

OEL 7 – Oracle WebLogic 12.2

Version:	1.0.0
Created by:	cloudimg

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1.) Overview

This document is provided as a user guide for the OEL 7 – Oracle WebLogic 12.2 product offering on the AWS Marketplace. Please reach out to support@cloudimg.co.uk if any issues are encountered following this user guide for the chosen product offering.

2.) Access & Security

Please update the security group of the target instance to allow the below ports and protocols for access and connectivity.



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Protocol	Type	Port	Description
SSH	TCP	22	SSH connectivity
TCP	TCP	7001	Oracle WebLogic Administration Console

3.) System Requirements

The minimum system requirements for the chosen product offering can be found below

Minimum CPU	Minimum RAM	Required Disk Space
1	1 GB	20 GB

4.) Connecting to the Instance

Once launched in the Amazon EC2 Service, please connect to the instance via an SSH client using the **ec2-user** with the key pair associated at launch. Once connected as the **ec2-user** user, you will be able to sudo to the **root** user by issuing the below command.

Switch to the root user.

```
sudo su -
```

NOTE: Please allow the EC2 Instance to reach 2/2 successful status checks to ensure you will be able to connect successfully with the ec2-key pair assigned at launch. Upon attempting to SSH to early you may receive errors such as below, this is expected with an early SSH connection. Allow the EC2 instance to reach 2/2 status checks and you will be able successfully connect with the ec2-key pair assigned at launch as the ec2-user.

☐	Name ↗	Instance ID	Instance state	Instance type	Status check
☐	cloudimg-example-instance	i-039990b0d91026962	Running	t3a.xlarge	2/2 checks passed

Example errors you may receive with an early SSH connection.

```
Permission denied (publickey,gssapi-keyex,gssapi-with-mic) .
ec2-user@your-instance-ip's password:
```



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5.) On Startup

An OS package update script has been configured to run on boot to ensure the image is fully up to date at first use. You can disable this feature by removing the script from /stage/scripts/ and deleting the entry in crontab for the root user.

Disable the OS update script from running on reboot

```
rm -f /stage/scripts/initial_boot_update.sh

crontab -e

#DELETE THE BELOW LINE. SAVE AND EXIT THE FILE.
@reboot /stage/scripts/initial_boot_update.sh
```

6.) Filesystem Configuration

Please see below for a screenshot of the server disk configuration and specific mount point mappings for software locations.

```
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        1.9G   0    1.9G   0% /dev
tmpfs           1.9G   0    1.9G   0% /dev/shm
tmpfs           1.9G  8.5M    1.9G   1% /run
tmpfs           1.9G   0    1.9G   0% /sys/fs/cgroup
/dev/nvme0n1p2   38G   3.5G   32G   10% /
/dev/nvme1n1     20G   6.5G   13G   35% /u01
/dev/nvme0n1p1   2.0G  143M   1.7G    8% /boot
tmpfs            389M   0    389M   0% /run/user/1002
tmpfs            389M   0    389M   0% /run/user/0
```

Mount Point	Description
/boot	Operating System Kernel files
/u01	Oracle software installation directory

7.) Server Components



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Please see below for a list of installed server components and their respective installation paths. The below versions are subject to change on initial boot based on the initial_boot_update.sh script finding new versions of the software in the systems package repositories.

Component	Version	Software Home
AWS CLI	2.7.7	/usr/local/aws-cli
AWS CloudWatch Agent	1.247352.0b251908	/opt/aws/amazon-cloudwatch-agent
AWS Systems Manager Agent	3.0.1390.0	/usr/bin/amazon-ssm-agent
Cloud-Init	19.4	/etc/cloud
Oracle WebLogic	12.2.1.4	/u01

8.) Scripts and Log Files

The below table provides a breakdown of any scripts & log files created to enhance the useability of the chosen offering.

Script/Log	Path	Description
Initial_boot_update.sh	/stage/scripts	Update the Operating System with the latest updates available.
Initial_boot_update.log	/stage/scripts	Provides output for initial_boot_update.sh
/home/oracle/setEnv.sh	/home/oracle	Oracle Environment variables file
/home/oracle/start-weblogic.sh	/home/oracle	Start Oracle WebLogic Instance
/home/oracle/stop-weblogic.sh	/home/oracle	Stop Oracle WebLogic Instance

9.) Using System Components

Instructions can be found below for using each component of the server build mentioned in section 7 of this user guide document.

