



# User manual

For windows and Linux users



Thank you for purchasing Jet-Speed™ product.

We will put all our efforts to applying latest technology to improve functionalities of our products and minimize any inconvenience for users .

- All copy rights are reserved by Taejin Infotech Co., Ltd (Hereinafter, referred as Taejin Infotech). All and partial contents of this document should not be distributed, reproduced or transmitted by using electronic, mechanical or audio devices without legal agreement of Taejin Infotech.
- This manual may include different contents or can be modified because of upgrade version of product release or as new operating systems are supported.
- Images used in the “Windows Driver Installation and Setup environment” chapter of this manual is based on Window 2000 operating system
- This manual provides system setup and software installation instruction step by step. Please read carefully before installation
- For improvement and upgrade of Jet-Speed™, contents of this manual or contents of CD may change without prior notification or agreement
- Taejin Infotech is not legally responsible for any mishap and loss of data. It is strongly recommended that you backup important data prior to installation or be careful not to loss a data.
- Upgraded contents or latest drivers can be downloaded from home page of Taejin InfoTech.
- This manual can not be copied partially or whole without agreement of Taejin InfoTech
- Provided values of parameters used in this manual are measured by research center of Taejin InfoTech however values were measured based on publicly well known documents.
- Included battery-pack is not manufactured by Taejin Infotech. There will be no guarantee from Taejin InfoTech.

### Copy Rights

Jet-Speed™ is registered trademark of Taejin InfoTech Co., Ltd and all rights are reserved by Taejin InfoTech.

## Cautions before installation of Jet-Speed™

### S y m b o l



Please read note item carefully since it provides important information, recommendation and suggestion.



Caution item indicates element that might affect your system. Please be cautious about caution all times



Warning item emphasizes element that might damage your system when warning is not observed

### Cautions during installation and operation



- Turn off power prior to performing installation process. Any task performed while power is turned on may cause damage to the product



- Make sure that there is no static electricity on your body. It is one of critical cause of damage to memory



- Use anti static electricity pack provided all the time while maintaining the product. Product may exposed to static electricity while not operated.



- Perform installation task on safe flat ground surface. Be cautious of any shock from external environment. It may cause damage to products



- Do not touch bottom side of Jet-Speed™ board. It may cause damage to the board.



- Be cautious to keep loading order of memory to Jet-Speed™. Please refer to loading order of memory provided below



- Load even number of memory for standard and Pro products. Load more than 2 even numbers of memory on both sides for correct operation .

### Caution while loading memory

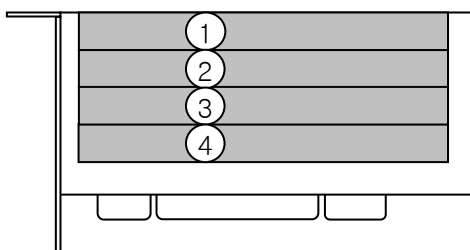


- Jet-Speed™ board is optimized for DDR SDRAM PC2700



- Follow order provided below when less than 4 memory chips are loaded for Lite product. (Lite Product uses non buffered non ECC type Memory)

#### Loading order of memory for Jet-Speed™ Lite

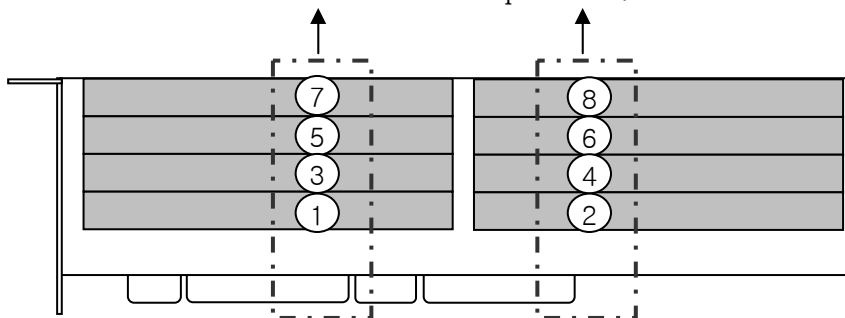


- Follow order provided below when less than 8 memory chips are loaded for Standard and Pro products. (Standards and Pro uses Buffered ECC type memory)

#### Loading order of memory for Jet-Speed™ Standard and Pro

Product may not operate correctly when odd number of memory is loaded.

Make sure that even numbers of memories are loaded on the product.



### Handling cautions of battery

- Please read descriptions carefully provided in battery pack about handling caution of battery



# C o n t e n t s

## Chapter 1 Introduction to Jet-Speed

What is Jet-Speed™?	8
Benefits of Jet-Speed™	8
Comparison of Jet-Speed™ and HDD	9
Jet-Speed™ Product Lines	10
Product specification	11

## Chapter 2 Hardware Installation

Load Jet-Speed™ into your system	12
Connect Jet-Speed™ battery	17

## Chapter 3 Install Windows Driver and Configuration

Install Jet-Speed™ Driver	18
Check installation status of Jet-Speed™	25
Jet-Speed™ initialization	27
Jet-Speed™ single configuration format	31
Jet-Speed™ Raid configuration format	36

## Chapter 4 Install Linux Driver and Configuration

Jet-Speed™ Single configuration format	41
Kernel 2.4	
Jet-Speed™ Single configuration format	45
Kernel 2.6	

## Chapter 5 Battery Pack User Manual

## Chapter 6 Q&A

## Chapter 7 Technical supports



# Jet-Speed™

## Jet-Speed™ components

- Jet-Speed™ PCI board (Lite, Standard or Pro depending on the model)
- User manual
- Installation CD
- Battery pack (Optional)

## Jet-Speed™ install CD components

- Install driver (Windows 2000, Windows XP, Windows 2003, Windows servers, Linux (kernel 2.4x, 2.6x), Unix (Planned to be released))
- User manual (User's Guide)
- Backup software (Optional)

## Jet-Speed™ component category



Figure 1. Jet-Speed™ PCI board (Images can be different to real product depending on the model types)



Figure 2. Battery (Purchase separately or included in the product package)



Figure 3. Battery connection cable (Purchase separately or included in the product package)



Figure 4. Adapter (Purchase separately or included in the product package)



Figure 5. Memory





## Chapter 1 Introduction to Jet-Speed™

### What is Jet-Speed™ ?

Jet-Speed™ is a storage device using solid state semiconductor. Unlike to the current hard disk drive (Hereinafter, referred as HDD) Jet-Speed™ improved performance and speed of system dramatically by using DDR-SDRAM and regarded as next generation storage device.

#### Benefits of Jet-Speed

- Transfer rate per second has improved dramatically compared to current HDD device. (Lite,: 132MB Standard: 256MB, Pro: 528MB).
- Gigabyte transfer speed can be achieved when disks are configured with RAID configuration.
- Average access time is few milliseconds which is much faster than current HDD device.
- Jet-Speed™ shows 100 times faster performance in disk transaction handlings based on IOPS comparison which usually measure transaction speed of current HDD.
- Current HDD is constructed with flatter disk format which only lasts for 3~5 years. However, Jet-Speed is built with semi-conductor and can be used semi-permanently in a normal operating environment.
- Jet-Speed™ has no noise which occurred in current HDD since it is built with semi-conductor.
- Jet-Speed™ does not have any physical devices thus it has stronger durability against humidity and temperature compared to current HDD.

## Outfit Comparison of Jet-Speed™ and HDD

HDD has I/O transactions depending on mechanical device. In contrast, Jet Speed adapts PCI interface using RAM as a storage with tremendous high speed.



Figure 1. Jet-Speed™ (Top: Lite, bottom: Pro)



Figure 2. Internal structure of HDD Drive (constructed with flatter disk which stores data and head which read and write the data)

## Jet-Speed product Lines

Jet-Speed™ Lite



Jet-Speed™ Standard



Jet-Speed™ Pro



## Product specification

### ■ Jet-Speed™ Board

Product	Jet-Speed™ Lite	Jet-Speed™ Standard	Jet-Speed™ Pro
Interface	32bit/33MHz	64bit/33MHz	64bit/66MHz
Capacity	1GB – 4GB	2GB – 32GB	2GB – 32GB
Max Transfer Rate	132MB/sec	256MB/sec	528MB/sec
Sustained Transfer Rate	100MB/sec	200MB/sec	400MB/sec
OS Support	Windows/ Linux/ Unix(soon)	Windows/ Linux/ Unix(soon)	Windows/ Linux/ Unix(soon)
RAM	DDR SDRAM PC 2700 (Non ECC/Non Buffered)	DDR SDRAM PC 2700 (ECC/Buffered)	DDR SDRAM PC 2700 (ECC/Buffered)
temperature	0~60 °C		
humidity	0~90%RH		
Power	<25 Watts	<25 Watts	<25 Watts
Battery Pack	Input	120/240V AC, 50/60 Hz	
	Output	12V DC, 2A	

\*Product does not support Windows 98 and Windows ME operating system.

\*Battery pack and backup software are optional.

\*Jet-Speed™ board is optimized for PC2700..



## Chapter 2 Hardware installation

### Connect Jet-Speed™ to system



- 1 Installation method may change depending on the type of computer and internal structure. Computer can be damaged with electrical shock thus it is strongly recommended that you unplug power cable prior to installation of hardware. If you have modem connected with computer, please unplug the modem line as well. Otherwise, there is a possibility of an electric shock.



- 2 Be cautious that even weak static electricity generated by people may also damage parts of the product and sharp pointing structure of internal parts of computer.
- 3 Remove system case. Please refer to user manual to remove case of system safely.
- 4 Remove protective panel covered over the PCI slots.

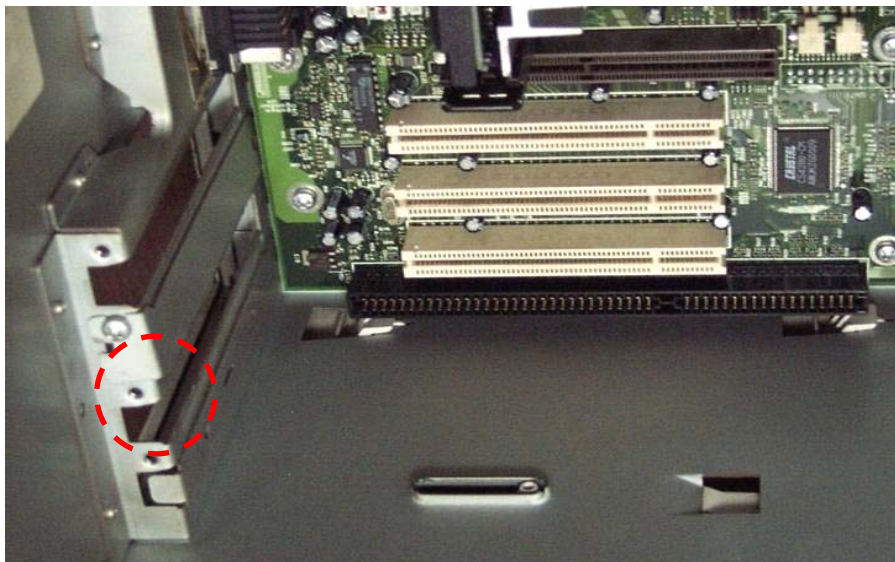


Figure-3 Remove protective panel of PCI slot



Installation can be performed without turning off power if the computer supports hot-swap capability for PCI slot. Please read user manual of your computer .



Install it to appropriate main board slot after confirming which product of Jet-Speed™ you have purchased (For Lite and model, install it to PCI-32bit/33MHz slot and for Standard and Pro model, install it to PCI-64bit/66MHz slot)



After you loaded board to slot, be careful whether it is loaded correctly to avoid damages on your system or board. Methods of removing or loading slot can be differed by products. Please read descriptions of main board for safe install operation



PCI part of Jet Speed card can be damaged if you repetitively insert or remove the card or RAM module.

