Common Unix Commands

sysinfo

	Solaris	Red Hat	Ubuntu/Debian	HP-UX
Server Release info	cat /etc/release	cat /etc/enterprise-release cat /etc/redhat-release lsb_release -a cat /proc/version	cat /etc/lsb-release lsb_release -a	/stand/kernrel
Server type	/usr/platform/`uname -i`/sbin/prtdiag -v	dmidecode	dmidecode	 model uname -a
Hardware Info	prtdiag -v prtconf -D prtpicl -v [-c <class>] picl = platform information and control library	lspci lsusb lshal Note: hal = hardware abstraction layer	lspci lsusb lshal	ioscan ioscan -fun [disk|tape|lan] /opt/ignite/bin/print_manifest cat /var/opt/ignite/local/manifest/m
Operating System	uname -a	uname -a	uname -a	uname -a
Memory	/usr/platform/`uname -i`/sbin/prtdiag -v prtconf | grep -i mem	cat /proc/meminfo (detailed) free -om cat /proc/slabinfo	cat /proc/meminfo (detailed) free -om cat /proc/slabinfo	dmesg | grep -i physical /usr/sam/lbin/getmem /opt/ignite/bin/print_manifest cat /var/opt/ignite/local/manifest/m
CPU (type, number, etc)	/usr/platform/`uname -i`/sbin/prtdiag -v ## display,offline,online psrinfo psradm -f 0 (offline) psradm -n 0 (online)	cat /proc/cpuinfo (detailed)	cat /proc/cpuinfo (detailed)	/opt/ignite/bin/print_manifest sam -> performance monitors -> s cat /var/opt/ignite/local/manifest/m
Disk Drives	format prtvtoc <device> format -e (to convert EFI (zfs) to SMI) Note: EFI - Extensible Firmware Interface SMI - Sun Microsystems Inc	fdisk -l sfdisk -l (advanced server) parted <device> print partprobe -s <device> smartctl -a <device>	fdisk -l sfdisk -l (advanced server) parted <device> print partprobe <device>	ioscan -funC disk
Kernel File and associated directories	/kernel/genunix /platform/`uname -m`/kernel /platform/i86pc/kernel /kernel /usr/kernel	/boot/initrd.?????.img /boot/vmlinuz	/boot/initrd.img-?????-server /boot/vmlinuz-????-server	/stand/vmunix
Kernel 32 or 64	isainfo -kv (solaris 9+) isalist (sparc v9 will be listed first) isainfo -b	uname -a uname -m getconf -a |grep -i 'long_bit' cat /proc/version	uname -a uname -m getconf -a |grep -i 'long_bit'	getconf KERNEL_BITS (version /opt/ignite/bin/print_manifest |grep HPUX < version 11 all 32 bit Note: determine if system suppor getconf HW_CPU_SUPP_BITS /opt/ignite/bin/print_manifest |grep
Display Firmware	At the OK prompt type banner	boot into the BIOS (normally F2 or F12)	boot into the BIOS (normally F2 or F12)	 workstations: reboot enter PDC type: IN (information menu) type: FV (Firmware Version)

Display IRQ, IO ports and DMA	n/a	/proc/interrupts /proc/ioports /proc/dma	/proc/interrupts /proc/ioports /proc/dma	n/a
GUI admin tool	admintool	linuxconf	linuxconf	sam

Memory and Swap

	Solaris	Red Hat	Ubuntu/Debian	HP	
Memory	/usr/platform/`uname -i`/sbin/prtdiag -v prtconf | grep -i mem	cat /proc/meminfo (detailed) free -om	cat /proc/meminfo (detailed) free -om	dmesg | grep -i physical /usr/sam/lbin/getmem /opt/ignite/bin/print_manifest cat /var/opt/ignite/local/manifest/manifest.info	prtconf -m prtconf |grep -i memor lsattr -El sys0 -a realm bootinfo -r
page size (memory)	/usr/bin/pagesize	/usr/bin/getconf -a| egrep -i 'pagesize|page_size'	/usr/bin/getconf -a| egrep -i 'pagesize|page_size'	dmesg |grep -i physical	pagesize pagesize -a (display al
display swap	swap -l swap -s	cat /proc/swaps (detailed) swapon -s	cat /proc/swaps (detailed) swapon -s	swapinfo (displayed in KB) swapinfo -m (display in Mb) swapinfo -tm (total / Mb)	lsps -a (detailed) lsps -s
adding swap	mkfile 5m /var/swapfile swap -a /var/swapfile update /etc/vfstab	device: create partition with fdisk (type 82) file(create 50MB swap file): dd if=/dev/zero of=/var/swapfile bs=1024 count=50000 mkswap <device>|<file> swapon <device>|<file> update /etc/fstab	device: create partition with fdisk (type 82) file(create 50MB swap file): dd if=/dev/zero of=/var/swapfile bs=1024 count=50000 mkswap <device>|<file> swapon <device>|<file> update /etc/fstab	Create logical volume or filesystem swapon <device> | -f <logical device> swapon -p 3 <device> | -f <logical device> update /etc/fstab Note: -p = priority swap number . The *nswapdev* tunable system parameter controls the maximum number of swap devices.	mkps -a -s 4 -n <volum # change the attributes chps -a n paging00 (d # change the logical v chlv -n <new name> < Note: -a reconfigure paging s -s size of the page spa -n activiates the paging also see /etc/swapspa
removing swap	update /etc/vfstab swap -d	swapoff <device>|<file> Remove device or file as normal	swapoff <device>|<file> Remove device or file as normal	remove entry from /etc/fstab reboot	swapoff /dev/paging00 rmps paging00 Note: paging space mu

