Total Backup Recovery

Server

User's Guide

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Chapter 1: Introduction

1.1 Product Overview

Total Backup Recovery Server is a powerful data backup and hard disk imaging application. It creates a complete disk image of a hard drive or a single hard drive partition and stores it on a local computer, network share and even on an FTP server. The image can be used for backup and recovery, to quickly transfer all information from a server's hard drive to a new hard drive. The image file can also be compressed and distributed across multiple hard drives or partitions.

Total Backup Recovery Server's compressed image file contains all of the hard drive data files, partition information and security settings, by copying only the used data sectors – this keeps the size of the image to a minimum. The complete disk image can 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 administrator an easy and reliable way to keep the system backup data current, by storing the images on an external USB hard drive, CD or DVD set, or on a network share. The administrator would then be able to quickly recover from any type of data disaster, including data corruption or hard drive failure.
With a special recovery environment (DriveClone Pre-OS), you can run DriveClone to back up and restore damaged partitions even if Windows won't start for some reason. Also some other features of DriveClone are still available in this recovery environment.
Total Backup Recovery Server offers the administrator flexible ways to protect all involved computers. System administrators will appreciate Total Backup Recovery Server's ability to dramatically reduce the time they spend configuring multiple systems, installing software, or restoring multiple systems to an original image.

1.2 Powerful Backup Features

DriveClone's Suite of backup features includes:

- **Hard Drive Imaging:** Backs up and restores a system with a complete copy of all files, installed software, partition information, and system settings.

- **Incremental Backup:** Manually or automatically updates save disk images without ever leaving Windows. Incremental backup points log only the changes that have occurred since the last Complete Backup.

- **System Snapshots:** Backs up an entire computer system automatically to the Secure Area. The system snapshots also provide a fast method to recover from software-related data disasters.

- **File Backup:** Manually or automatically backs up selected file/folder, file extension, etc.

- **Universal Restore:** Restores a complete system image of a particular configuration

to a different hardware configuration system or a Virtual Machine.

1.3 Other Features and Benefits

- **Microsoft Volume Shadow Copy Service (VSS) Support (for Windows Server 2003 and higher):** Easily back up VSS compatible databases (Exchange, Oracle, SQL Server) without taking databases offline and ensuring data consistency.

- **Preboot Execution Environment (PXE) Support:** Boot and recover any system from PXE server without the need for a Bootable Rescue Disk.

- **Complete External Backup:** Store a complete system image on a USB hard drive, or on a network share.

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

- **Flexible Backup:** Back up your client's hard drive to another local hard drive, network drive, or a USB device.

- **Rapid, Controlled Recovery:** Rebuild system via Complete Restore or System Snapshot in minutes, not hours or days.

- **Partition Support:** Supports FAT，FAT32, NTFS and other unknown partitions.

- **Hardware Support:** Supports IDE, EIDE, SATA, and SCSI/RAID hard drives.

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

- **Quick and Safe Try:** You have the choice to return your computer to its original state in seconds as long as a System Snapshot is created before a new application is installed.

- **Unlimited System Snapshots:** DriveClone has no limit for multiple system snapshots as long as adequate space is allocated in the hard drive for DriveClone's Secure Area.

- **FTP Support:** Save another data copy onto a remote FTP server to enhance the protection of files and even the whole computer.

- **Virtual Machine Support:** Convert the backup image into a VMware file image format to run it on a virtual machine.

1.4 Newly-added Features

- **Set Password:** Enable users to set a password to prevent other unauthorized users from changing program settings.

- **Resize Secure Area: Secure area** is a hidden, secure area on the primary hard drive, used to store Total Backup Recovery Server backup data. By using the **Resize Secure Area** feature, users can allocate more backup space.

- **Simplified Quota Mangement:** One base backups one folder when backuping, and users can choose to maintain several base backup.

- **Google Desktop Search:** Enable search engine support if you want to use Google Desktop to locate and recover files and folders contained in Backup Images.

- **Customized File Backup Search:** Users can restore file(s) by customized searching of backup file(s).

- **Windows 2008 Local Account Authentication:** If the console is CBP Schedule backup of 2008 system, a dialog box containing user name and password is displayed to let users input a local account. Then CBP will call the corresponding interface accordinbg to the account.

Chapter 2: Installing and Uninstalling DriveClone

2.1 System Requirements

- CPU: Pentium or higher
- RAM: 512 MB or more (1 GB or more for Vista)
- Hard Drive: 250 MB free space
- Supported Server Operating Systems: Windows® Server 2003 Standard or Enterprise or Data Center (32-bit & x64)SP2, Windows® Server 2003 R2 SP2, Windows® Server 2008, Windows 7
- Supported Desktop Operating Systems: Windows® XP (32-bit & x64), Windows® Vista (32-bit & 64-bit)

2.2 Start DriveClone Installation

If you purchased a CD:

Insert the CD into your CD-ROM drive. The setup program should start automatically. If it doesn't, browse the CD and double-click on the Autorun.exe. Follow the prompts displayed to finish your installation.

If you purchased an electronic download:

Save the executable file to your hard drive. Double-click on the file to launch the DriveClone installer. Follow the prompts displayed to finish your installation.

2.2.1 Installing Total Backup Recovery Server

1. Select **Setup,** and click **Next**.

2. Select the language preference of the application, and click **Next.**

3. Carefully read the software license agreement. If you accept the terms of the agreement, select **I accept the terms in the license agreement**, and click **Next**.

4. Enter your personal information and serial number, and click **Next**.

> **Note**
> Installation without purchasing a serial number will activate a time-limited evaluation version of DriveClone.

5. Click **Next** to install to the default folder, or **Change** to select another location.

6. Click **Install** to launch the installation process.

7. Click **Finish** to complete the installation. You are required to restart your computer to launch Total Backup Recovery Server.

2.3 Uninstalling DriveClone

1. From the Windows Start menu, select **Start → Settings → Control Panel**.

2. Double-click **Add/Remove Programs**, and select **Change** or **Remove Programs**.

3. Select **Total Backup Recovery Server**, and click **Remove** to begin uninstalling the associated component.

Chapter 3: DriveClone Specific Terminology

3.1 File Backup

DriveClone File Backup monitors file changes. When a change is detected, DriveClone will record it and back it up according to your schedule. File backups can be stored locally or externally.

3.2 System Snapshot

System Snapshot and Hard Drive Imaging are both sector level backup functions. System Snapshot stores only the changed data sectors into the DriveClone Secure Area. The amount of storage capacity required for each snapshot is substantially less than the entire amount of data on the hard drive. As a result, snapshots offer a significant savings of hard drive space and an increased restoration speed when compared with hard drive imaging or complete disk cloning methods.

3.3 Hard Drive Imaging

Hard Drive Imaging can be used for bare-metal disaster recovery when hard drive failure occurs.

3.4 Full and Incremental Backups

Full and incremental backup solutions aim to make storing several copies of the source data more feasible. To accomplish this, a complete backup is taken initially and then incremental backups can be scheduled or run manually (Incremental backup only stores the files or sectors that have changed since the previous full or incremental backup). Restoring a system to a certain point involves locating the complete backup and the incremental backups executed between the time of the complete backup and the time of the restore.

3.5 DriveClone Universal Restore

With DriveClone Universal Restore, there is no need to reinstall the operating system, applications, configuration files, individual files, and folders into the new system with different hardware configuration, or to a virtual machine. With Universal Restore, you can restore your system onto a similar or a different (than original) hardware configuration with a few mouse-clicks.

3.6 DriveClone Secure Area

DriveClone's Secure Area is a virtual partition which is created onto the hard drive's free space. This location is hidden, protected, and accessible only by DriveClone. The secure area is used to store the system snapshots and the DriveClone Pre-OS. It will not be influenced by most computer disasters, so it ensures the protection of your data and the efficiency of DriveClone recovery.

Chapter 4: Start using DriveClone

To launch DriveClone, double-click the **Total Backup Recovery Server** icon on your desktop, or select **Start → All Programs → FarStone → Total Backup Recovery Server**.

