



VTRAK

E-Class

E610f, E610s, E310f, and E310s

QUICK START GUIDE

Version 2.0

VTrak E-Class Task List

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Step 2: Mounting VTrak in a Rack

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For complete information about your VTrak E610f/s or E310f/s subsystem, see the *VTrak E-Class Product Manual* on the CD.

Step 1: Unpacking the VTrak

The VTrak box contains the following items:

- VTrak Unit
- Quick Start Guide
- Front bezel and key
- Left and right center-mount brackets
- Left and right mounting rails
- RJ11-to-DB9 serial data cable
- Screws for disk drives (E610f/s: 70, including 6 spares) (E310f/s: 50, including 2 spares)
- 1.5m (4.9 ft) Power cords (2)
- CD with SNMP files, *Product Manual* and *Quick Start Guide*



Warning

The electronic components within the VTrak disk array are sensitive to damage from Electro-Static Discharge (ESD). Observe appropriate precautions at all times when handling the VTrak or its subassemblies.



Important

Use the following categories of network cables with VTrak:

- Cat 6, preferred
- Cat 5E, minimum

Figure 1. VTrak E610f/s front view

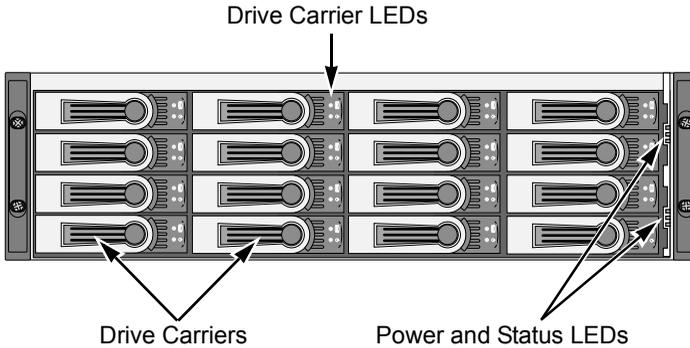
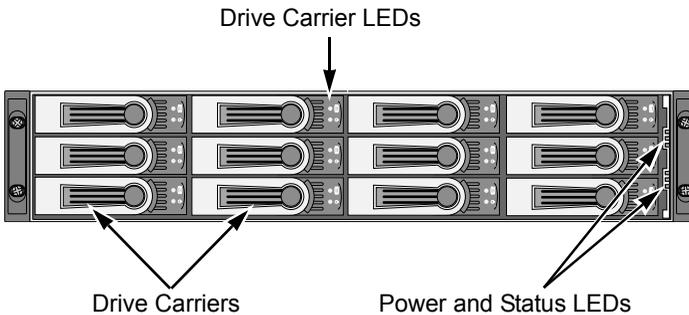


Figure 2. VTrak E310f/s front view



A defective drive may be replaced without interruption of data availability to the host computer. If so configured, a hot spare drive will automatically replace a failed drive, securing the fault-tolerant integrity of the logical drive. The self-contained hardware-based RAID logical drive provides maximum performance in a compact external chassis.

Figure 3. VTrak E610f rear view

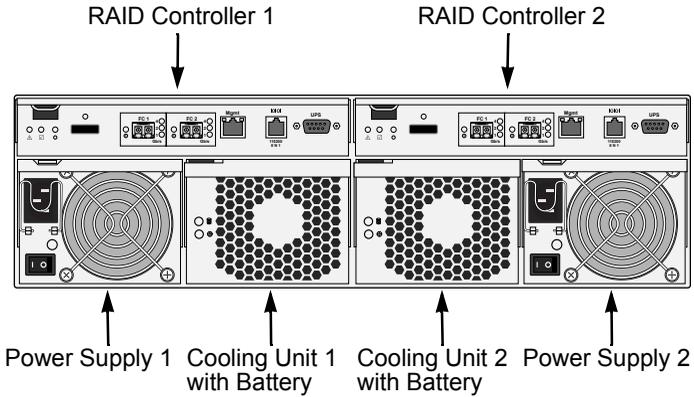


Figure 4. VTrak E610s rear view

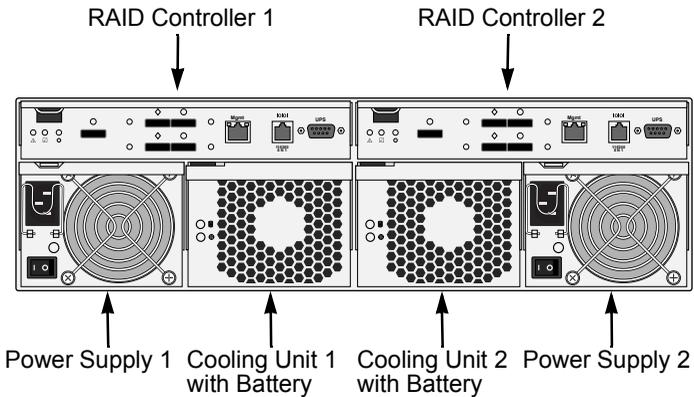


Figure 5. VTrak E310f rear view

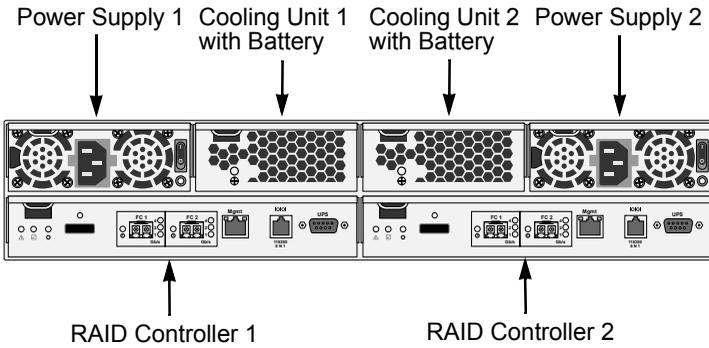
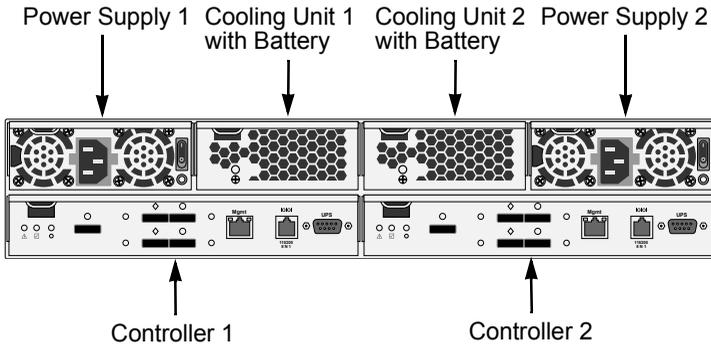


Figure 6. VTrak E310s rear view

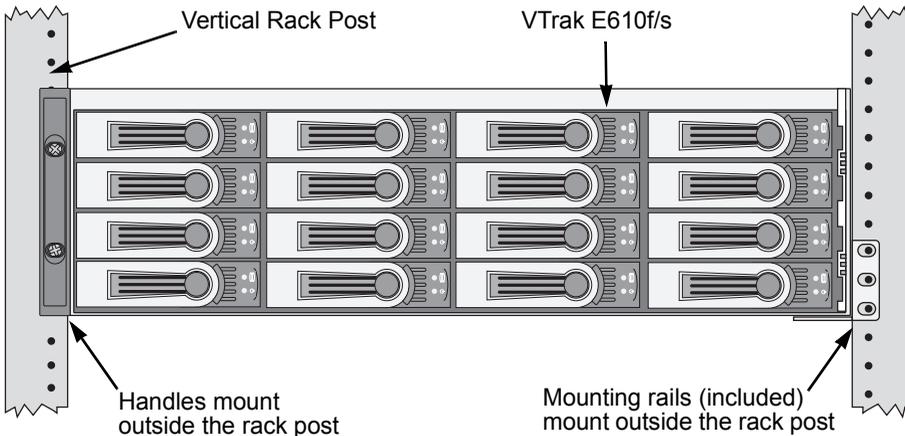


Step 2: Mounting VTrak in a Rack

E610f/s

The E610f/s subsystem installs to the rack using the supplied mounting rails. You can also use your existing rails.