Disks, Filesystems and Devices

	Solaris	Red Hat	Ubuntu/Debian	
Disk Drives	format prtvtoc <device> cfgadm -al fcinfo hba-port luxadm probe mpathadm list initiator-port mpathadm show <initiator-port name> iscsiadm list initiator-node iscsiadm list discovery format -e (to convert EFI (zfs) to SMI) Note: EFI - Extensible Firmware Interface SMI - Sun Microsystems Inc	fdisk -l sfdisk -l (advanced server) parted <device> print partprobe <device> udevadm info -q all -n /dev/sda1 blkid dmsetup [ls|info]	fdisk -l sfdisk -l (advanced server) parted <device> print partprobe <device>	ioscan -funC dis
Disk serial Number, type, etc	format iostat -En luxadm inq <disk> (A5x00 disk arrays)	hdparm -i /dev/hda hdparm -I /dev/hda (detailed) hdparm -Tt /dev/hda (speed test) sdparm -i /dev/sdb cat /proc/ide/ide0/hda/model cat /proc/scsi/scsi	hdparm -i /dev/hda hdparm -I /dev/hda (detailed) haparm -Tt /dev/hda (speed test) sdparm -i /dev/sdb cat /proc/ide/ide0/hda/model cat /proc/scsi/scsi	diskinfo -v /dev/ number) /opt/ignite/bin/p ## Insure that t been installed swlist -l bundle ## Command-L ## The run cstn cstm cstm> map cstm> sel dev 4 cstm> info cstm> il cstm> quit
Disk disk partitions	prtvtoc <device> cat /etc/vfstab	fdisk -l sfdisk -l (advanced server) cat /proc/partitions (very high level) cat /etc/fstab	fdisk -l sfdisk -l (advanced server) cat /proc/partitions (very high level) cat /etc/fstab	lvlnboot -v /dev/ lifls -Clv <device # Display the LI lifcp /dev/dsk/c0 cat /etc/fstab Note: Boot prog Logical Intercha file system. For volume on that (the initial syste bootstrap utility)
List Raw Partitions	use format to partition the disk then just use the slice as a raw partition, remember to use the character device	## Old way /etc/sysconfig/rawdevices service rawdevices start chkconfig rawdevices on ## New way, Edit below file /etc/udev/rules.d/60-raw.rules udevinfo -d or udevadm info	mknod /dev/rawctl c 162 0 mknod /dev/raw/raw0 c 162 1 mknod /dev/raw/raw1 c 162 2 ln -s /dev/rawctl /dev/raw/rawctl ## map raw devices to the disk raw /dev/raw/raw1 /dev/sdb1 ## display raw devices	Just create a ne

		## Display raw partitions raw -qa	raw -qa	
Bad Blocks	format (use analyse)	badblocks	badblocks	dd if=/dev/rdsk/ Note: no errors
Filesystem commands	df -k df -h	df -k df -h	df -k df -h	bdf df [-egiklnvfb]
Filesystem (create|remove)	newfs -v <raw device> # Display how the filesystem was created newfs -Nv <filesystem>	mkfs -t ext3 /dev/sdb1 mke2fs -t ext4 /dev/sdb1 # all point to mke2fs mkfs.ext2 mkfs.ext3 mkfs.ext4 cat /etc/mke2fs.conf	mkfs -t ext3 /dev/sdb1	newfs -F vxfs -c mkfs -F vxfs -o Note: mkfs and /sbin/fs_wrappe
Tune Filesystems	tunefs fstyp -v <device> |grep -i minfree	tune2fs tune2fs -l /dev/sda1 # change reserved blocks percentage to 1% tune2fs -m 1 /dev/sda1	tune2fs tune2fs -l /dev/sda1 # change reserved blocks percentage to 1% tune2fs -m 1 /dev/sda1	tunefs -v <filesy vxtunefs -v <file fstyp -v <filesys # Disk fragment fsadm -F vxfs -E fsadm -F vxfs -e

Force fsck	# Check to see filesystem needs checking
	fstyp -v <filesystem> | grep fsclean
		touch /forcefsck
		shutdown -Fr now
		fsck.mode=force (kernel parameter)
		
		tune2fs -l /dev/sdb<?> |grep -i 'filesystem state'
			touch /forcefsck
			shutdown -r now
			
			tune2fs -l /dev/sdb<?> |grep -i 'filesystem state'
			
			# edit /etc/default/rcS change below so
			# you dont have to hang around
			FSCKFIX=yes
				# Look at the se
				# needs checkir
				tunefs -v <filesy