AWS CLI

Using AWS CLI – as any OS user.

```
aws --help
```



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AWS CloudWatch Agent

On first use run the below command as the **root** user to configure the AWS CloudWatch Agent for your needs.

```
/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-config-wizard
```

Once configured, you will be able to start the AWS CloudWatch Agent via the below command as the **root** user

```
/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -a fetch-config -m ec2 -s -c file:/opt/aws/amazon-cloudwatch-agent/bin/config.json
```

Check status of the AWS CloudWatch Agent

```
/opt/aws/amazon-cloudwatch-agent/bin/amazon-cloudwatch-agent-ctl -m ec2 -a status
```

EXAMPLE EXPECTED OUTPUT (This may differ based on your configured setup)

```
{
  "status": "running",
  "starttime": "2022-06-05T12:10:13+0000",
  "configstatus": "configured",
  "cwoc_status": "stopped",
  "cwoc_starttime": "",
  "cwoc_configstatus": "not configured",
  "version": "1.247350.0b251814"
}
```

AWS Systems Manager

Check the status of the AWS Systems Manager Agent as the **root** user.

```
systemctl status amazon-ssm-agent
```



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Cloud-Init

Edit the /etc/cloud/cloud.cfg file to reflect your desired configuration. A link to the cloud-init official documentation can be found below for referencing best practise for your use case.

<https://cloudinit.readthedocs.io/en/latest/topics/datasources/ec2.html>

```
vi /etc/cloud/cloud.cfg
```

Oracle WebLogic

A sample Oracle WebLogic Single node installation has been configured on the system. You can start and or stop this example WebLogic instance via the below commands as the **oracle** OS user.

Run – Once logged into the server as the ec2-user, switch to the oracle user. (Please type this command instead of copy paste)

```
sudo su - oracle
```

Run – Three scripts have been created under the \$HOME directory of the Oracle user.

- setEnv.sh – This script will set the Oracle environment variables allowing the use of utilities such as wlst.
- start-weblogic.sh – This script will start the example Oracle WebLogic Instance.
- stop-weblogic.sh – This script will stop the example Oracle WebLogic Instance.

Run – The below commands will start the sample Oracle WebLogic instance.

```
#Start the sample Oracle WebLogic Instance  
cd $HOME  
. ./start-weblogic.sh
```



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```
# A start log file will be created under the $HOME directory of the oracle user. You can run the below command to check the status of the system start.
```

```
tail -f /home/oracle/start-weblogic.log
```

EXPECTED OUTPUT

```
<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to ADMIN>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RESUMING>

