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JBoss EAP 6 CLI – Ninja Management

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Agenda

- Demo, demo, demo!
- EAP 6 management basics
- Using the CLI with a single *Standalone Server*
- CLI security
- Using the CLI with a multi-server *Managed Domain*
- Interactive and non-interactive operation

EAP 6 Management Interfaces

Tools

- CLI
- Web Console

Management Protocols

- Native (Java)
- HTTP/REST
- JMX

The image displays a composite of three screenshots related to JBoss Enterprise Application Platform 6.0:

- Top Left:** A terminal window showing a CLI session. The user enters 'list' and receives a list of supported commands including 'batch', 'data-source', 'jms-topic', 'version', 'To read a description', 'core-service', 'interface', 'subsystem', 'management-major-version', 'namespaces=[]', 'product-version=6.0.', 'release-version=7.1.', 'server-state=running', and 'standalone@localhost:9999 /] help --commands'.
- Top Right:** A monitoring dashboard for 'jboss-eap-6.0DR13'. It features several graphs: 'Heap Memory Usage' (ranging from 50 Mb to 80 Mb, with 'Used: 58.9 Mb' indicated), 'Threads' (ranging from 70 to 70), and 'Classes' (ranging from 7,000 to 9,000). A 'Loaded:' indicator is visible at the bottom of the classes graph.
- Bottom Right:** The 'JBoss Enterprise Application Platform 6.0' web console. The 'Datasources' configuration page is shown, specifically the 'JDBC Datasources' section. It lists 'ExampleDS' with JNDI 'java:jboss/datasources/ExampleDS'. The configuration details include: Name: ExampleDS, JNDI: java:jboss/datasources/ExampleDS, Is enabled?: true, Driver: h2, Share Prepared Statements: false, and Statement Cache Size: 0.

New in EAP 6 -- Multi-Server Management

- Multi-server management is a core part of JBoss EAP 6 itself
- Manage multiple servers from a single control point
 - Start/stop servers
 - Rolling deployment to a set of servers
 - Roll a config change out to a set of servers
 - Roll back changes

Choices for How to Manage EAP 6 Instances

- Do you want to take advantage of our multi-server management features?
 - Yes: run a *Managed Domain*
 - `[bin]$./domain.sh`
 - No: run a *Standalone Server*
 - `[bin]$./standalone.sh`

Core concepts: Subsystems & Profiles

- Subsystem: a particular set of capabilities that extend the application server core
 - Webserver, Transaction Manager, EJB3, CDI, HornetQ, OSGi, JCA, JGroups, Infinispan, etc, are all subsystems
- Profile: a named set of subsystem configurations
 - A standalone server runs a single profile
 - A managed domain can have many profiles available, with different servers running different profiles

Core concept: Management Resources

- Everything manageable is exposed via a tree of addressable resources
 - Address is an ordered list of key/value pairs
 - /profile=default/subsystem=web/connector=http
- Resources expose attributes & operations
- Quite similar to JMX Open MBeans
 - But, resources are organized in a tree
 - Atomic multi-step operations supported
 - Operations across servers supported

CLI – Two Types of Commands

- Low-level:
 - provide resource address, operation name & params & you can invoke any operation on any resource

```
[standalone@localhost:9999 /] /subsystem=web/connector=http:read-attribute(name=request-count)
```

- High-level: convenience commands for common tasks

```
[standalone@localhost:9999 /] deploy /home/admin/wars/helloworld.war
```

Demo – CLI Basics with a Standalone Server

- Navigation: `ls`, `cd`, `pwd`
- Convenience: tab completion, history
- Commands:
 - Low-level: provide resource address, operation name & params & you can invoke any operation on any resource

```
[standalone@localhost:9999 /] /subsystem=web/connector=http:read-attribute(name=request-count)
```

- High-level: convenience commands for common tasks

```
[standalone@localhost:9999 /] deploy /home/admin/wars/helloworld.war
```

- Batch operations: `batch`, `run-batch`
- `reload`, shutdown **operations**

CLI Security

- Native management interface integrates with an EAP security-realm

```
<management>
  <security-realms>
    <security-realm name="ManagementRealm">
      ....
    <management-interfaces>
      <native-interface security-realm="ManagementRealm">
```

- Realms support different authentication stores
 - truststore, properties file, LDAP, JAAS, custom
 - properties file is the default
 - Manipulate via bin/add-user.sh (.bat) helper tool

