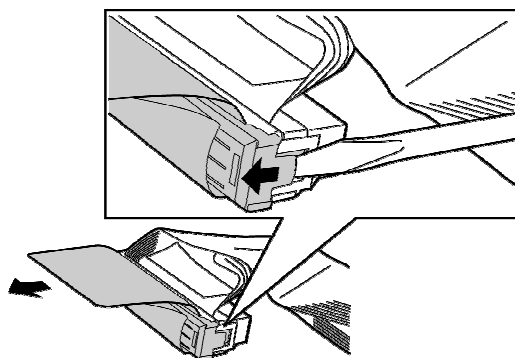


PG-140BL/141B/142B/142C/142Dを お使いになる前に(重要)

このたびは、弊社製品をお買い求めいただきまして、まことにありがとうございます。本書は、本製品に添付されている取扱説明書の記述を補足しております。本製品をご使用になる前に必ずお読みください。
2002年12月 富士通株式会社

1. PG-141B/142B/142CにはUser Guide CD-ROM が添付されておりますが、英語版のみとなります。日本語の取扱説明書はCD-ROMに含まれておりません。
2. Expand Array機能は使用しないでください。
3. 本製品を本体添付の内蔵Wide SCSIケーブルと接続する際、ケーブルコネクタの幅形状が大きいため、とりつかない場合があります。以下の手順にもとづき取り外してご使用ください。
 - i) Wide SCSIケーブルのSCSI アレイコントローラカード側コネクタのストレインリリーフを、マイナスドライバ等を使用し取り外してください。



- ii) ストレインリリーフを外した後、ケーブルフォーミングを行い、SCSI アレイコントローラカードに接続してください。
4. 本製品を使用する前に、SMOR(Storage Manager On ROM)を用い、以下の設定を確認、変更する必要があります。確認、変更方法については、取扱説明書の「3.3.2コントローラ情報ウィンドウ」を参照してください。

Configuration -> Boot Enable =

本カードに接続されたディスク装置から起動する場合： Checkする

本カードに接続されたディスク装置から起動しない場合： Checkしない

Bus Configuration -> Transfer Rate = Ultra160

5. 本製品に対してServerWizardを用いてOSのインストールを行う場合、BGI(Background Initialization)を使用する必要があります。BGI機能を有効にするために、次のように設定してください。
- 直接インストールを行う場合 BGI機能を「ON」に設定してください。
- Design Magicを使用する場合 「詳細」 「初期化をバックグラウンド処理する」にチェックをつけてください。
6. 本製品をPG-143B/144Bと同時に搭載している環境で、ServerWizardを使用してWindows2000のインストールを行う場合、PG-143B/144Bにシステムドライブ(論理ドライブ)が作成されている状態ではインストールが正しく行われません。ServerWizardを使用してWindows2000をインストールする際は、PG-143B/144Bにシステムドライブ(論理ドライブ)を作成せずに実施してください。
7. 本製品に、最新版のWindows用デバイスドライバ/管理ツールのフロッピーディスク添付してある場合があります。その場合、本製品をご利用になる前に、下記手順に従いデバイスドライバ/管理ツールの更新をしてください。
- 1) システムをインストールします (OSを新規にインストールする場合)
 - 2) デバイスドライバを更新します
 - 3) システムを再起動します
 - 4) Storage Manager (RAID 管理ツール)を更新します
 - 5) システムを再起動します
 - 6) 本製品を追加します (本製品を追加搭載する場合)
- **フロッピーディスクが添付してある場合は、本製品をご使用になる前に必ずデバイスドライバ、および RAID 管理ツールの更新を実施してください。更新を実施しない場合、システムが起動できない、もしくはハングする場合があります。**
- **既に SCSI アレイコントローラカード(PG-140BL/PG-141B/142B/142C/142D)が搭載されているサーバ本体に本製品を追加搭載する場合、搭載前に更新作業を実施し、システムの再起動を確認後、追加搭載を行なってください。システムが起動できなくなる場合があります。**

[デバイスドライバ更新手順]

