

# ***VTrak G-Class Series***

## ***Product Manual***

***Version 1.0***

**Warning**

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This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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**Warning**

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

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**Warning**

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Turn off the power and disconnect the power cord before servicing this device.

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Also included are four levels of notices:



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### **Warning**

A Warning notifies you of probable equipment damage or loss of data, or the possibility of physical injury, and how to avoid them.

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### **Caution**

A Caution informs you of possible equipment damage or loss of data and how to avoid them.

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### **Important**

An Important message calls attention to an essential step or point required to complete a task, including things often missed.

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### **Note**

A Note provides helpful information such as hints or alternative ways of doing a task.

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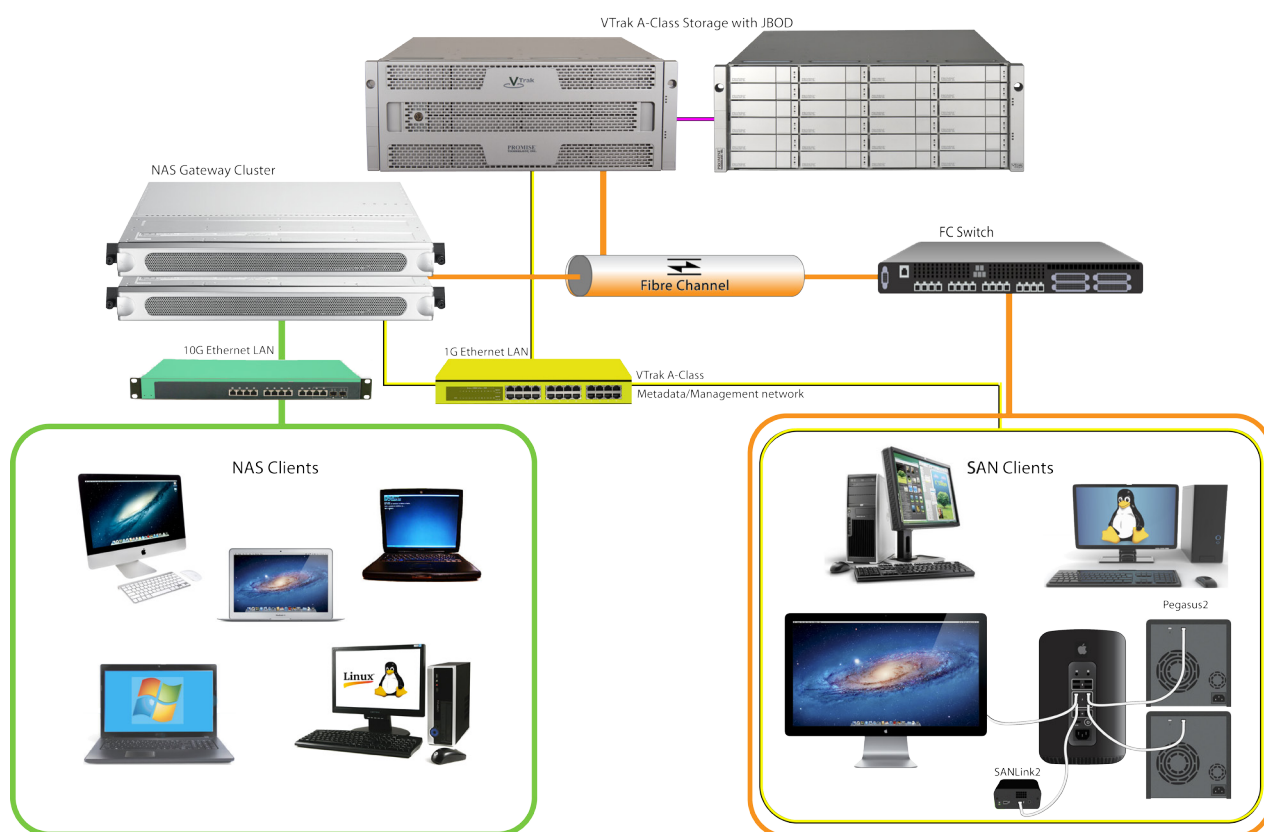
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# INTRODUCTION

The VTrak G1000 NAS Gateway provides universal access to the VTrak A-Class managed SAN without the need to deploy costly Fibre Channel SAN connections to every client system. This way, Fibre Channel data connections can be used only for clients that require an extremely high performance SAN. But the same data assets can still be used by Ethernet connected NAS clients that have no need for high IO performance. Data remains safely on the VTrak A-Class SAN available for high demand clients connected so there is no need to create two separate storage environments.

## *VTrak A-Class SAN, VTrak G1000 NAS Gateway and 10G NAS Client Network*



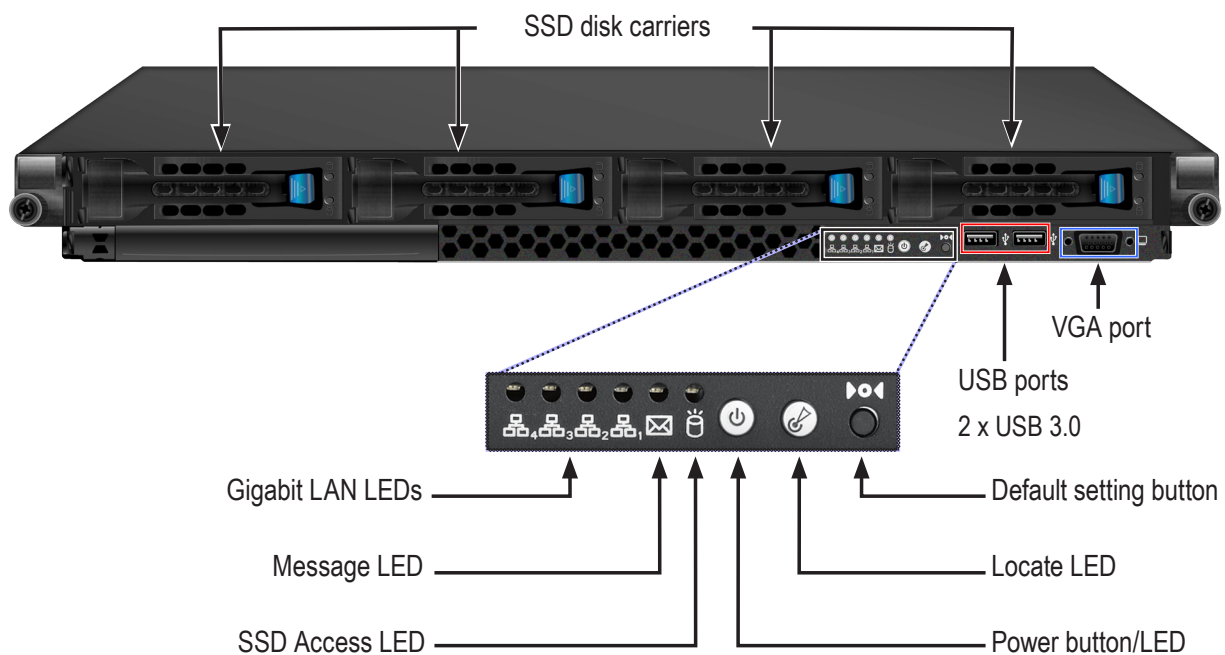
# HARDWARE

The following section provides a summary of the front and back panel hardware features of the VTrak Class A Series enclosures.

## FRONT OF VTRAK G1000

The Vtrak G1000 enclosure features screw on each side used to secure the enclosure to an equipment rack. A lockable ventilated bezel cover provides physical security.

*VTrak G1100 front view*



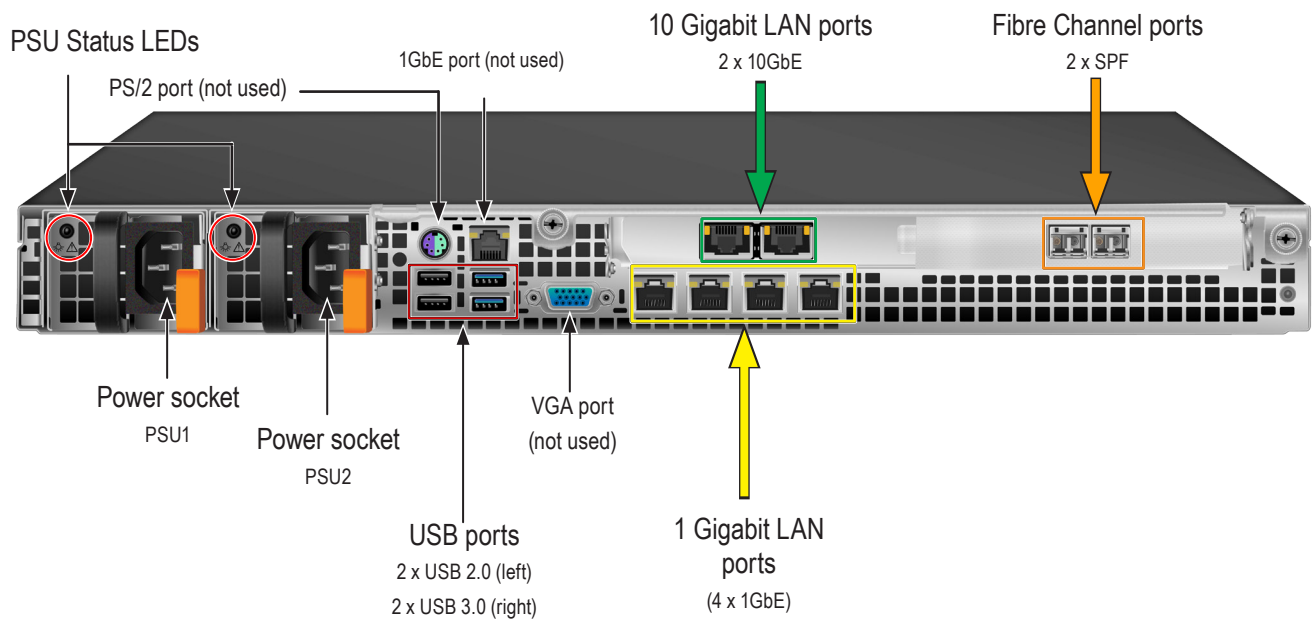
## FRONT PANEL LEDs

Feature	Description (refer to product manual for more details)
Gigabit LAN LEDs	Lights when a valid link is established on the corresponding Gigabit LAN port (from left to right, ports 4-1), blinks when there is activity on the port.
Message LED	Indicates a hardware event.
SSD Access LED	Lights when there is read/write activity on the SSDs.
Power button/LED	Press this to power on the system. This lights when the system is powered on.
Locate LED	Normally dark. Lights when the location feature is triggered.
Default setting button	Press to return system configuration to default settings.
USB ports	Two USB 3.0 ports.
VGA port	VGA (DB15) port for monitor connection.
SDD disk drive carriers	Two SSD drives are installed. Each drive carrier has a Status LED (uppermost) and Activity LED (lowermost) on the right front side.

## REAR OF VTRAK G1000

All network and power connections are located on the rear panel of the VTrak G1000.

### *VTrak G1000 back view*



Feature	Description (refer to product manual for more details)
PSU Status LEDs	Lights green when PSU is functioning normally. Lights red when PSU has a problem.
Power Supply sockets	Connect both power supplies using power cords shipped with the NAS Gateway.
USB ports	Two USB 2.0 ports (left) and two USB 3.0 ports (right).
10 Gigabit LAN ports	Two 10 Gigabit LAN ports. Connect to 10G Ethernet switch for physical connection to NAS clients. LED indicators above each port are Link/Activity on left, and Speed on right. Green Speed indicator = 1 Gbps, Amber = 10 Gbps
Gigabit LAN ports	Four 1 Gigabit LAN ports. Connect to 1G Ethernet switch for physical connection to VTrak A-Class metadata and management network. LED indicators above each port are Link/Activity on left, and Speed on right. Amber Speed indicator = 100 Mbps Green = 1 Gbps
Fibre Channel ports	SFP ports for Fibre Channel data channel. Connect to FC switch or directly to VTrak A-Class controller.

