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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Shielded cables: Connections between the workstation and peripherals must be made using shielded cables to comply with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted-pair (UTP) cables.

Modifications: Any modifications made to this device that are not approved by Naturetech may void the authority granted to the user by the FCC to operate this equipment.

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警告使用者:

這是甲類的資訊產品,在居住的環境中使用時,可能會造成射頻干擾,在這種情況下,使用者會被要求採取某些適當的對策。

Electrical Safety Notice



Warning: THE AC ADAPTER SUPPLIED WITH YOUR COMPUTER CONTAINS DANGEROUS VOLTAGES. IT CONTAINS NO USER SERVICEABLE PARTS. DO NOT REMOVE THE COVER.



Warning: ELECTRICAL CURRENT FROM POWER, TELEPHONE AND COMMUNICATION CABLES IS HAZARDOUS. TO AVOID SHOCK HAZARD, CONNECT AND DISCONNECT CABLES AS DESCRIBED BELOW WHEN INSTALLING, MOVING OR OPENING THE COVERS OF THIS PRODUCT OR ATTACHED DEVICES.

Connect Peripherals Devices to Your Computer

1. Turn your computer and peripherals OFF.
2. Connect all cables between your computer and any peripherals.
3. Connect all signal cables; for example, modem cable to a telephone receptacle.
4. Connect the power cord to the outlet.
5. Turn the peripherals ON and then turn your computer ON.

WHICH IS NOT A CUSTOMER SERVICEABLE PART AND MUST NOT BE REPLACED BY THE CUSTOMER / END USER. IF THE LITHIUM BATTERY REQUIRES REPLACEMENT, THE UNIT MUST BE RETURNED TO THE FACTORY OF MANUFACTURER, AS THERE IS A DANGER OF EXPLOSION IF THE BATTERY IS INCORRECTLY REPLACED.

Environmental Notice



Note – The fluorescent lamp located in the liquid crystal display (LCD) contains a small amount of mercury. Dispose of it in accordance with your company's safety procedures, local procedures or return it to your supplier for safe disposal.

Important Notice

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6. Place this equipment on a reliable surface when installing. A drop or fall could cause injury.
7. Enclosure openings are for air circulation and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source when connect the equipment to the power outlet.
9. Place the power cord so that it won't be stepped on or tripped over. Do not place anything on top of the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect the equipment from outlet to avoid being damaged by transient over voltage.
12. Do not spill liquids onto equipment; this may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should only be opened by qualified service personnel.
14. If any of the following situations arises, have the equipment checked by qualified service:
 - A: The power cord or plug is damaged.
 - B: Liquid has penetrated into the equipment.
 - C: The equipment has been exposed to moisture.
 - D: The equipment does not work well or operation does not match behavior described in user's manual.
 - E: The equipment has been dropped or damaged.
 - F: The equipment has obvious signs of damage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE TEMPERATURES EXCEED 60 °C (140 °F); IT MAY DAMAGE THE EQUIPMENT.

6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsoffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, dass diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluss an das Stromnetz die Anschlusswerte.
9. Verlegen Sie die Netzanschlussleitung so, dass niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsoffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. Elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zur Überprüfung:
 - A: Netzkabel oder Netzstecker sind beschädigt.
 - B: Flüssigkeit ist in das Gerät eingedrungen.
 - C: Das Gerät war Feuchtigkeit ausgesetzt.
 - D: Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - E: Das Gerät ist gefallen oder das Gehäuse ist beschädigt.
 - F: Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

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- ⊕ Typographical Conventions
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Related Documentation

Publication	Topics
777E/ES Technical Reference Manual	Provide basic skill for qualify technician to maintain/repair 777E/ES.

Sans-serif Bold	Used to indicate particular keys or key sequences that you press on the keyboard, and buttons displayed in windows.	To power off, press the Power button.
<i>Italics</i>	Used to emphasize important terms when they are first used and for titles of other publications.	The term <i>domain</i> is often applied to a group of networked computers within an organization.

Shell Prompts

Shell	Prompt
C shell	machine_name%
C shell superuser	machine_name#
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

- ⊕ One DB-9 serial port
- ⊕ One HD15 video port
- ⊕ Two USB 1.1b ports
- ⊕ Four USB 2.0 “mini-B” Receptacles ports
- ⊕ One Security Key port
- ⊕ One 5V output port
- ⊕ One Audio Line-out port
- ⊕ One Audio Mic-in port
- ⊕ One slim type ATAPI DVD-ROM or CD-RW/DVD-ROM (optional)
- ⊕ One Lithium-Ion Rechargeable Battery

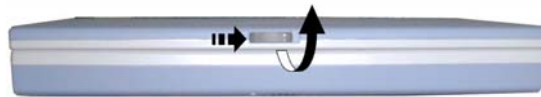
Differentiating Features

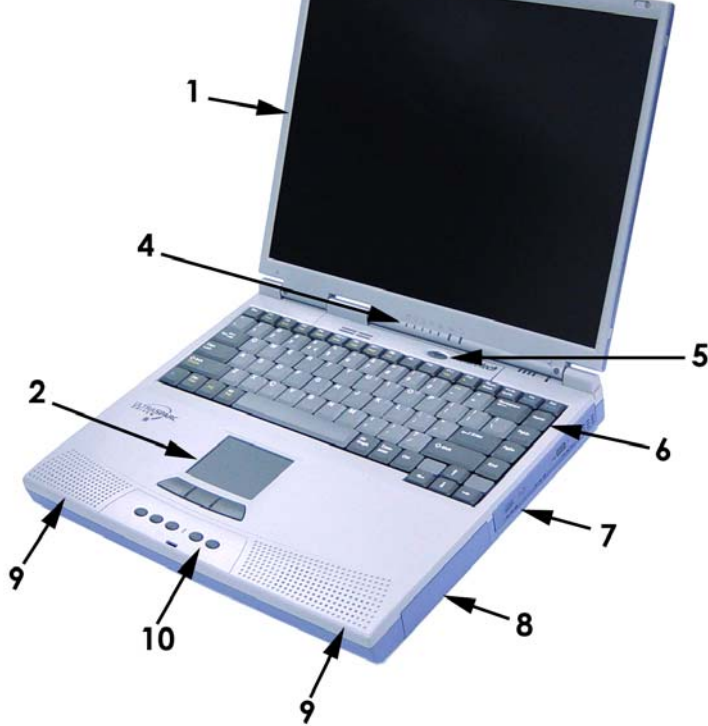
Difference between the 777E and 777ES

- ⊕ 777E come with PCMCIA module. The PCMCIA module provides one type-II socket supports 32-bit CardBus PC card.
- ⊕ 777ES come with 2nd HDD bay allows to install 2.5-inch hard disk drive.

1.1 Opening the Display Panel

Refer to the figure below; you can find the display release latch located on the front panel to secure the display panel. Push on the latch outward as arrow below to open the display panel. Gently tilt the display panel forward or backward to the best viewing angle.





Front View of 777E/ES

1. Display—15.0-inch SXGA-Plus TFT LCD Screen

The 777E/ES uses a 15.0-inch TFT LCD panel supporting SXGA-Plus (1400x1050 pixels) resolution.

2. Touchpad

The pressure sensitive touchpad provides all the functions of a three-button mouse. The touchpad **can not** be used simultaneously with an external USB mouse.

The power button allows power on/off system. see chapter 4 for detail shutdown operation.

6. Keyboard

The low-profile keyboard emulates all the functions of a full-size Sun keyboard including an embedded keypad and a full array of special function keys. The keyboard provide Solaris™ function keys to help ease navigation in the Solaris™ operating system.

7. DVD ROM Module

Enhanced IDE 5.25-inch DVD-ROM/Combo drive.

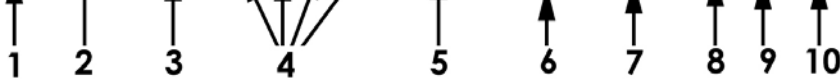
8. Battery Module

Rechargeable Lithium-Ion Battery Module.

9. Built-in Stereo Speakers

10. Personal ID Security

5 button pure hardware solution, 800K possible combination passwords. See chapter 5 for detail operating instruction.



Rear View of 777E/ES

1. DC-In Jack

The DC power input jack allows connecting a power adapter which converts AC power to DC power for computer use.

2. Security Key Port (optional)

The 777E/ES provides optional data encryption function to encrypting entire hard drive. You need to insert security key to the security key port to boot up Solaris and access your hard drive.

3. Serial Port

This 9-pin serial port supports RS-232 devices such as data terminal or external serial modem.

4. USB 2.0 Ports

777E/ES provides 4 high-speed USB 2.0 ports supporting data speeds up to 480 megabits per second (Mbps). These USB 2.0 ports automatically configures itself for USB 1.1 or USB 2.0 operation.

5. CRT Port

This 15-pin CRT port supports standard VGA-compatible devices such as an external CRT monitor or projector.

6. Air Vent

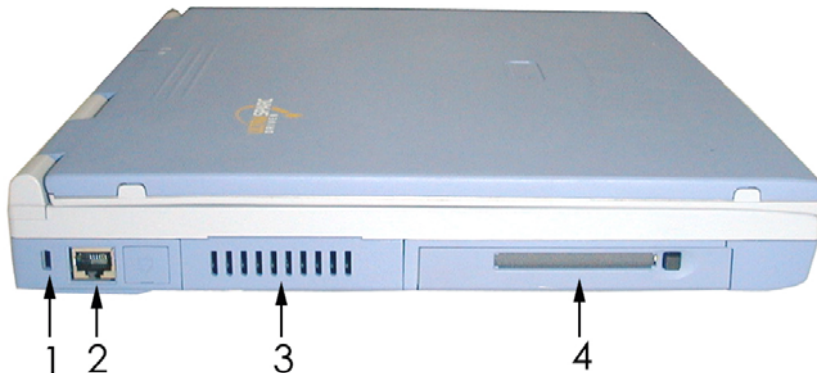
This area will bring the heat out for heat exchange.

Front Left View of 777E

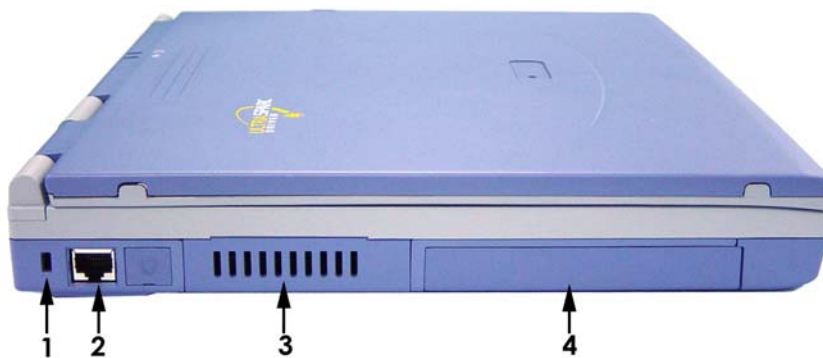
This Mic-in jack is used to connect an external microphone.