Windows 2000 の場合

1. Windows 2000 に Administrator、あるいは同等の権限でログインします。
2. [コントロールパネル]から[システム]を実行してください。
3. [ハードウェア]タブを選択し、[デバイスマネージャ]をクリックしてください。
4. [SCSI と RAID コントローラ]をダブルクリックしてください。SCSI アダプタの一覧が表示されます。
5. 以下を選択しダブルクリックしてください。
 - " Adaptec 2000S Ultra3" (PG-140BL の場合)
 - " 2100S Ultra3 Single Channel" (PG-141B の場合)
 - " 3000S Ultra3 Dual Channel" (PG-142B/142C/142D の場合)
6. プロパティウィンドウが表示されたら、[ドライバ]タブをクリックし、[ドライバの更新]をクリックしてください。[デバイスドライバのアップグレードウィザード]
7. ウィンドウが表示されますので、[次へ]をクリックしてください。
8. [このデバイスの既知のドライバを表示して、その一覧から選択する]を選択し、[次へ]をクリックしてください。
9. [ディスク使用]をクリックしてください。

10. 「PG-140BL/141B/142B Windows 2000 Driver & Storage Manager Disk1」をフロッピーディスクドライブに挿入します。
11. 製造元のファイルのコピー元]の欄に"A:¥"と入力後、[O K]ボタンをクリックします。
12. モデル欄から以下のデバイスを選択し、[次へ]をクリックしてください。
 - " Adaptec 2000S Ultra3" (PG-140BL の場合)
 - " 2100S Ultra3 Single Channel" (PG-141B の場合)
 - " 3000S Ultra3 Dual Channel" (PG-142B/142C/142D の場合)
13. [次へ]をクリックすると、デバイスドライバのインストールが開始されます。
[デジタル署名が見つかりませんでした]というウィンドウが表示されることがあります。[はい]をクリックしてインストールを続行してください。
14. [完了]をクリックし、[デバイスドライバのアップグレードウィザード]ウィンドウを閉じてください。
15. プロパティウィンドウの「閉じる」をクリックしてウィンドウを閉じてください。
16. [システム設定の変更]ウィンドウが表示されたら、[いいえ]をクリックしてください。
17. システムを再起動してください。

Windows NT4.0 の場合

1. Windows NT4.0 に Administrator、あるいは同等の権限でログインします。
2. [スタート]ボタンをクリックし、[設定]から[コントロールパネル]をクリックします。
3. [コントロールパネル]の[SCSI アダプタ]をダブルクリックします。
4. [SCSI アダプタ]の[追加]タブをクリックします。
5. [ドライバのインストール]ウィンドウが開きます。
6. [ディスクの使用]ボタンをクリックします。
7. 「フロッピーディスクからのインストール」ウィンドウが開きます。
8. 「PG-140BL/141B/142B Windows NT Driver & Storage Manager Disk1」をフロッピーディスクドライブに挿入します。
9. 「配布ファイルのコピー元」の欄に"A:¥"と入力後、[O K]ボタンをクリックします。
10. 表示される一覧から、SCSI アダプタを選択します。" Adaptec I2O RAID Host Adapter Driver for NT 4.0." を選択し、[O K]ボタンをクリックします。ファイルのコピーが行われます。
11. コピーが終了すると「新しい設定を有効にするには、コンピュータを再起動する必要があります。今すぐコンピュータを再起動しますか？」というメッセージが表示されますので、[はい]をクリックします。
12. システムが再起動されます。

[Storage Manager更新手順]

● 旧版の Storage Manager をインストール後、新版の Storage Manager に更新する場合、更新作業前に必ずシステムを再起動してください。システムを再起動しなかった場合、システムがハングする場合があります。

1. Windows に Administrator、あるいは同等の権限でログインします。
2. [スタート]ボタンをクリックし、[設定]から[コントロールパネル]をクリックします。
3. [コントロールパネル]の[サービス]をダブルクリックします。
4. 下記のサービスを停止させます。停止は、該当するサービス名を順次選択し、停止ボタンをクリックしてください。（表示されない場合は、停止させる必要はありません）
 - ・ Communications Server
 - ・ DPTSRV
 - ・ SNMP
5. [スタート]ボタンをクリックし、[Storage Manager] から [Uninstall] を選択します。
6. 本カード添付の取扱説明書の「Storage Manager のインストール」記載の手順に従い、Storage Manager を再インストールします。

