

12

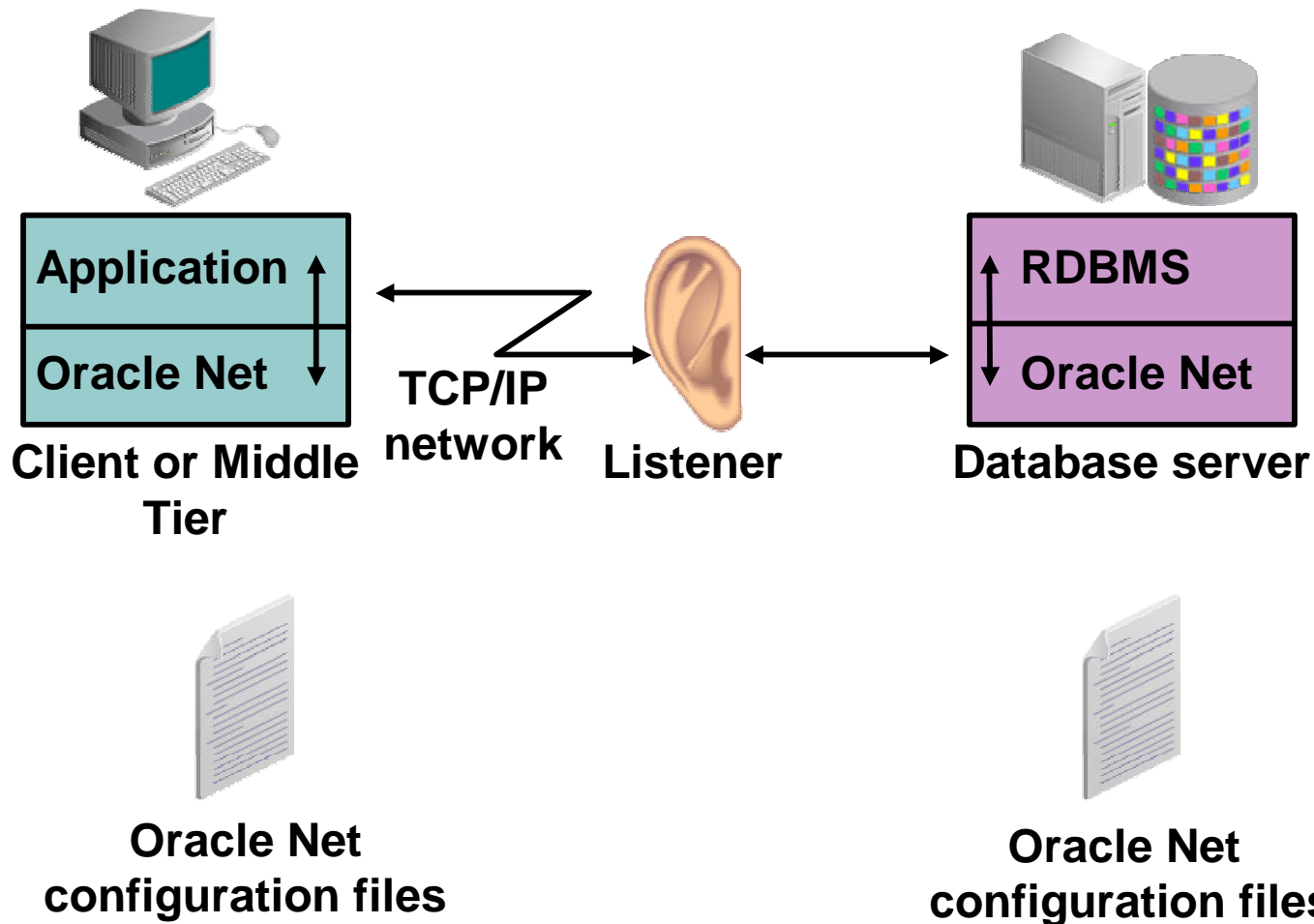
Oracle Net Services

Objectives

After completing this lesson you should be able to do the following:

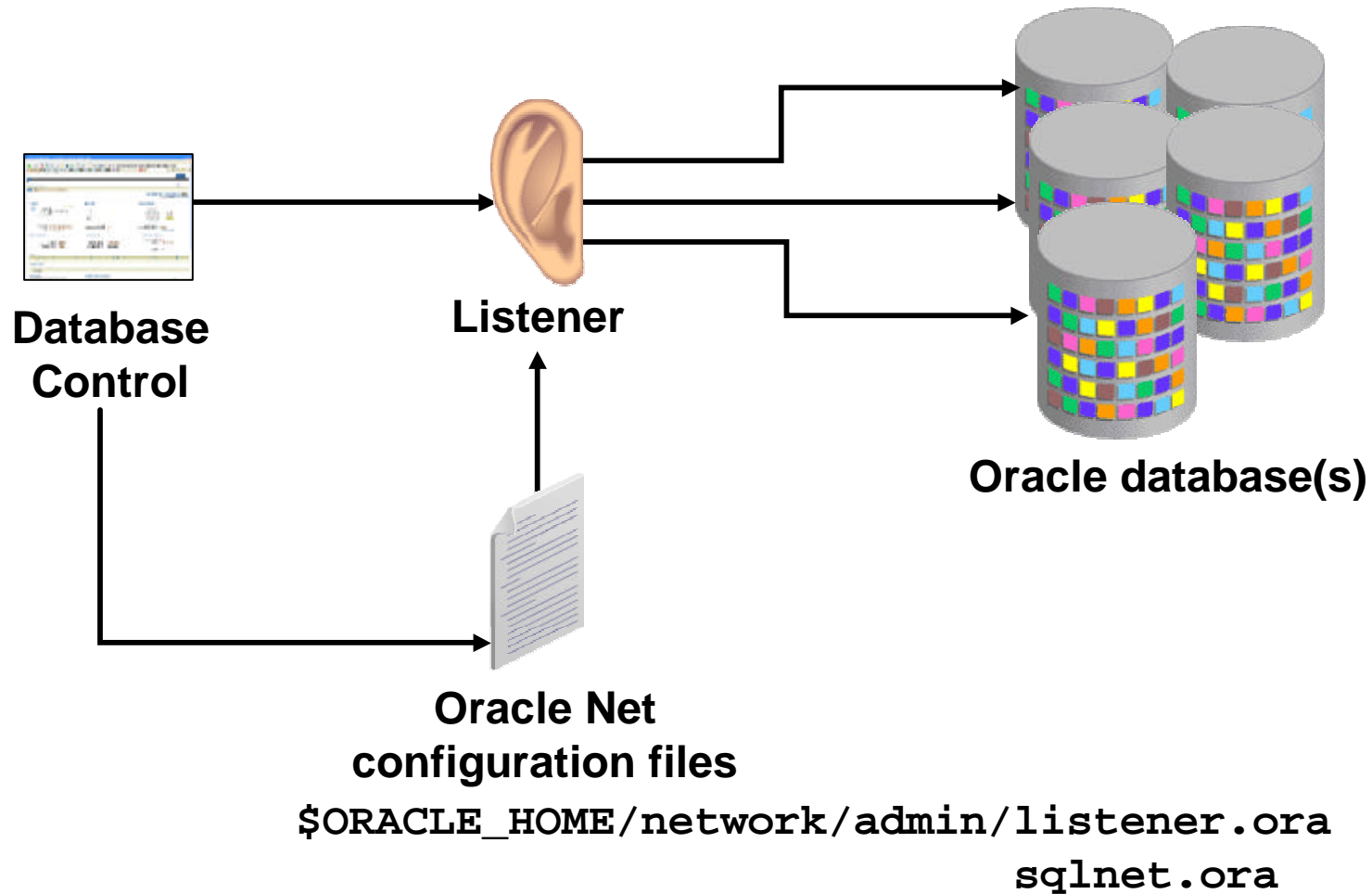
- **Use Database Control to**
 - Create additional listeners
 - Create Oracle Net service aliases
 - Configure connect time failover
 - Control the Oracle Net listener
- **Use the Oracle Net Manager to configure client and middle-tier connections.**
- **Use TNSPING to test Oracle Net connectivity**

Oracle Net Services



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Oracle Net Listener



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Monitoring the Listener

Listener: LISTENER_EDDNR5P1

[Home](#) [Serviced Databases](#)

Page Refreshed Feb 16, 2004 4:57:47 PM

General



Status	Up
Availability (%)	100 <small>(Last 24 Hours)</small>
Alias	LISTENER
Version	10.1.0.2.0
Oracle Home	/u01/app/oracle/product/10.1.0
Net Address	(ADDRESS=(PROTOCOL=TCP)(HOST=EDDNR5P1)(PORT=1521))
LISTENER.ORA Location	/u01/app/oracle/product/10.1.0/network/admin
Start Time	Feb 16, 2004 1:52:56 PM
Host	eddnr5p1.us.oracle.com

[Edit](#) [Stop](#)

State

TNS Ping (ms)	✓ 10
Established Connections per minute	4
Refused Connections per minute	0

