# Vess R3600 Series / Vess J3600

## Product Manual

*Version 1.0*

# About This Manual

This Product Manual describes how to setup, use, and maintain the Vess R3600 external storage subsystem.

This manual includes a full table of contents, index, chapter task lists and numerous cross-references to help you find the specific information you are looking for.

The terms "Vess R3600" or "subsystem" are used in examples or descriptions throughout this manual to refer to any of the available Vess R3600 Series models. The terms "unit" or "device" can refer to any Vess R3600 Series or Vess J3600 Series model.

## *Manual Overview*

The manual is organized into chapters as follows:

- **Introduction**, this chapter provides a general overview of the available devices in the Vess R3600 Series.

- **Hardware Installation** describes the steps necessary for installing subsystem hardware including installing hard disks and placing the device into a rack system.

- **WebPAM PROe - System Configuration** provides a more detailed description of the various menus used for managing the Vess R3600 Series and connected Vess J3600 Series expansion devices.

- **Managing with the CLI** describes using the CLI to manage the Vess R3600 Series through the network or via serial connection.

- **Contacting Technical Support** includes how to contact technical support, how to return a system for repair, and warranty information.

This manual includes are four levels of notices:

### Warning

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

### Caution

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

### Important

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

### Note

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

## Regulatory compliance notices

Regulatory compliance identification numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

## Avis de conformité réglementaire

Numéros d'identification de conformité réglementaire

Un numéro de modèle réglementaire unique a été attribué à ce produit aux fins des certifications de conformité réglementaire et d'identification. Le numéro de modèle réglementaire se trouve sur l'étiquette de la plaque signalétique du produit, ainsi que toutes les marques d'homologation et les informations requises. Lorsque vous demandez des informations sur la conformité de ce produit, veuillez toujours vous référer à ce numéro de modèle réglementaire. Le numéro de modèle réglementaire est différent du nom commercial ou du numéro de modèle du produit.

## Safety precautions

Retain and follow all product safety and operating instructions. Always refer to the documentation (printed or electronic) supplied with your product. If there is a conflict between this document and the product documentation, the product documentation takes precedence. Observe all warnings on the product and in the operating instructions to reduce the risk of bodily injury, electric shock, fire, and damage to the equipment.

## Consignes de sécurité

Conservez et respectez toutes les consignes de sécurité et d'utilisation du produit. Reportez-vous toujours la documentation (imprimée ou sous forme électronique) fournie avec votre produit. En cas de conflit entre ce document et la documentation du produit, la documentation du produit a priorité. Respectez tous les avertissements figurant sur le produit et dans les instructions d'utilisation pour réduire le risque de blessures corporelles, d'électrocution, d'incendie et d'endommagement du produit.

## General precautions

CAUTION:

For Class A products only: The installation and maintenance of products must be carried out by qualified personnel.

If the product sustains damage requiring service, disconnect the product from all power sources and refer servicing to a PROMISE TECHNOLOGY INC. authorized service provider. Examples of damage requiring service include:

- The power cord, extension cord, or plug has been damaged.
- Liquid has been spilled on the product or an object has fallen into the product.
- The product has been exposed to rain or water.
- The product has been dropped or damaged.
- The product does not operate normally when you follow the operating instructions.

To reduce the risk of personal injury or damage to the product:

- Place the product away from radiators, heat registers, stoves, amplifiers, or other products that produce heat.
- Never use the product in a wet location.
- Avoid inserting foreign objects through openings in the product.
- Move products with casters carefully. Avoid quick stops and uneven surfaces.

or
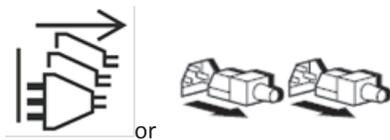
These symbols on power supplies or systems indicate that the equipment is supplied by multiple sources of power.

**WARNING**: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.



This symbol indicates the presence of a moving fan blade. If the spinning blades are contacted, the potential for injury exists.

**WARNING**: Hazardous moving parts. Keep away from moving fan blades. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

**Précautions générales**

ATTENTION:

Pour les produits de classe A seulement : L'installation et l'entretien des produits doivent être effectués par un personnel qualifié uniquement.

Si le produit a subit des dommages nécessitant une réparation, débranchez-le de la source d'alimentation électrique et contactez un fournisseur de service autorisé de TECHNOLOGIE PROMISE INC. pour effectuer les réparations. Exemples de dommages nécessitant une réparation :

- Le cordon d'alimentation, la rallonge ou la fiche ont été endommagés.
- Du liquide a été renversé sur le produit ou un objet lourd est tombé sur le produit.
- Le produit a été exposé à la pluie ou à l'eau.
- Le produit est tombé ou a été endommagé.
- Le produit ne fonctionne pas correctement même lorsque vous suivez les instructions d'utilisation.

Pour réduire le risque de blessures ou d'endommagement du produit :

- Placez le produit loin des radiateurs, des registres de chaleur, des cuisinières, des amplificateurs ou d'autres produits qui produisent de la chaleur.
- N'utilisez pas le produit dans un endroit humide.
- Évitez d'insérer des corps étrangers dans les fentes du produit.
- Déplacez les produits avec des roulettes avec précaution. Évitez les arrêts brusques et les surfaces inégales.

 ou 
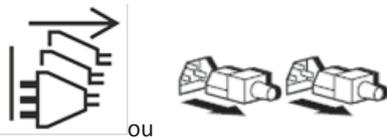
Ces symboles sur les sources d'alimentation ou sur les systèmes indiquent que l'équipement est alimenté par plusieurs sources d'alimentation.

**AVERTISSEMENT** : Pour réduire le risque de blessures par électrocution, débranchez tous les cordons d'alimentation pour couper complètement l'alimentation électrique du système.



Ce symbole indique la présence d'un ventilateur avec des pales en mouvement. Elles posent un risque de blessures en cas de contact.

**AVERTISSEMENT** : Pièces mobiles dangereuses. Évitez de toucher les pales du ventilateur. Pour réduire le risque de blessures causées par une surface chaude, laissez-la refroidir avant de la toucher.

### Precautions for maintaining and servicing products

To reduce the risk of electric shock or damage to the equipment when installing, maintaining, or servicing products, observe the following precautions::

- Some products contain power supplies that are capable of producing hazardous energy levels. Refer to the documentation included with your product to determine whether it contains these power supplies. The installation of internal options and routine maintenance and service of this product should be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with equipment containing hazardous energy levels.
- Allow the product to cool before removing covers and touching internal components.
- Do not use conductive tools that could bridge live parts.
- Remove all watches, rings, or loose jewelry when working in hot-plug areas of an energized server, storage, networking, or rack product.
- Some products have covers or doors to access hot-plug components and may allow access to hazardous energy circuits or moving fans.
- The doors should remain locked during normal operation.

OR

- The server, storage, networking, or rack product should be installed in a controlled access location where only qualified personnel have access.
- Power down the equipment and disconnect all power cords before removing any access covers for non-hot-plug areas.
- Do not replace non-hot-plug components while power is applied to the product. First, shut down the product and disconnect all power cords.
- Do not exceed the level of repair specified in the procedures in the product documentation. All troubleshooting and repair procedures are detailed to allow only subassembly or module-level repair. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.
- For floor-standing products, install and extend bottom stabilizers before installing options and boards.
- Verify that the AC power supply branch circuit that provides power to the rack is not overloaded. This will reduce the risk of personal injury, fire, or damage to the equipment. The total rack load should not exceed 80 percent of the branch circuit rating. Consult the electrical authority having jurisdiction over your facility wiring and installation requirements.
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**Précautions pour l'entretien et la maintenance des produits**

Pour réduire le risque de choc électrique ou d'endommagement de l'équipement pendant l'installation, l'entretien ou la maintenance du produit, observez les précautions suivantes :

- Certains produits contiennent des sources d'alimentation qui sont capables de produire des niveaux d'énergie dangereux. Reportez-vous à la documentation fournie avec votre produit pour déterminer s'il contient ces sources d'alimentation. L'installation de composants internes et l'entretien et la maintenance de routine de ce produit doivent être effectués seulement par des personnes qui connaissent bien les

procédures, les précautions et les dangers associés à un équipement contenant des niveaux d'énergie dangereux.

- Laissez le produit se refroidir avant d'ouvrir les capots et de toucher les composants internes.
- N'utilisez pas d'outils conducteurs qui pourraient faire le pont avec des pièces sous tension.
- Retirez vos montres, bagues ou bijoux lorsque vous travaillez dans les zones de connexion à chaud d'un serveur, d'un système de stockage, d'un réseau ou d'un produit en rack sous tension.
- Certains produits ont des capots ou des portes permettant d'accéder aux composants remplaçables à chaud ; cela peut vous exposer aux circuits d'énergie dangereux ou aux ventilateurs en mouvement.
- Ces portes doivent être fermées et verrouillées tout le temps pendant le fonctionnement normal.

OU

- Le serveur, le système de stockage, le réseau ou le produit en rack doivent être installés dans un endroit à accès contrôlé pour que seul le personnel qualifié ait accès.
- Mettez l'équipement hors tension et débranchez tous les cordons d'alimentation avant d'ouvrir les capots d'accès aux zones non remplaçables à chaud.
- Ne remplacez jamais les composants non remplaçables à chaud si le produit est toujours connecté à l'alimentation. Éteignez en premier le produit et débranchez tous les cordons d'alimentation.
- Ne dépassez pas le niveau de réparation spécifié dans les procédures de la documentation du produit. Toutes les procédures de dépannage et de réparation sont détaillées pour ne permettre que la réparation au niveau du sous-assemblage ou du module. À cause de la complexité des cartes et des sous-assemblages individuels, n'essayez pas d'effectuer des réparations au niveau des composants ou d'apporter des modifications à une carte de câblage imprimée. Des réparations incorrectes peuvent créer un risque de sécurité.
- Pour les produits installés sur pied, installez et rallongez les stabilisateurs de plancher avant d'installer les composants et les cartes.
- Vérifiez que le circuit de dérivation de l'alimentation CA qui alimente le rack n'est pas surchargé. Cela réduira le risque de blessures corporelles, d'incendie et d'endommagement de l'équipement. La charge totale du rack ne doit jamais dépasser 80 % de la capacité nominale du circuit de dérivation. Consultez la compagnie électrique responsable des exigences du câblage et de l'installation de votre emplacement.

## Precautions for power products

### Power cords

To reduce the risk of electric shock or damage to the equipment:

- Use an approved power cord. If you have questions about the type of power cord to use, contact your PROMISE TECHNOLOGY INC. authorized service provider.
- If you have not been provided with a power cord for your product or for any AC-powered option intended for your product, purchase a power cord that is approved for use in your country.

- You must use a power cord rated for your product and for the voltage and current marked on the electrical ratings label of the product. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
- Do not place objects on AC power cords or cables. Arrange them so that no one may accidentally step on or trip over them.
- Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.
- Make sure that the total ampere rating of all products plugged into an extension cord or power strip does not exceed 80 percent of the ampere ratings limit for the extension cord or power strip.
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

**Power supplies**

Hot-plug power supplies are not designed to be removed or installed with AC power connected to the power supply. To reduce the risk of electric shock or damage to the equipment when handling hot-plug power supplies:

- Install the power supply before connecting the power cord to the power supply.
- Unplug the power cord before removing the power supply from the product.
- If the system has multiple sources of power, you must unplug all AC power cords from the power supplies to completely disconnect power from the system.

**Batteries**



**WARNING!** Some PROMISE TECHNOLOGY INC. products may contain internal replaceable battery cells or battery packs. There is risk of fire, burns, or explosion if the battery pack is not handled properly. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not disassemble, crush, puncture, short external contacts, or dispose of the battery in fire or water.
- Replace only with the PROMISE TECHNOLOGY INC. spare battery designated for this product. Dispose of used batteries according to the manufacturer's instructions and local disposal requirements.
- For battery holders (for example, coin cells), observe the correct polarity when changing the battery/cell. There is a danger of explosion if the battery is installed incorrectly.

## Précautions relatives aux produits électriques
**Cordons d'alimentation**

Pour réduire le risque de choc électrique ou d'endommagement de l'équipement :

- Utilisez uniquement un cordon d'alimentation approuvé. Si vous avez des questions sur le type de cordon d'alimentation à utiliser, contactez votre fournisseur de services autorisé de TECHNOLOGIE PROMISE INC.
- Si vous n'avez pas reçu de cordon d'alimentation avec votre produit ou pour toute option d'alimentation CA destinée à votre produit, achetez un cordon d'alimentation qui est approuvé par les autorités compétentes pour utilisation dans votre pays.
- Vous devez utiliser un cordon d'alimentation adapté à votre produit et à la tension et au courant indiqués sur l'étiquette du produit. La tension et le courant nominal du cordon doivent être supérieurs à la tension et au courant nominal indiqués sur le produit.
- Ne placez aucun objet sur les cordons d'alimentation ou les câbles. Arrangez-les de manière à réduire le risque que quelqu'un ne marche ou ne trébuche dessus.
- Ne tirez pas sur un cordon ou un câble. Lorsque vous débranchez l'appareil de la prise électrique, saisissez le cordon d'alimentation par la fiche.
- Assurez-vous que l'ampérage total de tous les produits branchés sur une rallonge ou une barrette d'alimentation ne dépasse pas 80 % de l'ampérage maximal de la rallonge ou de la barrette d'alimentation.
- Ne modifiez pas la fiche de mise à la terre du cordon d'alimentation. La fiche de mise à la terre est un élément de sécurité important.
- Branchez le cordon d'alimentation sur une prise électrique (reliée à la terre) qui est facilement accessible tout le temps.

**Alimentations électriques**

Les sources d'alimentation remplaçables à chaud ne sont pas conçues pour être débranchées ou installées lorsque l'alimentation CA est toujours connectée à la source d'alimentation. Pour réduire le risque de choc électrique ou d'endommagement de l'équipement lors de la manipulation de sources d'alimentation remplaçables à chaud :

- Installez la source d'alimentation avant de raccorder le cordon d'alimentation à la source d'alimentation.
- Débranchez le cordon d'alimentation avant de débrancher la source d'alimentation du produit.
- Si le système utilise plusieurs sources d'alimentation, vous devez débrancher tous les cordons d'alimentation CA de toutes les sources d'alimentation pour couper complètement l'alimentation du système.

**Batteries**



**AVERTISSEMENT !**   Certains produits de PROMISE TECHNOLOGY INC. peuvent contenir des piles internes remplaçables ou des batteries. Il y a un risque d'incendie, de brûlures ou d'explosion si la batterie n'est pas manipulée correctement. Pour réduire le risque de blessures corporelles :

- N'essayez pas de recharger la batterie.

- Ne pas démonter, écraser, perforer, court-circuiter les contacts externes ou jeter la batterie dans un feu ou de l'eau.
- Remplacez seulement avec la pile de rechange de PROMISE TECHNOLOGY INC. conçue pour ce produit. Jetez les piles usagées conformément aux instructions du fabricant et aux exigences locales en matière d'élimination.
- Pour les porte-piles (par exemple, les piles bouton), respectez la polarité lors du remplacement de la pile / de la pile bouton. Il y a un risque d'explosion si la pile est mise incorrectement.

## Compliance

### Global notice for Class A equipment

Operation of this equipment in a residential environment could cause radio interference.

### Federal Communications Commission notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this product, go to the PROMISE TECHNOLOGY INC. Support Center
Website: http://www.promise.com
For questions regarding this FCC SDoC, contact us by mail or telephone:
- PROMISE TECHNOLOGY USA
- 580 Cottonwood Drive, Milpitas, CA 95035, USA
- Email: sales@promise.com

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

**Canada (Avis Canadian)**

Class A equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. CAN ICES-3(A)/NMB-3(A)

Cet appareil numérique de la class A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.CAN ICES-3(A)/NMB-3(A)

**European Union**

European Union Regulatory Notice

Products bearing the CE marking comply with applicable EU Directives:

$C\epsilon$

WARNING: This equipment is compliant with Class A of EN55032. In a residential environment this equipment may cause radio interference.

**Japan**

VCCI notice

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。                          VCCI－A

**Korea**

A 급 기기(업무용 방송통신기기)

이 기기는 업무용(A 급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

**Taiwan**

BSMI notices

Class A EMI warning message

警告使用者：

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

# INTRODUCTION

The Vess R3600 Series consolidates both block and file protocols onto a single hardware platform, simplified storage administration in one unified storage appliance that achieves performance and scalability goals. High availability design with active-active configuration, Vess R3600 Series storage solutions are ideal for use in data-intensive environments such as virtualized, cloud data centers or mid-size to large scale surveillance installations that utilize the Vess A Series Storage Appliance for Video Surveillance.

## Features

- Dynamic storage solution optimized for virtualized environments

- Unified FC and iSCSI connections for SAN and NAS in the same storage

- Flexible 1/10G and optional 8/16G FC, with 12G/6G SAS and 6G SATA backward compatible

- Fully tuned RAID expansion for video surveillance applications

- CacheGuard Data Protection & Predictive Data Migration (PDM)

- Scale up to 208 hard disk drives via Vess J3000 series expansion units

# Vess R3600 Series and Vess J3600 Models

All models listed below are equipped with dual controllers and two power supplies.

| Model | Interface / Controller | Controllers | Drives | Power Supplies |
|---|---|---|---|---|
| **Vess R3600iD** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO | 2 | 16 | 2 |
| **Vess R3600iS** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO | 1 | 16 | 2 |
| **Vess R3600tiD** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>2 x 10G BASE-T | 2 | 16 | 2 |
| **Vess R3600tiS** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>2 x 10G BASE-T | 1 | 16 | 2 |
| **Vess R3600xiD** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>2 x 10G SFP+ | 2 | 16 | 2 |
| **Vess R3600xiS** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>2 x 10G SFP+ | 1 | 16 | 2 |
| **Vess R3604fiD** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>4 x 16Gb Fibre Channel | 2 | 16 | 2 |
| **Vess R3604fiS** | 4 x 1000BASE-T<br>1 x 1000BASE-T Management / IO<br>4 x 16Gb Fibre Channel | 1 | 16 | 2 |
| **Model** | **Interface / IO Module** | **IO ModuleS** | **Drives** | **Power Supplies** |
| **Vess J3600sSD** | 2 x 12G SFF-8644 mini-SAS | 2 | 16 | 2 |
| **Vess J3600sS** | 2 x 12G SFF-8644 mini-SAS | 1 | 16 | 2 |

# Specifications

**Vess R3600 Series models**

| | |
|---|---|
| **Form factor** | 3U 19" rack mount |
| **Drives supported** | • Up to 16 3.5" drives<br>• 6/12 Gb SAS, 6 Gb SATA HDD and SSD<br>• Supports any mix of SAS and SATA drives simultaneously in the same enclosure |
| **IO Ports per controller** | • Four 1G IO plus One 1G Management / IO<br>• One 12G SFF-8644 mini-SAS connector per controller for JBOD expansion. |
| **Memory** | 8GB x 1 per ctrl (up to 64GB) |
| **Storage Expansion** | Cascade up to twelve Vess J3600 JBOD expansion units.<br>Vess J3600 Series supports 16 drives per device. |

## Operational

| | |
|---|---|
| **RAID support** | 0, 1, 5, 6, 10, 50, 60 |
| **RAID stripe size** | 64K, 128K, 256K, 512K, 1MB |
| **Hot Spare Drives** | Global, Dedicated and Revertible option |

| | | | | |
|---|---|---|---|---|
| **Power Supplies** | CRPS 550W; Efficiency 80PLUS Certified Redundant Power Supply | | | |
| **Voltage** | AC: 100-240VAC; DC: 180-320VDC Auto-Ranging | | | |
| **Current (Maximum)** | < 8A@100-240VAC@full load; < 8A@180-320VDC@full load | | | |
| **Power Conversion Efficiency** | >80% @ 110V (>20% load), >80% @ 240V (>20% load) | | | |
| **Dimensions** (Height, Width, Depth) | 131mm x 446.7mm x 507mm (5.2" x 17.6" x 19.96") | | | |
| **Weight** (killograms) | R3600tiD | R3600xiD | R3600iD | R3604fiD |
| (w/o drives) | 19.8 | 19.8 | 19.7 | 19.9 |
| (w drives) | 31.0 | 31.0 | 30.9 | 31.1 |

| Safety & Environment | Description |
|---|---|
| **EMI / RFI Statements** | EMC Class A: CE, FCC, VCCI, BSMI, RCM<br>Safety: IEEE CB, NTRL |
| **Environmental Standards** | RoHS, WEEE |
| **Temperature Range** | Operational: 5° to 35°C, Non-Operational: -40° to 60°C |
| **Humidity Range** | Operational: 20% to 80% (Non-Condensing)<br>Non--Operational: ~ 95% (Non-Condensing) |
| **Acoustic Noise Levels** | < 60dB, 25C |
| **Shock** | Operational: 5G, 11 ms duration<br>Non-Operational: 30G, 11ms duration |
| **Vibration** | Operational: 0.2G, 5 to 500Hz (sine wave) ; 0.41G, 3-10-200-500Hz (Random)<br>Non-Operational: 1G, 5 to 500Hz (sine wave) ; 2.256G, 5-80-350-500Hz (Random) |

| Support & Warranty | Description |
|---|---|
| **Support** | • 24 hour, 7 days a week, 365 days a year e-mail and phone support (English only)<br>• 24 hour, 7 days a week, 365 days a year access to PROMISE support site<br>• Firmware and compatibility lists |
| **Warranty** | 3 year limited warranty |

**Vess J3600 JBOD models**

| Form factor | 3U 19" rack mount |
|---|---|
| Drives supported | • Up to 16 3.5" drives<br>• 6/12 Gb SAS, 6 Gb SATA HDD and SSD<br>• Supports any mix of SAS and SATA drives simultaneously in the same enclosure |
| IO Ports per IO module | • Two 12G SFF-8644 mini-SAS connector per controller for JBOD expansion. |

| Power Supplies | CRPS 550W; Efficiency 80PLUS Certified Redundant Power Supply | |
|---|---|---|
| Voltage | AC: 100-240VAC; DC: 180-320VDC Auto-Ranging | |
| Current (Maximum) | < 8A@100-240VAC@full load; < 8A@180-320VDC@full load | |
| Power Conversion Efficiency | >80% @ 110V (>20% load), >80% @ 240V (>20% load) | |
| Dimensions (Height, Width, Depth) | 131mm x 446.7mm x 507mm (5.2" x 17.6" x 19.96") | |
| Weight | Single controller models | Dual controller models |
| (w/o drives)<br>(w drives) | 17.72 kg<br>28,92 kg | 19.8 kg<br>31 kg |

# Hardware

The following section provides a summary of the front and back panel hardware features of the Vess R3600 Series and Vess J3600 enclosures.

## Front View

Vess R3600 and Vess J3600 enclosures feature handles on each side used to secure the enclosure to an equipment rack.

*Front view of Vess R3600*



Drive carriers　　　　　　　　　　　　　　　　　　　Enclosure Power and Status LEDs

*Front view of Vess J3600*

# Back of Vess R3600

The rear of the Vess R3600 Series enclosure provides access to the power supply units, which include the cooling fans, and the system controller(s).

Each controller has an RJ-45 Gigabit Ethernet port used for management, an RS-232 serial management port using an RJ-11 connector, four 1 Gb/s iSCSI ports, one SAS Expansion port for additional drive enclosures, one USB 3.0 port and various LED indicators which are described below.

*Ports on all Vess R3600 Series*
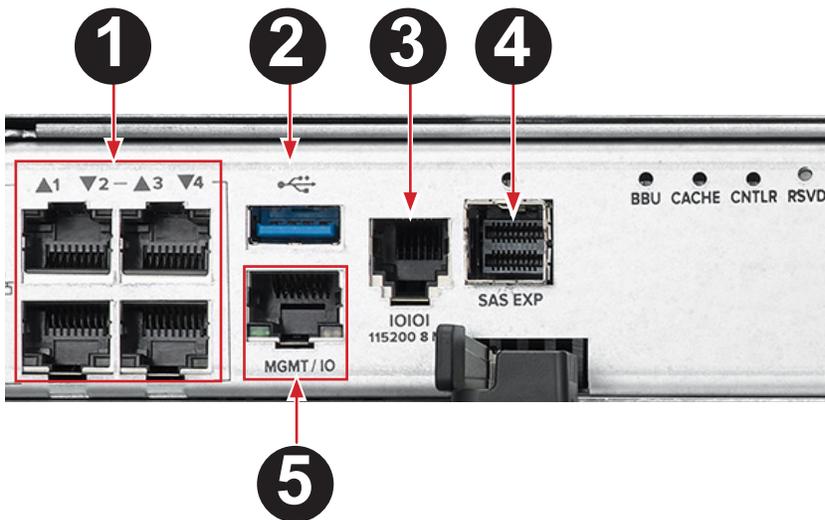


| Port | Description |
|---|---|
| 1 | 1000BASE-T IO ports (four ports for iSCSI) |
| 2 | USB 3.0 |
| 3 | RJ-11 Serial management (use DB9-to-RJ-11 data cable) |
| 4 | SFF-8644 mini-SAS Expansion (JBOD expansion) |
| 5 | 1000BASE-T MGMT / IO Network management and IO |

### Back view of Vess R3600i

Controller 1                                              Controller 2



PSU 1        Power Socket              PSU 2        Power Socket
ON/Off                                 ON/Off
switch                                 switch

### Back view of Vess R3600ti

Controller 1    10G BASE-T (2 ports)          Controller 2    10G BASE-T (2 ports)



PSU 1        Power Socket              PSU 2        Power Socket
ON/Off                                 ON/Off
switch                                 switch

### Back view of Vess R3600xi

Controller 1     10G SFP+ (2 ports)                              Controller 2     10G SFP+ (2 ports)



PSU 1     Power Socket                                    PSU 2     Power Socket
ON/Off                                                    ON/Off
switch                                                    switch

### Back view of Vess R3604fi

Controller 1          16Gb Fibre                          Controller 2          16Gb Fibre
                      Channel (4 ports)                                         Channel (4 ports)



PSU 1     Power Socket                                    PSU 2     Power Socket
ON/Off                                                    ON/Off
switch                                                    switch

# Back of Vess J3600

The rear of the Vess J3600 Series enclosure provides access to the power supply units, which include the cooling fans, and the IO modules. Each IO module has two SAS Expansion ports, including status LEDs for the SAS ports and the IO module.

### *Back view of Vess J3600sD*

IO Module 1   12G/bs SAS (2 ports)         IO Module 2    12G/bs SAS (2 ports)



PSU 1 ON/Off switch    Power Socket               PSU 2 ON/Off switch    Power Socket

### *Back view of Vess J3600sS*

IO Module 1   12G/bs SAS (2 ports)



PSU 1 ON/Off switch    Power Socket               PSU 2 ON/Off switch    Power Socket
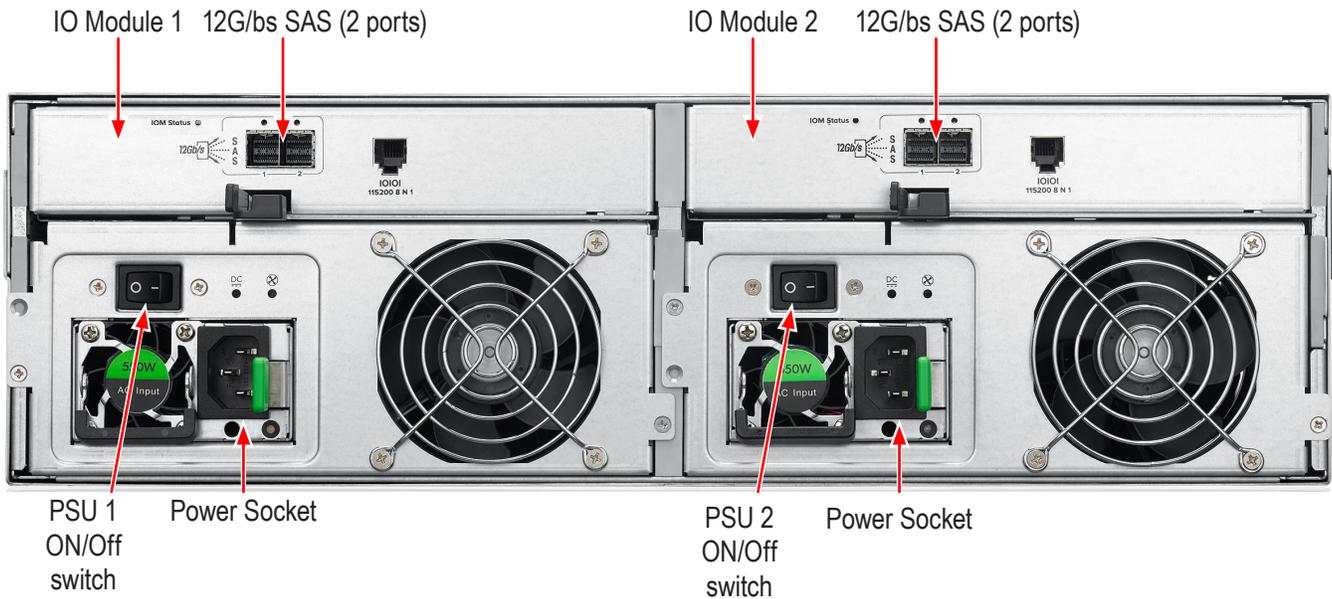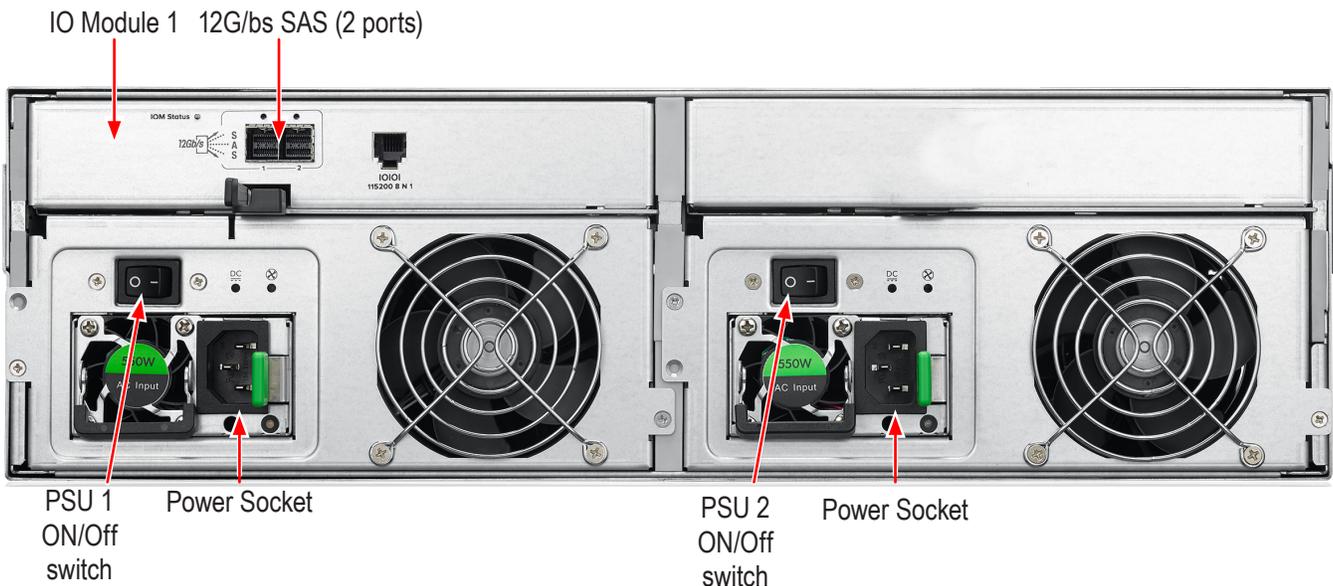
## Warranty and Support

## Warranty

- Three year complete system limited warranty

- Battery Backup Unit has a one year limited warranty

- Optional 2-year extended warranty

- Optional onsite parts replacement program

Promise Technology, Inc. ("Promise") warrants that for three (3) years from the time of the delivery of the product to the original end user except for one (1) year warranty on the battery backup unit:

a) the product will conform to Promise's specifications;

b) the product will be free from defects in material and workmanship under normal use and service.

This warranty:

a) applies only to products which are new and in cartons on the date of purchase;

b) is not transferable;

c) is valid only when accompanied by a copy of the original purchase invoice;

d) is not valid on spare parts.

This warranty shall not apply to defects resulting from:

a) improper or inadequate maintenance, or unauthorized modification(s), performed by the end user;

b) operation outside the environmental specifications for the product;

c) accident, misuse, negligence, misapplication, abuse, natural or personal disaster, or maintenance by anyone other than a Promise or a Promise authorized service center.

# HARDWARE INSTALLATION

This chapter presents basic information on unpacking the Vess R3600 Series and Vess J3600 enclosures and mounting it in an equipment rack, making the connections for data and management paths and connecting the power. It also describes how to power on the system and what to look for while it is powering up.

The main sections in Hardware Setup include the following:

- Unpacking

- Mounting the Vess enclosure in a rack

- Installing Physical Drives

- Making Management Connections

- Connecting the Power

- Power on

Depending on the details of your order, the Vess R3600 Series or Vess J3600 enclosure might be shipped with hard drives installed, or it might require that you install hard drives. The section "Installing Physical Drives" on page 18 provides instruction for installing hard disks.

# Unpacking

## *Packing List*

The Vess R3600 Series box contains the following items:

- Vess R3600 Unit
- One Quick Start Guide printed
- Two 1.5m (4.9 ft) Power cord
- Sliding rail assembly for rack mounting
- DB9-to-RJ11 serial data cable

The Vess J3600 box contains the following items:

- Vess J3600 JBOD Storage Enclosure
- One Quick Start Guide printed
- Two 1.5m (4.9 ft) Power cord
- Sliding rail assembly for rack mounting
- SFF-8644 external SAS cable
- DB9-to-RJ11 serial data cable

**Warning**

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

**Warning**

**Two persons are needed to safely place the unit onto the rails.**
**DO NOT lift the unit by the handles**

# Mounting the Vess enclosure in a rack

This section provides instructions for installing the Vess R3600 Series or Vess J3600 JBOD enclosure into a rack. Note that for simplicity, all Vess models enclosures are referred to as Vess or Vess unit.

**Caution**

To lighten the enclosure, remove the power supplies, and remove all hard drive carriers. Replace the power supplies and drive carriers after the unit is mounted in your rack.

**Cautions**

- Do not populate any unit with hard drives until it has been securely installed in the rack.

- At least two persons are required to safely lift, place, and attach the unit into a rack system.

- Do not lift or move the unit by the handles, power supplies or the controller units. Hold the system itself.

- 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 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 Vess unit are designed to safely support that PROMISE Vess unit 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 Vess unit unless you install them as instructed.

To install the Vess into a rack with the supplied mounting rails:

1.  Check the fit of the mounting rails in your rack system.

### *Installing the rails onto the rack*

Front left label

Front right label

Support flange on the front
end of each rail

Guide pins on rails align with holes in the rack post
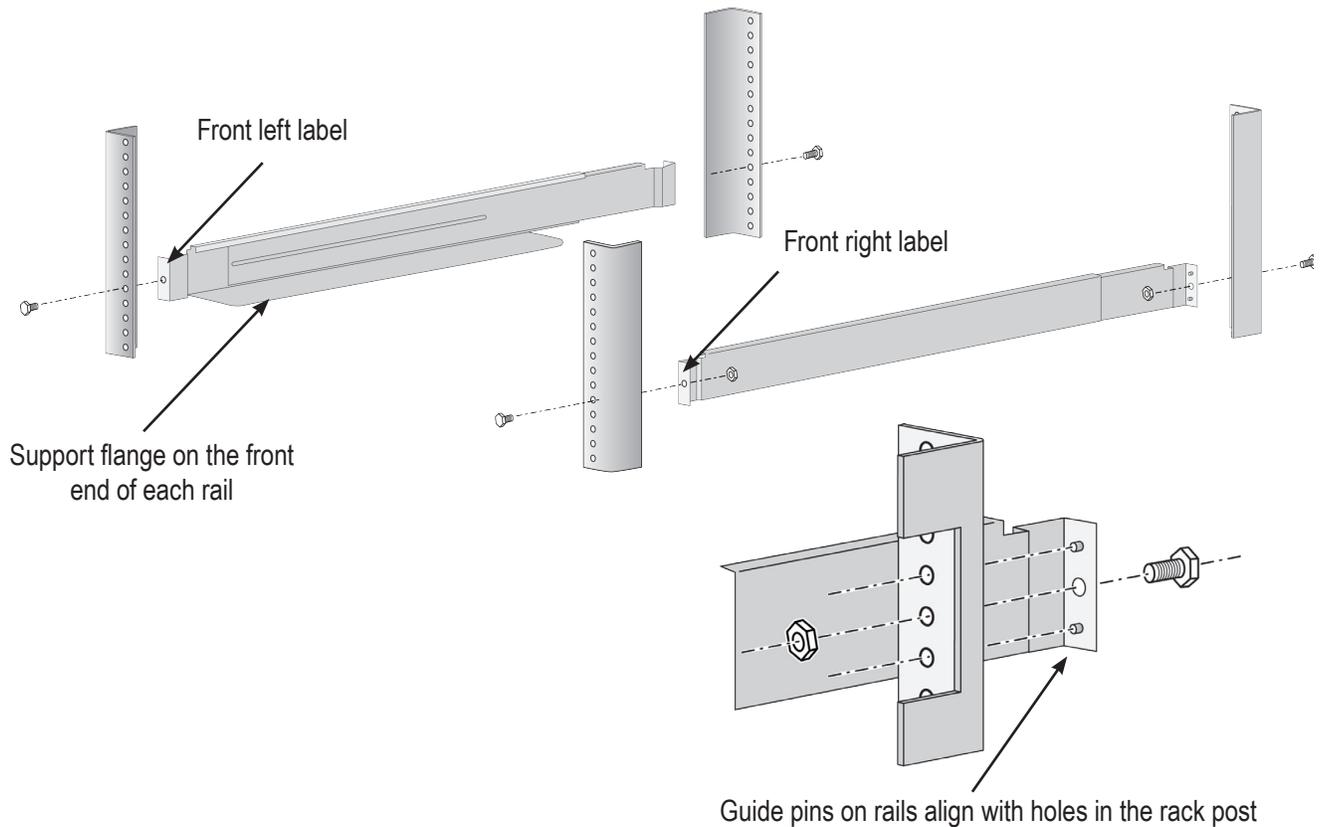
2.  Adjust the length of the mounting rails as needed.

- The rear rail slides inside the front rail. The rails are composed of two sliding sections and do not require adjusting screws.

- The front-left and front-right mounting rail ends are labeled.

- Be sure the front rail support is on the bottom facing inward.

- All rail ends, front and rear, attach at the outside of the rack posts.

- The guide pins at the rail ends align with the holes in the rack posts.

- Use the attaching screws and nuts from your rack system. Tighten the screws and nuts according to instructions for your rack system.

*Rail ends attach to the outside of each post*



Rail ends attach on the outside of the front and rear rack posts
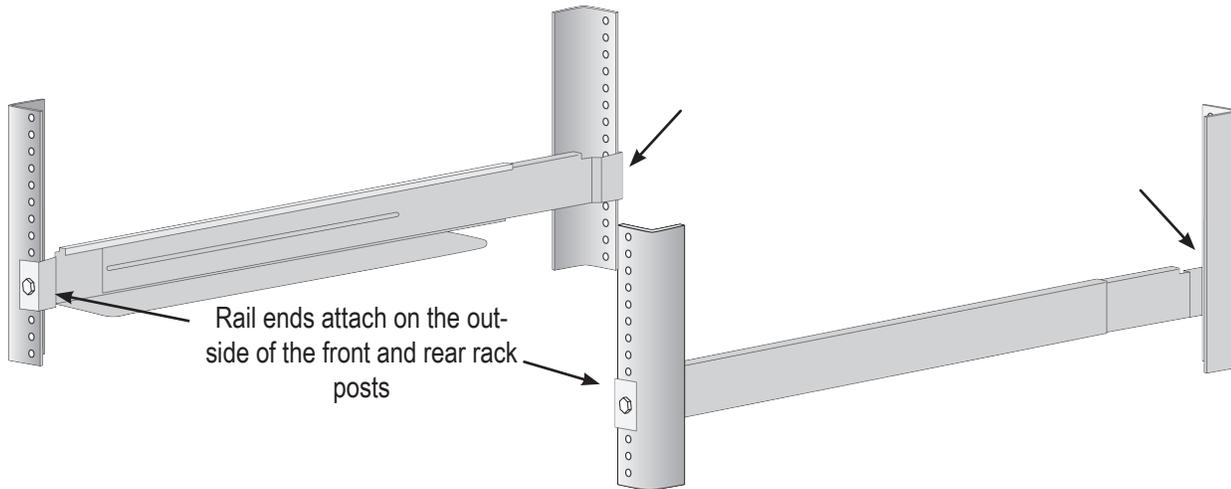
3. Place the Vess onto the rails.

- At least two persons are required to safely lift the system.

- Lift the Vess itself. Do not lift the system by its brackets.

> **! Warning**
>
> **Two persons are needed to safely place the unit onto the rails.**
> **DO NOT lift the unit by the handles**

*Placing the Vess system onto the rack rails*



Handles

Rails installed and tightened
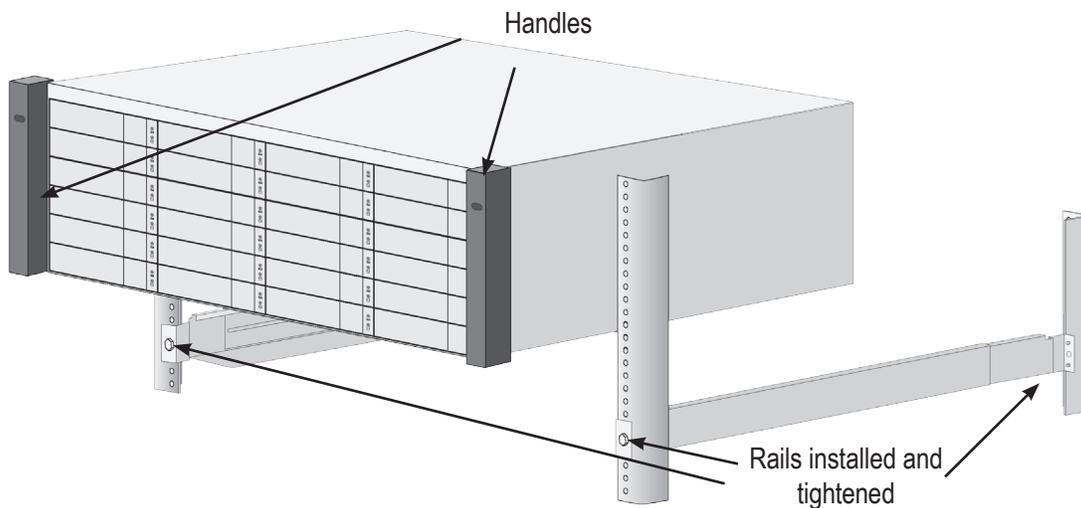
4.  Secure the enclosure to the rack.

• Use screws and nuts to lock the unit in to place in the rack.