1.2.3 Left View

The following figures describe all external components and accessories on the front left view of 777E and 777ES.



Front Left View of 777E



Front Left View of 777ES

3. Air Vent

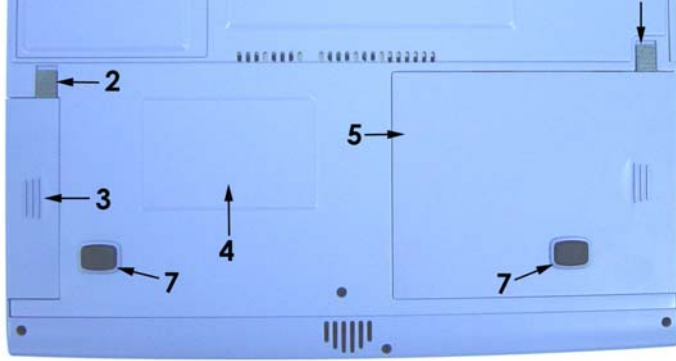
This area will bring the heat out for heat exchange.

4. PCMCIA Module(777E)/2nd HDD Module(777ES)

777E will come with PCMCIA module, currently 777E supports the following CardBus cards:

3ComMegahertz 10/100 LAN CardBus card (3CCFE575CT), Adaptec SlimSCSI 1480B CardBus SCSI card.

777ES will come with 2nd HDD module allows you to add additional 2nd hard drive to extend your storage.



Bottom View of 777E/ES

1. RAM Cover

2. Battery Module Latch

3. Removable Battery Module

777E/ES comes equipped with a factory-installed battery pack module. After the battery is depleted, the module can be removed and replaced with a charged battery.

4. FCC Label


5. PCMCIA Module(777E)/2nd HDD Module(777ES)

6. PCMCIA/2nd HDD Module Latch

7. Rubber Stands

The rubber feet are needed to elevate the computer allowing air to pass freely beneath the system. This will help ensure proper cooling of the computer.



 Do not disassemble the system yourself; unfamiliar operation will damage system and the warranty will be expired.

2.2 The Power System

2.2.1 AC Power System

The power system for 777E/ES is comprised of two parts, the power adapter and the battery power system. The power adapter converts AC power from a wall outlet to the DC power required by the computer. The battery pack consists of a set of Lithium-Ion (Li-Ion) battery cells housed together. When the power adapter is connected to the computer, it provides power to the computer and charges the internal battery at the same time as long as it is plugged into an electrical outlet.



Caution

To protect your computer from damage, use only the power adaptor that came with this computer because each power adapter has its own power output rating.

2.2.2 Battery Power System

The 777E/ES is designed to work with a removable battery pack located inside the battery pack compartment. Using power management features through the Solaris O.S can extend the battery life.

The internal battery is specially designed for use with your 777E/ES. It incorporates a number of safety features.

- It is shaped to aid correct insertion.
- It contains electrical protection against damage by short circuit.
- It is physically protected against chemical leakage or rupture.



Note – A brand-new battery have to be fully charged. Before you start to use the battery, we strongly recommend to charge the battery at least 8 hours.

2.2.2.2 Battery Warning Beep

When you run out of system battery, the battery low warning beep will be activated, the battery warning beep provides a visual warning when the battery is nearing exhaustion.

The battery warning beep provides three warning levels:

- First, the battery warning beep will be enabled by each 7 seconds when battery life reaches 15% of battery power remaining.
- Second, the battery warning beep will be enabled by each 3.5 seconds when battery life reaches 10% of battery power remaining.
- Third, 777E/ES perform Autoshutdown process automatically when battery life reaches 7% of battery power remaining.

At the second warning, you can take one of the following actions:

- Connect the AC adapter to charge the battery and continue working.
- Shutdown system, replace the battery with a fully charged battery and then power on system again.
- Save any files which you're currently working on and continue working before 777E/ES performs an automatic shutdown.

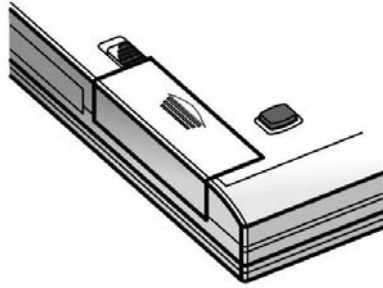
after several weeks of storage even if it is not fitted into your computer. Also, when it is installed in your system, the internal battery will discharge while your computer is not in use. This may take up to 3 weeks depending on the level of charge when the system was last used.

⊕ System behavior with an Exhausted Battery

The charge percentage may not be identified if the battery is completely exhausted.

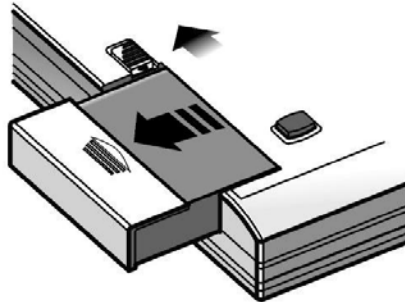
2.2.2.4 Battery Conditioning

A brand-new battery, or one that has not been used for a long time, will store less charge than expected for the first few charge and discharge cycles. This is normal. Over the course of five charge and discharge cycles, the capacity of the battery will rise to its correct value.



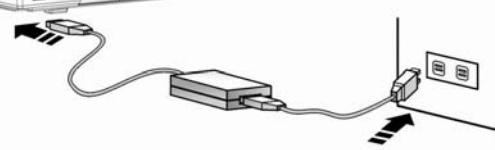
2.3.2 Removing Battery Pack

1. Push and hold down the battery latch to unlock the battery pack.
2. Pull out the battery pack towards the arrow as figure below to remove the battery pack.



Warning

Do Not remove the battery pack while the computer is being use without the AC adapter.



2.4.1 The AC Adapter

The most obvious way to conserve battery power is to avoid using the battery when there is an available AC power source. The AC Adapter is lightweight and compact, so it is very convenient to bring while traveling. By using the AC Adapter as much as possible, you can ensure that you will have a charged battery whenever you really need it.



Warning

Use only the power adapter that comes with your computer. **Do Not** use the adapter with any other electrical equipment. Always plug the connector the AC outlet first to check whether the green LED light, that means the AC power is within accepted range, then connect the DC power to the DC-in jack of the computer.

2.5 Using and charging the battery

Use the factory-supplied AC adapter only to charge your battery. When the computer is connected to the AC adapter, the computer will recharge the battery. Don't worry about overcharging since a thermo sensor is built in the battery pack to prevent it.

The Li-Ion battery pack has no memory effect, but the discharging and recharging cycle is limited. After this time, the efficiency of battery may begin to decrease and you should consider purchasing a replacement from your dealer. Fully draining and charging the battery will last battery longer.

operating system locks up and cannot shutdown.



Warning

Do Not turn off the computer while the hard drive is in use, doing this may loss or destruction your data. Always wait for 5 seconds after turning OFF your computer before turning it back ON.

2.7 The Power-On Self Test

When you power on the 777E/ES, it will run through a diagnostic tests called Power-On Self Test (POST). The Power-On Self Test includes a record of the computer's configuration. It's used to make a hardware check of the system. You can connect a RS232 cable between your 777E/ES and another computer through ttya to monitor the POST.

2.8 Using Power Management

2.8.1 Dtpower

To Start Dtpower through the CDE Workspace

1. On the CDE desktop, hold down the menu button on your touchpad.
2. From the pull-down list, select "Tools".
3. From the pull-down list, select "Power Manager".

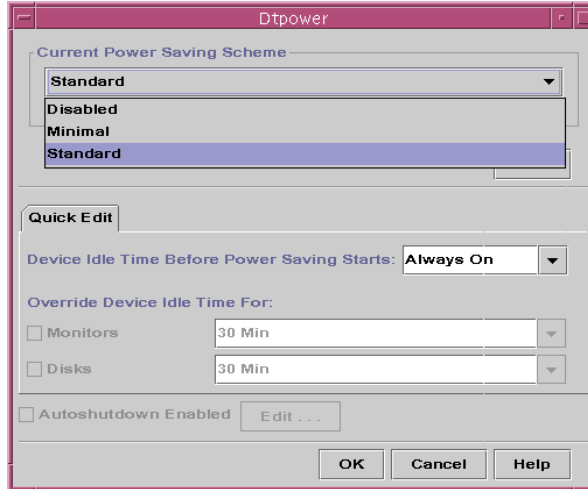
To Start Dtpower from the Applications Manager

1. From the front panel on the CDE desktop, select "Applications Manager".
2. From Applications Manager, select "Desktop_App".
4. From Desktop_App, select "Power Manager".

Standard

Display and Disk will be turned off after system idle for 30 minutes.

You can click on the “More” icon and adjust your own power saving function.



You can create a customized power scheme, overriding the schemes that come preset in the Dtpower software. You cannot overwrite the schemes provided by the system, but you can create a customized scheme. When you change a system-shipped scheme, a new scheme called “Customized” is created. The Customized scheme remains the default scheme even if you reboot your system. For further more detail descriptions, you can access Sun doc’s website at [Http://docs.sun.com](http://docs.sun.com) to obtain the related documentations.

operations (such as receiving mail) that may be affected while your system is suspended.

You can suspend your system automatically using the AutoShutdown feature in the Power Management software. To suspend your system manually, follow the instructions:

1. Press the right cursor button and select "**Suspend System**".
2. Select Suspend in the confirmation window.
5. Wait for the system to power off.

2.8.3 Low Power Feature

The Power Management software includes a power saving feature called Low Power. The Low Power feature will lock the display immediately.

Follow the instructions to use Low Power feature:

1. Press the FN Key + Power Key.
2. Select Low Power in the confirmation window.

2.9 Run Levels

2.9.1 Run Levels

A system's run level defines what services and resources are available to users. A system can be in only one run level at a time.

The Solaris environment has eight run levels, which are described in the following. The default run level is specified in the run level 3 (Multi-user state).

Run Level 0

Power-down state, Run level 0 will bring system to Power-down to shut down the operating system so that it is safe to turn off power to the system.

operations. Multiple users can access the system and all file system. All daemons are running except for the NFS server daemons.

Run Level 3

Multi-user level with NFS resources shared, Run Level 3 will bring system to Multi-user level for normal operations with NFS resources shared. This is the default run level for the Solaris environment.

Run Level 4

Alternative multi-user state, Run Level 4 will bring system to Alternative multi-user; currently is not available.

Run Level 5

Power-down state, Run Level 5 will bring system to shut down the operating system so that it is safe to turn off power to the system.

