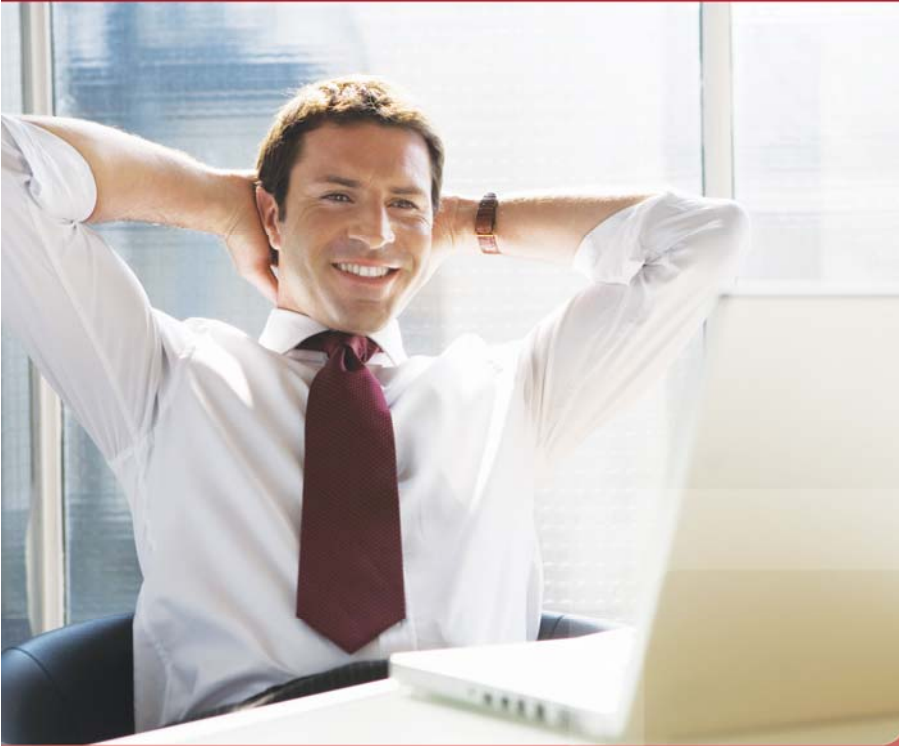


 FARSTONE®



DriveClone 5 Server

User's Guide

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Chapter 1: Introduction

1.1 Product Overview

DriveClone Server 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 server's hard drive to a new hard drive. The image file can also be compressed and distributed across multiple hard drives or partitions.

DriveClone 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 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. System administrators will appreciate DriveClone 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 Features and Benefits

- **Hard Drive Imaging:** Quickly back up or restore a system, or transfer a system image to a new hard drive.
- **Microsoft Volume Shadow Copy Service (VSS) support (for Windows 2003 Server and higher):** Easily backup 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 a need of the Bootable Rescue Disk.
- **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 server's hard drive to another local hard drive, network drive, a USB device, or to CD/DVD media. Clone hard drives that are different in size, format, or brand.
- **Rapid, Controlled Recovery:** Supports UDMA1-5 and can restore data in sectors.

- **Partition Support:** Supports FAT32, NTFS, Linux EXT2/3 and other unknown partitions.
- **Hardware Support:** Supports IDE, EIDE, SATA, and SCSI hard drives and hardware RAID 0/1. Please visit http://www.farstone.com/software/DriveClone_Server-raid.htm.
- **100% protection:** Restore an operating system damaged by corrupt software, human error, a virus attack, or a software bug.
- **Universal Restore:** Restore a complete system image of a particular configuration to different hardware or a Virtual Machine.
- **Password Protection:** Restrict user access to DriveClone Server; lock your server at the DOS level.
- **Unlimited System Snapshots:** Create multiple System Snapshots, limited only by the hard drive space you allocate for DriveClone Server's Secure Area.
- **Resize Secure Area:** Allocate more space to store Snapshots without reinstalling the application.

Chapter 2: Installing and Uninstalling DriveClone Server

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 2000 Server SP4 or higher for all editions, Windows 2003 Server SP2 or higher for all editions
- Supported Desktop Operating Systems: Windows 2000 Pro SP4 or higher, XP, or Vista

2.2 Installing DriveClone Server

1. Insert the DriveClone Server CD into your CD/DVD drive. The Setup program should start automatically. If it does not, run the file called Setup.EXE directly from the CD. If you have downloaded the application instead of purchasing the physical CD version, please run the Setup.exe file from the downloaded package. If you have already installed a version of DriveClone Server on your computer, the Setup program will run differently based on the version of Drive Clone currently installed.
 - a. If the current installed version is older than the version to be installed, you can choose to either install the new version or upgrade the software to the latest version.

**Tip**

This option will require you to enter your serial number.

- b. If the currently installed version is the same version as the version to be installed, you can choose to update the components you wish to install.
 - c. If the currently installed version is newer than the version to be installed, the Setup program will prompt you to uninstall the currently install version first prior to install this version.
2. Select your language preference, and when the installation screen appears, click **OK**.
 3. Click **Next** to continue the installation.

- Carefully read the software license agreement. If you accept the terms of the software license agreement, select **I accept** to continue.
- Enter your personal information and serial number. If you have not purchased a serial number, click **Next** to install a time-limited evaluation of DriveClone Server.
- Select an installation type, **Typical** Setup (Recommend) or **Custom** Setup, and then click **Next** to start the installation. If you select **Typical** Setup, please skip to step 11.



Tip

Typical Setup will install DriveClone Server with all features. We recommend most users choose Typical Setup.

Custom Setup allows customized settings and is intended for advanced users.

- If you select **Custom** Setup, you will be prompted to select the components you wish to install, **File Backup** and **System Snapshot**.
- Click **Next** and DriveClone Server will be installed to the destination folder.
- Specify the size for the DriveClone Server Secure Area to store the backup data (at least 1000 MB is required). DriveClone Server will recommend a size for the Secure Area for each selected partition. You can modify the size recommended for each partition manually. For best result, choose the non-system partition.



Tip

DriveClone Server Secure Area is used to store the Pre-OS Mode program and System Snapshots.

DriveClone Server Secure Area can only be created on your primary/bootable hard drive.