### *Secure to rack*

Screws and cage nuts attach
the Vess to the rack posts
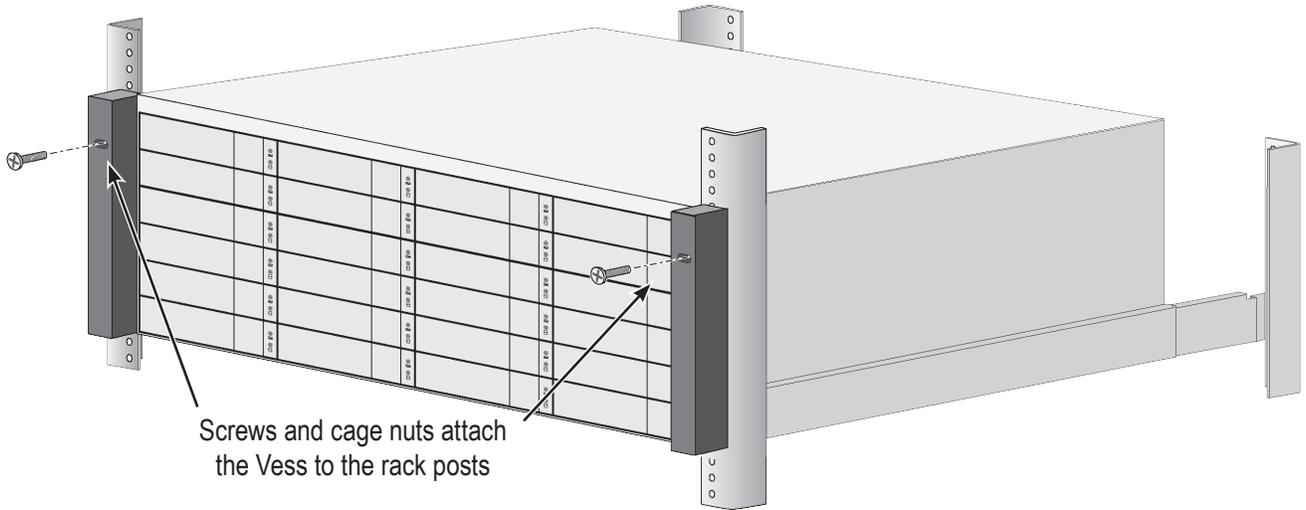
### *System installed in rack*

Vertical rack post

Mounting rails mount outside the rack post

Handles mount outside the rack post
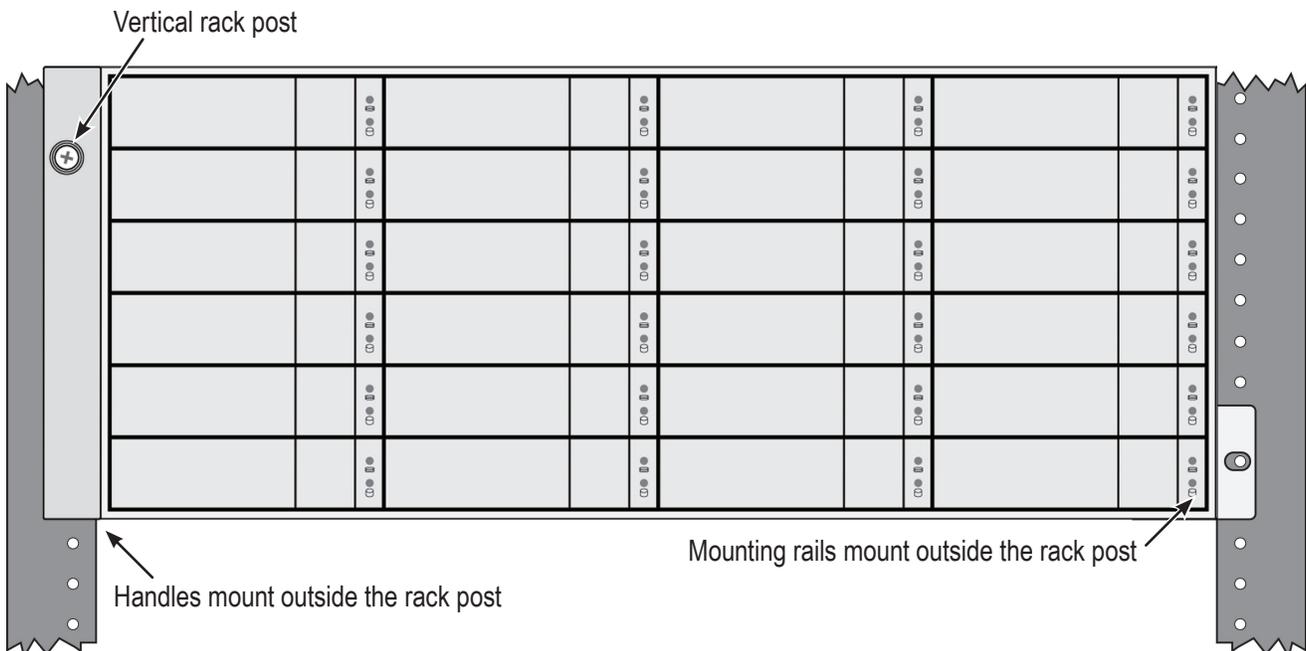
# Installing Physical Drives

The Vess R3600 Series and Vess J3600 JBOD subsystems support:

- SAS hard disks

- SATA hard disks (SATA drives require use of an adapter)

For a list of supported physical drives, download the latest compatibility list from the PROMISE

http://www.promise.com/support/.

# Number of Drives Required

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 32 |
| RAID 1 | 2 only | | RAID 10 | 4 or more* |
| RAID 5 | 3 to 32 | | RAID 50 | 6 or more |
| | | | RAID 60 | 8 or more |

*Must be an even number of drives.

**Caution**

**The Vess R3600 Series and Vess J3600 JBOD support disk drive hot-swapping. To avoid hand contact with an electrical hazard, do not remove more than one drive carrier a time.**

# Drive Slot Numbering

You can install any suitable disk drive into any slot in the enclosure. The diagrams below shows how drive slots are numbered on the Vess R3600 Series and Vess J3600 models. Slot numbering is reflected in the WebPAM PROe and CLI user interfaces.

Be sure to install all of the drive carriers into the Vess R3600 and Vess J3600 enclosure to ensure proper airflow, even if you do not populate all the carriers with physical drives.

*Drive slot numbering on Vess R3600 (Vess J3600 numbering is identical)*
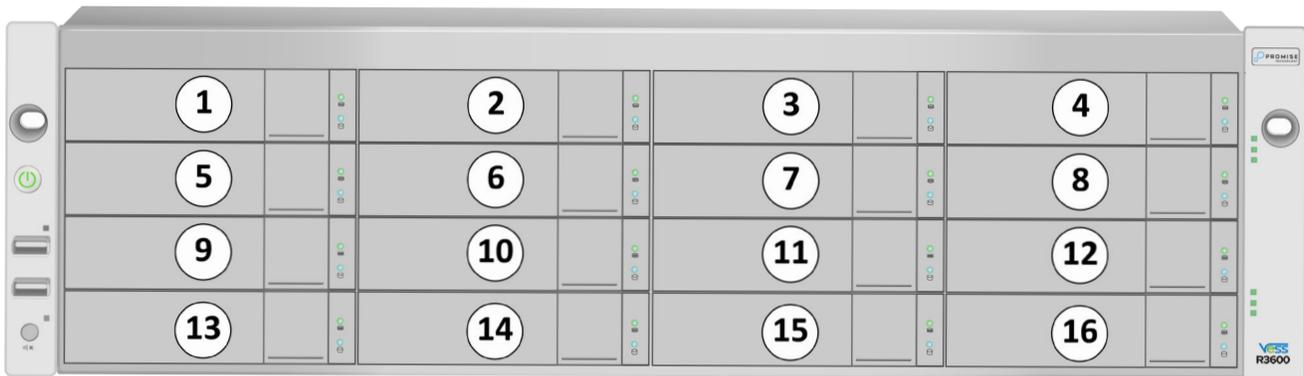
# Installing Your Drives

The drive carrier accommodates 3.5-inch drives.

The Vess R3600 and Vess J3600 do support use of SATA drives (SATA drives require use of an adapter), but SAS drives are recommended.

**Cautions**

**Swing open the drive carrier handle before you insert the drive carrier into the enclosure.**

**To avoid hand contact with an electrical hazard, remove only one drive carrier a time.**

**Important**

SATA drives require a SAS-to-SATA adapter, available from PROMISE Technology at http://www.promise.com/

SAS drives do not require adapters.

1. Press the drive carrier release button.

2. Grasp the front and gently pull the empty drive carrier out of the enclosure.

### Drive carrier front view



Disk carrier release button

3. If you are installing SATA drives, attach a SAS-to-SATA adapter onto the power and IO connectors of each drive.

4. Carefully lay the drive into the carrier with the power and IO connectors facing away from the carrier handle.

5. Position the drive in the carrier so the mounting holes line up.

   - 2.5-inch drive mounting screws go through the bottom of the carrier.
   - SAS-to-SATA adapter mounting screws go through the bottom of the carrier.
   - 3.5-inch drive mounting screws go through the sides of the carrier.

6. Insert the screws through the proper holes in the carrier and into the drive or adapter.

   - Use the screws supplied with the shipment or the SAS-to-SATA adapter.
   - Install four screws per drive.
   - Install two screws per adapter.
   - Snug each screw. Be careful not to over tighten.

7. With the drive carrier handle in open position, gently slide the drive carrier into the enclosure.



**Important**

Press the release button to push the drive carrier into position.

Proper drive installation ensures adequate grounding and minimizes vibration. Always attach the drive to the carrier with four screws.

# Making Management Connections

There are two methods to establish a management connection, Network and Serial connection. For the initial setup, it is necessary to establish the network management connection; use the MGMT/IO port on both controllers for system management. The Vess R3600 Series also features a Serial management port for system management using a terminal emulation program and the Vess R3600 Command Line Interface (CLI). The hardware connections for both methods are described in this section.

**Vess R3600 Series controller Management and IO ports**
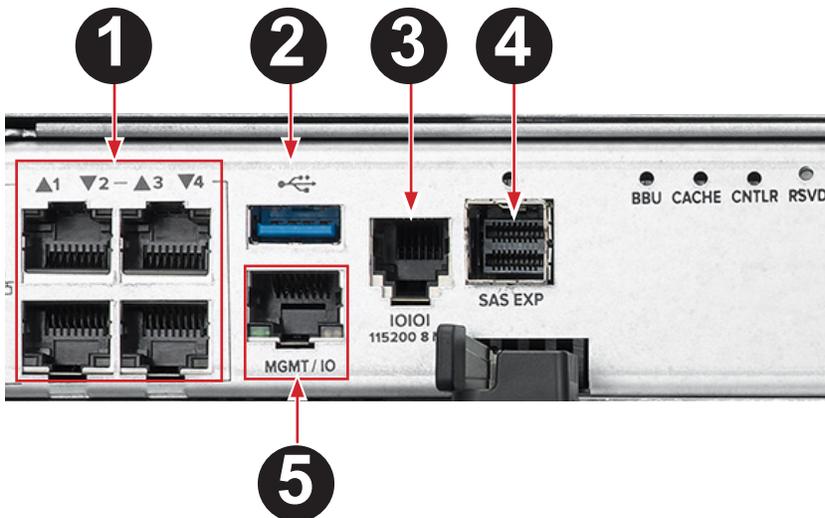


| Port | Description |
|------|-------------|
| 1 | 1000BASE-T IO ports (four ports for iSCSI) |
| 2 | USB 3.0 |
| 3 | RJ-11 Serial management (use DB9-to-RJ-11 data cable) |
| 4 | SFF-8644 mini-SAS Expansion (JBOD expansion) |
| 5 | 1000BASE-T MGMT / IO Network management and IO |

**Note**

The Vess J3600 is managed and controlled through the head unit. The Vess J3600 can be used with the Vess R3600, Vess A7000 and Vess A6000 series.

# Serial management connection

Serial communication enables any computer that has an available serial port and terminal emulation application to access the Vess Command Line Interface (CLI) to set up a network connection. The Vess package includes one RJ11-to-DB9 serial data cable for each controller.

To set up a serial cable connection:

1.  Attach the RJ-11 end of the serial data cable to the RJ-11 serial connector on one of the RAID controllers.

2.  Attach the DB9 end of the serial data cable to a serial port on the host PC or server.

# Network management connection

Each Vess R3600 Series controller has a 1000BASE-T Ethernet port labeled MGMT/IO used for management via network connection.

To establish the management path network connection:

1.  Attach one end of an Ethernet cable to the network connector or standard NIC in the Host PC, attach the other end of the Ethernet cable to a port on a standard network switch.

2.  Attach one end of an Ethernet cable to the same network switch and attach the other end to the MGMT/IO port on controller 1.

3.  If the subsystem is dual controller, connect one end of an Ethernet cable to the same network switch and attach the other end to the MGMT/IO port on controller 2.

*Vess R3600i management path connections*

Vess R3600i



1000BASE-T Switch

Administrator

---
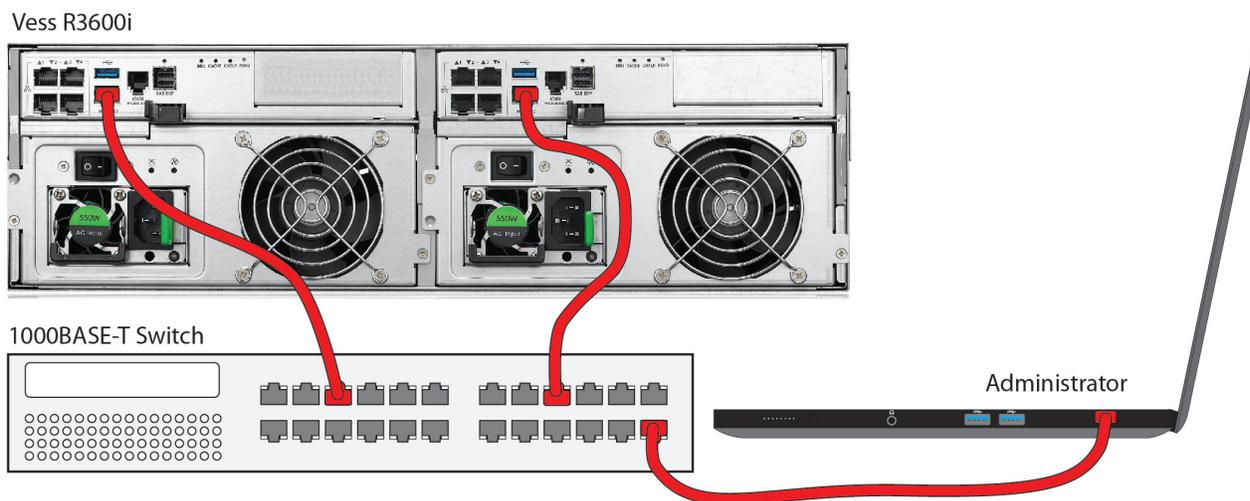
**Note**

The RJ-45 network management ports on a Vess R3600 Series subsystem share the same Virtual IP address. The default Virtual IP address, 10.0.0.1, applies to the RJ-45 network port (MGMT/IO) on both controllers. If you change the Virtual IP address, the change applies to both network management ports.

# Making Data Connections

Follow the instructions below for the type of controller used on your Vess R3600 subsystem.

## iSCSI Options

The Vess R3600 Series includes various options for iSCSI networks. All Vess R3600 controllers, including the Vess R3604fi, include four 1000BASE-T ports. The iSCSI data options for each of the available controllers are as follows:

- Vess R3600i and Vess R3604fi: four 1000BASE-T ports
- Vess R3600ti: four 1000BASE-T plus two 10G BASE-T ports
- Vess R3600xi: four 1000BASE-T plus two 10G SFP+ ports

## 1000 BASE-T iSCSI SAN connections

All Vess R3600 models include four 1GbE IO ports. For the 1000BASE-T iSCSI storage network:

Connect suitable network cables (Cat-5e or Cat-6 Ethernet cable) between the one or both 1GbE IO ports on one or both controllers to the 1000BASE-T network switch used for the iSCSI SAN. If you have multiple Vess R3600 subsystems, repeat the cabling setup procedure as required.

# 10G BASE-T iSCSI SAN connections

For the 10G BASE-T iSCSI storage network:

Connect suitable network cables (Cat-6 or Cat-7 Ethernet cable) between the one or both 10G ports on one or both controllers to the 10G network switch used for the iSCSI SAN. If you have multiple Vess R3600ti subsystems, repeat the cabling setup procedure as required.

*Vess R3600ti 10G iSCSI connections*

# SFP+ Fiber Optic iSCSI

The Fiber Optic data network for the Vess R3600xi controller requires the following items:

• An SFP+ connection in each host PC or server

• An SFP+ transceiver for every SFP+ port in the connection (subsystem, switch, HBA)

• An SFP+ switch (not required for direct attached connection)

• Fiber Optic cabling (LC/LC 62.5/125μm  MMF)

**Vess R3600xi SFP+ iSCSI connections**

> **Important**
>
> For a list of supported HBAs, switches, and SFP transceivers, download the latest compatibility list from PROMISE support:
> http://www.promise.com/support

## *SFP+ Fiber Optic connections*

For the Fiber Optic storage network:

1. Connect Fibre Optic cables between the Fibre Optic ports on the server and the Fibre Optic ports on the SFP+ switch.

2. Connect Fiber Optic cables between the Fiber Optic port on the Vess R3600xi controller and a Fiber Optic port on a SFP+ switch.

   If you have multiple Vess R3600xi subsystems, host PCs or servers, repeat the steps as required.

For *Direct Attached* SFP+ Fiber Optic storage:

1. Connect Fiber Optic cable to the Fiber Optic port on the host PC or server.

2. Connect the other end of the Fiber Optic cables to the SFP+ Fiber Optic port on the Vess R3600xi controller.

# Fibre Channel SAN data path

The Vess R3604fi features 16Gb Fibre Channel. The Fibre Channel data network requires the following items:

• A Fibre Channel connection in each host PC or server

• An SFP transceiver for every SFP (Fibre Channel) port in the connection (subsystem, switch, HBA), **16Gb SFP transceivers are recommended for best performance.**

• A Fiber Channel switch (not required for direct attached connection)

• Fiber Optic cabling

### *Vess R3604fi Fiber Channel SAN data connections*
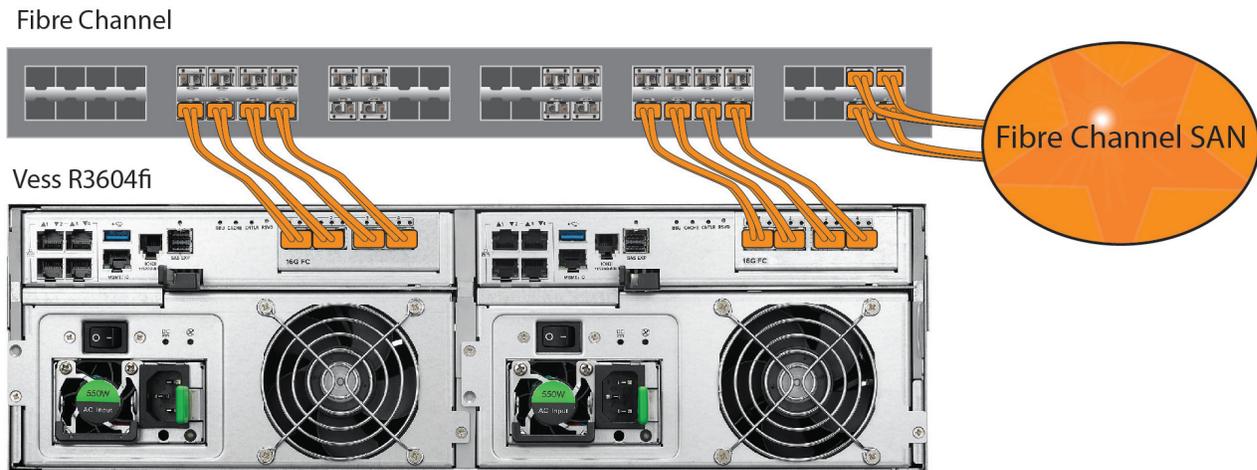


## *Fibre Channel SAN connections*

For the 16Gb Fibre Channel storage area network (SAN):

1. For servers equipped with Fibre Channel HBA cards, connect Fiber Optic cables between the Fibre Channel ports in both host PCs or servers and the ports on a Fibre Channel network switch.

2. Connect Fiber Optic cables between the Fibre Channel port on the Vess R3604fi controllers and a Fibre Channel port on a Fibre Channel switch or Fibre Channel capable switch (SFP).

   If you have multiple Vess R3604fi subsystems, host PCs or servers, repeat the steps as required.

## *Fibre Channel DAS connections*

For 16Gb Fibre Channel direct attached storage (DAS):

1.  For each attached server or host PC, connect Fiber Optic cable to the Fibre Channel port on the host PC or server; **16Gb SFP transceivers are recommended for best performance.**

2.  Connect the other end of the Fiber Optic cable to a 16Gb Fibre Channel port on one of the Vess R3600 controllers.

### *Vess R3604fi DAS connection*

Fibre Channel data cable directly attached to server
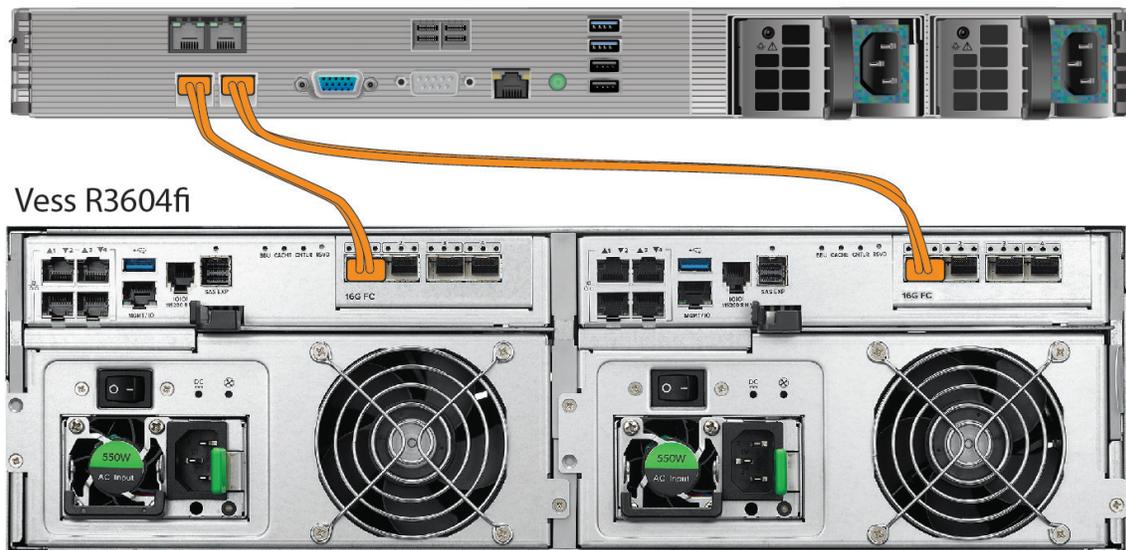
Vess R3604fi

## *Fiber Channel DAS data path*

The 16Gb Fibre Channel data connection for the Vess R3604fi controllers requires the following items:

•   A Fibre Channel connection in each host PC or server.

•   An Fibre Channel transceiver for each connected port on the subsystem.

•   Fiber Optic cabling (LC/LC 62.5/125μm  MMF)

# Vess R3600 with JBOD Expansion

JBOD expansion requires one SFF-8644 to SFF-8644 external SAS cable for each JBOD unit. The single controller Vess J3600sS is intended for use with the single controller Vess R3600 models, as well as the Vess A6000 Series and Vess A7000 Series models. Up to 12 Vess J3600sS unit can be used with each Vess R3600; up to 5 Vess J3600sS can be used with each Vess A6000 or Vess A7000 unit. The dual controller Vess J3600sSD can be used with dual controller Vess R3600 models.

For a cascading SAS connection to Vess R3600 models, use SFF-8644 external SAS cables to perform these tasks:

To add Vess J3600 Series units:

1. Connect the SAS expansion port on the left controller of the RAID subsystem to the SAS port on the left I/O module of the first Vess J3600 unit.

2. Connect the SAS expansion port on the right controller of the RAID subsystem to the SAS data port on the right I/O module of the first Vess J3600 unit.

3. Connect any remaining Vess J3600 units in the same manner.

Keep in mind the following points:

- Keep your data paths organized to ensure redundancy.
- JBOD expansion supports up to twelve Vess J3600 units.

> **Important**
>
> **Power on the JBOD units first**, when you are ready to power on the enclosures.
>
> Read the Vess J3600 Series Product Manual for information on the Vess J3600 Series enclosures.

# *Duel Controller Expansion with Vess R3600*

To setup a redundant JBOD cascading connection:

1. Use the SFF-8644 external SAS cable supplied with the Vess J3600sSD to connect the SAS port in left controller of the Vess R3600sD to a SAS port 1 of left controller on the uppermost Vess J3600sSD in the rack.

2. Connect SAS Port 2 of the left controller on the same Vess J3600sSD to the SAS  Port 1 of the left controller on the next Vess J3600sSD in the stack.

3. In the same manner, connect the SAS ports of the right controllers on the Vess R3600sD to the right controllers of the Vess J3600sSD in the stack.

4. Connect the remaining Vess J3600sSD enclosures in the same manner.

### **Vess R3600 with Vess J3600sSD JBOD expansion**
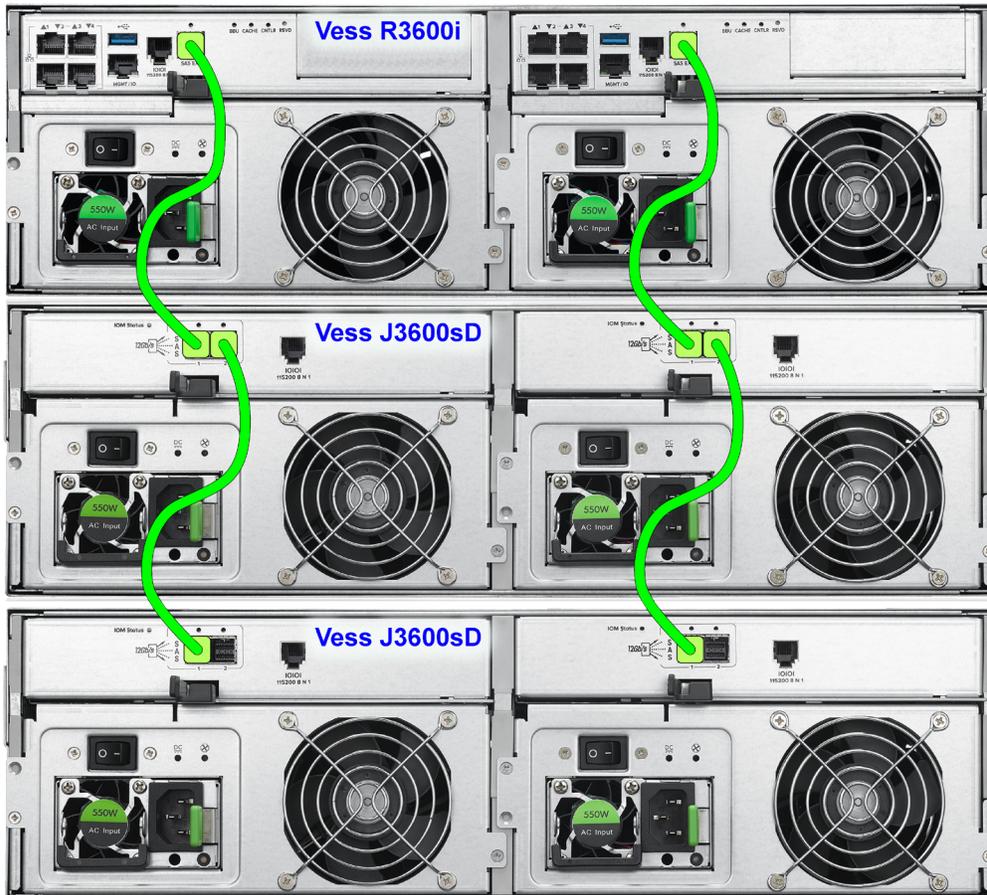
## *Single Controller Expansion with Vess R3600*

1. Connect the SFF-8644 SAS port in the host Vess R3600 system to SAS Port 1 on the uppermost Vess J3600sS unit in the rack.

2. Connect SAS Port 2 on the same Vess J3600sS to the SAS Port 1 on the next Vess J3600sS in the stack.

3. Connect the remaining Vess J3600sS enclosures in the same manner.

### *Vess R3600 with Vess J3600sSD JBOD expansion*
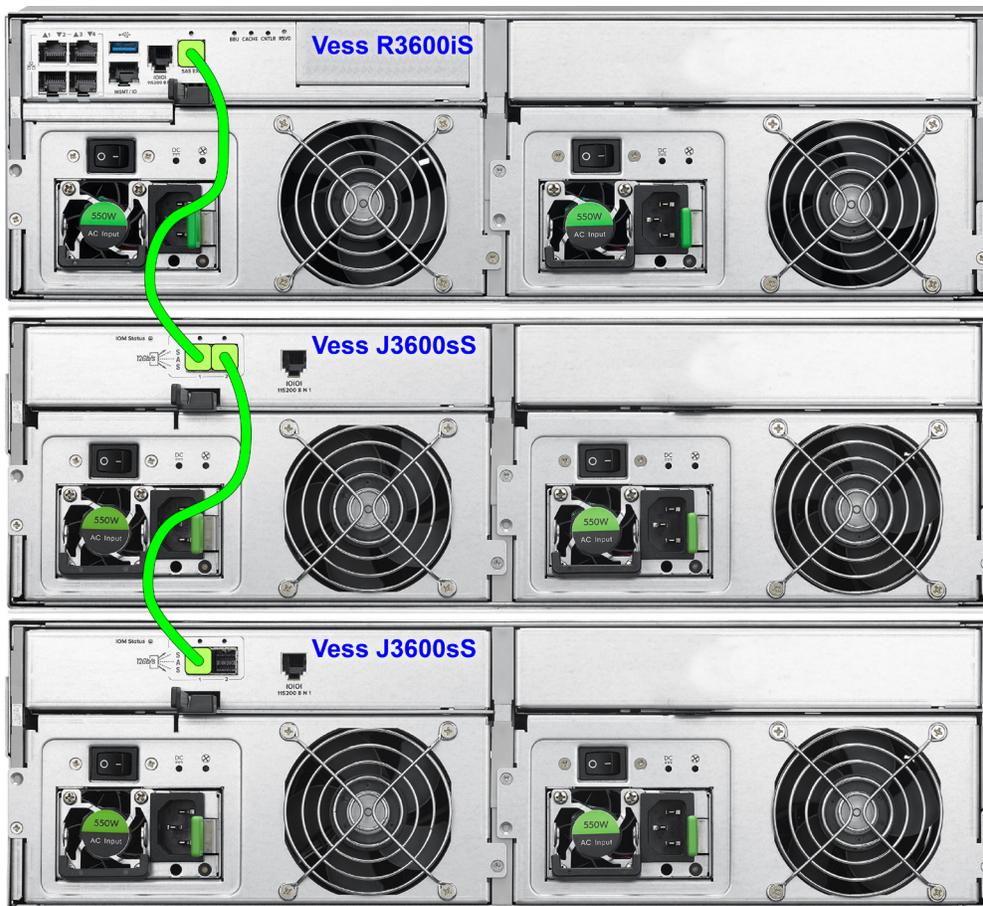


### Note

Please check the Vess J3600 Quick Start Guide for more setup options using the Vess A7000 and Vess A6000 Series.

# Connecting the Power

Vess R3600 and Vess J3600 enclosures are equipped with two power supply units (PSU) for each enclosure; each PSU has its own ON/OFF switch. Connect both power supplies to a suitable power source.

# Power on

With the power supplies connected, the system(s) can now be powered on. The power supply modules include the cooling fans that cool the enclosure. Both power supplies should be powered up when starting the system. Make sure the power switch on each power supply is in the On position.

If you are using Vess J3600 JBOD enclosures, power these units on BEFORE powering on the Vess R3600 enclosure. To power on the Vess J3600, toggle the power switch on each PSU to the ON position. See "Vess R3600 Power Supply Components" on page 39  for PSU description. To power on the Vess R3600 subsystem, press the Power button on the front left bracket facing (see illustration below). Observe the LEDs on the right front bracket facing.

**Important**

**If you are using the Vess J3600 JBOD enclosure, power the JBODs on first.**

*Power button on front left of Vess R3600*



Power button
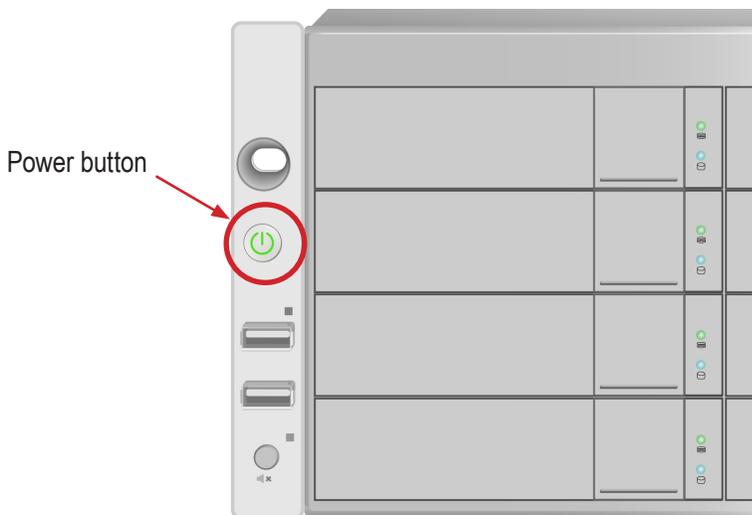
# Front LED Behavior

When boot-up is finished and the Vess R3600 subsystem is functioning normally:

- Power, FRU and Logical Drive LEDs display Green continuously

- Controller Activity LED flashes Green when there is controller activity.

- System Heartbeat LED blinks Green once per second for five seconds, then goes dark for ten secondes, then repeats the same pattern.

Also on the front panel, there are two LEDs on each drive carrier. These report the presence of power and a physical drive, and the current condition of the drive. See table on next page for complete description of LEDs on front right of Vess R3600 .

*LED indicators on front right of Vess R3600 enclosure*
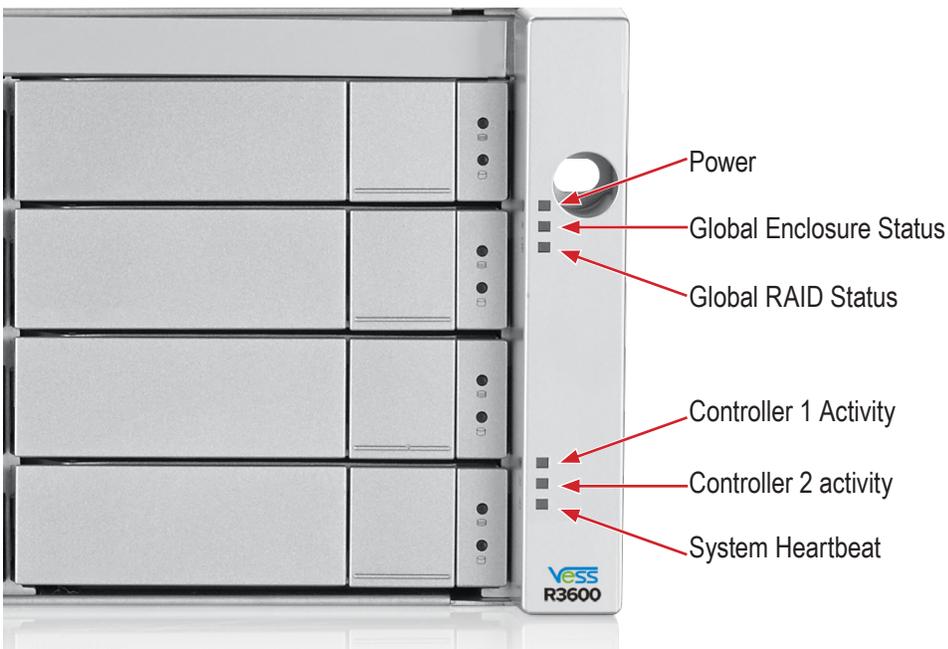
Vess R3600 front right LED Behavior After Boot Up

| LED | Status | Description |
|---|---|---|
| **Power** | Off | System power off |
| | Blue | System power on |
| **Global Enclosure Status** | Off | System power off |
| | Green | OK, healthy |
| | Amber | Malfunction |
| | Red | Critical/Failure (Check the PSU and controller LEDs on the back of the Vess enclosure). |
| **Global RAID Status** | Off | System power off |
| | Green | Normal |
| | Amber | Critical |
| | Red | Offline |
| **Controller 1 Activity** | Off | Controller not present |
| | Steady Blue | Any FC or Network port is linked with no I/O activity |
| | Blinking Blue | I/O running |
| **Controller 2 Activity** | Off | Controller not present |
| | Steady Blue | Any FC or Network port is linked with no I/O activity |
| | Blinking Blue | I/O running |
| **Heartbeat** | Off | System power off |
| | Blinking Blue | Blinks once per two second interval for dual controller enclosure; blinks once per four second interval for single controller enclosure |

**LED indicators on front right of Vess J3600 enclosure**



Reserved
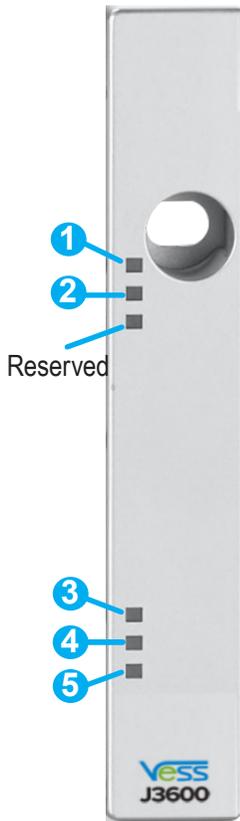
| | LED name | Status | Description |
|---|---|---|---|
| 1 | Power | OFF | System Power Off |
| | | Blue | System Power On |
| 2 | Global Enclosure Status | Off | System Power Off |
| | | Green | OK/Healthy |
| | | Amber | Malfunction |
| | | Red | Critical |
| 3 | I/O module 1 activity | Off | No I/O |
| | | Steady Blue | No I/O and SAS expansion port is linked |
| | | Blink Blue | I/O Running |
| 4 | I/O module 2 activity | Off | No I/O |
| | | Steady Blue | No I/O and SAS expansion port is linked |
| | | Blink Blue | I/O Running |
| 5 | Heartbeat | Off | System Power Off |
| | | Blink Blue | IOM FW works.( Dual IOM blink every 2 sec, single IOM blink every 4 sec ) |

### *Disk Carrier LEDs*



The Vess spins up hard disk drives sequentially to minimize power draw during start-up. After a few moments:

- The Power/Activity LED displays blue when a physical drive is present.

- The Drive Status LED displays green when the physical drive is configured as a member of a disk array or

   as a spare. When the physical drive is unconfigured, the LED is dark.

Steady means the LED is on.

Blinking means a regular on/off pattern.

Flashing means intermittent and irregular on/off pattern.

Drive Status LED Behavior After Boot Up

| State | Power/Activity | Drive Status |
|---|---|---|
| Dark | No drive in carrier | Drive is not configured |
| Steady Blue | Drive in carrier | — |
| Flashing Blue | Activity on drive | — |
| Steady Green | — | Drive is configured |
| Blinking Green | — | Locator feature |
| Amber | — | Drive is rebuilding |
| Red | — | Drive error of failure |

\* Configured means the physical drive either belongs to an array or it is assigned as a spare drive.

## Vess R3600 Power Supply Components

The LEDs on the rear panel of the Vess R3600 include a single status LED on each power supply. These PSU status LED will light green to indicate normal operation. A red LED indicates a problem or unit failure. See the table below for more detailed PSU LED information.

### Status LED on Vess R3600 Power Supply



Power Switch  Power Switch LED  PSU Fan Status LED
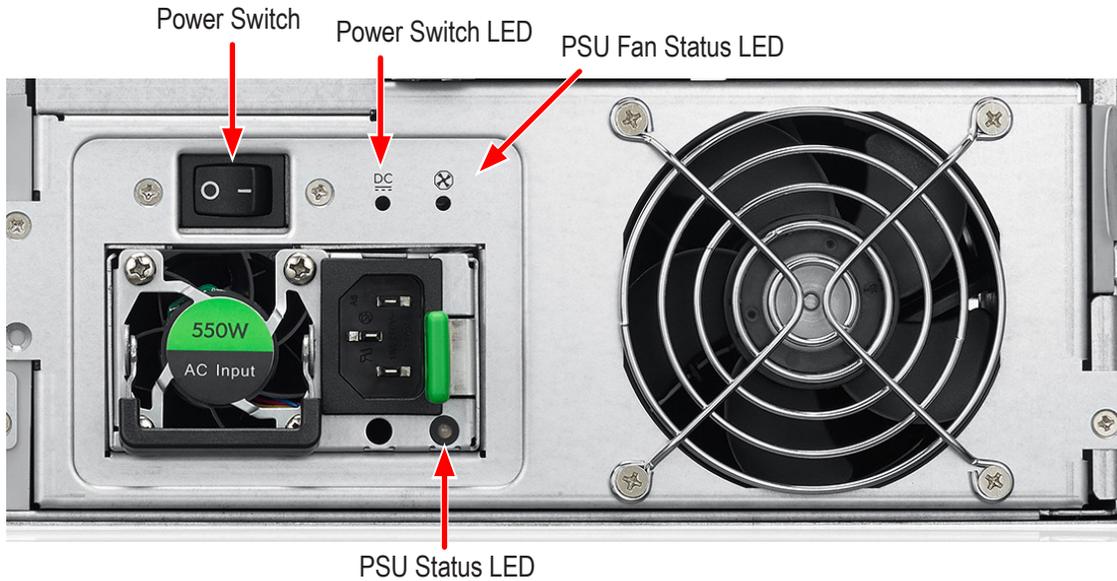
PSU Status LED

| LED | Status | Description |
|---|---|---|
| PSU Status LED | Off | Not detected |
| | On (Steady Green) | Normal |
| | Flashing Green | Power off and in standby mode |
| | Red | Failed |
| Power Switch LED | Off | Not detected |
| | Green | Normal |
| | Red | Failed |
| Fan Status LED | Off | Not detected |
| | Green | Normal |
| | | Failed |

# Controller LEDs

When boot-up is finished and the Vess R3600 subsystem is functioning normally:

- Controller status LEDs display green continuously.

- Ethernet LEDs display green or flash depending on your network connection.

- The SAS Expansion LEDs display green or flash during port activity.

*Vess R3600 Controller LEDs*
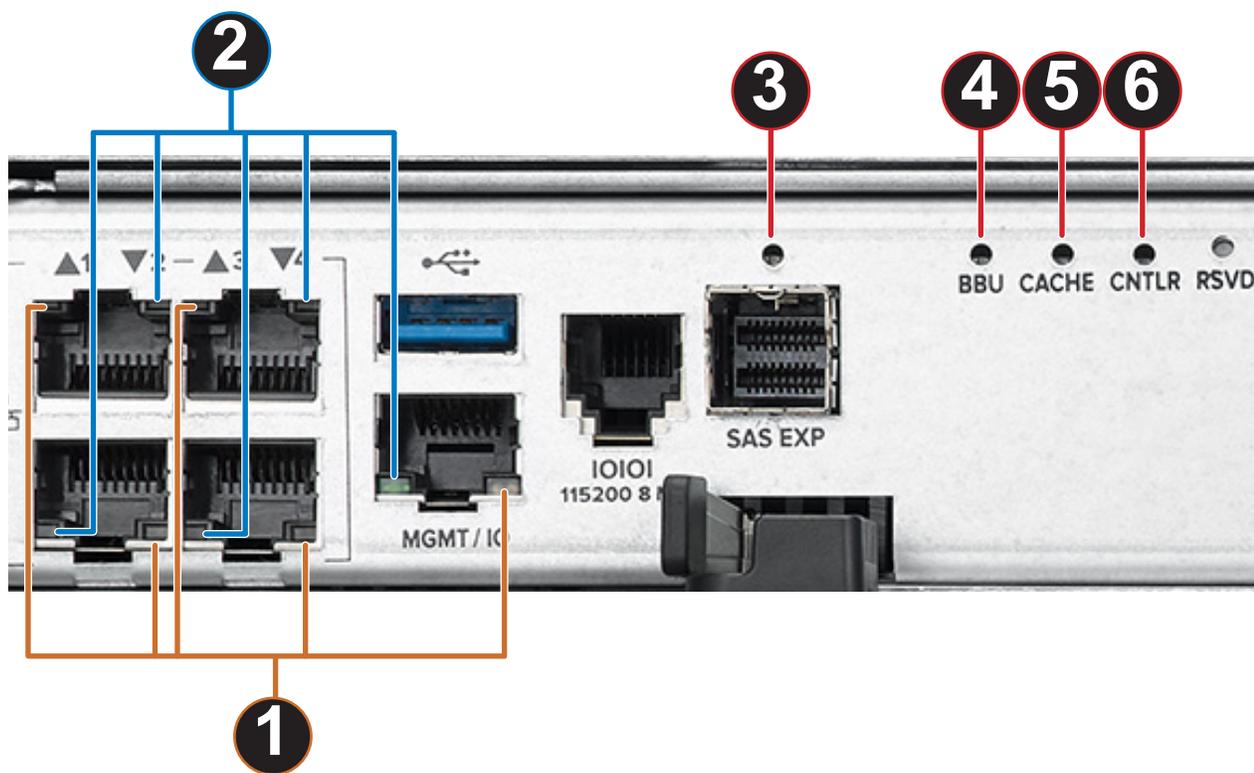


Please refer to table on next page for LED description.

## Controller LED Behavior

The table below describes behavior of the LED indicators on the Vess R3600 Series controller.

