

1. What are the challenges in network environment?

[A] The challenges are a) Connectivity

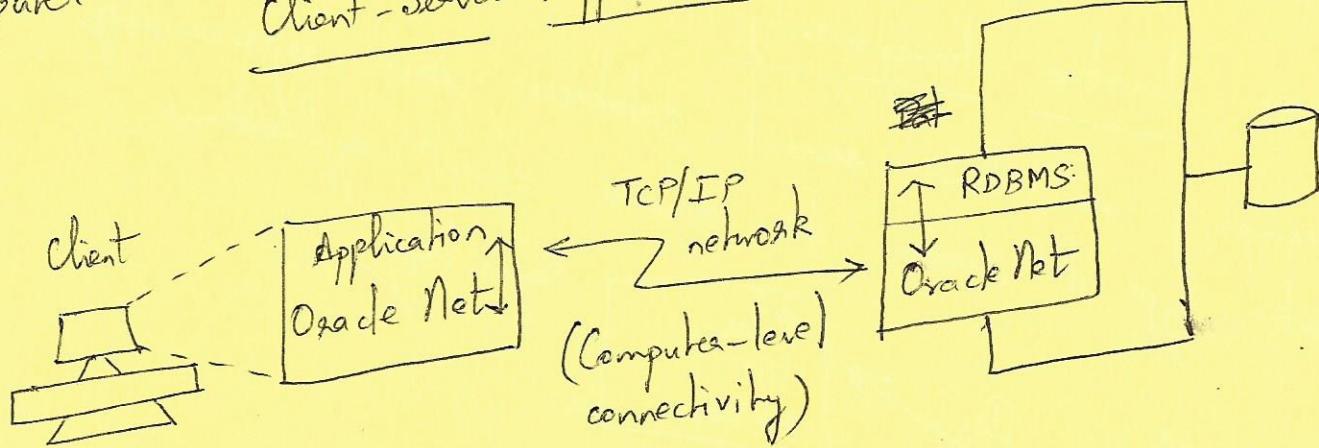
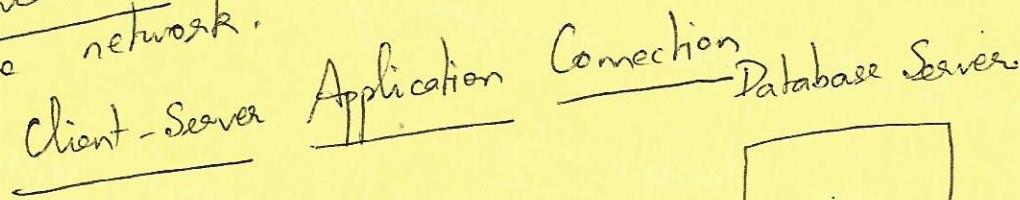
b) Manageability

c) Internet & Intranet scalability

d) Network security.

2. Which component enables a network session from a client application to an Oracle based server.

[A] Oracle Net enables a network session from a client application and the database server. It also exchanges messages between them. Oracle net is located on each computer in the network.



3. What are Java client applications? [A]

Java client applications access an Oracle database through Java Database Connectivity (JDBC) driver.

a) Java Database Connectivity (JDBC) drivers.

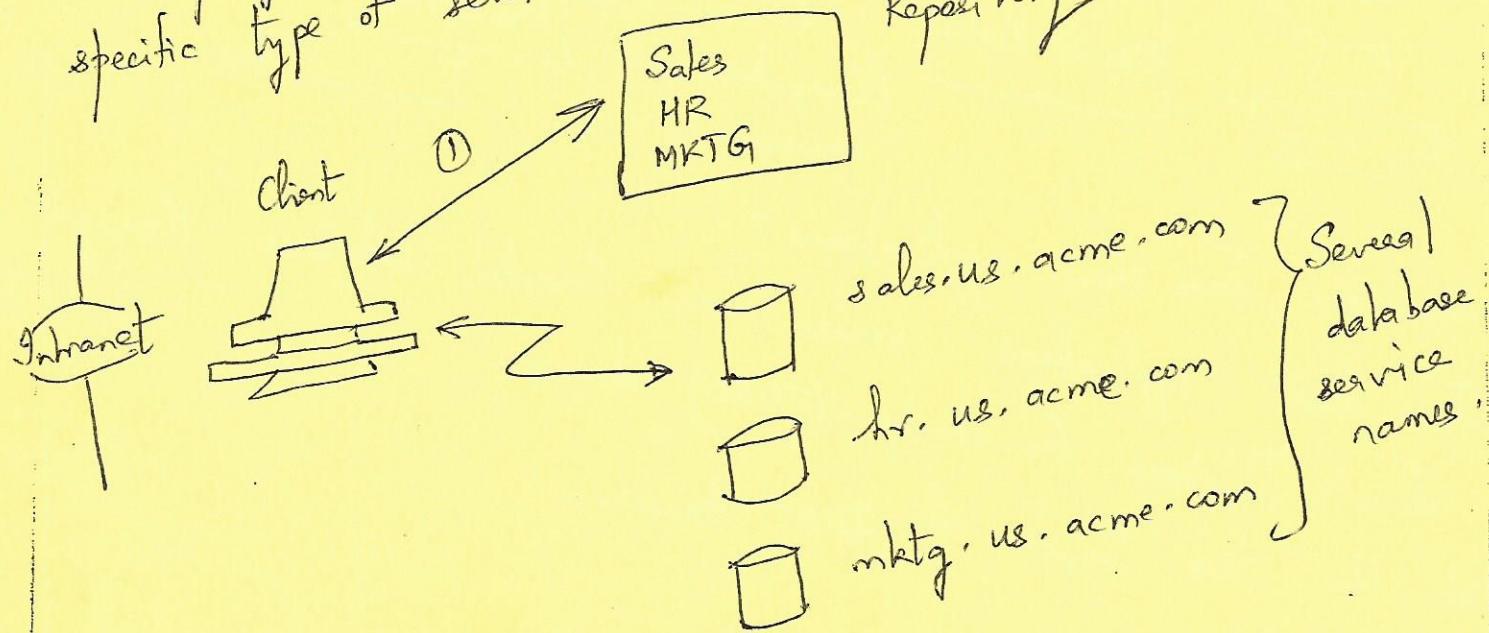
b) List the two types of JDBC drivers.

