# Oracle WebLogic FAQs

*Description:*

*BISP is committed to provide BEST learning material to the beginners and advance learners. In the same series, we have prepared a list of beginner's guide and FAQs for WebLogic beginner. Download many such learning documents, student guide, Lab Guide and Hands-on practice materials. Join our professional training.*

**History:**

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**Q1. What is BEA Weblogic?**

BEA WebLogic is a J2EE application server and also an HTTP web server by BEA Systems of San Jose, California, for Unix, Linux, Microsoft Windows, and other platforms. WebLogic supports Oracle, DB2, Microsoft SQL Server, and other JDBC-compliant databases. WebLogic Server supports WS-Security and is compliant with J2EE 1.3. BEA WebLogic Server is part of the BEA WebLogic Platform. The other parts of WebLogic Platform are:

a) Portal, which includes Commerce Server and Personalization Server
b) WebLogic Integration,
c) WebLogic Workshop, an IDE for Java, and
d) JRockit, a JVM for Intel CPUs.

**Q2. What is application server?**

An application server is a software framework dedicated to the efficient execution of procedures (scripts, routines, programs …) for supporting the construction of applications. The term was created in the context of web applications. In these, the application server acts as a set of components accessible to the software developer through an API defined by the platform itself. These components are usually performed in the same machine where the web server is running, and their main job is to support the construction of dynamic pages.

**Q3.What is the Basic Components of Weblogic Server?**
**ANSWER :** These are the basic weblogic components
1)Domains
2)Admin Server
3) Managed Server
4) Node Manager
5) Weblogic Server Cluster

**Q4. What is the Domain in Weblogic server?**
ANSWER : 1) Domain is a logically related group of Oracle WebLogic Server resources that are managed as a single unit
2) Domain Provides one point of administration
3) Can logically separate:
 A) Development, test, and production applications
 B) Organizational divisions

**Q5. What is the server?**
**ANSWER :** A server is an instance of weblogic.Server executing in a Java Virtual Machine (JVM).
A server:
1) Runs on a designated Oracle WebLogic Server machine
2) Has a dedicated amount of RAM
3) Is multithreaded

Two types of servers:
1) Administration Server
2) Managed Server

**Q6. What is the Admin Server ?**
**ANSWER :** Admin Server is the central domain configuration interface which is used to create, delete and configure the resources of a domain like managed server, machine, cluster, data source, work managers etc.

**Q7. What is the Managed Server?**
**ANSWER :** Managed server is a server in a domain that is not the Administration server. It contacts the administration server for configuration information. It runs business application in a production environment. It is independent of all other Managed servers in a domain (unless they are not in a cluster). You can have many managed servers in a domain. Individual managed servers are typically added for capacity and application isolation.

**Q8.How Administration server and Managed servers will interact?**
**ANSWER :** The Administration Server stores the master copy of the domain configuration, including the configuration for all Managed Servers in the domain. Each Managed Server stores a local copy of the domain configuration file. When a Managed Server starts, it connects to the Administration Server to synchronize the configuration. When the configuration is changed, the Administration Server sends the changed configuration to the Managed Servers.

**Q9. what is the difference b/w Admin and Managed Server?**
**ANSWER :** There is no difference between Admin and Managed server except admin
interface application by default deployed on admin server which is used to configure the domain resources. Apart from that an admin server is same as a managed server, you can deploy and create other relative resources on admin server also as you do on managed server.

**Q10. What is the MSI mode in Weblogic? How can you enable and disable this option?**
**ANSWER :** MSI is nothing but Managed Server Independence. 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, perform the following:
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.
Environment > Servers > Server_Name > Tuning > Advanced > Managed Server Independence Enabled check box.

**Q11. Difference between Weblogic Development and Production Mode?**
**ANSWER :** Here are some difference between Weblogic Development Mode and Production Mode:

### Development Mode:
1) The default JDK for development domain is Sun Hotspot
2) You can use the demo certificates for SSL
3) Auto deployment is enabled
4) Server instances rotate their log files on startup
5) Admin Server uses an automatically created boot.properties during startup
6) The default maximum capacity for JDBC Datasource is 15
7) The debugFlag which is used to start the WebLogic Workshop Debugger is enabled

### Production Mode:
1) The default JDK for production domain is JRockit
2) If you use the demo certificates for SSL a warning is displayed
3) Auto deployment is disabled
4) Server instances rotate their log files when it reaches 5MB
5) Admin Server prompts for username and password during startup
6) The default maximum capacity for JDBC Datasource is 25
7) The debugFlag which is used to start the WebLogic Workshop Debugger is disabled.

**Q12. How to change from development mode to production mode in Weblogic 10.3?**
**ANSWER :** To change Weblogic start up mode from DEV to production. One way to change it is, by simply editing **setDomainEnv.cmd** which resides in **$root_domain/bin** folder.
1. Look for the line that sets the PRODUCTION_MODE script variable: set PRODUCTION_MODE
Add **false** to the value of the PRODUCTION_MODE variable to ensure the server starts in development mode:
 Set **true** for starting in prod mode.
 set PRODUCTION_MODE=false
2. Save your changes and exit the text editor.

**Q13. What are the supported installation modes for WebLogic Server?**
**ANSWER :** Graphical mode, console mode and silent mode.

**Q14.How to access admin console?**
**ANSWER : Ssl enabled admin console accessed as :**
**https**://hostname or ip address (where admin server running):(port on which admin server is ssl enabled admin console accessed as :
Example - https://localhost:7001/console

**non ssl admin console accessed as :**
**http**://hostname or ip address (where admin server running):(port on which admin server is ssl enabled admin console accessed as :
Example - http://localhost:7001/console

## Q15. What is the default port of Weblogic admin server?
**ANSWER :** By default weblogic admin server configured on port 7001 and SSL is not enabled.