Figure 1. VTrak E610f/s mounted in a rack with the supplied rails



Cautions

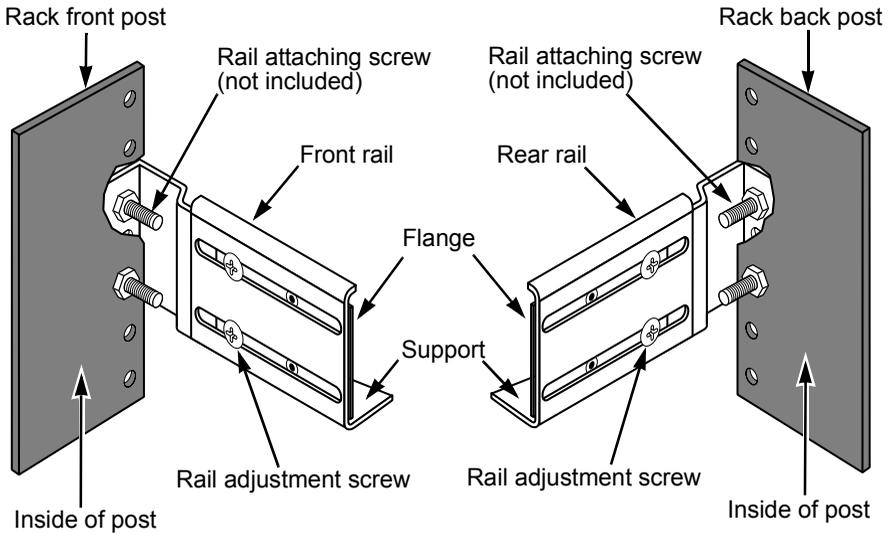
- At least two persons are required to safely lift, place, and attach the VTrak subsystem into a rack system.
- Do not lift or move the VTrak subsystem by the handles, power supplies or the controller units. Hold the subsystem itself.
- Do not install the VTrak subsystem into a rack without rails to support the subsystem.
- Only a qualified electrician who is familiar with the installation procedure should mount and install the VTrak subsystem.
- Be sure all switches are OFF before installing the VTrak subsystem or exchanging components.

To install the E610f/s subsystem into a rack with the supplied mounting rails:

1. Check the fit of the mounting rails in your rack system. See Figure 2.
2. Adjust the length of the mounting rails as needed.

3. Attach the mounting rail assemblies to the outside of the rack posts, using the attaching screws from your rack system.
Be sure the support is on the bottom facing inward.
4. Square the rail assemblies in the rack.
5. Tighten the adjustment screws and the attaching screws.
6. Place the VTrak subsystem onto the rails.
7. Secure the VTrak subsystem to the rack through each handle, using the attaching screws from your rack system.

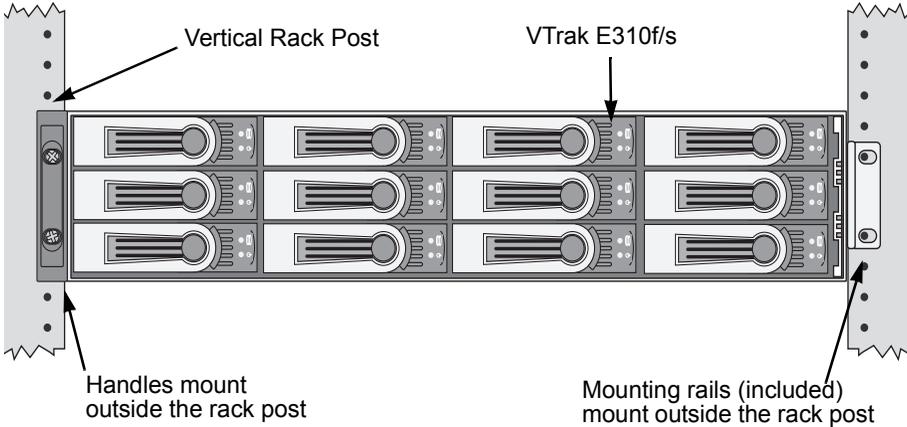
Figure 2. Rack mount assembly diagram



E310f/s

The E-Class subsystems install to the rack using the supplied mounting rails. You can also use your existing rails.

Figure 3. VTrak E310f/s mounted in a rack with the supplied rails



Cautions

- At least two persons are required to safely lift, place, and attach the VTrak subsystem into a rack system.
 - Do not lift or move the VTrak subsystem by the handles, power supplies or the controller units. Hold the subsystem itself.
 - Do not install the VTrak subsystem into a rack without rails to support the subsystem.
 - Only a qualified electrician who is familiar with the installation procedure should mount and install the VTrak subsystem.
 - Be sure all switches are OFF before installing the VTrak subsystem or exchanging components.
-

To install the VTrak subsystem into a rack with the supplied mounting rails:

1. Check the fit of the mounting rails in your rack system. See Figure 5.
2. Slide the plates out of the mounting rails.
3. Attach one plate to each side of the VTrak subsystem.
Line-up the six holes in the plate with the corresponding holes in the subsystem. Attach each plate with six screws (included). See Figure 4.
4. Slide one of the rails over the plate on one side of the enclosure.

- The rail is designed to slide freely over the plate.
5. Attach a flange to each end of the rail, with the rail on the opposite side of the flange from the two-hole bracket.
 6. Install the rail adjustment screws (included) through the flange into the rail. There are four screws for each flange. See Figure 5.
 7. Place the subsystem with mounting rails into your rack system.
 8. Attach the mounting rail assemblies to the outside of the rack posts, using the attaching screws from your rack system.
 9. Square the rail assemblies in the rack.
 10. Tighten the adjustment screws and the attaching screws.
 11. Place the VTrak subsystem onto the rails.
 12. Secure the VTrak subsystem to the rack through each handle, using the attaching screws from your rack system.

Figure 4. Sliding flange installation

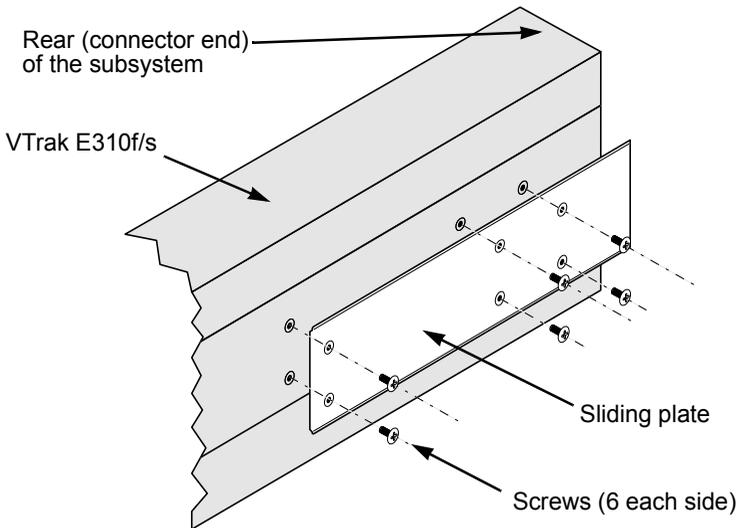
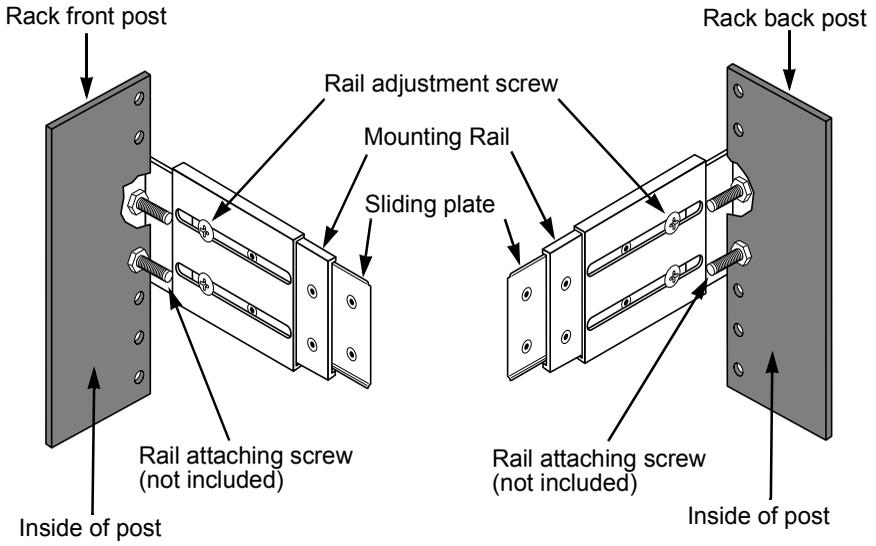


Figure 5. Mounting rail installation



Step 3: Installing Disk Drives

You can populate the VTrak with SAS or SATA hard disk drives. For optimal performance, install physical drives of the same model and capacity. The drives' matched performance allows the logical drive to function better as a single drive. The table below shows the number of drives required for each RAID level.

Level	Number of Drives	Level	Number of Drives
RAID 0	1 or more	RAID 6	4 to 16*
RAID 1	2 only	RAID 10	4 or more**
RAID 1E	2 or more	RAID 50	6 or more
RAID 5	3 to 16*	RAID 60	8 or more

* E310f/s: Drive counts above 12 require an expansion unit.
 ** Must be an even number of drives.

