



IBM® High IOPS  
Modular Adapters  
Management Utility  
User Guide

Version 1.1  
November 2012

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## Revision History

Version and Date	Description of Changes
Version 1.1, November 2012	Minor document updates.
Version 1.0, October 2012	Initial release of this document.

### **First Edition (November 2012)**

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**Statement 1:**



**DANGER**

**Electrical current from power, telephone, and communication cables is hazardous.**

**To avoid a shock hazard:**

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

**To Connect:**

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

**To Disconnect:**

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安裝本產品之前，請仔細閱讀 **Safety Information** (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen  
canjbinj soengq cungj vahgangj ancien siusik.

مەزكۇر مەھسۇلاتنى ئورنىتىشتىن بۇرۇن بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

ཐོན་ཁུངས་འདི་བདེ་སྤྱོད་མ་བྱས་གོང་། རྒྱ་རྒྱུ་ཡིད་གཟབ་བྱ་འདྲ་མིན་ཡོད་པའི་འོད་ཟེར་བལྟ་དགོས།

Bu ürünün kurmadan önce güvenli bilgilerini okuyun.

بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

### Important:

Each caution and danger statement in this document is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document.

For example, if a caution statement is labeled "Statement 1," translations for that caution statement are in the *Safety Information* document under "Statement 1."

Be sure to read all caution and danger statements in this document before you perform the procedures. Read any additional safety information that comes with the server or optional device before you install the device.

This device is intended for use with UL Listed IBM devices.

### Statement 1:



### DANGER

Electrical current from power, telephone, and communication cables is hazardous.

**To avoid a shock hazard:**

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

**To Connect:**

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

**To Disconnect:**

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

Statement 3:



**CAUTION:**

When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:



**DANGER**

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.



Class 1 Laser Product  
Laser Klasse 1  
Laser Class 1  
Luokan 1 Laserlaite  
Appareil À Laser de Classe 1

Statement 8:



**CAUTION:**

Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

---

# IBM® High IOPS Modular Adapters Card Management Utility User Guide

## 1 Introduction

Use the IBM High IOPS Modular Adapters management utility to update, format, and check the status of your High IOPS Modular Adapter. Obtain the management utility from the IBM website, <http://www.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-65723>



**NOTE** Although the terms Nytro and WarpDrive appear in some display output of the CLI tool, this is still an IBM-branded adapter.

---

## 2 Hardware and Software Compatibility

The High IOPS Modular Adapter management utility, `ddcli`, is compatible with the following hardware and software.

- Proprietary I/O protocol device  
The utility supports only High IOPS Modular Adapter controller cards that are based on the Fusion-MPT™ architecture and implemented according to the MPI v2.0 specification.
- Hardware platforms
  - x64/AMD64
- Devices
  - Onboard OEM SATA SSD devices
- Operating systems
  - Windows® – Server 2003, XP, Vista®, Server 2008, Windows 7, Server 2008 R2
  - Linux® 2.6 Kernel – Red Hat® Enterprise Linux® 5, SUSE Linux Enterprise Server 10, SUSE Linux Enterprise Server 11 (Xen kernels are supported.)
  - VMware® (ESX 4.0, ESXi 4.0, ESX 4.1, ESXi 4.1, ESX 5.0)
- Operating System architectures
  - Windows – x64
  - Linux – x86\_64
- Other software
  - High IOPS Modular Adapter firmware – MPI v2.0



### 3 ddcli Utility Version Information

You can determine the High IOPS Modular Adapter management utility version within the `ddcli` utility. In the following figure, the `ddcli` utility version is 107.00.00.00.

Figure 1 ddcli Utility Version Information

```
*****
LSI Corporation WarpDrive Management Utility
Version 107.00.00.00 (2012.04.10)
Copyright (c) 2011 LSI Corporation. All Rights Reserved.
*****

ID      WarpDrive      Package Version      PCI Address
-----
1       SLP-300        05.35.08.00         00:22:00:00

Select the WarpDrive [1-1 or 0:Quit]: 1

1. List WarpDrive Information
2. Update Flash Package
3. Display WarpDrive Health
4. Locate WarpDrive
5. Format WarpDrive

Select Operation [1-5 or 0:Quit]: _
```

### 4 Interfaces

The High IOPS Modular Adapter management utility supports a command line interface (CLI) and a text menu interface.