A dialog box will pop up:

a. If you select **Activate product and user registration,** then click **Next,** you can choose to activate the product now or later(30 days left to activate). Then you will enter a web page to register.

b. If you select **Activate product,** then click **Next,** you can choose to activate the product now or later(30 days left to activate)without registering.

c. If you select **User registration,** then click **Next,** you will enter a webpage to register the product without activating.

d. If you select **Skip to use the product directly**, then click **Next,** you can directly enter the main console without either activating or registering the product.

> **Note**
> If you select a or b, you can use the product without time limited.
>
> If you select c or d, you can use the product within 30 days.
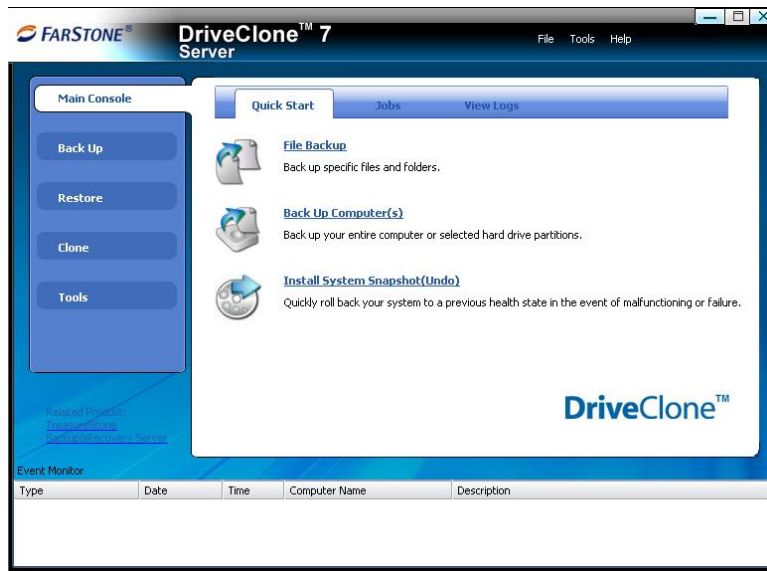
*DriveClone Main Console

4.1 Main Console

4.1.1 Quick Start

This displays a shortcut menu for File Backup, Back up Computer and Install System Snapshot (Undo).

File Backup — Click here to back up the selected files and folders.

Back Up Computer(s) – Click here to back up the entire hard drive or partition(s) to an external location.

Install System Snapshot (Undo) – Click here to install system snapshot feature, which backs up the whole computer and saves the backup data on its Secure Area.

> **Note**
> All system snapshots created within the trial period will be cleared once upgraded to a formal version. Once upgraded, DriveClone will create a new system snapshot.

To install System Snapshot, please do the following:

1. Click **OK** to continue after carefully reading the warning message.
2. Allocate the space for Secure Area (at least 1200 MB), you can also choose the partition manually(only for system partition hard drive),and click **Next**.
3. Check or uncheck **Disable System Restore,** click **Next.**

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4. Then wait patiently until the system reboots automatically.

If you don't want to use the system snapshot feature any more, you can also uninstall it from here by clicking **OK** to continue after carefully reading the warning message. Then the system will reboot automatically.

4.1.2 Jobs

View existing Snapshot, Complete Backup, and File Backup jobs.

- **Snapshot** – Set the frequency for the automatic creation of a System Snapshot, and intervals for automatic restoration. Also you can enable/disable System Snapshot by clicking the button **Turn On** or **Turn Off**.

Automatic creation of System Snapshots

a. **Create a Snapshot every x hour(s) –** Create a Snapshot every 1 to 24 hours.
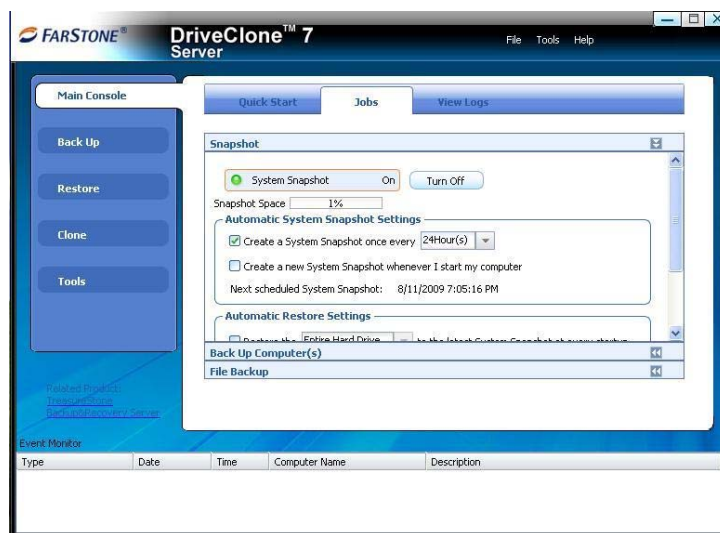
*Automatic System Snapshot

> **Note**
> If the system is set to create a snapshot every hour, DriveClone will take the first snapshot an hour after the creation of the most recent system snapshot.

b. **Create a Snapshot at system startup** – Create a new System Snapshot automatically every time the computer boots up.

- **Intervals for Automatic Restoration**

a. **Restore computer at every startup** – Check this box if you want DriveClone to restore from the most recent System Snapshot every time you start your computer. You can either just restore the system partition or the entire hard

drive. If you choose to only restore the system partition, all Snapshots created before the restore point will be available for system partition restoration only.

   b. **Set the time for rebooting your computer –** You can also select a time to automatically restart the computer. The computer will be restarted and restored according to these set times as well as at system startup. This option can be enabled only if you select option a.

- **Back Up Computers** – DriveClone shows all file backup jobs related to this computer. There are four functions you can perform on the each backup computer job.

   a. **Detail –** View detailed information about the backup jobs you've created, including the job name, source, destination, scheduled settings, description and FTP address for the selected backup.

   b. **Edit Schedule –** Schedule incremental updates for the backup job you've created; change other scheduled settings.

   c. **Offsite Copy** – Change FTP settings or click **Restore Defaults** to restore the FTP settings to be the same as it in **Settings**.

   d. **Back Up Now –** Create an Incremental Backup immediately.

   e. **Delete –** Delete the selected job.

> **Scheduling Complete Backups**
> 1.Complete backups and incremental updates can be created according to the pre-set schedule.
>
> 2. If the system is busy, DriveClone will not be able to perform the scheduled backup job, and will automatically try again later.

- **File Backup** – DriveClone displays all of the file backup jobs related to this computer, you'll see the following options under each job:

   a. **Detail** - View detailed information about a backup job you've created, including the job name, job location, scheduled settings and FTP address.

   b. **Edit Schedule** – Change scheduled settings for the backup job you've created.

   c. **Offsite Copy** – Change FTP settings or click **Restore Defaults** to restore the FTP settings to be the same as it in **Settings**.

   d. **Add Files** - Add files to your File Backup list.

   e. **Back Up Now** - Run the selected incremental File Backup job immediately.

f. **Delete** - Delete the selected job.

Scheduling File Backups
1. If your system is busy, DriveClone will not be able to initiate the backup process.   DriveClone will attempt to perform the backup after 5 minutes.

2. The following files are not backed up:

      a. Files in the Recycle Bin

      b. Files in the System Volume Information directory, pagefile.sys, and the _$temp directory

      c. Hiberfil.sys

      d. Files with ".rit" and ".tmp" extensions

      e. Microsoft Office temporary files

      f. Files in DriveClone's installation folder

      g. Files in the Backup Destination directory of the backup job currently running

      h. Files in the Temp directory

4.1.3 View Logs

This feature records all events of DriveClone, including warnings, errors and operations.
    Save - Export the logs and save the event record as an excel file.
    Delete - Delete the selected event(s).
    Delete All - Delete all the saved events.

4.1.4 Settings

- **Set Password** – Enable users to set a password to prevent other unauthorized users from changing program settings.

- **Resize Secure Area –** By using the **Resize Secure Area** feature, users can allocate more backup space.   **Secure area** is a hidden, secure area on the primary hard drive, used to store Total Backup Recovery Server backup data.

- **System Snapshot** – When users select this check box, users can set the percentage of secure area free space. DriveClone will automatically display a warning message if the ratio is smaller than this space.

