

## Software Tools

There are a wealth of software tools that will assist in determining information about the software or hardware configuration of the system, that can be used for controlling the system. These tools can be very helpful when trying to determine what you're working with. This list is by no means exhaustive, but does provide a good overview of some of the most commonly used tools.

The tools have been divided into the following general categories:

- System Hardware Tools
- System Software Tools
- User Information Tools
- Terminal Tools
- Peripheral Tools
- Networking Tools
- Mail Tools
- Miscellaneous Tools

The tools mentioned here either have manual (“man”) pages, or are compilable source code with some sort of readme file. Unless mentioned otherwise, typing “`man commandname`” will show manual page for that command.

The contents of the man pages for these tools will not be repeated here - just a general description of the command and what it can be used for. Where a particular set of command options provides useful information, that will be noted along with the expected results.

The following three pages show a list of the commands included in this chapter as well as some related information:

- Beware! - commands that are dangerous to use without being really sure what you're doing
- Description - a “one-liner” description of the command
- Page - what page they can be found on in this chapter
- Location - where the command can actually be found in the directory structure
- Related Commands - commands that might be of use, or perform similar or complementary functions

**System Hardware Tools**

Command	Beware!	Description	Page	Location	Related Commands
gfxinfo		show graphics subsystem information	165	/usr/gfx	
hinvt		show system hardware configuration	165	/bin	
nvtm	!!	show the values of Non-volatile RAM variables	166	/sbin	
sysinfo		show the system's unique identifier	166	/sbin	

**System Software Tools**

Command	Beware!	Description	Page	Location	Related Commands
chkconfig		show state of configuration flags	166	/sbin	
crontab		table of cronological events	166	/bin	
date		show or set system day and time	166	/sbin	
df		show amount of free disk blocks	166	/sbin	
du		show disk usage	166	/bin	
gr_osview		graphical version of osview	167	/usr/sbin	osview
gr_top		graphical version of top	168	/usr/sbin	top
hostname		show the name of the system	166	/usr/bsd	
last		list last logins of users or devices	167	/usr/bsd	
mkboottape		build, list or extract a boot tape	167	/usr/sbin	
osview		show the activity of the operating system	167	/usr/sbin	gr_osview
printenv		show the settings of the environmental settings	167	/bin	
ps		show process status	167	/bin	
swap	!!	add, delete or monitor system swap areas	167	/sbin	
syserr/sysmon		show system error info	168	/usr/sbin	
systune	!!	display/set tuneable kernel parameters	168	/usr/sbin	
top		show processes using largest percentage of CPU	168	/usr/sbin	gr_top
uname		show the current OS version	168	/bin	
versions		list software installed by inst	168	/usr/sbin	inst
whereis		locate source, binary or man pages for a program	168	/usr/bsd	
which		locate a program including aliases	168	/usr/bsd	
xlsfonts		list the fonts available to X server	169	/usr/bin/X11	
xdpyinfo		X display configuration info	169	/usr/bin/X11	
xwininfo		X window information	169	/usr/bin/X11	

**User Information Tools**

Command	Beware!	Description	Page	Location	Related Commands
id		show current user and group ID's	169	/bin	
who		show current system users	169	/bin	
whoami		show current user ID name	169	/bin	

**Terminal Tools**

Command	Beware!	Description	Page	Location	Related Commands
stty		set tty characteristics	169	/bin	
terminfo		terminal capabilities database	169	/usr/lib	
tput		initialize terminal or query terminfo database	170	/bin	
tty		get name of the terminal	170	/bin	