*Table below refers to Controller LED illustration on previous page*

| Item # | LED | Description |
| --- | --- | --- |
| 1 | Port Speed (1G I/O and Management ports) | Flashing amber indicates 100 Mb/s, flashing green indicates 1 Gb/s. Dark can mean 10 Mb/s or no link (check Link/Activity LED). |
| 2 | Link/Activity (1G I/O and Management ports) | Solid green light indicates a link. Flashing green light indicates activity. |
| 3 | SAS Expansion | This lights green when connected, and flash green when there is activity. |
| 4 | BBU | This lights steady green when the battery status is healthy (normal). Red indicates the battery has failed. A steady amber light indicates there is not enough reserve power in the battery to backup cache memory if the power fails. |
| 5 | Dirty Cache | Lights steady amber if cache is dirty, meaning that the controller memory cache contains data, otherwise this is dark. This will blink green when using the controller locator feature. |
| 6 | Controller Status | This displays the current operational status of the controller. A steady (unblinking) green light indicates the controller is operational. This will blink green when using the controller locator feature. A blinking amber light indicates a problem. Steady red light indicates controller failure. A flashing red light means the controller is in Maintenance Mode (offline while in Maintenance Mode). |

## 10G Port LED Behavior on Vess R3600xi and Vess R3600ti

| Model | LED/Description |
| --- | --- |
| Vess R3600xi | Two 10 Gb/s SFP+ iSCSI/NAS ports per controller. Two LEDs (Link/Act and Speed) are located above each port. The left LED lights green when connected, flashes green when there is activity on the port and remains dark no connection has been established. The LED on the right of each port indicates connection speed, green indicates 10 Gb/s, amber indicates 1 Gb/s. |
| Vess R3600ti | Two 10Gb/s BaseT iSCSI/NAS ports per controller. Two LEDs (Link/Act and Speed) are located above each port. The left LED lights green when connected, flashes green when there is activity on the port and remains dark no connection has been established. The LED on the right of each port indicates connection speed, green indicates 10 Gb/s, amber indicates 1 Gb/s. |

### *LED indicators for Fibre Channel ports on Vess R3604fi*
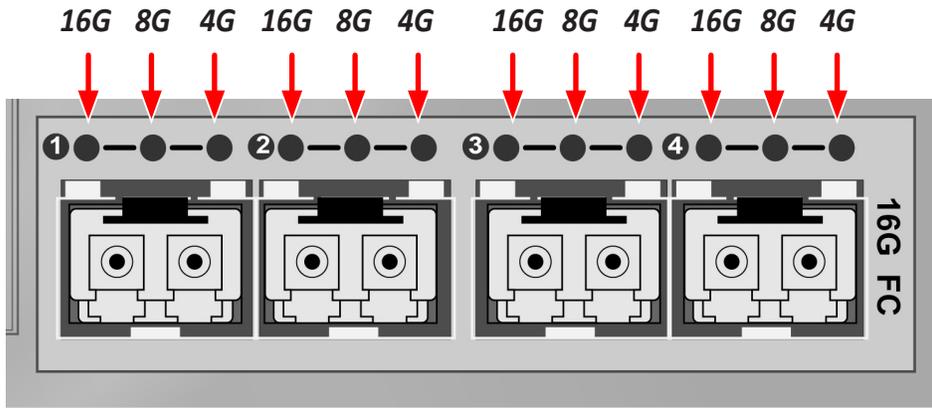


### *Fiber Channel Port LED behavior*

| LEDs | Power on (Before Firmware Initialization) | Power on (After Firmware Initialization) | Firmware Fault | 4 Gbps Link Up/ ACT | 8 Gbps Link Up/ ACT | 16 Gbps Link Up/ ACT |
|---|---|---|---|---|---|---|
| Green LED (16 Gbps) |  |  |  | Off | Off | On/Flash when active |
| Green LED (8 Gbps) | On | Flash | Flash in sequence | Off | On/Flash when active | Off |
| Green LED (4 Gbps) |  |  |  | On/Flash when active | Off | Off |

All Fibre Channel port LED indicators will be dark when the system is powered off. If all three indicators for a port flash simultaneously, then there is no SFP transceiver installed, or the wrong type of transceiver is installed, or the port is not connected.

### Vess J3600 Controller LEDs

IOM Status LED                    SFF-8644 SAS Expansion Port Link Status LED x 2
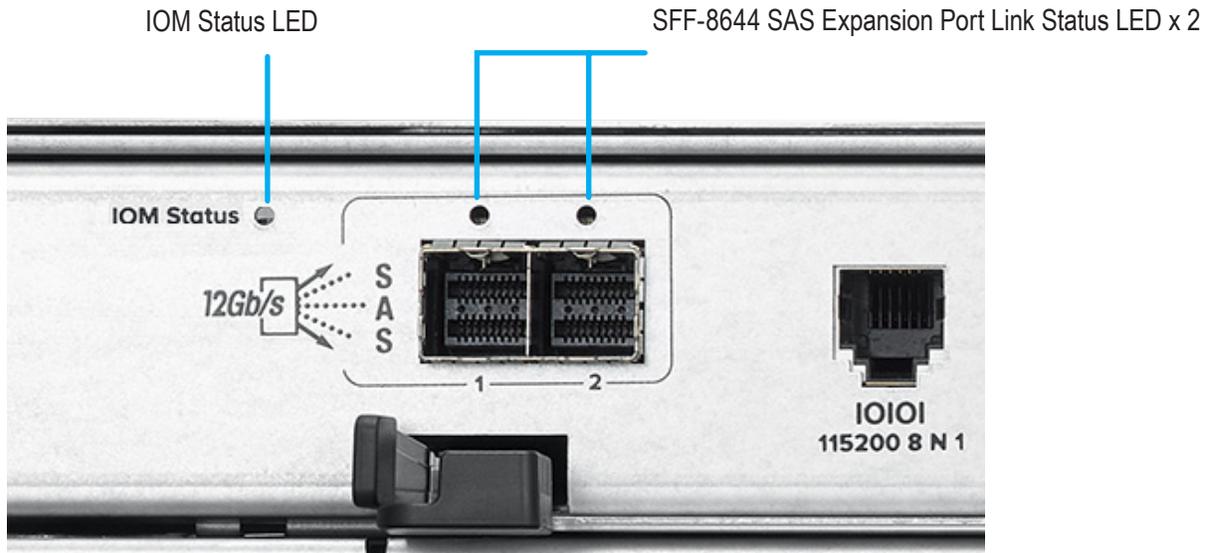


The table below describes behavior of the LED indicators on the Vess J3600 controller.

| LED name | Status | Description |
|---|---|---|
| IOM status LED | *Off* | Off |
| | *Green* | Ready |
| | *Red* | FW is not Ready |
| SFF-8644 SAS Expansion Port Link status LED | *Off* | Link down |
| | *On (Steady Green)* | Link up |
| | *Blinking Green* | Activity |

# Resetting the Default Password

This feature resets the Administrator's password to the default factory setting, password. Use this feature when you have forgotten Administrator's password or a new Administrator has been appointed.

The reset applies to the Administrator's login for WebPAM PROe and the CLI. No other user passwords are affected.

To reset the Administrator's default password:

1.  Verify that the Vess has fully booted.

2.  For one of the RAID controllers, locate the password reset switch. *See illustration below*.

3.  Insert a pin or a straightened paper clip into the opening and momentarily depress password reset switch.

You only need to press the reset switch on one RAID controller.

The next time the Administrator logs in, use the default password: **password**.

|  | **Important** |
|---|---|
| ✓ | **PROMISE recommends that you change the Administrator's default password immediately after reset.** |

# WEBPAM PROE - SYSTEM CONFIGURATION

This chapter describes system configuration using WebPAM PROe. The information is presented in approximately the same order the links for the menus appear in the WebPAM PROe user interface. The menus, submenus and other configuration information includes the following:

- Logging into WebPAM PROe

- Viewing the Storage Network

- Dashboard

- Creating a Shared Storage Pool

- Creating a Volume

- Creating a NAS Share

- Management User

- Device

- Managing Initiators

- Managing iSCSI Connections

- Using the Event Viewer

- Managing Users

- Managing Background Activities

# LOGGING INTO WEBPAM PROE

1.  Launch your browser.

2.  In the browser address field, type in the virtual management port IP address of the Vess R3600
    subsystem.

    Use the IP address you set in the CLI.

    Note that WebPAM PROe requires a secure HTTP connection (i.e. https://). For example, if your

    Vess R3600 has an IP address: 10.0.0.1 your entry looks like this:  **https://10.0.0.1**

3.  When the login screen 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.

4.  Optional. Choose a display language from the drop-down menu.

    WebPAM PROe displays in English and Simplified Chinese.

5.  Click the **Login** button.

    After login, the WebPAM PROe main menu appears.

# Choosing the Display Language

WebPAM PROe displays in multiple languages. You choose the display language when you log in.

If you are already logged in and you want to change the display language:

1.  Click **Logout** at the top right corner of the screen.


    The Login screen appears.

2.  Click the Language drop-down menu and highlight the language you prefer.


    ***Login language selection menu***



3.  Reenter your user name and password.

4.  Click the **Login** button.


    WebPAM PROe opens in the language you chose.

# Perusing the Interface

The WebPAM PROe interface consists of a header and four tabs, each with specific functions.

- Header

    Top right corner of the window:

    - Event Notification
    - Save Service Report – Saves a detailed report to your Host PC
    - Name of logged-in user
    - Logout – Exits WebPAM PROe

    Use the pulldown menu (small telephone icon) to see these links:

    - Get Help – Accesses the Help Welcome screen
    - About – Information about WebPAM PROe
    - Contact Us – Technical support contact information

- Discovery tab (located in bottom left corner of WebPAM PROe window)
    - Displays other PROMISE RAID systems on your network
    - Enables direct login to other PROMISE RAID systems

The main information and configuration menus are as follows:

- Dashboard tab
    - Subsystem Health quick summary
    - Capacity Utilization summary
    - Performance graphic summary

- Pool tab
    - Create New Pool button (Setup Wizard)
    - Pool List (including Extend or Delete existing pool)
    - Cache (SSD cache configuration)
    - Spare Drive (including create or delete spare drive)

- Volume tab
    - Create New Volume button (Setup Wizard)
    - Volume List (including Delete, Export, and Un-export)
    - LUN Mapping & Masking
    - Periodic Snapshot

- NAS Share tab
  - Create New NAS Share
  - NAS Share List
  - Protocol
  - Periodic Snapshot

- NAS Account tab
  - NAS User (Create, delete, modify users)
  - NAS Group
  - Domain

- Device tab
  - Device Overview (Device status and information summary, NTP settings, Date and time setting, Subsystem restart and shutdown)
  - Device View (Front View, Back View, Topology)
  - Component List (Enclosure, Controller, Battery, Buzzer, summary and configuration)
  - Physical Drive (Physical drive information summary, Physical drive settings)
  - UPS (summary and configuration)
  - Initiator (summary, add or delete initiator)
  - Target (summary, add or delete target)
  - Network Management (summary and configuration for Port, Trunk, Portal and Global setting)
  - FC Management (Information and configuration for FC including: Node, Port, Statistics, Logged in initiator, Logged in target, Devices on fabric, SFP)
  - iSCSI Management (Information and configuration for iSCSI including: Target, Session, iSNS, Chap, Logged in devices)

- Administration tab
  - Events
  - Management User
  - Service
  - Performance Monitor
  - Image Version
  - License
  - Firmware Update
  - Background Activity
  - Restore Factory Default
  - Import/Export
  - Product Registration
  - Setup Wizard

*Web PAM PROe Main menu/Dashboard*
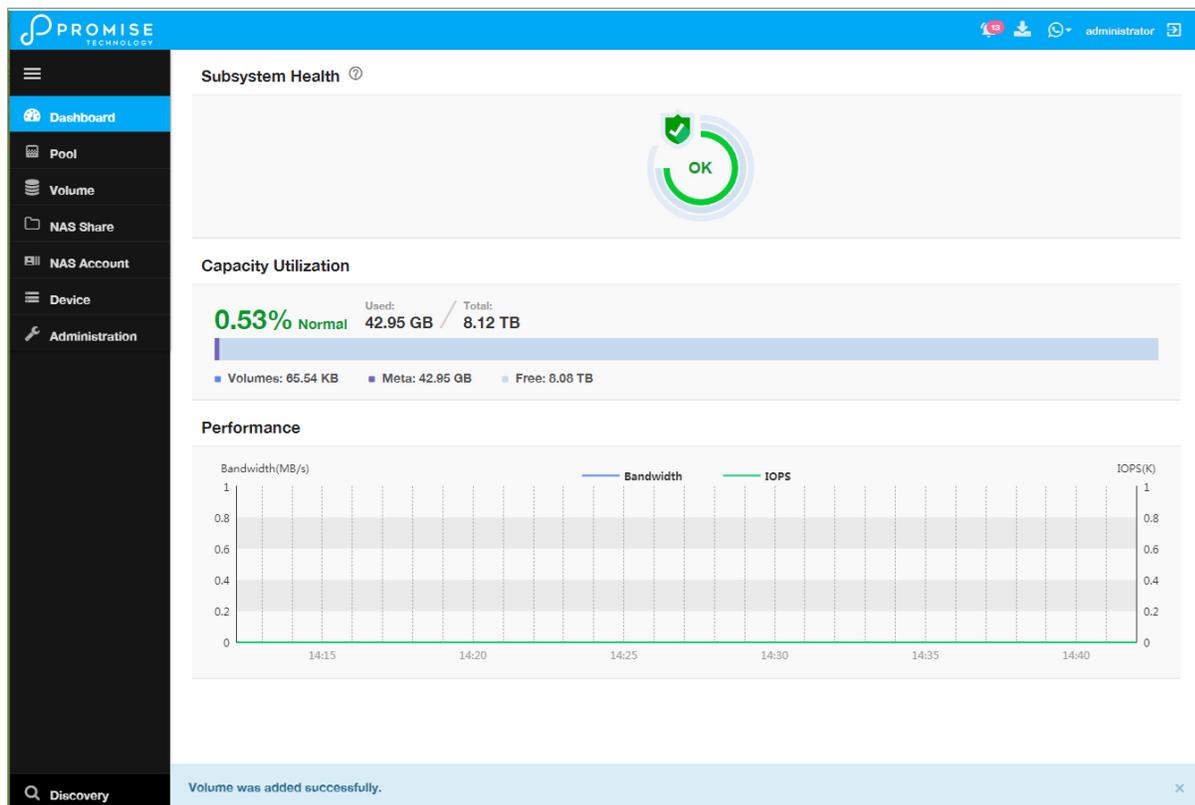


# Logging out of WebPAM PROe

There are two ways to log out of WebPAM PROe:

• Close your browser window

• Click the **Logout** icon in the upper right corner of the GUI

Clicking Logout brings you back to the Login Screen.

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

# License

Some advanced features such as the PerfectCloud (R3000 SR1.0, D5000 SR1.3), PerfectLock (R3000 SR1.0, D5000 SR1.3) and PerfectData features require a license to use. Please contact Promise Sales, channel partner, distributor to purchase perpetual license or acquire a trial license (free of charge for 60 days) for further evaluation.

To install acquired license, click on **Administration**, then the License menu link. Click on the **Choose File** button and locate the license file (format for license is .dat).

Click on **Upload** to begin importation of the license file. The Confirmation dialog menu appears, to continue importing the license file, you must confirm that you want to install the file by typing "Confirm" and clicking on the **Confirm** button. When the license is installed, you can go to the License menu to view the status of the license.

Please note the licensed services are not guaranteed to work normally when trial license or extended trial licensed expired. The delete operation is allowed, create operation is not.

To continue using the advanced features after the trial period, you can upgrade to a perpetual license. For more information on perpetual license and features included, please contact Promise Sales, channel partner or distributor.

*License menu*
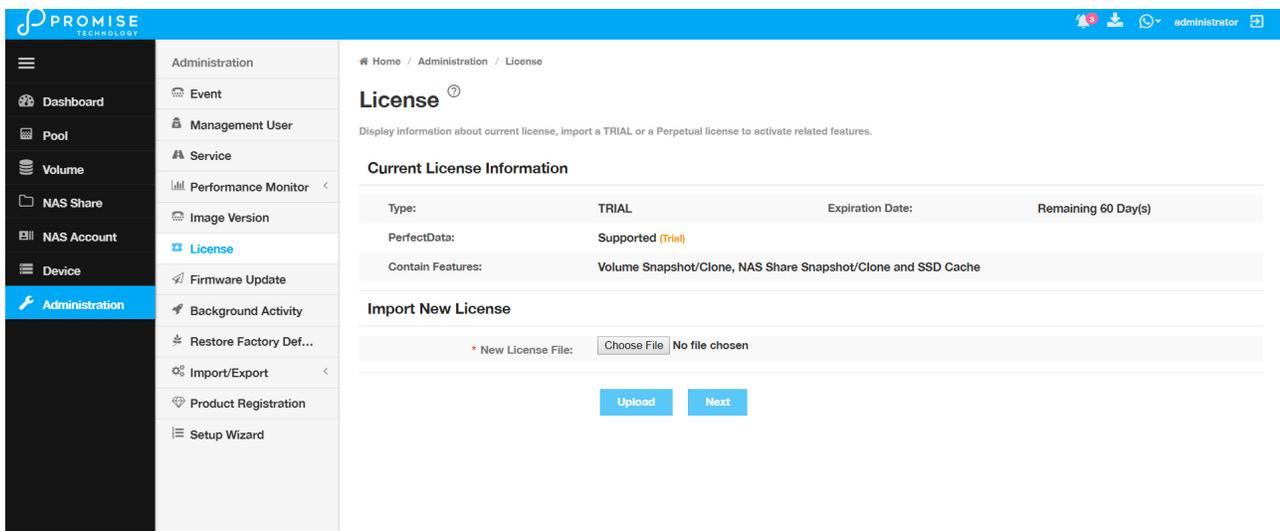
# VIEWING THE STORAGE NETWORK

To view the other subsystems on your Storage Network, click the **Discovery** button at the left bottom edge of

the WebPAM PROe window.

*Discovery menu in Main menu*
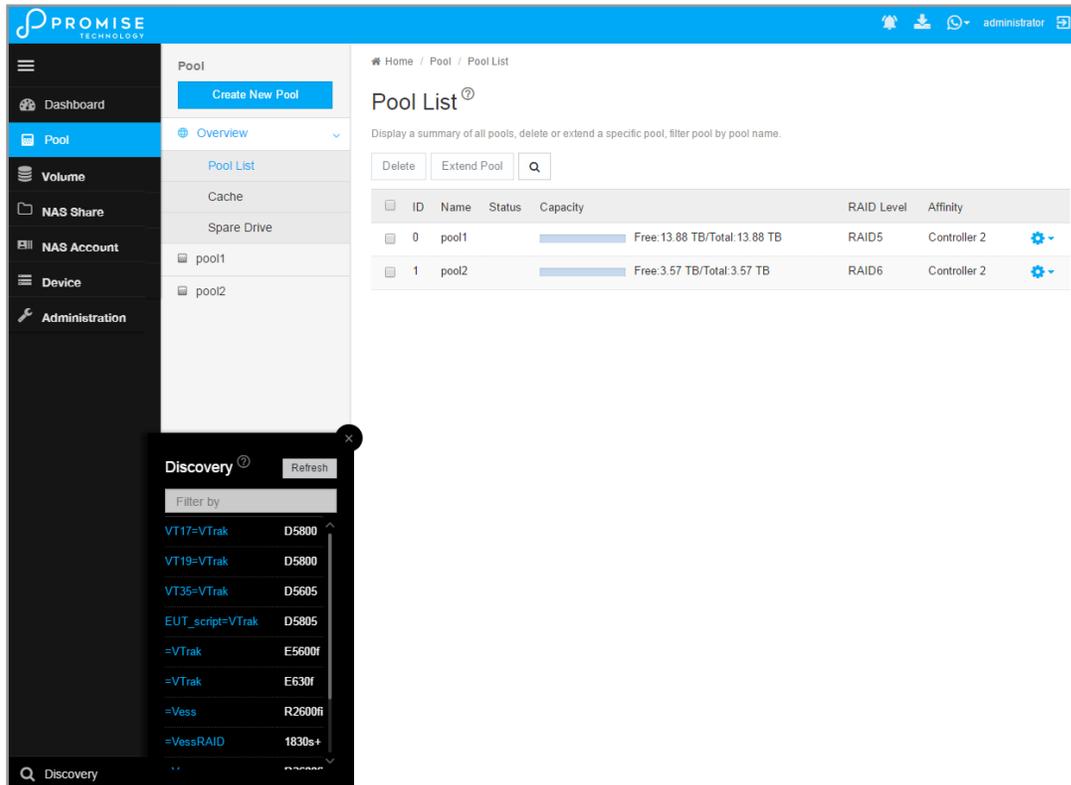


# Logging onto a Subsystem

To log onto a subsystem in the list, click on the IP address of that subsystem.



**Caution**

**The new subsystem displays in the same browser tab. Click your browser's back button to return to the original subsystem.**

# DASHBOARD

The Dashboard presents a quick system status overview, including graphs for storage capacity utilization, I/O performance and network bandwidth used.
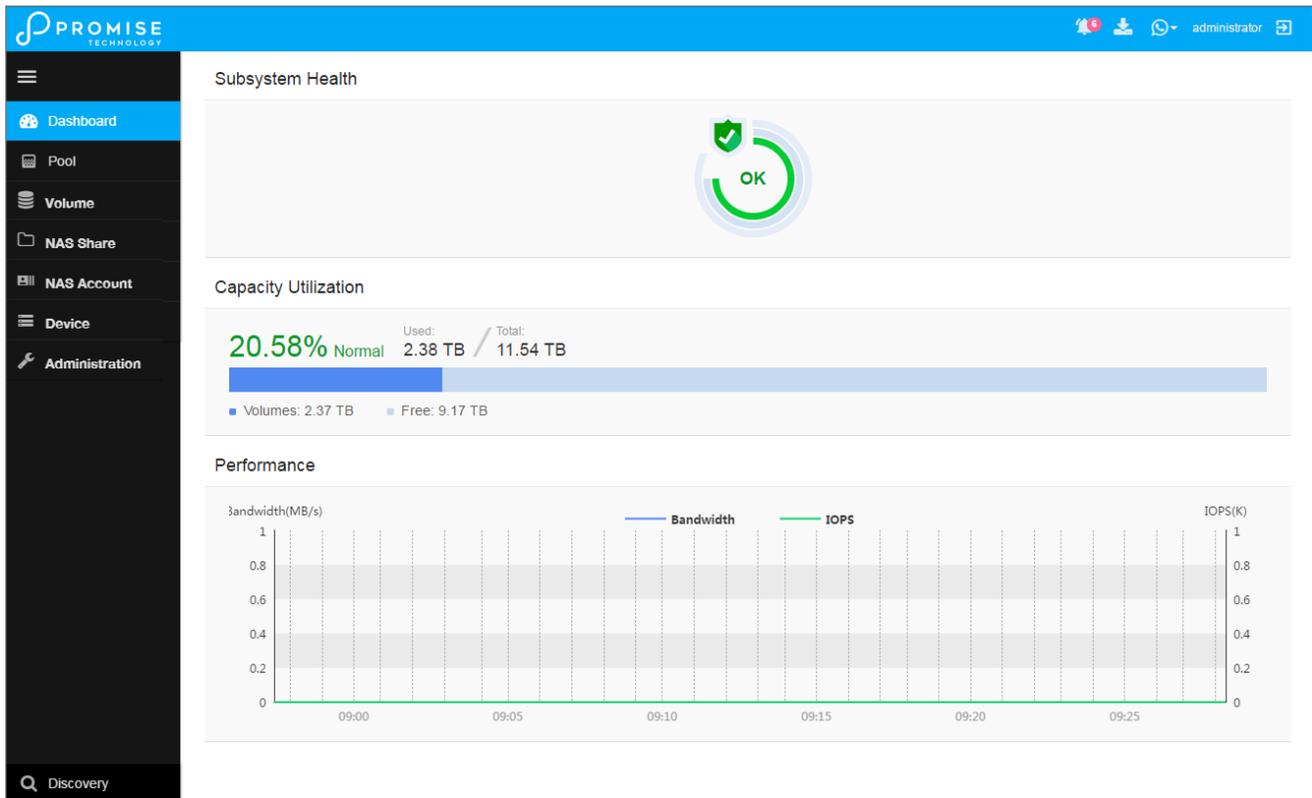


**Capacity Utilization**

A graph and numerical list of total available storage capacity, used capacity, size of existing volumes, storage used for snapshots, and free capacity.

**Performance**

A graphic summary of Bandwidth in MB/s and I/Os per second

**Dashboard with new events**

Click here to view
**Events** notices

Click here to
generate a
service report
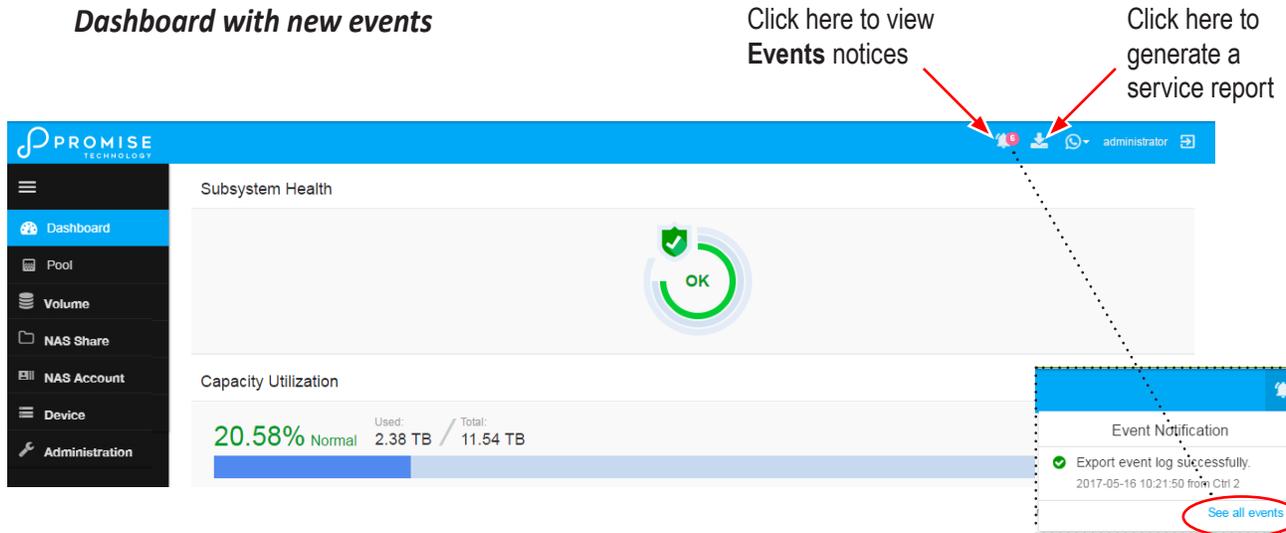


# Generating a Service Report

A Service Report is a detailed report covering the configuration and status of all components in your RAID system. A support technician or field engineer might request a service report for the purpose of diagnosis and troubleshooting.

To save a Service Report file:

1. Click the **Generate Service Report** in the Header (very top of the web interface, next to the *Events/Alarm* icon. It looks like a 'download' icon.).

   Information for the report is gathered and compiled. This action takes up to a few minutes, depending on the report size of your RAID system

2. In the **Save File** dialog, click the **Save** button.

   The report saves to your Host PC as a compressed HTML file.

3. Double-click the downloaded file to decompress it.

4. Double-click the report to open it in your default browser.

# CREATING A SHARED STORAGE POOL

The first step for provisioning storage capacity to client systems is create a storage pool. The storage pool is a storage resource consisting of a number of hard disks in a RAID configuration. Once created, a storage pool can be used for NAS sharing (see "Creating a NAS Share" on page 68) or create volumes for a SAN setup (see "Creating a Volume" on page 60).  Note that the Vess R3600 Series supports using NAS and SAN simultaneously. You can even allocate a portion of a disk pool for NAS Share, and another portion for SAN volumes.

After logging in, the Dashboard appears. Since the device is not yet configured, there will be little information in the Dashboard. The Dashboard is described in a later section once there is meaningful information to present.

To begin setting up the pool, you can click on the link in the middle of the menu, *Storage is not configured. Click here to create one*; or, click on the **Pool** menu icon in the left panel, then click the **Create Pool** button.

### *Dashboard*
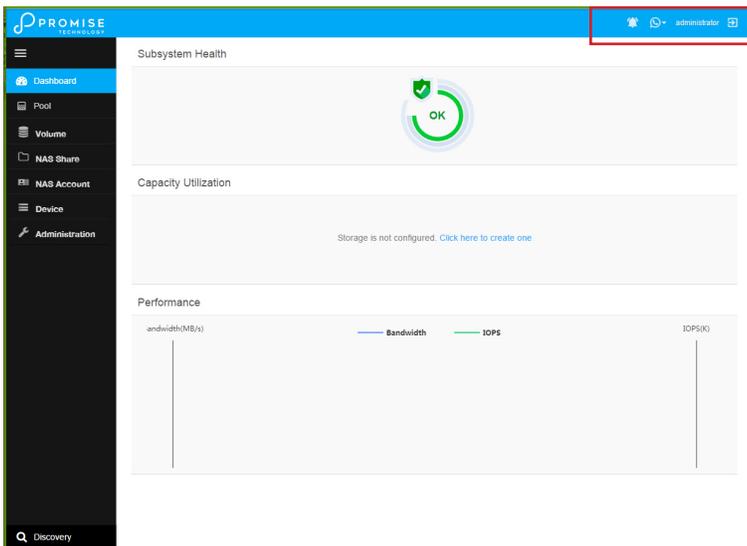


### *Create New Pool*
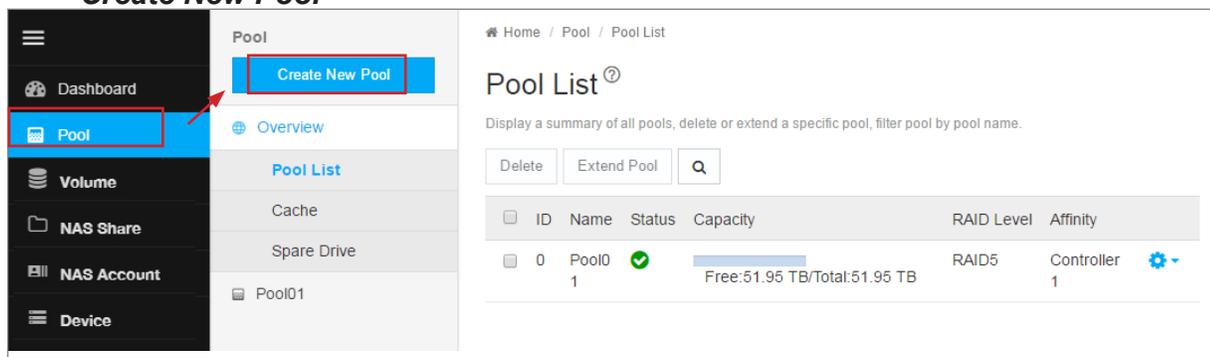
In the Create New Pool menu, click to select the available hard disks you want to be in the pool, the selected disks become darker in color to indicate selection. Type a name used for the pool, then choose the remaining parameters:

- ***Type*** (default = Advanced)

  *Advanced* - Allows use of advanced features such as Snapshot, Clone, Replicate, Migrate.

  *Standard* - Cannot use advanced management features.

- ***Media Type*** (HDD or SSD)

- ***RAID Level*** (RAID0, 1, 5, 6, 10, 50, and 60)

- ***Stripe Size*** (64 KB, 128 KB, 256 KB, 512 KB, and 1 MB)

- ***Sector Size*** (512 B, 1 KB, 2 KB, and 4 KB)

- ***Preferred Controller***

**Important**

Once the pool is created, these parameters cannot be edited or changed.

### Choose drives for new pool



Click on the **Submit** button to create the pool.

## *Pool List*

Storage pools are listed in the Pool List after creation. Use this menu to delete or extend a pool. To view more detail, click on the gear icon for the pool and select the *Detail* option. Note that, except of the pool name and preferred controller, pool parameters cannot be edited once it has been created.

To extend a pool, select it in the list and click on the **Extend** button. The Extend menu appears. If you want to add JBOD units, the Extend Pool procedure is used to add JBODs.

To delete a pool, select it and click the **Delete** button. You will need to confirm that you want to delete the pool in a pop-up menu. Type "confirm" and click the Confirm button to remove the pool. The drives in that pool revert to unassigned available status.

### *View current shared pool configuration*



# Extending a Storage Pool with JBOD

A storage pool can be extended if there are physical disks available in the original enclosure, or in a Vess J3600 JBOD connected via SAS cable to the Vess R3600 head unit. If you plan to expand capacity using JBODs, it is necessary to use the Extend Pool process for each JBOD added. You can add up to 12 JBOD units to one Vess R3600.

> **Important**
>
> For a RAID5 or RAID6 pool, there is a limit of 36 disks.
> It is possible to expand a storage pool across multiple enclosures, however this is not a best practice; and doing so requires using RAID50 or RAID60.

## *Creating Spare Drive*

Spare drives can be created at anytime, as long as there are unassigned drives available. The spare drive should be the same type (SSD or HDD) as the drives in the pool. Note that in this example, there is only one pool created, so the *Type* is irrelevant.

To create a spare drive, go to the Pool menu, and click **Create a Spare Drive**. Click to select an available hard disk, the selected disk become darker in color to indicate selection. Change the following spare drive options as desired:

- *Revertible* (reverts back to spare drive status after RAID is repaired or restored)

- *Type* (Global - available for any pool on the system, or Dedicated - assigned to specific pool)

- *Media* (HDD or SSD, must be same as pool)

Click on the **Submit** button to create the spare drive.

### *Create spare drive*
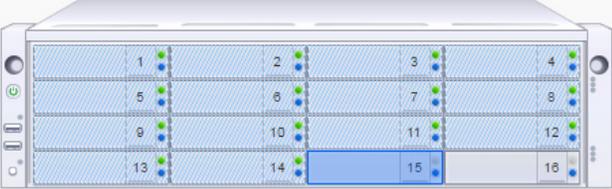
### Spare Drive List

Spare drives are listed in the Spare Drive list. Use this menu to delete a spare drive or to view more details about a spare drive. Click the gear icon and select *Detail* to view information about a spare drive.

To delete a spare drive, select it in the list and click on the **Delete** button. You will need to confirm that you want to delete the spare drive in a pop-up menu. Type "confirm" and click the Confirm button to remove the spare drive. The drive status reverts to an unassigned available drive.

#### *View spare drives*

# CREATING A VOLUME

Now that we have a storage pool, we can create volumes in the pool. The main decision for volumes is whether to use thin or full provisioning. Thin provisioning allows for creation of volumes which have a total cumulative capacity that is greater than the physical capacity available for the pool. Thin provisioning might not be appropriate for certain applications. So plan your storage utilization carefully.

To create a new volume, go to the **Volume** menu, click the **Create New Volume** button, and **Create Volume** menu appears.

***Create new volume***
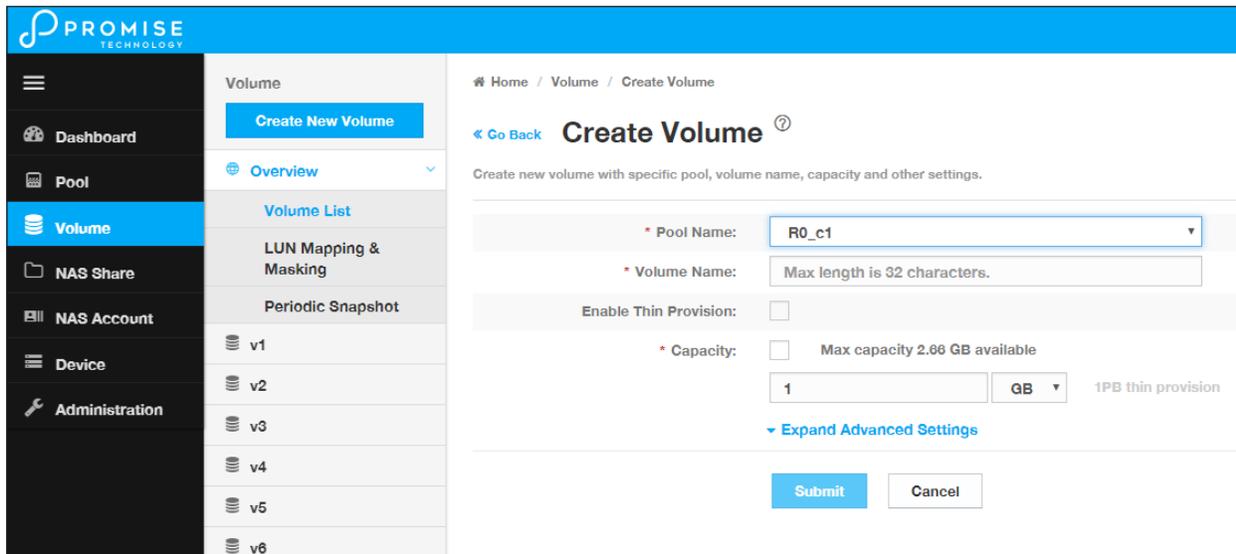


In the Create Volume menu, enter a name for the new volume, and click the *Enable Thin Provisioning* option if you plan to use thin provisioning on this pool.

Next, enter a value for the volume capacity, note that you need to specify *TB* or *GB* in a separate pull-down menu. Click on the **Submit** button to create the new volume. This volume should now appear listed in the **Volume List**. Volumes are exported by default. An exported volume becomes available for sharing on the storage network. To Un-export a volume, use the Volume list menu.

# Volume List

Use the Volume List menu to *Un-export*, *Export*, or *Delete* existing volumes. Also, this is where you can link to *LUN Mapping and Masking* to enable it.

To view more detailed information for a volume, you can either click the gear icon for the volume and select the *Detail* option, or click on the volume name in the left panel under *Overview*. Use the individual volume menu to link to the **Snapshot** and **Clone** menus.

### Volume List



### Individual volume information

# *Snapshots*

A volume snapshot is used to capture a read-only copy of the volume status at the time the snapshot is created. The snapshot is saved in case it is necessary to revert back to the volume status at the time of the snapshot for disaster recovery. This is called a rollback.

Rolling back to a previous snapshot will discard all data changes that have occurred between the time of the snapshot and the current time.

Snapshots and clones are a quick and low cost (in terms of capacity used) means of backing up a volume for the purpose of recovery.

To create a volume snapshot, click on the volume name in the left panel, click the **Snapshot & Clone** button, *you will see the Snapshot & Clone list*, then click the **Create Snapshot** button.

**Create Snapshot**



In the Create Snapshot menu, enter a name for the snapshot and click the **Submit** button. The snapshot will appear listed  Snapshot and Clone list.

## *Clones*

A clone is created from a snapshot as a means of backing up the snapshot. If you intend to delete a snapshot that has a clone, you must first delete the clone.

To create a snapshot clone, first create the snapshot, select it in the Snapshot & Clone list, click on the **Create Clone** button.

> ### *Create Clone*



In the Create Clone menu, enter a name for the clone and click the **Submit** button.

## *Snapshots*

To rollback using a snapshot, select the snapshot, click on the gear icon, and choose the *Rollback Snapshot* option. You are required to confirm that you want to rollback using the snapshot in a pop-up menu. Type "confirm" and click on the **Confirm** button to proceed with the rollback. Remember, any changes in the volume that have occurred since the snapshot will be lost.

**Rollback Snapshot**

# LUN Mapping and Masking

This feature applies to Fibre Channel SAN and iSCSI subsystems and controls user access to storage resources.

- LUN Mapping – Maps a LUN to an initiator; a LUN can be mapped to multiple initiators.

- LUN Masking – The process of applying a LUN Map.

To access LUN mapping:

1. Click the **Volume** tab.

2. Under **Overview**, click the **LUN Mapping & Masking** menu link.

To enable or disable LUN Masking, click on the **Enable LUN Masking** slider to toggle on LUN masking.

## *Adding a LUN Map*

For Fibre Channel and iSCSI (SAN) systems, you can set up an Initiator LUN map.

A maximum of 256 logical drives can be mapped to a Fibre Channel initiator.

To assign a LUN to an initiator, the initiator must have been previously added to the initiator list.

To add a LUN map:

1. Click the **Volume** tab.

2. Click on **LUN Mapping & Masking**.

3. Click the **LUN Mapping** button. (See sample menu on next page)

4. In the LUN Mapping menu, the Initiators appear on the left side with volumes (including snapshots and clones) on the right. Use this menu to select a volume or volumes to assign to an initiator. Click the box to select an ID number of existing volumes, snapshots or clones in the right side, and use the arrow transfer button to assign them to the preferred initiator.

5. Click the **Submit** button.

   The new LUN map is created.

6. By default, LUN Mapping & Masking is not enabled. To use LUN Mapping & Masking, it must be enabled in the LUN Mapping & Masking tab.

### LUN Mapping
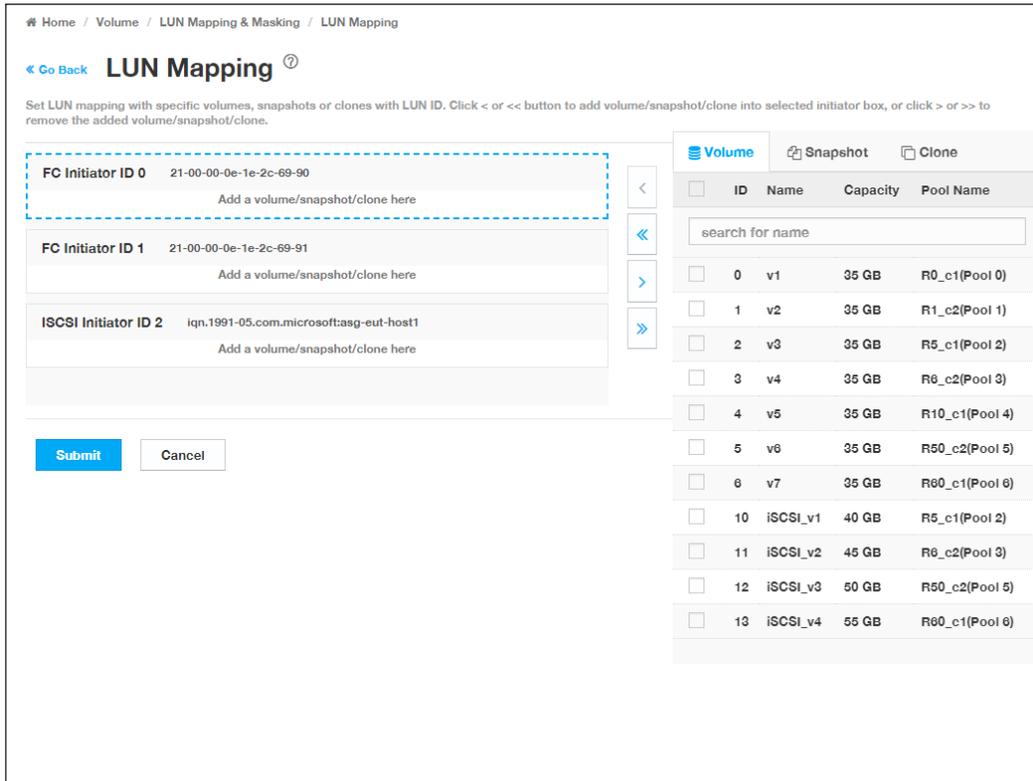


# Editing a LUN Map

Editing a LUN map is the action of assigning a logical drive or LUN to an initiator. By changing the assignment, you change the initiator's access.

To edit a LUN map:

1. Click the **Volume** tab.

2. Click on **LUN Mapping & Masking**.

3. Select the LUN to be edited.

4. Click on the **Gear** icon and select the *Modify* option.

5. To remove a volume from an initiator, click to select a Volume on the left side, and use the arrow transfer button to remove the volume from the initiator. To add a volume, Click the box to select an ID number of existing volumes in the right side, and use the arrow transfer button to assign the volume to the preferred initiator.

6. Click the **Submit** button.

   The modified LUN map is created.

**LUN Mapping & Masking**



## *Deleting a LUN Map*

Deleting a LUN map prevents the initiator from accessing the LUN while LUN masking is enabled.

To delete a LUN map:

1. Click the **Volume** tab.

2. Click on **LUN Mapping & Masking**.

   The list of LUN maps appears.

3. Click to select the LUN map you want, then click the **Gear** icon, and select the *Delete* option

4. In the Confirmation box, type the word "confirm" in the field provided and click the **Confirm** button.

## *Enabling and Disabling LUN Masking*

Disabling LUN masking allows all initiators to access all LUNs in your data storage. However, disabling LUN masking does not delete existing LUN maps.

These actions require **Administrator** or **Super User** privileges.

To enable or disable LUN masking:

1. Click the **Volume** tab.

2. Click on **LUN Mapping & Masking**.

3. Click on the **Enable LUN Masking** slider to toggle off (disable) or on (enable) LUN masking.

# CREATING A NAS SHARE

The procedure for creating a NAS Share includes first creating a storage pool (see "Creating a Shared Storage Pool" on page 55), then creating the NAS Share. You can set up protocols when creating the NAS Share, or change them after it is created. You also need to set up Users, User Groups and Domains.

Follow these instructions to create a new NAS Share:

1.  In the NAS Share menu, click on the **Create New NAS Share** button. A new menu appears.

*Create New NAS Share*



2.  Choose the **Pool Name** used for the new NAS share from the pull-down menu.

3.  Enter a name for the **NAS Share**.

4.  You have the option to **Enable Thin Provisioning** (default is not enabled). *Note that if you cannot use Thin Provisioning if you intend to use the Maximum available capacity for the NAS share. And if you do enable it, the NAS Share Capacity Utilization will appear to use up the entire space allotted for the NAS share (see next step) in the Dashboard menu.*

5.  Set the Capacity for the NAS Share. If you are not using Thin Provisioning, you have the option to use the

    Maximum capacity if you click the *Max capacity available* box. If you use Maximum capacity, this will use

    the entire capacity of the disk pool for the NAS share, therefore you cannot create another NAS share or

    a SAN volume on the disk pool used.

6.  Use the check boxes to select which Protocols to enable on the NAS share. Default settings are FTP,

    NFS, SMB, HTTP enabled. See "NAS Share Protocols" on page 71 for more details.

7.  Click the check box if you want to enable **Time Machine** for the NAS share. Default setting is not

    enabled.

8.  You can expand the menu to view the *Advanced Options*. Use this expanded menu to change **Recsize**

    and **Sync Mode**.

    Sync Mode options are as follows:

    > *Standard* -  means that synchronous share transactions, such as fsync, O_DSYNC, O_
    > SYNC, and so on, are written to the intent log.

    > *Always* - ensures that every share transaction is written and flushed to stable storage by a
    > returning system call. This value has a significant performance penalty.