# SPECIFICATIONS

VTrak G1000 Series Hardware	
<b>Memory</b>	Four DIMM slots DDR3 Non-ECC UDIMM, ECC UDIMM, 1333/1600 MHz (2 DPC) Capacity: Up to 32 GB Sizes: 1GB, 2GB, 4GB, 8GB
<b>Ports</b>	Two 10 Gigabyte Ethernet Four 1 Gigabyte Ethernet Two 8 Gigabyte Fibre Channel
<b>I/O Connectors</b>	4 x USB 3.0 ports (2 front, 2 rear) 2 x USB 2.0 ports (2 rear) 2 x VGA ports (1 front, 1 rear)
<b>Power Supply</b>	1+1 Redundant 450W 80PLUS Gold Power Supply
<b>Voltage</b>	AC Input Voltage: 90V ~ 264V AC Input Frequency: 47Hz ~ 63Hz
<b>Maximum Current</b>	Maximum Output Power: 450W Max DC Output Current of 12V: 37A Max DC Output Current of 5VSB: 2A
<b>Power Conversion Efficiency</b>	20% of max loading: 88% 50% of max loading: 92% 100% of max loading: 88%

Environmental	
<b>Temperature Range</b>	Operating: 5°C ~ 40°C Non-operating: -40°C ~ 70°C
<b>Humidity</b>	Operating: 10%~95%, Non-condensing
<b>Acoustics</b>	Sound Pressure Level 100~20k Hz,30sce MODE: OP & IDLE state OP mode: <60 dB @ 25 °C
<b>Vibration</b>	Condition 1: Sine wave 0.5oct/min, 5 to 500Hz, 0.2G, 30 mins for X.Y.Z axis Condition 2: Random,3-10-200-500 Hz,0.41 grms,30min for X.Y.Z axis
<b>Shock</b>	Operating: Half sine wave, 5gn, 11ms, X,Y,Z axes,6 surfaces, 3 times /each surface . Non-operating: Half sine wave,30gn, 11ms. X,Y,Z axes 6 surfaces, 3 times/each surface.
<b>Safety Certification</b>	FCC, CE, VCCI, C-Tick, BSMI, KCC , CB, TUV, UL
<b>Dimensions (H x W x D)</b>	615 mm x 444 mm x 43.4 mm
<b>Weight</b>	14.2 kg / 31.3 lbs

Platform	
<b>Availability</b>	Two node cluster for high availability and IO load balancing
<b>Protocols</b>	NFS, SMB/CIFS
<b>Management</b>	Configured, managed, and monitored with VTrak A-Class SAN management software

Warranty and Support	
<b>Warranty</b>	<p>Three year complete system limited warranty (Two-year extended warranty optional)</p> <p>Next-Business-Day PROMISE Service PLUS - onsite replacement included in every VTrak purchase**</p> <p>Optional 4-hour PSP upgrade</p>
<b>Support</b>	<p>24 x 7 web and phone support</p> <p>Support website - drivers, firmware, knowledge base, and downloadable compatibility reports</p> <p>Online product registration and seamless license activation</p>



# HARDWARE INSTALLATION

This chapter presents instructions for hardware installation including unpacking the Vtrak G1000 and mounting it in an equipment rack, connecting it to the SAN Metadata network and the Fibre Channel data network, and connecting the power. It also describes how to power on the system and what to look for while it is powering up.

The sections in Hardware Setup include the following:

- “Unpacking the VTrak G1000” on page 10
- “Rack-mounting the VTrak G1000” on page 11
- “Network connections for NAS” on page 15
- “Connect to Fibre Channel data network” on page 25
- “Connecting the power” on page 27
- “Power on system” on page 28

# UNPACKING THE VTRAK G1000

After opening the Vtrak G1000 box you will have to remove the mounting rails, protective cover and accessory boxes before you can remove the upper shipping foam spacers.

The accessory box contains the following items:

- VTrak G1000 NAS Gateway
- Quick Start Guide
- Two 1.5m (4.9 ft) Power cords
- Sliding rail assembly for rack mounting and associated hardware
- Front panel bezel cover
- Sheet of Cautions for safety regulation
- Sheet of Cautions for EMC/Safety for Class A product

# RACK-MOUNTING THE VTRAK G1000

This section provides instructions for installing the Vtrak G1000 NAS Gateway in to a rack.

## Cautions

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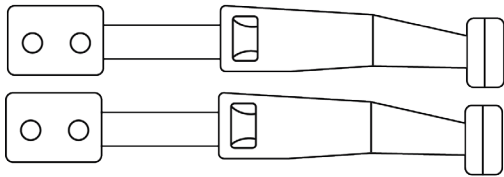
- At least two persons are required to safely lift, place, and attach the unit into a rack system.
  - Do not install the unit into a rack without rails to support the system.
  - Only a qualified technician who is familiar with the installation procedure should mount and install the unit.
  - Mount the rails to the rack using the appropriate screws and flange nuts, fully tightened, at each end of the rail.
  - Do not load the rails unless they are installed with screws as instructed.
  - The rails available for the PROMISE Vtrak G1000 are designed to safely support that PROMISE Vtrak G1000 when properly installed. Additional loading on the rails is at the customer's risk.
  - PROMISE Technology, Inc. cannot guarantee that the mounting rails will support your PROMISE Vtrak G1000 unless you install them as instructed.
-

The mounting hardware shipped with each NAS Gateway includes the following items.

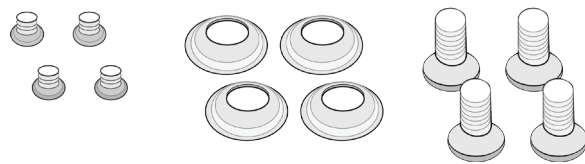
Right and left sliding rails.



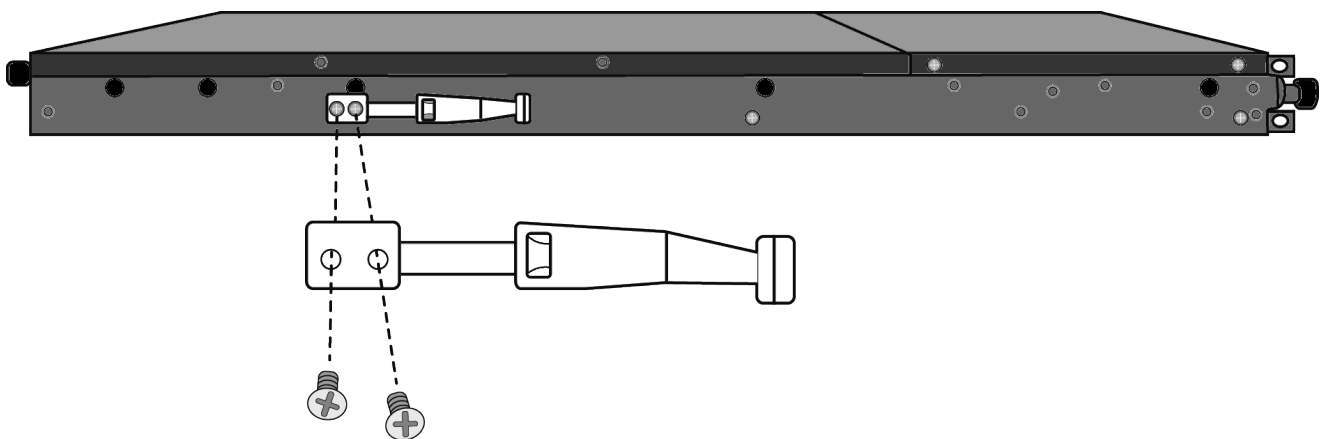
Rail latches



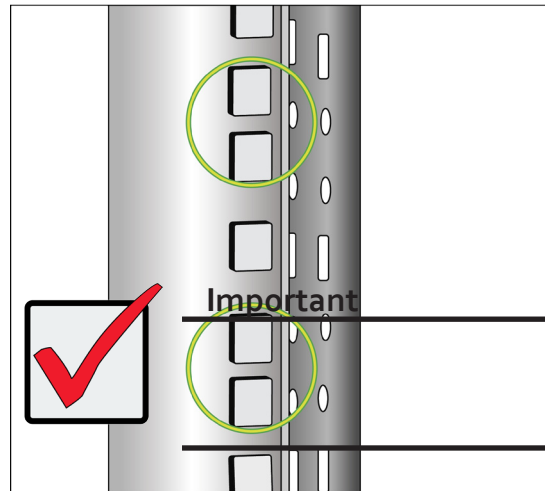
Latch screws, Rail washers, Rail screws



1. On the right and left sides of the NAS Gateway, secure the Rail Latches to the NAS Gateway housing using the latch screws, two screws for each latch.



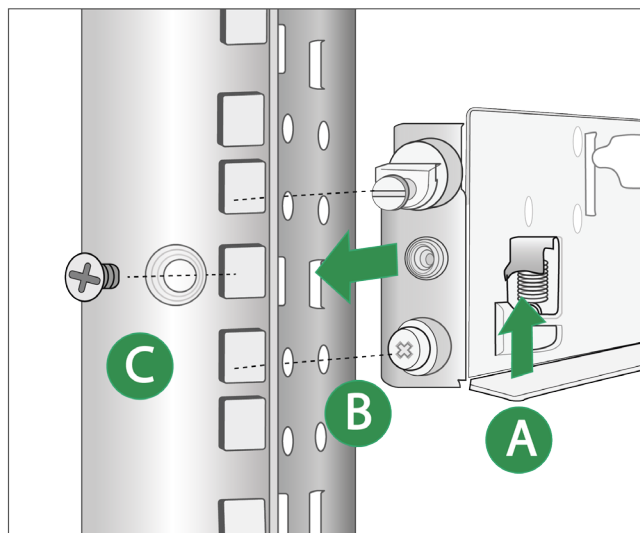
Determine what height to place the NAS Gateway in the rack, then place the right and left rack rails at the same height on in the right and left rack position. This is a 1U server, so choose the mounting holes accordingly for your rack system. Consult the documentation for your rack if you are unsure which holes to use.



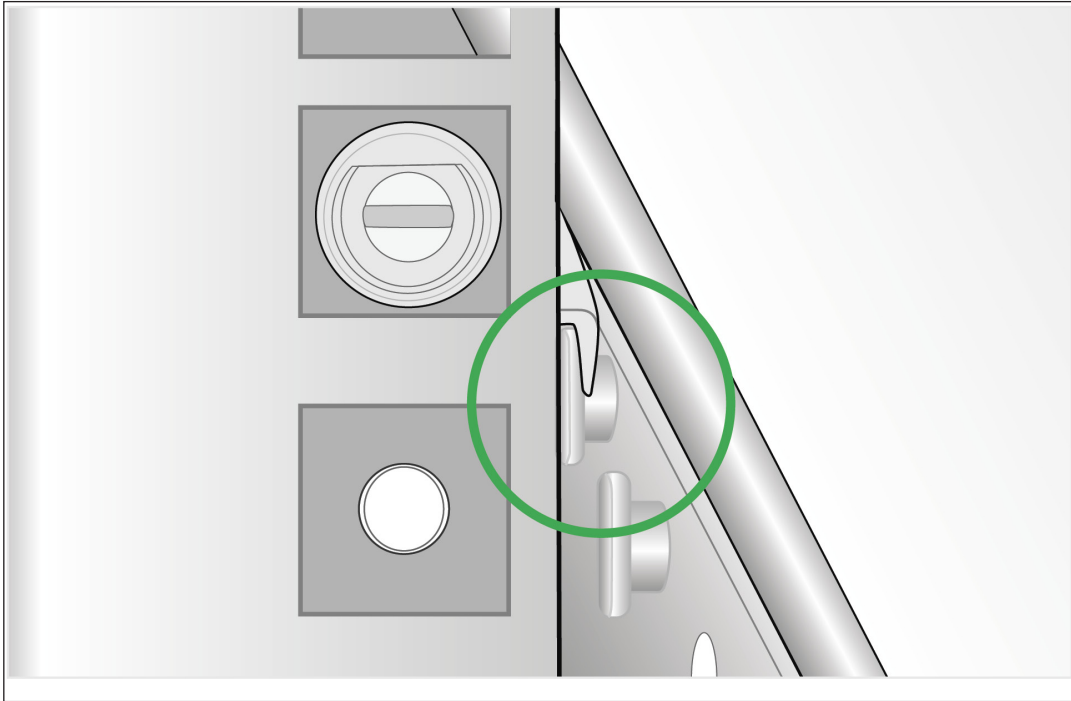
2. Secure the rails to the rack posts. Make sure the rack rails are properly oriented in the rack.

