearPath value add: authentication module (MCP / OS 2200)
- Unisys Admin Console provided for the Open Source Community
- Tomcat
- Coyote Connector

### Available Today:

- Struts, JSF and Spring frameworks
- XML buddy
- Web Services
- JUnit and Cactus testing frameworks
- Java EE design frameworks:
  - Data Access Objects
  - Session Façade
  - Model View Controller
  - Business Delegate
  - Service Locator
  - Front Controller
ClearPath: Standards Based Platform for Open Source Implementations

Highlights:

• JBoss Application Server, J2EE certified
• JBoss Enterprise Middleware Suite JEMS
• Eclipse IDE
• Any Java-based Open Source middleware and tools
• Database and performance tools: DbVisualizer, JMeter, Squirrel, etc.
• Test frameworks: JUnit, Cactus, etc.
New ClearPath Java Features
# New ClearPath OS 2200 Secure Java Deliverables

**Available Now**

| Platform          | • Dedicated OS 2200 Java Processors  
<table>
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<tr>
<th></th>
<th>• Performance improvements</th>
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</table>
| Industry Standard Tools and Skills | • Eclipse IDE for OS 2200 All-in-One package  
|                  | – Unisys developed and open source products  
|                  | – Automatically generates Java access to existing OS 2200 assets  
|                  | – Comprehensive set of tools  
|                  | • JBoss 4.0.2  
|                  | • Java JVM 5.0 (3Q07) |
| Composite Applications | • DMS RA  
|                  | – Enables OS 2200, Linux, Windows and UNIX-based Java applications to access DMS  
|                  | • Hibernate 3.0 based RDMS dialect  
|                  | • TIP RA ‘Nirvana’ feature= no need to change transactions  
| Security          | • Application Defender 1.1  

UNISYS
### New ClearPath MCP Secure Java Deliverables

| Next Gen | MCP Java on Intel (3Q07):  
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<tr>
<td></td>
<td>• Libra Models 400, 680, 690, 585, 595, 580, 590</td>
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| **Industry Standard Tools and Skills** | • Eclipse IDE for MCP (MCP Release 11.1)  
| | – Unisys Integrated package of open source products  
| | – SURE -Management of Composite Development now supports Eclipse (Available now)  
| | • Java JVM 5.0 (3Q07)  
| | • JBoss 4.0.5 transaction support (JBoss TS) (3Q07) |
| **Composite Applications** | • MCP DMS II JDBC Type 4 driver (MCP Release 11.1)  
| | • Enables MCP, Linux, Windows and UNIX-based Java applications to access DMSII databases  
| | • Hibernate-based DMSII dialect (3Q07) |
| **Security** | • Application Defender 2.0 (3Q07) |
ClearPath
Java Run-Time Environments
ClearPath OS 2200: Java Run-Time Environments

OS 2200 Java Run-Time Options

1. Java Applications/Development running within standard General Purpose or SDK Development environments
2. Dedicated Java Partition
   • Dorado 100, 200 and 300
3. Dedicated OS 2200 Java Processors
   • CMOS processors
   • SW Release 11.1
   • Dorado 100, 200 and 300
ClearPath Libra 680, 690, 585, 595, 580, 590: ClearPath MCP JProcessor

MCP Environment

Java Environment (JVM 5.0, JBoss, Tomcat)

Java Applications

DTP Resource Adapter
COMS Resource Adapter

COMS Transaction Server

DTP TP
COMS TP

DMSII
DMSII
DMSII

MCP CMOS

Intel-based JProcessor

All access, management and recovery via MCP

Transparent Migration

User Access
- Web browser
- Java clients

Tools available
- Administration
- Development tools
- Monitoring tools

MCP Environment

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ClearPath Libra 400: ClearPath MCP Java Run-Time

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Intel-based MCP environment

Intel-based Java Environment
Security
Built-in ClearPath Mainframe Class Security

- Secure by design and implementation
  - Comprehensive protection against unauthorized access of all resources
  - Immune to buffer overflow exploits

- Comprehensive logging and auditing

- Protects data confidentiality and integrity
  - Protects workloads against each other
  - File and database security
  - Encryption of data in transit or in storage

- Ensures system and data availability
  - Platform stability minimizes downtime
  - Thwarts denial of service attacks

There’s never been a successful external attack against a ClearPath system
Symantec Security Assessment: ClearPath OS 2200 Java

The Unisys OS 2200 Java environment is designed with “a security architecture that maps to industry best practices standards and the security features will allow customers to deploy applications on the Unisys Java environment with confidence.”