    > *Disabled* - means that synchronous requests are disabled. Share transactions are only
    > committed to stable storage on the next transaction group commit, which might be after
    > many seconds. This value gives the best performance, with no risk of corrupting the pool.

    > Caution: This disabled value is dangerous because the filesystem is ignoring the synchro-
    > nous transaction demands of applications, such as databases or NFS operations. Setting
    > this value on the currently active root or via share might result in unexpected behavior,
    > application data loss, or increased vulnerability to replay attacks. You should only use this
    > value if you fully understand all the associated risks.

    > The default value is *Standard*.

9.  Click the **Submit** button to create the new NAS Share. The newly created NAS share appears in the NAS

    Share list.

# Viewing NAS Share Information

To view information on a NAS Share, select the NAS Share, click ont the gear icon and choose the View option.

Information displayed includes:

| | |
|---|---|
| • NAS Share ID | • NAS Share Name |
| • Pool Name | • Thin Provision status |
| • Recsize | • Mounted Status |
| • Used Capacity | • Total Capacity |
| • Preferred Controller ID | • Share Protocol Enabled |
| • Time Machine status | • Compression |
| • Logbias | • Sync Mode |
| • NFS Mount Point | |
| • Written Size after Last Snapshot | |
| • The Latest Snapshot & Clone | |

# NAS Share Protocols

FTP, NFS, SMB, and HTTP can be disabled or enabled when you set up the NAS share. After creating the NAS share, you can use the Modify NAS Share menu to enable or disable protocols, or enable/disable them and configure other settings using the menu specific to each protocol.

Click on the **Protocol** menu link to view the menu used for Settings. To enable/disable any protocol in the list, you can click to select the protocol and click on the **Enable** or **Disable** button at the top of the list; or click on the Gear icon and select the *Enable* or *Disable* option. A pop-up menu will ask you to confirm the protocol enable or disable action. Likewise, to access the **Settings** menu for any listed protocol, select the protocol in the list and click on the Settings button; or click on the Gear icon for the protocol and select the **Settings** option. The Settings menu for selected protocol appears. Any settings changes apply only to the individual NAS share setup. If you have more than one NAS share, the others are not affected and must be configured individiually to change protocol settings.

### NAS Protocol list
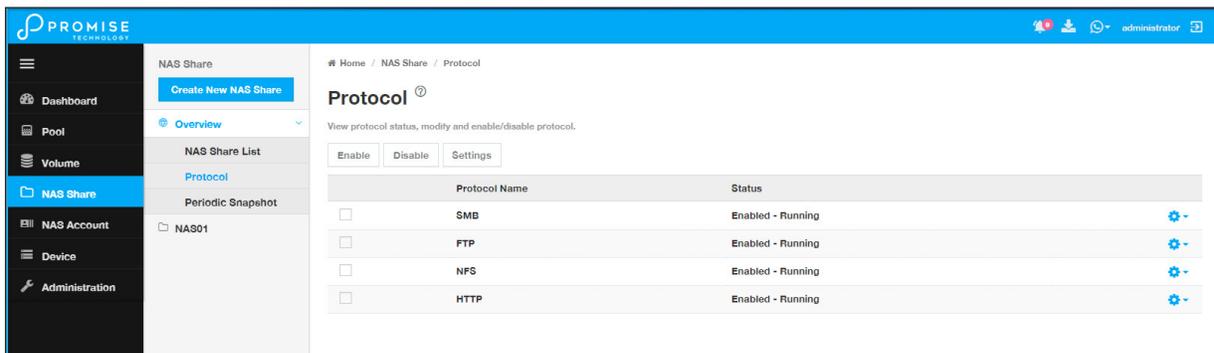
## *Changing SMB Settings*

To change the settings for SMB network protocol (Samba server) including enabling ACL authentication, on the selected NAS share, access the **SMB Settings** menu and configure the following:

- Enable/Disable: Click the **Enable** box to checkmark the box if you want to enable the SMB networking protocol. Click to remove the checkmark to disable SMB.

- Workgroup: Enter a name for the Workgroup for the server user group. Default is WORKGROUP.

- Description: Enter a description for the Samba server setup

- Windows ACL: If you will use ACL, enable it here by selecting the **Yes** radio button. See

*SMB Settings*



Click the **Save** button to change the SMB settings for the NAS share.

## *Changing FTP Settings*

To change the settings for FTP on the selected NAS share, access the **FTP Settings** menu and configure the following:

- Enable/Disable: Click the **Enable** box to checkmark the box if you want to enable the FTP protocol. Click to remove the checkmark to disable the protocol.

- Command Port: Change the port number used for FTP on the NAS share. Default is port 21.

- Client Code Type: Select the language input used for FTP commands.

- Protocol Type: Choose SFTP, Standard FTP, FTP over SSL (Explicit) or FTP over SSL (Implicit, Command Port 990)

- Maximum Download Rate (KB/s): Use to limit FTP download speed. Default is no limit.

- Maximum Upload Rate (KB/s): Use to limit FTP upload speed. Default is no limit.

### *FTP Settings*



Click the **Save** button to change the FTP settings for the NAS share.

## *Changing NFS Settings*

To change the settings for NFS on the selected NAS share, access the **NFS Settings** menu and configure the following:

- Enable/Disable: Click the **Enable** box to checkmark the box if you want to enable the NFS service. Click to remove the checkmark to disable NFS.

- Mounted Port: Change the port number used for mounting NFS serivce on the NAS share. Default is port 56789.

- Count: Change the count used for NFS service (8, 16, 32, 64 or 128). Default is 32.

Click the **Save** button to change the NFS settings for the NAS share.

Additional information listed in the NFS Settings menu includes port numbers for the port mapper, nfsd, rpc.statd and rpc. lockd.

### *NFS Settings*

## *Changing HTTP Settings*

To change the HTTP settings on the selected NAS share, access the **HTTP Settings** menu and configure the following:

- Enable/Disable: Click the **Enable** box to checkmark the box if you want to enable the HTTP service. Click to remove the checkmark to disable HTTP service.

- HTTP: Change the port number used for mounting HTTP serivce on the NAS share. Default is port 8088.

- HTTPS: Change the port number used for HTTPS service. Default is 8089.

*HTTP Settings*
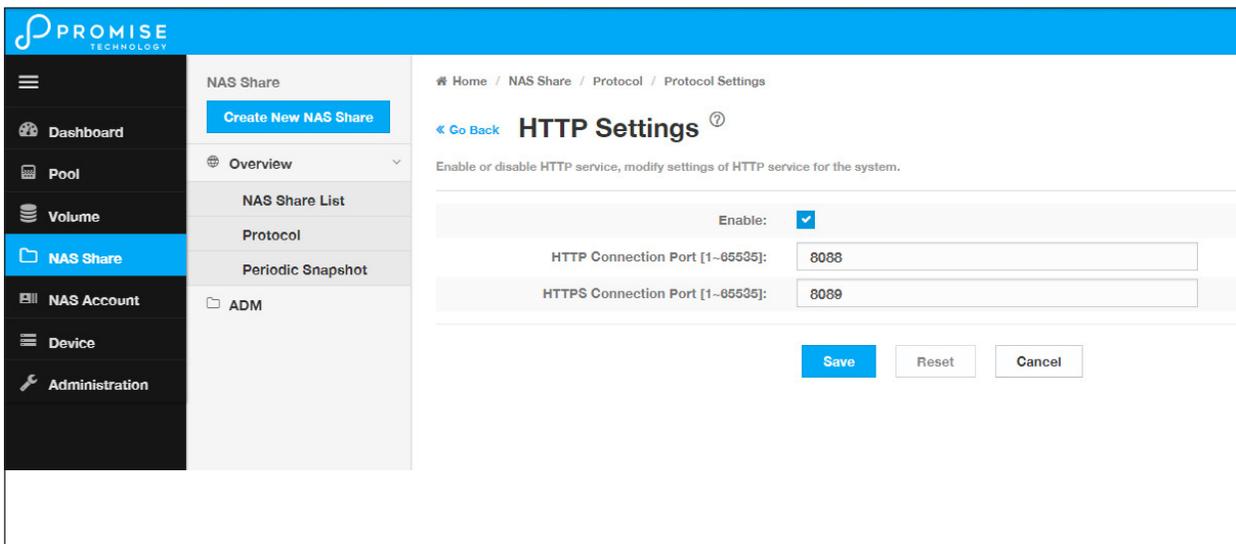
# Managing NAS Accounts

Management of NAS local and domain users and user groups, user permission settings and the Domain setting are done in the menus under the **NAS Account** tab. NAS users can be local or domain users. A user can be in multiple user groups.

*NAS User list (default list)*
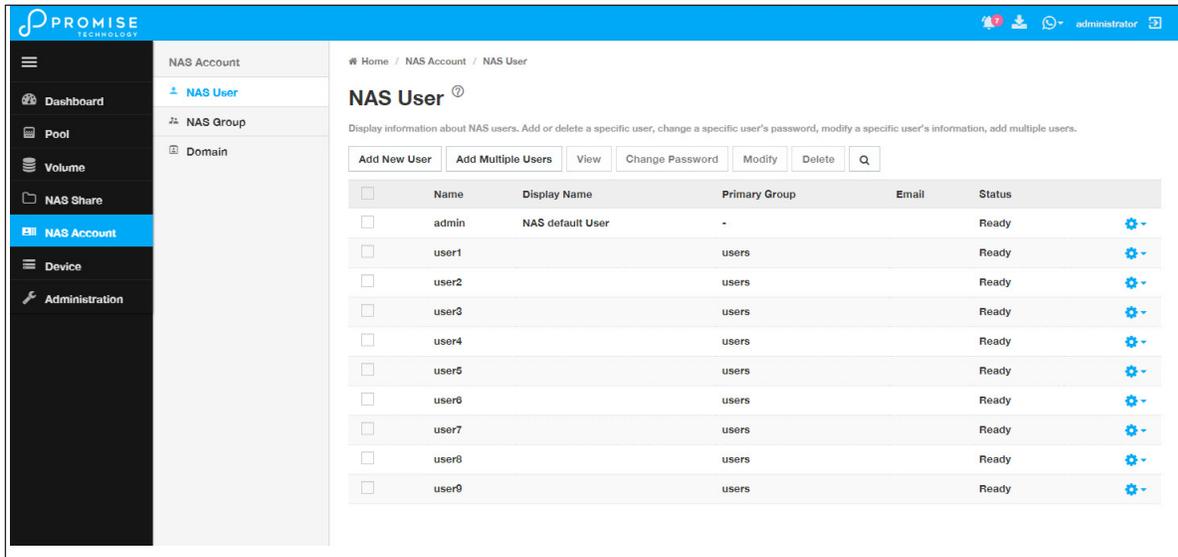


# Using the NAS User list

Access the NAS User menu, click on **NAS Account**, then **NAS User** to view the NAS User list. Use the list of current local users to view basic information, change the user password, change user settings or delete users. Use the search function is used to locate a user by name. To navigate the pages, click on the arrow symbols near the bottom of the menus to change the display, previous page, next page, first and last page. Use **Page Capacity** to determine how many rows of user or group information are displayed on the page. The Search function is used to locate a user by name. To search a name, type the name in the entry field and press **Enter**. For each of the user actions listed here, first click to check the box for the User in the list and move the cursor to the list row for the user, and click on the appropriate button (**View**, **Change Password**, **Modify**, **Delete**) to perform the action or display information; or click the Gear icon for the User in the list and select the appropropriate action from the menu.

### *To View NAS User information*

Click on the **View** button to display basic user information.

### *To change NAS User password*

1. Click **Change Password** button

2. Type the new password in the **Password** and again in the **Retype Password** entry fields.

3. Click the **Submit** button.

### *To remove a NAS User*

1. Click the **Delete** button.

2. Click the **Confirm** button.

# Add NAS Users

Local users can be added individually or many users can be added at once. For multiple users, an index number is added to the user name for the quantity of users being added.

### *Add New User (NAS User)*

## *To add a single user for the NAS*

1. Click **NAS Account** tab > **NAS User**.

2. Click the **Add New User** button.

In the Add New User menu, enter the required settings:

- **Name**

- **Display Name**

- **Password**

- **Retype Password**

Additional information for the NAS User can also be entered at this time. These fields are not required:

- **Email**

- **Department**

- **Telephone**

Finally, enter a group name in **Assign Primary Group** if you plan to setup NAS User Groups:

3. Click the **Submit** button to apply and save the settings.

The newly created user appears listed in the NAS User list.

## *To add a multiple users for the NAS*

There are two ways to add multiple users. One option is to use the procedure described below to use an automatically indexed user name (ex. user01, user02, user03). Alternatively you can create and edit a .csv file to and upload the file and apply the settings.

To add new users with the Wizard:

1. Click **NAS Account** tab > **NAS User**.

2. Click the **Add Multiple Users** button, choose the *Wizard* option in the new menu and click **Next**.

3.   Enter the required settings:

-   **Start Index**

-   **Quantity**

-   **User Name** (the prefix of the user name that is followed by the index value)

-   **Password**

-   **Retype Passwor**d

4.   Click the **Next** button.

5.   Review the new user data in the final Wizard menu, click **Submit** to create the new group of users.

 **To upload and edited .csv file  of new users:**

1.   Follow the procedure described above using the Wizard option, but this time, use the **Download** button in

     the final menu, do not Apply.

2.   Open the file you just downloaded and edit the information to change user names, add more users, etc.

3.   Repeat the procedure from the beginning, but this time choose the *Upload* option in the menu and click

     **Next**.

4.   Locate the edited .csv file, and click the **Next** button.

5.   Review the new user data in the final menu, click **Submit** to create the new group of users.

## *To remove Multiple Users from the NAS Users list*

1.   Click **NAS Account** tab > **NAS User**.

2.   Click the **Delete Multiple Users** button.

3.   Click to select the check box for each user you want to delete. Use paging feature if necessary.

4.   Click the **Apply** button.

# NAS Group settings

Use the NAS Group menus for setting both Local and Domain User groups.

## *Query User Groups*

In the **NAS Account** tab, click the **NAS Group** button and use the search function to query information on user groups. To navigate the pages, click on the arrow symbols near the bottom of the menus to change the display, previous page, next page, first and last page. Use **Page Capacity** to determine how many rows of user or group information are displayed on the page. The Search function is used to locate a group by name. To search a name, type the name in the entry field and press **Enter**.

### *NAS Group list*
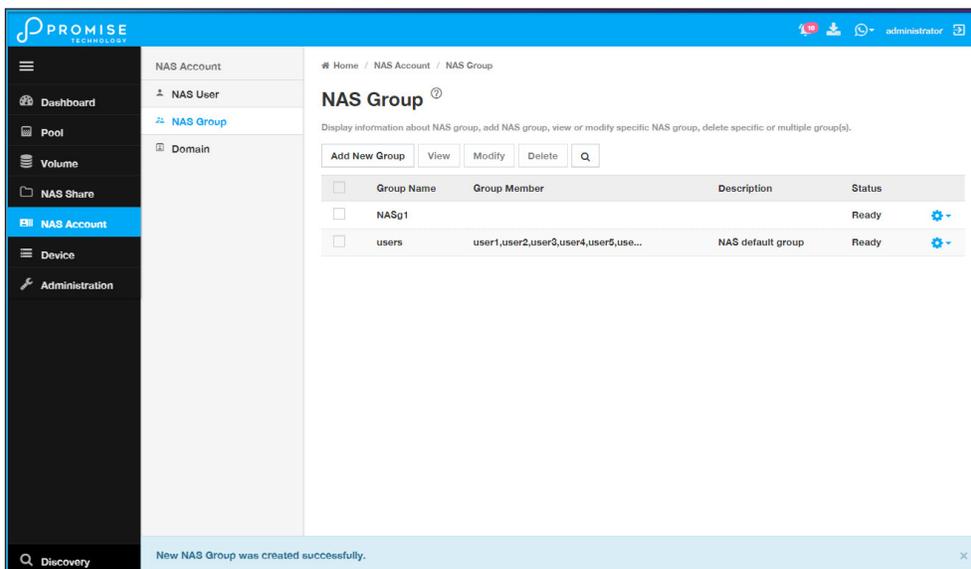


# Using the NAS Group list

In NAS configuration: **NAS Account > NAS Group**. Use the list of current groups to view members information, change groups settings or to delete the group.

## *To View Group Members*

1. Move the cursor to the row of the group in the list.

2. Click the **View** button.

## *Add User Group and choose members*

1. Use the **Type** pull-down menu toggles the menu between *User Group.*

2. Click the **New Group Create** button.

3. Enter a **Group Name** and click the boxes to select member local users from the list.

4. Click the **Submit** button to create the local user group.

### *Modify NAS Group*



## *To change User Group settings*

1. Select the group from the list to change.

2. Click the **Modify** button.

3. Add or remove local users by selecting or deselecting the selection boxes for the users in the list.

4. Click the **Save** button.

## *To remove a User Group*

1. Use the **Type** pull-down menu toggles the menu between *User Group.*

2. Click the **Delete** button.

3. Click the **Confirm** button.

# Domain Configuration

Use the Domain menu to create a Domain Workgroup or to join a Domain on the network using Windows Active Directory, LDAP or Open Directory.

### Domain Settings



---
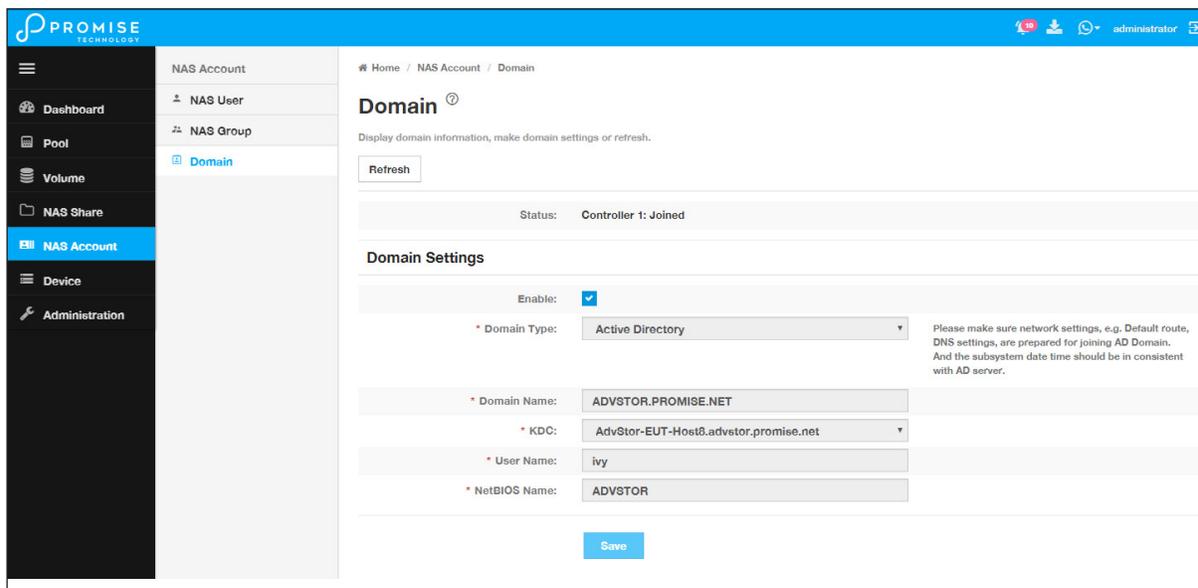
**Important**

**Make sure network settings support joining the AD Domain. Also, time settings need to be consistent with the AD server.**

---

## *Domain Settings*

1. In NAS configuration: **Account > Domain**.

2. Check the **Enable** box to enable the Domain settings.

3. Choose the **Domain Type** and configure settings accordingly.
   - *Active Directory*

     i. Enter the Active Directory domain and domain DNS server (server IP), the NetBIOS name is set automatically.

     ii. Click the **Next** button.

     iii. Select one domain controller.

     iv. Enter the **Administrator Account** and **Password**.

     v. Click the **Apply** button to join the domain.

     *AD domain uses default permission.*

     *Use AD RAID storage GUI to set Permission or ACL.*

## *To Enable a Domain*

In NAS configuration: **Account > Domain** then click to check the **Enable** box button.

## *To Set a Workgroup*

1. In NAS configuration: **Account > Domain**.

2. Enter a **Workgroup Name**.

3. Click the **Save** button.

## *To Refresh Domain Data*

1. In NAS configuration: **Account > Domain**.

2. Click the **Refresh Domain Data** button.

# ACL Setting

The Access Control List (ACL) rule-based access permission protocol is applied to a Share Disk when ACL is enabled.  To configure the rules for ACL, go to the **NAS Share List** menu, select the NAS Share you want to configure, click on the *Gear* icon for that NAS Share, and select the *ACL* option. The ACL menu appears. You will see the current ACL rule for the NAS Share. To clear the current settings, click on the **Clear** button to set the ACL rules to default setting.

> **Note**
>
> **Windows ACL must first be enabled in the SMB settings. For instructions, see "Using Windows ACL" on page 86.**

Access permission is listed after rules are added. To change the ACL configuration for the NAS share, click on the **ACL Settings** button. The **Apply Onto:** pull-down menu is used to apply the rule to the entire NAS Share (*This folder and its subfolders*) or to a selected folder in the NAS Share (*This folder only*). Click on **Save** to apply the new configuration.

*ACL Settings menu*

ACL rules are applied by **Type**: use the **Type** pull-down menu to select *Everyone*, *User* or *Group*, then check a box for the appropriate rule to *Deny-Access, Read-Only* or *Read-Write*.

### *ACL Settings for NAS Account Users*



### *ACL Settings for NAS Account Group*

# *Using Windows ACL*

To use Windows ACL, it must first be enabled in SMB Settings.

1.  Access the **SMB Settings** menu: **NAS Share > Protocol**, select *SMB* in the Protocol list and click on the

    **Settings** button

2.  Click on the **Yes** radio button for Windows ACL.

3.  Click on the **Save** button. Windows ACL is enabled for the NAS Share. ACL can now be configured via

    the default NAS administrator 'admin' using a Windows computer.

### SMB Settings
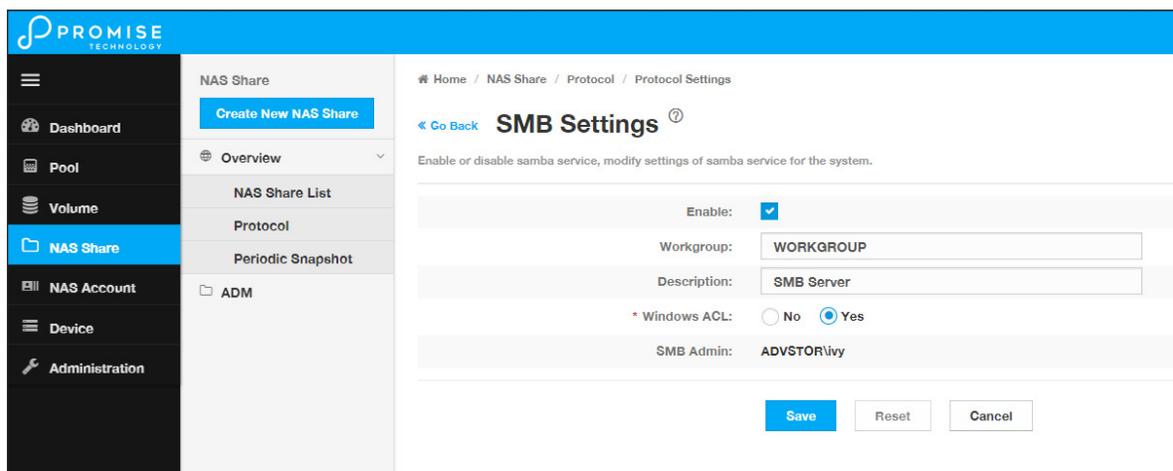


In the administrator's Windows system:

1.  Open the **Network** folder.
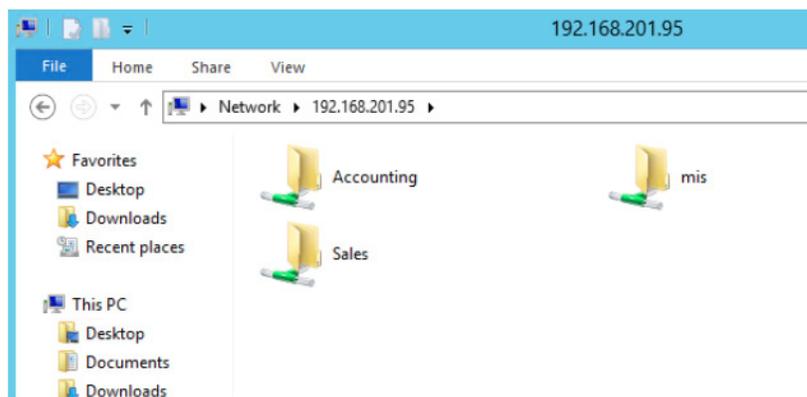
2. Right-click on the node you want to configure for ACL, scroll down to select *Properties*.
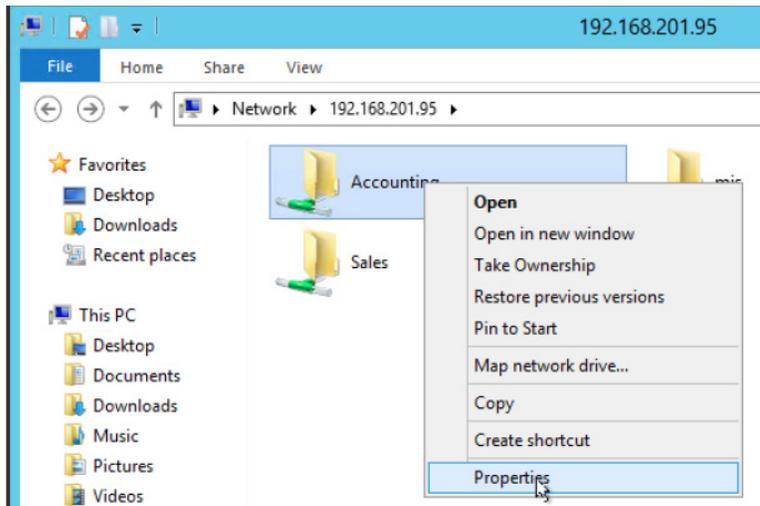


3. In the Properties menu under the **Group or user names** list, click on the **Edit** button.
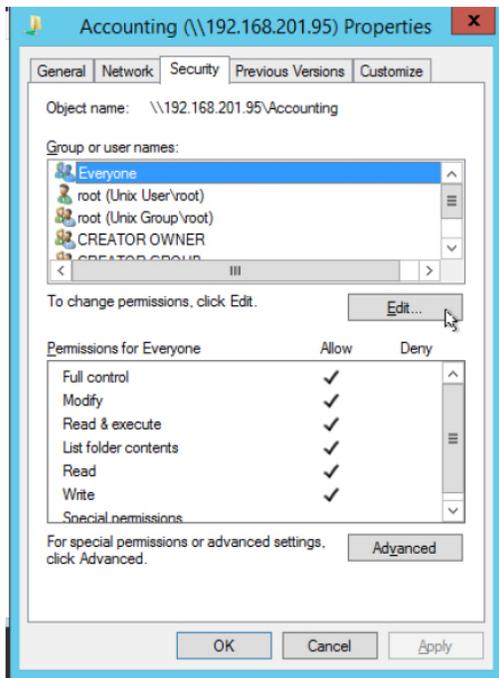
4.  Click on the **Add** button.
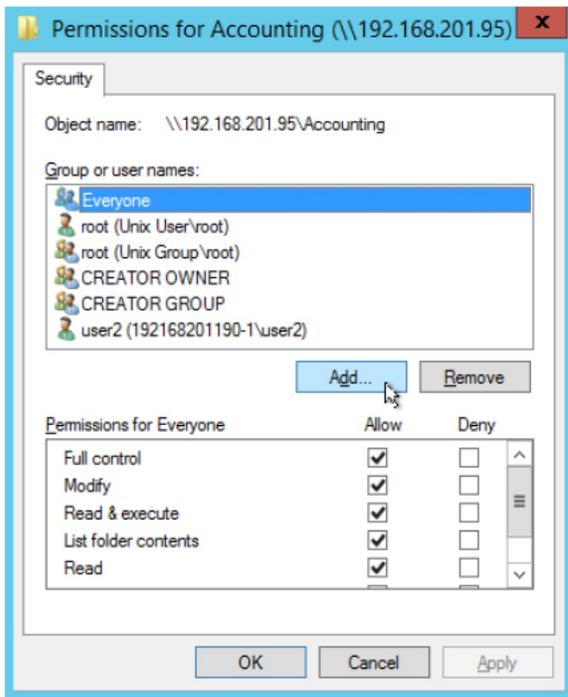


5.  In the **Select Users or Groups** menu, enter the user name to add to the ACL users list, and click on

    **Check Names** button.
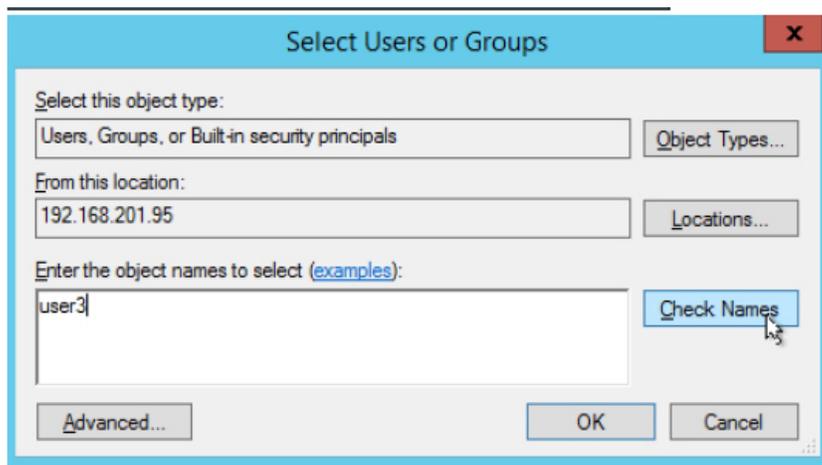
6.  The new user appears in the list (syntax: IP address/user name). Click the **OK** button to return to the

    Properties menu.
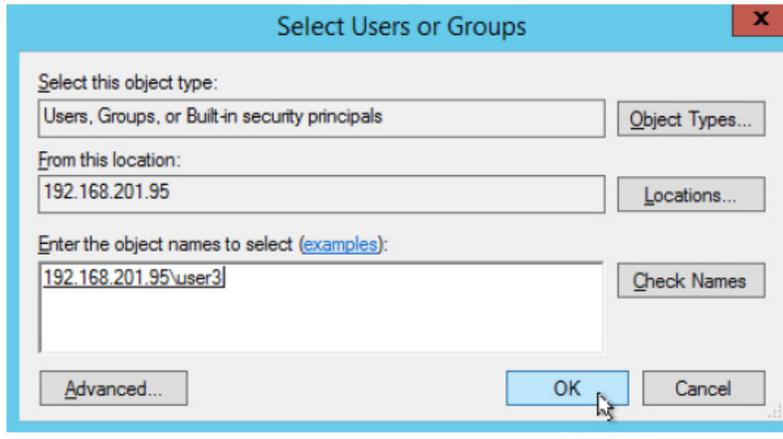


7.  The newly created user appears in the **Group or user names** list. Click **OK** to exit the menu.
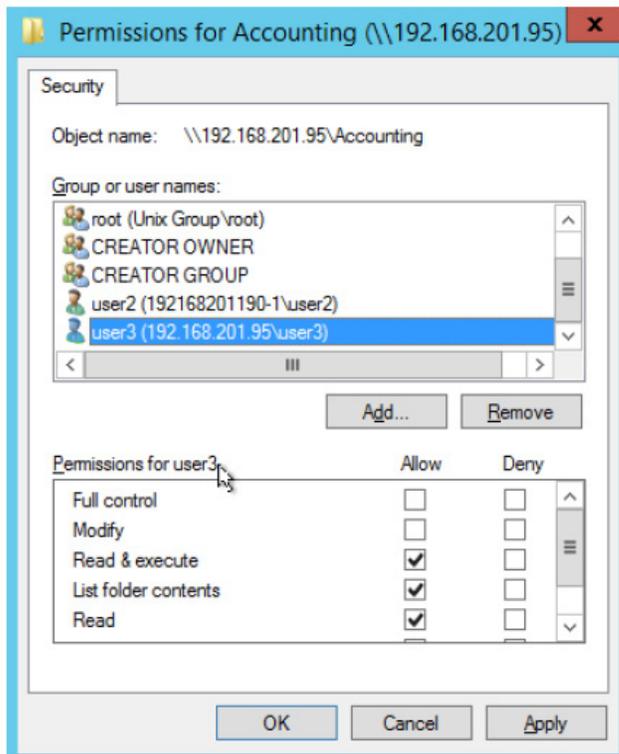
# MANAGEMENT USER

Management users can view the Vess R3600 user interface or make configuration changes according to the privilege level configured for the user. Only **Super** user level management users can add, remove or modify users. *Note that the Administrator has Super user level privilege.*

### *Management User list*

# Adding a New User

This action requires **Administrator** or **Super User** privileges.

To create a user:

1.  Click the **Administration** tab.

2.  Click the **Management User** tab

3.  In the **Management User** menu, click the **Add New User** button.

4.  In the **Add User** dialog box, enter the information in the fields provided:

    *   Name – This is the user's login name
    *   Display Name
    *   Password
    *   Retype Password
    *   User Email – Required for event notification

5.  Choose a privilege level from the drop-down menu. See the table below for a description of the privilege types.

6.  (Optional) Uncheck to disable this User account.

7.  Click the **Submit** button. The user is added to the list.

| User Privileges | |
| --- | --- |
| **Level** | **Meaning** |
| *View* | Allows the user to See all status and settings but not to make any changes |
| *Maintenance* | Allows the user to perform maintenance tasks including Media Patrol, and Redundancy Check |
| *Power* | Allows the user to create (but not delete) pools and volumes, change RAID levels, change stripe size; change settings of components such as pools, volumes, physical drives, and the controller |
| *Super* | Allows the user full access to all functions including create and delete users and changing the settings of other users, and delete pools and volumes. The default "administrator" account is a **Super User** |

# Changing User Settings

This action requires **Administrator** or a **Super User** privileges.

To change user settings:

1. Click the **Administration** tab.

2. Click the **Management User** tab

3. In the **Management User** menu, choose the user and click the **Modify** button.

4. Make settings changes as required:

    • For the Status box, check to enable this user account, uncheck to disable this user account

    • In the User Settings dialog box, enter a new **Display Name** or **User** E**mail** address

    • Choose a new **Privilege** level from the drop-down menu.

5. Click the **Save** button.

# Changing User Passwords

This action requires **Administrator** or **Super User** privileges.

To change a user's password:

1. Click the **Administration** tab.

2. Click the **Management User** tab

3. In the **Management User** menu, choose the user and click the **Change Password** button.

4. In the Change Password dialog box, enter the information in the fields provided:

    • New Password
    • Retype Password

5. Click the **Save** button.

# Deleting a User

This action requires **Administrator** or **Super User** privileges

To delete a user:

1.  Click the **User** tab.

2.  In the **Management User** menu, choose the user and click the **Delete** button.

3.  In the **Confirmation** box, type the word "**confirm**" in the field provided and click the **Confirm** button.
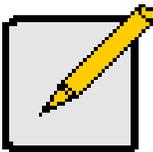
> **Note**
>
> The Administrator account cannot be deleted and the privilege level cannot be changed.

# Setting User Event Subscriptions

By default, event notification is set to the Major (severity) level for all events.

Subscribing users receive notification of events at the chosen severity level and all higher levels.

> **Note**
>
> Each user must have a valid Email address to receive events. Also, the email service must be properly configured with the SMTP server, including login information if necessary.

Changing a user subscription requires **Administrator** or **Super User** privileges.

To set a user event subscription:

1.  Click the **User** tab.

2.  In the User list, click the Gear icon for the user to configure, and choose the *Event Subscription* option.

3.  Make settings changes as required:

    *   For the **Enable Event Notification** box, check to enable for this user, uncheck to disable.
    *   Click to change the priority options for each category of event.

4.  Click the **Submit** button.

# DEVICE

Use the Device menus to monitor subsystem status and make settings changes to subsystem components, drives, network settings, etc.

### *Device Overview*



## Viewing Subsystem Information

To view subsystem information, click the **Device menu** tab.

The list of subsystems and host controllers is displayed in **Device Overview**. Subsystem information includes:

- Alias, if assigned

- Model

- WWN – World Wide Name

- Serial number

- Redundancy status

- Redundancy Type

- System date and time

- Time Zone

- Vendor

# Restarting the Subsystem

This function shuts down the subsystem and then restarts it.

To restart the subsystem:

1. Click the **Device** tab.

2. Click the **Overview** icon.

3. Click the **Shutdown/Restart Subsystem** button.

4. Choose the **Apply to** option, *Subsystem*, *Controller 1* or *Controller 2*.

5. Click the **Restart** button.

6. Type the word "confirm" in the field provided.

7. Click the **Confirm** button.

   When the controller shuts down, your WebPAM PROe connection is lost.

8. Wait at least two minutes.

9. In your browser, click **Logout** in the WebPAM PROe Header, then log in again.

   If you cannot log in immediately, wait 30 seconds and try again.

# Shutting Down the Subsystem

This function shuts down the RAID subsystem without restarting it.

To shutdown the subsystem:

1. Click the **Device** tab.

2. Click the **Overview** icon.

3. Click the **Shutdown/Restart Subsystem** button.

4. Choose the **Apply to** option, *Subsystem*, *Controller 1* or *Controller 2*.

5. Click the **Shutdown** button.

6. Type the word "**confirm**" in the field provided.

7. Click the **Confirm** button.

   When the controller shuts down, your WebPAM PROe connection is lost.

> **Important**
>
> **If your RAID subsystem manages JBOD expansion units, you must follow the proper startup procedure.**

# Restarting the Subsystem after a Shutdown

To start the RAID subsystem:

1. Press the Power button on the front left side of the device being restarted.

2. Wait at least two minutes.

3. Open your browser and log into WebPAM PROe.

   If you cannot log in immediately, wait 30 seconds and try again.

# Device View

The Device View menus display a real time virtual representation of the device used to check status of the subsystem and its components. Choose the Front View, Back View, and Internal View (click button in Back View menu).
Hover the cursor over different components to see a summary of the status for that component.

### *Device Front View*
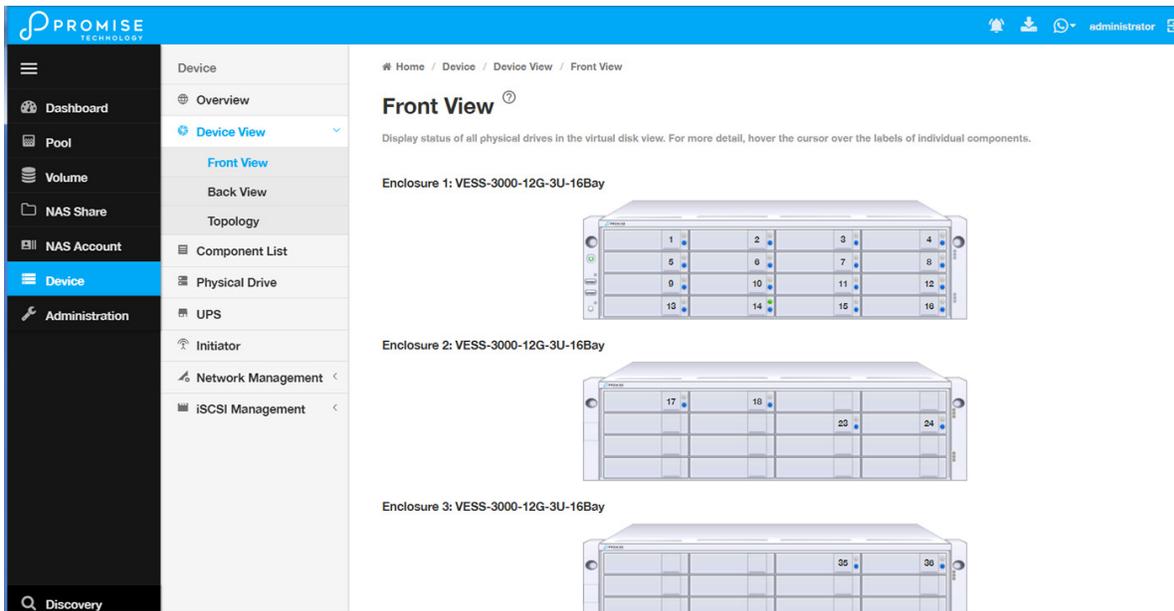
### Device Back View

Hover the cursor over a component to see a status summary

Click this to see internal view

### Device Internal View

# Viewing Enclosure Topology

This feature displays the connection topology of the Vess R3600 subsystem. Topology refers to the manner in which the data paths among the enclosures are connected. There are three methods:

- **Individual Subsystem** – A single subsystem

- **JBOD Expansion** – Managed through one subsystem or head unit

- **RAID Subsystem Cascading** – Managed through one subsystem or head unit

To view enclosure topology:

1. Click the **Device** tab.

2. Click the **Topology** icon.

   The topology or data connections of your system displays.

# Viewing Enclosure Information

To view enclosure information:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. Click the Enclosure and select **View** in the gear icon to view detailed information in a new menu.

   Enclosure information includes:

- Enclosure ID

- Enclosure Type

- Operational Status of PSUs

- Operational Status of Fans, including Current

   Fan Speed and Healthy Threshold

- Temperature Sensors for Controllers, PSUs and

   Backplane include Location, Status and current

   Temperature, and Healthy Threshold

- Voltage Sensors for Controllers and PSUs,

   including Sensor Type, Current Voltage, and

   Healthy Threshold

# Viewing Power Supply Status

To view the status of the power supplies and the fans that cool those power supplies:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. Click the Enclosure and click the **View** button to view detailed information in a new menu.

4. Scroll down to view the power supplies.

   The screen displays the operational and fan status of the power supplies. If any status differs from

   normal or the fan speed is below the Healthy Threshold value, a malfunction is indicated in the Status

   column.

# Locating an Enclosure

To locate an enclosure:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. Click the Enclosure you want, then click the **Locate** button.

   The enclosure LEDs blink for one minute.

# Making Controller Settings

In a dual-controller RAID subsystem, settings made to one controller are applied to both controllers.

To make controller settings:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. For the controller you want to configure, then click the Gear icon and select the *Settings* option.

4. Make settings changes as required:

   - Enter, change or delete the alias in the **Alias** field.
   - **HDD Power Saving** – Choose time periods from the drop-down menus.
     After an HDD has been idle for the set period of time:

     - \* **Power Saving Idle Time** – Parks the read/write heads.
     - \* **Power Saving Standby Time** – Lowers disk rotation speed.
     - \* **Power Saving Stopped Time** – Spins down the disk (stops rotation).

   - **Coercion** – Check the box to enable or uncheck to disable.
   - **Coercion Method** – Choose a method from the drop-down menu:

     - \* *GBTruncate*
     - \* *10GBTruncate*
     - \* *GrpRounding*
     - \* *TableRounding*

   - **Write Back Cache Flush Interval** – Enter a value into the field, 1 to 12 seconds.
   - **Enclosure Polling Interval** – Enter a value into the field, 15 to 255 seconds.
   - **Adaptive Writeback Cache** – Check the box to enable or uncheck to disable.
   - **Host Cache Flushing** – Check the box to enable or uncheck to disable.
   - **Forced Read Ahead** (cache) – Check the box to enable or uncheck to disable.
   - **SMART Log** – Check the box to enable or uncheck to disable.
   - **SSD Trim Support** – Check the box to enable or uncheck to disable.
   - **SMART Polling Interval** – Enter a value into the field, 1 to 1440 minutes
   - **Pseudo Device Type** - From the drop-down menu, choose:

     - \* *DAS*
     - \* *CTRL*

5. Click the **Save** button.

# Viewing Controller Information

To view controller information:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. Click the controller you want, then click the **View** button.

   Basic controller information includes:

   - Controller ID
   - Alias – If assigned
   - Readiness Status
   - Power On Time
   - LUN Mapping method
   - Serial Number
   - WWN – World Wide Name
   - Dirty Cache Usage – Percentage
   - Boot Loader Version
   - Firmware Version
   - Software Version
   - Operational Status
   - SCSI Protocol Supported
   - Part Number
   - Hardware Revision
   - Cache Usage – Percentage
   - Host Cache Flushing
   - Boot Loader Build Date
   - Firmware Build Date
   - Software Build Date

Advanced controller information includes:

- Slot 1 Memory Type
- Slot 1 Memory Size
- Slot 2 Memory Type
- Slot 2 Memory Size
- M.2 Device Present 1
- M.2 Device Size 1
- LUN Affinity
- ALUA *
- Controller Role
- Flash Type
- Flash Size
- NVRAM Type
- NVRAM Size
- Preferred Cache Line Size
- Coercion *
- Coercion Method *
- SMART Log
- SMART Polling Interval *
- Write Back Cache Flush Interval *
- Enclosure Polling Interval *
- Adaptive Writeback Cache *
- Forced Read Ahead
- Forced Read Ahead (cache) *
- Power Saving Standby Time
- Power Saving Idle Time *
- Cache Line Size
- Power Saving Stopped Time
- Pseudo Device Type
- SSD Trim Support:

Items with an asterisk (*) are adjustable under Controller Settings.

