

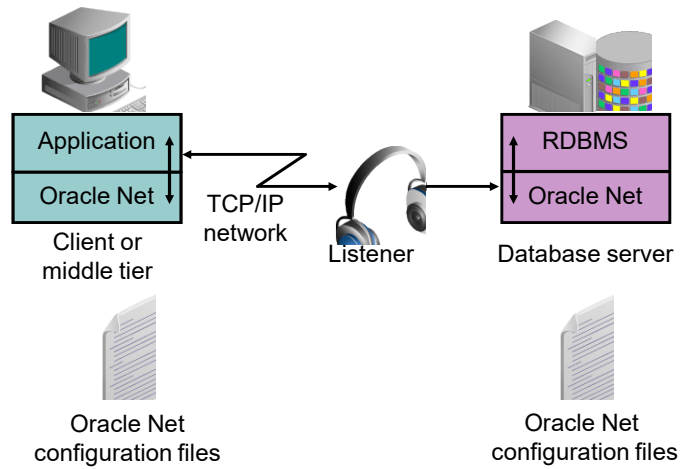
Configuring the Oracle Network Environment

Objectives

After completing this lesson, you should be able to:

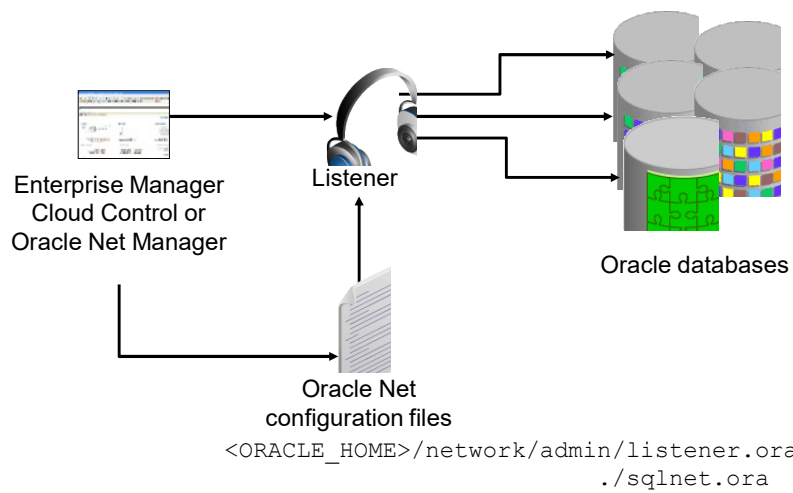
- Use Enterprise Manager Cloud Control and Oracle Net Manager to:
 - Create additional listeners
 - Create Oracle Net Service aliases
 - Control Oracle Net Listener
- Use the Listener Control Utility to manage Oracle Net Listener
- Use `tnsping` to test Oracle Net connectivity
- Identify when to use shared servers and when to use dedicated servers

Oracle Net Services: Overview



3

Oracle Net Listener: Overview

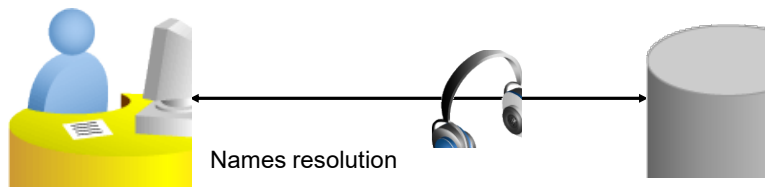


4

Establishing Oracle Network Connections

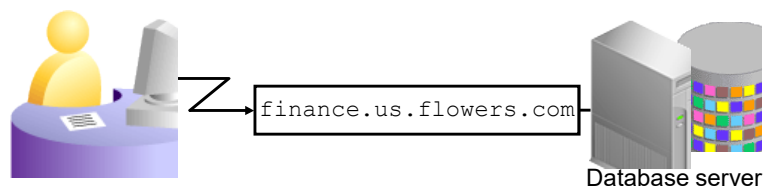
To make a client or middle-tier connection, Oracle Net requires the client to know the:

- Host where the listener is running
- Port that the listener is monitoring
- Protocol that the listener is using
- Name of the service that the listener is handling



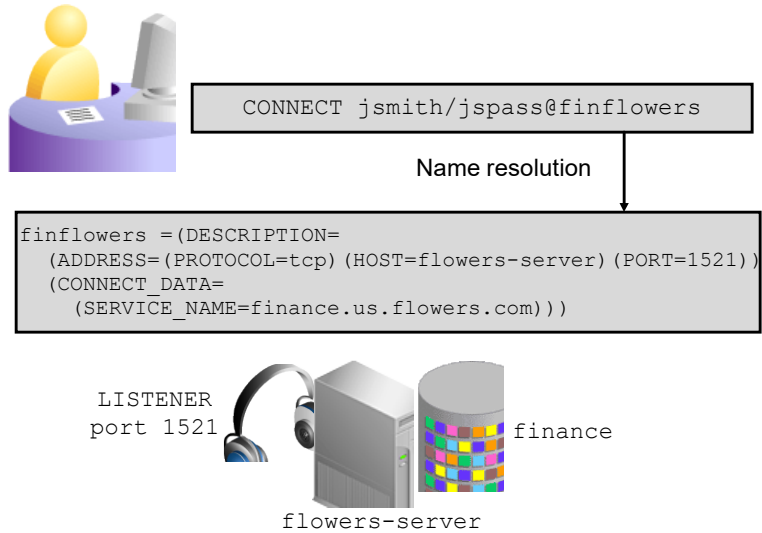
5

Connecting to an Oracle Database



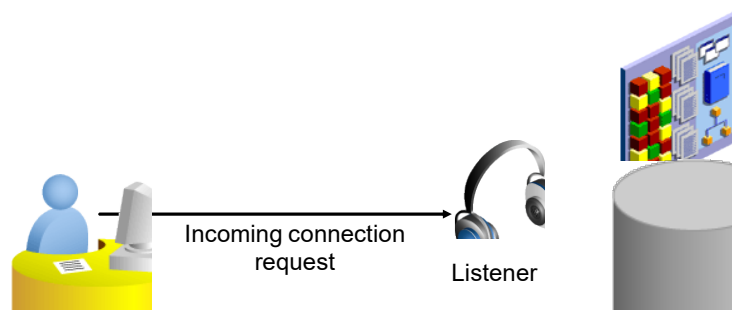
6

Name Resolution



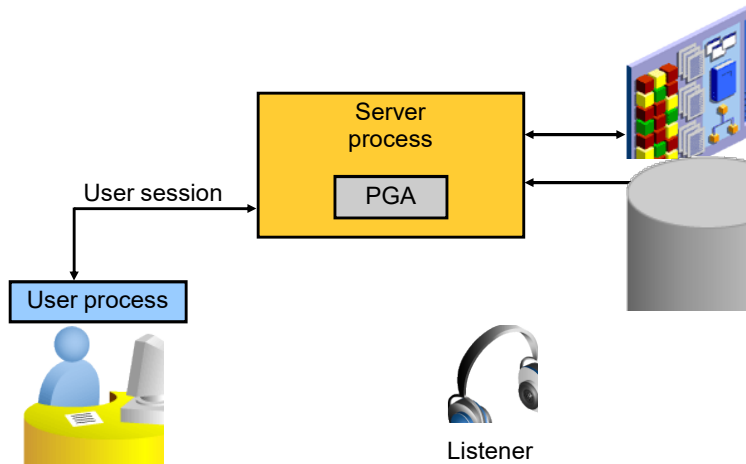
7

Establishing a Connection



8

User Sessions

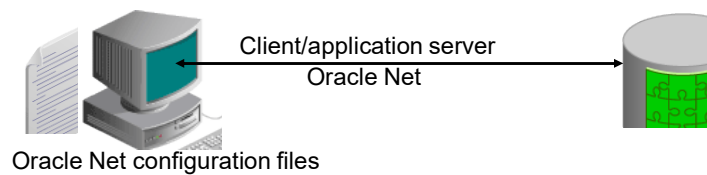


9

Naming Methods

Oracle Net supports several methods of resolving connection information:

- Easy connect naming: Uses a TCP/IP connect string
- Local naming: Uses a local configuration file
- Directory naming: Uses a centralized LDAP-compliant directory server
- External naming: Uses a supported non-Oracle naming service

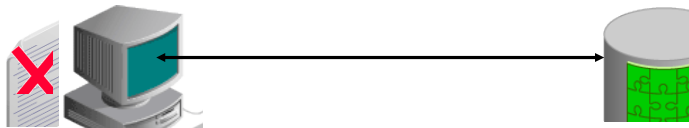


10

Easy Connect

- Is enabled by default
- Requires no client-side configuration
- Supports only TCP/IP (no SSL)
- Offers no support for advanced connection options such as:
 - Connect-time failover
 - Source routing
 - Load balancing

```
SQL> CONNECT hr/hr@db.us.oracle.com:1521/dballg
```

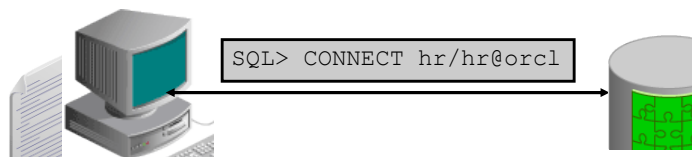


No Oracle Net configuration files

11

Local Naming

- Requires a client-side names-resolution file
- Supports all Oracle Net protocols
- Supports advanced connection options such as:
 - Connect-time failover
 - Source routing
 - Load balancing

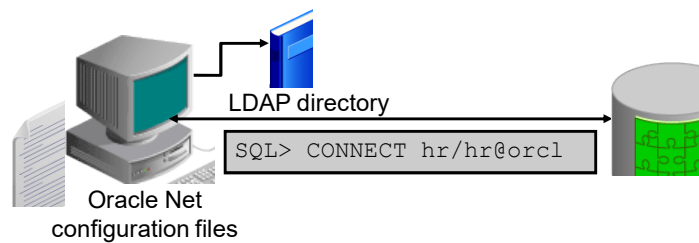


Oracle Net
configuration files

12

Directory Naming

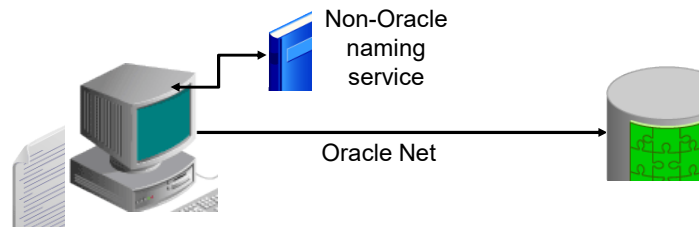
- Requires LDAP with Oracle Net names resolution information loaded:
 - Oracle Internet Directory
 - Microsoft Active Directory Services
- Supports all Oracle Net protocols
- Supports advanced connection options



13

External Naming Method

- Uses a supported non-Oracle naming service
- Includes:
 - Network Information Service (NIS) External Naming
 - Distributed Computing Environment (DCE) Cell Directory Services (CDS)



14

Tools for Configuring and Managing Oracle Net Services

- Enterprise Manager Net Services Administration page
- Oracle Net Manager
- Oracle Net Configuration Assistant
- Listener Control Utility



15

Using Enterprise Manager Cloud Control

Host: edRSr11p1.us.oracle.com > Net Services Administration

Net Services Administration

Net Services Administration allows you to configure or administer the following network components:

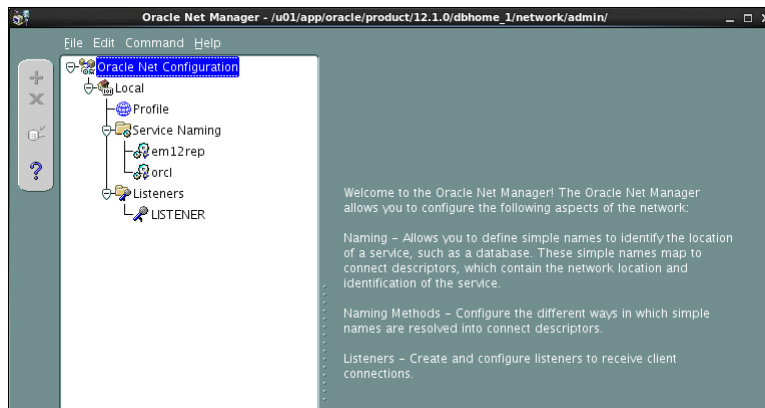
- Listener: Allows configuration and administration functions on listeners.
- Directory Naming: Allows configuration and administration of Net service names on a Directory server.
- Local Naming: Allows configuration and administration of Net service names on a client's tnsnames.ora file.
- Network Profile: Allows configuration of preferences for Oracle Net Services features on the client or server.

Choose a configuration file location, then select the feature that you want to administer and click 'Go'.

Administer	Select	Go
Listeners	Listeners	Oracle Home
Directory Naming	Directory Naming	
Local Naming	Local Naming	
Network Profile	Network Profile	
File Location	File Location	
Group Copy Of Network Config Files	Group Copy Of Network Config Files	

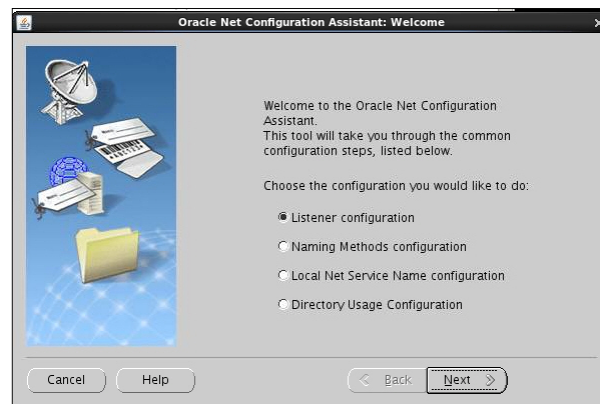
16

Using Oracle Net Manager



17

Using Oracle Net Configuration Assistant



18

Using the Listener Control Utility

```
$ lsnrctl
LSNRCTL for Linux: Version 12.1.0.1.0 - Production on 09-JUL-2013 08:47:42

Copyright (c) 1991, 2013, Oracle. All rights reserved.

Welcome to LSNRCTL, type "help" for information.

LSNRCTL> help
The following operations are available
An asterisk (*) denotes a modifier or extended command:

start          stop          status        services
version        reload        save_config   trace
spawn          quit          exit          set*
show*
```

19

Listener Control Utility Syntax

Commands for the Listener Control Utility can be issued from the command line or from the `lsnrctl` prompt.

- Command-line syntax:

```
$ lsnrctl <command name>
$ lsnrctl start
$ lsnrctl status
```

- Prompt syntax:

```
LSNRCTL> <command name>
LSNRCTL> start
LSNRCTL> status
```

20

Advanced Connection Options

Oracle Net supports the following advanced connection options with local and directory naming:

- Connect-time failover
- Load balancing
- Source routing

21

Testing Oracle Net Connectivity

The `tnsping` utility that tests Oracle Net service aliases:

- Ensures connectivity between the client and the Oracle Net Listener
- Does not verify that the requested service is available
- Supports Easy Connect Names Resolution:

```
tnsping host01.example.com:1521/orcl
```

