Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.

2. Disconnect the power cord from the D-Link NAS DNS-6040M/DNS-6040 before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the D-Link NAS DNS-6040M/DNS-6040 is properly grounded.

3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

   ➢ Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.

   ➢ When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

Table of Contents

Chapter 1 Introduction

This chapter contains the general information and the detailed specifications of the DNS-6040 Series Network Attached Storage server. Chapter 1 includes the following sections:

- **General Description**
- **Features**
- **System Specifications**
- **Mechanical Dimensions**
- **I/O Outlets**

1.1   General Description

The DNS-6040 Series server is designed for workgroup, and solution providers that have storage area network requirements across heterogeneous Microsoft Windows® NT, Windows® 2000, Novell Netware®, Apple Macintosh®, and Linux clients.

It is a reliable and affordable, 1U height unit that requires only power and network connections for setup. It's embedded software- RAID solution for Network Attached Storage (NAS) can support RAID level 0/1/5/5 with hot spare. It's hot-swappable IDE hard disk drives and redundant power supplies capability can get the most availability and reliability. With its innovative mechanical and electrical design, the D-Link NAS server provides high-density, scalability and reliability in space-sensitive environments. Boosting a 1U height construction, the DNS-6040 Series is for users electing on saving space in the data center and plan to scale their environment by adding storage to a maximum number of units. Its remarkably slim profile

and sophisticated storage capacity make this a superb front-end server.

With a cost effective IDE disk drive approach, the D-Link NAS server delivers optimized performance, compared to more costly SCSI based solutions. If one drive fails, data is secured by the other drive and alarm to administrator.

The intelligent online data rebuilding capability of D-Link NAS server lets you hot swap a failed drive with automatically rebuilding data into the new drive without suffering from any system down time while ensuring data integrity. The DNS-6040 Series support web-based management environment to let the administrator to manage the server very user-friendly.

1.2   Standard Features

➤   1U height rack mount/stacked-up design

➤   Hassle-free management via a browser interface or Windows®-based (95/98/NT/2000/Me/XP) setup utility for DHCP automatic IP assignment

➤   24 x 7 fault-resilient storage appliance; Auto-notification health-case system

➤   High-performance RAID at RAID 0, 1, 5 and 5 with hot spare, on-line rebuild, and testing report provided

➤   4 ATA-66/100 hot-swap IDE HDDs, up to 320GB capacity, scaleable to 10TB

➤   Redundant hot-swap power supplies support **(DNS-6040M only)**

➤   3 mini-PCI expansion slots: optional equip with SCSI, Gigabit Ethernet, and wireless LAN, etc.

➤   SCSI backup interface and snap-shot backup

➤   Supports Microsoft® Networks, Apple Networks, Novell Networks and UNIX Networks

➤   Double-byte language support for file name, user name, and security setting

1.3 System Specifications

Hardware

➢ **Form Factor:**
- 1U rack mount/stacked-up on desktop design

➢ **Capacity:**
- 240GB-320GB

➢ **Power Supply:**
- 2 x 250W ATX HRP power supplies (DNS-6040M)
- 1 x 250W single power supplies (DNS-6040)

➢ **Hard Drive:**
- 4 hot-swap IDE HDD bays

➢ **Rear Panel Connector:**
- 2 x RJ-45 LAN port
- 1 x COM port
- 1 x SCSI port (via an optional miniPCI adaptor)

➢ **Front Panel LED:**
- 4 x LED for HDDs
- 2 x LED for LANs
- 1 x LED for System/Alarm
- 1 x push-button for system reset
- 1 x push-button for power on/off

➢ **Bus Architecture:**
- 25" Petit board-like (215 x146mm)
- Double-side SMD

➢ **Processor:**
- FC-PGA Socket370 Intel® Celeron™,

➢ **System Chipset:**
- Intel® 815EB-82815-B GMCH, 82801-BAICH2
- Integrated 2D/3D graphical controller to support CRT-Maintenance use only

- ➢ **BIOS:**
  - ■ Award 4MB Flash BIOS Plug & Play

- ➢ **L2 Cache:**
  - ■ Built-in CPU

- ➢ **Main Memory:**
  - ■ One PC133 128MB SDRAM

- ➢ **IDE Interface:**
  - ■ Two onboard IDE controllers to support four bus mastering ATA-66/100 EIDE channels

- ➢ **FDD Interface:**
  - ■ Supports one floppy disk drive (maintenance use only)

- ➢ **Serial Port:**
  - ■ One UART

- ➢ **Keyboard/Mouse:**
  - (Maintenance use only)

