

User Manual

ST-2221 Series

Model No.:

ST-2221SUSRI (SATA to USB2.0 + SATA)

ST-2221SUSRE (SATA to USB2.0 + SATA)

ST-2221SATA (SATA to SATA)

Note: ST-2221SUSRI is with internal use packaging and
ST-2221SUSRE is with external use packaging)

Description and specs:

The ST-2221SUSR is a complete RAID solution through the use of two 2.5" SATA hard disks mounted on one mini 3.5" form factor drive cage. It is used as a standard 2.5" HDD with mirroring capability(Raid 1). By mirroring technique, ST-2221SUSR maintains data in two disk drives simultaneously and securely. If one drive fails, the ST-2221SUSR automatically switches operations to the functional drive and after changed a new hard drive the data is mirroring back. Data is totally secured by ST-2221SUSR.

Description:

- *Two ways Raid mode for Internal & External purposes. Support Raid modes including JBOD(Single), Big(Span), Fast(Strip), Safe(Mirror), Safe33, Safe50 and GUI only
- * The dimensions match exactly as a standard 3.5" bay
- * Simultaneously support two 2.5" SATA I or II hard drives in a 3.5" form factor(Raid 1)
- * Maximum transfer rate up to 480Mbps for USB2.0 & 3.0Gbps for SATA Interface
- * Complies with SATA-I, SATA-II interface, transfer rate up to 1.5Gbps & 3.0Gbps.
- * Compatible with SiliconImage Sil3132(*Suggest use "base driver" and avoid using "Raid driver") or Sil-3531 PCI-E to SATA Card, Sil-3124 PCI-X to SATA Card or another early SiliconImage SATA interface (But the early products of SiliconImage don't support port multiplier technology, so you can not configure more than 1 volume mode like safe33 or safe50 on this case.)
- * Hardware Raid engine inside. Easy raid configuration without any software (It supports software raid configure for power user). And

support external RAID modes including JBOD(Single), Big(Span), Fast(Strip), Safe(Mirror), Safe33, Safe50 or GUI only.

- * Hardware DIP Switch Raid Setting
- * HDD Auto Eject when you open the cover
- * With hot-plug function, no driver needed
- * Aluminum material, best heat sink.
- * Dimension: 101.7x 25.8 x 146mm
- * Weight: 0.23 kg

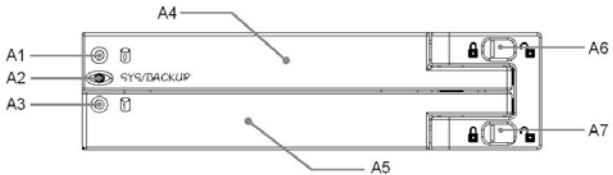
NOTE:

This 2.5" dual HDD Raid box is featuring that it can start & recognize TWO hard disks through USB connection..

[*Very important: When you use it as an external enclosure, we strongly suggest DO NOT USE THE PC CASE FRONT USB PORTS FOR CONNECTION ON THIS DEVICE. Many PC Cases' front USB ports may use weak wiring connection and caused the front USB ports can not support enough power to start the device with hard drives].

Front Panel

Picture A



A1) HDD 0 Access & Failure LED (Green: HDD-0 working. Red: HDD-0 failed)

A2) OTB Switch & System ready/Backup LED

A3) HDD 1 Access & Failure LED (Green: HDD-1 working. Red: HDD-1 failed)

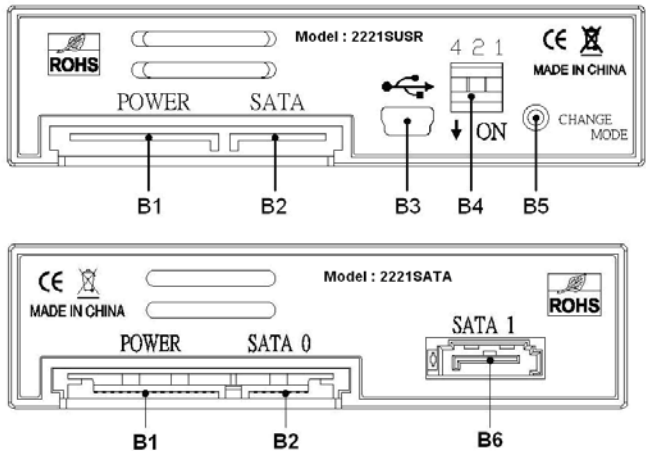
A4) Upper cover & HDD extractor

A5) Lower cover & HDD extractor

A6) Upper HDD Safety Lock (Push right to open & push left to lock)

A7) Lower HDD Safety Lock (Push right to open & push left to lock)

Picture B



B1) SATA 15pin power connector

B2) SATA 7pin data connector

B3) Mini USB Port

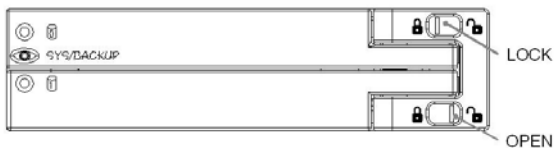
B4) RAID mode configuration DIP switch (see page 9 for details)

B5) Change mode button

B6) SATA 7pin data connector

Safety Lock

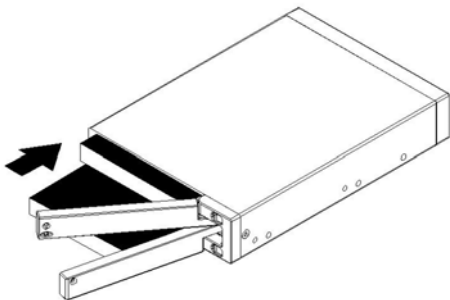
Upper HDD Safety Lock & Lower HDD Safety Lock. (Push right to open & push left to lock). See Picture C.



Picture C

Install HDD:

Open the upper & lower cover and put the HDD inside the cage.



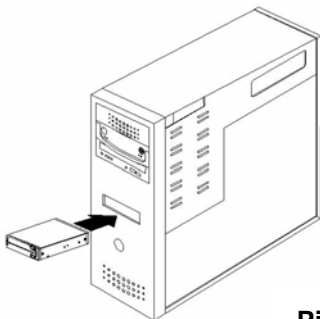
Picture D

Hardware Installation Procedures

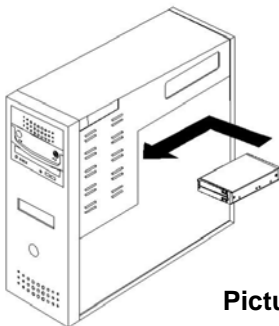
Please follow the following procedures to complete the hardware installation:

- 1) Open the package and take out the product and make sure the product is brand new and all the necessary parts are included. If damage or shortage occurred, please contact your distributor or where you bought.
- 2) Unlock the upper and lower covers (see picture C, push the lock rightward) and open the two covers and then, put the two 2.5"SATA HDD inside the box(See Picture D).
- 3) After both HDD installed, push both covers back like picture C and then, push the lock button leftward to lock both covers to secure the HDD inside properly.
- 4) Then, mount the ST-2221 on the device and use the included screws to mount it on the device and make all the cable connections and it is ready for use.
- 5) There are two ways to mount the ST-2221 on the device (see pictures E-1(on the 3.5" bay & E-2 mounted it inside the case):
-- Picture E-1) Mount ST-2221 on the floppy drive bay

