# 7

# Configuring Managed Servers

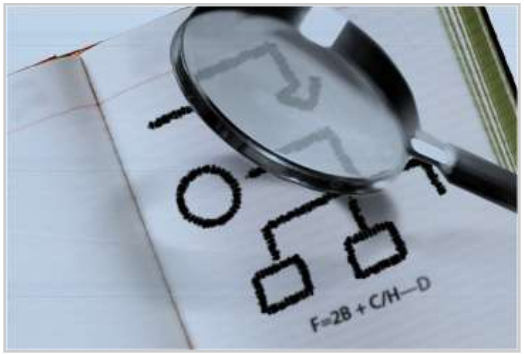
# Objectives

After completing this lesson, you should be able to:

- Configure managed servers using the Administrative Console
- Configure managed servers using WebLogic Scripting Tool (WLST)
- Start managed servers
- Shut down a server or an entire domain using WLST or the Administrative Console
- Configure managed servers on a computer separate from the administration server
- Explain administration and Managed Server Independence (MSI)

# Road Map

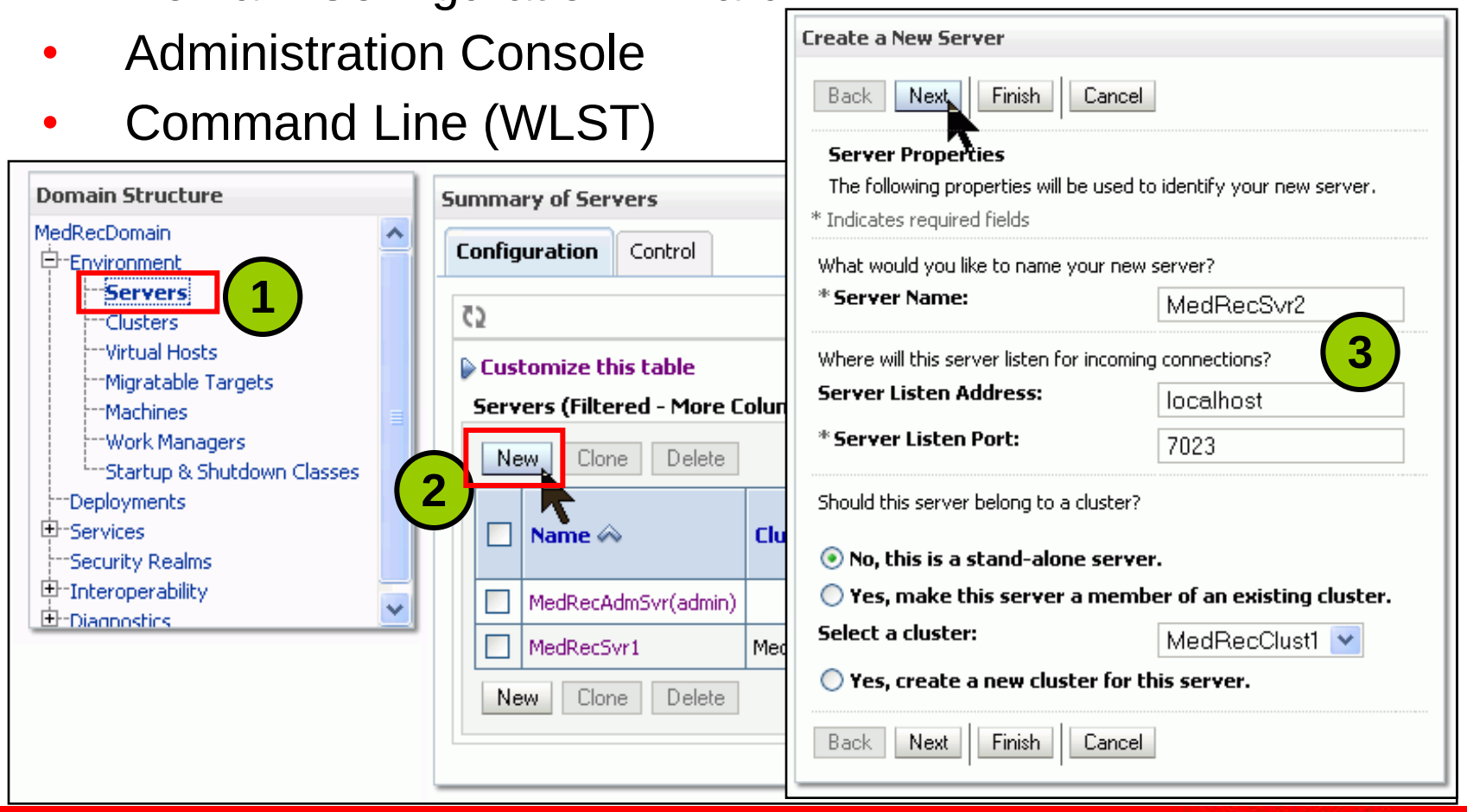
- Managed servers
  - Configuring managed servers
  - Starting managed servers
  - Stopping managed servers
- Remote managed servers
- Managed Server Independence (MSI)