- ➢ **Ethernet:**
  - ■ Two 10/100 Base-T Ethernet, 82801BA ICH2 built-in and external Intel $^®$ 82559
  - ■ Support fail-over and trunking

- ➢ **Power Connector:**
  - ■ Standard ATX power input connector

- ➢ **RTC:**
  - ■ Internal ICH2 with external battery

- ➢ **Expansion:**
  - ■ Three mini-PCI bus connectors for IDE, SCSI, and Gigabit Ethernet adaptor expansion

- ➢ **Compact-Flash^{TM}:**
  - ■ One IDE interface CompactFlash^{TM} socket for embedded use

- ➢ **Hardware Monitoring:**
  - ■ Six FAN detection, one CPU thermal temperature monitoring

- ➢ **Dimensions:**
  - ■ 482.6mm(19")(W) x 44mm(1.75")(H) x 490mm(19.3")(D) Depth in 520mm(19.5") with front bezel added

➢ **Weight:**
  ◼ Approx. 8 kg without any hard drive
➢ **Operation environment:**
  ◼ Air temperature: 10 C – 35C (50F – 95 F)
  ◼ Humidity: 8% – 80%
➢ **Non-operation environment:**
  ◼ Air temperature: 10 C – 43C (50F – 95 F)
  ◼ Humidity: 8% – 80%
➢ **Power requirements:**
  ◼ AC voltage ranges: 100-127/200-240 Vac, 50-60Hz.

Software

➢ **Network Types/Network File Systems/Protocols/Clients Supported:**
  ◼ Microsoft® Network: CIFS SMB, TCP/IP, Windows® 95, 98,Me, NT 4.0, 2000 and XP
  ◼ UNIX Network: NFS v2.0 & v3.0, TCP/IP, Red Hat Linux, Solaris, FreeBSD
  ◼ Novel Network
  ◼ NCP/IPX
  ◼ IntraNetW Client for Windows
  ◼ Apple Macintosh Network
  ◼ AFP
  ◼ AppleTalk, TCP/IP
  ◼ Apple Macintosh 7.x, 8.x, 9.x, OS X

➢ **Integratable Domains:**
  ◼ Microsoft® NT 4.0/2000 Domain
  ◼ NIS Domain

➢ **Software-RAID Levels:**
  ◼ RAID 0
  ◼ RAID 1
  ◼ RAID 5
  ◼ RAID 5 with hot spare

➢ **Availability & Reliability:**
  ◼ IDE hard disk swapping & on-line rebuilding
  ◼ External UPS support through serial port & SNMP trap

- Hardware (thermal, ECC, HD…) monitoring, auto-notification, and logging
- Power Supply Fail-over Support (DNS-6040M only)
- System Fan Fail-over Support

➢ **Manageability:**
- Web-based Management for Microsoft® Windows® IE 5.0 or above
- SNMP MIBII support
- Multi-platform backup/restore support

➢ **Other Features:**
- Windows®-based setup utility for DHCP automatic IP assignment for Microsoft® Windows® 95/98/NT/2000/XP
- Windows®-based (Non-Windows®-based) setup utility for DHCP automatic IP assignment for Microsoft® IE 5.0 or above
- Double-byte language support
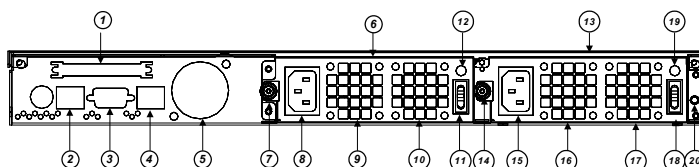- RAID management
- Restore default settings