- **Offsite Copy** - By setting the following options, users can save another image copy on an FTP server to ensure the data protection. It is the default one for your file backup and complete backup.

  a. FTP information – Enter the address and port.

  b. FTP account – Enter the username and password of the FTP. You can select **Anonymous** if the FTP server is shared to all users in the network.

  c. FTP connection retry frequency – Enter Retry attempts (Maximum of 100 times), Delay between retries (Maximum of 600s).

- **E-mail Notification** - By configuring the below settings, DriveClone will send an E-mail to your specified E-mail account when the backup is completed.

  a. E-mail configuration - Enter preferred E-mail address and other server settings.

  b. Send test email – Click here to test proper setting functionality.

  c. Notification events – Specify the events for which you would like to receive notification via E-mail regarding the backup operation.
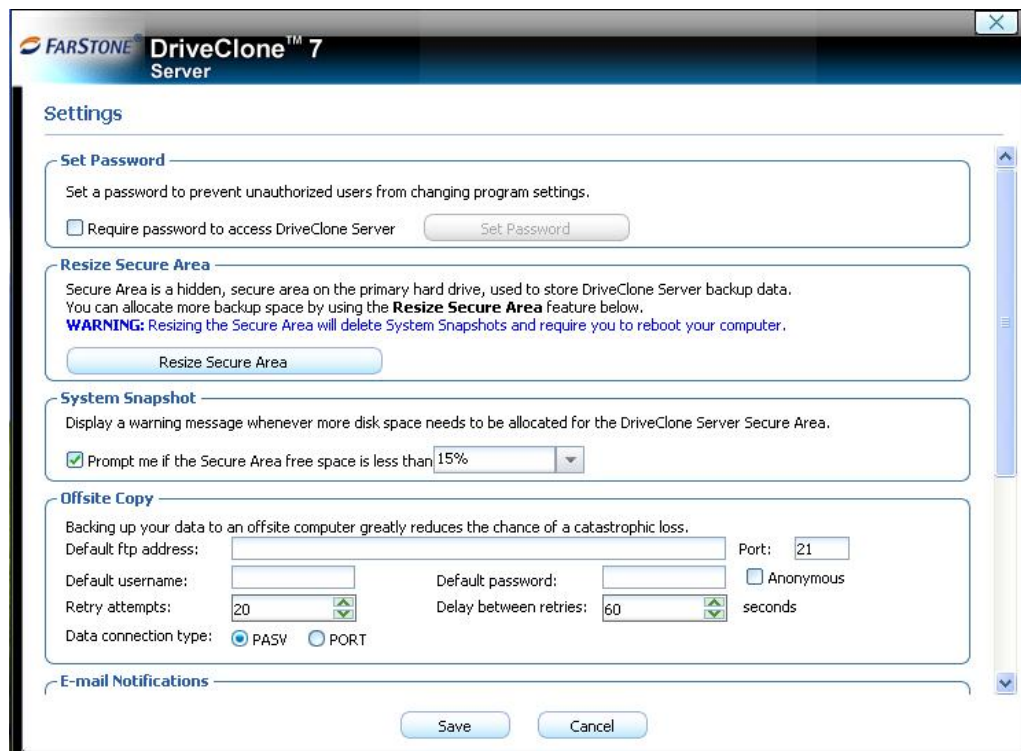
4.2 Backup Console

4.2.1 Create a System Snapshot

This feature is available only if you install it by clicking **Install System Snapshot(Undo)** on the main console.

1. Click **Back Up** to create a System Snapshot. You can also click **Create a System Snapshot** on the main interface of DriveClone to start creating a System Snapshot.

2. Enter a name for the System Snapshot. Click Next to continue. To return to the previous menu, click **Cancel**.

3. After you choose a way to create the system snapshot, click **Next**.

    i. If you select **Start Now**, DriveClone will initiate the process after clicking **Next** twice.

    ii. If you set a schedule, specify the frequency for creating or restoring from a System Snapshot automatically. (For more detail about scheduling, please refer to 4.1.2)

4. Confirm all the settings, and then click **Next** to launch the backup process or click **Previous** to modify any setting.

5. If any program is currently writing data to the hard drive, DriveClone may not be able to create a System Snapshot.

6. Click **Finish** when a System Snapshot has been successfully created. You can also click **Edit Schedule** to specify how often a System Snapshot should be automatically created and specify if the system need to be restored automatically.

4.2.2 File Backup

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

2. Select **New File Backup** to create a new job.

3. Enter a name for your new job.

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 preference. Click **Next** to continue.

*Select Files for Backup or Add File/Folders or Add File Types

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 the **Select File Types** interface, as shown below.

   a. Click **Delete Type** to remove file types you don't want to back up.

   b. Click **Add New Type** to add new file type in to the back up list. You will need to
      enter a file type extension and a description. Or click **Add Group** to create a new
      file type group. You will need to enter a group name.

5.   Select a location to store the backup file, such as a shared folder or locally on the system.
     Click **Next** to continue. If you want to save one more image copy on the FTP, select
     Enable offsite copy (optional), and click **Settings** to configure these below.

*Enable Offsite Copy

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a. FTP information – Enter the address and port.

b. FTP account – Enter the username and password of the FTP. You can select **Anonymous** if the FTP server is shared to all users in the network.

c. FTP connection retry frequency – Enter Retry attempts (Maximum of 100 times), Delay between retries (Maximum of 600s).

d. Restore Defaults – Clear all FTP settings.

> **Tip**
> This feature only supports local image files. If you want to use the image file on the network or disc, you should save it on the local computer first.
>
> The entire FTP upload process executes in the background. If the program fails to upload backup data onto FTP server, it will be recorded in logs which can be checked through View Logs.   DriveClone will retry three times automatically until the next startup.

6. Click **Start Now** to proceed. You can also choose to run daily, weekly, or monthly backups.

> **Note**
> If you select daily, weekly or monthly, and then uncheck **"Create a full backup at 1 st backup of each month"** checkbox, so this item can't be for option. And X latest catalog is retained, the default value is "3"

7. Click **Advanced** for optional settings including**:** backup priority, network connection speed, compression mode, password protection, image split, backup description, configuration of E-mail notification and Pre/Post command:
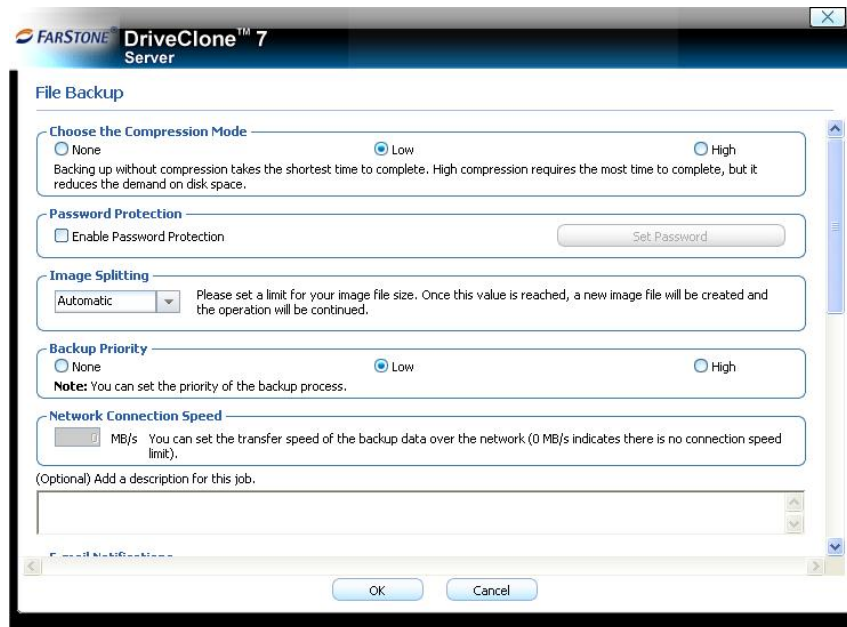
*Optional Advanced Settings

8. Review your information and settings, and click **Next** to launch the backup process. For best results, close all of the files you want to back up prior to launching your backup job.

9. Click **Finish** to return to the main console. Or to specify your preferred Schedule Settings, **click here to create a schedule now**. By doing so, you can choose to repeat the backup operation at a specific scheduled time.