Run Level 6

Reboot state, Run Level 6 will bring system to shut down the system to run level 0, and then reboot to multi-user level with NFS resources shared.

2.9.2 Determine a System's Run Level

Using the "who -r" command to Display run level information.

Use the "who -r" command to determine a system's current run level for any level, except run level 0.

```
$ who -r
      .          run-level  31   Jun 27 15:49  2  33  04  S5
```

1. Identifies the current run level
2. Identifies the date of last run level change
3. Also identifies the current run level
4. Identifies the number of times the system has been at this run level since the last reboot
5. Identifies the previous run level

hardware diagnostics before you bring the system to a different Run Level. You need to change the default boot device to add a new drive to the system either permanently or temporarily, to change the network boot strategy, or if you want to temporarily boot a standalone system from the network.

Follow instruction below to change NVRAM settings for boot device.

1. Pressing "**Stop+Fn+A**" to stop auto-boot procedure after powering on system or become super-user then bring the system to run level 0.
init 0
The ok PROM prompt is displayed.
2. Change the value of the boot-device parameter.
ok setenv boot-device *device[n]*
3. Verify that the default boot device change.
ok printenv boot-device
4. Save the new boot-device value.
ok reset
The new boot-device value is written to the PROM.

2.10.2 Shutdown a system

This describes the procedures for shutting down systems.

Solaris software is designed to run continuously so that the electronic mail and network software can work correctly. However, some system administration tasks and emergency situations require that the system be shut down to a level where it is safe to remove power. In some cases, the system needs to be brought to an intermediate level, where not all system services are available, such as the following:

Use system's stop key sequence to shutdown a system is not clean shutdowns because system services are terminated abruptly. However, it is sometimes necessary to use these actions in emergency situations. The following describes the various shutdown commands and provides recommendations for using them.

shutdown

The shutdown command will call the init program to shut down the system and bring system to run level S by default. It is recommended for servers running at run level 3 because users are notified of the impending shutdown. Also notified are the systems that are mounting resources from the server that is being shut down.

Use shutdown command to shutdown system:

1. Become superuser

2. Shutdown system

```
#shutdown -y -l init-level -g grace-period
```

-y: Continues to shutdown the system without intervention.

-l *init-level*: Bring the system to an Run Level, the choice are 0,1,2,5,6. The default is S.

-g *grace-period*: Indicates a time (seconds) before the system is shutdown. The default is 60 seconds.

#init run-level

init 0: Bring system to Power-down state to shut down the operating system so that it is safe to turn off power to the system.

init 5: Bring system to Power-down state and shutdown system automatically.

reboot

The reboot command will sync the disks and stop the processor.

It is not recommended to use reboot command to shutdown system.

halt

The halt command will sync the disks and stop the processor.

Not recommended to use halt to shutdown system because it doesn't execute the /etc/rc0 script. This script will stop all processes, sync the disks, and unmount any remaining file systems.



3.1 Overview of System Configuration

Before you configure your 777E/ES, you have to prepare some information for the system configuration. You may need some help from your system administrator. You need to provide information as following:

- ⊕ Assigning a host name and obtain a Internet Protocol (IP) address
- ⊕ Set your own time zone
- ⊕ Set a password for the superuser (root) account
- ⊕ Create user accounts
- ⊕ Network configuration information

3.2 Initial Configuration

Before you configure your system, you have to collect information as the table below. You may need to consult your system administrator to obtain needed information.

Category	Example	Your Configuration
Host Name	xxxxx	
IP Address	192.168.1.10	
Subnet Mask	255.255.255.0	
Name Service	DNS	
Domain Name	naturetech.com.tw	
DNS IP Address	192.168.1.1	
Time Zone	No example given	
User Name	xxxxx	

3. Belgium-Flemish (ISO8859-1)
4. Belgium-Flemish (ISO8859-15 - Euro)
5. Bosnia (ISO8859-2)
6. Brazil (ISO8859-1)
7. Bulgaria (ISO8859-5)
8. Canada-English (ISO8859-1)
9. Catalan, Spain (ISO8859-1)
10. Catalan, Spain (ISO8859-15 - Euro)
11. Croatia (ISO8859-2)
12. Czech Republic (ISO8859-2)
13. Denmark (ISO8859-1)
14. Denmark (ISO8859-15 - Euro)
15. Egypt (ISO8859-8)
16. Estonia (ISO8859-15)
17. Finland (ISO8859-1)
18. Finland (ISO8859-15 - Euro)

Press Return to show more choices.

Please make a choice (0 - 51), or press h or ? for help:

the Solaris CD. See your hardware documentation for the current list of supported cards.

Specify No if the system is connected to a network/communication card that is not supported on the Solaris CD, and follow the instructions listed under Help.

Networked

Yes
 No

F2_Continue F6_Help

- DHCP

On this screen you must specify whether or not this system should use DHCP for network interface configuration. Choose Yes if DHCP is to be used, or No if the interfaces are to be configured manually.

WARNING: Because this machine booted from the network, DHCP support will not be enabled, if selected, until after the system reboots.

Use DHCP

Yes
 No

F2_Continue F6_Help

A host name must be at least two characters; it can contain letters, digits, and minus signs (-).

Host name: simon

F2_Continue F6_Help

3.2.4 Internet Address

Assign the IP address your 777E/ES.

The IP address must be unique for your system.

- IP Address

On this screen you must enter the Internet Protocol (IP) address for this system. It must be unique and follow your site's address conventions, or a system/network failure could result.

IP addresses contain four sets of numbers separated by periods (for example 129.200.9.1).

IP address: 192.168.1.10

F2_Continue F6_Help

On this screen you must specify whether this system is part of a subnet.
If you specify incorrectly, the system will have problems communicating
on the network after you reboot.

> To make a selection, use the arrow keys to highlight the option and
press Return to mark it [X].

System part of a subnet

 Yes

No

F2_Continue

F6_Help

> To make a selection, use the arrow keys to highlight the option and press Return to mark it [X].

Enable IPv6

[] Yes

[X] No

F2_Continue

F6_Help

lists here.

>To mark a selection, use the arrow keys to highlight the option and press Return to mark it [X].

Name service

- NIS+
- NIS
- DNS
- LDAP
- None

F2_Continue F6_Help

- Domain Name

On this screen you must specify the domain where this system resides. Make sure you enter the name correctly including capitalization and punctuation.

Domain name: naturetech.com.tw

F2_Continue F6_Help

- DNS Search List

On this screen you can enter a list of domains that will be searched when a DNS query is made. If you do not enter any domain, DNS will only search the DNS domain chosen for this system. The domains entered, when concatenated, may not be longer than 250 characters.

Search domain: naturetech.com.tw

Search domain:

Search domain:

Search domain:

Search domain:

Search domain:

- Confirm Information

>Confirm the following information. If it is correct, press F2; to change any information, press F4.

Name service : DNS

Domain name: naturetech.com.tw

Server address(es): 192.168.1.1

Search domain(s): naturetech.com.tw

On this screen you must specify your default time zone. You can specify a time zone in three ways: select one of the geographic regions from the list, select other - offset from GMT, or other - specify time zone file.

> To make a selection, use the arrow keys to highlight the option and press Return to mark it [X].

Regions

- Africa
- Asia, Eastern
- Asia, Western
- Australia / New Zealand
- Canada
- Europe
- Mexico
- South America
- United States
- other - offset from GMT
- other - specify time zone file

F2_Continue F6_Help

- Mountain
 - Pacific
 - East-Indiana
 - Arizona
 - Michigan
 - Samoa
 - Alaska
 - Aleutian
 - Hawaii
-

F2_Continue

F5_Cancel

F6_Help

Day (1-31) : 30
Hour (0-23) : 20
Minute (0-59) : 18

F2_Continue F6_Help

- Confirm Information

> Confirm the following information. If it is correct, press F2; to change any information, press F4.

Time zone: US/Eastern
Date and time: 2001-07-30 20:18:00

F2_Continue F4_Change F6_Help

characters can be used including letters, numbers and punctuation marks.

After you have entered your root password, a Solaris™ operating system displays the Solaris™ login prompt. You should create a user account as described in the next section.

Root password:
Re-enter your root password.
Press Return to continue.
System identification is completed.

```
rebooting system due to change(s) in /etc/default/init
Jul 30 17:19:32 rpcbind: rpcbind terminating on signal.
syncing file systems... done
rebooting...
Resetting ...
```



⊕ Many of the operations described in this manual require you to be logged in as root. The root account gives you the privileges required to carry out system administration tasks such as disk maintenance. However, using the root account for day-to-day purposes is very risky as you can easily cause damage to the operating system.

⊕ As a rule, you should log in to your normal user account for every day purposes. Then, when you need to carry out particular task as root, enter the su command and the root password to log in to the root account:

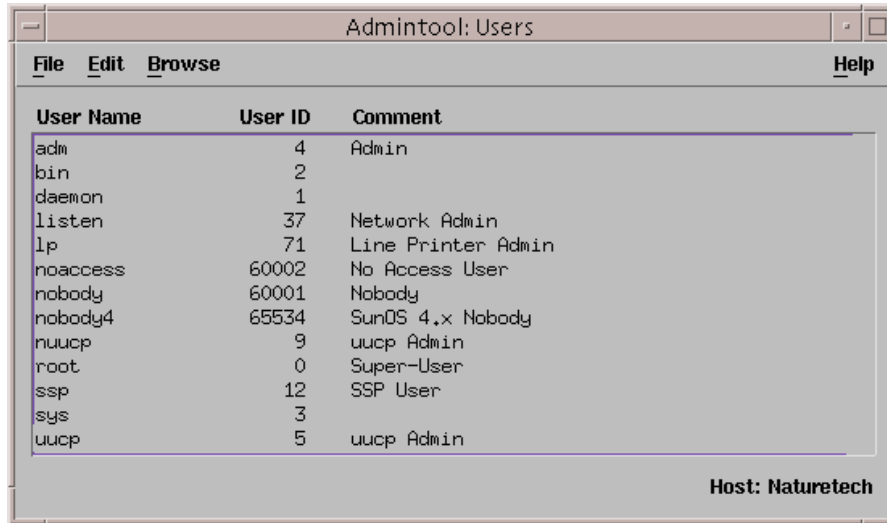
```
% su
```

```
Password:
```

```
#
```

⊕ The hash prompt (#) indicates that you have root privileges. When you have completed the task requiring root privilege, close the root account by pressing Ctrl-D on the keyboard.

- right mouse button. The CDE desktop Workspace menu is displayed.
3. From the Workspace menu, select Tools and then AdminTool. The AdminTool window is displayed. If necessary, select the User from the Browse menu to display a list of users.
 4. From the Edit menu, select Add. The Add User window is displayed.