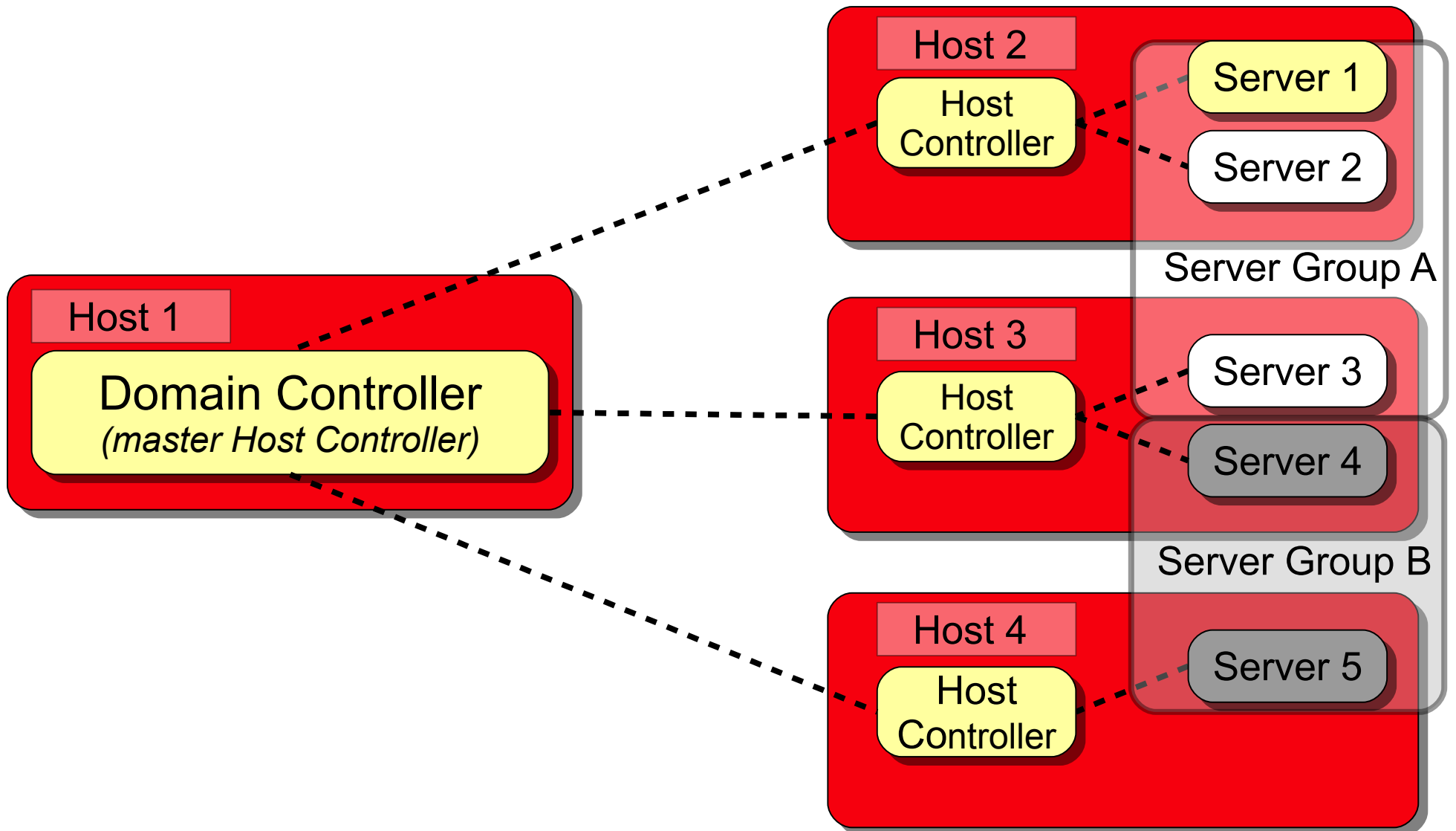
“Local” Authentication

- Automated challenge-response, transparent to end user
 - EAP provides location of a file writable by EAP process
 - Client proves it can write to that file
- Based on filesystem permissions
 - Assumption is if client process can write to files owned by EAP process' account, the client account is valid
- Supported by default, but can be disabled

Demo – CLI Security

- `whoami` operation
- Disable local authentication, require login

Managed Domain Topology



Demo – Administer a Managed Domain

- Administer a 3 “host”, 2 server domain
- Navigate the domain
- Add a server group
- Add 2 new servers

Rollout Plans

- Control how changes get applied to multiple servers in your domain
- Concurrency
 - Apply to all server groups concurrently or in series
 - Apply to all servers in a group concurrently or in series
- Failure tolerance
 - Failure on $> x$ servers or $> y\%$ of servers in a group triggers rollback (in that group or in all groups)

Demo – Rolling Changes Out to a Domain

- Roll a deployment out to the domain
- Save a rollout plan for re-use
- Use the saved rollout plan with an undeploy operation

Demo – Running the CLI from a Script

- Run a script that shuts down a given list of hosts

Q&A