Drive Slot Numbering

You can install any suitable disk drive into any slot in the enclosure. The diagram below shows how VTrak's drive slots are numbered. Slot numbering is reflected in the WebPAM PROe and CLU user interfaces.

Figure 6. VTrak E610f/s drive slot numbering

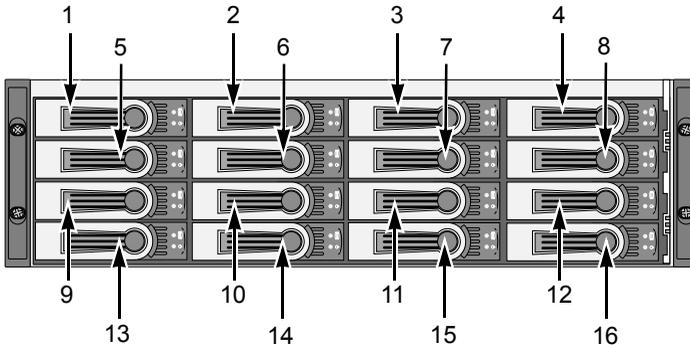
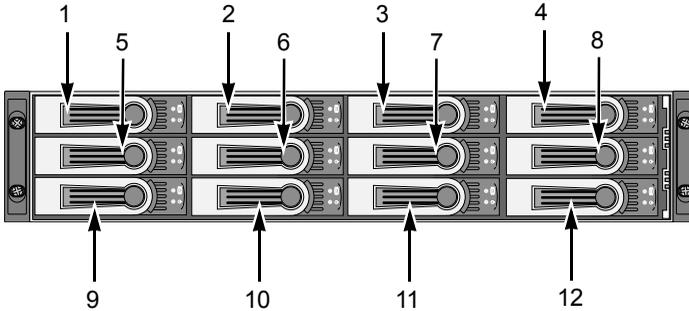


Figure 7. VTrak E310f/s drive slot numbering



Install all of the drive carriers into the VTrak enclosure to ensure proper airflow, even if you do not populate all the carriers with disk drives.

AAMUX Adapter

If your VTrak has dual controllers—Fibre Channel or SAS—and you plan to install SATA drives, you **must** install an AAMUX adapter with each SATA drive. AAMUX adapters are available from Promise Technology.

Installing Disk Drives

1. Remove a disk drive carrier.
2. SATA drives only. Place the AAMUX adapter into the disk drive carrier and attach it with the four screws. See Figure 9.
 - Install only the screws supplied with the adapter.
 - The adapter fits into the carrier with the SAS connector at the back.
 - Snug each screw. Be careful not to over tighten.
3. Carefully lay the disk drive into the drive carrier at the front, so that the screw holes on the bottom line up.

If you installed an AAMUX adapter, lay the SATA disk drive into the carrier and slide it so the power and data connectors insert in to the adapter.
4. Insert the screws through the holes in the drive carrier and into the bottom of the disk drive. See Figure 8.
 - Install only the counter-sink screws supplied with the VTrak.
 - Install four screws per drive.
 - Snug each screw. Be careful not to over-tighten.
5. Reinstall the drive carrier into the VTrak chassis.

Repeat steps 2 through 5 until all of your disk drives are installed.

Figure 8. Disk drive mounting holes in the drive carrier

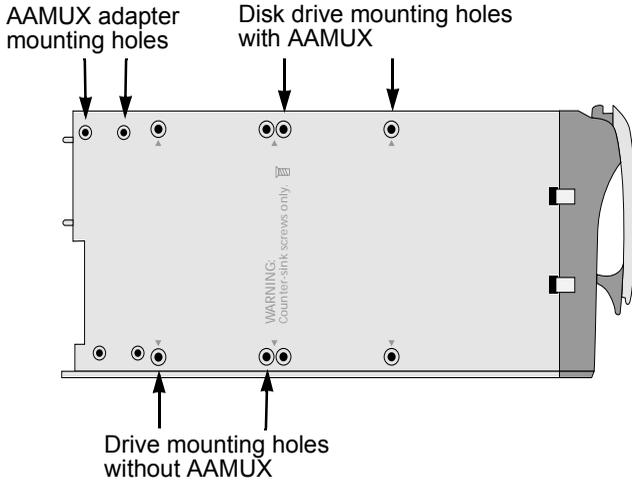


Figure 9. SATA drive mounted in a drive carrier with the required AAMUX adapter



Figure 10. SAS drive mounted in a drive carrier



Step 4: Making Management and Data Connections

For Serial Attached SCSI setup, go to page 20.

Fibre Channel

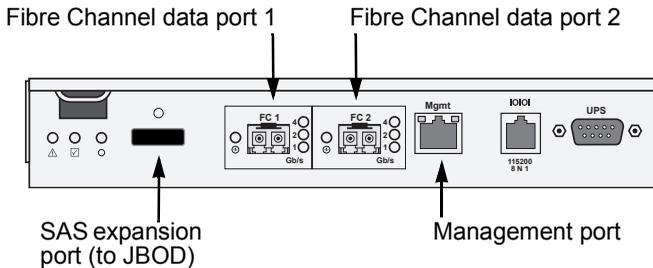
VTrak models can have one or two RAID controllers. Each controller has an Ethernet (RJ45) Management Port connector that enables you to monitor the VTrak over your network using the WebPAM PROe Software. VTrak supports HTTP, HTTPS, and Telnet protocols.

The VTrak E610f and E310f RAID controllers have two 4-Gb Fibre Channel (FC) connections for the data ports. See Figure 11.

You can configure your VTrak for:

- Storage Area Network (SAN)
- Direct Attached Storage (DAS)
- JBOD Expansion using a SAS data connection

Figure 11. VTrak E610f and E310f controller data and management connectors



Configuring a Storage Area Network

A storage area network (SAN) requires:

- A Fibre Channel switch
- A Fibre Channel HBA card in each Host PC/Server
- A network switch
- A network interface card (NIC) in each Host PC/Server

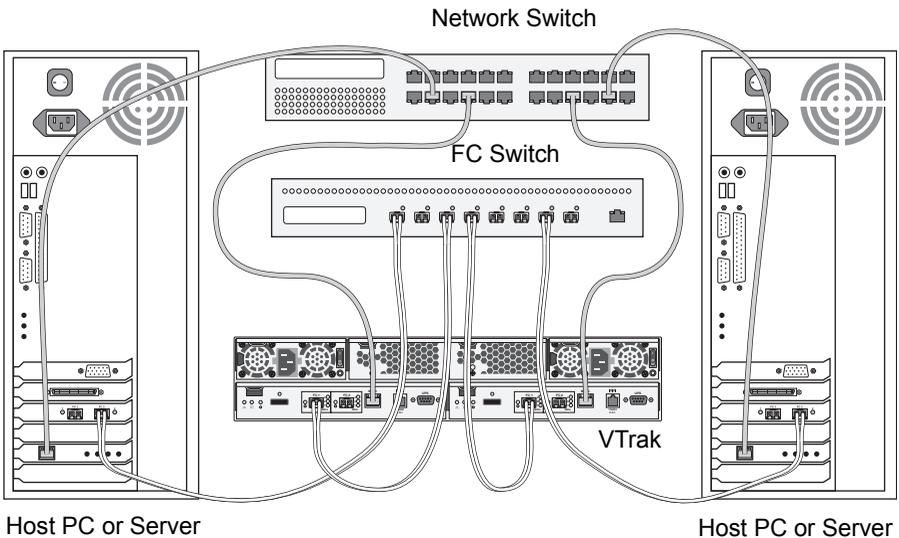
To establish the data path:

On the VTrak controller, connect one of the Fibre Channel data ports to your Fibre Channel switch.

To establish the management path:

1. On the VTrak controller, connect the Management Port to your network switch. Figure 12.
2. Connect each Host PC's or Server's standard NIC to your network switch.

Figure 12. SAN data and management connections. The E310f is shown. The E610f is similar



Configuring Direct Attached Storage

Direct attached storage (DAS) requires:

- Two Fibre Channel HBA cards in the Host PC or Server
- A network switch
- A network interface card (NIC) in the Host PC or Server

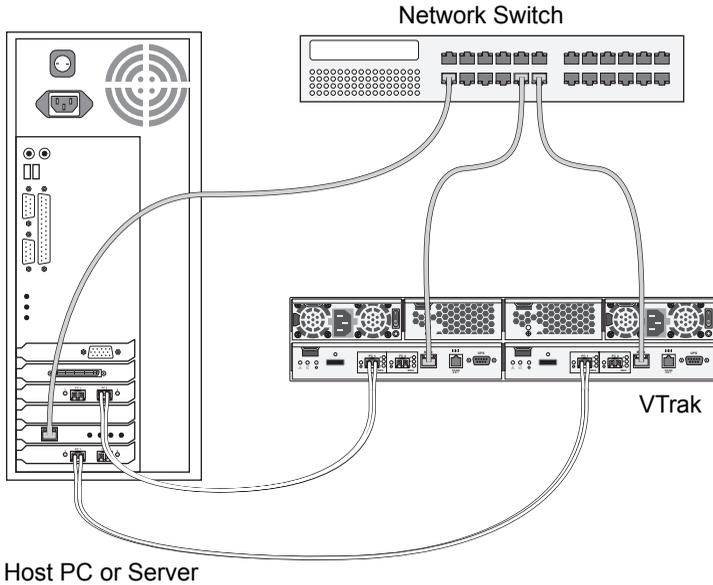
To establish the data path:

On the VTrak controller, connect one of the Fibre Channel data ports to your Fibre Channel switch. See Figure 13.

