

G-SPEED™ eS Mac Installation Guide



G-Technology Inc.
Tel: (310) 449-4599
Fax: (310) 449-4670
support@g-technology.com

TABLE OF CONTENTS

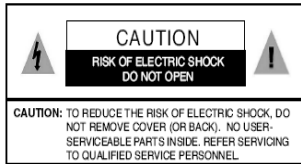
1. [INTRODUCTION](#) (Pg 4)
2. [SAFETY PRECAUTIONS](#)
3. [SYSTEM REQUIREMENTS](#)
4. [WHAT'S IN THE BOX](#)
5. [G-SPEED eS OVERVIEW](#) (Pg 5)
6. [OPTIONAL G-TECH PCIe RAID CONTROLLER OVERVIEW](#)
7. [G-SPEED eS AUDIBLE ALARMS](#) (Pg 6)
8. [SETTING UP G-SPEED eS WITH THE G-TECH PCIe RAID CONTROLLER](#)
9. [G-TECH RAID CONTROLLER WEB GUI](#) (Pg 8)
10. [CHANGING THE G-TECH RAID CONTROLLER MODE](#) (Pg 9)
11. [CONFIGURING TWO G-SPEED eS UNITS IN RAID 5 MODE](#) (Pg 11)
12. [WHAT TO DO IN THE EVENT OF A DISK DRIVE FAILURE](#) (Pg 15)
13. [TECHNICAL SUPPORT](#) (Pg 17)
14. [LIMITED WARRANTY](#)

[APPENDIX A – DETAILED INFORMATION ON USING THE WEB GUI](#)

[APPENDIX B – EXPLANATION OF RAID LEVELS](#)

[APPENDIX C – NOTES](#)

IMPORTANT SAFEGUARDS



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating maintenance (servicing) instructions literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE APPLIANCE TO RAIN OR MOISTURE.

1. READ INSTRUCTIONS

All the safety and operating instructions should be read before the unit is operated.

2. RETAIN INSTRUCTIONS

The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS

All Warnings on the unit and in the operating instructions should be adhered to.

4. FOLLOW INSTRUCTIONS

All operating and use instructions should be followed.

5. ATTACHMENTS

Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.

6. WATER AND MOISTURE

Do not use this unit near water—for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

7. ACCESSORIES

Do not place this unit on an unstable cart, stand, tripod, bracket or table. The unit may fall, causing serious injury and serious damage to the unit.

8. VENTILATION

Openings in the front and back of the unit are provided for ventilation to ensure reliable operation and to protect it from over heating. These openings must not be blocked or covered. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided.

9. POWER SOURCES

This unit should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply in your facility, consult your local dealer or power company.

10. GROUNDING AND POLARIZATION

This equipment is supplied with a power cord with a US style 3-wire grounding type plug at one end and a 3-wire IEC standard connector at the other. The 3-wire grounding type plug will fit into a US style grounding type power outlet and the IEC connector is intended to plug into the Medea unit. The 3-wire grounding type plug is a safety feature. If you are unable to insert the plug into the outlet, do not force it. Contact your electrician to replace the obsolete outlet. **DO NOT DEFEAT THE SAFETY PURPOSE OF THE GROUNDING TYPE PLUG.** For use in Foreign Countries, contact your local Medea dealer or representative to obtain a power cord with a locally compatible 3-wire grounding plug on one end and a 3-wire IEC standard connector on the other.

11. POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles and the point where they exit the unit.

12. SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltages or other hazards. (See Caution Symbol at rear of power supply chassis.) Refer all servicing to qualified service personnel.

WICHTIGE SICHERHEITSHINWEISE



Dieses Symbol soll den Benutzer darauf aufmerksam machen, dass er hier unisolierte gefährliche Spannung innerhalb des Gehäuses antrifft, die ausreichend gefährlich ist um einen Stromschlag hervorzurufen.



Dieses Symbol ist gedacht um den Anwender darauf hinzuweisen, dass sich im Handbuch wichtige Hinweise befinden.

WARNING: UM DIE GEFAHR EINES ELEKTRISCHEN SCHLAGES ZU VERRINGERN, DARF DAS GERÄT WEDER REGEN NOCH FEUCHTIGKEIT AUSGESETZT WERDEN.

1. LESEN SIE DIE HINWEISE

Lesen Sie bitte alle Sicherheitshinweise und die Bedienungsanleitung bevor Sie das Gerät in Betrieb nehmen.

2. AUFBEWAHREN DER HINWEISE

Bewahren Sie die Bedienungsanleitung und alle Sicherheitshinweise für spätere Verwendung auf.

3. BEACHTEN SIE DIE WARNUNGEN

Alle Warnungen und Hinweise auf dem Gehäuse und in der Anleitung sollten unter allen Umständen beachtet werden.

4. FOLGEN SIE DEN ANWEISUNGEN

Alle Benutzer- und Bedienungsanweisungen sollten befolgt werden.

5. ERWEITERUNGEN

Benutzen Sie keine Erweiterungen, die nicht vom Hersteller empfohlen wurden um Gefahren zu vermeiden.

6. WASSER UND FEUCHTIGKEIT

Benutzen Sie das Gerät nicht in der Nähe von Wasser—z.B. Badewanne, Wuschüssel, Spüle, Waschwanne, feuchter Fußboden oder in der Nähe eines Pools.

7. ZUBEHÖR

Stellen Sie das Gerät nicht auf einen wackeligen Rollcontainer, Ständer, Stativ, Regal oder Tisch. Das Gerät könnte herunterfallen, was einen bleibenden bzw. irreparablen Schaden an dem Gerät hervorrufen könnte.

8. BELÜFTUNG

Öffnungen an der Vor- und Rückseite des Gerätes sind für die Belüftung vorgesehen, um eine zuverlässige Funktion zu garantieren und gegen Überhitzung vorzubeugen. Diese Öffnungen dürfen weder verstellt noch zugedeckt werden. Das Gerät sollte niemals in der Nähe einer Heizung oder einer anderen Wärmequelle aufgestellt werden. Das Gerät sollte außerdem nicht in einem Einbaugeschäbe wie einem Schrank, oder einem Rack installiert werden, solange eine ausreichende Belüftung nicht sichergestellt ist.

9. NETZANSCHLUß (STROMVERSORGUNG)

Das Gerät sollte nur mit der Spannungsversorgung, die auf dem Geräteaufkleber ausgewiesen ist, betrieben werden. Sollten Sie nicht sicher sein, welche Art der Spannungsversorgung in Ihrem Betrieb verwendet wird, fragen Sie bei Ihrem Händler oder der Stromversorgungsgesellschaft nach.

10. ERDUNG UND POLUNG

Zur Ausstattung gehört ein Stromkabel mit einem amerikanischen Schutzkontakt Stecker mit Erdung auf der einen Seite und einem Kaltgeräte Stecker auf der anderen (IEC Standard). Der Schutzkontaktstecker passt in eine amerikanische Schutzkontaktsteckdose und der Kaltgerätestecker in ihr Medea Gerät. Der Schutzkontaktstecker ist eine Sicherheitsvorrichtung. Sollten Sie ihn nicht in Ihre Steckdose stecken können, wenden Sie keine Gewalt an. Setzen Sie sich mit Ihrem Elektriker in Verbindung um die Steckdose auszuwechseln. Zerstören Sie unter keinen Umständen die Sicherheitsvorrichtung an Ihrem Stecker. Zur Anwendung in anderen Ländern setzen Sie sich mit Ihrem Medea Händler in Verbindung, der Ihnen ein Landesübliches Stromkabel mit einem Schutzkontaktstecker auf der einen und einem Kaltgerätestecker auf der anderen Seite zur Verfügung stellt.

11. STROMKABEL ISOLIERUNG

Stromkabel sollten so gelegt werden, dass man nicht auf sie tritt, oder Gegenstände auf ihnen stehen bzw. gegen sie stoßen. Besondere Aufmerksamkeit sollte Leitungen und Steckern, sowie Kupplungen und die Stelle an der sie das Gerät verlassen, gewidmet werden.

12. SERVICE

Versuchen Sie keinesfalls das Gerät selbständig zu warten, oder das Gehäuse zu öffnen. Dies kann Sie gefährlicher Spannung oder andern Gefahren aussetzen. Überlassen sie alle Wartungsarbeiten qualifiziertem Service Personal.

MEDIDAS PREVENTIVAS IMPORTANTES

PRECAUCIÓN
RIESGO DE DESCARGA ELÉCTRICA
NO ABRIR

PRECAUCIÓN: PARA REDUCIR EL RIESGO DE DESCARGA ELÉCTRICA, NO RETIRE LA CUBIERTA (O CUBIERTA POSTERIOR). NO HAY ADENTRO PARTES REPARABLES POR EL USUARIO. PERMITA QUE EL SERVICIO LO REALICE PERSONAL DE SERVICIO CALIFICADO.



El símbolo del rayo con fecha dentro de un triángulo equilátero tiene por objeto alertar al usuario de la presencia de voltaje peligroso y sin aislamiento en el interior del producto que pudiera ser de la suficiente magnitud como para constituir el riesgo de recibir una descarga eléctrica.



El símbolo de el signo de exclamación dentro de un triángulo equilátero tiene por objeto alertar al usuario de la existencia de instrucciones importantes para la operación y mantenimiento (servicios) en los documentos que acompañan el equipo.

ADVERTENCIA: PARA PREVENIR LA POSIBILIDAD DE PROVOCAR UN INCENDIO O DE RECIBIR UNA DESCARGA ELÉCTRICA, NO EXPONGA ESTE SISTEMA A LA LLUVIA O HUMEDAD.

1. LEA LAS INSTRUCCIONES

Deberá leer todas las instrucciones sobre seguridad y operación antes de operar la unidad.

2. GUARDAR LAS INSTRUCCIONES

Deberá guardar las instrucciones sobre seguridad y operación para referir en caso futuro.

3. PRESTE ATENCIÓN A ADVERTENCIAS

Deberá cumplir con todas las Advertencias indicadas en la unidad o en las instrucciones de operación.

4. SIGA LAS INSTRUCCIONES

Deberá seguir todas las instrucciones sobre operación y uso.

5. ACCESORIOS

No utilice accesorios que no hayan sido recomendados por el fabricante de la unidad en virtud de que pueden crear un peligro.