- Supports local and directory naming:

```
tnsping orcl
```

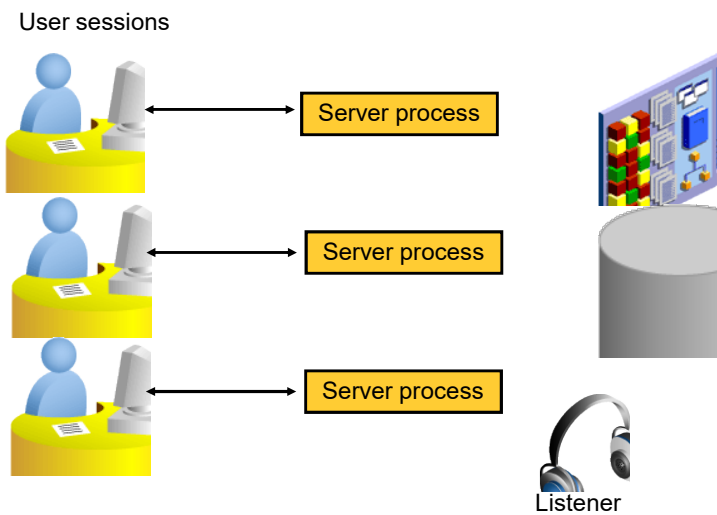
22

Comparing Dedicated Server and Shared Server Configurations

- Dedicated server configuration: One server process for each client
- Shared server configuration: A small pool of server processes can serve a large number of clients

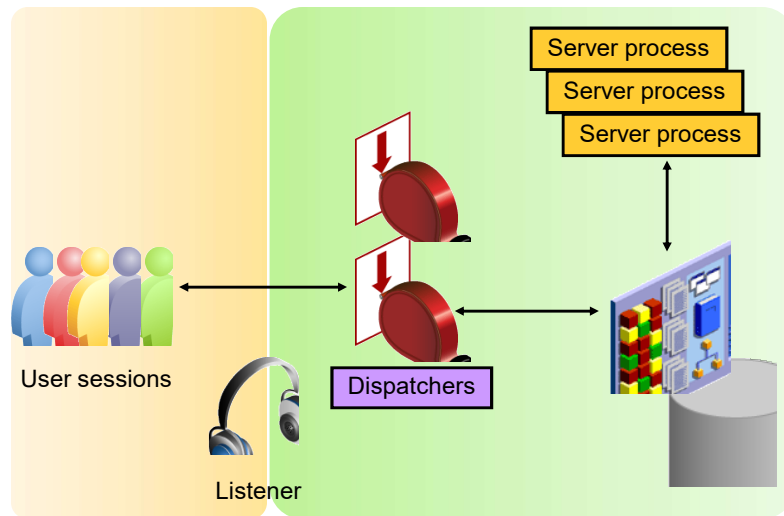
23

User Sessions: Dedicated Server Process



24

User Sessions: Shared Server Processes



25

Shared Server Configuration Considerations

Certain types of database work must not be performed using shared servers:

- Database administration
- Backup and recovery operations
- Batch processing and bulk load operations
- Data warehouse operations



26

Configuring Communication Between Databases

- Sending data or messages between sites requires network configuration on both sites.
- You must configure the following:
 - Network connectivity (for example, `tnsnames.ora`)
 - Database links

```
CREATE DATABASE LINK <remote_global_name>  
CONNECT TO <user> IDENTIFIED BY <pwd>  
USING '<connect_string_for_remote_db>';
```

27

Connecting to Another Database

```
REMOTE_ORCL =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCP)  
      (HOST = host02.example.com)  
      (PORT = 1521))  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = orcl2.example.com)  
    )  
  )  
)  
CONNECT hr/hr@orcl1;  
  
CREATE DATABASE LINK remote  
CONNECT TO HR IDENTIFIED BY HR  
USING 'REMOTE_ORCL';  
  
SELECT * FROM employees@remote
```

`tnsnames.ora`

`SQL*Plus`

28

Summary

In this lesson, you should have learned how to:

- Use Enterprise Manager to:
 - Create additional listeners
 - Create Oracle Net Service aliases
 - Control the Oracle Net Listener
- Use `tnsping` to test Oracle Net connectivity
- Identify when to use shared servers and when to use dedicated servers