**!! - When logged in as root, these commands could cause system damage. Not for casual use!!**

**Peripheral Tools**

Command	Beware!	Description	Page	Location	Related Commands
ansitape		ANSI tape handler	170	/usr/bsd	
bru		backup and restore utility	170	/usr/sbin	
cpio		copy file and archives in and out	170	/bin	
inquire		show result of a SCSI device inquiry	170	~4Dgifts	
dvhtool	!!	show disk volume header information	170	/sbin	
eject		eject removable media	171	/usr/sbin	
fsck		check file system	171	/sbin	
fuser		identify a process using a file or file structure	171	/sbin	
fx	!!	disk formatter/exerciser	171	/bin	
lpsched		start up the line printer scheduler	171	/usr/lib	
lpshut		shut down the line printer scheduler	171	/usr/lib	
lpstat		prints line printer scheduler	171	/bin	
mediad		removeable media daemon	171	/usr/etc	
mkfs	!!	make a file system	172	/sbin	
mkfp		make a floppy disk partition	172	/bin	
mount		mount or unmount a file system	172	/sbin	showmount, umount
mt		magnetic tape program	172	/mt	
ncheck		generate a path name from an I-node number	172	/sbin	
prtvtoc		show disk volume header information	173	/usr/sbin	
quota		display disk usage limits	173		
umount		mount or unmount a file system	172	/sbin	showmount, mount
xselinput		show X device input events	173	~4Dgifts	
xlist		list all the X input devices	173	~4Dgifts	

**Networking Tools**

Command	Beware!	Description	Page	Location	Related Commands
exportfs		export and unexport directories to NFS clients	174	/usr/etc	
ifconfig		configure network parameters	174	/usr/etc	
netstat		show network status	174	/usr/etc	
ping		send an ECHO_REQUEST to a network machine	174	/usr/etc	
rup		show host status of host machine	174	/bin	
ruptime		show host status of local machines	174	/usr/bsd	
showmount		show remotely mounted file systems	174	/usr/sbin	mount, umount
timedc		timed control program	174	/usr/etc	
uustat		UUCP status and job control	174		
ypwhich		show the NIS server of map master hostname	175	/bin	

**Mail Tools**

Command	Beware!	Description	Page	Location	Related Commands
mailq		print contents of the mail queue	175	/usr/bsd	
sendmail		send network mail	175	/usr/lib	

**!! - When logged in as root, these commands could cause system damage. Not for casual use!!**

**Miscellaneous Tools**

<b>Command</b>	<b>Beware!</b>	<b>Description</b>	<b>Page</b>	<b>Location</b>	<b>Related Commands</b>
apropos		locate commands by keyword lookup	175	/bin	man
autoconfig	!!	configure a kernel	175	/etc	lboot
cli	!!	clear i-node	175	/sbin	
distcp		copy or compare software distributions	175	/usr/sbin	
endsession		terminate a login session	175	/usr/bin/X11	
ftp		Internet file transfer program	176	/usr/bsd	
gclear		clear the graphics screen	176	/usr/sbin	
halt	!!	halt the system	176	/etc	reboot, shutdown,
init		process control initialization	176	/etc	init
inst		software installation tool	176	/usr/sbin	distcp
kill		terminate a process by default	176	/bin	killall
killall		kill a named process	177	/sbin	kill
lboot	!!	configure a bootable kernel	177	/usr/sbin	autoconfig
MAKEDEV		create device special files	177	/dev	
makewhatis		make manual page database	177	/usr/lib	
man		print entries from on-line reference manuals	177	/bin	apropos
network		network initialization and shutdown script	177	/etc/init.d	
nice		run a command at a low priority	177	/bin	renice
od		octal dump	177	/bin	
powerdown		stop all processes and halt the system	178		halt, reboot, shut- down.
rcp		remote file copy	178	/usr/bsd	
rdist		remote file distribution program	178	/usr/bsd	
reboot	!!	reboot the system	178	/etc	halt, shutdown
renice		alter the priority of a running process	178	/usr/sbin	
setmon		set the current and default video output format	178	/usr/gfx	
single		switch the system to single user mode	178	/etc	init
shutdown	!!	shut the system down, change system state	178	/etc	halt, reboot
startgfx, stopgfx		start or stop the window system	178	/usr/gfx	
su		switch to root or another user	179	/bin	single
sync		update the super block	179	/bin	
talk		talk to another user	179	/usr/bsd	
telinit		process control initialization	179	/sbin	init
wakeupat		request the system power back on at a future time	179	/usr/sbin	powerdown
whatis		describe what a command is	179	/bin	
winterm		a terminal emulator window	179	/usr/sbin	wsh, xwsh, xterm
wsh		create a window shell	179	/bin	xwsh, xterm, winterm
xconsole		monitor system console messages	179	/usr/bin/X11	
xterm		terminal emulator for X	180	/usr/bin/X11	wsh, xwsh, winterm
xwsh		creates and specifies a window shell	180	/usr/sbin	wsh, winterm, xterm