# Configuring Managed Servers

You can configure managed servers by using the following:

- Domain Configuration Wizard
- Administration Console
- Command Line (WLST)



# Creating a Managed Server with WLST

```
[oracle@wls-sysadm /]$ java weblogic.WLST
wls:/offline> connect('weblogic','mypassword','t3://localhost:7020')
 Connecting to t3://localhost:7020 with userid weblogic ...
 Successfully connected to Admin Server 'MedRecAdmSvr' that belongs to
 domain 'MedRecDomain'.
wls:/MedRecDomain/serverConfig> cd('Servers')
wls:/MedRecDomain/serverConfig/Servers> edit()
wls:/MedRecDomain/edit> startEdit()
wls:/MedRecDomain/edit !> server1=create('MedRecSvr3','Server')
 MBean type Server with name MedRecSvr3 has been created successfully.
wls:/MedRecDomain/edit !> server1.getName()
 'MedRecSvr3'
wls:/MedRecDomain/edit !> ls('Servers')
 drw-   MedRecAdmSvr
 drw-   MedRecSvr1
 drw-   MedRecSvr2
 drw-   MedRecSvr3
wls:/MedRecDomain/edit !> save()
wls:/MedRecDomain/edit !> activate()
wls:/MedRecDomain/edit !> stopEdit()
wls:/MedRecDomain/edit> exit()
[oracle@wls-sysadm /]$
```

# Starting Oracle WebLogic Managed Servers

You can start managed servers using:

- *DOMAIN_DIR*/bin/startManagedWebLogic.sh
- weblogic.Server
- WLST and Node Manager
- Administration Console
  - Requires Node Manager on each machine
  - Requires additional configuration—for example:
    - Username and password
    - Listen ports
    - CLASSPATH, JAVA_PATH
    - Security type (plain versus SSL)

# Starting a Managed Server Using `startManagedWebLogic.sh`

- Start the domain's Administration server.
- Type *DOMAIN_NAME*`/bin/startManagedWebLogic.sh` *managed_server_name [admin_url]*.

```
[oracle@wls-sysadm /]$ cd /home/oracle/wls_sysadm/work/domains/MedRecDomain/bin
[oracle@wls-sysadm bin]$ ls
nodemanager          setDomainEnv.sh            startWebLogic.sh
server_migration     startManagedWebLogic.sh    stopManagedWebLogic.sh
service_migration    startPointBaseConsole.sh   stopWebLogic.sh
[oracle@wls-sysadm bin]$ ./startManagedWebLogic.sh MedRecSvr1 http://myAdminSvr:7003
```

```
<Feb 2, 2009 11:46:22 AM EST> <Info> <Security> <BEA-090065> <Getting boot identity
     from user.>
Enter username to boot WebLogic server:weblogic
Enter password to boot WebLogic server:********
```

```
<Feb 2, 2009 12:01:32 PM EST> <Notice> <WebLogicServer> <BEA-000330> <Started WebLogic Managed Server
     "MedRecSvr1" for domain "MedRecDomain" running in Production Mode>
<Feb 2, 2009 12:01:36 PM EST> <Notice> <Cluster> <BEA-000102> <Joining cluster MedRecClust1 on
     192.168.0.1:7009>
<Feb 2, 2009 12:01:36 PM EST> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING>
<Feb 2, 2009 12:01:36 PM EST> <Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>
```

# Command-Line Requirements for Starting the Managed Server Using `java weblogic.Server`

- Run `<WL_HOME>/server/bin/setWLSEnv.sh`.
- Start the administration server:

```
java weblogic.Server
```