Creating a Listener

Step 1: Administer Listeners

Select	Configuration File Location	Oracle Home
<input checked="" type="radio"/>	/u01/app/oracle/product/10.1.0/network/admin	/u01/app/oracle/product/10.1.0

Step 2: Listeners: /u01/app/oracle/product/10.1.0/network/admin

Select	Name	Protocol Details	Status	Enterprise Manager Target
<input checked="" type="radio"/>	LISTENER	Protocol: IPC Key: EXTPROC Protocol: TCP/IP Host: c640.lowenthal.com Port: 1521	Started	LISTENER_c640.lowenthal.com

Step 3: Create Listener

General | Authentication | Logging | Tracing | Static Database Registration | Other Services

* Listener Name:

Addresses

If address is changed, listener will be stopped before applying changes.

Select	Protocol	Protocol Details
	(No items found.)	

Step 4: Add button

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Listening Addresses

Add Address

Cancel OK

6 Protocol TCP/IP 5

* Port 5561

* Host <hostname or IP address of server> 7

The host name or IP address of the computer.

8

Listeners: /u01/app/oracle/product/10.1.0/network/admin

Create

Edit Delete Actions Start/Stop

Go

9

Select	Name	Protocol Details	Status	Enterprise Manager Target
<input type="radio"/>	<u>LISTENER</u>	Protocol IPC Key EXTPROC Protocol TCP/IP Host c640.lowenthal.com Port 1521	Started	<u>LISTENER_c640.lowenthal.com</u>
<input checked="" type="radio"/>	<u>BACKUP</u>	Protocol TCP/IP Host c640.lowenthal.com Port 5561	Stopped	Not a target

Configuring Optional Parameters

Edit Listener: BACKUP

Cancel OK

General Authentication **Logging & Tracing** Static Database Registration Other Services

Logging

☒ Logging Disabled
☐ Logging Enabled

* Log File

Tracing

☒ Tracing Disabled
☐ Tracing Enabled

Select a trace level.

☒ User
Basic information useful for identifying user-induced error conditions

☐ Administrator
Detailed information useful for identifying installation-specific problems

☐ Support
Trace information useful for Oracle Support Services

* Trace File

Static Database Registration

Edit Listener: BACKUP

Cancel OK

General Authentication Logging & Tracing **Static Database Registration** Other Services

Configure the static registration of databases for the listener. Database information for Oracle8i or later releases is dynamically registered with the listener during instance startup. Therefore, static registration is not required for these releases, unless you require remote database startup from other than Oracle Enterprise Manager. Click Help for more details.

Add

Select	Service Name	Oracle Home Directory	Oracle System Identifier (SID)
(No items found.)			


Add Database Service

Cancel OK

* Service Name

* Oracle Home Directory

* Oracle System Identifier (SID)

 **Edit Confirmation: BACKUP**

If the listener is not stopped and restarted, the changes will not take effect. Choose whether or not you want the listener to be restarted.

☒ Restart

☐ Don't Restart

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Listener Control Utility

Oracle Net listeners can also be controlled with the command-line `lsnrctl` utility.

```
#lsnrctl
LSNRCTL for Linux: Version 10.1.0.1.0 on 05-NOV-2003 13:27:51
Copyright (c) 1991, 2003, 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
change_password quit         exit
set*           show*
```

Listener Control Utility Syntax

Commands from the listener control utility can be issued from the command-line or from the `LSNRCTL` prompt.