Password: Cleared until first login

Min Change: days

Max Change: days

Max Inactive: days

Expiration Date: (dd/mm/yy) None None None

Warning: days

HOME DIRECTORY

Create Home Dir:

Path:

OK Apply Reset Cancel Help

3.3.1 User Name

This is the login name for the user. This is often an abbreviation or your initials.

3.3.2 User ID

The user ID is a unique number by which the network identifies a user account. Numbers 1 through 10 are reserved. You should consult the network administrator for your site for a valid number. If you are using your system as a stand-alone unit, use 100 for the first account, 101 for the next and so on.

must enter a directory path in the text field. User accounts are normally located in /export/home. After you have entered your account details, click on OK and Solaris™ to create a user account based to your specifications.


3.4 Restarting the System

When you completed system configuration, system will reboot automatically and bring system to Solaris login screen. You can login to Solaris CDE or GNOME 2.0 session and you can select your own language.





The embedded numeric keypad consists of 15 keys located central to the right side of the keyboard. It serves as a numeric keypad, cursor and screen-control, and as part of the normal keyboard.

The Num Lock  key is used to invoke the numeric keypad, the set of alphanumeric keys marked with blue numbers or characters on their front

face. By default, the Num Lock  indicator is off when you power on

your system. To turn on the Num Lock  indicator and activate the

embedded numeric keypad, press Fn  and Num Lock  keys.

That is, when the Num Lock of the internal keyboard is ON, the Num Lock of the external keyboard will also be on and vice versa. The function of the embedded numeric keypad and the external numeric keypad will still follow the status of the Num Lock key:

Num Lock OFF:

1. The embedded numeric keypad acts as a normal keyboard and the Num Lock LED is turned off.
2. The external numeric keypad acts as a cursor pad and the Num Lock LED of the external keyboard is turned off.

Num Lock ON:







1. The embedded numeric keypad acts as a numeric keypad and the Num Lock LED is turned ON.
2. The external numeric keypad acts as a numeric keypad and the Num Lock LED of the external keyboard is turned ON.























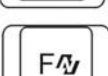

4.1.2 Hot Keys

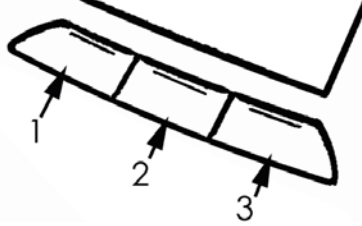
The computer provides the following Hot-Keys:

- For regular adjustment
- For Sun's Definition key

Regular adjustment for Audio and LCD brightness

		Disable/Enable System Sound Generation
		Increase Volume
		Decrease Volume

		Props
		Compose
		Front
		Open
		Find
		Again
		Undo
		Copy
		Paste
		Cut
		Help
		Power Off



1. Left Cursor Button
2. Central Button
3. Right Cursor Button
4. Touchpad

4.2.1 Using the Touchpad

Light pressure with the tip of your finger is all that is required to operate the touchpad. Because the touchpad is electrostatic sensitive, objects cannot be used in place of your fingers. The primary function of the touchpad is to move the cursor around or select items displayed on the screen with the use of your fingertip. The following illustrations demonstrate proper use of the touchpad.

Moving the cursor – Place your finger in the center of the touchpad and do the followings to move the cursor:

- Up – Slide your finger forward
- Left – Slide your finger to the left
- Down – Slide your finger backward
- Right – Slide your finger to the right

Clicking/Tapping – With the cursor over an item, press the left button or use your fingertip to touch the touchpad lightly, keeping your finger on the touchpad until the item is selected. The selected item will change color.

(Press the left cursor button
and release)

(Lightly but rapidly strike the
touchpad)

Double-clicking/Double-tapping – This is a common skill for launching a program directly from the corresponding icon you select. Move the cursor over the icon you wish to execute, press the left button or tap the pad twice in rapid succession, and the system launches the corresponding program. If the interval between the clicks or taps is too long, the operation will not be executed.



Double-Clicking
(Press the left button twice
and release)



Double-Tapping
(Lightly but rapidly strike the
touchpad twice)

Dragging – Dragging means to pick up an item and place it anywhere on the screen you wish. You can move the cursor over the item you select, and while keeping the left button depressed, moving the cursor to the desired location, then release the button. Or, you can simply double-tap on the item and hold while dragging the item with your fingertip. The following 2 examples produce the same results.

(Hold left button and slide
finger on touchpad)

(Lightly strike the touchpad
twice and then slide)

Duplicate – You can duplicate text (copy-paste) easily by clicking the central button. Point the mouse at the location and double-click to mark the text, and click central touchpad button. The duplicate button is the middle touchpad button. The text is copied to the new location without removing it from its original location.



4.2.2 Caring for the Touchpad

The touchpad is pressure sensitive. If not properly cared for, it can be easily damaged. Take note of the following precautions.

- Make sure the touchpad does not come into contact with dirt, liquids or grease.
- Do not touch the touchpad if your fingers are dirty or wet.
- Do not rest heavy objects on the touchpad or the touchpad buttons.
- Do not scratch the touchpad with your fingernails or any hard objects.



NOTE

The touchpad responds to movement not to force. There is no need to tap the surface too hard. Tapping too hard does not increase the responsiveness of the touchpad. The touchpad responds best to light pressure.



Your 777E/ES supports USB Sun-compatible type 6 keyboard and USB Sun-compatible mouse. Other types of mouse or keyboard may not be supported.

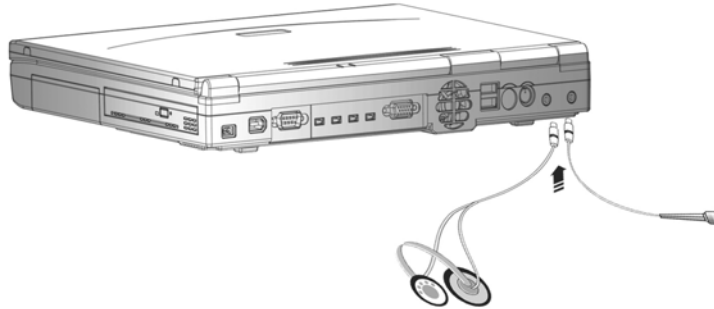


Note

- ⊕ The Sleep key on the USB keyboard behaves differently than the power key on Type-5 or Type-6 keyboards. On a USB keyboard, you can shutdown the system using the power key.
- ⊕ A regular USB keyboard may not support all function keys as the left block of Sun keyboard.
- ⊕ Multiple keyboard/mouse is not supported. If connect a USB keyboard or USB mouse, you can only use the external USB keyboard/mouse. **The priority for the external input device is higher than the internal input device.**
- ⊕ If you would like to use external USB keyboard/mouse, you must shutdown system, plug-in external keyboard/mouse than boot up system.

4.5 External Audio Connections

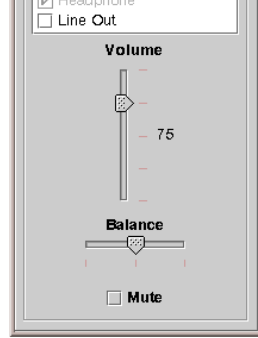
The 777E/ES provides easy access for connecting a stereo headphone, mono microphone.



4.5.1 Adjust Mic-In and Line-out

The Audiotool allows you to record and play back audio files and provides controls to adjust the input level of the microphone, Mic-In and the volume of the speaker and Line Out.

For more information about Audiotool, please refer to your Solaris™ documentation.

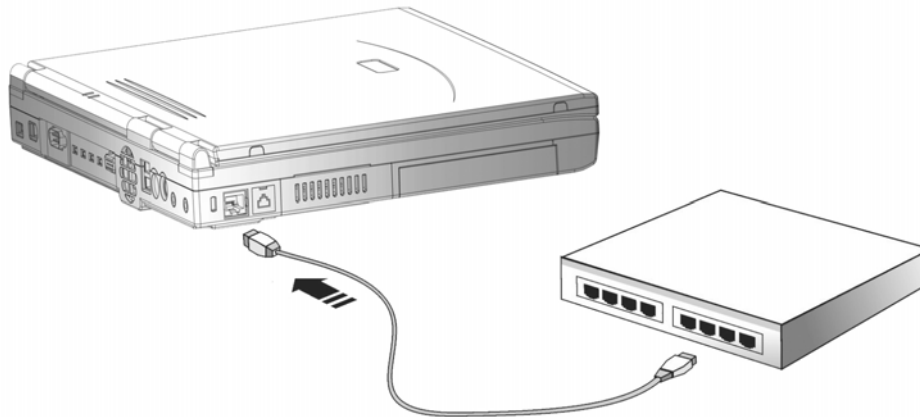


4.5.3 External Audio Outputs

The Line Out provides a suitable input for a PA amplifier or for active or multimedia speakers (speakers that contain their own amplifier). The audio output can be adjusted to provide CD-quality sound reproduction.

4.6 Network Connections

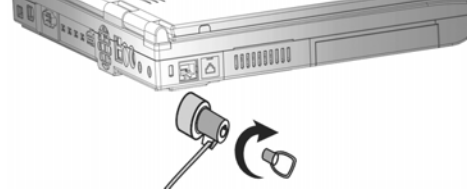
The built-in network comes with two RJ-45 ports. RJ-45 network cables are found connecting network computers to network hubs or switches usually found in business environments.



Ethernet device name for 777E/ES is "eri0". You can configure network interface during system initialization. **You can use "sys-unconfig" command if you didn't configure network interface during system initialization.** Refer to chapter 3 and chapter 6 for detail network initialization and configuration.

4.7 System Memory Expansion

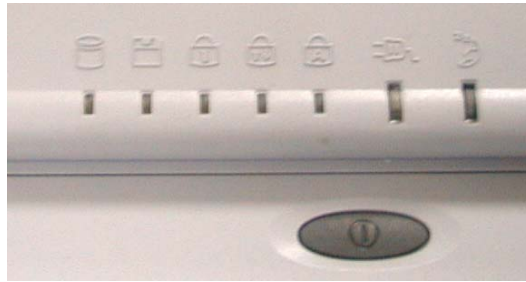
Under some circumstances, you may find additional memory is required. This is particularly true as applications become more complex. Expanding system memory is one method of increasing system performance by decreasing hard disk access. Four non-standard 144-pin SO-DIMM (Small Outline Dual Inline Memory Module) sockets are available for system memory expansion using manufacturer's SDRAM SO-DIMM modules. Currently, SO-DIMM memory sizes are available in 256MB/512MB/1GB for each module. The maximum memory size you can expand for 777E/ES is 4GB using four 1GB SO-DIMMs. The 777E/ES automatically detects the amount of memory in the system and configure OBP accordingly during the POST (Power-On-Self-Test) process. There is no hardware or software setup required after the memory is installed. Only purchase expansion modules from your authorized retailer to ensure compatibility and reliability. **The memory module has to be installed by a certified technician.**





4.9 LED Indicators






There are seven LED indicators to provide current operating status information. Upon activating a certain function, a LED corresponding to that function will blink until you deactivate that feature.