backup filesystem	ufsdump|ufsrestore tar dd cpio	dump/restore tar dd cpio	dump/restore tar dd cpio	fbackup/frecove dump/restore ftio tar dd cpio
Display the boot device	eeprom |grep boot-device prtconf -pv |grep bootpath prtpicl -v|grep ':bootpath'	cat /boot/grub/grub.conf cat /etc/lilo.conf grub = grand unified boot loader lilo = linux loader	cat /boot/grub/menu.lst	setboot
Setting the boot device	setenv boot-device [<device>|<alias>] eeprom boot-device [<device>|<alias>]	/boot/grub/grub.conf /etc/lilo.conf	/boot/grub/menu.lst	setboot -p <prin setboot -a <alte # autoboot sequ setboot -b [on|o
Creating boot device (MBR)	installboot /usr/platform/`uname -i`/lib/fs/ufs/bootblk <raw-device>	grub-install <raw-device> lilo -v	grub-install <raw-device>	mkboot -l <devi Note: we are tre
Format floppy drive	fdformat -v -U volcheck -v newfs -v /vol/disk/aliases/floppy0	floppy --probe (use device obtained below) floppy --createrc > /etc/fd0 floppy --format /dev/fd0 mkfs /dev/fd0	n/a	n/a
mount/unmount floppy	volrmmount -l floppy0 eject floppy	mount /dev/fd0 /mnt/floppy umount /mnt/floppy	n/a	n/a
mount/unmount CDROM	mount -F hsfs -o ro <device path> /cdrom/cdrom0 umount /cdrom/cdrom0 /etc/init.d/volmgr start eject cdrom	mount -rt iso9660 /dev/cdrom /mnt/cdrom umount /mnt/cdrom eject cdrom	mount -rt iso9660 /dev/cdrom /mnt/cdrom umount /mnt/cdrom eject cdrom	mount -rF cdfs / start: /usr/sbin/p pps_mount
mount/umount ISO image	lofiadm -a <iso image> /dev/lofi/1 mount -F hsfs -o ro /dev/lofi/1 /mnt # to list lofiadm			
remount a filesystem	n/a	mount -o remount,rw /	mount -o remount,rw /	mount_vxfs -o r
create boot disk or recovery tape	n/a	mkbootdisk `uname -r` (boot diskette)	n/a	recovery tape (p make_tape_rec /opt/ignite/bin/m
boot cdrom/diskette (single user)	ok> boot cdrom -s	using the grub window append the word **single** to the kernel line	using the grub window append the word **single** to the kernel line	enter PDC > search >boot p1 (cdron interact with IPL ISL> hpux -is
	ok> boot -as	f10 or f12	f10 or f12	>boot pri interact with IPL ISL> hpux -lm

boot into maintenace mode				
Device paths	floppy: disk: /dev/dsk/c0t0d0s0 tape: /dev/rmt/0ucb cdrom: /dev/dsk/c0t6d0s0 /dev/scd0 (external usb cd)	floppy: /dev/fd0 disk: /dev/hda or /dev/sda /dev/hdb or /dev/sdb tape: cdrom: /dev/hda (depends on number of IDE disks)	floppy: /dev/fd0 disk: /dev/hda or /dev/sda /dev/hdb or /dev/sdb tape: cdrom: /dev/hda (depends on number of IDE disks)	floppy: n/a disk: /dev/dsk/c0t6d0 tape: /dev/dsk/rmt/0 cdrom: /dev/dsk/c1t6d0
update /dev directory	drvconfig devlinks disks|tapes|ports devfsadm (solaris 8, 9, 10)	/dev/MAKEDEV <device>	/dev/MAKEDEV <device>	insf -C tape (Cla insf -H 0.1.0 -e
remove or change a device	rem_drv			# remove all de rmsf -k -H 52.6.
list device drivers	prtconf -D sysdef	cat /proc/devices	cat /proc/devices	lsdev

Networking

	Solaris	Red Hat	Ubuntu/Debian	
Basic network information (hostname, ip address)	/etc/hostname.hme0	/etc/sysconfig/network /etc/sysconfig/network-scripts/ifcfg-eth0	/etc/network/interfaces	/etc/rc.c
displaying network interfaces	prtdiag -v ifconfig -a kstat hme:0:parameters:<param name> kstat e1000g:0:parameters:<param name> module:instance:name:statistics # Solaris 11 netadm list dladm show-phys dladm show-link dladm show-linkprop dladm show-vnic dladm show-etherstub ipadm show-if ipadm show-ifprop ipadm show-addr ipadm show-addrprop	ifconfig system-config-network (GUI)	ifconfig	ioscan - lanscan ifconfig
Configure network interface	ifconfig # Solaris 11 - Automatic (using profiles) netadm enable -p ncp Automatic netcfg (use by Automatic) # Solaris 11 - Manual netadm enable -p ncp DefaultFixed netcfg dladm create-vnic dladm delete-vnic dladm rename-link dladm create-etherstub ipadm create-ip net1 ipadm create-addr -T static -a 192.168.0.110/24 net1/pfv ipadm delete-ip ipadm delete-addr	ifconfig	ifconfig	ifconfig
Starting and stopping a network interface	ifconfig qfe0 up ifconfig qfe0 down	/sbin/ifup eth0 /sbin/ifdown eth0	/sbin/ifup eth0 /sbin/ifdown eth0	ifconfig ifconfig note: th "ifconfig
Setting NIC speed	ndd -set <device> <parm> <value> (dynamically) /etc/system (edit and update then reboot - permanent)	mii-tool -F 100baseTx-FD eth0 ethtool -s eth1 speed 100 duplex full	ethtool -s eth1 speed 100 duplex full	ndd -se lanadmi

