

# 6

## Configuring the Oracle Network Environment

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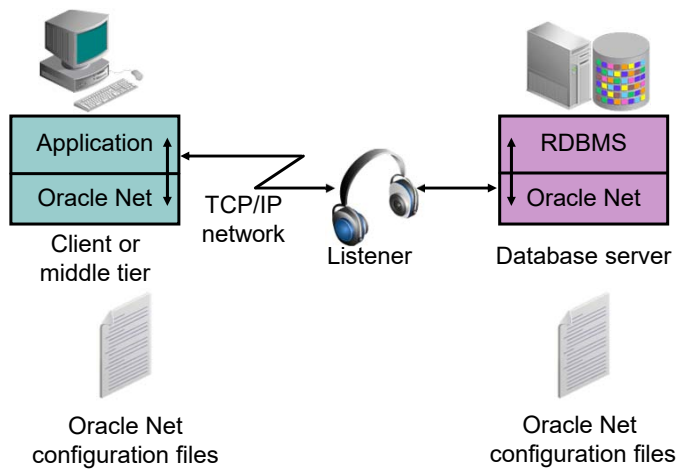
### Objectives

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

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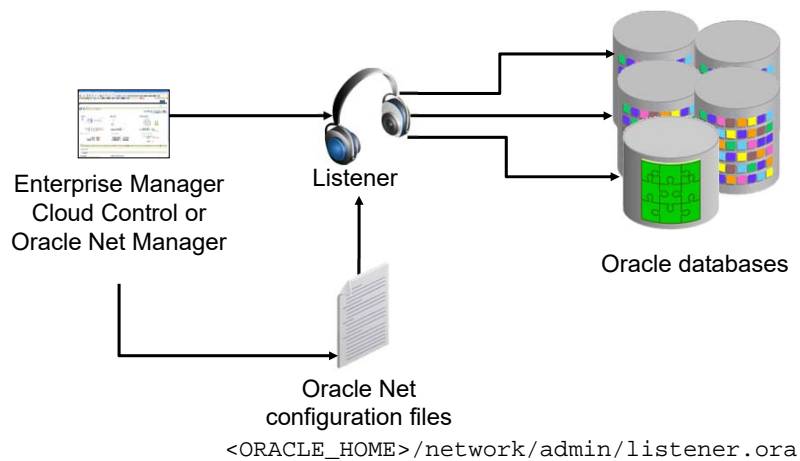
## Oracle Net Services: Overview



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## Oracle Net Listener: Overview



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## 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*
```

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## 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
```

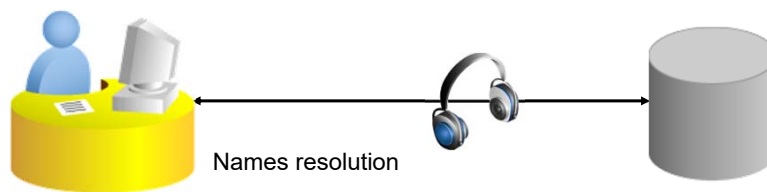
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## Establishing Oracle Network Connections

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

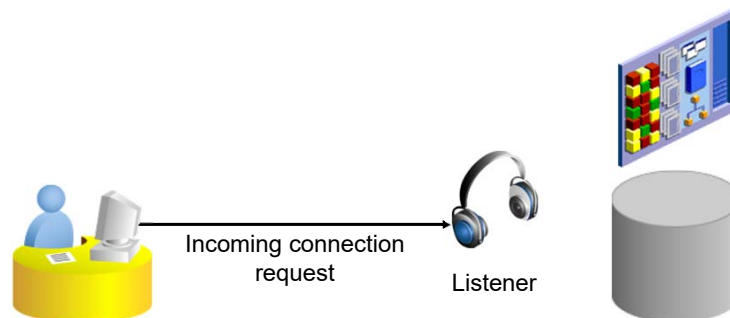
- Host where the listener is running
- Port that the listener is monitoring
- Protocol that the listener is using
- Name of the service that the listener is handling