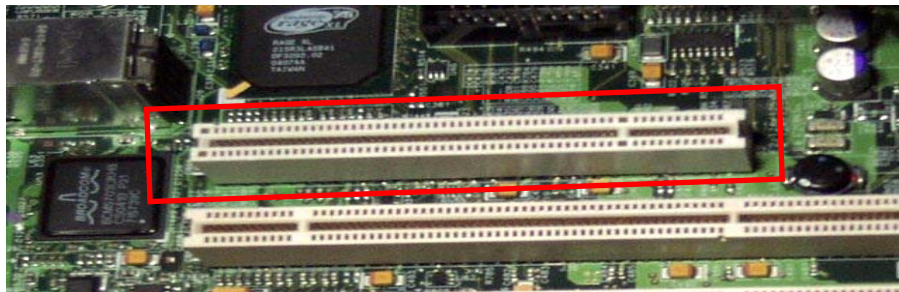


Figure4. PCI-32Bit/33MHz slot (For Lite model)

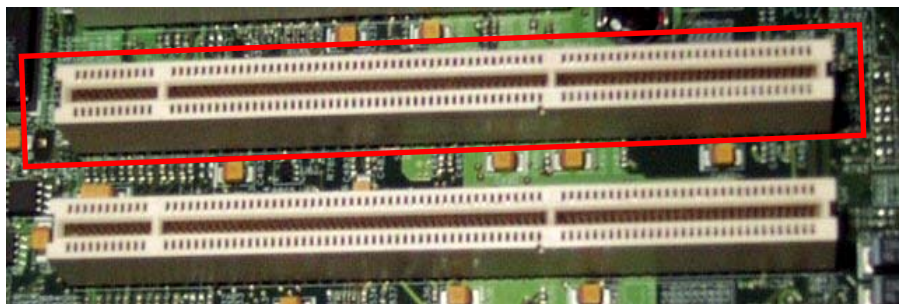


Figure5. PCI-64Bit/66MHz slot (For Standard Pro model)



- 5 Load Jet-Speed™ board after you remove protective panel of PCI slot

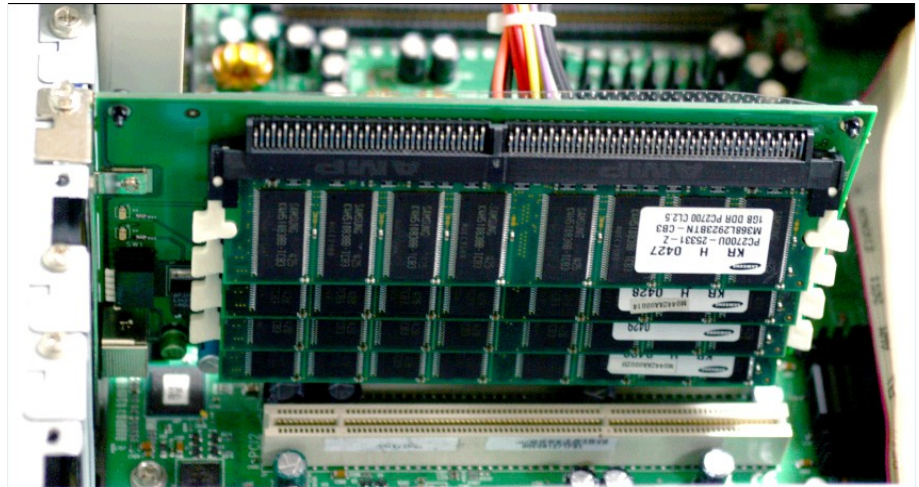


Figure 6. Loading Jet-Speed™ Lite

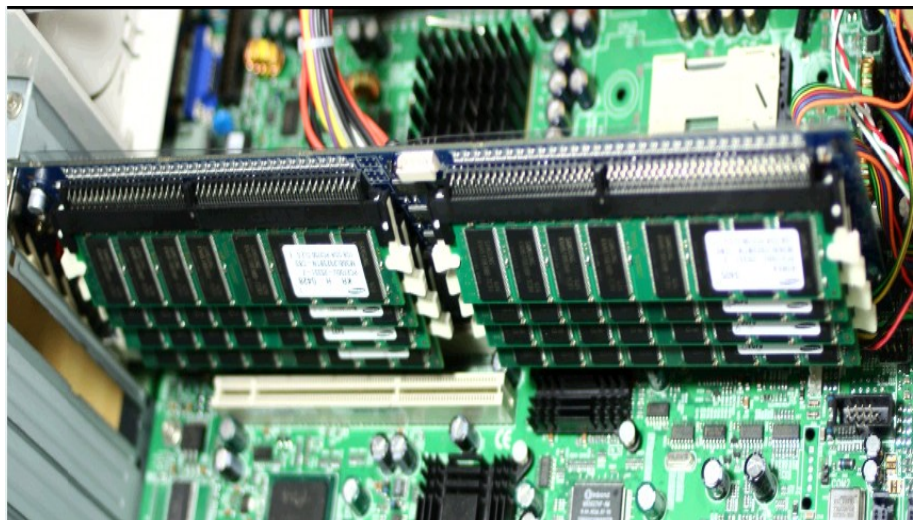


Figure 7. Loading Jet-Speed™ Pro



In order to operate 64bit/66MHz mode, you should load Jet-Speed™ Standard or Pro(64bit/66MHz) product into main board slot of PCI-64bit/66MHz. If you load it to PCI-32bit/33MHz main board slot, only 32Bit/33MHz transmission rate will be performed

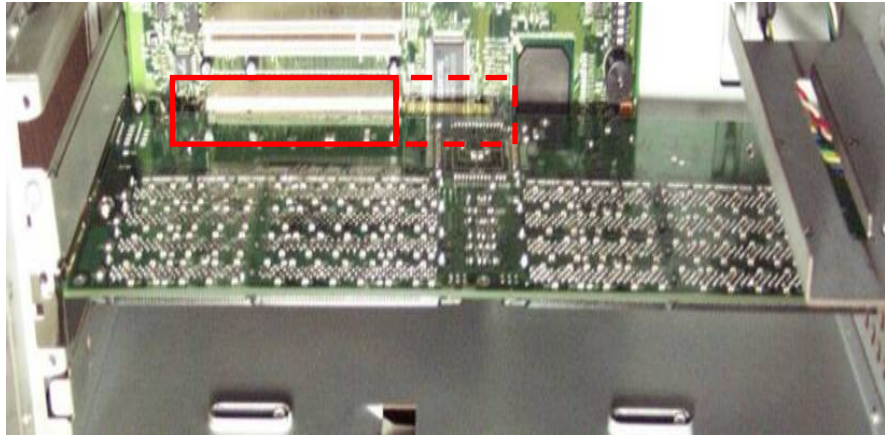


Figure 8. Picture of Jet-Speed™ Pro loaded into PCI-32Bit/33MHz (32 bit slot is loaded on left hand side instead of 64 bit slot on right hand side)



If Jet-Speed™ Standard or Pro(64bit/66MHz) is loaded into PCI-X 64bit/100MHz or 64bit/133MHz PCI slots, 64bit/66MHz transmission rate will be performed. Also if Lite(32bit/33MHz) is loaded, only 32bit/33MHz transmission rate will be performed.



PCI-Express is not supported yet.





Please be cautious that if you load Jet-Speed™ Lite which operates on PCI-32bit/33MHz products into PCI-64bit/66MHz slot, it will cause performance degradation of other PCI-64bit/66MHz board or other Jet-Speed™ Standard or Pro on same channel, down to PCI-32bit/33MHz speed

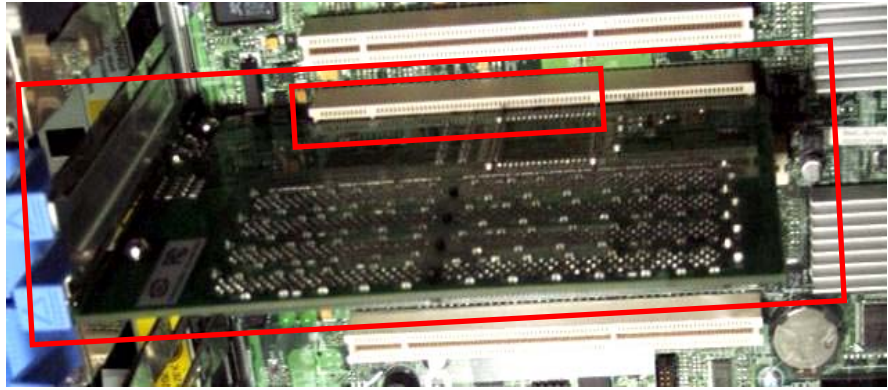


Figure 9. Picture of Jet-Speed™ Lite loaded into PCI-64bit/66MHz slot. (Only internal quadrangle part is loaded)

- 6 If you have multiple Jet-Speed™ boards, please repeat steps from 4 through 5.
- 7 Close system case and move system to original position and connect cables you previously unplugged in the step 1.
- 8 If you purchased battery pack, connect battery to Jet-Speed™ (Please refer to page 17)

## Connect battery to Jet-Speed™

- 1 Connect PCI board and battery by using provided battery pack
- 2 Connect battery and AC adapter and connect power cable to power plug .



Figure 10. Connecting battery pack to Jet-Speed™

- 3 Turn system power on. (ON)



Any problem occurred because of not following the recommendation, manufacturer will not take any responsibility.



## Chapter 3 Install WINDOWS driver and environment configuration

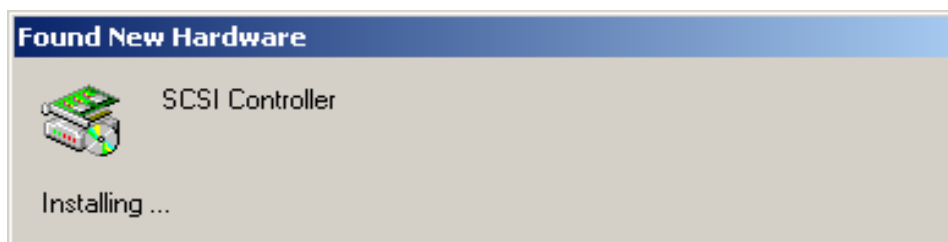
### Install Jet-Speed™ driver



Jet-Speed™ support various Microsoft operating system from Windows 2000 through Windows 2003 servers. This manual is based on Windows 2000 operating system. Description used in this manual may differ depending on your operating system

#### Step 1 Install driver

- 1 When Windows starts, “New hardware found” message will be prompted

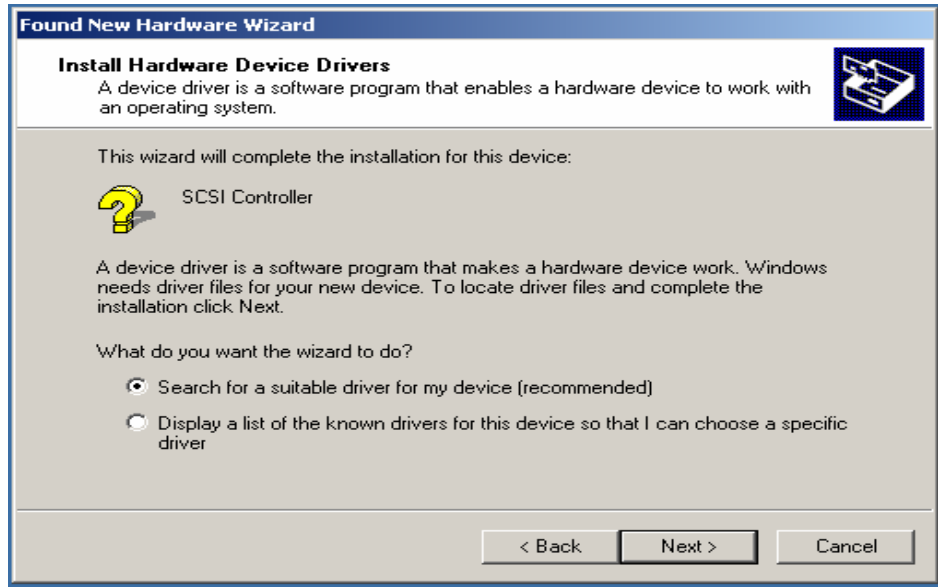


While installing Jet-Speed™, 2 SCSI controllers will be installed for each board. Please install both of controllers.