6. AGUA Y HUMEDAD

No utilice esta unidad cerca de agua—por ejemplo, cerca de una tina, lavabo, fregadero o tinaco, en un sótano mojado o cerca de una piscina.

7. EQUIPO AUXILIAR

No coloque esta unidad sobre carritos, bases, tripodes, soportes o mesas inestables. La unidad se podrá caer, causando lesiones graves y daños severos a la unidad.

8. VENTILACIÓN

Aberturas al frente y en la parte posterior de la unidad se proporcionan para ventilación y para asegurar una operación estable, así como para proteger a la unidad de sobrecalentamiento.

Estas aberturas no deberán ser obstruidas o cubiertas. Esta unidad nunca se deberá de colocar cerca o encima de un radiador o fuente de calor. Esta unidad no se deberá de colocar en muebles construidos a la medida, tales como libreros o estantes, salvo que se proporcione ventilación adecuada.

9. FUENTES DE ENERGÍA

La unidad deberá operar únicamente a partir del tipo de fuente de energía indicada en la etiqueta correspondiente. Si no está seguro del tipo de fuente de energía en su edificio, consulte a su distribuidor local o compañía de suministro de energía eléctrica.

10. PUESTA A TIERRA Y POLARIZACIÓN

El equipo se entrega con un cable alimentador con un enchufe con puesta a tierra de 3 alambres en un extremo y un enchufe estándar IEC (Comité Electrotécnico Internacional) de tres alambres en el otro. El enchufe con puesta a tierra de 3 alambres se conecta a un tomacorriente con puesta a tierra y el conector IEC tiene por objeto enchufarse a una unidad Medea. El enchufe con puesta a tierra de 3 alambres es una medida de seguridad. Si no le es posible conectar el enchufe a un tomacorriente, no lo fuerce. Póngase en contacto con un electricista para sustituir el tomacorriente obsoleto. **NO FRUSTRE LA MEDIDA DE SEGURIDAD INCORPORADA POR EL ENCHUFE CON PUESTA A TIERRA.** Para uso en países extranjeros, póngase en contacto con su distribuidor local de Medea o su representante para obtener un cable alimentador con un enchufe con puesta a tierra de 3 alambres en un extremo y un enchufe estándar IEC de tres alambres en el otro compatible en su país.

11. PROTECCIÓN DEL CABLE ALIMENTADOR

Los cables alimentadores se deberán de colocar de manera que se evite que sean pisados o pellizcados por algún equipo o mueble puestos encima de ellos o contra ellos, poniendo especial atención al enchufe del cable alimentador; receptáculos de protección o el punto en que se conectan a la unidad.

12. SERVICIOS

No intente dar servicio a esta unidad por sí mismo en virtud de que abrir la unidad o retirar alguna cubierta lo puede exponer a voltajes peli grosos u otros riesgos. Permita que el servicio lo realice personal de servicio calificado.

MISES EN GARDE IMPORTANTES

ATTENTION
RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRI

ATTENTION: AFIN DE PRÉVENIR LES RISQUES D'ÉLECTROCUTION, NE PAS ENLEVER LE COUVERCLE NI LE PANNÉAU ARRIÈRE DE L'APPAREIL. AUCUNE PIÈCE INTÉRIEURE NE PEUT ÊTRE RÉPARÉE PAR L'UTILISATEUR. POUR TOUTE RÉPARATION, CONSULTER UN TECHNICIEN COMPÉTENT.



Le symbole d'éclair dans un triangle équilatéral indique la présence d'une tension suffisamment élevée pour engendrer un risque de chocs électriques.



Le point d'exclamation dans un triangle équilatéral indique que le manuel d'utilisation inclus avec l'appareil contient d'importantes recommandations quant au fonctionnement et à l'entretien de ce dernier.

MISE EN GARDE: AFIN DE PRÉVENIR TOUT RISQUE D'INCENDIE OU D'ÉLECTROCUTION, NE PAS EXPOSER L'APPAREIL À LA PLUIE NI À L'HUMIDITÉ.

1. LIRE LES DIRECTIVES

Lire toutes les directives concernant la sécurité et le fonctionnement de l'appareil avant de l'utiliser.

2. CONSERVER LES DIRECTIVES

Conserver les directives concernant la sécurité et le fonctionnement de l'appareil pour référence ultérieure.

3. RESPECTER LES MISES EN GARDE

Respecter toutes les mises en garde sur l'appareil et dans le manuel d'utilisation.

4. SUIVRE LES DIRECTIVES

Suivre toutes les directives concernant le fonctionnement et l'utilisation de l'appareil.

5. ACCESSOIRES

Ne pas utiliser d'accessoires non recommandés par le fabricant de l'appareil, car ils peuvent représenter un danger.

6. EAU ET HUMIDITÉ

Ne pas utiliser l'appareil dans un endroit où il risque d'être mouillé, notamment dans un sous-sol humide et à proximité d'une baignoire, d'un lavabo, d'un évier, d'une cuve à lessive ou d'une piscine.

7. BAIES ET SUPPORTS

Ne pas placer l'appareil dans une baie ou sur un support, un trépied, une console ou une table instable. L'appareil pourrait tomber et subir des dommages importants ou infliger de graves blessures.

8. AÉRATION

Le boîtier de l'appareil comporte des fentes d'aération à l'avant et à l'arrière pour assurer le bon fonctionnement de l'appareil et le protéger de la surchauffe. Ces fentes ne doivent pas être obstruées ni recouvertes. Éloigner l'appareil de toute source de chaleur telle les radiateurs et autres éléments de chauffage. Ne pas placer l'appareil dans un meuble encastré tel une bibliothèque ou un bâti qui ne procure pas une aération adéquate.

9. ALIMENTATION

Ne brancher l'appareil que dans une prise de courant du type décrit sur l'étiquette signalétique. En cas de doute sur le type

d'alimentation disponible, consulter la compagnie d'électricité ou le distributeur local.

10. MISE À LA TERRE ET POLARISATION

Le cordon d'alimentation fourni avec l'appareil est doté d'une fiche polarisée à trois branch es de style américain à une extrémité et d'un connecteur femelle CEI standard à l'autre extrémité. La fiche polarisée à trois branches peut être branchée dans une prise de courant polarisée de style américain et le connecteur CEI doit être rac cordé à l'appareil Medea. La fiche polarisée à trois branches constitue une mesure de sécurité. Si elle ne s'insère pas aisément dans la prise, ne pas la forcer. Contacter un électricien pour remplacer la prise désuète. **NE PAS TENTER DE CONTOURNER CETTE MESURE DE SÉCURITÉ.** Pour utiliser l'appareil à l'étranger, se procurer un cordon d'alimentation compatible avec la configuration électrique locale auprès du distributeur ou du représentant Medea local.

11. PROTECTION DU CORDON D'ALIMENTATION

Les cordons d'alimentation doivent être placés de manière qu'ils ne soient pas piétinés ou écrasés par des objets et une attention particulière doit être portée à la fiche, à la prise et au point de sortie de l'appareil.

12. RÉPARATION

Ne pas tenter de réparer l'appareil, car l'ouverture ou le retrait du boîtier peut vous exposer à des tensions dangereuses ou à d'autres risques. Confier toute réparation à un technicien qualifié.

G-SPEED eS INSTALLATION GUIDE

1. INTRODUCTION

Thank you for purchasing G-SPEED eS from G-Technology, Inc. (G-Tech)! Specifically designed for professional content creation applications, G-SPEED eS features a high-speed 3Gbit/sec eSATA interface and provides RAID 0, 1, 5, 10 and JBOD functionality when used in conjunction with the optional G-Tech PCI Express (PCIe) RAID controller. Up to four G-SPEED eS units can be attached to the G-Tech RAID controller for storage capacities to 16 TB and data rates over 600 MB/sec. G-SPEED eS supports multi-stream video editing workflows on Mac Pro workstations.



If you purchased G-SPEED eS with the G-Tech PCIe RAID controller, the system has been set up at the factory in RAID 0 mode. The controller also supports RAID 1, 5, 10 and JBOD modes. Refer to Section XX if you wish to change the mode of operation.

2. SAFETY PRECAUTIONS

The disk drives contained in your G-SPEED eS are delicate electronic instruments and are susceptible to damage due to excessive physical shock. Place the unit in a vented area away from moisture or liquids. Please handle the unit with care. Do not open the case. Doing so will void the warranty. *If the Product is returned with damage caused by improper handling, the warranty will be void and liability will rest with the user.*

3. SYSTEM REQUIREMENTS

- Apple Mac Pro (Intel Mac) workstation
- Mac OS X 10.4.x or higher
- G-Tech PCIe RAID Controller or third party port multiplier aware eSATA host adapter