DriveClone Server allocates 200MB of the Secure Area for Pseudo Drive. (Refer to [Glossary](#) for details about Pseudo Drive)

- Click **Next** to continue the installation process.
- Select **Restart Now** to complete the installation. DriveClone Server will restart the computer and create the initial System Snapshot. You can also click **Restart Later** to exit the installation. DriveClone will run at next boot up.

**Tip**

You cannot launch DriveClone Server until your computer has restarted.

2.3 Uninstalling DriveClone Server

DriveClone Server can be uninstalled by following below steps:

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 **DriveClone Server**. Click **Remove** to begin uninstalling related component.

**Tip**

Enter your password (if specified) and click **OK** to access DriveClone Server.
(If no password was set, the password box will not be shown.)

Or

1. From the Windows® taskbar, select **Programs** → **DriveClone Server** → **Uninstall DriveClone Server**. Enter your password (if specified).
2. Click **OK** to begin uninstalling DriveClone Server.

**Tip**

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

Chapter 3: General Info and Key DriveClone Server Technologies

3.1 File Backup

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

3.2 System Snapshot and Hard Drive Imaging

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

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

3.3 Full and Incremental Backups

Another great backup model involves updating disk images incrementally. A Complete + Incremental backup solution aims to make storing several copies of the source data more feasible. To accomplish this, a complete backup is taken 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 in time requires locating the complete backup and all the incremental backups taken between that complete backup and the particular point in time to which the system is to be restored to.

3.4 DriveClone Universal Restore

Universal Restore lets you restore a complete Windows-based system to a different hardware configuration. This feature is useful if you need to replace failed hardware and cannot find an exact match for your original system specifications, or if you simply want to upgrade to different (newer) hardware.

3.5 DriveClone Secure Area and Startup Recovery Manager

DriveClone's Secure Area is a virtual partition. It uses the free space on the hard drive to create a new storage location. This location is hidden, protected, and accessible only by DriveClone.

The Startup Recovery Manager (called DriveClone Pre-OS) is stored in DriveClone's Secure Area, which enables starting DriveClone on a local computer prior to Windows being loaded. With this feature, if Windows won't start for some reason, you can run DriveClone and restore damaged partitions. As opposed to when booting from DriveClone's Bootable Rescue Disk or from a PXE server, you will not need separate media or a network connection to start DriveClone.

3.6 PXE and Network Recover Manager

PXE stands for Preboot Execution Environment. It is an open industry standard developed by a number of participating software and hardware vendors. Initially designed by Intel, with input from 3Com, HP, Dell, Compaq, and Phoenix Technologies, PXE works with a network interface card (NIC) as a boot device for a client PC. 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 state by using the PXE restore feature.

To do this, your Server PC and Client PC must have network cards that support PXE Boot. You will also have to configure a DHCP Server and a TFTP Server to support the function of PXE restore feature.

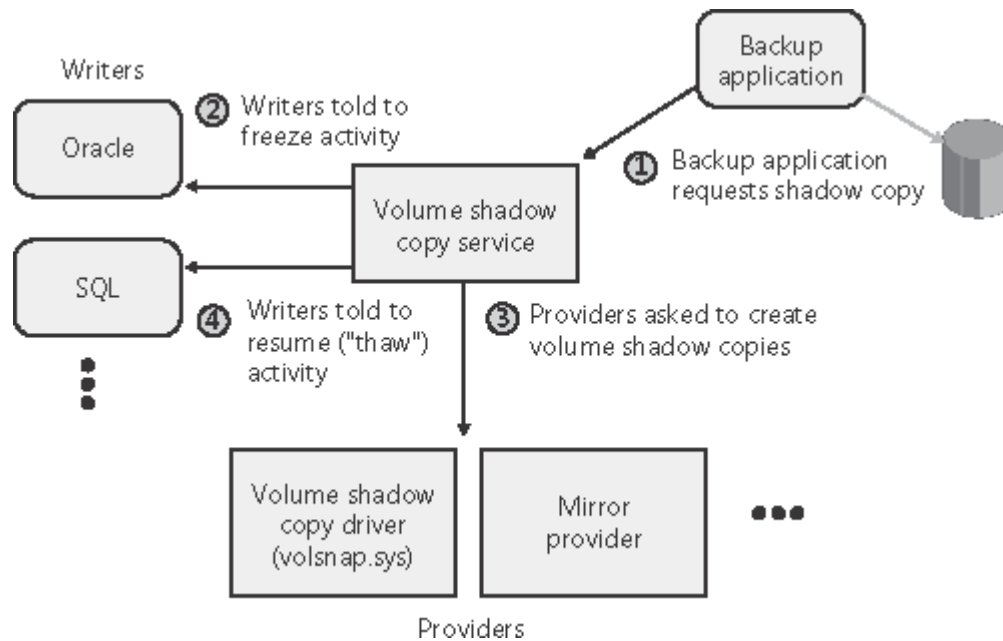
See [Configuration of PXE Restore](#).

3.7 VSS and database support

When a key business service such as Microsoft Exchange Server 2003 is online, several files are either open or undergoing changes. The large volume and dynamic nature of the data make an accurate and reliable backup difficult to perform. DriveClone Server introduces VSS support to solve the problems mentioned above.

VSS (Volume Shadow Copy Service), also referred to as Volume Snapshot Service, is a storage technology for Windows 2003 Server operating systems. VSS allows for taking manual or automatic backup copies or snapshots of a file or folder at a specific point in time. It is useful for creating backups or to access and recover copies of files that have been locked by applications for editing. Because this technology has practical uses and good results with server operating systems, VSS has been also included with the new Windows Vista operating system.

3.7.1 VSS Concepts



As shown in the above figure, VSS consists of 4 parts:

1. Requestor - its main task is to create an initial shadow copy. Based on the computing activity and the requirements of various applications, different requestors may request a shadow copy.
2. Writer - its main task is to ensure the consistency of the data. If utilities keep writing data to the hard disk during the process of creating a shadow copy, the data will be inconsistent. VSS can ensure the consistency of data by controlling the Application Writer Module. It can then achieve a higher efficiency and increased data integrity when creating the shadow copy. Usually, the writer may be a different service module in the operating system, like COM+, DHCP Service, Active Directory Service, etc. A database is a common writer type.
3. Provider - its main task is to create the shadow copy. Provider is the interface of creation time. It can be based on Storage Array (Hardware mode) or Operating System (Software mode). VSS has different Providers. Its arrangement is: bottom is Hardware Provider, middle is Software Provider, and top is System Software Provider.
4. Core module of Volume Shadow Copy Service - its main task is to organize different modules to work together. The core module also provides the method to create the Volume Shadow Copy.