-- Picture E-2) Mount ST-2221 inside the case

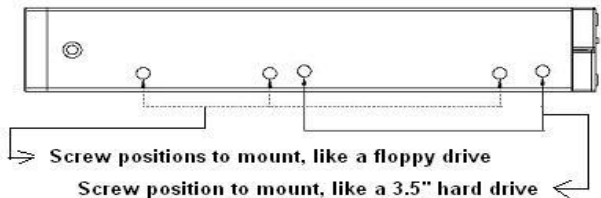


Picture E-1



Picture E-2

6) See the drawing of the two ways to mount ST-2221 on the device
(See Picture F)



Picture F

Set the RAID mode on the DIP SW:

Display	RAID Status	RAID Config		
		4	2	1
0	BIG (span)	OFF	OFF	OFF
1	JBOD (single)	OFF	OFF	ON
2	FAST (strip)	OFF	ON	OFF
3	SAFE (mirror)	OFF	ON	ON
4	SAFE33	ON	OFF	OFF
5	SAFE50	ON	OFF	ON
6	RESERVED	ON	ON	OFF
7	GUI ONLY	ON	ON	ON

DIP Switch Table 1

When you want to set any Raid mode from the table1, follow the following steps:

- 1) Connect USB or SATA data and power cable to your system, then, turn on the power and wait both hard disks are recognized.
- 2) After you set the Raid mode you need, then, press the RAID Change Mode Switch one time (Picture B, B5) to finish the RAID Mode setting.

Note:

- A) When you replaced HDDs, you MUST press the RAID Change Switch button once(See Picture B, B5).
 - B)Or even you use the default mode, .you still HAVE TO press the RAID Change Switch button once(See Picture B, B5).
- (3) After selected Raid is built ready, then, to partition/format the Raid-built HDDs. After HDDs being formatted, they are ready to use.

RAID Mode DIP Switch Setting:

1. BIG(Span) Mode (Set DIP SW-1: OFF, SW-2: OFF, SW-4: OFF)

RAID Mode is BIG (Span), the HDD capacity is HDD1 + HDD2, It has big capacity feature but without safety consideration.

2. JBOD(Single) Mode (Set DIP SW-1: ON, SW-2: OFF, SW-4: OFF)

RAID Mode is JBOD (Single), the system recognizes two separate HDD of their own capacity but without safety consideration.

3. FAST(Strip) Mode (Set DIP SW-1: OFF, SW-2: ON, SW-4: OFF)

RAID Mode is FAST (Strip), the HDD capacity is double from the smaller one, and with faster speed (Ex: HDD-1 : 50Gb, HDD-2: 80G, then, it is 100Gb in this mode).

4. SAFE(Mirror) Mode (Set DIP SW-1: ON, SW-2: ON, SW-4: OFF)

RAID Mode is SAFE(Mirror), the system recognize 1 physical drive only and capacity is with the smaller capacity of the two. But it is with the highest safety. (Ex: HDD-1 : 150Gb, HDD-2: 200G, then, it is 150Gb in this mode).

5. SAFE33 Mode (Set DIP SW-1: OFF, SW-2: OFF, SW-4: ON)

The RAID Mode is SAFE33. It will have 30% of each HDD to build a SAFE(mirror) Raid and also use the rest of the capacity to build a

second BIG(Span) HDD. In this mode, System will recognize two physical drives, one is SAFE(mirror) and the other is BIG(Span).

6. SAFE50 Mode (Set DIP SW-1: ON, SW-2: OFF, SW-4: ON)

The RAID Mode is SAFE50. It will take 50% of both HDD to build a SAFE(mirror) Raid and the rest of the HDD capacity to build a BIG(span) Raid. The system recognizes two physical drives, one is SAFE(mirror) and the other, BIG(span). This Raid mode is featuring with bigger SAFE(mirror) HDD capacity.

7. Reserved Mode (Set DIP SW-1: OFF, SW-2: ON, SW-4: ON)

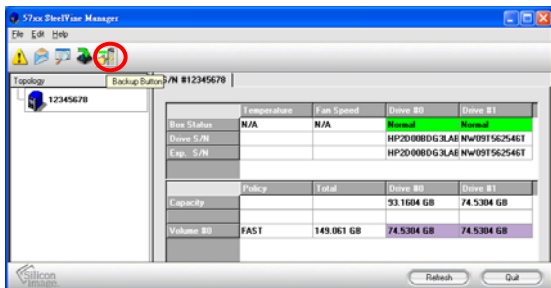
There is no Raid function of this setting. It is reserved.

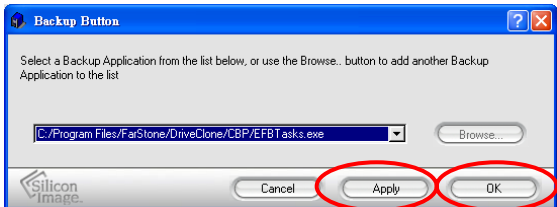
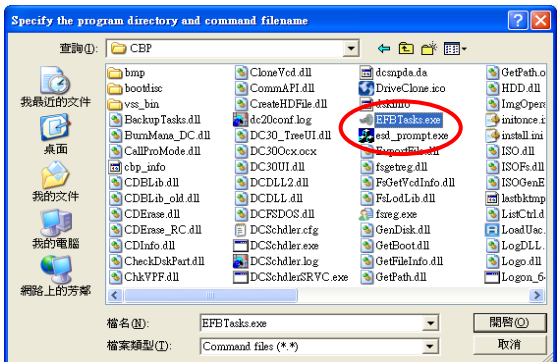
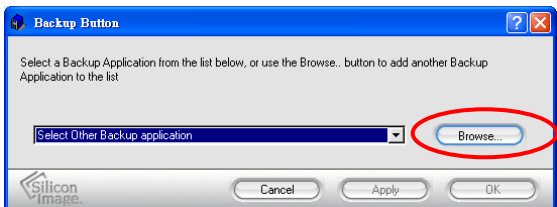
8. GUI ONLY Mode (Set DIP SW-1: ON, SW-2: ON, SW-4: ON)

The RAID Mode is GUI ONLY Mode. In this Raid mode, it can configure the Raid mode through the GUI(Graphical Utility Interface). Using this mode, you can configure different combination settings. It is suggested for professional & advanced users.

How to use the OTB(One button backup)

There is an OTB software together with this product. The following pictures are the samples of the procedure reference. Please refer to the enclosing software for all the installation details.





Press “Apply” first, then ‘OK”

Appendix A

File System Expansion for Windows

Overview

This appendix describes the procedures needed with Microsoft Windows for expanding file systems that have been created on volumes that have increased in size, while preserving all of your existing data. After you have added more hard disk drives to increase the storage capacity of a BIG volume, you must use the supplemental procedure described below to allow the expanded capacity to be recognized by the Windows file system.

A command-line utility named "Diskpart.exe" ("Disk Partition") enables you to manage hard disk partitions and volumes. This utility is included as part of Windows XP Professional Edition, Windows 2003 Server and Windows Vista. For Windows 2000 or Windows XP Home Edition, you must download the "diskpart" utility from Microsoft's website.