To establish the management path:

1. On the VTrak controller, connect the Management Port to your network switch. See Figure 13.
2. Connect the Host PC's or Server's standard NIC to your network switch.

Figure 13. DAS data and management connections. The E310f is shown. The E610f is similar

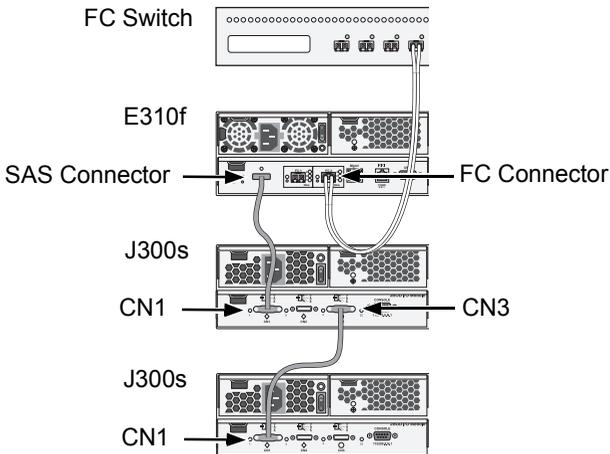


Configuring JBOD Expansion

To expand the number of disk drives:

1. On the E310f controller, connect the SAS connector (a subtractive-routed port) to CN1 (a table-routed port) on the I/O module of the first J300s unit. See Figure 14.
2. Connect CN3 (a subtractive-routed port) on the first J300s unit to CN1 on one of the I/O modules of the next J300s unit.
3. Connect the remaining J300s units in the same manner.

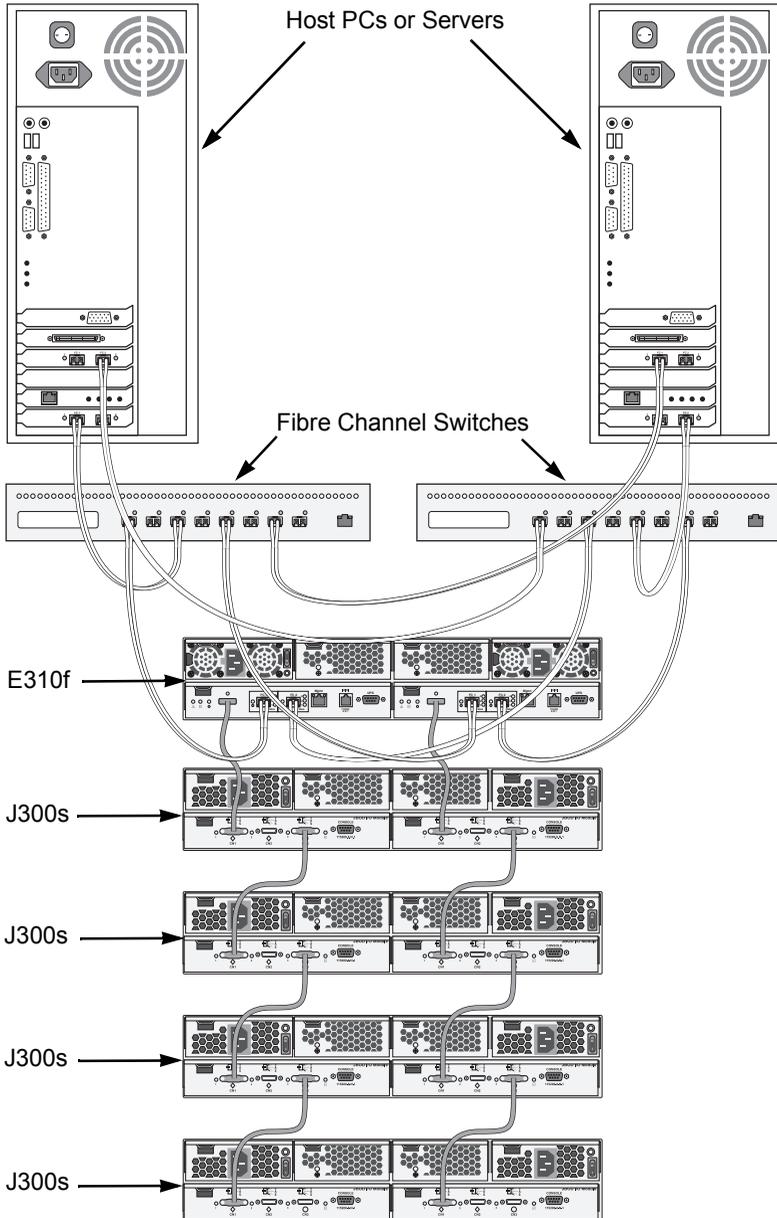
Figure 14. JBOD data connections. The E310f is shown. The E610f is similar



You can expand a SAN system with no single point of failure. See Figure 15. Such an arrangement requires:

- Two Fibre Channel switches
- Two Fibre Channel HBA cards in each Host PC or Server
- A network switch (not shown)
- A network interface card (NIC) in each Host PC or Server

Figure 15. JBOD expansion with no single point of failure



This completes management and data connections for VTrak E610f and E310f. Go to “Step 5: Making Serial Cable Connections” on page 26.

Serial Attached SCSI

VTrak models can have one or two RAID controllers. Each controller has an Ethernet (RJ45) Management Port connector that enables you to monitor the VTrak over your network using the WebPAM PROe Software. VTrak supports HTTP, HTTPS, and Telnet protocols.

The standard VTrak E610s and E310s controllers have five SAS ports:

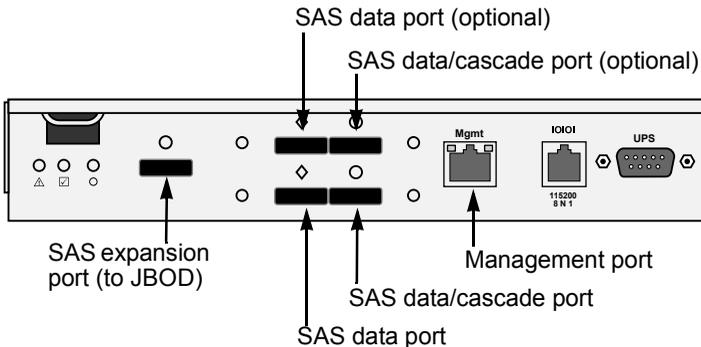
- Data ports (2) – Connects to the Host PC or Server
- Data/Cascade ports (2) – Connects to the data port of a second E310s controller or to the Host PC or Server
- SAS Expansion port (1) – Connects to a VTrak J300s JBOD expansion subsystem

If your VTrak E310s has the optional daughter card installed in the controller, you have two data ports and two data/cascade ports, plus the SAS expansion port.

You can configure your VTrak for:

- Direct Attached Storage (DAS)
- Cascaded Storage (Multiple E610s or E310s subsystems)
- JBOD Expansion using a SAS data connection

Figure 16. VTrak E610s and E310s controller data and management connectors



Configuring Direct Attached Storage

Direct attached storage (DAS) requires:

- Two SAS HBA cards in the Host PC or Server
- A network switch
- A network interface card (NIC) in the Host PC or Server

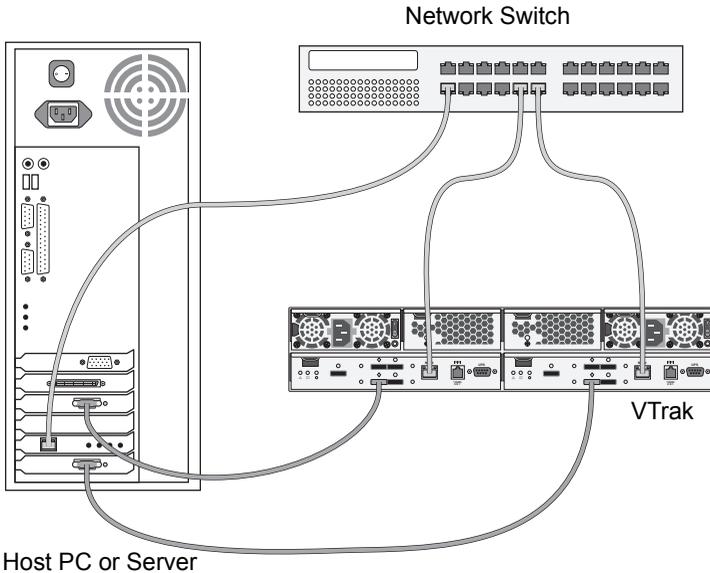
To establish the data path:

On the VTrak controller, connect a SAS data port or a SAS data/cascade port to one of your SAS HBA cards. See Figure 17.