## Q16.How many admin consoles possible in a single domain?
**ANSWER :** Only One

## Q17.What is boot.proerties file in weblogic server?
**ANSWER :** boot.properties is the file used by admin or managed server during startup for username and password. it exist under your domain/servers/server_name/security folder.

## Q18.What is config.xml?
**ANSWER :** config.xml is the central configuration repository for a domain. every resource you have configured from admin console or by command line or by any other tool registered under this file. WLS 9.x onwards, this file contain references to other xml configuration files also those are under your domain/config folder ( further sub folder under it for respective resources ) since wls 9.x onwards concept of modules are introduced for sub resources like data source, jms etc otherwise prior to 9.x ( 8.x or older ) every configuration was stored under this single config.xml file

## Q19. How do I provide User credentials for starting weblogic server?
ANSWER : When you create a domain, the Configuration Wizard prompts you to provide the username and password for an initial administrative user. If you create the domain in development mode, the wizard saves the username and encrypted password in a boot identity file. A WebLogic Server instance can refer to a boot identity file during its startup process. If a server instance does not find such a file,it prompts you to enter credentials.
If you create a domain in production mode, or if you want to change user credentials in an existing boot identity file, you can create a new boot identity file.

## Q20.Can I start a Managed Server if the Administration server is unavailable?
ANSWER : By default, if a Managed Server is unable to connect to the specified Administration Server during startup, it can retrieve its configuration by reading a configuration file and other files directly. You cannot change the server's configuration until the Administration Server is available. A Managed Server that starts in this way is running in Managed Server Independence mode.

## Q21. What Is a WebLogic Server Cluster?
ANSWER : A WebLogic Server cluster consists of multiple WebLogic Server server instances running simultaneously and working together to provide increased scalability and reliability. A cluster appears to clients to be a single WebLogic Server instance. The server instances that constitute a cluster can run on the same machine, or be located on different machines. You can increase a cluster's capacity by adding additional server instances to the cluster on an existing machine, or you can add machines to the cluster

to host the incremental server instances. Each server instance in a cluster must run the same version of WebLogic Server.

**Q22.What is the advantage of clustering?**
**ANSWER :** WebLogic clustering offers three important benefits:
**1. Scalability:**
The capacity of an application deployed on a WebLogic Server cluster can be increased dynamically to meet demand. You can add server instances to a cluster without interruption of service — the application continues to run without impact to clients and end users.

**2. Load balancing:**
The ability to distribute requests across all members of the cluster, according tothe workload on each server.

**3. High availability:**
A mix of features that ensure applications and services are available even if aserver or machine fails. Clients can continue to work with little or no disruption ina highly available environment. WebLogic achieves high availability using acombination of features: replication, failover, and migratable services.

**Q23.What is Mulicast and Unicast in weblogic?**
**ANSWER : Mulicast:**
Multicast is easier to explain over Unicast. Multicast is a broadcast UDP option for sending a packet/announcement over to a group that is listening on a specific multicast address and port over which the announcement is sent.There is a defined range for valid Multicast address (224.0.0.1 to 239.255.255.255). Everyone listening on the given address hears the announcement just like following a Twitter post. Some limitations with Multicast is the TTL (time to live) across machines/subnets/routers needs to be adjusted and the routers configured to retransmit the multicast packet across subnets
**Unicast:**
Unicast is more of a point to point UDP option to send the packet to a specific member and not everyone. That way, unicast is more of a private conversation between two individuals while multicast is more of a shout to a group or room. Both are UDP based, so there can be losses unlike TCP that handles retransmissions on message loss. But Unicast can span across routers and does not have to worry about TTL without the everyone hearing the announcement. So, Network Admins in general prefer to go with Unicast over Multicast for these reasons

**Q24.What is Horizontal and vertical clustering?**
**ANSWER :** There are two method of clustering Horizontal and Vertical.
**Horizontal clustering :**involves running multiple Java application servers that are run on two or more separate physical machines**.**
Horizontal scaling is more reliable than vertical scaling, since there are multiple machines involved in the cluster environment, as compared to only one machine.

**Vertical clustering:** however, consists of multiple Java application servers on a single physical machine. With vertical scaling, the machine's processing power, CPU usage, and JVM heap memory configurations are the main factors in deciding how many server instances should be run on one machine.

### Q25. How Does a Cluster Relate to a Domain?
**ANSWER :** A cluster is part of a particular WebLogic Server domain.A domain is an interrelated set of WebLogic Server resources that are managed as a unit. A domain includes one or more WebLogic Server instances, which can be clustered, non-clustered, or a combination of clustered and non-clustered instances. A domain can include multiple clusters. A domain also contains the application components deployed in the domain, and the resources and services required by those application components and the server instances in the domain.

### Q26.What is Node Manager?
**Answer** Node Manager is program that is used to control WebLogic Server instances. A single Node Manager instance is used to control all of the server instances running on the same physical machine. These instances can reside in different clusters, domains, and such. You must configure each machine in your domain to communicate with Node Manager.