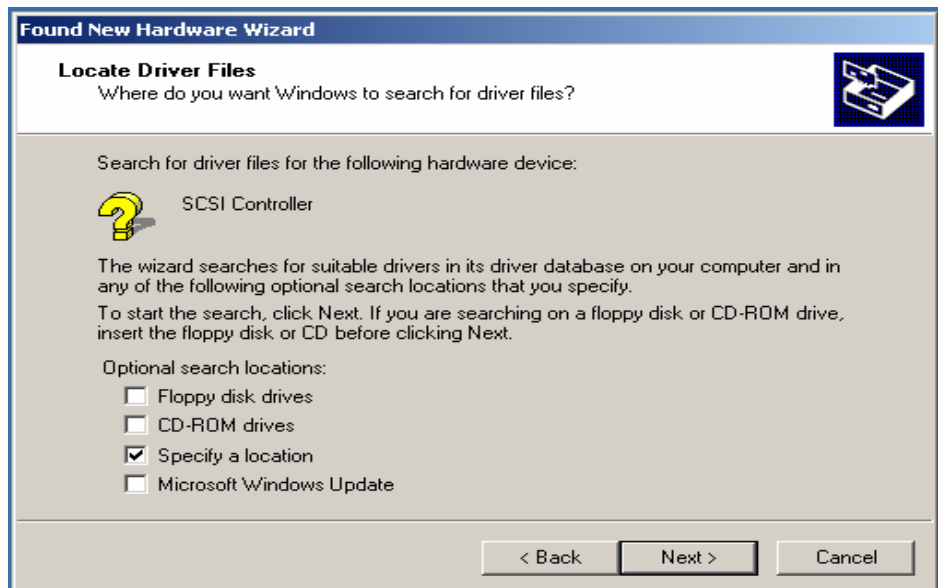


If you reinstalling Jet-Speed™, this dialog message will not be displayed

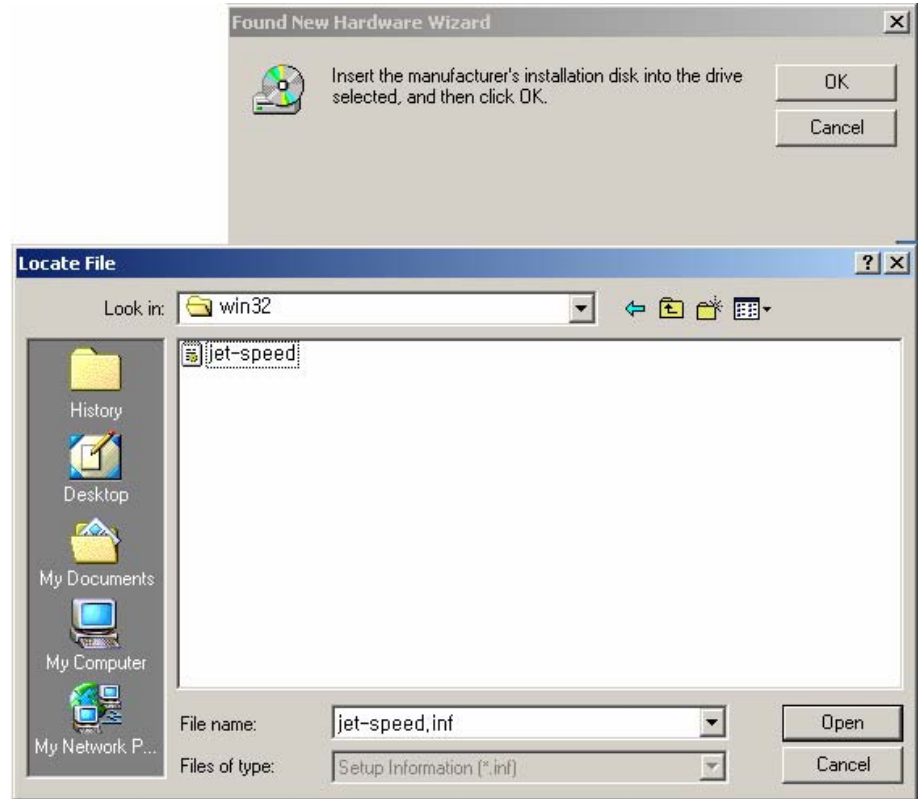
- 2 In short time, “Install hardware device and driver” window will be displayed.
- 3 Select “Search for the new driver (Recommended)” and click next button.



- 4 When “Find driver file” dialog box displays, insert CD into CD-ROM driver and select “file location” then click next button.



- 5 Define location of driver by using “Find” button. win32 in mini\_v1.3 folder for 32bit operating system and jet-speed.inf in win64 folder for 64bit operating system then click “next” button



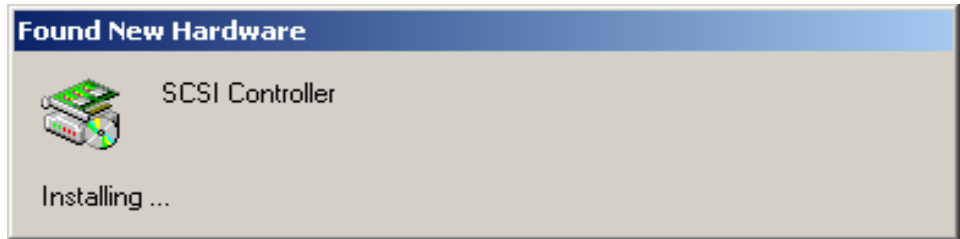
- 6 Windows will search for Jet-Speed™ driver to install in the system.
- 7 “Result of driver search window” will appear, click next button to proceed.

- 8 In short time, Windows will copy driver files into system folder.
- 9 When the end of “New hardware search wizard” Window appears, confirm that “Taejin-infoTech Jet-Speed Controller V1.3” is installed correctly. If accurate information is not found as described, please install driver again. Click “Finish” button to complete driver installation.

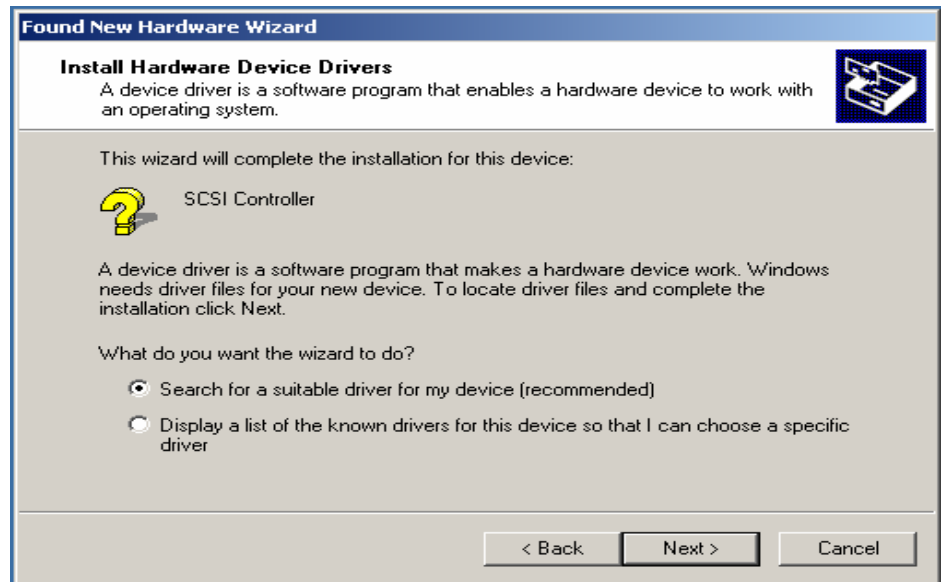


When restart Windows, message dialog box appears click ‘No’ button and procedure monitor driver installation. Jet-Speed Lite doesn’t need ‘Monitor Driver Installation’.

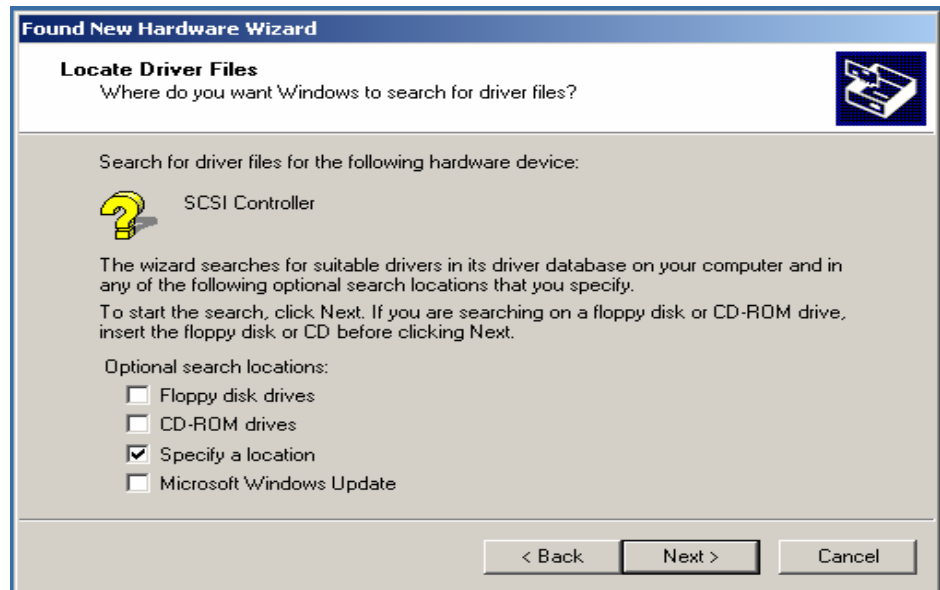
- 10 To install monitor driver, “New hardware found” message will be prompted.



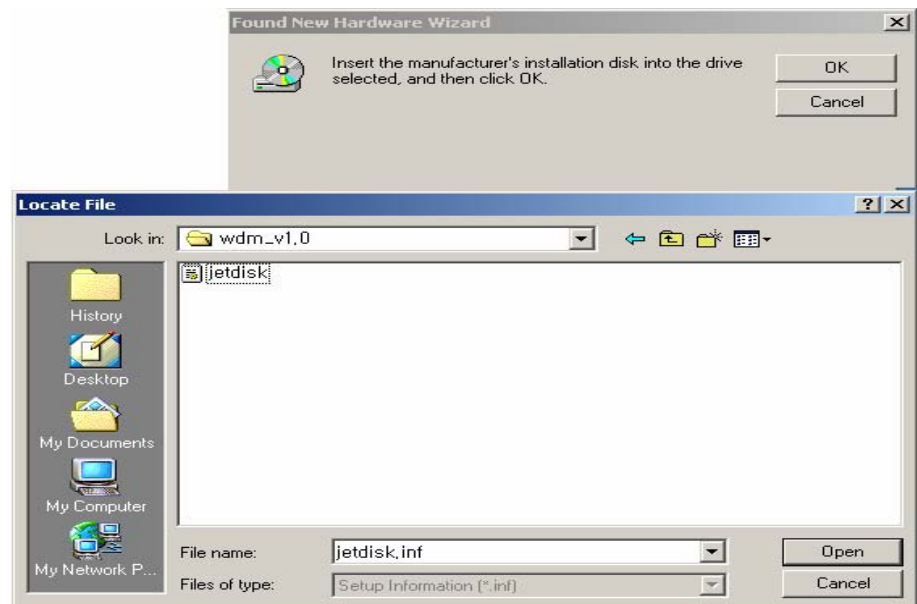
- 11 In short time, “Install hardware device and driver” window will be displayed.
- 12 Select “Search for the new driver (Recommended)” and click next button..