3.7.2 VSS Limitations

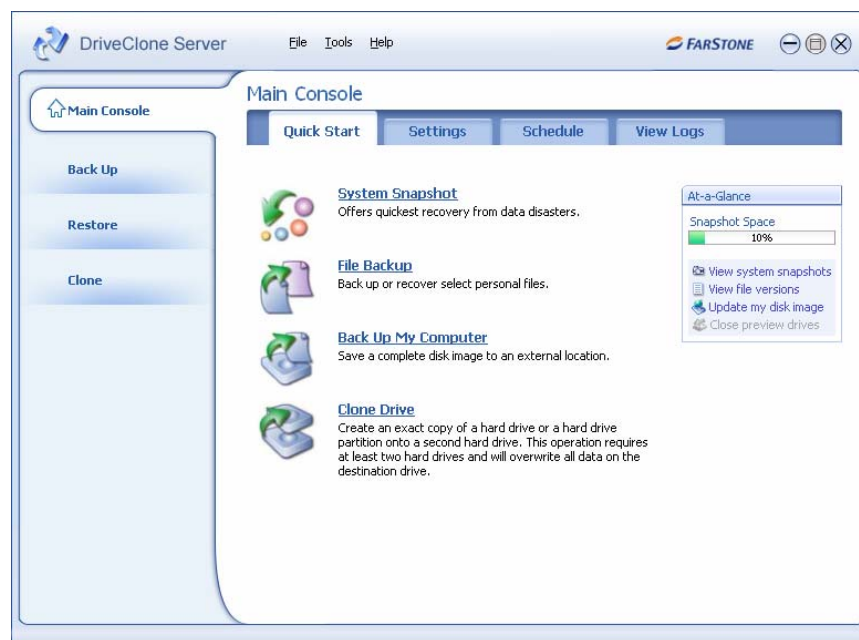
VSS has several significant limitations:

1. Only VSS compliant applications can benefit from VSS framework.

2. VSS is a local solution working within a single host. Remote applications aren't controlled by VSS.
3. VSS currently works to its full capacity on Windows 2003 Server only.
4. There must be a NTFS partition in the system.

Chapter 4: Getting Started in DriveClone Server

To launch DriveClone Server, double click the DriveClone Server icon on your desktop, or select **Start → All Programs → DriveClone Server → DriveClone Server**. Your system will run DriveClone Server automatically.



4.1 DriveClone Server Main Console

4.1.1 Quick Start

System Snapshot - Create a System Snapshot which allows you to recover your system from virus attacks or failed software installation.

File 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 system snapshots - View a list of System Snapshots you have created. You can select any of the listed snapshots and restore the system to that point in time.

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 Snapshot and Complete Backup image.

4.1.2 Settings

General Settings

- **System Snapshot** - View the status of System Snapshot. Click **Turn Off/On** to disable/enable System Snapshot.
- **Resize Secure Area** - Modify the size of the Secure Area. This action will delete all of the system snapshots and will require a system restart.
 1. Select **Resize Secure Area** and click **Yes** to continue.
 2. Allocate space from each partition listed for Secure Area, the allocated space for Secure Area can not be larger than the available space for DriveClone Server.
 3. Click **Next** to start resizing your Secure Area.
 4. Click **OK** to restart your computer and complete the process.
- **Require password access to DriveClone Server** - Check this box to enable password protection for the program. Set a password to protect against unauthorized access to DriveClone Server.

After enabling the password protection, you can set/change the password by clicking **Set Password**, and then enter your current password. Enter the new desired password (maximum of eight characters) and re-enter it to confirm your password.

After the password is applied, DriveClone Server will prompt for password every time the application starts.

If you enter the wrong password five consecutive times, DriveClone Server will shut down automatically (you can try to enter the password again by restarting the application). Please memorize your password and keep it confidential.

System Snapshot Settings

Users can configure the application to display a warning message whenever the Secure Area is running out of the space you specified.

4.1.3 Schedule

Schedule of System Snapshot - Specify the frequency to capture or restore from a system snapshot automatically.

Create a System Snapshot once every n hour(s) - Create a Snapshot every n (1-24) hour(s).



Tip

If the system is set to create a snapshot every hour, then the DriveClone Server will take the first snapshot 1 hour after the creation of the most recent system snapshot.

Create a System Snapshot whenever I start my computer - Create a new System Snapshot automatically every time the system starts.

Select a portion of the hard drive to restore automatically - Check the box if you want DriveClone Server to restore from the most recent System Snapshot every time you start your system.

You can choose to restore C: only or the entire hard drive. If you choose to restore C: only, DriveClone Server will only restore the files on C: drive. All of the Snapshots created before the restoration point can only be used to restore C: drive.



Schedule Definition of System Snapshot

After the installation, DriveClone Server will create a System Snapshot when you restart your computer. And then the running mechanism of the System Snapshot takes this created time as the basis.

After that, it will perform the System Snapshot schedule according to the basis time. When the system creates new System Snapshot later, the running mechanism of the System Snapshot will default the created time as the time to perform the last System Snapshot.

So the running mechanism of the System Snapshot will take that time as the basis to create System Snapshot. And it will not change because of turning off the computer or modifying the system time.

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 backup. 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 a previously scheduled 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 Definitions for Back Up My Computer

1. If the system is busy at the pre-set time, DriveClone Server will not run the scheduled backup job but will try it again later (automatically).
2. If you turn off your computer before reaching the scheduled backup time and you have selected **Run the scheduled job at system startup, if the scheduled time was missed**, DriveClone Server will start the backup process as soon as you turn on your computer.
3. If you have not selected **Run the scheduled job at system startup, if the scheduled time was missed**, DriveClone Server will start the backup process at the next scheduled backup time.