### Q27.what is the work of node manager and how do you configure it ?
**ANSWER:** Node manager is especially used for remote managed server startup. We require a logical machine created from Weblogic Admin console. Domain ---> Machines --> NewMachine --> Nodemanager (we need to provide the host and the port on which nodemanager is running , by default it will be localhost and 5556)
Start the nodemanager from Beahome/weblogichome/common/bin/startNodemanager.cmd
(E:/bea92/weblogic92/common/bin/startNodemanager.cmd)

### Q.28 How many way to start and stop weblgic servers?
**ANSWER :** There are many ways to start & stop weblogic Admin and managed servers:
You can start and stop Admin Server using :
1) Script
2) "Java weblogic.server "command(The weblogic.Server class is the main class for a WebLogic Server instance)
3) From startup option on windows
4) WLST with or without node manager
You can start managed servers using:

1) scripts
2) admin console
3) using WLST
4) using node manager
5) java weblogic.server command( The weblogic.Server class is the main class for a WebLogic Server instance  )

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**Q29.How many types you configure managed server in weblogic server?**
**A**.Three types
1)Domain Configuration Wizard
2)Administration Console
3)Weblogic Scripting Tool

**Q30. How to know weblogic version?**
**ANSWER :** In the WebLogic console, in the left navigation tree, click on "Environment", then "Servers". Then click on one of the servers in the list. Then click on the "Monitoring" tab. Look at the "WebLogic Version" field.

**Q31..How do you set the classpath?**
**ANSWER :** WebLogic Server installs the following script that you can use to set the classpath that a server requires:
WL_HOME\server\bin\setWLSEnv.cmd (on Windows)
WL_HOME/server/bin/setWLSEnv.sh (on UNIX)

**Q32.What is Machine in weblogic server?**
**Answer** The main purpose of a machine is to administratively manage servers.A machine required by a node manager. Machines are optionally used clusters, it is logical description not physical entity.

**Q33.. How does a server know when another server is unavailable?**
 WebLogic Server uses two mechanisms to determine if a given server instance is unavailable. Each WebLogic Server instance in a cluster uses multicast to broadcast regular "heartbeat" messages that advertise its availability. By monitoring heartbeat messages, server instances in a cluster determine when a server instance has failed. The other server instances will drop a server instance from the cluster, if they do not receive three consecutive heartbeats from that server instance
WebLogic Server also monitors socket errors to determine the availability of a server instance. For example, if server instance A has an open socket to server instance B, and the socket unexpectedly closes, server A assumes that server B is offline.

**Q34.. Explain the concepts and capabilities of Web Logic Server**
Answer : Web Logic server supports the services and infrastructure for JEE applications. The deployment of java applications and components as services through SOAP, UDDI and WSDL, is performed by Web Logic server. The server can be configured as a web server by using its own HTTP listener that supports HTTP 1.1. The web servers of Apache, Microsoft IIS and Netscape can also be utilized. The web server configuration allows the Web Logic server to provide services to the static and dynamic requests that are generated by HTML, Servlets and JSP.

The following are some of the capabilities of Web Logic server:
1)Dynamic configuration changes
2)Production application redeployment
3)Rolling upgrades
These capabilities help the availability of running systems, while changes are making.

**Q35) What is the function of T3 in WebLogic Server?**
Answer : The enhancements support for WebLogic Server messages is provided by T3. These enhancements include object replacement, which work in WebLogic Server clusters' context and HTTP. Java Object Serialization, RMI predation is done by T3. T3 is superset of java Object. Serialization and RMI can be done over T3.
Between WebLogic Servers and between programmatic clients and a WebLogic Server cluster, T3 is mandated. To communicate between processes and WebLogic Server, the protocols HTTP and IIOP can be used and optional. The HTTP is used to communicate between a browser and WebLogic Server. The IIOP is used to communicate between an Object Request Broker and WebLogic Server.

**Q36.. How do stubs work in a WebLogic Server cluster?**
**Answer :** The enhancements support for WebLogic Server messages is provided by T3. These enhancements include object replacement, which work in WebLogic Server clusters' context and HTTP. Java Object Serialization, RMI predation is done by T3. T3 is superset of java Object. Serialization and RMI can be done over T3.
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**Q37. What happens when a failure occurs and the stub cannot connect to a WebLogic Server instance?**
The stub removes the instance that is failed from its list, when a failure occurs. The stub uses DNS again for the purpose of finding a running server and obtains a current list of instances, when there are no servers left in its list. The list of available server instances in the cluster will get periodical refreshment, which allows making the advantage of new servers. This is because; the servers are added to the cluster.

**Q38. How do clients handle DNS requests to failed servers?**
The bandwidth will be wasted if the DNS continually sends requests to the unavailable machine, when the server is failed so. This problem occurs only during start up, for a client application. The unavailable servers are removed by searching the DNS entries by a WebLogic server. This prevents the accessibility of a client to a failed server.
To avoid the DNS requests those are unnecessary, with the browser-based clients, a third-party load-balancers are used. These are Resonate, BigIP, Alteon, and Local Director. The masking of multiple DNS addresses into a single address is done by these third-party load-balancers.

**Q39. What is the difference between weblogic and websphere?**

Though the functionality of these two products are closer, there are minor differences in the standards that support. These differences are:
1)WebSphere's focus is more on connectivity, integration and web services where as WebLogic's focus is more on emerging standards and ease-of-use of J2EE.
2)WebSphere's  performance is better in terms of implementations of J2EE is little more involved, and supports more integration and transaction management to a great extent.
3)WebLogic is supported by default transaction attribute – "Supports", where as WebSphere has not default transaction attribute.
4)WebSphere strictly follows J2EE architecture.

**Q40.How do I Increase Weblogic Server memory?**
**Answer :** Increase the allocation of Java heap memory for WebLogic Server. (Set the minimum and the maximum to the same size.) Start WebLogic Server with the -ms32m option to increase the allocation, as in this example:
$ java ... -ms32m -mx32m ...
This allocates 32 megabytes of Java heap memory to WebLogic Server, which improves performance and allows WebLogic Server to handle more simultaneous connections. You can increase this value if necessary

**Q41. How do you differentiate between a server hang and server crash issue?**
Answer : When a Server crashes, the JAVA process no longer exists. When the Server is hung, it stops responding.
We can use the WebLogic .ADMIN utility to ping the server. In case of a hang situation we can take multiple thread dumps and analyze the cause of hang.

