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**LEARN. NETWORK.
EXPERIENCE OPEN SOURCE.**





JBoss ENTERPRISE APPLICATION PLATFORM 6

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Management

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JBoss AS Lead and App.
Platform Architect

@jtgreene

ease into cloud

WITH THE SLIM, SLEEK JBOSS ENTERPRISE APPLICATION PLATFORM 6

AGENDA

- Market Drivers and Goals
- Introduction to JBoss Application Platforms
- Roadmap

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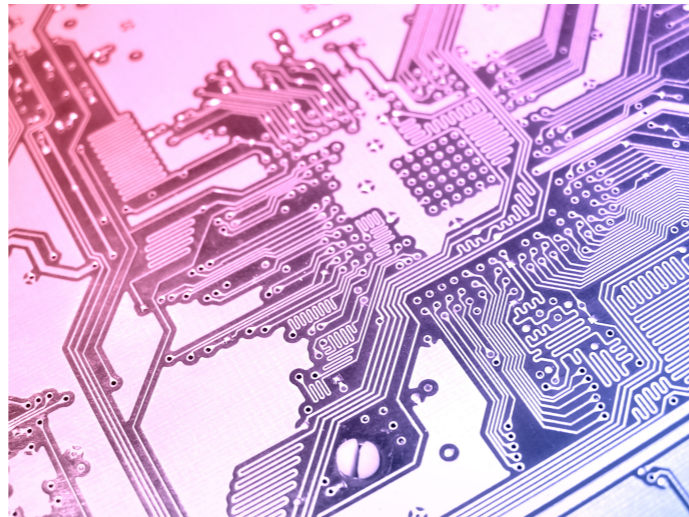
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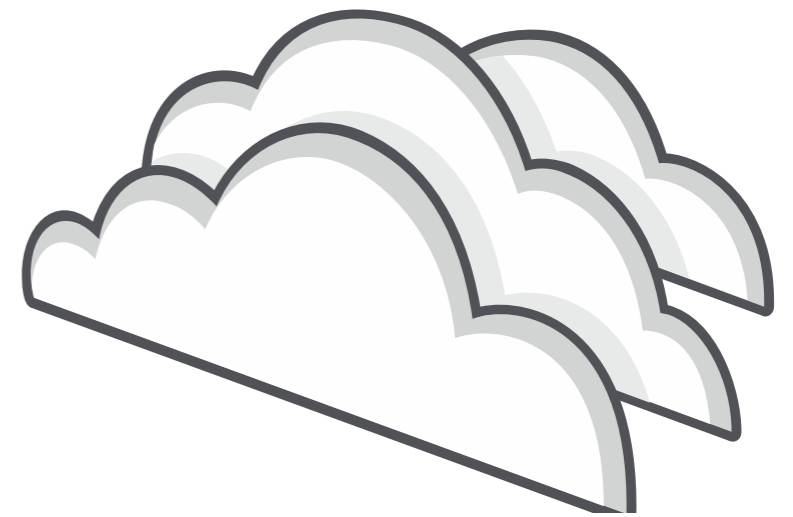
MARKET DRIVERS



MOBILE



DATA



CLOUD

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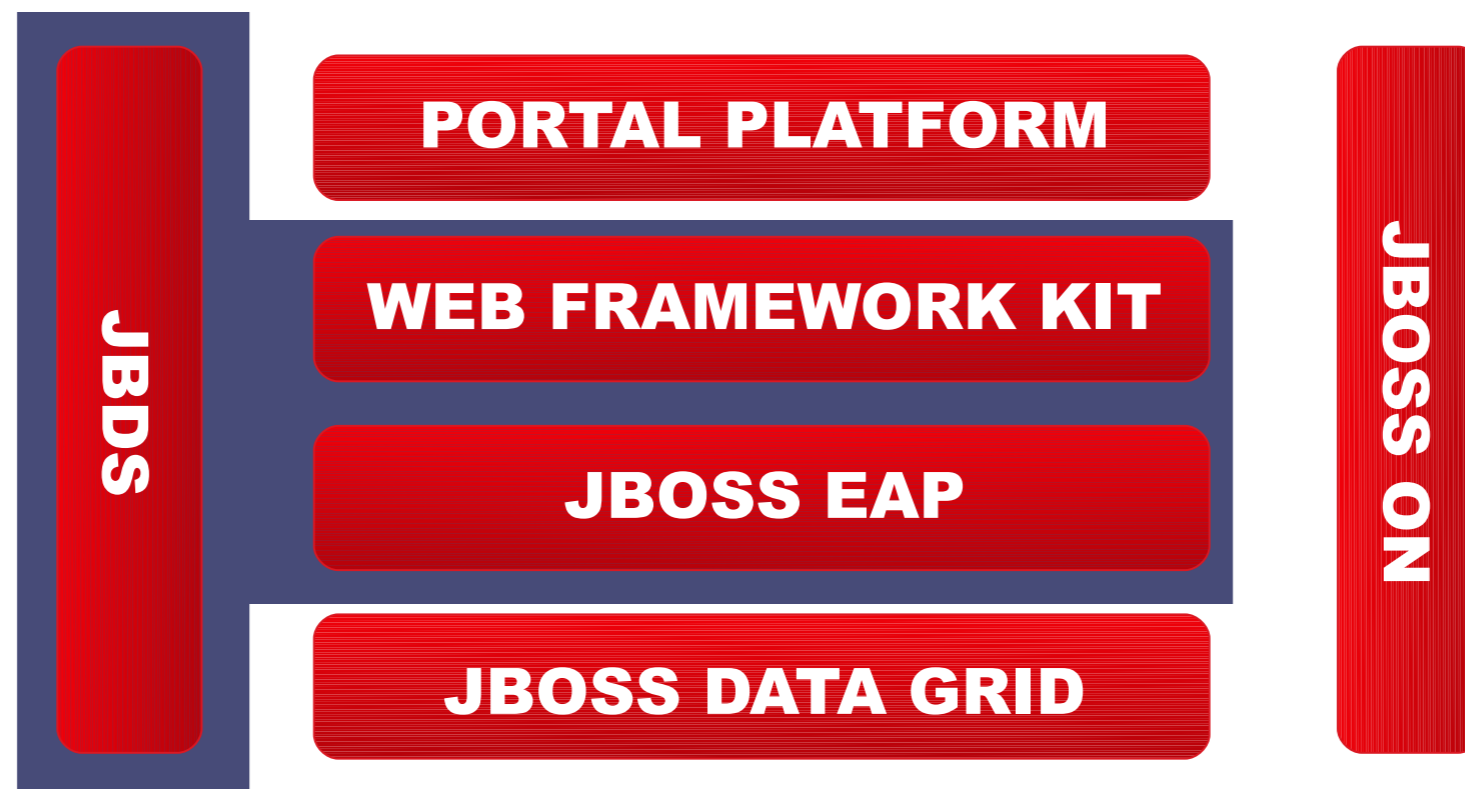
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JBOSS APPLICATION PLATFORMS