- 13 When “Find driver file” dialog box displays, insert CD into CD-ROM driver and select “file location” then click next button.



- 14 Define location of driver by using “Find” button. and choose jetdisk.inf in wdm\_v1.0 folder

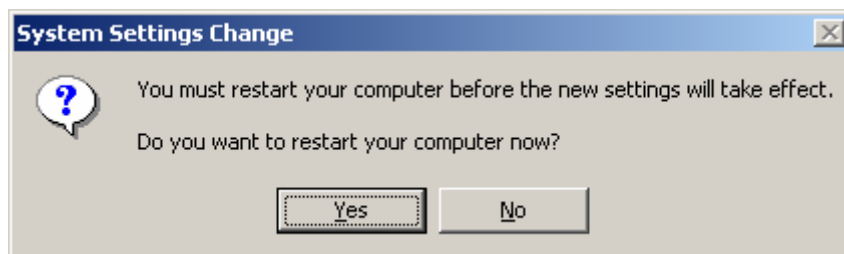




- 15 Windows will search for Jet-Speed™ monitor driver to install in the system.
- 16 There will be can't find digital signature message shows up. click yes button.



- 17 In short time, Windows will copy driver files into system folder.
- 18 After "New hardware search wizard" restarts the system.



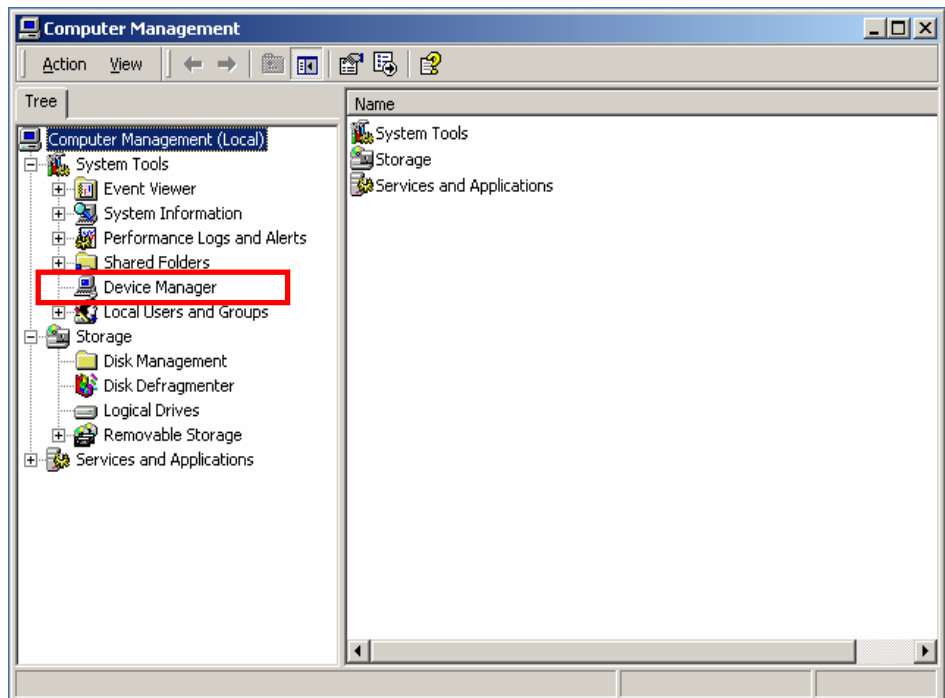
## Check installation status of Jet-Speed™



Installation of Jet-Speed™ board and driver are not complete preparation procedure. Similar to other disk driver (HDD), driver initialization and other tasks are required.

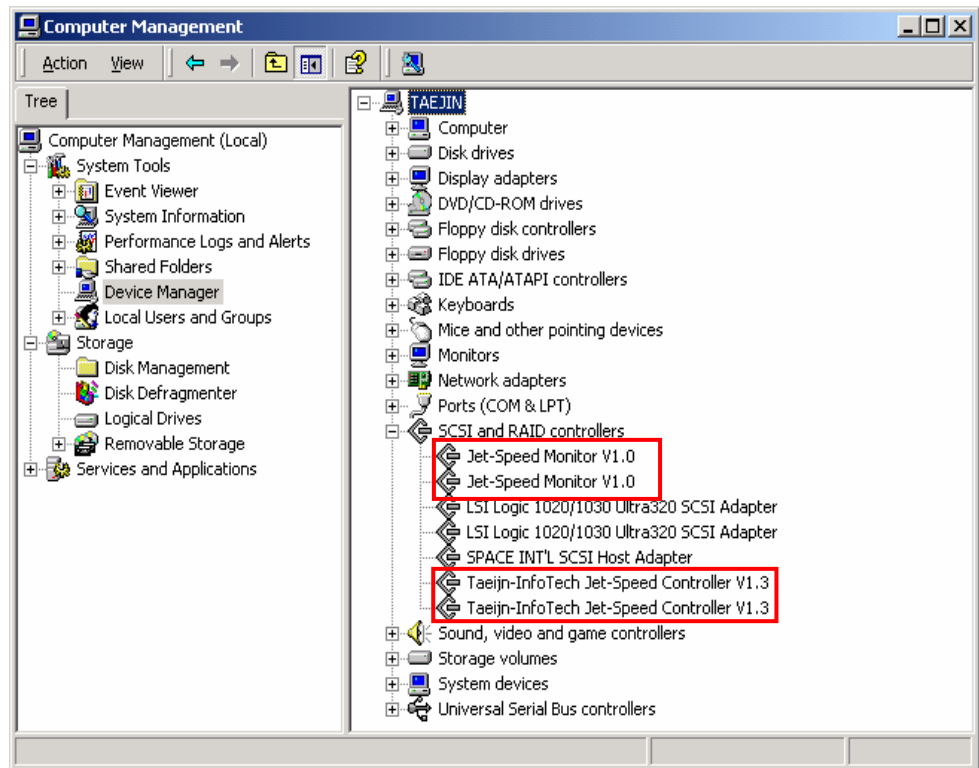
### Step 2. Confirm correctness of installation

- 1 Double click on button from “Start” -> “Control panel” -> “Performance and maintenance” -> “Management tool” -> “Computer management”, or use right mouse button and click on manage from my computer icon. .
- 2 Execute “System tool” -> “Device manager” menu



- 3 Double click on “SCSI and RAID controller” from right hand side of device manager and check whether “Taejin – InfoTech Jet-Speed Controller V1.3” and “Jet-Speed Monitor V1.0” is displayed

Same number of installed Jet-Speed™ entries will be displayed from device category.(Picture shows that 2 drivers have installed )



- 4 If “Taejin-InfoTech Jet-Speed Controller V1.3” or “Jet-Speed Monitor V1.0” is not displayed on the list, it indicates that Jet-Speed™ is not installed correctly. In this case, please check installation step from load “Jet-Speed™ part”. Jet-Speed Lite Driver doesn't contain “Jet-Speed Monitor V1.0”.

## Initialization of Jet-Speed™



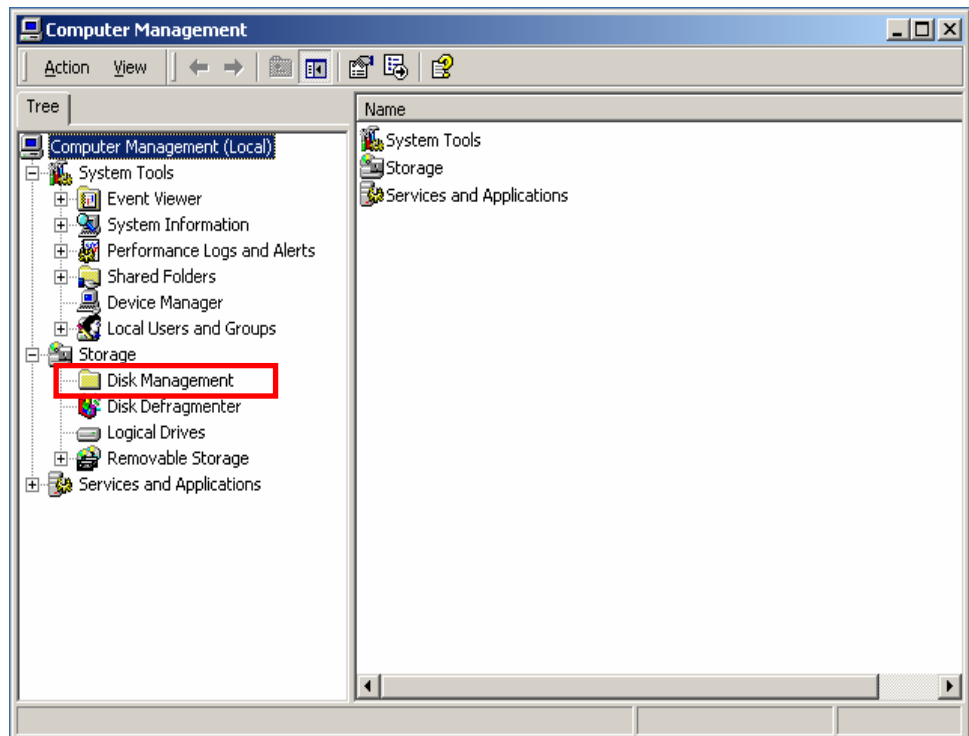
Including HDD driver, all drive should go through initialize, partition and format processes. During these processes, initialization step can be omitted by condition of operating system. .



If you format current using Jet Speed drive, stored data can be deleted. Please make sure that you backup important data prior to format process.

### Step 3 Disk initialization

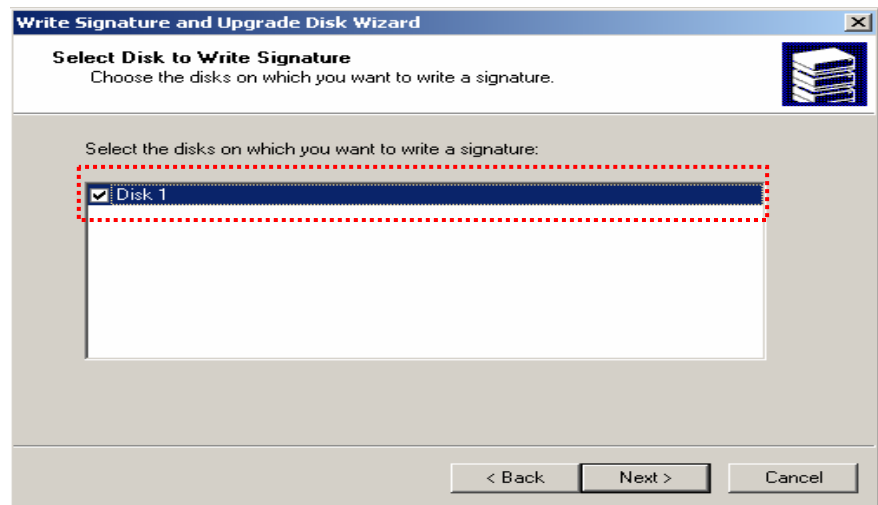
- 1 Click on “Disk Management” from sub menu of “Storage” of computer management(local).



- 2 “Write signature and upgrade disk wizard” window will be displayed. Click “next” button to proceed. (if the is not displayed, click right button of the mouse on the subject disk and choose signature menu)



- 3 When “Write signature and upgrade disk wizard” window is displayed, disk category that has not initialized will be displayed. Select “Disk 1” then click “Next” to proceed. If you installed multiple Jet-Speed™ boards, please select check mark in the option box.

