

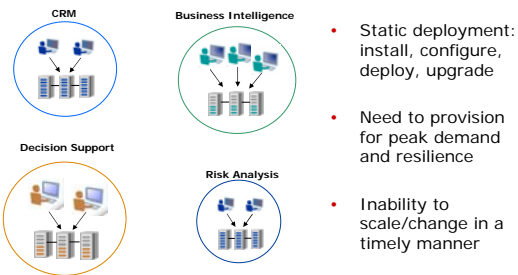
JBoss and FabricServer

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DataSynapse

Agenda

- Deploying and Managing App Servers and Applications
- Introduction to Container Virtualization
- FabricServer Integration with JBoss
- Customer Case Study

Current State: Siloed Web Applications Deployments



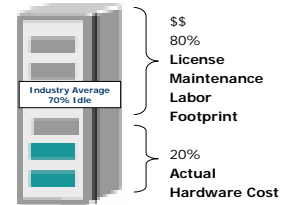
Breaking Down True Server Costs

Servers are typically:

- Over-provisioned
- Underutilized

Manual and Costly process for:

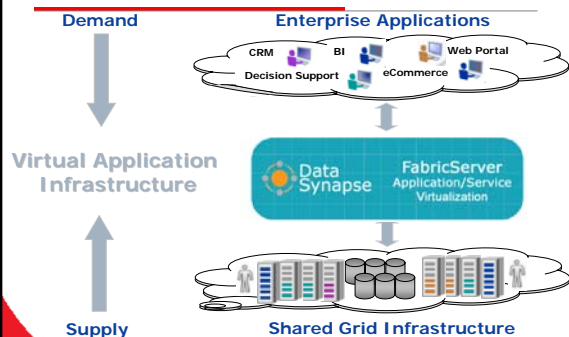
- Installation
- Configuration
- Managing
- Monitoring
- Resizing
- Upgrading
- Test UAT



"Adding hardware provides incremental gains of 20-30%, but dramatically increases cost."

- Bank of America, BONY, IDC, HP, UPS

DataSynapse Vision



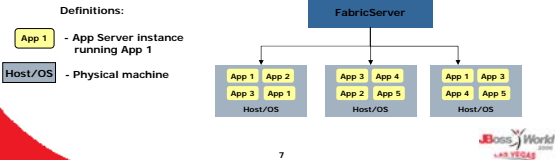
Proven Benefits of Application Virtualization

- Reduce Costs
 - ✓ Convert high fixed costs to low variable costs
 - ✓ Improve utilization
 - ✓ Consolidate management
 - ✓ Improve efficiency of operations
- Manage Service Levels
 - ✓ Scale applications based on objectives
 - ✓ Built-in resilience
- Improve Agility
 - ✓ Prioritize applications
 - ✓ Accelerate application deployment
 - ✓ Better respond to changing business demands



Application Virtualization with FabricServer

- Application configuration is centrally stored
- Runtime policy dictates:
 - ✓ The size (range) of the app server cluster
 - ✓ Attribute to monitor that indicates load
 - ✓ The watermarks for adding or removing incremental JVM instances
- App Server instances are managed by FabricServer



Container Technologies – a Common Abstraction

- Application Server
 - ✓ BEA WebLogic
 - ✓ IBM WebSphere
 - ✓ JBoss
- Servlet Container
 - ✓ Tomcat, Jetty
- Data Services
 - ✓ Tangosol Coherence
 - ✓ BEA ALDSP, Terracotta
- SOA/ESB Containers
 - ✓ Tibco Business Works
 - ✓ BEA Aqualogic
 - ✓ JBI Providers
- ISV Server Tiers

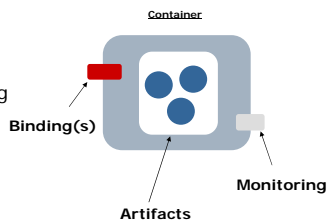
Binding
 HTTP/HTML
 RMI
 HTTP/SOAP
 JMS, SMTP
 Proprietary

Artifacts
 Jars, EARS
 WARS, XML
 .NET Assemblies
 Cache loaders
 Native Libraries

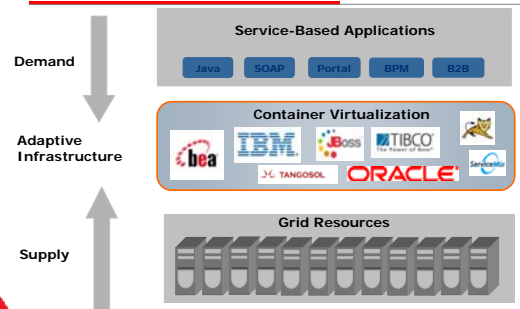


Virtualizing Containers-Based Applications

- Lifecycle
 - ✓ Environment
 - ✓ Start/Stop
- Application Deployment
 - ✓ Adding/removing
 - ✓ Versioning
- Monitoring
 - ✓ JMX
 - ✓ Other stats gathering
- Notification
 - ✓ Systems management
 - ✓ Load balancers
 - ✓ Reporting