- [A] a) JDBC OCI driver
 - client side use with Oracle client installation.
- b) JDBC thin driver
 - client side use without Oracle installation.
 5 What are the various manageability features in Oracle Net services?

- [A] a) Location transparency
 b) Centralized Configuration & Management
 c) Quick Installation & Configuration

6. Describe the three manageability features.

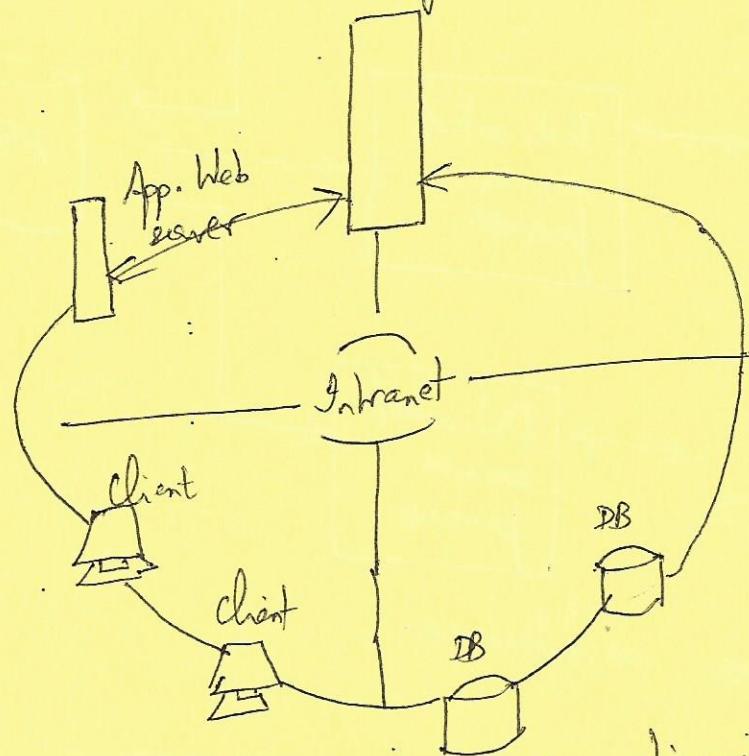
[A] a) Location transparency
 A company can have several databases, each representing a specific type of service for various client applications.



b) Centralized configuration & management:

To manage large networking environments, administrators have to be able to easily access a centralized repository to specify & modify the network configuration.

Directory server



c) Quick installation & configuration:

Clients & servers are ready to immediately connect when installed, giving users the benefits of distributed computing.

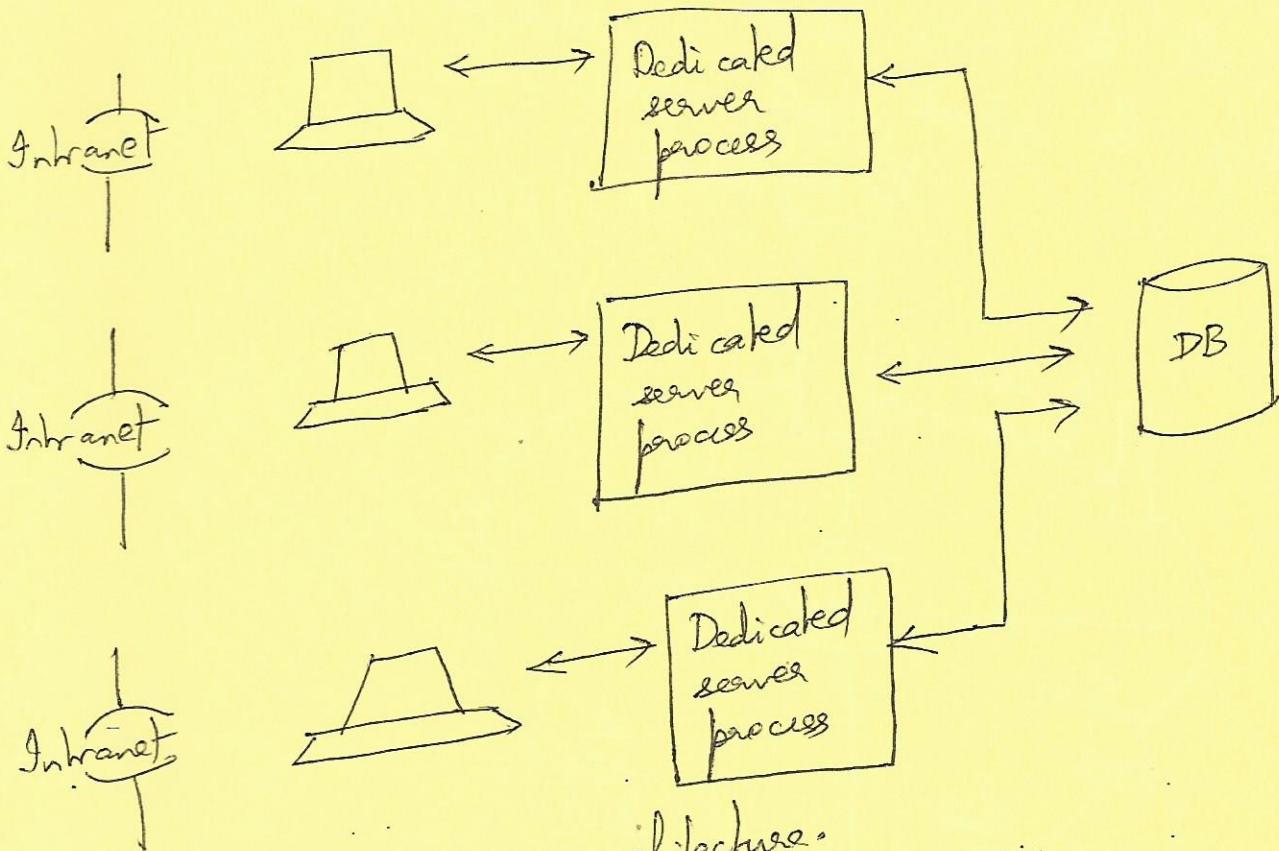
What is Intranet scalability?

[A] Oracle net provides scalability features that enables you to maximize system resources & improve performance between middle tier & Oracle DB. The features are (i) shared server, (ii) performance between

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Draw the dedicated server architecture.