---

## 4.1 CLI

To bring up the utility in CLI mode, use either of the following commands.

```
ddcli < -c DDID > < -option arg >
```

or

```
ddcli -listall
```

Adhere to the following CLI guidelines.

- All commands, except the `-listall` command, are run with the `-c` option.
- The commands that require the `-c` option cannot run without a parameter. Only the `-listall` command can run without a parameter.

## 4.2 Text Menu Interface

To bring up the utility in Text Menu mode, use the `ddcli` command without any options. The utility displays the following top-level menu, which shows a list of High IOPS Modular Adapter cards in the system.

```
ID WarpDrivePackage VersionPCI Address
-----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00
```

Select the WarpDrive [1-2 or 0:Quit]

After one of the High IOPS Modular Adapter cards in the top-level menu is selected, the utility displays the following menu.

```
1.List WarpDrive information
2.Update Flash Package
3.Display WarpDrive Health
4.Locate WarpDrive
5.Format WarpDrive
```

Select the operation [1-5 or 0:Quit]:

## 5 Commands

The following table lists all of the user commands supported by the High IOPS Modular Adapter management utility. The following sections provide detailed descriptions of the commands.

**Table 1 List of Commands**

Command	Description
<code>-help</code>	Display help for command line usage
<code>-listall</code>	List all High IOPS Modular Adapter cards in the system
<code>-list</code>	List all information for the selected High IOPS Modular Adapter card
<code>-updatepkg</code>	Update High IOPS Modular Adapter card components with the Flash package
<code>-health</code>	Display the health of the selected High IOPS Modular Adapter card
<code>-locate</code>	Locate the selected High IOPS Modular Adapter card in the system
<code>-format</code>	Format the selected High IOPS Modular Adapter card
<code>-c</code>	Select a High IOPS Modular Adapter card with correct ID number (ID numbers range from 1 to 255)

---

## 5.1 List All Command

The `-listall` command lists all of the High IOPS Modular Adapter in the system along with the following information:

- High IOPS Modular Adapter index
- High IOPS Modular Adapter name or controller name
- High IOPS Modular Adapter Flash package version
- PCI address

The `-listall` command runs without any command line parameter. You need not specify the `-c` option on the command line.

### 5.1.1 Text Menu Option

The following top-level menu lists the High IOPS Modular Adapters in the system and prompts you to select a High IOPS Modular Adapter on which to perform an operation.

```
# ddcli

ID WarpDrive Package VersionPCI Address
-----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00

Select the WarpDrive [1-2 or 0:Quit]:
```

### 5.1.2 Command Line Usage

Enter the following command in the CLI to run the `-listall` command.

Command syntax:

```
# ddcli -listall
```

Command example:

```
# ddcli -listall
```

### 5.1.3 Sample Output

When the `-listall` command runs, the utility returns the following text.

```
ID WarpDrivePackage VersionPCI Address
-----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00
```

---

## 5.2 List Command

The `-list` command lists the information of a selected High IOPS Modular Adapter card. In CLI mode, select a controller by including its High IOPS Modular Adapter card index.

The following information is displayed with the `-list` command:

- High IOPS Modular Adapter card index
- High IOPS Modular Adapter card name or controller name
- High IOPS Modular Adapter card Flash package version
- PCI address
- SAS address

---

### 5.2.1 Text Menu Option

The following top-level menu lists the High IOPS Modular Adapters in the system and prompts you to select a High IOPS Modular Adapter on which to perform an operation.

```
# ddcli

ID WarpDrivePackage VersionPCI Address
-- -----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00

Select the WarpDrive [1-2 or 0:Quit]: 1

1.List WarpDrive information
2.Update Flash Package
3.Display WarpDrive Health
4.Locate WarpDrive
5.Format WarpDrive

Select Operation [1-5 or 0:Quit]:1
```

### 5.2.2 Command Line Usage

Enter the following command in the CLI to run the `-list` command.