- **UNIX or Linux command-line syntax:**

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

- **Prompt syntax:**

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

Monitoring with Listener Control

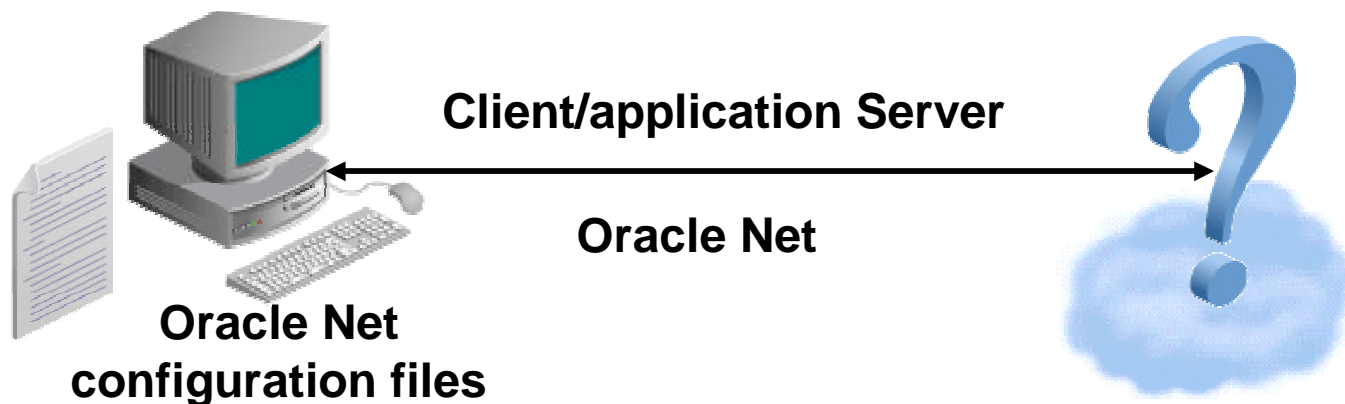
Listener control provides two monitoring options, services and status.

```
LSNRCTL> SERVICES
Connecting to
 (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC)))
Services Summary...
Service "dba10g" has 1 instance(s).
  Instance "dba10g", status READY, has 1 handler(s) for
  this service...
    Handler(s):
      "DEDICATED" established:12 refused:0 state:ready
  ...
The command completed successfully
```

Oracle Net Connections

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

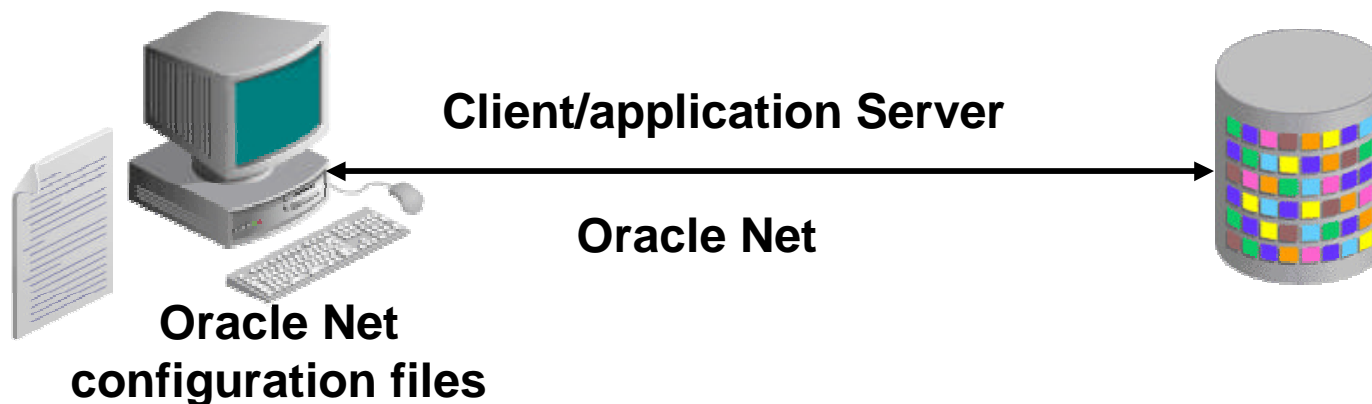
- Host where the listener is running
- Port the listener is monitoring
- Protocol the listener is using
- Name of the service the listener is handling



Names Resolution

Oracle Net supports several methods of resolving connection information:

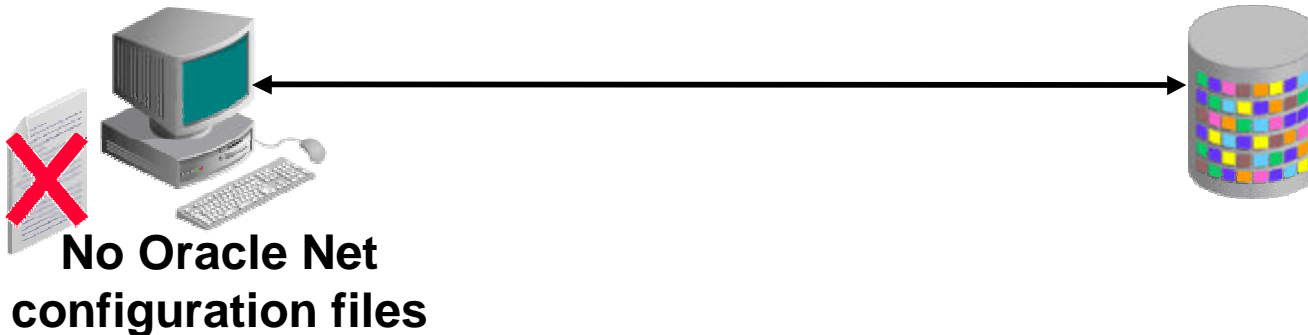
- Easy Connect
- Local naming
- Directory naming
- External naming