[A]



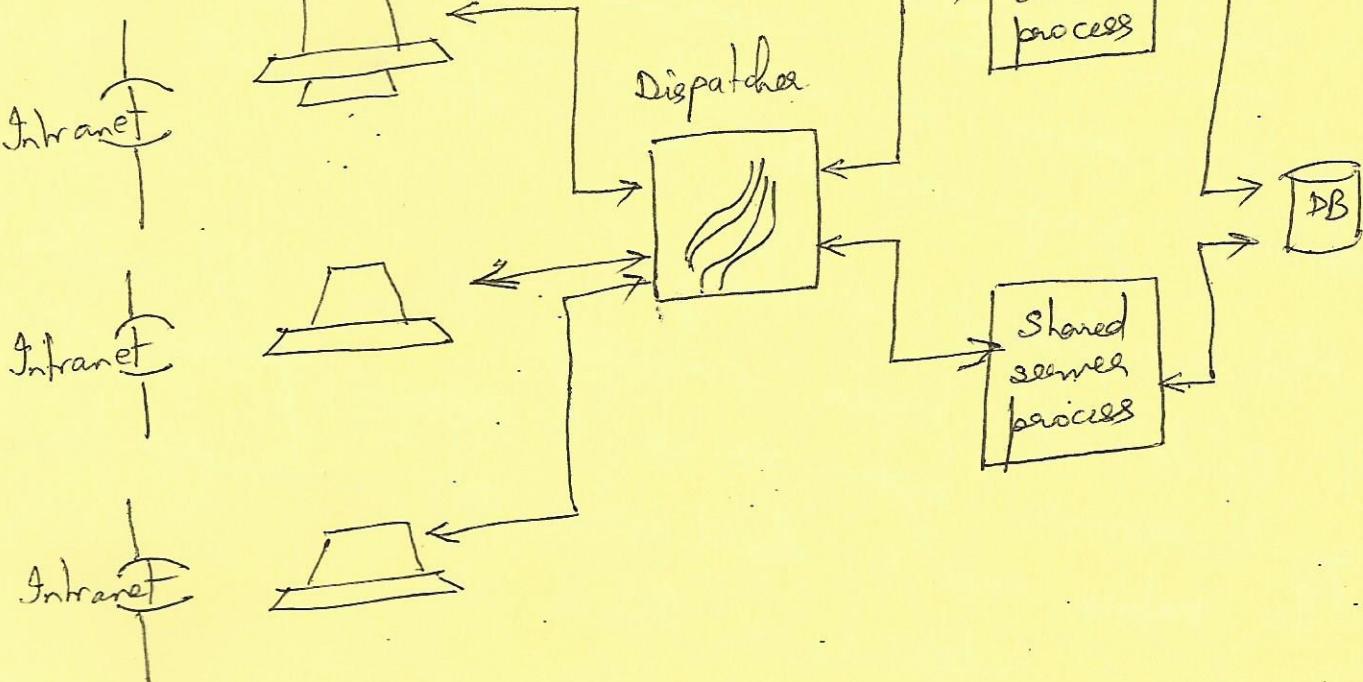
9.

Draw the

shared server

architecture.

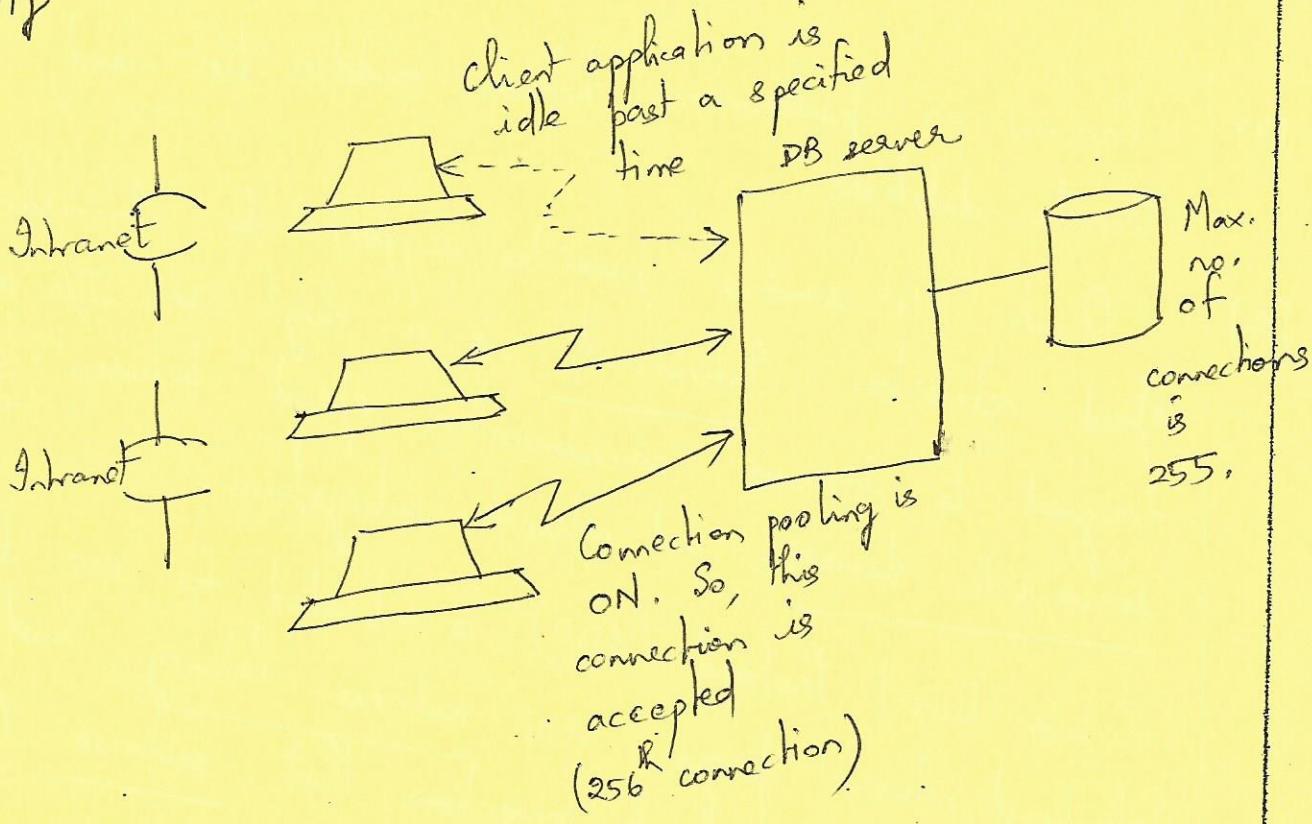
[A]



Q) How can shared server architecture be further classified into?
[A] a) Connection pooling b) Session Multiplexing.