**Q42.What can be the various reasons for a server crash?**
a) Native IO
b) SSL Native Libraries
c) JVM
d) Supported Configuration
e) JDBC Driver issue

**Q43.How do you troubleshoot a crash?**
Answer : JVM crash generates a hs_err_pid file. We need to look into the stack trace of the hs_err_pid file .
If the thread is from a native io, we need to disable native io.
if the stack trace is from the driver, we need to get in touch with the drive team.
Quite possibly its a problem with driver. Changing the type of driver can be a workaround.
If the thread shows it coming from an optimzed code, we can turn of optimization.
If the stack is from native calls of application, its a bug with the application and it has to b modified.

**Q44.Ho do you troubleshoot Server Hang?**
Answer : We can use java weblogic.Admin PING to check if we get a normal response. We need to take multiple thread dumps with kill -3 pid on unix and CTLR Break on Windows. Analyz e the thread dump to find the root cause.

**Q45. What can be the reasons of Server hang?**
Answer : Memory leak, database query taking a long time to return, Deadlock.

**Q46.  What is memory leak?**
Memory leak is when objects are not removed from the heap even when they are not required.

**Q47. What are the various causes for OUT OF MEMORY?**
a) Insufficient heap size, not able to match the extra load.
b) Objects licing too long, like HTTP Sessions.
c) Memory leak in application code.

**Q48. How to troubleshoot and overcome such issues?**

**Answer** : Gather memory data by enabling GC verbose. If its due to Http Session, timing out http session after certain interval might help. Look into the code for jdbc connection handling. Optimizing the heap size according to the load.

**Q49. When does High CPU Usage occur?**
**Answer** : It occurs when one process or one thread utilizes unexpectedly high proportion of CPU.

**Q50. How to troubleshoot it?**
**Answer** : In Solaris environment, we need to take pstack and prstack and see what the threads are doing. In Windows we need to use pslist and process explorer.

**Q51. What is clustering and what is achieved through it?**
**Answer** : Clustering is the grouping together of servers for the purpose of high availability and scalability.Load balancing and Failover is achieved.

**Q52. How does Cluster Communication Happen?**
**Answer** : Members of the Cluster communicate over the Cluster Multicast IP and Port by sending periodic heart beat messages.

**Q53. What is the difference between the Sun JVM and BEA JRockit JVM?**
**Answer** : The most well know JVM is the implementation from Sun. The Sun JVM is called HotSpot. The Sun JVM is shipped in the Java Developer's Kit (JDK) and Java Runtime Environment (JRE) from Sun. The BEA JRockit JVM from BEA systems is optimized for reliability and performance for server side applications. To achieve this, BEA JRockit JVM uses technologies. such as code generation, hot spot detection, code optimization, advanced garbage collection algorithms and tight operating system integration.

**Q54. Tuning  JVM Parameters.**
**Answer** : If you have a single processor, single thread machine then you should use the serial collector (default for some configurations, can be enabled explicitly for with -XX:+UseSerialGC). For multiprocessor machines where your workload is basically CPU bound, use the parallel collector. This is enabled by default if you use the -server flag, or you can enable it explicitly with -XX:+UseParallelGC. If you'd rather keep the GC pauses shorter at the expense of using more total CPU time for GC, and you have more than one CPU, you can use the concurrent collector (-XX:+UseConcMarkSweepGC). Note that the concurrent collector tends to require more RAM allocated to the JVM than the serial or parallel collectors for a given workload because some memory fragmentation can occur.

**Q55**. **How do you do performance tuning of WLS?**
Answer **:** It can be categorized in 4 parts.
Answer : Application Tuning.
jsp precompilation, ejb pool size cache..
       b. OS Tuning
       Setting tcp ip parameter.
       tcp_time_wait_interval
       tcp_conn_req_max_q
       c. Core Server Tuning.
       tune workmanager, tune chuck size and chunck pool size, using performance packs, conenction
       backlog buffering.

d. JVM Tuning
tuning gc strategy, monitoring garbage collection..

**Q56. How are notifications made when a server is added to a cluster?**
Answer **:** The WebLogic Server cluster broadcasts the availability of a new server instance each time a new instance joins the cluster. Cluster-aware stubs also periodically update their list of available server instances.

**Q57. How many WebLogic servers  can I have on multi-cpu machine?**
**ANSWER :** There are many possible configurations and each has its own advantages and disadvantages. BEA WebLogic Server has no built-in limit for the number of server instances that can reside in a cluster. Large, multi-processor servers such as Sun Microsystems, Inc. Sun Enterprise 10000, therefore, can host very large clusters or multiple clusters.
In most cases, WebLogic Server clusters scale best when deployed with one WebLogic Server instance for every two CPUs. However, as with all capacity planning, you should test the actual deployment with your target web applications to determine the optimal number and distribution of server instances.

**Q58. Can I set the deployment order for applications?**
**ANSWER :** WebLogic Server allows you to select the load order for applications. WebLogic Server deploys server-level resources (first JDBC and then JMS) before deploying applications. Applications are deployed in this order: connectors, then EJBs,
then Web Applications. If the application is an EAR, the individual components are loaded in the order in which they are declared in the application.xml deployment descriptor.