Schedule of File Backup - After you've performed a File Backup, you'll see the following options:

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

Edit Schedule - Specify your preferred **Schedule Settings** of the backup job you have created. Specify the frequency to back up additional changes since the last backup. You can choose to run the backup every n(1-7) day(s).

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

Back Up Now – Back up the selected job immediately

Delete - Delete the selected job.



Schedule Definition of File Backup

1. If your system is turned off during your scheduled backup time, DriveClone Server will start the backup process immediately after you start the system.
2. If your system is busy, DriveClone Server will not be able to start the backup process. DriveClone Server will start the backup process again automatically 5 minutes later.
3. 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 Server's Setup folder
 - g. Files in Backup Destination directory of the current running backup job
 - h. Files in the Temp directory

4.1.4 View Logs

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

Save - Save the event record with .xls format.

Delete - Delete the selected events.

Delete All - Delete all the saved events.

Chapter 5: Backup Console

5.1 Create a System Snapshot

1. Click **Back Up** to create a System Snapshot. You can also click **System Snapshot** on the main interface of DriveClone Server to start creating a System Snapshot.
2. Enter a name for the System Snapshot. Click **Create a System Snapshot** to start creating it. Click **Cancel** to return to the previous menu.
3. If any program is currently writing data to the hard drive, DriveClone Server may not be able to create a System Snapshot.
4. Click **Return to Main Console** when 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. You can choose to restore the entire hard drive or C drive only. And click **Save** to save your settings.

5.2 File Backup

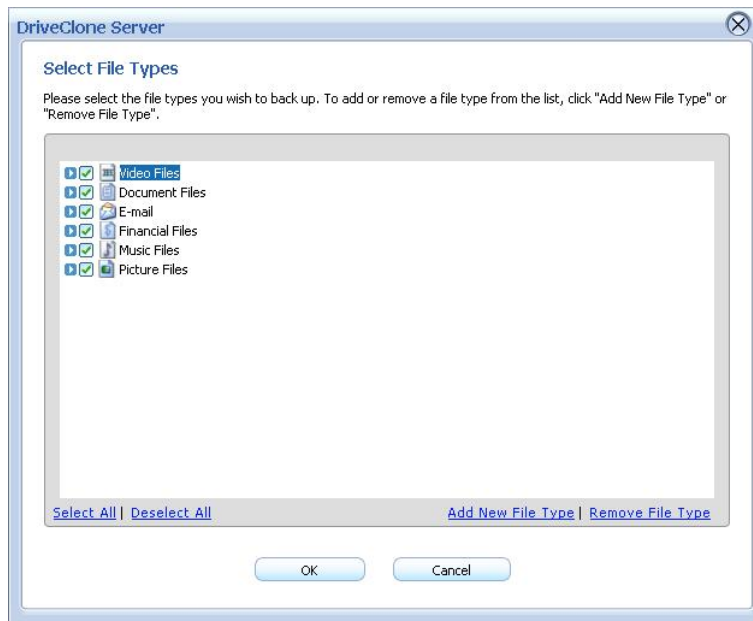
1. Start the DriveClone Server Program. Select **Back Up** and then click **File Backup**.
2. You can create a new full file backup and you can also select **Incremental File Backup** box to select a former job and create incremental file backup.

If you have selected **Incremental File Backup**, you can choose to examine information details 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](#) for details).

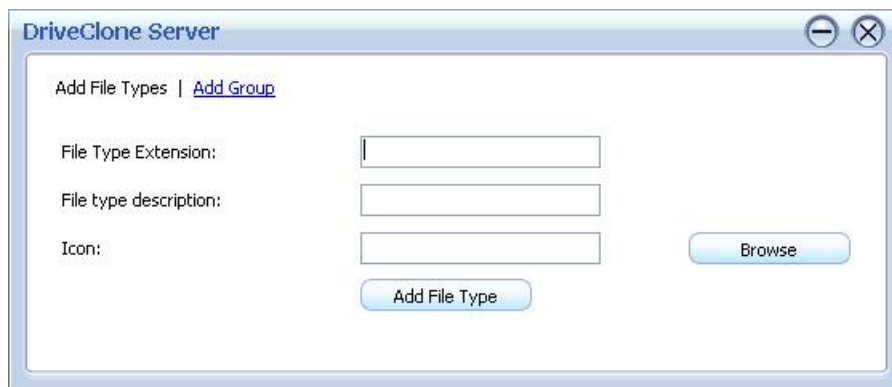
3. Enter a name for your new job. And click **Get Started**.
4. Select the file(s) you want to back up. You can also click **Add Files/Folders** or **Add File Types** to add file type, folder or individual file to back up according to your preference. Click **Next** to continue. You can set the maximum number of backup versions you want to back up in this step. DriveClone Server 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.

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.

6. Select **Run Backup Now** checkbox, then click **Next** to begin backup. You can uncheck **Run Backup Now** if you want to run schedule backup. You can also click **Previous** to modify your selections.



Tip
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 starting the backup job.

7. 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 click **Return to Main Console** to finish the backup. (Refer to [Schedule of File Backup](#) for details).

5.3 Back Up My Computer

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

3. Enter a name (1-50 characters) for your new Complete backup file. Click **Get Started>** to continue.
4. Check the **Support Universal Restore** option if you would like to allow the image to be restored to dissimilar hardware at a later time. Click **Next** to continue.



Tip
You can only use the **Universal Restore** option if your bootable system partition is located in a primary partition on the primary hard drive.

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



Tip

- 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 Server 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 image to a partition where your Operating System was installed, it will take much longer time to complete the backup process.

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 **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.

(Optional) In the **Image Splitting** option, select a file size for a single volume of the split image. If you select automatic, DriveClone Server 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”**.

(Optional) You can add description of the backup file in the Image File Description box.

7. Click **Next**.
8. You can now review the information and settings that have been specified.
9. Select **Run Backup Now** checkbox, then click **Next** to begin backup. You can uncheck **Run Backup Now** if you want to run schedule backup. Also you can also click **Previous** to modify your selections. If the system is busy, and DriveClone Server can not start the backup process successfully, DriveClone Server will try to back up again automatically.

10. Click **Return to the Main Console** after the backup completes. You could also Click **Click here to create a schedule now** or **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)

5.3.1 Image Integrity Check

Use this function to check if an image file of a complete backup created by DriveClone Server can be used.