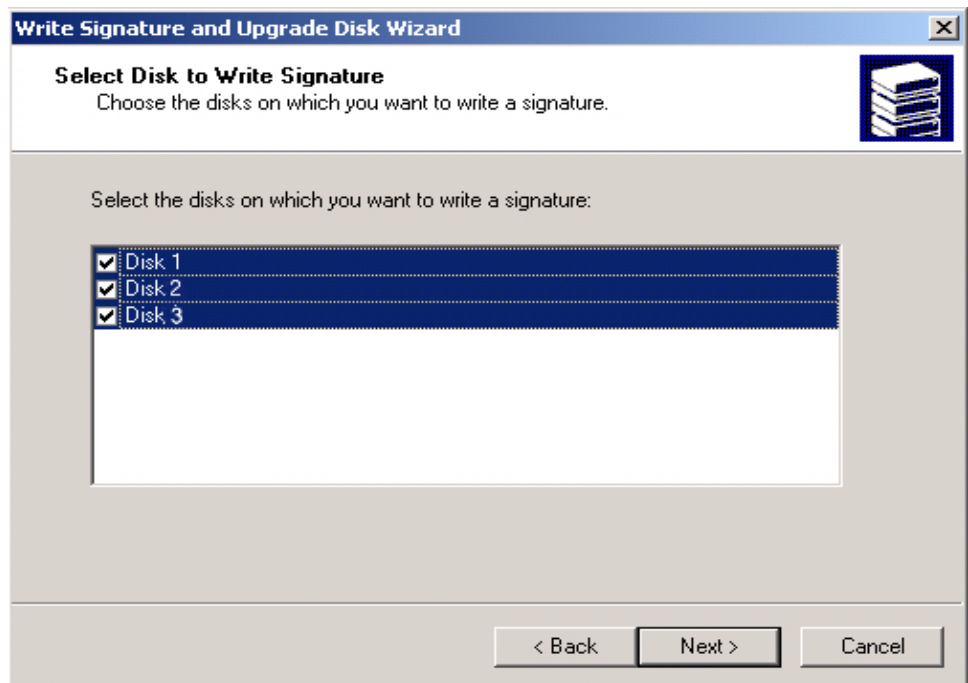


Described “disk 1” in previous paragraph can be different depending on the disk drives that you have on your system. .



If you have installed more than 2 or more Jet-Speed™ boards, number of installed drivers will be displayed from the category.

- 4 When initialization selection completes, “Select disk to write signature” dialog box will be displayed. This selection is required for Jet-Speed™ RAID(Redundant Arrays of inexpensive Disk) configuration. If you installed only one Jet-Speed™, please remove check mark. If you installed multiple Jet-Speed™ boards, please select check mark in the option box.



If you wish to configure RAID with Jet-Speed™ product, please check the page 36 on this manual

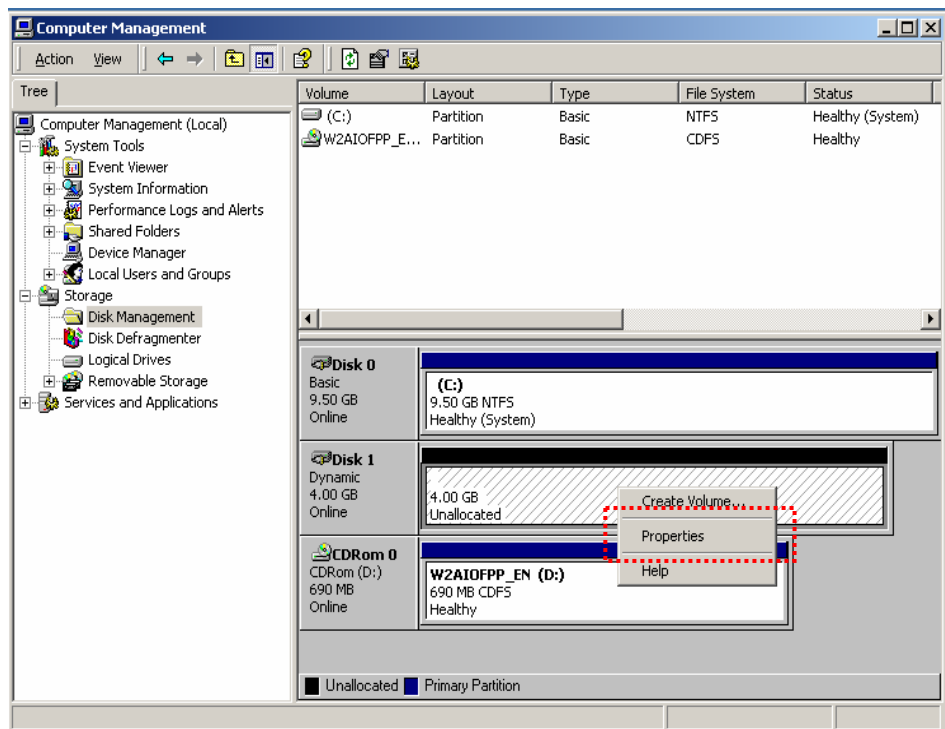
- 5 When initialization task completes, initialization wizard will notify the completion of the task. Click on “Finish” button to end the process.



## Single format configuration of Jet-Speed™

### Step 4 Single configure single partition and format

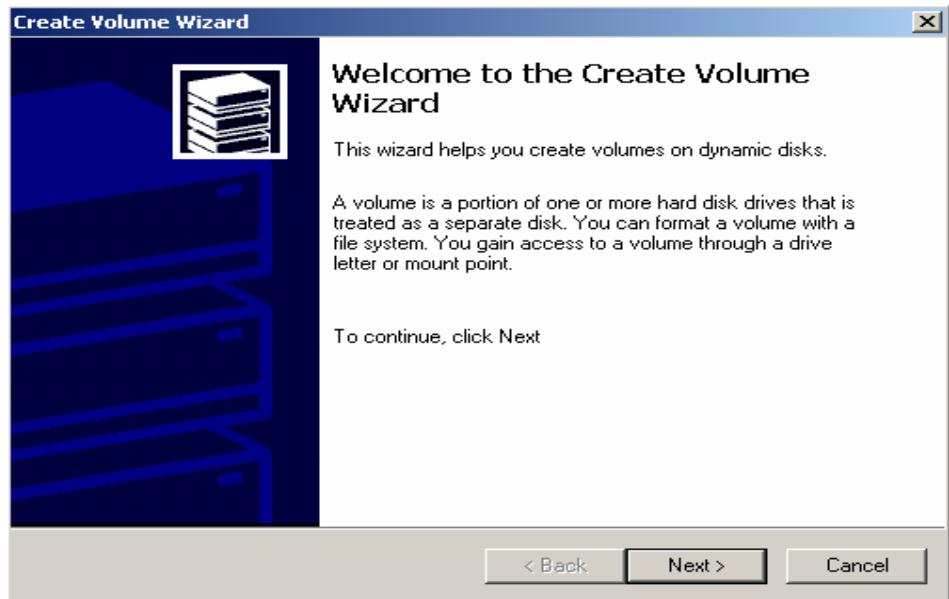
- 1 When disk initialization completes, completed initialization or converted disk will be displayed from right bottom side of computer management menu. If the status of default or dynamic is shown from disk 1, it indicates that the initialization has completed successfully. .
- 2 From “unallocated” menu, use right mouse button to select “Create volume” menu.



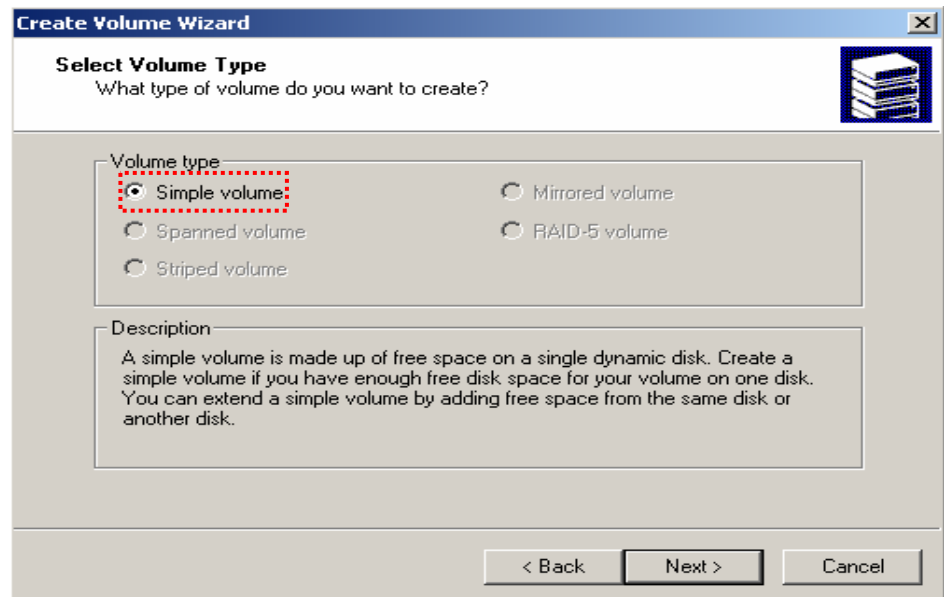
When you change partition, data stored in the disk will be removed. Please make sure that you have selected Jet-Speed™ drive before proceed. If you have not selected “Jet-Speed™”, you will not be able to proceed to next step from popup menu.



- 3 When “Create Volume wizard” window is displayed, click “Next” button to proceed.

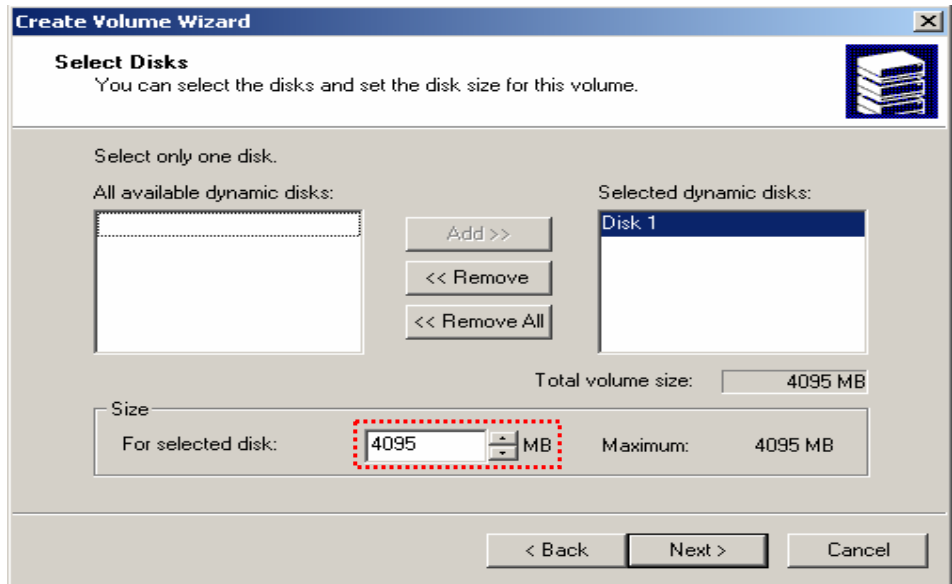


- 4 Select “Simple volume” then click “Next” button.

