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Understanding Oracle Network Configuration

Oracle Net is a software component that resides on the client and the Oracle database server Or Oracle DBA Machine. It is responsible for establishing and maintaining the connection between the client application and the server, as well as exchanging messages between them, using industry standard protocols. Oracle uses three files (listener.ora, tnsnames.ora & sqlnet.ora) for network configuration. This document describes the key points of Oracle network configuration:

- **Parameter Value**

```
HOST : ERP
ORACLE_HOME = /d01/app/oracle/product/9.2.0
ORACLE_SID = PROD
DOMAIN = COM
These are the parameter values, this document uses in examples.
```

- **Oracle Net Listener Configuration at Server Side**

The listener.ora file contains server side network configuration parameters. It can be found in the "\$ORACLE_HOME/network/admin" directory on the server. Here is an example of a listener.ora file.

```
LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS_LIST =
        (ADDRESS = (PROTOCOL = TCP)(HOST = ERP)(PORT = 1521))
      )
    )
  )
```

```
SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = PROD.COM)
      (ORACLE_HOME = /d01/app/oracle/product/9.2.0)
      (SID_NAME = PROD)
    )
  )
```

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After the "listener.ora" file is edited, the listener must be restarted or reloaded to allow the new configuration to take effect. For this we need to issue the following command.

```
lsnrctl stop  
lsnrctl start  
or  
lsnrctl reload
```

- **Oracle Net Listener Configuration at Server Side**

The "tnsnames.ora" file contains client side network configuration parameters. It can be found in the "\$ORACLE_HOME/network/admin" or "\$ORACLE_HOME/net80/admin" directory on the client. This file will also be present on the server if client style connections are used on the server itself. Let's take an example of a "tnsnames.ora" file.

```
PROD.COM =  
(DESCRIPTION =  
  (ADDRESS_LIST =  
    (ADDRESS = (PROTOCOL = TCP)(HOST = ERP)(PORT = 1521))  
  )  
  (CONNECT_DATA =  
    (SERVICE_NAME = PROD.COM)  
  )  
)
```

The "sqlnet.ora" file also contains client side network configuration parameters. It can be found in the "\$ORACLE_HOME/network/admin" or "\$ORACLE_HOME/net80/admin" directory on the client. This file will also be present on the server if client style connections are used on the server itself. Here is an example of an "sqlnet.ora" file.

```
NAMES.DIRECTORY_PATH= (TNSNAMES, ONAMES, ERP)  
NAMES.DEFAULT_DOMAIN = COM
```

```
# The following entry is necessary on Windows if OS authentication is required.  
SQLNET.AUTHENTICATION_SERVICES= (NTS)
```

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- **Verify the Net connection**

Once the files are present in the correct location and amended as necessary the configuration can be tested using SQL*Plus by attempting to connect to the database using the appropriate username (SCOTT), password (TIGER) and service (PROD).

```
$ sqlplus scott/tiger@prod
```

If we connected successfully , then we have configured the oracle Net connection correctly.