Command syntax:

```
# ddcli -c <Nytro WarpDrive number> -list
```

Command example:

```
# ddcli -c 1 -list
```

### 5.2.3 Sample Output

When the `-list` command runs as entered in the previous example, the utility returns the following text.

```
WarpDrive Selected is NWD-BLP4-400
-----
WarpDrive information
-----
WarpDrive ID           : 1
PCI Address            : 00:10:00:00
SAS Address            : 500605b-0-006c-6490
Package Version       : 07.00.00.00
RAID Support          : YES
```

## 5.3 Update Flash Package Command

The `-updatepkg` command updates the selected High IOPS Modular Adapter with the specified firmware package. This command supports upgrades of only the High IOPS Modular Adapter firmware package. If the current firmware package version on the selected High IOPS Modular Adapter is higher than the specified firmware package version, the command returns an error.

### 5.3.1 Text Menu Option

The following top-level menu lists the High IOPS Modular Adapters in the system and prompts you to select a High IOPS Modular Adapter on which to perform an operation.

```
# ddcli

ID WarpDrivePackage VersionPCI Address
-----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00

Select the WarpDrive [1-2 or 0:Quit]: 1

1.List WarpDrive information
2.Update Flash Package
3.Display WarpDrive Health
4.Locate WarpDrive
5.Format WarpDrive

Select the operation [1-5 or 0:Quit]:2
Enter Flash package path: /home/user/NWD-BLP4-400_07.00.00.00.bin
```

### 5.3.2 Command Line Usage

Enter the following line of text in the CLI to run the `-updatepkg` command. The path is optional. If you do not specify a path, the `ddcli` utility uses the current directory to locate the firmware file.

Command syntax:

```
# ddcli -c <Nytro WarpDrive number> -updatepkg <optional:path><firmware file name>
```

Example syntax:

```
# ddcli -c 1 -updatepkg NWD-BLP4-400_07.00.00.00.bin
```

The previous example assumes the firmware file, `NWD-BLP4-400_07.00.00.00.bin`, is located in the same directory as the `ddcli` utility.

```
# ddcli -c 1 -updatepkg /home/user/NWD-BLP4-400_07.00.00.00.bin
```

The previous example uses the `/home/user` directory to find the firmware file, `NWD-BLP4-400_07.00.00.00.bin`.

### 5.3.3 Error Handling

The following statements are true with regard to error handling:

- If a High IOPS Modular Adapter controller firmware update fails, the `-updatepkg` command terminates.
- If a firmware download fails on any of the High IOPS Modular Adapter components, the process terminates.

## 5.4 Health Reporting Command

The `-health` command shows the overall health status of a selected High IOPS Modular Adapter and its components. If any alert exists, this command shows the component causing the alert along with further information. The `-health` command Overall Health output possibilities include the following:

- GOOD. The High IOPS Modular Adapter is operating correctly. All operations are supported.
- WARNING. The High IOPS Modular Adapter is approaching failure. This output appears because of a decreased `Life Left` value or an increased `Temperature` value outside the set threshold.
- ERROR. The High IOPS Modular Adapter is not operating. No operations can be performed.

The `-health` command `Life Left` output possibilities include percentages between 0 percent and 100 percent. Zero percent indicates an expired High IOPS Multiple Adapter warranty.

### 5.4.1 Text Menu Option

The following top-level menu lists the High IOPS Modular Adapters in the system and prompts you to select a High IOPS Modular Adapter on which to perform an operation.

```
# ddcli

ID WarpDrive Package VersionPCI Address
--
1 NWD-BLP4-40007.00.00.0000:10:00:00
2 NWD-BLP4-40007.00.00.0000:20:00:00

Select the WarpDrive [1-2 or 0:Quit]:1
1.List WarpDrive information
2.Update Flash Package
3.Display WarpDrive Health
4.Locate WarpDrive
5.Format WarpDrive

Select the operation [1-5 or 0:Quit]: 3
```

### 5.4.2 Command Line Usage

Enter the following command in the CLI to run the `-health` command.