To establish the management path:

1. On the VTrak controller, connect the Management Port on each Controller to your network switch. See Figure 17.
2. Connect the Host PC's or Server's standard NIC to your network switch.

Figure 17. DAS data and management connections. The E310s is shown. The E610s is similar



Configuring Cascaded Storage

Cascaded storage requires:

- One SAS HBA card in the Host PC or Server
- A network switch
- A network interface card (NIC) in the Host PC or Server

To establish the data path:

1. On the VTrak controller, connect a SAS data port or a SAS data/cascade port to your SAS HBA card. See Figure 18.
 2. Connect the data/cascade port (a subtractive-routed port) of the first E310s to the data port (a table-routed port) on the second E310s.
 3. Connect the remaining E310s controllers in the same manner.
- You can cascade up to eight VTrak subsystems.

To establish the management path:

1. On the VTrak controller, connect the Management Port on each Controller to your network switch. See Figure 19.
2. Connect the Host PC's or Server's standard NIC to your network switch.

Figure 18. Cascaded data connections. The E310s is shown. The E610s is similar

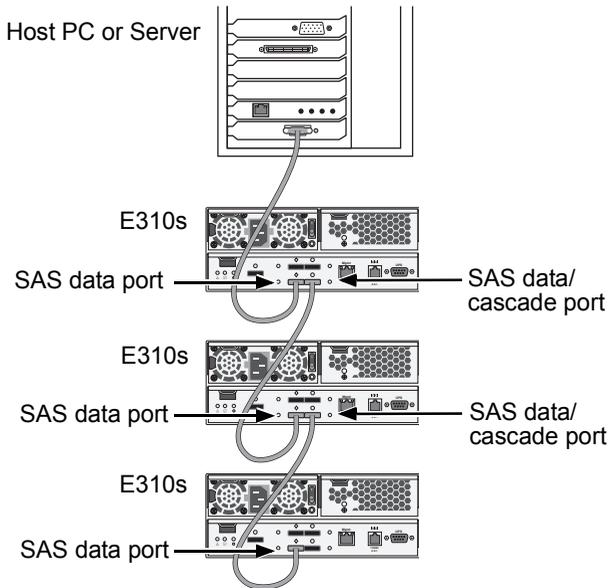
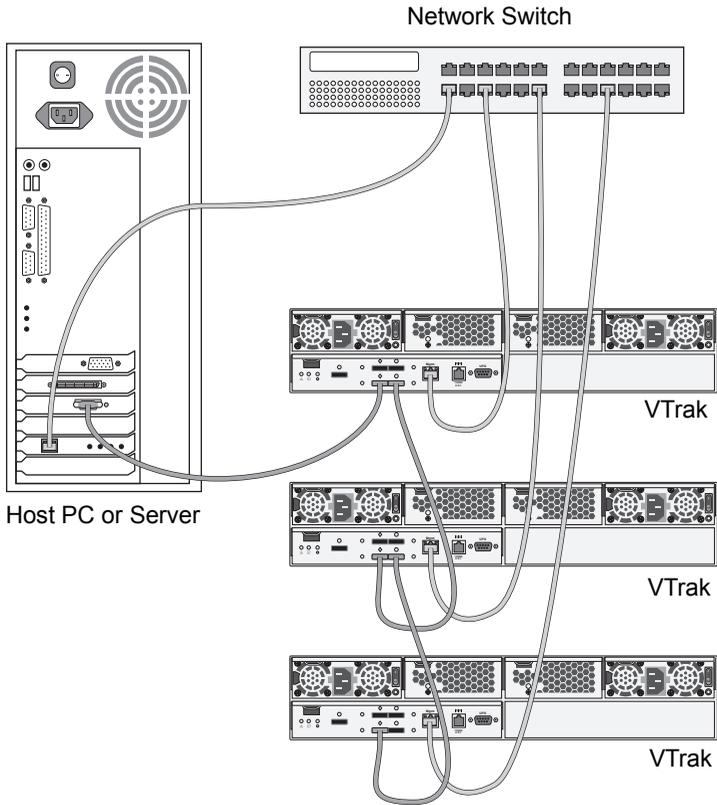


Figure 19. Cascaded management and data connections. The E310s is shown. The E610s is similar

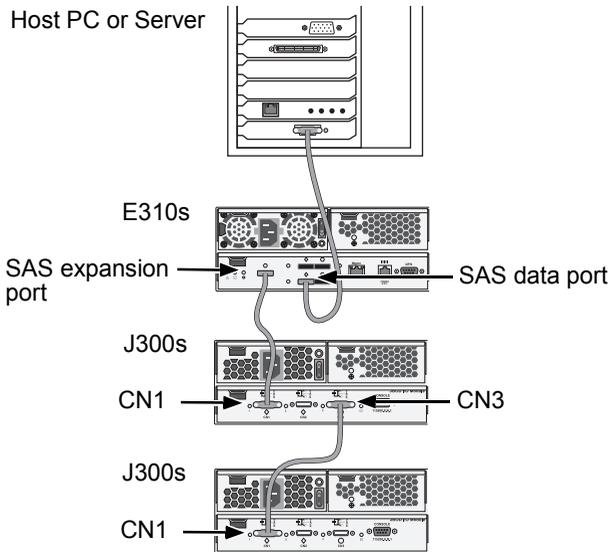


Configuring JBOD Expansion

To expand the number of disk drives:

1. On the E310s controller, connect the SAS expansion port (a subtractive-routed port) to the CN1 (a table-routed port) on one of the I/O modules of the first J300s unit. See Figure 20.
2. Connect CN3 (a subtractive-routed port) on the first J300s unit to CN1 on one of the I/O modules of the next J300s unit.
3. Connect the remaining J300s units in the same manner.

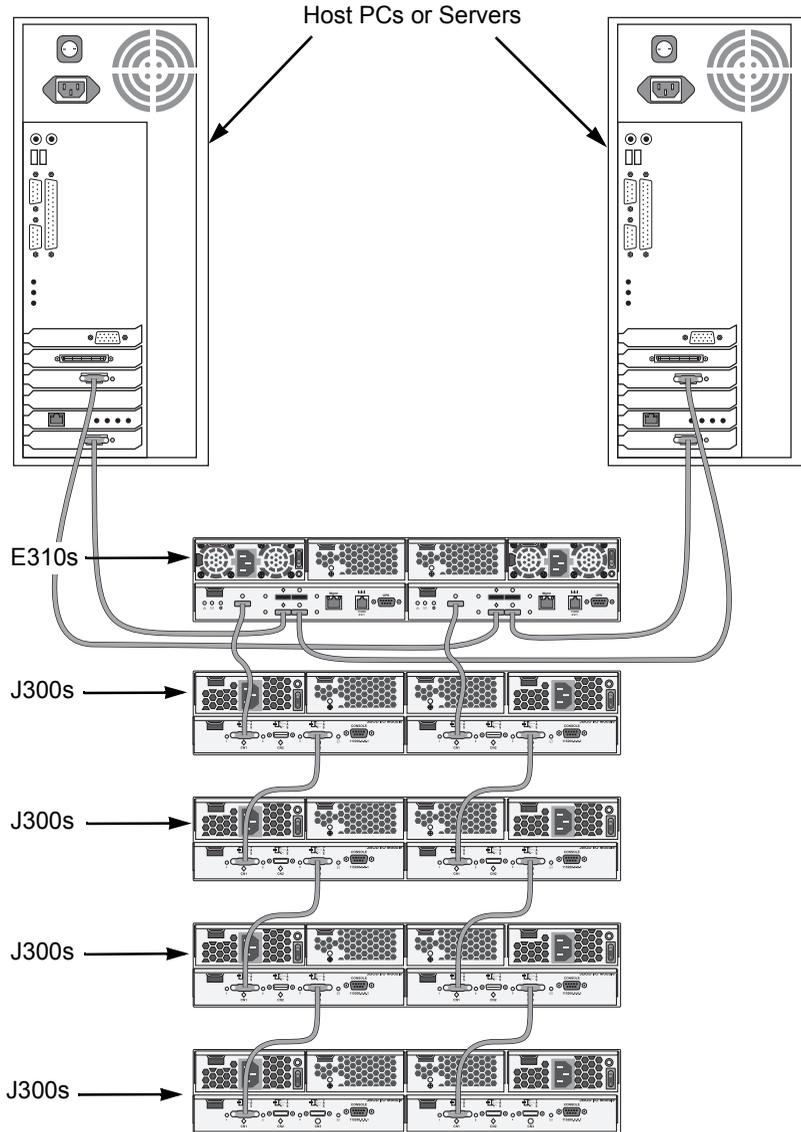
Figure 20. JBOD data connections. The E310s is shown. The E610s is similar