Change NIC parameters	ndd -get <device> <parm> # List parameters ndd -get /dev/hme \? ndd -get /dev/e1000g0 \? ndd -get /dev/ip \? ndd -get /dev/tcp \?	mii-tool -v ethtool eth1 ethtool -t eth0 online sysctl -a | grep net*	ethtool eth0 sysctl -a |grep net*	lanadmi ## optic ndd -ge ndd -ge ndd -ge ndd -ge
Display NIC statistics				netstat netstat
display MAC address	ifconfig -a (as user root)	ifconfig system-config-network (GUI)	ifconfig	lanscan
Displaying network packets	snoop -d <interface>	tcpdump -i <interface> ethereal (needs to be installed)	tcpdump -i <interface> ethereal (needs to be installed)	nettl -st nettl -st nettl -tn /var/adr nettl -st use net
default router	/etc/defaultrouter route add default <gateway> route -p add default <gateway> (persist changes)	edit /etc/sysconfig/network add: GATEWAY=<IP address>	edit /etc/network/interfaces add: gateway <IP address>	/etc/rc.c
display routing table	netstat -rn	netstat -rn route -n	netstat -rn route -n	netstat
Test IPMP, Bonding	if_mpadm -d (detach) if_mpadm -r (reattach) tail /var/adm/messages	ifenslave -d bond0 eth1 (detach) ifenslave bond0 eth1 (reattach) cat /proc/net/bonding/bond0 # create bonding /etc/sysconfig/network-scripts/ifcfg-bond0 # modprobe /etc/modprobe.d/bonding.conf # for bonding options - use BONDING_OPTS /etc/sysconfig/network-scripts/ifcfg-bond0 # see bonding mode cat /sys/class/net/bond0/bonding/mode	ifenslave -d bond0 eth1 (detach) ifenslave bond0 eth1 (reattach) cat /proc/net/bonding/bond0	You buy Aggrega
change the hostname	change the following files: /etc/nodename /etc/hostname.<interface> /etc/inet/hosts /etc/inet/ipnodes /etc/net - few files in here as well # Solaris 11 svccfg -s system/identity:node listprop config/nodename svcfg -s system/identity:node setprop config/nodename = astring: hostname svcadm refresh system/identity:node svcadm restart indentity:node	/etc/sysconfig/network /etc/hosts sysctl -a |grep hostname	/etc/hostname /etc/hosts sysctl -a |grep hostname	set_par
setup DNS	/etc/resolv.conf # Solaris 11 - You need to use the svccfg command svccfg -s dns/client listprop config/nameserver svccfg -s dns/client listprop config/search svccfg -s name-service/switch listprop config/host svccfg -s name-service/switch listprop config/password svcprop <pattern> Note: just use listprop on its own to view all options svccfg -s "dns/client" setprop "config/nameserver = net_address: (192.168.0.1)" svccfg -s "dns/client" setprop 'config/domain = astring: ("datadisk.co.uk")' svccfg -s "name-service/switch" setprop 'config/host = astring: "file dns"' svcadm refresh name-service/switch svcadm refresh dns/client	/etc/resolv.conf	/etc/resolv.conf	/etc/res
Name service switch file (DNS client)	/etc/nsswitch.conf /etc/resolv.conf # Solaris 11 - you need to use the svccfg command see above	/etc/nsswitch.conf /etc/host.conf /etc/resolv.conf	/etc/nsswitch.conf /etc/host.conf /etc/resolv.conf	/etc/nss /etc/res
Flush DNS cache	svcadm restart system/name-service-cache:default	## if installed service nscd restart		n/a
Domain Name	/etc/defaultdomain	/etc/sysconfig/network (HOSTNAME option) /etc/resolv.conf Note: for NIS use the NISDOMAIN option	/etc/host /etc/resolv.conf	/etc/rc.c
Obtain IP Address routing	route -n get <hostname> traceroute	ip route get <IP address> traceroute	ip route get <IP address> traceroute	n/a
	Boot (jumpstart) servers:	Boot (jumpstart) servers:	Boot (jumpstart) servers:	Boot (ju

Find Services on the network	rpcinfo -b bootparam 1 NFS servers: rpcinfo -b mountd 1 NIS servers/slaves: rpcinfo -b ypserv 1	rpcinfo -b bootparam 1 NFS servers: rpcinfo -b mountd 1 NIS servers/slaves: rpcinfo -u <yp server> ypserv	rpcinfo -b bootparam 1 NFS servers: rpcinfo -b mountd 1 NIS servers/slaves: rpcinfo -u <yp server> ypserv	rpcinfo NFS se rpcinfo NIS ser rpcinfo

Crash Dump

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX
Crash Dump	dumpadm -d <device> coreadm crash (used to analyse crash dumps) adb (used to analyse crash dumps)	diskdump netdump kdump (part of kexec rpm) /etc/kdump.conf (select where you want the dump to go) service kdump start chkconfig kdump on ## to crash the system echo "c" > /proc/sysrq-trigger crash (used to analyse crash dumps)	diskdump netdump kdump (part of kexec rpm) /etc/kdump.conf (select where you want the dump to go) service kdump start chkconfig kdump on ## to crash the system echo "c" > /proc/sysrq-trigger crash (used to analyse crash dumps)	edit /stand/system add either: dump 2/0/1.5.0 dump lvol dump none # crash config file /etc/rc.config.d/savecrash	sysdumpdev -l (list dump destination) sysdumpdev -e (estimates dumpsize) sysdumpdev -L (info) sysdumpstart -p (start dump primary) sysdumpstart -s (start dump secondary) # set the dump device permanently sysdumpdev -p <dump device> -P # analyse dump file echo "stat\n status\n t -m" | crash /var/adm/ras/vm