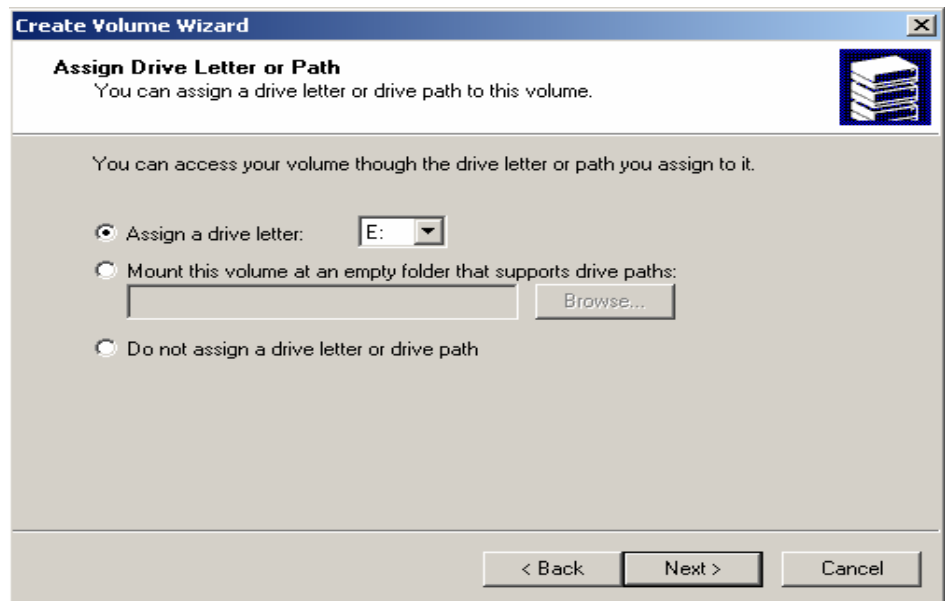


If you wish to select other volume type, please refer to system manual provided with Windows operating system. In this manual, we have selected simple volume configuration..

- 5 Select size of partition then select “Next” button. You may select same size of partition displayed “Maximum” field at the bottom of the window

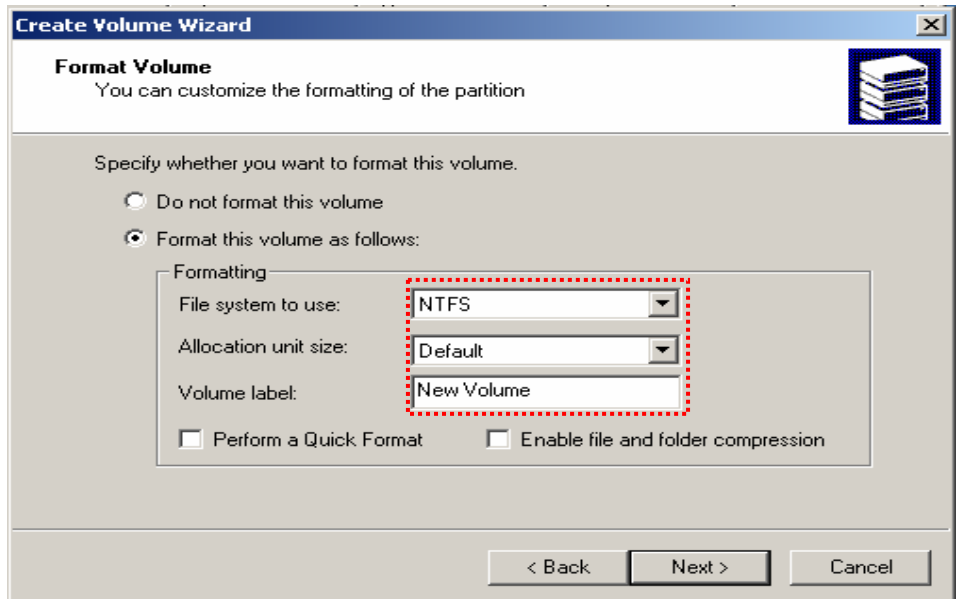


- 6 Select “assign a drive letter” to assign to drive then click “Next” button to proceed .



At this stage, “letter that has not assigned to drive” will be displayed. Letter used for drive can be differed by number of disk on your systems and numbers of partitions.

- 7 Select “Format this volume as follow” then configure “File system to use” and “Volume label” then click “Next” button to proceed.



Windows 2000 and Windows XP support FAT32 and NTFS file systems. “Allocation unit size” will be populated with default size. If you wish to change this value, please refer to your Windows system manual.

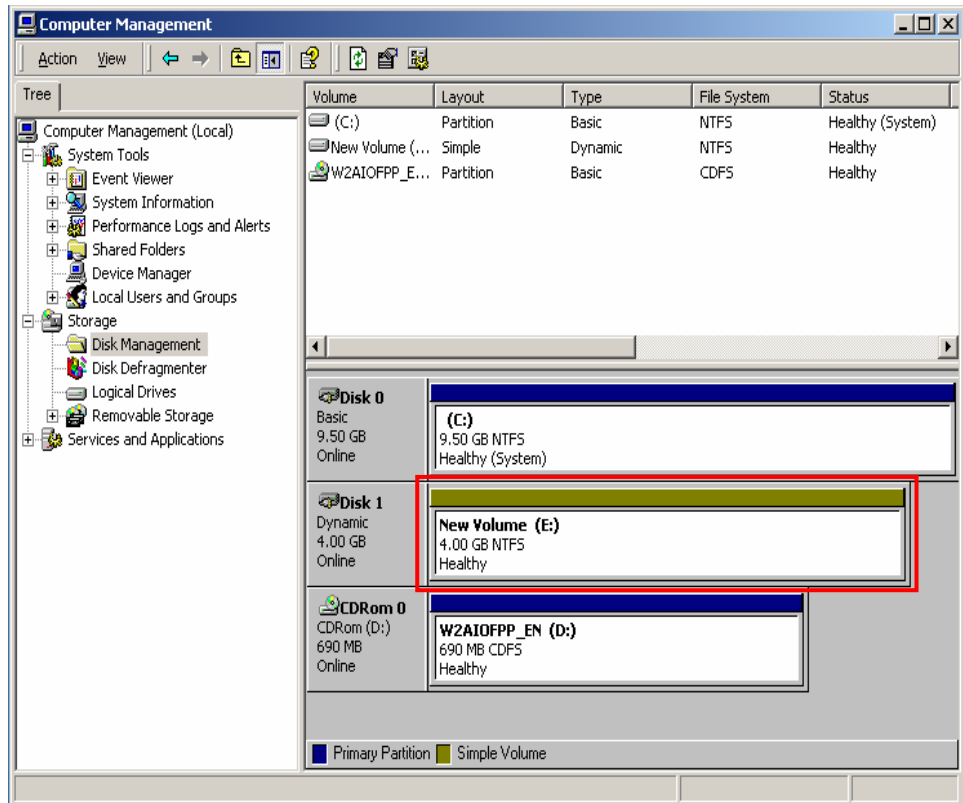


If you don't want to format drive immediately, you may perform format process later on. However, you will not be able to use Jet-Speed™ until you format the drive.



Format process will remove all data from your disk. Therefore, when you want to proceed with format process, please make sure that you have selected Jet-Speed™ drive before you proceed.

- 8 When “Formatting” message is displayed, Jet-Speed™ is currently in the progress of formatting. Time consumed for format process can be varied depending on the system specification.
- 9 When format process completes, volume label and drive character are configured as follow and “healthy” status will be displayed.

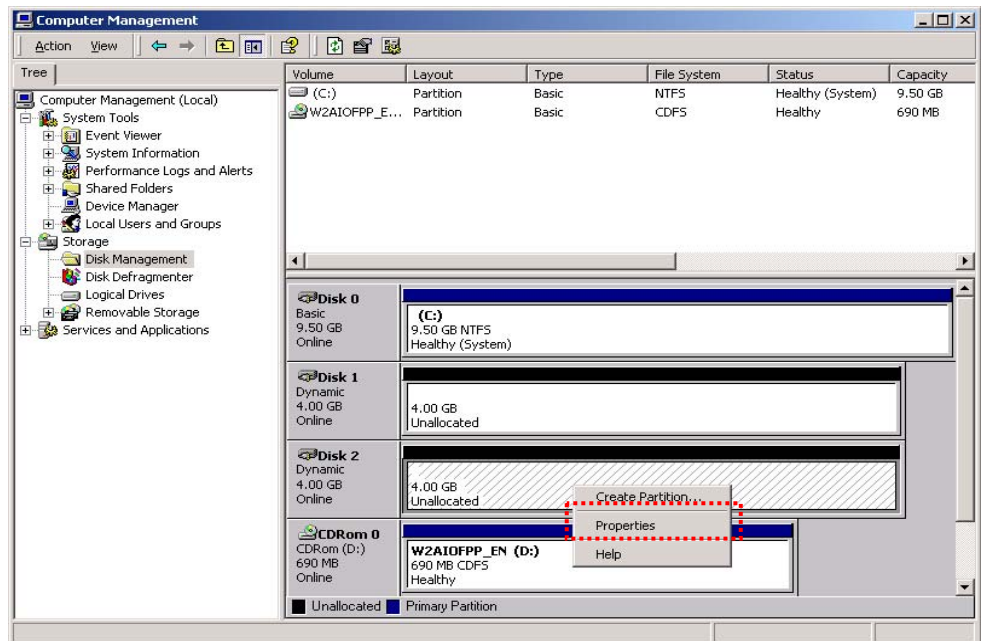


Assigned character for drive and volume label will be applied as configured previously. If time consumed for formatting drive is too long or unable to complete, please check each step from step 3.

## Jet-Speed™ RAID configuration format

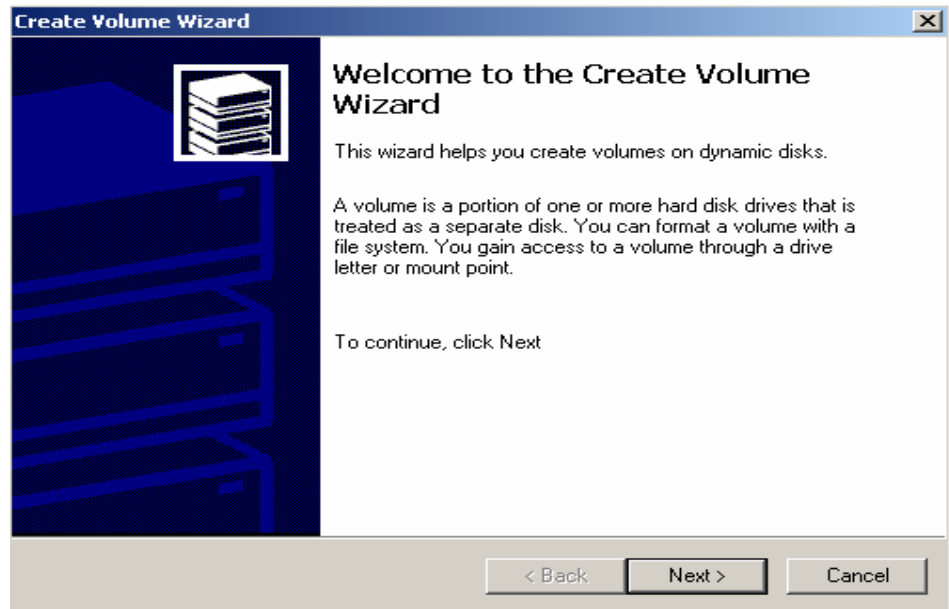
### Step 5 RAID configuration and format

- 1 Change to My computer manage menu to configure RAID disk structure. This process will upgrade Jet-Speed™ disk to dynamic disks.
- 2 Use right mouse button from “unallocated” menu then click on “Create volume” menu

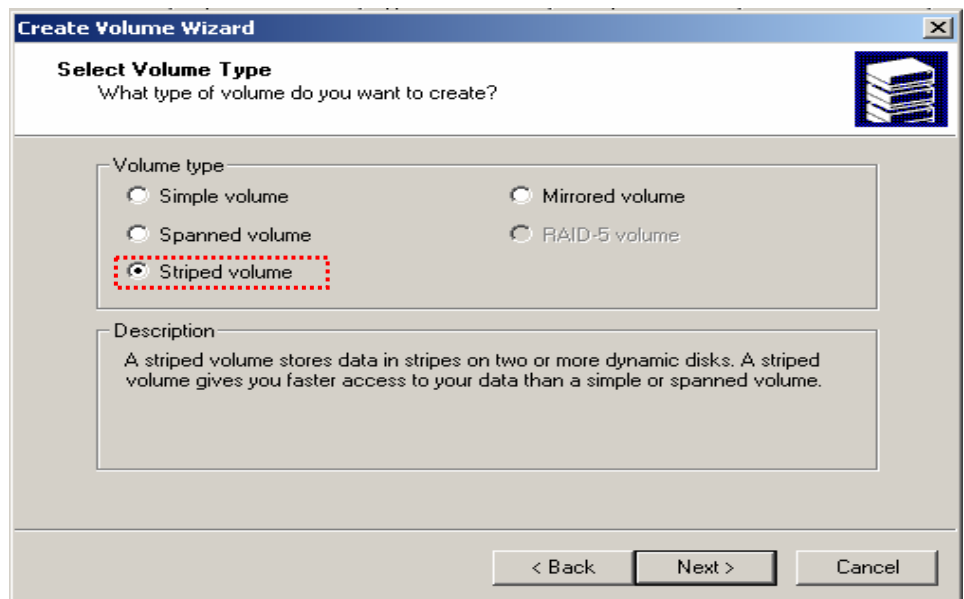


RAID format configuration is only allowed when more 2 Jet-Speed™ are installed. Please check number of installed Jet-Speed™ drives on PC prior to RAID format function. RAID format can be used regardless of Jet-Speed™ types (Lite, Standard or Pro). However, If you setup RAID with Lite, Standard or Pro together, speed of RAID will that of 32bit/33MHz.