To set the rails into the rack posts and secure the rails, follow these steps:

- a. Press the spring lock then insert the studs into the selected square holes on the rack post.
- b. Press the spring lock on the other end of the rail and insert the studs into the selected mounting hole on the rack post. If necessary, extend the rail to reach the post.
- c. Use the rail screws and washers to anchor the rack rail to the post.
- d. Make sure the rack rail is aligned, secure, stable and in the correct place.
- e. Perform steps a through c above for the other rail.
- f. Make sure the rack rails are aligned, secure, stable and in place.



3. Mount the NAS Gateway to the rack. Make sure to include the side knots of the left and right sides of the NAS Gateway in the rack rail holders.



# NETWORK CONNECTIONS FOR NAS

The VTrak G1000 NAS Gateway enables NAS connectivity to the VTrak A-Class SAN. It is the physical and logical bridge between the Fibre Channel SAN of the VTrak A-Class managed storage and the NAS clients connected to the Ethernet LAN. The VTrak A-Class head unit must connect to the NAS Gateway through the 1G LAN ports in order to create the metadata network used for storage management. This is referred to as the Management network or Management link in this document.

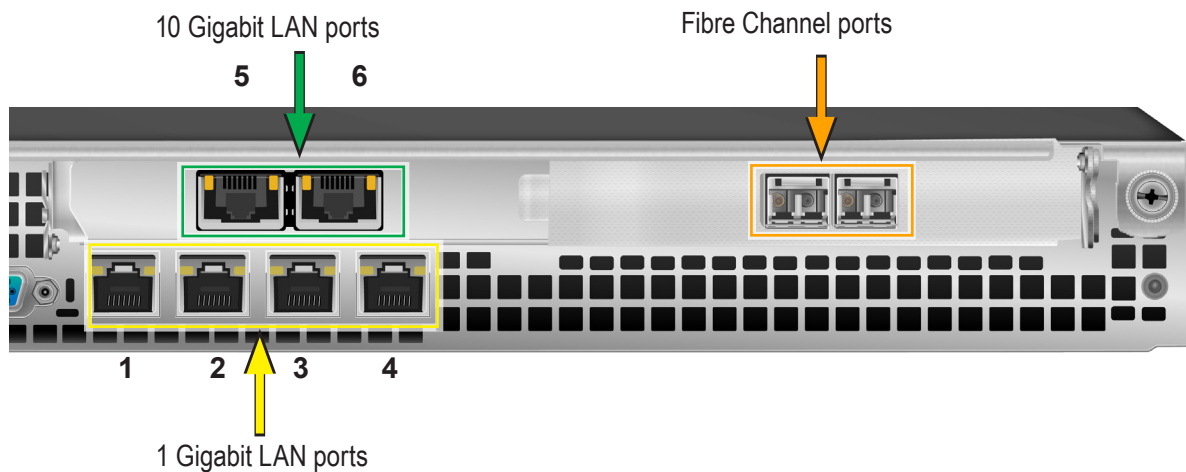
The data path from the NAS Gateway to the NAS clients can run on the 10G LAN ports, on the 1G LAN ports, or on both 1G and 10G LAN ports. How the cabling is arranged depends on which Link Aggregation option will be used for the 1G ports. See *“1G LAN Port Link Aggregation options” on page 17 for details*. For 1G LAN NAS Client setup especially, careful planning is needed for the cabling arrangement. For simplicity, the connection to the NAS clients on either the 1G or 10G Ethernet will be referred to as the NAS Client network or NAS Client link.

## I/O PORTS

The I/O ports located on the rear panel of the NAS Gateway are:

- Two SFP Fibre Channel ports provide the Fibre Channel data link to VTrak A-Class
- Two 10 Gigabit Ethernet ports are used for 10G Ethernet NAS Client network
- Four 1 Gigabit Ethernet ports used for the Management link to VTrak A-Class. For 1G NAS setup, these are also used for the NAS Client network.

### *Network data and management ports on back panel*





# 1G LAN PORT LINK AGGREGATION OPTIONS

In the Setup Wizard, you are offered three options to configure Link Aggregation for the Management link from the VTrak A-Class head unit. See *example Setup Wizard menu on page 18*.

- The first option is for 10G LAN NAS Client setup. In this case all four 1G LAN ports are aggregated for maximum throughput for the Management link. This arrangement provides the most bandwidth for the Management link, and is therefore the most reliable arrangement of the Link Aggregation options.
- The second option uses both the 10G LAN and 1G LAN ports for NAS Client data. In this arrangement, only Port 1 is used for the Management link. This setup provides the highest level of performance of the options, but has less reliability.
- The third option is for 1G LAN NAS Client setups. In this case the 10G LAN ports are disabled. And ports 1 & 2 are aggregated for the Management link, ports 3 & 4 are aggregated for the NAS Client link. This setup provides a balance between performance and reliability.
- The fourth option is also for 1G LAN NAS Client setups. The 10G LAN ports are disabled. Port 1 is used for the Management link, ports 2, 3 and 4 are aggregated for the NAS Client link. This setup provides higher performance with less reliability.

### Link Aggregation options menu

#### Change Nas Gateway Node 3 Link Configuration

Note: Port1 - Port 4 is 1G, Port 5, Port 6 is 10G

<input checked="" type="radio"/>	<p>VTrak A-Class      NAS Gateway Node      NAS Clients</p>	<p>This is the recommended mode when 10G Ethernet ports are available.</p>
<input type="radio"/>	<p>VTrak A-Class      NAS Gateway Node      NAS Clients</p>	<p>This is the recommended mode when 10G Ethernet ports are available.</p>
<input type="radio"/>	<p>VTrak A-Class      NAS Gateway Node      NAS Clients</p>	<p>This mode will provide you the balance between performance and reliability. 10G Ethernet ports will be disabled in this mode.</p>
<input type="radio"/>	<p>VTrak A-Class      NAS Gateway Node      NAS Clients</p>	<p>Compare to above mode, this mode will provide better performance but lower reliability. 10G Ethernet ports will be disabled in this mode.</p>

# 10G NAS CLIENT NETWORK SETUP

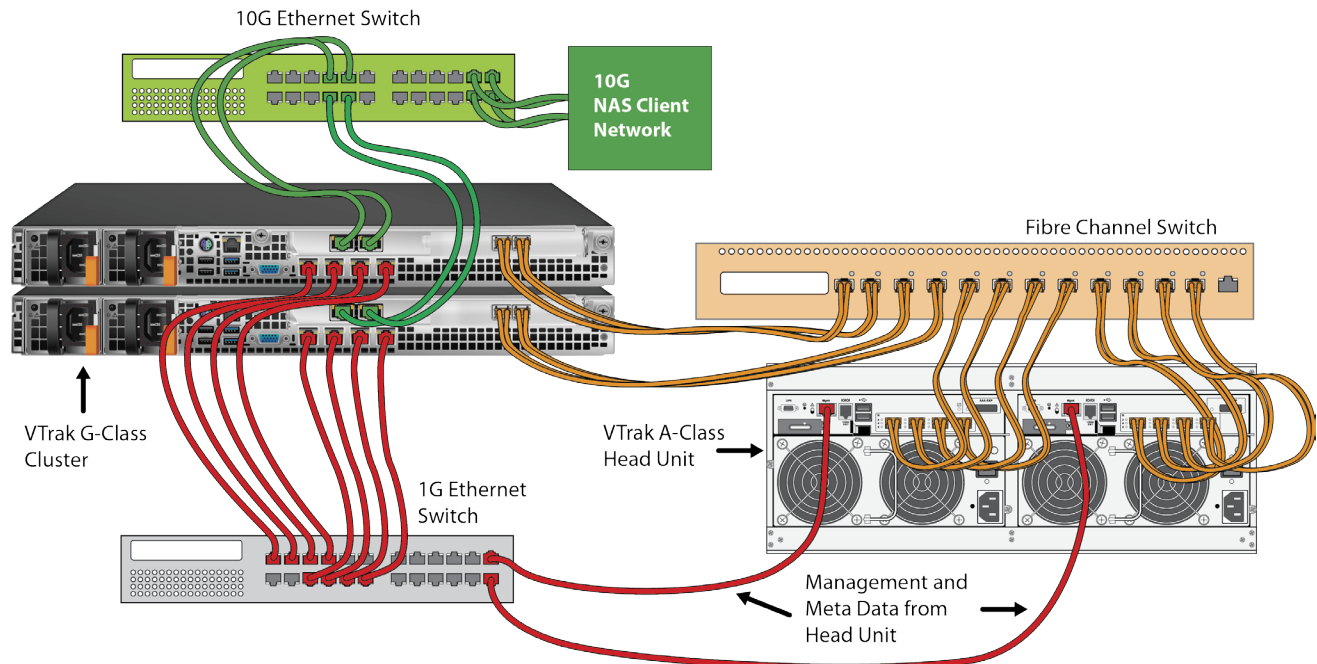
## 1G Management link cable arrangement for Link Aggregation Option 1

For this option, all 1G LAN ports on both units must be connected to a Gigabit Ethernet switch that completes the Management link to the VTrak A-Class.

To connect the 1G ports, follow these steps:

1. Attach Category 6 or better Ethernet cables to all ports 1 Gigabit Ethernet ports on the rear panel of all G1000 devices.
2. Attach the other end of the cables to a 1 Gigabit Ethernet switch.

### 10G NAS Client network setup Link Aggregation Option 1



## 10G NAS Client cable arrangement for Link Aggregation Option 1

Complete the cable connections for a 10 Gigabit LAN data network if you plan to use the 10G LAN for data connection to NAS clients.

To connect to the 10 Gigabit Ethernet LAN, follow these steps:

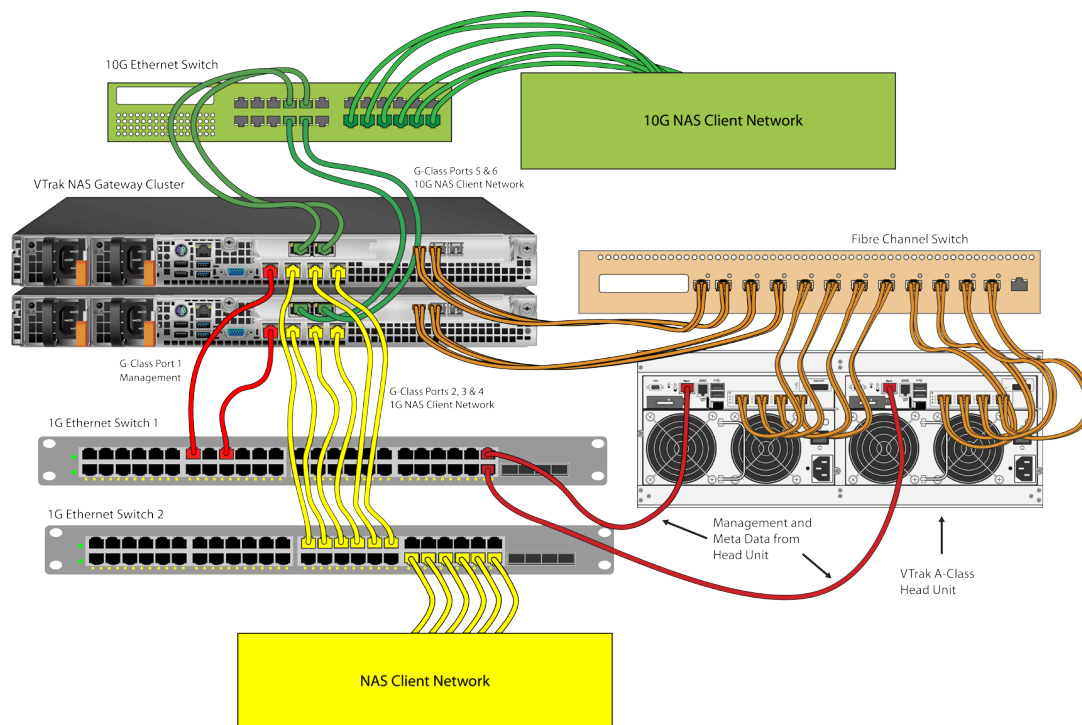
1. Attach Category 7 (recommended) or Category 6 Ethernet cables to both 10 Gigabit Ethernet ports on the rear panel of all G1000 devices.
2. Attach the other end of the cables to the 10 Gigabit Ethernet switch used for the NAS Client network.