Updating a File Backup Job

1. Launch DriveClone.

2. Select **Back Up**, and click **File Backup.**

3. Select **Incremental File Backup**, and click **Next**.

4. Select an existing job from the Job List.

5. Review your information and settings, and click **Next** to launch the incremental backup.

6. Click **Finish** to return to the main console.

4.2.3 Back Up My Computer

1. Start the DriveClone Program. Select **Back Up** and then click **Back Up Computer(s).**

2. Select **Create a New Complete Backup**.

3. Enter a name for your new Complete Backup and click **Next**.

4. Select the partition(s) or the entire hard disk to back up, and click **Next**.

Tip:
If you want to restore with **Universal Restore** later, you must choose your system partition (e.g. C:) to back up.

5. Enter the storage path and click **Goto**. Or select a destination location on a hard drive, USB storage medium, or a network location to store the image file. If you want to save one more image copy on the FTP, select **Enable offsite copy** (optional), and click **Settings** to configure these below.

   a. FTP information – Enter the address and port.

   b. FTP account – Enter the username and password of the FTP. You can select **Anonymous** if the FTP server is shared to all users in the network.

   c. FTP connection retry frequency – Enter Retry attempts (Maximum of 100 times), Delay between retries (Maximum of 600s).

   d. Restore Defaults – Clear all FTP settings.

Tip
This feature only supports the local image file. If you want to use the image file on the network or disc, you should save it on the local computer first.

The entire FTP upload process executes in the background. If the program fails to upload backup data onto FTP server, it will be recorded in log files which can be checked through View Logs; DriveClone will retry three times automatically until the next startup.

6. Click **Next** to continue.

7. Click **Start Now** to proceed. You can also choose to run daily, weekly or monthly backups.

Note
If you choose daily, weekly or monthly, and then uncheck "**Create a full backup at 1 st backup of each month**" checkbox, so this item can't be for option. And X latest paths is(are) retained, the default value is "3"

8. Optional settings will pop-up if you click **Advanced**. These settings include: backup priority, network connection speed, compression mode, password protection, image split, backup description, configuration of E-mail notification and Pre/Post command.

9. Click **Next**.

10. Review the information and settings that have been specified. Click **Next** to launch the backup process. Or click **Previous** to modify setting(s).

> 💡 **Tip**
> If the system is busy, and DriveClone cannot start the backup process successfully, DriveClone will try to back up again automatically.

11. Click **Finish** to return to the main console. If you would like to edit the schedule for this job, **click here to create a schedule now**.

Creating an Incremental Backup

1. Launch DriveClone.

2. Select **Back Up** and click **Back Up Computer(s)**.

3. Select **Incremental Backup** and click **Next**.

4. Select an existing job from the Job List.

5. Review your information and settings, and click **Next** to launch the incremental backup.

6. Click **Finish** to return to the main console.

4.3 Restore Console

4.3.1 Return to a System Snapshot

This feature is only available if you install System Snapshot and take system snapshots on your system.

1. Click **Restore** and then click **Return to a System Snapshot** on the main interface.

2. Select the date you want to restore to from the calendar on the left pane and select the System Snapshot of that day you would like to restore to on the right pane and click **Next**. You can also click **Preview System Snapshot** to view its content prior to restoration. Then if you want to close the Preview Drives, click **Unmount Preview Drive** in the **Tools** tab or in the menu to close the Preview Drives.

3. Choose to restore the **Entire Hard Drive** or **C : Drive Only** and then click **Next** to begin the restoration.

4. Carefully read the warning message. Click **OK** to proceed to the next step. You can also click **Cancel** to exit.

5. Your computer will restart automatically to start the restoration process.

4.3.2 Restore Files

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

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

2. Select a backup image file from the drop down list. You can also **click here** to select it on a network share. Click **Next** to continue.
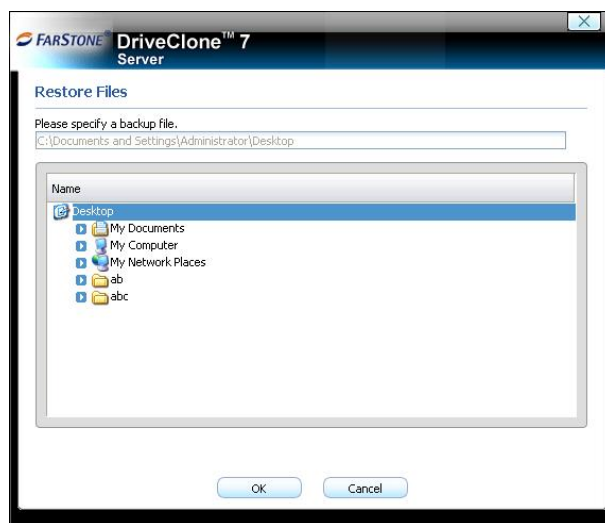
*Select backup image from network share

3. Select **Files from the most recent backup** or **Files from a previous backup** and click **Next**. If you select **Files from a previous backup,** please select the backup point you want to restore from the list.

4. Then click **Next** . If you select "**Please select common restoration or special restoration**", click **Next**, and skip to step 6; if you select "**Search special files for the restoration**", then click **Next**, skip to step 5.

5. Input the file name you want to restore, then click **Search** or click **Search** directly to choose the file(s).

6. Select the file(s) you want to restore.

7. Select a location to save the restored files:

   a. If **New Desktop Folder** is selected, the restored files will be saved in a new folder on the client's desktop, with the folder hierarchy preserved exactly as it was backed up.

   b. If **Original Location** is selected, the restored files will be saved to their original folder and will overwrite existing files in that folder with the same name.

   c. If **Another Folder** is selected, click **Select a folder** to browse a folder on the network. The restored files will be kept in their original folder hierarchy.

8. Click **Next** to start the restore after confirming the source and the destination.

9. Click **Finish** to return to the main console.

4.3.3 Restore Your Computer

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

1. Launch DriveClone.

2. Select **Restore,** and click **Restore Your Computer**.

3. Select a backup image from the list, or **click here** to select an image file stored on a network share. Click **Next** to continue.

4. Select a Complete Backup point or any Incremental Backup point to restore from, and click **Next**.

   If you want to restore your entire physical disk drive, click **One-Click Restore,** then click **Restore** to begin the restoration process; or click **No** to exit.

5. Select **Do not use Universal Restore**, and click **Next**.

6. Select to restore a single partition or the entire hard drive, and click **Next**.

7. Click **OK** to return to the original location, or click **Cancel** to select another location. If you choose **OK**, skip to step 11.

8. Select a destination partition or a destination hard drive to be restored from the image file, and click **Next**.

9. To restore a single partition, skip to step 10. To restore the entire hard disk, please select a restore option.

   a. Select the checkbox if you would like to modify the destination partition size.

   b. Do not check the box if you have multiple systems or a hidden partition.

   If you selected option **a**, double click the partition capacity to be resized from the list. If you selected option **b**, skip to step 10.

10. When it displays the structure of the destination partition, double-click the highlight and modify its size, and click **Next** to continue.

   > **Tip**
   > The restoration process will require your computer to reboot into the
   > FarStone Recovery Environment.

11. Click **Next** to start the restoration after confirming the source and the destination.

12. Click **OK** to enter the FarStone recovery environment to complete the restoration process automatically.

Your computer will restart to complete the restoration. After that, it will reboot into Windows automatically.

You will need to reallocate space for the secure area if you installed System Snapshot and want to continue to use the system snapshot feature:

1. Click **OK** to start the allocation.

2. Click **Next** to continue.

3. Click **Yes** to restart your computer and complete the process.

4.3.4 Perform Universal Restore

You can restore the system partition or the entire hard drive of the selected client to dissimilar

hardware.

1. Launch DriveClone.

2. Select **Restore,** and click **Restore Your Computer**.

3. Select a backup image from the list, or **click here** to select an image file stored on a network share. Click **Next** to continue.

4. Select a Complete Backup point or any Incremental Backup point to restore from, and click **Next**.

5. Select to restore with **Universal Restore**, and click **Next**.

6. When the dialog box appears, click **OK** to restart your system into FarStone Recovery Environment to begin the restoration process, or **Cancel** to exit.

After your computer restarts to complete the Universal Restore, you need to do the following:

1. Select to restore a single partition or the entire hard drive, and click **Next**.

2. Click **OK** to restore to the original location, or click **Cancel** to select another location. If you choose **OK**, skip to step 6.