1.4   Dimensions

428.4

523

44.5
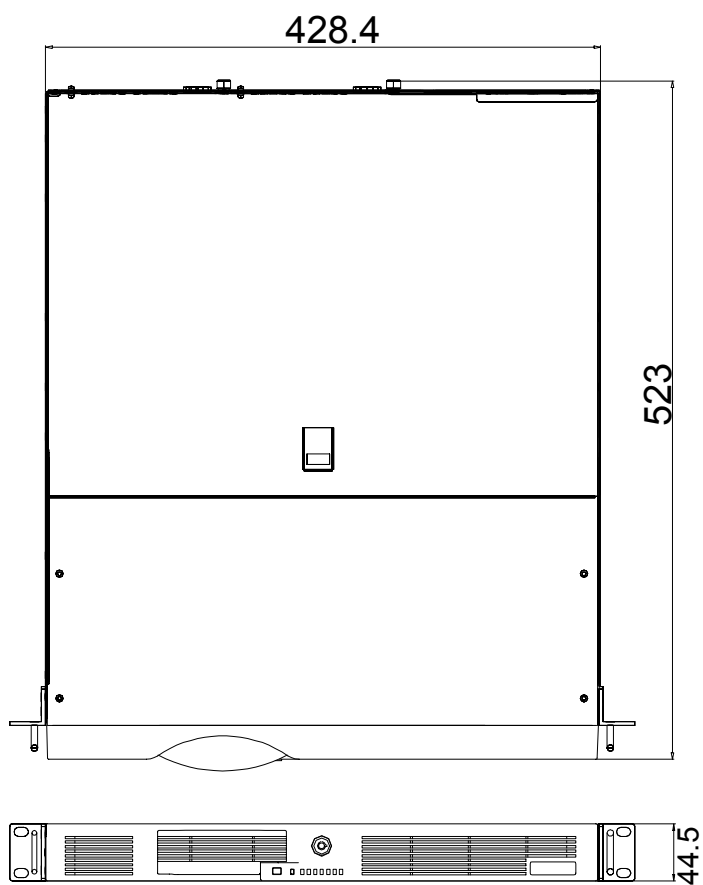
1.5   Rear Panel Outlets

Located at the rear panel of the D-Link NAS are the I/O outlets for connection of serial and Ethernet interface-supported devices. You will also find the main power switch and cooling fans.

The DNS-6040M Rear Panel

	1 External SCSI port (Optional)	**2** LAN port #1
	3 COM Port #1	**4** LAN port # 2
	5 Chassis FAN	**6** Redundant Power Supply # 1
	7 Screw of Power Supply # 1	**8** A/C Inlet of Power Supply # 1
	9 FAN # 1 of Power Supply # 1	**10** FAN # 2 of Power Supply # 1
	11 A/C Switch of Power Supply # 1	**12** D/C LED of Power Supply # 1
	13 Redundant Power Supply # 2	**14** Screw of Power Supply # 2
	15 A/C Inlet of Power Supply # 2	**16** FAN # 1 of Power Supply # 2
	17 FAN # 2 of Power Supply # 2	**18** A/C Switch of Power Supply # 2
	19 D/C LED of Power Supply # 2	**20** Power Fail Buzzer Reset Button

1.6 Front Panel Outlets
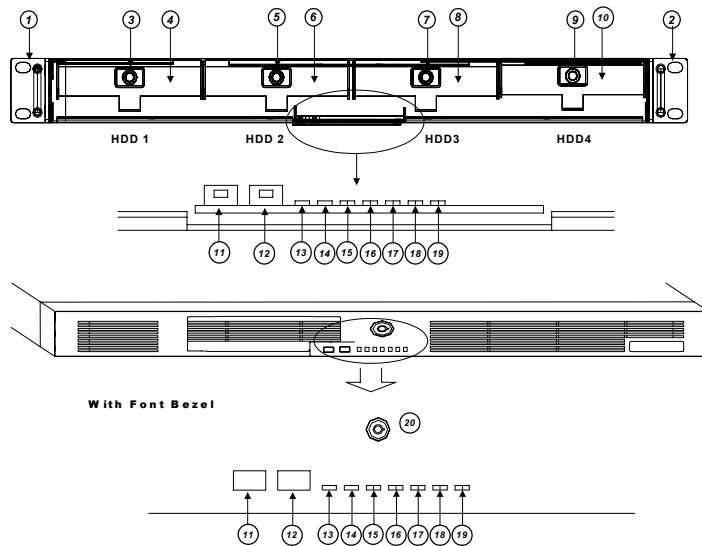
1 Left Mounting Bracket		**2** Right Mounting Bracket	
3 Thumbscrew of Drive Bay # 1		**4** Tray Handle of Drive Bay # 1	
5 Thumbscrew of Drive Bay # 2		**6** Tray Handle of Drive Bay # 2	
7 Thumbscrew of Drive Bay # 3		**8** Tray Handle of Drive Bay # 3	
9 Thumbscrew of Drive Bay # 4		**10** Tray Handle of Drive Bay # 4	
11 Power Control Bottom		**12** Reset Bottom	
13 Link/Active LED of LAN port # 2		**14** Link/Active LED of LAN port # 1	
15 LED of System Status/Alert		**16** Active/Error LED of HDD # 1	
17 Active/Error LED of HDD # 2		**18** Active/Error LED HDD # 3	
19 Active/Error LED of HDD # 4		**20** Key-lock	

Chapter 2 Installation Procedures

2.1   Preinstallation Checklist

In addition this installation guide, make sure you have the following items,

- The D-Link NAS appliance
- Power cord x 2 (DNS-6040M)
- Utility CD (including this installation guide)
- Mounting screws for disk drive and screws used in this appliance for spared
- Quick installation guide
- Key for this appliance
- Mounting brackets for rack installation (left/right) x 2
- Plastic stand for stack–up x 4

2.2   Setting up the appliance

This section provides the information about the initial installation and setup the DNS-6040 Series server.