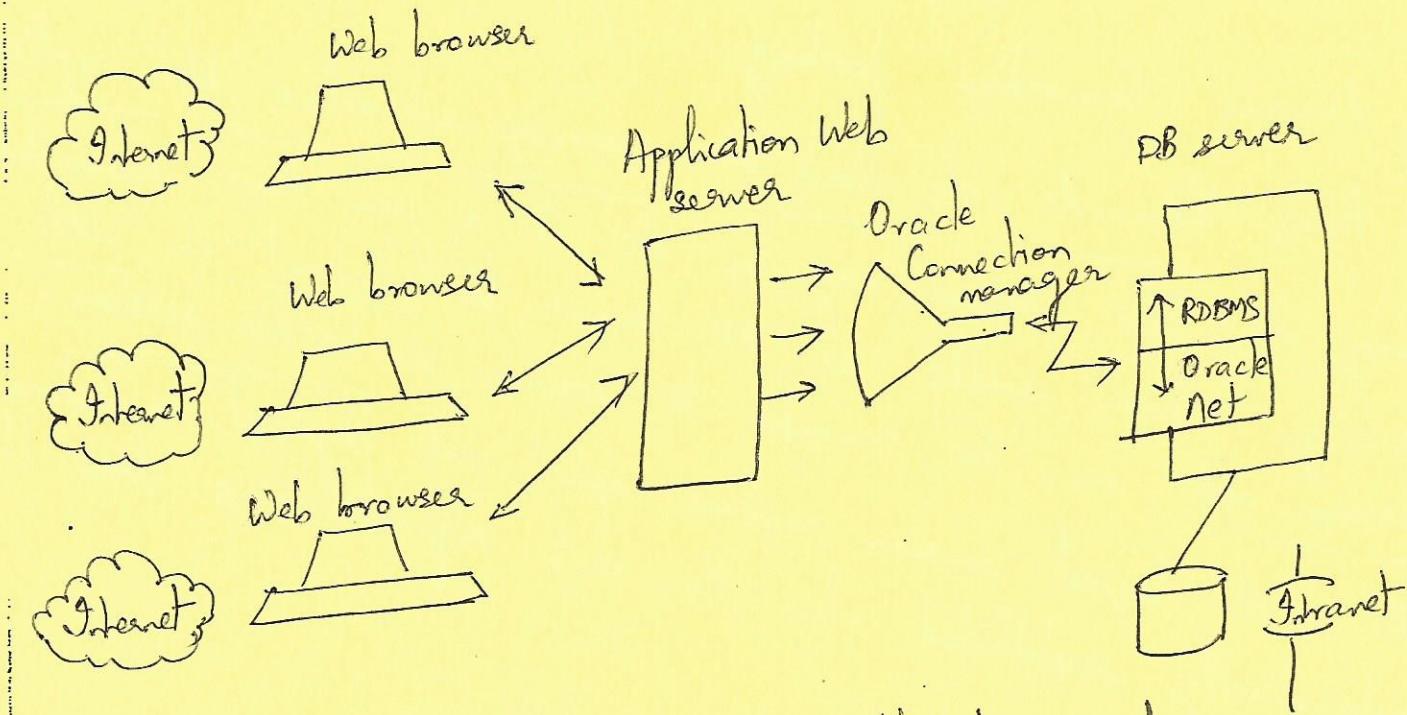
Describe Connection pooling:

Here, thousands of clients are running interactive Web applications, many of these sessions may be idle at a given time. Connection pooling feature enables the DB server to timeout an idle session and use the connection to service an active session. The idle logical session remains open, and physical connection is reestablished when the next request comes from that session.



Describe Session Multiplexing.
[A] Oracle Connection Manager, an Oracle Net Services component,

enables multiple client network sessions to be multiplexed or funneled through a single network connection to a database.



- 1.3) Comment on performance between middle tier and Oracle database.

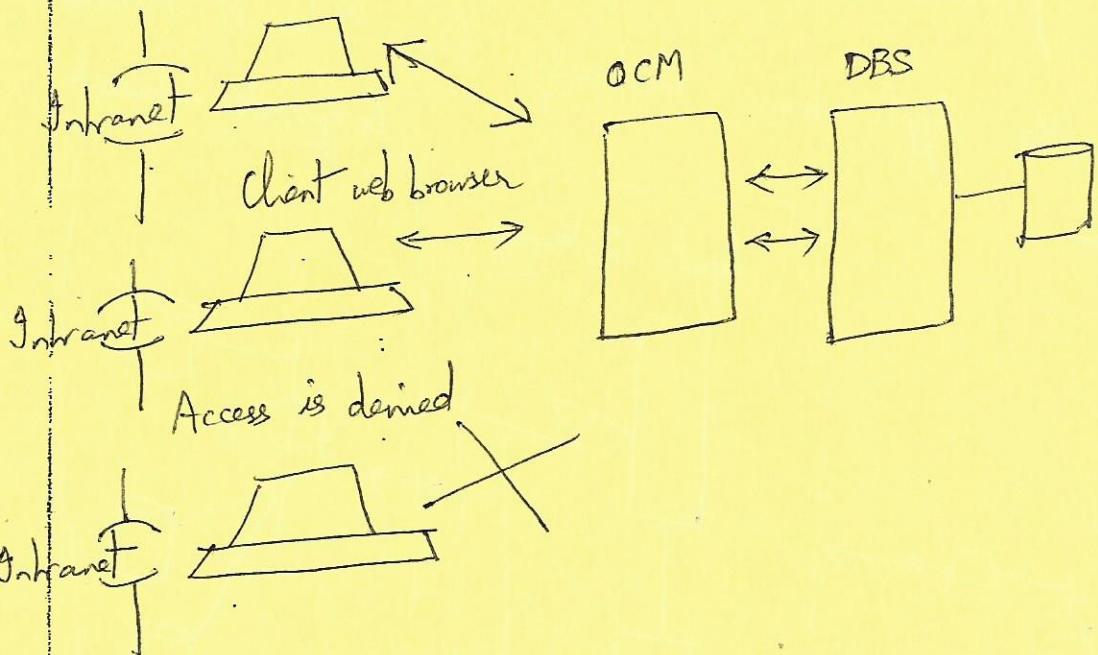
[A] Oracle Net services provides support for Infiniband high speed networks. Infiniband is a high BW I/O architecture designed to increase communication speed between server-side devices, and network subsystems.