Optional G-Tech 4-port,
PCIe x4 RAID Controller

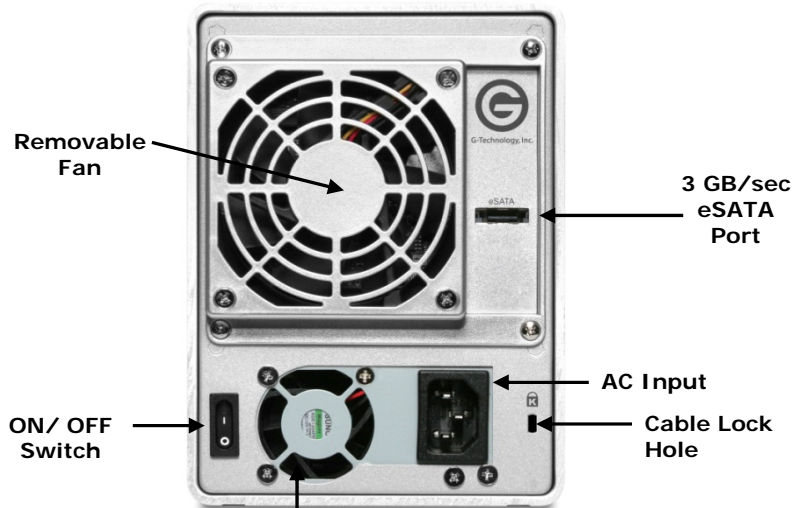
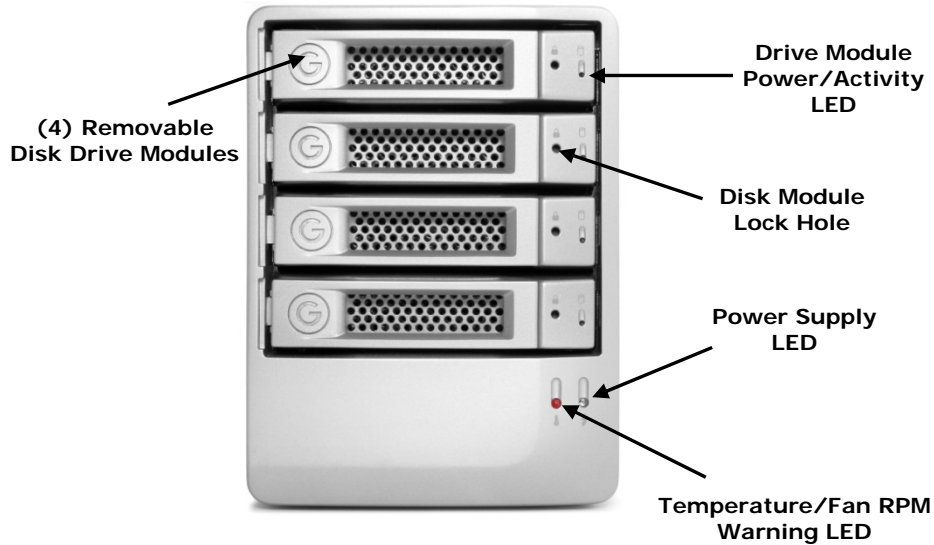
4. WHAT'S IN THE BOX

Take a moment to ensure that the following items are included in the box. If anything is missing, please call G-Tech at (310) 449-4599. Please keep the shipping container and packing materials. *In the unlikely event that you need to return G-SPEED eS to us for any reason, you must use the G-Tech shipping container. If the Product is returned damaged caused by improper packaging, the warranty will be void and liability will rest with the user.*



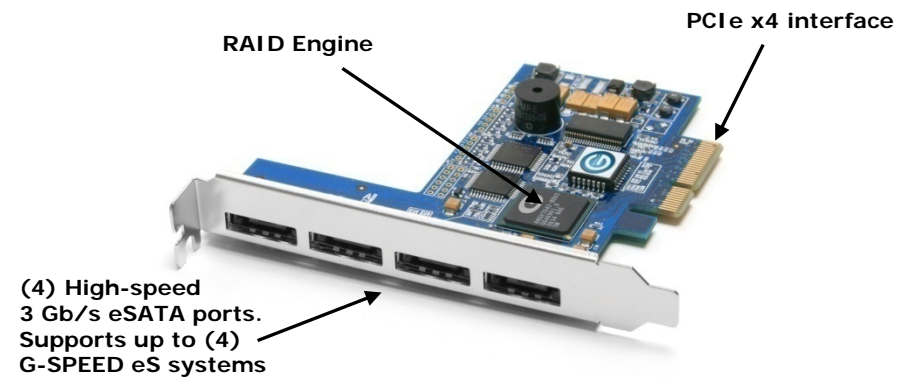
- G-SPEED eS storage system
- 4 removable SATA drive modules (installed in unit)
- (2) disk module keys
- 1-meter eSATA cable
- AC Power cable
- Optional – G-Tech PCIe RAID controller
- Configuration Utility & Installation CD

5. G-SPEED eS OVERVIEW



6. OPTIONAL G-TECH PCIe RAID CONTROLLER OVERVIEW

The optional G-Tech PCIe RAID controller connects G-SPEED eS to any Mac Pro workstation and provides RAID 0, 1, 5, 10 & JBOD functionality.



6.1 Supported RAID Levels

If your G-SPEED eS shipped with the optional G-Tech PCIe RAID controller, the system was **configured as a RAID 0 at the factory**. The controller also supports RAID 1, 5, 10 and JBOD configurations. If you wish to change the RAID mode, please refer to Section 10.

For an explanation of supported RAID levels, please refer to Appendix B.



If you purchased G-SPEED eS with the G-Tech PCIe RAID controller, the system has been set up at the factory in RAID 0 mode. The controller also supports RAID 1, 5, 10 and JBOD modes. Refer to Section 10 if you wish to change the mode of operation.



G-SPEED eS is also compatible with third-party Mac & Windows port multiplier aware eSATA host adapters. Refer to your host adapter documentation to set up G-SPEED eS with these boards.

7. G-SPEED eS AUDIBLE ALARMS

7.1 The G-SPEED eS enclosure is equipped with an audible alarm that sounds when:

1. The internal temperature of the G-SPEED eS enclosure reaches a temperature of 60° centigrade

and/or

2. When the main FAN fails or the RPM of the fan slows to a state where the fan can longer adequately cool the system.

In addition to the audible alarm, the Temperature/Fan Warning LED located on the front bezel of G-SPEED eS will illuminate.



If you hear an audible alarm and see the RED warning LED on the front of G-SPEED eS, stop using G-SPEED eS immediately. Check to see if the fan is spinning and move the unit to a cooler location. If you require a new fan, contact G-Tech Support for a replacement.

7.2 The G-Tech RAID controller is also equipped with an audible alarm that sounds when:

1. A disk drive failure occurs

or

2. When the G-SPEED eS is removed from the RAID controller without first selecting “Unplug” in the Array Maintenance menu in the web GUI.



If you hear an audible alarm coming from the G-Tech RAID controller, see Section 12 “What to do in the Event of a Disk Drive Failure”. See Appendix A.1.7.2 for information on the proper way to hot “Unplug” G-SPEED eS.

8. SETTING UP G-SPEED eS WITH THE G-TECH PCIe RAID CONTROLLER

G-SPEED eS comes pre-configured in RAID 0 mode and formatted for MAC OS X. Connecting G-SPEED to your Mac Pro and configuring your system takes just a few steps as outlined below.

8.1 Installing the G-Tech PCIe RAID Controller

1. Install the G-Tech RAID controller into SLOT 4 (top slot) of your Mac Pro workstation.



G-Tech PCIe RAID Controller

2. Secure the RAID controller in place.

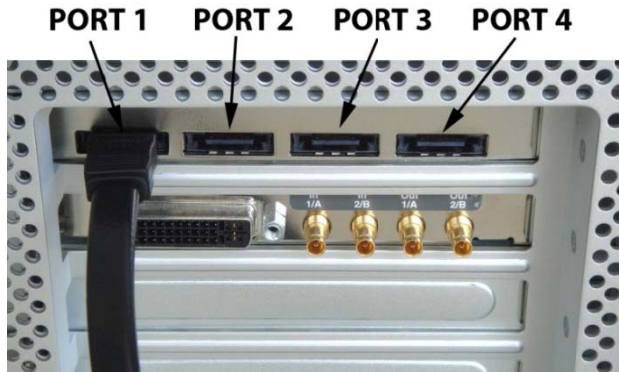


NOTE: If you are using an AJA, Blackmagic Design or equivalent video capture card, install it in SLOT 3 unless otherwise instructed by the card vendor.

G-SPEED eS INSTALLATION GUIDE

8.2 Attaching G-SPEED eS to the G-TECH RAID Controller

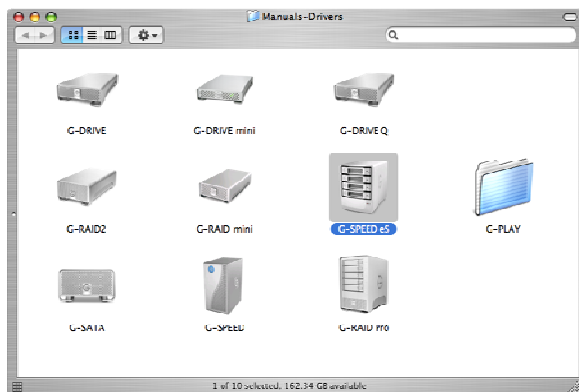
1. Attach one end of the supplied eSATA cable to the eSATA port located on the back of G-SPEED eS.
2. Attach the other end of the eSATA cable to Port 1 (leftmost port) on the G-Tech RAID controller as shown below.



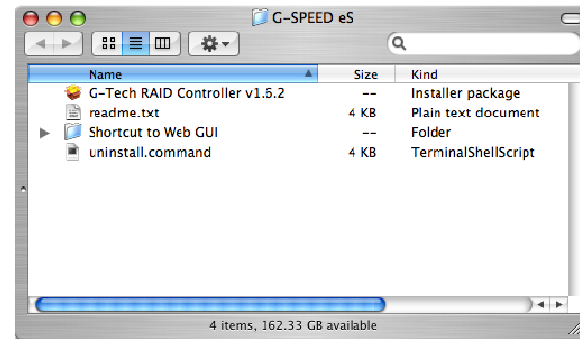
3. Attach the power cord to the back of G-SPEED eS and connect the other end to AC power.
4. Power on G-SPEED eS.

8.3 Loading the G-Tech PCIe RAID Controller Software

1. Double-click on the G-SPEED eS icon located in the "Manuals-Drivers" folder on the included CD as shown below.



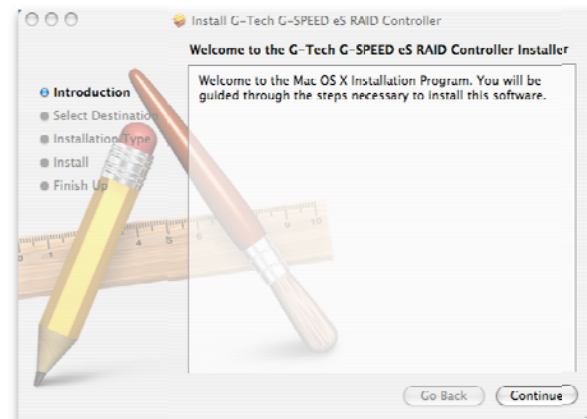
2. Double-click on the "G-Tech RAID Controller" installer package as shown below.



Check for software updates at
<http://www.g-technology.com/Support/>

If you are upgrading software you must un-install the previous version first. See section 8.4 for details

3. The following window will appear. Follow the instructions to load the software.



After restarting your system, the G-SPEED eS will mount on your desktop.



