AIX QuickSheet

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Filesystems

hd1	/home	
hd2	/usr	
hd3	/tmp	
hd4	/	root
hd5		BLV (Boot Logical Volume)
hd6		Paging space
hd8		JFS2 log
hd9var	/var	
hd10opt	/opt	
hd11admin	/admin	New in 6.1
livedump	/var/adm/ras/livedump	New in 6.1 TL3
	/proc	procfs pseudo filesystem

Remove mount point entry *and* the LV for /mymount
```
rmfs /mymount (Add -r to remove mount point)
```
Grow the /var filesystem *by* 1 Gig
```
chfs -a size=+1G /var
```
Grow the /var filesystem *to* 1 Gig
```
chfs -a size=1G /var
```
Find the file usage on a filesystem
```
du -smx /
```
List filesystems in a grep-able format
```
lsfs
```
Get extended information about the /home filesystem
```
lsfs -q /home
```
Create a log device on datavg VG
```
mklv -t jfs2log -y datalog1 datavg 1
```
Format the log device just created
```
logform /dev/datalog1
```

Kernel Tuning

- no is used in the following examples. vmo, no, nfso, ioo, raso, and schedo all use similar 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_isno=1
```
Set a tunable at next reboot
```
no -r -o use_isno=1
```
Set current value of tunable as well as reboot
```
no -p -o use_isno=1
```
List all settings, defaults, min, max, and next boot values
```
no -L
```
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 maxuproc=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 vscsi?" CuDv
```

Devices

List all devices on a system
```
lsdev
```
List all disk devices on a system (See next item for a list of classes)
```
lsdev -Cc disk
```
List all customized (existing) device classes (-P for complete list)
```
lsdev -C -r class
```
Remove hdisk5
```
rmdev -dl hdisk5
```
Get device address of hdisk1
```
getconf DISK_DEVNAME hdisk1 ⇐or⇒ bootinfo -o hdisk1
```
Get the size (in MB) of hdisk1
```
getconf DISK_SIZE /dev/hdisk1 ⇐or⇒ bootinfo -s hdisk1
```
List all disks belonging to scsi0
```
lsdev -Cc disk -p scsi0
```
Find the slot of a PCI Ethernet adapter
```
lsslot -c pci -l ent0
```
Find the (virtual) location of an Ethernet adapter
```
lscfg -l ent1
```
Find the location codes of all devices in the system
```
lscfg
```
List all MPIO paths for hdisk0
```
lspath -l hdisk0
```
Find the WWN of the fcs0 HBA adapter
```
lscfg -vl fcs0 | grep Network
```
Temporarily change console output to /console.out
```
swcons /console.out → (Use swcons to change back.)
```
Get statistics and extended information on fcs0
```
fcstat fcs0
```

Tasks

Change port type of HBA (This may vary by HBA vendor)
```
rmdev -d -l fcnet0
rmdev -d -l fscsi0
chdev -l fcs0 -a link_type=pt2pt
cfgmgr
```
Mirroring rootvg to hdisk1
```
extendvg rootvg hdisk1
mirrorvg rootvg
bosboot -ad hdisk0
bosboot -ad hdisk1
bootlist -m normal hdisk0 hdisk1
```
Mount a CD/DVD ROM to /mnt
```
mount -rv cdrfs /dev/cd0 /mnt → (for a CD)
mount -v udfs -o ro /dev/cd0 /mnt → (for a DVD)
```
↪ Note the two different types of read-only flags. Either is Ok.
Create a VG, LV, and FS, mirror, and create mirrored LV
```
mkvg -s 256 -y datavg hdisk1 (PP size is 1/4 Gig)
mklv -t jfs2log -y dataloglv datavg 1
logform /dev/dataloglv
mklv -t jfs2 -y data01lv datavg 8 → (2 Gig LV)
crfs -v jfs2 -d data01lv -m /data01 -A yes
extendvg datavg hdisk2
mklvcopy dataloglv 2 → (Note use of mirrorvg in next example)
mklvcopy data01lv 2
syncvg -v datavg
lsvg -l datavg will now list 2 PPs for every LP
mklv -c 2 -t jfs2 -y data02lv datavg 8 → (2 Gig LV)
crfs -v jfs2 -d data02lv -m /data02 -A yes
mount -a
```
Move a VG from hdisk1 to hdisk2
```
extendvg datavg hdisk2
mirrorvg datavg hdisk2
```
↪ Wait for mirrors to synchronize
```
unmirrorvg datavg hdisk1
reducevg datavg hdisk1
```
Find the free space on PV hdisk1
```
lspv hdisk1 → (Look for "FREE PPs")
```