Easy Connect

- Enabled by default
- Requires no client-side configuration
- Supports only TCP/IP protocol (no SSL)
- No support for advanced connection options like:
 - Connect-time failover
 - Source routing
 - Load balancing

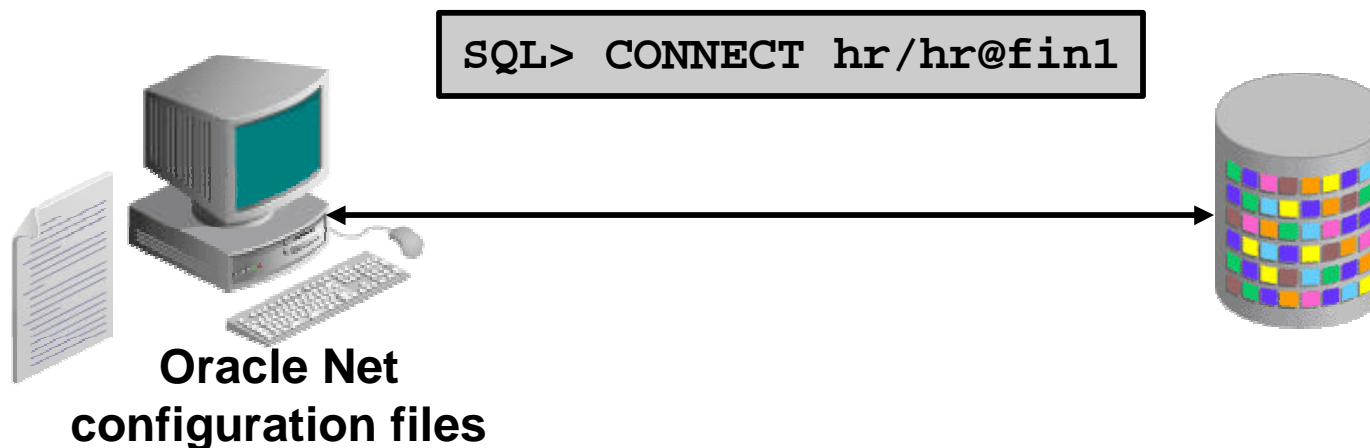
```
SQL> CONNECT hr/hr@db.us.oracle.com:1521/dba10g
```



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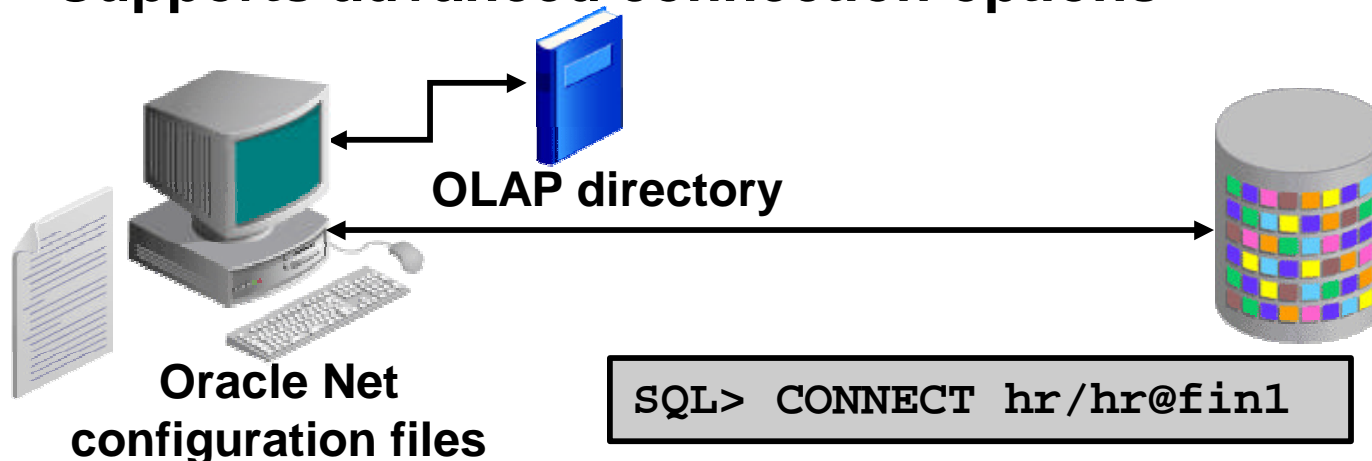
Local Naming