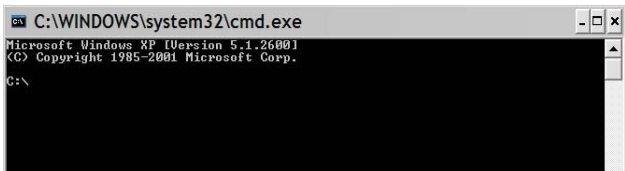
Additional third-party products (such as Acronis Disk Director Suite 10.0) are available to perform similar volume management activities,

but those products are very sophisticated and are not included in this manual.

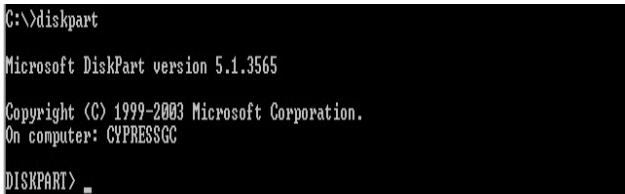
Procedure

Before you can use DiskPart.exe commands on a hard drive disk partition/volume, you must first list and then select the partition/volume to extend their capacity to match the virtual hard drives created in the DIP SW.

1. Open a command prompt window by clicking Start Run, then entering "cmd"



2. At a command prompt, type diskpart



- Type `list volume` to display the existing volumes on the computer.

```
DISKPART> list volume
```

Volume ###	Ltr	Label	Fs	Type	Size	Status	Info
Volume 0	D			DVD-ROM	0 B		
Volume 1	C		NTFS	Partition	37 GB	Healthy	System
Volume 2	E	My BIG Disk	NTFS	Partition	153 GB	Healthy	

- Select volume `<volume_number>` where “`<volume_number>`” is the number of the volume that you want to extend. In this case that will be “2”.

```
DISKPART> select volume 2
```

```
Volume 2 is the selected volume.
```

- Type `extend`

```
DISKPART> extend
```

```
DiskPart successfully extended the volume.
```

- Type `exit` to quit Diskpart.exe

```
DISKPART> exit
```

```
Leaving DiskPart...
```

The volume size will be updated to reflect the expanded physical storage capacity while maintaining all of the existing data that is stored on the volume.

The result of extending the hard disk partition/volume is illustrated below.

Before extend:

Disk 1 Basic 305.34 GB Online	My BIG Disk (E:)	
	152.66 GB NTFS Healthy	152.67 GB Unallocated

After extend:

Disk 1 Basic 305.33 GB Online	My BIG Disk (E:)	
	305.33 GB NTFS Healthy	

Note: Before the hard drive partition/volume has been extended the “152.67GB Unallocated” was not accessible for data usage. After using the diskpart utility to extend the hard drive partition/volume capacity, the Windows host side matches the virtual hard drive partition/volume created in the DIP SW.

For more information about the diskpart utility, please see the documentation on Microsoft's

website at:

<http://www.microsoft.com/resources/documentation/windows/xp/all/priddocs/en-us/diskpart.mspx?mfr=true>

Appendix B

File System Expansion for Macintosh

Overview

This appendix describes the procedures needed with Apple Mac OS X for expanding file systems that have been created on volumes that have increased in size, while preserving all of your existing data.

After you have added more hard disk drives to increase the storage capacity of a BIG volume, you must use the supplemental procedure described below to allow the expanded capacity to be recognized by Mac OS X.

The following example illustrates a hard disk growing from a JBOD to a BIG Storage Policy.

A software tool named VolumeWorks from SubrosaSoft (available from http://www.subrosasoft.com/OSXSoftware/index.php?main_page=product_info&products_id=6) can be used to grow the partition that was created in JBOD Storage Policy to a BIG Storage Policy disk.

SubrosaSoft VolumeWorks easily organizes your hard drive by creating, resizing, copying your partitions on a Mac OS X (10.3 or higher) system.

There are other third-party products available to perform similar volume management activities, but those products are very sophisticated and are not described in this manual.

Procedure

Growing partition/volume with VolumeWorks:

Limitations of Resize/Move

VolumeWorks can only resize HFS+ partitions

The second drive when growing from JBOD to BIG must not have any partition information on it. It must be a raw disk with no data of any kind.

To extend a volume, follow these steps:

1. Start Volume Works



2. Click on the volume that you want to extend, then click on Repartition button on the bottom.



3. Now click on the Resize button on the bottom



4. Now move the slider all the way to the right within the Resize dialog box. (Maximum resize)



Once you click on Start, it will execute the volume resize request.

The new storage capacity will be added to the existing drive while maintaining the data on the volume.

Appendix C

File System Expansion for Linux

Overview

This appendix describes the procedures needed with Linux for expanding file systems that have been created on volumes that have increased in size, while preserving all of your existing data. After you have added more hard disk drives to increase the storage capacity of a BIG volume, you must use the supplemental procedure described below to allow the expanded capacity to be recognized by Linux.

The following example illustrates a hard disk growing from a JBOD to a BIG Storage Policy.

A software tool named GNU Parted (available from <http://www.gnu.org/software/parted/parted.html>) can be used to grow the partition that was created in JBOD Storage Policy to a BIG Storage Policy disk.

GNU Parted easily organizes your hard drive by creating, resizing,

copying your partitions on a Linux system.

There are other third-party products available to perform similar volume management activities, but those products are very sophisticated and are not included in this manual.

Procedure

Growing partition/volume with GNU Parted:

To extend a volume, follow these steps:

1. Start parted by typing **parted /dev/hdc**. (where **/dev/hdc** is the device path of the hard disk for the system) This will bring up the parted console indicated by the partedprompt.

```
# parted / dev / hdc
```

```
(parted)
```

2. Type **print** with in the parted console to bring up the volume and disk information.

```
(parted) print
```

```
Disk geometry for /dev/hdc: 0.000-800000.000 megabytes
```

```
Disk label type: msdos
```

```
Minor
```

```
Start
```


End

Type

Filesystem

Flags

1

0.063

400000.000

primary

ext2

3. Use the **resize** command extend the size of volume 1 listed above.

(parted) resize 1 0.063 400000

4. Type print to verify the resize of volume 1.

(parted) print

Disk geometry for /dev/hdc: 0.000-800000.000 megabytes

Disk label type: msdos

Minor

Start

End

Type

Filesystem

Flags

1

0.063

800000.000

primary

ext2

The new space should be added to the existing drive while

maintaining the data on the volume. Before **resize**:

(parted) print

Disk geometry for /dev/hdc: 0.000-800000.000 megabytes

Disk label type: msdos

Minor

Start

End

Type

Filesystem

Flags

1

0.063

400000.000

primary

ext2

After **resize**:

(parted) print

Disk geometry for /dev/hdc: 0.000-800000.000 megabytes

Disk label type: msdos

Minor

Start

End

Type

Filesystem

Flags

1

0.063

800000.000

primary

ext2

DriveClone™ 3 Personal

OTB

User's Guide

for Windows[®] 2000, XP & Vista

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Chapter 1: Product Overview

DriveClone creates a complete disk image of a hard drive or a single hard drive partition. The image can be used for backup and recovery, to quickly transfer all information from a computer's hard drive to a new hard drive. The image file can also be distributed across multiple hard drives or partitions

DriveClone's compressible image file contains all of the hard drive data files, partition information and security settings, by copying only the used data sectors to keep the size of the image to a minimum. The complete disk image can now be updated quickly with incremental backups; the incremental backup contains only the hard drive changes that have occurred since the complete backup was created, or since the last incremental backup. This offers the user an easy and reliable way to keep system backup data current, by storing the images on an external USB hard drive, CD or DVD set, or on a network share. The user would then be able to quickly recover from any type of data disaster, including data corruption or hard drive failure. System administrators will appreciate DriveClone's ability to dramatically reduce the time they spend configuring multiple systems, installing

software, or restoring multiple systems to an original image.