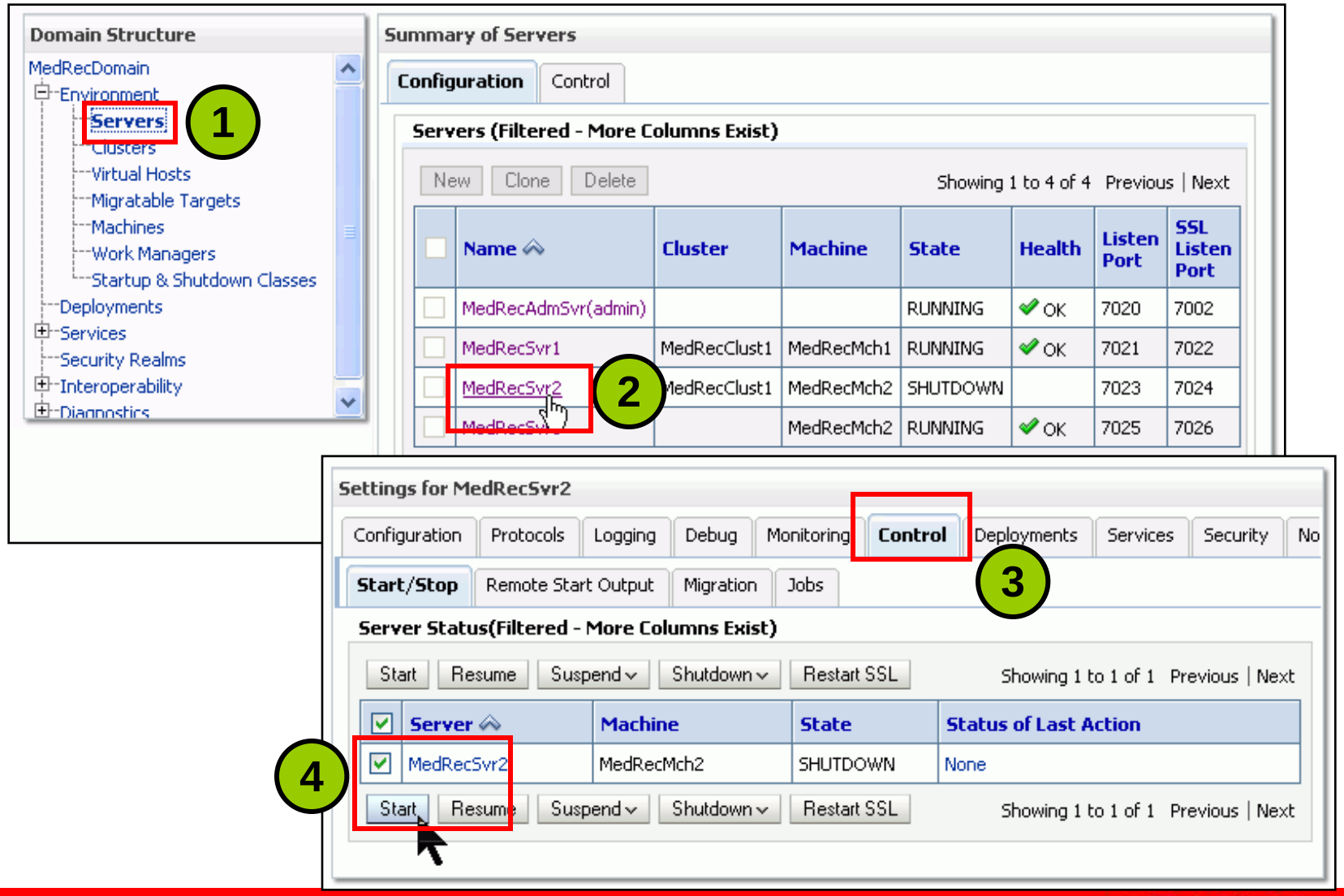
- Start a managed server:

```
java
   -Dweblogic.Name=managed_server_name
   -Dweblogic.management.server=url_Admin_Server
   weblogic.Server
```