1. Select **Tools → Image Integrity Check**.
2. Select an image from the list. If the image you want to check is not listed, click **Browse** to specify it on hard drive, CD/DVD disc, network location or other movable storage medium. And then click **Next** to check the image.
3. Select a complete backup point or an incremental backup point, then click **Next** to start image checking process.
4. Click **Return to Main Console** to complete the Image Check.

5.4 Create a Bootable Rescue Disk

Your Bootable Rescue Disk is used to boot your computer into Pre-OS as your operation tour.

1. Click **Bootable Rescue Disk**.
2. Insert an USB device or a blank CD into your CD/DVD Drive.
3. All available devices should display in the drop down list. Select the device you will use to create Bootable Rescue Disk.
4. Click **Get Started** to continue.



Tip

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**. And click **Change** to insert another blank CD/DVD, click **Cancel** to stop burning.

5. Click **Finish** to return to Main Console.

Chapter 6: Restore Console

6.1 Return to a System Snapshot

1. Click **Restore** and then **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 System Snapshot of that day you would like to restore on the right pane and click **Restore System**.
3. Choose to restore the **Entire Hard Drive** or **C : Drive Only** and then click **Next** to begin restoration.

**Tip**

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

4. Carefully read the warning message. And then click **Continue** to proceed to next step. You can also click **Cancel** to exit.
5. Your computer will restart automatically to start the restoration process.

6.1.1 Preview System Snapshot

User can preview a System Snapshot as Preview Drives that can be browsed by Windows® Explorer. As the result, user can restore individual file or folder from Preview Drives without restoring the entire hard drive.

1. Start DriveClone Server and Select **Restore** and then **Return to a System Snapshot**.
2. Select a System Snapshot point that you want to preview, then click **Preview System Snapshot**.
3. Click **OK** to access the Preview Drives.



Note

You can preview only one System Snapshot at one time. If you want to preview another System Snapshot, the current Preview Drive(s) will be closed.

If you want to close the Preview Drives, click **Close Preview Drives** on the interface of Quick Start or in **Tools** to close the Preview Drives.

6.2 Restore Files

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

1. Select **Restore** and then click **Restore Files**.
2. Select a backup image file 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.
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.
4. 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.



Tip

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 **Select a folder** to specify a folder on your local hard drive to hold the restored files. The restored files will be kept in their original folder hierarchy.

4. Click **Start Restore** to continue.
5. Click **Return to Main Console** to complete the process.

6.3 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.

1. Start DriveClone Server and select **Restore** and then click **Restore My Computer**.
2. Select a Complete backup image from the list or click **Browse** to select a Complete backup image that is not listed in the dropdown choice. Click **Next** to continue.



Tip

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.

3. You can restore from the complete backup point plus any incremental back up files. Click **Next** to continue.
4. Select whether you'll restore a single partition or the entire hard drive and click **Next**.
5. 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 continue and then skip to step 9.



Note

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

6. To restore the entire hard disk, please select a restore option.
 - a) Modify the destination partition size.
 - b) Restore according to the original size of the source hard drive.
7. If you selected option **a**, double click the partition to be resized from the list. If you selected option **b**, skip to step 9.
8. Modify the size of the destination partition, Click **Next**.
9. Click **OK** to restart your computer. Your computer will then boot into Pre-OS recovery environment. You can also click **Cancel** to terminate the restore process.
10. Click **Return to Main Console** to complete the restoration process.

6.4 Restore My Computer (Universal Restore)

Follow the steps below to restore a system partition or active partition to a different computer:



Tip

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

1. Launch DriveClone Server, select **Restore** from the options on the left side of the window and then click **Restore My Computer (Universal Restore)**.
2. Select a complete backup image from the dropdown list, or click **Browse** to locate a complete backup image and click **Next** to continue.



Tip

All the images displayed will be the images that support Universal Restore. More information about Universal Restore can be found in the Back up My Computer section of this manual.

If you select an image file stored on the network, you may be prompted to provide a user name and password to access the network share. Contact your network administrator if you need assistance accessing network resources.

3. Select a backup point, then click **Next** to proceed.
4. When confirmation dialog box appears, click **OK** to enter DriveClone Server Pre-OS to begin the restore process, or click **Cancel** to exit.
5. Select the destination hard drive where you want to restore image to. It is strongly recommended to select **Only restore system partition** if you don't want the entire hard drive being overwritten.
6. View the partition structure of the destination hard drive as if the restoration completed. Click **Next** to continue.
7. Confirm settings of the restoration. Click **Previous** to modify. Click **Start** to continue. Click **Cancel** to exit.
8. Click **OK** to reboot to Windows.

6.5 Preview Backup Image

To restore an individual file or folder:

1. Click **Preview Backup Image** directly on the main interface of Restore.
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 and click **Next** to continue.
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 begin previewing the image.
5. You can now browse and copy data on the preview drive in Windows® Explorer.
6. Click **Return to Main Console** to complete the mounting process.

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

1. Click **Tools** and then select **Close Preview Drives** or click **Close Preview Drives** on the interface of Quick Start.
2. Click **OK** to begin the unmounting process.

This operation will unmount all of the preview drives of Complete Backup image and Snapshot.

6.6 Export PXE Image

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

information about PXE, [please refer to 3.6](#).)

1. Click on the **Tools** tab, and select **Export PXE Image**.
2. Enter the destination path you want to save the exported image and click **Goto**, or select the destination path locally or remotely and click **Next**.
3. Click on **Finish** to complete the process.

Chapter 7: Clone Console

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

7.1 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 Server 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 could also click **Cancel** to exit.

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

7.2 Clone Partition

With DriveClone Server, 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 Server 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 could also click **Cancel** to exit.

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

Chapter 8 Recover System in Pre-OS Mode

8.1 Enter the DriveClone Server Pre-OS Manager

To launch the DriveClone Server Pre-OS Manager, press the **space bar** after system POST (Power-On-Self-Test), but before Windows® begins to load.

Enter your password (if specified) and click **OK** to access the main screen of DriveClone Server. (If no password has been set, the password box will not be shown.)