# Buzzer Settings

To make buzzer settings:

1. Click the **Device** tab.

2. Click the **Component List** icon.

3. Choose the *Enable Buzzer / Disable Buzzer* option to enable or disable the buzzer.

4. Choose the *Turn on Buzzer / Turn off Buzzer* option to turn the buzzer on or off. Note that while the buzzer is on, the status reads *Sounding*; when the buzzer is off, the status reads *Silent*.

> ⚠️ **Caution**
>
> **If you disable the buzzer, it is disabled for all events. To stop the buzzer from sounding, you can use either the Mute Alarm button located on the front of the subsystem hardware, or follow the instructions below.**

# Silencing the Buzzer

To silence the buzzer, you can press the Mute Alarm button on the front of the Vess enclosure hardware, located on the left side under the power button and USB ports. Or, click on the virtual Mute Buzzer button at the top of the user interface in WebPAM PROe. *This only appears when the buzzer is sounding.*

# Managing Physical Drives

## *Viewing Physical Drive Information*

To view physical drive information:

1. Click the **Device** tab.

2. Click the **Physical Drive** icon. Information for each drive is listed in the menu.

    Physical drive information includes:

    - Physical Drive ID – ID number of the physical drive
    - Operational Status – OK is normal, Stale, PFA, Dead
    - Model Number– Make and model of the drive
    - Drive Interface Type – SATA or SAS
    - Location – Enclosure number and slot number
    - Configuration Status – Pool number or spare number
    - Physical Capacity – Total capacity in TB

## *Making Global Physical Drive Settings*

To make global physical drive settings:

1.  Click the **Device** tab.

2.  Click the **Physical Drive** icon.

3.  Click the **Global Physical Drive Settings** button.

4.  Check the boxes to enable, uncheck to disable.

    For **SATA** drives:

    *   Enable Write Cache
    *   Enable Read Look Ahead Cache
    *   DMA Mode (use pull down menu to select option)
    *   Medium Error Threshold (Default is 64, range is 0-4294967294)

    For **SAS** drives:

    *   Enable Write Cache
    *   Enable Read Look Ahead Cache
    *   Enable Read Cache
    *   Medium Error Threshold

5.  Click the **Save** button.

# Managing UPS Units

## *Viewing UPS Information*

To view information about a specific UPS unit:

1.  Click the **Device** tab.

2.  Click the **UPS** icon.

    UPS information includes:

    *   **UPS ID**
    *   Status
    *   Model
    *   **Battery Capacity** – Backup capacity expressed as a percentage.
    *   **Run Time Remaining**

## *Making UPS Settings*

These settings control how the Vess R3600 subsystem detects the UPS unit and responds to data reported by the UPS unit.

To make UPS settings:

1. Click the **Device** tab.

2. Click the **UPS** icon.

3. Click the **UPS Settings** button.

4. Perform the following actions as required:

   - Choose a Detection Setting from the drop-down menu:

       * **Auto** – Default. If a UPS is detected when the subsystem boots, the setting changes to Enable.

       * **Enable** – Monitors UPS. Reports warnings and logs events.

       * **Disable** – Does not monitor UPS.

   - Type values into the Threshold fields:

       * **Running Time Remaining Threshold** – Actual time below this value resets adaptive writeback cache to writethrough. Default is 5 minutes, range is 3-20 minutes.

   - For UPS units with network cards, type the IP addresses or DNS names in fields UPS 1 and UPS 2. *See Note 2*.

5. Press **Submit** to save your settings.

**Note 1:** Vess R3600 supports multiple UPS units using network or USB connections, but not a combination of both methods.

**Note 2:** To specify UPS units by DNS names, ask your IT administrator to add the DNS names to the DNS server, before you make UPS settings. DNS settings must first be configured in **Network Management** using the **Global Settings** menu.

# Managing Initiators

## Adding a Fibre Channel or iSCSI Initiator

You must add an initiator to the Vess R3600's initiator list in order to map your LUN or logical drive to the initiator.

This action requires **Administrator** or **Super User** privileges.

To add a Fibre Channel or iSCSI initiator to the list:

1. Click the **Device** tab.

2. Click the **Initiator** icon.

3. Click the **Add Initiator** button.

4. Choose the network Type (FC or iSCSI)

5. Input the initiator name in the fields provided.

   A Fibre Channel initiator name is the World Wide Port Name of the initiator, composed of a series of eight, two-digit hexadecimal numbers. The iSCSI initiator name is composed of a single text string.

6. Click the **Submit** button.

   The initiator is added.

# Viewing Initiators

The Vess R3600's initiator list displays initiators available for mapping to a LUN or logical drive. You must add initiators to the Vess R3600's initiator list to make them available for mapping to a LUN.

To view a list of initiators:

1. Click the **Device** tab.

2. Click the **Initiator** icon.

   The list of initiators appears. Initiator information includes:

   • **ID** – Initiator 0, Initiator 1, Initiator 2, etc.

   • **Type** - Choose *FC* or *iSCSI*
     **Fibre Channel** – WWPN: Enter the World Wide Port Name of the initiator, composed of a series of eight, two-digit hexadecimal numbers.

     **iSCSI** – Name: Enter the iSCSI name of the initiator device, composed of a single text string.

## *Deleting an Initiator*

**Caution**

**If you delete an initiator, you delete the LUN map associated with that initiator. Verify that the LUN map is no longer needed before deleting the initiator**

This action requires **Administrator** or **Super User** privileges.

To delete a Fibre Channel initiator:

1. Click the **Device** tab.

2. Click the **Initiator** icon.

3. Click the **trash can** icon on the initiator if you want to delete it.

4. In the Confirmation box, type the word "**confirm**" in the field provided and click the **Confirm** button

   The initiator is removed from Vess R3600's initiator list.

# Manageing Targets

## Adding a Fibre Channel or iSCSI Target

You must add an target to the Vess R3600's target list in order to map your LUN or logical drive to the target.

This action requires **Administrator** or **Super User** privileges.

To add a Fibre Channel or iSCSI target to the list:

1.  Click the **Device** tab.

2.  Click the **Target** icon.

3.  Click the **Add Target** button.

4.  Input the target name in the fields provided.

    A Fibre Channel target name is the World Wide Port Name of the target, composed of a series of eight, two-digit hexadecimal numbers. The iSCSI target name is composed of a single text string.

5.  Click the **Submit** button.

    The target is added.

*Add Target*

# Viewing Target

The Vess R3600's target list displays targets available for mapping to a LUN or logical drive. You must add targets to the Vess R3600's target list to make them available for mapping to a LUN.

To view a list of targets:

1. Click the **Device** tab.

2. Click the **Target** icon.

   The list of targets appears. Target information includes:

   - **ID** – Target 0, Target 1, Target 2, etc.
   - **Type**
     **Fibre Channel** – WWPN: Enter the World Wide Port Name of the target, composed of a series of eight, two-digit hexadecimal numbers.

     **iSCSI** – Name: Enter the iSCSI name of the target device, composed of a single text string.

## *Deleting an Target*

> **Caution**
>
> **If you delete an target, you delete the LUN map associated with that target. Verify that the LUN map is no longer needed before deleting the target**

This action requires **Administrator** or **Super User** privileges.

To delete a Fibre Channel target:

1. Click the **Device** tab.

2. Click the **Target** icon.

3. Click the **trash can** icon on the target if you want to delete it.

4. In the Confirmation box, type the word "**confirm**" in the field provided and click the **Confirm** button

   The target is removed from Vess R3600's target list.

# NETWORK MANAGEMENT

Network settings includes IP settings, physical port settings, management and IO port settings, including the option to allow IO on management ports. By default, Subsystem Management is enabled

## *Management Portal list*

# Making Management IP Settings

Use the Management Portal menu to view, change, enable or disable IP settings for the Subsystem and Controller management. To change management IP settings:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Portal** and click on **Management Portal**.

IPv4 is enabled by default for **Subsystem Management** and **Controller Management IP**.

T*o enable IPv6, click to select the  IPv6 configuration set for* **Subsystem Management IP** *or* **Controller Management IP** *, and click on the* **Enable** *button.*

- To disable a management portal configuration, click to select it and click on the **Disable** button.

- To enable a management portal configuration, click to select it and click on the **Enable** button.

3. To change IP setting for **Subsystem Management** or **Controller Management IP**, click to select the configuration you want to change, and click on the **Modify** button.

- Check the **Enable DHCP** box to enable a DHCP server to make your network settings. DHCP is currently supported in IPv4 only. Note that you will have the option to enable Auto DNS.

- For manual network settings, type the RAID subsystem's IP address, subnet mask and gateway IP address into the fields provided.

4. Click the **Save** button.

# Viewing Management IP Settings

Use the Management Portal menu to view, change, enable or disable IP settings for the Subsystem and Controller management. To view management IP settings:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Portal** and click on **Management Portal**.

3. To view IP setting for **Subsystem Management** or **Controller Management IP**, click to select the configuration you want to view, and click on the **View** button.

*View Subsystem Management IP Configuration*

# Making IO Portal Settings

Use the IO Portal menu to view, change, enable or disable IP settings for the IO Ports. To change IO port IP settings:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Portal** and click on **IO Portal**.

3. To change IO Portal settings, click to select the configuration you want to change, and click on the **Modify** button.

   - Check the **Enable DHCP** box to enable a DHCP server to make the IO port network settings. DHCP is currently supported in IPv4 only.

   - For manual network settings, type the IO Port IP address, subnet mask and gateway IP address into the fields provided.

   - Enter a **TCP Port Number** or use the default 3260.

4. Click the **Save** button.

*IO Portal Configuration*

# Viewing IO Portal Settings

Use the IO Portal menu to view, change, enable or disable IP settings for the IO Ports. To view IO port IP settings:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Portal** and click on **IO Portal**.

3. To change IO Portal settings, click to select the configuration you want to view, and click on the **View** button.

*IO Portal Information*

# Making Global IP Settings

Use the Global Settings menu to select the default route used for system management; this menu also includes the option to enable IO on management ports.

1. Click the **Device** tab.

2. Click the **Network Management** tab and click on **Global Settings**.

3. To change Global IP settings, click to select the configuration you want to change, and click on the **Modify** button.

   - Choose the Default Route option that best suits the application used: *Subsystem Management IP, Controller Management IP* or *IO Portal.*

   - Check the **Auto DNS** box to use the DNS administered by DHCP. *This requires DHCP be enabled in the Management Portal IP Settings.*

   - If you are not using DHCP, specify a DNS IP Address, and a Secondary DNS IP Address (optional).

   - (Optional) Check Wake On LAN if you want to enable this feature.

   - (Optional) IO can be enabled through Management Ports. Check the box to enable this feature.

4. Click the **Save** button.

*Global IP Settings*

# Making Trunk Settings

Two or more IO ports can be used to create a Trunk Port (link aggregation) in order to increase throughput capacity. In order to do this, it is necessary to delete at least two IO portals in the **IO Portal** menu. Then the physical ports can be aggregated to form a single portal. However, before creating the IO Trunk, it is necessary to first delete all the portals on the IO ports that will make up the IO Trunk.

To delete IO Portals on ports to be used for the IO Trunk:

1. Click the **Device** tab > **Network Management** > **Portal.**

2. Click the **IO Portal** or **Management Portal** menu link.

3. Click to select the ports to be used for the Trunk.

4. Click the **Delete** button. It is necessary to confirm that you want to delete the portals.

5. In the new menu, type "Confirm" and click on the Confirm button to delete the portals. The ports can now be used for Trunk.

*Delete IO Portal for Trunk*

## *Create IO Trunk*

Two or more IO ports can be used to create a Trunk Port (link aggregation) in order to increase throughput capacity. In order to do this, it is necessary to delete at least two IO portals in the **IO Portal** menu. Then the physical ports can be aggregated to form a single portal. However, before creating the IO Trunk, it is necessary to first delete all the portals on the IO ports that will make up the IO Trunk.

To delete IO Portals on ports to be used for the IO Trunk:

1.  Click the **Device** tab > **Network Management** > **Trunk.**

2.  Click the **Add Trunk** button.

3.  Click to select the ports to be used for the Trunk.

4.  Click to select the **Trunk Type**: *Balance XOR, LACP* or *Active-Standby*

5.  Choose the Controller where the Trunk is created and determine which port is Master Port.

6.  Click on the **Submit** button to create the new Trunk.

### *Add Trunk menu*

# Viewing Port Information

To view physical port information for IO or Management ports:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Port** and click on **Management Port** or **IO Port**.

3. Select the port to view information and click on **View**.

*Management Port Information*



# Making Port Settings

To view physical port information for IO or Management ports:

1. Click the **Device** tab.

2. Click the **Network Management** tab, expand **Port** and click on **Management Port** or **IO Port**.

3. Select the port to change settings and click on **Modify**.

4. Click to enable or disable Jumbo Frame on the port.

5. Click the **Save** button.

# Making Maintenance Mode Settings

Each controller has its own IP addresses for access when the controller goes into maintenance mode.

To make maintenance mode settings:

1. Click the **Device** tab.

2. Click the **Network Management** tab.

3. Click the **Management Portal** tab.

4. For maintenance mode, use the **Static IP** settings.

5. Click the controller and protocol family whose settings you want to change and click the **Configuration**

    button.

6. Make the following settings are needed:

    - Check the **Enable** box to enable this protocol family.
    - Check the **Enable DHCP** box to enable a DHCP server to make your
      network settings. DHCP is currently supported in IPv4 only.
    - For manual network settings, type the **IP address, subnet mask, gateway
      IP address**, and **DNS server IP address** into the fields provided.

7. Click the **Submit** button.

## *Making Maintenance Mode Port Settings*

The IP settings of management ports are also configured in Network Management.

To make physical management port settings:

1. Click the **Device** tab.

2. Click the **Management Portal** icon.

3. Under **Static IP**, click on the gear icon and choose the *Modify* option.

4. In the new menu, make the following settings are needed:

    - Check the **Enable DHCP** box to enable a DHCP server to make
      your network settings. DHCP is currently supported in IPv4 only.
      Note that you will have the option to enable Auto DNS.
    - For manual network settings, type the RAID subsystem's IP address,
      subnet mask and gateway IP address into the fields provided.
    - You can choose to **Enable Physical IP**.

5. Click the **Save** button.

# Managing Fibre Channel Connections

## *Viewing Fibre Channel Node Information*

To view Fibre Channel node information:

1. Click the **Device** tab.

2. Click the **FC Management** tab.

3. Click the **Node** tab.

   Node information includes:

   - **Worldwide Node  Name (WWNN)**
   - **Maximum Frame Size**
   - **Supported Fibre Channel Class**
   - **Supported Speed**

*Fibre Channel Node Information*

## *Viewing Fibre Channel Port Information*

To view Fibre Channel port information:

1. Click the **Device** tab.

2. Click the **FC Management** tab.

3. Click the **Port** tab.

4. Click the gear icon in the list of FC ports and select the *View* option.

Port information includes:

- **Controller ID**
- **Link Status**
- **Topology**
- **Alias WWNN - World Wide Node Name**
- **Fabric WWPN**
- **Current Speed**
- **Configured Link Speed**
- **Hard ALPA**

- **Port ID:**
- **Identifier - (hexadecimal)**
- **WWPN - Worldwide Port Name**
- **Number Of Current Aliases**
- **Fabric WWNN**
- **Link Type**
- **Configured Topology**

## *Making Fibre Channel Port Settings*

To make Fibre Channel port settings:

1. Click the **Device** tab.

2. Click the **FC Management** tab.

3. Click the **Port** tab.

4. Click the gear icon in the list of FC ports and select the *Modify* option.

5. Make these changes as required:

- Choose a configured link speed from the drop-down menu.
  The choices are Auto (default), 4 Gb/s, 8 Gb/s and 16 Gb/s.

- Choose a topology from the drop-down menu.

- Enter a Hard ALPA in the field provided.
  Enter 255 to disable Hard ALPA.

6. Click the **Save** button.

*Fibre Channel Node Information*
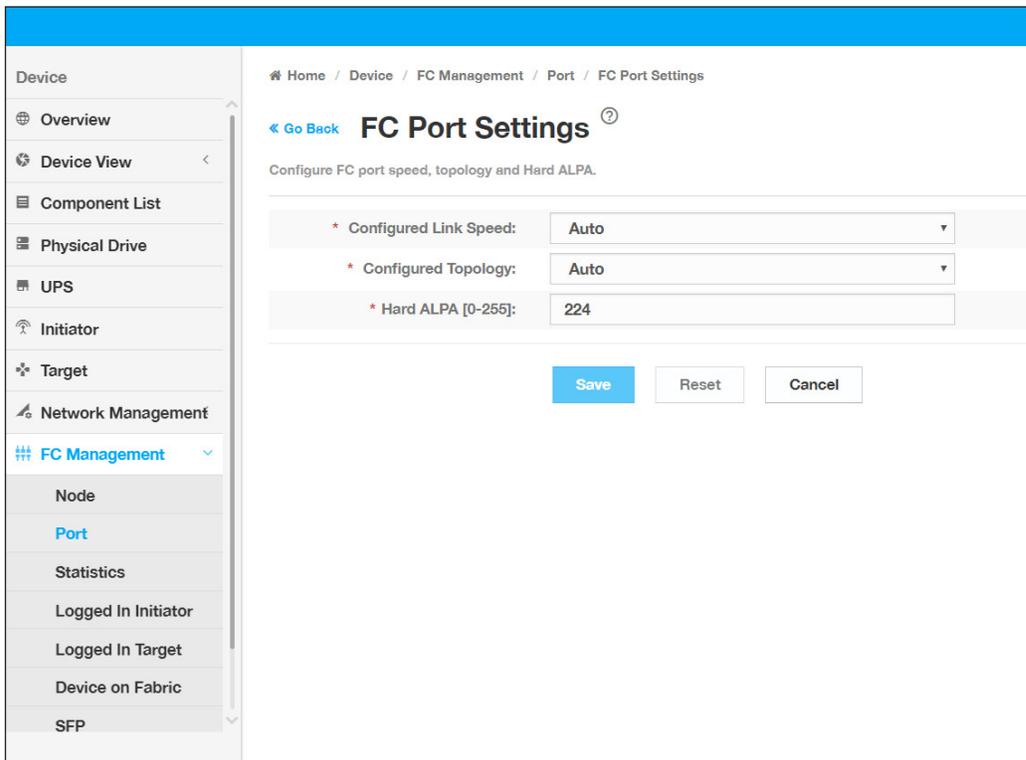


## Port Setting Information

The examples below show the type of attached topology you achieve based on your connection type and the configured topology you select.

Example 1: If you connect the Vess R3600 to a Fibre Channel switch and choose NL-Port topology, you create a Public Loop attached topology.

Example 2: If you have a Point-to-Point attached topology, you made a direct connection (no Fibre Channel switch) and selected N-port topology.
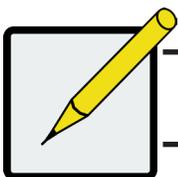
**Note**

**In some cases, HBA settings to N-Port only work if connected to the switch. Refer to your HBA manual for more information.**

## *Viewing Fibre Channel Port Statistics*

To view Fibre Channel port statistics:

1. Click the **Device** tab.

2. Click the **FC Management** tab.

3. Click the **Statistics** tab.

4. Click the gear icon in the list of FC ports and select the *View* option.

## *Viewing Fibre Channel Logged-in Devices*

Logged-in devices refers to all Fibre Channel devices currently logged into the Vess R3600. The device list includes:

- **Fibre Channel ports**

- **Fibre Channel switches, if attached**

- **Fibre Channel initiators**

To view a list Fibre Channel logged-in devices:

1. Click the **Device** tab.

2. Click the **Fibre Channel Management** icon.

3. Click the **Logged In Device** tab.

To add a Fibre Channel initiator in the list, select it and click on the **Add to Initiator List** button. This is the method described in "Adding a Fibre Channel or iSCSI Initiator" on page 110.

### *Fibre Channel Logged In Initiators*

### *Viewing Fibre Channel Initiators on the Fabric*

To view a list Fibre Channel initiators on the fabric:

1. Click the **Device** tab.

2. Click the **FC Management** tab.

3. Click the **Device on Fabric** tab.

Also see "Viewing Initiators" on page 111.

To add a Fibre Channel initiator in the list, select it and click on the **Add to Initiator List** button. See "Adding a Fibre Channel or iSCSI Initiator" on page 110.

### *Viewing Fibre Channel SFPs*

The term SFP refers to Small Form Pluggable transceivers used in Fibre Channel ports. The SFPs convert electrical signals to optical signals and send them over the Fibre Channel fabric, where another transceiver converts the optical signal back to an electrical signal again.

To view a list Fibre Channel SFPs:

1. Click the **Device** tab.

2. Click the **Fibre Channel Management** icon.

3. Click the **SFP** tab.

SFP information includes:
- **Controller ID**
- **FC Port ID**
- **Connector type**
- **Transceiver type**
- **Transceiver code**
- **Vendor name**

# MANAGING iSCSI CONNECTIONS

## *Viewing iSCSI Target Information*

To view information about the iSCSI target:

1.  Click the **Device** tab.

2.  Click the **iSCSI Management** icon.

3.  Click the **Target** tab. (Note that you need to click *Expand Detail Information* to view the entire list)

    Target information includes:

*   **ID** – ID number of the target.
*   **Status** – Up or down.
*   **Name** – iSCSI qualified name (iqn) of this target.
*   **Alias** – Maximum of 32 characters. Use letters, numbers, space between words, and underscore. An alias is optional.*
*   **Error Recovery Level** – Error recovery level supported.
*   I**nitial R2T** – Allows initiator to begin sending data to a target without receiving a ready to transfer command.
*   **Max Outstanding R2T** – Maximum number of R2T PDUs the target can have outstanding for a single iSCSI command.
*   **Max Burst Length** – Maximum length of a solicited data sequence in bytes.
*   **Data Digest** – Adds a data digest (CRC).*
*   **Header Digest** – Enables the use of header digest (CRC).*
*   **Data PDU in Order** – Enables placement of data in PDU order
*   **Data Sequence in Order** – Enables placement of data in sequence order
*   **Default Time to Wait** – After a dropped connection, the number of seconds to wait before attempting to reconnect
*   **Default Time to Retain** – Number of seconds after time to wait (above) before reassigning outstanding commands
*   **Uni-directional CHAP Authentication** – Uni-directional (peer) CHAP authentication, enabled or disabled*
*   **Bi-directional CHAP Authentication** – Bi-directional (local) CHAP authentication, enabled or disabled*
*   **Maximum Connections** – The maximum number of concurrent connections
*   **Immediate Data** – Enables the initiator to send unsolicited data with the iSCSI command PDU.
*   **First Burst Length** – In bytes.
*   **Assigned Portal IDs**
*   **Keep Alive -** Enable or Disable

# Making iSCSI Target Settings

To make target settings:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **Target** tab.

4. Click the target you want, then click the **Modify** button.

5. Make settings changes are required:

   - **Alias**

   - **Enable/Disable Keep Alive**

   - **Enable/Disable Header Digest**

   - **Enable Data Digest**

   - **Enable Bi-directional CHAP Authentication**

   - **Enable Uni-directional CHAP Authentication**

6. Click the **Save** button.

## *Viewing a List of iSCSI Sessions*

To view a list of iSCSI sessions:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **Session** tab.

   iSCSI session information includes:

   - **ID** – ID number of the session

   - **Controller ID** - Controller 1 or 2

   - **Target Alias** – Alias of the target

   - **Initiator Alias** – Part of the IQN

   - **IO Portal ID** – ID number of the portal

   - **IO Portal IP -** IP address of the portal

   - **Status** – Active or inactive.

### *Viewing iSCSI Session Information*

To view a list of iSCSI sessions:

1.  Click the **Device** tab.

2.  Click the **iSCSI Management** icon.

3.  Click the **Session** tab.

4.  Click the **View** button.

# Deleting an iSCSI Session

To delete an iSCSI session:

1.  Click the Device tab.

2.  Click the **iSCSI Managemen**t icon.

3.  Click the **Session** tab.

4.  Click the iSCSI session you want and click the **Delete** button.

5.  Type "**confirm**" in the field provided, then click the **Confirm** button.

### *Viewing iSCSI iSNS Information*

To view information about iSNS:

1.  Click the **Device** tab.

2.  Click the **iSCSI Management** icon.

3.  Click the **iSNS** tab.

    The information includes:

    -   **IO Portal ID**
    -   **Type**
    -   **Controller**
    -   **Status**
    -   **Server IP**
    -   **Server Port**

# Making iSCSI iSNS Settings

To make iSNS settings:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **iSNS** tab.

4. Click on a portal to select it.

5. Click the **Modify** button.

6. Make settings changes are required:

   - **Enable** (check to enable)
   - **Server Port** (1-65535)
   - **Server IP**
   - **IO Portal ID**

7. Click the **Submit** button.

## *Viewing a List of iSCSI CHAPs*

To view a list of iSCSI CHAPs:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **CHAP** tab.

   CHAP information includes:

   - **ID** – ID number of the CHAP
   - **Type** – Peer or local
     Peer is one-way or uni-directional.
     Local is two-way or bi-directional.
   - **Name** – User assigned name of the CHAP

# Adding iSCSI CHAPs

To add an iSCSI CHAP:

1.  Click the **Device** tab.

2.  Click the **iSCSI Management** icon.

3.  Click the **CHAP** tab.

4.  Click the **Create CHAP** button.

5.  Make your choices and inputs as required:

    - **Enter** a name in the Name field.
    - **Choose a CHAP type**.
       Peer is one-way or uni-directional.
       Local is two-way or bi-directional.
    - **Enter** a secret of 12 to 16 characters in the Secret field.
    - **Enter** the secret again in the Retype Secret field.

6.  Click the **Submit** button.

    The new CHAP is added to the list.

# Deleting iSCSI CHAPs

To delete an iSCSI CHAP:

1.  Click the **Device** tab.

2.  Click the **iSCSI Management** icon.

3.  Click the **CHAP** tab.

4.  Click the CHAP you want, then click the **Delete** button.

5.  Type "CONFIRM" into the popup menu and click the **Confirm** button.

    The CHAP is removed from the list.

# Making iSCSI CHAP Settings

When you change CHAP settings, you must change the secret. You cannot change the type (peer or local).

To make iSCSI CHAP settings:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **CHAP** tab.

4. Click the CHAP you want, then click the **Modify** button.

5. Make settings changes are required:

    • **Enter** a name in the **Name** field.

    • **Enter** the current secret in the **Current Secret** field.

    • **Enter** a new secret of 12 to 16 characters in the **Secret** field.

    • **Enter** the new secret again in the **Retype Secret** field.

6. Click the **Save** button.


# Viewing a List of Logged-in Devices

Logged-in devices refers to all iSCSI devices currently logged into the Vess R3600. The device list includes:

To view a list of logged-in devices:

1. Click the **Device** tab.

2. Click the **iSCSI Management** icon.

3. Click the **Logged In Device** tab.

# USING THE EVENT VIEWER

The Event Viewer displays log of subsystem events. Events are classified as:

•   Runtime Events – A list of and information of up to about 300,000 of the most recent runtime events recorded since the subsystem was started.

## Event Severity Levels

| Level | Description |
|---|---|
| Fatal | Non-recoverable error or failure has occurred. |
| Critical | Action is needed now and the implications of the condition are serious. |
| Major | Action is needed now. |
| Minor | Action is needed but the condition is not a serious at this time. |
| Warning | User can decide whether or not action is required. |
| Information | Information only, no action is required. |

## *Viewing Events*

To display Events:

1. Click the **Administration** tab.

2. Click the **Events** icon.

   The log of Events appears. Events are added to the top of the list. Each item includes:
   - **Index number** – Begins with 0 at system startup.
   - **Device** – Disk Array, Logical Drive, Physical Drive by its ID number.
   - **Event ID** – Hexadecimal code for the specific event
   - **Severity** – see table on previous page
   - **Time** – Date and time the event happened.
   - **Description** – A description of the event in plain language.

3. Press the up and down arrow keys to scroll through the log. Choose the page size and event log page you want to view.

## *Saving Events*

This feature saves a plain text file of runtime events to your host PC or server using your browser.

To save the Events log:

1. Click the **Administration** tab.

2. Click the **Events** icon.

3. Click the **Save** button.

4. Follow your browser's procedure to save the event file to the desired location.

## *Clearing Events*

To clear the Events log:

1. Click the **Administration** tab.

2. Click the **Events** icon.

3. Click the **Clear** button.

4. In the Confirmation box, type the word "**confirm**" in the field provided and click the Confirm button.

# MANAGING USERS

## Viewing User Information

To view user information:

1. Click the **Administration** tab.

2. Click the **Management User** tab.

   The list of users displays. User information includes:

   - User name
   - Display Name
   - Privilege level
   - Email address
   - Status

## Creating a User

This action requires **Administrator** or **Super User** privileges.

To create a user:

1. Click the **Administration** tab.

2. Click the **Management User** tab.

3. Click the **Add New User** button.

4. In the **Add User** dialog box, enter the information in the fields provided:

   - Name – This is the user's login name
   - Display Name
   - Password
   - Retype Password
   - User Email – Required for event notification
   - Enable this user - Check box to enable the user. Click to remove check to disable.
   - Privilege - Use pull down menu to select *View, Maintenance, Power*, or *Super* user level. See the table below for a description of the privilege types.

5. Click the **Submit** button. The user is added to the list.

| User Privileges | |
|---|---|
| **Level** | **Meaning** |
| *View* | Allows the user to See all status and settings but not to make any changes |
| *Maintenance* | Allows the user to perform maintenance tasks including Rebuilding, PDM, Media Patrol, and Redundancy Check |
| *Power* | Allows the user to create (but not delete) disk arrays and logical drives, change RAID levels, change stripe size; change settings of components such as disk arrays, logical drives, physical drives, and the controller |
| *Super* | Allows the user full access to all functions including create and delete users and changing the settings of other users, and delete disk arrays and logical drives.<br>The default "administrator" account is a **Super User** |

# Making User Settings

This action requires **Administrator** or a **Super User** privileges.

To make user settings:

1.  Click the **Administration** tab.

2.  Click the **Management User** tab.

3.  In the User list, click the user you want, then click the gear icon and select the *Modify* option.

4.  Make settings changes as required:

    *   For the E**nable** box, check to enable this user account,
        uncheck to disable this user account

    *   In the User Settings dialog box, enter a new **Display Name** or **User** E**mail** address

    *   Choose a new **Privilege** level from the drop-down menu.
        See the table on the next page.

5.  Click the **Save** button.

# Changing User Passwords

This action requires **Administrator** or **Super User** privileges.

To change a user's password:

1.  Click the **Administration** tab.

2.  Click the **User Management** icon.

3.  In the User list, click the user you want, then click **Change Password**.

4.  In the Change Password dialog box, enter the information in the fields provided:

    *   New Password
    *   Retype Password

5.  Click the **Save** button.

# Deleting a User

This action requires **Administrator** or **Super User** privileges

To delete a user:

1.  Click the **Administration** tab.

2.  Click the **User Management** icon.

3.  In the User list, click the user you want, then click the **Delete** button.

4.  In the **Confirmation** box, type the word "**confirm**" in the field provided and click the **Confirm** button.

> **Note**
>
> **The Administrator account cannot be deleted.**

# Setting User Event Subscriptions

By default, all users have event notification:

- Enabled

- Set to the Major (severity) level for all events

Subscribing users receive notification of events at the chosen severity level and all higher levels.
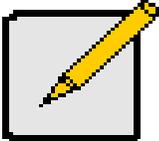
**Note**

**Each user must have a valid Email address to receive events.**

Changing a user subscription requires **Administrator** or **Super User** privileges.

To set a user event subscription:

1.  Click the **Administration** tab.

2.  Click the **Management User** tab.

3.  In the User list, click the user you want, then click the **Subscription** button.

4.  Make settings changes as required:

    - For the E**nable** Event **Notification** box, check to enable for this user, uncheck to disable.
    - Click to change the priority options for each category of event.

5.  Click the **Save** button.

# Viewing Services

This feature displays all software services running on the RAID subsystem.

To view the list of software services:

1.  Click the **Administration** tab.

2.  Click the **Service** icon.

    The Services list displays the Status and Start Type of the services available. These services are described in the sections that follow.  To view the actions available for the various services in the list, click the gear icon for the respective service.

## *Email Service*

Email service enables the RAID subsystem to send you Email messages about events and status changes. By default, Email service is set to Automatic.

## *Stopping Email Service*

To stop the Email service:

1.  Click the **Administration** tab.

2.  Click the **Service** icon.

3.  Click the gear icon for Email service and select the *Stop* option.

4.  Click the **Confirm** button.

To start the Email service after stopping it:

1.  Click the **Administration** tab.

2.   Click the **Services** icon.

3.  Click the gear icon for Email service and select the *Start* option.

## *Restarting Email Service*

To restart the Email service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for Email service and select the *Restart* option.

## *Making Email Settings*

To change Email service settings:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for Email service and select the *Settings* option.

4. Make settings changes as required:

    - Choose a startup type,

        * Automatic – (default) Starts and runs with the subsystem.

        * Manual – You start the service when you need it.

    - SMTP Server IP address
    - SMTP Server Port
    - SMTP Authentication – Choose the *Yes* radio button to enable authentication or the *No* radio button to disable authentication.
    - Authentication Username – Required if SMTP authentication is enabled.
    - Authentication Password – Required if SMTP authentication is enabled.
    - Sender (From) Address – The sender's name shown on notification messages.
    - Email Subject – The subject line of the notification message.

5. To enable SSL for the connection to the Email server, check the **Enable SSL** box.

6. To send a test email, one time, check the **Send a Test Email** box.

7. Click the **Save** button.

8. Type "CONFIRM" in the popup menu and click the **Confirm** button.

### Note

**To verify your settings, send a test message.**

## SLP Service

Service Location Protocol (SLP) discovers services over the Internet. SLP applies to IPv4 protocol only.

## Stopping SLP Service

To stop the SLP service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SLP service and select the *Stop* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

To start the SLP service after stopping it:

1. Click the **Administration** tab.

2. Click the **Services** icon.

3. Click the gear icon for SLP service and choose the *Start* option.

## Restarting SLP Service

To restart the SLP service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SLP service and select the *Restart* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Making SLP Settings*

To change SLP service settings:

1.  Click the **Administration** tab.

2.  Click the **Service** icon.

3.  Click the gear icon for SLP service and select the *Settings* option.

4.  Choose a startup type:

    •   Automatic – (default) Starts and runs with the subsystem.

    •   Manual – You start the service when you need it.

5.  Click the **Save** button.

6.  Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Webserver Service*

Webserver service connects the WebPAM PROe interface to the RAID subsystem though your browser.

## *Stopping Webserver Service*

To stop the Webserver service:

1.  Click the **Administration** tab.

2.  Click the **Service** icon.

3.  Click the gear icon for Webserver service and select the *Stop* option.

4.  Type "CONFIRM" in the popup menu and click the **Confirm** button.

To start the Webserver service after stopping it:

1.  Click the **Administration** tab.

2.  Click the Services icon.

3.  Click the Webserver service and click the **Start** button.

4.  Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Restarting Webserver Service*

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SLP service and select the *Restart* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Making Webserver Settings*

To change Webserver service settings:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SLP service and select the *Settings* option.

4. Make settings changes as required:

   - Choose a startup type,
     - \* Automatic – (default) Starts and runs with the subsystem.
     - \* Manual – You start the service when you need it.
   - Session Time Out – Default is 24 minutes.

5. Click the **Save** button.

6. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *SSH Service*

Secure Shell (SSH) service enables you to access the subsystem's Command Line Interface (CLI) through a network connection.

## *Stopping SSH Service*

To stop SSH service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SSH  service and select the *Stop* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

To start SSH service after stopping it:

1. Click the **Administration** tab.

2. Click the **Services** icon.

3. Click the gear icon for SSH  service and select the *Start* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Restarting SSH Service*

To restart SSH service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SSH  service and select the *Restart* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Making SSH Settings*

To change SSH service settings:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SSH  service and select the *Settings* option.

4. In the SSH Settings tab, make settings changes as required:

   - Choose a startup type,
     - \* Automatic – (default) Starts and runs with the subsystem.
     - \* Manual – You start the service when you need it.
   - Port number - Default is 22.
   - Max Number of Concurrent Connections – Default is 4.
     Maximum number is 4.
   - Session Time Out - Default is 24 minutes.

5. Click the **Save** button.

6. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *SSH Public Key Management*

To change SSH service settings:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SSH  service and select the *SSH Public Key Management* option.

4. In the SSH Public Key Management menu, make settings changes as required:

   - Click the **Choose File** button and locate the file with the SSH Public Key
   - Enter a comment
   - Enter TFTP IP and file path information

5. Click the **Upload** button.

## *SNMP Service*

Simple Network Management Protocol (SNMP) is the long used protocol for getting information or modifying about managed devices on IP networks.

## *Stopping SNMP Service*

To stop SNMP service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SNMP  service and select the *Stop* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

To start SNMP service after stopping it:

1. Click the **Administration** tab.

2. Click the **Services** icon.

3. Click the gear icon for SNMP  service and select the *Start* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *Restarting SNMP Service*

To restart SNMP service:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SNMP  service and select the *Restart* option.

4. Type "CONFIRM" in the popup menu and click the **Confirm** button.

## *SNMP Settings*

To change SNMP settings:

1. Click the **Administration** tab.

2. Click the **Service** icon.

3. Click the gear icon for SNMP  service and select the *Settings* option.

4. Required settings include:

   - **Security User Name**
   - Choose an **Authentication Protocol** (*MD5*, *SHA*)
   - Enter an **Authentication Password** and **Retype Authentication Password**
   - Choose a **Privacy Protocol**
   - Enter an **Privacy Password** and **Retype Privacy Password**

5. Click on **Submit** button to apply new settings.

Note that the **Context Engine ID** is listed in this menu.

# Performance Monitoring

The Vess R3600 includes menu displays for monitoring of numerous functions and parameters. However, many administrators might give priority to particular functions for monitoring. For this reason, a feature is included to allow the administrator to create a favorites list of menus for monitoring.

Performance monitoring charts are available for **Controller**, **Pool**, **Volume**, **NAS Share**, **Clone**, **Physical Drive**, **Management Port**, **IO Port**, and **FC Port**. Go to **Administrator > Performance Monitoring** and choose which menu you want to view from the expanded list. For some charts, additional parameters can be selectively viewed.

## *Adding a menu to Favorites page*

To add a menu to the **Favorites** page in Performance Monitoring, open the performance menu you want to add, choose the parameter to view if applicable, and click on the ***Add this chart to favorites***.

### *Controller Performance chart*
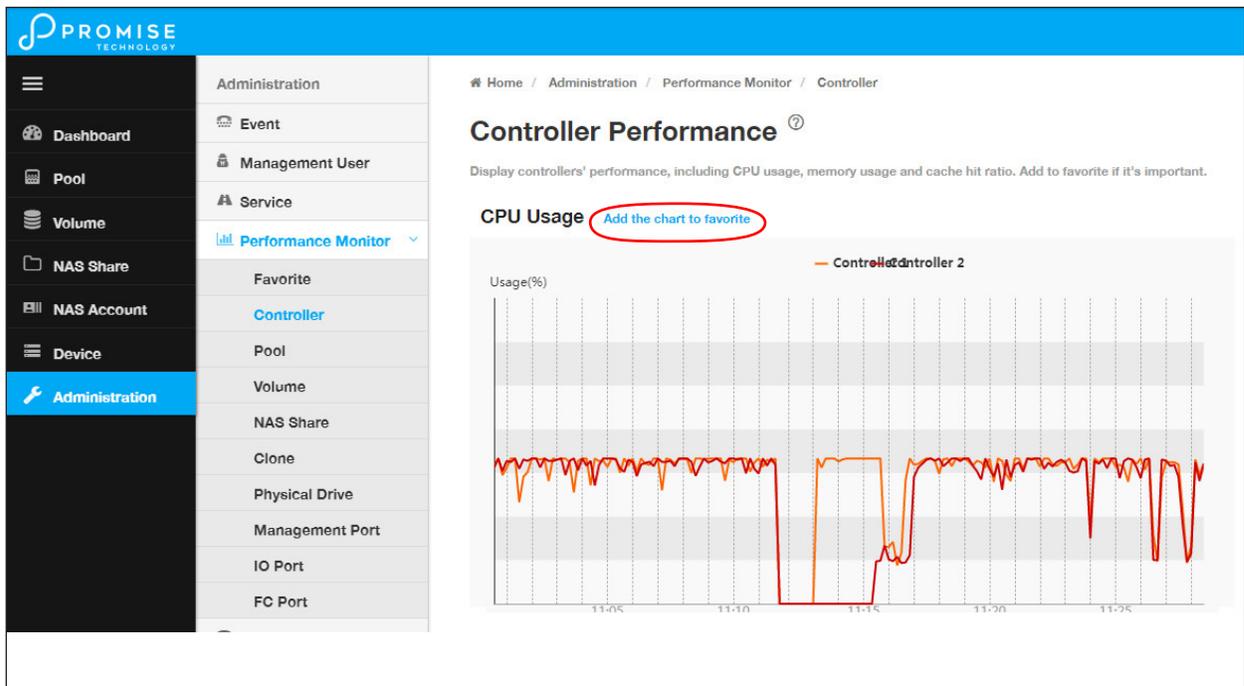
**Favorite Performance Monitoring menus display**



To remove a chart from the Favorite menus, click on *Remove this chart*.

# Managing Background Activities

Background activities perform a variety of preventive and remedial functions on your physical drives, disk arrays, logical drives, and other components.

You can run a background activity immediately or schedule it to run at a later time. Scheduling options are described below.

Setting options for each activity are listed after the scheduling options. These settings determine how the background activity affects I/O performance.

## View Current Background Activities

To view a list of current background activities:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

   Currently running activities show a progress bar.

## View Scheduled Background Activities

To view a list of scheduled background activities:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

3. Click the **Scheduler** button.

   The list of currently scheduled background activities appears.

# Add a Scheduled Background Activity

To add a new scheduled background activity:

1.  Click the **Administration** tab.

2.  Click the **Background Activities** tab.

    The list of background appears.

3.  Click the **Background Activity Scheduler** button.

    The list of currently scheduled background activities appears.

4.  Click the **Add Schedule** button.

5.  In the new menu, choose the option (radio button) for the activity you want:

    *   Redundancy Check
    *   Spare Check

6.  Check the box to **Enable This Scheduler** if you want to make the schedule active. (Remove check if you

    want to disable.)

7.  Choose a **Start Time** from the drop-down menus.

    The menus have a 24-hour clock.

8.  Choose a **Recurrence Pattern** option, daily, weekly, or monthly.

    *   For the Daily option, enter an interval in the Every field.
    *   For the Weekly option, enter an interval in the Every field
        and choose one or more days of the week.
    *   For the Monthly option, choose, Day of the Month option then choose a number from the
        drop-down menu.
        The day of the week option then choose the day of the month from the drop-down menus.

9.  Choose a **Start From** date from the drop-down menus.

10. Choose an E**nd On** option,

    *   No end date or perpetual.
    *   End after a specific number of activity actions.
    *   Until date from the drop-down menus.

11. For **Redundancy Check**, choose,
    - **Auto Fix** option – Attempts to repair the problem when it finds an error. Check to enable
    - **Pause on Error** option – The process stops when it finds a non-repairable error. Check to enable
    - **Select LD** – Check the boxes for the logical drives to run Redundancy Check. Check at least one logical drive

12. Click the **Submit** button.

# Change a Background Activity Schedule

To change an existing scheduled background activity:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

3. Click the **Scheduler** button.

   The list of currently scheduled background activities appears.

4. Click the background activity and click the **Settings** button.

5. Make settings changes as required:

    - Choose a **Start Time** from the drop-down menus.
      The menus have a 24-hour clock.

    - Choose a **Recurrence Pattern** option, daily, weekly, or monthly.
      For the Daily option, enter an interval in the Every field.
      For the Weekly option, enter an interval in the Every field and choose one or more days of the week.
      For the Monthly option, choose the Day of the Month option or the day of the week option, and choose the day from the drop-down menu.

    - Choose a **Start From** date from the drop-down menus.

    - Choose an E**nd On** option,
      No end date or perpetual.
      End after a specific number of activity actions.
      Until date from the drop-down menus.

    - For **Redundancy Check**, choose,
      **Auto Fix** option – Attempts to repair the problem when it finds an error. Check to enable
      **Pause on Error** option – The process stops when it finds a non-repairable error. Check to enable
      **Select LD** – Check the boxes for the logical drives to run Redundancy Check. Check at least one logical drive

6. Click the **Save** button.

# Enable/Disable Scheduled Background Activity

Background activity schedules are enabled by default when you create the schedule. If you want to stop a background activity now but plan to use it again in the future, disable the scheduled activity rather than deleting it. To enable or disable change an existing scheduled background activity:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

3. Click the **Scheduler** button.

   The list of currently scheduled background activities appears.

4. Click the background activity and click the **Settings** button.

5. Uncheck the E**nable This Schedule** box to disable this schedule.

   Check the box to enable this schedule.

6. Click the **Save** button.

# Delete a Scheduled Background Activity

To change an existing scheduled background activity:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

3. Click the **Scheduler** button.

   The list of currently scheduled background activities appears.

4. Click the background activity and click the **Delete** button.

5. In the confirmation box, click the confirm button.

# Media Patrol

Media Patrol is a routine maintenance procedure that checks the magnetic media on each disk drive. Media Patrol checks are enabled by default on all disk arrays and spare drives. Media Patrol is concerned with the media itself, not the data recorded on the media. If Media Patrol encounters a critical error, it triggers a PDM if PDM is enabled on the disk array.

