AIX QuickSheet

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Filesystems

Default rootvg filesystems
hd1 - /home
hd2 - /usr
hd3 - /tmp
hd4 - /
hd5 - Boot logical volume
hd6 - paging space
hd8 - log device
hd9var - /var
hd10opt - /opt
hd11admin - /admin
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.
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`

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`
Device states are: Undefined; Supported Device, Defined; Not usable (once seen), Available; Usable
List all disk devices on a system (Some other devices are: adapter, driver, logical_volume, processor)
`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`
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.)

Tasks

Change port type of (a 2Gb) HBA (4Gb may use different setting)
`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 ROM to /mnt
`mount -rv cdrfs /dev/cd0 /mnt`
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`
`unmirrorvg datavg hdisk1`
`reducevg datavg hdisk1`
Find the free space on PV hdisk1
`lspv hdisk1` (Look for "FREE PPs")

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`

Networking

• 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=www.tablesace.net`
Turn on routing by putting this in `rc.net`
`no -o ipforwarding=1`
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`
Speed is found through the ent*X* device
`lsattr -El ent0 -a media_speed`
Set the ent0 link to Gig full duplex
(`Auto_Negotiation` is another option)
`chdev -l ent0 -a media_speed=1000_Full_Duplex -P`
Turn off Interface Specific Network Options
`no -p -o use_isno=0`
Get (long) statistics for the ent0 device (no -d is shorter)
`entstat -d ent0`
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`
IP packets can be captured using `iptrace` / `ipreport` or `tcpdump`

Error Logging

Error logging is provided through: `alog`, `errlog` and `syslog`.
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`
Send a message to errlog
`errlogger "Your message here"`
Display the contents of the system error log
`errpt` (Add `-a` or `-A` for varying levels of verbosity)
• Errors listed from errpt can be limited by the `-d S` or `-d H` options. S is software and H is hardware. Error types are (P)ermanent, (T)emporary, (I)nformational, or (U)nknown. Error classes are (H)ardware, (S)oftware, (O)perator, or (U)ndetermined.
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`
`syslog.conf` line to send all messages to error log
`*.debug errlog`
Error log messages can be redirected to the syslog using the errnotify ODM class.

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

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`

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
`oslevel -rl 5300-05`
List installed MLs
`instfix -i | grep AIX_ML`
List all filesets
`lslpp -L`
List all filesets in a `grep`able or `awk`able format
`lslpp -Lc`
Find the package that contains the filemon utility
`which_fileset filemon`
Install the database (from CD) 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`

LVM

Put a PVID on a disk
`chdev -l hdisk1 -a pv=yes`
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)

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`
Extend the existing paging space by 8 PPs
`chps -s 8 hd6`

Performance Monitoring

Make topas look like `top`
`topas -P`
View statistics from other partitions
`topas -C`
View statistics for disk I/O
`topas -D`
Show statistics related to micro-partitions in Power5 environment
`topas -L`
• All of the above commands are availible from within `topas`
• Use `mpstat -d` to determine processor affinity on a system. Look for s0 entries for the best affinity and lesser affinity in the higher fields.
Get verbose disk stats for hdisk0 every 2 sec
`iostat -D hdisk0 2`
Get extended vmstat info every 2 seconds
`while [ 1 ]; do vmstat -vs; sleep 2; clear; done`
Get running CPU stats for system
`mpstat 1`
Get time based summary totals of network usage by process
`netpmon` to start statistics gathering, `trcstop` to finish and summarize.

Getting info about the system

Find the version of AIX that is running
`oslevel`
Find the ML/TL or service pack version
`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`
List all attributes for the kernel "device"
`lsattr -El sys0`
Print a "dump" of system information
`prtconf`

Display Error Codes

214,2C5,2C6,2C7,302,303,305 - Memory errors
152,287,289 - Power supply failure
521 - init process has failed
551,552,554,555,556,557 - Corrupt LVM, rootvg, or JFS log
553 - inittab or /etc/environment corrupt
552,554,556 - Corrupt filesystem superblock
521 through 539 - `cfgmgr` (and ODM) related errors
532,558 - Out of memory during boot process
518 - Failed to mount `/var` or `/usr`
615 - Failed to config paging device
More information is availible in the "Diagnostic Information for Multiple Bus Systems" manual

Additional Information

http://publib16.boulder.ibm.com/pseries/en_US/infocenter/base

About this QuickSheet

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