> **Deployment order is:**
> 1.Resources( JDBC and JMS)
> 2.jsp's and servlets
> 3.EJB ,RMI
> 4.Start up and Shutdown classes(optional)

**Q59.Can I refresh static components of a deployed application without having to redeploy the entire application?**
**ANSWER :** Yes. You can use weblogic.Deployer to specify a component and target a server,using the following syntax:
java weblogic.Deployer -adminurl http://admin:7001 -name appname -targets server1,server2 -deploy jsps/*.jsp

**Q60.When should I use the -nostage option?**
**ANSWER :** Set the staging mode to -nostage (using weblogic.Deployer or the Administration Console) if you don't want to copy deployment files but want to deploy an application from its present location. All target servers must be able to access
the same set of deployment files.

**Q61.When should I use the external_stage option?**
Answer **:**  Set -external_stage using weblogic.Deployer if you want to stage the application yourself, and prefer to copy it to its target by your own means.

**Q62.What is the difference between WL_Home/config/examples/applications folder and the WL_Home/config/examples/stage folder ?**
**ANSWER :** The applications folder is intended for applications that are not yet ready for a production environment. WebLogic Server dynamically deploys the contents of the applications folder. The stage folder (or a folder that you create for the same purpose) is for storing copies of deployment files that are ready for deployment in a production environment (deployments that use the stage or external_stage deployment modes).

**Q63 How do I turn the auto-deployment feature off?**
**ANSWER :** The auto-deployment feature checks the applications folder every three seconds to determine whether there are any new applications or any changes to existing applications and then dynamically deploys these changes.

The auto-deployment feature is enabled for servers that run in development mode.
To disable auto-deployment feature, use one of the following methods to place servers in production mode:
=>In the Administration Console, click the name of the domain in the left pane, then select the Production Mode checkbox in the right pane.
=>At the command line, include the following argument when starting the domain's Administration Server:
-Dweblogic.ProductionModeEnabled=true
Production mode is set for all WebLogic Server instances in a given domain.

**Q64. What are the databases that are available to be used with the Web logic J2EE connector architecture?**
ANSWER: There are two databases that can be used with the Web logic J2EE connector architecture and these databases are as follows:

1. Cloudscape database: This is the default database that is used with the architecture and this consists of the samples that contain the resource adapter representing the database system. The configuration of this is set in weblogic-ra.xml file that contains the cloudscape datasource.

2. Oracle database: The settings of cloudscape can be replaced by oracle settings. The resources that are provided consist of the JDBC support, hence it can use any database for which the resources can be configured and represented.

**Q65. What are deployment descriptors?**
**ANSWER :** Modules and applications have deployment descriptors—XML documents—that describe the contents of the directory or JAR file. Deployment descriptors are text documents formatted with XML tags. The J2EE specifications define standard, portable deployment descriptors for J2EE modules and applications.

**Q66. What is the difference in the web.xml and weblogic.xml?**
**Answer : Web.xml:** An application-specific XML-based deployment descriptor file named web.xml, which lists your application's J2EE components and their configurations as J2EE modules. Each J2EE module is a collection of one or more J2EE components of the same container type (Web or EJB) that are

represented by one component deployment descriptor for that type in the web.xml file
**Weblogic.xml:** A WebLogic-specific deployment descriptor file named weblogic.xml, which defines how named resources in the web.xml file are mapped to WebLogic Server resources. Examples of weblogic.xml attributes include HTTP session parameters, HTTP cookie parameters, JSP parameters, resource references, security role assignments, and container attributes.

**Q67 How to set Session Timeout in weblogic?**
**ANSWER :** There are two ways user's HTTP session timeout can be set for your web application.
1.Web.xml
2.Weblogic.xml

**Web.xml**
<session-config>
 <session-timeout>60</session-timeout>
</session-config>
Please note in web.xml the **session timeout is set in minutes.**

**Weblogic.xml**
<session-descriptor>
  <session-param>
    <param-name>TimeoutSecs</param-name>
    <param-value>3600</param-value>
  </session-param>
</session-descriptor>
In weblogic.xml the **session timeout is set in seconds.**

More importantly the timeout value set in web.xml takes precedence over weblogic.xml. If you don't set any values in web.xml, weblogic.xml takes over. I think it is better to handle session timeout in web.xml itself since web.xml takes precedence over application server's deployment descriptors.

**Q68. Difference between execute queues and work Managers ?**
**ANSWER :** Execute Queues are available till WLS 8.1 and Workmanagers are available from WLS 9.2 and the main difference between these two is Workmanagers are selftuned, that means it will shrink and increase whenever it requires rather than fixed to the maximum number of threads there by causing some issues on high load.

**Q69. How managed servers communicate with each other ?**
**ANSWER :** Managed servers communicate each other using t3 protocol internally.

**Q70. what are the challenges in cluster environment ?**
**ANSWER :** Network Architecture and multicast issues.

**Q71. In which situations server crashes ?**
**ANSWER :** Server can crash because of so many reasons..
1. If there is any JNI code involved
2. If there is any native api or type2 driver involved

3. If there is a memory issue and then leads to an outofmemory error and there by it crashes so on...

**Q72. 10)How do you persist session across weblogic ?**
**ANSWER :** Session replication

**Q73**. **What is sticky session ?**
**ANSWER :** If we send any request and that request reaches to a particular server and if we send the request again, it has to go to the same server (if the session is same for that request)

**Q74. What is SSL in weblogic?**
**ANSWER :** Secure Sockets Layer (SSL) provides secure connections by allowing two applications connecting over a network connection to authenticate the other's identity and by encrypting the data exchanged between the applications. Authentication allows a server and optionally a client to verify the identity of the application on the other end of a network connection. Encryption makes data transmitted over the network intelligible only to the intended recipient.