JBOSS EAP



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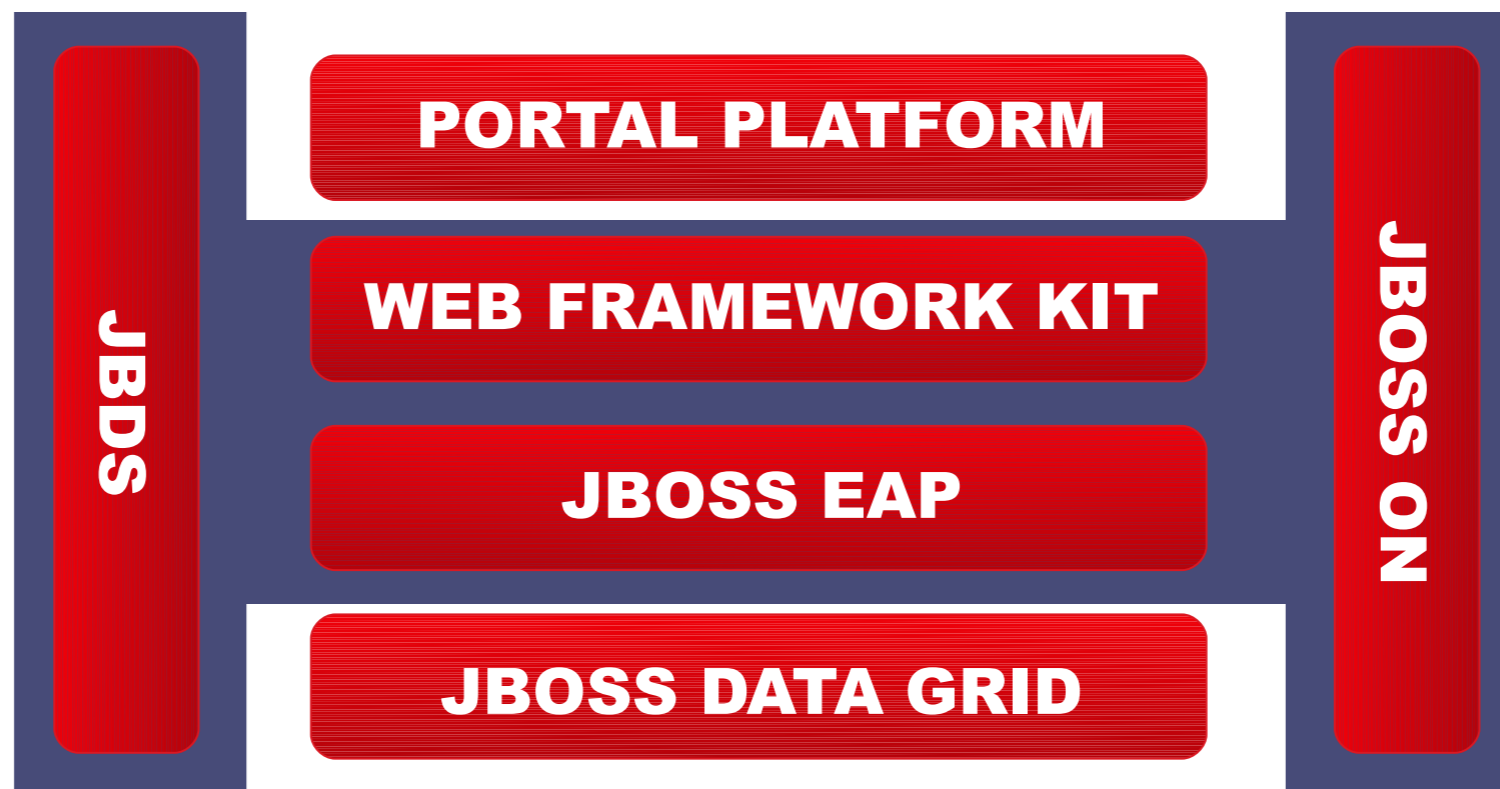
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JBOSS APPLICATION PLATFORMS

JBOSS EAP (MANAGED)



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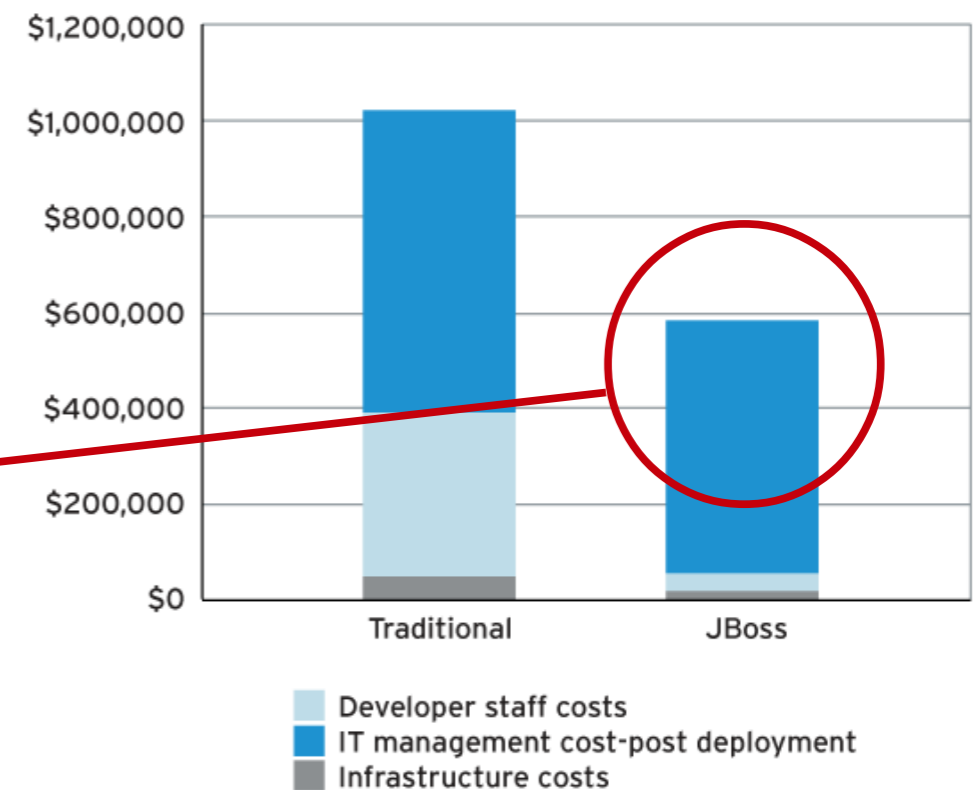
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JBOSS EAP 6 – 50,000 FT VIEW