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## System Hardware Tools

### Gfxinfo - show graphics subsystem information

This tool will help determine the kind of graphics subsystem that is installed in the system. It will provide information about the type and revision of the graphics board, the number of bit planes used and some other aspects of the graphics subsystem.

### Hinv - show system hardware configuration

The most familiar tool is 'hinv'. This shows the **hardware inventory** for the system. This inventory includes:

- the CPU type and clock speed
- the CPU and FPU type and revision
- the number of serial ports
- the presence of a parallel port
- sizes of the various memory caches
- amount of main memory
- any bus adapters that are present - VME, or EISA
- the number and type of SCSI controllers and devices
- the type of graphics subsystem installed

A sample hinv result (from an Indigo<sup>2</sup> Extreme) is shown below:

```

1 150 MHZ IP22 Processor
FPU: MIPS R4010 Floating Point Chip Revision: 0.0
CPU: MIPS R4400 Processor Chip Revision: 5.0
On-board serial ports: 2
On-board bi-directional parallel port
Data cache size: 16 Kbytes
Instruction cache size: 16 Kbytes
Secondary unified instruction/data cache size: 1 Mbyte
Main memory size: 64 Mbytes
EISA bus: adapter 0
Iris Audio Processor: version A2 revision 0.1.0
Integral Ethernet: ec0, version 1
CDROM: unit 7 on SCSI controller 1
Tape drive: unit 6 on SCSI controller 1: QIC 150
Disk drive: unit 4 on SCSI controller 1
Integral SCSI controller 1: Version WD33C93B, revision D
Disk drive: unit 3 on SCSI controller 0
Tape drive: unit 2 on SCSI controller 0: DAT
Disk drive: unit 1 on SCSI controller 0
Integral SCSI controller 0: Version WD33C93B, revision D
Graphics board: GU1-Extreme

```

### **Nvram - show the values of Non-volatile RAM variables**

This tool allows you to see and set the values in the non-volatile RAM. Many important variables are kept in the nvram that determine how the system operates.

### **Sysinfo - show the system's unique identifier**

`sysinfo` prints the value of the unique system identifier. Many software companies use some sort of licensing scheme based on this value.

## **System Software Tools**

### **Chkconfig - show state of configuration flags**

`chkconfig` shows the state of certain configurable flags for the system. For example, it will show whether or not networking is turned on. This tool can be used to turn on or off these configurable flags. Typing "`chkconfig`" will list all of the configurable options and their state. You must be root to modify any of these flags.

### **Crontab - table of cronological events to be performed**

`crontab` is a table of events that are scheduled to occur at a preset time and frequency. This could include tape backups, file updates, etc. To determine what events are in the queue for a specific user use `crontab -l`.

### **Date - show or set system day and time**

This tool allows the user to check or set the systems day and time.

### **Df - show the amount of free blocks on the disk**

This tool shows the file systems that are currently mounted as well as how disk space is used. In particular, it shows the number of (disk) blocks on each mounted partition, the number of blocks currently used, and the number of blocks available. Keep in mind that disk blocks are 512 bytes. By using the `-k` option the tool will report all the above in terms of Kbytes instead of blocks.

### **DU - show disk usage**

This tool shows the amount of disk space for the current (and all underlying) directories. It is done in a bottom-up fashion, so the total space in the directory will be the last number listed. As with `df`, the numbers reported are in disk blocks unless the `-k` option is used.

### **Hostname - show the name of the system**

`hostname` shows the name of the system you are currently logged into.

## Last - list last logins of users or devices

**Last** shows a listing of the logins (most recent first) for a particular user or device. It also shows the time the login occurred and its length.