<Apr 24, 2023 6:27:49 PM EDT> <Warning> <Server> <BEA-002611> <Hostname "localhost", maps to multiple IP addresses: 127.0.0.1, 0:0:0:0:0:0:1>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on fe80:0:0:0:1043:5dff:fe0e:929d:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 172.31.87.250:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 127.0.0.1:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[3]" is now listening on 0:0:0:0:0:0:1:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000329> <Started WebLogic Admin Server "AdminServer" for domain "base_domain" running in Production Mode>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>
```

You may now access the WebLogic Administration Console via the below URL. Exchange the values in RED with that matching your instance.

<http://PUBLIC/PRIVATEIP:7001/console>



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12c

Welcome

Log in to work with the WebLogic Server domain

Username:

Password:

Login

WebLogic Server Version: 12.2.1.4.0
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The default Administrator username for WebLogic is: weblogic

The default password for the Administrator WebLogic user is: welcome123

Enter these values and Click Login, the steps below will detail how to reset this password value.

Resetting WebLogic Administrator Password

The screenshot shows the WebLogic Server Administration Console 12c interface. The browser address bar indicates the URL: `44.211.147.169:7001/console/console.portal?_nfpb=true&_pageLabel=HomePage1`. The console displays the 'Home Page' with various sections:

- Information and Resources:** Includes 'Helpful Tools' (Configure applications, Configure GridLink for RAC Data Source, Recent Task Status, Set your console preferences) and 'General Information' (Common Administration Task Descriptions, Read the documentation, Ask a question on My Oracle Support, Oracle Guardian Overview).
- Domain Configurations:** Includes 'Domain' (Domain), 'Environment' (Servers, Clusters, Virtual Hosts, Migratable Targets, Coherence Servers, Coherence Clusters, Machines, Work Managers, Startup And Shutdown Classes), 'Your Deployed Resources' (Deployments), and 'Your Application's Security Settings' (Security Realms).
- Services:** Includes 'Messaging' (JMS Servers, Store-and-Forward Agents, JMS Modules, Path Services, Bridges), 'Data Sources', 'Persistent Stores', 'XML Registries', 'XML Entity Caches', 'Foreign JNDI Providers', 'Work Contexts', 'JCOM', 'Mail Sessions', 'FileT3', and 'JTA'.
- Interoperability:** Includes 'WTC Servers', 'Jolt Connection Pools', 'Diagnostics' (Log Files, Diagnostic Modules, Diagnostic Images, Request Performance, Archives, Context, SNMP), and 'Charts and Graphs' (Monitoring Dashboard).

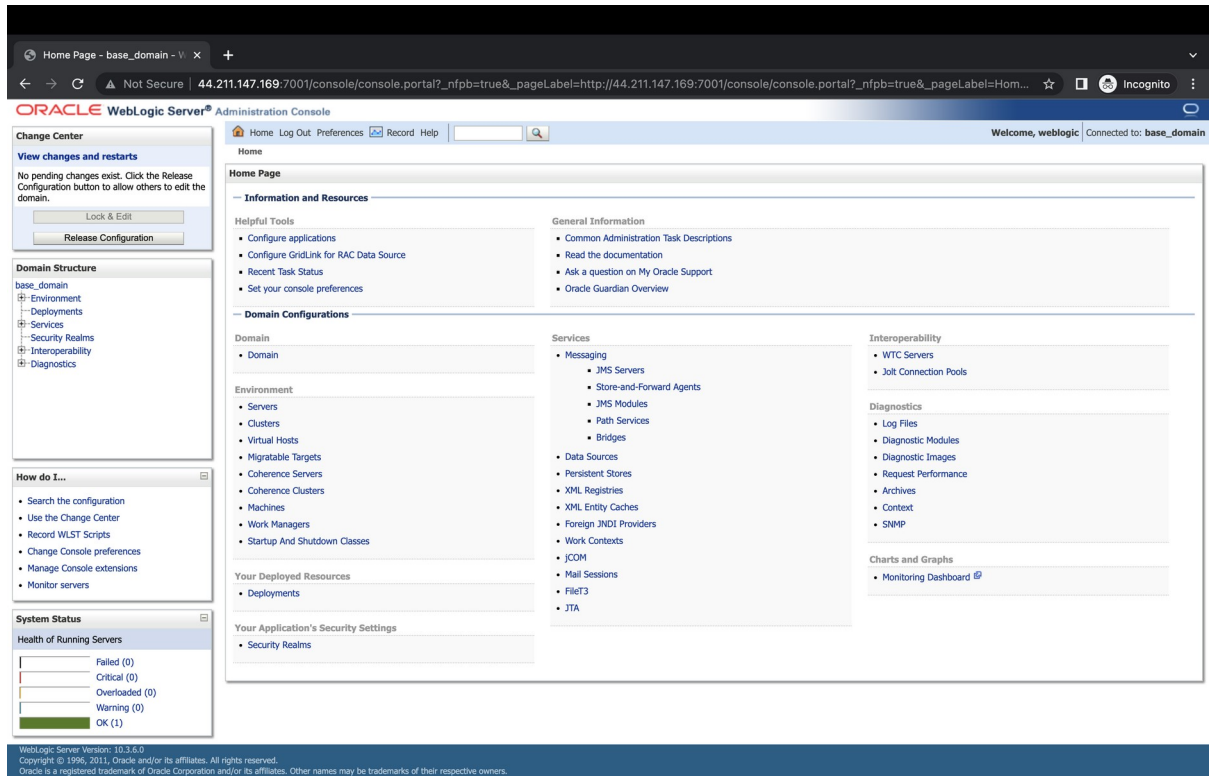
The left sidebar shows the 'Change Center' and 'Domain Structure' sections. The 'Domain Structure' shows the 'base_domain' with sub-items: Environment, Deployments, Services, Security Realms, Interoperability, and Diagnostics. The 'System Status' section shows the 'Health of Running Servers' with a bar chart indicating the status of various servers.



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Click Lock & Edit in the top left pane.



Upon selecting this, the Lock & Edit option will be greyed out ensuring the edit session is active.

Click Security Realms in the left-hand pane.



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Summary of Security Realms

A security realm is a container for the mechanisms—including users, groups, security roles, security policies, and security providers—that are used to protect WebLogic resources. You can have multiple security realms in a WebLogic Server domain, but only one can be set as the default (active) realm.

This Security Realms page lists each security realm that has been configured in this WebLogic Server domain. Click the name of the realm to explore and configure that realm.

Customize this table

Realms (Filtered - More Columns Exist)

Name	Default Realm
myrealm	true

Showing 1 to 1 of 1 Previous Next

Security Realms, Level 1, 4 of 6, Selected

Select myrealm

Settings for myrealm - base_d...

Home > Summary of Security Realms > myrealm

Settings for myrealm

Configuration Users and Groups Roles and Policies Credential Mappings Providers Migration

General RDBMS Security Store User Lockout Performance

Save

Use this page to configure the general behavior of this security realm.

Note:
If you are implementing security using JACC (Java Authorization Contract for Containers as defined in JSR 115), you must use the DD Only security model. Other WebLogic Server models are not available and the security functions for Web applications and EJBs in the Administration Console are disabled.

Name: myrealm The name of this security realm. [More Info...](#)