- **MOST AMBITIOUS JBOSS RELEASE. EVER.**
 - Cloud Ready Architecture
 - Major EE platform release (Java EE 6)
 - Ease of Use – Dev. / Ops.
 - Performance
 - App / Data Scalability

Deliver substantially better value over the full application lifecycle



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SOURCE – The Business Value of JBoss Enterprise Application Platform, IDC Dec. 2010. Study commissioned by Red Hat

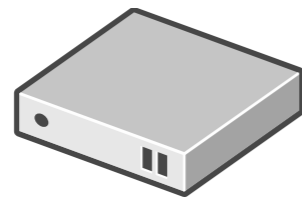
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WHAT IS A CLOUD-READY ARCHITECTURE ?

- High degree of automation
- Flexible Management
- Frugal use of resources
- Lean, agile development
- Open Platform

JBOSS ENTERPRISE MIDDLEWARE



PHYSICAL



VIRTUAL



PRIVATE



PUBLIC

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RED HAT CLOUD PORTFOLIO

Openshift™ - Platform-as-a-service

JBoss Enterprise Middleware

Cloudforms™ – Hybrid Cloud Management

Red Hat Enterprise Linux

Red Hat Storage

Red Hat Enterprise Virtualization



PRIVATE



PUBLIC

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JBOSS EAP 6 - PERFORMANCE

- Better multi-processor support
 - Lock-less concurrent class-loading
 - Concurrent service activation
 - Lazy service activation
- HornetQ Messaging
- Infinispan 2nd – Hibernate 2LC, session replication
- Working to publish SPECjEnterprise2010
- Early results are promising

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JBOSS EAP 6 : MANAGEMENT

Modes

- Standalone
- Domain

Tools

- CLI
- Web Console

Management APIs

- Java (DMR)
- REST API

The image displays the JBoss EAP 6.0 management console and its CLI interface. The CLI window shows the following output:

```
[standalone@localhost:9999 /] list
Unexpected command 'list'. Type 'help --commands' for the list of supported commands.
[standalone@localhost:9999 /] help --commands
Commands available in the current context:
batch
data-source
jms-topic
version
To read a description of a command, type 'help --description <command>'
[standalone@localhost:9999 /] core-service
interface
subsystem
management-major-version
namespaces=[]
product-version=6.0.0
release-version=7.1.0
server-state=running
[standalone@localhost:9999 /]
```

The management console shows the following metrics and configuration:

- Heap Memory Usage:** 80 Mb (Used: 58.9 Mb)
- Threads:** 70 (Live threads: 64)
- Classes:** 9,000 (Loaded: 8,112)

The console also displays the configuration for the **ExampleDS** JDBC Datasource:

| Name | JNDI | Enabled? |
|-----------|----------------------------------|----------|
| ExampleDS | java:jboss/datasources/ExampleDS | ✓ |

Additional configuration details for ExampleDS:

- Name: ExampleDS
- JNDI: java:jboss/datasources/ExampleDS
- Is enabled?: true
- Driver: h2
- Share Prepared Statements: false
- Statement Cache Size: 0

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JBOSS ON 3

- Central Management and Monitoring
- Multiple Products / Versions
- Configuration Management
- Responsive Provisioning / Deployment
- Performance and Availability Management
- Custom Dashboards



DEPLOY



MANAGE



MONITOR

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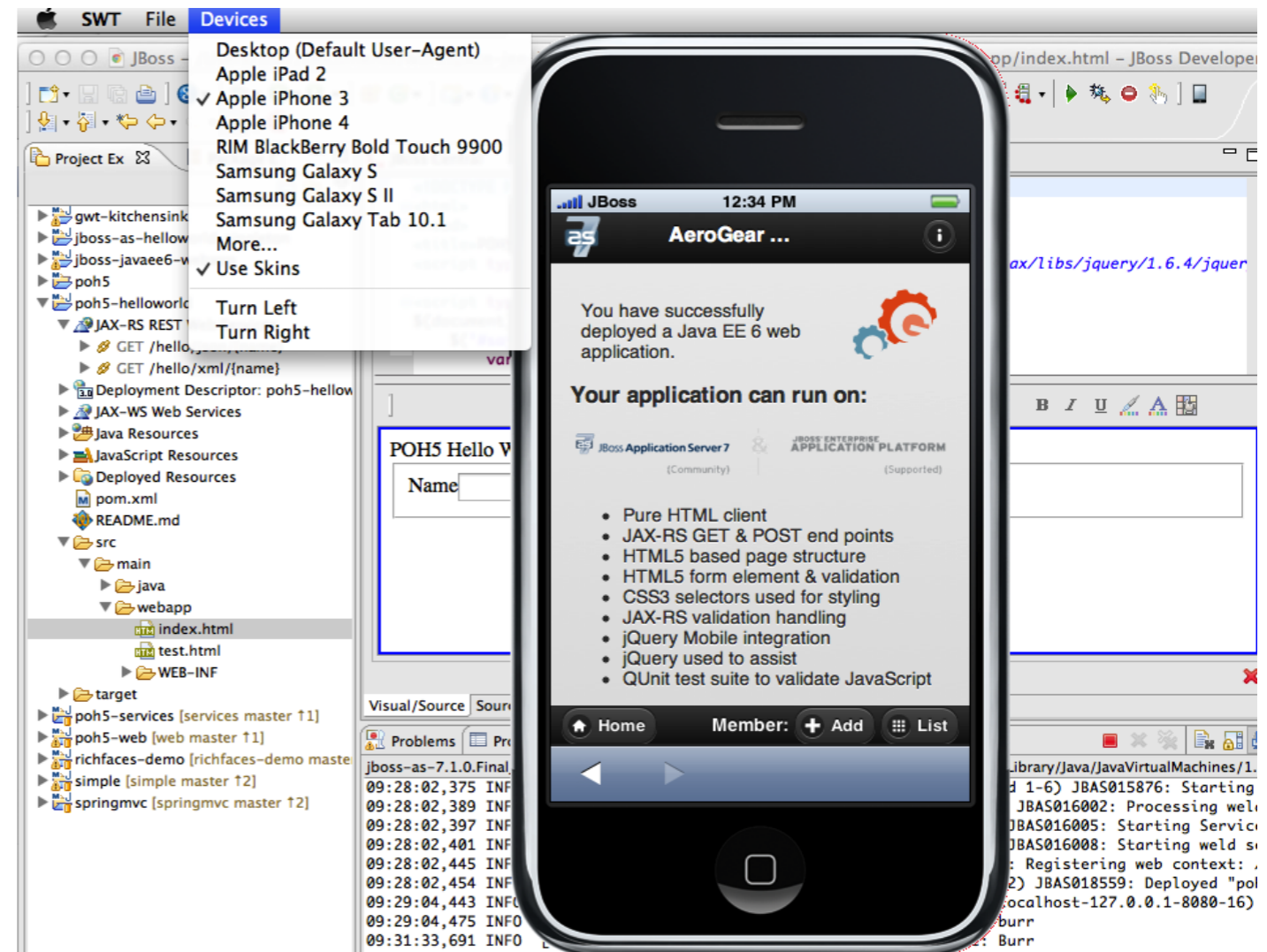
WORLD-CLASS DEVELOPER EXPERIENCE