Performance Monitoring and Diagnostics

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX	
CPU	top (sunfreeware) prstat sar mpstat w (load average) uptime (load average) ps vmstat	top sar mpstat w (load average) uptime (load average) ps vmstat procinfo oprofile cat /proc/cpuinfo	top sar mpstat w (load average) uptime (load average) ps vmstat procinfo cat /proc/cpuinfo	top sar w (load average) uptime (load average) ps vmstat glance sam	topas -P topas -L (logical partitions) mpstat sar -c w (load average) uptime (load average) lparstat ps iostat -tT 1 tprof curt	**CPU**
Memory	prstat vmstat top sar	free vmstat top procinfo slabtop sar cat /proc/meminfo	free vmstat top procinfo slabtop sar cat /proc/meminfo	top vmstat sar sam glance	topas vmstat sar -b svmon ps ipcs -a lockstat (version 4) rmss	**Memory**
Network	ndd netstat lsof snoop route	ethtool mii-tool netstat lsof tcpdump ip iptraf nmap	ethtool mii-tool netstat lsof tcpdump ip iptraf	netstat lanadmin sam glance	[ent|tok|fddi|atm]stat netstat netpmon (trcstop to stop trace)	**Network I/O**
Disk	sar -d iostat vmstat lsof	sar -d iostat vmstat lsof	sar -d iostat vmstat lsof	iostat sar sam glance	topas -D (disk) topas -F (filesystem) iostat sar -D fcstat (fibre) lvmstat filemon (trcstop to stop) fileplace # disk stat history chdev -l sys0 -a iostat=true lsattr -HEl sys0 -a iostat	**Disk I/O**
Application	truss -p <pid> ppriv -D -e <command>	strace -p <pid>	strace -p <pid>	download and install **tusc** tusc -p <pid>	topas truss sar probevue tprof svmon -P <pid>	**Application**
NFS	nfsstat	nfsstat	nfsstat	nfsstat	nfsstat	**NFS**
Process	top prstat ps -ef pargs <pid> pcred <pid> pfiles <pid> pflags <pid> pgrep <pattern> pkill <pattern> pmap <pid> pldd <pid> preap <pid> prun <pid> psig <pid> pstack <pid> pstop <pid> ptime <pid> ptree <pid> pwait <pid> pwdx<pid>					

Kernel Modules and Parameters

	Solaris	Red Hat	Ubuntu/Debian	H

display loaded modules	modinfo	cat /proc/modules (more detailed) lsmod modinfo <module> Location: /lib/modules/`uname -r`/kernel/drivers Config: /etc/modprobe.conf /etc/modprobe.d	cat /proc/modules (more detailed) lsmod Location: /lib/modules/`uname -r`/kernel/drivers Config: /etc/modprobe.d/options /etc/modprobe.d	kmadmin -k
load modules	modload -p drv/<module name>	modprobe <module> insmod	modprobe <module> insmod	kmadmin -L <module name>
unload modules	modunload -i <module number>	modprobe -r <module> rmmod	modprobe -r <module> rmmod	kmadmin -U <module name> kmadmin -u <module id>
set kernel parameters (tuning)	/etc/system (edit and reboot)	/etc/sysctl.conf (edit and update then reboot) sysctl -p <filename> sysctl -w param=value No reboot (dynamically): echo "250 32000 100 28" > /proc/sys/kernel/sem echo "536870912" > /proc/sys/kernel/shmmax echo "4096" > /proc/sys/kernel/shmmni echo "2097152" > /proc/sys/kernel/shmall etc.....	/etc/sysctl.conf (edit and update then reboot) sysctl -p <filename> sysctl -w param=value No reboot (dynamically): echo "250 32000 100 28" > /proc/sys/kernel/sem echo "536870912" > /proc/sys/kernel/shmmax echo "4096" > /proc/sys/kernel/shmmni echo "2097152" > /proc/sys/kernel/shmall etc.....	kcweb (11i) kctune (11i only) rebuild kernel (< 11i see below)
display kernel parameters	cat /etc/system sysdef -i	sysctl -a cat /etc/sysctl.conf cat /proc/sys/kernel/sem cat /proc/sys/kernel/shmmax etc.....	sysctl -a cat /etc/sysctl.conf cat /proc/sys/kernel/sem cat /proc/sys/kernel/shmmax etc.....	kctune (11i only) sysdef kmtune kmsystem /usr/sam/lbin/getkinfo -f /stand/v
build kernel	edit and update file then reboot: /etc/system	cd /usr/src/linux-2.5 edit Makefile (change EXTRAVERSION) make mrproper backup .config make xconfig make dep make bzImage make modules move new kernel make modules_install change lilo/grub config file reboot		cd /stand/build /usr/lbin/sysadm/system_prep -v edit system file /usr/sbin/mk_kernel -s ./system mv /stand/system /stand/system mv /stand/vmunix /stand/vmunix mv /stand/build/system /stand mv /stand/build/vmunix_test /sta reboot
interprocess communication	ipcs -a	ipcs -a	ipcs -a	ipcs -a

