Appendix A

Inst Quick Reference

This appendix is a reference for experienced Inst users. It contains an abbreviated installation procedure and a complete glossary of Inst commands. The command glossary includes hidden commands and provides expanded discussions of command features that are partially covered in earlier chapters. Commands on each menu are presented in alphabetical order.

This chapter contains these sections:

- "Main Menu Commands"
- "View Menu Commands"
- "Administrative Menu Commands"
- "Interrupt Menu Commands"

Condensed Installation Instructions

Use this procedure if you are already familiar with using Inst and need only cursory instructions to complete the installation process. The procedure contains references to information in Chapter 5, in case you need more detail.

Note: Inst has an extensive online *help* feature. To see the list of topics on which help is available, give the command *help help*.

1. Become the superuser.

   ```
   % su -
   Password:
   ```

2. Invoke Inst:

   ```
   # inst
   ```

   After your entry, initial messages appear, including the default location of the software distribution that will be used for the installation. If you plan to use this distribution, omit step 3 and go directly to step 4.

3. Specify the software distribution source, if you need to:

   ```
   Inst> from server:pathname
   ```

   Use the *from* command to specify the location of the distribution that you wish to use if the default is not acceptable. Substitute a local specification, such as */CDROM/dist*, if necessary. (See "Step 2: Specifying the Source" on page 42 for more details.)

   The initialization is performed after your entry. Inst posts messages about reading the installation history and product descriptions; then it performs space calculations.

4. Display the distribution inventory (optional):

   ```
   Inst> list
   ```

   Use the *list* command to browse the software on the distribution. After your entry, you see a display of subsystems, their selection status, installation status, and disk space requirements. (See "Using the list Command" on page 44 for details.) If you omitted step 3, you see the initialization messages before the software inventory is posted.

5. Switch to the target view and look at the installed products (optional):

   ```
   Inst> view targ
   Inst> list
   ```

   To browse the software on the target, use *view* to change the view to the target and *list* to display target software. After your entry, you see a display of subsystems that are installed on the target and their removal status. (See "Using the View Commands Menu" on page 66 for details.)

6. Step through the distribution inventory to change selections, as needed:

   ```
   Inst> view dist
   Inst> step
   ```

   After your entries, the first subsystem in the distribution is displayed. Type **<Enter>** to display succeeding subsystem, checking the selection status in the first column of each subsystem as it is displayed (these selections were made by Inst during initialization). Use the selection commands to change any selections, as needed: Type *i* to install the subsystem, *r* to remove it, and *k* to keep the subsystem in its present condition on the target. (See "Step 4: Making Software Selections" on page 49 and "Using step to Make Selections" on page 90 for more information.)

7. Launch the installation:

   ```
   Inst> go
   ```

   If there are no conflicts or errors in your selections, see messages about images being removed and installed, followed by a completion message, after you enter *go*. (See "Step 5: Launching the Installation" on page 53 for details.) If you see conflict messages, go on to step 8 of this procedure. If no conflict messages are posted, omit steps 8 and 9 and go directly to step 10.

8. Resolve conflicts, if needed:

   ```
   Inst> conflicts num num num
   ```

   If you were notified of conflicts, specify the conflict resolution that you prefer from the list of recommendations. (See "Step 6: Resolving Conflicts and Other Errors" on page 54 for details.)

   If you prefer not to accept the resolutions that are offered in the conflict notice, you can return to step 6 to change your selections. Then, repeat the *go* command to install or remove the software that is affected by the conflict resolutions.

9. Remove some selections if there is insufficient disk space.

   If you were notified that your selections required more disk space than Inst can safely use, you must remove some of your selections. Repeat the *go* command to process your changes.

10. Quit Inst.

    If there is no more software to install, quit Inst at the quit prompt (see "Step 7: Quitting the Installation Session" on page 56 for details). Otherwise, return to step 3 to change the distribution source or to step 4 to display the distribution inventory.

Main Menu Commands

The list below describes all commands (including hidden commands) that appear on the Inst Main menu.

admin — Use the *admin* command to display the Administrative Commands Menu. This provides a variety of functions that are not needed for most installations.

conflicts

Use the *conflicts* command with no arguments to display the list of conflicts that Inst has detected in your installation selections. Conflicts occur if you select incompatible software for installation, if you omit required selections, or if you omit subsystems that are prerequisites to other selected subsystems.