**Q75**. **What is session replication?**
**ANSWER :** Weblogic Server provides clustering support for servlets and JSPs by replicating 'HTTP session state' of clients that access servlets and JSPs through a cluster service.
Weblogic Server can use 'memory, file based and database' persistence for storing session information

**Q76. How you deploy your applications on weblogic server?**
**ANSWER :** These are the types.
1) Auto Deployment
2) Console
3) Command line – weblogic.deployer
4**)** ANT / WLST

**Q77. What are stating modes are available in Weblogic Server ?**
**Answer** :There are three starting modes are available:
1) **Stage mode:** Administration Server copies the deployment files from their original location on the Administration Server machine to the staging directories of each target server
2) **External Stage:** target servers deploy using local copies of the deployment files, here the Administration Server does not automatically copy the deployment files to targeted servers in external_stage mode ; instead, you must copy the files to the staging directory of each target server before deployment.
3) **No Stage:** The Administration Server does not copy deployment unit files; instead, all servers deploy using the same physical copy of the deployment files, which must be directly accessible by the Administration Server and target servers.

**Q78. What is a Thread dump? How will you take in unix/linux and windows?**
**ANSWER:** A Java thread dump is a way of finding out what every thread in the JVM is doing at a particular point in time. This is especially useful if your Java application sometimes seems to hang when running under load, as an analysis of the dump will show where the threads are stuck.
1) Linux : kill -3 <ps_id>
2) Windows (console mode) : crtl+break
3) Windows (service) : beasvc -dump -svcname:mydomain_myserver

**Q79. How should u look for in a Thread Dump?**
**A.**1) Always have 7-10 thread dumps taken in an interval of 5 seconds each
2)   A thread dump will give you an insight on what every thread in the JVM is currently doing
3)   While analyzing the thread dump you should be looking for stuck threads (threads which have not moved from a long time) – could be a resource (file / db) lock not allowing the thread to complete the task and free the monitor
4) Look for thread locsk(if two threads store references to different objects into the same reference value, the variable will subsequently contain a reference to one object or the other, not a reference to some other object or a corrupted reference value)
5) Look for recursive loops in application / server code traces, usually hampers server performance by utilizing CPU

**Q80. What is difference between 8.1 and 9.2, 10.x versions?**
**A.**1) 8.1 uses JDK 1.4.2 ; 9.2/10.0 uses JDK 1.5 ; 10.3 uses JDK 1.6
2) 8.1 uses execute worker threads ; 9.2/10/10.3 uses work manager for work load distribution within the server
3) Directory structures
4) Console applet bases in 8.1 ; while it is portlet based in later versions
5) 8.1 has one big config.xml ; later versions have basic info in config.xml and subsystem level info in different directories(jms, jdbc, etc)

**Q81. What are multi pools / multi data sources?**
ANSWER : MultiPools are 'pools of connection pools' that you can set up according to either a high availability or load balancing algorithm.
You can use a MultiPool in the same manner that you use a connection pool..
When an application requests a connection, the MultiPool determines which connection pool will provide a connection, based on the selected algorithm.

**Q82. Which types of JDBC databases does WebLogic JMS support?**
**A.**The JMS database can be any database that is accessible through a JDBC driver. WebLogic supports and provides JDBC drivers for the following databases:
1)Cloudscape
2) Informix
3)Microsoft SQL (MSSQL) Server (Versions 6.5 and 7)
4)Oracle (Version 8.1.6)
5)Sybase (Version 12)

**Q83. Can two JMS servers share the same persistent store?**
**ANSWER :** No, Each JMS server must have its own unique persistent store. Two file-based JMS persistent stores may share the same directory, but their messages will be stored in different files. In this case, the filenames will contain different prefixes.
Two JDBC-based JMS persistent stores may share the same database, but they must be configured to use a different Prefix Name which will be prepended to the database tables.

**Q84. The two primary cluster services provided by WebLogic Server are?**
**ANSWER :** HTTP session state clustering , Object Clustering.

**Q85. How to enable EJB available to servlet? asume servlet on apache, ejb on Weblogic cluster.**
ANSWER : Any external access to EJB is not allowed. if the apache webserver already configure as front-end  then we need to look up by JNDI tree.

**Q86. What do you mean by weighted based server instance? How do you configure it?**
**ANSWER:** The Weblogic Servers in the clustered environment could be routed in 6 ways ROUND-ROBIN, WEIGHT-BASED, RANDOM and same algorithms with Affinity. Weight is defined as the number of the requests incoming to a managed server that is default **100**. As per the machine capacity and Operating environments will make you to deside how much weight is suggested on that managed server. We can control the incoming requests using weights increase or decrease, So, this way we can route all the request to one of the managed server in the Cluster. This Weight differences can be used when there is operating environment differences are there.

**Q87. What are all the ANT command options?**

**ANSWER :** To view all options of ant command is simple, just use the following command :
prompt> ant -help
Note: This will work on Unix and Windows too if PATH is pointing to ant specific jars

**Q90. What is the silent mode installation file contains root element? When do you require this mode of installation?**
**ANSWER :** The root element in silent.xml is <install>This kind of mode usually required in two different situations
> **Situation1 :** Weblogic clusters could be installed/implemented only on homogenous environments. If cluster1 is constructed with MgdServer1, MgdServer2if one server isusing Weblogic 7 environment and other one on Weblogic 8.1 or higher this is not allowed.
> **Situation 2:** When one huge project is migrated from one physical location to other, Where the Application specialist must have the similar environment as the Production Server had. To prepare Development work with similar kind environment we shall install on First system same as Production Server rest of the developers systems could be installed with silent mode.