8.1.1 Boot from a Bootable Rescue Disk

1. Insert the Bootable Rescue Disk and restart your computer, and then enter BIOS to set the CD/DVD ROM or the USB device as the first boot device.
2. After entering DriveClone Server Pre-OS Console, you can then modify your network settings, return to a system snapshot, check image integrity, restore drives and uninstall DriveClone Server.



Tip

If you have installed System Snapshot module, the Return to a System Snapshot and Uninstall features in Pre-OS mode will be gray.

8.1.2 Restore from a 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.

1. Insert the Recovery CD/DVD and select **Restore** and then click **Restore My Computer**.
2. Click **Browse** to select the restore point from the CD/DVD.
3. Select a partition or an entire hard drive to restore.
4. Select a destination partition or unallocated space to restore the image file. Click **Next** to

begin the process.

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.

1. Restart your computer and enter BIOS. Set CD/DVD ROM to be the first bootable device.
2. Insert the Recovery CD/DVD and start up the computer. The system will enter the Pre-OS mode.
3. Click **OK** to continue. Click **Cancel** to exit and restart your computer.
4. Click **OK** to complete the process and restart your computer.

8.1.3 Boot from PXE Server

8.1.3.1 System Requirement for PXE

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

8.1.3.2 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 Server's Pre-OS mode to restore the system to a working status by using PXE Restore.

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

8.1.3.3 Configuration of 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 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 be named with any name). Then, copy all the files of Bootstrap directory from DriveClone Server's installation directory to your root directory.
3. Set the configuration file to match the client PC. Create a new directory named with pxelinux.cfg in C:\pxe_boot. Then, create a text file in pxelinux.cfg directory. The name of this text file must be named with the MAC Address of the client PC. For instance, if the MAC Address is 00-14-2a-3a-c9-9c, the filename must be 01-00-14-2a-3a-c9-9c. There cannot be an extension of the file name.
4. The content of the text file is shown below:

```
DEFAULT install
PROMPT 1
LABEL install
KERNEL spc_kern
APPEND initrd=spc_root rw root=/dev/ram0 vga=788 ramdisk_size=102400 APPT=0
console=/dev/null
```
5. Select a tsize option for the TFTP Server.

8.1.3.4 Configuration of DHCP Server

1. Set the Boot File as pxelinux.0.
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.

8.1.3.5 Configuration of Client PC

Enter BIOS and set the boot mode as LAN Boot.

1. Turn on the DHCP and TFTP Servers. Restart the client PC so that it can enter the pre-OS mode of PXE.
2. In pre-OS, specify your network settings and restore drives.

Network Settings

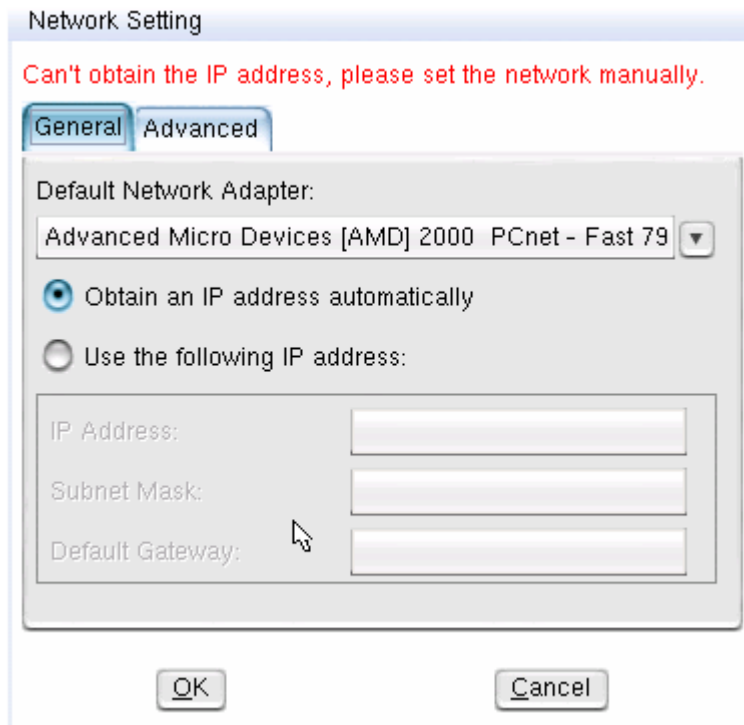
DriveClone Server can back up to, or restore from a network location. To use this feature, you should first configure your network settings.

To configure your network settings, click **Network Settings** in Pre-OS.

There are two tabs in the Network Settings window:

➤ **General:**

The General tab is shown below.



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

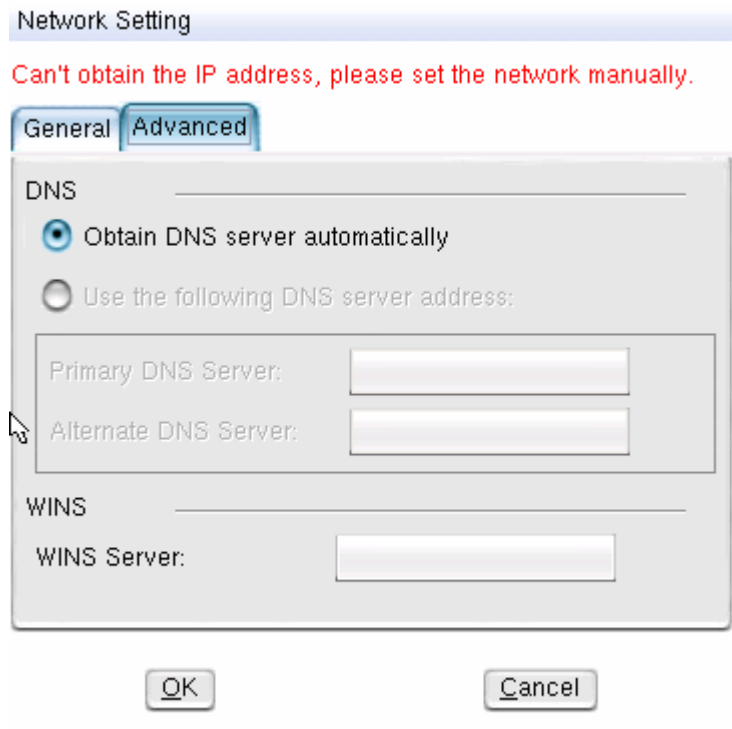
If you have more than one network adaptor on your system, select the adaptor to be used from the dropdown menu.