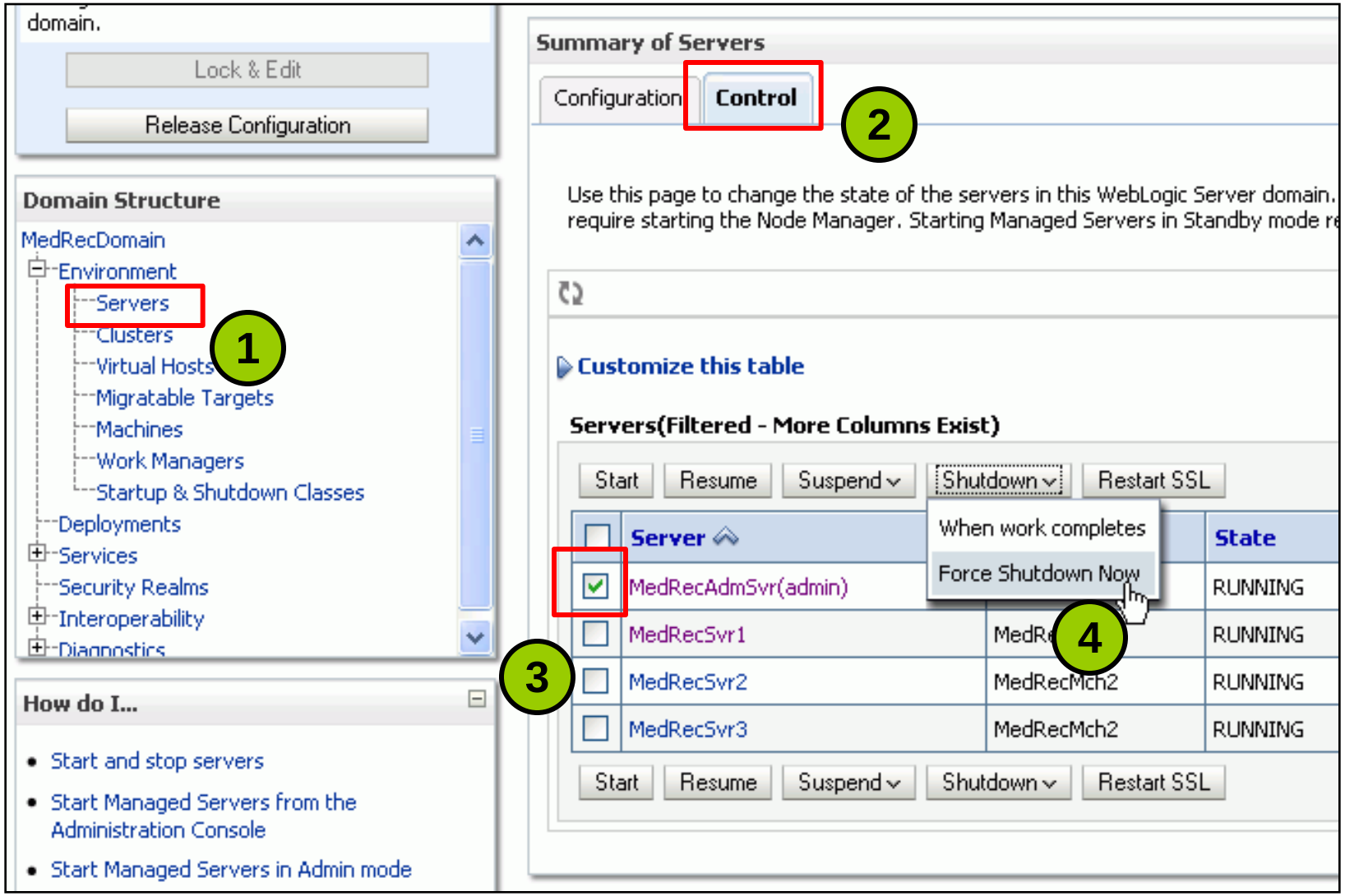
Substitute name such as `MedRecSvr2`

Substitute address such as `192.168.0.1:7020` or `localhost:7020` or `myAdminSvr:7020`