If a conflict occurs, the *go* command is not processed; an error message is posted that includes a list of suggested resolutions. Use the *conflicts* command to specify your choice of conflict resolutions in the conflicts message:

```
Inst> conflicts 1a 2b 3b
```

Inst uses conflict choices to modify your original selections and complete the installation. If you prefer, you can modify your selections with *install*, *remove*, and *keep* commands instead of accepting the suggested conflict resolutions.

from

Use the *from* command to specify the location of the software distribution that you wish to install. Your specification can include a single product in the distribution. The syntax of the argument to the *from* command is explained in "Alternative Ways to Specify a Distribution" on page 83.

The *from* command causes four events:

- A connection with the distribution source is established.
- The product descriptions are read from the source. Inst displays the list of product descriptions that it reads.
- The current selections for installation and removal are discarded. If the *set* preference *autoselect* is *on*, Inst uses its algorithms for making initial installation selections. If *autoselect* is *off*, nothing is selected for installation (see "The Preferences List" on page 117 for more information).
- If the *delayspacecheck* preference is *off*, disk space is calculated before the output of a *list* or *step* command is displayed (see "The Preferences List" on page 117 for more information).

If the distribution is on a remote server, Inst must have access to the IP address of the server. If the server address is not listed in the target's */etc/hosts* file (*/etc/hosts* or */root/etc/hosts*), Inst prompts you for the address.

When Inst is invoked, it displays a message about the default location of the software distribution. If this location is correct, it is not necessary to enter the *from* command.

go

Use the *go* command to start the installation and removal of files that you selected with *install*, *remove*, and *keep* commands. Before the installation begins, Inst does several checks to verify that your selections are valid. If any check fails, no installations or removals are performed and an error message is displayed.

help

Use the *help* command to display information on a given topic:

```
Inst> help topic
```

The *topic* can be almost any word that appears on a menu, letters that appear in the output of *list* and *step*, and the special vocabulary of the Inst application.

If you are unfamiliar with Inst or feel confused, start with *help help*.

If *help* output is more than one screenful, a *more?* prompt appears after one screenful. Press the space bar when you are ready to display more output.

A complete list of *topic* arguments to *help* is shown in Table A-1.

Table A-1 Help Topics

*	deltas	lverror	return
.N	devices	main	same
.O	dir	maintenance	save
?	dist	miniroot	selection
A	distribution	mkfs	set
D	files	more	sethostipaddr
I	filter	mount	sethostname
L	from	movedir	sh
N	fsname	names	shroot
O	go	networkerror	sizes
S	hardware	new	sort

Table A-1 (continued) Help Topics

T	help	nfs	source
U	i	older	space
admin	image	options	spaceerror
all	incompatible	overview	step
args	inst	preferences	subsystem
b	install	prerequisite	targ
base	installable	product	target
beginner	installed	quit	timeouterror
check	k	r	umount
config	keep	readerror	uninstalled
conflicts	kernelerror	recalculate	unmount
d	keywords	removable	upgrade
date	list	remove	view
default	load	request	wilcard

install Use the *install* command to select products or product components for installation. The *install* command queues your request; the installation occurs only after you use the *go* command. Until you enter the *go* command, you can change your selections as you wish. Use the *keep* command to undo an *install* request.

keep Use the *keep* command to select products or product components that should be kept as is on the target. Also use the *keep* command to undo other requests—*keep* cancels any pending *install* or *remove* selections. The existing versions on the target, if any, remain undisturbed.

list Use the *list* command to show the products or product components that are in the currently available distribution. By default, *list* displays at the subsystem level. See “Interpreting list Output” on page 47 for a description of the output. Also see “Using the View Commands Menu” on page 66 for information on controlling *list* output.

quit Use *quit* to exit Inst.

If you made installation or removal selections that were not processed by the *go* command, Inst reminds you of pending selections and asks you to confirm the *quit*. If you type *yes*, the selections are discarded. If you type *no*, you return to the current menu. You can use *list* to identify pending selections and *go* to install or remove them.

Usually, auxiliary commands are executed automatically after you use *quit*. If you are installing software that requires a system reboot, you will be asked if you are ready to restart the system. If you answer *no*, the Inst session resumes. If you answer *yes*, the system reboots and resumes operation using the new software.

remove Use the *remove* command to select installed products or product components that you wish to remove from the target. The removal does not occur until you enter the *go* command. Until then, you can change your selections for any or all subsystems. To undo a *remove* request, use the *keep* command.