1.1 Features and Benefits

Hard Drive Imaging: Quickly back up or restore a system, or transfer a system image to a new hard drive.

Complete External Backup: Store a complete system image on a USB hard drive, network share, or use the built-in CD/DVD burner to create an exact copy of your hard drive on disc

Easy Disk Image Updates: Incremental Backup lets you quickly update your saved disk image without ever leaving Windows.

Flexible Backup: Back up your hard drive to a protected local partition, a network drive, a USB device, or to CD or DVD. Clone hard drives that are different in size, format, or brand.

Ease of Use: One-click recovery restores your system in seconds

Rapid, Controlled Recovery: Support UDMA1-5 and can restore data in sectors.

Partition Support: Support FAT32, NTFS, Linux EXT2/3 and other unknown partitions.

Hardware Support: Support IDE, EIDE, SATA, and SCSI hard drives and hardware RAID 0/1 .

100% protection: Restore an operating system damaged by corrupt software, human error, a virus attack, or a software bug.

Password Protection: Restrict user access to DriveClone; lock your computer at the DOS level

Chapter 2: Installing and Uninstalling DriveClone

2.1 System Requirements

Windows 2000/XP/Vista

Intel 486 (or compatible) processor or higher

VBE2.0 Display Card or higher

512 MB of RAM

130 MB free hard drive space for installing DriveClone

IE6.0 or higher

2.2 Installing DriveClone

Step 1 Insert the DriveClone setup CD into your CD drive. The Setup program should start automatically. If it does not, run the file called Setup.EXE directly from the CD. And user can also download the program to set up.

Step 2 Select your language preference, and when the installation screen appears, click **Next**.

Step 3 Carefully read the software license agreement. If you accept the terms of the software license agreement, select **I accept** to continue.

Step 4 Enter your personal information and serial number. If you have not purchased a serial number, click **Continue** will install a time-limited evaluation of DriveClone.

Step 5 DriveClone will be installed in the path displayed. You will have the option to select another location to install DriveClone.

Step 6 Click **Continue** and DriveClone will be installed to the destination folder.

Step 7 Select **Restart** to complete the installation. DriveClone will

restart the computer.

Note

You cannot launch DriveClone until your computer has restarted

2.3 Uninstalling DriveClone

Step 1 From the Windows[®] taskbar, select **Programs** → **DriveClone** → **Uninstall DriveClone**.

Step 2 Click **OK** to begin uninstalling DriveClone.

Note

All of the backup files you created will not be deleted after you uninstall DriveClone. You can still use those backup files to restore your system

if you installed DriveClone again.

Chapter 3: Getting Started in DriveClone

To launch DriveClone, double click the DriveClone icon on your desktop, or select **Start** → **All Programs** → **DriveClone** → **DriveClone**.



3.1 DriveClone Main Console

3.1.1 Quick Start

Files Backup - Start automatically or manually save copies of select files or folders on your hard drive.

Back Up My Computer - Back up your entire system.

Clone Drive - Create a 1:1 copy of your hard drive. More than one hard drive will need to exist in the system for this functionality to work.

View File Versions - View the file versions you have created and select a backup file to restore from.

Update My Disk Image - Modify the pre-set backup schedule setting.

Close Preview Drives – Close all the previewed drives with Complete Backup image.

3.1.2 Schedule

Schedule of Back Up My Computer - You must first create a complete backup of your system prior to see the following functionalities.

Detail - View detailed information about the backup jobs you have created, including its description, source, destination and schedule setting.

Edit Schedule - Specify the frequency to back up additional changes since the last back up. You can choose to run the backup every $n(1-7)$ day(s). If you wish to automatically run the scheduled backup job when the system starts up after you miss the scheduled time of backup, check the **Execute Schedule Job while starting system after miss schedule** box.

Back Up Now - Start to back up the incremental changes immediately.

Delete - Delete the selected jobs.

Schedule Definition of Back Up My Computer

1 Back up files will be created according to the pre-set backup

schedule.

2 If the system is busy, DriveClone will not be able to run the scheduled backup job. DriveClone will try it again automatically.

3 If you turn off your computer before reaching the scheduled backup time and you have selected **Execute Schedule Job while starting system after miss schedule**, DriveClone will start the backup process as soon as you turn on your computer. If you have not selected **Execute Schedule Job while starting system after miss schedule**, DriveClone will start the backup process at the next scheduled backup time.

4 If you changed the time of your operating system and the time you changed is later than the scheduled backup time, DriveClone will start the backup process. If the time you changed is earlier than the scheduled backup time, DriveClone will start the backup process according to the pre-set schedule.

Schedule of File Backup

Detail - View the detailed information about the backup jobs you have created, including its description, source, destination and schedule setting.

Edit Schedule - Specify your preferred **Schedule Settings** of the backup job you have created.

Add Files - Add files, folders or file types to your file backup list. Refer to [File Backup](#) for more details.

Back Up Now - Backup the selected job immediately

Delete - Delete the selected job.

Schedule Definition of Back Up Files

1 If you changed the time of your operating system and the time you changed is later than the scheduled backup time, DriveClone will start the backup process 10 minutes from the current time. If the time you changed is earlier than the scheduled backup time, DriveClone will start the backup process according to the pre-set schedule set.

2 If your system is turned off during your scheduled backup time, DriveClone will start the backup process immediately after you start the system.

3 If your system is busy, DriveClone will not able to start the backup process. DriveClone will start the backup process again automatically 5 minutes later.

4 Following files will not be backed up.

- a. Files in Recycle Bin
- b. Files in System Volume Information directory, pagefile.sys and files in _\$temp directory
- c. Hiberfil.sys
- d. Files with the extension named with **rit** and **tmp**
- e. Temporary files of Word
- f. Files in DriveClone 3 Pro's Setup folder
- g. Files in Backup Destination directory of the current running backup job
- h. Files in the Temp directory

3.1.3 View Logs

This feature records all events of DriveClone, including warnings, errors and operations.

Delete - Delete the selected events.

Delete All - Delete all the saved events.

Save - Save the event record.

3.2 Backup Console

3.2.1 File Backup

Step 1 Start the DriveClone Program. Select **Back Up** and then click

Files Backup.

Step 2 You can create a new full file backup and you can also select **Incremental File Backup** box to select a former job and create incremental file backup.