Refer to the following figure to find the location of the LED indicators.



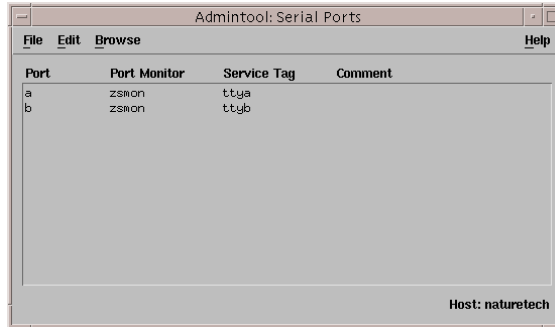
A description for each LED is listed below.

Standby		This LED is currently not defined.
Power And Charge Indicator		<ul style="list-style-type: none"> The LED blinks in green color to indicate the AC adapter is plugged-in; the system is powered ON and using power from AC adapter.

Lock		engaged. Press the [Caps Lock] key again to deactivate this feature.
Scroll Lock		This LED is currently not defined.
Num Lock		LED blinks to indicate the embedded keypad's numeric feature is activated. Press the [Num Lock] key again to deactivate this feature.
FDD Activity		This LED is currently not defined.
HDD Activity		LED blinks to indicate the hard disk or DVDROM drive is activated. System is accessing the hard drive or DVD-ROM.

admintool

2. From the Browse menu, select Serial Ports. The Serial Ports menu is displayed:



3. To edit a port's configuration, double-click the associated entry's line. A Modify Serial Port window is displayed.
4. Use this window to edit the parameters, such as baud rate and terminal type, for the port to suit your external device and application and then click on Apply to save the changes. You will need to consult the documentation for your serial device for information about the serial interface requirements.
For further more detailed manual to configuring serial devices, see the Sun Solaris™ documentation.

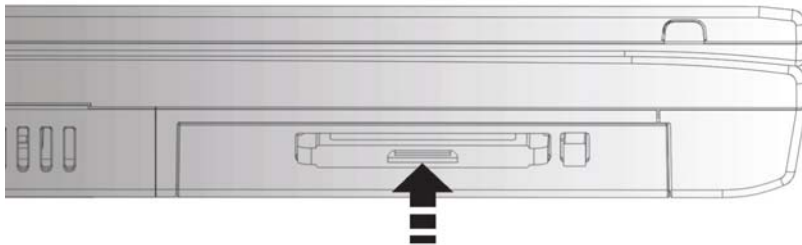
⚠ USB 1.1 devices cannot operate at USB 2.0 speeds even when connected to a USB 2.0 Hub.
⊕ USB 2.0 devices connected through a USB 1.1 Hub are limited to USB 1.1 speeds.

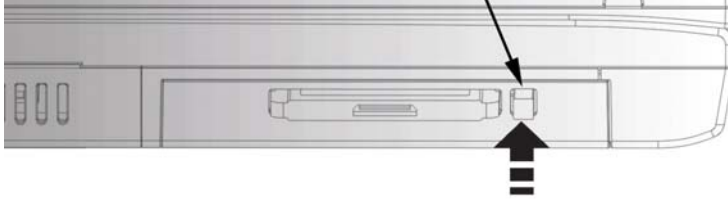
4.12 Using PCMCIA Devices

The 777E provides one PCMCIA socket accepts to connect PCMCIA Type II 32-bit CardBus PC card. Currently 777E supports 3Com 3CCFE575CT 10/100 LAN CardBus card, Adaptec USB2connect USB 2.0 CardBus card and Adaptec SlimSCSI 1480B UltraSCSI CardBus card. **Currently the driver only supports Solaris 8. The PCMCIA do not support hot-plug function, power off system, plug-in PCMCIA card then power on system if you want to use PCMCIA card.**

4.12.1 Installing PCMCIA card

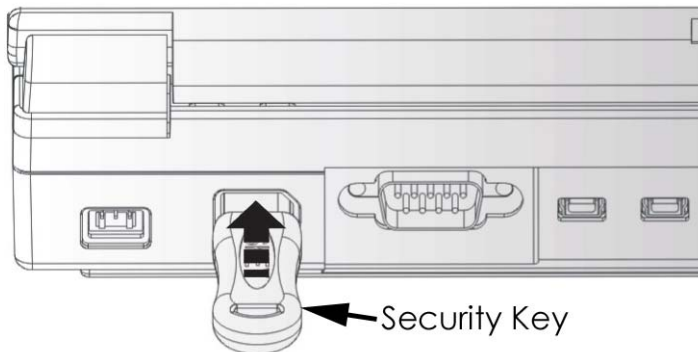
1. Insert the PC card with the connector side first.
2. Carefully connect any cables or adapters needed by the PC card. Usually connectors can only be inserted in one orientation. Look for a sticker, icon, or marking on one side of the connector representing the topside.





4.13 Using Data Encryption Function (optional)

The 777E/ES provides data encryption feature to encrypt/decrypt the entire hard disk bit by bit including boot sector and operating system with real-time performance. 777E/ES comes with a pair of portable security keys that load device status and most importantly, the DES/TDES security key. The Security KEY serves as an exclusive device for authentication from which that Security Key must present itself to activate the Data Encryption function. **You have to plug-in the Security Key to the security port to activate Data Encryption; otherwise, system can't recognize your hard drive.**



2. #cp /cdrom/cdrom0/NatWVGA-0.X+-sol8.sun4u.tar.gz /var/spool/pkg
3. #cd /var/spool/pkg
4. #gunzip -c NatWVGA-0.X+-sol8-sun4u.gz | tar xvf -
5. #pkgadd NatWVGA+
6. #reboot

“**NatWVGA+**” folder will be created after the package being installed to Solaris and located in /opt. The folder will contain readme file, and setting script.

Verify Driver version

Use “pkginfo” command to verify driver version if you want to update VGA driver.

```
#pkginfo | grep NatWVGA+
```

Adjust Resolution

Change directory to /opt/NatWVGA+/bin and execute “setting.sh” script to switch resolution settings. You can change resolution and color depth by executing this script.

The LCD for 777E/ES uses 15.0-inch SXGA-Plus panel; the standard resolution is 1400x1050 pixel. The maximum color depth is 24 bit. You can switch resolution and color depth by executing the setting script. The graphics can support higher resolution for external CRT monitor/projector and the maximum resolution is 1600x1200.



It is highly recommended that connect an external CRT monitor/projector before you adjust graphics settings.



The personal ID security is a unique, self-contained digital signature ciphering security/tracking device. A simple and intuitive 4-button keypad interface allows for over 800K password possibilities with any combination up to 5 buttonstokes. The personal ID security requires no software intervention, rendering the locking mechanism relatively hacker-proof. The personal ID security function is designed for secure your data, preventing unauthorized access to the system. We provide purely hardware operation. You can't "Power On" your computer without password when the security password is being created.

Entering the User Password

Holds down button 1 and the enter button together for more than 5 seconds takes the personal ID security to user password input mode. Upon entering the beginning of any password input mode, LED will start blinking until enter button is pressed. There are 4 dedicated security buttons to the personal ID security, and a password up to 5 buttonstokes can be entered. Multiple buttons can be entered together as one single buttonstoke. To complete the password keying process, press the enter button. After entering the password, the personal ID security will enter to security mode when the system is powered off and restarted.

Password Erasure and Modification

The password can be erased if they are no longer needed. A new password can be entered only if the old one is erased. Holds down button 3 and the enter button together for more than 5 seconds to enter the erasing user password mode, after key in the user password and enter button, user password will be erased. A new user password can be entered if desired.

Upon entering any erasing or entering mode, LED will start blinking

5.1.1 Operation Instruction

5.1.1.1 Create password:

1. Power on system
2. Hold down button 1 and enter button together for more than 5 seconds for creating User Password, LED will start blinking until enter button is pressed.
3. Press button #1~4 to enter your password, then press “**Enter**” key to create password.

5.1.1.2 Erase password:

1. Power on system and enter your password.
2. Hold down button 3 and the enter button together for more than 5 seconds for erasing User Password, LED will start blinking until enter button is pressed.
3. Press button #1~4 to enter your password, then press “**Enter**” key to erase password.



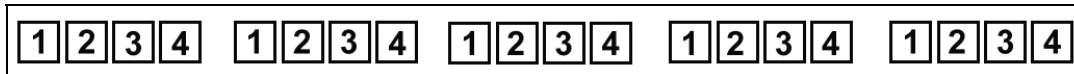
- 1. If you do not set security password, you can power on system by pressing power button and booting up your system directly.**
- 2. After password is created, when the system is on, the LED will blink with Green color. System will enter security mode as long as a valid password is found, you have to enter the correct password and Enter button to boot up your system.**
- 3. If you fail to enter the correct password 3 times continually, the LED will blink with Red color and system is remaining locked. When the Red LED blink, password enter is still possible, if you**

password.

6. Please don't forget to press the Enter key when you create/erase your password, if you do not press Enter key, system will not take any affect.
7. If you forget your Supervisor password, unfortunately, you have to replace the motherboard or send back your system to repair.

5.1.2 Key combination

This security function allows you to protect your personal notebook's information than ever. We provide this function with multiple degrees to setup password. At most, there are five degrees. That means you can set single key or combination keys for every degree. Refer to the picture below to reference.



5.1.2.1 Single Key

The password allows creating as single key; it could be one key, two keys, three keys, four keys or five keys. For this example, you can just push on key#1 then push on **Enter** key, or "1", "2" or "1" "2" "3" or "1" "2" "3" "4" "1" then push on **Enter** to create password.



you try to press these buttons before you set the password. If you set your password as combination key, you have to press these keys simultaneous for every degree. Please consider whether your fingers can fit in with the space for the buttons and whether you can press your combination key simultaneous. Otherwise, maybe you can set your own password but you can't press them simultaneous when you shutdown system and try to power on your system.

With security-mode set to command:

- A password is not required if you type the boot command by itself. However, if you use the boot command *with an argument*, a password is required.
- The go command never asks for a password.
- A password is required to execute any other command.

Examples are shown in the following screen.

```
ok
boot (no password required)
ok go (no password required)
ok boot filename (password required)
Password: (password is not echoed as it is typed)
ok reset-all (password required)
Password: (password is not echoed as it is typed)
```



Caution

It is important to remember your security password and to set the security password before setting the security mode. If you forget this password, you cannot use your system; you must call your vendor's customer support service to make your machine bootable again.

The security password you assign must be between zero and eight characters. Any characters after the eighth are ignored. You do not have to reset the system; the security feature takes effect as soon as you type the command.

If you enter an incorrect security password, there will be a delay of about 10 seconds before the next boot prompt appears.