Your G-SPEED eS is shipped from the factory in RAID 0 mode. The G-Tech RAID controller also supports RAID 1, 5, 10 and JBOD modes. Refer to Section 10 below if you wish to change the mode of operation.

G-SPEED eS INSTALLATION GUIDE

8.4 Uninstalling the G-Tech PCIe RAID Controller Software

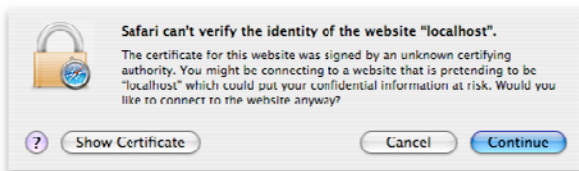
1. Double-click on the uninstall.command file located in the "Manuals-Drivers" folder on the included CD as shown above.
2. A Terminal window will open and you may be prompted to enter your password to delete the installed driver and web GUI.

9. G-TECH RAID CONTROLLER WEB GUI

The G-Tech RAID controller web GUI is used to configure and monitor the G-SPEED eS system. The GUI is accessed using any web browser such as Safari, Internet Explorer or equivalent.

9.1 Accessing the G-Tech PCIe RAID Controller Web GUI

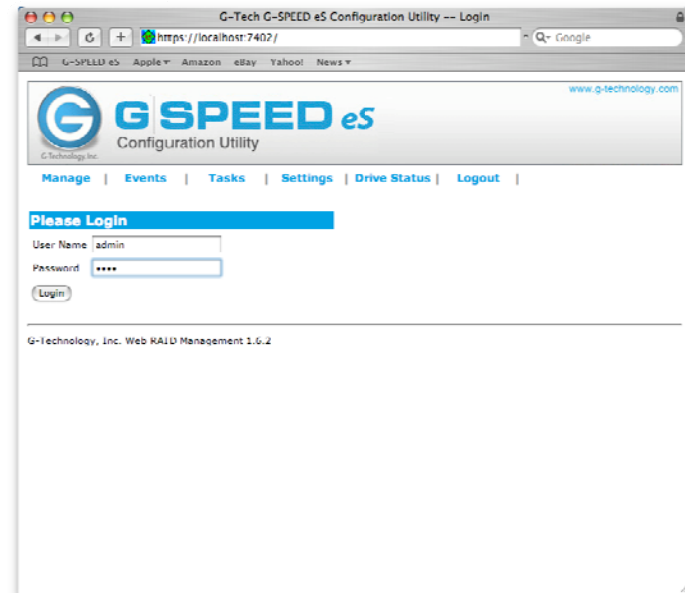
1. Open your web browser and enter the following address:
https://localhost:7402
2. The following window will appear. Click the <Continue> button.



NOTE: A shortcut has been provided to access the web GUI. Drag the "G-SPEED eS Web GUI" file (located in the folder Manuals-Drivers\G-SPEED eS\Shortcut to Web GUI) to your Documents folder. Drag the file from the Documents folder to the dock as shown below. Click on the icon to access the web GUI.



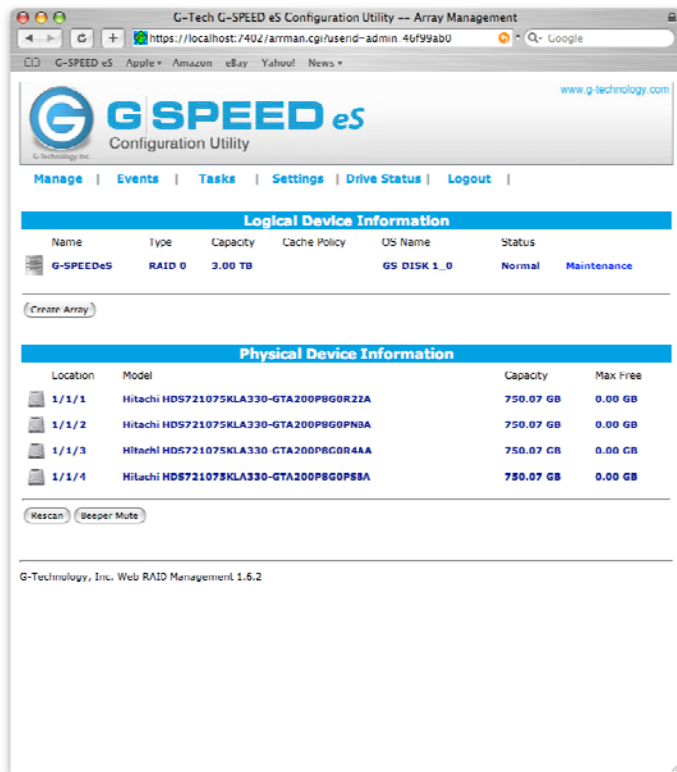
3. The following will appear in your browser window. Enter "admin" as the User Name and "0000" (four zeros) as the Password and click on the <Login> button.



Note: See appendix A.4.5 for instructions on changing the password

G-SPEED eS INSTALLATION GUIDE

- The main screen of the web GUI will appear as shown below. Note that the G-SPEED eS is set up as a RAID 0. Each of the four drives in the unit are displayed in the lower Section of the GUI.



NOTE: Please refer to APPENDIX A for detailed information on the features of the G-Tech RAID Controller web GUI.

10. CHANGING THE G-TECH RAID CONTROLLER MODE

The G-SPEED eS/G-Tech RAID controller combination is configured at the factory in RAID 0 mode. RAID 1, 5, 10 and JBOD modes are also available. The web GUI is used to change the mode of operation. Follow the directions below to change modes.

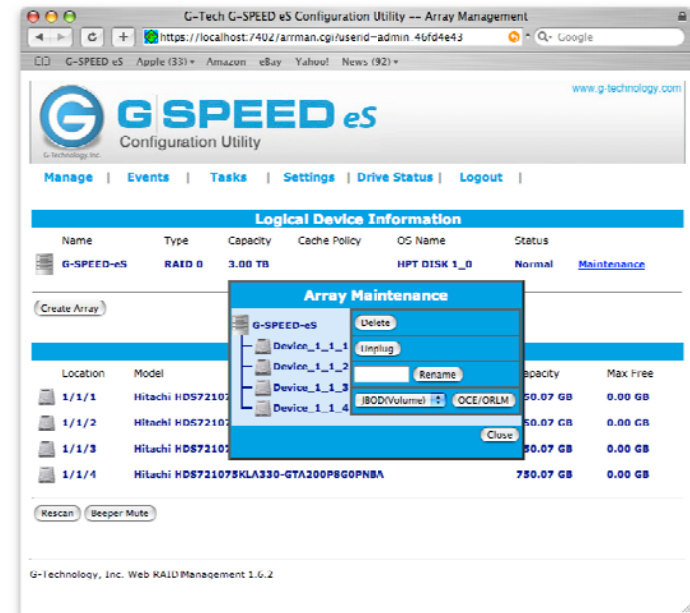
10.1 Changing from RAID 0 to RAID 5

- Unmount G-SPEED eS by dragging the icon to the trash.



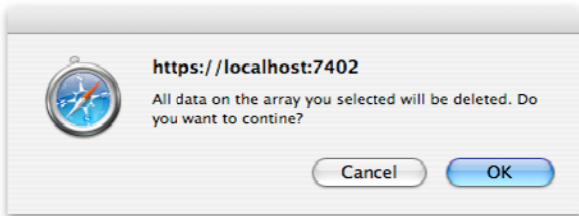
- Launch the G-Tech RAID Controller web GUI.

- Click on the "Maintenance" Link. The window shown below will appear.



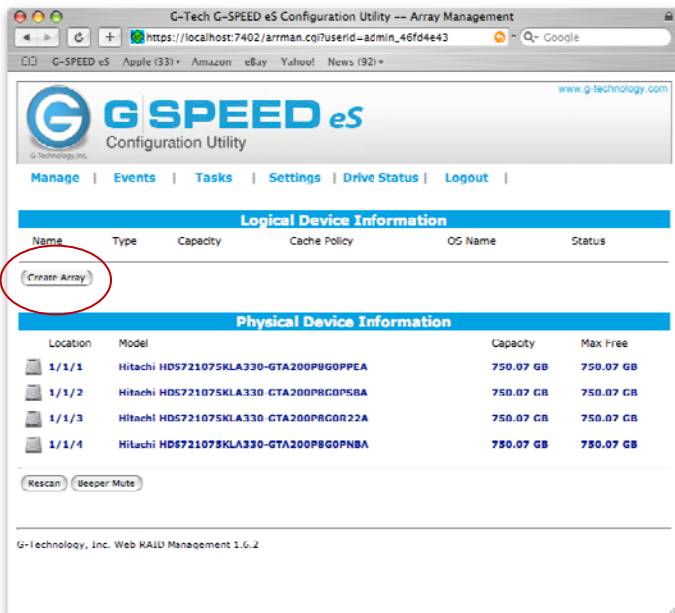
G-SPEED eS INSTALLATION GUIDE

- Click on the <DELETE> button. The following window will appear. Click the <OK> button to proceed.



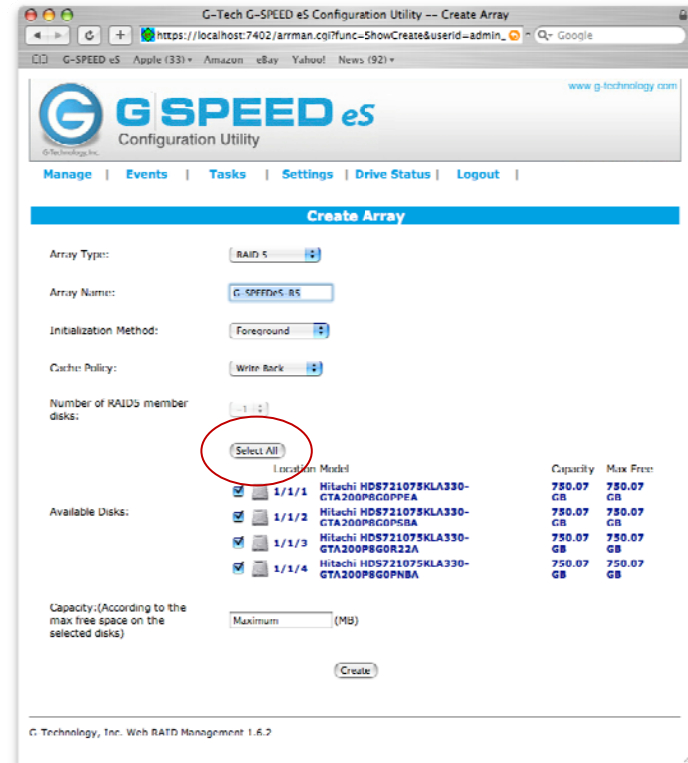
WARNING: This will delete any data stored on G-SPEED eS!