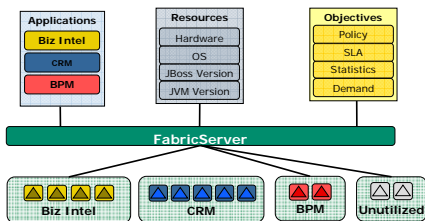


Container Virtualization

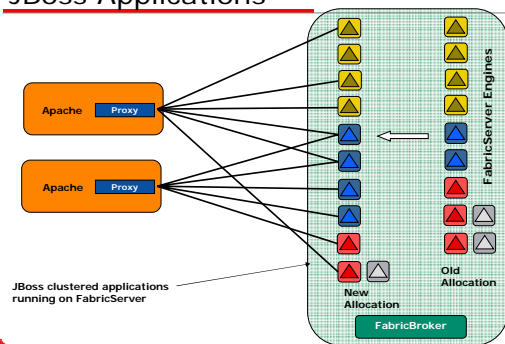


FabricServer-JBoss Integration

- Host and manage JBoss application deployments
- Runtime Provisioning
- Manage Heterogeneous Application Server Environments

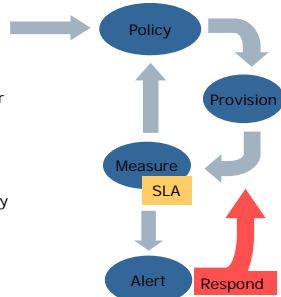


Runtime Provisioning of JBoss Applications



Policy-Driven Provisioning for JBoss

- FabricServer uses policy to:
 - Determine what applications should be running during particular time interval
 - Define min/max app server instances per application
 - Assess load (via JMX) and provision accordingly
 - Deal with conflicting objectives
- FabricServer provisions:
 - JVM
 - Application Server
 - Application Code



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Simplified deployment of JBoss Applications

- Manage multiple JBoss Versions
 - Install new container versions into FabricServer
 - Customize app server for applications as needed

Name	Version	Binding Version	Description	Supported Domains	Types	Modified	Actions
Default Container	1.0	1.2.0.4	Basic container provided by DataSynapse	POJO Service, Spring Service	no		[-] Actions
JBoss Container	4.0.3SP1	1.2.0.4	JBoss Container	Web App, Web Service	no		[-] Actions
JBoss Container	4.0.3SP1	1.2.0.4	JBoss Container	Web App, Web Service	no		[-] Actions
JBoss Container	4.0.2	1.2.0.4	JBoss Container	Web App, Web Service	no		[-] Actions
JBoss Container	4.0.0	1.2.0.4	JBoss Container	Web App, Web Service	no		[-] Actions

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Manage Hundreds of JBoss Applications

Name	Type	Status	Modified	Actions
ClusteredGenericDomain	Web App	deployed	no	[-] Actions
ClusteredOODomain	Web App	deployed	no	[-] Actions
ClusteredRuboDomain	Web App	deployed	no	[-] Actions
GenericWebServiceDomain	Web Service	deployed	no	[-] Actions
JBossWebAppGenericServiceDomain	Web App	deployed	no	[-] Actions
JBossWebAppInputOutputServiceDomain	Web App	deployed	no	[-] Actions
MultiClusteredGenericDomain	Web App	deployed	no	[-] Actions
MultiClusteredOODomain	Web App	deployed	no	[-] Actions
MultiClusteredRuboDomain	Web App	deployed	no	[-] Actions
Web App Example	Web App	deployed	no	[-] Actions
WebService Example	Web Service	deployed	no	[-] Actions
WebLogicTestDomain	Web App	deployed	no	[-] Actions

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Setting Policy for Runtime Allocation of JBoss

- Manage operating policy for shared environment
- Dictate minimum and maximum size of app server clusters

Domain	Min	Max	Priority
GenericServiceDomain	2	8	1
ClusteredRuboDomain	2	4	1
ClusteredGenericDomain	1	3	1
ClusteredOODomain	2	3	1

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Runtime Provisioning Policy

- Allow application clusters to change size automatically
- Track JBoss JMX attribute to determine load and trigger events

Enter rule definition

Domain (*): Web-App-Example

Rule: JBoss Thread Count

Statistics: JBoss Thread Count

Sampling Window (ms): 120000

Violation Behavior: Add engine if > max / Remove engine if < min

Min: 20

Max: 80

Buttons: OK, Cancel

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Wachovia Leverages FabricServer for Service-Oriented Infrastructure



- FabricServer hosts SOA platform with transaction processing apps
- JBoss with Spring are best practices around all apps going forward
- FabricServer speeds migration from WebLogic to JBoss
- FabricServer easily manages dozens of JBoss apps on shared hardware infrastructure
- Cluster sizes are adjusted to meet business demand

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Wachovia Leverages FabricServer for Service-Oriented Infrastructure

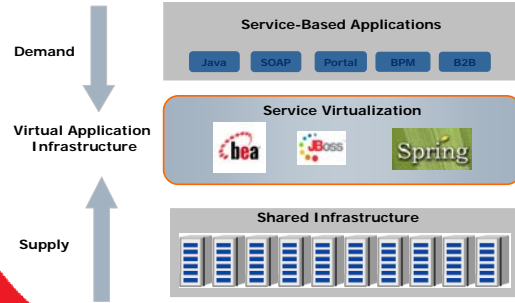


- *Benefits to Wachovia:*
 - ✓ "A critical element of the bank's plan to develop a global, virtual processing infrastructure"
 - ✓ Currently processing front-office trading and middle-office order management applications over FabricServer
 - ✓ Enabled the bank to achieve **7-figure cost avoidance and operational cost impacts while improving growth efficiency by 30%**
 - ✓ Service level management control available at runtime, Wachovia has seen a **5x improvement in application responsiveness**
 - ✓ **50 percent increase in throughput** since implementing DataSynapse FabricServer"

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Adaptively Provision and Scale Service Components



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Questions?

Thank you...

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