5.2.1.2 Full Security

The full security mode is the most restrictive. With security-mode set to full:

- A password is required any time you execute the boot command.
- The go command never asks for a password.
- A password is required to execute any other command.

Here are some examples.

```
ok go (no password required)
ok boot (password required)
Password: (password is not echoed as it is typed)
ok boot filename (password required)
Password: (password is not echoed as it is typed)
ok reset-all (password required)
Password: (password is not echoed as it is typed)
```

5.3.1 Setting Superuser Password

Each 777E/ES must create superuser password at the first start, Solaris will bring system to Initial System Configuration, the last step will need to enter superuser (root) password as below. Follow the on-screen instruction to create your superuser (root) password.

On this screen you can create a root password.
A root password can contain any number of characters, but only the first eight characters in the password are significant. (For example, if you create `a1b2c3d4e5f6` as your root password, you can use `a1b2c3d4` to gain root access.)
You will be prompted to type the root password twice; for security, the password will not be displayed on the screen as you type it.

> If you do not want a root password, press RETURN twice.
Root password:
Re-enter your root password.
Press Return to continue.
System identification is completed.

rebooting system due to change(s) in /etc/default/init
Jul 30 17:19:32 rpcbind: rpcbind terminating on signal.
syncing file systems... done
rebooting...
Resetting ...

you should require users to change their passwords every six weeks. Once every three months is adequate for lower levels of security. **System administration logins (such as root and sys) should be changed monthly, or whenever a person who knows the root password leaves the company or is reassigned.**

5.3.2 How to change Password

In order to change superuser password, you have to become a superuser (root) then you can change superuser password.

- **Become superuser by one of the following methods. Both methods require that you know the root password.**
 1. Change to the superuser account by using the su command.

```
% su  
Password: root_password  
#
```

2. Log in as superuser on the system console.

```
hostname console: root  
Password: root_password  
#
```

The pound sign (#) is the Bourne shell prompt for the superuser account.

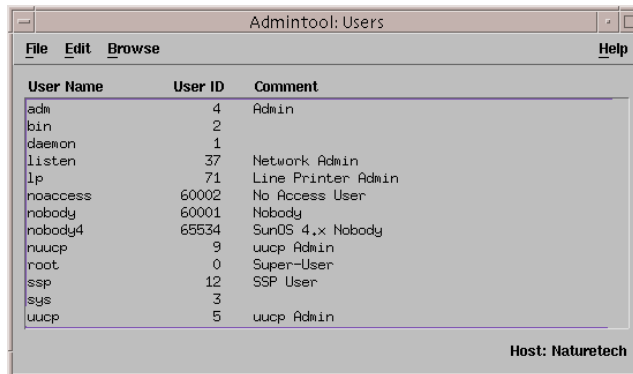
You must log out Solaris to activate the new superuser password.

5.3.3 Administer Passwords

You can use Admintool for password administration, which includes specifying a normal password for a user account, enabling users to create their own passwords during their first login, disabling or locking a user account, or specifying expiration dates and password aging information.

Admintool can only be use in the CDE session. Follow the instruction to use “Admintool”:

2. Log in Solaris as root and enter superuser (root) password. Log in the CDE session.
3. Push on the right mouse button and select “**Tools**” then select “**Admintool**”. The picture below will appear.



Primary Group: 10
Secondary Groups:
Comment:
Login Shell: Bourne /bin/sh

ACCOUNT SECURITY

Password: Cleared until first login
Min Change: days
Max Change: days
Max Inactive: days
Expiration Date: None None None
(dd/mm/yy)
Warning: days

HOME DIRECTORY

Create Home Dir:
Path:

OK Apply Reset Cancel Help

- ⊕ Nonsense words made up of the first letters of every word in a phrase
- ⊕ Words with numbers or symbols substituted for letters (b00k for book)

Do not use these choices for passwords:

- ⊕ Your name, forwards, backwards, or jumbled
- ⊕ Names of family members or pets
- ⊕ Car license numbers
- ⊕ Telephone numbers
- ⊕ Social Security numbers
- ⊕ Employee numbers
- ⊕ Names related to a hobby or interest
- ⊕ Seasonal themes, such as Santa in December Any word in the dictionary



and store network settings.

The following instruction describes how to activate/modify network settings temporary without “sys-unconfig” command. You can use “ifconfig” command to activate/modify network settings temporary, system will not store network settings in Solaris and network settings will disappear after system reboot.

⊕ Display network configuration

Use “ifconfig -a” command to display currently network configuration.

⊕ Modify network settings

Use “ifconfig eri0 up” command to activate eri0 and “ifconfig eri0 down” to deactivate eri0.

If you need to modify IP address or netmask setting, use “ifconfig eri0 inet xxx.xxx.xxx.xxx netmask xxx.xxx.xxx.xxx” command which inet is for IP address, netmask is for Netmask setting.

If you want to activate “eri1”, use “ifconfig eri1 plumb” command then configure network interface for eri1 by “ifconfig” command.

If you have 3COM Ethernet card inserted, the network interface should be “cbfsx0”. Use “ifconfig cbfsx0 plumb” then configure network environment for 3Com Ethernet card.

6.2 Configuring 777E/ES for a TCP/IP Network

The operations are required to configure your 777E/ES for a TCP/IP network:

- Configuring a hostname and IP address
- Many organizations appoint an individual to be responsible for the

many larger networks by designating one host as a *name server*. A name server provides a name-to-address mapping service for individual hosts within its domain allowing them to obtain the address information required for communication.

- Configure your 777E/ES to use a router (optional)
- If your network is local and has no connection to other networks or to the Internet, this is not required. On some networks, one machine, or several machines on very large networks, will be configured as a *router*. A router controls the passage of data packets between network segments and ensures the efficient flow of data.
- Reboot and test the system.

6.2.1 Assigning a Hostname and IP Address

Although you may have already assigned a hostname and IP address to your system during initial system configuration, you may need to change these details from time to time because your 777E/ES is a mobile system and may be connected to different networks at different locations. If this is the case, you will need to consult the network administrator responsible for all networks you wish to connect to.

- Simple Configuration Using `ifconfig`
- The `ifconfig` command can be used to set the basic characteristics of the network interface, the most important of which is to associate an IP address with the interface.

```
For example: ifconfig eri0 192.168.3.45 netmask 255.255.255.0  
broadcast192.168.3.255
```

- Configuring Your 777E/ES by Editing the Hosts Files
- The `/etc/hosts` file traditionally contains the name-to-address mapping for every host on the network, including the local host itself.



Note – The address and hostname used here are examples only and would be substituted by your 777E/ES.

You must add an additional line for each machine that you need to communicate with on your network. To edit the `/etc/hosts` file you must be logged in as root. You can edit the file using a text editor or with `vi` at the Solaris™ command prompt.

Each line contains the following information:

`ip-number hostname #comments`

For example, the following might be the host file for the network of machines:

```
#
# Internet host table
#
127.0.0.1 localhost
192.168.3.45 tsd loghost
#my new 777E/ES
#
192.168.3.10 gate-1
# internet router
192.168.3.46 demo-1
192.168.3.47 demo-2
192.168.3.48 demo-3
192.168.3.49 demo-4
192.168.3.50 demo-5
```

```
nameserver 192.168.3.10
```

The file could contain a list of several name servers, if required. The `/etc/hosts` file is much simpler for the DNS client and need only contain the hostname and IP address of your own system and the name server. For example, the `/etc/hosts` for a machine attached to the network would be similar to the following:

```
#
# Internet host table
#
127.0.0.1 localhost
192.168.3.45 tsd loghost
# my new 777E/ES
#
192.168.3.10 gate-1
# DNS name server
```

6.2.3 Setting up a Default Router

Your 777E/ES is configured to use a router by creating the file `/etc/defaultrouter` containing the IP address of the router. For example, the `/etc/defaultrouter` file for a machine attached to the network where gate-1 is the router would be similar to the following:

```
# defaultrouter
192.168.3.10
```

6.2.4 Testing Your Network Connection

When the entire necessary configuration files have been created and correctly edited, your 777E/ES should be rebooted for the changes to take effect and the network connection tested.

```
# ping demo-5
```

```
demo-5.naturetech.com.tw is alive
```

You can obtain more detailed information by using the “-s” option with the command.

To test the Internet connection to a company called naturetech, you may use a command as below:

```
# ping naturetech.com.tw
```

```
naturetech.com.tw is alive
```



You can check modem status by using the tip command with the appropriate label.

For example, the following command opens a command line interface to the external modem:

```
% tip /dev/cua/a
connected
```

This allows you to control the modem directly with the AT command set.

To break the command interface, enter ~. (tilde period), that is:

```
~.
[EOT]
%
```

7.2 Simple Terminal Login Connection

To open a simple terminal login connection to a remote system, you can use the tip command. The tip command allows you to open an AT command interface for the modem, as described in the previous section, or to dial up remote UNIX or non-UNIX systems and to login to an interactive login session, although you may require a login account on the remote system.

For example, to dial out using an external modem, you could use the sequence:

```
% tip /dev/cua/a
atdt012345678
```

Where at informs the modem that the following sequence is a Hayes command and the number is the number to be dialed. The number includes the tone-dial characters "t".

Once the link is established, the actions taken depend upon the

file on the remote machine. If `to` is omitted, the same file name is used.

`~?` Get a summary of tilde escapes.

`~.` Terminate the connection.

7.3 Remote Network Access

Your 777E/ES supports connection to a local network in the same way as any SPARC-based workstation running the same operating system. In addition, it supports remote connection to a network using the external modem and a telephone line.

Your 777E/ES supports one remote network connection protocols as follows:

- Point-to-point protocol (PPP)

Once setting up, PPP can be used to transfer Internet packets via a telephone line. All of the regular network applications can be used, although the limited bandwidth of the link may make transferring large files a lengthy process.

In order to gain access to a network using the PPP, you must connect, via a telephone line and modem, to a computer that will function as a gateway (or *dialup server*) to your organization's office network or to the Internet. This might be provided by your own organization or by an Internet service provider.

The server must be attached to the network with which you need to communicate and must support PPP via the modem. You will need to consult the system administrator or service provider for advice on this.

- The steps required to get PPP operational on your 777E/ES are as follows:
1. Load the Solaris™ PPP packages onto your 777E/ES, if necessary.
 2. Edit the /etc/hosts file on all machines to be connected.
 3. Edit the uucp database files for all dial-out systems.
 4. Edit the /etc/passwd and /etc/shadow files for a dial-in machine. You will need to consult the system administrator if this is an organization's dial-in server.
 5. Edit the /etc/asppp.cf file on each machine on the link.
 6. Test the link.

For further information about PPP, please refer the Solaris™ documentation.

You can find another way to set up PPP via GUI Internet Dialer.