8. Netware5.1J環境で、サーバに本製品を追加する場合、下記手順に従い、設定情報の更新が必要となります。
 1. STARTUP.NCF に以下の行を追加する製品の数だけ、追加します。
LAOD BKSWTROSM.HAM SLOT=1
 2. サーバを再起動します
 3. BKSWTROSM.HAM のロードとき、「スロット番号が誤っています、修正を行いますか？」とのエラーメッセージが出力されますので、「修正する」を指定してください。
9. SCSIアレイコントローラが複数枚搭載されている場合、SMORとStorage ManagerではSCSIアレイコントローラカードの表示される順序が異なる場合がありますのでご注意ください。情報確認・操作等行う際は、SCSIアレイコントローラを正しく確認した上で行ってください。

"Windows NT" 及び "Windows 2000" は米国 Microsoft Corporationの米国およびその他の国における登録商標です。NetWare 米国ノベル社の登録商標です。

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Additional Notes for RAID Card

PG-140BL/141B/142B/142C/142D

Thank you for purchasing the Fujitsu RAID Card PG-140BL/141B/142B/142C/142D. This document is an addendum to the User Guide supplied with this product. Read this document before you use this product.

December 2002, FUJITSU LIMITED

Notes for RAID Card

1. Supported Features.

Product	SCSI spec	BBM*	Cache	Supported RAID level	Supported operating systems
PG-140BL	0 channel Ultra160	None	48MB	0, 1, 5, 0+1*	Windows NT4.0SP6A Windows 2000
PG-141B	1 channel Ultra160	None	32MB	0, 1, 5, 0+1*	Windows NT4.0SP6A Windows 2000
PG-142B	2 channels Ultra160	None	64MB	0, 1, 5, 0+1*	Windows NT4.0SP6A Windows 2000
PG-142C	2 channels Ultra160	Present	64MB	0, 1, 5, 0+1*	Windows NT4.0SP6A Windows 2000
PG-142D	2 channels Ultra160	None	32MB	0, 1, 5, 0+1*	Windows 2000

*There is BBM (Battery Backup Module) to save cached data.

*RAID 0+1 is currently not supported yet. Do not use RAID 0+1 until this restriction is lifted.

2. User Guide CD-ROM

The documents contained in this CD-ROM are as follows:

Do1010_1.pdf (SCSI RAID Family Quick Start Guide)
Do1011_1.pdf (Storage Management Software User's Guide)
Do1012_1.pdf (Storage Manager Pro User's Guide)
Do1013_1.pdf (2100S SCSI RAID Installation Guide)
Do1014_1.pdf (3000S Series SCSI RAID Installation Guide)

Please read **Do1010_1.pdf** before you start.

For Software details, refer to **Do1011_1.pdf**.

For Hardware Installation instructions, refer to **Do1013_1.pdf**, **Do1014_1.pdf**.

Note: We recommend that you read all documents including the precautions and restrictions in this document before you start.

Warning: Do not use the prohibited functions described in this document.

3. BIOS settings

Be sure to set the BIOS to the following values before creating an array in SMOR.

Smart ROM Configuration	
Bootable Devices	
Enable Bootable CD-ROMs	Blank
DOS/Windows 3.1 Cache Setting	Write Through
Scan Delay	Default *
Smart ROM Options	
EBDA Relocation	Blank **
Enable Extended Int13	Check
HBA Configuration	
PCI MWI Enable	Check
Boot Enable	Check (When boot from this card) No Check (When do not boot from this card)
Bus Configuration	
Transfer Rate	Ultra160

* "Default" for Scan Delay is same as 10(seconds).

** Several server systems might require having a check for the 'EBDA relocation' setting. Please refer to the user manual attached to your server system for further details.

Note: If the server documentation recommends alternate settings, please use the parameter settings recommended by the server.

4. Bus Configuration

Do not change these parameters.

Parameter	Default	Meaning
ID	7	SCSI ID of this controller (0-7)
Type	Ultra160	Type of SCSI Bus (Ultra, Ultra2, Ultra160, 10/8/5MHz, Asynchronous)
Width	16 Bit	SCSI Bus Width (8, 16 Bit)
Termination	Auto	SCSI Termination (Off, On, High Only)
TERMPWR	On	Termination Power Setting (Off, On, Auto)

Precautions

1. DO NOT use the "Expand Array" function.

2. When using this product on the server.

WARNING

Before using this product on Windows NT4.0 or Windows 2000 System, be sure to update the device driver and the storage manager from Drivers FDs supplied with this products. Otherwise, the system may be hang up.
About the updating method, please see the User's Guide of this products..