- The GUI will refresh and the array is now deleted.



- Click the <Create Array> button. The "Create Array" window will appear.

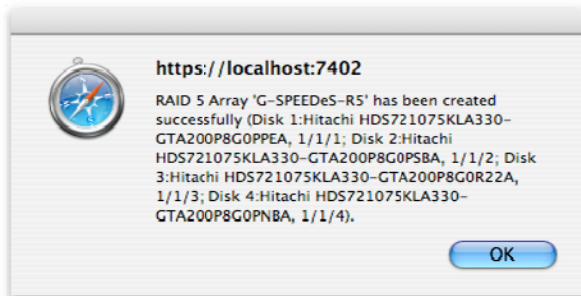
- Select **RAID 5** for "Array Type:", enter **G-SPEEDeS-R5** for "Array Name:", select **Foreground** and **Write Back** for "Initialization Method:" and "Cache Policy:" respectively and click the <Select All> button.



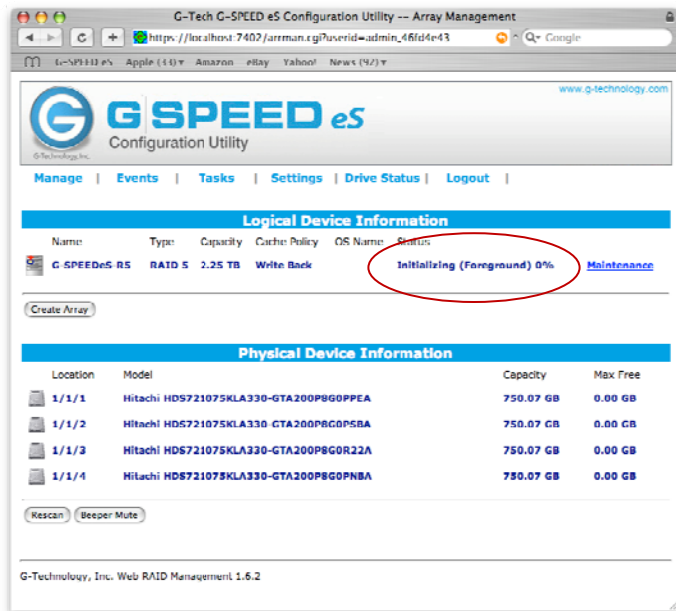
NOTE: In this example we are creating a RAID 5. The system can also be set up in RAID 1, 10 or JBOD mode by selecting the appropriate setting in the "Array Type:" pull-down menu.

G-SPEED eS INSTALLATION GUIDE

8. Click the <Create> button. The following window will appear.

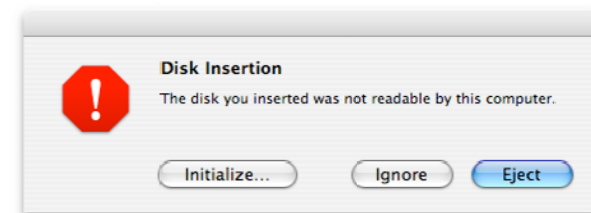


9. Click the <OK> button. The following window will appear. The GUI will indicate that the G-SPEED eS is initializing.



10. The RAID 5 initialization process takes approximately 1:45 per TB of final capacity. Once the initialization process is complete, the GUI will indicate "Type" as **RAID 5** and "Status" as **Normal**.

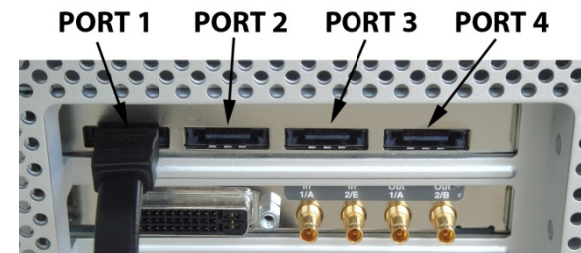
11. The Mac OS will display the "Disk Insertion" window indicating the G-SPEED eS is now ready to be initialized. Click on the <Initialize> button to launch the Apple Disk Utility and refer to your system documentation for instructions.



11. CONFIGURING TWO G-SPEED eS UNITS IN RAID 5 MODE

Each G-SPEED eS unit is configured at the factory with the G-Tech RAID controller in RAID 0 mode. RAID 1, 5, 10 and JBOD modes are also available. The web GUI is used to change the mode of operation. Follow the directions below to configure two G-SPEED eS arrays in RAID 5 mode using the G-Tech RAID controller.

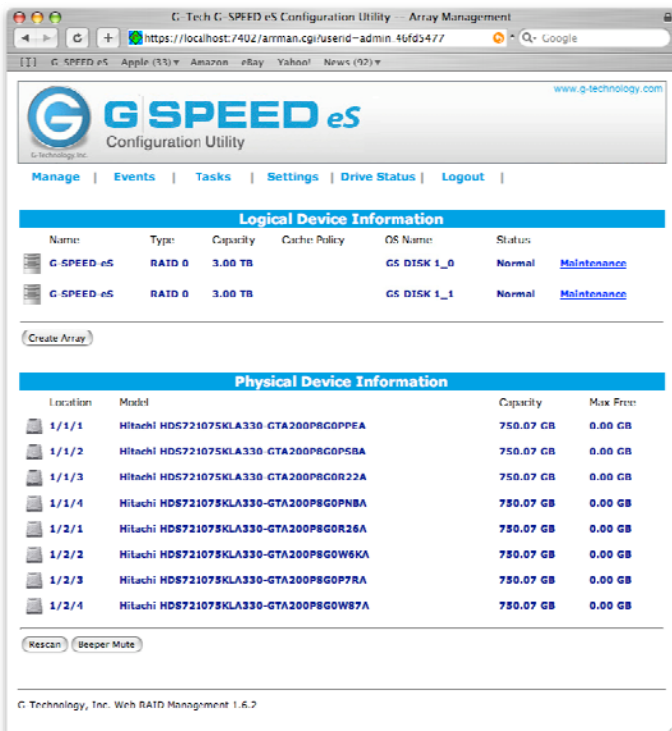
1. Ensure that the G-Tech RAID controller is properly installed and the driver and web GUI are loaded.
2. Attach both G-SPEED eS units to the G-Tech RAID controller as shown below, power the units and restart your computer



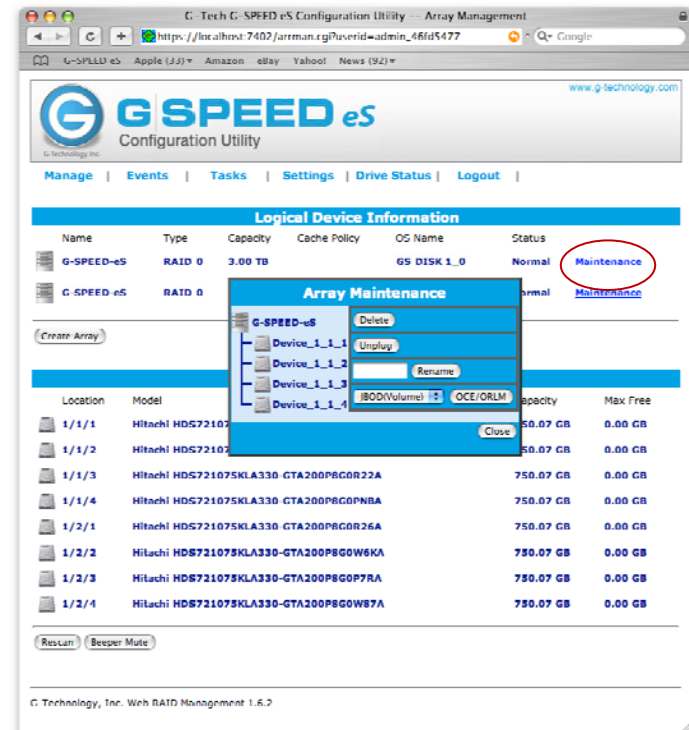
3. Both systems will mount on the desktop.

G-SPEED eS INSTALLATION GUIDE

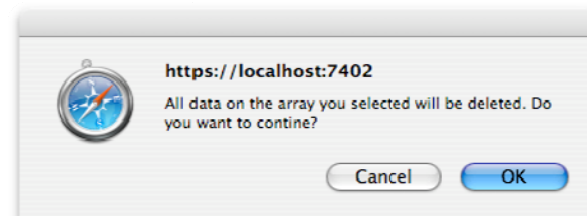
4. Unmount both G-SPEED eS units by dragging the icons to the trash.
5. Launch the G-Tech RAID Controller web GUI. With the two units attached to the G-Tech RAID controller, the GUI will display information like that shown below.



6. Click on the "Maintenance" link next to the array with "OS Name" GS Disk 1_0. The window shown below will appear.



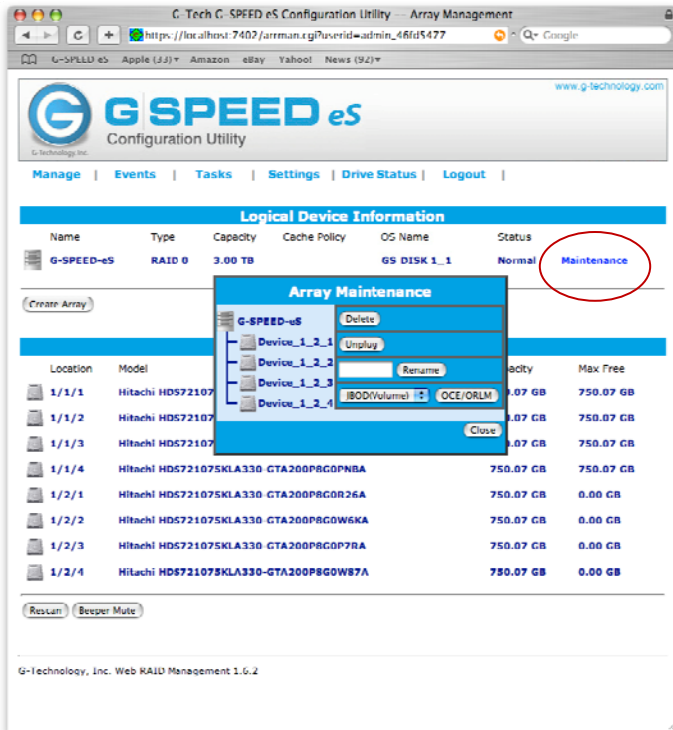
7. Click the <Delete> button. The following window will appear.