# Starting a Managed Server Using the Administration Console



# Shutting Down a Server



# Shutting Down a Domain

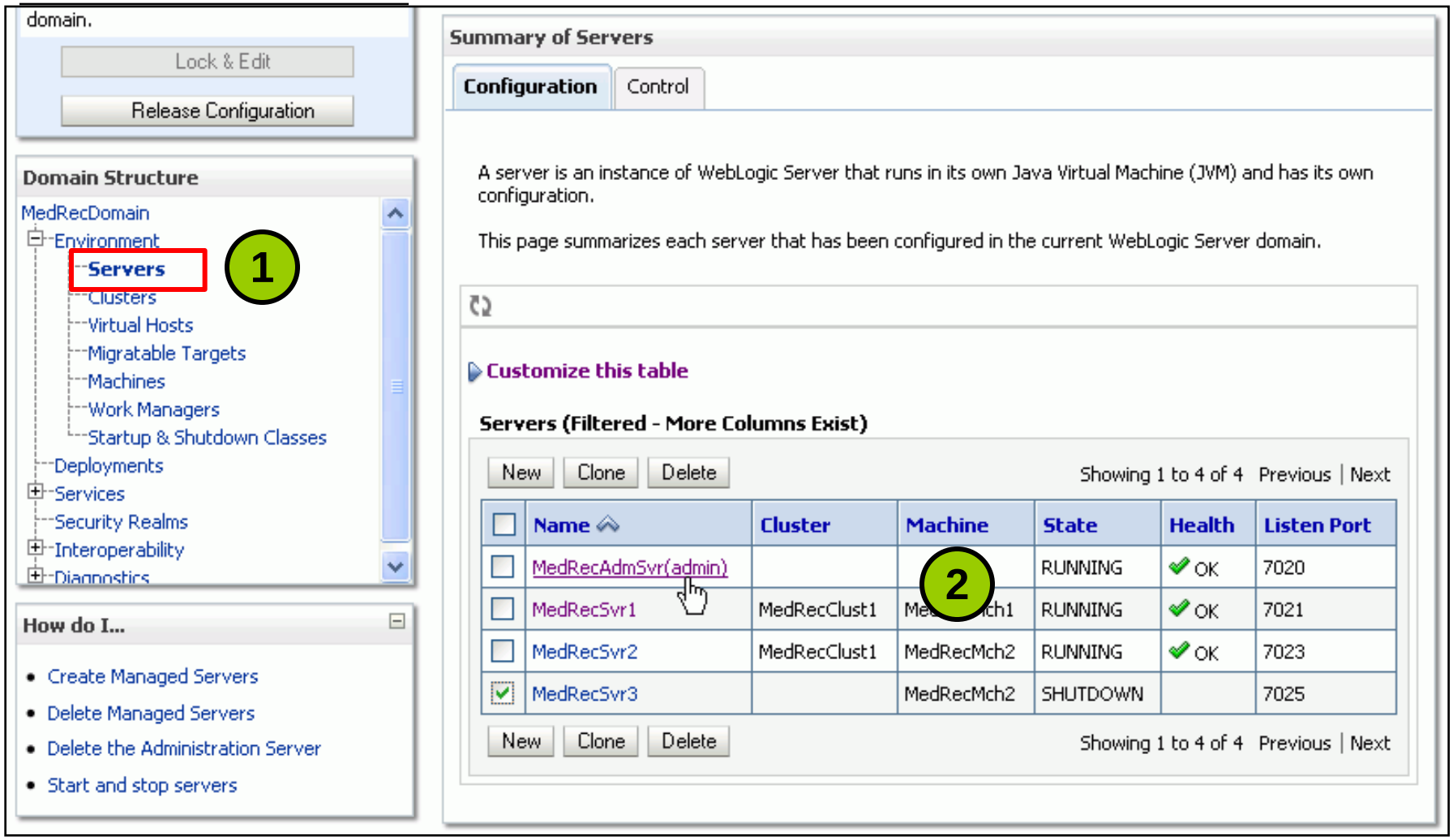
1. Connect to the administration server.
2. Obtain a list of servers.
3. Shut down the servers using the options; shut down the managed servers first.
4. Shut down the administration server to which you are connected.

```
connect('weblogic','weblogic','t3://wls-sysadm.example.com:7001')
ls('Servers')
shutdown('MedRecSvr1')
shutdown('MedRecAdmSvr')
exit()
```

