

## - Sample - Tuning Report for a Solaris 8 System running Oracle.

### Operating System

The recommendation for Solaris 8 is to only set the following kernel parameters (/etc/system file):

```
set tune_t_fsflushr=10          (fsflush wake up timer in seconds)
set autoup=120                  (max. age of any modified memory resident page)
set maxphys=1048576            (allow larger I/O transfers - in bytes)
set vxio:vol_maxio=2048       (allow larger VxVM I/O transfers - 512 byte units)
..etc.. (truncated)
```

### Network

The following parameters might have to be adjusted based on network topology and utilization. We strongly recommend conducting an in-depth analysis of the network subsystem in itself to insure adequate throughput and response time. The following changes have to be made to /etc/init.d/inetinit (hard link to /etc/rc2.d/S69inet).

```
nnd -set /dev/tcp tcp_slow_start_initial 2      (flag fixes congestion window problem)
nnd -set /dev/tcp tcp_xmit_hiwat 32768          (size of TCP transmit window)
nnd -set /dev/tcp tcp_rcv_hiwat 32768          (size of TCP receive window)
nnd -set /dev/udp udp_xmit_hiwat 16384          (size of UDP transmit window)
nnd -set /dev/udp udp_rcv_hiwat 16384          (size of UDP receive window)
... etc ... (truncated)
```

### VxFS File System

We recommend setting the stripe size to 128KB. When using the Veritas Volume Manager (VVM), the read ahead size of the VxFS file system is being determined automatically at mount time (no tuning necessary). The `vxfs_mount` command queries the VVM and sets the read-ahead option to the most efficient value supported by the underlying volume. Internally, the file system utilizes a parameter called `read_pref_io` (in conjunction with a `read_nstream` parameter) to determine how much data to read ahead. The parameter `read_nstream` reflects the desired number of parallel read requests, each of a size `read_pref_io`. The `vxtunefs` (with the option `-o`) allows changing the `read_pref_io` parameter (after the file system has been mounted) on the fly:

```
vxtunefs -o read_pref_io=524288 /mnt1 -> set the read ahead to 512KB (4 disks)
vxtunefs -o read_pref_io=393216 /mnt2 -> set the read ahead to 384KB (3 disks)
vxtunefs -o read_pref_io=262144 /mnt3 -> set the read ahead to 256KB (2 disks)
...etc... (truncated)
```

The VxFS file system is utilizing similar parameters to implement write behind. It uses the `write_pref_io` parameter in conjunction with `write_nstream` to determine how much data to write out at one time. The default values for read and write behind in the VxFS file system is 64KB.

```
vxtunefs -o write_pref_io=524288 /mnt -> set the write behind to 512KB (4 disks)
vxtunefs -o write_pref_io=393216 /mnt -> set the write behind to 384KB (3 disks)
vxtunefs -o write_pref_io=262144 /mnt -> set the write behind to 256KB (2 disks)
... etc ... (truncated)
```

Please note that these recommendations do not guarantee optimal performance and are based on limited information provided. Better choices of parameters can only be provided by performing more detailed analysis.