- **JBDS 5**

- Java EE6
- HTML 5 and Mobile
- Maven Support

- **WFK 2**

- Spring 2.5, 3.0, 3.1
- GWT 1.7, 2.4
- RichFaces 2.4
- TorqueBox (TP)



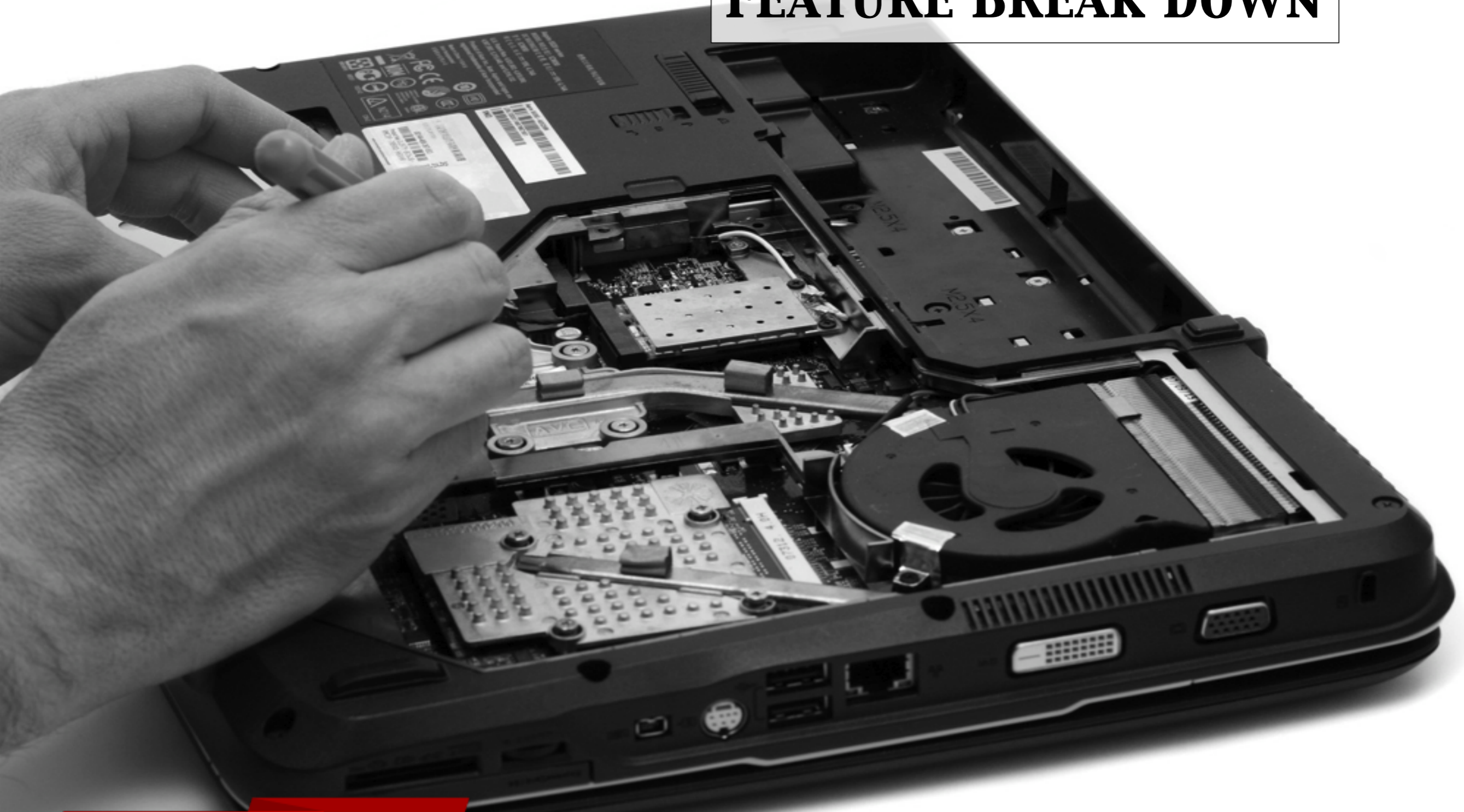
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EAP6 FEATURE BREAK DOWN



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Java EE6 Certified

- Contexts and Dependency Injection (CDI)
- Managed Beans
- Bean Validation
- Restful Web Services (JAX-RS)
- Both Web & Full Profiles