3. When adding this product on the server.

WARNING

Before adding this product on Windows NT4.0 or Windows 2000 System, which has been installed RAID Card PG-140BL/141B/142B/142C/142D, be sure to update the device driver and the storage manager from Drivers FDs supplied with this products and reboot the system before adding this products. Otherwise, the system may unable to start.
About the updating method, please see the User's Guide of this products..

4. When installing this product on the server.

WARNING

Before installing this product in the server, be sure to turn off the server and all other devices connected to it and unplug all power cords from the AC outlets. If this product is installed when the server and connected devices are switched on, it may cause a malfunction, fire, electric shock, etc.

CAUTION

The temperature of this product is extremely high while the server is operating. Before handling/removing this product from the server, turn off the server and wait for it to cool down.

- ✓ Don't connect this product with any device (CD-ROM drive, MO drive, DAT drive, etc.) other than hard disks.
- ✓ Don't connect any hard disks to this product other than those specified by the server.
- ✓ Don't connect any SCSI cable except the specified cable for this product.
- ✓ If an internal/external SCSI connector is used, don't use the external/internal connector on the same channel.
- ✓ Don't connect this product with hard disks which have the same capacity but different rotational speed.
- ✓ Pre-used hard disk drives may contain unnecessary partition table data or RAID configuration data. This data may cause unexpected problems. For Pre-used hard disk drives please execute a low level format of the drives prior to connecting them physically to this product.

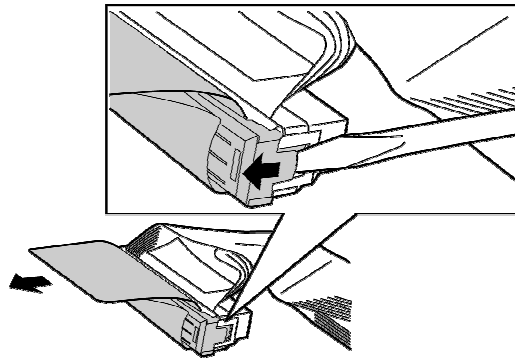
5. When using this product

- ✓ For the IRQ(interrupt level) of this product, refer to the instructions provided with the server. If nothing is specified with the server, avoid IRQ sharing with another card.
- ✓ When connecting a hard disk that was previously used in a disk array to a general SCSI adapter, always perform a low level reformat before it is used with the SCSI adapter.
- ✓ While the server is turned on, do not remove any hard disks (non hot-swap). This excludes replacing a failed hard disk with another (hot-swap) while the server is turned on.
- ✓ When turning on the server immediately after turning it off, wait for 10 seconds or more to avoid reset problems.
- ✓ This product doesn't support clustering.
- ✓ Some past event logs may be logged into the Event Viewer right after Windows NT/2000 is installed. Ignore those events.
- ✓ Command Line Utility is not supported.
- ✓ Timeout may be logged in the system log of the event log. This log is recorded when Windows accessed this product and detected the timeout, but Window do retry it. Therefore there is no problem.
- ✓ If you install an operating system into an array, you must include the hard disk that has the lowest channel number and an ID into that array. That array's LSU should be numbered to (0, 0, 0, 0) if the ID (0, 0, 0, 0) exists.
- ✓ If you use ServerWizard, you have to use BGI (Background Initialization). Make sure that the setting is correct as using BGI when you set parameters in ServerWizard and Design Magic.

6. Precaution about connecting a Wide SCSI cable to this product.

A Wide SCSI cable at the server may not be connected to this product because of the width of the cable. Remove the strain relief of the connector on the RAID Card side by the following.

- i) Remove the strain relief of the connector on the RAID Card side by the minus driver or something else.



- ii) After removing the strain relief, connect the cable to the RAID Card.

7. When using Server Wizard V2.0L22/L24 at the server including both this product and PG-143B.

When there are both this product and PG-143B in the same server and there is a system drive in PG-143B, the installation of Windows 2000 by Server Wizard V2.0L22/L24 will be failed. If you want to use Server Wizard V2.0L22/L24, do not create any system drive in PG-143B.