**Q91. Why do you need multicast address in Clustering?**
**ANSWER :** The Multicast address is must for clustering, If server instance need to join the cluster it will use multicast address. The Administrator server handles the web/resource request which is incoming to the Weblogic server then the admin server will send poll messages for availability to handle the current incoming request by which member server in the cluster with multicasting. The multicast address should not conflict with the Network configurations on every member server. The range of multicast IP address is : 224.0.0.0 to 239.255.255.255.The admin server sends a TTL (Time to Leave) packet,which will acknowledges the readiness of a managed server. If more than one member server is available then it will choose the member server with first come first server bases.

**Q92. What is the procedure for Queues config? How to make them to free?**
**ANSWER :** 1. The Queues configuration requires persistence storage which could be a File on operating system or a DataSource.
2. The queue configuration requires JMSConnectionFactory, JMSServer, jms module Queue or topic as per the application need
You can created using the Weblogic Administration console or using WLST in latest versions 9.x onwards

**Q93. What is the default JVM used for Weblogic?**
**ANSWER :** Sun Hotspot JDK default for Development installation, JRockit is for Production mode for WebLogic 11g and 12c. Operating environment also factor to select the Certified JDK JVM. If you want to change you need to specify it.

**Q94. How to make a managed server?**
**A.1)** Backup the configuration by rename config.xml

   2) Configure startManagedWebLogic.sh (weblogic home and java home and give the admin severs URL)

  3) Go to admins weblogic console and add a managed server and give the IP and port of the managed server.

**Q95.  How to configure a DB connection pool?**
**ANSWER :**
1) Choose the DB type (Oracle, Sybase, Mysql, etc...).
2)Then choose the driver type for the DB.
3) Give the connection pool name.
4) Give the DB Service ID, schema name and password.
5)Then it will ask for testing the connection pool/DataSource.
6)  After successful connection, it will ask you to create and deploy the connection pool target to server or cluster. After creating new connection pool always point the jdbcstore to the connection pool created. This is required because A JMS JDBC store will be used for persistent messaging.
7)After each JDBC connection, we have to restart the server if there is startup classes dependancy exists otherwise no restart required in WebLogic 9.x and higher versions

**Q96**. **What is a domain template?**
**ANSWER :** A domain template is a jar file default one is wls.jar file, which is '/bea/weblogic10.3/common/templates/domains/, it has all the features that is required for the standard weblogic domain, we can even create domain template of our own configuration. by this template we dont have to configure every time we create a new domain.

By using template we can:
1)  Create servers.
2)  Clusters.
3) Machines.
4)  Configure services such as JMS, JDBC, Applications

**Q97. How to configure a DB connection pool?**
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cluster. After creating new connection pool always point the jdbcstore to the connection pool created. This is required because A JMS JDBC store will be used for persistent messaging.

7)After each JDBC connection, we have to restart the server if there is startup classes dependancy exists otherwise no restart required in WebLogic 9.x and higher versions.

**Q99.What is JNDI in Weblogic?**

**ANSWER :** Applications use naming services to locate objects in data sources, EJBs, JMS, Mail Sessions, and so on in the network. A naming service associates names with objects and finds objects based on their given names. (The RMI registry is a good example of a naming service.)

JNDI provides a common-denominator interface to many existing naming services, such as LDAP (Lightweight Directory Access Protocol) and DNS (Domain Name System). These naming services maintain a set of bindings, which relate names to objects and provide the ability to look up objects by name. JNDI allows the components in distributed applications to locate each other.

**Q98. JNDI Usage for weblogic?**

**ANSWER :** Generally JNDI is used to locate the Objects residing in different location. So like Yellow pages are helpful to find out certain things, similarly JNDI is useful to search the objects.

In Weblogic JNDI is highly useful as here in Connection Pool, Virtual Host etc. places it creates Objects . So to locate & search the Objects , JNDI is useful. JNDI is an context lookup for information retrived from application. and also we can say, JNDI is a line to reach/trace our DB datAnswer : and also we can say, JNDI is like a folder which contains information sent/recevied to/from database.

**Q99. How to configure JMS?**

**Answer 1)** JMS (Java Message Service) is a standard API for accessing enterprise messaging systems. Specifically, WebLogic JMS:

2)   Enables Java applications sharing a messaging system to exchange messages.

3)  Simplifies application development by providing a standard interface for creating, sending, and receiving messages.

Using the Administration Console, you define configuration attributes to:

1.. Create JMS servers and target a WebLogic Server instance or a Migratable Target where the JMS server will be deployed.

2. Create and/or customize values for JMS servers, connection factories, destinations (queues and topics), JMS templates, destination sort order (using destination keys), persistent stores (file or JDBC), paging stores, session pools, and connection consumers.

3. Define message and/or bytes thresholds and quotas, as well as a maximum allowable message size on your JMS servers, destinations, and templates.

Enable any desired WebLogic JMS features, such as:

**Server clustering using multiple connection factories.**

i) High availability and load balancing for destinations across a cluster by using distributed destinations.

ii)  Persistent messages and durable subscribers.

iii) Paging out message bodies during peak load periods to free up memory

iv) Controlling message flow during peak load periods, including blocking message producers.

v)Establishing a message expiration policy to ensure that expired messages are cleaned up immediately.

vi)Preventing message quota errors by temporarily blocking message producers from sending messages to a destination when it exceeds its specified maximum message quota.

vi) Concurrent message processing via session pools.