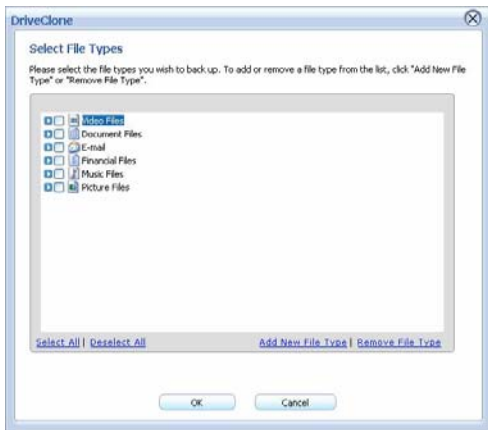
If you have selected **Incremental File Backup**, you can choose to examine the detail information of all created backup jobs, modify the time and date to run scheduled Incremental File Backup, click **Back Up Now** to run Incremental File Backup immediately, or delete the job that is no longer required (Refer to [Schedule of File Backup](#) for details).

Step 3 Enter a name for your new job.

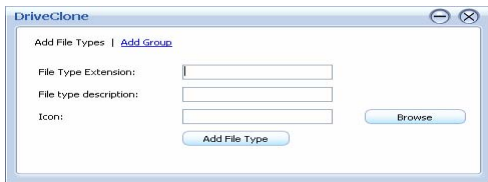
Step 4 Select the file(s) you want to back up. You can also click **Add Files/Folders** or **Add File Types** to add file type, folder or individual file to back up according to your needs. Click **Next** to continue. You can set the maximum number of backup versions you want to back up in this step. DriveClone will always store a fixed number of the most recent backup versions you set.

Add Files/Folders: Click this to select the files or folders you want to add from Windows[®] Explorer.

Add File Types: Click this to enter Select File Types interface, shown as below.



a. **Add New File Type:** Click this to add new file type(s) into the file type group you select. You will also need to enter the **File Type Extension** and **File type description**. Click **Browse** to add file type icon. Click **Add Group** to create a new file type group.



b. **Remove File Type:** Click this to delete the file type you don't want to back up.

Step 5 Select a location on a hard drive, USB storage medium, or a network location to store the backup file. Click **Next** to continue.

Calculate Space: Click **Calculate Space** to calculate the space required to store the backup file in the destination location.

Step 6 You can now review the information and settings that have been specified. After reviewing your selections, click **Start Backup** to start backing up the file(s). You can also click **Previous** to modify your selections.

Some files may not be able to be copied because they are in use by other applications. It is recommended that you close all applications and files you want to back up prior to start the backup job.

Step 7 File backup: You can use this OTB (One button backup) function but it is necessary to install GUI (SteelVine Manager). After installed, then 'double click' the icon (Pic-1), and Pic.2 will show up. Follow the Pic-2 to Pic-6 to set the OTB route & job. After these procedures are done, the file backup setting is finished. After this setting, each time you click the OTB icon, the default OTB schedule

backup process is in operation(*see Pic-7) as you have set.



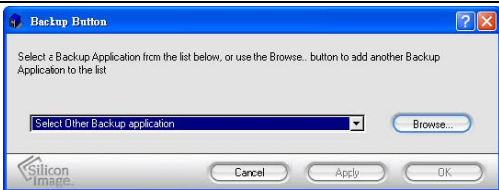
1



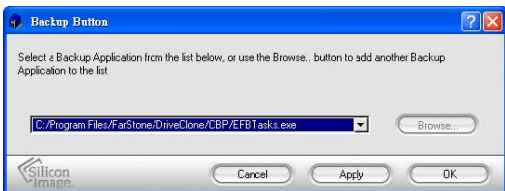
2



3



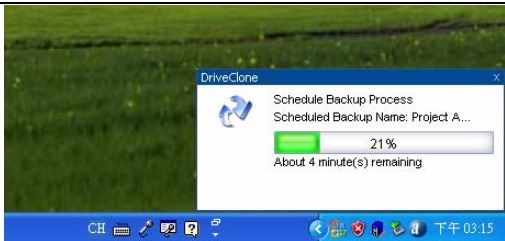
4



5



6



7

Step 8 Click **Schedule Incremental Backup** to specify your preferred **Schedule Settings**. By doing so, you can choose to repeat the backup operation at a certain time of the day. The shortest time interval is 1 day. The longest time interval is 7 days. You can also view details of your backup, run System Snapshot, or delete a backup (Refer to **Schedule of File Backup** for details).

3.2.2 Back Up My Computer

Step 1 Start the DriveClone Program. Select **Back Up** and then click **Back Up My Computer**.

Step 2 You can create a new complete backup or update the existing backup by selecting **Incremental Backup**. If you selected **Incremental Backup**, you can choose to view the detail of the backup file, modify the schedule to create an Incremental Backup, start the

incremental back up immediately, or delete the selected job. (Refer to **Schedule of Back Up My Computer** for details).

Step 3 Enter a name (1-50 characters) for your new Complete backup file. Click **Get Started>** to continue.

Step 4 Select the hard drive and partition(s) you want to

Note

If there is only one hard drive installed in a computer, you can skip selecting the partition(s) you would like to protect.

If there is more than one hard drive, you can choose to back up any partition(s) of any hard drive(s).

You can select to image one or more partitions from a hard drive simultaneously. If you prefer to back up the entire hard drive, select a source hard drive instead of partitions.

Step 5 Select a destination location on a hard drive, USB storage medium, or a network location to store the image file.

Note

If you want to store the image on a network location, you can select the location through Windows® and My Network Places directly.

If you have a CD/DVD writer (USB recorders are supported), you can

burn the image onto a blank CD/DVD. The CD/DVD burned by DriveClone can be used as a Recovery CD/DVD.

If you select a location on the network, you may be prompted to provide a username and password. If your system does not respond when you try to save disk image to a network location, please contact your network administrator to check your connection status or access privileges.

If you choose to store the Complete backup on a location of the hard drive where the operating system is installed, System Snapshot will be disabled. You can enable System Snapshot after you finish Complete backup.

Step 6 Click **Next** to select a compression method between None, Medium and High. Compressed images will save disk space, however will take more time during image creation and data recovery.

(Optional) You can select **Enable password protection** to password protect your image files. Once a password is set, it will be required when you attempt to use the image file.

In the Image Splitting option, select a file size for a single volume of the split image. If you select automatic, DriveClone will automatically split

the image according to the file system type of the destination partition.

(Optional) If you want to verify whether the backup file is usable, you can select the box “Check the data integrity of the image file when backup is complete”.

Step 7 You can add description of the backup file in the Image File Description box.

Step 8 You can now review the information and settings that have been specified. After reviewing your selections, click **Start Backup** to begin copying data into an image. You can also click **Previous** to modify your selections. Click **Start Backup** to start the backup process. If the system is busy, and DriveClone can not start the backup process successfully, DriveClone will try to back up again automatically.

Step 9 Click **Schedule Incremental Backup** to specify **Schedule Settings**. By doing so, you can choose to repeat the update the image at a certain time of the day based on pre-set time interval. The shortest time interval is 1 day. The longest time interval is 7 days. You can also view detail of your backup, run Incremental Backup or delete the backup. (Refer to **Schedule of Back Up My Computer** for details)

3.2.3 Create Start-up Disc

Step 1 Click **Start-up Disc** to start creating the start-up disc

Step 2 Insert a blank CD into your CD/DVD Drive and click **Get Started** to continue

Step 3 Click **Finish** to return to Main Console

3.2.6 Use Start-up Disc

Step 1 Insert the Start-up Disc and restart your computer, and then enter BIOS to set the CD/DVD ROM as the first boot device.