Services

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX
display services	svcs -a svcs -l <service> svcs -vx inetadm -l	service --status-all	There is no services or chkconfig command use the old fashioned way /etc/init.d/<service>	There is no services or chkconfig command use the old fashioned way /sbin/init.d/<service>	lssrc -a
start services	svcadm enable nfs	service nfs start			startsrc -s <subsystem> startsrc -g <group>
stop services	svcadm disable nfs	service nfs stop			stopsrc -s <subsystem> stopsrc -g <group>
reload service	svcadm refresh nfs svcadm clear nfs (changes state)	service nfs reload			refresh -s <subsystem>
restart service	svcadm restart nfs	service nfs restart			stopsrc -s <subsystem> startsrc -s <subsystem>
service status	svcs nfs	service nfs staus			lssrc -a
service dependencies	svcs -d network	n/a			n/a
service dependants	svcs -D network	n/a			n/a
Service notifications	# change or add svccfg # verify or confirm svcprop				
service logging, etc	/var/svc/log /var/svc/manifest /lib/svc/method /etc/svc/repository.db /system/volatile/svc_nonpersist.db	n/a			/var/adm/ras /etc/syslog.conf /etc/rc.tcpip
change service startup	n/a	chkconfig --levels 2345 nfs on			n/a
Add a new service	n/a	# Create your stop/start # script in /etc/init.d chkconfig --add <script>			

Patching / Software

	Solaris	Red Hat	Ubuntu/Debian	
display installed patches	showrev -p patchadd -p			swlist -l bundle swlist -l product swlist -l patch

adding patch	patchadd patchadd -M <dir> (multiple patches)	patch -p1 <patch> zcat patch46.gz | patch -p1 Note: -p = # of path stripping		swcopy (install patch swinstall (install pat Note: the swagentd
removing patch	patchrm	patch -R -p1 <patch>		swremove
display installed packages	pkginfo (all packages) pkginfo -l (single package) pkgchk -l -p <file> (file belongs) # NEW IPS pkg list (all packages) pkg info (single package) pkg search (find packages and files)	rpm -qa (all packages) rpm -q (single package) rpm -qf (file belongs) rpm -qi <package> (very detailed)	dpkg -l dpkg -S <search string> (search) dpkg -S <filename> (file belongs) dpkg -s <package> (status) dpkg -p <package> (detailed)	swlist -l bundle <bur swlist -l product <pr ## check a package swlist -s <full_path/s
adding package	pkgadd # NEW IPS pkg install pkg update	rpm -Uhv (updates/installs if not already) rpm -ihv (install)	dpkg -i <package>	swinstall swinstall -s <full_pa
removing packages	pkgrm # NEW IPS pkg uninstall <package>	rpm -e <package>	dpkg -r <package> (do not remove config files) dpkg -P <package> (remove config files)	swremove
verify package	pkginfo -l pkginfo -p # NEW IPS pkg publisher pkg verify <package>	rpm -V <package>	n/a	swverity <fileset> (s
List files in package	pkgchk -l <package> | grep -i pathname # NEW IPS pkg contents <package>	rpm -ql <package>	dpkg -L <package> (list files)	swlist -l file <produc
Other package commands	# NEW IPS pkg history pkg purge-history pkg freeze pkg unfreeze pkg fix pkg refresh pkg publisher			
Package directory	/var/sadm	/var/lib/rpm	/var/lib/dpkg/info	/var/adm/sw
List libraries required for binary program	ldd <file>	ldd <file>	ldd <file>	chatr <file>

Accounts

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX
display users	cat /etc/passwd logins -x [-p]	cat /etc/passwd system-config-users (GUI)	cat /etc/passwd	cat /etc/passwd logins -x	cat /etc/passwd lsuser -f ALL (detailed)
create a user	useradd # user defaults /usr/sadm/defadduser	useradd system-config-users (GUI)	useradd	useradd sam	mkuser useradd
remove a user	userdel	userdel system-config-users (GUI)	userdel	userdel sam	rmuser userdel
modify a user	usermod	usermod system-config-users (GUI)	usermod	usermod sam	chuser -a usermod passwd -f passwd -s chfn <username> chfn <username><shell>
change user password	passwd	passwd	passwd	passwd	passwd pwdadm pwdck -t ALL
create a group	groupadd	groupadd	groupadd	groupadd	mkgroup <group name>
remove a group	groupdel	groupdel	groupdel	groupdel	rmgroup <group name>
modify a goup	groupmod	groupmod	groupmod	groupmod	chgroup <attribute><group name>
password files	/etc/passwd /etc/shadow	/etc/passwd /etc/shadow	/etc/passwd /etc/shadow	/etc/passwd /tcb/files/auth/r/root (trusted system)	/etc/security/passwd
useful user commands	id -a whoami who w finger logins -p	id -a whoami who w finger	id -a whoami who w finger	id whoami who w uptime (displays # of users logged in) finger	id whoami who w uptime (displays # of users logged in) finger # License information

					lslicense chlicense # Maximum number of processes for a user lsattr -D -l sys0 -a maxuproc chdev -l sys0 -a maxuproc=<number>
useful group commands	groups setpgrp newgrp	groups	groups	groups setprivgrp	groups setgroups lsgroup ALL
Password Policy	/etc/security/policy.conf /etc/default/passwd	/etc/login.defs			
Password Aging	passwd	chage -l <user> chage <options> <user>			