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

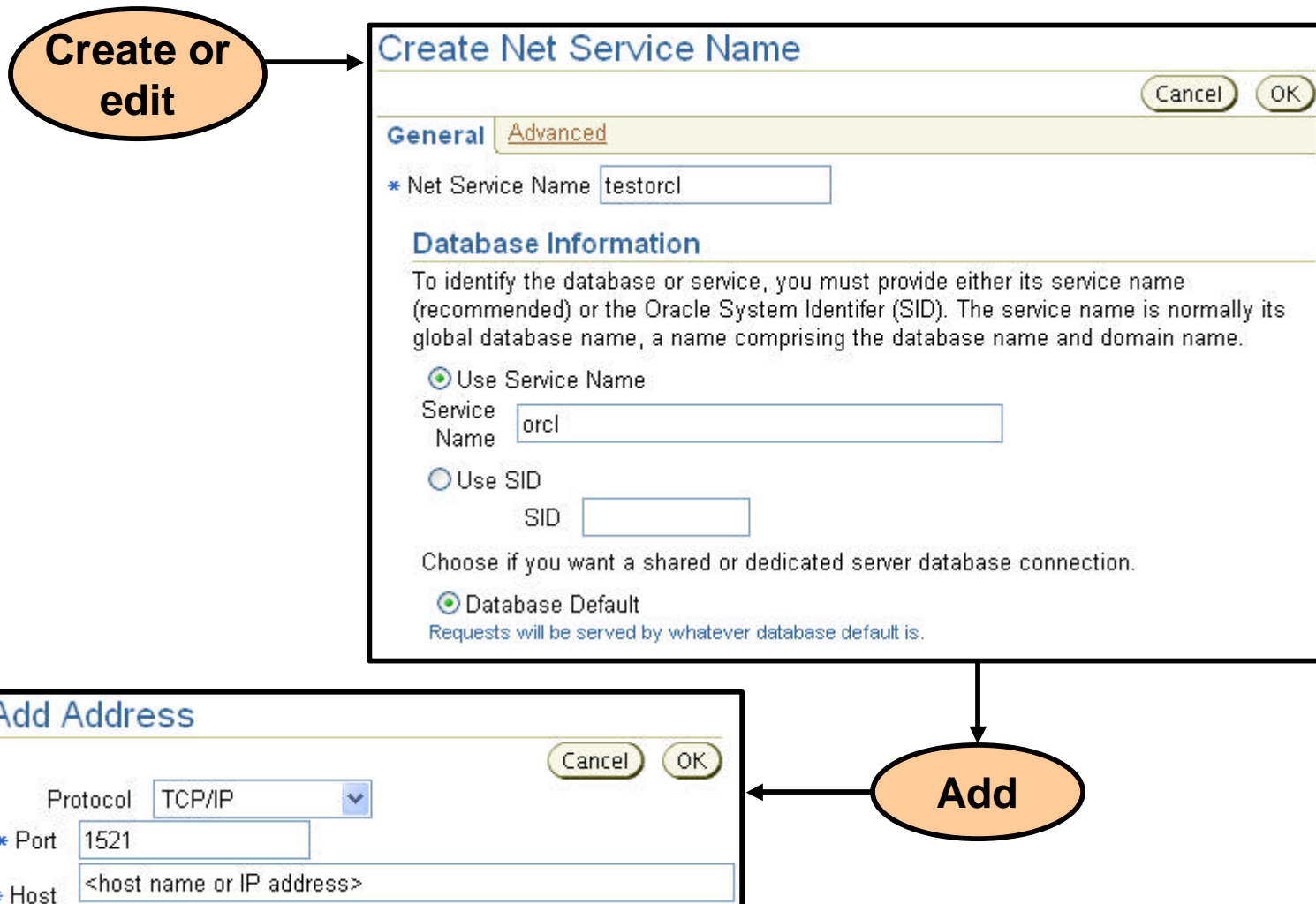


Directory Naming

- Requires a Lightweight Directory Access Protocol (LDAP) with Oracle Net names resolution information loaded
 - Oracle Internet Directory
 - Microsoft Active Directory Services
- Supports all Oracle Net protocols
- Supports advanced connection options



Configuring Service Aliases



Advanced Connection Options

Oracle Net supports advanced connection options with local and directory naming

- Connect-time failover
- Load balancing
- Source routing

The screenshot shows a configuration window with a toolbar at the top containing buttons for 'Edit', 'Remove', 'Reorder', 'Move To Top' (with a dropdown arrow), and 'Go'. Below the toolbar is a table with two columns: 'Select' and 'Protocol'. The first row has a selected radio button and 'TCP/IP' in the 'Protocol' column. The second row has an unselected radio button and 'TCP/IP' in the 'Protocol' column. To the right of the table, under the heading 'Protocol Details', are the host and port information for each entry. The first entry has Host '192.168.2.62' and Port '1521'. The second entry has Host '192.168.2.62' and Port '5561'. Below the table is a section titled 'Connect-time Failover and Client Load Balancing' with a descriptive paragraph and five radio button options.