2.2.1 Removing and Replacing the Top Cover
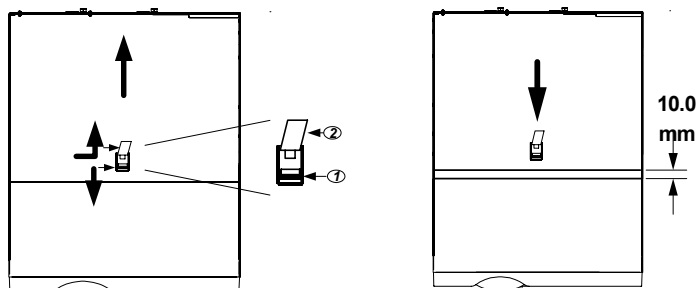
1: cover-release lever 2: cover release handle

Figure 2.2.1(a)　　　　　　　　　**Figure 2.2.1(b)**
Removing the top cover　　　　　　**Replacing the top cover**

1. To open the top cover. Working with the front panel facing you, if there are 2 screws located at the left/right sides of the chassis. These screws affix the top cover into place. Remove both screws.

2. Slide the cover-release lever on the top of the cover toward the front of the appliance and the cover-release handle will pop up. Push the cover-release handle toward the rear of the appliance about 10mm(0.4 in.) Lift the cover off the appliance and set the cover aside.

3. To replacing the top cover. Make sure the cover-release handle is at the unlock position. Place the top cover to the appliance, and the distance between the cover and the top-front cover is around 10mm (See figure 2.2.1(b)). Slide the top cover toward the front then the cover release lever will be locked automatically.

Attention:　　For proper cooling and airflow, replace the cover before switching on the appliance. Operation the appliance for extended periods of time (over 30 minutes) with the cover removed might damage appliance components.

2.2.2 Installing a Microprocessor (CPU)

The DNS-6040 Series can be installed one Intel Pentium III /Celeron microprocessor from 533 to 850MHz with 66/100 MHz front side bus (FSB). Install other CPU might be damaged.

1. Switch off the appliance and peripheral devices and disconnect all external cables and power cords, them remove the cover (Review the "Removing and Replacing the Cover" of section 2.2.1)
2. Release the CPU socket handle, install the microprocessor into the socket. Make sure the pin number #1 location.
3. Lock the CPU socket handle, spread the heat sink silicone compound on the central-top of the microprocessor.
4. Install the CPU cooler, and connect the FAN cable to the CPU FAN connector on the system board.

Attention: When you handle electrostatic discharge-sensitive (ESDs) take precautions to avoid damage from static electricity.

2.2.3 Installing a memory module (DIMM)

The DNS-6040 Series can be installed one SDRAM DIMM up to 256MB with PC-100/PC-133 compliance memory module. And due to the height of 1U chassis, the height of DIMM must not over 29.5mm(1.16 in.).

1. Switch off the appliance and peripheral devices and disconnect all external cables and power cords, them remove the cover (Review the "Removing and Replacing the Cover" of section 2.2.1)
2. Turn the DIMM so that the pins align correctly with the correct.
3. Insert the DIMM into the connector by pressing on one edge of the DIMM and then on one edge of the DIMM. Be sure to press straight into the connector and the retaining clips snap into the close position.

Attention: When you handle electrostatic discharge-sensitive (ESDs) take precautions to avoid damage from static electricity.

2.2.4 Installing a hard-swap hard drive

The DNS-6040 Series has four hot-swap drive bay can be installed up to four 3.5" IDE hard drives with the hot-swap drive tray. To replacing a failed hard drive without switch off the appliance. Each hot-swap drive you plan to install must have a hot-swap drive tray attached. The hard drive must be 3.5" ATA66/100 IDE compliance.

The hot-swap drive tray connects to the hot-swap backplane. The backplane is the printed circuit board behind the bay.

Attention:

1. Do not use any other drive try not come with this appliance. Or you might get a serious damage.

2. Due to the best flexibility, the appliance may be installed the most types of hard drive come with the drive vendors. But each of them might have different mechanical dimension for installation, we strongly recommend use the same type hard drive or with the same dimension. Review the section 2.3 for more detail.

