

Understanding JNDI

At the end of this module you will be able to:

- ✓ Describe naming and directory services
- ✓ Detail the high-level architecture of JNDI
- ✓ Define basic terminology
- ✓ View the JNDI tree in WebLogic Server
- ✓ Use the Administration Console to deploy a startup or shutdown class

1. Introduction to JNDI

- What Are Directory and Naming Services and How Do They Work
- The High-level Architecture of JNDI
- Viewing JNDI Tree Via the Administration Console and the Command-Line

2. Startup and Shutdown Classes

What Is JNDI?



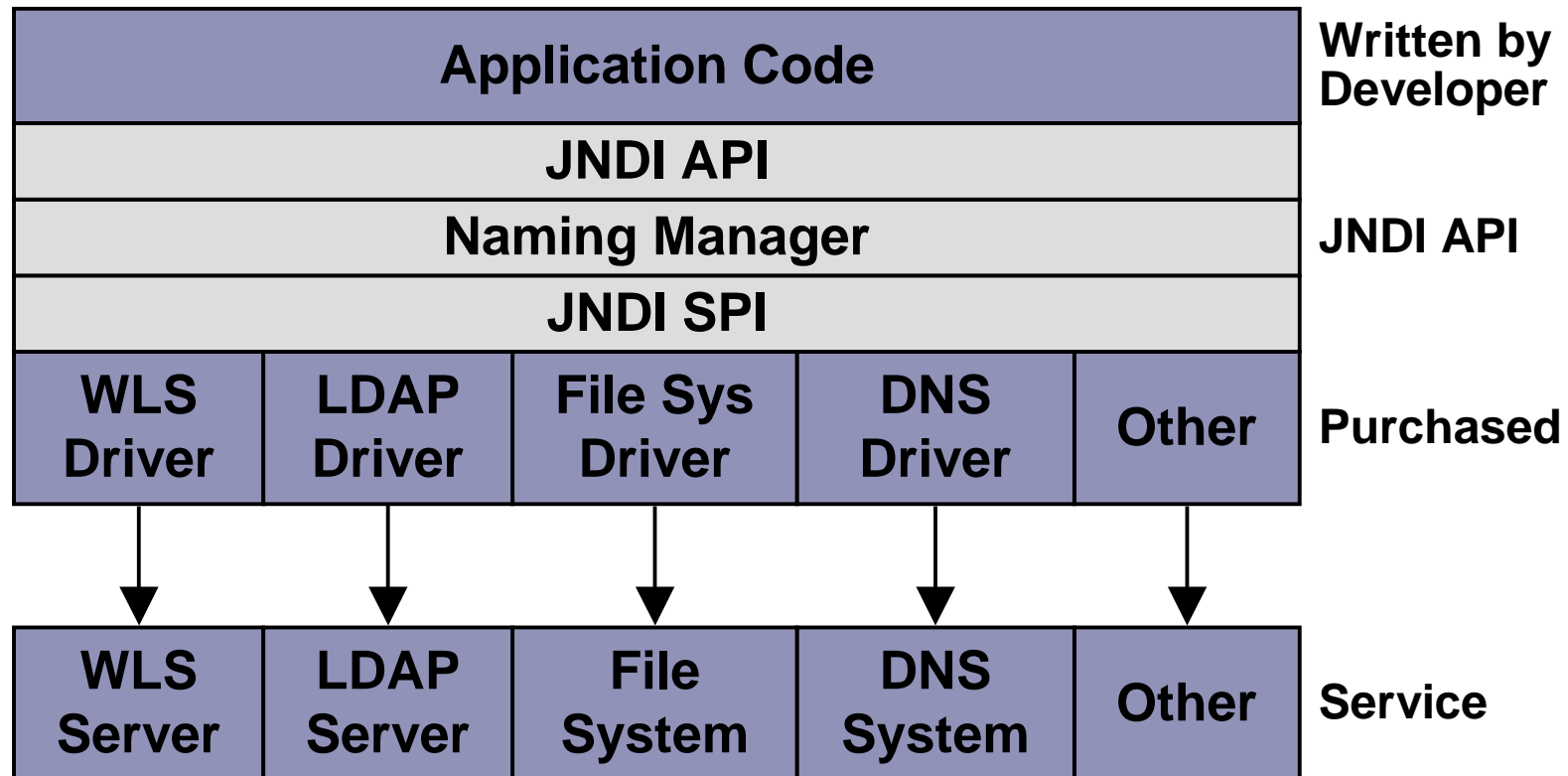
- ▶ The Java Naming and Directory Interface is an API for accessing different naming and directory services uniformly.
- ▶ This is a major step forward because:
 - Different services use vastly different naming schemes
 - Java applications will be able to navigate seamlessly across databases, files, directories, objects and networks