Step 2 If you are using the Evaluation Version of DriveClone, you have to enter your serial number and click **OK** to continue.

Note

Only the licensed user can use this function.

Step 3 After entering DriveClone Pre-OS Console, you can then modify your network settings, check image integrity and restore drives.

Restore My Computer in Pre-OS

You can select a complete backup point stored on CD/DVD, local hard drive or local area network to restore your computer.

Step 1 Click **Restore My Computer icon** on Pre-OS Main Console.

Step 2 Click **Browse** to select the complete backup points you want to restore. Click **OK** to continue.

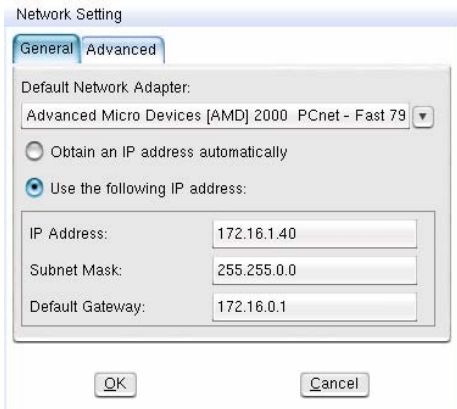
DriveClone can restore from a network location. To use this feature, you should first configure your network settings.

Modify Network Settings

Network Settings

There are two tabs in the Network Settings window:

General:



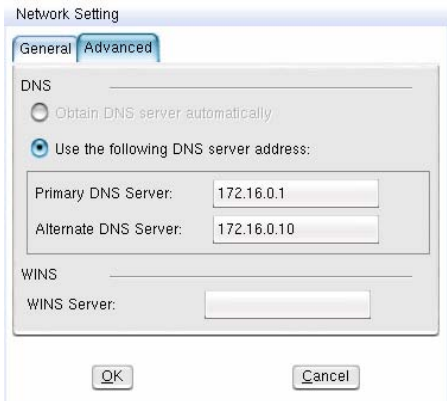
You can setup your network adaptor, IP address, Subnet mask and Default gateway from here.

If you have more than one network adaptor on your system, select the adaptor to be used from the dropdown menu.

IP Settings:

Obtain an IP address automatically: If your network supports DHCP (Dynamic Host Configuration Protocol), choose this option to obtain an IP address automatically from a DHCP server or a Point-to-Point Protocol (PPP) dial-up network access server. DriveClone uses DHCP as the default option and will obtain the IP address of your computer automatically. IP address: Choose this option to manually specify IP address for your network. This option can be used when automatically obtaining IP address fails or there is an IP address conflict.

Advanced:



If your computer is on a Local Area Network (LAN), you can set the LAN settings so that you can back up images to or restore from a network location.

DNS settings:

Obtaining DNS server address automatically: DNS (Domain Name System) is an internet service that translates domain names into IP addresses. It is a system for name resolution suitable for network computers with fixed IP addresses. By default, DriveClone uses this option to obtain the DNS sever address automatically from the network.

Use the following DNS server addresses: Choose this to manually specify the DNS server addresses if needed.

WINS: Specify an IP address for a WINS server. Windows Internet Naming Service (WINS) is a system that determines the IP address associated with a particular network computer. It supports network client and server computers running Windows and can provide name resolution for other computers with special arrangements. It uses a distributed database that is automatically updated with the names of computers currently available and the IP address assigned to each one.

Gateway: Specify an IP address for a default gateway. A default gateway is a local IP router that is used to forward packets to destinations beyond the local network.

Step 3 Click **Next** and select the complete backup point or any incremental backup point to restore.

Step 4 Click **Next** to select Source partition/hard drive and Destination partition/hard drive.

Step 5 Click **Next** to continue.

Step 6 Click Previous to modify your selections and click **Start** to begin

restoration.

Image Integrity Check

In this section, you can check if the backup data in your Complete backup image file is valid.

Step 1 Click **Image Integrity Check** icon on Pre-OS Main Console.

Step 2 Click **Browse** to select the image file you want to check. Click **OK**.

Step 3 Click **Next** to begin checking process.

Step 4 Click **Continue** to select another image to check, or click **Cancel** to return to Pre-OS Main Console.

DriveClone can also check the image file stored on a network location.

To use this feature, you should first configure your network settings.

Refer to [Network Settings](#) for details.

3.3 Restore Console

3.3.1 Restore My Computer

To restore a partition or the entire hard drive, please do the following:

Note

There must be enough free disk space on the destination partition to hold the data that will be restored from the image file.

Step 1 Start DriveClone and select **Restore** and then click **Restore My Computer**.

Step 2 Select a Complete backup job from the list or click **Browse** to select a Complete backup job that is not listed in the dropdown choice. Click **Next** to continue.

Note

If you want to select an image file which is stored on the network, you may be prompted to provide username and password to access the network stored image file.

Step 3 You can restore from the complete backup point plus any incremental back up files. Click **Next** to continue.

Step 4 Select a partition or an entire hard drive to restore. Click **Next** to continue.

Step 5 Select a destination partition or unallocated space to restore the image file. Click **Start Restore** to continue.

Note

An image file may contain backup data of more than one partition. You can select and restore only one partition at a time.

If you want to restore the entire hard drive, click the drive entry only.

Step 6 Click **OK** to begin the restoration process. If you don't want to start the restoration process, click **Cancel** to return to Main Console.

Step 7 Click **Finish** to complete the restoration process.

3.3.2 Restore Files

To restore file(s), please do the following:

Step 1 Select Restore and then click **Restore Files**.

Step 2 Select a backup image file you want from the drop down list.

You can also click **Browse** to select it from another location on your computer. Click **Get Started** to continue.

Step 3 Select the file you want to restore. In the selection area, all of the backed up files with all available versions are listed in a standard Windows[®] folder structure. Check the file(s) you want to restore. If backup data is stored on CD/DVDs, please have all of the necessary discs before the restoration. If backup data is stored on multiple discs, insert the last volume discs first. Please then follow the on-screen instructions.

Under **Restore files to** option, select a location to save the restored files:

◇ If **New folder on my desktop** is selected, the restored files will be

saved in a new folder on your desktop, with the original folder hierarchy preserved as it was backed up previously.

◇ If **Original location** is selected, the restored files will be saved in their original locations. The files in this location will be replaced by the back up files. It is recommended that you back up this location prior to restore.

Note: If several versions of a file are selected, the files will be restored to the same place with the version number appended to the file name.

◇ If **Another folder** is selected, click **Choose a folder** to specify a folder on your local hard drive to contain the restored files. The restored files will be kept in their original folder hierarchy.

Step 4 Click **Start Restore** to continue.

Step 5 Click **OK** to begin the restoration process. If you don't want to start the restoration process, click **Cancel** to return to exit.

Step 6 Click **Return to Main Console** to complete the process.

3.3.3 Preview Backup Image

To restore an individual file or folder:

Step 1 Click **Preview Backup Image** directly on the main interface of

Restore.

Step 2 Select an image you want to preview and click **Next** or click **Browse** to select an image that is not listed in the dropdown choice.

Click **Next** to continue.

Step 3 Select a complete backup point or an incremental backup point and click **Next**.

Step 4 Select the partition you want to preview and click **Mount** to begin previewing the image.