NFS

	Solaris	Red Hat	Ubuntu/Debian
NFS Daemons	server: mountd, nfsd client: statd, lockd	server: rpc.mountd,nfsd client: rpc.statd, lockd	server: rpc.mountd,nfsd client: rpc.statd, lockd
NFS files	/etc/dfs/dfstab /etc/dfs/sharetab /etc/rmtab	/etc/exports /var/lib/nfs/etab /var/lib/nfs/xtab	/etc/exports /var/lib/nfs/etab /var/lib/nfs/xtab
List nfs clients that have a remote mount	/etc/rmtab	/var/lib/nfs/rmtab	/var/lib/nfs/rmtab
display nfs shares	dfshares showmount -e localhost	showmount -e localhost	showmount -e localhost
create nfs share	/etc/dfs/dfstab (edit and add share) share <path> ## dfstab example share -F nfs -d "jumpstart" /export/jumpstart	redhat-config-nfs (GUI) /etc/exports (edit and add share) /sbin/service nfs reload ## /etc/exports example /export *(rw,fsid=0,insecure,no_root_squash,sync)	/etc/exports (edit and add share, see below examp exportfs -rav (export the shares) /etc/init.d/portmap restart /etc/init.d/nfs-kernel-server restart ## /etc/exports example /export *(rw,fsid=0,insecure,no_root_squash,sync)
uncreate nfs share	unshare <path> /etc/dfs/dfstab (edit and remove share)	/etc/exports (edit and remove share) /sbin/service nfs reload	/etc/exports (edit and remove share) exportfs -rav (export the shares)
start/change nfs daemons	/etc/init.d/nfs.server start /etc/init.d/nfs.client start svcadm enable nfs/server svcadm disable nfs/server	/sbin/service nfs start	/etc/init.d/portmap start /etc/init.d/nfs-kernel-server start
stop nfs daemons	/etc/init.d/nfs.server stop /etc/init.d/nfs.client stop	/sbin/service nfs stop	/etc/init.d/portmap stop /etc/init.d/nfs-kernel-server stop
nfs status	ps -ef|grep < nfs daemons>	/sbin/service nfs status	/etc/init.d/nfs-kernel-server status
nfs reload	shareall	/sbin/service nfs reload	exportfs -rav (export the shares)
nfs performanace	nfsstat	nfsstat	nfsstat
nfs Options	n/a	cat /var/lib/nfs/etab	cat /var/lib/nfs/etab
solaris/redhat mount problems (nfs v3 to v4)	## Make sure you use NFS version 3 mount -F nfs -o vers=3 <mount> <mountpoint>	n/a	n/a

NTP

	Solaris	Red Hat	Ubuntu/Debian	HP	
Time daemons	xntpd	ntpd	ntpd	xntpd	x
ntp setup	# Solaris 8 /etc/ntp.conf /etc/ntp.server /etc/ntp.client /etc/rc2.d/xntpd [start|stop] # Solaris 10 /etc/inet/ntp.server /etc/inet/ntp.client svcadm enable ntpd	/etc/ntp.conf (edit with ntp servers) dateconfig (GUI) chkconfig --list ntpd chkconfig --level 2345 ntpd on /sbin/service ntpd start	/etc/default/ntp /etc/ntp.conf /etc/init.d/ntp [start|stop|restart]	/etc/rc.config.d/netdaemons (set XNTPD to 1) /etc/ntp.conf	/e s s ls
ntp daemon options	/lib/svc/method/xntp	/etc/sysconfig/ntpd	/etc/default/ntp	/etc/rc.config.d/netdaemons	 s /e
NTP Trace commands	ntpq -p ntptrace	ntpq -p ntptrace	ntpq -p ntptrace	ntpq -p ntpdate (set the date)	n n n

Log Files

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX	
messages	/var/adm/messages	/var/log/messages	/var/log/messages	/var/adm/syslog/syslog.log	/var/adm/ras	**messages**
syslog	/var/log/syslog	/var/log/syslog	/var/log/syslog	/var/adm/syslog/syslog.log	/var/adm/ras	**syslog**
mail		/var/log/mail	/var/log/mail.*	/var/adm/syslog/mail.log	/usr/spool/mqueue/syslog	**mail**
cron	/var/cron/log	/var/log/cron	/var/log/cron.log	/var/adm/cron/log	/var/adm/cron/log	**cron**

boot	/var/adm/messages dmesg	/var/log/boot dmesg	/var/log/boot dmesg	/var/adm/syslog/syslog.log dmesg	/var/adm/ras alog -o -t boot alog -o -t console alog -L (list all the logs available)	**boot**
Error logging	logger	logger	logger	logger	/usr/lib/errdemon -l (display attributes) /usr/lib/errdemon (start error logging) /usr/lib/errstop (stop error logging) # use with above errorlog file errpt (summary errorlog report) errpt -a (detailed errorlog report) errpt -j <identifier> (single errorlog report) errclear (clears errorlog) errclear -d <class><days> (clears class errors) errlogger "message upto 230 chars"	**Error logging**

Security

	Solaris	Red Hat	Ubuntu/Debian	HP	AIX
Checking the passwd file	pwck	pwck	pwck	pwck	pwdck -t ALL usrck -t ALL
checking the group file	grpck	grpck	grpck	grpck	grpck
console login (allow/deny)	# Solaris 10 (no reboot) /etc/default/login # Solaris 11 (no reboot) /etc/default/login /etc/user_attr (see below) rolemod -K type=normal root	# No reboot required /etc/securetty	# No reboot required /etc/securetty	# No reboot required /etc/securetty Note: you may need to create this file if it does not exist	# No reboot required /etc/security/user chsec -f /etc/security/use