Sockets Direct Protocol (SDP) is intended for use between Infiniband network peers. SDP reduces latency and improves bandwidth & throughput connection that reduces the amount of CPU cycles dedicated to network processing.

4) Which services are used for Network Security in Oracle Net services?

[A] a) Firewall access control

Client web browser



OCM → Oracle Connection Manager

Access is allowed/denied based on source host names or IP addresses for clients.

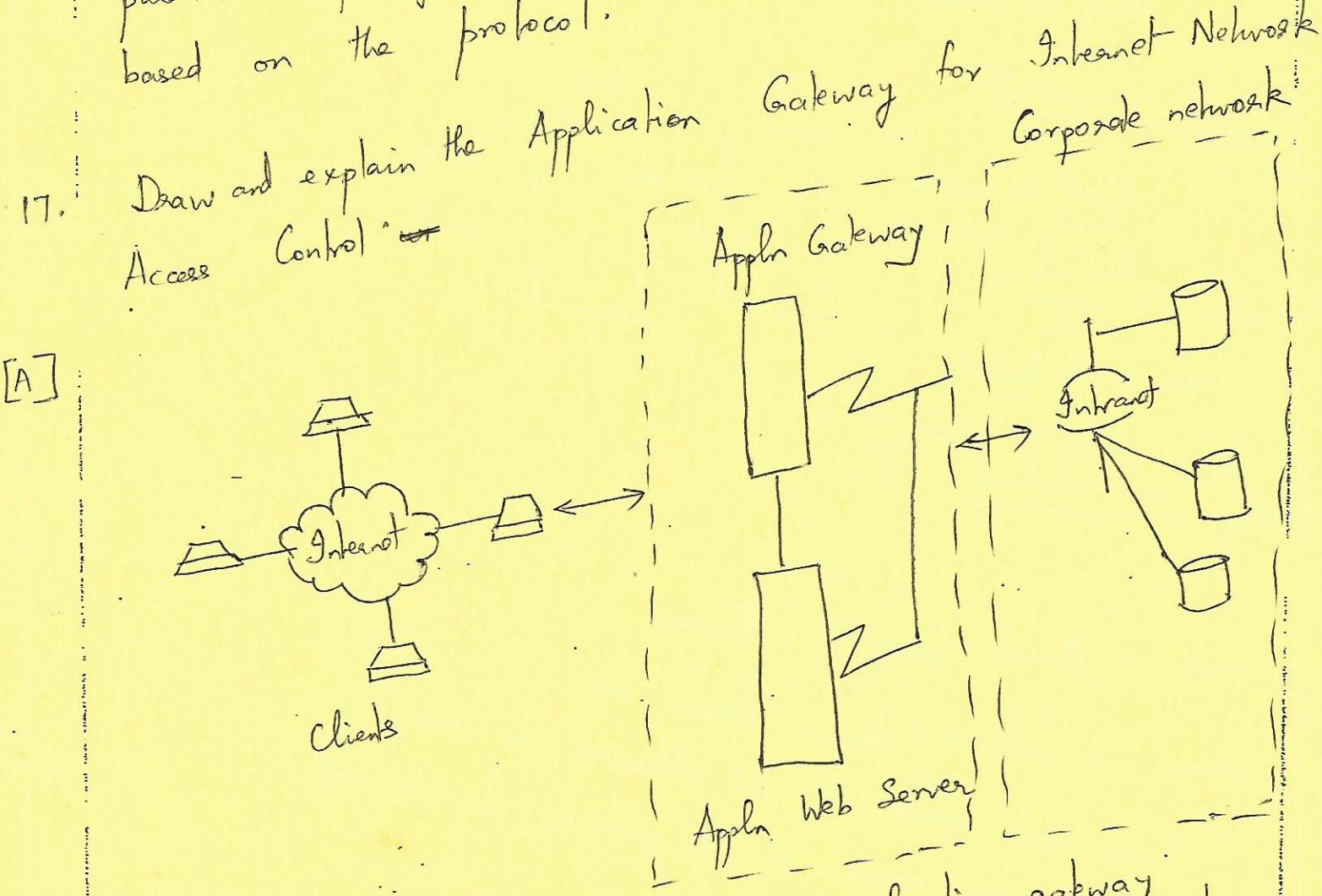
- a) Source host names or IP addresses for servers
- b) Destination host names or IP addresses for servers
- c) Destination database service names
- d) Client use of Oracle Advanced Security

15) Who is a thin client?

A thin client is a light weight computer that is built for remote access to a server.

b) Protocol access control

16. What is Protocol Access Control?
- [A] The database server can be configured with access control parameters in the sqlnet.ora configuration file. These parameters specify whether clients are allowed / denied access based on the protocol.



- The above diagram shows an application gateway controlling traffic between internal & external networks providing a single check point for access control & auditing.
- Unauthorized Internet hosts cannot directly access the database inside a corporation, but authorized users

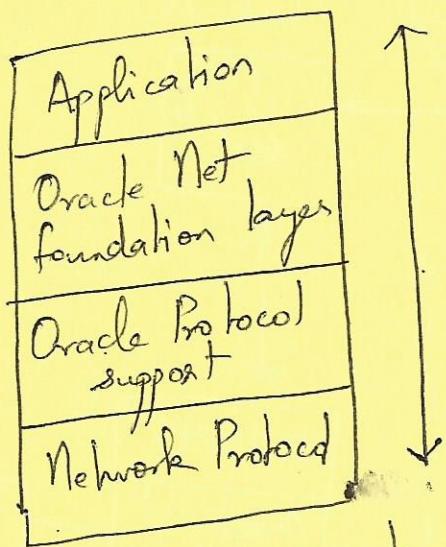
- can still use Internet services outside the corporate network.
- This capability is critical in Internet environments to restrict remote access to sensitive data.