A similar assessment by Symantec on the Unisys Application Defender and WebTS Server Products also yielded an “industry best practices” rating.

Security Second to None

“The design and implementation of mainstream operating systems could be improved greatly by examining the security engineering decisions that were made while developing the ClearPath MCP environment.”

*ClearPath MCP Security Assessment Client Facing Document*
ClearPath Java Role-Based Security

- Unisys value added integration
- Role-based Java Security between JBoss and ClearPath
- Access permission assigned to roles, new users get access permissions based on their role
- Provides simplified administration
- Unified authentication between Java and ClearPath
Application Defender Reduces Java Application Vulnerability to Hackers

- A new Unisys Web application security solution
- Eliminates the Top Ten Web Application vulnerabilities:
  - Unvalidated Input
  - Broken Access Control
  - Broken Authentication and Session Management
  - Cross-Site Scripting Flaws
  - Injection Flaws
  - Improper Error Handling
  - Insecure Storage
  - Denial of Service
  - Insecure Configuration Management
- Buffer Overflows (ClearPath Immune to buffer overflow exploits)

- Addressed by the initial release of Application Defender
- Availability: MCP Release 11.1 and OS 2200 Release 11.1
ClearPath Java Services
Java Services Are Available

• Services available:
  – Java Proof of Concepts
  – Java Assessment & Design
  – Java Implementation
  – Java Performance Analysis

• Proof-of-Concepts

• Demos are available for Libra and Dorado
ClearPath Java Demonstrations Are Available in eCommunity

- OS 2200 Java Demo

- MCP Java Demo

- You can run these demos

  OR

- Contact Unisys for a demonstration
Benefits for the ClearPath Clients
Why ClearPath Java? Enables ClearPath SOA

- Enables ClearPath SOA implementations

- Enables existing legacy ClearPath applications and data to be part of the enterprise’s SOA infrastructure and strategy

- Enables composite applications
  (Composite = Existing applications + packages + new Java or .Net components)
Why ClearPath Java? Modernize, Integrate and Reuse

• Enables **modernizing** existing ClearPath applications with new Java-based components

• Enables existing legacy ClearPath applications and data to **integrate** with any Java-based applications running on any platform

• **Reuse** of existing ClearPath and non-ClearPath (!) assets
Why ClearPath Java?
Industry Standard Skills and Tools

• Any standard Java development environment
• Eclipse IDE
• Open source tools and frameworks
• Unisys value added products that automatically generates EJB code to access TIP, HVTIP, DMS and RDMS (OS 2200)
Why ClearPath Java? IT Agility

• Improved business and IT alignment
• Fastest time to market with new products and services
• Access to a huge industry pool of Java artifacts and skills
• Java flexibility
ClearPath: Completely Integrated

**ClearPath Releases**
- Web Server
- Application Server
- Java Middleware
- Database Server
- Transaction Server
- Open Source elements
- Over 150 products MCP
- Over 150 products OS 2200
- Releases 11.1
- Vendor: Unisys

**Java Environment**
- JBoss
- JVM
- Transaction connectors
- Database connectors
- Eclipse plug-ins
- Hibernate
- Wiley Interscope
- Java authentication
- Database admin tools
- SQL Explorer
- Application Defender

**Built-in Compatibility**
Completely Integrated
Supported by 1 Vendor

Vendor: Unisys
Summary
ClearPath Java Benefits

• Maximum architecture flexibility
• Industry standard integration with any solution and database
• ClearPath is bringing Open Source elements to core business
• Secure, mission critical Java
• Industry standard Java development with Unisys value added tools
• SOA enablement
ClearPath Secure Java Main Web Sites

Best place to find:
- Demos
- SW Downloads!
- White Papers
- Strategy/ Roadmaps
- Presentations
- Training material

Secure Java for
ClearPath OS 2200

Secure Java for
ClearPath MCP
# Links to the Supporting Material

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<td>Secure Java for ClearPath OS 2200</td>
</tr>
<tr>
<td>MCP Java Web Site</td>
<td>Secure Java for ClearPath MCP</td>
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<tr>
<td>Strategy Presentation</td>
<td>ClearPath Secure Java Strategy and Roadmaps ClearPath Libra and Dorado</td>
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<td>OS 2200 Demo</td>
<td>ClearPath OS 2200 J2EE On-line Banking Demo</td>
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Thank you
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