Networking

- The ent*X* is the physical device. It is associated with physical layer settings such as link speed, and duplex. en*X* and et*X* determine the frame type run on ent*X*. IP addresses are configured on en*X* (Standard Ethernet) or et*X* (802.3). Typically only en*X* is used.
- The examples here assume that the default TCP/IP configuration (rc.net) method is used. If the alternate method of using rc.bsdnet is used then some of these examples may not apply.

Determine if rc.bsdnet is used over rc.net
```
lsattr -El inet0 -a bootup_option
```
TCP/IP related daemon startup script
```
/etc/rc.tcpip
```
To view the route table
```
netstat -r
```
To view the route table from the ODM DB
```
lsattr -EHl inet0 -a route
```
Temporarily add a default route
```
route add default 192.168.1.1
```
Temporarily add an address to an interface
```
ifconfig en0 192.168.1.2 netmask 255.255.255.0
```
Temporarily add an alias to an interface
```
ifconfig en0 192.168.1.3 netmask 255.255.255.0 alias
```
To permanently add an IP address to the en1 interface
```
chdev -l en1 -a netaddr=192.168.1.1 -a netmask=0xffffff00
```
Permanently add an alias to an interface
```
chdev -l en0 -a alias4=192.168.1.3,255.255.255.0
```
Remove a permanently added alias from an interface
```
chdev -l en0 -a delalias4=192.168.1.3,255.255.255.0
```
List ODM (next boot) IP configuration for interface
```
lsattr -El en0
```
Permanently set the hostname
```
chdev -l inet0 -a hostname=bombay
```
List networking devices
```
lsdev -Cc tcpip
```
List Network Interfaces
```
lsdev -Cc if
```
List attributes of inet0
```
lsattr -Ehl inet0
```
List (physical layer) attributes of ent0
```
lsattr -El ent0
```
List (networking layer) attributes of en0
```
lsattr -El en0
```
Set (desired) speed is found through the ent*X* device
```
lsattr -El ent0 -a media_speed
```
Find actual (negotiated) speed, duplex, and link
```
entstat -d ent0
```
↪ The interface must be up (ifconfig en0 up) for stats to be valid
Set the ent0 link to Gig full duplex
```
chdev -l ent0 -a media_speed=1000_Full_Duplex -P
```
↪ Auto_Negotiation is another option
Turn off Interface Specific Network Options
```
no -p -o use_isno=0
```
Get (long) statistics for the ent0 device (remove -d for shorter results)
```
entstat -d ent0 ⇐or⇒ netstat -v ent0
```
↪ The results of entstat vary by device type. Virtual, physical, and IVE (LHEA) devices all produce different results.
List all open, and in use TCP and UDP ports
```
netstat -anf inet
```
List all LISTENing TCP ports
```
netstat -na | grep LISTEN
```
Remove all TCP/IP configuration from a host
```
rmtcpip
```
Flush the netcd DNS cache
```
netcdctrl -t dns -e hosts -f
```
- Hostname lookup order is determined using /etc/irs.conf, /etc/netsvc.conf and then $NSORDER. irs.conf and $NSORDER are typically not used.
- IP packets can be captured using iptrace / ipreport or tcpdump