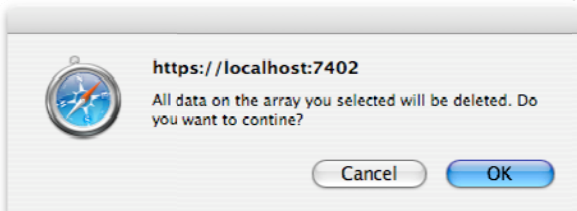
WARNING: This will delete any data stored on G-SPEED eS.

G-SPEED eS INSTALLATION GUIDE

- Click the <OK> button to delete the array.
- Click on the "Maintenance" link next to the array with "OS Name" GS Disk 1_1. The window below will appear.

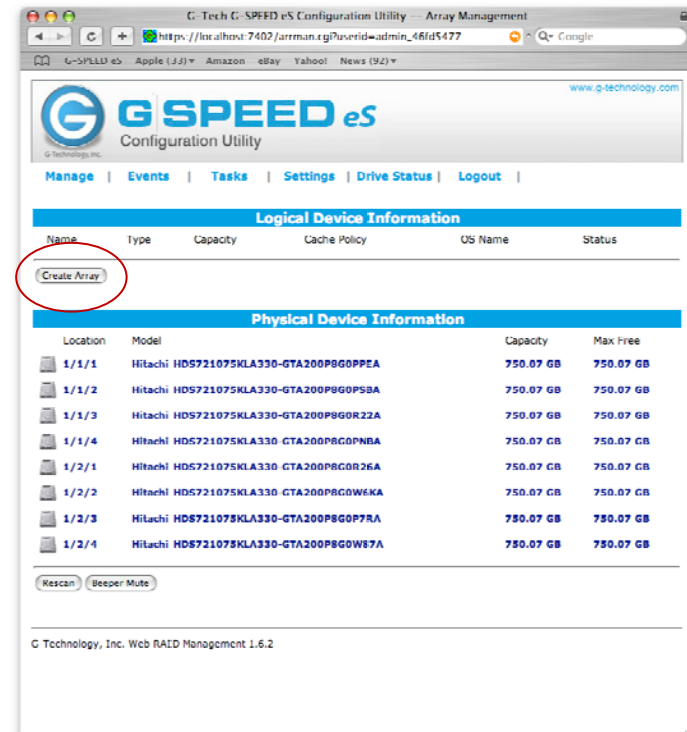


- Click the <Delete> button and the following window will appear.



WARNING: This will delete any data stored on G-SPEED eS.

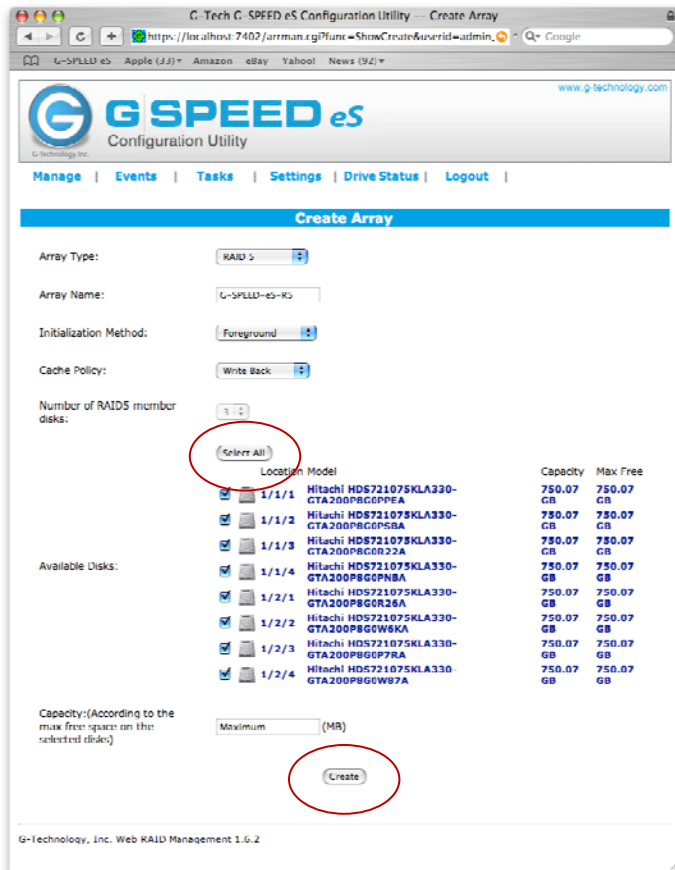
- Click the <OK> button to delete the array. Both arrays have now been deleted as shown below.



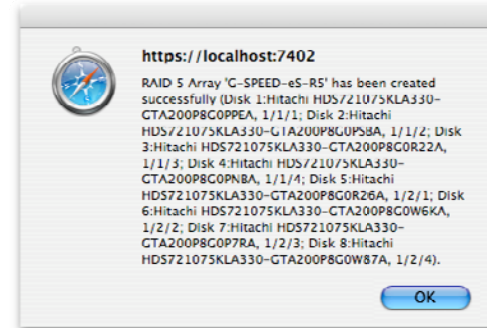
- Click the <Create Array> button. The "Create Array" window will appear.

G-SPEED eS INSTALLATION GUIDE

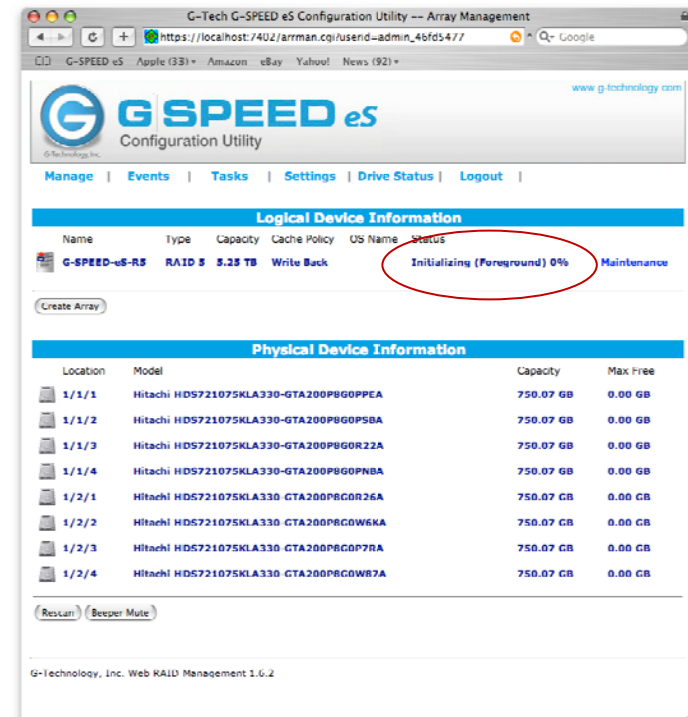
13. Select **RAID 5** for "Array Type:", enter **G-SPEED-eS-R5** for "Array Name:", select **Foreground** and **Write Back** for "Initialization Method:" and "Cache Policy:" respectively and click the <Select All> button then Click the <Create> button.



14. The following window will appear.

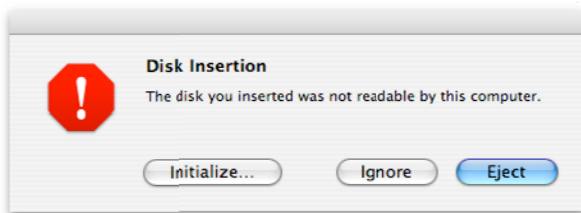


15. Click the <OK> button. The following window will appear to indicate that the G-SPEED eS is initializing.



G-SPEED eS INSTALLATION GUIDE

- The RAID 5 initialization process takes approximately 1:45 per TB of final capacity. Once the initialization process is complete, the GUI will indicate "Type" as **RAID 5** and "Status" as **Normal**.
- The Mac OS will display the "Disk Insertion" window indicating the G-SPEED eS is now ready to be initialized. Click on the <Initialize> button to launch the Apple Disk Utility and refer to your system documentation for instructions.



12. WHAT TO DO IN THE EVENT OF A DISK DRIVE FAILURE

The G-Tech RAID controller continually monitors the health of each of the disk drives in G-SPEED eS. In the event of a disk failure, an audible alarm will sound. The web GUI will also report the failed drive and its physical position.



NOTE: If G-SPEED eS was configured in a protected RAID mode (RAID 1, 5 or 10), a drive failure does not result in data loss. However, the array is now in an unprotected state and the failed drive should be replaced as soon as possible to avoid data loss.

Follow the steps below to identify and replace a failed drive.

- Launch the web GUI.
- Mute the alarm by clicking on the <Beeper Mute> button.

The GUI will display information like that shown below. An exclamation mark on the G-SPEED eS icon indicates that the "Status" of the array is **Critical**. The lower portion of the GUI indicates which drive in which G-SPEED eS unit has failed.