You can expand a SAN system with no single point of failure. See Figure 21. Such an arrangement requires:

- Two SAS HBA cards in each Host PC or Server
- A network switch (not shown)
- A network interface card (NIC) in each Host PC or Server
- One to four VTrak J300s JBOD subsystems

Figure 21. JBOD expansion with no single point of failure

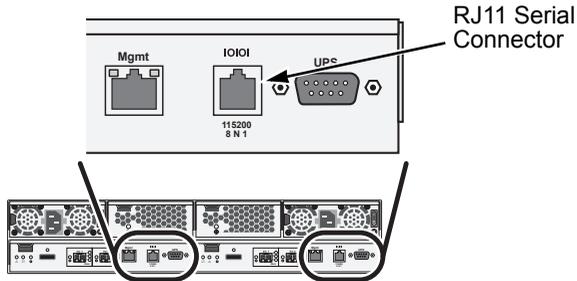


This completes Network and Data connections for VTrak E610s and E310s. Go to "Step 5: Making Serial Cable Connections" on page 26.

Step 5: Making Serial Cable Connections

RS232 serial communication enables the Command Line Interface (CLI) and Command Line Utility (CLU) on your PC to monitor and control the VTrak. On VTrak, RS232 communication goes through the RJ11 serial connector on each controller.

Figure 22. Serial communication goes through the RJ11 connector. The E310f is shown. The E610f, E610s, and E310s are similar



To set up a serial cable connection:

1. Attach the RJ11 end of the RJ11-to-DB9 serial data cable, supplied with the VTrak, to the RJ11 serial connector on one of the controllers.
2. Attach a null-modem cable to the DB9 end of the RJ11-to-DB9 serial data cable.
3. Attach the other end of the null-modem cable to a serial port on the Host PC or Server.

You will establish a serial connection on the Host PC or Server in Step 7 (see page 29). At this time, continue with Step 6.



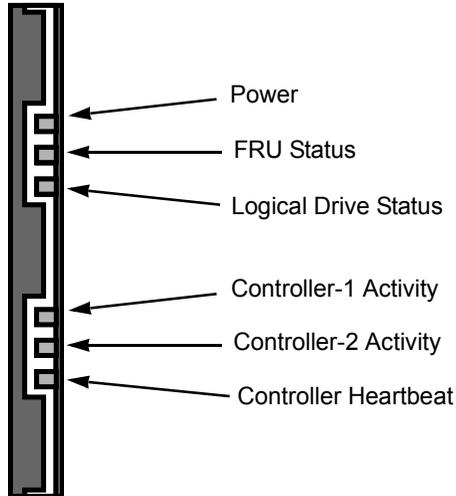
Note

The DB9 connector on the VTrak controller is for a UPS support, which is planned for a future release.

Step 6: Connecting the Power

Plug the power cords and switch on both power supplies on. When the power is switched on, the LEDs on the front of the VTrak will light up.

Figure 23. VTrak front panel LED display. The E310f/s display is shown. The E610f/s display is similar

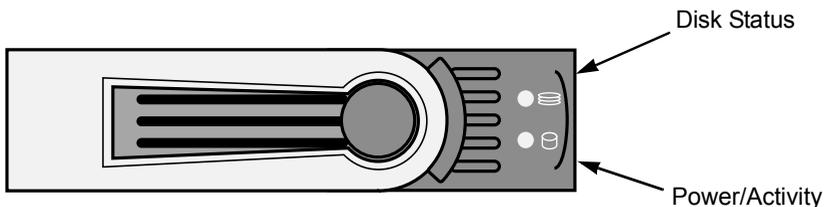


When boot-up is finished and the VTrak is functioning normally:

- Controller LED blinks green once per second for five seconds, goes dark for ten seconds, then blinks green once per second for five seconds again.
- Power, FRU and Logical Drive LEDs display green continuously.
- Controller LEDs flash green if there is activity on that controller.

There are two LEDs on each Drive Carrier. They report the presence of power and a disk drive, and the current condition of the drive.

Figure 24. VTrak disk drive carrier LEDs



After a few moments the Power/Activity should display Green. If there is no disk drive in the carrier, the Power/Activity LED will remain dark.

The Power/Activity LED flashes during drive activity.

The Disk Status LED displays Green when a drive is present and configured.

Step 7: Setting the IP Address

Setting up the Serial Connection

VTrak has a Command Line Interface (CLI) to manage all of its functions, including customization. A subset of the CLI is the Command Line Utility (CLU), a user-level interface that manages your VTrak via your PC's terminal emulation program, such as Microsoft HyperTerminal. This procedure uses the serial cable connection you made in Step 5 (see page 26).

You must use the CLU to assign an IP address to the VTrak to enable a network connection for WebPAM PROe.

1. Change your terminal emulation program settings to match the following specifications:
 - Bits per second: 115200
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: none
2. Start your PC's terminal VT100 or ANSI emulation program.
3. Press Enter once to launch the CLI.
4. At the Login prompt, type **administrator** and press Enter.
5. At the Password prompt, type **password** and press Enter.
At this point, you are in the CLI. You can continue using the CLI to make network settings or you can switch to the CLU. Go to:
 - Setting up with the CLI (page 30)
 - Setting up with the CLU (page 32)

Choosing DHCP or a Static IP Address

When you setup your VTrak, you have the option of:

- Enabling DHCP and letting your DHCP server assign the IP address to the VTrak's virtual management port.
- Specifying a static IP address for the VTrak's virtual management port.

If you choose to enable DHCP, have your Network Administrator dedicate an IP address for the VTrak, linked to the VTrak's MAC address. This action will prevent the DHCP server from assigning a new IP address when the VTrak restarts, with the result that users can no longer log in.

To access the MAC address for VTrak's virtual management port:

- In the CLI, type **net -v** and press Enter.
- In the CLU Main Menu, highlight *Network Management* and press Enter. Then highlight *Virtual* and press Enter.

Setting up with the CLI

1. Type the following string to set the system date and time, then press Enter.

```
administrator@cli> date -a mod -d 2006/08/25 -t 14:50:05
```

In the above example, the date and time are included as examples only. Your values will be different. Use yyyy/mm/dd for the date and a 24-hour clock for the time.

2. Type the following string to set the Management Port IP address and other settings, then press Enter.

```
administrator@cli> net -a mod -t mgmt -s "primaryip=192.168.10.85,
primaryipmask=255.255.255.0, gateway=192.168.10.1"
```

In the above example, the IP addresses and subnet mask are included as examples only. Your values will be different.

If you prefer to let your DHCP server assign the IP address, type the following string, then press Enter.

```
administrator@cli> net -a mod -t mgmt -s "dhcp=enable"
```

Note that the IP address described above belongs to the VTrak subsystem, not to the RAID controller. Use this IP address to log into the VTrak over your network.

3. To verify the settings, type **net** and press Enter.

```
administrator@cli> net
```

```
=====
CId Port Type  IP           Mask           Gateway         Link
=====
1  1    Mgmt  192.168.10.85 255.255.255.0 192.168.10.1  Up
```

Each RAID controller has an IP addresses for access when the controller goes into *maintenance mode*. Maintenance mode is only for remedial action in the event of a problem with the controller. See Chapter 8 of the *VTrak E-Class Product Manual* on the CD for more information.

4. Type the following string to set the Maintenance Mode IP address and other settings, then press Enter. You must set each controller separately.

```
administrator@cli> net -a mod -t mgmt -m -c 1 -s
"primaryip=192.168.10.101, primaryipmask=255.255.255.0,
gateway=192.168.10.1"
```

```
administrator@cli> net -a mod -t mgmt -m -c 2 -s  
"primaryip=192.168.10.102, primaryipmask=255.255.255.0,  
gateway=192.168.10.1"
```

In the above example, the IP addresses and subnet mask are included as examples only. Your values will be different.

If you prefer to let your DHCP server assign the IP addresses, type the following strings, then press Enter.

```
administrator@cli> net -a mod -t mgmt -m -c 1 -s "dhcp=enable"  
administrator@cli> net -a mod -t mgmt -m -c 2 -s "dhcp=enable"
```

Note that the IP address described above belongs to the RAID controller, not to the VTrak subsystem. Use this IP address to log into the controller over your network.