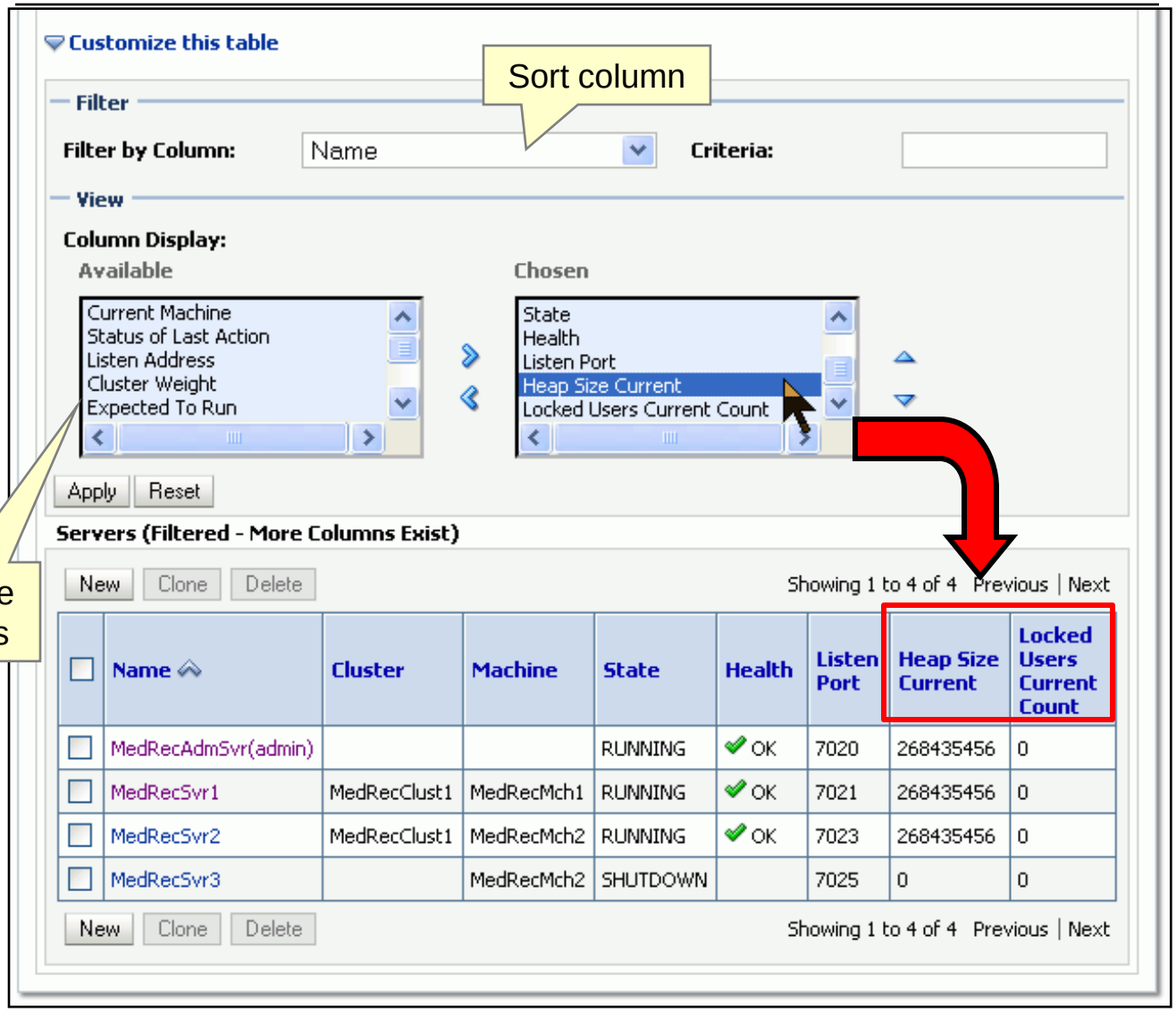
# Creating a Boot Identity File

- Create a file called `boot.properties` in the *`DOMAIN_NAME`*`/servers/<server_name>/security` directory that contains two lines:
  - `username=`*`username`*
  - `password=`*`password`*
- The first time you start the server, the server reads the Boot Identity file and overwrites it with an encrypted version of the username and password.
- Thereafter, the server remembers the credentials for subsequent startup cycles.