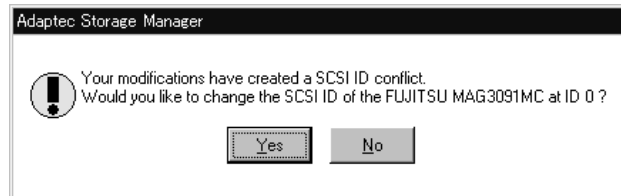
8. When using SMOR

- ✓ Note the following when you create an array.
 - Do not change the Stripe Size.
 - Only use drives of the same model/type (same capacity and same rotational speed) in the same array.
- ✓ The following functions are not supported. **Do NOT use these functions.**
 - Flash HBA in Action menu.
 - Test Alarm in Action menu.
 - Make Boot Floppy in Action menu.
- ✓ Before replacing Hotspare drives please note the following.
 - Prepare the same drive model/type (same capacity and same rotational speed) as the drive requiring replacement in the array.
 - If there is more than one array, prepare the same drive model/type (same capacity and same rotational speed) for each drive requiring replacement in each array.
- ✓ It is not supported to use a redirected drive. If there is a redirected drive, remove that redirected drive and use that drive as one included in an array or Hot Spare. The following is how to delete a redirected drive.
 1. Select an array group displayed as "Redirected".
 2. Select RAID-Delete, and select 'Yes' in the dialog box of the confirmation for deleting.
 3. Select File-Set System Config.

9. When using Storage Manager

- ✓ Note the following when installing Storage Manager,
 - Install "Broadcast service".
 - Do not install "Update driver".
 - Installing "Communication server" and "SNMP System Agent" is an option.
- ✓ Install "SNMP System Agent" if you use Serverview, or you will not be able to receive any SNMP traps of PG-140BL/141B/142B/142C/142D.
- ✓ Note the following when you create an array.
 - Do not change the Stripe Size.
 - Only use the same drive model/type (same capacity and same rotational speed) in the same array.
 - Note that all existing data will be lost when you create a new array.
- ✓ Before replacing Hotspare drives please note the following.
 - Prepare the same drive model/type (same capacity and same rotational speed) as the drive requiring replacement in the array.
 - If there is more than one array, prepare the same drive model/type (same capacity and same rotational speed) for each drive requiring replacement in each array.
- ✓ Note that data in an array may be lost when you use Fail Drive.
- ✓ The following functions are not supported. **Do NOT use these functions.**
 - Any functions to the operating system that is not Windows NT/Windows 2000.
 - Load/Save Configuration File in File menu.
 - Flash Configuration.
 - Naming an array group.
 - Formatting drives.
 - Events.
 - HBA Caching Configuration.
 - Audible Alarms. Always select "Turn Off Audible Alarms".
 - Background Task Priority. Always set it "Foreground".
 - Controller/Device I/O Statistics.

- > Pager Event Messaging.
- ✓ Close the Storage Manager Window during rebuilding an array.
- ✓ Always leave the following check boxes checked.
 - > Low: Auto Write-Through
 - > Predictive Failure Warning
- ✓ It is not supported to use a redirected drive. If there is a redirected drive, remove that redirected drive and use that drive as one included in an array or Hot Spare. The following is how to delete a redirected drive.
 1. Select the icon of Redirect in the Logical Configuration View Window.
 2. Select Delete Array Group.
 3. Select 'No' in the following Window.



4. Select File-Set System Configuration.
- > When you create an array or Hot Spare by using the drive released from Redirect, the following message may appear. In that case, create an array or Hot Spare by SMOR.



10. Battery Backup Module

A battery, which is one of the life component, is mounted on PG-142C, and it needs to be replaced every two years.















A new battery can hold the cache dirty data for 48 hours, but the hold time shortens with time. The battery life depends on its operating environment and the degradation becomes more intense in high temperature especially. As rule of thumb, battery needs to be replaced every two years in 25 degrees C (ambient temperature of server). A intensely degraded battery causes a liquid leakage in the worst case. Use below table and replace the battery regularly.

<u>Schedule of Battery Replacement</u>		
Purchase Day : (/ /)		Slot No. _____
	Schedule	Result
Replacement Day [1st time]	/ /	/ /
Replacement Day [2nd time]	/ /	/ /
	/ /	/ /
	/ /	/ /
	/ /	/ /

- ✓ Describe the purchase day and the next schedule, and do not lose this table. And check your schedule regularly.
- ✓ Be sure to replace the battery on schedule.
- ✓ Please put the attached seal at the place where you can see easily and check your schedule.
- ✓ The cost is needed for the battery replacement.
- ✓ When the battery backup circuitry detects the voltage drop, it checks the status of the disk cache. If the cache is empty, the battery backup circuitry does nothing. If the cache contains data during a power failure the battery backup circuitry will maintain cache data integrity until the power is restored.
- ✓ When the battery charged level is lower than the value set at Low Auto Write-Through value in Battery Backup Configuration, it operates in the Write Through mode.
- ✓ The battery is recyclable. At the end of it's useful life, under various states and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

11. Icons in Storage Manager

The following icons show the kind of RAID or some Units.

