Kernel Tuning

- no is used in the following examples. vmo, no, nftoo, 1oo, raso, and schedo use different syntax. lvmo uses different syntax.
- Reset all networking tunables to the default values
  no -d (Changed values will be listed)
- List all networking tunables
  no -a
  Set a tunable temporarily (until reboot)
  no -o use=ISO1
  Set a tunable at next reboot
  no -r -o use=ISO1
  Set current value of tunable as well as reboot
  no -p -o use=ISO1
- List all settings, defaults, min, max, and next boot values
  no
- List all sys0 tunables
  lsattr -El sys0
  Get information on the minperm% vmo tunable
  vmo -h minperm%
  Change the maximum number of user processes to 2048
  chdev -l -sys0 -a maxproc=2048
  Check to see if SMT is enabled
  smtctl
  Directory containing tunables settings
  /etc/tunables/

ODM
- Query CuDv for a specific item
  odmget -q name=hdisk0 CuDv
- Query CuDv using the "like" syntax
  odmget -q "name like hdisk?" CuDv
- Query CuDv using a complex query
  odmget -q "name like hdisk? and parent like vacsi?" CuDv
Error Logging
- Error logging is provided through: alog, errlog and syslog.
  alog - boot, console messages, NIM, others
  errlog - hardware, kernel, and some apps
  syslog - Internet daemon, and apps

Display the contents of the boot log
alog -o -t boot

Display the contents of the console log
alog -o -t console

Display the contents of the system error log
errpt (Add -a or -A for varying levels of verbosity)
Clear all errors up until x days ago.

List info on error ID FE2DEE00 (IDENTIFIER column in errpt output)
errpt -ad FE2DEE00

Put a "tail" on the error log
errpt -c

List all errors that happened today
errpt -s ‘date +%s%3N’
To list all errors on hdisk0
errpt -N hdisk0
To list details about the error log
/usr/lib/errmon -l
To change the size of the error log to 2 MB
/usr/lib/errmon -d 2097152

syslog.conf line to send all messages to log file
*.debug /var/log/messages
→ AIX uses *.debug for all, not *. *

LVM
Put a PVID on a disk
chdev -l hdisk1 -a pv=yes
→ PVIDs are automatically placed on a disk when added to a VG
Remove a PVID from a disk
chdev -l hdisk1 -a pv=clear
List all PVs in a system (along) with VG membership
lspv
Create a VG called datavg using hdisk1 using 64 Meg PPs
mkvg -y datavg -s 64 hdisk1
Create a LV on (previous) datavg that is 1 Gig in size
mkvg -y datavg -s 64 hdisk1
Create a LV on (previous) datavg that is 1 Gig in size
mkvg -y datavg -s 64 hdisk1
List all LVs on the datavg VG
lsvg -l datavg
List all PVs in the datavg VG
lsvg -p datavg
Take the datavg VG offline
varyoffvg datavg
Remove the datavg VG from the ODM
exportvg datavg
Import the VG on hdisk5 as datavg
importvg -y datavg hdisk5
Vary on the new datavg VG (can use importvg -n)
varyonvg datavg
List all VGs (known to the ODM)
lsvg
List all VGs that are on line
lsvg -o
Check to see if underlying disk in datavg has grown in size
chvg -g datavg
Move a LV from one PV to another
migratepv -l datavol1 hdisk4 hdisk5
Delete a VG by removing all PVs with the reducevg command.
reducevg hdisk3 (-d removes any LVs that may be on that PV)
Note: See additional examples in “tasks” section.

smitty FastPaths
- Find a smitty FastPath by walking through the smitty screens to
  get to the screen you wish. Then Hit F8. The dialog will tell you
  what FastPath will get you to that screen. (F3 closes the dialog.)

   lvm  - LVM Menu
   mkvg  - Screen to create a VG
   mkconfig - TCP/IP Configuration
   eadap  - Ethernet adapter section
   fcadd  - Fibre Channel adapter section
   chgphy - Change / Show characteristics of OS
   users  - Manage users (including ulimits)
   devdrpci - PCI Hot Plug manager
   etherchannel - EtherChannel / Port Aggregation

System Resource Controller
- Most SRC based services are started from /etc/rc.tcpip
Start the xntpd service
startsrc -s xntpd
Stop the NFS related services
stopsrc -g nfs
Refresh the named service
refresh -s named
List all registered services on the system
lsrsr -a
Show status of ctnr subsystem
lsrsr -l ctnr
Performance Monitoring

CPU
mpstat, topas -P, w, lparstat, ps, iostat -T 1, tprof, curl
Memory
vmstat, svmon, ps -o fsdets, topas, ipcs -m
Network I/O
[ent|tok|fddi|atm]stat
Disk I/O
iostat, fstat, lvmstat, filemon], fileplace, topas -D
Application
truss, probevue, tprof, svmon -P pid, ps -o fsdets -p pid
   The -c character toggles to nmon-mode in topas
Other
Check for disk stat history collection
lsattr -H -E sys0 -a iostat
Enable historical disk statistic collection
chdev -l sys0 -a iostat-true

Working with Packages
List all files in bos.games fileset.
lspp -f bos.games
Find out what fileset “fortune” belongs to.
lspp -w /usr/games/fortune
List packages that are above the current OS level
oslevel -g
Find packages below a specified (ML/TL)OS level
oslevel -rl 5300-05
List all filesets
lspp -l
List all files in a general or a packable format
lspp -Lc
Find the package that contains the filemon utility
which filemon
Install the database (from CD/DVD) for which filemon
installp -ac -d /dev/cd0 bos.content
Create a mkfsybs backup of the rootvg volume group
mkfsybs -i /mnt/server1.mkfsybs -d %time
Cleanup after a failed install
installp -C

Memory / Swapfile
List size, summary, and paging activity by paging space
laps -a
List summary of all paging space
laps -s
List the total amount of physical RAM in system
lsattr -E1 sys0 -a realmem
Create a new paging device on rootvg of 64 PPs
mksysb -i /dev/cd0 root=64
 Extend the existing paging space by 8 PPs
chps -s 8 hd6

NFS
List all exported file systems
exportfs
Refresh exports after editing /etc/exports
exportfs -av
Templating “export the /proj directory, allowing root access by server1
exportfs -i -o rw root=server1 /proj
(uns)hare(all) are symlinks to exports for Unix compatibility.
• (ak|x)m(ch)ns are provide to maintain /etc/exports

Getting info about the system
Find the OS, (ML/TL) (-r), and service pack version / date (-s)
olevel -r <-> or olevel -s
List all attributes of system
getconf
Find the type of kernel loaded (use -a to get all options)
genconf KERNAL_BITMODE
getconf returns much of the same information,
genconf returns more and has the grepable -a option.
Find the level of firmware on a system
insvsect <-> or lscfg -pv
List all attributes for the kernel “device”
lstat -E 1 sys0
Print a ’dump’ of system information
prtcfg
Get all page sizes supported on this system
pagesize -a

Users and Groups
List all settings for root user in grepable format
lauser -f root
List just the user names
lauser -a ALL | sed ‘s/ //’
Find the size value for user wfavorit
lauser -a fsizer wfavorit
Change the size value for user wfavorit
sizer -a $size
   (/usr)/bin/sh and (/usr)/bin/ksh are the same file. Use bash for
   the Bourne shell.

Additional Information
http://publib.boulder.ibm.com/infocenter/systems/scope/aix
http://www.redbooks.ibm.com/portals/unix
Display error codes can be found in the “Diagnostic Information for
Multiple Bus Systems” manual

About this QuickSheet
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