

AIX QuickSheet

Version: 1.3.0

Date: 7/1/8

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 -d1 hdisk5

Get device address of hdisk1

getconf DISK_DEVNAME hdisk1 or bootinfo -o hdisk1

Get the size (in MB) of hdisk1

getconf DISK_SIZE 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 datalog1v datavg 1

logform /dev/datalog1v

mklv -t jfs2 -y data011v datavg 8 (2 Gig LV)

crfs -v jfs2 -d data011v -m /data01 -A yes

extendvg datavg hdisk2

mklvcopy datalog1v 2 (Note use of mirrorvg in next example)

mklvcopy data011v 2

syncvg -v datavg

lsvg -l datavg will now list 2 PPs for every LP

mklv -c 2 -t jfs2 -y data021v datavg 8 (2 Gig LV)

crfs -v jfs2 -d data021v -m /data02 -A yes

mount -a

Move a VG from hdisk1 to hdisk2

extendvg datavg hdisk2

mirrorvg datavg hdisk2

umirrorvg 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 -EH1 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=0xfffff00

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 -Eh1 inet0

List (physical layer) attributes of ent0

lsattr -El ent0

List (networking layer) attributes of en0

lsattr -El en0

Speed is found through the entX 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.FullDuplex -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)nclassified. 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 FE2DDEE0 (IDENTIFIER column in `errpt` output)

```
errpt -adj FE2DDEE0
```

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

`fcscdd` - 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.

```
ls1pp -f bos.games
```

Find out what fileset "fortune" belongs to.

```
ls1pp -w /usr/games/fortune
```

List packages that are above the current OS level

```
oslevel -g
```

Find packages below a specified ML

```
oslevel -r1 5300-05
```

List installed MLs

```
instfix -i | grep AIX_ML
```

List all filesets

```
ls1pp -L
```

List all filesets in a `grepable` or `awkable` format

```
ls1pp -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

```
lspas -a
```

List summary of all paging space

```
lspas -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 available 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

```
netpmn 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 available in the "Diagnostic Information for Multiple Bus Systems" manual

Additional Information

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

About this QuickSheet

Created by: William Favorite (wfavorite@tablespace.net)

Updates at: <http://www.tablespace.net>

Disclaimer: This document is a guide and it includes no express warranties to the suitability, relevance, or compatibility of its contents with any specific system. Research any and all commands that you inflict upon your command line.

Distribution: The PDF version is free to redistribute as long as credit to the author and [tablespace.net](http://www.tablespace.net) is retained in the printed and viewable versions. \LaTeX source not distributed at this time.