## *Starting, Stopping, Pausing and Resuming Media Patrol*

To make Media Patrol settings:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

   The list of background appears.

3. To begin Media Patrol, click the **Start** button. To Pause a running Media Patrol, click on the Gear icon and select *Pause*; click *Resume* to continue the Media Patrol. To Stop a running Media Patrol, click on the Gear icon, select *Stop*. Stopping Media Patrol requires confirmation by typing "Confirm" in the Confirmation pop up menu and clicking on the **Confirm** button.

*Media Patrol actions menu*

# Redundancy Check

Redundancy Check is a routine maintenance procedure for fault-tolerant disk arrays (those with redundancy) that ensures all the data matches exactly. Redundancy Check can also correct inconsistencies.

## *Starting, Stopping, Pausing and Resuming Redundancy Check*

To make Redundancy Check settings:

1. Click the **Administration** tab.

2. Click the **Background Activities** tab.

    The list of background activities appears.

3. Use the check boxes to select the pools to run Redundancy Checks. Note that you can also enable/disable **Auto Fix** and **Pause on Error** for each pool.

4. To begin Redundancy Check on existing pools, click the **Start** button. To Pause a Redundancy Check for a pool, click on the Gear icon for the pool and select *Pause*; click *Resume* to continue the Redundancy Check. To Stop a running Redundancy Check, click on the Gear icon, select *Stop*. Stopping Redundancy Check requires confirmation by typing "Confirm" in the Confirmation pop up menu and clicking on the **Confirm** button.

*Redundancy Check actions menu*

| Redundancy Check | | Redundancy Check is running. | | Start |
|---|---|---|---|---|
| **Pool ID** | **Pool Name** | **Status** | | |
| 1 | R1_c2(RAID1) | | Running 54% | ⚙▾ |
| 2 | R5_c1(RAID5) | | Running 32% | Pause |
| 3 | R6_c2(RAID6) | | Running 36% | Stop |
| 4 | R10_c1(RAID10) | | Running 69% | ⚙▾ |
| 5 | R50_c2(RAID50) | | Running 38% | ⚙▾ |
| 6 | R60_c1(RAID60) | | Running 31% | ⚙▾ |
| 8 | R1_c1(RAID1) | | Running 69% | ⚙▾ |

# Rebuild

When you rebuild a disk array, you are actually rebuilding the data on one physical drive.

- When a physical drive in a disk array fails and a spare drive of adequate capacity is available, the disk array begins to rebuild automatically using the spare drive.

- If there is no spare drive of adequate capacity, but the Auto Rebuild function is ENABLED, the disk array begins to rebuild automatically as soon as you remove the failed physical drive and install an unconfigured physical drive in the same slot. See "Making Rebuild Settings" below.

- If there is no spare drive of adequate capacity and the Auto Rebuild function is DISABLED, you must replace the failed drive with an unconfigured physical drive, then perform a **Manual Rebuild**.

## *Starting a Rebuild*

Rebuilding a disk pool is only available if the status of a pool has been determined to be degraded or critical.

1. Click the **Administration** tab.

2. Click the **Background Activities** icon.

    The list of background activities appears.

3. Choose the options in the Rebuild menu, including the Source Physical Drive and Target Physical Drive from the respective pull down menus.

4. Click the **Submit** button to begin the rebuild. A rebuild requires confirmation by typing "Confirm" in the Confirmation pop up menu and clicking on the **Confirm** button.

PDM

Transition

Synchronization

# Background Synchronization

Synchronization is automatically applied to redundant logical drives when they are created. Synchronization recalculates the redundancy data to ensure that the working data on the physical drives is properly in sync.

### Background Synchronization Rate

1. To change Background Synchronization Rate setting, click on **Global Background Activities Settings** to view the **Background Activities Settings** menu, then click the **Synchronization Rate** drop-down menu and choose a rate:

   • **Low** – Fewer system resources to Synchronization, more to data read/write operations.

   • **Medium** – Balances system resources between Synchronization and data read/write operations.

   • **High** – More system resources to Synchronization, fewer to data read/write operations.

2. Click the **Submit** button.

## *PDM*

Predictive Data Migration (PDM) is the migration of data from the suspect physical drive to a spare drive, similar to rebuilding a logical drive. But unlike Rebuilding, PDM constantly monitors your physical drives and automatically copies your data to a spare drive before the physical drive fails and your logical drive goes Critical.

### PDM Settings

To change PDM setting the in Background Activities Settings menu:

1.  Click on **Global Background Activities Settings** to view the **Background Activities Settings** menu, then click the **PDM Rate** drop-down menu and choose a rate:

    -   **Low** – Fewer system resources to PDM, more to data read/write operations.
    -   **Medium** – Balances system resources between PDM and data read/write operations.
    -   **High** – More system resources to PDM, fewer to data read/write operations.

2.  Highlight the current values in the block threshold fields and input new values.
    *Reassigned Block Threshold* range is 1 to 512 blocks.
    *Error Block Threshold* range is 1 to 2048 blocks.

3.  Click the **Submit** button.

## *Transition*

Transition is the process of replacing a revertible spare drive that is currently part of a disk array with an unconfigured physical drive or a non-revertible spare drive. To begin a transition, there must first be an un-configured physical drive or a non-revertible spare available to be the target drive. Spare drives are normally created when setting up shared pools. See "Creating Spare Drive" on page 58 for instructions on how to set up spare drives.

To configure a transition, click the **Start** button for Transition in the Background Activities menu, in the new menu, choose the Source Drive and Target Drive in the affected pool and click on the **Submit** button.

# Restore Factory Default Settings

This feature restores settings to their default values.

**Caution**

**Use this feature only when required and only on the settings that you must reset to default in order to set them correctly.**

To restore all settings to their default values:

1.  Click the **Administration** tab.

2.  Click **Restore Factory Default**.

3.  In the Restore factory default settings screen, check the boxes beside the settings you want to reset to default value (see **Factory Default Settings (by type)** table below). Note that you have the option to select all firmware or all software settings to factory default, or choose each setting to reset individually for both categories.

4.  Click the **Submit** button.

5.  In the Confirmation box, type the word "confirm" in the field provided and click the **Confirm** button.

**Caution**

**If you apply Restore Factory Default settings to the Management Network Settings, you might lose your WebPam Pro connection.**

## Factory Default Settings (by type)

### Firmware Settings

- Background Activities Settings
- Controller Settings
- Enclosure Settings
- FC Settings
- iSCSI Settings
- Management Network Settings
- Physical Drive Settings
- Subsystem Settings

### Software Settings

- BGA Scheduler Settings
- Service Settings
- Web Server Settings
- SNMP Settings
- SSH Settings
- Email Settings
- NTP Settings
- User Settings
- UPS Settings
- Syslog Settings
- Time Zone Settings
- NAS Settings

# Export User Database

You can save the user information and settings from one Vess R3600 RAID subsystem, export it, and then import it to automatically configure your other Vess R3600 RAID subsystems.

To export a user database:

1. Click the **Administration** tab.

2. Click the **Import/E**xport tab.

3. Click the E**xport** option.

4. Choose **User Da**tab**ase** radio button in the **Type** menu.

5. Click the **Submit** button.

> **Note**
>
> The user database file is not designed to be opened or edited in the field. The User.dat file is downloaded to the default download folder.

# Export Service Report

You can save a service report from a Vess R3600 RAID subsystem.

To export a Service Report:

1. Click the **Administration** tab.

2. Click the **Import/E**xport tab.

3. Click the E**xport** option.

4. Choose **Service Report** radio button in the **Type** menu.

5. Click the **Submit** button.

# Export Configuration Script, NAS Configuration, NAS Account

You can save a system report from a Vess R3600 RAID subsystem.

To export a user database:

1. Click the **Administration** tab.

2. Click the **Import/E**x**port** tab.

3. Click the E**xport** option.

4. Choose **the** radio button (Configuration Script, NAS Configuration or NAS Account) in the **Type** menu.

5. Click the **Submit** button.

# Import User Database

You can save the user information and settings from one Vess E5000 RAID subsystem, export it, and then import it to automatically configure your other Vess E5000 RAID subsystems.

⚠️ **Caution**

**Importing a user database overwrites the current users and user settings on your Vess E5000 subsystem.**

To import a user database:

1. Click the **Administration** tab.

2. Click the **Import/**E**xport** icon.

3. Click the **Import** option.

4. Choose **User Da**tab**ase** radio button from the **Type** menu.

5. Click the **Upload** button and navigate to the user database file and click the **OK** button.

6. Click the **Next** button.

   The system verifies that the file is a valid user database and displays any errors or warnings.

7. Click the **Submit** button to continue.

8. In the **Confirmation** box, type the word "**confirm**" in the field provided and click the Confirm button.

   The user database is imported and applied automatically.

# Import Configuration Script, NAS Configuration, NAS Account

You can save a settings script for system configuration, NAS configuration or NAS account settings and use it to automatically configure your Vess E5000 subsystem. The script must be a plain, non-encrypted text file. From there, you can import the script from the Host PC and perform the configuration automatically.

> ⚠️ **Cautions**
>
> **Do NOT attempt to write or modify a configuration script until you receive guidance from Technical Support.**
>
> **Importing a settings script overwrites the current settings on your Vess R3600 subsystem.**

Or you can save the configuration from one Vess E5000 RAID subsystem, export it, and then import it to automatically configure your other Vess E5000 RAID subsystems. To import a configuration script:

1. Click the **Administration** tab.

2. Click the **Import/Export** icon.

3. Click the **Import** option.

4. Choose radio button (Configuration Script, NAS Configuration or NAS Account) in the **Type** menu.

5. Click the **Choose File** button and navigate to the configuration script and click the **Upload** button.

6. Click the **Next** button.

   The system verifies that the file is a valid configuration script and displays any errors or warnings.

7. Click the **Submit** button to continue.

8. In the **Confirmation** box, type the word "**confirm**" in the field provided and click the **Confirm** button.

   The settings script is imported and applied automatically.

# Update Firmware

Use this function to flash (update) the firmware on the Vess R3600.

Download the latest firmware image file from PROMISE support:

http://www.promise.com/support/ and save it to your Host PC or TFTP server.

> **Important**
>
> **Verify that no background activities are running on the RAID subsystem.**

To update the firmware on the subsystem and JBOD expansion units:

1.  Click the **Administration** tab.

2.  Click the **Firmware Update** tab.

3.  Choose a download option:

    - **Local File through HTTP** – Click the **Choose File** button, locate the firmware image file, click the file to choose it, then click the **Open** button.
    - **TFTP Server** – Enter the TFTP Server host name or IP address, port number and file name.

4.  Optional. Check the Non-disruptive Image Update (NDIU) box.

    NDIU updates the RAID controllers and I/O modules one at a time, enabling I/O operations continue

    during the firmware update. Updates with this option take a longer period of time to complete. Only dual

    controller models support this feature.

5.  Click the **Download** button.

    The next screen shows the Flash Image (firmware image file) Version Number and Build Date.

6.  Click the **Submit** button.

    The progress of the update displays.

> **Warning**
>
> **Do NOT power off the subsystem during the update!**
>
> **Do NOT move to any other screen until the firmware update operation is completed!**

When the update is completed a message tells you to reboot the subsystem,

7.  Click the **OK** button.

    -   If you chose the Disruptive Flash Method, the RAID subsystem
        and JBOD expansion units automatically restart.
    -   If you chose the Non-Disruptive Flash Method, the system automatically
        flashes and restarts the RAID controllers one at a time.

### *Automatic Restart*

If you did NOT check the NDIU box, the RAID subsystem and JBOD expansion units automatically restart. That

action temporarily disrupts I/O operations and drops your WebPAM PROe connection.

To reestablish your WebPAM PROe connection:

1.  Wait no less than two minutes.

2.  Click **Logout** in the WebPAM PROe Header, then log in again.

    If you cannot log in, wait 30 seconds and try again.

3.  In your browser, click Logout in the WebPAM PROe Header, then log in again.

    If you cannot log in immediately, wait 30 seconds and try again.

# Product Registration

Access the **Product Registration** menu located in the **Administration** tab to register your Vess product. If you

do not have an account, follow the links and instructions to create a new account.

In the Sign In menu, enter the Email ID and Password for your Promise account and click on **Submit**. If you

do not have an account, click the *Don't have a Promise ID?* radio button, click **Submit** and enter the required

information to create an account in the new menu.

# MANAGING WITH THE CLI

This chapter provides information on how to use the command line interface (CLI) for administration of the Vess R3600 with a description of the syntax and function of each command and its parameters. CLI management can be done remotely using an SSH based terminal simulation program, or connect directly to the device using the serial port.

For convenience, a table of contents (page 171) for the commands is included to jump to a specific command description.

# Making a Serial Connection

Before you begin, be sure the RJ11-to-DB9 serial data cable is connected between the Host PC and the Vess

R3600 enclosure, and that both machines are booted and running.

*Serial port on the Vess R3600i controller*
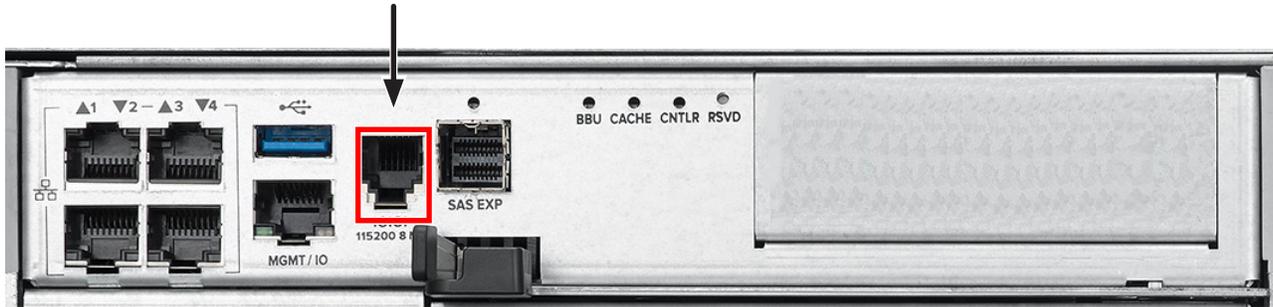


Then do the following actions:

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.

# Logging Into the CLI

1.   At the Login prompt, type the user name and press Enter.

    The default user name is **administrator**.

2.   At the Password prompt, type the password and press Enter.

    The default password is **password**.

    The CLI screen appears.

## Command Table of Contents

# TABLE OF SUPPORTED COMMANDS

The table below and on the following pages provides a brief description of the CLI commands available on the

Vess R3600 Series.

| Command | Action |
| --- | --- |
| about | View utility information. |
| acl | List, set, clear, cancel or refresh the ACL settings on the NAS Share |
| acltmpl | List, add or delete the Windows ACL common settings. |
| allowip | NFS allow share IP settings. |
| battery | View battery information or to recondition a battery. |
| bbm | View or clear the BBM defect list of the specified configured physical drive. |
| bga | View status of all current background activities.<br>Enable or disable relevant background activities.<br>Modify the background task rate for each of the background tasks. |
| bgasched | View status of all current background activities.<br>Enable or disable relevant background activities.<br>Modify the background task rate for each of the background tasks. |
| buzz | View buzzer status, enable/disable and turn on/off buzzer. |
| cache | View or edit cache information and settings. |
| chap | View, create, edit or delete a CHAP record. iSCSI host interface product only. |
| clone | View logical drive clone status and progress. Start, stop a clone. |
| ctrl | View or edit controller information and settings. |
| date | View or edit system time. |
| domain | Domain settings |

**Note**: Commands are NOT case sensitive.

**Table of Supported Commands (Continued)**

| Command | Action |
|---|---|
| encldiag | View enclosure element information. |
| enclosure | View or edit enclosure and SEP information and settings. Locate an enclosure via LEDs. |
| event | View or clear events logs. |
| export | Subsystems only. Export files to remote TFTP host. |
| factorydefaults | Restore settings to factory defaults. |
| fc | View or edit fc information and settings. Fibre Channel host interface product only. |
| folder | List, add, modify, delete and refresh folder. |
| group | List, add, modify or delete nas group. |
| import | Import files or license from remote TFTP host. |
| initiator | View initiator list, add or delete initiator entry. |
| iscsi | View or edit iSCSI information and settings. iSCSI host interface product only. |
| isns | View or edit iSNS information and settings. iSCSI host interface product only. |
| license | View license information. |
| logout | Logout session for the current user. |
| lunmap | View the LUN mapping and masking table. Enable or disable LUN mapping and masking on iSCSI and Fibre Channel host interface product.<br>Add, delete or modify a LUN mapping and masking entry. |
| maintenance | Enter or exit maintenance mode. |
| migrate | Start or stop volume migration |
| mp | View media patrol status and progress.<br>Start, stop a media patrol process. |
| nasconfig | List, reset or restore NAS configuration |
| nasshare | NAS share settings |
| net | View or edit ethernet network information and settings. |
| ntp | View or edit NTP status and settings |
| pair | List, add, modify and delete pair. |
| password | Modify a user's password |

**Note**: Commands are NOT case sensitive.

**Table of Supported Commands (Continued)**

| Command | Action |
| --- | --- |
| pcie | View PCIe slots information in controller. |
| pdm | View PDM status and progress.<br>Start, stop, pause or resume a PDM process. |
| periodsnap | List, add, modify or delete periodic snapshot task. |
| phydrv | View or edit physical drive information and settings. Locate a physical drive via LEDs. |
| ping | Ping another system through management port. |
| pool | View or edit pool information. Create, edit or delete a new or existing pool. |
| protocol | Protocol settings. |
| ptiflash | Update system software and firmware through tftp server. |
| quota | List, set, cancel or refresh the Quota settings on NAS Share. |
| rb | View rebuild status and progress. Start, stop, pause, or resume a rebuild process. |
| rc | View redundancy check status and progress. Start, stop, pause or resume redundancy check. |
| replication | View volume replication status. Start or stop replication. |
| sasdiag | SAS diagnostic command. |
| sc | View spare check status. Start spare check. |
| session | View the list of active sessions. |
| shutdown | Shutdown or restart system. |
| smart | S.M.A.R.T diagnostic for physical drives. |

**Note**: Commands are NOT case sensitive.

**Table of Supported Commands (Continued)**

| Command | Action |
| --- | --- |
| snapshot | Create snapshots or modify snapshot settings. |
| spare | Create or modify hot spare drives. |
| stats | View or reset statistics. |
| subscription | View, modify, enable or disable event notification. |
| subsys | View or edit subsystem information and settings. |
| swmgt | View, start or stop software component. |
| sync | View logical drive synchronization status and progress. |
| target | View the target list. Add or delete a target entry. |
| topology | View SAS topology, the physical connections and device information. For products that support  multiple enclosures only. |
| transit | View transition status and progress. Start, stop, pause or resume a transition process. |
| trunk | List, modify, create and delete trunk information and settings. iSCSI host interface product only. |
| tz | View and modify timezone information.. |
| ups | View or modify UPS information and status. |
| user | List, modify, create and delete user accounts on subsystem. |
| volume | List, add, modify, delete, export and un-export a volume. |

**Note**: Commands are NOT case sensitive.

# NOTES AND CONVENTIONS

Commands and options are NOT case sensitive.

Not all extended keys are supported. However, you can use the backspace and the left and right arrow keys for command line editing. In addition, the up and down arrow keys allow scrolling through the command history buffer.

If you need context-sensitive help, type one of the following commands:

- <command> -h

That action will display full context-sensitive help for the specific command. Each command when used alone, such as "array" will display a summary of relevant information. If more information is desired, the -v verbose mode can be used. This will provide information for all relevant aspects of that command.

Usage terminology is as follows:

- [square braces] depict an optional switch

- <arrow braces> depict user input

  Type " | more" at the end of each command, to display info page by page

## about

**Usage**

about

**Summary**

Displays firmware information.

## acl

**Usage**

acl -a <action> [-f <full path>] [-s <settings>] [-v]

acl -a clear -f <full path>

acl -a set -f <full path> -s <settings>

acl -a cancel -f <full path>

acl -a refresh -f <full path>

**Summary**

This command allows the user to list, set, clear, cancel or refresh the ACL settings on the folder or file.

Note that only one set operation is allowed at the same time on different UIs.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |

| | |
|---|---|
| list | (Default) List ACL settings |
| clear | clear acl settings |
| set | set acl settings |
| cancel | cancel the acl settings operation hold by others |
| refresh | refresh acl settings |
| -f <full path> | Full path of folder or file. |

-s "<option>=<value>"

Used to specify what settings to change.

Only valid for set action.

role=                                    acl role type.

    everyone

    user

    group

name=                                    user name or group name.

Only valid for user or group acl role type

acl=                                     acl settings

    unset

    deny

    ro

    rw

    windows

Following settings are valid for windows acl setting.

template=                                Specify the ACL template name.

traverse=                                Traverse folder/ execute file ACL

    allow

    deny

list=                                    List folder/ read data ACL

    allow

    deny

r_attr=                                  Read attributes ACL

    allow

    deny

r_ext_attr=                                Read extended attributes ACL

     allow

     deny

create=                                    Create files/ write data ACL

     allow

     deny

create_f=                                  Create folders/ append data ACL

     allow

     deny

w_attr=                                    Write attributes ACL

     allow

     deny

w_ext_attr=                                Write extended attributes ACL

     allow

     deny

delete_s=                                  Delete subfolders and files ACL

     allow

     deny

delete=                                    Delete ACL

     allow

     deny

r_perm=                                Read permission ACL

      allow

      deny

chg_perm=                              Change permission ACL

      allow

      deny

take_own=                              Take owner ACL

      allow

      deny

-v                                     Verbose mode. Used with -a list.

**Examples**:

```
acl -a list -f /FS/ns

acl -a list -f /FS/ns/a.txt

acl -a clear -f /FS/ns

acl -a set -f /FS/ns -s "role=user, name=testa, acl=ro"

acl -a cancel -f /FS/ns

acl -a refresh -f /FS/ns

Type ' | grep "word1,word2,..."' at the end of each command, to display filtered

info.
```

## acltmpl

**Usage**

acltmpl -a <action> [-n <template name>] [-s <settings>] [-v]

acltmpl -a list -n <template name>

acltmpl -a add -n <template name> -s <settings>

acltmpl -a mod -n <template name> -s <settings>

acltmpl -a del -n <template name>

**Summary**

This command allows the user to list, add, mod, del windows acl template.

**Options**

-a <action>          Which action to perform.

      list                          (Default) List windows acl template.

      add                          Add windows acl template.

      mod                          Mod windows acl template.

      del                           Del windows acl template.

-n <template name>    Specify the windows acl template.

-s "<option>=<value>"

Used to specify the windows acl template settings. (Optional)

      desc=                          Description of the template.

      traverse=                      Traverse folder/ execute file ACL

        allow

        deny                          (Default)

list=                                        List folder/ read data ACL

    allow

    deny                              (Default)

r_attr=                                      Read attributes ACL

    allow

    deny                              (Default)

  r_ext_attr          Read extended attributes ACL

    allow

    deny            (Default)

  create              Create files/ write data ACL

    allow

    deny            (Default)

  create_f          Create folders/ append data ACL

    allow

    deny            (Default)

  w_attr            Write attributes ACL

    allow

    deny            (Default)

  w_ext_attr          Write extended attributes ACL

    allow

    deny            (Default)

  delete_s          Delete subfolders and files ACL

    allow

    deny            (Default)

delete            Delete ACL

    allow

    deny          (Default)

r_perm            Read permission ACL

    allow

    deny          (Default)

chg_perm            Change permission ACL

    allow

    deny          (Default)

take_own            Take owner ACL

    allow

    deny          (Default)

-v                Verbose mode. Used with -a list.

**Examples**

```
acltmpl -a list

acltmpl -a add -n aaa -s "traverse=allow, list=allow, r_attr=allow,

        r_ext_attr=allow, create=allow, create_f=allow, w_attr=allow,

        w_ext_attr=allow, delete_s=allow, delete=allow, r_perm=allow,

        chg_perm=allow, take_own=allow"

acltmpl -a mod -n aaa -s "traverse=allow, list=allow, r_attr=allow"

acltmpl -a del -n aaa

Type ' | grep "word1,word2,..."' at the end of each command, to display

filtered info.
```

### allowip

**Usage**

allowip [-a <action>] -t <type> -d <ID> [-i <index>] [-s <settings>]

**Summary**

This command allows the user to add, modify or delete NFS allow share IP settings.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |

| | |
|---|---|
| list | (Default) List allow share ip for NFS protocol |
| add | add allow share ip for NFS protocol |
| mod | modify allow share ip for NFS protocol |
| del | delete allow share ip for NFS protocol |
| clear | clear allow share ip for NFS protocol |

| | |
|---|---|
| -t <type> | Storage type. If not specified for list action. |

nasshare

| | |
|---|---|
| -d <ID> | The storage ID. |

| | |
|---|---|
| -i <index> | Used to specify the allow ip entry index. |

Only valid for modify or delete action

-s "<option>=<value>"

Used to specify allow share ip settings for NFS protocol

| | |
|---|---|
| ip= | IP address |

permission=

| | |
|---|---|
| rw | read-write |
| ro | read-only |

squash=

| | |
|---|---|
| all | all_squash |
| root | root_squash |
| noroot | no_root_squash |

-v                         Verbose mode.  Used with -a list.

**Examples**

allowip -a list -t nasshare -d 2

allowip -a add -t nasshare -d 2 -s "ip=10.0.0.1, permission=ro, squash=root"

allowip -a mod -t nasshare -d 2 -i 1 -l "ip=10.0.0.1, permission=rw,

squash=noroot"

allowip -a del -t nasshare -d 2 -i 1

allowip -a clear -t nasshare -d 2

Type ' | grep "word1,word2,..."' at the end of each command, to display filtered info.

## battery

**Usage**

battery [-a <action>] [-b <batId>]

battery -a recondition -b <batId>

**Summary**

Battery is used to display the current status of a battery indicating the percentage of charge left.

This command is also used to recondition a battery. Reconditioning of a battery attempts to fully discharge, and

then recharge it. In addition the battery will be reconditioned automatically once per month.

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) List information for all batteries or a specific battery unit. |
| recondition | Recondition a specific battery. |
| -b <battery ID> | Used to specify which battery in a given enclosure. |

**Examples**

```
battery

battery -a recondition -b 1
```

## bbm

**Usage**

bbm [-a <action>] [-p <PdId>]


bbm -a clear -p <PdId>

**Summary**

The bbm command displays or clears the Bad Block Map (BBM) defect list for all configured physical drives.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
| list | (Default) List the BBM information. |
| clear | Clears the BBM list. For configured SATA drives only. |
| -p <PdId> | Specifies the physical drive id. For the -a list option, the default is all physical drives. For the -a clear option, you must specify a physical drive id. |

**Examples**

```
bbm -p 1

bbm -a clear -p 3
```

## bga

**Usage**

bga [-a <action>]

bga -a mod -s "<list of settings>"

**Summary**

The bga command displays all current background activities and makes settings for each background activity.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
|     list | (Default) Lists current background activities. |
|     mod | Makes changes to one of the settings. |
| -s "<option>=<value>" | Specifies which background activity settings to change. |
|     autorebuild= | Enable or disable auto-rebuild and auto-transition. |
|     enable | Auto-rebuild initiates a rebuild of an array when an unconfigured drive is inserted into the slot of a dead drive. |
|     disable | Auto-transition means transitioning is initiated on a used revertible spare in the following condition: |

1. When the rebuild has been completed using the revertible spare, and

2. When an unconfigured drive is inserted into the slot of the dead drive which the was part of the array.

or

When a non-revertible spare has been inserted or created, and is applicable to the array This option affects all arrays on the subsystem.

| | |
|---|---|
|     <bg task>=<rate> | Background task rates are used to determine what percentage of the IO load on the controller should be dedicated to the background task.  A lower number will mean the task takes longer to complete, a higher number will cause the task to complete faster, all other things being equal. |

---

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| | |
|---|---|
| rebuildrate= | Rebuild rate determines the rate at which rebuild will run. (low=25, medium=50, high=75) |
| low | |
| medium | |
| high | |
| rcrate= | Redundancy check rate determines the rate at which redundancy check will run. (low=25, medium=50, high=75) |
| low | |
| medium | |
| high | |
| syncrate= | Synchronization rate determines the rate at which synchronization will run. (low=25, medium=50, high=75) |
| low | |
| medium | |
| high | |

**Examples**

```
bga

bga -a mod -s"rebuildrate=high"

Type ' | grep "word1,word2,..."' at the end of each command, to display

filtered info.
```

## bgasched

**Usage**

bgasched -a <action> -t <type> -s <list of settings>

bgasched -a add -t <type> -s <list of settings>

bgasched -a mod -t rc -i <RC scheduler id> -s <list of settings>

bgasched -a mod -t <type> -s <list of settings>

bgasched -a del -t <type>

bgasched -a del -t rc -i <RC scheduler id>

**Summary**

Bgasched is used to display all scheduled background activities as well as to allow the user to add, modify or delete date and time of the scheduled activities.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays information of BGA scheduler. |
| add | Create a new BGA scheduler. |

If exists RC scheduler, cannot add RC scheduler with all pools. The max number of RC scheduler is 2.

Only 1 for other schedulers.

| | |
|---|---|
| mod | Modify a exist scheduler. |

Can not change poolid param of an exist RC scheduler to all pools.

| | |
|---|---|
| del | Delete a exist scheduler. |
| -t <type> | Specifies what type of scheduler. |
| mp | Media Patrol Schedule. |
| rc | Redundancy Check Schedule. |

---

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| | |
|---|---|
| br | Battery Reconditioning Schedule. |
| sc | Spare Drive Check Schedule. |
| -i <RC scheduler id> | Specifies the RC scheduler ID. It's used for list/modify/delete RC scheduler. If the option is not specified, assumed to all. |
| -s "<option>=<value>" | Used to specify which BGA scheduler settings to change. |
| status= | Specifies status type of scheduler. |
| enable | Enable a scheduler. |
| disable | Disable a scheduler. The default is disable. |
| starttime= | Used to specify start time of scheduler in the following format hh:mm where hour's range is 0-23, minute's range are 0-59. The default is 20:00 for MP, 22:00 for RC and SC, 02:00 for others. |
| recurtype= | Specifies recurrence type of scheduler. The default is monthly for br type, weekly for others. |
| daily | |
| weekly | |
| monthly | |
| recurInterval= | Specifies recurrence Interval. This option is for Daily and Weekly recurrence type. For Daily type, the range is 1-255. For Weekly type, the range is 1-52. For Daily type, the default is 1. For Weekly type, the default is 4 for MP, 2 for RC, 1 for others. |
| dow= | Day of Week. This is for Weekly or Monthly recurrence type scheduler. Regarding Monthly type, if daypattern (see below) is |

day of week, it will be used.

For Weekly, the range is [Sun|Mon|Tues|Wed|Thur|Fri|Sat].

For multiple value, divided by space.

The default is 'Fri' for MP, 'Wed' for RC, 'Tues' for SC,

'Sun Mon Tues Wed Thur Fri Sat' for others.

For Monthly, the range is [Sun|Mon|Tues|Wed|Thur|Fri|Sat].

The default is Sat.

daypattern =                              Specifies the daypattern type for Monthly recurrence type scheduler.

  dom                          Day of month.

  dow                          Specific day of week.

  dom=           Day of Month, for 'dom' daypattern type.

        The range is 1~31. The default is 1.

wom=           Week ordinal, for 'dow' daypattern type.

        The range is (1st| 2nd |3rd |4th |Last).

        The default is 1st.

month=           Months. The range are 1~12 divided by space or '~'.

        The default is 1~12.

startfrom=       Start day of range of occurrence in the following format

        yyyy-mm-dd where month's range is 1-12,

        day's range is 1-31.

        The default is current date of system.

endon=           Used to specify end time of scheduler.

0           (Default) No end time.

n            An integer N indicates after N times.

yyyy-mm-dd    End date, month's range is 1-12 and day's range is 1-31.

autofix=       Fix inconsistent data.

enable       The default is enable.

disable

pause=         Pause on error.

enable

disable       The default is disable.

poolid=        The list of PoolID.

For add action, if the option is not specified,

assumed to for all pools.

For multiple value, divided by space or '~'.

-v              Verbose mode. Used with -a list.

**Examples**

```
    bgasched

    bgasched -a mod -t rc -i 1 -s "status=disable,poolid=1 3~5 7"

    bgasched -a add -t mp -s "recurtype=monthly,daypattern=dow,wom=2nd,dow=Sun,

    month= 1 3~6, endon=10"

    bgasched -a add -t sc -s "recurtype=weekly,dow= Mon Wed Fri,starttime=12:00,

    endon=2020-01-01"

Type ' | grep "word1,word2,..."' at the end of each command, to display

filtered info.
```

## buzz

**Usage**

buzz [-a <action>]

buzz -a list buzz -a enable buzz -a disable buzz -a on

buzz -a off

**Summary**

The buzz command displays the status of the buzzer, and enables, disables, turns on or turns off the buzzer.

**Options**

-a <action>    Specifies the action to perform.

list                    (Default) List the status of the buzzer.

enable              Enable the buzzer.

disable             Disable the buzzer.

on                     Turn on the buzzer.

off                     Turn off the buzzer.

## cache

**Usage**:

    cache [-a <action>] -t <type> [-m <media type>] [-p <phydrv id list>]

        [-i <pool id list>]

**Summary**:

  The cache command allows the user to list cache info. To add or del read/write cache using SSD physical drive.

To modify SSD physical drives or to modify/remove assigned pools used in read/SSD write cache. As well as to

modify or remove assigned pools for Memory media type write cache.

      Note that a pool can be assigned to either SSD or Memory media type write cache.

**Options**:

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | List cache info. |
| | add | Add read/write cache using SSD PDs. |
| | | At least 2 SSD PDs required for write cache. |
| | mod | Modify SSD PDs or assigned pools used for read/write cache. |
| | del | Delete read/write cache using SSD PDs. |
| | remove | Remove assigned pool(s) from cache. |
| -t < type> | | To specify type of cache. |
| | read | |
| | write | |
| -m <media type> | | To specify the media type of the write cache. |
| | | Only valid for -t write type. |
| | ssd　　(Defaults) | |
| | memory | |

| -p \<phydrv id list\> | To specify physical drive IDs. |
| | |
| | Only valid for -a add/mod action. |
| | |
| -i \<pool id list\> | To specify assigned pool IDs. If not specified for adding cache, it means no pool assigned. If not specified for -a remove action, it means to remove all the assigned pools. Only valid for -a add/mod/remove action. |
| | |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
cache

cache -a add -t read -p 1 -i 1

cache -a add -t write -p 1,2 -i 0

cache -a mod -t read -p 1,2 -i 1

cache -a mod -t write -m ssd -p 1,2 -i 0,1

cache -a mod -t write -m memory -i 3

cache -a remove -t read

cache -a remove -t write -m memory -i 3

cache -a remove -t write -m ssd

cache -a del -t read

cache -a del -t write
```

# chap

**Usage**

chap [-a <action>] [-i <ChapId>]

chap -a add [-s "<list of settings>"]

chap -a mod -i <ChapId> [-s "<list of settings>"]

chap -a del -i <ChapId>

**Summary**

The chap command is used to create, modify or delete a CHAP record.  CHAP authentication is used between

the subsystem and an initiator for the iSCSI host interface.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) List the existing CHAP records. |
| add | Create a CHAP record. |
| mod | Modify an existing CHAP record. To change CHAP secret, use this operation without specifying -s. |
| del | Delete a CHAP. |
| -i  <chap ID> | Used when viewing, modifying or deleting a CHAP record to uniquely identify the CHAP record which to manipulate. |

-s "<option>=<value>"

| | |
|---|---|
| name= | Specifies chap name. |
| type= | Specifies chap type. Could be local or peer. |
| peer: | A peer CHAP record is one that the initiator must know when logging into the subsystem local: A local CHAP is one that the subsystem must know when the initiator logs into the subsystem to create a session. |

**Examples**

```
chap

   chap -a del -i2

   chap -a mod -i1 -s "name=chap1"

   chap -a add -s "name=chap1, type=local"

   > Chap Secret: ****************
```

## clone

**Usage**

clone [-a <action>] [-i <clone id>]  [-d <snapshot id>] [-n <clone name>] [-v]

clone -a list

clone -a add -d <snapshot id> -s "name=<clonename>"

clone -a mod -i <clone id> -s "name=<newclonename>"

clone -a del -i <clone id>

clone -a export -i <clone id>

clone -a unexport -i <clone id>

clone -a mount -i <clone id>

clone -a unmount -i <clone id>

**Summary**

The clone command allow user to view, add, delete a clone.

Can export or uexport a clone if it's type is volume. Can mount or unmount a clone if it's type is nasshare.

**Options**

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | (Default) Displays the current active Clone(s) and their status(es). |
| | add | Add a clone based on snapshot. |
| | mod | Modify clone setting. |
| | del | Delete a clone. |
| | export | Export a clone.For volume type only. |
| | unexport | Unexport a clone.For volume type only. |
| | mount | Mount a clone.For nasshare type only. |
| | unmount | Unmount a clone.For nasshare type only. |
| | promote | Promote a clone. |
| -i <clone id> | | Specify clone id. |
| -d <snapshot id> | S | pecify snapshot id. |
| -s "<option>=<value>" | | |
| | name= | Name to clone, accept double-bytes. |
| -f | | Force delete the clone. |
| -v | | Verbose mode.  Used with -a list. |
| -y | | Enable non-interactive mode. |

**Examples**

```
clone

clone -a add -d 1 -s "name=abc"

clone -a mod -i 1 -s "name=abc"

clone -a export -i 1

clone -a mount -i 1
```

## ctrl

**Usage**

ctrl [-a <action>] [-i <ctrlId>] [-c <ctrl count>] [-v]

ctrl -a mod [-i <ctrlId>] -s "<list of settings>"

ctrl -a clear [-i <ctrlId>] [-t <condition type>]

**Summary**

The ctrl command displays controller information and changes controller settings.

**Options**

-a <action>          Which action tto perform.

      list                              (Default) List current information of the controller(s).

      mod                             Make changes to one of the settings.

      clear                            Clear certain condition on the controller.

-i <ctrl ID>                    Controller ID that information or settings are for. For high availability

                            products, controller ID is required when setting alias of controller.

-c <ctrl count>               Controller count. Used if the user wants information for multiple

                            controllers.

-s "<option>=<value>"       Used to specify which settings to change.

      alias=                          A user specified name used to identify a controller.

                            It can be up to 47 characters long, containing alpha-

                            numeric characters, blank spaces and underscores.

                            The beginning and ending blank spaces will be discarded.

Following setting is shared if there are dual controllers:

| | |
|---|---|
| coercion= | To enable or disable disk coercion functionality.  Disk coercion will truncate the size of the physical disks but will make different sized drives appear as though they are similarly sized.  For example, a 90.1 GB drive would appear as the same size as an 89.8 GB drive. |
| | This is important when using drives of different manufacturers when performing rebuilds or in use as hot spares. |
| | Coercion settings are shared if there are dual controllers: |
| enable | |
| disable | |
| coercionmethod= | The method of coercion. |
| GBTruncate | Truncates the drive to the nearest 1-billion byte boundary. |
| 10GBTruncate | Truncates the drive to the nearest 10-billion byte boundary. |
| GrpRounding | Truncates the drive using an intelligent algorithm. This allows the maximum amount of usable space while at the same time attempting to keep drives in the same size group the same size. For example a  253 GB drive would appear the same size as a 248 GB drive. |
| TableRounding | This uses a pre-defined coercion table to determine how much will be truncated. |
| smart= | Enables or disables polling drive SMART status. |
| enable | |
| disable | |

smartpollinginterval=          (1 - 1440) Sets the time interval in number of minutes to poll the drive

SMART status.

cacheflushinterval=            (1-12) Sets the time interval in seconds to flush the controller writeback

cache.

pollinterval=                  Polling interval in seconds to poll enclosure SEP information. 15..255

adaptivewbcache=               To enable or disable adaptive writeback cache.

    enable              Writeback logical drives will change the write policy based on the

availability of protection. If BBU or UPS is available, the write policy is

retained as Writeback, otherwise the policy is switched to Writethru.

    disable            The write policy of the writeback logical drives are not changed

irrespective of the availability of BBU or UPS.

hostcacheflushing=             To enable or disable host cache flushing. When enabled, SYNCHRONIZE

CACHE SCSI command from host is supported.

For high availability products only.

    enable

    disable

forcedreadahead=  To enable or disable forced read ahead. For high availability products only.

    enable

    disable

  ssdtrimsupport=   To enable or disable SSD trim. Default value is enabled.

    enable

    disable

| | |
|---|---|
| powersavingidletime= | After an HDD has been idle for the set period of time, parks the read/write heads. Set the time interval in number of minutes. Valid values are 0(never), 15, 30, 60(= 1 hour)..1440(=24 hours). |
| powersavingstandbytime= | After an HDD has been idle for the set period of time, lowers disk rotation speed. Set the time interval in number of minutes. Valid values are 0(never), 15, 30, 60(= 1 hour)..1440(=24 hours). |
| powersavingstoppedtime= | After an HDD has been idle for the set period of time, Spins down the disk (stops rotation). Set the time interval in number of minutes. Valid values are 0(never), 15, 30, 60(= 1 hour)..1440(=24 hours). |
| VAAIsupport= | To enable or disable VAAI support. |

enable

disable

pseudodevicetype= pseudo device type

| | |
|---|---|
| das | DAS |
| ctrl | Storage controller device |
| -t <condition type> | Used to specify the type of condition to clear. It is valid only when the command action is "clear". |
| watermark | Watermark, the only supported condition for now. It is used together with -a clear to clear the orphan migration watermark in the controller NVRAM. This will work only when migration storage is set to NVRAM prior to starting migration. |
| -l | Display local controller's id that CLI runs through its serial port. |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
    ctrl

    ctrl -v

    ctrl -l

    ctrl -a mod -i 1 -s "alias=ctrl1, coercion=enable"

    ctrl -a mod -s "powersavingstoppedtime=180"
```

## date

**Usage**

date

date -a mod [-d <date>] [-t <time>] [-z <timezone>]

**Summary**

The date command allows the user to view and modify the system time.