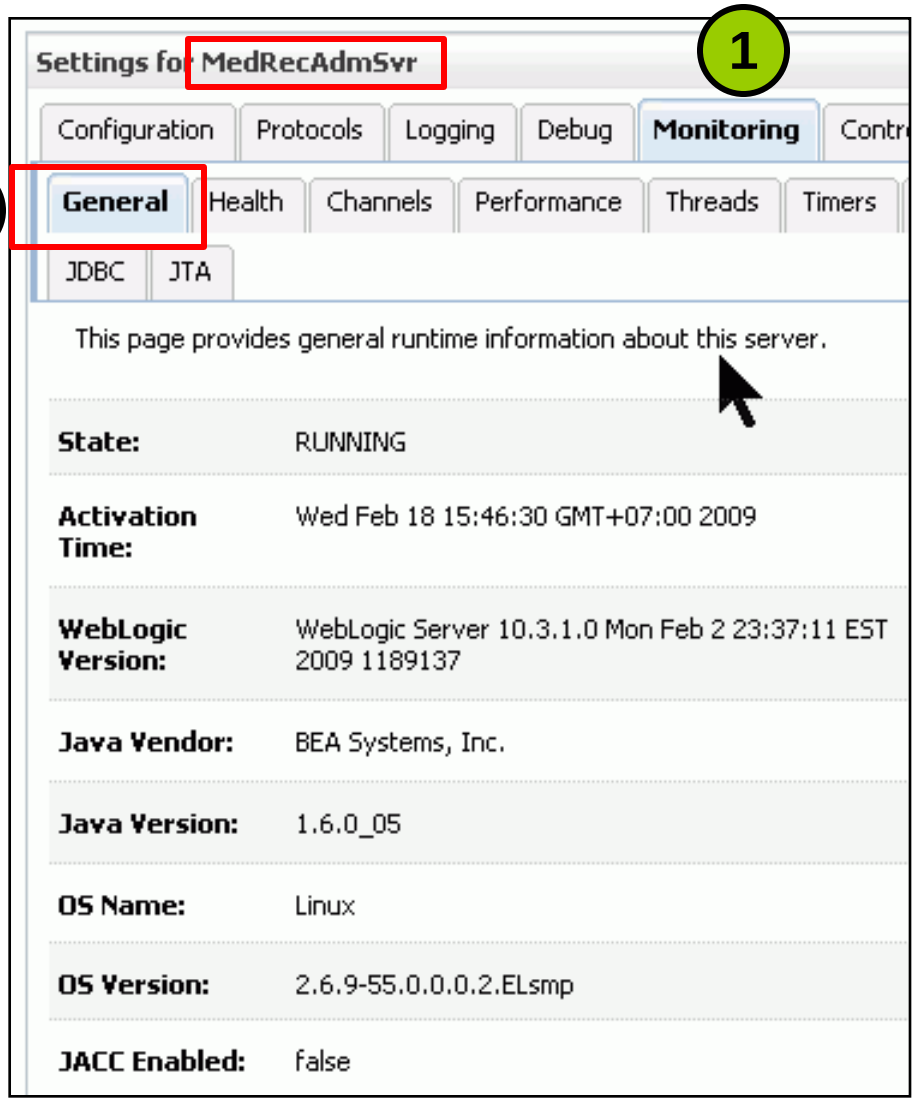
# Monitoring All Servers



# Customizing the View for All Servers



# Monitoring Individual Servers

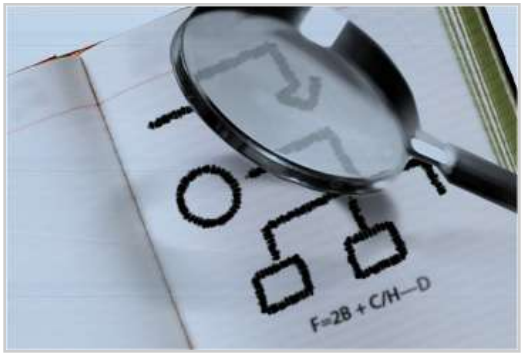


# Demonstration

- Enable automated start using the boot properties file.
- Go to OTN > Tutorials > Fusion Middleware > Oracle WebLogic Server 10.3 > Installation and Configuration > Enable Auto Login using the Boot Properties File.

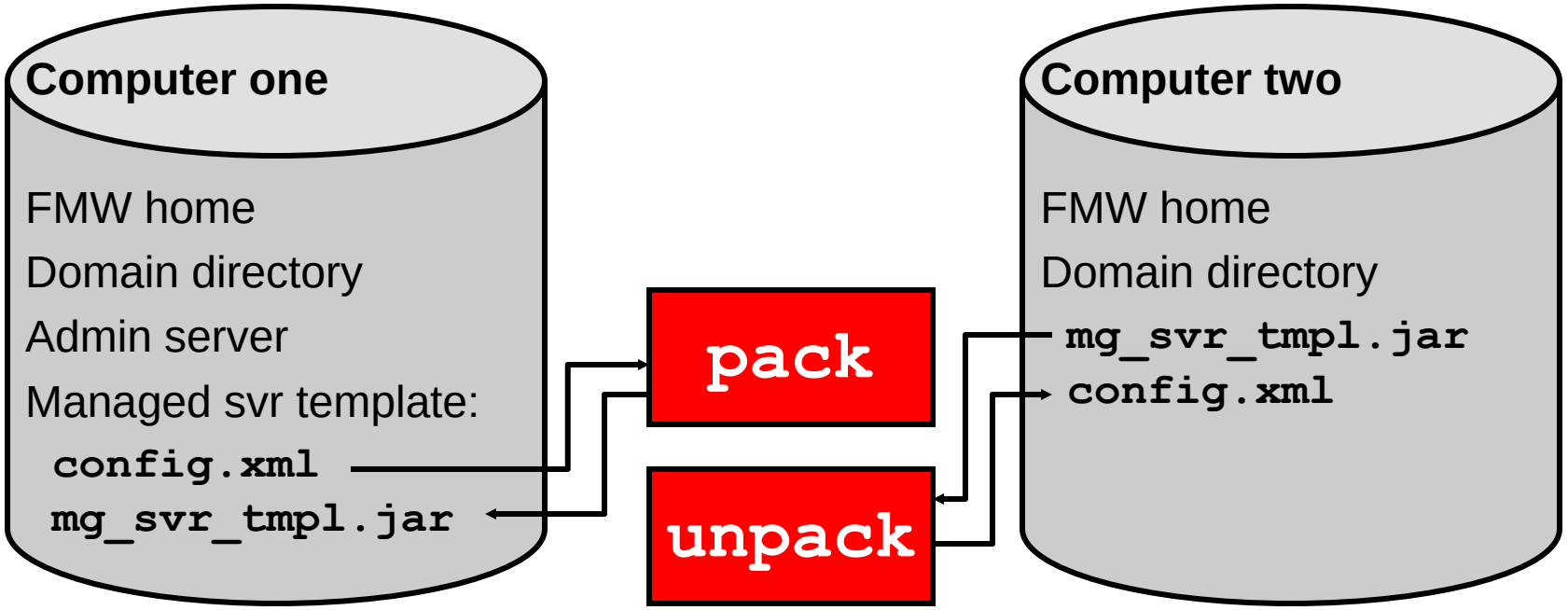
# Road Map

- Managed servers
- Remote managed servers
- Managed Server Independence (MSI)



# Creating a Managed Server on a Remote Computer

1. Install WLS on both computers.
2. Create a managed server using the Administration Console.
3. Create a managed server template using `pack`.
4. Create a managed server on a remote computer using `unpack`.
5. Start the remote managed server.