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 Server uses DHCP as the default option and will obtain the IP address of your computer automatically.
- **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.

➤ **Advanced:**

The Advanced tab is shown as below.



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.

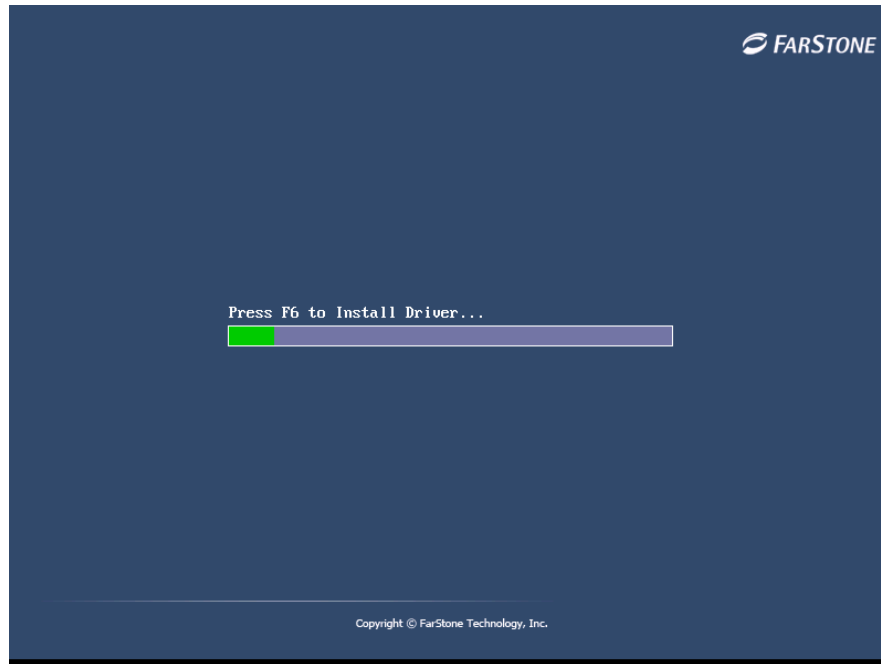
DNS settings:

- 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 Server 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.

8.1.4 Install Driver in Pre-OS

1. During launching the DriveClone Server Pre-OS Manager, press the **space bar** after system POST (Power-On-Self-Test), but before Windows® begins to load.
2. When the following screen appears, press **F6** to continue.



3. Insert a Driver Disc and then press **Enter** to begin loading driver. After that, DriveClone will enter Pre-OS to install third party driver. You can also press **F3** to skip the driver installation and load into Pre-OS directly.

If DriveClone cannot detect the compatible and available driver, you can install third party driver manually. But the driver may not work properly.

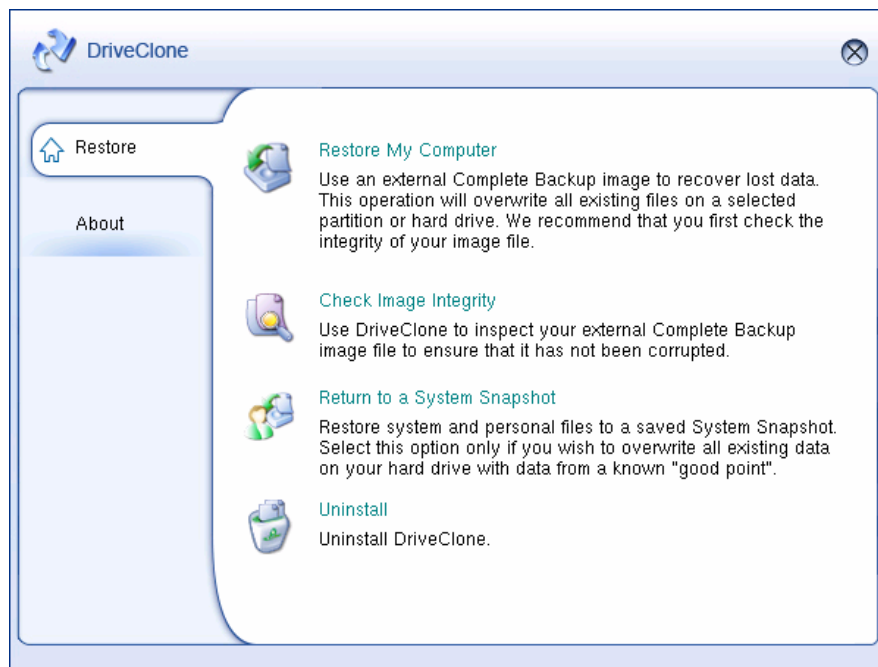


Tip

DriveClone is fully compatible with Redhat Enterprise Linux 5.

8.2 DriveClone Server Manager in Pre-OS Mode

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



8.2.1 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.

1. Click **Restore My Computer** icon on Pre-OS Main Console.
2. Click **Browse** to select the complete image file you want to restore from. Click **OK**.
3. Click **Next** to continue.
4. Select the complete backup point or any incremental backup point to restore from.
5. Click **Next** to continue without selecting **Perform Universal Restore**.
6. Select the destination partition or hard disk to restore.
 - a. To restore a single partition, click **Next**.
 - b. To restore the entire disk, you could select or deselect **Restore by the Original Size** checkbox. If you want to resize the destination partition, please deselect **Restore by the Original Size** checkbox and then double-click a partition in the list to resize it. And then click **Next**.
7. Confirm the settings of the restore. Click **Previous** to modify. Click **Start** to continue. Click **Cancel** to exit.
8. Click **OK** to return to main console in Pre-OS, or click **Restart** to reboot to windows.

DriveClone Server can restore from a network location. To use this feature, you should first configure your network settings. (Refer to [Network Settings](#) for details.)

8.2.2 Perform Universal Restore in Pre-OS

With Universal Restore, you can restore your saved system image to a dissimilar hardware or a virtual machine.