## 1G Management link cable arrangement for Link Aggregation Option 2

For this option, only one 1G LAN port (Port 1) on all units must be connected to the Gigabit Ethernet switch for the Management link to the VTrak A-Class. The remaining 1G LAN ports are used for the NAS Client link. To connect the 1G ports, follow these steps:

1. Attach Category 6 or better Ethernet cables to all ports 1 Gigabit Ethernet ports on the rear panel of all G1000 devices.
2. Attach the other end of the cables to a 1 Gigabit Ethernet switch.

## 10G NAS Client network setup Link Aggregation Option 2



## 10G NAS Client cable arrangement for Link Aggregation Option 2

Complete the cable connections for a 10 Gigabit LAN data network if you plan to use the 10G LAN for data connection to NAS clients. The 10G cabling for the NAS Client link is identical to that used for Option 1.

To connect to the 10 Gigabit Ethernet LAN, follow these steps:

1. Attach Category 7 (recommended) or Category 6 Ethernet cables to both 10 Gigabit Ethernet ports on the rear panel of all G1000 devices.
2. Attach the other end of the cables to the 10 Gigabit Ethernet switch used for the NAS Client network.

## TWO-SWITCH SOLUTION FOR 1G NAS CLIENT NETWORK

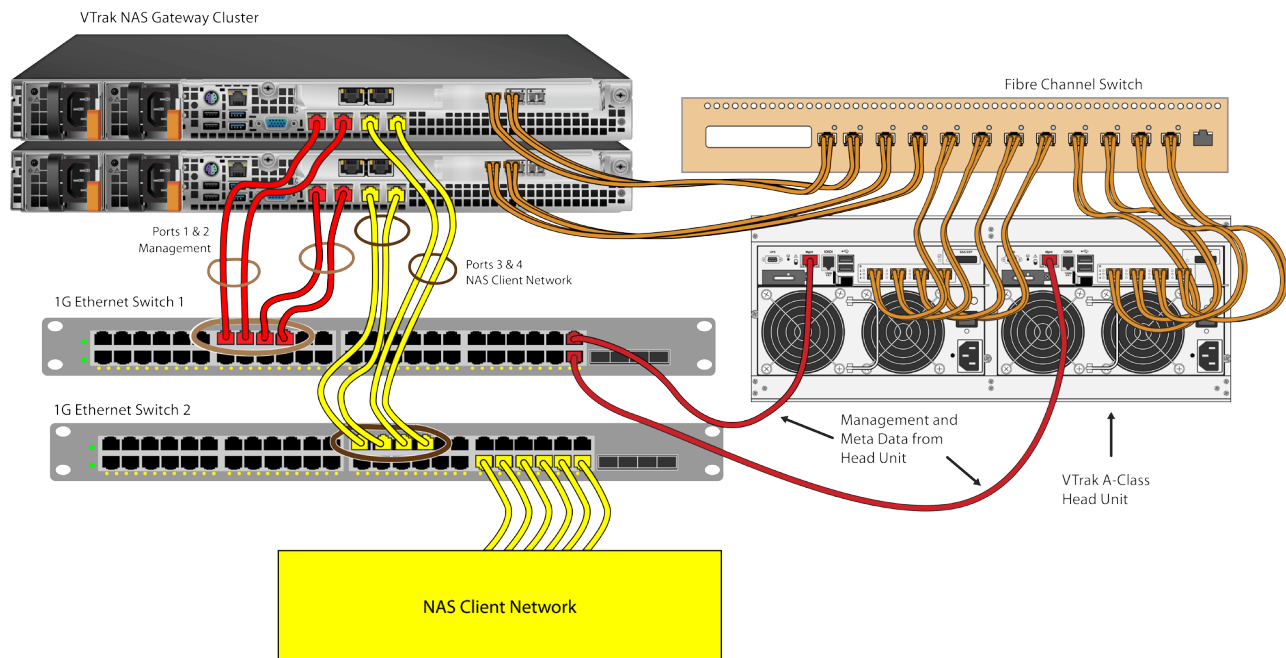
For NAS Client networks working on a 1G LAN, it is recommended to use two switches to physically separate the Management link from the NAS Client link. If two switches are available for separating the NAS Client network and Management link, follow the instructions below to setup cabling.

### 1G NAS Client network: two-switch solution

Follow the directions below to establish the NAS Client link according to the Link Aggregation option you intend to use. Use Category 6 or better Ethernet cables.

- **Link Aggregation Option 3:** Connect 1G LAN ports 3 and 4 on all G1000 devices to the 1G switch used for the NAS Client network. See illustration
- **Link Aggregation Option 4:** Connect 1G LAN ports 2, 3 and 4 on all G1000 devices to the 1G switch used for the NAS Client network.

#### 1G NAS Client network Link Aggregation Option 3 with two switches



**1G Management link: two-switch solution**

Two 1G Ethernet switches are used, one switch for the Management link, another switch for the NAS Client link. Use Category 6 or better Ethernet cabling for all 1G Ethernet connection. To establish the Management link:

- **Link Aggregation Option 3:** Connect 1G LAN ports 1 and 2 on all G1000 devices to the 1G switch used for the Management link to the VTrak A-Class. See illustration
- **Link Aggregation Option 4:** Connect 1G LAN port 1 on all G1000 devices to the 1G switch used for the Management link to the VTrak A-Class.

## ONE-SWITCH SOLUTION FOR 1G NAS CLIENT NETWORK

If a single Ethernet switch is used for the 1G NAS Client link and the Management link, it is important to first create two VLANs to segment broadcast domains so there is a separate VLAN for the Management link and another VLAN for the NAS Client network. Follow the instructions in user documentation for the 1G Ethernet switch to create these VLANs, then proceed to connect the cables.

If your VTrak A-Class is also used for Fibre Channel SAN clients, the Management link for these clients should also be placed in the same VLAN with the VTrak A-Class head unit.



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### Important

The NAS Client and Management link to the VTrak A-Class should be separated logically or physically, so they placed are in different broadcast domains. If a single 1G switch is used, the switch must be configured to create the separation logically. The best way to achieve this is to create one VLAN for the Management network, and another VLAN for the NAS Client network.

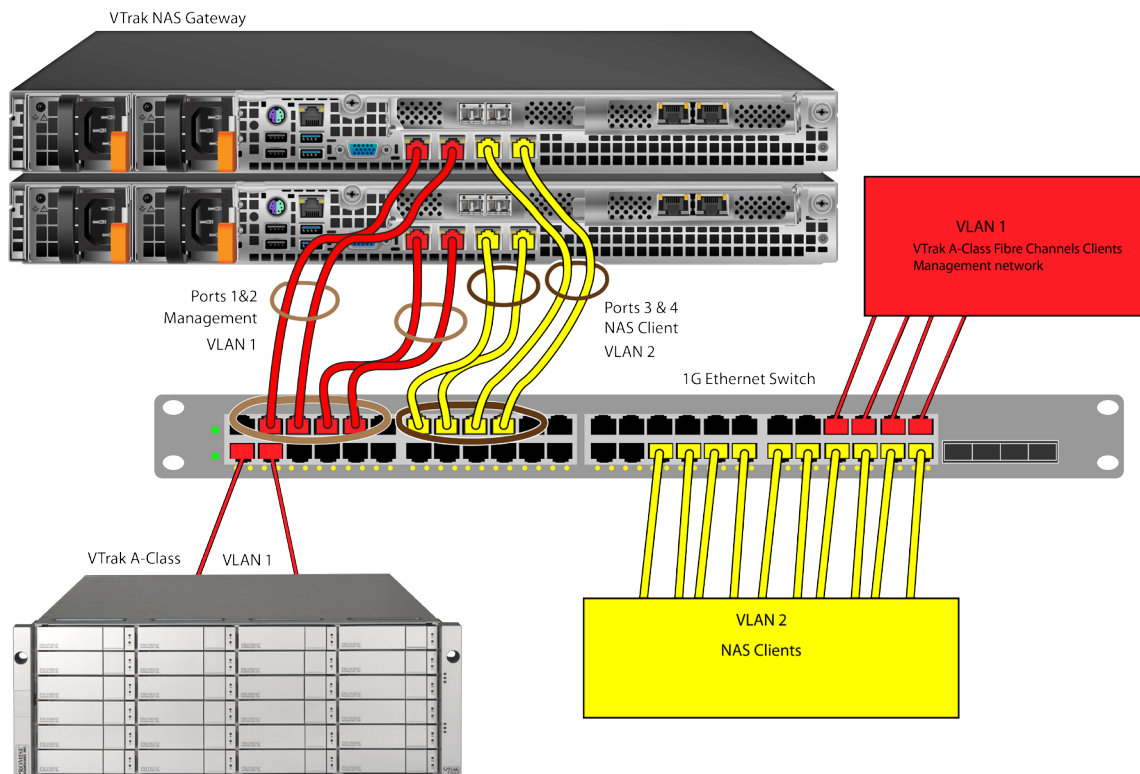
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### 1G NAS Client network: one-switch solution

Follow the directions below to establish the NAS Client link according to the Link Aggregation option you intend to use. Use Category 6 or better Ethernet cables.

- **Link Aggregation Option 3:** Connect 1G LAN ports 3 and 4 on all G1000 devices to the 1G switch used for the NAS Client network. See illustration
- **Link Aggregation Option 4:** Connect 1G LAN ports 2, 3 and 4 on all G1000 devices to the 1G switch used for the NAS Client network.

#### Link Aggregation option 3 on a single 1G Ethernet switch



### 1G Management link: one-switch solution

To establish the Management link using a single switch:

- **Link Aggregation Option 3:** Connect 1G LAN ports 1 and 2 on all G1000 devices to the 1G switch.
- **Link Aggregation Option 4:** Connect 1G LAN port 1 on all G1000 devices to the 1G switch.



# CONNECT TO FIBRE CHANNEL DATA NETWORK

The NAS Gateway can be directly attached to VTrak A-Class, or it can be connected to a Fibre Channel switch that is connected to the VTrak A-Class. Follow the instructions below for the method you will use.

## VIA FIBRE CHANNEL SWITCH

For each NAS Gateway device, perform the following.

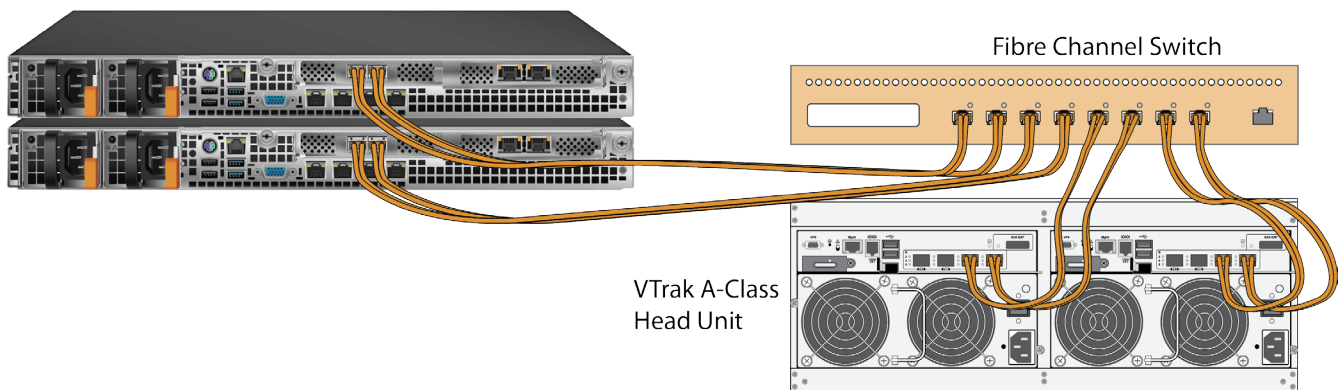
1. Connect Fibre Channel cables from both Fibre Channel ports on the rear panel of the NAS Gateway and the Fibre Channel switch.
2. Connect Fibre Channel cables between the Fibre Channel switch and all Fibre Channel ports on each controller of the partner VTrak A-Class unit. Note that each controller has four Fibre Channel ports.