Misc

	Solaris	Red Hat	Ubuntu/Debian	
startup	eeprom setenv boot-device	grub (GUI) lilo (text based)	grub (GUI)	setboot -p <primary pat setboot -a <alternate pa # autoboot sequnce setboot -b [on|off]

shutdown	shutdown -i5 -g0 -y (power down)
	shutdown -i6 -g0 -y (reboot)
	shutdown -i0 -g0 -y (OK prompt)
	
	reboot -- -r (reboot/reconfigure)
	
	touch /reconfigure
		shutdown -h (halt)
		shutdown -r (reboot)
		shutdown -f (fast reboot no fsck)
		shutdown -F (force fsck)
			shutdown -h (halt)
			shutdown -r (reboot)
			shutdown -P (power off)
			
			touch /forcefsck
			
			# edit /etc/default/rcS change below so
			# you dont have to hang around
			FSCKFIX=yes
				shutdown -h now (halt)
				shutdown -r now(reboot

Change run level	halt init poweroff reboot shutdown telinit uadmin	halt init poweroff reboot shutdown telinit	halt init poweroff reboot shutdown telinit	init reboot shutdown
init status **0** **1** **2** **3** **4** **5** **6**	 0 - shutdown 1 - single user 2 - n/a 3 - Multi-user 4 - n/a 5 - power off 6 - reboot # change default vi /etc/inittab	 0 - halt 1 - single user 2 - multiuser (no networking) 3 - multiuser (networking) 4 - unused 5 - GUI 6 - reboot # change default vi /etc/inittab	 0 - halt 1 - single user 2 - multiuser (default) 3 - same as 2 4 - same as 2 5 - same as 2 6 - reboot # change default - change all the telinit vi /etc/event.d/rc-default	 0 - halt 1 - single users 2 - multiuser (networkin 3 - multiuser (networkin 4 - multiuser (netwrking 5 - n/a 6 - n/a # change default - chan vi /etc/inittab
Startup options	boot <option> # Options -s single user -a interactive -x no device drivers (used in clustering) -r reconfigure devices -m milestone	single - use grub to edit kernel line emergency - use grub to edit kernel line linux rescue - use at the boot prompt single: runlevel1, local fs mounted, no network emergency: root fs read-only, no init files run rescue: use cd-rom/network, root mounted as /mnt/sysimage	single - use grub to edit kernel line emergency - use grub to edit kernel line linux rescue - use at the boot prompt single: runlevel1, local fs mounted, no network emergency: root fs read-only, no init files run rescue: use cd-rom/network, root mounted as /mnt/sysimage	interact with IPL? Y # single user ISL> hpux -is # Logical volume mainta ISL> hpux -lm # No quroum check ISL> hpux -lq
startup scripts	/etc/init.d /etc/rc0.d - /etc/rc6.d	/etc/init.d /etc/rc0.d - /etc/rc6.d	/etc/init.d /etc/rc0.d - /etc/rc6.d	/sbin/init.d /etc/rc.config.d (startup /sbin/rc0.d - /sbin/rc6.d
	boot printenv setenv	F10 or F12	F10 or F12	interact with IPL? Y

boot prompt commands	banner devalias show-devs show-pci-devs-all probe-scsi-all probe-fcal-all probe-pci watch-net-all reset-all			
Boot process	Phases: • Boot PROM: displays system information, run POST, load bootblk, locate ufsboot • Boot Programs: bootblk loads and executes the ufsboot • Kernel Initialization: ufsboot loads and executes the core kernel, initializes core kernel data structures, loads other kernel modules based on the */etc/system* file, starts */sbin/init* program • init: starts other processes based on the */etc/inittab* file	Boot sequence 1. BIOS 2. POST 3. Master Boot Record (MBR) - point to the bootloader GRUB or LILO 4. GRUB (stage 1) - point to GRUB stage 1_5 5. GRUB (stage 1_5) - deals with specific filesystem types look at /boot/grub/*1_5 files 6. GRUB (stage 2) – reads /etc/grub.conf and displays the grub menu, it specifies the kernel and the initrd files 7. KERNEL - control given to the kernel 8. INIT - reads /etc/inittab and runs /etc/rc.d/rc.sysinit script	Boot sequence 1. BIOS 2. POST 3. Master Boot Record (MBR) - point to the bootloader GRUB or LILO 4. GRUB (stage 1) - point to GRUB stage 1_5 5. GRUB (stage 1_5) - deals with specific filesystem types look at /boot/grub/*1_5 files 6. GRUB (stage 2) – reads /boot/grub/menu.lst and displays the grub menu, it specifies the kernel and the initrd files 7. KERNEL - control given to the kernel 8. INIT - runs the /etc/event.d/rc-default script	Phases: 1. PDC - processo performs self-te 2. ISL - initial syste system loader *h* 3. HPUX - is the se the kernel /stan kernel 4. KERNEL - swap kernel then start 5. INIT - reads /etc
Boot Environments (BE)	bootadm list-archive bootadm update-archive bootadm list-menu bootadm set-menu <option> beadm create beadm rename beadm activate beadm list beadm destroy			
determine the run level	who -r	runlevel who -r	runlevel who -r	who -r
obtain default run level	cat /etc/inittab	cat /etc/inittab	/etc/event.d/rc-default	/etc/inittab
list locale	locale -a	locale -a	locale -a	locale -a
start xwindows	n/a	startx (shorthand of below) initx (lots of parms)		n/a
initialize system	sys-unconfig			set_parms [initial|hostna Note: set_parms is in /s
Timezone	/etc/TIMEZONE /etc/default/init	/etc/sysconfig/clock /usr/share/zoneinfo/zone.tab	/etc/timezone /usr/share/zoneinfo/zone.tab	/etc/TIMEZONE