Step 5 You can now browse and copy data on the preview drive in Windows® Explorer.

After you have finished restoring an individual file or folder, you can un-mount the preview partition.

Step 1 Click **Tools** and then select **Close Preview Drives** or click **Close Preview Drives** on the interface of Quick Start.

Step 2 Click **OK** to begin the process.

This operation will unmount all of the preview partitions.

3.4 Clone Console

With DriveClone, you can clone (duplicate) a partition or hard drive to another one without any lost or altered data.

3.4.1 Clone Drive

Clone Drive duplicates one hard drive to another. It eliminates the need to re-install the operating system, drivers and applications, and enables you to upgrade a new hard drive with only a few mouse clicks.

Note

To use this function, you will need to have at least two hard drives on your computer. The target hard drive should have enough space to store the data of the source hard drive.

Step 1 Select **Clone** and then click **Clone Drive**.

Step 2 Select the Source Disk (top pane) and then the Destination Disk (bottom pane). You can choose to modify the Destination Partition Size automatically or manually by selecting **Modify the destination partition size**. You can also choose not to modify the Destination Partition Size by selecting **Keep the partition size of the destination drive the same as the source drive**. Click **Next** to continue.

Note

If you select **Keep the partition size of Destination Hard Drive the same as the Source Hard Drive**, please skip to step 4.

If the Hard Drive you want to clone is going to boot your system, for

best result, please select **Keep the partition size of Destination Hard Drive the same as the Source Hard Drive.**

Step 3 You can alter the Destination Partition size by double-clicking the entry of Destination Partition and change the size in a popup dialog box. Click **Next** to continue.

Step 4 After confirming your selections, click **Start Clone** to begin the cloning process or you can click **Previous** to change your settings.

You can start the clone process by clicking **Start Clone**. If the system is busy, DriveClone will try to clone again automatically.

Step 5 Click **Finish** to complete the process.

3.4.2 Clone Partition

With DriveClone, you can copy data from the source partition into the destination partition.

Step 1 Select **Clone** and then click **Clone Partition**.

Step 2 Select the Source Hard Drive, and then select a Source Partition (top pane).

Note

If there is only one hard drive installed in a computer, you can skip the drive selection step and proceed to selecting a partition.

You can only choose one partition at a time.

The Source Partition and the Destination Partition cannot be the same.

Step 3 Select the Destination Hard Drive, and then select Destination Partition (bottom pane). Click **Next** to continue.

Note

The selected destination partition must have enough space to hold the data of the source partition.

Step 4 After confirming your selections, click **Start Clone** to start the duplicating process or you can click **Previous** to change your selections. You can start the cloning process by clicking **Start Clone**. If the system is busy, DriveClone will try to clone again automatically.

Step 5 Click **Finish** to complete the process.

3.5 Recovery CD/DVD

A Recovery CD/DVD is a disc containing backup data. It allows end users to restore backed up partition(s) or entire drives from these CD/DVDs

3.5.1 Create a Recovery CD/DVD

Step 1 Start DriveClone. Select **Back Up** and then click **Back Up My Computer**.

Step 2 Enter a name (1-50 characters) for your Backup file. Click **Get Started** to continue.

Step 3 Select the Source Hard Drive, and then select the Source Partition(s) to be backed up. Click **Next** to continue.

Note

If there is only one hard drive installed in a computer, you can skip selecting the partition(s) you would like to protect.

If there is more than one hard drive, you can choose to back up any partition(s) of any hard drive(s).

You can select to image one or more partitions from a hard drive simultaneously. If

you prefer to back up the entire hard drive, select a source hard drive instead of partitions.

Step 4 Click on **My Computer** and select your CD/DVD Drive. Click **Next** to continue.

Step 5 Click **Next** to select a compression method between None, Medium and High. Compressed images will save disk space, however will take more time during image creation and data recovery.

(Optional) You can select **Enable password protection** to set a

password to access your image files. Once a password is set, you will be prompted for password when you attempt to use the image file.

In the Image Splitting option, select a file size for a single volume of the split image. If you select automatic, DriveClone will automatically split the image according to the file system type of the destination partition.

(Optional) If you want to verify whether the backup file is valid, you can select the box **Check the data integrity of the image file when backup is complete.**

Step 6 Add description of the backup file in the Image File Description box.

Step 7 Review the information and settings that have been specified.

Click **Start Backup** to begin copying data into an image or click **Previous** to modify your selections. You can complete the backup by clicking **Start Backup**. If the system is busy, DriveClone will try to back up again automatically.

Note

If the size of the backup data exceeds the writable disc capacity, DriveClone will automatically split the image into several volumes and burn onto different discs. It will prompt you to insert another disc when

needed.

If there are some data on the disc, you will be asked whether you wish to erase the disc. If you want to continue, click **Erase**. Click **Change** to insert another blank CD/DVD, or click **Cancel** to stop burning.

3.5.2 Restoring from a Recovery CD/DVD

Step 1 Insert the Recovery CD/DVD and select **Restore** and then click **Restore My Computer**.

Step 2 Click **Browse** to select the restore point from the CD/DVD.

Step 3 Select a partition or an entire hard drive to restore.

Step 4 Select a destination partition or unallocated space to restore the image file. Click **Next** to begin the process.

Note

An image file may contain backup data of more than one partition. You can select and restore one or more partitions at a time.

If you want to restore the entire hard drive, click the drive entry only.

Step 5 Click **OK** to begin restoration process. If you don't want to restore, click **Cancel** to return to Main Console.

You can also restore the partition or hard drive directly through CD/DVD Rom.

Step 1 Restart your computer and enter BIOS. Set CD/DVD ROM to be the first bootable device.

Step 2 Insert the Recovery CD/DVD and start up the computer. The system will enter the Pre-OS mode.

Step 3 Click **OK** to continue. Click **Cancel** to exit and restart your computer.

Step 4 Enter your serial number and click **OK** to begin restoration.

Step 5 Click **OK** to complete the process and restart your computer.

3.6 Image Integrity Check

Use this function to check if an image file created by DriveClone can be used.

Step 1 Select **Tools** → **Image Integrity** Check

Step 2 Select an image from either hard drive, CD/DVD disc, network location or other movable storage medium, and then click **OK** to check the image. Click **Finish** to complete the Image Check.

Chapter 4 Glossary

DriveClone Image

A DriveClone image is the file that contains the contents of a computer's hard drive or partition(s). Using this image, you can copy the contents of a hard drive to a portable medium such as a recordable CD/DVD, USB drive or to another hard drive.

Recovery CD/DVD

The Recovery CD/DVD allows users to restore their system by inserting this disc into their CD/DVD-ROM drive. Once the system is booted up, the Recovery CD/DVD will restore the system automatically based on the content contained on the Recovery CD/DVD.

Clone (Copy) Partition/Drive

The term "cloning" refers to the physical reading of all sectors of a source partition or disk and the subsequent writing of this raw sector information to the corresponding sectors of a destination partition or disk. The size, file system formats, brand of the source partition/disk and target partition/disk can be different.

Chapter 5 Appendix

5.1 FAQ

Q1. How long does it take to backup/restore a system using DriveClone?

A: The time to backup/restore the system depends on the amount of data on your system. However, DriveClone's unique technology minimizes the amount of time it takes to backup/restore the system.