## Mkboottape - build, list or extract a boot tape

**Mkboottape** is used to make a bootable tape for system recovery. To list the contents of a boot tape use **mkboottape -l**.

## Osview & Gr\_osview - show the activity of the operating system

These two tools can show any number of different aspects of the operation of the system. The **osview** tool works purely in text, while the **gr\_osview** tool opens up a window and shows various aspects of the system in real time.

Some aspects of the system that can be tracked are: memory usage, CPU load, swap space, I/O activity, etc.

## Printenv - show the settings of environmental variables

**Printenv** shows the current settings for the systems environmental variables. Many of these variables are set by the system at boot or login time, but this tool also shows those variables set by the user in `.cshrc` or `.login` files. Two frequently used incantations of **printenv** are:

**printenv PATH** - this shows the current search path the system is using

**printenv TERM** - this shows the terminal type currently being used

## Ps - show process status

This tool shows all the processes that are currently running. It has several options that allow you to configure the way it presents the data. It's helpful in finding if some is still running when it shouldn't be. Some useful "**ps**" incantations:

**ps -eaf | grep process** - see if a particular *process* is running

**ps -eaf | sort +n1** - list all the processes running by owner

**ps -eal | sort +n4** - list all the processes running by process ID number

## Swap - add, delete or monitor system swap areas

**Swap** is used to change or monitor the systems swap area(s). To show the current status of the swap area use **swap -l**.

## Syserr/Sysmon - show system error information

Both of these utilities are part of the Desktop and can be found in the toolchest's SYSTEM menu.

**Syserr** shows the critical system errors that have occurred. **Sysmon** shows all the errors the system has logged and their priorities. For an alternative way of checking system messages the command `tail -f /usr/adm/SYSLOG` or `tail -40 /usr/adm/SYSLOG`.

## Systune - display and set tuneable kernel parameters

**systune** will display the kernel's tuneable parameters. It will also allow some of these parameters to be modified in either an interactive or non-interactive mode. For these changes to take effect the kernel must be rebooted.

## Top and Gr\_top - show processes using largest percentage of CPU

These two tools accomplish the same end. They show the processes on the system that are using up the most CPU resources. The process at the top of the list is using the most resources. This can be very helpful in determining why a system is bogged down.

**Gr\_top** opens its own window on the screen for running rather than running in the current window.

## Uname - show the current OS version

**uname** identifies the current IRIX Operating System that is on the machine. **uname -a** is typically used to show the version of IRIX that is running, as well as the system name and the type of CPU.

## Versions - list software installed by "inst"

The **versions** tool can tell you what software has been installed by the 'inst' installation tool. It can also be used for removing software from the system that has been installed by 'inst'.

## Whereis - locate source, binary or manual page for a program

**whereis** will show where the source, executable or man page for a particular program. It is especially useful when the current PATH variable does not include the directory where the program exists.

## Which - locate a program including aliases

**which** is similar to **whereis** with the exception that it will show any aliases for that program that have been defined. This is only available in csh.

**Xlsfonts - list the fonts available to X Server**

`xlsfonts` shows the fonts available on your system.

**Xdpyinfo - X display configuration information**

This tool provides information about the X server. The number of displays and their possible configurations (8 bit/pixel, 24 bit/pixel, etc) are included in this listing.

**Xwininfo - X window information**

`xwininfo` provides information about an X-based window. The information can include window location, height, width, color depth, border width, colormap id, and corner locations to name a few. After typing `xwininfo`, the mouse is clicked on the window for which information is desired.

**User Information Tools****ID - show current user and group ID's**

This tool shows both the user ID and group ID by name and number.

**Who - show current system users**

`who` identifies who is currently logged into the system, what port (either real or virtual) they're logged in on and what time that login started.

**Whoami - show current user ID**

`whoami` is ismilar to `ID`, but shows only what your current user ID name is.

**Terminal Tools****Stty - set tty characteristics**

This tool shows or sets the characteristics of the current terminal (either real or virtual). The terminal can be configured to respond to certain protocols or keystrokes. Often a basic terminal set up is provided in a `.login` or `.cshrc` file.

**Terminfo - terminal capabilities database**

This is a database of capabilities for specific terminal (and printer) types. The database describes the way the terminal will react to certain keystrokes and function keys. The name for the terminal in use is found in the `TERM` environmental variable.

### **Tput - initialize terminal or query terminfo database**

This tool can be used for a number of different terminal control functions. It can initialize the terminal, show the settings for specific terminal capabilities, or can be used to set shell variables for setting bold or other terminal characteristics.

### **Tty - get name of the terminal**

This tool shows the name of the tty device that is currently being used.

## **Peripheral Tools**

### **Ansitape - ANSI tape handler**

This tool allows reading and writing of ANSI format tapes. To show a list of files contained on a cpio formatted tape, use **ansitape -t**.

### **Bru - backup and restore utility**

This tool reads, writes and lists data on tapes using the bru format. To show a list of files contained on a cpio formatted tape, use **bru -vt**.

### **Cpio - Copy file archives in and out**

Cpio is most often used to transfer files onto and off of magnetic tape. It can also be used to transfer groups of files between disk drives and/or file systems. To show a list of files contained on a cpio formatted tape, use **cpio -ivt**.

### **Inquire - show result of a SCSI device inquiry**

This program will echo the results of an inquiry to a particular SCSI device (as specified on the command line). It can be useful in determining the exact manufacturer and model number of the device on the SCSI bus.

This program is provided in the /usr/people/4Dgifts directory. It does not have a man page. Consult the README file in the directory for specifics on using this utility.

### **Dvhtool - show disk volume header information**

**dvhtool** shows the information contained in a disks volume header. This tool can also be used to modify this information, but **fx** is the preferred tool for modifying any disk parameters.

#### **Caution!!!**

*Since this utility can change a hard disks configuration, it is NOT RECOMMENDED for casual use. Read the "dvhtool" man page prior to using this utility.*

## Eject - eject removeable media

**Eject** does exactly what it sounds like. If no argument is given, it will try and eject the first device it finds in either `fsd.tab` or in the hardware inventory table. If the media is a mounted file system, `eject` will try and unmount it prior to ejecting it.

## Fsck - check file system

This utility checks the integrity of a file system. It will automatically be run when IRIX boots if the system detects some problem with the file system. It can be invoked on separate file systems to resolve some file system problems.

## Fuser - identify a process using a file or file structure

**Fuser** will show any process that is currently using the specified file or file structure. Since all IRIX devices are files, this allows a listing of all processes using that device.

## Fx - disk formatter/exerciser

This is a very useful, but potentially dangerous, tool. It allows the disk to be repartitioned, formatted and exercised. It uses a hierarchical command structure where many commands may be invoked by using one or two letters.

### **Caution!!!**

*Since this utility can erase data from a hard disk, it is NOT RECOMMENDED for casual use. Read the "fx" man page prior to using this utility.*

## Lpsched - start up the line printer scheduler

This tool is used to start up the scheduling process for a connected printer.

## Lpshut - shut down the line printer scheduler

This shuts down the printers scheduling process.

## Lpstat - prints line printer spooler status

This tool prints LP status information. Use `'lpstat -t'` to get all printer spooling information.

## Mediad - removeable media daemon

Mediad monitors removeable media on the system. When a piece of removeable media is inserted into a drive `mediad` automatically determines the type of file system that is on the media and mounts the file system appropriately. This works for floppy drives and cdroms.

To disable `mediad`'s automatic mounting, use `'mediad -q'`.

## Mkfs - make a file system

**Mkfs** takes a disk partition and makes it useable as an IRIX file system. This file system may then be mounted to the system.

### **Caution!!!**

*Since this utility can erase data from a hard disk, it is NOT RECOMMENDED for casual use. Read the "mkfs" man page prior to using this utility.*

## Mkfp - make a floppy disk partition

**Mkfp** will write an FAT (MS-DOS) or HFS (Macintosh) type file system onto a floppy disk. The utility will format 5 different types of FAT file systems - 360Kbytes (5.25" disk), 720 Kbytes (3.5" disk), 1.2Mbytes (5.25" disk), 1.44Mbytes (3.5" disk), or 20 Mbytes (floptical). Two HFS formats are supported - 1.44Mbytes and 20Mbytes - both on 3.5" media.

## Mount/Umount - mount or unmount a file system

**Mount** can take an existing file system (most typically on a disk drive) and mount it onto a defined mount point. **Umount** does the reverse. Either command may be used to mount a single file system, group of file systems, or those file systems related to a particular host. **Mount** uses the file /etc/fstab for some operations.

The **mount** command without any options will show all mounted file systems.

## Mt - magnetic tape program

**mt** can be used for a number of things. It can control and get status of a magnetic tape device (QIC, DAT, 1/2", etc). Useful incantations of **mt** include:

```
mt -t /dev/mt/tps0d2 stat - get the status of tape device 2 on SCSI bus 0.
```

```
mt -t /dev/tape rew - rewind the default /dev/tape device
```

## Ncheck - generate a path name from an I-node number

**Ncheck** will accept an I-node number and, optionally, a file system and generate a path name for each I-node given.

## **Prtvtoc - show disk volume header information**

This tool prints the disk volume header information for a specific disk. You must be root to run this tool.

An example printout for a root disk is shown below.

```
Printing label for root disk
* /dev/rdisk/dks0d1s0 (bootfile "/unix")
* 512 bytes/sector
* 54 sectors/track
* 15 tracks/cylinder
* 2 spare blocks/cylinder
* 1631 cylinders
* 4 cylinders occupied by header
* 1627 accessible cylinders
*
* No space unallocated to partitions
Partition Type Fs Start: sec (cyl) Size: sec (cyl) Mount Directory
0 efs yes 3232 ( 4) 32320 ( 40) /
1 raw 35552 ( 44) 81608 ( 101)
6 efs yes 117160 ( 145) 1200688 (1486) /usr
7 efs 3232 ( 4) 1314616 (1627)
8 volhdr 0 ( 0) 3232 ( 4)
10 volume 0 ( 0) 1317848 (1631)
```

## **Quota - display disk usage and limits**

**quota** displays the amount of disk space used and the limits for usage for each user.

## **Xselinput - show X device input events**

This program will provide information about X events coming into the system from X devices.

This program is provided in the `/usr/people/4Dgifts` directory. It does not have a man page. Consult the README file in the directory for specifics on using this utility.

## **Xlist - list all the X input devices**

This program lists all the X devices that the system has attached.

This program is provided in the `/usr/people/4Dgifts` directory. It does not have a man page. Consult the README file in the directory for specifics on using this utility.

## Networking Tools

### Exportfs - Export and unexport directories to NFS clients

**Exportfs** makes a local directory (or file) available for mounting over the network by NFS clients. A list of exported directories is kept in `/etc/exports`.

### Ifconfig - configure network parameters

**Ifconfig** is used to configure network interface parameters. Each network interface has a name (“`enp0`” for example). **Ifconfig** can be used to turn on or off each of these network interfaces by name. An example is `ifconfig enp0 down`. This shuts down the network interface `enp0`.

### Netstat - show network status

**Netstat** shows the status of the network connections on the machine. In particular, `netstat -i` will show the status of the various network interfaces.

### Ping - send an ECHO\_REQUEST to a network machine

**Ping** is used to see if you can communicate with a remote machine. This is done by sending an `ECHO_REQUEST` to a the machine. Ping will continue to send these requests until you stop the process (Control-C).

### Rup - show host status of local machines

**Rup** shows a listing of all local machines with their name, how long they’ve been up and what their load average is.

### Ruptime - show host status of local machines

**Ruptime** shows the status of local machines.

### Showmount - show remotely mounted file systems

**Showmount** shows all the clients that have remotely mounted a filesystem from a particular host (the local host if no argument given).

### Timedc - timed control program

**Timedc** is used to control the timed daemon. It can be used to determine the time difference between two systems, find the system on the network being used as a time master, or help debug problems with the timed daemon.

### Uustat - UUCP status and job control

**Uustat** will show the status of uucp commands or the status of uucp connections.

## **Ypwhich - show the NIS server or map master hostname**

**Ypwhich** shows which Network Information Service (NIS) server supplies the NIS services to an NIS client, or which server is the master for a map. If no hostname is supplied as an argument, it supplies the hostname of the NIS server for the local machine.

## **Mail Tools**

### **Mailq - print contents of the mail queue**

**Mailq** prints the contents of the mail queue. It is actually the sendmail program invoked with the argument `'-bp'`.

### **Sendmail - send network mail**

**Sendmail** is the facility used by mail programs to send mail over the network.

## **Miscellaneous Tools**

The following is a list of commands for doing common operations on SGI systems. Some might be considered tools, while others are the commands necessary to bring a system up, shut it down, or change it into some different operational state.

### **Apropos - locate commands by keyword lookup**

**Apropos** uses the whatis database to find commands associated with keywords.

### **Autoconfig - configure a kernel**

**Autoconfig** is used to invoke lboot and other commands to generate a UNIX kernel. **Autoconfig** automatically places the newly generated kernel in place for the next reboot.

### **Clri - clear i-node**

**clri** writes nulls on the inode table entry for the given i-number.

### **Distcp - copy or compare software distributions**

**Distcp** copies or compares software distributions. Software distributions are software releases for one or more software products that are prepared by Silicon Graphics and installed by inst.

### **Endsession - terminate a login session**

**Endsession** terminates a login session initiated by xdm.

## Ftp - Internet file transfer program

**Ftp** is the user interface to the Internet standard File Transfer Protocol. The program allows a user to transfer files to and from a remote network site.

## Gclear - clear the graphics screen

**Gclear** clears every visible bit of every pixel on the entire IRIS graphics screen.

## Halt - halt the system

**halt** causes the system to be shut down. The **-p** option can cause the power to be turned off once the system is down on those system that support this feature. **halt** calls the shutdown command. Key differences between **halt**, **powerdown**, **reboot** and **shutdown** are shown below:

Command	Confirmation Option?	Grace Period Option?	Init State Choice?	Power Down Option?	Restart System?	Confirmation if remote?
halt	no	no	no (state 0)	yes	no	yes
powerdown	yes	yes	no	yes (default)	no	
reboot	no	no	no (state 6)	no	no	yes
shutdown	yes	yes	yes (state 0)	yes	no	no

**System shutdown commands**

## Init - process control initialization

**init** is used to change the operating level of the system. It can be used to bring the system from a multiuser state into a single user state.

## Inst - software installation tool

The **inst** tool installs software from a source where the software is in the “**inst**” format. This can be from a CD-ROM, tape, local disk or remote disk. An “**-a**” argument will enable the automatic mode where little interaction is required.

## Kill - terminate a process by default

**kill** sends a signal to the processes either by process ID or process group ID.

## Killall - kill named processes

**killall** sends a signal to a set of processes specified either by name, process group, or process ID. **killall** is similar to **kill** except the process can be specified by name.

## Lboot - configure a bootable kernel

**lboot** creates a bootable kernel based on the information in the master directory. By default, the resulting kernel is placed in the file `unix.new`. **lboot** does not replace the new kernel for the currently used kernel. Since **lboot** forces the system to check for all installed hardware, using the verbose flag, **lboot -v**, can be used to see whether a board or device responds to a probe. Also see **autoconfig**.

## MAKEDEV - create device special files

**MAKEDEV** creates specified device files in the current directory. This is most often invoked in the `/dev` directory to make (or remake) all or some of the systems devices. For example, '**MAKEDEV tape**' will create all the tape device special files.

## Makewhatis - make manual page database

**Makewhatis** finds all the man pages and compiles a database that is used by **man**, **apropos** and **whatis**.

## Man - print entries from on-line reference manuals

**Man** is used to print the manual page for the given command.

## Network - network initialization and shutdown script

**Network** (`/etc/init.d/network [start | stop]`) is used to either start or stop the network devices attached to the system. Issuing a '**network stop**', then a '**network start**' will cause the system to recognize any changes in network configuration and reinitialize the networking hardware.