Command syntax:

```
# ddcli -c <Nytro WarpDrive number> -health
```

Example syntax:

```
# ddcli -c 1 -health
```

### 5.4.3 Sample Output

When the `-health` command runs, as entered in the previous example, the utility returns the following text.

```
*****
LSI Corporation WarpDrive Management Utility
Version 107.00.00.00 (2012.04.10)
Copyright (c) 2011 LSI Corporation. All Rights Reserved.
*****

-----
WarpDrive SLP-200-4d Health
-----
```



Life Left : 100 %  
Temperature : 58 degree C

Overall Health : GOOD

- 1.List WarpDrive information
- 2.Update Flash Package
- 3.Display WarpDrive Health
- 4.Locate WarpDrive
- 5.Format WarpDrive

Select the operation [1-5 or 0:Quit]:

---

## 5.5 Locate High IOPS Modular Adapter Command

The `-locate` command turns on the Status LED of the selected High IOPS Modular Adapter. Use this command to start blinking the LED on the specified High IOPS Modular Adapter to locate the selected card. You can view the LEDs on the rear of the system chassis. The Status LED turns off after 60 seconds. Refer to the *IBM High IOPS Multiple Adapters User Guide* for the exact LED locations.

### 5.5.1 Text Menu Option

The following top-level menu lists the High IOPS Modular Adapters in the system and prompts you to select a High IOPS Modular Adapter on which to perform an operation.

```
# ddcli
```

```
ID WarpDrivePackage VersionPCI Address
-----
1   NWD-BLP4-40007.00.00.0000:10:00:00
2   NWD-BLP4-40007.00.00.0000:20:00:00
```

```
Select the WarpDrive [1-2 or 0:Quit]: 1
```

```
1.List WarpDrive information
2.Update Flash Package
3.Display WarpDrive Health
4.Locate WarpDrive
5.Format WarpDrive
```

```
Select the operation [1-5 or 0:Quit]:4
Enter Operation [1: on]:
```

---

### 5.5.2 **Command Line Usage**

Enter the following line of text in the CLI to run the `-locate` command.

Command syntax:

```
# ddcli -c <Nytro WarpDrive number> -locate on
```

Command example:

```
# ddcli -c 1 -locate on
```

## 5.6 Format High IOPS Modular Adapter Command

The `-format` command formats a High IOPS Modular Adapter. This command performs the following actions:

- Deletes the existing RAID volume (if present).
- Sends ATA commands to format all the connected SSD drives.
  - Optionally modifies the over-provisioning level.
- Reads manufacturing page 4 to get the value of `MaxPhysDisks`.
- If number of drives discovered is not equal to the value of `MaxPhysDisks`, prints error and exits.
- Creates the RAID volume.

The `-format` command deletes the logical block address (LBA) tables and the current encryption key internal to the SSD drive. A new encryption key is randomly generated. The media, however, is not erased by default.

The `-format` command can modify the over-provisioning level of any High IOPS Modular Adapter device. If `-slot` is not specified or if the High IOPS Modular Adapter card operates in Direct Drive mode (single, virtual device), over-provisioning is performed on all SSDs. Specify one of three discrete over-provisioning levels:

- `perf`: Choose this over-provisioning level for maximum performance at the expense of some capacity.
- `nom`: This over-provisioning point is optimized for performance and capacity. This is the default level.
- `cap`: Choose this option to maximize capacity at the expense of performance on 1.6-TB High IOPS Modular Adapters. Only the 1.6-TB High IOPS Modular Adapters support the `cap` over-provisioning level.

The `-format` command takes 35 s to 40 s to complete.



**CAUTION** The `-format` command erases all of the data present on the High IOPS Modular Adapter card drives.

### 5.6.1 Text Menu Mode

Type the following command:

```
# ddcli
```

### 5.6.2 Sample Output

```
*****
LSI Corporation WarpDrive Management Utility
Version 107.00.00.00 (2012.04.10)
Copyright (c) 2011 LSI Corporation. All Rights Reserved.
*****
```

ID	WarpDrive	Package Version	PCI Address
--	-----	-----	-----
1	6203-DD	00.00.00.00	00:0a:00:00
2	NWD-WLP4-200	00.00.00.00	00:0c:00:00

Select the WarpDrive [1-2 or 0:Quit]: 2

1. List WarpDrive Information
2. Update Flash Package
3. Display WarpDrive Health
4. Locate WarpDrive
5. Format WarpDrive