Icon	Meaning
	This is an array's icon.
	This is a SIMM module's icon. This is always displayed because this product has a memory module.
	This is a battery's icon. This is displayed when the battery backup module is installed onto this product.
	This means an unconfigured Hard Disk.
	This means Hard Disk in the array.
	This is a Hotspare drive's icon. This is displayed when Hard Disk is assigned to Hotspare.
	This is LSU icon. This is Logical Drive to be accessed by the operating system.
	This means RAID 0 group. Data would be lost when one Hard Disk was broken down.
	This means RAID 1 without Hotspare. Data is being mirrored into two drives. You should replace the drive and rebuild the drive when one Hard Disk was broken down because there is not Hotspare.
	This means RAID 5 without Hotspare. Data is being striped with a parity. You should replace the drive and rebuild the drive when one Hard Disk was broken because there is not Hotspare.
	This means RAID 1 with Hotspare. Data will be recovered by Hotspare even though one Hard Disk was broken.
	This means RAID 1 with Hotspare. Data will be recovered by Hotspare even though one Hard Disk was broken.
	This is a redirected drive's icon. This is displayed when Hard Disk is redirected.
	This is SAF-TE processor's icon. SAF-TE processor is watching the insertion or the removal of Hard Disk.

12. Status in SMOR and Storage Manager

Status Flags show the status in Storage Manager. Status flags used in SMOR and Storage Manager are as follows.

□ Flags in Storage Manager

Color	Meaning
None	Normal.
RED (Failed)	This means there is a faulty Hard Disk in the array.
YELLOW (Warning)	The array is working but without redundancy.
WHITE (Impacted)	The array is in Verification mode, the Hard Disk is in the process of Rebuilding, or there is a Hard Disk that does not respond. It will take time to perform normal I/O operations.
BLUE (Building)	An array is in Building or Rebuilding mode, or the Hard Disk is being formatted.
BLACK (Missing)	A Hard Disk is not responding or an array has not yet been configured.

□ Status of an array.

Flag	SMOR	Storage Manager	Condition
None	Optimal	Optimal	Normal.
RED	Dead	Dead	This is displayed when two or more Hard Disks in a RAID 1 or RAID 5 configuration fail, or when one of the Hard Disks in a RAID 0 configuration fails. Data has been lost. Reconfigure the array and restore from backup data.
YELLOW	Degraded	Degraded	The array is working but without redundancy (RAID 1 or RAID 5). The array needs to be rebuilt and reconfigured. (Replace the Hard Disk and rebuild it.)
	Created	Dead	Building of the array is incomplete and it is also not in the Building process. Complete Building the array.
WHITE	Verify ----	Verify/Fix Impacted	Verification mode is in progress. There is Hard Disk that does not respond.
	Building Rebuilding Expanding	Building Reconstructing Expanding	Building is in progress. Rebuilding is in progress. Expanding array is in progress.
BLACK	Not Set Into Hardware	----	The System Configuration has not been set. This is displayed after creating an array, or after redirection. Please Set the System Configuration.

□ Status of Hard Disk

Flag	SMOR	Storage Manager	Condition
None	Optimal	Optimal	Normal
	Not Set Into Hardware	Not Initialized	The System Configuration has not been set. This is displayed after creating an array, or after redirection. Please Set the System Configuration.
	Uninitialized	Uninitialized	Building of the array is incomplete and it is also not in the Building process. Complete Building the array.
	Not Configured	----	This Hard Disk is not configured.
RED	Failed	Failed Drive	This Hard Disk is broken. In RAID 1 or RAID 5, replace the Hard Disk and Rebuild. In RAID 0, data was lost. Reconfigure the array and restore data from back up source.
WHITE	Impacted	Replaced Drive	Rebuilding of the array is in progress.
BLUE	Formatting	Formatting	Low level formatting is in progress. Do not cut the power supply of the server and the cabinet until it is complete.
BLACK	Missing Component	----	The Hard Disk is not responding. Check the connection of Hard Disk. This is displayed in the Tree View in SMOR.

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