



## *White Paper: Setting up a Logical Oracle Database Server for Time Machine*

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This paper outlines the process of how to set up an additional Oracle server on a system without having to completely reinstall the Oracle product. Each time this process is done, you will be able to run one more concurrent virtual clock on your system for Oracle testing with Time Machine.

Excluding the time it takes you to set up your new database, setting up the Logical Oracle Database Server should take you less than an hour and the new logical server will only take about 20 MB of disk space compared to 500-700 MB required to install another Oracle server.

### **1. Setting up the New Oracle Account**

- A. Log in as Oracle.
- B. Create the environment variable OLD\_ORACLE\_HOME. Set it to the value of ORACLE\_HOME
- C. su root (keeping the Oracle environment)
- D. Create a new unix user account to be the owner of the new logical db server (this paper will call it tmy2koracle). Make the home directory \$OLD\_ORACLE\_HOME/tmy2koracle and make dba the primary group.

### **2. Creating Symbolic Links to the Oracle Software**

- A. cd to \$OLD\_ORACLE\_HOME/tmy2koracle
- B. Create the following symbolic links:
  - dbs -> ../dbs
  - lib -> ../lib
  - network -> ../network
  - nlstrl -> ../nlstrl
  - ocommon -> ../ocommon
  - oracore -> ../oracore
  - oraInst -> ../oraInst
  - ord -> ../ord
  - otrace -> ../otrace
  - passes -> ../passes
  - plsSql -> ../plsSql
  - precomp -> ../precomp
  - slax -> ../slax
  - sqlplus -> ../sqlplus

```
stage_tmp -> ../stage_tmp
svrmgr -> ../svrmgr
unix.prd -> ../unix.prd
unix.prd0 -> ../unix.prd0
unixdoc -> ../unixdoc
```

- C. Make the new Oracle account, tmy2koracle, the owner of these links and dba the group  
# chown -hR tmy2koracle:dba \*

- D. Create the following directories:

```
bin
rdbms/audit
rdbms/log
```

- E. Make the new Oracle account, tmy2koracle, the owner of these dirs and dba the group

- F. cd rdbms

```
Create the symbolic link, mesg -> ../../rdbms/mesg
Make the new Oracle account, tmy2koracle, the owner and dba the group
```

- G. cd ../bin

```
cp $OLD_ORACLE_HOME/bin/oracle .
Make the new oracle account, tmy2koracle, the owner and dba the group
Turn on the setuid bit
chmod +s oracle
```

### 3. Files and Configuration for the New Oracle Server

- A. cp the original oracle's .cshrc/.profile to the home directory of the new oracle account  
i.e., cp \$OLD\_ORACLE\_HOME \$ORACLE\_HOME/tmy2koracle

- B. Edit the .cshrc/.profile of the new oracle account, tmy2koracle

- 1) Create a new environment variable OLD\_ORACLE\_HOME  
note: use the value of OLD\_ORACLE\_HOME NOT the env variable:  
OLD\_ORACLE\_HOME=\$ORACLE\_HOME
- 1) Set the ORACLE\_HOME to be the home directory of tmy2koracle:  
ORACLE\_HOME=\$OLD\_ORACLE\_HOME/tmy2koracle
- 2) Set the PATH to include the tmy2koracle home directory and the oracle home directory:  
\$PATH=\$PATH:\$ORACLE\_HOME/bin:\$OLD\_ORACLE\_HOME/bin
- 3) Set the ORACLE\_SID to be the name of the db server, i.e. y2kt (note this must be 8 or less characters long): ORACLE\_SID=y2kt
- 4) Change ORACLE\_OWNER to the new oracle user, tmy2koracle :ORACLE\_OWNER=tmy2koracle

- C. su - tmy2koracle

- D. cd dbs

- E. Copy initORACLE.ora to init<new-server-name>.ora  
cp initORACLE.ora inity2kt.ora

- F. Copy configORACLE.ora to config<new-server-name>.ora  
cp configORACLE.ora  
configy2kt.ora
- G. Edit the new init\*.ora file, i.e., vi inity2kt.ora
  - 1) Put in full path to the config file for ifile  
Ex) ifile = /oracle/u01/app/oracle/products/8.0.5/dbs/ configmy2koracle.ora
- H. Edit the control files, user\_dump\_dest, and core\_dump\_dest and set up mount points for the new database(s) as needed. This will depend on how you are setting up your database(s), whether you are using existing ones or new ones, etc.
- I. Edit the new config\*.ora file, i.e., vi configy2kt.ora, change the db\_name to y2kt
- J. Update the semaphore kernel parameter.  
i.e., on solaris, update the /etc/system as root  
Increase sysmsg:semnms by 50 /\* semaphores \*/  
Reboot the system so the change takes affect
- K. If needed, create your new databases.

#### 4. *Setting up SQL/NET*

(as tmy2koracle, the new oracle owner)

- A. cd \$ORACLE\_HOME/network/admin
- B. Edit listener.ora, adding these lines under SID\_LIST:  
(SID\_DESC = (GLOBAL\_DBNAME= y2k)  
(ORACLE\_HOME= /oracle/u01/app/oracle/product/8.0.5/y2k)  
(SID\_NAME = y2k))
- C. Configure the client. edit tnsnames.ora in \$ORACLE\_HOME/network/admin to include:  
y2knet =  
(DESCRIPTION = (ADDRESS = (PROTOCOL= TCP)(Host= charlie)(Port= 1521))  
(CONNECT\_DATA = (SID = y2k)))  
  
oraclenet =  
(DESCRIPTION = (ADDRESS = (PROTOCOL= TCP)(Host= charlie)(Port= 1521))  
(CONNECT\_DATA = (SID = ORACLE)))

#### 5. *Testing the Set Up*

- A. Make sure you rebooted the system after modifying /etc/system.
- B. Bring down oracle if it is running.
- C. Put the new oracle account onto Time Machine  
(this example assumes the tmy2koracle uid == 777)  
# tmuser -a -u 777 -x 010101012000
- D. Start up the oracle listener  
# su - oracle  
% !snrctl  
> start

- E. Start up the original oracle, owned by oracle
  - # su - oracle
  - % svrmgrl
  - > connect internal
  - > startup
  - >quit
  
- F. Start up the new oracle owned by tmy2koracle
  - # su - tmy2koracle
  - % svrmgrl
  - > connect internal
  - > startup
  - >quit
  
- G. Test the date of the original oracle server owned by oracle.
  - % sqlplus sys@oraclenet
  - > select sysdate from dual;
  - You will see the system clock.
  
- H. Test the date of the new oracle server owned by tmy2koracle
  - > connect sys@y2kt
  - > select sysdate from dual;
  - You will see the virtual clock of tmy2koracle.