Inst automatically removes old versions of software when it installs a upgrade to the software, so it is not necessary to remove old versions explicitly. Typically, software is removed when it is no longer needed or when the target system is short of disk space.

set Use the *set* command with no arguments to display a list of preferences that allow you to tailor Inst operation. To change a preference, use *set* with the preference and its value as arguments:

```
Inst> set delayspacecheck on
```

For a list of preferences, see “The Preferences List” on page 117.

sh Use *sh* with no arguments to invoke an IRIX shell. Use *sh* with an IRIX command as its argument to execute the IRIX command. This command displays the contents of the */usr/tmp* directory on the target:

```
Inst> sh ls /usr/tmp
```

See “The sh and shroot Commands” on page 77 for additional information.

shroot Use *shroot* with no arguments to invoke an IRIX shell that executes commands relative to a new root (see the *chroot*(1M) reference page). Use *shroot* with an IRIX command as an argument; the command is executed relative to the new root. This command displays the contents of */root/usr/tmp*:

```
Inst> shroot ls /usr/tmp
chrooting to /root
```

See "The sh and shroot Commands" on page 77 for additional information.

step

Use the *step* command to display and select individual products or product components. The *step* command takes keyword arguments. It also takes the name of a product, image, or subsystem as an argument. See "Using step to Make Selections" on page 90 for additional information on *step*.

When you use *step*, Inst reads single keystrokes. The key that you press as each item is displayed determines the action that is taken.

Table A-2 describes the effects of keystrokes during *step* operations. The items in this table assume that the viewing level is subsystem (see "The level Command" on page 69 for information on setting viewing levels).

Table A-2 Keys Used in step Mode

Key	Action
d	Select this subsystem for installation if marked with *d*
f	List the files in this subsystem
h	Display help for the *step* feature
i	Select this subsystem for installation
j	Retain the current request and display the next subsystem
k	Keep the current version and/or cancel the current request
l	List all previous subsystems
n	Retain the current request
p	Retain the current request and display the previous subsystem
q	Quit step mode
r	Select this subsystem for removal

Table A-2 (continued) Keys Used in step Mode

Key	Action
u	(Same as **i**)
D	Select the remaining subsystems in this product for installation if marked with *d*
I	Select the remaining subsystems in this product for installation
J	Retain the current request for all subsystems in this product and display the first subsystem in the next product
K	Keep the current version and/or cancel the current request for the remaining subsystems in this product
N	(Same as **J**)
P	Retain the current request and display the first subsystem of the previous product
R	Select the remaining subsystems in this product for removal
U	(Same as **I**)
<Enter>	(Same as **j** or **n**)
+	(Same as **j, n**, or **<Enter>**)
–	(Same as **p**)
/*pattern*<Enter>	Search for pattern specified after the slash
<right-arrow>	(Same as **i** or **u**)
<left-arrow>	(Same as **k**)
<down-arrow>	(Same as **n**, **j**, **+**, or **<Enter>**)
<up-arrow>	(Same as **p** or **–**)
<Shift-right-arrow>	(Same as **D**)
<Shift-left-arrow>	(Same as **K**)

Table A-2 (continued) Keys Used in step Mode

Key	Action
<Shift-down-arrow>	(Same as **J** or **N**)
<Shift-up-arrow>	(Same as **P**)

view

Use the *view* command without arguments to display the View menu. Use the *view* command with arguments (View menu items) to control the output of the *list* and *step* commands. (See "Using the View Commands Menu" on page 66 for more information on *view* features.)

By default, *list* and *step* display all software in the distribution at the subsystem level; subsystems are sorted alphabetically by shortname. You can use *view* to change these defaults. For example, these commands set the view to the target and reset it to the distribution:

```
Inst> view targ
Inst> view dist
```

These commands specify the viewing level:

```
Inst> view level image
Inst> view targ
```

These commands change the sorting index to size and filter out downgraded distribution items from displayed lists:

```
Inst> view sort size
Inst> view filter downgrade off
```

Also use *view* commands with the *set* command to set Inst preferences (see "A Closer Look at Preferences" on page 115 for details).

View Menu Commands

The list below describes all commands that appear on the View Commands menu.

dist

Use the *dist* command to set the view to the distribution. When the view is set to *dist*, the *list* and *step* commands display software in the distribution inventory. See also the *targ* command description in this section.

filter

Use the *filter* command with no arguments to display the list of filters that can be used to modify the output of *list* and *step* commands. This form of the command also shows the current settings for the filters (on or off). By default, all filters are off.