Why JNDI ?



- ▶ In WebLogic Server, JNDI serves as a repository and lookup service for J2EE objects including:
 - EJB home stubs
 - JDBC DataSources
 - JMS connection factories, queues and topics
 - RMI stubs

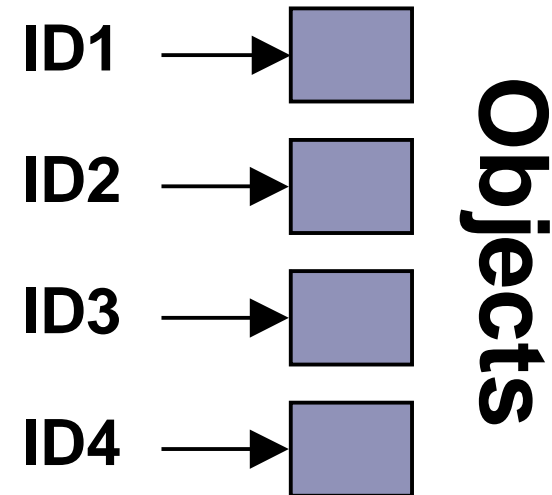
JNDI Structure



Naming Service



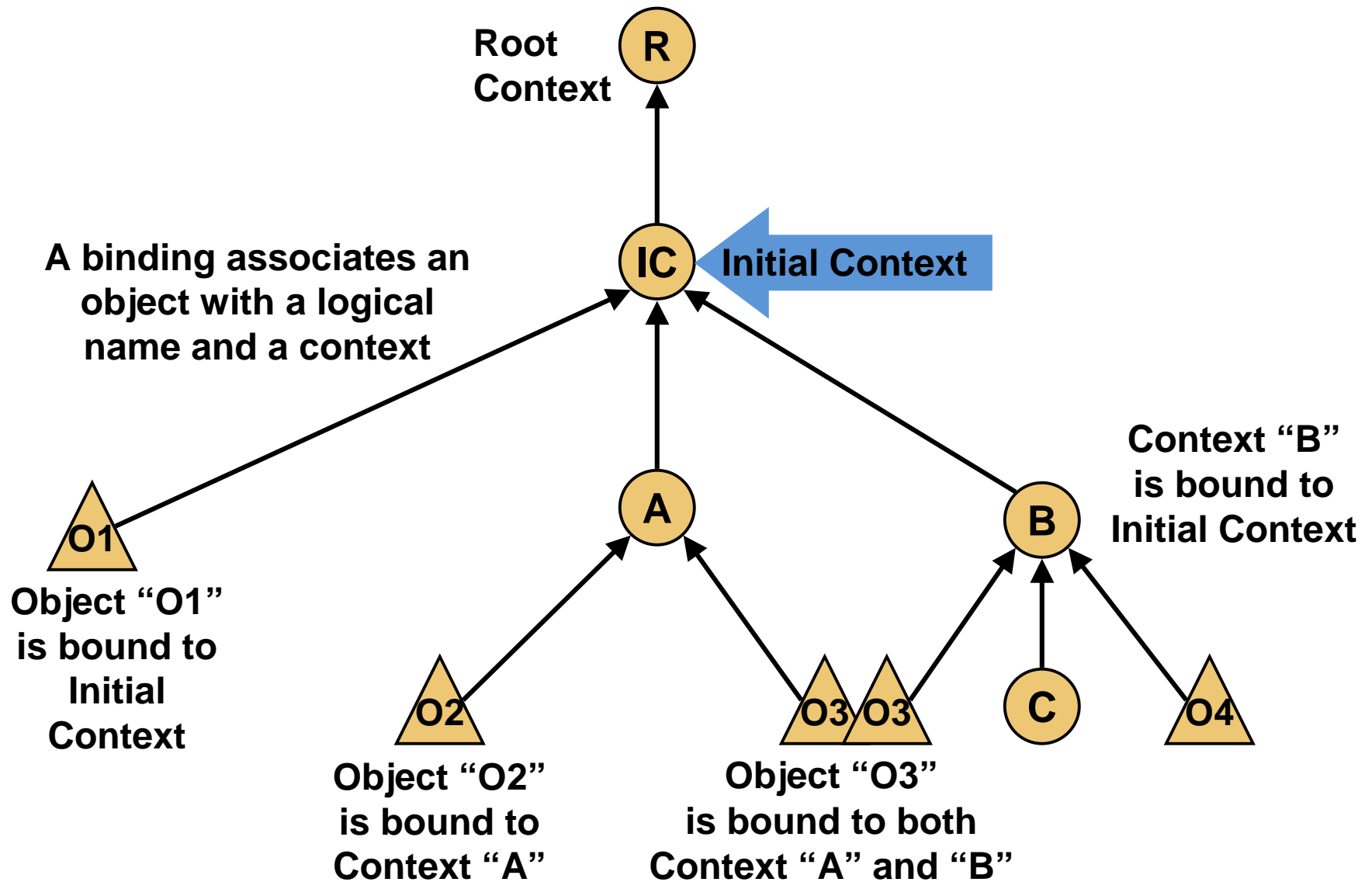
- ▶ A *naming service* provides a method for mapping identifiers to entities or objects:



- ▶ Naming Service vocabulary:

Term	Definition	Example
Binding	Association of an atomic name and an object	<code>www.bea.com</code> is bound to <code>209.10.217.38</code>
Namespace	A set of unique names in a naming system	<code>www.bea.com/products</code>

A JNDI Tree



Contexts and Subcontexts



- ▶ Subcontexts are referenced through dot delimiters (.)
- ▶ Subcontexts must be created before objects are placed into them

If the following context exists:

`com.bea.examples`

you cannot bind:

`com.bea.examples.ejb.SomeObject`

without first creating:

`com.bea.examples.ejb`



JNDI for Administrators



- ▶ An administrator needs to understand JNDI because it will be their job to:
 - verify objects are bound in the JNDI tree
 - set security on contexts within the JNDI tree

Viewing the JNDI Tree



Domain Structure

- wl_server
 - Environment
 - Servers** (1)
 - Clusters
 - Virtual Hosts
 - Migratable Targets
 - Machines
 - Work Managers
 - Startup & Shutdown Classes
 - Deployments
 - Services
 - Messaging
 - JDBC
 - Persistent Stores
 - Path Services
 - Foreign JNDI Providers
 - Work Contexts

Domain Structure

examplesServer

- bea_wls_remote_deployer
- ejb
 - mgmt
 - MEJB
 - ejb20-beanManaged-Account
 - examples-datasource-demo
 - examples-datasource-demoXAPool
 - examples-datasource-demoXA-2
 - examples-multiDataSource-demoXAPool
- javax
 - jdbcRowSetsEarjdbcRowSetsEjbPatientSessionEJB_EO
- jms
 - mejbmejb_jarMejb_EO
- PatientSessionEJB
- quotes
- weblogic

Servers

Click the **Lock & Edit** button in the Change Center to activate all the buttons on this page.

New Clone Delete

Showing 1 - 1 of 1 Previous | Next

<input type="checkbox"/>	Name ^	Cluster	Machine	State	Health	Listen Port
<input type="checkbox"/>	examplesServer(admin)			RUNNING	OK	7001

New Clone (2) Delete

Showing 1 - 1 of 1 Previous | Next

Use this page to configure general features of this server such as default network communications.

