The Linux Storage People

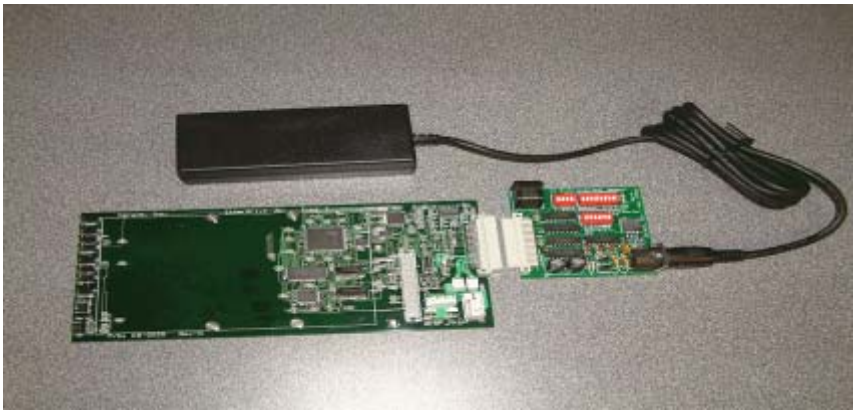
EtherDrive® Storage Blade

Evaluation Kit
Users Guide

Updated 4 March 2006

Thank you for purchasing the EtherDrive® Storage Blade Evaluation Kit.

The EtherDrive Storage Blade Evaluation Kit shown below in Figure 1, consists of one EtherDrive Storage Blade (without ATA disk) and an interface board to simulate the 3U Shelf usually used to hold 10 EtherDrive Blades. Developers will find the Evaluation Kit useful when developing EtherDrive Software Drivers for any Operating System.



3U - EtherDrive Evaluation Kit

Figure 1

Kit Contents

- One Universal 100-230 VAC Power Supply unit with IEC AC input connector (shown)
- One 3U EtherDrive Storage Blade (shown)
- One Ethernet Interface Adapter Board (shown)
- One ATA disk power cable for connection from ATA disk to EtherDrive blade (not shown)
- One ATA disk ribbon cable for connection from ATA disk to EtherDrive blade (not shown)
- One 120 VAC power cord with IEC connector (not shown)
- Four ATA disk mounting screws (not shown)

Additional Equipment Needed (not included in the Kit)

- One standard 3.5” ATA/IDE Disk Drive (to be mounted to the blade by the user)
- Ethernet cables and Switches to connect the Ethernet Interface Adapter to the Host/Server
- One or more Host/Servers equipped with the AoE driver software. The latest version ATA-over-Ethernet (AoE) drivers are available free from Coraid’s web site, www.coraid.com/support .

The Ethernet Interface Adapter Board shipped with the demo kit is designed for both demo purposes and for factory testing and debugging. There are some DIP switch and jumper options on the Ethernet Interface Adapter Board that may not be needed.

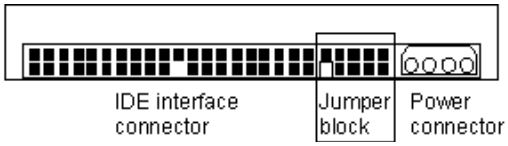
Quick Setup in 3 easy steps

IMPORTANT NOTE : Before powering up and using this Evaluation Kit make sure you have a flat non-conductive surface to place the Ethernet Interface Adaptor and the 3U EtherDrive Storage Blade.

1. ATA Disk installation

a. EtherDrive® Storage Blades are designed to accommodate standard 3.5" ATA/IDE disk drives. The Kit includes four (4) mounting screws and interface cables for disk drive power and IDE connection.

b. Before installing the ATA disk drive to the blade, check the jumper settings on the connector of the disk drive. Disks must be set to "Master". The jumper block is located between the disks power connection and the IDE interface connection. Please consult the disk drive manufacturer's literature to locate the jumpers correctly for "Master" operation.



c. After setting the jumper to "Master" connect the power and IDE cables to the blade first then make the connections to the disk drive, then mount the drive to the blade with the 4 screws provided. The EtherDrive Storage Blade is now ready to be plugged into the Ethernet Interface Adapter. Plug the 48 Pin DIN connector on the Ethernet Interface Adapter into the 48 Pin DIN plug on the 3U EtherDrive Blade. Attach a Cat-5 Ethernet cable to the RJ 45 jack on the Ethernet Interface Adapter. Finally plug in the power supply into the 5 Pin Circular DIN plug on the adaptor and plug a power cord into the IEC plug on the power supply.