For further information, please refer the documentation at the following URL: <http://www.kempston.net/solaris/dialer.html>

```
# /etc/init.d/asppp stop
```

7.4.2 Testing the Link

If your modem is correctly installed and the `/etc/hosts` files, UUCP database files and PPP are all correctly edited and you have the correct dial-in access to the server machine, the link can be tested with the ping command. For example on the 777E/ES simon, you could use the command:

```
# ping gate-1-p 180  
gate-1-p is alive
```

Your 777E/ES should dial the remote system and then, after some delays while the connection is being established return output similar to that shown. The 180 arguments, in this example, set a timeout of 3 minutes to allow time for the connection process to complete before reporting a failure.



SPARCstation and compatible workstations will run on the 777E/ES with very few limitations as follows:

- Applications use either X-windows as their graphics system or must be written for OpenWindows. The operating system uses X-windows Release 6 and OpenWindows Version 3.4, but you can run earlier X-windows or OpenWindows applications directly on the 777E/ES. Older SunView applications aren't supported.
- Applications that require the existence of Sun specific hardware, such as attached PCIBus hardware, or that make direct calls into undocumented device driver interfaces in the Sun kernel, will not run on the 777E/ES.
- Applications that use Sun or other vendor specific hardware (such as IDPROMs) for licensing may not run on the 777E/ES.

8.2 Methods of Installing Applications

Software installation on the 777E/ES is carried out in a conventional manner. Programs can be installed to run locally or can be run on a network server. However, due to the mobile test of the 777E/ES, which may mean it is operated without a network connection from time to time, it is advisable to install applications onto your own hard disk and then run them locally.

You can install applications from a locally connected drive or from a network server. In addition, application vendors are increasingly using the World Wide Web to distribute their products.

Applications can be installed using one of the following methods:

- From a locally connected CD-ROM, tape or floppy drive
- From a network server
- From a remote website

be set independently of the physical resolution of the display. Applications operate independently of the physical display's resolution because they are only aware of the X-server's resolution. The default resolution is 1400x1050 pixel.

8.4 Legibility of Text on a Small Screen

When using some display resolutions, you may find that text elements within windows and menus become very small. Both OpenWindows and CDE allow you to increase the size of text used in windows, menus and alert messages.

- **Changing Text Size in OpenWindows**
To change the font size used in OpenWindows, select Workspace Properties from the Workspace menu and then select Fonts from the Category menu. Within the fonts category window, select the required font style and size.
- **Changing Text Size in CDE**
To change the font size used in CDE, select the Style Manager icon from the Front Panel and then select the Font icon from the Style Manager window. In the Font window, select the required font size and then click OK.
The change takes effect immediately for applications launched after the change is made. However, to make the change take effect for CDE, you must exit and then re-enter CDE.

It may be necessary to add an external CD-ROM drive to a /77E/ES without powering the system down in order to allow uninterrupted access to available filesystems.

In this case, the device file described above can be created as follows:

1. Become superuser.
2. Enter the following commands:
drvconfig -i sd
disks

- Create the Mount-Point and Mount Your CD-ROM

To do this, login as root and enter the following commands:

```
# cd /  
# mkdir /cdrom  
# mount -r /dev/dsk/c0t0d0s0 /cdrom
```

- Installing the Packages

The pkgadd command is used to install the required packages. For example, to add a package to a Solaris™ 8 release, type:

```
# pkgadd -d /cdrom/Solaris_8 packageA
```

Follow the displayed instructions to complete the installation procedure.

You can add several packages at one time by specifying the required package names separated with a space. For example:

```
# pkgadd -d /cdrom/Solaris_8 packageA packageB
```

Note – The name of the directory Solaris_8 differs between versions of the operating system. You can ascertain the correct name by listing the contents of the CD-ROM. That is: ls /cdrom.

8.5.2 Removing Packages

To remove packages, use the `pkgrm` command. For example:

```
# pkgrm packageA
```

You can remove several packages at one time, by specifying the package names separated with spaces. For example:

```
# pkgrm packageA packageB packageC
```

8.6 Memory Usage and Swap Space

The Solaris™ operating system uses *virtual memory* to allow several applications to run simultaneously when they would otherwise require more memory than is physically present in the system. To support this feature, one of the disk partitions on the boot disk is assigned to provide your 777E/ES with 'swap space'. This allows parts of programs that are not running at any given moment to be stored (or *swapped*) temporarily on to the hard disk while active applications are running in main memory. The effect of this is to make your memory appear to be much larger than it really is.

The swap partition created by the "factory install" on your hard disk drive is large enough to allow a reasonable number of tools and applications to be used simultaneously.

Table below shows the sizes used for the swap partition for the different memory capacities.

Memory (MB)	Swap size (MB)
512	1024
1024	2048
2048	4096
4096	8192

mind:

- Minimize the number of DeskSet tools in use. The tools use large amounts of memory. For example, if you only use the Calendar Manager occasionally, call it up from the Workspace menu when you need it rather than leaving it as an icon on your workspace.
- Avoid using tools that use memory continuously or often. For example, the performance meter tool runs every second. Similarly, if you enable the second hand on the clock, the clock program must run every second.
- Keep your mail in mailfiles if you have more than a few messages. Each message that appears when you open your mail file takes memory.
- Keep tools iconified if you are not using them, but do not want to quit them. For example, the performance meter and the File Manager tools are suspended when they are iconified, freeing up memory (but not swap space) for other processes.
- Arrange tools on the screen so they do not overlap. This reduces repainting by the Window Manager.
- If you are using the multi-browser in the Calendar Manager, quit it when you are finished rather than iconizing it, it is almost as quick to restart it from the Calendar Manager as it is to open it from the icon.
- Avoid using a background image for the main background; plain backgrounds use less memory.
- Avoid using PostScript applications at the same time as OpenLook applications.
- Do not try and run too many applications at once. You may have to reduce the number of different applications active or on the DeskTop if you want to run a new large application.

root can create and add additional swap space without reformating the disk. For example, the following steps create a 512Mbyte file for use as extra swap space (you will need to be superuser or logged in as root to do this) as follows:

1. Create a swap file using the following commands:

```
# mkdir /swap
```

```
# cd /swap
```

```
# mkfile 512m SWAPFILE Make a 512Mbyte file
```

2. Add the swap file to the system by edit you should add lines such as the following to the file /etc/vfstab:

```
/swap/SWAPFILE - - swap - no - no-
```

3. Restart your system using a full system startup



essential system configuration files.

9.1.1 Backup Strategies

777E/ES usage and filesystem structures vary widely from system to a system, which means that your backup strategy must be appropriate for your individual needs. You should consult the system administrator of your organization to advise you on the best strategy for you and the facilities available. The following observations may help in devising your strategy.

- Your 777E/ES runs the standard Solaris™ operating system with backup capabilities identical to those of a conventional desktop system, including tar, cpio and ufsdump.
- Consider also how cumbersome different media and drives to carry around with your 777E/ES and whether you are able to power any external drives in a different country.

9.1.2 Further Information

The Solaris™ operating system contains many facilities for automated backup in a large networked environment. This manual can only describe very basic backup and restore facilities. For a complete description of the backup and restore capabilities of Solaris™ you will need to refer to Sun's publications.

9.2 File Backup Facilities

For most purposes, tar and cpio are adequate for saving important files to tape or floppy. They are sufficient to save small amounts of data and have the advantage of allowing you to back up both local and remote filesystems mounted via NFS.

To extract the archive from the floppy the command would be:

```
$ tar xvf /dev/rdiskette mywork
```

For further information about tar and cpio, please consult the Sun Solaris™ documentation.

9.3 Backing up Filesystems

To make backups of a complete filesystem (or single disk partition), the `ufsdump` command provides an alternative. The general syntax for the command is as follows:

```
# ufsdump options arguments filesystem
```

Where `options` are a list of options to be used for this backup and `arguments` is a list of arguments that correspond to the list of options in the *same order*.



Caution

It is important to supply the arguments in the same order as their corresponding options. For example:

```
ufsdump 0sd s-arguments d-arguments filesystems
```

Failing to observe the correct order could completely destroy the filesystem being backed up.

Restore procedure is listed as follows.

1. Connect the backup drive to your 777E/ES.
2. Power on your 777E/ES and external drive.
3. If you are using a tape device, ensure that the backup tape is rewound by logging in as root and entering the following command at the Solaris™ prompt (assuming that the backup device used was /dev/mnt/0n):

```
# mt -f /dev/rmt/0n rewind
```

4. Reset your 777E/ES by entering the following commands:

```
# halt
```

5. Boot the system with the following command:

```
ok boot -r
```

6. Log in as root and then at the Solaris™ prompt, restore each partition in turn with the following sequence of commands:

```
# cd /
```

```
# umount /mnt
```

```
# mount /dev/dsk/c0t0d0s0 /mnt
```

```
# ufsrestore -rf /dev/rmt/0n
```

Restore the root filesystem to your hard disk.

```
# cd /
```

```
# umount /mnt
```

```
# mount /dev/dsk/c0t0d0s3 /mnt
```

```
# ufsrestore -rf /dev/rmt/0n
```

Restore the var filesystem to your hard disk.

```
# cd /
```

```
# umount /mnt
```

```
# mount /dev/dsk/c0t0d0s5 /mnt
```

```
# cd /mnt
```

```
# ufsrestore -rf /dev/rmt/0n
```

Umount /mnt

8. Reset your 777E/ES by reboot



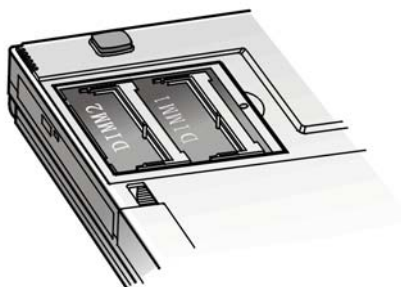
The process of upgrading your system's memory consists of two basic steps:

- Memory upgrade notice
- Upgrade memory

10.2.1 Memory upgrade notice

The partition layout for your hard drive is always depends on your memory size. The only reason for memory upgrade is system performance. And the SWAP partition will depend on your memory size. If you upgrade memory, the SWAP partition needs to be changed to increase system performance. If you just upgrade memory and do not re-layout your SWAP partition, you will not achieve better performance.

Regarding to this reason, we recommended you to contact your dealer for memory upgrade. Unfamiliar operation will damage the system/memory. Always find a qualify technician for memory upgrade. Naturtech will provide two types of memory modules for DIMM1 and DIMM2, the memory module only provided by Naturetech. There will be a label for each memory to identify. Each memory must be installed in each DIMM for normal operation.