View JNDI Tree (3)

Name: examplesServer

Machine: (None)

Cluster: (Standalone)

5

Settings for ;examples-datasource-demoPool;examplesServer

Binding Security

General

This tab allows you to configure a Bound Object

Binding Name: examples-datasource-demoPool

Class: weblogic.jdbc.common.internal.RmDataSource

Hash Code: 25206157

ToString: weblogic.jdbc.common.internal.RmDataSource@1809d8d

Listing JNDI Contents



- ▶ WLST provides a command line utility for viewing JNDI bindings.
- ▶ `jndi ()` changes to the jndi tree and `ls ()` lists the bindings

```
wls:/humanresources/runtime> jndi<>
Location changed to jndi tree. This is a read-only tree with No root.
For more help, use help('jndi')

wls:/humanresources/jndi> ls<>
dr--   ejb
dr--   javax
dr--   weblogic

wls:/humanresources/jndi> cd('weblogic')
wls:/humanresources/jndi/weblogic> ls<>
dr--   cluster
dr--   common
dr--   cosnaming
dr--   jms
dr--   logging
dr--   management
dr--   messaging
dr--   remote
dr--   rmi
dr--   security
dr--   transaction
-r--   MessageInterception           weblogic.messaging.intercept
ion.internal.InterceptionServiceImpl
-r--   fileSystem                   weblogic.jndi.internal.Serve
rNamingNode
```

10
0101
1110

Section Review



In this section we discussed:

- ✓ What directory and naming services are and how they work
- ✓ The high-level architecture of JNDI
- ✓ Viewing the JNDI tree via the Administration Console and the command line



1. Introduction to JNDI

2. **Startup and Shutdown Classes**

- What Are Startup and Shutdown Classes and How Do They Work
- Deploying a Startup or Shutdown Class Using the Administration Console

What Is a Startup Class?

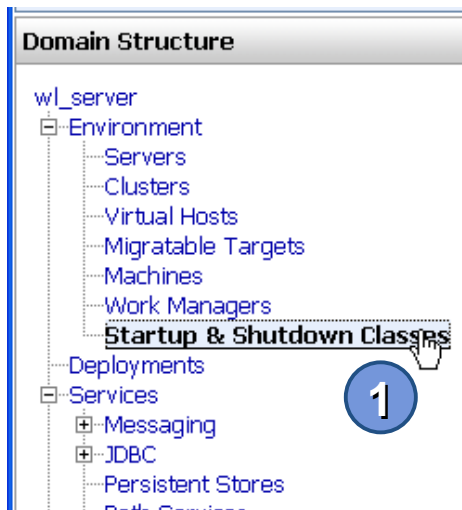


- ▶ A startup class is a class that is loaded and executed when WebLogic Server boots.
- ▶ You can use a startup class to:
 - initialize objects in memory
 - reconstruct a JNDI tree
 - load critical values from the database
 - recover the system to the state that existed before shutdown

What Is a Shutdown Class?

- ▶ A shutdown class is a class which gets executed when WebLogic Server is shutting down.
- ▶ Shutdown classes are usually used to free resources obtained by startup classes.

Defining Startup/Shutdown Classes...



This page summarizes the startup and shutdown classes that have been configured in the current domain. You must deploy each class on one or more specific servers.

[Customize this table](#)

Startup and Shutdown Classes

2

NewCloneDelete

Showing 0 - 0 of 0Previous | Next

☐

Name

Type

Class Name

Deployment Order

Arguments

There are no items to display

NewCloneDelete

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Configure a New Startup or Shutdown Class

Back **Next** Finish Cancel

Class Type
Which type of class would you like to define?

3 ☒ Startup Class
☐ Shutdown Class

Configure a New Startup or Shutdown Class

Back **Next** Finish Cancel

Startup Class Properties
The following properties will be used to identify the class you are configuring.

What name would you like to use to identify the class?

4 Name:

Class Name:

...Deploying Startup/Shutdown Classes



Configure a New Startup or Shutdown Class

Back Next **Finish** Cancel

Select Targets **6**

You can target this new class to any of these servers or clusters.