3. Select a destination partition or a destination hard drive to be restored from the image file, and click **Next**.

4. To restore a single partition, skip to step 6. To restore the entire hard disk, please select a restore option.

   a. Select the checkbox to modify the destination partition size.

   b. Do not check the box if you have information on multiple systems

5. If you selected option **a**, double click the partition Capacity to be resized from the list. If you selected option **b**, skip to step 5.

6. When it displays the structure of the destination partition, double click the highlight and modify its size, and click **Next** to continue.

7. Click **Next** to begin the restoration process after confirming all settings.

After the restore, it will reboot into Windows.

You will need to reallocate space for the secure area if you installed system snapshot and want to continue to use the system snapshot feature:

1. Click **OK** to start the allocation.

2. Click **Next** to continue.

3. Click **Yes** to restart your computer and complete the process.

4.4 Clone Console

4.4.1 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.

> **Tip**
> 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.

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

2. Select the Source Disk (top pane) and then the Destination Disk (bottom pane). You can choose to modify the Destination Partition Size 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.

    > **Tip**
    > 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**.

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.

4. After confirming your selections, click **Clone Now** to proceed or you can click **Previous** to change your selection. If the system is busy, DriveClone will try to clone again automatically.

    > **Note**
    > The cloning process will overwrite all data on the destination disk. Click **Continue** to begin the cloning process. You can also click **Cancel** to exit.

5. Click **Shutdown** to complete the cloning process.

4.4.2 Clone Partition

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

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

2. Select a Source Partition in the Hard Drive (top pane).

> **Note**
> You can only choose one partition at a time.
> The Source Partition and the Destination Partition cannot be the same.

3. Select a Destination Partition in the original Hard Drive or another Hard Drive (bottom pane), then click **Next** to continue.

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

4. After confirming your selections, click **Clone Now** 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.

> **Tip**
> The cloning process will overwrite all data on the destination disk. Click **Continue** to begin the cloning process. You can also click **Cancel** to exit.

5. Click **Return to Main Console** to complete the process.

4.5 Tools Tab

4.5.1 Create a Bootable Rescue Disk

Create a bootable disk to recover from a system crash or hard drive failure

1. Insert a blank Disc or USB device.

Note

Before creating a Bootable Rescue Disk, data on the disk should be formatted.

2. Click **Tools** tab on the left or **Tools** menu on the top of the interface, and then select **Bootable Rescue Disk**.

3. Select the CD/DVD drive or the USB device you'll be using to create your Bootable Rescue Disk, and click **Next**.

Tip

If there is some data on the inserted device, 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 **Cancel** to stop the creation process.

4. Click **Finish** to complete the process.

4.5.2 Preview Backup Image

Preview the content of the specified partition of a complete backup image to make sure you can only restore the needed partition(s).

1. Click on the **Tools** tab, and then select **Preview Backup Image**.

Note

If you have mounted an image before, you will be prompted to dismount the previous image. Click **Continue** to dismount the previous image, or **Cancel** to exit this process.

2. Enter the storage path of the image you want to preview and click on **Goto** to select the image, or select the storage path of the image you want to preview and click **Next**.

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

4. Select the partition you want to preview, and click **Mount** to load the image into the system.

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

6. You can click **Yes** to mount another image. Click **No** to return to main console.

If you do not want to preview the image anymore, select **Unmount Preview Drive** on the the **Tools** tab, or select the **Tools** menu and click **Unmount Image** to close the preview partition.

4.5.3 Check Image Integrity

Use this function to check if a complete backup image file is valid and can be used for restoration.

1. Click the **Tools** tab in the left or the **Tools** menu on the top of the interface, and then select **Check Image Integrity**.

2. Enter the storage path of the image you want to check, and click **Goto** to select the image. You can also select the storage path of the image you want to check and click **Next**.

3. Select to validate either the Complete or Incremental Backup point, and click **Next** to continue.

4. After validating the backup point, click **Finish** to complete the Image Integrity Check.

4.5.4 Export PXE Image

Export the PXE image to restore system without using the Bootable Rescue Disk.

1. Click on the **Tools** tab or **Tools** menu, and select **Export PXE Image**.

2. Enter the destination path where you want to save the exported image and click **Goto,** or select the destination path locally or remotely and click **Next**.

3. Click **Finish** to return to the main console, or click the storage path to view the PXE Image.

4.5.5 Convert Backup to Virtual Disk

After converting the complete backup image as a *.vmdk format successfully, you can conveniently load it as a new hard disk on your virtual machine. In doing so, all data on the original hard disk is available on that virtual machine.

> **Tip**
> If you did not install **VMware Virtual Disk Development Kits,** this function will be disabled. You can visit the provided link to download it.

1. Click on the **Tools** tab, and select **Convert Backup to Virtual Disk**.

2. Enter the storage path of the backup image and click **Goto,** or select it locally or remotely and

click **Next.**

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

4. Select to convert a single partition or the entire hard drive, and click **Next**.

5. Choose to either convert to VMware 5 or VMware 6, and click **Next**.

6. Select a local or remote destination path to save the conversion backup. Click **Next** to launch the conversion process.

7. Confirm all information about this conversion. Click **Next** to launch the conversion process.

8. Click **Finish** to return to the main console when the process completes.

4.5.6 iSCSI Initiator

First, ensure that the iSCSI initiator is installed on the machine. On Windows Vista, it is installed by default; other Windows systems require a download and manual installation. With this feature, users may connect to the iSCSI device and access a great deal of information and configuration options.

1. Click on the **Tools** tab, and select **iSCSI Initiator**.

2. Select the **Discovery** tab.

3. Click **Add** and enter the **IP address or DNS name** and **Port number** for the Target Portal on which you would like to log on.

4. If your Target Portal requires Chap for authentication, click **Advanced**. Then select the **Chap logon information** option and enter the **Target secret**. Click **OK** twice to return to the iSCSI Initiator Properties dialog.

5. Verify the **Target Portals** properties displayed on the Discovery tab.

6. Select the **Targets** tab to view a list of available targets which you can log on to. Note that the **Status** for these targets is shown as **Inactive** prior to login.

> **Tip**
> a. If your targets are not listed in the Targets tab, verify discovery and successful login by repeating Steps 3 through 6.
>
> b. If you successfully log into the Target portal but the target is still not listed, verify that the target has Logical Unit Numbers (LUNs) assigned to the server.
>
> c. If the target is still not listed, check the System Event Log for errors,

resolve any issues noted in the log, and repeat Steps 2 through 5 to log on
to the Target Portal.

7. Select the target that you want to log on to and click **Log On**.

8. Click **Advanced** and enter the username and password of the iSCSI target.

9. Verify that your target indicates "**Connected**" in the **Status** column.

Once connected, you can operate the connected iSCSI hard drive as you would a physical hard
drive on your system (such as backup and restore)

Chapter 5: DriveClone Pre-OS

5.1 Enter DriveClone Pre-OS Manager

To launch the DriveClone Pre-OS, press the **space bar** after the system POST (Power-On-Self-Test), but before Windows® begins to load. Also you can enter the Pre-OS manager via the following means, a bootable rescue disk, USB drive, USB key and PXE server.

> **Tip**
> To prevent its use as a pirated operating system, Windows PE automatically stops running the shell and reboots after **72 hours of continuous use**. This time period is not configurable.

5.1.1 Boot from Bootable Rescue Disk

1. Insert the Bootable Rescue Disk and restart your computer, and then enter the BIOS to set the CD/DVD ROM as the first boot device.

2. After entering the DriveClone Pre-OS main console, you can then back up and restore your computer, return to a system snapshot, clone a hard disk and many other useful functions.

5.1.2 Boot into Windows via a USB Drive or USB Key

With the USB Hot Drive, you can restore the entire system from a Windows environment.

Follow the steps below to use the USB Hot Drive:

1. Connect the USB device, start your computer, enter the BIOS to set the USB device as the first bootable option, and save your settings.

2. Restart the system and boot from the USB device.

3. After entering Windows, use DriveClone to restore the system. All of DriveClone's other features will also be available to you.