To removing and replacing the front bezel

Figure 2.2.4.1
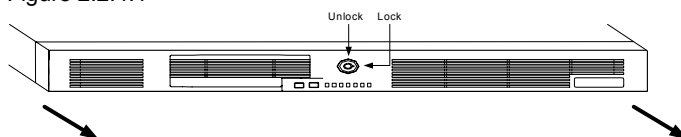
To install a new drive or to replace a failed drive, you must remove and replace the front bezel

1. To remove the front bezel, let the key-lock to the unlock position.

2. Pull the bezel toward the front, and release the bezel.

3. To replace the front bezel, push the bezel toward to the appliance and lock it.

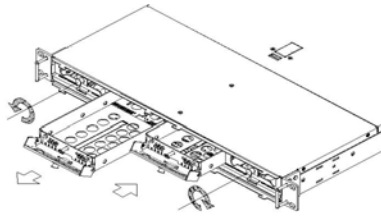**To install a hard drive to a hot-swap drive tray**
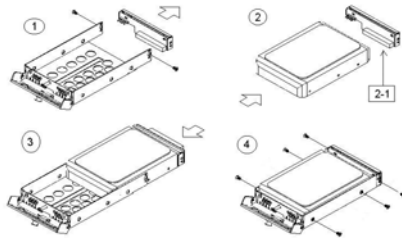

Figure 2.4.2.2

Figure 2.4.2.3

1. Switch off the appliance and peripheral devices and disconnect all external cables and power cords, them remove the cover (Review the "Removing and Replacing the Cover" section 2.2.1). Any time a failed drive found, you do not need to switch off the appliance, and do the following step to replace a new drive.

2. Remove the front bezel. (Review the "To removing and replacing the front bezel" section2.2.4)

3. Remove the empty hot-swap drive tray. Unlock the thumbscrew of the tray, the tray handle will be in open position. Pull the tray handle toward the front about 10mm(0.14 in.), the tray is disconnected from the hot-swap backplane. Slide the tray off the drive bay. See figure 2.4.2.2

4. Remove the drive tray rear cover. See the 1 of figure 2.4.2.3

5. Adjust the drive tray backplane mounting hole location due to drive vendor. See 2-1 of figure 2.4.2.3. (Review the section 2.3 "Adjusting the hot-swap backplane")

6. Connect the drive tray backplane with the tray rear cover to the hard drive. See 3 of figure 2.4.2.3.

7. Screw the drive tray rear cover with drive to hot-swap drive tray.

8. Screw the drive to the hot-swap drive tray. See 4 of figure 2.4.2.3.

To install a hot-swap drive tray to the hot-swap drive bay

1. Ensure the drive tray handle is open (The thumbscrew is unlock)

2. Align the rails on the hot-swap drive tray with the guide rails in the hot-swap drive bay

3. Gently push the ho-swap drive tray into the hot-swap drive bay until the tray connects to the hot-swap backplane.

4. Push the drive tray handle toward to the closed position and lock the thumbscrew. See figure 2.4.2.2.

Check the hard drive status indicators to verify the drive is operating properly (Review the section 3.2)

1. When the HDD red LED is continuously, the drive is failed.

2. When the HDD red/green LED is off, the hot-swap drive tray is in bad connection.

3. When the system green LED flashed slowing (one flash per two second), the drive is being rebuilding.

4. When the system green LED is continuously, the drive is ready to use.

5. When the HDD green LED flash rapidly, the drive is accessing by host.

2.2.5 Replacing a hot-swap redundant power supply (DNS-6040M only)

The DNS-6040M comes with two hot-swap redundancy power supplies. Each power has a LED indicator. Review section 1.2 "Rear Panel Outlets".
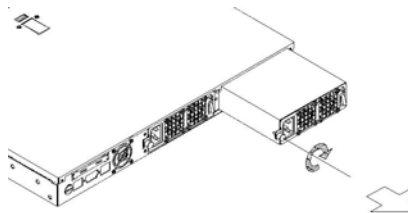

Figure 2.2.5.1

1. Check the DC LED on the power supply to determine which power has failed. The LED is in off state when the power supply is failed.

2. Switch-off the AC switch of the failed power supply. Disconnect it's power cord.

3. Unlock the screw of the failed power supply by screwdriver.

4. Pull out the failed power supply by the handle. Replace a new one and lock the thumbscrew.

5. Connect the AC power cord and switch on the power.

2.3   Adjusting the hot-swap backplne

This section provides the information about the initial installation of the hot-swap drive tray backplane and hot-swap control backplane to setup the DNS-6040 Series hard drive mounting location.