Select Operation [1-5 or 0:Quit]: 5

Perform Over-provisioning? (Yes/No): **yes**

1. Performance over provisioning
2. Nominal over provisioning
3. Max capacity over provisioning

Select the predefined over provisioning option [1-3 or 0:Quit]: **2**

WARNING: Formatting will result in loss of all data on the selected WarpDrive device. Type YES if you would like to continue, or any other key to abort the request:

### 5.6.3 Command Line Mode

Command syntax:

```
# ddcli -c <Nytro WarpDrive number> -format [-slot <slot>] [-op <-level <perf | nom | cap>> ] [ -s ]
```

Command example:

```
# ddcli -c 1 -format [-slot <slot>] [-op <-level <perf | nom | cap>> ] [ -s ]
```

### 5.6.4 Sample Output

When the `-format` command runs as entered in the previous example, the utility returns the following text.

```
# ddcli -c 1 -format -op -level perf -s
```

```
*****  
LSI Corporation WarpDrive Management Utility  
Version 107.00.00.00 (2012.04.10)  
Copyright (c) 2011 LSI Corporation. All Rights Reserved.  
*****  
LSI WarpDrive Management Utility: Preparing WarpDrive for format.  
LSI WarpDrive Management Utility: Please wait. Format of WarpDrive is in  
progress.....
```

Selected over-provisioning level change is done successfully.

LSI WarpDrive Management Utility: WarpDrive format successfully completed.

LSI WarpDrive Management Utility: Execution completed successfully.

```
#
```

## 6 Exception Handling

The following table lists all of the input validation errors.

**Table 2 Error Messages**

Error Message
LSI WarpDrive Management Utility: Invalid command format specified on the command line.
LSI WarpDrive Management Utility: Invalid argument: %s.
LSI WarpDrive Management Utility: Invalid entry.
LSI WarpDrive Management Utility: Incorrect number of command line parameters.
LSI WarpDrive Management Utility: File doesn't exists or not a regular file. Name: %s.
LSI WarpDrive Management Utility: No controllers found.
LSI WarpDrive Management Utility: Failed getting controller information.
LSI WarpDrive Management Utility: Insufficient memory.
LSI WarpDrive Management Utility: Feature not supported in this release.
LSI WarpDrive Management Utility: Execution completed successfully.
LSI WarpDrive Management Utility: Error executing command %s.
LSI WarpDrive Management Utility: Command terminated %s.
LSI WarpDrive Management Utility: Format failed for Cage=%d Location=%s component.
LSI WarpDrive Management Utility: Only %d out of %d components found.
LSI WarpDrive Management Utility: Controller with index %d not found...!
LSI WarpDrive Management Utility: WarpDrive is not in a proper state.
LSI WarpDrive Management Utility: Preparing WarpDrive for format.
LSI WarpDrive Management Utility: Couldn't prepare WarpDrive for format.
LSI WarpDrive Management Utility: Please wait. Format of WarpDrive is in progress.
LSI WarpDrive Management Utility: Format failed for component at "Cage=%d Location=%s".
LSI WarpDrive Management Utility: WarpDrive could not be brought in usable state.
LSI WarpDrive Management Utility: WarpDrive format successfully completed.
LSI WarpDrive Management Utility: Invalid package signature.
LSI WarpDrive Management Utility: Checksum error.
LSI WarpDrive Management Utility: Package type not supported. Type: 0x%x
LSI WarpDrive Management Utility: Invalid file size.
LSI WarpDrive Management Utility: Package does not contain required image.
LSI WarpDrive Management Utility: Package type does not match controller.
LSI WarpDrive Management Utility: Failed to get current package version from WarpDrive.
LSI WarpDrive Management Utility: Cannot downgrade package version xx.xx.xx.xx to xx.xx.xx.xx.
LSI WarpDrive Management Utility: Failed to Flash image. Type: 0x%x
LSI WarpDrive Management Utility: Flash upgrade not allowed for component at "Cage: %d, Location: %s".
LSI WarpDrive Management Utility: Failed to update component at "Cage: %d, Location: %s".

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## 7 Technical Support

For assistance installing, configuring, or running the High IOPS Modular Adapter card, contact IBM Technical Support:

**Phone:** 1-800-IBM-SERV (1-800-426-7378)

**Website:** <http://www.ibm.com/support/>