5.1.3 Boot from PXE Server

If the operating system of the PXE Server is Windows Server 2003, you can enable and configure Windows Deployment Services (WDS), and then set the boot image as DriveClone boot.wim in the configuration options of Windows Deployment Services. If you failed to configure WDS, you have to configure the TFTP Server and DHCP Server prior to booting from the PXE Server.

5.1.3.1 System Requirements for PXE

- Intel 486 (or compatible) processor or higher
- VBE2.0 Display Card or higher
- 256 MB of RAM or higher

5.1.3.2 Configuration of PXE Restore

When the operating system on a client PC cannot be accessed after a system crash, the System Administrator can use DriveClone's Pre-OS mode (from the Client PC) to restore the system to a working status by using PXE Restore.

To do this, your Server PC and Client PC must have a network card which supports PXE Boot. You will also have to configure a DHCP Server and a TFTP Server to support the function of PXE Restore.

5.1.3.3 Configuration of a TFTP Server

Please follow the steps below to configure a TFTP Server.

1. Set the IP address of your server (example: 192.168.0.1). For best results, start the IP address with xxx.xxx.xxx.1.

2. Create a Root directory for the TFTP Server. For instance, set the C:\pxe_boot to be the Root directory (You can create the directory in any location on the TFTP Server and the directory can have any name). Then, copy all the files of Boot folder from directory of your exported PXE image to your root directory.

3. Select a tsize option for the TFTP Server.

5.1.3.4 Configuration of DHCP Server

1. Set the Boot File as boot\wdsnbp.com.

2. Configure the Boot Server with the same IP address of your TFTP Server.

3. Create a new port for DHCP Server (The port can be named with any name). Then, set the IP Address to be the IP Address of the TFTP Server, such as 192.168.0.1.

5.1.3.5 Configuration of Client PC

1. Enter the BIOS and set the boot mode as LAN Boot.
2. Turn on the DHCP and TFTP Servers. Restart the client PCPE.
3. You will be prompted to press F12 within 3 seconds to launch PXE booting process.
4. In the Pre-OS, specify your network settings (Refer to 5.2.8.1) and restore your computer.

5.2 DriveClone Pre-OS Main Console

After you enter the DriveClone Pre-OS, you will see the following window.

5.2.1 Quick Start

Back Up Computer(s) — Click here to back up partition(s) or the entire hard drive for your system.

Return to a System Snapshot — Click here to restore from a specified system snapshot.

Restore Your Computer — Click here to restore from a complete backup point.

Data Shredding (Eradication) US DoD Standard Complied — Click here to 100% clean your data by wiping hard drive contents beyond recovery.

5.2.2 Backup (Computers)

5.2.2.1 Back up My Computer in PE Manager

1. Click **Back Up Computer(s)**.

2. Enter a name for your new Complete Backup, and click **Next**.

3. Select the partition(s) or the entire hard disk to back up, and click **Next**.

> 💡 **Tip**
> This backup performed in PE is not supported by Universal Restore.

4. Enter the storage path and click **Goto**, or select a destination location on a hard drive, USB

storage medium, or a network location to store the image file. Some optional settings will be displayed if you click **Advanced**; these include: compression mode, password protection, image split, integrity check, backup description, backup priority, and network connection speed.

5. Click **Next**.

6. Review the information and settings that have been specified. Click **Next** to launch the backup process, or click **Previous** to modify setting(s).

7. Click **Finish** to return to main console.

5.2.3 Return to a System Snapshot

5.2.3.1 Return to a System Snapshot in Pre-OS Manager

1. Click on **Return to a System Snapshot** icon to display a list of System Snapshots. The first System Snapshot listed will be the most recently created snapshot.

2. Select the date you want to restore to from the calendar on the left pane and select System Snapshot of that day you would like to restore on the right pane and click **Next**.

3. Choose to restore the **Entire Hard Drive** or **C : Drive Only** and then click **Next** to begin restoration.

> **Tip**
> If the user chooses to restore the C Drive only, DriveClone only restores the files of the active partition. All of the System Snapshots created before the restoration point can only be used to restore C: drive.

4. Carefully read the warning message. And then click **OK** to proceed to next step. You can also click **Cancel** to exit.

5. Your computer will restart automatically to start the restoration process.

A complete restore can take from 20 seconds up to 10 minutes, depending on the number of files affected. Once the system has restarted, your SYSTEM will be restored from the chosen System Snapshot. All file modifications and additions made after System Snapshot date will be removed.

5.2.4 Restore Your Computer

5.2.4.1 Restore Your Computer in Pre-OS Manager

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

1. Enter into DriveClone Pre-OS manager.

2. Click **Restore Your Computer**.

3. Select a backup image from the list, or **click here** to select an image file stored on a network share. Click **Next** to continue.

4. Select a Complete Backup point or any Incremental Backup point to restore from, and click **Next**.

5. Select to restore a single partition or the entire hard drive, and click **Next**.

6. Select a destination partition or a destination hard drive to be restored from the image file, and click **Next**. If you choose to restore a single partition, click **Yes** to launch the restoration process.

7. To restore the entire hard disk, please select a restore option.

   a. Select the checkbox to modify the destination partition size.

   b. Don't select it for fear of information loss on multiple systems or hidden partition.

   If you selected option **a**, double click the partition Capacity to be resized from the list. If you selected option **b**, skip to step 9.

8. When it shows the structure of the destination partition, double click the highlight and modify its size, and click **Next** to continue.

9. Click **OK** to begin the restoration process.

After the restoration completes, it will reboot into Windows automatically.

If you want to continue to use system snapshot feature, you will need to reallocate space for the secure area as prompted.

5.2.4.2 Perform Universal Restore

You can restore the system partition or the entire hard drive of the selected client to a dissimilar hardware.

1. Launch DriveClone Pre-OS manager.

2. Select **Restore,** and click **Restore Your Computer**.

3. Select a backup image from the list, or **click here** to select an image file supported by Universal Restore. Click **Next** to continue.

4. Select a Complete Backup point or any Incremental Backup point to restore from, and click **Next**.

5. Select to restore with **Universal Restore**, and click **Next**.

6. Select to restore a single partition or the entire hard drive, and click **Next**.

7. Select a destination partition or a destination hard drive to be restored from the image file, and click **Next**. If you choose to restore a single partition, click **Yes** to launch the restoration process.

8. To restore the entire hard disk, please select a restore option.

      a. Select the checkbox to modify the destination partition size.

      b. Don't select it for fear of information loss on multiple systems.

    If you selected option **a**, double click the partition Capacity to be resized from the list. If you selected option **b**, skip to step 10.

9. When it shows the structure of the destination partition, double click the highlight and modify its size, and click **Next** to continue.

10. Click **Next** to begin the restoration process.

11. Click **Finish** to complete the process.

5.2.5 Clone Tab

5.2.5.1 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.

> **Tip**
> 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.

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

2. Select the Source Disk (top pane) and then the Destination Disk (bottom pane). You can choose to modify the Destination Partition Size 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.

> **Tip**
> 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**.

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.

4. After confirming your selections, click **Clone Now** to proceed or you can click **Previous** to change your selection. If the system is busy, DriveClone will try to clone again automatically.

> **Note**
> The cloning process will overwrite all data on the destination disk. Click **Continue** to begin the cloning process. You can also click **Cancel** to exit.

5. Click **Shutdown** to complete the cloning process.

5.2.5.2 Clone Partition

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

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

2. Select a Source Partition in the Hard Drive (top pane).

> **Note**
> You can only choose one partition at a time.
> The Source Partition and the Destination Partition cannot be the same.

3. Select a Destination Partition in the original Hard Drive or another Hard Drive (bottom pane), then click **Next** to continue.

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

4. After confirming your selections, click **Clone Now** 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.

> ⚠️ **Tip**
> The cloning process will overwrite all data on the destination disk. Click **Continue** to begin the cloning process. You can also click **Cancel** to exit.

5. Click **Return to Main Console** to complete the process.

5.2.6 Data Shredding
5.2.6.1 Data Shredding (Eradication) in Pre-OS Manager

DriveClone can erase all data on specified partition(s) or the entire hard drive; the erased data cannot be recovered after eradication. Be cautious before operating this function.