The mounting holes location of those backplanes are very flexibility to accept the hard drives. When you get the drive, please make sure the dimension between pin and the left side of the drive (The dimension of "L" at the following figures). And adjust the location of the mounting hole at the hardware installation.
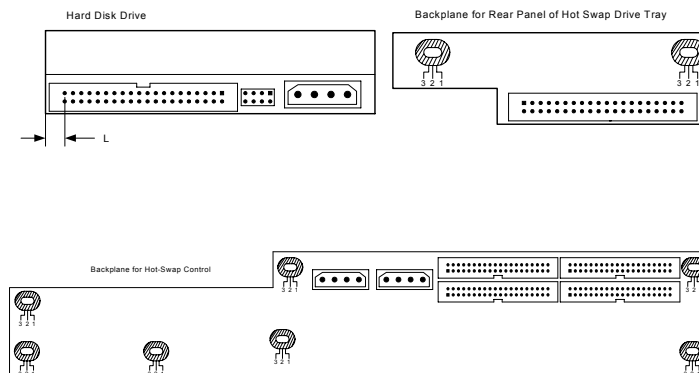
L (+/- 0.3 mm)	Location of the backplane mounting hole
8.3 mm	Location 1
9.425 mm	Location 2
10.7 mm	Location 3

You can adjust to other location by yourself if the dimension of "L" is not as the above.

Chapter 3 Starting the Appliance

Complete the installation by switching on the appliance and running the power-on diagnostics. Each time the appliance is switched on, it runs a self-testing program to ensure that it is running correctly. After the power-on diagnostics running, the DNS-6040 Series starts to load the operation and is ready for use.

3.1 Hardware installation before starting the appliance

Before starting the appliance, you need to finish the hardware Installation. Following the following steps to do it. (Review the chapter 2 for detail.)

➢ **Step 1:** Open top cover and Install CPU and DIMM

➢ **Step 2:** Install HDD Via hot-swap drive tray to the drive bay. Note that All HDD must be set to master mode

➢ **Step 3:** Connect the cable of Ethernet. The appliance is switched on after one or both AC power cord is connected and the switch is/are on the on position. Make sure the green IDE LED is continuously.

➢ **Step 4:** The red system LED is continuously at diagnostics status about 2 seconds, then the green system LED flash rapidly (one flash per 0.5 second) at the appliance is booting.

➢ **Step 5:** The green LED is continuously means the appliance is ready.

➢ **Step 6:** Finish the hardware installation.

3.2   Appliance Indicators and Connectors

The DNS-6040 Series has the following indicators of control and connectors.
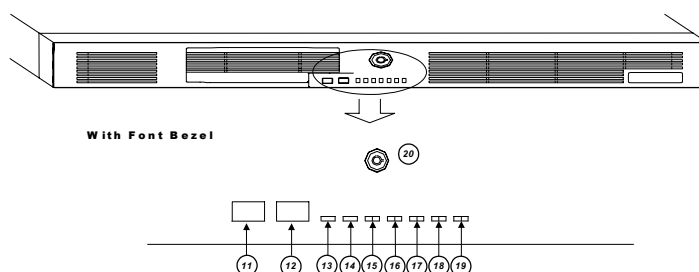
3.2.1 The power control and reset buttons

(11)   Power control button

Press this button once to shutdown the appliance, and then once to switch on
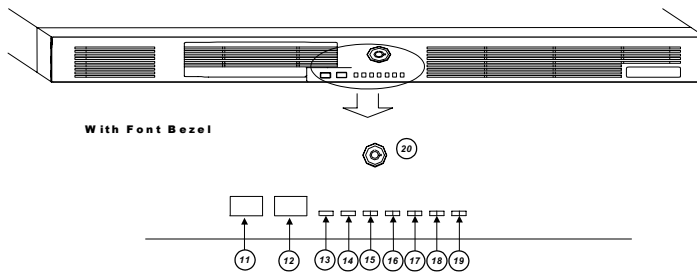the appliance.
Attention:
1.When the appliance is switch on, press this button continuously over 4
seconds to switch off the power. This switch off activity only when the appliance
is hung, otherwise may make the appliance non-operational or corrupt the drives.
2.The time to shutdown is around 20 seconds.

(12)   Reset button

Press this button continuously over 4 seconds to reset the appliance.
Attention:
Press this button only when the appliance is hung, otherwise may make the
appliance non-operational or corrupt the drives.