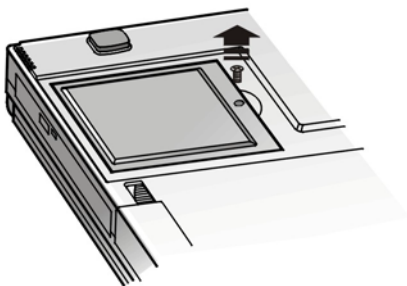


777E/ES provide four 144-pin non standard SDRAM S.O.DIMMs supporting maximum memory up to 4GB. Naturetech only provide two kinds of memory size for upgrade.

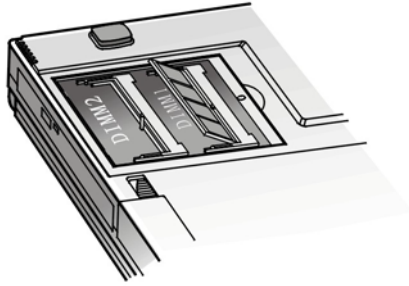
Max. Supported Memory	4GB
	512MB / 1GB / 2GB / 3GB / 4GB
	Four 144-pin SDRAM S.O.DIMMs
	Single bit Error Checking & Correction Double bit Error Checking & Correction

10.2.3 Remove the memory module

1. **Shutdown the system and remove battery and power adaptor.**
2. Turn over the 777E/ES.
3. Find the RAM cover as figure below.

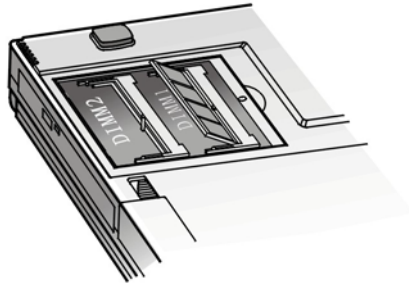


4. Remove the screw and then remove the RAM cover.
5. Gently release the memory latches outward until the DIMM pops up.



10.2.4 Upgrade Memory

1. Gently slide the memory module into memory S.D.DIMM in a 30~45 degree.



2. Gently push down the memory module downwards until the latches click into place.
3. Replace the RAM cover.

1. Power on your system.
2. When the OpenBoot greeting is displayed, press FN-Stop-A.
3. Check that the new memory capacity is correctly reported on the banner.
4. Power off by pressing Power button or “power-off” command.
5. You can display the banner information by “banner” command in the ok prompt.

10.3 Upgrading Solaris™

For more information about Upgrading Solaris, please refer to your Solaris™ documentation or contact your dealer.

10.4 Upgrading Firmware

Naturetech will release the latest firmware binary file to our distributor/reseller. Contact your dealer/reseller or contact service@naturetechws.com to obtain the latest OBP if you need to update OBP for your 777E/ES. Place the OBP file to your hard drive and double click the update script to execute update process.



In the meantime, Run Window will pop up and show you the message as Figure below.




Enter C and press Enter to continue installation.

Note – C and T are Case-Sensitive, Please make sure Caps Lock is enabled.

After you enter C to continue installation, this program is writing a new ROM image as Figure below. When updating is successfully, please reboot again to take effect.

```
1 Verifying Program ... Done.
**** Update.to.777p2-09.rom@OS Completed Successfully
*****
* NOTE: updated Firmware takes effect after next reboot or *
* Power cycle of the system. *
* If there is any configuration support to become effective, *
* you have to use -r with your boot command *
*****
```

 Caution
DO NOT INTERRUPT or POWER-DOWN the system when updating Flash PROM in progress. Otherwise, you may damage the system and make it cannot boot up.



Customer support can be contacted by telephone or Email.

Telephone: TAIWAN: +886-2-2268-9901

Email: TAIWAN: support@naturetechws.com

In addition technical support information is provided on our website at:

<http://WWW.NATURETECHWS.COM>

Prepare problem description information before you call. This will assist us to find a solution to your problem as quickly as possible:

- Machine model and serial number (from the base of the unit).
- Machine configuration (what peripherals are connected).
- For networking problems, a brief description of your network.
- A description of the problem and any steps you have taken to solve it.
- Any warning messages or output you have observed.
- Any codes displayed in the status display.

the battery is discharged.	Plug in the AC adapter and power on system.
The AC adapter is faulty.	Contact your reseller to replace a new one.

Failed to boot operating system, main display OK, and status display OK

Possible Cause	What to Check or Action to Take
Hard drive is not appeared.	1.Use "probe-ide" command in the ok prompt to check primary hard drive status 2.Check the hard drive cable
Network configuration problem. This means your 777E/ES is looking for a name server to which it has no connection.	Reset and restart your 777E/ES as follows: 1. Press Power button. 2. When the OpenBoot welcome message is displayed, press FN-Stop-A. The OpenBoot ok prompt is displayed. 3. At the ok prompt, enter the following commands: ok boot disk -r

<p>Entry for remote system not in local /etc/hosts or entry for your system not in remote /etc/hosts.</p>	<p>configuration problem. If it's no response for a while, you may terminate it with the Ctrl-C interrupt command. If ping fails there may be a basic hardware or software configuration problem and you should check the hardware interfaces and the basic software setup.</p>
<p>Cannot find name server or name service configuration files or they contain incorrect information.</p>	<p>Ask for help from an experienced network administrator about specific configuration requirements for your location.</p>
<p>Internet addresses incorrect or duplicated.</p>	
<p>No write permission to requested resources.</p>	

<p>External keyboard or mouse does not work.</p>	<p>Check that the external mouse or keyboard are compatible types and are connected to USB port properly.</p> <p>Check if the keyboard and 777E/ES are communicating by using the command <code>kbconfig -r</code>. The keyboard LEDs should light.</p> <p>In the case of an optical mouse you can see if it is powered by checking to see if the red LED on the underside of the mouse is illuminated.</p>
--	---

☒ Audio Problems

Possible Cause	What to Check or Action to Take
<p>System disabled Audio device, no sound device available and you can see warning message.</p>	<p>This problem will appear occasionally, system can't detect Audio device and not load Audio driver and disabled Audio device.</p> <p>First of all, you have to shutdown system, press "Stop+FN+A" key to interrupt the boot process and display the OpenBoot (ok) prompt when the banner appears. Use "ok boot disk -r" command to reconfigure Audio device.</p>

☒ Stopping Processes

To stop the processes, press the interrupt character Ctrl-C. This normally causes a program to exit. However, not all programs recognize or act on the interrupt in which case you need to kill the process in order to halt it, as described in the next section.

☒ Killing a Program

Before killing a process, you must know its process ID number (PID). To determine this, display a summary of all user processes with the following command:

```
# ps -ef
```

Make a PID note of the program you wish to kill. For example, the following output shows a program called demo running with a PID of 7363:

PID	TTY	TIME	CMD
7361	pts/4	0:00	ps
7339	pts/4	0:00	sh
7363	pts/4	0:00	demo

To kill the demo process, you would type:

```
# kill -9 7363
```

The -9 specifies that the process should be killed regardless of what it is doing. If you do not own the process, you will need to become superuser to carry out this step.

☒ Operating System Panic

Failing Program

Programs can fail to be executed for a variety of reasons, some conventional problem are as follows:

- Corrupt program
- The disk copy of the program has been corrupted.
- Shared library inconsistency

The program was compiled with a shared library that is incompatible with the 777E/ES. Use the "ldd" utility to determine what libraries a program is loading. This problem can only be resolved by re-link the application with the shared libraries.

Program Error

A programming fault can cause a segmentation violation if, for example, a program attempts to write to an illegal or protected address.

Out of Swap Space or Memory Space

A message may displays on the console if each of the condition occurs. If you are running OpenWindows, the server may suddenly exit, return to the terminal interface.

Memory failure

There has been a memory error (hardware) during program execution.

The Solaris™ operating system includes the trace utility that allows you to monitor the system calls made by a process. An experienced UNIX programmer may use to track down the cause of a problem.

In addition, experienced UNIX programmers may be able to use the crash, adb or dbx debugger utilities provided to determine the cause of a core dump.

message such as:

- out of swap space
- or out of memory
- or FS full on /dev/c0t0d0s6
- : cannot write %xyx

As a rule you should exit the offending program in this. It may be prudent to reboot the operating system after such an event because applications and the operating system do not always recover from resource failures gracefully.

If you run out of disk space you must either move files to a different filesystem, or to a networked server, or you must remove them.

11.2 FAQs

? What is OBP?

A: OpenBoot is an industry standard (IEEE1275) ROM-based firmware implementation that controls your 777E/ES between the time it is powered on and the Solaris™ operating system takes control. During this time OpenBoot carries out the hardware testing and initialization before booting the operating system.

OpenBoot also provides a user interface and programming language, based on Forth, which can be used to perform diagnostics and change user-configurable options stored in NVRAM.

? How to display the OpenBoot User Interface?

A: Display the OpenBoot user interface as follows:

Press the power button to power on the system. When the OpenBoot start-up screen is displayed, press FN-Stop-A. The OpenBoot ok prompt is displayed.

Device 3 (Secondary Slave)

Not Present

? How to use TTYA to perform full system hardware self test?

A: Carrying out a full system self test with OpenBoot entails the following basic steps:

- Connecting an ASCII terminal to the serial ports on the rear of 777E/ES.
- Configuring OpenBoot to enable diagnostics and terminal I/O.
- Entering the selftest command.
- Connecting an ASCII terminal

The terminal should be configured for 9600 baud operation, 8 bits, no parity and no handshaking.

? How to enabling Terminal I/O of 777E/ES?

A: Enter the following commands to configure OpenBoot to enable diagnostics. Use the serial channel as the input and output devices and to inhibit auto-booting:

```
setenv diag-switch? true
setenv output-device ttya
setenv input-device ttya
setenv auto-boot? false
```

? How to restore default settings for the NVRAM?

A: To re-enable normal operation, enter the following commands:

```
ok set-defaults
ok reset-all
```

A: Contact Naturetech to obtain the OBP file. The OBP should be an executable script, double click it in the Solaris CDE. For CLI environment, use `#!/Update.to.4.0.xxxxx` to update OBP.

? How to adjust the network settings?

A:

1. Use "sys-unconfig" command; it's the easiest way to reconfigure network settings.
2. Use "ifconfig" to perform network administration, issue "#man ifconfig" command for detail description.

? How to adjust the graphics resolution and color depth?

A: Change directory to `/opt/NatWVGA/bin`, execute the "setting.sh" script then select resolution and color depth. System will reboot automatically after settings.

? Can 777E/ES support Solaris 2.7?

A: No, 777E/ES only supports Solaris 8 and above versions.

? How to check my current OBP version?

A: To determine the installed OBP version, enter the following command at the OK prompt

For the ok prompt: `ok .version`

For Solaris: `#prtconf -V`

? How to check my Solaris version?

A: To determine the installed Solaris version, enter the following command

`#uname -X`

777E/ES come with Combo drive or DVD-ROM drive. DVD-ROM drive is not supported by cdrw command.