### VTrak G1000 Fibre Channel ports on back panel



### Fibre Channel data network from VTrak A-Class

VTrak G-Class NAS Gateways



## ***DIRECTLY CONNECT TO VTRAK A-CLASS SYSTEM***

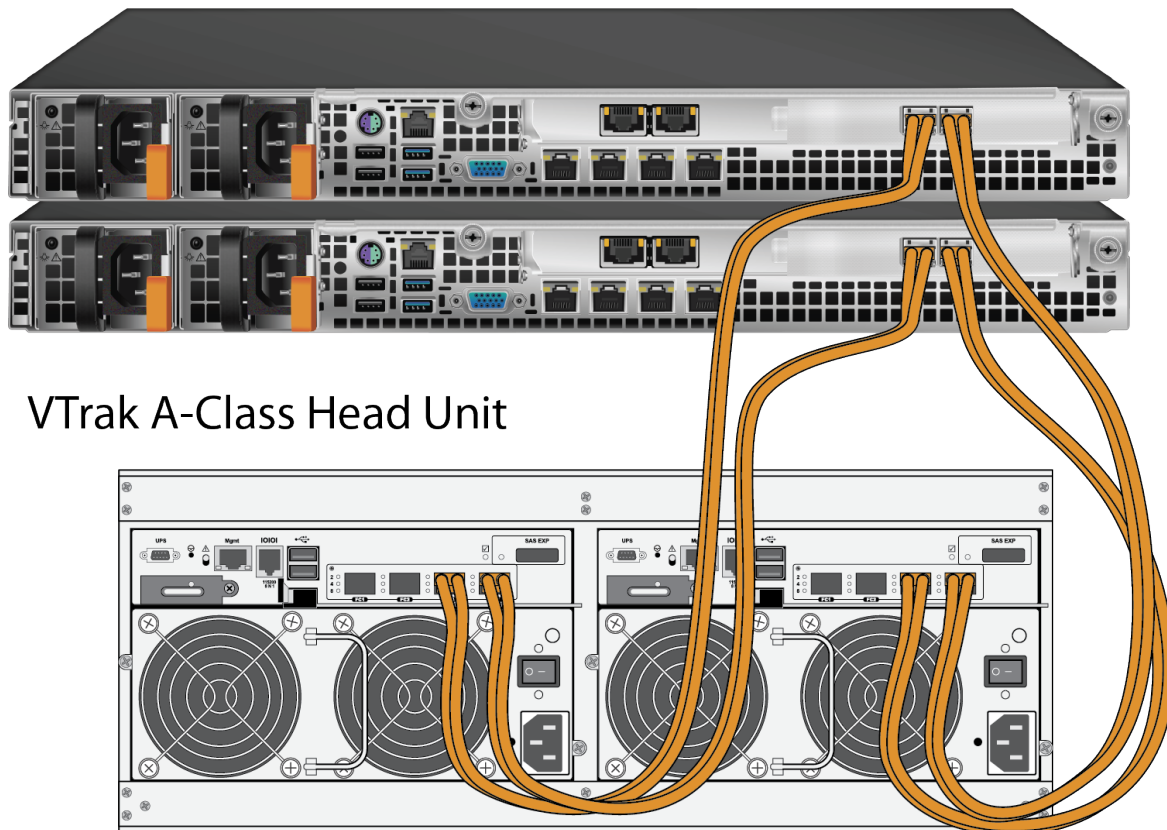
For each NAS Gateway device attached directly to the VTrak A-Class partner system:

1. Attach Fibre Channel cables to both Fibre Channel data ports on the rear panel of one NAS Gateway, and connect the other end of one cable to the a Fibre Channel port on one controller of the partner VTrak A-Class unit. Connect the remaining Fibre Channel cable to a Fibre Channel port on the other controller of the VTrak A-Class.
2. Repeat the procedure described in step 1 for the other NAS Gateway.
3. When completed, each NAS Gateway will be connected to both controllers on the VTrak A-Class as in the illustration below.

*Fibre Channel directly attached to VTrak A-Class*

### VTrak G-Class NAS Gateways

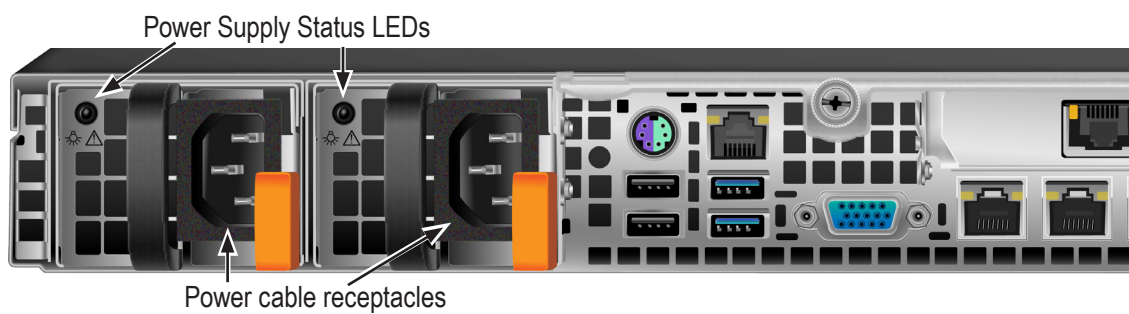
### VTrak A-Class Head Unit



# CONNECTING THE POWER

Insert the female end of one of the supplied power cables in to a power cable receptacle on each of the power supply units, and plug the other end in to a suitable power outlet.

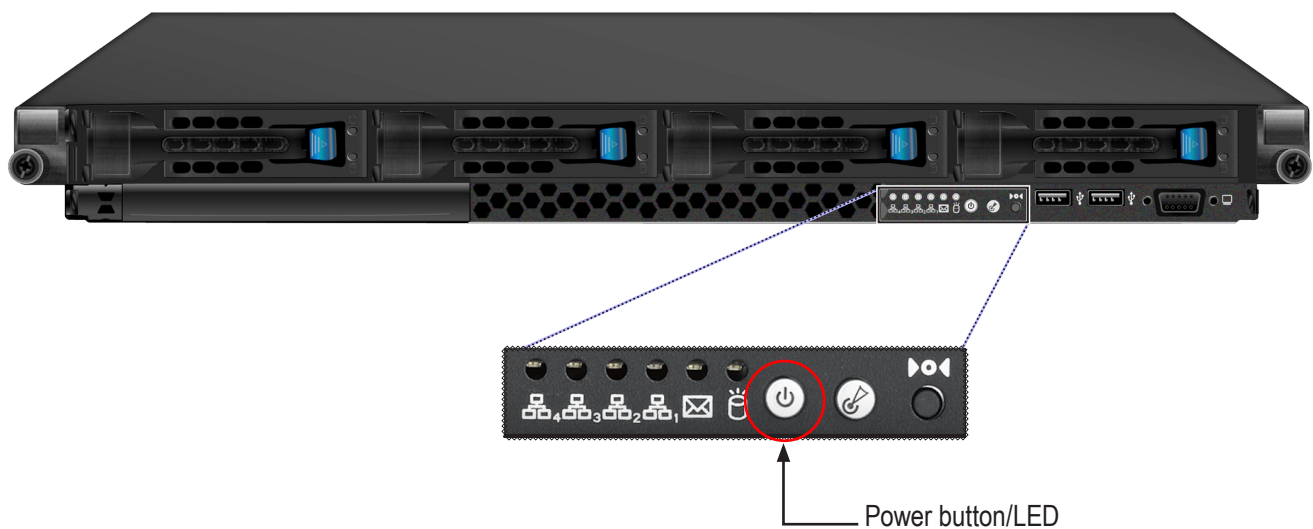
## *Power Supply Units on rear panel left end*



# POWER ON SYSTEM

Before powering on the NAS Gateway, make sure the VTrak A-Class partner is booted up and running so the G-Class system will be discovered automatically.

*VTrak G1000 Power button on front*



To power on the VTrak G1000 simply press the power button on front of each device. Power on all units and check the power LED and other LEDs to monitor the boot up process. The power LED will light green when the system is powered on.

## ATTACH OR REMOVE FRONT BEZEL

Each VTrak G1000 is shipped with a protective bezel that attaches to the front of the device. Keep this bezel in place when it is not necessary to view the LEDs on the front.



**Attach bezel:** To attach the bezel, first make sure it is oriented with the ventilation slots on the bottom, then it just snaps into place when pushed onto the front.

# WEB-BASED MANAGEMENT

All management of the NAS Gateway is done via the VTrak A-Class head unit using the same web-based user interface used for the VTrak A-Class.

Note that the VTrak A-Class firmware must be Version 2.0 or later to manage the NAS Gateway. Follow the instructions in the Product Manual for the VTrak A-Class to upgrade firmware to the latest version, available for download from PROMISE.

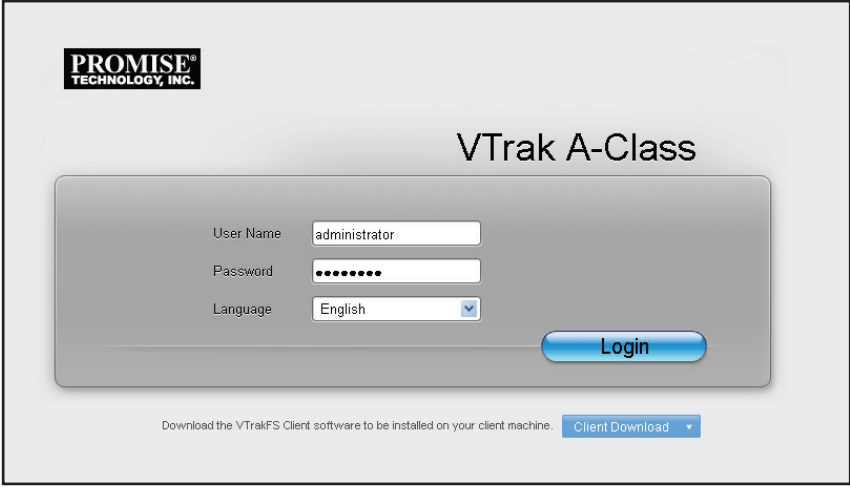
For initial setup, use the Setup Wizard to make some basic configuration changes in the NAS Gateway so that the file system can be mounted for use by NAS clients.

# LOGIN TO WEBPAM PROE

Management of the NAS Gateway is done through the VTrak A-Class system. After the two VTrak G1000 units have booted up, they will be quickly discovered by the VTrak A-Class head unit. You now need to login as the administrator of the VTrak A-Class system using WebPAM PROe.