**Options**

| -a <action> | Which action to perform. |
|---|---|
| list | (Default) Displays the current system time. |
| mod | Modifies the current system time. |
| -d <date> | Used to specifies date in the following format: yyyy/mm/dd where month's range is 1-12 and day's range is 1-31. |
| -t <time> | Used to specifies time in the following format: hh:mm:ss where hour's range is 0-23, minute's and seconds' range are 0-59. |

**Examples**

```
 date

 date -a mod -d 2004/02/25 -t 14:50:05
```

## domain

**Usage**

domain -a <action> [-t <type>] [-s <settings>]

**Summary**

 This command allows the user to list, enable or disable domain settings, check KDC for Windows AD or domain

 name for LDAP, as well as to rejoin into domain sever by existing domain settings.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |

| | |
|---|---|
| list | (Default) List domain settings |
| enable | enable setting and join into domain |
| disable | Leave from domain |
| refresh | Rejoin into domain by existing domain settings. |
| | Valid for already joined into domain mode. |
| check | Show Key Distribution Center info for Windows AD or domain name for |
| | LDAP. |

| | |
|---|---|
| -t <type> | Domain server type. |

| | |
|---|---|
| ad | Windows AD |
| ldap | LDAP |
| od | MAC OD |

-l "<option>=<value>" Specify the LDAP domain setting used to get domain name for LDAP type, or specify

 windows AD domain name to get the kdc. Only valid for -a check operation.

| | |
|---|---|
| domain= | Domain name. Only valid for windows AD. |
| server= | Domain server host. Only valid for LDAP. |
| basedn= | Domain base DN. Only valid for LDAP. |
| '<value>' | |
| security= | Security type. Only valid for LDAP. |

| | |
|---|---|
| none | (Default) |
| tls | |
| ssl | |
| -s "\<option\>=\<value\>" | Used to specify domain settings. |
| | Only valid for -a enable action. |
| domain= | (AD/LDAP)Domain name |
| kdc= | (AD) Key Distribution Center |
| netbios= | (AD) NetBIOS Name |
| server= | (LDAP/OD) Domain server host |
| basedn= | (LDAP/OD) Base DN |
| '\<value\>' | |
| security= | (LDAP) security type |
| none | (Default) |
| tls | |
| ssl | |
| usersuffix= | (LDAP) user suffix |
| '\<value\>' | |
| grpsuffix= | (LDAP) group suffix |
| '\<value\>' | |
| username= | (AD/LDAP/OD) Domain join user name for AD or root DN for LDAP/OD |
| password= | (AD/LDAP/OD) Domain join password |
| clear= | Clear acl/quota setting directly or not.Only valid for enable and disable action. |
| no | (default) |
| yes | |
| -v | Verbose mode.  Used with -a list. |

**Examples**

```
    domain -a list

    domain -a enable -t ad -s "domain=2008ad.com,

        kdc=WIN-CC18N6QMNLL.2008AD.com, netbios=2008ad, username=administrator,

        password=password"

    domain -a enable -t ldap -s "domain=test.com, server=10.84.2.46,

        security=none, basedn='dc=test,dc=com', username=admin,

        password=password, usersuffix='ou=People', grpsuffix='ou=Group'"

    domain -a check -t ad -l "domain=2008ad.com"

    domain -a check -t ldap -l "server=10.84.2.71,security=tls,

         basedn='dc=test,dc=com'"

    domain -a disable

    domain -a refresh

Type ' | grep "word1,word2,..."' at the end of each command, to display

filtered info.
```

## encldiag

**Usage**

encldiag -a <action> -e <EnclosureId> -t <element type>

**Summary**

The enclosure diagnostic command is used to get enclosure element information, such as PSU usage, PSU power on time.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | Display enclosure diagnosis information. |
| -e <enclosure ID> | Used to specify enclosure ID. |
| -t <diagnose type> | Used to specify type of diagnosis. |
|     all | (Default) Display the all enclosure diagnosis information. |
|     psu | Display the PSU Usage Info. |
|     powerontime | Display the enclosure element power on time information. |

**Examples**

```
encldiag -a list

encldiag -a list -t all

encldiag -a list -e 1 -t psu
```

## enclosure

**Usage**

enclosure [-a <action>] -v

enclosure -a mod -s <list of settings>

enclosure -a locate [-t <FRU type> -f <FRU id>]

**Summary**

The enclosure command provides status and information about the various components of the enclosure unit. It is also used to set thresholds for temperature and polling.  In addition when using the -v option all VPD (Vendor Provided Data) will be displayed.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays information and status of the enclosure. |
| mod | Allows the user to modify settings when coupled with the -s switch. |
| locate | Allows the user to locate an enclosure by flashing LEDs |
| -e <encl id> | Enclosure ID. The default value is 1 if unspecified. |
| | For list action, the default is for all enclosures if unspecified. |
| -i <sensor id> | IOM Sensor ID. For controller temperature warning (1..6) and critical threshold. If unsepecified, only the IOM sensor 1,4 will be set, the IOM sensor 2,3,5,6 will not changed. |
| -s "<option>=<value>" | Used to specify which Enclosure settings to change. |
| | Please note that IOM sensor 1 and 4 will always in same warning or critical threshold settings. So changes on either sensor 1 or sensor 4 will take effected on both. |

| | |
|---|---|
| ctrltempwarning= | Controller temperature, displayed in Celsius, that the controller will consider as a warning threshold.<br><br>(61-65) For IOM sensor 1,4.<br><br>(66-70) For IOM sensor 2,5.<br><br>(71-78) For IOM sensor 3,6. |
| ctrltempcritical= | Controller temperature, displayed in Celsius, that the controller will consider as a critical threshold.<br><br>(68-72) For IOM sensor 1,4.<br><br>(73-77) For IOM sensor 2,5.<br><br>(81-88) For IOM sensor 3,6. |
| -t <FRU type> | Used with action locate to indicate which type of FRU to locate. If -t is not specified, it indicates to locate the enclosure. |
| ctrl | To locate controller. |
| cooling | To locate cooling unit. It only works with SAS type enclosure. |
| psu | To locate power supply unit. It only works with SAS type enclosure. |
| -f <FRU id> | Used with action locate and -t <FRU type> option to indicate which FRU to locate. The valid values for FRU id are 1,2,3 and 4. |
| -v | Verbose mode. Used with -a list. VPD information will also be displayed when using this switch. |

**Examples**

```
enclosure

  enclosure -v

  enclosure -a mod -s "tempwarning=40,tempcritical=70"

```

## event

**Usage**

event [-a <action>] [-i <SeqNo>] [-c <event count>] [-v]


event -a clear

**Summary**

The event command displays and clears the RAM and NVRAM event logs.

**Options**

| | |
|---|---|
| -a <action> | Specified the action to perform. |
| list | (Default) Displays the events for the specified location. RAM events are displayed if no location is specified. |
| clear | Clear events for a specified location. |
| -i <sequence ID> | Specifies a specific event by its sequence number. This is a starting point. Requires the -a list option. You can use the -c option. |
| -c <event count> | Specifies the number of events to retrieve when displaying events. |
| -b | Used to specify events created after latest boot time. Used with -a list. |
| -v | Verbose mode. Requires the -a list option. |

**Examples**

```
event

event -v

event -c 200

event -a list -i 852 -c 200
```

## export

**Usage**

export -t <fileType> [-s <tftpServer>] [-p <port>] [-x <fileExt>] -f <fileName>

**Summary**

The export command exports certain types of configuration files to a TFTP server.

**Options**

| | |
|---|---|
| -t <file type> | Specifies the type of file to export. |
| userdb | User database file. |
| configscript | Configuration script. |
| servicereport | System service report file in compressed HTML format. |
| nasconfig | NAS configuration |
| nasaccount | NAS account |
| -f <file name> | Specifies the name of the file to be exported. |
| -x <file ext> | Specifies the type of the file. |
| txt | Saves service report as a text file. |
| html | Saves service report as a compressed HTML file (default). |
| -s <TFTP server> | Specifies tftp server's IP or host name. |
| -p <port num> | The port number of the TFTP server. Default is 69. |

**Examples**

```
export -t userdb -s 192.168.1.1 -f userdb.bin

export -t servicereport -s 192.168.1.1 -f servicereport

export -t servicereport -s 192.168.1.1 -f servicereport -x txt
```

Note: Make sure that you have a file named <fileName>.<html|txt>.gz  (e.g. servicereport.txt.gz or servicereport.

html.gz) created on the specified TFTP server, with write permissions.

## factorydefaults

**Usage**

factorydefaults -a <action> -t <type>

**Summary**

The factorydefaults command restores specified settings to the factory default values.

**Options**

-a <action>                              Specifies the action to perform.


    restore                          Restore the factory default settings.


-t <type>                                Specifies the type of settings to restore.


    all                              All settings.

    allfw                            All firmware settings.

    allsw                            Subsystems only. All software settings.

The following are individual Firmware settings:


    bga                              Background activity settings.

    ctrl                             Controller settings.

    encl                             Enclosure settings, including temperature thresholds, buzzer, etc.

    fc                               fc port settings. Fibre Channel host interface product only.

    iscsi                            iSCSI settings, restore operation applies to port and iSNS;  erase

                  operation applies to all iSCSI components, including target, portal, chap,

                  trunk, etc. iSCSI host interfa

network                          network settings including management port and portal, iSCSI port, portal,

trunk and iSNS.

phydrv                           Physical drive settings.

subsys                           Subsystem settings.

The following are individual Software settings:

bgasched                         bga scheduler settings.

service                          service startup type settings.

webserver                        web server settings.

snmp                             snmp settings.

ssh                              ssh settings.

email                            email settings.

ntp                              ntp settings.

tz                               Time zone settings.

user                             user settings.

ups                              ups manager configuration settings.

syslog                           syslog settings.

nas                              nas settings.(Only valid when nas feature is enabled)

**Examples**

```
factorydefaults -a restore -t phydrv

factorydefaults -a restore -t all
```

# fc

**Usage**

fc [-a <action>] [-t <Type>] [-i <CtrlId>] [-p <PortId>] [-v]

fc -a mod -t <Type> -i <CtrlId> -p <PortId> -s "<list of settings>"

fc -a reset -i <CtrlId> -p <PortId>

**Summary**

The fc command is used to view and modify Fibre Channel information and settings. Fibre Channel host interface product only.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Gives summary information about Fibre Channel status. |
| mod | Modify Fibre Channel settings. |
| reset | Reset Fibre Channel port(s) |
| clear | Clear the port statistics. |
| -t <type> | Specifies what type of information to display or modify. |
| node | Display Fibre Channel node information. |
| port | (Default) Specifies Fibre Channel port as the device type to display or modify information. |
| SFP | Display port SFP (Small Form Factor Pluggable) information. |
| stats | Display port statistics information. |
| loggedininitiators | Display port logged in initiator information. |
| loggedintargets | Display port logged in target information. |
| fabricdevices | Display devices list from fabric switch. |
| -i <ctrlId> | Controller Id. Default to be all available controllers for listing if -i is not specified. Default to be controller 1 for modifying if -i is not specified. |

-p <port id>                    Port Id. Default to be all ports for listing if -p is not specified.

Default to be port 1 for modifying if -p is not specified.

-s "<option>=<value>"           Specifies Fibre Channel settings to change.

linkspeed=                      Fibre Channel link speed.

    4gb                        4 GB/s

    8gb                        8 GB/s

    16gb                       16 GB/s

    auto                       Automatic

topology=                       Fibre Channel topology method.

    nlport                     NL-Port

    nport                      N-Port

    auto                       Automatic

    hardalpa=                  Hard Arbitrated Loop Physical Address (ALPA)

    0..255                     Value 255 will disable hard ALPA.

-v                              Verbose mode.  Used with -a list.

**Examples**

```
fc

fc -t port -v

fc -a mod -t port -p 1 -s "linkspeed=8gb"

fc -a reset -i 1 -p 2

fc -a clear -i 1 -p 2
```

## folder

**Usage:**

folder [-a <action>] [-p <path>] [-t <type>] [-c <count>] [-s <settings>]

**Summary**:

The folder command is used to list, create, delete or refresh the folder as well as modify or change owner of file or folder.

**Options**:

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays information of specified path. |
| add | Create folder with specified path. |
| del | Delete folder or file with specified path. |
| mod | Modify folder or file with specified path. |
| refresh | Refresh the folder with specified path. |
| -p <path> | Specify the foler or file path. |
| -c <count> | Specify the count of folder and files under specified path. |
| | Used with list action. |
| -n <page number> | Specify the page number to display. |
| | Used with list action. |
| -t <type> | Specify the path type. Valid for mod or delete actions. |
| folder | Folder type. |
| file | File type. |

| -s "<option>=<value>" | Used to specify what options to change. |
| | |
| | Only valid for add or mod action. |
| | |
| owner= | Specify the folder or file owner. |
| recursive= | Recursive enable or disable. Valid for folder type. |
| enable | |
| disable | |
| -v | Verbose mode.  Used with -a list. |

**Examples**

```
folder -a list -p /FS/ns1 -c 10

folder -a add -p /FS/ns1/nnn -s "owner=aaa"

folder -a del -p /FS/ns1/nnn -t folder

folder -a mod -p /FS/ns1/nnn -t folder -s "owner=aaa, recursive=enable"

folder -a refresh -p /FS/ns1/nnn
```

## group

**Usage**:

group [-a <action>] [-n <group name>]

group -a add -g <group name> [-u "user=<user name list>"]

group -a mod -g <group name> -s "desc=<>"

group -a del -g <group name>

group -a adduser -g <group name> [-u "user=<user name list>"]

group -a deluser -g <group name> [-u "user=<user name list>"]

**Summary**:

  This command is used to view, add and delete an existing group.

**Options:**

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | (Default) Displays the group info. |
| | | If no group name specified, all groups will be displayed. |
| | add | Add group. |
| | mod | Modify group description. |
| | del | Delete group. |
| | adduser | Add user to group. |
| | deluser | Delete user from group. |
| | refresh | Refresh group. |
| -g <group name> | | Specify the group name when add the group. |
| -u <user name> | | Specify the user name belonged to the group. |
| -s "<option>=<value>" | | |
| | desc= | The description of group. |

**Examples**

```
group

group -a add -g gname

group -a mod -g gname -s "desc=<>"

group -a del -g gname

group -a adduser -g gname -u a

group -a refresh
```

## import

**Usage**

import -t <fileType> -s <tftpServer> -f <fileName> [-p <port>] [-i] [-l]

**Summary**

The import command is used to import files from a remote host.

**Options**

| | |
|---|---|
| -t <file type> | Specifies what type file to import. |
| userdb | User database file. |
| configscript | Configuration script. |
| nasconfig | NAS configuration |
| license | License file. |
| -s <TFTP server> | Specifies tftp server's IP or host name. |
| -f <file name> | Specifies the name of the file to import. |
| -p <port num> | The port number of the TFTP server. Default is 69. |
| -i | Get format validation information about imported file only. File is not really applied to subsystem yet.<br><br>This option is applicable for userdb file only. |
| -l | Do not use tftp server. |

**Examples**

```
import -t userdb -s 192.168.10.168 -f userdb.xml

import -t license -s 192.168.10.168 -f license.dat -y
```

## initiator

**Usage**

initiator [-a <action>] [-i <Index>] [-c <Count>]

initiator -a add [-i <Index>] -n <Name>

initiator -a del -i <Index>

**Summary**

Use this to display information about the current initiator list as well as to add or delete an initiator.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) Displays the current initiator list. |
|     add | Add an initiator to the list. |
|     del | Delete an initiator from the list. |
| -i <Index> | (0-2047) Used to specify the index of the initiator. For -a list option, it is the starting index and may be used with -c option. For other options, it is the specific index. |

> **Caution**
>
> **For -a add option, if the index specified is already in use, the existing initiator name is overwritten with new name.**

| -c <Count> | Used to specify the number of initiators to be listed. |
|---|---|
| | Only used with -a list option. |

| -t <type> | When used with the -a add option, this option specifies which kind of initiator to add. |
|---|---|

| fc | For a Fibre Channel host interface. |
|---|---|
| iscsi | For an iSCSI host interface. |

| -n <Name> | Used to specify the name of the initiator. |
|---|---|
| | For an iSCSI host interface product, the name should be the initiator's iSCSI name, e.g. iqn.vendorcompany.com |
| | For a Fibre Channel host interface product, the name should be the initiator's WWPN in hex format, e.g. aa-bb-cc-dd-ee-ff-11-22 |

**Examples**

```
initiator -i 1 -c 2

initiator -a add -n iqn.vendorcompany.com
```

## iscsi

**Usage**

iscsi [-a <action>] [-t <Type>] [-i <componentId>] [-r <CtrlId> -p <PortId>]

    [-c <Count>] [-m <PortalInterfaceType>] [-v]

iscsi -a mod [-t <Type>] [-i <TargetId|SessionId|PortalId|DeviceId>]

    [-r <CtrlId> -p <PortId>] -s "<list of settings>"

**Summary**

The iscsi command is used to display and modify iSCSI information and settings. Use this to view and modify iSCSI component and global settings, and to add and delete iSCSI portals. iSCSI host interface product only.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) Gives summary information about iSCSI status. |
|     add | Add iSCSI portal. |
|     mod | Modify iSCSI settings. |
|     del | Delete iSCSI target, portal or session. |
| -t <type> | Specifies the type of information. For list action, the default is target if unspecified. For modify action, the default is global iSCSI setting if the type is unspecified. |
|     target | Specifies iSCSI target as the device type to display, add, modify or delete information. |
|     port | Specifies iSCSI port as the device type to display or modify information. |
|     session | Display or delete session information. |
|     portal | Display, add, modify or delete portal information. |
|     device | Displays the logged in devices information. |

-i <component id>

| | | |
|---|---|---|
| | <target id> | Target id for iSCSI target type. |
| | <session id> | Session id for iSCSI session type or stats type. |
| | <portal id> | Portal id for iSCSI portal type. |
| | <device id> | Device id for iSCSI device type.. |

-r <controller id>                   Controller id.

-p <port id>                         Port id for iSCSI port type and add iSCSI portal type.

-c <Count>                           Used to specify the number of items to be listed.

Only used with -a list option.

-m <portal interface type>           Valid for add iSCSI portal type.

| | |
|---|---|
| phy | (Default) |
| vlan | |
| trunk | |

-s "<option>=<value>"                Specifies which iSCSI type settings to change.

The following are for target settings. Requires -t target and -n <target id> options.

| | |
|---|---|
| alias= | Target alias. |
| | Can up to 31 characters long, containing alphanumeric characters, blank spaces and underscores. The beginning and ending blank spaces will be discarded. |
| headerdigest= | 32bit CRC for iSCSI headers. Enabling a header digest may decrease performance. |
| enable | |
| disable | |

datadigest                          32bit CRC for iSCSI data. Enabling a data digest may decrease

                                    performance.

enable

disable

unichapauth                         Unidirectional CHAP authorization. Requires the initiator to have a CHAP

                                    secret to log into the subsystem. Can be configured only when modify a

                                    target.

enable

disable

bichapauth                          Bidirectional CHAP authorization. Requires both the subsystem and

                                    initiator to have a CHAP secret to log in. Can be configured only when

                                    modify a target.

enable

disable

The following setting applies to sessions and targets.

Requires -t session and -r <controller id>, -i <session id> options or -t target and -i <target id>

keepalive =       Keeps an iSCSI session alive. For global setting,

enable        omit -t and -i options.

disable

The following settings apply to ports.

Requires -t port and -r <controller id>, -p <port id> options.

jumboframe =      Enable or Disable the jumbo frame of the port.

enable

disable

The following settings apply to portals.

Requires -t portal and -g <portal id> options.

Adding a portal also requires -m <portal interface type> optioin.

| | |
|---|---|
| vlantag = | The VLAN tag of a portal in LAN-mode. Range is 1 to 4094. |
| trunkid = | The Trunk ID of a portal in Trunk-mode. Range is 1 to 8. |
| dhcp = | Enable or Disable DHCP on the portal. |
| enable | |
| disable | |
| iptype = | The IP address type of portal. |
| 4 | IPv4 |
| 6 | IPv6 |
| primaryip = | The primary IP address of portal. Use when DHCP is disabled. |
| primaryipmask = | The primary IP mask of portal. Use when DHCP is disabled. |
| gateway = | Specify the gateway. |
| tcpport = | Specify the tcp port number. |
| porttype = | The port type used to create portal. |
| | Only valid for -m phy or vlan interface type. |
| io | |
| mgmt | |
| attribute = | The portal mode. |
| io | |
| advanced | |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
iscsi

iscsi -t port -r 1 -p 2

iscsi -a del -t session -i 2 -r 1

iscsi -a mod -s "keepalive=enable"

iscsi -a mod -t target -i 1 -s "alias=vendorNode"

iscsi -a add -t portal -r 1 -p 1 -m phy -s "iptype=4,dhcp=enable, porttype=io"

iscsi -a add -t portal -r 1 -p 2 -m vlan -s "iptype=4,dhcp=enable,

vlantag=4,porttype=io"

iscsi -a add -t portal -m trunk -s "iptype=4,dhcp=enable,trunkid=0"
```

## isns

**Usage**

isns [-a <action>]

isns -a mod -t <Type> [-g <PortalID>] -s "<list of settings>"

**Summary**

iSCSI iSNS Information and Settings. iSCSI host interface product only.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) Displays a summary of iSNS settings. |
|     mod | Allows the user to change iSNS settings |
| -t <port type> | The type of port to iSNS through. If -t is not specified, the default value is Mgmt port. |
|     portal | iSCSI portal. For iSCSI host interface product only. |
|     mgmt | Management port. For embedded only. |
| -g <portal id> | Portal ID |
| -s "<option>=<value>" | Used to specify what options to change. |
|     isns = | Enable and disable iSNS. |
|     enable | |
|     disable | |
|     serverip = | iSNS server ip address. |
|     serverport = | iSNS server port number. The default value is 3205. 1..65535 |

**Examples**

```
isns

isns -a mod -t mgmt -s "isns=enable,serverip=10.0.10.90"
```

## license

**Usage**

license [-a <action>]

**Summary**

It can be used to view the imported license information.

Use command "import" to import or update license file.

**Options**

-a <action>                          Specify which action to perform.


list                          (Default) Displays imported license info


**Examples**

```
    license

    license -a list


Type " | more" at the end of each command, to display info page by page.

Type ' | grep "word1,word2,..."' at the end of each command, to display

filtered info.
```

## logout

**Usage**

logout

**Summary**

The logout command is used to logout the current user from the session.

**Examples**

```
logout
```

## lunmap

**Usage**

lunmap [-a <action>] [-i <InitiatorId>] [-t <type>] [-c <Count>]

lunmap -a addlun -i <InitiatorId> [-p <SourceType>] [-l <SourceIdList>] [-m <LunMapList>]

lunmap -a dellun -i <InitiatorId> [-p <SourceType>] [-l <SourceIdList>]

lunmap -a add [-i <InitiatorId>] -n <Name> -t <type> [-p <SourceType>] [-l <LdIdList>] [-m <LunMap>]

lunmap -a del -i <InitiatorId>

lunmap -a enable

lunmap -a disable

**Summary**

The lunmap command displays information about the current LUN mapping and masking (LMM) table information and enables you to add, modify, and delete LMM entries. LMM can be enabled or disabled.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |

| | |
|---|---|
| list | (Default) Displays the current LMM table. |
| enable | Enables LMM. |
| disable | Disables LMM. |
| add | Adds an LMM entry and its LUN maps to the table. |
| del | Deletes an LMM entry from the table. |
| addlun | Adds or modifies an LUN map for an existing LMM entry. |
| dellun | Deletes a LUN map for an existing LMM entry. |

| | |
|---|---|
| -i <InitiatorId> | (0-2047) Specifies the initiator ID for an initiator based LMM entry. |
| | For -a list option, it is the starting index. |
| | May be used with -c option. |

| | |
|---|---|
| -c <Count> | Specifies the number of LMM entries to be listed. |
| | Only used with -a list option. |

| | |
|---|---|
| -t <type> | When used with the -a add option, this option specifies which kind of initiator to add. |

| | |
|---|---|
| fc | |
| iscsi | |

| | |
|---|---|
| -n <Name> | Specifies the initiator name. |
| | For iSCSI host interface, the name is the initiator's |
| | iSCSI name, such as iqn.vendorcompany.com |
| | For Fibre Channel host interface, the name is the initiator's WWPN in hex format, such as aa-bb-cc-dd-ee-ff-11-22 |

-p <source type>                    Specifies the source type.

     volume

     snapshot

     clone

-l <Source ID list>                 (0-1023) Specifies the source IDs.

-m <LUN map list>                   (0-1023) Specifies the LUN mapping values.

                                              Please check the maximum number of LUNs supported by host OS.

**Examples**

```
lunmap -i 1 -c 2

lunmap -a addlun -p volume -i 1 -l 2 -m 2

lunmap -a dellun -p volume -i 1 -l 2

lunmap -a enable

lunmap -a add -i 0 -p volume -l 0,1 -m 0,1
```

## maintenance

**Usage**

maintenance [-a <action>] -i <CtrlId>

maintenance -a enter -i <CtrlId>

**Summary**

The maintenance command instructs the selected RAID controller to enter maintenance mode.

*Note: To bring the RAID controller out of maintenance mode, enter the command "shutdown -a restart".*

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| enter | (Default)Enter maintenance mode. |
| -i <CtrlId> | Controller id. |

**Examples**

```
maintenance -i 1
```

## migrate

**Usage**

migrate [-a <action>] [-i <ID>] [-t <location>] [-p <pool ID>] [-s <settings>]

**Summary**

The migrate command allows the user to migrate volume into another pool which located in same subsystem (Local) or other subsystem (Remote).

As well as to list or stop a specified migration.

Only with thin-provision disabled volume can be used to migrate. During migration in progress, source volume cannot be expanded or removed; destination volume disallowed to do any operations.

Note: Snapshot and clone of source volume will not be migrated. They won't be reserved after migration.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays the migration in progress. |
| start | Start a specific migration progress. |
| stop | Stop the migration |
| -i <ID> | Source volume ID. |
| -t <location> | Destination location. |
| local | (Default) |
| remote | |
| -p <pool ID> | Destination pool ID. |
| -s "<option>=<value>" | Used to specify migration settings |
| srcip= | Source portal IP |
| | Only valid for -t remote specified. |
| dstip= | Destination portal IP of remote subsystem. |
| | Only valid for -t remote specified. |

| | | |
|---|---|---|
| syncmode= | | sync mode method. |
| async | | |
| semi-sync | | |
| sync | | (Default) |
| srcwwn= | | source subsystem wwn.It's optional when start remote migrate. |
| dstwwn= | | destination subsystem wwn.It's optional when start remote migrate. |

-v          Verbose mode.  Used with -a list.

-y          Enable non-interactive mode.

**Examples**

```
migrate

migrate -a start -i 1 -t local -p 0

migrate -a start -i 2 -t remote -p 0 -s "srcip=10.0.0.1, dstip=10.0.0.2"

migrate -a stop -i 1

migrate -a stop -t remote -i 1
```

## mp

**Usage**

    mp -a <action>

**Summary**

   Media patrol (MP) is a feature that will actively search the disks for media errors.  When an error is found, MP will attempt to repair the error. If MP fails to correct the error, MP will attempt to reassign the sector. Note: Support for reassignment of sectors is not currently supported.

   MP will allow the user to start, stop, pause, or resume a media patrol as well as to check on the progress and status.

**Options**

    -a <action>                     Which action to perform.

        list                        (Default) Display the status and progress of media patrol.

        start                       Start media patrol.

        stop                        Stop media patrol.

        pause                       Pause media patrol.

        resume                      Resume a paused media patrol.

**Examples**

```
mp

mp -a stop

mp -a resume
```

## nasconfig

**Usage**

nasconfig -a <action> [-f <file name>]

**Summary**

This command allows the user to list, reset or restore NAS configuration

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) List NAS settings |
| reset | Reset NAS all setting |
| restore | Restore NAS setting |
| -f <file name> | Specify which file to restore to. |
| | Only valid for restore action |
| -v | Verbose mode.  Used with -a list. |

**Examples**

```
nasconfig -a list

nasconfig -a reset

nasconfig -a restore -f testfile
```

## nasshare

**Usage**

nasshare [-a action] [-i <nasshare id>] [-v]

nasshare -a list [-i <nasshare id>] [-v]

nasshare -a add -p <pool id> -s "<list of nasshare params>"

nasshare -a mod -i <nasshare id> -s "<list of nasshare params>"

nasshare -a del -i <nasshare id>

nasshare -a mount -i <nasshare id>

nasshare -a unmount -i <nasshare id>

**Summary**

The nasshare command allow user to view, add, delete, modify, mount and un-mount NAS share.

**Options**

| | |
|---|---|
| -a <action> | Specifies which action to perform. |
| list | (Default) List NAS share information. |
| add | Add a NAS share. |
| del | Delete an existing NAS share. |
| mod | Change the settings for a NAS share. |
| mount | Mount NAS share. |
| unmount | Un-mount NAS share. |
| -p <pool id> | The disk pool ID. Valid values are 0-255. |
| | Only valid for add or list action. |
| -i <nasshare id> | The NAS share ID. |

-s "<option>=<value>"          Used to specify what options to change.

Only valid for add or mod action.

name                    The name of the NAS Share.

capacity                Used to specify the capacity of NAS Share.

For add action, if not specified with thinprov setting enabled. It means to

use the max available capacity of the pool. For mod action, it means to

extend capacity of the NAS share. It must be larger than original capacity.

recsize                 NAS share record size. 4KB to 1MB, default is 128KB

For richmedia, it is 1MB.

sync=                   Sync mode.

standard                (Default)

always

disabled

logbias=                Slog behavior

latency                 (Default)

throughput

thinprov=               Thin-provision supported or not.

enable

disable

-v          Verbose mode.  Used with -a list.

-y          Enable non-interactive mode.

**Examples**

```
nasshare -a list -v

nasshare -a add -p 1 -s "name=sd, capacity=10gb"

nasshare -a mod -i 1 -s "name=sd2, capacity=20gb"

nasshare -a del -i 1

nasshare -a mount -i 1

nasshare -a unmount -i 1
```

## net

**Usage**

net [-a <action>] [-t <type>] [-f <protocol family>] [-c <ctrl ID>] [-p <portid>] [-s "<list of settings>"] [-m] [-v]

net -a mod -t port -s "<list of settings>"

net -a mod -t portal [-f <protocol family>] -s "<list of settings>"

net -a mod -t portal -m -c <ctrl ID> [-f <protocol family>] -s "<list of settings>"

net -a enable -t port

net -a enable -t portal [-m] [-c <ctrl ID>] -f <protocol family>

**Summary**

Net is used to display the TCP/IP specific information for the management port and portal. Information such as IP addresses and subnetmask can be displayed or changed.  Support for DHCP and DNS can be configured here as well.

Most often this command will be used during initial setup to either setup a controller management IP address or to display what DHCP assigned IP address the enclosure is using.

**Options**

    -a &lt;action&gt;        Which action to perform.

        list                (Default) Displays a list of IP configurations.

        mod              To modify current network settings.

        enable           To enable IPv4/IPv6 for portal type. To enable IO support for port type.

        disable         To disable IPv4/IPv6for portal type. To disable IO support for port type.

    -t &lt;type&gt;

        port

        portal           (Defaults)

    -m                 Physical portal IP configurations.

                         This option must be specified in maintenance mode

    -c &lt;ctrl ID&gt;        Specifies the controller ID. When the action is to modify setting and -c is

                         not specified, the value is default to be the current controller id.

    -p &lt;port ID&gt;        Specifies the port ID.

    -f &lt;protocol family&gt;      To specify which protocol family will be modified, enabled or disabled.

        ipv4             (Default)IPv4.

        ipv6             IPv6.

    -y                 Execute command in non-interactive mode.

                         Only valid for disable, mod action.

    -s "&lt;option&gt;=&lt;value&gt;"      List the various settings for the MGMT ports and portals.

                         These options are comma separated.

                         Works only with modify command.

The following settings apply to portal. Requires -t portal or -t portal -m and -c <controllerr id> options.

ip=                                    Specify the primary IP address.

ipmask=                                Specify the primary subnet mask.

gateway=                               Specify the gateway.

dhcp=                                  Enable or disable DHCP support.

                                       Currently only supported for ipv4.

    enable

    disable

Followings are global settings apply to portal. Requires -t portal option.

primarydns=                            Set an IP address of the primary DNS server.

secondarydns=                          Set an IP address of the secondary DNS server.

autodns=                               Obtain DNS from DHCP server. Only valid when

                                       DHCP is enabled on the default route portal.

    enable

    disable

defaultroute=                          Default route on which portal type.

    floatingip

    staticip

    ioportal

ctrl1portalid=                         Default route portal ID on controller1. Valid for defaultroute as ioportal.

ctrl2portalid=                         Default route portal ID on controller2. Valid for defaultroute as ioportal.

wol=                                            Enable or disable Wake On LAN support.


       enable

       disable

The following settings apply to port. Requires -t port, -c <controllerr id> and -p <port id> options.

jumboframe =                                    Enable or Disable the jumbo frame of the port.


       enable

       disable

-v                                              Verbose mode.  Used with -a list.


**Examples**

```
net                   *shows a list of floating IP info*

net -m                *shows a list of static IP info*

net -a enable -t port       *enable IO support

net -a enable -t portal -f ipv4

net -a enable -t portal -m -c 1 -f ipv4

net -a mod -m -c 1 -s "ip=10.0.0.2"

net -a mod -f ipv4 -s "ip=192.168.1.10, ipmask=255.255.255.0"

net -a mod -t portal -s "autodns=enable, wol=disable"

net -a mod -t port -c 1 -p 1 -s "jumboframe=enable"
```

## ntp

**Usage**

ntp [-a <action>]

ntp -a list

ntp -a mod -s "<list of settings>"

ntp -a test -t <time server>

ntp -a sync

**Summary**

The ntp command enables a user to view NTP status, add an NTP server, modify NTP settings, test the NTP

server connection, and  synchronize subsystem time with the NTP server.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays NTP information. |
| mod | Change the settings for NTP. |
| test | Test time server. |
| sync | Sync time with time server. |
| -s "<option>=<value>" | Used to specify what options to change. |
| ntp= | Enable and disable ntp service. |
| enable | |
| disable | |
| server1= | Specific to the time servers. |
| server2= | |
| server3= | |
| -t <time server> | Specifies the time server to test |
| | Used with -a test. Returns only failure reports. |

**Examples**

```
ntp -a list

ntp -a mod -s "server1=ABC.123.XYZ" (adds a NTP server)

ntp -a mod -s "ntp=enable, server1=ABC.123.XYZ"

ntp -a test -t ABC.123.XYZ

ntp -a sync
```

## pair

**Usage**

pair  -a <action> [-r <remote ip>] [-w <wwn>]

**Summary**

This command allows the user to list, add, modify or delete pair.

**Options**:

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) List pair information. |
|     add | Add pair. |
|     mod | mod pair. |
|     del | del pair |
| -r <remote ip> | Remote subsys ip. |
| -w <wwn> | Remote subsys wwn. |

**Examples**

```
    pair -a list

    pair -a add -r 10.20.30.40

    pair -a mod -w 1000-2000-3000-4000
```

## password

**Usage**

password [-u <username>] [-t<type>] [-p<protocol>]

**Summary**

Allows a user to change their password.  A normal (non super user) user will never use the -u option, as they are allowed only to change their password. For any user who wants to change its own password, it will be first prompted for their old password before inputting their new password.

For a super management user, the -u option can be used to change the password of other users.  When changing the password of another user, the old password is not required.

Maximum password length is 31 characters, no spaces.

**Options**

| | |
|---|---|
| -u <username> | Whose password to change. Current management user is the default. |
| -t <type> | Specified the user type. |
|     mgmt | (Default)Change management user password. |
|     snmp | Change snmp user password. |
|     nas | Change nas user password. |
| -p<protocol> | Specifies the secure protocol type. For snmp user only. |
|     auth | Change authentication protocol password. |
|     priv | Change privacy protocol password. |

**Examples**

```
password

old password:******

new password:******

Retry password:******

password -u snmpuser -t snmp -p auth

Input auth password:******

Retype auth password:******

password -u nasuser -t nas

new password:******

Retry password:******
```

## pcie

### Usage

pcie [-a list] [-h]

### Summary

This command will display PCIE slot information for the controllers.

**Options**

-a <action>                        Specifies the action to perform.

　　list                        (Default) Displays a list of PCIE slot info.

**Examples**

```
pcie            Displays a list of PCIE slot information
```

## pdm

**Usage**

pdm [-a <action>] [-l <PoolId>] [-s <SeqNo>]

pdm -a start -l <PoolId> -s <SeqNo> -p <PdId>

pdm -a stop -l <PoolId> -s <SeqNo>

pdm -a pause -l <PoolId> -s <SeqNo>

pdm -a resume -l <PoolId> -s <SeqNo>

**Summary**

This command allows the user to start, stop, pause or resume a PDM. PDM (Predictive Data Migration) is an operation to replace an drive in the pool, which has a PFA condition, with a destination physical drive. The destination physical drive can be an unconfigured drive, a global spare, or a dedicated spare to this pool.

During PDM, the data on the PFA drive will be transferred to the destination drive while the IO remains going on. After PDM, the destination drive becomes part of the pool; the PFA drive will become unconfigured and PFA condition will remain on. The PFA drive cannot be used for further configuration until the PFA condition is cleared by the user. To clear the PFA condition of a physical drive, please refer to phydrv command with option -a clear.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|    list | (Default) Displays the current active or paused PDM(s) and their status(es). |
|    start | Starts a manual PDM. |
|    stop | Stops a PDM. |
|    pause | Pauses a PDM. |
|    resume | Resumes a paused PDM. |
| -l <Pool ID> | Specifies which pool to perform PDM action on. |
| -s <sequence Num> | Specifies the sequence number of the physical drive that has a PFA condition. |
| -p <PD ID> | Specifies physical drive ID of the destination drive. |

**Examples**

```
pdm

pdm -a start -l 0 -s 2 -p 10

pdm -a stop -l 0 -s 2
```

## periodsnap

**Usage**

periodsnap -a <action> [-t <type>] [-d <source id>] -s <list of settings>

periodsnap -a add -t <type> -d <source ids> -s <list of settings>

periodsnap -a mod -i <task id> [-t <type>] [-d <source ids>] -s <list of settings>

periodsnap -a del -i <task id> [-f]

**Summary**

Periodsnap is used to display all periodic snapshot tasks, as well as to allow the user to add, modify or delete date

and time of the periodic snapshot tasks.

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays information of periodic snapshot. |
| add | Create a new periodic snapshot task. |
| | The max number of periodic snapshot task is 64. |
| mod | Modify a exist periodic snapshot task. |
| del | Delete a exist periodic snapshot task. By default all the snapshots |
| | generated by the task will be removed. |
| -i <schedule id> | Specifies the periodic snapshot ID for list/modify/delete action. |

| | |
|---|---|
| -t <source type> | Specify source storage type for list or add periodic snapshot task. |
|     nasshare | |
|     volume | (Default for add.) |
| -d <source ids> | Source storage IDs. Nasshare IDs or volume IDs. Valid for add/modify action. For multiple value, divided by ',' or '~'. Note that all the nasshares or volumes must in the same pool. |
| -f | Do not remove all the periodic snapshots generated by the task. Used with -a del action. |
| -s "<option>=<value>" | Used to specify periodic snapshot task settings. |
|     status= | Specifies status type of task. |
|     enable | |
|     disable | (Default) |
|     recurtype= | Specifies recurrence type of task. |
|     daily | (Default) |
|     weekly | |
|     interval= | Specifies the minutes between two snapshot copies. This option is valid for Daily recurrence type. The range is [5, 10, 15, 30, 60, 120, 240, 360, 480, 720, 1440]. Default is 60. |
|     dow= | Day of Week. This is for Weekly recurrence type task. The range is [Sun\|Mon\|Tues\|Wed\|Thur\|Fri\|Sat]. For multiple value, divided by space. Default is Sun. |

starthour=          Used to specify start hour of task.

The range is 0-23.

endhour=          Used to specify end hour of task.

This option is valid for Daily recurrence type.

The range is 0-23.

keepnum=          Keep the number of periodic snapshot copies.

-v          Verbose mode. Used with -a list.

**Examples**

```
periodsnap -a add -t volume -d 1 -s "recurtype=daily,interval=60, starthour=1,

endhour=22, keepnum=5"

periodsnap -a mod -i 1 -s "status=disable"

periodsnap -a del -i 1
```

## phydrv

**Usage**

phydrv [-a <action>] [-p <PdId>] [-c <Pd count>] [-v]

phydrv -a mod -p <PdId> -s "<list of settings>"

phydrv -a locate -p <PdId>

phydrv -a online -p <PdId>

phydrv -a offline -p <PdId>

phydrv -a clear -t <condition type> -p <PdId>

**Summary**

The phydrv command displays physical drive information, changes physical drive settings, locates individual drives, and forces a drive to an online or offline state.

**Note:** Forcing a drive online should only be done in extreme conditions.  It will almost always cause data corruption.

**Options**

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | (Default) Displays all physical drives in the enclosure, their make, model number, and array they belong to. Their status is also shown. |
| | mod | Allows the user to make modifications to the physical drive settings. |
| | locate | Allows the user to flash an LED for physically identifying the location of the drive. |
| | offline | Allows the user to force a drive offline if it is misbehaving. |
| | clear | Allows the user to clear a drive's past condition. |
| -p <PD ID> | | Specifies the physical drive ID. |

| | |
|---|---|
| -c <count> | Used when more than one physical drive is to be specified and their ID numbers are sequential. |
| -l | Used with -a list option to display external drive information. |
| -t <condition type> | When used with the -a clear option, this option specifies which type of condition to clear. |
| pfa | Used to clear the PFA condition on the drive. |
| staleconfig | Used to clear the stale configuration on the drive. |
| -d <drive type> | When used with the -a mod option, this option specifies which drive type settings to modify. It defaults to be all if -d is not specified. |
| sata | SATA related setting(s): writecache, rlacache, dmamode. The SATA settings apply to all SATA physical drives. |
| sas | SAS related setting(s): writecache, rlacache, readcache. The SAS settings apply to all SAS physical drives. |
| all | Apply to both SATA and SAS drives where is applicable. |
| -s "<option>=<value>" | Used to specifies which physical drive settings to change. |
| alias= | A user specified name used to identify a physical drive. Currently, this is the only setting that is specific to individual drive. It can only be set on a configured drive. It can be up to 32 characters long, containing alpha-numeric characters, blank spaces and underscores. The beginning and ending blank spaces will be discarded. |

The following settings are global to same type of physical drives:

writecache=                              Enables or disables write cache on the physical drive(s).

      enable

      disable

rlacache=                                Enables or disables read look ahead cache on the physical drive(s).

      enable

      disable

temppollint=                             Drive temperature polling interval in seconds.

                                   (15..255) If value is 0, polling is disabled. For high availability products only.

mediumerrorthreshold=                    (0..4294967294) Medium error threshold. If the threshold is exceeded, the physical drive will be marked as dead. The default value is 0, indicating that physical drive will not be marked as dead for medium errors.

The following settings are only for SATA drives:

| | |
|---|---|
| dmamode= | For SATA drive only. Attempt to negotiate at the specified DMA transfer mode. |

If a DMA transfer mode cannot be negotiate, the next slower mode will be attempted until a mode can be negotiated (udma6, udma5....udma0, mdma 2.....mdma0).

| | |
|---|---|
| udma0 | Ultra DMA Mode 0 |
| udma1 | Ultra DMA Mode 1 |
| udma2 | Ultra DMA Mode 2 |
| udma3 | Ultra DMA Mode 3 |
| udma4 | Ultra DMA Mode 4 |
| udma5 | Ultra DMA Mode 5 |
| udma6 | Ultra DMA Mode 6 |
| mdma0 | Multi DMA Mode 0 |
| mdma1 | Multi DMA Mode 1 |
| mdma2 | Multi DMA Mode 2 |

The following settings are only for SAS drives:

| | |
|---|---|
| readcache= | Applied to SAS drive only. Enables or disables read cache on the physical drive(s). |
| enable | |
| disable | |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
phydrv

phydrv -v

phydrv -l -v

phydrv -a locate -p 9

phydrv -a mod -s "writecache=enable,rlacache=enable"

phydrv -a offline -p 8

phydrv -a online -p 8

phydrv -a clear -p 8
```

## ping

**Usage**

ping -t <PortType> [-l <CtrlId>] [-p <PortId>] -i <ipAddr | DestinationId> [-d <DestinationType>]

**Summary**

Allows the user to ping another network device from the management port or FC port to verify that the device is

able to be "seen" by the enclosure.

**Options**

    -t &lt;port type&gt;                      The type of port to ping through. If -t is not specified, the default value is mgmt port.

        iscsi                        iSCSI port. iSCSI host interface product only.

        mgmt                     Management port. For embedded only.

        fc                          FC port. FC host interface product only.

    -l &lt;CtrlId&gt;                   Controller id. It is required when port type is fc.

    -p &lt;port ID&gt;                Physical port id. Port id is required when port type is fc.

    -i &lt;IP address | DestinationId&gt;    IP address to ping destination identifier for fc port.

    -d &lt;Destination Type&gt;       The type of destination for the ping. It is required when port type is fc.

        FCID

        WWPN

**Examples**

```
ping -t mgmt -i 192.168.1.1   # for embedded

ping -t iscsi -l 1 -p 1 -i 192.168.1.1 -c 5

ping -t fc -l 1 -p 1 -d WWPN -i 26-03-00-01-55-60-01-0e
```

## pool

**Usage**

   pool [-a <action>] [-i <pool id>] [-v]

   pool -a add [-s "<list of pool params>"] -p <pd id list>

   pool -a del -i <pool id list>

   pool -a mod -i <pool id> -s "<list of pool params>"

   pool -a expand -p <pd id list>

**Summary**

  Pool is the main command for performing advanced configuration maintenance and is used when performing tasks that are directly related to pool. It can be used to list, create, modify, delete, expand or locate the pool(s) configuration in the subsystem.

**Options**

| | | |
|---|---|---|
| -a <action> | | Specifies which action to perform. |
| | list | (Default) Displays a summary of all or a specific or a specified number of pools. |
| | mod | Modify pool name. |
| | add | Create new Pool by specific drives, RAID level and so on. |
| | del | Delete an existing pool. |
| | expand | Expand pool. The pool created by external drive can expand only with external drive. The pool created by HDD physical drive can expand with external drive. |
| | locate | Allows the user to flash the LED for physically identifying the location of the pool. |
| | accept | Accept an incomplete pool. |
| -i <Pool ID> | | The pool ID. Valid for list, mod, del and expand action. |

| | |
|---|---|
| -t <Drive type> | Specify the type of drive. |
| pd | Physicsl drive |
| ed | External drive |
| -p <PD ID list> | Used to specify which drives are to be used in a pool. |
| | Used in conjunction with -a add or -a expand. |
| | Drive IDs can be used singly or separated by comma. |
| | Additionally a sequential group of drives can be specified by placing a ~ between numbers such as 1~6. |
| | This will include drives 1,2,3,4,5,6. |
| -s "<option>=<value>" | Used to specify settings for an pool.  This is used when creating (add) or modifying (mod) an pool. These options are separated by commas. |
| name= | A user specified name used to identify an pool. |
| | It can be up to 32 characters long, containing alpha-numeric characters, blank spaces and underscores. The beginning and ending blank spaces will be discarded. Valid for add or mod action |
| type= | Used to specify the type of pool. Default is advanced if it is supported, otherwise default is standard. |
| standard | |
| advanced | |

| raid= | Used to specify the RAID level of the pool Only valid for add action with physical drive type. |
|---|---|
| 0 | Striping. |
| 1 | Mirroring on two drives. |
| 5 | Parity, requiring 3 or more drives. |
| 10 | Mirroring on even number of drives. |
| 50 | Striping on multiple RAID 5, requiring 6 or more drives. |
| 6 | Allow two drive failure, requiring 4 or more drives. |
| 60 | Striping on multiple RAID 6, requiring 8 or more drives. |
| stripe= | Used to specify the stripe size. |
| | The possible parameters are 64KB, 128KB, 256KB, 512KB, and 1MB. If not specified, the default 64K will be used. |
| | Only valid for add action with physical drive type |
| sector= | Used to specify the desirable sector size. |
| | The possible parameters are 512B, 1KB, 2KB, and 4KB. |
| | It must not be greater than the Stripe size. |
| | It will be auto-adjusted not to exceed the max supported sector size of the controller, please see controller info |
| | If not specified, for advanced type, the default 4KB will be used; for standard type, the default 512B will be used |
| | Only valid for add action with physical drive type. |
| Axle= | RAID 50, 3 to 32 drives per axle. |
| | RAID 60, 4 to 32 drives per axle. |
| | Valid for add action with physical drive type or expand action on the pool created by physicsl drive with new drives is physical drive too. |

| ctrlid= | Used to specify which controller the pool is preferred for LUN affinity. Valid value is 1 or 2. If value is not specified, LUN affinity will be auto balanced. Valid for add or mod action. |

The following settings are global to all pools: all pools:

| capthreshold= | (75..95 ) Pool capacity nearly full warning threshold. Valid for add or mod action. |
| optimizedapptype = richmedia others | Optimized application type. |
| -f | Force delete the pool. |
| -v | Verbose mode. Used with -a list action. |
| -y | Enable non-interactive mode. |

**Examples**

```
pool -v -i 1

pool -a add -s "name=MyAxxx, type=advanced, raid=5" -t pd -p 1,3,5~9

pool -a add -s "name=MyAxxx" -t ed -p 1,2

pool -a mod -i 1 -s "name=xxx"

pool -a del -i 3

pool -a expand -i 1 -t pd -p 1,3,5~10 -s "axle=4"

pool -a expand -i 2 -t ed -p 1,2

pool -a locate -i 1

pool -a accept -i 1
```

## protocol

**Usag**:

    protocol [-a <action>] [-d <ID>] [-t <type>] [-n <name>] [-s <settings>]

**Summary**

This command allows the user to list, modify, reset, enable or disable global protocol service, as well as to list,

 modify, enable or disable sharing protocol on the share disk, snapshot or clone.