# pack and unpack: Examples

On computer one (administration server):

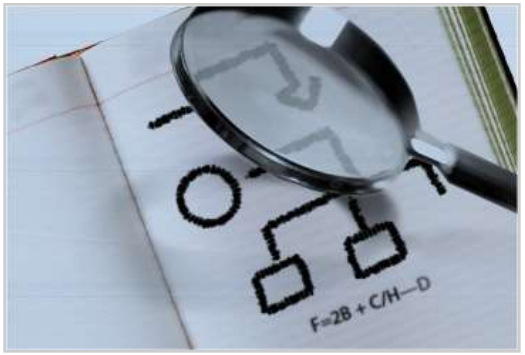
```
[oracle@wls-sysadm]$ cd $WL_HOME/common/bin
[oracle@wls-sysadm]$ pack -managed=true
    -domain=/u01/app/oracle/user_projects/domains/mydomain
    -template=/home/oracle/work/mydomain_managed.jar
    -template_name="My Managed Server Domain"
```

On computer two (remote managed server):

```
[oracle@wls-mgdsvr2]$ cd $WL_HOME/common/bin
[oracle@wls-mgdsvr2]$ unpack
    -domain=/u01/app/oracle/user_projects/domains/mydomain
    -template=/home/oracle/work/mydomain_managed.jar
```

# Road Map

- Managed servers
- Remote managed servers
- Managed Server Independence (MSI)



# Managed Server Independence (MSI)

- By default, managed servers can function independently of the administration server.
- A managed server instance can start in MSI mode if the administration server is unavailable.
- Configure MSI mode from the Administration Console.
- To start a managed server in MSI mode:
  - Ensure that the managed server's root directory contains the `config` subdirectory
  - If the `config` subdirectory does not exist, copy it from the administration server's root directory
  - Start the managed server at the command line or by using a script

# MSI Search Order

- If the administration server is unavailable at boot time, the managed servers search for:
  - `config.xml`
  - `SerializedSystemIni.dat`
  - `boot.properties(optional)`
- Each managed server looks in its local `config` directory for `config.xml`.
- You cannot change the configuration of the managed server that is running in MSI mode until it restores communication with the administration server.

# When the Administration Server Is Down

- The administration server can:
  - Go down without affecting the operation of the managed servers
  - Be restarted when the managed servers are still running
- When an administration server goes down:
  - The domain log entries are unavailable while it is down
  - Managed servers can start in independent mode
  - The Administration Console and the management tools are unavailable
  - WebLogic SNMP Agent *may* become unavailable

# Running Multiple WLS Instances

- You can run multiple instances of WLS using different configurations on the same physical computer at the same time by doing either of the following:
  - Assigning multiple IP addresses to a computer (multihoming) and defining each server to use a unique IP address
  - Specifying the same IP address but using different listen ports
- A multihomed computer:
  - Is a computer with multiple IP addresses
  - Can run a different WLS instance that is bound to each IP address
  - Can be used to configure a cluster on a single computer

# Quiz

Under the `servers` directory of WLS domain, there are subdirectories for administration and managed servers. The `servers` directory contains one subdirectory for each WebLogic Server instance in the domain. If you do not see the subdirectory for each WebLogic Server instance in your domain, it means that:

1. The WebLogic Server instance is not correctly configured.
2. The patch level is not correct.
3. The administration server is unable to communicate with the managed servers.
4. The WebLogic Server instance has not been started since it was created.

# Quiz

Which of the following will happen if you run `startWebLogic.sh` without any options?

1. It invokes `java weblogic.Server`.
2. It starts the managed servers associated with the administration server.
3. It sets the environment using `setDomainEnv.sh`.
4. It starts the administration server.

# Quiz

Which of the following options would you use to create a managed server?

1. Domain Configuration Wizard
2. Administration Console
3. Command line (WLST)

# Quiz

Which of the following is true when the administration server is down?

1. Domain log entries are unavailable.
2. Managed servers can start in MSI mode.
3. The Administration Console and management tools are unavailable.
4. At boot time, managed servers read a local copy of `config.xml`, `SerializedSystemIni.dat`, and `boot.properties` (optional).
5. You cannot change the configuration of the managed servers that are running in MSI mode until communication with the administration server is restored.
6. The Node Manager can start the managed servers in MSI mode.

# Summary

In this lesson, you should have learned how to:

- Start or stop the Oracle WebLogic Server
- Configure managed servers
- Start managed servers
- Create a remote managed server
- Describe administration and Managed Server Independence (MSI)

# Practice 7 Overview: Configuring a Managed Server

This practice covers the following topics:

- Creating and deleting managed servers
- Starting and stopping managed servers
- Monitoring managed servers