1. Select Data Shredding on the left pane, then click **Data Shredding (Eradication) US DoD Standard Complied** or click **Data Shredding (Eradication) US DoD Standard Complied** on **Quick Start** console**.**

2. Select the partition(s) or the entire hard drive and enter number of the times (maximum of 49) you would like to operate eradication.

3. Confirm all information and then click **Start Now**.

4. Carefully read the warning message and click **OK** to continue, or click **Cancel** to return to main console.
5. Click **Finish** to return to main console.

5.2.7 Analyze Tab

5.2.7.1 Check Backup Image

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

1. Select **Tools** tab and click on **Check Backup Image** icon.

2. Enter the storage path of the image you want to check, and click **Goto** to select the image. You can also select the storage path of the image you want to check and click **Next**.

> 💡 **Tip**
> DriveClone can also check the image file stored on a mapped drive. For more detail about map network drive, please refer to section 5.2.8.2.

3. Select to validate either the Complete or Incremental Backup point, and click **Next** to continue.

4. After validating the backup point, click **Finish** to complete the Image Integrity Check.

5.2.7.2 Check Hard Disk Errors

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

1. Select **Analyze** tab and click on **Check Hard Disk for Errors** icon.

2. Select the disk to be checked.

3. Do one of the following to launch checking process.

   a. To check for errors without repairing them, click **Check Now** without selecting either of the check boxes above.

   b. To check for and correct system errors, make the appropriate selections in the check boxes. And then click **Check Now**.

4. Click **OK** to complete the process.

5. Click **Finish** to return to the main console.

5.2.7.3 Run Command Shell

The command shell executes programs and displays their output on the screen by using individual characters similar to the MS-DOS command interpreter Command.com. You can use the command shell to create and edit batch files (also called scripts) and to automate routine tasks. You can perform operations more efficiently by using batch files than you can by using the user interface.

1. Select **Tools** tab and click on **Open Command Shell Window** icon.

2. Put in the command in the pop-up window and press **Enter** key.

3. Type exit and press **Enter** key to return to main console.

5.2.8 Network Tab

5.2.8.1 Network Adapter Configuration

DriveClone can back up to, or restore from a network location. To use this feature, you should first configure your network settings. From here, you can configure the **IP Address Settings** and **DNS Server Settings**.
Click the **Network** tab and then select **Network Adapter Configuration**, you will see the following screen.
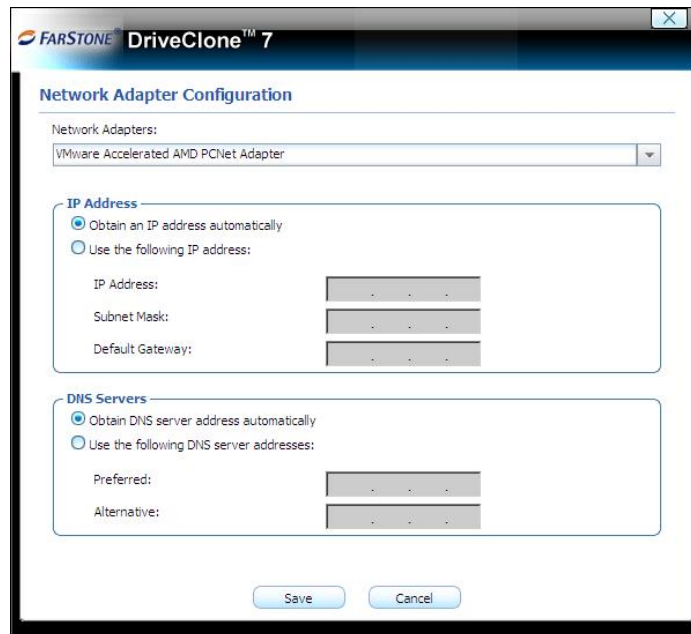
You can setup your network adaptor, IP address, Subnet mask and Default gateway from here.

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

IP Address Settings:

- Obtain an IP address automatically: If your network supports DHCP (Dynamic Host Configuration Protocol), this option will obtain an IP address automatically from a DHCP server or a Point-to-Point Protocol (PPP) dial-up network access server.   DriveClone Client sets DHCP as the default option.

- IP address: Choose this option to manually specify an IP address for your network. This option can be used when automatically obtaining an IP address fails or when there is an IP address conflict.

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

DNS Server Settings:

- Obtaining a 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. DriveClone sets DHCP as the default option.

- Use the following DNS server address: Manually specify the DNS server address if needed. You can enter a preferred one and an alternative one (if the former one is unavailable).

5.2.8.2 Map Network Drive

In this section, you can use the network folder as the local one, and assign a drive letter for it. In doing so, you can access the image files in that folder more conveniently.

After the network resource is connected successfully, you can access all data in it just like they were on your local computer.

1. Select **Tools** tab and click on **Map Network Drive** icon.

2. Select a drive letter from the drop-down list to map the shared resource
3. Enter the computer share name of the resource in this format: **\\Server name\share name**. Or click **Browse** to locate the resource.
4. Click **Save**.
5. In the User name and password dialogue box, type your user name in this format: **domain name\username.** Enter password if prompted.

> **Note**
> All mapped drive(s) will be removed if you reboot or shut down this computer.

5.2.8.3 iSCSI Initiator

First, ensure that the ISCSI initiator is installed on the machine. On Windows Vista, it is installed by default; other Windows systems require a download and manual installation. With this feature, users may connect to the iSCSI device and access a great deal of information and configuration options. For more details regarding the configuration of iSCSI initiator, please refer to 4.5.6.

5.2.8.4 Launch Web Brower
Click the button, users will go through the website in PE.

5.2.9 Tools Tab

5.2.9.1 Preview Backup Image

Preview the content of the specified partition of a complete backup image to make sure you can only restore the needed partition(s).

1. Click on the **Tools** tab, and then select **Preview Backup Image**.

> Note
> If you have mounted an image before, you will be prompted to dismount the previous image. Click **Continue** to dismount the previous image, or **Cancel** to exit this process.

2. Enter the storage path of the image you want to preview and click on **Goto** to select the image, or select the storage path of the image you want to preview and click **Next.**

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

4. Select the partition you want to preview, and click **Mount** to load the image into the system.

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

6. You can click **Yes** to mount another image. Click **No** to return to main console.

   If you do not want to preview the image anymore, select **Unmount Preview Drive** on the the Tools tab, or select the Tools menu and click **Unmount Image** to close the preview partition.

5.2.9.2 Add Driver

If DriveClone cannot detect the compatible and available driver for the application you need, you can install a third party driver manually.

1. Select **Tools** tab and click on **Add Driver** icon.

2. Select the driver file on the local computer or on the network.
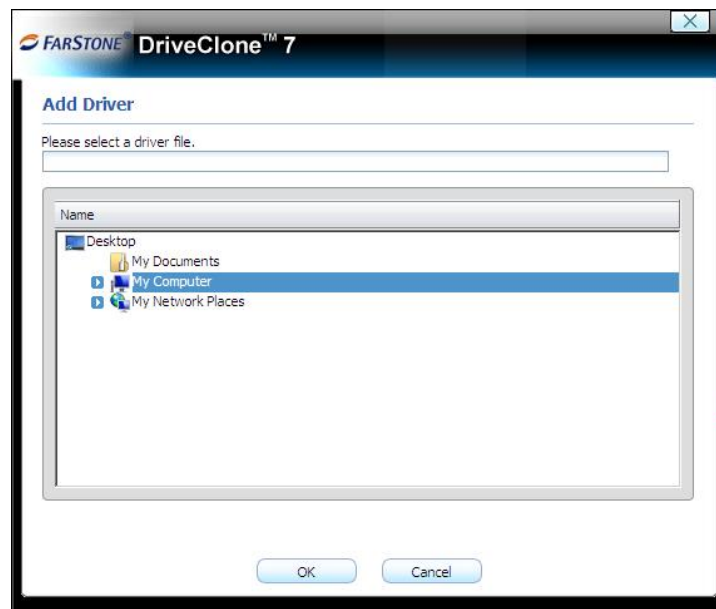
*Select a driver file on your local computer or shared network.

3. Click **OK.**

> **Note**
> All mapped drive(s) will be removed if you reboot or shut down this computer.

The added driver(s) can now work with the matched applications.

5.2.9.3 Fix System MBR

Click **Fix System MBR** to quickly fix the MBR of the primary bootable hard disk to boot the system normally, but the System Snapshot feature will be unavailable and DriveClone may not work normally.