- 3 When “Create Volume wizard” is displayed, click “Next” button to proceed.

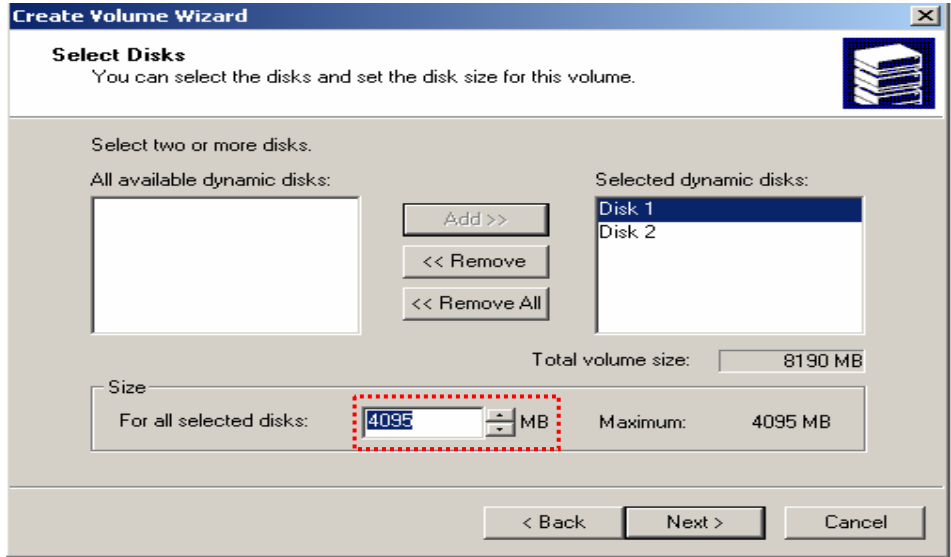


- 4 Select appropriate RAID type for your system. Select “striped volume” type

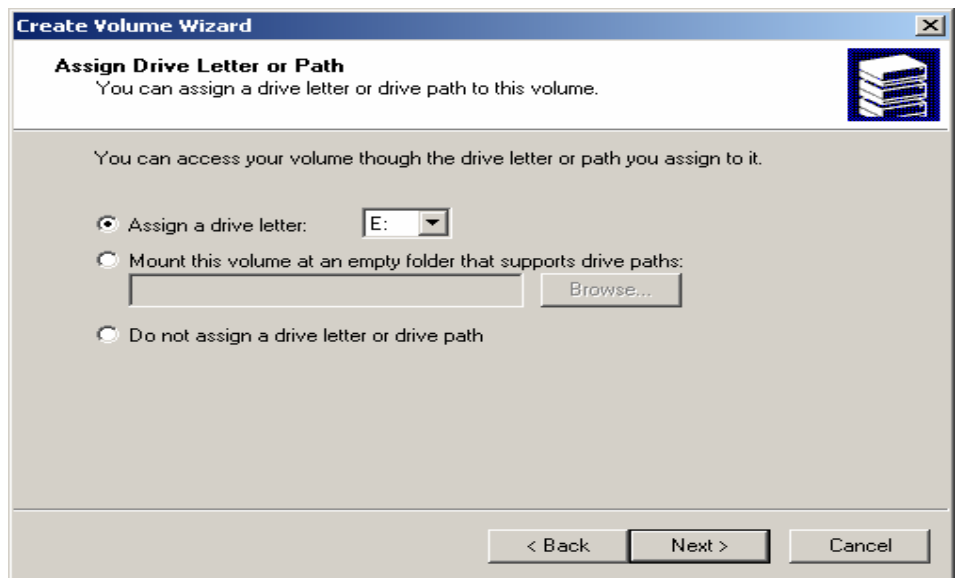


Please refer to home page of Taejin InfoTech for details of RAID type for each system and related documents.

- 5 Select size of partition then select “Next” button. You may select same size of partition displayed “Maximum” field at the bottom of the window.

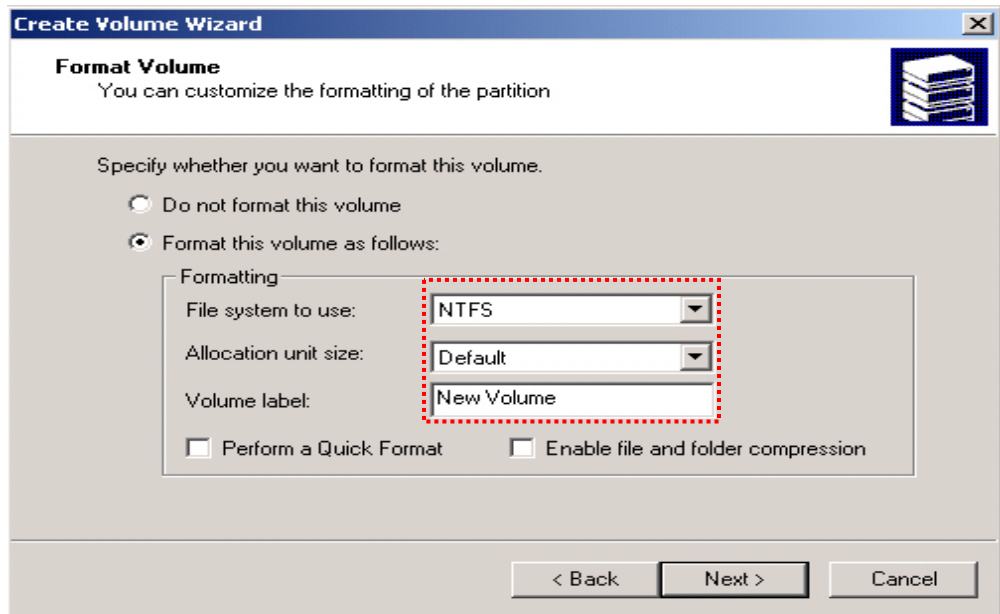


- 6 Select character to assign to drive then click “Next” button to proceed



At this stage, “Letter that has not assigned to drive” will be displayed. Letter used for drive can be differed by number of disk on your systems and numbers of partitions

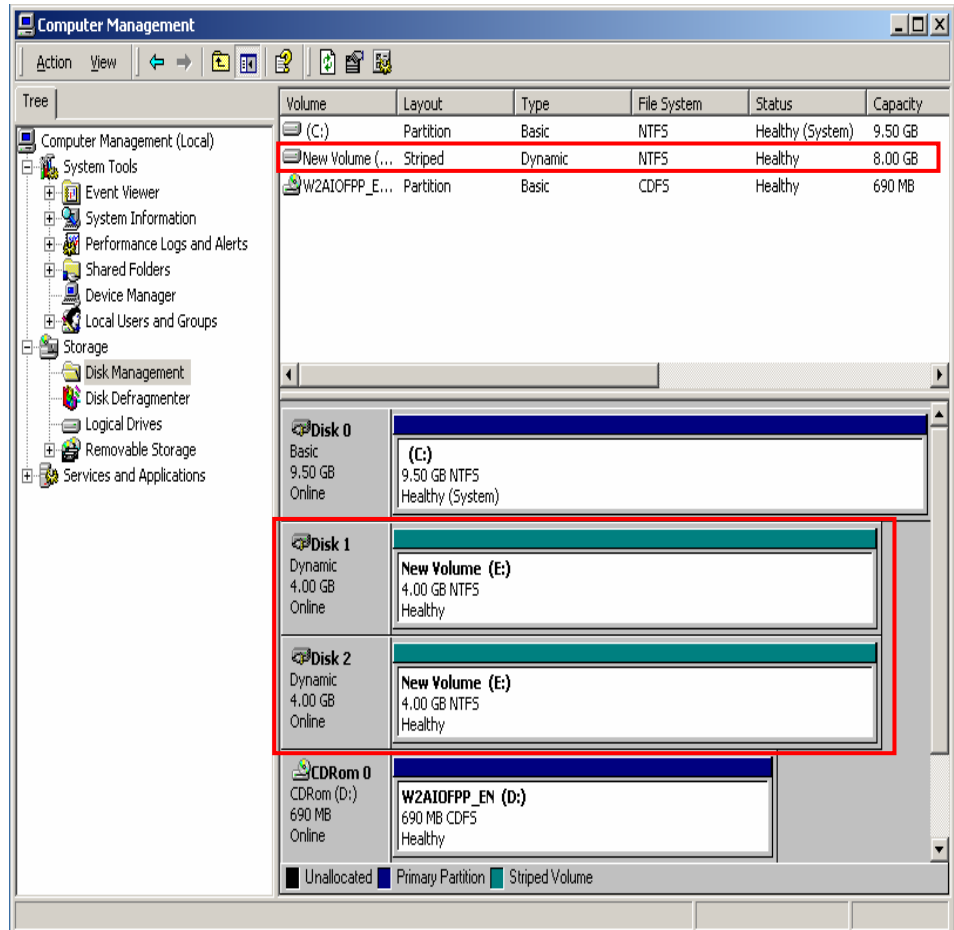
- 7 Select “Format this volume as follow” then configure “File system to use” and “Volume label” then click “Next” button to proceed



Windows 2000 and Windows XP support FAT32 and NTFS file systems. “Allocation unit size” will be populated with default size. If you wish to change this value, please refer to your Windows system manual.



- 8 When “Formatting” is displayed, Jet-Speed™ is currently in the progress of formatting. Time consumed for format process can be varied depending on the system specification.
- 9 When format process completes, volume label and drive character are configured as follow and “Healthy” status will be displayed .



Now, all requirements have completed. Please enjoy new world of Jet-Speed™ and experience the differences.



## Chapter 4 Install Linux driver and environment configuration

### Install Jet-Speed™ driver

#### Linux Kernel 2.4

- 1** This manual assumes that linux-v2.4 kernel is set to /usr/src/linux or /usr/src/linux-2.4 and root access right is permitted. If kernel source is not installed in the system, please install kernel-source-xxx.rpm from the Linux CD.
- 2** Uncompress source codes of device drivers into working directory

```
% tar -xvfz Jet-Speed-v1.0c.tgz
```

```
Jet-Speed-v1.0c/
Jet-Speed-v1.0c/Makefile
Jet-Speed-v1.0c/jetspeed.h
Jet-Speed-v1.0c/jetspeed.c
```

- 3** Boot system with compiled kernel from step 1 and perform following steps for each platform .