Use the *filter* command with one of these arguments to modify the output of *list* and *step* commands:

```
new
upgrade
patchupgrade
same
downgrade
notinstalled
```

For example, this command causes new products to be omitted from *list* and *step* displays:

```
View> filter new off
```

help

Use the *help* command to display Inst online help. Help is available on all topics listed in Table A-1.

level

Use the *level* command with no arguments to display the current level of the software hierarchy (see Figure 1-1) that is shown in *list* and *step* displays. By default, software is displayed at the subsystem level. Use the *level* command with one of these arguments to change the level of software shown in *list* and *step* displays.

```
product (or 1)
image (or 2)
subsystem (or 3)
```

return

Use the *return* command to return to the Main menu.

set

Use the *set* command to examine and change the settings of variables called preferences. If you provide no arguments, the current settings are displayed. If you provide the name and a value, the preference value is changed.

Most preference settings are saved in the installation history when you enter the *quit* command and are restored the next time that you invoke Inst. “The Preferences List” on page 117 describes *set* preferences in detail.

show

Use the *show* command to display the current view settings.

sort Use the *sort* command with no arguments to display the current sorting order of *list* and *step* displays. By default, software is sorted alphabetically by shortname, but you can use the *sort* command to change the sort order so that subsystems are shown in ascending order of size. After your entry, the new sort order is displayed:

```
View> sort size
Current Sort : size

View> sort name
Current Sort : short
```

targ Use the *targ* command to set the view to target software. When the view is set to *targ*, the *list* and *step* commands display software that is either installed on the target or recorded in the installation history. See also the *dist* command description in this section.

Administrative Menu Commands

The list below describes all commands (including hidden commands) that appear on the Administrative Commands menu.

config Use the *config* command to list the configuration files that are installed on the target. Configuration files are marked with an *m* in the first column if their size or checksum is different from the originally installed version. Use *config changed* to list the names of configuration files for which a corresponding *.O* (older) or *.N* (newer) version was created.

The *.O* version of a configuration file is the version of the file that was obsoleted by the software installation. The version without the *.O* suffix contains changes that are required for compatibility with the rest of the newly installed software, for increased functionality, or to correct bugs. Use *diff* or *gdiff* to compare the two versions of the files and transfer information that you recognize as machine- or site-specific from the *.O* version to the no-suffix version (see the diff(1) or gdiff(1) reference page).

When a *.N* version of a configuration file is created, it is a new, recommended version of the file. It contains changes or new features that can be added to the no-suffix version of the file at your option. Use *diff* or *gdiff* to compare the two versions of the files and add the *.N* version changes to the no-suffix version if you want them (see the diff(1) or gdiff(1) reference page).

date Use the *date* command with no arguments to display the system date. Enter arguments described in the date(1) reference page to change the date.

files Use the *files* command to list the names and other information about the files that make up a subsystem or group of subsystems. The other information includes any pending selection for the file (that is, *install*, *remove*, or *keep*); the installation state; the subsystem name; disk space delta; and file type. See "The files Command" on page 74 for more information.

hardware Use the *hardware* command to display information about the internal architecture and components of the target system.

help Use the *help* command to display Inst online help. Help is available on all topics listed in Table A-1.

load Use the *load* command to open a file that was created with the *save* command to contain a custom selection of software. Also see the discussion of *save*.

mkfs Use the *mkfs* command to create a new filesystem (replaces the *clean* command found in earlier versions of Inst). You can use *mkfs* in miniroot installations only.

If a disk is new or if the current contents of the disk or filesystem are to be completely removed (cleaned), you can use *mkfs* to make new, empty filesystems. By default, new filesystems are made on the root (/) and user (*/usr*) filesystems. Partition 0 of a system disk is assumed to be the root filesystem (/); partition 6 (if present) is assumed to be the */usr* filesystem.

When you use *mkfs*, specify the name of the disk device to be used for the filesystem. For example, the following command

```
mkfs /dev/dsk/dks0d1s6
```

creates an empty filesystem on partition 6.

All existing files, including all directories, programs, configuration files, and data, are lost when a new filesystem is made. You will be warned if a filesystem is already on the named device, and prompted for a confirmation before any new filesystem is made.

mount — Use the *mount* command without arguments to display mounted filesystems. Use *mount* with arguments to change the default mounts or add new mount points that are unknown to Inst. The two arguments are the block device name and the mount point. The *mount* command with arguments can be used during miniroot installations only.

recalculate — Use the *recalculate* command to initiate a disk space calculation. The *recalculate* command identifies the current amount of free disk space, the size of each subsystem, and the amount of disk space that will be consumed if the subsystem is installed or freed if it is removed.