Targets

Servers

5 ☒ examplesServer

Startup and Shutdown Classes

New Clone Delete Showing 1 - 1 of 1 Previous | Next

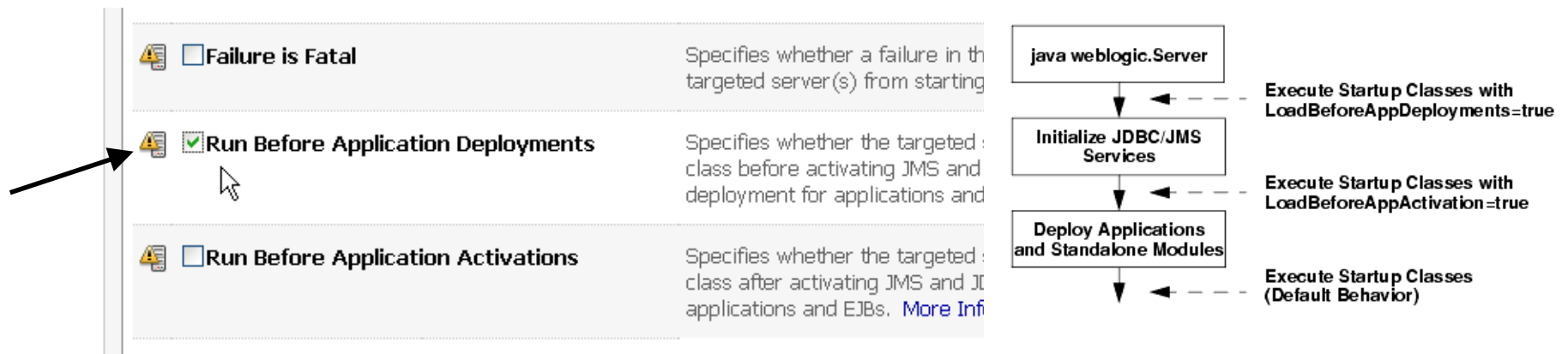
<input type="checkbox"/>	Name	Type	Class Name	Deployment Order	Arguments
<input type="checkbox"/>	StartupClass-0	Startup	fully.qualified.class.name	1000	

7 New Clone Delete Showing 1 - 1 of 1 Previous | Next

When Are Startup Classes Loaded?



- ▶ By default, startup classes are loaded after the J2EE deployment units.
- ▶ J2EE deployment units load in this order: JDBC, JMS, Connectors, EJBs, Web Applications.
- ▶ If “Run Before Application Deployments” is checked, then startup class are loaded right before deploying JDBC Data Sources.

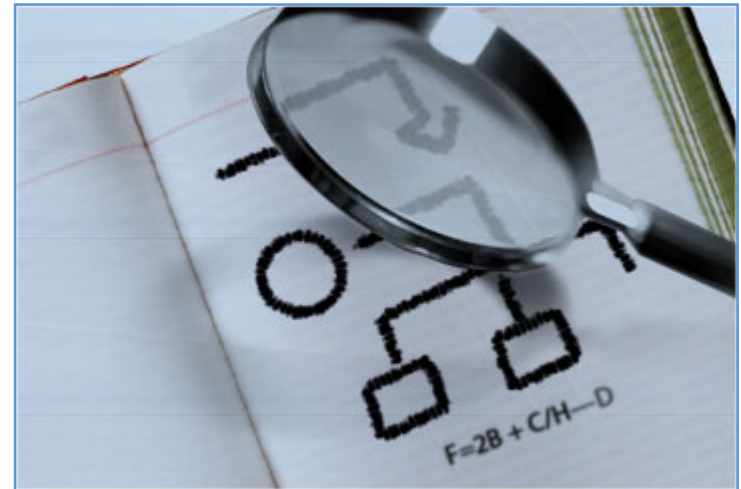


Section Review



In this section we discussed:

- ✓ What startup and shutdown classes are and how they work
- ✓ How to deploy a startup or shutdown class using the Administration Console



Working With Startup Classes and JNDI

- ▶ In this lab you are going to deploy a startup class that binds objects into the JNDI tree.
- ▶ Ask the instructor for any clarification.
- ▶ The instructor will determine the stop time.



Lab Exercise



Module Review



In this module we discussed:

- What naming and directory services are
- The high-level architecture of JNDI
- Terminology used in naming and directory services
- How to view the JNDI tree in WebLogic Server
- How to deploy a startup or shutdown class via Administration Console