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Best In Class Frameworks



JBoss Transactions



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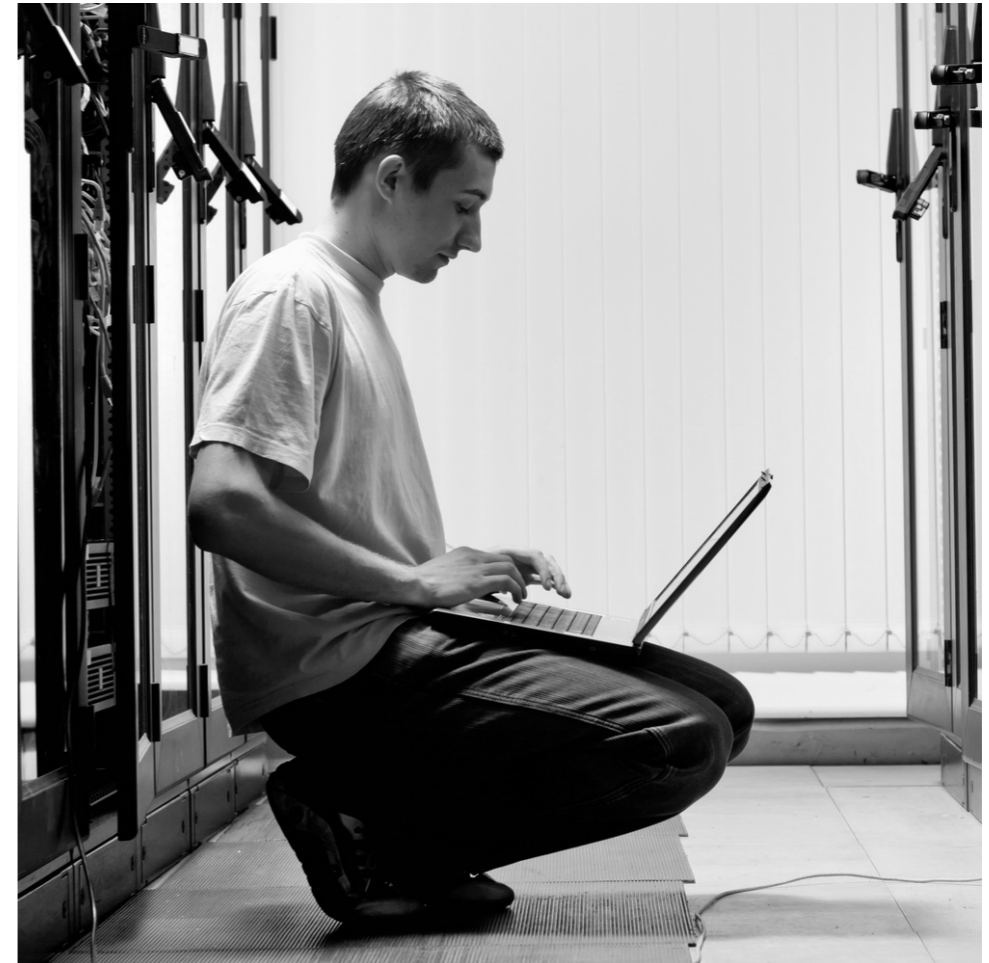
Modular Class-Loading

- Increased Isolation Between Components
- More intuitive behavior (less bugs)
- Greater flexibility and customizability
 - Ability to use independent XML parsers
- Better performance



Powerful Management at the Core

- User-focused, typed XML Configuration
- Unified Management with many interfaces
- Scriptable from any language that supports HTTP



```
# Standard HTTP File Upload, Decode JSON response
hash = JSON.parse(RestClient.post(
  "http://localhost:9990/management/add-content" ,
  :file => File.new("foo.jar", 'rb')))[ 'result' ][ 'BYTES_VALUE' ]

print "The uploaded hash is #{hash}\n"

# Encode JSON Deployment Request
RestClient.post("http://localhost:9990/management", {
  'content' => [ 'hash' => { 'BYTES_VALUE' => hash } ],
  'address' => [ 'deployment' => 'node-info.war' ],
  'operation' => 'add',
  'enabled' => 'true'
}).to_json)
```

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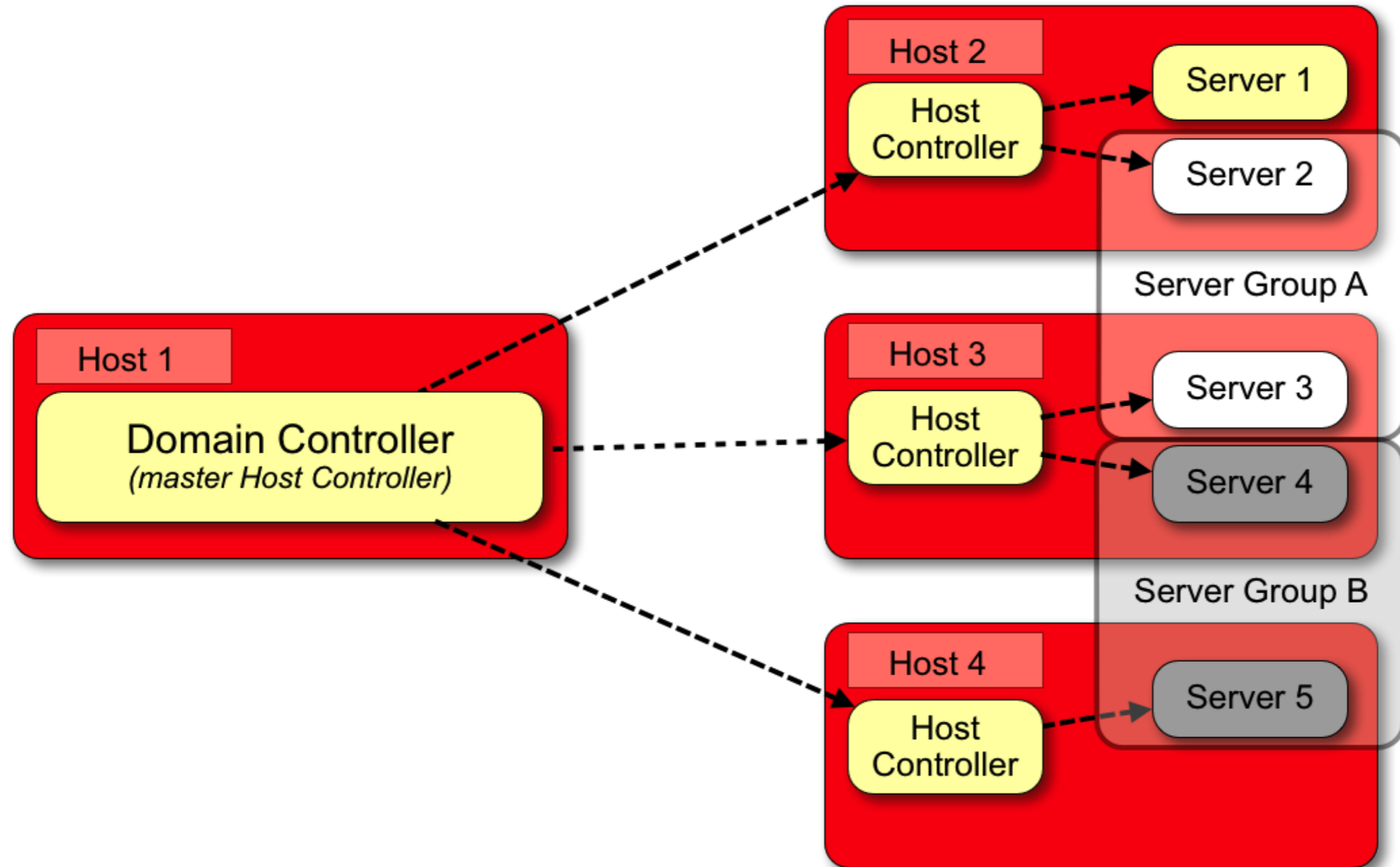