Q2. I launched DriveClone in Windows, but a message indicates that I must restart my computer in order to run DriveClone?

A: You have to restart your computer after the installation of DriveClone.

Q3. When I restored a partition from an image file, it prompted me "There is not enough space on the Destination Partition." However, I'm sure the free space on the Destination Partition is larger than the used space in the Source Partition.

A: If the data on the end of the Source Partition cannot be moved, DriveClone will prompt you with this notice. Even if the free space on Destination Partition is larger than the used space in the Source Partition.

Q4. If the source partition is a bootable partition (e.g. C:\) but the target partition is not, can the target partition be used to boot the system after restoration?

A: Yes, however please follow the instruction shown below.

1. Modify your boot.ini file.

a. If you are in DOS, enter the boot partition (C:\) and type "**edit boot.ini**" to modify this file.

b. If you are in Windows, the file **boot.ini** may be hidden. Select **Show hidden files and folder** from **tools->folder** options from the menu bar to show **boot.ini**, then open it.

2. Add the following entry to boot.ini:

```
multi(0)disk(0)rdisk(X)partition(Y)\Folder=" Description "
```

X: is the HDD (hard drive) number, generally defined as 0 – 3. Number 0 is the primary master, 1 is the primary slave, 2 is the secondary primary and 3 is the secondary slave;

Y: is the partition ID, generally defined as 0-25, 0 is for the first partition.

Folder: is the place storing the boot file (this is not the boot.ini file). If your system is Windows® NT/2000, it should be defined as WINNT.

If your system is Windows® XP, it should be Windows.

Description is for adding comments for the options listed on the splash screen at system startup.

Q5. I installed DriveClone on two different operating systems (Windows® 2000 and XP) on my computer. After I removed DriveClone from Windows® 2000, why is the program on Windows® XP unusable?

A: Uninstalling DriveClone from one operating system will result in the removal of the program in the other operating systems as well.

Q6. I cloned a hard drive using the Clone Disk function. Why can't I boot from the cloned drive?

A: This may happen if Norton GoBack is installed on your computer. Please uninstall Norton GoBack before cloning the drive.

Q7. I have connected a USB hard drive or a USB CD/DVD recorder to the system, why can't the device be recognized by DriveClone?

A: Please try the following methods

(1) If you plugged in the USB hard drive after launching DriveClone,

please insert your USB drive and then restart your computer and try again.

(2) Disable the USB 2.0 Controller in BIOS or set USB to “Hi Speed” in the BIOS USB settings.

Q8. I created an image for Drive C: on two CD-R discs. Why can't the disc be mounted as a temporary partition?

A: Mounting a partition requires all the backup data of the drive. If you use one of two discs, it cannot provide the complete information. To solve this problem, copy the image files from the two discs to the hard drive and then mount it as a temporary partition. This problem cannot be overcome by using multiple CD/DVD drives.

Q9. When I created a Recovery CD/DVD, an error message “Move Data Error” appears.

A: This error may occur if the quality of the recordable CD/DVD media is not good, or the disc is incompatible with the recorder. To solve this problem, please try a different brand of CD/DVD media or upgrade your CD/DVD recorder.

Q10. Are there any limitations when I restore from an image over the network?

A: DriveClone can restore an image file size below 2GB when restoring from a network location. When backing up an image to a network location, DriveClone can automatically split the file into several volumes with a maximum size of 2GB each. You can select the first volume of the image to be restored. If you have an image that is over 2GB on the network share, you cannot restore over the network. The file must be copied back to the local computer prior to restoration.

Q11. Why can't I find all backup files in the Backup files List?

A: There are two possible scenarios.

Case 1: The core files of your System Partition were lost or re-initialized after restoring the System Partition.

Case 2: The partition which was backed up in your backup files has been resized. In both scenarios, the backup files which contain the old partition information of this hard drive are no longer valid and therefore removed from the backup file list.

Q12. Do I need to do anything before installing DriveClone?

A: We strongly recommend that you run the Windows[®] Checkdisk program to check for hard drive errors prior to install DriveClone. The Checkdisk utility can be started by running Chkdsk.exe from a

command prompt or by using the DriveClone, Pre-Installation Checklist tool. Note: Running Checkdisk from either location will require a system restart for the operation to be completed.

Q13. Can DriveClone fix the system after my hard drive has been mistakenly formatted or repartitioned?

A: DriveClone can fix the system only if it was installed prior to the data lost.

Q14. Can I use disk tools such as F-disk, PartitionMagic and Norton Speed Disk after DriveClone is installed on my computer?

A: Even though DriveClone is compatible with those software, certain functions within those utilities may cause DriveClone to stop function Properly.

Q15. What should I do if I see error message “0xe2f” while installing DriveClone?

A: Please contact our technical support staff to obtain a tool to repair the logic error on your hard drive.

Q16. I have multiple operating systems, including Linux. Can DriveClone protect all three systems?

A: DriveClone is designed for Windows[®] users only, and it protects

Windows® only. DriveClone can protect multiple Windows® operating systems but it cannot protect a Linux system.

Q17. Does DriveClone work in Windows® Safe Mode?

A: No. DriveClone does not work in Windows® Safe Mode.

Q18. Can I use Norton Ghost to copy a hard drive on which DriveClone is installed?

A: Yes. DriveClone version 3.01 or later is compatible with all versions of Ghost except Ghost 2003.

If you are using Ghost 2003, in order to copy the hard drive properly you need to modify the Ghost

Properties by typing in “parameter –ib” behind the Target command.

Q19. Why do I see a “0xe2” error when trying to install DriveClone on a system with four operating systems?

A: A maximum of four operating system entries can reside on a computer. If all four entries are filled, then DriveClone cannot be installed.

Q20. Can DriveClone really protect my PC from being destroyed by a virus?

A: Yes. When a virus attacks your PC, common system files,

applications, MS Word documents, you can use DriveClone to revert your system back to the day before the virus infection. All of the files on your hard drive will be free of viruses after restoration.

Q21. Does DriveClone Provide support for Windows[®] advanced power management?

A: DriveClone supports all Windows[®] advanced power management features (Standby, Sleep, Hibernate).

Q22. Why did my computer crash while DriveClone was loading the hard drive driver?

A: This problem will only occur on a computer whose hard drive does not support UDMA3. Please
disable UDMA in CMOS setup.

Q23. Why can't I find some of the Complete backup Files that have been stored on the hard drive in Pre-OS?

A: If you stored the backup file in the compressed NTFS partition, the backup file can not be recognized and selected in Pre-OS mode. To avoid this issue, please move the backup files to a non-compressed NTFS partition.

Q24. I try to back up the data to network computer. Why can't I

access the network computer's share folder after I have entered the correct user name and password?

A: If you can't back up the data to a network location, you may need to modify the Local Security Settings of the network computer.

Shown below are steps to update the Local Security in Windows[®] XP and Vista.

1. Select **Start** → **Control Panel** → **Administrative Tools** →
2. Double click on **Local Security Policy**.
3. Select **Security Settings** → **Local Policies** → **Security Options** from the directory in the left pane.
4. Double click on **Network access: sharing and security model for local accounts**.
5. Select **Classic-local users authenticate as themselves**, and click **Apply**.