5. To verify the maintenance mode settings, type **net -m** and press Enter.

```
administrator@cli> net -m
```

```
-----  
CtrlId: 1                               Port: 1  
Type: Management Ethernet               IPType: IPv4  
IP: 192.168.10.101                      IPMask: 255.255.255.0  
MAC: 00:01:55:AE:02:AE                  DNS: 0.0.0.0  
Gateway: 192.168.10.1                   DHCP: Disabled
```

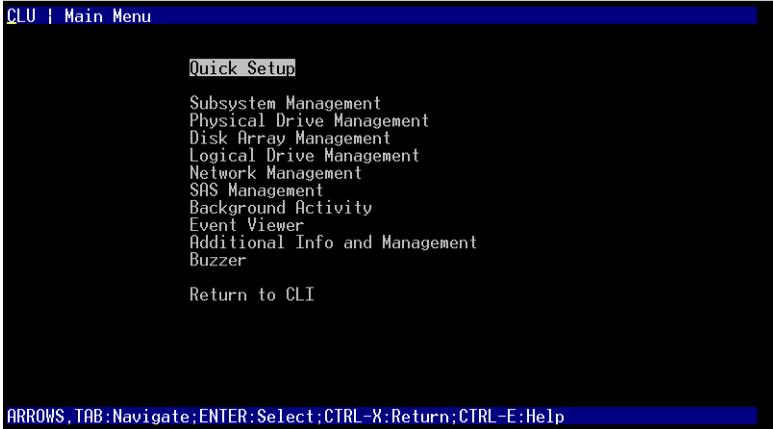
This completes the Management port setup. Go to “Step 8: Creating Disk Arrays with WebPAM PROe” on page 35.

To see the full set of CLI commands, at the `admin@cli>` prompt, type **help** and press Enter.

Setting up with the CLU

1. At the administrator@cli> prompt, type **menu** and press Enter.
The CLU main menu appears.

Figure 25. CLU main menu



```
CLU | Main Menu

Quick Setup
Subsystem Management
Physical Drive Management
Disk Array Management
Logical Drive Management
Network Management
SAS Management
Background Activity
Event Viewer
Additional Info and Management
Buzzer

Return to CLI

ARROWS, TAB: Navigate; ENTER: Select; CTRL-X: Return; CTRL-E: Help
```

2. With *Quick Setup* highlighted, press Enter.
The first Quick Setup screen enables you to make Date and Time settings.

Setting system date and time

1. Press the arrow keys to highlight *System Date*.
2. Press the backspace key to erase the current date.
3. Type the new date.
4. Follow the same procedure to set the System Time.
5. Press Ctrl-A to save these settings and move to the Management Port configuration screen.

Making Management Port settings

By default, DHCP is disabled on VTrak and the default Management Port address is set to 10.0.0.1.

Note that the IP address described here belongs to the VTrak subsystem, not to the RAID controller. Use this IP address to log into the VTrak over your network.

Manual IP settings

To make Management Port settings manually:

1. Press the arrow keys to highlight *IP Address*.
2. Press the backspace key to erase the current IP Address.

3. Type the new IP Address.
4. Follow the same procedure to specify the Subnet Mask, Gateway IP Address and DNS Server IP Address.
If you do not have a DNS server, skip the DNS Server IP address.
5. Press Ctrl-A to save your settings.

Automatic IP settings

To make Management Port settings automatically:

1. Press the arrow keys to highlight *DHCP*.
2. Press the spacebar to toggle to *Enable*.
3. Press Ctrl-A to save these settings.

Viewing IP address and settings

To view the current IP address and network settings when using DHCP:

1. Press the arrow keys to highlight *DHCP*.
2. Press the spacebar to toggle to *Disable*.
The current Management Port settings are displayed.
3. Press the spacebar to toggle DHCP back to *Enable*.
4. Press Ctrl-A to save these settings and move to the RAID configuration screen.

Making Controller Maintenance Mode Settings

Each RAID controller has an IP addresses for access when the controller goes into *maintenance mode*. Maintenance mode is only for remedial action in the event of a problem with the controller. See Chapter 8 of the *VTrak E-Class Product Manual* on the CD for more information.

Note that the IP address described here belongs to the RAID controller, not to the VTrak subsystem. Use this IP address to log into the controller over your network.

Making Automatic Settings

1. From the CLU Main Menu, highlight *Network Management* and press Enter.
2. Highlight *Maintenance Mode Network Configuration* and press Enter.
3. Highlight the controller you want and press Enter.
4. Highlight *DHCP* and press the spacebar to toggle to *Enabled*.
5. Press Ctrl-A to save your settings.

Making Manual Settings

1. From the CLU Main Menu, highlight *Network Management* and press Enter.
2. Highlight *Maintenance Mode Network Configuration* and press Enter.

3. Highlight the controller you want and press Enter.
4. Highlight *DHCP* and press the spacebar to toggle to *Disabled*.
5. Highlight each of the following and press the backspace key to erase the current value, then type the new value.
 - IP Address
 - Subnet Mask
 - Default Gateway IP Address
 - DNS Server IP Address
6. Press Ctrl-A to save your settings.

Exiting the CLU

1. Highlight *Skip the Step and Finish* and press Enter.
2. Highlight *Return to CLI* and press Enter.

This completes the Management Port setup. Go to “Step 8: Creating Disk Arrays with WebPAM PROe” on page 35.

Step 8: Creating Disk Arrays with WebPAM PROe



Note

You can also use the CLU to create disk arrays and logical drives. See Chapter 5 of the *VTrak E-Class Product Manual* for more information.

Setting up disk arrays with WebPAM PROe consists of the following actions:

- Logging into WebPAM PROe (below)
- Selecting a Language (page 37)
- Creating a Disk Array (page 37)
- Logging out of WebPAM PROe (page 41)

Logging into WebPAM PROe

1. Launch your Browser.
2. In the Browser address field, type in the IP address of the VTrak subsystem.
Use the IP address you obtained in Step 7 (see page 32). Note that the IP address shown below is only an example. The IP address you type into your browser will be different.

Regular Connection

- WebPAM PROe uses an HTTP connection.http://
- Enter the VTrak's Management Port IP address 192.168.10.85

Together, your entry looks like this:

http://192.168.10.85

Secure Connection

- WebPAM PROe uses a secure HTTP connection.https://
- Enter the VTrak's Management Port IP address 192.168.10.85

Together, your entry looks like this:

https://192.168.10.85



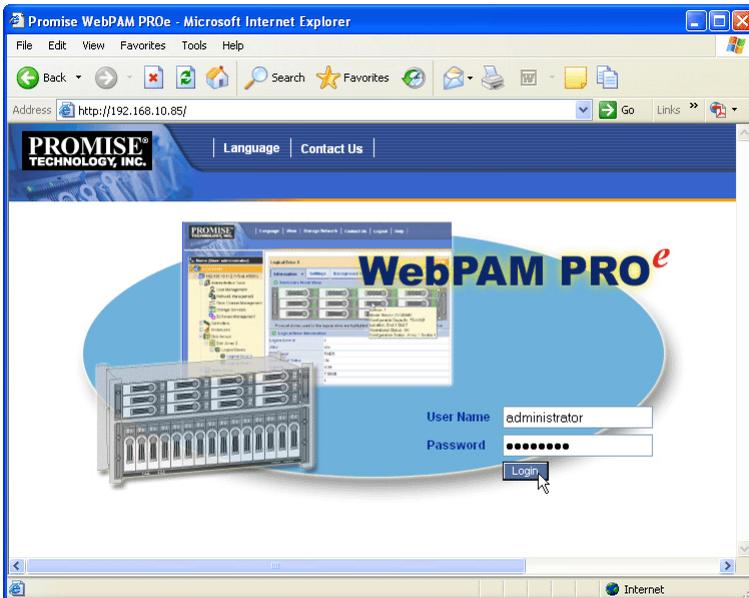
Note

Whether you select a regular or a secure connection, your login to WebPAM PROe and your user password are always secure.

3. When the log-in screen (Figure 21) appears:
 - Type **administrator** in the User Name field.
 - Type **password** in the Password field.
 - Click the **Login** button.

The User Name and Password are case sensitive.

Figure 26. WebPAM PROe log-in screen



After sign-in, the WebPAM PROe opening screen appears. If there are any unconfigured physical drives in the enclosure, an Array Configuration menu will also appear (see page 37).



Note

Make a Bookmark (Netscape Navigator) or set a Favorite (Internet Explorer) of the Login Screen so you can access it easily next time.

Selecting a Language

WebPAM PROe displays in English, German, French, Italian, Japanese, Chinese Traditional, Chinese Simple, and Korean.

1. Click **Language** on the WebPAM PROe banner.
The language list appears in the Header.
2. Click on the language you prefer.
The WebPAM PROe user interface displays in the selected language.