Two Operational Modes

- Standalone
 - Traditional JBoss single JVM server
 - Management facilities IN-VM
 - No lifecycle management (only shutdown)
- Domain
 - Multi-JVM, multi-server model
 - Management coordinated by Domain Controller Process
 - Multiple server instances (JVMs) per Host
 - Full lifecycle managed by Process Controller



Domain Mode Topology



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Improved Clustering

- Web/EJB Sessions Backed by Infinispan
 - Local, Replicated, or Distributed (Grid)
 - Asynchronous or Synchronous
 - Advanced eviction strategies (LIRS, LRU, etc)
- Hibernate 2LC also backed by Infinispan
 - XA, non-durable XA, and Synchronization tx modes
- Flexible Message Clustering
 - Bridged Queues/Topics
 - Client & Server Load-balancing / Failover
 - Redistribution & Chaining

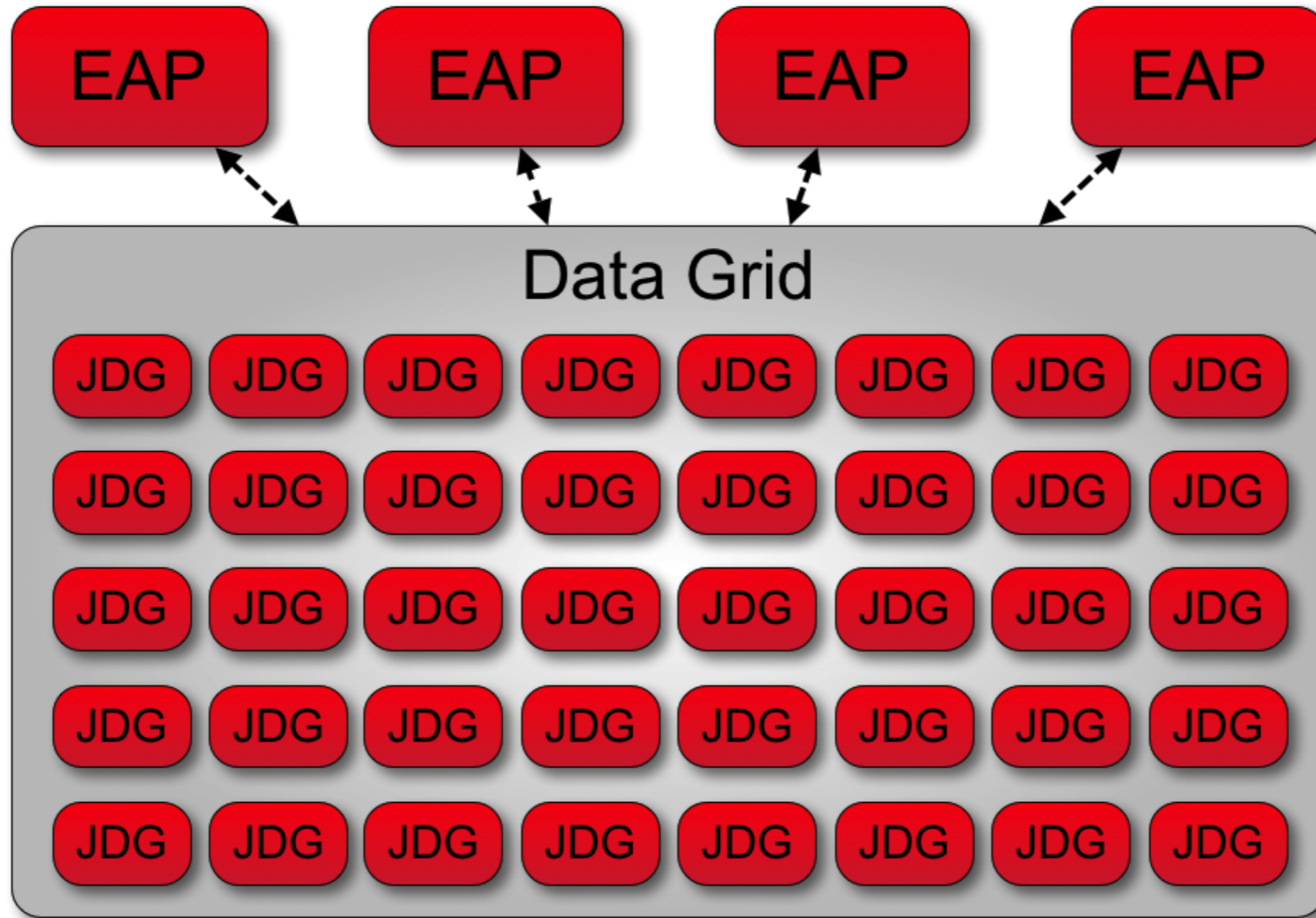
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Combining JDG & EAP