Select	Protocol	Protocol Details
<input checked="" type="radio"/>	TCP/IP	Host 192.168.2.62 Port 1521
<input type="radio"/>	TCP/IP	Host 192.168.2.62 Port 5561

Connect-time Failover and Client Load Balancing

Configure whether addresses are tried randomly or sequentially during connections to the service. This setting is applicable only if there are more than one addresses configured.

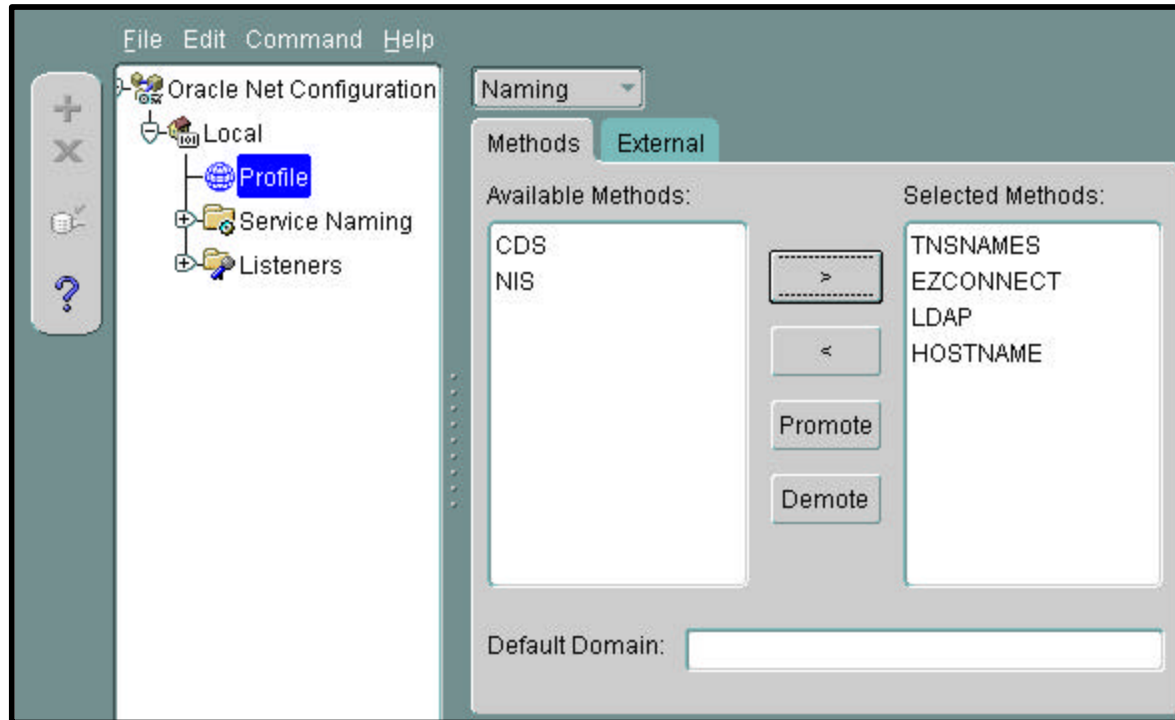
- ☒ Try each address, in order, until one succeeds
- ☐ Try each address randomly, until one succeeds
- ☐ Try one address, selected at random
- ☐ Use each address in order until destination is reached
- ☐ Use only the first address

Oracle Net Manager



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Choosing Naming Methods



Oracle Net Manager configures the names resolution methods a client or middle-tier will use and the order in which they are checked.

Configuring Service Aliases with Net Manager

To access an Oracle database, or other service, across the network you use a net service name. This wizard will help you create a net service name.

Enter the name you want to use to access the database or service. It can be any name you choose.

Net Service Name:

To communicate with the database across a network, a network protocol is used. Select the protocol used for the database you want to access.

☒ TCP/IP (Internet Protocol)
☐ TCP/IP with SSL (Secure Internet Protocol)
☐ Named Pipes (Microsoft Networking)
☐ IPC (Local Database)

Use Oracle Net Manager to configure local and directory naming aliases.

To communicate with the database using the TCP/IP protocol, the database computer's host name is required. Enter the TCP/IP host name for the computer where the database is located.