**Q100. How do you install Apache web server in UNIX and windows?**

**ANSWER :** You will get a binaries for Apache website and you compile and build with the 4 steps

Answer : Extract the compressed file
b. Execute configure.sh file from the extracted folder
c. make
d. make install

## Q101. **What are the tuning techniques you applied?**
**ANSWER :** 1)Tunning for JVM - chanigng -Xmx, -Xms, MaxNewSize, MaxPermSize, and if required GC algorithms
2)Tuning in Threads/ThreadPool -- Defining Workmanager with maximum constraint
3)Tuning TCP/IP connections Interface address, backlog count,
4)Tuing  JMS  -- changing queue sizes as required
5)Tuing JDBC - initial count, maximum capacity, increase by number of connections

## Q102.   **How do u trouble shoot if managed server is in FAILED state?**
**ANSWER :** If any managed server is in FAILED state there could be reasons as follows:
i) deployment failed
ii) JDBC DataSource issue
iii) JMS configuration issue

## Q103. **How to monitor WebLogic using WLST?**
**Answer** First you need to connect to the adminServer. then you can use any Runtime MBean.Using WLST we can monitor various Runtime MBeans such as ThreadPool, JVM, JDBC ConnectionPool, JMS Server and Server Life Cycle for state of a WebLogic server instance.

Q104. What are monitoring tools you know?
Answer: There are wide varieties of  monitoring tools available, such as:
a. HP-OVO
b. Introscope Willey
c. Patrol
d. Mercury and many more...

## Q104. **What are the difference between Connection pool and data source?**
**Answer** Connection Pool is physically connects to the Database. whereas Data Source is a logical resource that can be used by developer or any other resource for accessing Connection of pools.
DataSource can be associated with JNDI name that is used for lookup from any other client.

## Q105.**What is nmenroll in WLST?**
Anwer .The nmEnroll() method is used for enroll the machine with the weblogic domains running on that. It is name and its path. the Nodemanager always get the domain information from the Administration server provided that it should have enrolled in that machine.

## Q106. **Types of load balancing techniques and differences b/n them**
Answer : There are Hardware loadblancer, Software loadbalancer BIG IP F5 is most leading load

balancers in use. Again the Software loadbalancing CMS, CSS Context Switch Servicing. Basically Load balances uses Round robin method to its connecting Webservers.

**Q107**. **What is the important configuration file in apache?**
**A.**The Apache configuration will be defined in the httpd.conf, if required segrigated weblogic.conf file can be created.
SSL enable sites requires httpsd.conf

**Q108**. **How do you provide load balancing?**
**A.**In WebLogic Cluster side we have 3 basic types and each supports Affinity based also.
I) Round Robin
ii) Random
iii) Weight based

**Q109.   When do you use vi editor?**
**A.**In UNIX environments we have vi editor for creating new file which can be shell or python or jython or plain file.
I - insert mode
Esc - to come out of the mode
r - replace char
a - append to the line
O - insert above line
o - insert below line
dw - delete word
dd - delete line
x - delete char
/ - search a pattern
:set nu setup numbers  etc...

**Q110. What type of wlst scripts u have created?**
**Answer** WLST scripts
I) Thread Monitoring script
ii) JVM monitoring
iii) JMS monitoring
iv) DataSource monitoring
v) Site wise, Server wise, Domain wise scripts

**Q111. How to test the port is existing or not in unix?**
**Answer** On the UNIX you can give the following command netstat -na |grep <port>

**Q112. Is there any disadvantages of using machines in cluster configuration?**
**Answer** Yes, If Weblogic domain not using the feature of **NodeManager** then it is a useless configuration.

**Q113. What happens if we delete the log files when the server is running & when the server is not running?**
**Answer:** Better option is to NULLify the content of the log after archiving the logs. Nothing happen when we delete a WebLogic server log files, When server is RUNNING, new logs will be generated w.r.t Server instance and application logs depends on log4j.properties.
New logging will be written if the file exists. It will always do appending to the log file. If the file is removed then no appending happens. So that you don't know what is happening to the Server instance. The other case, When NOT RUNNING not new log generated

**Q113. Can we change the name of the log files?**
**Answer** When we want to change the log file names while running. If we change at run time WebLogic will creates new log file again. Using WLST, specifying logger with edit, save we can change it in the domain level

**Q114. Basic requirement for datasouce and connection pools?**
**Answer** The Basic need for Connection Pool and DataSource are:
1. connection to the adminserver
2. JDBC Driver name, connecting parameters such as DataSource name, DATABASE schema details (user,password, hostname, port, SID)
3. Target the connection pool to a 'server' or 'cluster'.
4. Finally verify the connection pool by testing it.

**Q115. How to monitor the incoming traffic for webserver?**
Answer: HP OVO, Patrol, access logs of web servers. By looking in the access logs of the web-server.

**Q116. How to select where and which driver we have to use?**
**Answer** This is absolutely depends on application context.

> Major impacting factors
> i) load capacity number of connections
> ii) Application contains PreparedStatements, CallableStatements preferable is OCI if it is Oracle. (DB vendor specific driver)
> iii) Thin Driver is preferable for certain number of connections only. But is most widely used with Oracle RAC and Grid databases.

**Q117. If SSL certificates are expired what to do?**
**Answer** Two options:
1. Using temporary demo certificates.
2. Get new renewal from CA(Certifying Authority) like verisign.

**Q118. In order to see last 20 files what is the command?**
**Answer** At your Unix prompt you can give as follows:
ls -lrt | tail -20

**Q119. What is Bootup Process?**
Answer : StartWebLogic.sh script flow need to explain...
CLASSPATH
MEMARGS
GC parameters to start the weblogic.Server class check authentication if user, password given script takes from it. if notcheck for boot.properties

Domain bootup process is like this...
Admin Server -> EJB TIER servers -> Web – Tier