Logical Device Information						
Name	Type	Capacity	Cache Policy	OS Name	Status	
G-SPEED-eS-R5	RAID 5	5.25 TB	Write Back	GS DISK 1_0	Critical	Maintenance

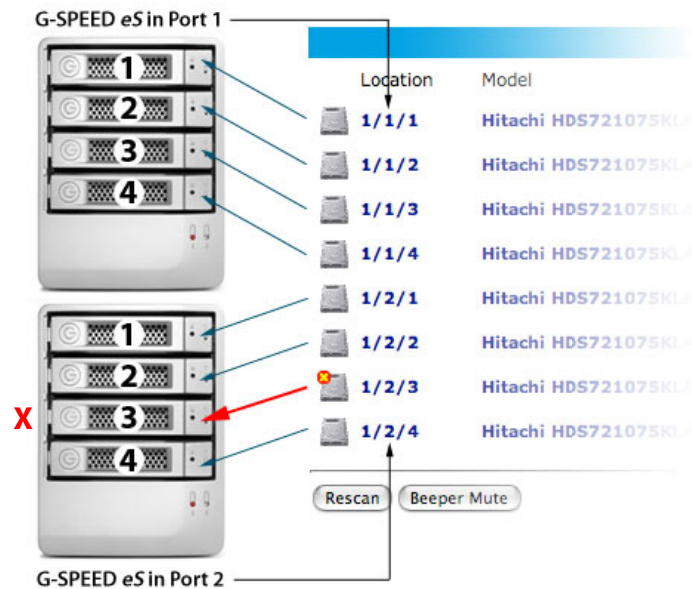
Physical Device Information			
Location	Model	Capacity	Max Free
1/1/1	Hitachi HDS721075KLA330-GTA200P8G0PPEA	750.07 GB	0.00 GB
1/1/2	Hitachi HDS721075KLA330-GTA200P8G0PSBA	750.07 GB	0.00 GB
1/1/3	Hitachi HDS721075KLA330-GTA200P8G0R22A	750.07 GB	0.00 GB
1/1/4	Hitachi HDS721075KLA330-GTA200P8G0PNBA	750.07 GB	0.00 GB
1/2/1	Hitachi HDS721075KLA330-GTA200P8G0R26A	750.07 GB	0.00 GB
1/2/2	Hitachi HDS721075KLA330-GTA200P8G0W6KA	750.07 GB	0.00 GB
1/2/3	Hitachi HDS721075KLA330-GTA200P8G0P7RA	750.07 GB	0.00 GB
1/2/4	Hitachi HDS721075KLA330-GTA200P8G0W87A	750.07 GB	0.00 GB



In this example there are two G-SPEED eS units connected to the G-Tech RAID controller. Drive 3 of the G-SPEED eS connected to Port 2 of the G-Tech RAID controller has failed.

G-SPEED eS INSTALLATION GUIDE

3. Remove the failed drive (In this example Drive 3, of the G-SPEED eS connected to port 2 of the G-Tech RAID controller) by inserting the provided key in to the lock hole and gently sliding the drive module out of the enclosure.



WARNING: Make absolutely sure that you remove the failed drive indicated by the GUI. If multiple G-SPEED eS units are connected to the G-Tech RAID controller, it is a good idea to follow the cable to ensure you know which Port # the array is connected to on the RAID controller.



REMOVING THE WRONG DRIVE WILL RESULT IN THE LOSS OF THE ARRAY AND ALL OF THE CONTENT STORED ON G-SPEED eS.

4. Replace the failed drive with a new disk module and secure in place. Once the drive has spun up to speed, the GUI will indicate that the array is rebuilding (The "Status" shows **Rebuilding** and the percentage complete) as shown below. The rebuild time is approximately 2 hours per TB.

Logical Device Information					
Name	Type	Capacity	Cache Policy	OS Name	Status
G SPEED eS R5	RAID 5	5.25 TB	Write Back	GS DISK 1_0	Rebuilding 0%

Buttons: Create Array, Maintenance

5. Once the rebuild is complete, G-SPEED eS is back to **Normal** and protecting your valuable data once again.

Logical Device Information					
Name	Type	Capacity	Cache Policy	OS Name	Status
G SPEED eS R5	RAID 5	5.25 TB	Write Back	GS DISK 1_0	Normal

Buttons: Create Array, Maintenance

13. TECHNICAL SUPPORT

If you encounter any difficulties while installing G-SPEED, please contact G-Tech Technical Support via one of the following ways:

Telephone: (310) 449-4599

Fax: (310) 449-4670

E-mail: support@g-technology.com

Internet: <http://www.g-technology.com/support>

When contacting Technical Support, make sure to be in front of your computer and have the following information readily available:

- Your G-SPEED eS serial number (on bottom of unit)
- Operating system and version
- Computer brand and model
- eSATA host adapter brand and model
- Amount of memory installed
- Other devices attached to your computer

Thank you for purchasing G-SPEED eS. If you have any comments or questions about this manual or the Product, please call (310) 449-4599, or send an email to info@g-technology.com.

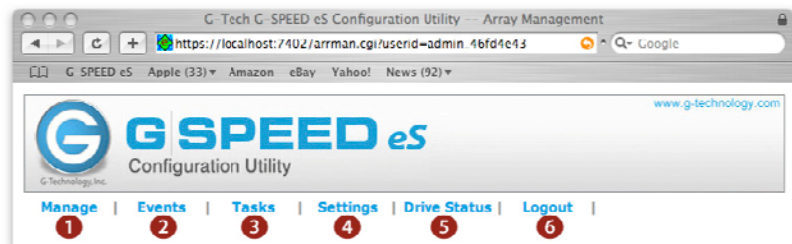
14. LIMITED WARRANTY

G-Technology Inc. (G-Tech) warrants your Product against any defect in material and workmanship, under normal use, for the designated warranty period. If the Product should become defective within the warranty period, G-Tech, will at its discretion, repair or replace the Product. Repair or replacement parts or Products will be furnished on an exchange basis and will be either new or reconditioned. All replaced parts or Products shall become the Property of G-Tech. This warranty shall not apply if the Product has been damaged by accident, misuse, abuse or as a result of unauthorized service or parts. Warranty service is available to the purchaser by obtaining a Return Material Authorization number (RMA) and by delivering the Product during the warranty period to an authorized G-Tech service facility or to G-Tech. The purchaser shall bear all shipping, packing and insurance costs and all other costs, excluding parts and labor, necessary to effectuate repair, replacement or refund under this warranty. All returned Product must be shipped to G-Tech in the original shipping container.

For more information on how to obtain warranty service, an RMA number or to acquire shipping materials, contact G-Tech at 1653 Stanford Street, Santa Monica, CA 90404, (310) 449-4599 or support@g-technology.com.

IN THE EVENT A PRODUCT BECOMES DEFECTIVE DURING THE WARRANTY PERIOD, THE PURCHASER'S EXCLUSIVE REMEDY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED ABOVE. INCIDENTAL OR CONSEQUENTUAL DAMAGES, INCLUDING WITHOUT LIMITATION LOSS OF DATA, ARISING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ARE NOT THE RESPONSIBILITY OF G-TECH AND, TO THE EXTENT PERMITTED BY LAW, ARE HEREBY EXCLUDED BOTH FOR PROPERTY DAMAGE, AND TO THE EXTENT NOT UNCONSCIONABLE, FOR PERSONAL INJURY DAMAGE.

APPENDIX A: WEB GUI



1. Manage:

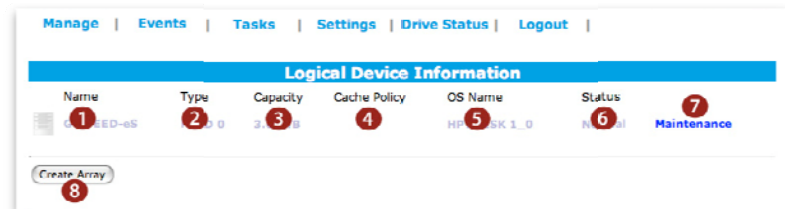
Array: This is the main screen of the G-SPEED eS web GUI. G-SPEED eS is configured and monitored from this page. (See Appendix A.1 for details)

Devices: Hard drive parameters are modified on this page (you should not make any changes on this page as the drives are configured for optimal performance with the G-SPEED eS).

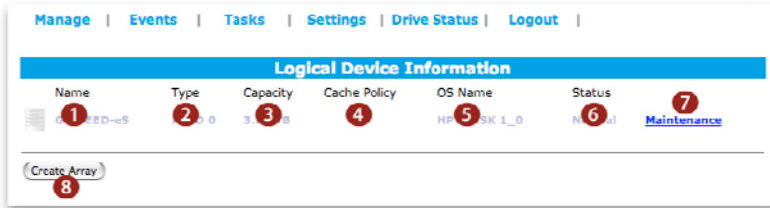
Spare Pool: When configured in protected mode drives can be assigned to a "spare pool" (sometimes called hot spare). These drives will be automatically added to the Array in the event of a drive failure.

- Events:** All events of the G-SPEED eS controller are recorded here, such as array changes and failures. These events can be emailed by setting up email notification under the "Settings" tab.
- Tasks:** Schedule the G-Tech controller to automatically verify the integrity of the RAID volume.
- Settings:** Configure the G-SPEED eS controller settings such as login password and email notification. See Appendix A.4 for details
- Drive Status:** Check the status of all connected hard drives including detailed SMART data.
- Logout:** Say goodbye

A.1 Manage: Array

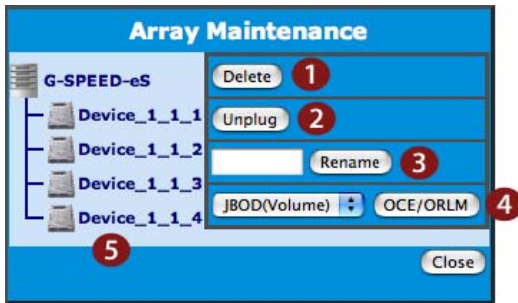


- Name:** Array name (as shown in GUI only).
- Type:** Displays RAID level of array.
- Capacity:** you guessed it... capacity of the array.
- Cache Policy:** Displays current write cache policy for RAID protected arrays. For more info see appendix A.1.7.7
- OS Name:** Controller assigned name that will display in Disk Utility.
- Status:** Displays current status of array.
 - Normal:** All OK
 - Critical:** Drive failure has occurred
 - Initializing:** Building RAID 1, 5 or 10 array
 - Rebuilding:** Parity data being reconstructed



7. Maintenance: Displays configuration and maintenance options for current array. The options differ depending on RAID level of the array.

RAID 0



7.1 Delete: Deletes current Array



WARNING: THIS OPERATION WILL DELETE THE ARRAY AND ALL DATA ON IT!!

7.2 Unplug: This will disconnect the Array from the controller. Be sure to unmount all volumes from the system before using this option. This enables the arrays to be unplugged from the system without causing an alarm.



NOTE: While the controller is "hot pluggable," we recommend shutting the system down when connecting or disconnecting G-SPEED eS from the controller.