Security Model Default: DD Only Specifies the default security model for Web applications or EJBs that are secured by this security realm. You can override this default during deployment. [More Info...](#)

☒ **Combined Role Mapping Enabled** Determines how the role mappings in the Enterprise Application, Web application, and EJB containers interact. This setting is valid only for Web applications and EJBs that use the Advanced security model and that initialize roles from deployment descriptors. [More Info...](#)

☐ **Use Authorization Providers to Protect JMX Access** Configures the WebLogic Server MBean servers to use the security realm's Authorization providers to determine whether a JMX client has permission to access an MBean attribute or invoke an MBean operation. [More Info...](#)

Advanced

Save

Select Users and Groups



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Oracle WebLogic Server Administration Console

Home > Summary of Security Realms > myrealm > Users and Groups

Settings for myrealm

Configuration **Users and Groups** Roles and Policies Credential Mappings Providers Migration

Users Groups

This page displays information about each user that has been configured in this security realm.

Customize this table

Users

Name	Description	Provider
OracleSystemUser	Oracle application software system user.	DefaultAuthenticator
weblogic	This user is the default administrator.	DefaultAuthenticator

Showing 1 to 2 of 2 Previous | Next

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Select the weblogic user

Oracle WebLogic Server Administration Console

Home > Summary of Security Realms > myrealm > Users and Groups > weblogic

Settings for weblogic

General Passwords Attributes Groups

Save

Use this page to change the description for the selected user.

Name: weblogic The login name of this user. [More Info...](#)

Description: This user is the default administrator. A short description of this user. For example, the user's full name. [More Info...](#)

Save

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Select Passwords



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Settings for weblogic - base_domain

Not Secure | 44.211.147.169:7001/console/console.portal?_nfpb=true&_pageLabel=SecurityUsersUserConfigChangePasswordPage&handle=com.bea.console.handle...

ORACLE WebLogic Server® Administration Console

Home Log Out Preferences Record Help

Welcome, weblogic | Connected to: base_domain

Change Center

View changes and restarts

No pending changes exist. Click the Release Configuration button to allow others to edit the domain.

Lock & Edit

Release Configuration

Domain Structure

base_domain

- Environment
- Deployments
- Services
- Security Realms
- Interoperability
- Diagnostics

How do I...

- Create users
- Modify users
- Delete users

System Status

Health of Running Servers

Failed (0)
Critical (0)
Overloaded (0)
Warning (0)
OK (1)

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Settings for weblogic

General Passwords Attributes Groups

Save

Use this page to change the password for the selected user.

* Indicates required fields

* New Password: The new password of this user. [More Info...](#)

* Confirm New Password:

Save

Set a new value for the password in the two fields shown above to be a strong password value.
Click Save.

Settings for weblogic - base_domain

Not Secure | 44.211.147.169:7001/console/console.portal?_nfpb=true&_pageLabel=SecurityUsersUserConfigChangePasswordPage&handle=com.bea.console.handle...

ORACLE WebLogic Server® Administration Console

Home Log Out Preferences Record Help

Welcome, weblogic | Connected to: base_domain

Change Center

View changes and restarts

No pending changes exist. Click the Release Configuration button to allow others to edit the domain.

Lock & Edit

Release Configuration

Domain Structure

base_domain

- Environment
- Deployments
- Services
- Security Realms
- Interoperability
- Diagnostics

How do I...

- Create users
- Modify users
- Delete users

System Status

Health of Running Servers

Failed (0)
Critical (0)
Overloaded (0)
Warning (0)
OK (1)

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Messages

Settings updated successfully.

Settings for weblogic

General Passwords Attributes Groups

Save

Use this page to change the password for the selected user.

* Indicates required fields

* New Password: The new password of this user. [More Info...](#)

* Confirm New Password:

Save

Click Release Configuration in the left-hand pane.



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The WebLogic Instance will need to be rebooted before the password change can take effect. The boot.properties file of the Admin Server will also need to be updated with the new password value. Upon the restart of the Admin Server, the password within the file will become hashed and encrypted.

Follow the below steps to update the password in the boot.properties file and restart the WebLogic Instance.

Run – Edit the boot.properties file as the **oracle** user.