If the *detailspacecheck* preference is off, or if files were created or removed in another shell, use *recalculate* to resynchronize space information.

return — The *return* command returns control to the Main menu from the Administrative Commands menu. You can also use *return* to execute a Main menu command from the Administrative Commands menu, as shown in this example:

```
Admin> return go
```

save — Use the *save* command to copy the current custom selections of software to a file that you can later open using the *load* command (also see the discussion of *load*).

set — Use the *set* command to examine and change the settings of variables called preferences. If you provide no arguments, the current settings are displayed. If you provide the name and a value, the preference value is changed.

Most preference settings are saved in the installation history when you enter the *quit* command, and are restored the next time that you invoke Inst. “The Preferences List” on page 117 describes *set* preferences in detail.

sh — Use the *sh* command with no arguments to invoke an IRIX shell. Include a single IRIX command as an argument to execute the command immediately (see “The sh and shroot Commands” on page 77 for additional information).

shroot — Use the *shroot* command with no arguments to invoke a “chrooted” IRIX shell (see the *chroot*(1M) reference page). If you provide arguments, they are taken as a single IRIX command to be executed immediately.

The *shroot* command uses the *chroot*(2) system call to invoke the shell as if */root* were its root directory; that is, */root* becomes / for all references. Thus files can be referred to with their normal pathnames (see "The sh and shroot Commands" on page 77 for additional information).

space — Use the *space* command to display a disk space summary; the displayed summary is the same as the *list* command if the *set* preference *delayspacecheck* is off. If *delayspacecheck* is on, the *space* command forces the disk space calculation to be performed and displays the disk space summary.

sethostname — Use the *sethostname* command to set the hostname of the target system; this command restarts networking using the new hostname. The *sethostname* command can be used in miniroot installations only.

sethostipaddr — Use the *sethostipaddr* command to set the IP address of the target system; this command restarts networking using the new IP address. The *sethostipaddr* command can be used in miniroot installations only.

umount — Use the *umount* command to unmount disks that Inst has mounted by default or that have been mounted with the *mount* command. The filesystem name remains in the Inst device table even after the filesystem is unmounted. In some cases, filesystems mounted under the specified filesystem must be unmounted first.

Interrupt Menu Commands

The list below describes all of the commands that appear on the Interrupt menu.

continue — Use *continue* to resume processing from the point at which Inst was interrupted.

help — Use the *help* command to display Inst online help. Help is available on all topics listed in Table A-1.

retry — Appears only if Inst displays the Interrupt menu automatically, which happens if an error occurs during *go* processing (subsystems are being installed or removed). Use *retry* after you correct the error (reported in a message above the menu) to repeat the installation and removal process.

set [*preferences*] Use the *set* command to examine and change the settings of variables called preferences. If you provide no arguments, the current settings are displayed. If you provide the name and a value, the preference value is changed.

Most preference settings are saved in the installation history when you enter the *quit* command and are restored the next time that you invoke Inst. "The Preferences List" on page 117 describes *set* preferences in detail.

sh Use the *sh* command with no arguments to invoke an IRIX shell. Include a single IRIX command as an argument to execute the command immediately (see "The sh and shroot Commands" on page 77 for additional information).

shroot Use the *shroot* command with no arguments to invoke a "chrooted" IRIX shell (see *chroot*(1M)). If you provide arguments, they are taken as a single IRIX command to be executed immediately.

The *shroot* command uses the *chroot* system call to invoke the shell as if */root* were its root directory; that is, */root* becomes / for all references. Thus files can be referred to with their normal pathnames (see "The sh and shroot Commands" on page 77 and the chroot(2) reference page for additional information).

stop Use the *stop* command to cancel the command in progress. If you use *stop* while Inst is reading the installation history or distribution inventory, or while it is calculating dependencies, Inst discards the information that it has read or calculated. So, Inst will reread or recalculate this information before executing subsequent *list* commands, selection requests, or the *go* command.

If you use *stop* while Inst is installing software, it makes a record of pending selections. At the next go command, Inst restarts the installation process on any uncompleted product installations, then continues processing the remaining selections that were pending.

Caution: Using the *stop* command during installation can leave software in an inconsistent state that requires a removal and reinstallation of the affected product.