

## Determining And Fulfilling Prerequisites

This document lists out the general prerequisites and outlines what was used for this particular installation

### Prerequisites

- **Certified Operating System** - as per Oracle's certification matrix
- **Certified patches on OS** - as per Oracle's documentation
- **Enough physical disk space** - Ensure you have lots of it, otherwise the process will fail somewhere in the middle and you will tear your hair apart ! ;-)
- **Optimum RAM** - 12 GB or more
- **Certified Database** - As per certification matrix

### Configuration for this installation

Operating System	OEL 5.5 64 bit
Physical disk space	75 GB
RAM	10 GB
Database	Oracle Database 11g R1

### Fulfilling OS level prerequisites

- Kernel parameters

kernel.sem	256 32000 100 142
kernel.shmmax	2147483648

```
# Controls the maximum shared segment size, in bytes
kernel.shmmax = 3758096384

# Controls the maximum number of shared memory segments, in pages
kernel.shmall = 2097152

kernel.shmmni = 4096
kernel.sem = 256 32000 100 142
fs.file-max = 6815744
fs.aio-max-nr = 1048576
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 1048576
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
```

Activate the changes - ***/sbin/sysctl -p***

```
[root@localhost etc]# /sbin/sysctl -p
net.ipv4.ip_forward = 0
net.ipv4.conf.default.rp_filter = 1
net.ipv4.conf.default.accept_source_route = 0
kernel.sysrq = 0
kernel.core_uses_pid = 1
net.ipv4.tcp_syncookies = 1
kernel.msgmnb = 65536
kernel.msgmax = 65536
kernel.shmmax = 3758096384
kernel.shmall = 2097152
kernel.shmmni = 4096
kernel.sem = 256 32000 100 142
fs.file-max = 6815744
fs.aio-max-nr = 1048576
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 1048576
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
[root@localhost etc]#
```

- Configure Shell limits

Modify */etc/security/limits.conf*

soft nofile	65536
hard nofile	150000
soft nproc	2048
hard nproc	16384

```
# End of file
oracle      soft    nproc    2048
oracle      hard    nproc    16384
oracle      soft    nofile   65536
oracle      hard    nofile   150000
```

- Make sure that Open File limit is 4096 via the ***ulimit -n*** command
- Configure appropriate machine name in the hosts file
- Check groups for ***oracle*** user

id oracle

```
[oracle@localhost ~]$ id oracle
uid=500(oracle) gid=500(oinstall) groups=500(oinstall),501(dba)
[oracle@localhost ~]$
```

Make sure that oracle user is part of the ***oinstall*** (primary group) and ***dba*** group. If these groups are not present, create them and add oracle user to them

```
groupadd -g 500 oinstall
```

```
groupadd -g 501 dba
```

```
useradd -g oinstall -G dba -u 500 oracle
```

### Fulfilling Database level prerequisites

- Ensure DB initialization parameters

aq_tm_processes	1
dml_locks	200
job_queue_processes	10
open_cursors	1600
session_max_open_files	50
sessions	500
processes	500
sga_target	512M
pga_aggregate_target	100M
sga_max_size	4G
session_cached_cursors	500

Check the parameters by using ***show parameter <paramname>*** command. Alter them if required and restart the database

```
SQL> show parameter pga_aggregate_target;
```

NAME	TYPE	VALUE
pga_aggregate_target	big integer	0

```
SQL> alter system set pga_aggregate_target=100M scope=spfile;
```

System altered.

```
SQL> alter system set sga_max_size=4G scope=spfile;
```

System altered.

```
SQL> show parameter session_cached_cursors;
```

NAME	TYPE	VALUE
session_cached_cursors	integer	50

```
SQL> alter system set session_cached_cursors=500 scope=spfile;
```

System altered.