> **Note**
> You must carefully read the shown warning message prior to processing.

1. Select **Tools** tab and click on **Fix System MBR** icon.

2. Click **OK** to confirm this operation.

3. Click **Next** to continue.

4. Select a disk from the list and click **Next.** If your disk doesn't display on the list, you can click **Load Driver** to search matched driver for your disk.

5. Click **Next** to launch the fix process after you select the checkbox.

6. Click **Finish** to complete the process. And you need to restart your computer to Windows manually.

5.2.9.4 Open Explorer Window
Select Tools tab, then click **Open Explorer Window,** files and folders on your computer will be displayed.

Chapter 6: Glossary

- **DriveClone Image**
  A DriveClone image is a file containing a complete copy of a computer's hard drive or partitions on that hard drive. With this image, you can transfer the contents of a hard drive to a portable medium such as a recordable CD/DVD, USB drive, or to another hard drive, for later restoration when needed.

- **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 / 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.

- **Secure Area**
  The Secure Area is a Virtual Partition on the primary hard drive. It uses dispersed free hard drive space to create a logically continuous storage area. This area is hidden in Windows and protected and accessible only by Total Backup Recovery Server.

- **System Snapshot**
  System Snapshots are incremental points-in-time of a computer system's state at a given moment. Total Backup Recovery Server monitors all sector-level changes from the last Snapshot and writes any changes to a new Snapshot. This backup usually takes only seconds to complete. Snapshots offer the quickest way to restore a damaged Windows system to a working state.

- **System Partition**
  The system partition refers to the disk volume that contains the hardware-specific files that are needed to launch Windows (for example: Ntldr, Boot.ini, and Ntdetect.com). On dynamic disks, this is known as the system volume.

- **Boot Partition**
  The boot partition refers to the disk volume that contains the Windows operating system files (by default, in the WINDOWS folder) and its support files (by default in the WINDOWS\System32 folder). The boot partition can, but is not required, to be the same partition as the system partition. There will be one (and only one) system partition, but there will be one boot partition for each operating system in a multi-boot system. On dynamic disks, this is known as the boot volume.

- **Universal Restore**
  Universal Restore allows you to restore your system partition and active partitions to different hardware configurations or virtual machines, such as a replaced motherboard or hard drive controller.

- **Pseudo Drive**
  Pseudo Drive is a virtual space created in the Secure Area. Total Backup Recovery Server utilizes this space to reduce the backup data of System Snapshot and increase backup efficiency.

Chapter 7: Appendix

7.1 Frequently Asked Questions

Q. How long does it take Total Backup Recovery Server to back up or restore a system?

A: This depends on the amount of data on your system. However, Total Backup Recovery Server's technology minimizes the time it takes to perform a backup.

Q. I started DriveClone in Windows immediately after installation completed, but a message says that I have to restart my computer in order to run it. Why?

A: You have to restart your computer after installing DriveClone, in order for all configuration changes to take effect.

Q. When I restored a partition from an image file, Total Backup Recovery Server prompted me that "There is not enough space on the Destination Partition". But I'm sure the free space on the Destination Partition is larger than the used space in the Source Partition. Why am I getting this prompt?

A: If data at the end of the source partition cannot be moved, Total Backup Recovery Server will prompt you with this notice.

Q. 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.

Q. While creating a Recovery CD/DVD, an error message 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.

Q. Do I need to do anything before installing Total Backup Recovery Server?

A: We recommend running Windows Check Disk to scan for hard drive errors.

Q. Bad Sectors have already been detected on a hard drive. How does this affect my backup and restore options?

A: DriveClone will try to copy all used sectors when performing a Complete or Incremental backup. You may be prompted to skip a bad sector or a job could fail due to bad sectors.

Therefore, it's recommended to run Windows Check Disk command to detect and repair hard drive errors, or use utilities provided by your hard drive manufacturer, when attempting to resolve this type of problem.

Q. Can Total Backup Recovery Server fix my system after my hard drive has been accidentally formatted or repartitioned?

A: Yes — if Total Backup Recovery Server was installed prior to the incident.

Q. Can I use disk tools such as Fdisk, PartitionMagic and Norton Speed Disk after installing Total Backup Recovery Server on my computer?

A: Currently there is no known resource conflicting with those utilities.

Q. I've installed three operating systems on my computer, including Linux. Can Total Backup Recovery Server protect all three systems?

A: Total Backup Recovery Server protects multiple Windows operating systems completely, and we recommend using **Back Up Computers** to protect the non-windows systems.

Q. Does Total Backup Recovery Server work in Windows Safe Mode?

A: Total Backup Recovery Server does not work in Windows Safe Mode.

Q. Can Total Backup Recovery Server protect my PC from a destructive virus?

A: While Total Backup Recovery Server cannot prevent the actual virus attack, it can restore your computer to a point before the attack occurred, recovering your files and effectively removing the virus.

Q. Does Total Backup Recovery Server Provide support for Windows® advanced power management?

A: Total Backup Recovery Server supports all Windows® advanced power management features (Standby, Sleep, Hibernate).

Q. Why was my System Snapshot deleted automatically?

A: 1. If there are two operating systems on your computer with only one of the systems installed with Total Backup Recovery Server, when you enter the operating system which does not have Total Backup Recovery Server installed and modify the hard disk data, the system snapshot will be deleted automatically.

   2. If you connect your hard dive physically to another computer and modify your data, the system snapshot will be deleted automatically.

   3. If you use DOS Bootable Rescue Disk to start the system and modify your data, the system snapshot will be deleted automatically.

Q. I've installed Total Backup Recovery Server on Windows 2003 Server. Why can't I back up data through VSS?

A: VSS requires an NTFS partition in the system. Please check to see if your computer has an NTFS partition and that all other VSS requirements are met.

Q. Why does it take more time to install System Snapshot on my computer than on other systems?

A: If there are too many dispersed/fragmented files in your system partitions, Total Backup Recovery Server will defragment them to free up continuous space for the application's kernel file Secure Area. This may take several minutes. Moreover, when you install System Snapshots on a FAT32 partition, Total Backup Recovery Server will divide the Secure Area, which takes much longer time than an installation on NTFS partitions.

Q. How can a PC be restored following a data disaster?

A: There are three ways to boot the PC:

1. Press the space bar upon boot up to enter the Pre-OS.

2. Use a Bootable Rescue Disk to enter the Pre-OS.

3. Configure PXE and remotely boot the Client to the Pre-OS.

Upon entering the Pre-OS:

a. Select a System Snapshot to restore from.

b. Connect to the network or other locally attached storage and select a Complete or Incremental Backup Image to restore from.

Q. How can I restore without having a DHCP Server on the network?

A: If the DHCP service is not running on your network, you'll have to manually enter a static IP address to access the network through **Network Adapter Configuration** in Pre-OS.

Q. What happens if my PC misses a scheduled backup?

A: DriveClone will start the missed backup automatically at next boot up if you select the checkbox in the setting interface saying **If the computer shuts down, run the missed tasks when it boots next time**. If you don't select that checkbox, DriveClone will start the next schedule backup at next boot up.

Q. Does the Total Backup Recovery Server conflict with any other applications?

A: Please close the following applications when launching Total Backup Recovery Server: Utimaco SafeGuard,

Besides, be aware of the following applications, which is conflict with system snapshot:

Norton GoBack, RecoveryGenius, Acronis OS Selector, Acronis TrueImage, SafeguardV4.2, OSL2000

Q. Which partition types does Total Backup Recovery Server recognize?

A: NTFS, FAT, FAT32, Linux Ext2 and Ext3.

Q. Why is my backup image larger than the source partition or hard disk?
A. The source partition or hard disk may have too much of fragmentation. Please Defragment it and then run the backup again.

Q. How can I access the computer outside the Workgroup through the network under the Pre-OS?
A. Click on the **Tools** tab and select **Map Network Drive**. And then map the directory on the remote computer as you wish.

Q. How can I get SDK download location correctly before I use Convert Backup to Virtual Disk feature?

A. VMware Home Page (www.vmware.com) ->Download ->VMware SDK&APIs ->Virtual Disk ->VMware Virtual Disk Development Kit