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Connectivity Improvements

- Full IPv6 Support
- Increased Multiplexing
 - Native Management Port (9999) - DMR, JMX
 - Application Remoting Port (4447) - EJB, JNDI
- Non-Blocking I/O
- NAT / Complex Network Topology Support
 - Network agnostic proxies
 - Server configured client routing tables
 - Hierarchical TX Distribution
- Zero round-trip JNDI option for EJB

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Security Improvements

- Secure By Default
- Pass-through local user authentication
- SASL Authentication
 - Beyond JAAS challenge/response
 - Digest by default
- Default uses Two Simple File Credential Databases
 - Digested H1s (no passwords in the clear)
 - Application & Management Realms
- Simple Security Store SPI
- Integrated Password Vault

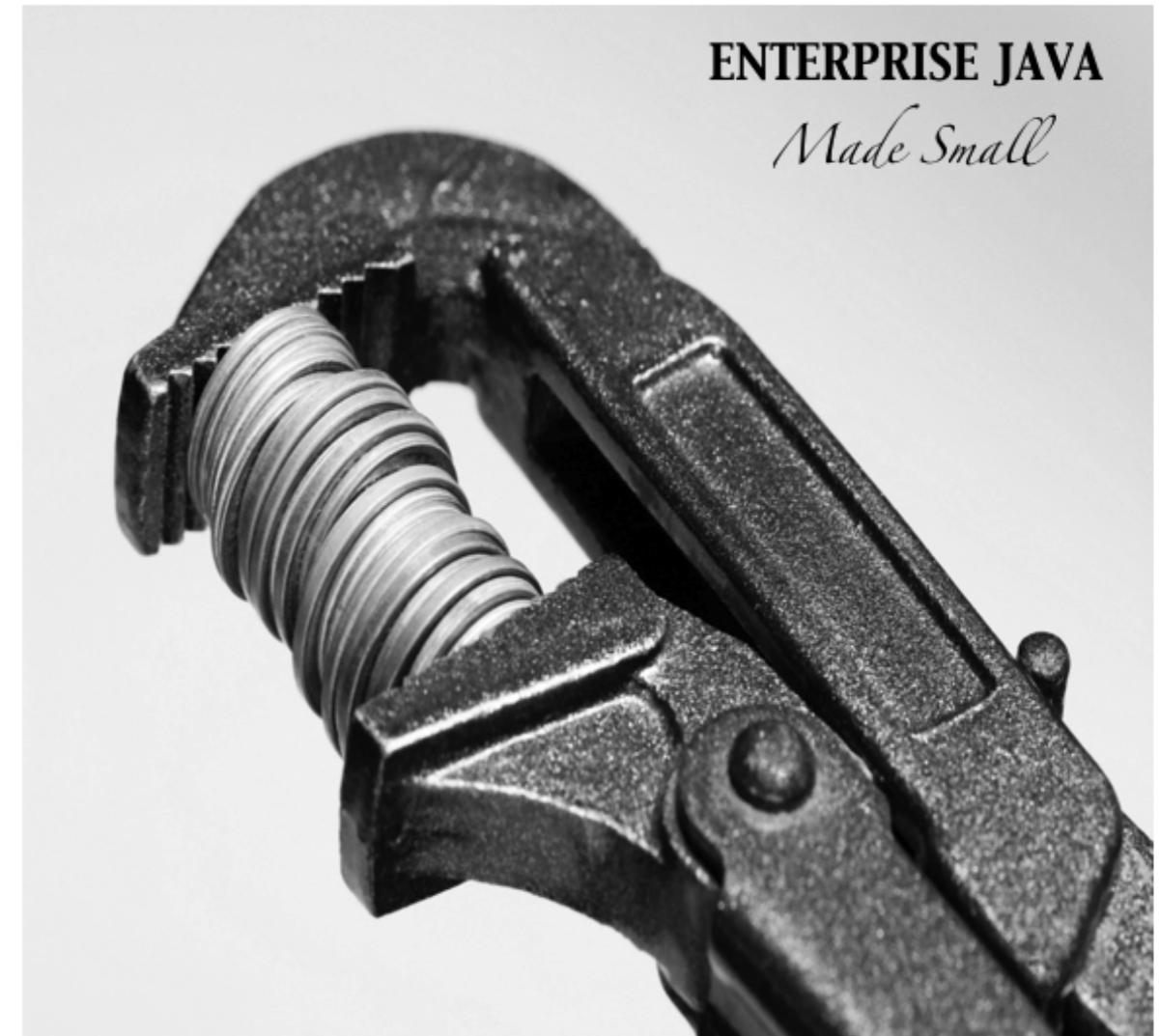
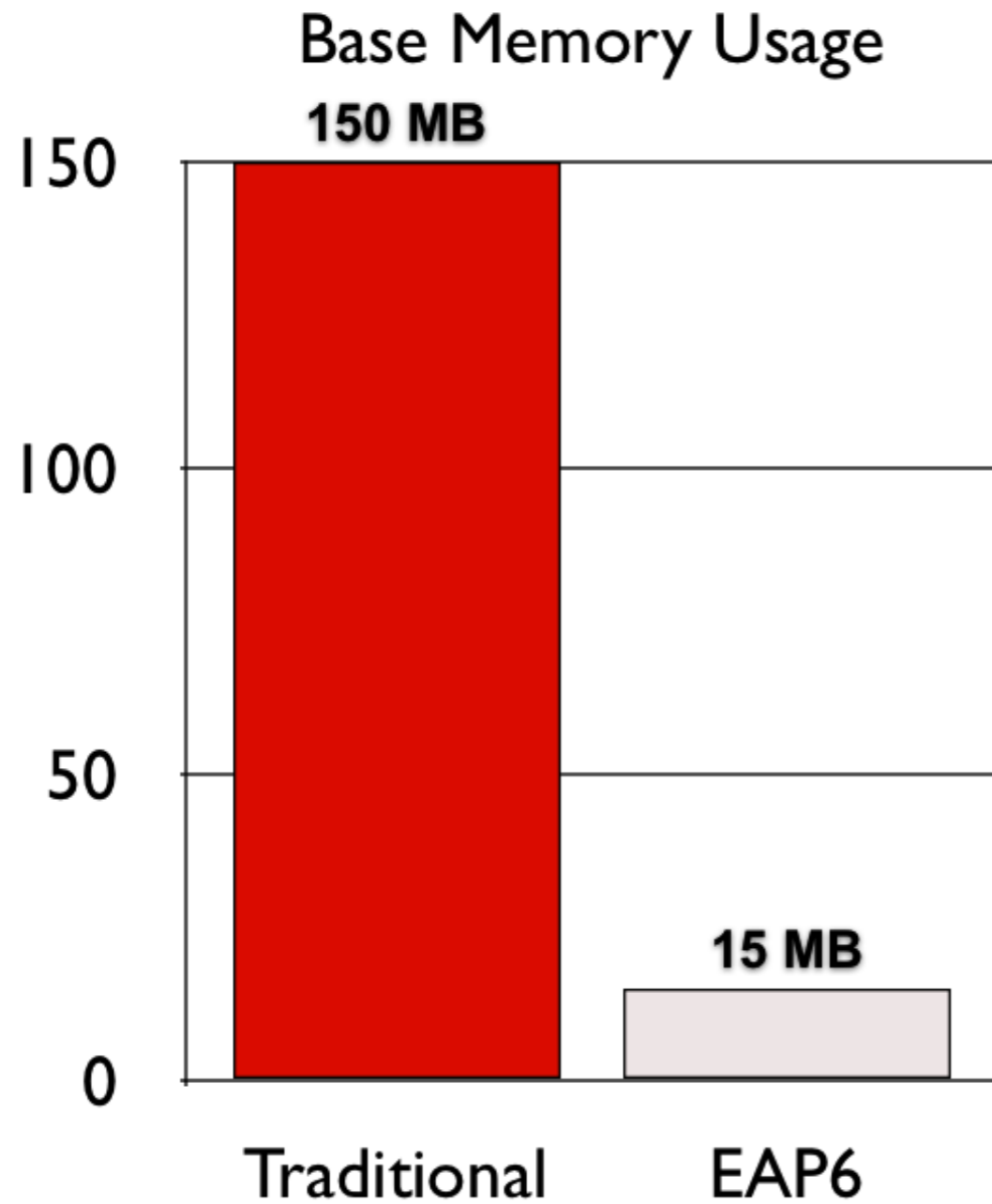
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Light-weight Footprint