W ith Font Bezel

3.2.2 The indicators of Ethernet control

(13) **Link/Active LED of LAN port # 2**

1. This green LED is on when there is an active connection on this Ethernet port.

2. This LED flashes when there is transmit or receive activity to or from the appliance.

(14) **Link/Active LED of LAN port # 1**

1. This green LED is on when there is an active connection on this Ethernet port.

2. This LED flashes when there is transmit or receive activity to or from the appliance.


W ith Font Bezel
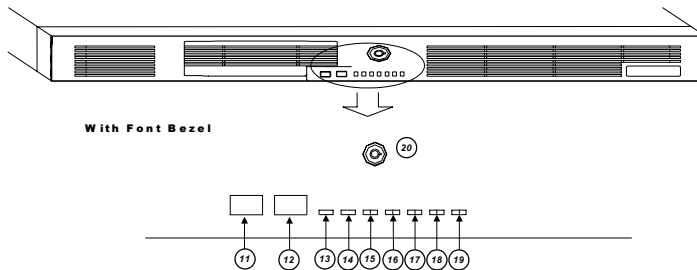
3.2.3 The indicators of system status control LED

(15) **Green LED for system status**

1. The green LED flashes rapidly (one flash per 0.5 second) when the appliance is booting.

2. The green LED flashes (one flash per second) when the appliance is being shutdown.

3. The green LED flashes slowly (one flash per 2 second) when the appliance is being re-building.

4. The green LED is continuously on when the appliance is ready.

Red LED for System alert

1. This red LED is continuously on when the appliance is failed to POST (power on self test) and the appliance is halt. After around 2 seconds, the red LED must be off after the diagnostic.

2. The red LED flashes once per 0.5 second when one of the redundant power supplies failed at normal operation. And the appliance will generate a buzzer to alarm the administrator. The buzzer can be disable the by pressing once of the button at the real panel outlet.

3. The red LED flashes once per second when one of the 6 FANs failed. Fan No. 1 to 4 are on the hot-swap backplane. No. 5 is the chassis fan and CPU fan is No. 6.

4. The red LED is continuously on when the appliance is identified. This can be done by storage manager of the filer assistant utility

With Font Bezel
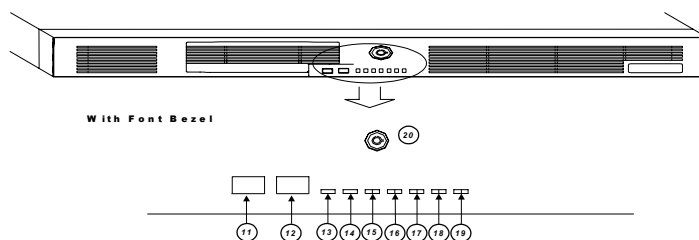
3.2.4 The indicators of HDD status control LED

(16) **LED of HDD 1 activity status**

(17) **LED of HDD 2 activity status**

(18) **LED of HDD 3 activity status**

(19) **LED of HDD 4 activity status**

Green LED for HDD activity status

1. This green LED is continuously on when the HDD 1 is identified.

2. This green LED flashes when there is transmit or receive activity to or from the drive.

3. This green LED is off when there is no drive in this drive bay.

Red LED for HDD activity status

This red LED is continuously on when this HDD failed. At this stage, you must to replace with a new drive.
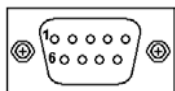
Attention: face the appliance, the HDD1 drive is on the left side and HDD4 is on the right side.

The DNS-6040M Rear Panel

Ethernet Port (II)
Serial Port
Ethernet Port (I)
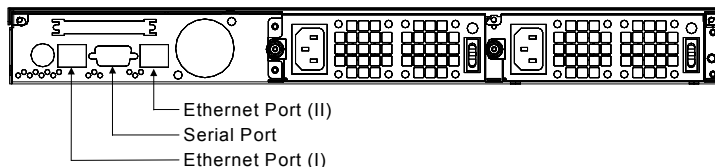
3.2.5 Serial Port

The DNS-6040 Series uses a DB-9 connector for its serial port connection. The following table shows the pin assignments of this connector.

Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator

The DNS-6040M Rear Panel

- Ethernet Port (II)
- Serial Port
- Ethernet Port (I)
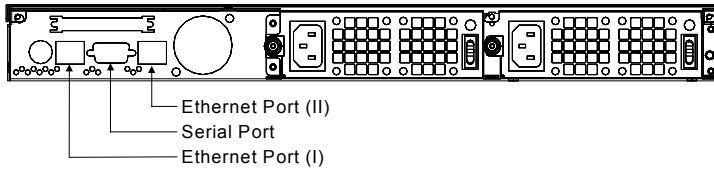
3.2.6 Ethernet Port

The DNS-6040 Series provides two Ethernet (RJ-45) interfaces. For network connection, just plug in one cable end of a 100-Base-T Hub into the standard Ethernet phone jack.
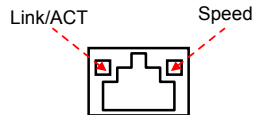
Link/ACT   Speed

The Speed LED continuously lights up when the Ethernet connection is running on a 100Base-T speed. It does not light up or blink when running on a 10Base-T speed. The Link/ACT LED allows you to view the monitor the status of your system's Ethernet connection to a hub or other workstations. Link/ACT LED continuously lights up when the connection status is good and ready. It blinks when there is data transfer operation.

The pin assignment of the RJ-45 is listed below.
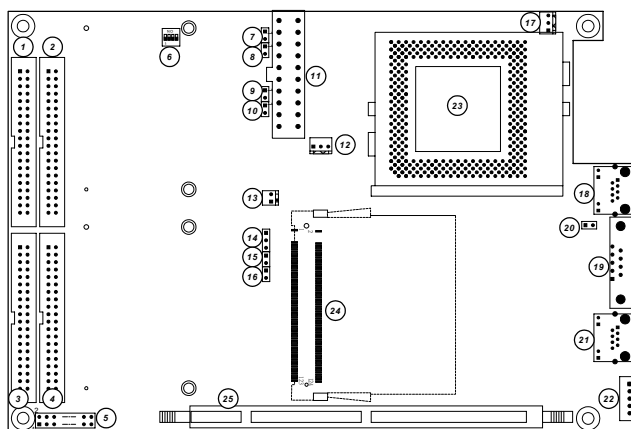
RJ-45 Connector Pin Assignment

Pin	Description
1	Tx+ (Data transmission positive)
2	Tx- (Data transmission negative)
3	Rx+(Data reception positive)
6	Rx- (Data reception negative)
others	Not use
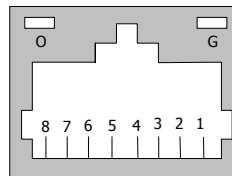
RJ-45

3.3 The system board

3.3.1 Major components of the system board

1 HDD # 1 Connector   **2** HDD # 2 Connector

3 HDD # 3 Connector   **4** HDD # 4 Connector

5 Internal CRT VGA Connector   **6** JP Switch (all on at normal operation)

7 Reserved open   **8** Reserved open

9 Reserved open   **10** Reserved open

11 ATX Power input   **12** CPU fan connector

13 Power status input connector   **14** RTC jumper (short 1-2 at normal)

15 Reset connector   **16** Power control connector

17 Chassis fan connector   **18** Ethernet port (II)

19 Serial port   **20** Reserved open

21 Ethernet port (I)   **22** Internal keyboard connector

23 CPU   **24** Mini-PCI connector

25 DIMM socket

3.3.2 Keyboard Port (internal use/ Maintain only)

The DNS-6040 Series provides a keyboard connector for PS/2 type keyboard.

Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	No Connection
4	Ground for Keyboard
5	VCC for Keyboard
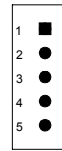
3.3.3 CRT VGA Port (internal use/ Maintain only)

The DNS-6040 Series provides a CRT VGA connector for video display.

Pin	Description
1	Red Signal
2	VGA_GND
3	Green Signal
4	No Connection
5	Blue Signal
6	VGA_GND
7	No Connection
8	DDC_DATA
9	GND
10	VGA_GND
11	GND
12	HSYNC
13	GND
14	VSYNC
15	DDC_CLOCK
16	No Connection
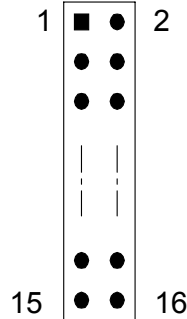
3.4   Turn off the appliance

There are two ways to turn off the D-Link NAS server.

1. When the appliance is running, you can turn off the appliance by
    pressing the power control button once. The appliance will shutdown
    automatically after the pressing around 20 seconds. Do not press the
    power control button continuously over 4 second, that will switch off the
    power immediately. It may make the appliance non-operational or
    corrupt the drives.

2. You can turn off (shutdown) the appliance by the Storage Manager of the
    Filer Assistant Utility,