**Options**

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | (Default)List settings, service status and running status of global protocol service or protocol status on share disk. |
| | mod | modify global protocol service settings |
| | reset | reset protocol settings of global protocol service. If -n not specified, it means all services. |
| | enable | enable global protocol service or protocol settings on the share disk, snapshot or clone |
| | disable | disable global protocol service or protocol settings on the share disk, snapshot or clone |
| -t <type> | | |
| | nasshare | |
| | snapshot | |
| | clone | |
| -d <ID> | | nas share ID, snapshot ID or clone ID. If not specified for mod action, it means global protocol service |
| -n <service name> | | protocol service name |
| | ftp | |
| | nfs | |

smb

tm                                       Only used with -d specified

http

-s "<option>=<value>"                    Used to specify global protocol service settings followings are valid for

                                         FTP type

encrypt=

standard

explicit

implicit

sftp

port =                                   connection port (1 ~ 65535). Default as 21.

startport=                               start of passive connection port

endport=                                 End of passive connection port

charset =                                Character set type

utf8

ja_jp

ko_kr

zh_cn

zh_tw

dwrate =                                 Download rate of all user

uprate =                                 Upload rate of all user followings are valid for NFS type

port=                                    Mountd port (1024 ~ 65533). Default as 56789.

count=                                   Number of NFS server. It can be 8, 16, 32, 64 or 128.

                                         Default as 32.

following are valid for SMB type

desc=                                    Description displayed via SMB.

workgroup=                               SMB workgroup name displayed for SMB client

ntacl=                              Windows NT ACL support.

yes

no

smbadmin=                           SMB manager account. Only can modified for LDAP/OD type domain

mode.

followings are valid for HTTP type

httpport=                           HTTP connection port. Default is 8088.

httpsport=                          HTTPS connection port. Default is 8089.

-v               Verbose mode.  Used with -a list.


-y               Enable non-interactive mode.


**Examples**

```
protocol -a list

protocol -t nasshare -d 2

protocol -t nasshare -d 2 -n ftp

protocol -a reset -n ftp

protocol -a enable -n ftp

protocol -a enable -t nasshare -d 2 -n ftp

protocol -a disable -t nasshare -d 2 -n ftp

protocol -a mod -n smb -s "workgroup=testgrp"
```

## ptiflash

**Usage**

ptiflash [-a <action>] [-t] [-s <ServerIP>] -f <FileName> [-p <PortNum>]

[-e <encl id>] [-i <ctrl id>] [-n] [-d <pd id>] [-l] [-y] [-v]

**Summary**

This is the flash utility for the controller and physical drives. It is used to flash images such as firmware or software for controllers and drive firmware image for physical drives. For embedded, in order to update the flash image, the user must have a TFTP server setup that is accessible from the enclosure's management port and the flash image located on the TFTP server. For in-band, the flash image located on the local host must be accessible.

Please note that only one flash process should be running at one time.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     start | (Default) To start the flash process. |
|     versioninfo | To get the version and build information of running images of all controllers or the specified controller. |
| -t | Indicates that TFTP get method is to be used to obtain the file from a TFTP server. |
| -s <servername\|ipaddress> | Specifies the hostname or IP address of the TFTP server which contains the image file. |
| -f <filename> | Specifies the filename of the flash image. Include the folder name A flash image could be either a controller flash image or a physical drive firmware update image. |
| -p <port number> | Specifies the port number of the TFTP server. If no port number is given, the default value that will be used is 69. |

| | |
|---|---|
| -e \<encl id\> | Specifies the Enclosure ID. |
| | Only used with -a versioninfo option. |
| | If not specified, default value is all enclosures. |
| -i \<ctrl id\> | Specifies the Controller ID. |
| | Only used with -a versioninfo option. |
| | Enclosure id is required when controller id is specified. |
| | If not specified, default value is all controllers. |
| -v | Verbose mode. Only used with -a versioninfo option. To show the version and build information of all the flash images of all controllers or the specified controller. |
| -n | Start the flash process/image update in NDIU mode. |
| | This mode is applicable only if the system is in redundant state. |
| | Default mode of flash is DIU (disruptive) mode. |
| -d \<device id\> | Specifies the physical drive IDs. |
| | Only for physical drive firmware update. |
| | If not specified, all the physical drives, which are supported by the specified physical drive firmware, are selected. |
| -l | Display the status of currently running flash process. |
| -y | Enable non-interactive mode. |

**Examples**

```
ptiflash -t -s 192.168.1.1 -f fw_multi.ptif -p 69  # for embedded

ptiflash -f fw_multi_20031010.ptif   # for in-band

ptiflash -l # list currently running flash process

ptiflash -t -s 192.168.1.1 -f fw_multi.ptif -n  # for NDIU mode

ptiflash -t -s 192.168.1.1 -f pd_fw.ptif -d 1,2

# update the pd firmware for pd 1 and 2 using the pd_fw.ptif image.
```

## quota

**Usage**

quota [-a <action>] [-d <storage id>] [-t <type>] [-s <setting>] [-v]

quota -a set -d <storage id> -t <type> -s "<list of settings>"

quota -a refresh -d <storage id> -t <type>

quota -a cancel -d <storage id> -t <type>

**Summary**

This command allows the user to list, set, cancel or refresh the Quota settings on the NAS Share.

Note that only one set operation is allowed at the same time on different UIs.

**Options**

| | |
|---|---|
| -a <action> | Specifies which action to perform |
|     list | (Default) Displays the quota information |
|     set | Set quota setting |
|     refresh | Refresh Quota by given NAS Share/Clone ID |
|     cancel | Cancel the Quota settings operation hold by others |
| -t <type> | Storage type. If not specified for list action. |
|     nasshare | |
| -d <storage id> | NAS Share ID. |
| -s "option=value" | Only valid for set action |
|     role= | Role type. |
|     user | |
|     group | |
|     name= | User name or group name based on role type. |
|     limit= | Specify the quota limited size. If it is 0 means no limitation. |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
quota -a list -d 1 -t nasshare

quota -a set -d 1 -t nasshare -s "role=user, name=a, limit=1Gb"

quota -a set -d 1 -t nasshare -s "role=user, name=a, limit=0"

quota -a refresh -d 1 -t nasshare

quota -a cancel -d 1 -t nasshare
```

## replication

**Usage**

replication [-a <action>] [-i <ID>] [-p <pool ID>] [-s <settings>]

**Summary**

The replication command allows the user to replicate volume into another pool. Only with thin-provision disabled

volume can be used to replicate. During replication in progress, source volume cannot be expanded or removed;

destination volume disallowed to do any operations.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays the replication status. |
| start | Start a specific replication status. |
| stop | Stop the replication |
| pause | Pause the replication |
| resume | Resume a paused replication |
| -t <location> | Replication location. Only valid for -a stop action. |
| local | (Default) |
| remote | |

| -i \<ID> | Source or destination volume ID for stop action. Source volume ID for other actions. When used with -a stop action. For local location, it means source volume ID. For remote location, if role is source, it means source volume ID; if role is destination, it means destination volume ID. |
|---|---|
| -p \<pool id> | Destination pool ID.<br>Only valid for -a start specified |
| -s "\<option>=\<value>" | Used to specify replication settings.<br>Only valid for -a start specified |

| | |
|---|---|
| name= | Destination volume name. |
| mode= | mode method. Only valid for remote replication. |
| active-passive | (Default) |
| active-active | |
| syncmode= | sync mode method |
| async | |
| semi-sync | |
| sync | (Default) |
| period= | Period of sync cycle.Unit is hour(s). |
| 0 | always sync. |
| 1 | |
| 2 | |
| 4 | |
| 6 | |
| 8 | |
| 12 | |
| 24 | |

| | | |
|---|---|---|
| srcip= | source portal ip.Only valid for remote replication. | |
| dstip= | destination portal ip.Only valid for remote replication. | |
| srcwwn= | source subsys wwn.Only valid for remote replication. It's optional when start remote replication. | |
| dstwwn= | destination subsys wwn.Only valid for remote replication. | |
| -v | Verbose mode.  Used with -a list. | |
| -y | Enable non-interactive mode. | |

**Examples**

```
replication -a list

replication -a start -t local -i 1 -p 0 -s "name=test, syncmode=async"

replication -a start -t remote -i 1 -p 0 -s "name=test, syncmode=async,
          mode=active-passive, srcip=10.20.30.1, dstip=10.20.30.2"

replication -a stop -i 2 -t remote

replication -a pause -i i -t remote

replication -a resume -i 1 -t remote
```

## rb

**Usage**

rb [-a <action>] [-l <PoolId>] [-s <SeqNo>]

rb -a start -l <PoolId> -s <SeqNo> -p <PdId>

rb -a stop -l <PoolId> -s <SeqNo>

rb -a pause -l <PoolId> -s <SeqNo>

rb -a resume -l <PoolId> -s <SeqNo>

**Summary**

This command allows the user to check on the progress of a running or paused Rebuild as well as to check on

the progress of a running Rebuild..

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays the current active and their status(es). |
| start | Starts a manual rebuild. |
| stop | Stops a rebuild. |
| pause | Pauses a rebuild. |
| resume | Resumes a paused rebuild. |
| -l <Pool ID> | Specifies which Pool to perform rebuild action on. |
| -s <sequence Num> | Specifies the sequence number of the physical drive that was marked offline and will used for the rebuild. |
| -p <PD ID> | Identifies the physical drive ID that will be used in the rebuild process. |

**Examples**

```
rb

rb -a start -l 0 -s 2 -p 10

rb -a stop -l 0 -s 2
```

## rc

**Usage**

rc [-a <action>] [-l <LdId>]

rc -a start -l <LdId> [-n] [-p]

rc -a stop -l <LdId>

rc -a pause -l <LdId>

rc -a resume -l <LdId>

**Summary**

The rc command is used to start and stop a Redundancy Check and monitor the progress of a running Redundancy Check.

**Options**

| | |
|---|---|
| -a <action> | Specifies action to perform. |
| list | (Default) Displays active and paused Redundancy Checks and their status. |
| start | Starts a Redundancy Check. |
| stop | Stops a Redundancy Check. |
| pause | Pauses a Redundancy Check. |
| resume | Resumes a paused Redundancy Check. |
| -l <Pool ID> | Specifies the Pool ID on which to run redundancy check. |
| -n | Do not fix inconsistent data. Specifying this option will cause redundancy check to run without correcting inconsistent data.  All inconsistency errors found will still be reported. |
| -p | Pause on error. This option causes Redundancy Check to pause when it encounters inconsistent data. The default is to continue on error. |

**Examples**

```
rc

rc -a start -l 3 -n -p

rc -a start -l 3

rc -a stop -l 2
```

## sasdiag

**Usage**

sasdiag -a <action> -e <EnclosureId> -i <expanderId> [-p <PHYId>]

**Summary**

Diagnostic command for getting SMP discovery info, getting PHY error log, or clear the error log. For products
that support multiple enclosures only.

| | |
|---|---|
| -a <action> | Which action to perform. |
| discover | Display SMP general discovery information. |
| errorlog | Display error log on a certain expander. |
| clearerrlog | Clear error log on a certain PHY. |
| -l <PHY Location> | The location where PHY resides. If -l is not specified, the default value is expander. |
| expander | |
| c2cport | |
| -e <Enclosure ID> | Used to specify which enclosure ID. |
| -i <Expander ID> | Used to specify which expander ID. |
| -p <PHY ID> | Used to specify which PHY ID you wish to issue clear errorlog. Only used with -a clearerrlog option. |

**Examples**

```
    sasdiag -a discover -l expander -e 1 -i 1

    sasdiag -a errorlog -l expander -e 1 -i 1

    sasdiag -a clearerrlog -l expander -e 1 -i 1 -p 1

    sasdiag -a errorlog -l c2cport
```

## SC

**Usage**

sc [-a <action>] [-i <SpareId>]

sc -a start [-i <SpareId>]

**Summary**

The sc command starts a Spare Check and monitors the status of a running Spare Check.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
| list | (Default) Displays Spare Check status. |
| start | Starts the Spare Check. |
| -i <Spare ID> | Specifies the spare ID on which to run Spare Check. Valid value range is 0~255. |

**Examples**

```
sc

sc -a start -i 3
```

## session

**Usage**

session

session -h (this command)

**Summary**

This command lists the current active sessions.

**Examples**

```
session
```

## shutdown

**Usage**

shutdown -a <action> [-i <ctrlId>

shutdown -a shutdown

shutdown -a restart

shutdown -a restart -i 2

shutdown -a shutdown -i 1

**Summary**

Shutdown is the command used to shutdown or restart a controller or subsystem.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| shutdown | To shutdown the controller or subsystem. |
| restart | To restart the controller or subsystem. |
| -i <ctrlId> | Controller ID or subsystem. If -i is not specified, the default value is subsystem. |
| 1 | Controller 1. |
| 2 | Controller 2. |
| subsys | Subystem. |

## smart

**Usage**

smart [-a <action>] [-p <PdId>]

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) Displays the status of S.M.A.R.T. diagnostic for phydrv drive(s). |
|     enable | Enable S.M.A.R.T. |
|     disable | Disable S.M.A.R.T. |
| -p <PdId> | Specifies physical drive ID of the destination drive. |
| | If not specified, the destination drive will be all physical drives. |
|     -v | Verbose mode. Used with -a list. |

**Summary**

S.M.A.R.T diagnostic for physical drives.

**Examples**

```
smart

smart -v

smart -a list -p 1

smart -a enable -p 1
```

## snapshot

**Usage**

snapshot [-a <action>] -i <snapshot ID> -t <type> -d <id> [-n <name>]

**Summary**

This command allows the user to list, add, modify, delete, export, unexport, or rollback a snapshot. Export or unexport only valid for volume type.

Note: after rollback a snapshot, the data will be gone.

Please specify -f option if need rollback to the older one.

**Options**

| | | |
|---|---|---|
| -a <action> | | Which action to perform. |
| | list | (Default) List snapshot information. |
| | add | add a snapshot |
| | mod | modify name of snapshot |
| | del | delete a snapshot |
| | export | export a snapshot which is based on volume type |
| | unexport | Un-export a snapshot |
| | mount | mount a snapshot which is based on nasshare type |
| | unmount | Un-mount a snapshot which is based on nasshare type |
| | rollback | Rollback a snapshot |
| -i <snapshot ID> | | Snapshot ID |
| -t <type> | | Source type |
| | volume | (Default) |
| | nasshare | |
| -d <id> | | Source ID. For volume source type, it is Volume ID; For nasshare source type, it is nasshare ID. |

-s "<option>=<value>"          Used to specify what options to change.

                               Only valid for add or mod action.


   name=                       snapshot name.

-f                             Force delete the snapshot or rollback to older one.


-v                             Verbose mode.  Used with -a list.


-y                             Enable non-interactive mode.


**Examples**

```
snapshot -a list

snapshot -a add -t volume -d 1 -s "name=testname"

snapshot -a mod -i 1 -s "name=testname"

snapshot -a del -i 1

snapshot -a export -i 1

snapshot -a unexport -i 1

snapshot -a mount -i 1

snapshot -a unmount -i 1

snapshot -a rollback -i 1
```

## spare

**Usage**

spare [-a <action>]

spare -a list [-i <SpareId>] [-d <PoolId>] [-v]

spare -a add [-i <SpareId>] -p <PdId> [-t g|d] [-r y|n] [-d <PoolId list>] [-s "<list of settings>"]

spare -a del -i <SpareId>

**Summary**

Spare is the command used to display all hot spare drives as well as to create and delete hot spare drives.

A Global hot spare is the most generic form. A global hot spare drive can replace any drive from a pool of equal size or less.

A dedicated hot spare is a spare drive that has been assigned specifically to one or more pools. It is used to replace only drives that are in these assigned pools. If a drive is marked offline that was not in one of the assigned pools, the dedicated spare will not replace that drive. This feature can used for prioritizing pools which may have a greater need to survive disk failures.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
|     list | (Default) Displays a list of hot spare drives. |
|     add | Adds new hot spare drives. |
|     del | Deletes a hot spare drive. |
| -i <Spare Id> | Specifies the ID of the spare drive. |
| -p <PD ID> | Specifies the ID of the physical drive. Requires the -a add option to configure a drive as a spare. |
| -d <POOL ID or POOL ID List> | When used with -a list, it is used to specify a pool id. The result of the list will be the global spares and the dedicated spares to this pool. When used with other actions, it is used to specify the ids list of the pools to which the spare is dedicated. |

-t \<type\>          Type of hot spare to manipulate.

      g                          A global hot spare will replace any drive from a redundant pool of same

                                                   size or smaller.

      d                          A dedicated hot spare will only replace drives from pools in which the

                                                   spare is associated with. Drives that are being replaced must be of the

                                                 same size or smaller.

-r \<revertible\>     Whether the spare drive is revertible or commited.

      y                          Revertible.

      n                          Committed.

-v                                Verbose mode. Used with -a list.

**Examples**

```
spare

spare -a add -p 14 -t g

spare -a del -i 0
```

## stats

**Usage**

stats [-t <type>] [-i <devId>] [-c <Count>]

stats -a clear

**Summary**

The stats command displays statistics of subsytem, controller, enclosure, physical drives, and logical drives; and resets the statistics count to zero.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
|     list | (Default) Displays the statistics. |
|     clear | Resets the statistics count to zero. |
| -t <type> | Specifies the device type. |
|     ctrl | Controller. |
|     phydrv | Physical drive. |
|     all | All the above options. |
| -i <devId> | Specifies the device ID. Default is the first available device ID. |
| -c <Count> | Specifies the device count. Default is all devices. Used with -a list. |

**Examples**

```
stats -t phydrv -i 0 -c 5

stats -a list -t all

stats -a clear
```

## subscription

**Usage**

subscription -a <action> [-u <username>] -t <type> -s "<list of settings>"

subscription -a list

subscription -a list -v -t <type>

subscription -a enable

subscription -a disable

subscription -a mod  [-u <username>] -s "<list of settings>"

subscription -a test [-u <username>]

**Summary**

Subscription is used to enable or disable event notification for specific user, specify events of interest, as well as to modify the levels of severity. Users with superuser privilege can subscript for all users.

**Options**

| -a <action> | Which action to perform. |
|---|---|
| list | (Default) Displays information of event subscription. |
| mod | Modify a exist event subscription. |
| enable | Enable event notification. |
| disable | Disable event notification. |
| test | Send a test email to the email address of specific user. |
| -u <username> | Specifies the username event subscription belongs to |
| | (Default) Assumes to the username of current logged in. |
| -t <type> | Specifies what type of event subscription. |
| | Only used for verbose list action. |

shortcut                    event subscription by shortcut. If the param have no value, it means that

the severity level of underling items are different.

enclosure                   event subscription by enclosure.

raid                        event subscription by RAID core.

host                        event subscription by host interface.

drive                       event subscription by drive interface.

other                       event subscription by other.

-s "<option>=<value>"

Following for shortcut type event subscription:

If params for shortcut type and corresponding underling items are both inputed in cli command. Make

sure they have the same severity level, or it will report conflict.

enclosure =                 shortcut event subscription by enclosure.

raid =                      shortcut event subscription by raid core.

host =                      shortcut event subscription by host interface.

drive =                     shortcut event subscription by drive interface.

other =                     shortcut event subscription by other.

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

Followings for enclosure type event subscription:

battery =                   battery event subscription of enclosure.

blower =                    blower event subscription of enclosure.

cu =                        Cooling Unit event subscription of enclosure.

psu =                       PSU event subscription of enclosure.

sep =                       SEP event subscription of enclosure.

temp =                      temperature event subscription of enclosure.

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

Followings for raid type event subscription:

| | |
|---|---|
| ctrl = | Controller event subscription of enclosure. |
| da = | Disk Array event subscription of enclosure. |
| init = | Initialization blower event subscription of enclosure. |
| ld = | Logical Drive cooling unit event subscription of enclosure. |
| ddf = | DDF event subscription of enclosure. |
| mp = | Media Patrol event subscription of enclosure. |
| oce = | Online Capacity Expansion event subscription of enclosure. |
| pd = | Physical Disk event subscription of enclosure. |
| rm = | RAID Migaration event subscription of enclosure. |
| rebuild = | Rebuild event subscription of enclosure. |
| rc = | Redundancy Check event subscription of enclosure. |
| smart = | SMART event subscription of enclosure. |
| sync = | Synchronization event subscription of enclosure. |
| subsys = | Subsystem event subscription of enclosure. |
| pdm = | Predictive Data Migaration event subscription of enclosure. |
| sc = | Spare Check event subscription of enclosure. |

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

Followings for host type event subscription:

| | |
|---|---|
| hictrl = | Host Interface Controller event subscription of Host interface. |

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

Followings for drive type event subscription:

| | |
|---|---|
| dictrl = | Drive Interface Controller event subscription of Drive interface. |

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

Followings for other type event subscription:

| | |
|---|---|
| ups = | UPS event subscription of other. |
| app = | Application event subscription of other. |

The range is (info | warning | minor | major | critical | fatal | none).

Default value is major.

-v                                             Verbose mode. Used with -a list.

**Examples**

```
subscription -a list -t shortcut -v

subscription -a mod -u administrator -s "enclosure=info"

subscription -a mod -s "bbu=critical"

subscription -a disable -u administrator
```

## subsys

**Usage**

subsys [-a <action>] [-v]

subsys -a mod -s "<list of settings>"

subsys -a lock [-r] [-t <number of minutes>]

subsys -a unlock [-f]

subsys -a chklock

**Summary**

The subsys command is used to display and make changes to subsystem settings. This is also used to lock the subsystem so that only the current administrator can make modifications.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
| list | (Default) Displays information for the specified subsystem. |
| mod | Modifies subsystem settings. |
| lock | Locks the subsystem so other users cannot apply changes. No changes can be made to subsystem settings by other users until the lock expires or the system is unlocked. |
| unlock | Clears a subsystem lock. |
| chklock | Checks the status of the lock. |
| -s "<option>=<value>" | Specifies which subsystem settings to change. |
| alias= | A user specified name to identify the subsystem. It can be up to 48 characters long, containing alpha-numeric characters, blank spaces and underscores. The beginning and ending blank spaces will be discarded. |

cachemirroring=                     Enable and disable cache mirroring. Cache mirroring will only be available

when redundancy type is active-active. The default value is enable if not

specified.

      enable

      disable

-t <number of mins>                 Used with -a lock. Number of minutes to lock the subsystem.

Default is 30 minutes.

-r                                  Renew the lock timer.  Used with -a lock and -t

-f                                  Force unlock. Only super user has the privilege to do it.

-v                                  Verbose mode.  Used with -a list.

**Examples**

```
subsys

subsys -v

subsys -a mod -s "alias=MySubsystem"

subsys -a lock -t 60

subsys -a lock -r -t 35

subsys -a unlock

subsys -a chklock
```

## swmgt

**Usage**

swmgt [-a <action>]

swmgt -a mod -n <component name> [-t <startup type>] [-s "<list of settings>]

swmgt -a start -n <component name>

swmgt -a stop -n <component name>

swmgt -a restart -n <component name>

**Summary**

The swmgt command allows a user to view and modify setting of software components.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays all software components. |
| start | Start a software component. |
| stop | Stop a software component. |
| restart | Restart a software component. |
| mod | Change a component's startup type when system boots. |
| add | Add trap sink for snmp, public key for ssh or recipient for netsend. |
| del | Delete trap sinks for snmp, public key for ssh or recipients for netsend. |
| -n <component name> | Specifies the component name to view setting, modify, start or stop. |
| email | Email notification. |
| slp | Service location protocol service agent. SLP service is supported for IPv4 protocol only. |
| webserver | Web server. |

| | |
|---|---|
| ssh | SSH. |
| snmp | SNMP. |
| -t <startup type> | Specifies the startup type. |
| automatic | Component is automatically started when system boots. |
| manual | Component has to be manually started by issuing command. |
| -s "<option>=<value>" | Used to specify settings for this component. This is used when modifying (mod). These options are comma separated. |

email settings

| | |
|---|---|
| smtpserver= | SMTP server IP address or SMTP server name. |
| serverport= | SMTP server port number. |
| authentication= | SMTP server authentication. |
| | no |
| | yes |
| username= | Username if using SMTP authentication. |
| password= | Password if using SMTP authentication. |
| senderaddr= | Sender's email address. |
| subject= | Email subject. |

webserver settings

| | |
|---|---|
| sessiontimeout= | Session time out in minutes. Maximum 1440. |

ssh settings

| | |
|---|---|
| port= | Port number for ssh daemon. |
| sessiontimeout= | Session time out in minutes. Maximum 1440. |
| maxconnection= | Max number of ssh client connection. Maximum 4. |

snmp settings

| | | |
|---|---|---|
| | port= | IPv4 Port number. |
| | port6= | IPv6 Port number. |
| | sysname= | System name string. |
| | syslocation= | System location string. |
| | syscontact= | System contact information string. |
| | readcommunity= | IPv4 Read community name. |
| | readcommunity6= | IPv6 Read community name. |

-i \<Index>                          Used to specify trap sink index for snmp or public key index for ssh. Only valid for modify or delete trap sink, delete public key.

-p "\<option>=\<value>"               Used to specify trap sinks for snmp or public key for ssh.

Multiple -p option can be entered with -a add option for trap sink.

| | | |
|---|---|---|
| | trapsinkserver= | Trap sink IP address or trap sink server name. For snmp only. |
| | trapfilter= | Trap filter level. It implies the level and above. For snmp only. |
| | info | |
| | warning | |
| | minor | |
| | major | |
| | critical | |
| | fatal | |

filename=                            Ssh public key file name. For ssh only.

server=                              TFTP server IP address or server name. For ssh only.

comment=                             Ssh public key comment. For ssh only.

**Examples**

```
swmgt

swmgt -n webserver

swmgt -a start -n snmp

swmgt -a stop -n snmp

swmgt -a mod -n snmp -t automatic

swmgt -a add -n ssh -p "filename=key.pub, server=192.168.1.1, comment=root@server"

swmgt -a del -n ssh -i 1
```

For adding multiple trapsinkserver (SNMP):

```
swmgt -a add -n snmp -p "trapsinkserver=192.168.1.1,trapfilter=info"

     -p "trapsinkserver=192.168.2.1,trapfilter=critical"
```

## sync

**Usage**

sync [-l <Pool Id>]

**Summary**

This command allows the user to check the status of background synchronization.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays the current active and their status(es). |
| -l <Pool ID> | Specifies which Pool to perform sync action on. |

**Examples**

```
sync
```

## target

**Usage**

target [-a <action>] [-i <Index>] [-n <Name>]

target -a add [-i <Index>] -n <Name>

target -a del -i <Index>

**Summary**

Target will display information about the current target list as well as the ability to add or delete a target.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays the current target list. |
| add | Add a target to the list. |
| del | Delete a target from the list. |
| -i <Index> | Used to specify the index of the target. |
| -n <Name> | Used to specify the target's WWNN in hex format, e.g. aa-bb-cc-dd-ee-ff-11-22 |

**Examples**

```
target

target -a add -n aa-bb-cc-dd-ee-ff-11-22

target -a del -i 1
```

# topology

**Usage**

topology [-a <action>] [-v]

**Summary**

View enclosures topology, the physical connections and devices. For products that support multiple enclosures

only.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|     list | (Default) Displays topology information. |
| -v | View complete information about topology. |

**Examples**

```
topology
```

## transit

**Usage**

transit [-a <action>] [-l <PoolId>] [-s <SeqNo>]

transit -a start -l <PoolId> -s <SeqNo> -p <PdId>

transit -a stop -l <PoolId> -s <SeqNo>

transit -a pause -l <PoolId> -s <SeqNo>

transit -a resume -l <PoolId> -s <SeqNo>

**Summary**

This command allows the user to start, stop, pause or resume a transition as well as to check on the progress of a running transition.

Transition is an operation to replace an used revertible spare in the pool with an appropriate physical drive, which is called the destination drive. The destination drive can be an unconfigured drive, a non-revertible global spare, or a non-revertible dedicated spare to the pool.

During transition, the data on the revertible spare is transferred to the destination drive while IO is going on. After transition, the destination drive becomes the part of the pool; the revertible spare becomes available for later use.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
|     list | (Default) Displays the running and paused transitions and their |
|     start | Starts a manual transition. |
|     stop | Stops a transition. |
|     pause | Pauses a transition. |
|     resume | Resumes a paused transition. |
| -l <pool ID> | Specifies the pool id, which contains the revertible spare. |
| -s <sequence Num> | Specifies the sequence number of the used revertible spare in the pool. |
| -p <PD ID> | Specifies the physical drive ID of the destination drive. |

**Examples**

```
transit

transit -a start -l 0 -s 2 -p 10

transit -a stop -l 0 -s 2
```

## trunk

**Usage**

trunk [-a <action>] [-i <trunk id>]

trunk -a add -s "<list of settings>"

**Summary**

The trunk command is used to display and modify port trunk settings for the iSCSI host interface.

**Options**

| | |
|---|---|
| -a <action> | Specifies the action to perform. |
|     add | Create a new trunk. |
|     list | Displays trunk information. |
|     mod | Modify an existing trunk setting. |
|     del | Delete a trunk. |
| -i [<trunk id>] | Port trunk identifier. (0 - 7). |
| -s ["<option>=<value>"] | Used to specify which trunk settings to change. |
|     ctrlid= | Controller ID of Port |
|     masterport= | Master port of the Trunk. Range: Port ID |
|     slaveport= | List of ports aggregated in this trunk, excluding the master port |
|     Range: | Port ID. |

| trunktype= | trunk type |
| --- | --- |
| balance_xor | Transmits based on XOR formula. (Source MAC address is XOR'd with destination MAC address) modula slave count. This selects the same slave for each destination MAC address and provides load balancing and fault tolerance. |
| lacp | This mode is known as Dynamic Link Aggregation mode. It creates aggregation groups that share the same speed and duplex settings. This mode requires a switch that supports IEEE 802.3ad Dynamic link. |
| active_standby | Only one slave in the bond isactive. A different slave becomes active if, and only if, the active slave fails. This mode provides fault tolerance. |

**Examples**

```
trunk -a add -s"ctrlid=1,masterport=2,slaveport=3 4"

trunk -a del -i 2
```

# tz

**Usage**

tz [-a list] [-d] [-h]

tz -a mod -s "<list of settings>"

**Summary**

TZ is used to display or modify the time zone for the controllers

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
|    list | (Default) Displays current or all the time zone info. |
|    mod | Modify the time zone. |
| -s "<option>=<value>" | |
|    zone = | Specifies which city name to use, it can check from detail all time zone info. |
| -d | Detail all time zone info.  Used with -a list. |

**Examples**

```
tz

tz -d

tz -a mod -s "zone=apia"
```

## volume

**Usage**

> volume [-a <action>] [-i <volume ID>] [-p <pool ID>] [-s <settings>]

**Summary**

This command allows the user to list, add, modify, delete, export and unexport volume.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |

| | |
|---|---|
| list | (Default) List volume information. |
| add | add a volume |
| mod | modify volume settings |
| del | delete a volume |
| export | export a volume |
| unexport | un-export a volume |

| | |
|---|---|
| -p <pool ID> | Pool ID. |
| | Only valid for add or list action. |

| | |
|---|---|
| -i <volume ID> | volume ID |

| | |
|---|---|
| -c <volume count> | Specify the number of volumes to be created when used with the -a add option. If this -c option is used, all the volumes will be created with the same settings. |

| | |
|---|---|
| -s "<option>=<value>" | Used to specify what options to change. |
| | Only valid for add or mod action. |

| | |
|---|---|
| name= | Volume name. |
| capacity= | Volume capacity. |
| | For add action. If not specified for not thin-provision supported volume, it means to use the max available capacity of the pool. |
| | For mod action, it means to extend capacity of the volume. It must be larger than original capacity. |
| block= | Block size of the volume. |
| | The possible parameters are 4KB, 8KB, 16KB, 32KB, 64KB and 128KB. If not specified, the default 8KB will be used. |
| | Only valid for add action. |
| sector= | Sector size of the volume. |
| | The possible parameters are 512B, 1KB, 2KB and 4KB. |
| | If not specified, the default 512B will be used. |
| | Only valid for add action. |
| sync= | Sync mode of the volume. |
| standard | |
| always | (Defaults) |
| disabled | |
| logbias= | Slog behavior. If not specified, for block size is 64KB or 128KB, the default thoughtput will be used. For other block size values, the default latency will be used. |
| latency | |
| throughput | |
| thinprov= | Thin-provision supported or not. |
| enable | |
| disable | |
| -f | Force delete the volume. |

| -v | Verbose mode.  Used with -a list. |
|---|---|
| -y | Enable non-interactive mode. |

**Examples**

```
volume -a list

volume -a list -i 1

volume -a list -p 2

volume -a add -p 2 -s "name=test, capacity=20GB, block=8KB, sector=512B"

volume -a add -p 2 -s "name=testvol, capacity=10GB" -c 5

volume -a mod -i 2 -s "name=mytest"

volume -a del -i 2

volume -a export -i 2

volume -a unexport -i 2
```

## ups

**Usage**

ups [-a <action>]

ups -a list [-v]

ups -a mod -s "<list of settings>"

**Summary**

The ups command allows a user to view and modify ups status and settings. Network UPS is supported for IPv4

 protocol only.

**Options**

| | |
|---|---|
| -a <action> | Which action to perform. |
| list | (Default) Displays all current UPS status. |
| mod | Change the settings for UPS. |
| -s "<option>=<value>" | Used to specify what options to change. |
| detection= | Detection mode setting |
| auto | (Default. Whenever a UPS is detected, it changes the detection mode to "enable".) |
| enable | (Monitors UPS, UPS Settings changes, reports warnings and logs events.) |
| disable | (Monitors Serial UPS only.) |
| ups1= | UPS1 IP address or Domain Name. |
| ups2= | UPS2 IP address or Domain Name. |
| rtr= | Running time remaining threshold in minute. The valid value range is 3~20. |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
ups -v

ups -a mod -s "ups1=192.168.1.1, rtr=5"
```

## user

**Usage**

user [-a <action>] [-u <username>]

user -a add -u <username> -p <privilege> [-s "<list of settings>"]

user -a mod -u <username> [-p <privilege>] [-s "<list of settings>"]

user -a del -u <username> [-t <type>]

**Summary**

The user command allows a user to view and modify an existing user account.

Both management user and SNMP user are supported.

For management, only a Superuser can create, modify, or delete a user account.

User access levels are: Superuser, Poweruser, Maintenance, and View.

If a password is not specified when the user account is created, there will be no password when you log in.

Maximum password length is 31 characters, no spaces.

For SNMP user, only permission READ_ONLY is supported now.

The minimum length of password is 8 characters.

Maximum password length is 31 characters, no spaces.

Use the password command to change a password.

**Options**

-a <action>                      Which action to perform.

    list                      (Default) Displays the current users.

    add                       Create a new user.

    mod                       Modify an existing user.

    del                       Delete a user.

    refresh                   Refresh the NAS user.

| -t \<usertype> | Specifies the type of user. |
| --- | --- |
| mgmt | (Default) Management user. |
| snmp | SNMP user, who can only view subsystem settings through |
| SNMP. | |
| nas | Nas user. |
| -u \<username> | Specifies the username to display, edit or delete. |
| | Maximum username length is 25 characters, no spaces. |
| -p \<privilege> | Specifies the privilege level to set for the user. Management user only. |
| super | Superuser has max control |
| power | Poweruser cannot modify users nor delete configs |
| maintenance | Maintenance user can only perform background tasks |
| view | View user can only view. |
| -f | Force delete a user. |
| -s "\<option>=\<value>" | |
| name= | Specifies the user's display full name. |
| email= | Specifies an email address for the user. |
| Management user settings: | |
| status= | Enable/disable this user's account. Default is enable. |
| SNMP user settings: | To provide a secure environment, following authentication and privacy protocols are available. A password is required for each protocol. |

| auth= | Specifies the authentication protocol. |
|---|---|
| md5 | Using MD5 authentication protocol. |
| sha | Using SHA authentication protocol. |
| priv= | Specifies the privacy protocol. Only when authentication is set, can this be set. |
| des | Using CBC-DES privacy protocol. |
| aes | Using CFB-AES-128 privacy protocol. |
| NAS user settings: | |
| group= | Specifies the primary group name which the user belongs to. |
| department | User department. |
| phone | User phone. |
| -v | Verbose mode. Used with -a list. |

**Examples**

```
user

user -a add -u newuser -p view -s"name=NewUser,email=MyEmail@yourcompany.com"

Input password: ******

Retype password: ******

user -a add -t snmp -u snmpuser -s "auth=md5,priv=des"

Input auth password: ******

Retype auth password: ******

Input priv password: ******

Retype priv password: ******

user -a add -t nas -u nasuser -s "email=aa@123.com"

Input password: ******

Retype password: ******
```

# 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.

PROMISE E-Support: https://support.promise.com

PROMISE web site: http://www.promise.com//

When you contact us, please have the following information available:

- Product model and serial number

- Firmware version

- A description of the problem / situation

- System configuration information, including: motherboard and CPU type

Please refer to "Export Service Report" on page 163 to create a service report with the needed information.

## *United States*

580 Cottonwood Drive

Milpitas, Ca 95035, USA

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

## *Australia*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

## *EMEA*

## *Netherlands*

Science Park Eindhoven 5228

5692 EG Son, The Netherlands

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

## *Austria*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

## *France*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

## *Germany*

Europaplatz 9

44269 Dortmund, Germany

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Sweden

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Switzerland ITF

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Norway ITF

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Belgium

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Luxembourg

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### United Kingdom

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### Taiwan

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### China

Room 1108, West Wing, Shi Chuang Plaza, 22 Information Road

Shangdi IT Park, Haidian District, Beijing 100085

Fax: 86-10-8857-8015

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### *Korea*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### *Hong Kong*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### *Singapore*

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

### *Japan*

3F, Mura Matsu Bldg, 3-8-5, Hongo Bunkyo-ku

Tokyo 113-0033, Japan

Technical Support (E-Support): https://support.promise.com

Web site: http://www.promise.com//

# Limited Warranty

PROMISE Technology, Inc. ("PROMISE") warrants that this product, from the time of the delivery of the product to the original end user:

a)  all components, except the cache backup battery, for a period of three (3) years;

b)  the cache backup battery, for a period of one (1) year;

c)  will conform to PROMISE's specifications;

d)  will be free from defects in material and workmanship under normal use and service.

This warranty:

a)  applies only to products which are new and in cartons on the date of purchase;

b)  is not transferable;

c)  is valid only when accompanied by a copy of the original purchase invoice.

d)  Is not valid on spare parts.

This warranty shall not apply to defects resulting from:

a)  improper or inadequate maintenance, or unauthorized modification(s), performed by the end user;

b)  operation outside the environmental specifications for the product;

c)  accident, misuse, negligence, misapplication, abuse, natural or personal disaster, or maintenance by anyone other than a PROMISE or a PROMISE-authorized service center.

## *Disclaimer of other warranties*

This warranty covers only parts and labor, and excludes coverage on software items as expressly set above.

Except as expressly set forth above, PROMISE disclaims any warranties, expressed or implied, by statute or otherwise, regarding the product, including, without limitation, any warranties for fitness for any purpose, quality, merchantability, non-infringement, or otherwise. PROMISE makes no warranty or representation concerning the suitability of any product for use with any other item. You assume full responsibility for selecting products and for ensuring that the products selected are compatible and appropriate for use with other goods with which they will be used.

PROMISE does not warrant that any product is free from errors or that it will interface without problems with your computer system. It is your responsibility to back up or otherwise save important data before installing any product and continue to back up your important data regularly.

No other document, statement or representation may be relied on to vary the terms of this limited warranty.

PROMISE's sole responsibility with respect to any product is to do one of the following:

a) replace the product with a conforming unit of the same or superior product;

b) repair the product.

PROMISE shall not be liable for the cost of procuring substitute goods, services, lost profits, unrealized savings, equipment damage, costs of recovering, reprogramming, or reproducing of programs or data stored in or used with the products, or for any other general, special, consequential, indirect, incidental, or punitive damages, whether in contract, tort, or otherwise, notwithstanding the failure of the essential purpose of the foregoing remedy and regardless of whether PROMISE has been advised of the possibility of such damages. PROMISE is not an insurer. If you desire insurance against such damage, you must obtain insurance from another party.

Some states do not allow the exclusion or limitation of incidental or consequential damages for consumer products, so the above limitation may not apply to you.

This warranty gives specific legal rights, and you may also have other rights that vary from state to state. This limited warranty is governed by the State of California.

## *Your Responsibilities*

You are responsible for determining whether the product is appropriate for your use and will interface with your equipment without malfunction or damage. You are also responsible for backing up your data before installing any product and for regularly backing up your data after installing the product. PROMISE is not liable for any damage to equipment or data loss resulting from the use of any product.

## *Returning the Product For Repair*

If you suspect a product is not working properly, or if you have any questions about your product, contact our Technical Support staff, and be ready to provide the following information:

- Product model and serial number (required)
- Return shipping address
- Daytime phone number
- Description of the problem
- Copy of the original purchase invoice

The technician helps you determine whether the product requires repair. If the product needs repair, the technician issues an RMA (Return Merchandise Authorization) number.

### Important

Obtain an RMA number from Technical Support **before** you return the product and write the RMA number on the label. The RMA number is essential for tracking your product and providing the proper service.

Return ONLY the specific product covered by the warranty. Do not ship cables, manuals, CDs, etc.

| USA and Canada: | PROMISE Technology, Inc. Customer Service Dept. Attn.: RMA # _____ 47654 Kato Road Fremont, CA 94538 |
|---|---|
| Other Countries: | Return the product to your dealer or retailer. Contact them for instructions before shipping the product. |

You must follow the packaging guidelines for returning products:

- Use the original shipping carton and packaging

- Include a summary of the product's problem(s)

- Write an attention line on the box with the RMA number

- Include a copy of your proof of purchase

You are responsible for the cost of insurance and shipment of the product to PROMISE. Note that damage incurred due to improper transport or packaging is not covered under the Limited Warranty.

When repairing returned product(s), PROMISE may replace defective parts with new or reconditioned parts, or replace the entire unit with a new or reconditioned unit. In the event of a replacement, the replacement unit is under warranty for the remainder of the original warranty term from purchase date, or 30 days, whichever is longer.

PROMISE pays for standard return shipping charges only. You must pay for any additional shipping options, such as express shipping.

## Information for China RoHS

| 部件名稱<br>Products<br>Description | Toxic or Hazardous Substances | | | | | |
|---|---|---|---|---|---|---|
| | 鉛<br>(Pb) | 汞<br>(Hg) | 鎘<br>(Cd) | 六價鉻<br>(Cr6+) | 多溴联苯<br>(PBB) | 多溴二苯醚<br>(PBDE) |
| PCBA | X | ○ | ○ | ○ | ○ | ○ |
| Metal parts | X | ○ | ○ | ○ | ○ | ○ |
| Plastic parts | ○ | ○ | ○ | ○ | ○ | ○ |
| Cable | ○ | ○ | ○ | ○ | ○ | ○ |
| Power Supply | X | ○ | ○ | ○ | ○ | ○ |
| Battery | X | ○ | ○ | ○ | ○ | ○ |
| Package | ○ | ○ | ○ | ○ | ○ | ○ |

本表格依據 SJ/T 11364 的規定編制。
This table is prepared in accordance with the provisions of SJ/T 11364.
O：表示該有害物质在该部件所有均質材料中的含量均在 GB/T 26572 规定的限量要求以下。
O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is under the limitation requirement of GB/T 26572.
X：表示該有害物质至少在该部件的某一均質材料中的含量超出 GB/T 26572 规定的限量要求。
X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.
此产品符合 EU RoHS 指令 2011/65/EU
The product complies with EU RoHS Directive 2011/65/EU

生產日期代碼參考路徑：*http://www.promise.com/Manufacturing-Dates-of-Products*