Host Name:

A TCP/IP port number is also required. The port number for Oracle databases is usually 1521. You should not normally need to specify a different port number.

Port Number:

To identify the database or service you must provide either its service name, for Oracle8i 8.1 or later, or system identifier (SID), for Oracle8 8.0 database versions. The service name for an Oracle8i or later database is normally its global database name.

☒ (Oracle8i or later) Service Name:
☐ (Oracle8 or Previous) SID:

Optionally, you can choose if you want a shared or dedicated server database connection. The default is to let the database decide.

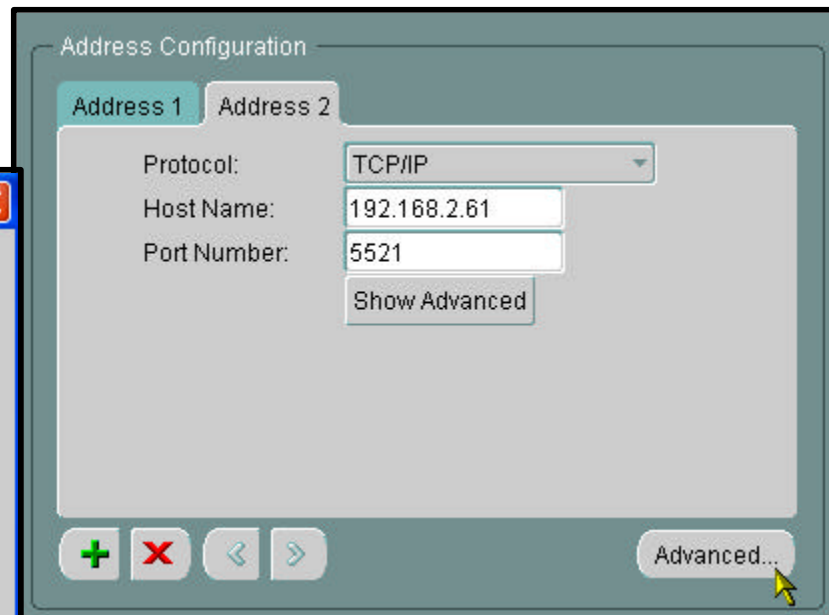
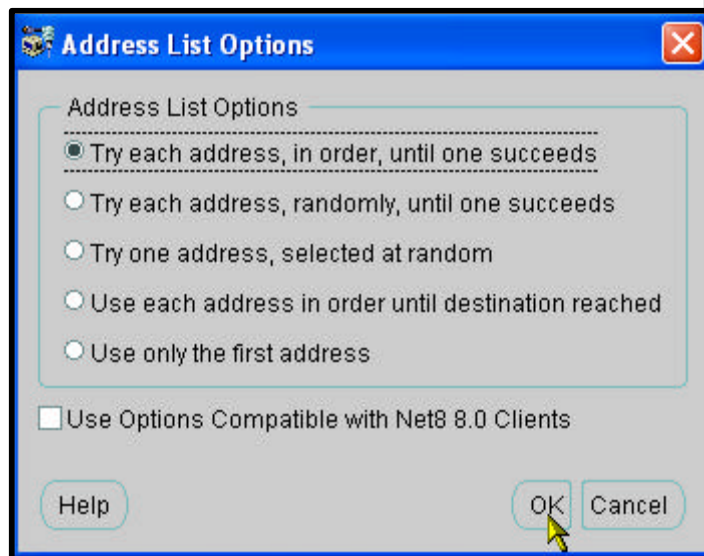
Connection Type:

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Advanced Connection Options Using Oracle Net Manager

Oracle Net supports advanced connection options with local and directory naming

- Connect-time failover
- Load balancing
- Source routing



Testing Oracle Net Connectivity

The `tnsping` utility tests Oracle Net service aliases.

- Ensures connectivity between client and the Oracle Net listener
- Does not verify that the requested service is available
- Supports Easy Connect names resolution

```
# tnsping db.us.oracle.com:1521/dba10g
```

- Supports local and directory naming

```
# tnsping foo
```


Summary

In this lesson you should have learned how to:

- **Use Database Control to:**
 - Create additional listeners
 - Password-protect the listener
 - Create Oracle Net service aliases
- **Control the Oracle Net listener**
- **Use the Oracle Net Manager to configure client or middle-tier connections**
- **Use `TNSPING` to test Oracle Net connectivity**

Practice 12 Overview: Oracle Net Services

This practice covers the following topics:

- **Creating a listener**
- **Configuring local names resolution**
- **Configuring connect time failover**