To login:

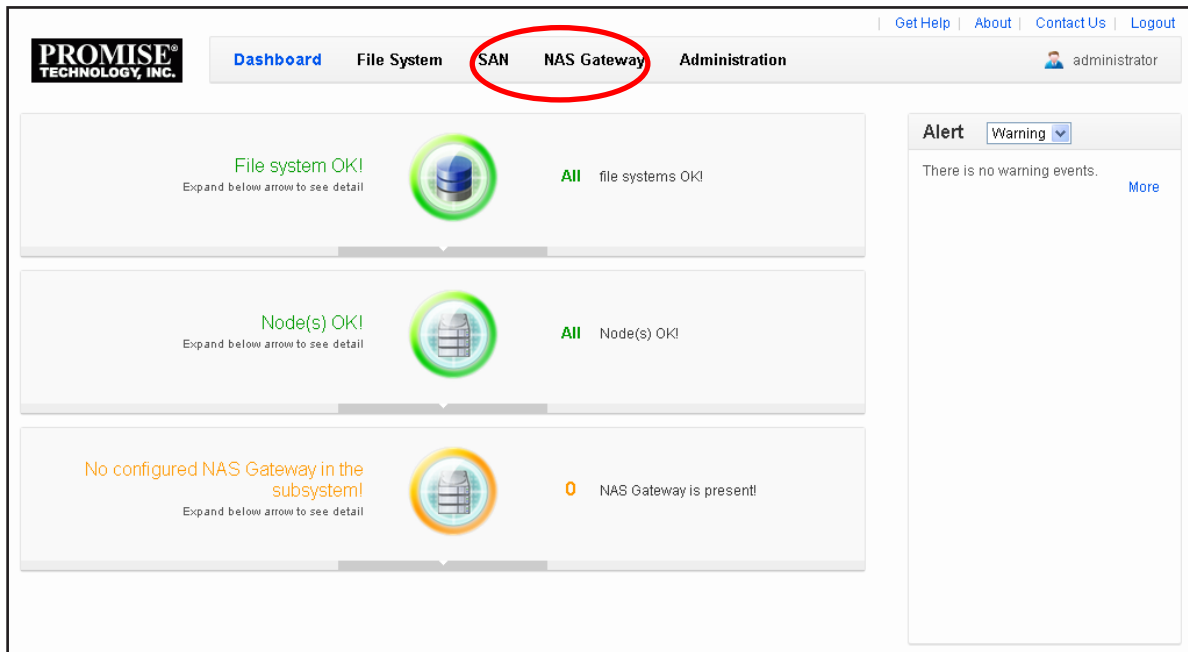
1. Launch your browser. *The Firefox browser is recommended as it has been tested by PROMISE.*
2. In the browser address field, type the IP address of the VTrak A-Class head unit. and press Enter. The login menu appears:



3. Enter the default login User Name **administrator** and default Password **password** and click the **Login** button.

4. Notice that there is a new menu tab in the GUI for the **NAS Gateway**. Click on this to get to the first Setup Wizard menu for setting up the NAS Gateway and assigning drives for the NAS.

#### Main menu GUI for VTrak A-Class



#### Note

If the **NAS Gateway** menu tab is not displayed in the VTrak A-Class WebPAM PROe user interface, you need to update the firmware on the A-Class. The A-Class must have version 2.0 or later firmware.

To upgrade the firmware on the A-Class, go to SAN > Firmware Upgrade and upload firmware for version **1.02.0000.00** or later.



# ACCESS SETUP WIZARD

The first page you see when accessing the NAS Gateway menu for initial configuration is the **Setup Wizard**. Use the Setup Wizard for initial setup, or click **Cancel** to go to the main configuration menu for the NAS Gateway.

The Setup Wizard is used to configure any or all of the following:

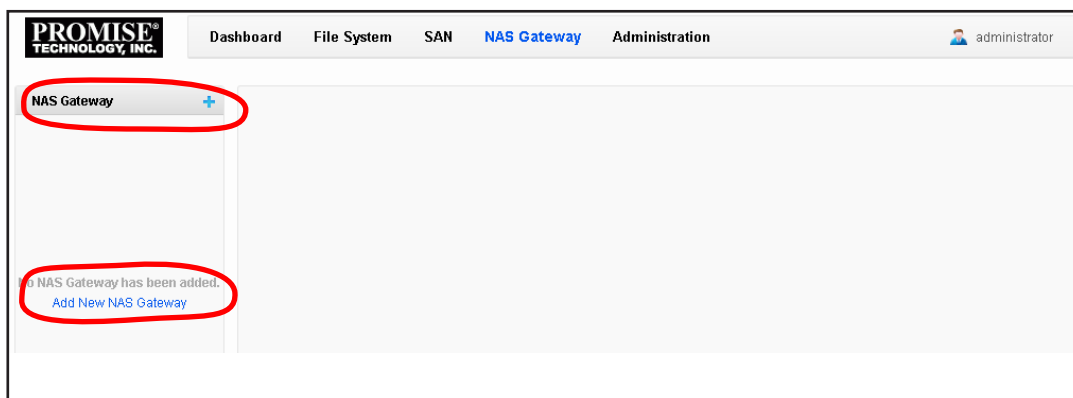
- Virtual IP settings
- Cluster group settings
- Link aggregation
- Alias

## USING THE SETUP WIZARD

Follow these steps when you configure the first VTrak NAS Gateway using the Setup Wizard.

1. Click on the “+” symbol next to NAS Gateway in the left panel or click on **Add new NAS Gateway** near the bottom of the left panel to launch the Setup Wizard.

*Initial NAS Gateway menu - no gateways have been added*



2. Enter the following information.
  - **Alias**, enter a name for the NAS Gateway.
  - **Virtual IP Address** for the NAS Gateway.

*The Virtual IP is the public IP address by which clients access the NAS Gateway. This Virtual IP address is shared by all G1000 units when setting up two units. Then, all nodes that join the NAS Gateway will use the same subnet and have their own virtual IP address.*

NAS Gateway Setup Wizard (1 of 6 steps)

Please assign NAS Gateway Name and NAS Gateway Virtual IP Address for the new NAS Gateway.

NAS Gateway Name:	NAS1
NAS Gateway Virtual IP Address:	
Enable CIFS Protocol:	<input checked="" type="checkbox"/>
Default CIFS anonymous Permissions:	<input checked="" type="radio"/> No Anonymous User <input type="radio"/> Read Only <input type="radio"/> Read and write
Enable NFS Protocol:	<input checked="" type="checkbox"/>

Cancel Previous Next

Click **Next** to continue.

3. Choose one or two nodes from the list to add to the cluster. Click **Next** to continue.

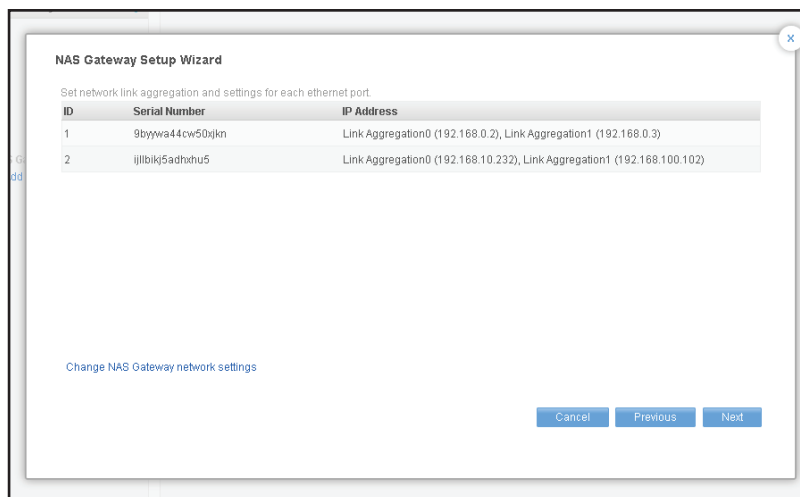
NAS Gateway Setup Wizard

Select node that you want be the part of NAS Gateway. If more than 1 node selected and the nodes' FW Version are out of sync, the node with older FW Version will be synced to the newer one.

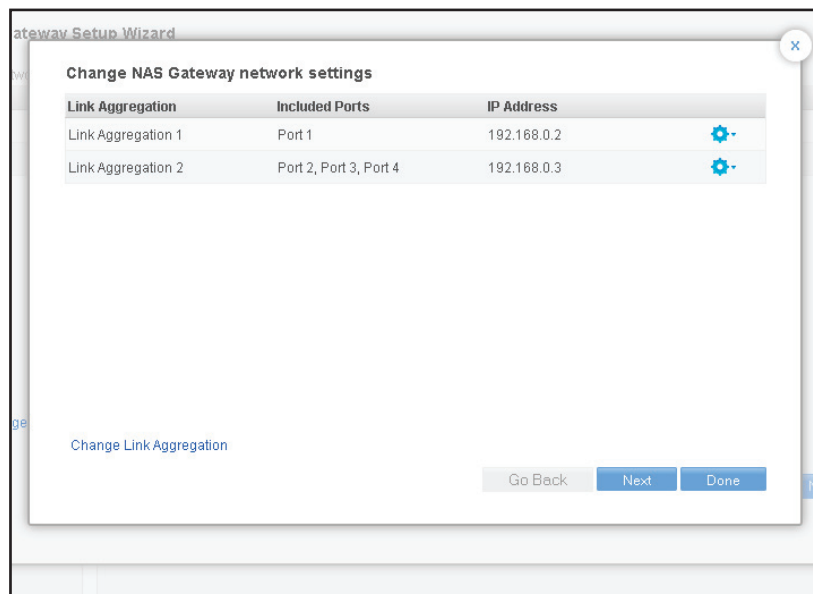
ID	Status	Serial Number	Cluster IP	IP Address
<input checked="" type="checkbox"/> 1	OK	9byywa44cw50xjkn	none	192.168.0.2
<input checked="" type="checkbox"/> 2	OK	ijlbiqj5adhxhu5	none	192.168.10.232
<input type="checkbox"/> 3	OK	ijlbiqdd9mbvy5x	none	192.168.10.231

Cancel Previous Next

4. Configure the Link Aggregation settings. Click on **Change NAS Gateway network settings**, and new menu appears.



5. Click on **Change Link Aggregation** in the new menu. A new menu appears.



6. Four Link Aggregation arrangement options are presented. See “1G LAN Port Link Aggregation options” on page 17 for details. Choose the option that suits the cabling arrangement and performance requirements of your network and click **Done** to go continue.

**Change Nas Gateway Node 3 Link Configuration**

Note: Port1 - Port 4 is 1G, Port 5, Port 6 is 10G

	<p>Port 1 Port 2 Port 3 Port 4</p> <p>Port 5 Port 6</p>	<p>This is the recommended mode when 10G Ethernet ports are available.</p>
	<p>Port 1</p> <p>Port 2 Port 3 Port 4 Port 5 Port 6</p>	<p>This is the recommended mode when 10G Ethernet ports are available.</p>
	<p>Port 1 Port 2</p> <p>Port 3 Port 4</p>	<p>This mode will provide you the balance between performance and reliability. 10G Ethernet ports will be disabled in this mode.</p>
	<p>Port 1</p> <p>Port 2 Port 3 Port 4</p>	<p>Compare to above mode, this mode will provide better performance but lower reliability. 10G Ethernet ports will be disabled in this mode.</p>

Cancel Save

7. Now change the IP settings for the NAS Client Link.

**Change IP Address**

Warning: A-Class Link IP Address Should be in the same subnet as VTrak A-Class IP Address  
NAS Client Link IP Address Should be in the same subnet as NAS Gateway Virtual IP Address

- A-Class Link**
  - A-Class Link Configuration: Port 1, Port 2, Port 3, Port 4
  - VTrak A-Class IP Address: 192.168.10.181
  - A-Class Link Subnet Mask: 255.255.0.0
  - A-Class Link IP Address: 192.168.0.2
  - A-Class Link Gateway IP Address: 192.168.0.1
- NAS Client Link**
  - NAS Client Link Configuration: Port 5, Port 6
  - NAS Client Link Subnet Mask: 255.255.255.0
  - NAS Client Link IP Address: 192.168.0.3
  - NAS Client Link Gateway IP Address: 192.168.0.1

Cancel Save

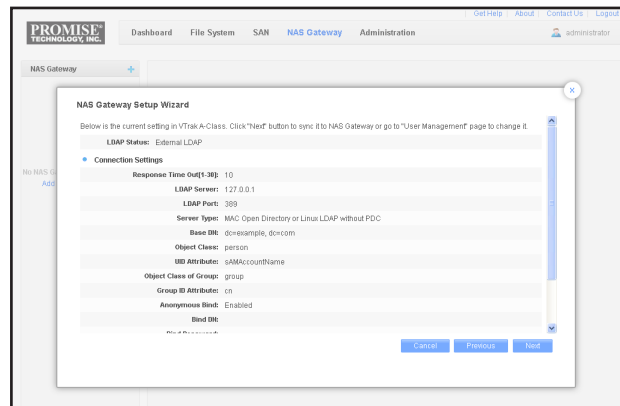
IP settings must be correct or the NAS will not function. If unworkable IP settings are entered, an error message appears instructing you to change the settings to create a functional NAS.