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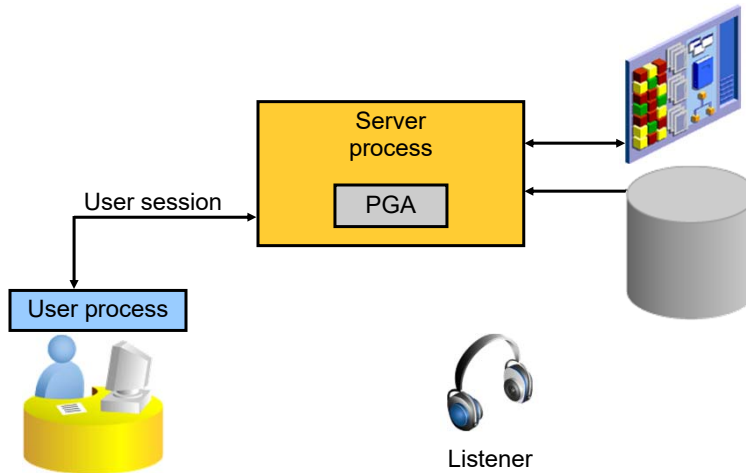
## Establishing a Connection



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## User Sessions



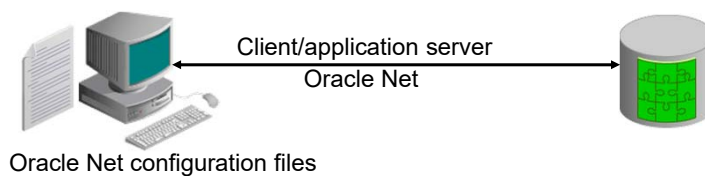
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## Naming Methods

Oracle Net supports several methods of resolving connection information:

- Easy connect naming
- Local naming
- Directory naming
- External naming



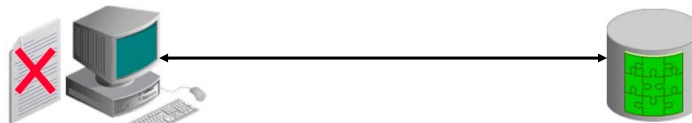
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## Easy Connect

- 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
```



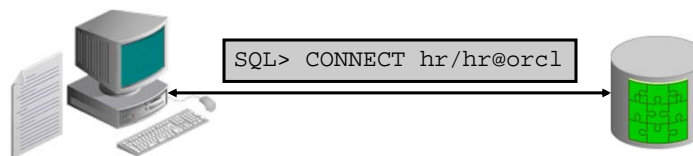
No Oracle Net configuration files

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## 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

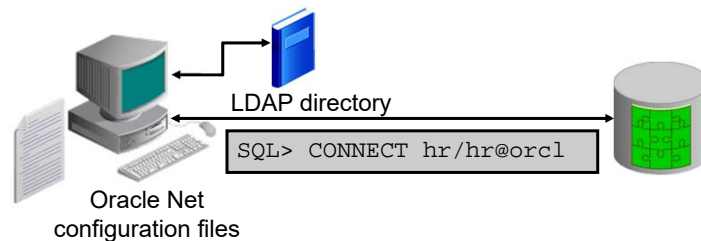
```
SQL> CONNECT hr/hr@orcl
```

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## 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

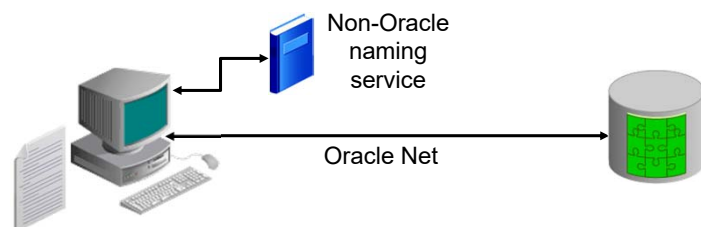


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## External Naming Method

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



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## Tools for Configuring and Managing Oracle Net Services

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



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## Using Enterprise Manager Cloud Control

**ORACLE Enterprise Manager Cloud Control 12c**

Enterprise Targets Favorites History

edRSr11p1.us.oracle.com

Host

Home

Monitoring

Control

Job Activity

Information Publisher Reports

Administration

**Net Services Administration**

Log File Alerts

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 Listeners Go

Select Co Directory Naming

☒ /u0 Local Naming

Network Profile

File Location

Group Copy Of Network Config Files

Oracle Home

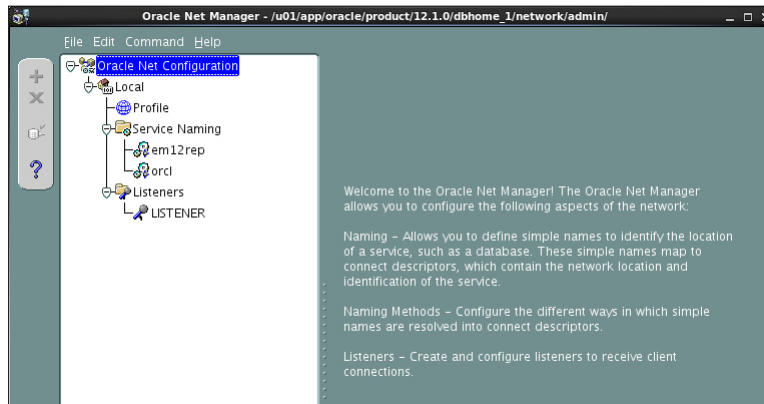
/u01/app/oracle/product/12.1.0/dbhome\_1

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## Using Oracle Net Manager



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## Using Oracle Net Configuration Assistant



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## 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
```