What are the software components which exist in Oracle Net?

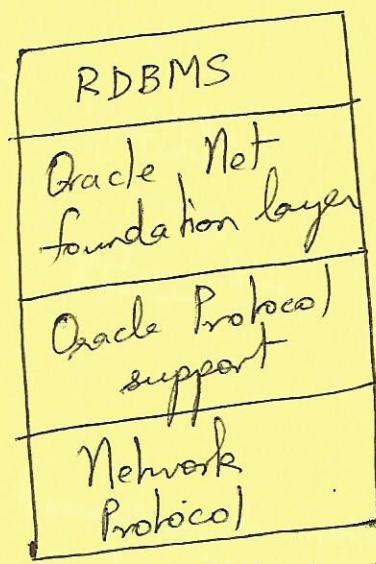
a) Oracle Net Foundation layer

b) Oracle Protocol support.

Discuss about Oracle Net on Client



Oracle Net on Server



Applications communicate with Oracle Net foundation layer to establish & maintain connections.

A Network Protocol sends client request information to Oracle support layer, which then sends information to Oracle Net foundation layer, which in turn communicates with Oracle Database server to process client request.

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List the standard network protocols in Oracle Protocol Support

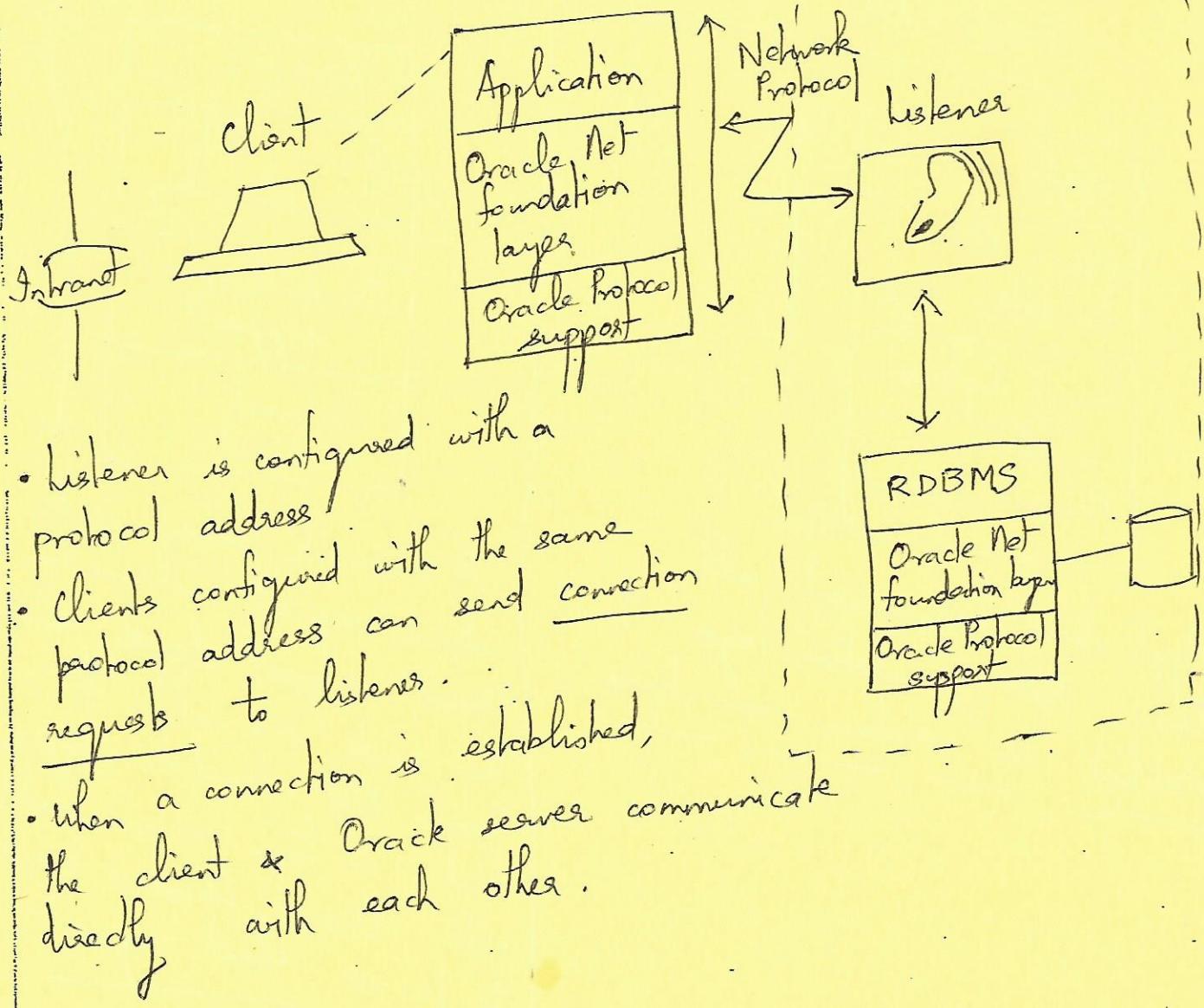
- [A] Oracle Net foundation layer uses Oracle protocol support to communicate with the following industry-standard network protocols.
- TCP/IP
 - TCP/IP with SSL
 - Named Pipes
 - SDP

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Discusses the role of a listener in Connection Request.