```
#Set the Oracle environment variables via the setEnv.sh script
cd $HOME
. ./setEnv.sh

# Create a copy of the boot.properties files
cp $DOMAIN_HOME/servers/AdminServer/security/boot.properties
$DOMAIN_HOME/servers/AdminServer/security/boot.properties.old

# Edit the existing boot.properties file to include the new password set in the Administration
Console.

vi $DOMAIN_HOME/servers/AdminServer/security/boot.properties
```

REPLACE – Enter the new password value, example shown below. Edit the line containing password to now equal your new password value.

```
password=STRONG_PASSWORD123
```

Save and exit the file.

Run – Stop the WebLogic Instance.

```
#Stop the sample Oracle WebLogic Instance
cd $HOME
. ./stop-weblogic.sh

# The shell will now begin the shutdown of the WebLogic Instance. Once complete, a stop log
file can be found under the directory /home/oracle/stop-weblogic.log for review before
starting the services.
```



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Run – The below commands will start the sample Oracle WebLogic instance.

```
#Start the sample Oracle WebLogic Instance

cd $HOME

. ./start-weblogic.sh

# A start log file will be created under the $HOME directory of the oracle user. You can run
the below command the check the status of the system start.

tail -f /home/oracle/start-weblogic.log
```

EXPECTED OUTPUT

```
<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to
ADMIN>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to
RESUMING>

<Apr 24, 2023 6:27:49 PM EDT> <Warning> <Server> <BEA-002611> <Hostname "localhost", maps to
multiple IP addresses: 127.0.0.1, 0:0:0:0:0:0:1>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now
listening on fe80:0:0:0:1043:5dff:fe0e:929d:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default" is now
listening on 172.31.87.250:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now
listening on 127.0.0.1:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <Server> <BEA-002613> <Channel "Default[3]" is now
listening on 0:0:0:0:0:0:1:7001 for protocols iiop, t3, ldap, snmp, http.>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000329> <Started WebLogic Admin
Server "AdminServer" for domain "base_domain" running in Production Mode>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to
RUNNING>

<Apr 24, 2023 6:27:49 PM EDT> <Notice> <WebLogicServer> <BEA-000360> <Server started in
RUNNING mode>
```

You may now access the WebLogic Administration Console via the below URL. Exchange the values in RED with that matching your instance.

<http://PUBLIC/PRIVATEIP:7001/console>



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12c

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Welcome

Log in to work with the WebLogic Server domain

Username:

Password:

Login

Username: weblogic

Password: Enter your new weblogic administrator password value.

Click Login

WebLogic is now available for use as per your requirements.



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