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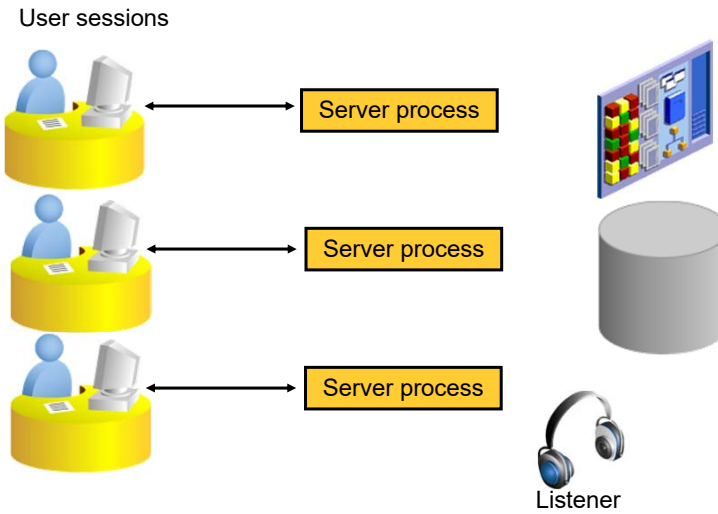
## Comparing Dedicated Server and Shared Server Configurations

- 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

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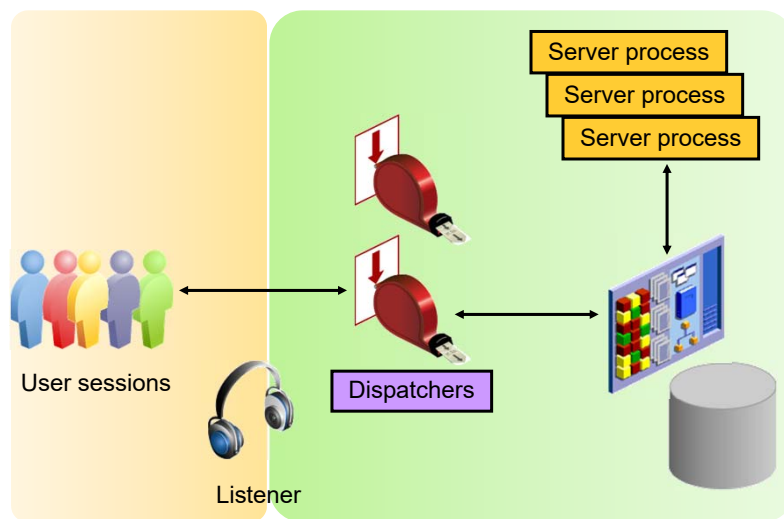
## User Sessions: Dedicated Server Process



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## User Sessions: Shared Server Processes



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## 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



Dispatcher



Dedicated server  
process

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## 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

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