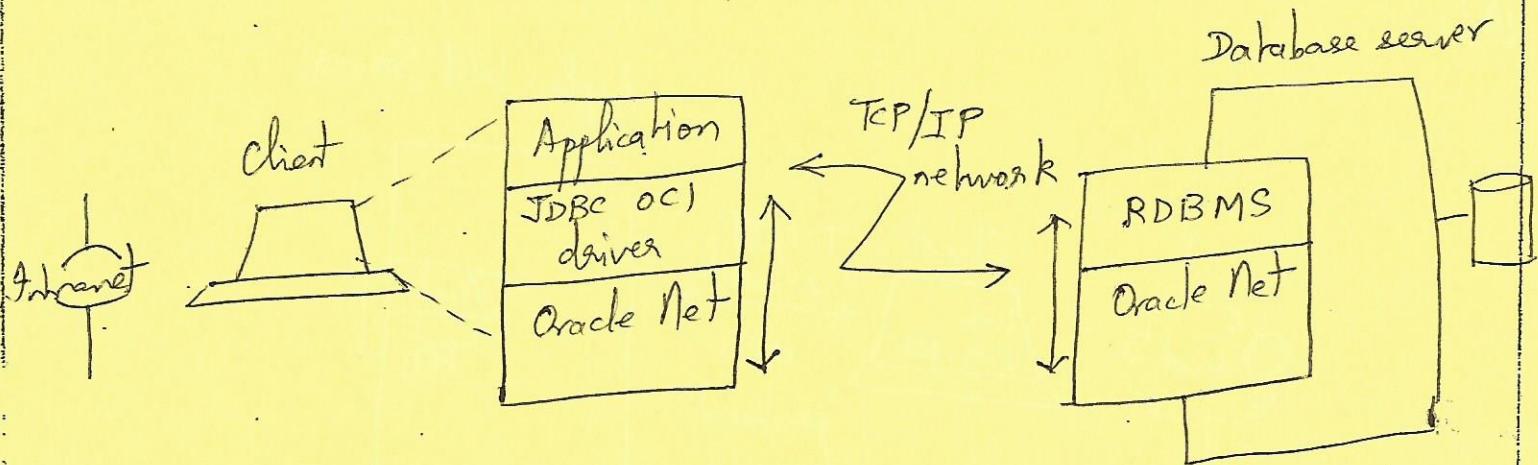
Database Server Computer

[A]



Draw and discuss the architecture diagram of a Java application connection.

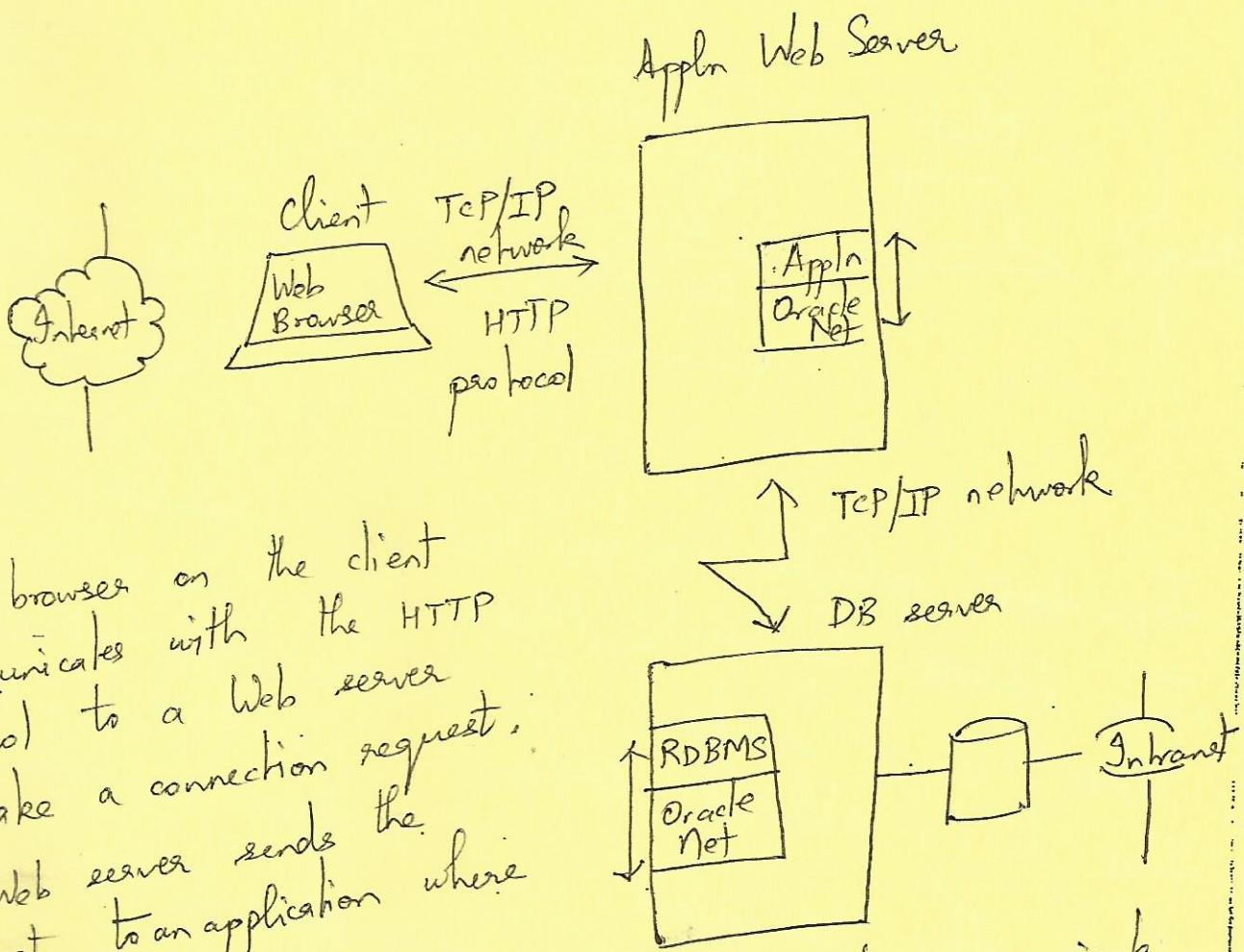
[A]



- Java client applications access an Oracle database through a Java database Connectivity (JDBC) driver.
- JDBC is a standard Java interface for connecting from Java to a relational database.
- Oracle offers two drivers
 - JDBC OCI driver (client use)
 - Thin driver (client use without Oracle, particularly with applets)
- Java client application makes calls to JDBC calls directly into Oracle Net layer which in turn translates the JDBC calls to communicate with Oracle Database that is also configured with Oracle Net.

23. Discuss the architecture of Web Client connections through an Application Web Server.

[A]



- The browser on the client communicates with the HTTP protocol to a Web server to make a connection request.

- The Web server sends the request to an application where it is processed.

- The application then uses Oracle DB server with an Oracle Net.