Most importantly:

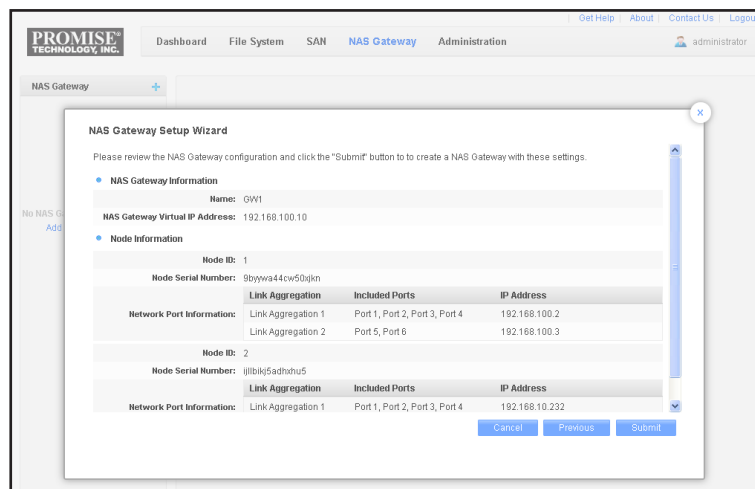
- **A-Class Link:** The IP settings for the Management port or ports must be in the same subnet as the VTrak A-Class Management port.
- **NAS Client Link:** The IP settings for the output ports (to NAS clients) must be an a different subnet.

Note that if LDAP settings are configured for the VTrak A-Class, these will be synced automatically.

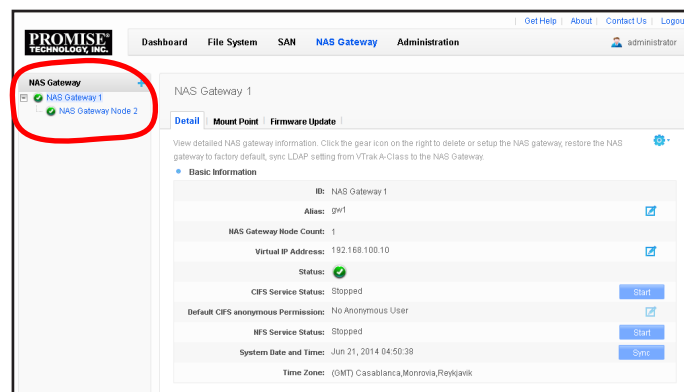
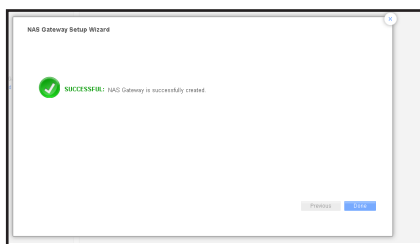
To change the IP settings, click on the **Gear** icon and choose **Change IP Address**.



8. Review the settings in the new menu, click **Next** to continue to review the remaining settings.



9. Continue to review the settings in the next menu, click **Submit** to finish.
10. A Success message appears informing you the new settings are applied and the new NAS Gateway is created. The cluster and node information for the NAS Gateway should now appear listed in the left panel.



## DETAIL MENU

Click on the **Detail** tab for either a NAS Gateway (cluster) or individual NAS node in a cluster to view information about the status and basic configuration settings for the cluster or node.

Administrator operations in the Detail menu include the following:

- Delete a NAS cluster
- Remove a node from a cluster
- Add node to a cluster
- Change Virtual IP settings or Link Aggregation setup for existing cluster
- Restore factory default settings to a node
- Refresh LUN mapping for a node

### NAS Cluster Detail information

Click on Gear icon to

### Delete NAS Gateway

### Setup NAS Gateway

(add node, change IP or Link Aggregation settings for cluster)

Click on Note icons to change Alias, Virtual IP address, or permission settings for CIFS.

Click on the Start/Stop button to start or stop CIFS, NFS.

Click on Sync to synchronize time and date settings with head unit.

## **NAS GATEWAY *DETAIL***

Click on a listed NAS Gateway to view cluster information. Information for a cluster includes:

- **ID:** The NAS Gateway number assigned to the cluster. Numbering is automatically assigned starting with number 1.
- **Alias:** The name assigned for the cluster by the administrator during setup.  
Click the note icon to change the alias.
- **NAS Gateway Node Count:** The number of nodes in the cluster.
- **Virtual IP Address:** The virtual IP address for the cluster. The NAS Client Link must be in this subnet.  
To change the Virtual IP Address of the NAS Gateway, click on the note icon, change the IP address in the entry field that appears, click the Save button to apply the new Virtual IP address.
- **Status:** Basic operational health status of the cluster represented by a green (OK), yellow (Problem) or red (Offline) check mark icon.
- **CIFS Service Status:** CIFS is running or stopped.  
Click the **Start** or **Stop** button to start or stop CIFS.
- **Default CIFS anonymous Permission:** Permission for default anonymous CIFS NAS client (*No Anonymous User, Read only, Read-write*) Click the note icon to change CIFS permission.
- **NFS Service Status:** NFS is running or stopped.  
Click the **Start** or **Stop** button to start or stop NFS.
- **System Date and Time:** System time and date. *This is obtained from the VTrak A-Class head unit.*  
Click the **Sync** button to to synchronize time and date settings with the head unit.
- **Time Zone:** System time zone, also from VTrak A-Class head unit.



## Node Detail

Click on a listed node in a NAS cluster to view basic information. Information for a node includes:

- **ID:** Number assigned to the node. Numbering is automatically assigned starting with number 1.
- **Status:** Basic operational health status of the node represented by a green (OK), yellow (Problem) or red (Offline) check mark icon.
- **Firmware Version:** Current firmware version.
- **BIOS Version:** Current BIOS version.
- **Link Aggregation 1:** Link Aggregation arrangement for the 1G LAN ports.
- **Link Aggregation 2:** Link Aggregation arrangement for the 10G LAN ports if enabled.
- **Software RAID Status:** Health status of the associated RAID array on the VTrak A-Class head unit represented by check mark icon.
- **Software RAID Background Activities:** Indicates if Background Activities are currently running on the array.
- **CIFS Service Status:** CIFS is running or stopped.
- **NFS Service Status:** NFS is running or stopped.
- **System Date and Time:** System time and date. *This is obtained from the VTrak A-Class head unit.*
- **Time Zone:** System time zone, also from VTrak A-Class head unit.



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### Note

To change Link Aggregation or Virtual IP settings for an individual node, click on the node in the cluster and use the **Network Management** menu tab. See the menu description in "Network settings for a node" on page 51. **Before changing Link Aggregation settings**, please read "1G LAN Port Link Aggregation options" on page 17 to see what changes are needed to the Ethernet cabling setup.

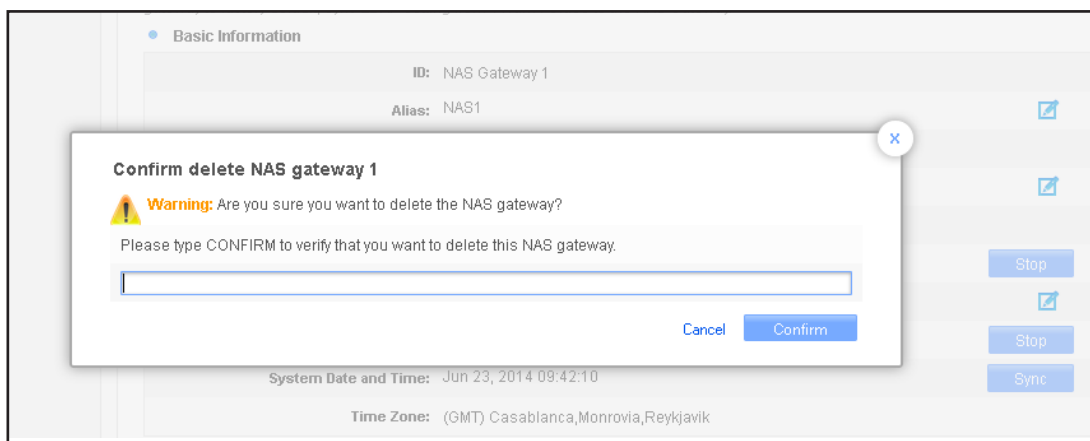
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## DELETE A NAS CLUSTER

To remove a NAS Cluster, select the cluster you intend to delete in the left panel, click on the **Gear** icon and select the *Delete NAS Gateway* option.

Deleting a NAS Gateway Cluster requires confirmation. A new menu appears. If you want to delete the NAS Gateway, type “**Confirm**” in the space provided and click on the **Confirm** button to acknowledge that you intend to remove the Gateway cluster.

*Type “Confirm” to confirm that you intend to remove the NAS Gateway cluster*



## SETUP NAS GATEWAY

If you have completed the Setup Wizard process to create the initial NAS Gateway cluster, the menus used to add a new node to the existing cluster, change the Link Aggregation or Virtual IP settings will be familiar. Basically they are the same menus used to initially create the NAS Gateway cluster.



### Important

If you add a node that had been previously configured to a NAS Gateway cluster, the previous settings on the node being added will be wiped out when reassigned. Keep in mind that the operation will fail if either of the following circumstances are true:

- The node is actively connected to NAS clients.
- The node is currently part of another cluster.

## **ASSIGN A NEW NODE TO THE NAS GATEWAY CLUSTER**

The initial release of the VTrak G1000 supports a maximum of two nodes in a cluster. Later releases will increase the number of nodes allowed in a cluster to four.

To add another node to an existing cluster, follow these steps:

1. Select the NAS Gateway cluster you will assign a new node to, click on the gear and choose the *Setup NAS Gateway* option. The **NAS Gateway Setup Wizard** menu appears.

2. Choose one node from the list to add to the cluster. Click **Assign**, then the **Next** button to continue.

*Notice that the general health status of the nodes in the list are indicated by a green or red check mark icon. It is still possible to assign an NAS Gateway with a red check mark, indicating a problem with the node. But this decision requires you to confirm the add on in a new menu.*

3. Accept the Link Aggregation settings as listed, or, click on the gear icon and choose the *Change Link Aggregation* option. The Link Aggregation option menu appears. Again, this is the same menu you have seen before if you already went through the Setup Wizard process. Choose the new Link Aggregation option and click on the **Save** button. You will return to the Link Aggregation configuration list with the new settings displayed.
4. Now click on the gear icon again and choose the *Change IP Address* option. You will see the IP Settings settings for configuration of the NAS Client Link IP and NAS Client Gateway IP settings, and the A-Class Link IP and A-Class Link Gateway IP settings. Click Next to continue and review the settings of the new node.

## REMOVE A NODE FROM THE NAS GATEWAY CLUSTER

A node can be removed from a NAS Gateway cluster with 2 or more nodes. *If there is only a single node, then it is necessary to delete the NAS Gateway cluster entirely.*

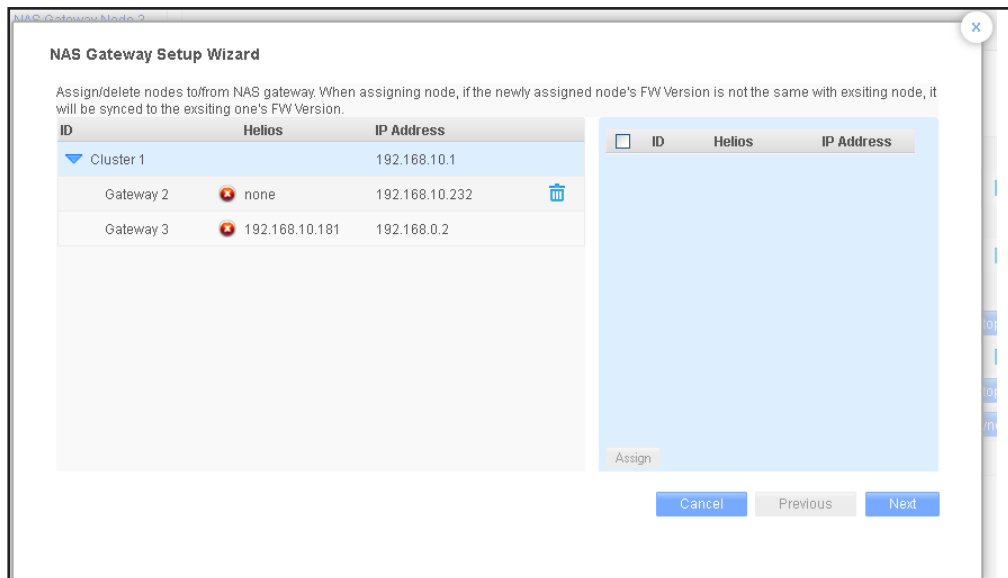
To delete a node from a multiple node cluster, follow these steps:

1. Select the NAS Gateway cluster you will assign a new node to, click on the gear and choose the **Setup NAS Gateway** option. The **NAS Gateway Setup Wizard** menu appears.
2. Click on the trash can icon for the node that will be removed, click **Next** to go to the next Wizard menu.