7.3 Rename: Renames array as displayed in the GUI.

7.4 OCE/ORLM:

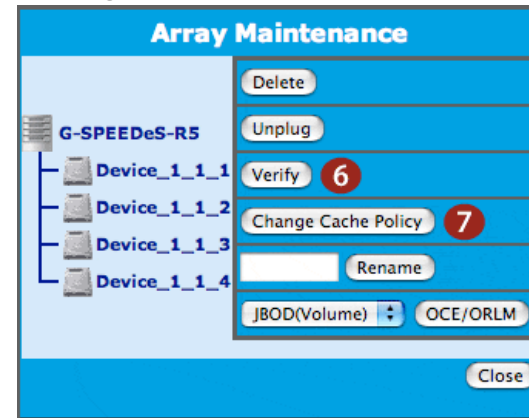
Online Capacity Expansion: It is possible to expand the capacity of an existing array when additional G-SPEED eS units are added to the system.

Online RAID Level Migration: it is possible to change the RAID level of an existing array.

7.5 Shows the devices currently part of the Array, their location and status.

"Device_Controller#_Port#_Drive#"

RAID 5



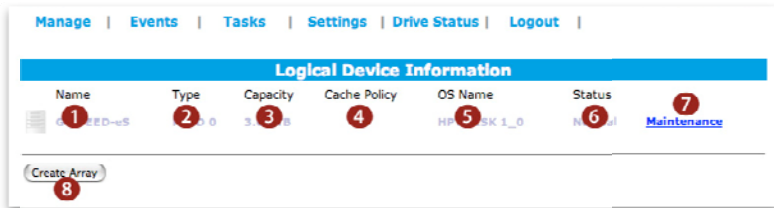
7.6 Verify: Verifies the integrity of the RAID set.

7.7 Change Cache Policy: This option is available for RAID 5 arrays.

Write-back: Data written to the array is cached. This will result in higher performance, but data loss may occur in case of a power failure.

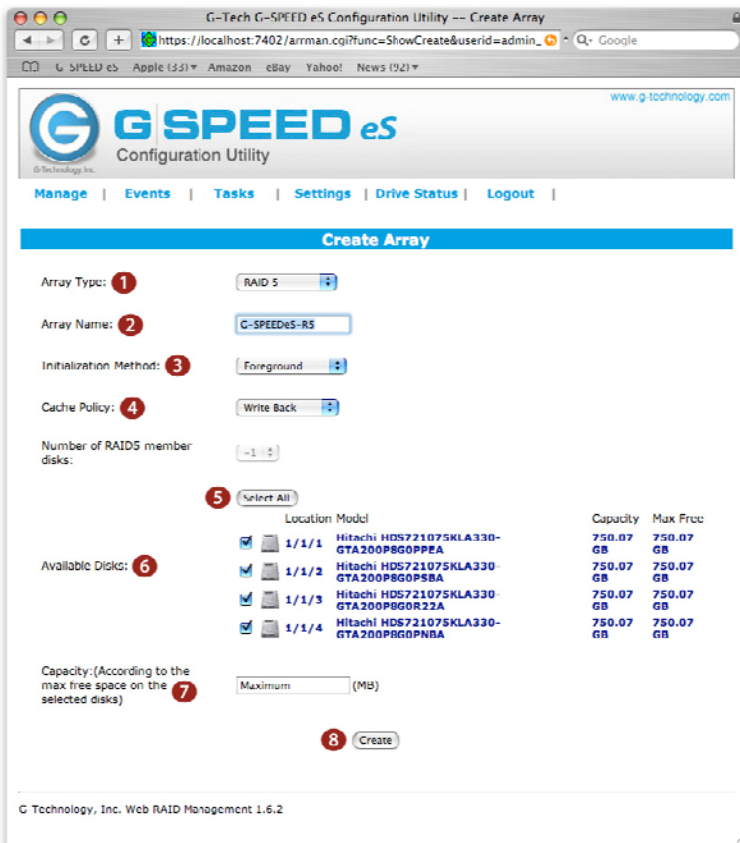
Write-through: Data written to the array is always passed directly to the disks. Subsequent reads may still be completed from the cache, if appropriate

G-SPEED eS INSTALLATION GUIDE



8. Create Array

Click on "Create Array" and the following will appear.



8.1 Array Type: select the RAID level for new array

8.2 Array Name: This is the name that will be displayed in the MAIN page of the GUI.

8.3 Initialization Method: Sets the priority of the RAID creation process.

Foreground: All controller resources are used for the creation process and the array is not available until complete.

Background: Minimal controller resources are used for the creation process and the array is available for immediate use.



NOTE: RAID protection is not available until initialization is complete

8.4 Cache Policy: This option is available when creating a RAID 5 array.

Write-back: Data written to the array is cached. This will result in higher performance, but data loss may occur in case of a power failure.

Write-through: Data written to the array is always passed directly to the disks. Subsequent reads may still be completed from the cache, if appropriate

8.5 Select All: Simple method to select all disks.

8.6 Available Disks: Displays disks currently available for array creation, showing location, drive model, serial number, size of the disk and current free capacity.

Location: "**Controller#/Port#/Drive#**"

8.7 Available Disks: Enter the desired capacity of the new array. Default is the Maximum capacity available.

8.8 Create: As expected, selecting this will begin the array creation process.

Physical Device Information			
Location	Model	Capacity	Max Free
1/9	Hitachi HDS721075KLA330-GTA200P8G0PPEA	750.07 GB	0.00 GB
1/1/2	Hitachi HDS721075KLA330-GTA200P8G0P5BA	750.07 GB	0.00 GB
1/1/3	Hitachi HDS721075KLA330-GTA200P8G0R22A	750.07 GB	0.00 GB
1/1/4	Hitachi HDS721075KLA330-GTA200P8G0PNBA	750.07 GB	0.00 GB

Rescan Beeper Mute

G-Technology, Inc. Web RAID Management 1.6.2

- 9. Location:** Shows the location of disks attached to the controller.
Location: "**Controller#/Port#/Drive#**"
- 10. Model:** Displays the drive model and serial number of disks currently attached to the controller.
- 11. Capacity:** Displays the advertised capacity of the disks currently attached to the controller.
- 12. Max Free:** Displays the maximum free capacity of the disks currently attached to the controller.
- 13. Rescan:** Rescans the eSATA bus to detect any new devices attached.
- 14. Beeper Mute:** Mutes audible beeper.



NOTE: Beeper will sound when a drive fails or an array is disconnected from the system without first selecting "Unplug" in the Array Maintenance menu.

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Appendix A.4: Settings

Manage | Events | Tasks | Settings | Drive Status | Logout

Auto Rebuild 1

Enable auto rebuild. [Change](#)

Audible Alarm 2

Enable audible alarm. [Change](#)

SAF-TE 3

Set SAF-TE Config File: [Change](#)

Listening Port 4

Restrict to localhost access.
Port Number: [Change](#)

Password 5

Password:
Confirm:
[Change Password](#)

SMTP Setting 6

Enable Event Notification
Server Address (name or IP):
Mail From (E-mail address):
Login Name:
Password:
SMTP Port:
[Change Setting](#)

Recipients 7

E-mail	Name	Event Level
Add Recipient 8		
E-mail:	<input type="text"/>	
Name:	<input type="text"/>	
Event Level:	<input type="checkbox"/> Information <input type="checkbox"/> Warning <input type="checkbox"/> Error	
<input type="button" value="Add"/> <input type="button" value="Test"/>		

HDD Temperature Threshold 9

Set harddisk temperature threshold (Celsius): [Set](#)

G-Technology, Inc. Web RAID Management 1.6.2

- 1. Auto Rebuild:** Enables or disables the auto-rebuild feature. When enabled, a critical RAID 5 or RAID 1 array will automatically rebuild when a new drive is inserted. See Section 12 for details.
- 2. Audible Alarm:** Enables or disables the audible alarm
- 3. SAF-TE:** This feature is not currently supported.
- 4. Listening Port:** The port used to connect to the G-SPEED web GUI. "Restrict to local access" disables network users to access the GUI. Default is Port 7402.
- 5. Password:** Changes login password. Default is 0000
- 6. SMTP Setting:** Email server information necessary for email notification. Enter your server information here.
- 7. Recipients:** A list of current email recipients.
- 8. Add Recipient:** Add email addresses for email notification. Select Event level to trigger an email.
Information: Informational events are sent
Warning: Warning events are sent
Error: Error events are sent
Test: Sends a test email to the new account
- 9. HDD Temperature Threshold:** Adjusts the threshold of the hard drive temperature to trigger a warning email. Default is 50°C, however today's disk drives can operate up to 60°C.

APPENDIX B: RAID levels explained

RAID Level	Description	Advantage	Disadvantage	Ideal For...
0	Disk striping	Offers the highest performance and a useable storage capacity of 100% of total available storage capacity	No fault tolerance - failure of one drive in the array results in complete data loss	Content creation applications requiring highest storage capacity
1	Mirroring	Maximum level of data protection as identical data is written to multiple drives	Useable storage space is 50% of total available capacity	Applications in which data security is paramount
5	Disk striping with distributed parity	High read performance, medium write performance with data protection in case of a drive failure.	Useable storage capacity equals total capacity of all drives in the array less the capacity of one drive. For example, a 4x 1TB RAID 5 yields a useable capacity of 3 TB. Disk failure results in drop in performance	Content creation applications requiring data protection
10	Mirror of striped drive pairs	Higher performance than RAID 1 with same level of data protection.	Useable storage space is 50% of total available capacity	Content creation applications requiring data protection
JBOD	Just-a-bunch-of-disks	Each drive can be accessed as an individual volume. Useable storage capacity is 100% of total available storage.	No fault tolerance	Audio applications

APPENDIX C: Notes

When the G-Tech web GUI is open dropped frames may occur in editing applications such as Final Cut Pro. We recommend not having the GUI open while working in these programs.

It is recommended not to exceed the standard eSATA cable length of 1 meter (3 feet).

Up to (4) G-SPEED eS storage units can be attached to the G-Tech RAID controller for up to 16TB of capacity and over 600 MB/sec of performance.

Replacements / extra G-SPEED eS disk modules are available for purchase online at:
www.g-technology.com/products/g-speed-es.cfm