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 dameons, and apps
Display the contents of the boot log
  `alog -o -t boot`
Display the contents of the console log
  `alog -o -t console`
List all log types that `alog` knows
  `alog -L`
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.
  `errclear` x
List info on error ID FE2DEE00 (IDENTIFIER column in `errpt` output)
  `errpt -aDj FE2DEE00`
Put a "tail" on the error log
  `errpt -c`
List all errors that happened today
  `errpt -s 'date +%m%d0000%y'`
To list all errors on hdisk0
  `errpt -N hdisk0`
To list details about the error log
  `/usr/lib/errdemon -l`
To change the size of the error log to 2 MB
  `/usr/lib/errdemon -s 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
  `mklv -t jfs2 -y datalv datavg 16`
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 datalv01 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
`configtcp`	-	TCP/IP Configuration
`eadap`	-	Ethernet adapter section
`fcsdd`	-	Fibre Channel adapter section
`chgsys`	-	Change / Show characteristics of OS
`users`	-	Manage users (including ulimits)
`devdrpci`	-	PCI Hot Plug manger
`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
  `lssrc -a`
Show status of ctrmc subsystem
  `lssrc -l -s ctrmc`

Performance Monitoring   (†Denotes trace based tools.)

CPU
  `mpstat, topas -P, w, lparstat, ps, iostat -tT 1, tprof†, curt†`
Memory
  `vmstat, svmon, ps -o` *fields*`, topas, ipcs -m`
Network I/O
  `[ent|tok|fddi|atm]stat, netstat, netpmon†, topas -E`
Disk I/O
  `iostat, fcstat, lvmstat, filemon†, fileplace, topas -D`
Application
  `truss, probevue, tprof†, svmon -P` *pid*`, ps -o` *fields* `-p` *pid*
topas
  • The ~ character toggles to nmon-mode in topas
Other
Check for disk stat history collection
  `lsattr -HEl sys0 -a iostat`
Enable historical disk statistic collection
  `chdev -l sys0 -a iostat=true`

Working with Packages

List all files in bos.games fileset.
  `lslpp -f bos.games`
Find out what fileset "fortune" belongs to.
  `lslpp -w /usr/games/fortune`
List packages that are above the current OS level
  `oslevel -g`
Find packages below a specified (ML/)TL
  `oslevel -rl 5300-05`
List all filesets
  `lslpp -L`
List all filesets in a grepable or awkable format
  `lslpp -Lc`
Find the package that contains the filemon utility
  `which_fileset filemon`
Install the database (from CD/DVD) for `which_fileset`
  `installp -ac -d /dev/cd0 bos.content_list`
Create a mksysb backup of the rootvg volume group
  `mksysb -i /mnt/server1.mksysb.'date +%m%d%y'`
Cleanup after a failed install
  `installp -C`

Memory / Swapfile

List size, summary, and paging activity by paging space
  `lsps -a`
List summary of all paging space
  `lsps -s`
List the total amount of physical RAM in system
  `lsattr -El sys0 -a realmem`
Create a new paging device on rootvg of 64 PPs
  `mkps -a -s 64 -n rootvg`
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`
Temporarily export the /proj directory, allowing root access by server1
  `exportfs -i -o rw root=server1 /proj`
• (un)share(all) are symlinks to `exportfs` for Unix compatibility.
• [mk|rm|ch]nfs are provided to maintain /etc/exports

Getting info about the system

Find the OS, (ML/)TL (-r), and service pack version / date (-s)
  `oslevel -r` ⇐or⇒ `oslevel -s`
List all attributes of system
  `getconf -a`
Find the type of kernel loaded (use -a to get all options)
  `getconf KERNEL_BITMODE`
  ↪ bootinfo and getconf can return much of the same information, getconf returns more and has the grepable -a option.
Find the level of firmware on a system
  `invscout` ⇐or⇒ `lscfg -pv`
List all attributes for the kernel "device"
  `lsattr -El sys0`
Print a "dump" of system information
  `prtconf`
Get all page sizes supported on this system
  `pagesize -a`

Users and Groups

List all settings for root user in grepable format
  `lsuser -f root`
List *just* the user names
  `lsuser -a id ALL | sed 's/ id.*$//'`
Find the fsize value for user wfavorit
  `lsuser -a fsize wfavorit`
Change the fsize value for user wfavorit
  `chuser fsize=-1 wfavorit`
• (/usr)/bin/sh and (/usr)/bin/ksh are the same file. Use `bsh` 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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