### Important

Once you choose to delete the node by clicking the trash can icon, the node cannot be added again in this procedure. If you want to add the deleted node back to the cluster, it will be necessary to go through the add new node procedure described in the previous section.



3. If necessary, you can change IP settings or Link Aggregation options as previously described. Click **Next** to continue to the review settings menu.
4. Review settings and click **Next** to continue.
5. Click on **Submit** to apply the settings.

## **RESTORE FACTORY DEFAULT SETTINGS TO A NODE**

When a node is restored to factory default settings, it is removed from the NAS Gateway cluster. To reset a node to its factory default settings, select the node to reset, click on the gear icon and choose the *Restore Factory Default* option.

A new menu pops up to make sure you want to restore the default settings. If you want to continue to reset the node settings to the factory default, type “**Confirm**” in the space provided and click on the **Confirm** button.



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### **Important**

**When a node is reset to factory default settings, it is removed from the NAS Gateway cluster.**

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## **NAS GATEWAY MOUNT POINT**

Use the Mount Point menu tab for the NAS Gateway cluster to create or remove a mount point folder in the file system on the A-Class head unit, or to unmount and mount the file system.

Also use this menu to view the current status of the mount point and the total capacity of the file system available to the NAS Gateway.

Make sure the Fibre Channel connection is valid or the mount will fail. To check the Fibre Channel connection status, choose a node in the NAS Gateway cluster, click on the **Device** menu tab. You will see if the FC links are working or not. If none of the FC port links are working, you cannot mount to the file system.

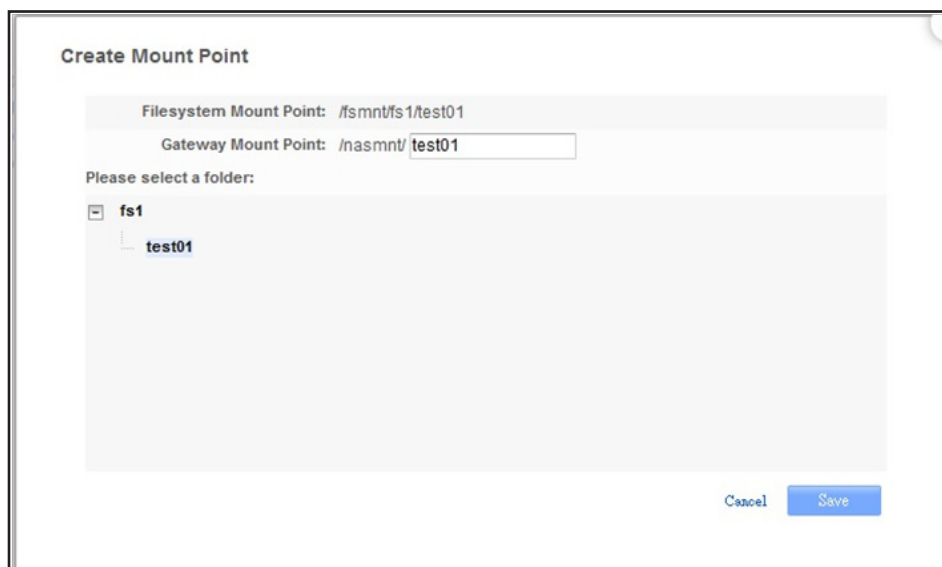
*If the FC port links are down, check to see if the VTrak A-Class FC links are offline, **SAN>Device** to view the virtual VTrak A-Class enclosure.*

## CREATE A MOUNT POINT FOR NAS GATEWAY

In the Setup Wizard procedure, the NAS Gateway is mounted to a file system automatically and then managed by the VTrak A-Class. If the Fibre Channel connection is online, that file system is available for use to connected NAS clients. The administrator then has the option to create additional mount points. If for example, another file system is added, this new file system will need to be mounted manually. User read/write permission is still configured through CIFS and NFS settings, but this is an additional tool for managing data storage resources for the NAS.

To create a mount point for the NAS:

1. Click the gear icon and choose the *Create Mount Point* option.
2. Choose a file system and type a name for the folder used for the mount point.
3. Click on **Save** to create the folder in the file system and mount point for the Gateway.



4. The new mount point appears listed with the path of the file system mount point and Gateway mount point.

Filesystem Mount Point	Gateway Mount Point	Status	Capacity	Free Capacity	Usage
/fsmnt/fs1/test01	/nasmnt/test01	Mounted	3.63 TB	3.62 TB	0

## ***CHANGE THE MOUNT POINT FOLDER NAME***

If you want to change the name of the mount point folder, select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon and choose the *Settings* option. Type in the new folder name and click **Save**.

## ***UNMOUNT***

A mount point can be unmounted without deleting the mount point. ***A mount point cannot be unmounted if it is in use.***

To unmount a NAS mount point:

1. Select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon for the mount point in the list and choose the *Unmount* option.
2. The status should immediately indicate *Not mounted*.

## ***MOUNT AN UNMOUNTED NAS MOUNT POINT***

To remount a NAS mount point that is currently not mounted

1. Select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon for the mount point in the list and choose the *Mount* option.
2. The status should immediately indicate *Mounted*.

## ***DELETE NAS MOUNT POINT***

To remove a mount point, select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon for the mount point in the list and choose the *Delete* option.

***A mount point cannot be deleted if it is in use.***

## CIFS SHARE SETTINGS

CIFS and NFS settings are configured in the Setup Wizard process, but if you want to change permission settings or enable/disable CIFS sharing.

1. Select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon and choose the *CIFS Share* option.
2. Click a radio button to choose the **Default Permission** option, *Read-Write*, *Read-Only* or *Deny Access*.
3. Enable or disable CIFS sharing, a check mark in the **Enable CIFS Share** option box indicates Server Message Block (SMB) are allowed, i.e. CIFS sharing is allowed. To disable CIFS sharing, click in the box to remove the check mark.
4. If LDAP is used, the permission settings for users and user groups are set in a separate Permission setting menu. Choose the permission settings according to user and group listed.
5. Click **Save** to apply the new settings.



### Note

CIFS and NFS can be started or stopped in the **Detail** menu. Keep in mind that these cannot be stopped if a client is currently connected to the file system.

## NFS SHARE SETTINGS

To change NFS Share settings,

1. Select the NAS Gateway in the left panel, click the **Mount Point** menu tab, click the gear icon and choose the *NFS Share* option.
2. Enable or disable NFS sharing, a check mark in the **Enable NFS Share** option box indicates NFS Sharing is allowed. To disable NFS sharing, click in the box to remove the check mark.
3. NFS requires that clients to be specified. To add an NFS client, click **Add** and type the IP address of the NFS client to add to the list. Then choose the permission settings for the NFS client with the pull-down menu under **Permission**.
4. Click **Save** to add the new NFS client or to apply the new settings.



## NAS Node

The NAS node tabbed menus are mostly read-only for displaying status and other information about individual nodes in a NAS Gateway cluster. The menu tabs include **Detail**, **Device**, **Network Management** and **Mount Point**. Network Management is used to change Link Aggregation and IP settings configuration, and Mount Point has a feature to attempt a “Fix” of a problem if the mount point is unable to mount.

### ***DETAIL***

The Detail menu for an individual Gateway node includes the following basic information:

- **ID:** Automatically generated identifier for the node.
- **Status:** General health status of the node indicated with green, yellow or red check mark icons.
- **Firmware Version:** Current firmware
- **BIOS Version:** Current BIOS
- **Link Aggregation 1:** Link Aggregation arrangement for 1G LAN ports
- **Link Aggregation 2:** Link Aggregation arrangement for 10G LAN ports if enabled
- **Software RAID Status:** General health status of the RAID indicated with green, yellow or red icons.
- **Software RAID Background Activities:** Background Activities status on the array
- **CIFS Service Status:** CIFS is enable or disable
- **NFS Service Status:** NFS is enabled or disabled
- **System Date and Time:** Current time and date
- **Time Zone:** Current time zone

## DEVICE

The Device menu for an individual node displays status information related to system hardware:

- **Fiber Channel Port Information**
- **Temperature Sensor Information**
- **Voltage Sensor Information**
- **Fan Sensor Information**
- **Power Supply Unit Information**

### Example of node Device information display

NAS Gateway Node 2

Detail | **Device** | Network Management | Mount Point

- **Fibre Channel Port Information**

Port	Linkup	WWN
1	down	0x10007bdc1601559a
2	up	0x10007bdc1601559b

- **Temperature Sensor Information**

ID	Status	Sensor	Temperature
1	✓	CPU1 Temperature	40°C
2	✓	MB1 Temperature	41°C
3	✓	CPU1 Margin	59°C

- **Voltage Sensor Information**

ID	Status	Sensor	Voltage
1	✓	VCORE1	1.81V
2	✓	+VDDQ	1.50V
3	✓	+12V	12V
4	✓	+5V	5.04V
5	✓	+3.3V	3.23V
6	✓	+3VSB	3.41V
7	✓	VBAT	3.34V

- **Fan Sensor Information**

ID	Status	Sensor	Fan_speed
1	✓	CPU_FAN1	5440RPM
2	✓	FRNT_FAN1	5040RPM
3	✓	FRNT_FAN2	5440RPM

## NETWORK SETTINGS FOR A NODE

Use the Network Settings menu tab to view the current Link Aggregation arrangement, or to change Link Aggregation or Virtual IP settings.

**Before changing Link Aggregation settings**, please read “1G LAN Port Link Aggregation options” on page 17 to see what changes are needed to the Ethernet cabling setup.

### **Change Link Aggregation**

To change the Link Aggregation option, click on the **Network Management** tab, click on the gear icon and choose the *Change Link Configuration* option. This will bring up the **Link Aggregation** option menu from the Setup Wizard.

### **Change Link IP settings**

To change the IP settings for a Link Aggregation setup, click on the note icon for the link that will be changed. You are allowed to change the IP address, subnet mask and gateway IP address for that link only.

## OPEN DIRECTORY AUTHENTICATION FOR NAS CLIENTS

Open Directory NAS clients must be authenticated one time before it can mount the file system. The procedure is the same for all OD clients, Mac, Windows or Linux.

1. To get authentication, perform the following procedure at each NAS client system:
2. Type the NAS Gateway Virtual IP address into the address bar of the client's browser and press **Enter**.
3. Enter the Username and Password created for the client in the menu that appears.
4. Click the Login button.
5. Follow the normal mounting procedure for the client to mount the file system.

# UPGRADING FIRMWARE IN THE NAS GATEWAY

Firmware upgrades for VTrak nodes are done using the Firmware Upgrade menu tab of the SAN menu group.

To get the latest controller firmware, download it from the PROMISE Support Download Center

To upgrade a VTrak node:

1. Go to **NAS Gateway > Firmware Upgrade** menu tab
2. Choose the NAS Gateway node you want to upgrade in the left panel.
3. Click the **NAS Gateway Firmware Upgrade** button, the NAS Gateway Firmware Upgrade menu pops up.
4. Click on the **Choose File** button and locate the file.
5. Click the **Next** button to begin the upgrade process. It might take a few minutes for the process to be completed.