Oracle Net to communicate that is also configured

The basic components have the following characteristics:

a) Hypes Text Transport Protocol (HTTP)

HTTP provides the language that enables Web browsers and application Web servers to communicate.

b) Application Web Server

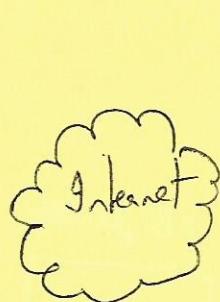
9t (i) manages data for any web site

(ii) Controls access to that data

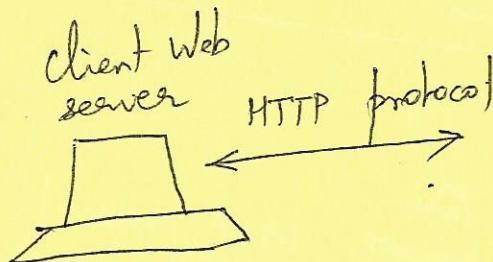
(iii) responds to requests from Web browsers.

The application on the Web server communicates with the database and performs the jobs requested by the Web server.

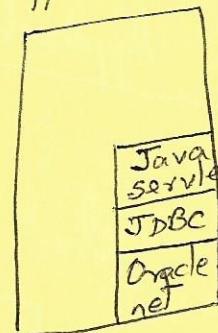
Discuss the architecture of Web client of connections through the Java application Web server.



Client Web
server

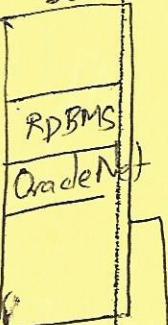


Appn Web Server

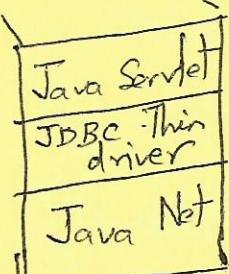
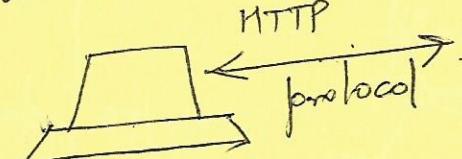


TCP/IP
network

Database
server



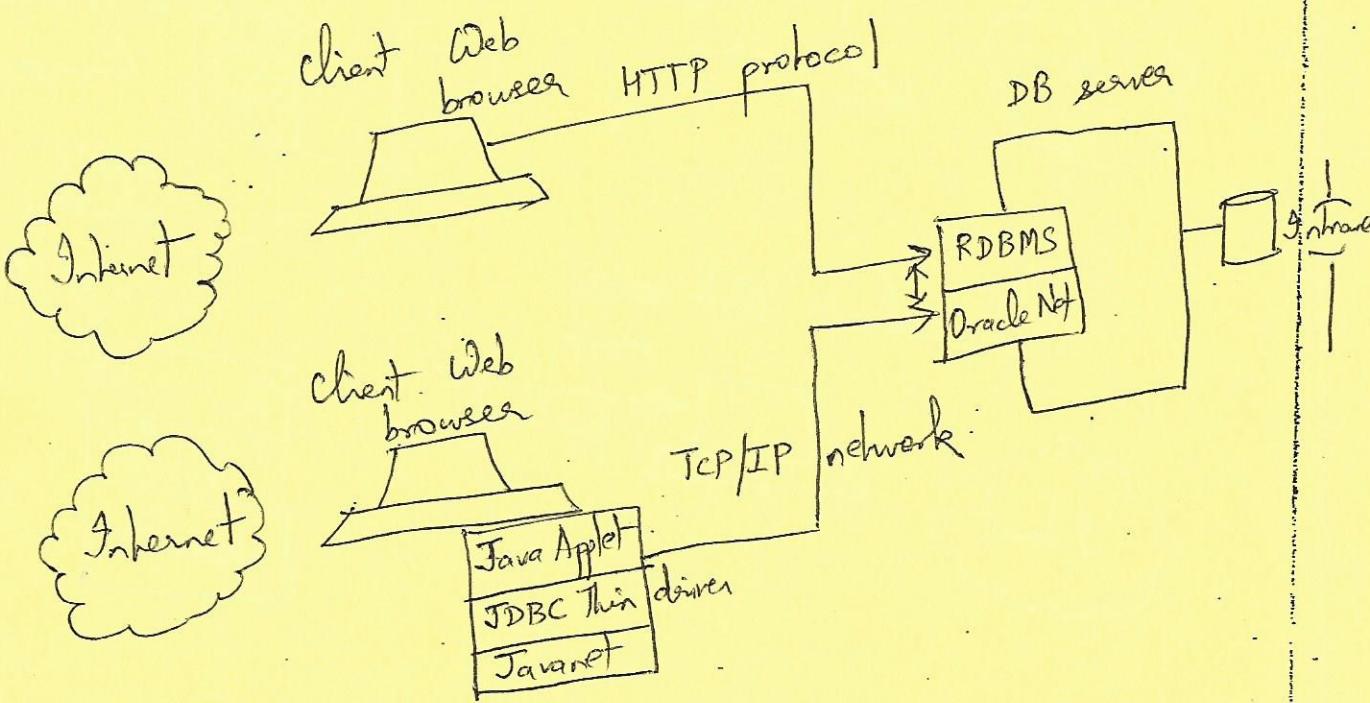
Client Web server



- An application Web server can host Java applications & servlets.
- Web browsers make a connection request by communicating through HTTP to an application Web server.
 - The application application or OCI or a JDBC Thin driver sends the request to an application server which in turn uses a JDBC to process the request.
 - The driver then uses Oracle Net to communicate with an Oracle DB server that is also configured with Oracle Net.

25. Discuss the architecture of Web client application connections without an Application Web server.

[A]



Web clients that do not require an application Web server to access applications can access the Oracle DB directly, by using a Java applet.

In addition to regular connections, the DB can be configured to accept HTTP protocol, FTP protocol, or Web DAV protocol connections.

These protocols are used for connections to Oracle XML DB. In Figure shown on Pg 14, there are two different Web clients.

First client makes an HTTP connection to DB.
 Second client uses a Web browser with a JDBC thin driver, which in turn uses a Java version of Oracle Net called Java Net to communicate with Oracle DB server.

a) IIOP b) OPS c) Java TTC

Expand & explain.

- a) The Internet Inter-ORB protocol makes it possible for distributed programs written in different programming languages to communicate over the Internet.
- b) OPS - Oracle Parallel Server
- c) Java TTC - Java True Type Collection
Supports a particular font format used in Java.