Figure 27. Clicking “Language” on the WebPAM PROe banner

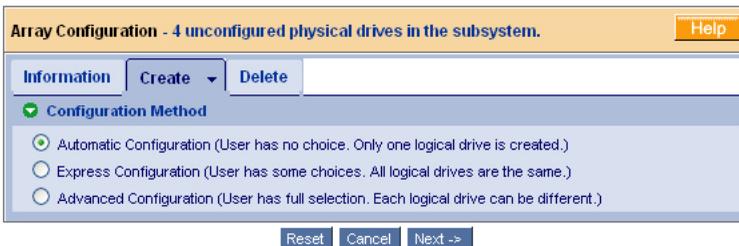


Creating a Disk Array

On a newly activated VTrak subsystem, there are no disk arrays or logical drives. To create a disk array:

1. Click on the Disk Arrays  icon, then click on the Create tab.
The Array Configuration menu appears. See Figure 27.
2. Choose one of the options:
 - **Automatic** – Creates a new disk array based on a default set of parameters, including one logical drive. The number of unconfigured physical drives available determines the RAID level of the disk array and whether a spare drive is created. See page 38.
 - **Express** – Creates a new disk array based on the characteristics you specify. You can create multiple logical drives. However, all of the logical drives will be the same size and RAID level. See page 39.
 - **Advanced** – Enables you to directly specify all parameters for a new disk array and its logical drives. See page 40.
3. Click the **Next** button.

Figure 28. The Array Configuration menu



Automatic

When you choose the Automatic option, the following parameters appear on the screen:

- **Disk Arrays** – The number of physical drives in the disk array, their ID numbers, configurable capacity, and the number of logical drives to be created
- **Logical Drives** – The ID number of the logical drives, their RAID level, capacity, and stripe size
- **Spare Drives** – The physical drive ID number of the dedicated hot spare assigned to this disk array

If you accept these parameters, click the **Submit** button. The new disk array appears in the Disk Array List on the Information tab.

If you do NOT accept these parameters, use the Express (page 39) or Advanced (page 40) option to create your disk array.

Express

When you choose the Express option, a set of characteristics and options appears on the screen.

1. Check the boxes to select any one or a combination of:
 - **Redundancy** – The array will remain available if a physical drive fails
 - **Capacity** – The greatest possible amount of data capacity
 - **Performance** – The highest possible read/write speed
 - **Spare Drive** – A hot spare drive
2. In the Number of Logical Drives field, enter the number of logical drives you want to make from this disk array.
The maximum possible number of logical drives appears to the right of this field.
3. From the Application Type menu, select an application that best describes your intended use for this disk array:
 - File Server
 - Video Stream
 - Transaction Data
 - Transaction Log
 - Other
4. Click the **Update** button.

Or check the Automatic Update box and updates will occur automatically.

The following parameters display:

- **Disk Arrays** – The number of physical drives in the disk array, their ID numbers, configurable capacity, and the number of logical drives to be created
- **Logical Drives** – The ID number of the logical drives, their RAID level, capacity, and stripe size
- **Spare Drives** – The physical drive ID number of the dedicated hot spare assigned to this disk array

If you accept these parameters, proceed to the next step.

If you do NOT accept these parameters, review and modify your selections in the previous steps.

5. When you are done, click the **Submit** button.

The new disk array appears in the Disk Array List on the Information tab.

Advanced



Note

For an explanation of the parameters under the Advanced option, see Chapter 7 of the *VTrak E-Class Product Manual*.

When you choose the Advanced option, the *Step 1 – Disk Array Creation* screen displays.

1. Enter a name for the disk array in the field provided.
2. Check the box to enable the following features.
 - **Media Patrol** – A routine maintenance procedure that checks the magnetic media on each disk drive. Media Patrol is concerned with the condition of the media itself, not the data recorded on the media.
 - **PDM** – Predictive Data Migration (PDM) scans the bad sector remapping table of the disk drives assigned to a logical drive. When the table fills to a specified percentage of its capacity, PDM triggers a migration of data from the suspect drive (the disk drive with the bad sectors) to a spare disk drive.
3. Highlight the physical drives you want in the disk array from the Available list and press the >> button to move them to the Selected list.
You can also double-click them to move them.
4. When you are done, click the **Next** button.
The *Step 2 – Logical Drive Creation* screen displays.
5. Enter an Alias (name) for the first logical drive.
6. Choose a RAID level from the dropdown menu.
The choice of RAID levels depends on the number of physical drives you selected.
7. RAID 50 and 60 only. Choose the number of axes from the dropdown menu.
8. Specify a Capacity and the unit of measure (MB, GB, or TB).
This value will be the data capacity of the logical drive. If you specify less than disk array's maximum capacity, the remainder is available for additional logical drives.
9. Specify a Stripe size from the dropdown menu.
64, 128, 256, 512 KB, and 1 MB are available. 64 KB is the default.
10. Specify a Sector size from the dropdown menu.
512 Bytes, 1, 2, and 4 KB are available. 512 Bytes is the default.

11. Choose a Read Cache policy:
 - ReadCache
 - ReadAhead
 - No Cache
12. Choose a Write Cache policy:
 - WriteThru
 - WriteBack
13. Choose the Preferred Controller ID.
You can make a selection when LUN Affinity is enabled. Choose 1, 2, or *Automatic*.
14. RAID 6 and 60 only.
Choose the number of parity drives from the dropdown menu.
15. Click the **Update** button.
When you click the Update button, WebPAM PROe sets up one logical drive and adds it to the New Logical Drive lists at the bottom of the *Step 2 – Logical Drive Creation* screen.
Repeat the above steps to specify additional logical drives as desired.
16. When you have finished specifying logical drives, click the **Next** button.
The *Step 3 – Summary* screen displays with the proposed disk array and logical drives you specified.
17. If you agree with the proposed disk array and logical drives, click the **Submit** button.
If you disagree, click the **Back** button and make changes as needed.

Logging out of WebPAM PROe

There are two ways to log out of WebPAM PROe:

- Close your browser window
- Click **Logout** on the WebPAM PROe banner

Figure 29. Clicking “Logout” on the WebPAM PROe banner



Clicking **Logout** brings you back to the Login Screen. See page 36.

After logging out, you must enter your user name and password in order to log in again.

Contacting Technical Support

Promise Technical Support provides several support options for Promise users to access information and updates. We encourage you to use one of our electronic services, which provide product information updates for the most efficient service and support.

If you decide to contact us, please have the following information available:

- Product model and serial number
- BIOS, firmware and driver version numbers
- A description of the problem or situation
- System configuration information, including: motherboard and CPU type, hard drive models, SAS/SATA/ATA/ATAPI drives & devices, and other controllers.

Technical Support Services

Promise Online™ Web Site	http://www.promise.com/support (technical documents, drivers, utilities, etc.)
--------------------------	--

United States

Email Support	e-Support On-Line
Fax Support	(408) 228-1097 Attn: Technical Support
Phone Support	(408) 228-1400 option 4
If you wish to write us for support:	Promise Technology, Inc. 580 Cottonwood Drive Milpitas, CA 95035, USA

The Netherlands

Email Support	e-Support On-Line
Fax Support	+31 (0) 40 256 9463 Attn: Technical Support
Phone Support	+31 (0) 40 235 2600
If you wish to write us for support:	Promise Technology Europe B.V. Science Park Eindhoven 5542 5692 EL Son, The Netherlands

Germany

Email Support	e-Support On-Line
Fax Technical Support	+49 (0) 2 31 56 76 48 - 29 Attn: Technical Support
Phone Technical Support	+49 (0) 2 31 56 76 48 - 10
If you wish to write us for support:	Promise Technology Germany Europaplatz 9 44269 Dortmund, Germany

Italy

Email Support	e-Support On-Line
Fax Support	+39 06 367 124 00 Attn: Technical Support
Phone Support	+39 06 367 126 26
If you wish to write us for support:	Promise Technology Italy Piazza del Popolo 18 00187 Rome, Italy

Taiwan

Email Support	e-Support On-Line
Fax Support	+886 3 578 2390 Attn: Technical Support
Phone Support	+886 3 578 2395 (ext. 8811)
If you wish to write us for support:	Promise Technology, Inc. 2F, No. 30, Industry E. Rd. IX Science-based Industrial Park Hsin-Chu 30075, Taiwan (R.O.C.)

China

Email Support	support@promisechina.com
Fax Support	+86-10-8857-8015 Attn: Technical Support
Phone Support	+86-10-8857-8085/8095
If you wish to write us for support:	Promise Technology China Room 1205, Tower C Webok Time Center, No.17 South Zhong Guan Cun Street Hai Dian District, Beijing 100081, P.R. China



Caution

- There is a risk of explosion if the battery is replaced by the incorrect type.
- Dispose of used batteries according to the instructions that accompany the battery.