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May the source be with you

- All JBoss Products Include Complete Source Code
- EAP and WFK also include maven repositories with source
- Debug your applications AND see whats happening (no secrets)
- Own your application's destiny



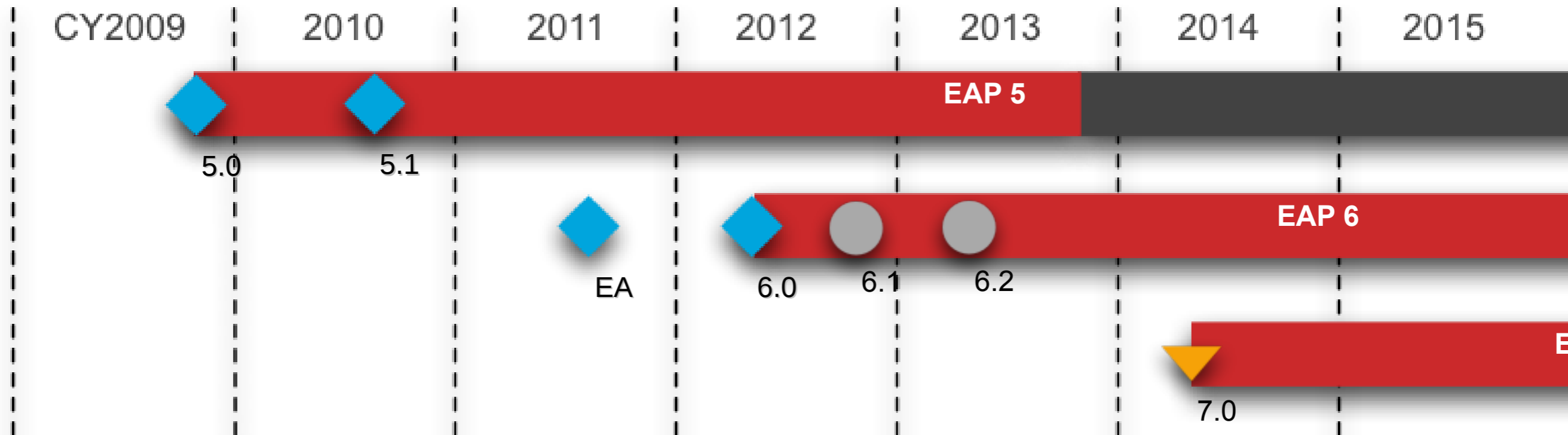
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JBoss EAP Roadmap



EAP 6.0 (Released : June 2012)

- Java EE 6
- Cloud Ready (OpenShift, CloudForms)
- Operational Ease of Use
- Domain Management
- Performance & scalability, reduced footprint
- Developer Productivity

EAP 6.1 (Target : Q4 CY12)

- Common Criteria (EAL 4+)
- Local Patching
- OSGi Support
- WebSockets / Mobile Support

EAP 7.0 (Target : Q2CY14)

- Java EE 7
- Looking for input

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Summary

CHALLENGES:

- > Scaling application and data tiers
- > Large scale, high-density, automated environments
- > Development velocity / mobile support
- > Support current and future applications

RED HAT'S RESPONSE:

- > **JBOSS EAP 6**: modular, manageable, efficient
- > **JBOSS DATA GRID 6**: Cost effective, unobtrusive architecture, fault-tolerant

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MORE INFORMATION

Thursday, June 28 10:40 am - 11:40 am

Configuration & Management with JBoss Enterprise Application Platform 6 Domains

Brian Stansberry — Principal Software Engineer, Red Hat

Thursday, June 28 1:20 pm - 2:20 pm

Discount Tire: Migrating from Oracle WebLogic to JBoss

Aaron Gresko — Infrastructure Engineer, Discount Tire

Gary Lamperillo — Senior Middleware Solution Architect, Red Hat

Tom Socha — Senior Web Administrator, Discount Tire

Thursday, June 28 2:30 pm - 3:30 pm

JBoss Enterprise Application Platform BOF

Rich Sharples — Director, Product Management, Red Hat

Friday, June 29 9:45 am - 10:45 am

JBoss Enterprise Application Platform 6 CLI - Ninja Management

Brian Stansberry — Principal Software Engineer, Red Hat

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