## Nice - run a command at a low priority

**Nice** executes a command with a lower CPU scheduling priority.

## Od - octal dump

Somewhat of a misnomer, **od** displays a file in one of several different formats, including octal, character, hexadecimal and decimal.

## Powerdown - stop all processes and halt the system

**Powerdown** brings the system to a state where nothing is running so the power can be turned off. By default, the user is asked questions that control how much warning the other users are given. This can be overridden by a command line argument. **Powerdown** invokes shutdown. This command is useful for shutting down a system after it completes some long running command. For a comparison of **halt**, **powerdown**, **reboot** and **shutdown** see Table .

## Rcp - remote file copy

**Rcp** copies one or more files from a source machine to a destination machine.

## Rdist - remote file distribution program

**Rdist** is a program to maintain identical copies of files over multiple hosts.

## Reboot - reboot the system

**Reboot** halts the system and then restarts it. To bring a system down before shutting off the power use either **halt** or **shutdown**. For the differences between **halt**, **powerdown**, **reboot** and **shutdown** see Table .

## Renice - alter the priority of running processes

**Renice** alters the scheduling priority of one or more running processes.

## Setmon - set the current and default video output format

**Setmon** changes the video output format to the one specified on the command line. It is also used to define the default video format for the system.

## Single - switch the system to single user mode

**Single** switches the system to single user mode and turns gettys off. This can be performed while in IRIX or in the command mode of the prom monitor.

## Shutdown - shut the system down, change system state

**Shutdown** brings the system to a new system state (by default, the PROM monitor). For differences between **halt**, **powerdown**, **reboot** and **shutdown** consult Table .

## Startgxf, stopgxf - start stop the window system

**Startgxf** turns the windowssystem configuration flag on, and executes the X Display Manager, **xdm**. **Stopgxf** turns the windowssystem configuration flag off, and terminates the X Display Manager.

## **Su - switch to root or another user**

**su** is used to switch from the current login to another user login. Without an argument **su** assumes you want to switch to the root login. Use of the “-” argument defines that the environment of new login will be used. Otherwise the current environment will be used for the new login.

## **Sync - update the super block**

**sync** is used to update the information on the disks super block. It flushes all previously unwritten system buffers out to disk, thus assuring that all file modifications up to that point will be saved.

## **Talk - talk to another user**

**Talk** is a visual communication program which copies lines from your terminal to that of another user.

## **Telinit - process control initialization**

**Telinit** is used to change the operating level of the system. It can be used to bring the system from a multiuser state into a single user state.

## **Wakepat - request the system power back on at a future time**

**Wakepat** allows you to specify a time at which the system will power on by itself.

## **Whatis - describe what a command is**

**whatis** uses the **whatis** database to show the header line from a particular commands man page.

## **Winterm - a terminal emulator window**

**Winterm** is a shell script that runs an application in a shell window. It is used by **workspace** and **toolchest** when launching applications with teletype-style user interfaces. The value of **winterm** is that it will start a **wsh**, **xwsh** or **xterm** terminal emulator by specifying the **\$WINTERM** variable. **Winterm** is specific to SGI machines.

## **Wsh - creates a window shell**

**wsh** is the predecessor to **Xwsh**. It is a terminal emulation program that runs a shell (or other UNIX command) within its own window on the screen. **wsh** is specific to SGI machines. It takes advantage of the SGI graphics hardware.

## **Xconsole - monitor system console messages**

**xconsole** displays messages which are usually sent to **/dev/console**.

**Xterm - terminal emulator for X**

The **xterm** program is a terminal emulator for the X Window System. Useful for running programs specifically written for a pure X environment.

**Xwsh - creates and specifies a window shell**

**xwsh** is a terminal emulation program that runs a shell (or other UNIX command) within its own window on the screen. **xwsh** is specific to SGI machines. It takes advantage of the SGI graphics hardware.