1. Click **Restore My Computer** icon on Pre-OS Main Console.
2. Click **Browse** to select a saved complete system image file that you want to restore. Click **OK** to continue.
3. Click **Next** to continue.
4. Select a complete system backup point or any incremental backup point to restore.
5. Click **Next** to continue after you select to **Perform Universal Restore**.



Tip

Universal Restore is only available only if you checked **“Universal Restore”** during the Complete Backup process.

6. Select the destination hard drive. It is strongly recommended to select **Only restore system partition** if you don't want the entire hard drive be overwritten.
7. View the partition structure of the destination hard drive as if the restoration completed. Click **Next** to continue.
8. Confirm all settings of the restoration. Click **Previous** to modify. Click **Start** to continue. Click **Cancel** to exit.
9. Click **OK** to return to the main console in Pre-OS, or click **Restart** to reboot to Windows.

DriveClone Server can restore system image from a network shared folder. To use this feature, you should first configure your network settings. (Refer to [Network Settings](#) for details.)

8.2.3 Image Integrity Check

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

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

2. Click **Browse** to select the image file you want to check. Click **OK**.
3. Click **Next** to continue.
4. Confirm the information of the selected image and click **Next** to begin checking process.
5. After the checking process is complete, click **OK** to return to the Pre-OS main console. Or click **Restart** to reboot to Windows.

DriveClone Server 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.



8.2.4 Return to a System Snapshot in Pre-OS

1. Click on **Return to a System Snapshot** icon in the Pre-OS Main Console to display a list of System Snapshots. The first System Snapshot listed will be the most recently created snapshot.
2. Select a System Snapshot, and then choose whether to restore the entire hard drive or the C: drive only.
3. Click **OK**.
4. Please read the prompt message carefully and then click **OK** to start the DriveClone Server restoration process. Or click **Cancel** to exit.
5. Click **Close** to complete the restoration process, or click **Return to Main Console** to return the main interface in Pre-OS.

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.

8.2.5 Uninstall

Click **Uninstall**, your system will uninstall DriveClone Server after your computer restarts. All disk space held by DriveClone Server will be released.

You can also click  button to restart your computer or click  button to turn off your computer.

Chapter 9 Glossary

- **DriveClone Server Image**

A DriveClone Server 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 / 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**

Secure Area is a virtual partition. It uses the free space on the hard disk to create a new logically continuous storage space. This space is hidden and protected by DriveClone Server.

- **System Snapshot**

DriveClone Server automatically takes quick snapshots of Windows® files and settings. This backup action takes only several seconds to complete and enables a user to restore Windows® to a previous working state, thus recovering from system crash, virus attacks and bad software installations.

- **Pseudo Drive**

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

- **System Partition**

The system partition refers to the disk volume that contains the hardware-specific files that are needed to start 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, such as a replaced motherboard or hard drive controller.

Chapter 10 Appendix

10.1 FAQ

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

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

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

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

Q. 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 Server will prompt you with this notice. Even if the free space on Destination Partition is larger than the used space in the Source Partition.

Q. I installed DriveClone on two different operating systems (Windows® 2000 and XP) on my computer. After I removed DriveClone Server 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 DriveClone Network Secure Area, so the program in another operating system will become unusable.

Q. 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 Server?

A: Please try the following method: If you plugged in the USB hard drive after launching DriveClone Server, please insert your USB drive and then restart your computer and try again.

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. After cloning disk, why is DriveClone Server uninstalled in destination disk?

A: DriveClone Server writes the original MBR of the system to the destination disk while cloning the disk. Therefore, if user had installed System Snapshot, DriveClone Server will be automatically uninstalled after startup because DriveClone Server MBR cannot be detected.

Q. Do I need to do anything before installing DriveClone Server?

A: We strongly recommend that you run the Windows® Checkdisk program to check for hard drive errors prior to install DriveClone Server. The Checkdisk utility can be started by running Chkdsk.exe from a command prompt or by using the DriveClone Server, Pre-Installation Checklist tool. Note: Running Checkdisk from either location will require a system restart for the operation to be completed.

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

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

Q. Can I use disk tools such as Fdisk, PartitionMagic and Norton Speed Disk after DriveClone Server is installed on my computer?

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

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

A: DriveClone Server protects multiple Windows operating systems completely, and we recommend using **Back Up My Computer** to protect the non-windows systems.

Q. Can DriveClone Server protect my PC from a destructive virus?

A: While DriveClone 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 DriveClone Server Provide support for Windows® advanced power management?

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

Q. I had a large storage capacity hard drive (>137G) on my computer. Why was DriveClone Server automatically uninstalled after I had finished installing it and restarted the system?

A: Your BIOS may not support large storage capacity hard drive. Contact the manufacture of your computer to upgrade the BIOS.

Q. Which software is not compatible to DriveClone Server?

A: The following software are not compatible to DriveClone Server
Norton GoBack
RecoveryGenius
Utimaco SafeGuard
Acronis OS Selector
Safeguard
OSL2000

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 DriveClone Server, when you enter the operating system which does not have DriveClone 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. 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.

Q. Why does my computer take a long time to install DriveClone Server?

A: If your system has many disk fragmentations, DriveClone Server will defrag the hard disk to allocate enough continuous space to store DriveClone Server's Secure Area. This process will take several minutes. If there is enough continuous space on the hard disk, the installation process will be much faster.

Also DriveClone Server will take a longer time to create Secure Area on FAT32 partition than on NTFS partition while installing System Snapshot module.

Q. Why can't I start my computer after performing a Universal Restore, while the same image can be universally restored to other computers?

A: After Universal Restore completes, Windows will install drivers for identifiable hardware

devices automatically. However, if any hardware device used in the system startup routine cannot be identified (such as SCSI drive controllers or RAID enabled drive controllers), the system would not be able to boot.

Q. Why did a dialog window for installing a driver program appear in Windows after Universal Restore completes?

A: After Universal Restore, Windows will detect new hardware and install drivers automatically. If Windows cannot identify any hardware device, the dialog window for installing a driver program will be displayed. You can follow the installation to complete driver installation.

Q. Why can't I backup to the network mapped drive with DriveClone Server, which can be explored in Vista environment?

A: Please check whether the User Account Control (UAC) is enabled. You could disable the UAC or modify the registry as below.

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System
EnableLinkedConnections = 1 (DWord)

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.