**** NOTE **** *The power supply provided with the Kit has +12V, +5V and Ground on the 5 Pin DIN connector. Other desktop type switching power supplies have 5 Pin DIN connectors as well; but may have different pin-outs.* ***Do not substitute the supply with another vendor****.*

2. Shelf Address Switches and Jumper Settings

a. Ethernet Interface Adapter Board LEDs

i. When power is applied the three (3) red LEDs on the Ethernet Interface Adapter Board by the power connector should all be illuminated. If all of them are out then check the AC power cable on the power supply. If one or more are illuminated, but not all, then unplug the adaptor from the 3U Blade and contact Coraid at 877-548-7200 or email support@coraid.com .

ii. There is also a green LED labeled: Dsk-Spn on the Ethernet Interface Adapter Board located near the DIP switches. This LED may flash or come on, and stay on after power is applied. It is used in factory testing and has no demo functionality.

b. Ethernet Interface Adapter Board DIP Switches

i. Across the top of the Ethernet Interface Adapter Board are two DIP switches. One is a four (4) position and the other is an eight (8) position. They are labeled S1 and S2. For demo purposes these should normally all be off or in the down position. This setting enables the Ethernet Interface Adapter Board to simulate a shelf address equal 0x000. You can change these 12 switches to simulate other shelf addresses. A 12 bit address is set to uniquely locate the shelf in a rack mounted array of shelves. (bits 0 through 11, ie. shelf number 8 would be set to 000000001000).

ii. Below the two top DIP switches is another six (6) position switch. It is labeled S3. The four rightmost switches are used to simulate the slot address in a shelf. Once again these will normally all be off or in the down position. You can change them to simulate slot addresses from 0x0 to 0x9. The switch position number 1 is labeled: INVRT. It should be off or down since it is typically used for factory testing. When this switch is on (or up) it inverts both the shelf and slot addresses set on the other switches. The last switch on S3 is at position 2 and is labeled: PFAIL. It should always be off or down! If it is on it will simulate a power fail and stop the blade from operating.

c. Ethernet Interface Adapter Board Jumpers

i. There are two jumpers on the Ethernet Interface Adapter Board labeled: J4 +5CM and J5 +12VCM. Before applying power to the board you can remove the shorting jumper from these pins and connected a voltmeter in current measurement mode to get current reading on +5V and +12V of the hard drive on the 3U Blade.

3. Network Connection

a. Use CAT5 fast Ethernet cable to connect the RJ-45 connection on the Ethernet Interface Adapter Board to a port on an Ethernet switch which in turn is network connected to the desired Host/Servers.

b. Coraid recommends the use of Ethernet switches that support 802.3x (flow control) and 802.3ad (port aggregation). Most modern Ethernet switches support these standards.

c. Install the latest software driver on each Server that will be accessing the EtherDrive Storage Blades. This can be downloaded from Coraid's web site at www.coraid.com/support

d. The EtherDrive Storage Blade are now ready and accessible by the network connected Servers, equipped with ATA-over-Ethernet (AoE) drivers. Please consult the Coraid web site www.coraid.com/support for helpful "HOWTO" information about accessing EtherDrives from the Host/Server.

Blade Indicator LEDs

Each EtherDrive Storage Blade is equipped with 8 color LED indicators.

Power (Green)
In-Service (Yellow)
Failed (Red)
Run (Green)
100MB (Green)
Link (Green)
Receive (Green)
Disk (Green)
Access (Green)

Figure 5

- **Power** – Normally "ON" Green, indicating power supply voltages are correct.
- **In-Service** – Normally "ON" Yellow indicating the Blade's processor has booted up.
- **Failed** – Normally "OFF" Red, turned "ON" only when Blade has detected a fault and halted, indicating the Blade must be removed and serviced.
- **Run** – Flashes "ON/OFF" Green when Blade is processing an AoE read/write request from the Ethernet connection.
- **100MB** – Normally "ON" Green, when fast Ethernet (100Mbps) connection is detected on the Ethernet connector.
- **Link** – Flashes "ON/OFF" Green on any detected Ethernet activity.
- **Receive** – Flashes "ON/OFF" Green when an Ethernet packet is being received or transmitted by the blade.
- **Access** – Flashes "ON/OFF" Green when blade is accessing the disk drive.

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3. The customer is responsible for all in-bound shipping charges to CORAID. No Cash on Delivery (“COD”) is allowed. Products sent COD will either be rejected by CORAID or become the property of CORAID. Products shall be fully insured by the customer. CORAID will not be held responsible for any packages that are lost in transit to CORAID.
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FCC: 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.