(1) For uni-processor platform

```
% make up
```

```
gcc -c -D__KERNEL__ -DMODULE -Wall -Wno-sign-compare -
fno-strict-aliasing -Wstrict-prototypes -O2 -fomit-frame-
pointer -I. -I/usr/src/linux-2.4/drivers/scsi -
I/usr/src/linux-2.4/include -include /usr/src/linux-
2.4/include/linux/modversions.h -o jetspeed.o jetspeed.c
```

(2) For multi-processor platform

**% make smp**

```
gcc -c -D__KERNEL__ -DMODULE -Wall -Wno-sign-compare -
fno-strict-aliasing -Wstrict-prototypes -O2 -fomit-frame-
pointer -DCONFIG_SMP -I. -I/usr/src/linux-
2.4/drivers/scsi -I/usr/src/linux-2.4/include -include
/usr/src/linux-2.4/include/linux/modversions.h -o
jetspeed-smp.o jetspeed.c
```

As results of tasks performed, each module file is created either jetspeed.o or jetspeed-smp.o types.

- 4** Install created driver by performing following command from directory where jetspeed-smp(or jetspeed.o) is located.

**% make install**

- 5** In order to load installed driver, use modprobe command to recognize Jet-Speed™ disk. .

(1) For uni-processor

**% modprobe jetspeed**  
**% modprobe sd\_mod**

(2) For multi-processor

**% modprobe jetspeed-smp**  
**% modprobe sd\_mod**

- 6** When command below is executed, information of Jet-Speed™ recognized by system will be provided .

**% cat /proc/scsi/scsi**

```
scsiAttached devices:
Host: scsi0 Channel: 00 Id: 00 Lun: 00
Vendor: Taejin   Model: Jet-Speed   Rev: 0001
Type:   Direct-Access                ANSI SCSI   revision: 03
```

- 7** When command below is executed, path information of Jet-Speed™ recognized by system will be provided .

```
% dmesg | grep scsi
```

```
scsi0 : Jet-Speed 8192MB
Attached scsi disk sda at scsi0, channel 0, id 0, lun 0
```

- 8** In order to separate partition, execute command below.

```
% fdisk /dev/sdx      ※ x = option (Option can be selected)
```

```
ex) % fdisk /dev/sda
```

- 9** Use below command to execute format process.

```
% mkfs -t ext3 /dev/sdx      ※ x = option
```

```
ex) % mkfs -t ext3 /dev/sda1
```

- 10** Create directory to mount Jet-Speed™ drive. .

```
% mkdir /mnt/jetspeed      Set directory name temporarily
```

```
ex) % mkdir /mnt/jetspeed_pro
    % mkdir /mnt/jetspeed_lite
```

- 11** Create directory to mount by using command below

```
% mount -t ext3 /dev/sdx /dir
```

```
    ※ x = option
```

```
    ※ dir = directory name to configure
```

```
ex) % mount -t ext3 /dev/sda1 /mnt/jetspeed
```

- 12** Add following entry to vi /etc/rc.local and set driver automatically.

**% vi /etc/rc.local**

```
/sbin/modprobe jetspeed-smp(jetspeed)
/sbin/modprobe sd_mod
/sbin/mkfs -t ext3 /dev/sdx ※ x = option
mount -t ext3 /dev/sdx /dir ※ dir = directory name to config
```

```
ex) % vi /etc/rc.local
    /sbin/modprobe jetspeed-smp(jetspeed)
    /sbin/modprobe sd_mod
    /sbin/mkfs -t ext3 /dev/sda
    mount -t ext3 /dev/sda /dir
```

- 13** Perform command below and check status of installation.

**% df -k**

**% df -k**

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/hda3	114239496	7163204	101273216	7%	/
/dev/hda1	101089	9322	86548	10%	/boot
none	127088	0	127088	0%	/dev/shm
/dev/sda1	8256936	32828	7804680	1%	/mnt/jetspeed



## Chapter 4 Install Linux driver and environment configuration

### Install Jet-Speed™ driver

#### Linux Kernel 2.6

- 1** This manual assumes that linux-v2.x kernel is set to /usr/src/linux or /usr/src/linux-2.x and root access right is permitted. If kernel source is not installed in the system, please install kernel-source-xxx.rpm from the Linux CD.
- 2** Uncompress source codes of device drivers into working directory

```
% tar -xvfz Jetspeed_kernel-2.6.x_64_bin.tgz
```

```
Jetspeed-kernel-2.6.x_64_bin/  
Jetspeed-kernel-2.6.x_64_bin /Makefile  
Jetspeed-kernel-2.6.x_64_bin /jetspeed.o  
Jetspeed-kernel-2.6.x_64_bin /jetspeed.ko
```

- 3** Install created driver by performing following command from directory where jetspeed.o(jetspeed.ko) is located.

```
% make install
```

- 4** In order to load installed driver, use modprobe command to recognize Jet-Speed™ disk. .

(1) For uni-processor

```
% modprobe jetspeed
% modprobe sd_mod
```

(2) For multi-processor

```
% modprobe jetspeed
% modprobe sd_mod
```

- 5** When command below is executed, information of Jet-Speed™ which recognized by system will be provided .

```
% cat /proc/scsi/scsi
```

```
scsiAttached devices:
Host: scsi0 Channel: 00 Id: 00 Lun: 00
Vendor: Taejin   Model: Jet-Speed   Rev: 0001
Type:   Direct-Access               ANSI SCSI   revision: 03
```

- 6** When command below is executed, path information of Jet-Speed™ which recognized by system will be provided .

```
% dmesg | grep scsi
```

```
scsi0 : Jet-Speed 8192MB
Attached scsi disk sda at scsi0, channel 0, id 0, lun 0
```

- 7** In order to separate partition, execute command below.

```
% fdisk /dev/sdx      ※ x = option (Option can be selected)
```

```
ex) % fdisk /dev/sda
```

- 8** Use following command to execute format process.

**% mkfs -t ext3 /dev/sdx**                      ※ x = option

ex) % mkfs -t ext3 /dev/sda1

- 9** Create directory to mount Jet-Speed™ drive. .

**% mkdir /mnt/jetspeed**              Set directory name optionally

ex) % mkdir /mnt/jetspeed\_pro  
       % mkdir /mnt/jetspeed\_lite

- 10** Create directory to mount by using command below

**% mount /dev/sdx /dir**

      ※ x = option

      ※ dir = directory name to configure

ex) % mount /dev/sda1 /mnt/jetspeed

- 11** Perform command below and check status of installation.

**% df -k**

% df -k

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/hda3	114239496	7163204	101273216	7%	/
/dev/hda1	101089	9322	86548	10%	/boot
none	127088	0	127088	0%	/dev/shm
/dev/sda1	8256936	32828	7804680	1%	/mnt/jetspeed





## Chapter 5 User manual or Battery Pack

### Components



Figure 1. Cable to connect battery: 1 EA



Figure 2. Adapter: 1 SET



Figure 3. Battery: 1 EA

## Installation

- 1 Connect connecting part of Jet-Speed™ battery and adapter with cable.
- 2 Plug power cable after you connect battery and adapter
- 3 Check LED light lamp of battery. (It will be turned on after few seconds)

## Caution



- 1 If you use battery for first time or battery that has not been used for long time, recharge battery with 12V adapter prior to use
- 2 When recharge process starts, battery display light will be turned on and turned off when recharge process completes
- 3 When battery display light is blinking, it indicates holding status of recharging due to increase of battery temperature. Recharging will be initiated again once temperature decreases.
- 4 Jet-Speed™ is storage using RAM as a storage. It needs electricity to maintain data on Jet-Speed™ Disk. Please make sure not to turn off the battery while power of computer is off.
- 5 Battery is expandable product.  
**Product guarantee period:** 6 month from the date of purchase



## Chapter 6 Q & A

**Q** After first installation, new hardware device searching is not performed correctly

**A** After you install Jet-Speed™ driver, if you have not prompted for detection of new hardware device, it indicates incorrect installation of hardware. Please turn off power immediately and check “Load main part of Jet-Speed™” section.

**Q** I have attached 3 Gigabytes of memory to Jet-Speed™ board, but system recognize as 4 gigabytes .

**A** Please download latest Jet-Speed™ driver and reinstall again. Latest driver will always provided from shopping mall home page.

**Q** I have finished disk initialization process. But, driver is displayed as “Dynamic” instead of “Default” and also it has red X mark on it.

**A** This problem occurs because configuration is set to dynamic instead of default during initialization step. Please restart initialization step and select check mark on “Select disk to initialize” and do not select any option during “Select disk to convert” process .

**Q** Are Windows 98 and Windows ME not supported?

**A** Currently Jet-Speed™ is not supported on Windows 98 and Windows ME operating systems

**Q** What is maximum capacity of Jet-Speed™?

**A** Jet-Speed™ does not have limitation in memory capacity. Currently, lite supports 512MB and 1GB module, Pro and standard support 512MB,1GB,2GB and 4GB module. Jet Speed Lite can be expanded up to 4GB, Pro and Standard can be expanded up to 32GB.

User can increase the capacity through RAID as much as user wants. If user has 5 jet speeds Pro or Standard that have 8 modules of 4GB, and set RAID Configuration it can be expanded up to 160GB. For more detail, please refer the RAID manual.

**Q** What kind of memory is suitable for Jet speed?

**A** Basically Jet-Speed™ is configured to over DDR-SDRAM PC-2700 Under PC2700 is also available however for data reliability, we recommend you to use over PC2700.

Non Buffered/Non ECC DDR-SDRAM PC-2700 memory is configured for Lite and Buffered/ECC DDR-SDRAM PC-2700 is configure for Pro and Standard

**Q** How long does battery power lasts after full electric charge?

**A** To store and maintain data safely, Battery is consists of rechargeable Lithium-polymer battery which used in mobile phone and adapter.

This is for unexpected interruption of electric power.

Battery can last electric power 4 hours for Lite and 6 hours for Pro/Standard without power supply. It can be changed depend on condition of battery/ When you get a notice of interruption of electric power, Please make sure to backup data by using Back up software packed together.

**Q** What kinds of verifications do you have?

**A** Jet-Speed™ passed the test of MIC(Korea), FCC(USA),EC(Europe) and VCCI(Japan)

**Q** What is the difference between software RAMDISK and Jet-Speed?

**A** Usually software RAMDISK uses memory which is equipped on main board of the computer. As more using of the memory on the main board by software, there is more burden to the CPU. Therefore as more process occurs more of CPU operation is required. In this case performance of whole system decreases. Also, when power is shut, RAMDISK can not maintain any data.

However, Jet-Speed removed limitation of current HDD. With PCI bus based interface and designed as DDR SDRAM structure, it shows dramatic performance increase compare to HDD.

Therefore Jet-Speed is used as same as current HDD, and it removes bottle-neck state with its high I/O and increase total system performance dramatically.



## Chapter 7 Technical supports

Please upgrade to latest install driver for better performance from the home page.

Please contact home page or information provided below when you experience any problem or inconvenience

Warranty of product: 1 year from the date of purchase (Battery: 6 month)

Phone number: 82-(2) 851-2662

Fax number: 82-(2) 851-2655

Home page: <http://jet-speed.taejin.co.kr>

---

Note

## U.S. FCC CLASS B NOTICE

**CAUTION :** Do not attempt to modify this product in any way without written authorization from TAEJIN INFOTEK. Unauthorized modification could void the user's authority to operate this product.

**CAUTION :** Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, if it is not installed or used by the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, that could be determined by tuning the equipment on and off, the user is encouraged to try to connect the interference with the following option:

- Re-orient or relocate the reception of antenna.
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected to.
- Consult the dealer or an experienced Radio / Television technician for help.

**NOTE:** The manufacturer is not responsible for any Radio or TV interference caused by unauthorized modifications to equipment. Such modifications could void the user's authority to operate the equipment

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS :

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION

