

Active@ Boot Disk

User Guide

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Contents

| | |
|--|----|
| 1.0 Product Overview | 4 |
| 1.1 About Active@ Boot Disk | 4 |
| 1.2 Requirements for Using Active@ Boot Disk | 6 |
| 1.3 Downloading Active@ Boot Disk | 6 |
| 1.4 BootDisk_Drivers and BootDisk_Scripts | 9 |
| 1.5 Booting from a CD, DVD or USB Device | 10 |
| 2.0 Navigating the Active@ Boot Disk Shell | 14 |
| 2.1 Data Backup Utilities | 15 |
| 2.2 Data Recovery Utilities | 18 |
| 2.3 Data Security Utility | 30 |
| 2.4 Network Operations Utilities | 34 |
| 2.5 Utilities | 37 |
| 2.6 System | 42 |
| 2.7 Internet | 64 |
| 2.8 Load Drivers | 70 |
| 3.0 About Boot Priority | 71 |
| 4.0 Glossary | 73 |

1.0 Product Overview

This chapter gives an overview of Active@ Boot Disk.

1.1 About Active@ Boot Disk

Active@ Boot Disk is a powerful set of tools that will help you in a number of data recovery and data security scenarios.

Active@ Boot Disk combines a number of powerful tools that let you recover lost data, reset Windows passwords, make computer system backups and securely erase data. Active@ Boot Disk starts when you start your computer from a bootable CD-ROM or DVD-ROM.

When you use Active@ Boot Disk, you gain access to the drive's data on a physical level, and on a logical level, bypassing the resident operating system. What this allows you to do is lock selected volumes for your exclusive use. Locking a volume is important if you want to wipe data residue from unoccupied space on the drive or recover data from files or folders.

When you boot from the local hard drive, drive volumes cannot be locked by the resident system. The recover operation must have exclusive access to the target location. If a service or another application gains access to the target location, it might write over the files that you are trying to recover, rendering them un-recoverable.

Here are some other functions that you can perform by booting from the CD or DVD:

- Backup the system drive - If you backup the system drive with Windows started from the same drive, when you restore the backup, it starts as though you are recovering from a loss of power. The boot up starts with system integrity checking. If you backup the system drive with Windows started from an external drive, the restored system starts clean.
- Wipe unused data from the MFT, from unused clusters, from file slack space (see Active@ KillDisk) - A "clean" wipe operation is not possible with Windows started from the same drive. If you wipe data with Windows started from an external drive, the wipe performs cleanly.
- Delete files - If you delete files with Windows started from the same drive, Volume Shadow Copy service may still be active, keeping the previous version of the file or even a snapshot of the whole disk. It is possible that an uninvited intruder may retrieve this confidential data. If you delete files with Windows started from an external drive, the delete is permanent.

Active@ Boot Disk contains the following products and utilities:

- Active@ Disk Image
- Active@ Data CD/DVD Burner

- Active@ Partition Recovery
- Active@ File Recovery
- Active@ Password Changer
- Active@ HEX Editor
- Active@ KillDisk
- Active@ Partition Manager
- Network operations utilities to help you map network drives, view network status, configure IP settings and Windows firewall and to help you connect and work with a server remotely.
- Utilities to monitor the status of your hard disk, copy, move and delete files and folders and create a text file..
- System utilities to create, delete, format and resize partitions, manage system tasks, run command prompt commands, check disk integrity and configure the display parameters.
- K-Meleon Web browser
- FTP Client and Telnet Client
- A list of documents that support Boot Disk utilities.

1.1.1 About Active@ Boot Disk operating system

Because the Active@ Boot Disk ISO image has been created using the Microsoft Windows PE (Preinstallation Environment) 2.0 operating system, you have access to many new Vista features using the Vista user interface.

The bootable image contains a variety of plug-ins, drivers and other 32 bit applications. The best aspects from version 2.0 are the ability to create and use a re-writable RAM disk, and the recognition of USB keys.

Here are some more advantages in Windows PE 2.0:

- You may use the new Vista-style standard dialogs, like File Open, Save As, and so on.
- Security Updates: Support for SSL (Secure Socket Layer) is included.
- PnP (Plug and Play) support: Hardware devices can be detected and installed while Windows PE is running. This supports any in-box PnP device, including removable media and mass-storage devices. This means that you can plug in a mass-storage device to use for data recovery or data backup.
- Automatic writable RAM drive: When booting from the CD/DVD drive, Windows PE automatically creates a writable RAM disk (drive X:) and allocates 32 MB of the RAM disk for general-purpose storage. By using compressed NTFS, the 32 MB is addressable up to 60 MB. This drive space may be used to recover files or folders.



Note After the Windows operating system and Active@ Boot Disk have started, the boot CD/DVD can be removed from the drive. A new CD/DVD can be inserted into the drive and you can read from it or burn data to it.

1.2 Requirements for Using Active@ Boot Disk

To use Active@ Boot Disk, you must have the following:

- Pentium II processor or higher
- 300MB or more RAM
- A CD/DVD drive or a USB mass storage device to boot from

In addition to the above, you must be able to turn on power to the machine and you must have access to the system board BIOS setup.

1.2.1 How the system RAM is used

The ISO for Active@ Boot Disk was created from Windows PE (Preinstallation Environment), a lightweight version of Windows Vista.

When booting from the CD/DVD drive or from a USB storage device, Windows PE creates a writable RAM disk (X:) and places itself on this drive for loading. While Windows Vista is booting up, it loads itself into RAM. After Windows has started, the boot CD/DVD may be removed from the drive or the USB flash card may be removed from the USB port. Starting with 300MB of RAM, all that is left is about 60MB of writable space to work with.

1.3 Downloading Active@ Boot Disk

You must perform these operations on a separate computer that has a healthy hard drive and access to the Internet.

To download Active@ Boot Disk:

1. On the Internet, navigate to <http://www.boot-disk.com>.
2. To download Active@ Boot Disk (Win Edition), click the **Buy Now!** link and follow the procedure for paying.
3. To download the 10-day Demo version, click the **Download** link.
4. You may save the file to a folder on your machine or you may run the file directly from the Internet folder.
5. The install wizard steps you through pages to agree to the terms of the license and determine the destination folder.

6. In the **Select Components** page, for assistance with writing Active@ Boot Disk to a bootable CD, DVD or USB mass storage device, select the **Active@ Boot Disk Creator** check box.
7. After Active@ Boot Disk has been successfully installed, select the **Run Active@ Boot Disk Creator** check box and click **Finish**.

Continue with the next section.

1.3.1 Active@ Boot Disk Creator

Active@ Boot Disk Creator helps you prepare a bootable CD, DVD or USB mass storage device that you may use to start a machine with a damaged hard drive and recover data, recover partitions, create a disk image or repair security access issues.

To prepare a bootable device for Windows:

1. In the Active@ Boot Disk Creator main page, click **Boot Disk Win Edition**. The **Boot Disk Win Edition** page appears.
2. To prepare a bootable CD or DVD:
 - a. Click **Win CD/DVD Boot Disk**. The **Win CD/DVD Boot Disk** page appears.
 - b. To write the Boot Disk ISO file to a different folder, click **Browse** and navigate to the folder.
 - c. Insert a blank or re-writable CD or DVD into the disk writer.
 - d. Click **Create!**. A progress bar appears.
3. After the ISO has been created, you must write it to a bootable CD or DVD.

If you have a disk burning utility that you prefer to use, use it to burn the ISO to a disk. Section 1.3.2 has instructions for some other utilities.

4. If you do not have a disk burning utility, you may choose to use **Windows Burning Engine**.

To upgrade the Windows Burning Engine:

- a. Open a connection to the Internet.
 - b. From the Windows **Start** button, choose **All Programs > Active@ Boot Disk > Windows Burning Engine Update from Microsoft**. A new session of your default web browser opens to http://www.ntfs.com/burning_engine_update.htm.
 - c. Download the file from the ntfs site and install it on your computer.
5. If you choose not to use Windows Burning Engine, you may use **Active@ ISO Burner** utility. Continue with the steps below.

- a. In the Active@ ISO Burner main page, in the **Step 1** area, the path to the ISO appears. To change this path and use a different ISO, click the ellipsis button (...) and navigate to the ISO.
 - b. In the **Step 2** area, the disk burning device name appears. To use a different disk burning device, select it from the drop-down list.
 - c. To choose a different burning speed, select it from the speed drop-down list.
 - d. To change burning settings, click the **Settings** link and change settings on the dialog box.
 - e. Click **BURN ISO!**. A progress bar appears.
 - f. After the CD or DVD has been finalized, the disk ejects and a success message box appears. Click **OK**.
 - g. To burn another CD or DVD, insert a blank disk and click **BURN MORE!**.
6. To prepare a bootable USB mass storage device:
 - a. Insert a blank USB mass storage device into any USB port.
 - b. Click **Win Bootable USB Device**. The **Win Bootable USB Device** page appears.
 - c. To write the Boot Disk ISO file to a different folder, click **Browse** and navigate to the folder.
 - d. Click **Create!**. A progress bar appears.
 - e. After the ISO has been created and copied onto the USB device, you must use **Safely Remove Hardware** to stop and unplug the device.



Note If you receive an error message when using Active@ ISO Burner, you may use other CD/DVD burning utilities to burn the CD or DVD.

1.3.2 Burn the ISO to a bootable CD using other utilities

If you have Roxio EasyCD Creator or Ahead Software Nero - Burning ROM installed, you may use either one of them to burn the ISO to a bootable CD or DVD.

Nero – Burning ROM (Ahead Software)

For more information about this program, visit the Ahead Software Web site at: <http://www.ahead.de>.

To burn the ISO to a CD using Nero - Burning ROM:

1. Insert a blank CD in your CD-RW drive.
2. Start Nero - Burning ROM.

3. Follow the wizard steps to burn a Disk Image.
4. In the Open dialog box, locate the Active@ Boot Disk ISO file, and then click Open.
5. In the wizard, click Burn.

The ISO image is burned to the CD

EasyCD Creator (Roxio)

When the program is installed, it is automatically associated with the ISO file extension in Windows Explorer. For more information about this program, visit the Roxio Web site at: <http://www.roxio.com>.

To burn the ISO to a CD using EasyCD Creator:

1. Insert a blank CD in your CD-RW drive.
2. Start Windows Explorer and navigate to the Active@ Boot Disk ISO file.
3. Right-click the file name, and then click Open. The EasyCD application starts.
4. In the Write Method section of the CD Creation Setup dialog box, click Disk at Once for optimum recording performance.
5. Click OK.

The ISO image is burned to the CD.

1.4 BootDisk_Drivers and BootDisk_Scripts

You can automate some functions using Active@ Boot Disk.

While Active@ Boot Disk is starting, you may install drivers and run scripts that can reduce the amount of time it takes to perform maintenance functions on your data storage system.

If you know that your hard drive has damaged drivers, or if you have older or uncommon RAID type or SCSI type drivers, you may create a folder named **BootDisk_Drivers** on the root of any logical drive and load drivers along with their configuration files into it. Active@ Boot Disk will detect these drivers and install them automatically during the boot process.

While Active@ Boot Disk is loading (described in the next section, below), the utility searches for the **BootDisk_Drivers** folder in the root of all devices. That includes the floppy drive, a USB device, a working hard drive, and so on.

If Active@ Boot Disk finds .INF files inside a folder named **BootDisk_Drivers**, it tries to load them along with all other files required by the drivers.

Whether or not the utility loads drivers, Active@ Boot Disk proceeds to search for a folder named **BootDisk_Scripts** – again in the root of any logical drive. Active@ Boot Disk will run any CMD files, assuming that they are scripts.

1.5 Booting from a CD, DVD or USB Device

You can start your computer and perform data recovery and other functions by starting from a bootable CD, DVD or USB device.

To start your computer with the Active@ Boot Disk CD, DVD or USB device, you must first download the ISO file and burn it to the medium.

Before you use Active@ Boot Disk, you must purchase it and obtain a registration key.



Note For instructions on setting boot sequence priority in the system BIOS, see Chapter 3.0 About Boot Priority.

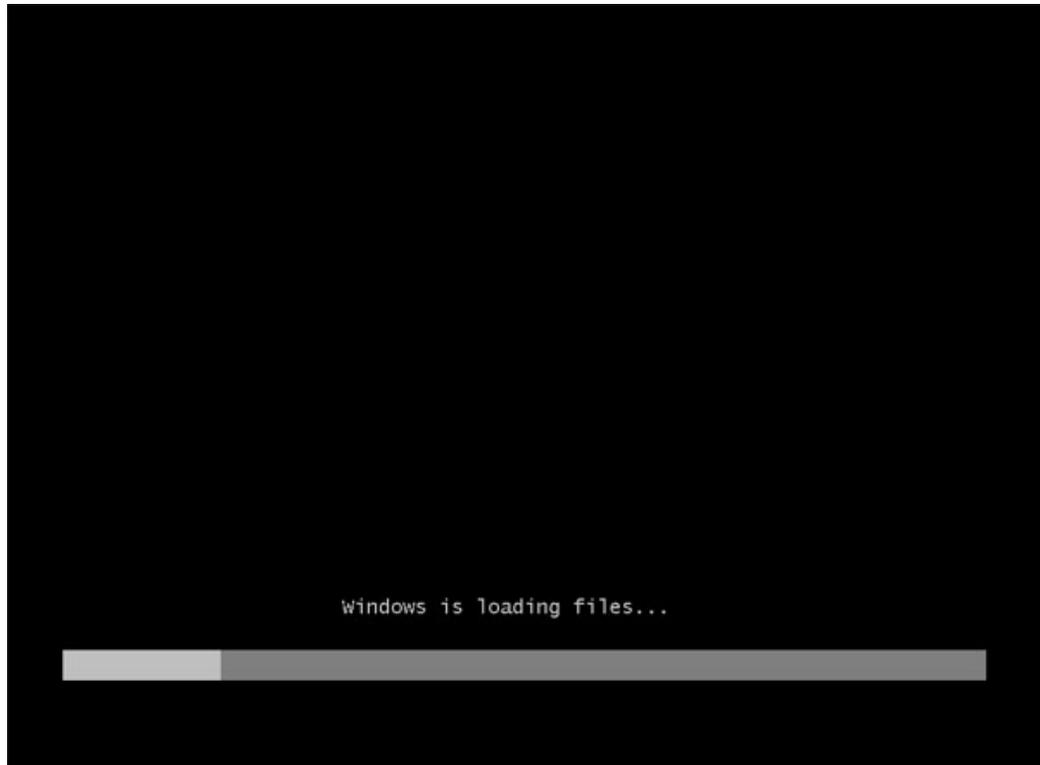
To boot from the Active@ Boot Disk device:

1. To boot from a CD or DVD, put the bootable **Active@ Boot Disk** CD or DVD disk into the player.
2. To boot from a USB device, plug the bootable **Active@ Boot Disk** USB device into a USB port.
3. Start the power on the machine. In a DOS screen, the following message appears:

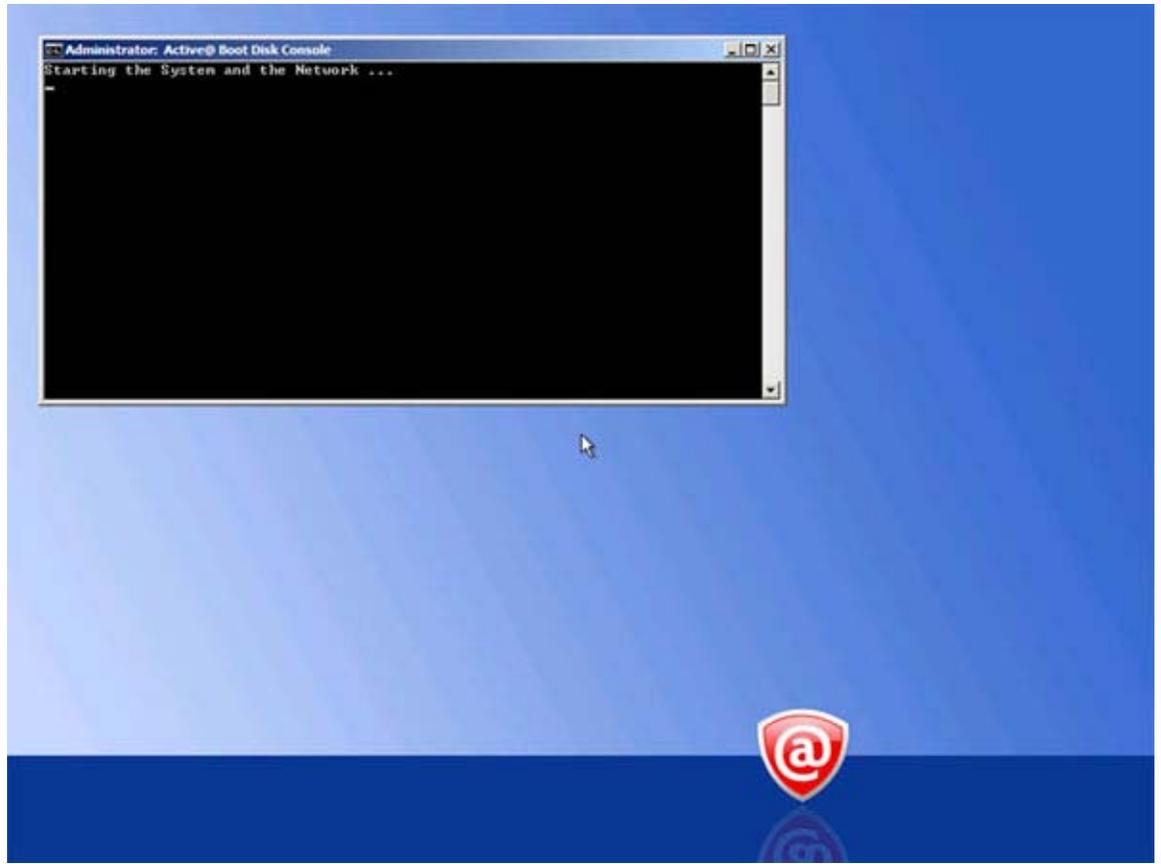
```
Press any key to start Active@ Boot Disk...
```

4. Press a key on the keyboard. The screen changes and appears to be loading the kernel.

1.3.2 Burn the ISO to a bootable CD using other utilities



5. The screen goes dark for a length of time. Wait for the console to load.
6. The Active@ Boot Disk Console appears.

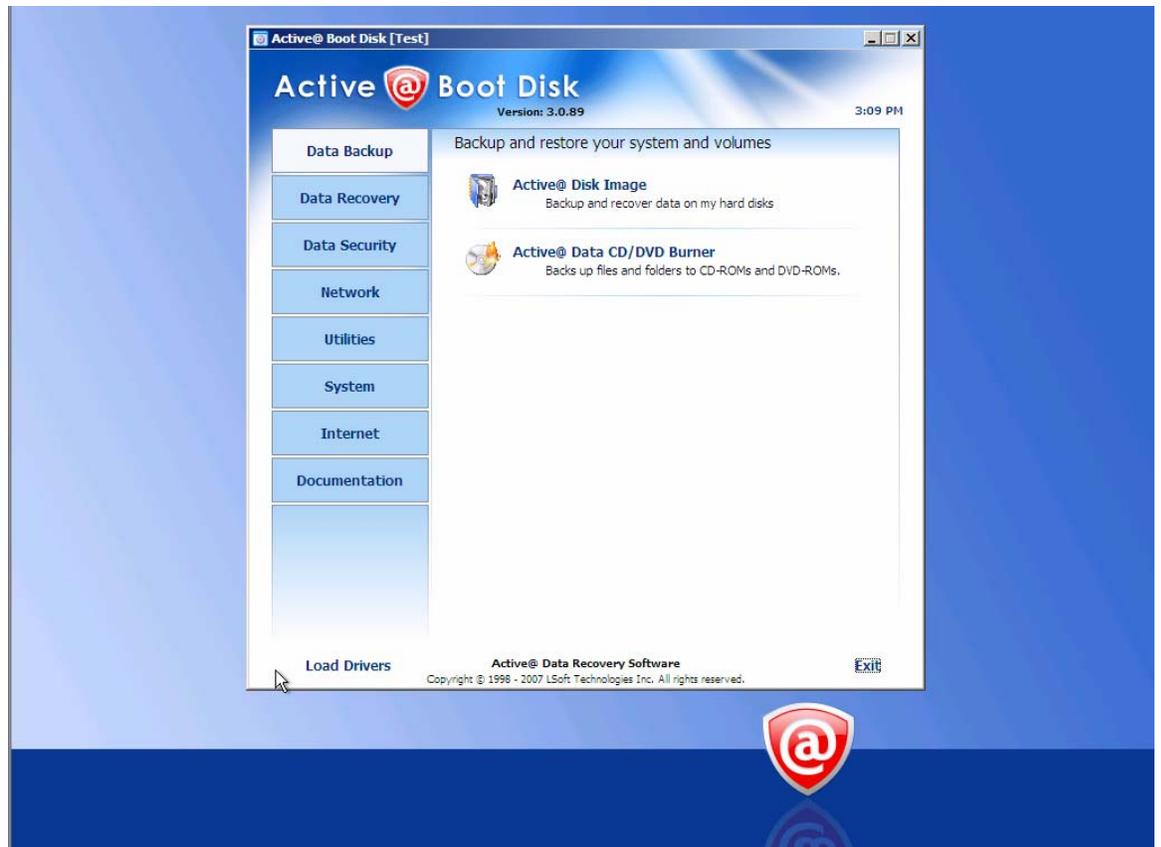


The console detects and loads hardware drivers and starts the network. This may take a long time and the screen may flash to black and back to the console.

The console runs scripts and checks for errors and missing information.

7. The **Active@ Boot Disk** shell appears.

1.3.2 Burn the ISO to a bootable CD using other utilities



You are ready to use the utilities in Active@ Boot Disk.

After you start the computer this way, you have full exclusive access to the system drive. With this kind of access, you can perform tasks that are not possible when Windows has been started from the hard drive.

The only other way to get this type of exclusive access to your hard drive would be to physically remove your hard drive and install it on another computer. After installing the hard drive, you would have to boot up from the second computer's local drive and access the files on your original hard drive.



Note You cannot save registration information to a file on a hard drive with damaged partitions.



Note If you have successfully booted from the CD, DVD or USB device and you do not see your C: drive because it is a Stripe Array (Raid-0) or if you are using an older or non-standard controller, see instructions in **2.7 Load Drivers**.

2.0 Navigating the Active@ Boot Disk Shell

In the shell, select a category from the list. Links to the utilities in that category appear in the right panel.

Active@ Boot Disk provides utilities to perform the following:

- **Data Backup** – Backup or restore physical and logical hard drives, including folders, data files and installed applications. You may use an ISO disk image or you may burn files to a CD or DVD. Protect your valuable data by regularly making backups.
- **Data Recovery** – Recover data from deleted or damaged partitions on attached or external drives, portable drives and memory cards. Recover data from damaged or deleted files or folders. Reset password and user accounts on your system. View and edit disk sector content in raw format.
- **Data Security** – Securely erase data from hard drives in a way that it is impossible to restore the data. Wipe data from unused clusters on a regular basis to make your drive's deleted or temporary data unavailable to intruders.
- **Network** – Network operations utilities to map network drives, view network status, renew your computer IP address or connect to a remote desktop.
- **Utilities** – Monitor the physical status of your hard drives, create delete and format drive partitions, copy move and delete files and folders and edit registry parameters. Also make notes about actions that you have done or need to do.
- **System** – Run system utilities like Windows Task Manager, Partition Manager and Check Disk. Run commands in a DOS environment. Also, change the display resolution and color mode.
- **Internet** – Run K-Meleon web browser to explore the Internet, download files from an FTP site or use Telnet client to connect to a Telnet server.
- **Documentation** – Documents included with Active@ Boot Disk.

After you have successfully started Active@ Boot Disk, click Utilities > Explore My Computer. The ExplorerXP utility appears. You should see all the physical and logical devices associated with your computer along with the ISO disk image named Boot (X:).



Note When you exit the Active@ Boot Disk shell, you have the option to shut down your computer, restart it or cancel the exit routine.

2.1 Data Backup Utilities

Active@ Disk Image is a Windows-based solution that allows you to create an exact image of the data stored in selected partitions of a hard disk or an image of the entire hard disk. You can protect your valuable data by regularly making a disk image and keeping it in a safe place. If you have trouble with data corruption, or if you want to refer to an archived version of a file, you can easily restore the data.

Active@ Data CD/DVD Burner is a burning tool used to write/burn files and folders onto CD-R, DVD-R, DVD+R, CD-RW, DVD-RW, and DVD+RW.



Note For instructions and support on how to run Active@ Disk Image and Active@ Disk Image Explorer, open the PDF user guide from the Documentation page.

2.1.1 Active@ Disk Image help

Active@ Disk Image is a Windows-based solution that allows you to create an exact image of the data stored in selected partitions of a hard disk or an image of the entire hard disk. You can protect your valuable data by regularly making a disk image and keeping it in a safe place. If you have trouble with data corruption, or if you want to refer to an archived version of a file, you can easily restore the data.

The application provides many tools around backing up data on your hard disk:

- Disk to Image - Opens the Disk to Image Wizard. Helps you to create a regular type disk image archive of an entire disk or of selected partitions in the system.
- Image to Disk - Opens the Image to Disk Wizard. Helps you to restore data from a disk image archive.
- Explore Image - Opens Active@ Disk Image Explorer. Helps you to browse through folders and files in a disk image as though it was a hard drive. You may select folders or individual files and restore them.
- Verify Image - Opens the Verify Image Wizard. Helps you check the integrity of a disk image archive file.
- Create Raw Image - Opens the Create Raw Image Wizard. Helps you create a raw type disk image of only one partition or the entire disk.
- Clone Disk - Opens the Clone Disk Wizard. Helps you to transfer a sector-by-sector copy from one disk (partition) to another.
- Partition Manager – A tool that helps you create, delete, format or show properties of partitions on all devices in your system.

This guide describes only the Disk to Image tool. For a description of the other tools, see the Active@ Disk Image User's Guide document in the Documentation tab of the Active@ Boot Disk shell.

2.1.1.1 Creating a Disk or Partition Image

The Disk to Image Wizard steps you through the process of creating a disk image for a whole disk or a number of partitions.

To create a disk or partition image:

1. To open Active@ Disk Image, in the Active@ Boot Disk shell, click **Data Backup > Active@ Disk Image**.
2. To open the Disk to Image Wizard, from the **Tools** menu, choose **Disk to Image**.
3. Click **Next**. The **Select Disks and Partitions** page appears.
4. Select a check box next to a disk or partition if you want to include that disk or partition in the disk image. At the bottom of the list a total size for the selected partitions is displayed.
5. Click **Next**. The **Indicate Backup Location** page appears.
6. Do the following:
 - If a CD/DVD burner is available, select the CD/DVD radio button, select a device from the Device drop-down list and type a descriptive disk image name into the **Backup name** field.
 - To save the disk image to a hard disk, select the Local or network file radio button, type a descriptive disk image name into the **Backup name** field and type the path or click **Browse...** and navigate to the location where you want to save the disk image.
7. Click **Next**. The **Image Options** page appears.
8. Do the following:
 - To set the compression speed, select one of three radio buttons:
 - None give you fast results and a larger file size.
 - Normal (recommended) is a compromise between a smaller file size and a faster operation speed.
 - High provides the smallest file size and takes the longest time to complete.
 - To try saving the disk image to a single file, in the Image Splitting area, select the **Automatic (try single file)** radio button. If the system runs out of free disk space on the disk where you are saving the backup—or if you are storing an image file on disk with a FAT file system—Active@ Disk Image automatically splits the archive into multiple files and prompts you for the path to write the next file.

- To manually indicate how to split the disk image, in the Image Splitting area, select the **Fixed size (MB)** radio button and type a file size in megabytes or choose a size from the drop-down list.
 - To protect sensitive data on a disk image, in **Password**, type a password (maximum 16 characters) and type the same password in **Confirm**.
 - Optionally, type a short description of your disk image (maximum 1,024 characters) into the **Image description** text box.
9. Click **Next**. The **Confirm Operation Details** page appears.
 10. Do the following:
 - Review the details in the summary.
 - To write a log of events into a text file, select the **Write text log to** check box and type the path to the text file or click **Browse...** and navigate to the location where you want to save the text file.
 11. Click **Next**. The **Progress Status** page appears.
 12. You may watch the progress of the operation.
 13. To stop the operation at any time, click **Cancel**.

2.1.2 Active@ Data CD/DVD Burner help

To run Active@ Data CD/DVD Burner:

1. From the Active@ Boot Disk shell, click **Data Backup > Active@ Data CD/DVD Burner**. The **Active@ Data CD/DVD Burner** dialog box appears.
2. Place a writable CD/DVD in the drive.
3. To add a folder, in the **Base** field, click **Browse**. Navigate to a base folder to burn to the CD/DVD. Select it and click **Open**. The name of the selected folder appears.
4. To add a file, in the Root list, click **Add File**. Navigate to a file to burn to the CD/DVD. Select it and click **Open**. The file name appears in the list.
5. To add a folder, in the Root list click **Add Folder**. Navigate to a folder to burn to the CD/DVD. Select it and click **Open**. The folder name appears in the list.
6. To remove an item from the Root list, select it and click **Delete**.
7. To label the CD/DVD, type a descriptive label in **Disc Label**.
8. To burn files and folders to the CD/DVD and keep the original path hierarchy, in **File and Folder Path**, click the **Keep Full Path** radio button.

9. To burn all files and folders to the root of the CD/DVD, click the **Normal (No Path)** radio button.
10. Select a drive and a write speed from the **Burner** drop-down list.
11. To change write settings:
 - a. Click **Settings**. The **Active@ Data CD/DVD Burner Settings** dialog box appears.
 - b. Change the settings to suit your writing needs.
 - c. Click **OK**.
12. Click **BURN!**

Files are written to the CD/DVD.

2.2 Data Recovery Utilities

This section provides help with the following:

- **2.2.1 Data Recovery Tips** – General tips around data recovery.
- **2.2.2 Active@ Partition Recovery** - Recover lost partitions. This means that you can recover deleted or damaged partitions located on data volumes (D:, E:, and so on), attached hard drives, as well as on the external USB drives and Memory Cards (SunDisk, MemoryStick, CompactFlash, etc.). On a system partition, BOOT.INI is corrected automatically (if needed) to repair an un-bootable system. As well, damaged Volume Boot Sectors are corrected to maintain integrity of the partition. This utility also enables you to fix a damaged MBR and to delete invalid partitions.
- **2.2.3 Active@ File Recovery** - Recover lost or deleted files. You can recover data from a hard drive that has been formatted or from a hard drive with lost partitions. You can also recover files that have been damaged, destroyed by a virus or if the file directory has been destroyed. This utility will even recover files after they have been emptied from the Recycle Bin. The utility scans computer hard drives in minutes and displays all files that can be recovered.
- **2.2.4 Active@ Password Changer** - Use a simple interface to recover from forgotten or damaged user passwords. This utility supports multiple hard disk drives. If multiple operating systems were installed on one volume, this utility detects several SAM (Security Account Manager) databases and lets you pick the right SAM before starting the password recovery process. To reset account attributes, Active@ Password Changer displays a list of all local users. You choose each local user from the list to reset the password.
- **2.2.5 Active@ HEX Editor** - Edit a disk's raw sector data to analyze and repair the MBR and other important files.

2.2.1 Data Recovery Tips

DO NOT WRITE ANYTHING ONTO THE DRIVE THAT CONTAINS YOUR IMPORTANT DELETED DATA!

When you install software, you write data onto the disk. This can destroy your deleted data. If you have only one logical drive, physically remove the hard drive from the computer and install it as a second logical drive on another computer where data recovery may be possible.

DO NOT SAVE RECOVERED DATA ONTO THE SAME DRIVE THAT CONTAINS THE LOST OR DAMAGED DATA!

When saving recovered data, you are writing records to the file table. If you write these records to the same drive that contains the damaged data, you are destroying the file table records that you are trying to recover. At the same time, you may be destroying the file table records for other deleted entries. It is best to save recovered data onto another logical, removable or network drive.

CREATE A RAW DISK IMAGE IF YOU HAVE AN EXTRA HARD DRIVE, OR OTHER LOGICAL DRIVES THAT ARE BIG ENOUGH!

A Raw Disk Image is a single file that stores all the data from your logical drive or physical device as a mirror image. Having a Raw Disk Image can be useful when you want to back up the contents of the whole drive, and restore it or work with it later. Before you start recovering deleted files, it may be a good idea to create a Raw Disk Image for the one drive, if you have enough space on another drive. If you do something wrong while recovering the files (for example, recovering them onto the same drive and destroying the data), you will be able to recover these deleted files and folders from the Raw Disk Image that you have wisely created.

2.2.2 Active@ Partition Recovery Help

Active@ Partition Recovery is a data recovery utility that you can use to:

- 2.2.2.1 Find and recover deleted partitions and logical drives
- 2.2.2.2 Create a Drive Image for backup purposes
- 2.2.2.3 Fix or create a typical MBR (Master Boot Record)

For any computer to boot properly, the following conditions must apply:

- The MBR (Master Boot Record) exists and is not damaged
- The Partition Table exists and contains at least one active partition

If these conditions exist, the executable code in the MBR selects an active partition and passes control to it so that it can start loading the system files (COMMAND.COM, NTLDR, ...).

If these files are missing or corrupted then the operating system will be unbootable.

2.2.2.1 Find and recover deleted partitions and logical drives

To find and recover deleted partitions and logical drives:

1. From the **Active@ Boot Disk** shell, click **Data Recovery > Active@ Partition Recovery**. The **Active@ Partition Recovery** workspace appears with all available devices listed in a tree view under **Local System Devices**.
2. To scan an unallocated space, select it. Known details of the selected item are displayed in the right pane.
3. To scan the unallocated space in basic mode, do the following:
 - a. Click **Quick Scan**. The status bar displays the progress of the scan.
 - b. After the scan is complete, a list of all allocated and unallocated partitions appears in the **Local System Devices** list.
4. If you cannot see a logical drive, to process the whole surface of a disk, select it and click **Super Scan**. The **Super Scan Options** dialog box appears. Do the following:
 - a. From the **Scan What** drop-down list, choose the area that you want to scan.
 - b. To restrict the scan to a small number of sectors, indicate the **From sector** and the number of sectors to scan.
 - c. Select the check box next to each type of partition that you want to scan.
 - d. Click **Start**. The status bar displays the progress of the scan.
 - e. After the scan is complete, a new folder named **SuperScan** appears in the **Local System Devices** list.
5. To display a smaller set of SuperScan results, do the following:
 - a. Right-click the **SuperScan** device node folder.
 - b. From the context menu choose **Filter...** The **Filter Found Partitions** dialog box appears.
 - c. To select the types of file systems data that are displayed, in the **Display File Systems** area, clear the check box beside the types that you do not want to display.
 - d. To display only those partitions within a specified size limit, in the **Partition Size** area, indicate the minimum and maximum size of partitions in Megabytes.

- e. To use basic filtering parameters, in the **Filter Type** area, click **Use Basic Filtering**.
 - f. To select displayed partitions based on partition status, in the **Basic Filtering [Partition Status]** area, clear the check box next to each partition status number that you do not want to display.
 - g. To use advanced filtering parameters, in the **Filter Type** area, click **Use Advanced Filtering**.
 - h. To restrict displayed results for NTFS-specific parameters, in the **Advanced Filtering [NTFS specific]** area, select the check box beside all the types of data that you want to display.
 - i. To restrict displayed results for FAT-specific parameters, in the **Advanced Filtering [FAT specific]** area, select the check box beside all the types of data that you want to display.
 - j. Click **Filter**. The right panel displays the filtered results.
6. You may manage other aspects of **SuperScan** results:
 - a. To resume a stopped **SuperScan**, right-click the folder and choose **Resume** from the context menu. **SuperScan** resumes.
 - b. To save scan results, right-click the **SuperScan** folder and choose **Save Scan Results**. Similarly, you may open the saved scan results at a different time.
 - c. To delete a **SuperScan** folder, right-click the folder and choose **Delete**.
 - d. To display detailed properties of a **SuperScan** folder, right-click the folder and choose **Properties**.
 7. To recover deleted or damaged partition select it and click **Recover**. The **Active@ Partition Recovery** parameters dialog box appears. To specify recovery options, do the following:
 - a. To ensure that the Windows operating system assigns the correct letter to the disk, select a disk letter from the **Assign Disk Letter** drop-down list.
 - b. To set the recovered partition as active and allow the system to boot from it, select the **Set Partition Active** check box.
 - c. The recovery process checks the boot sector and fixes it if it is damaged. Select **Automatic** or **Manual**, depending on how you want to do this.
 - d. If the disk has an extended partition, select the **Create Extended Partition First** check box and/or **use ALL Unallocated area** check box. If these areas are not available, these check boxes will be disabled.
 - e. To save a copy of the partitioning information before recovering, select the **Backup Current Partitioning Info** check box and indicate the file name to store the backup.
 - f. Click **Recover**.

The partition is recovered to the new path.

2.2.2.2 Creating a Raw Disk Image

A Raw Disk Image is a mirror copy of your entire logical drive or physical device stored as set of files. It may be a good idea to create a Raw Disk Image for a drive containing deleted files that you want to recover, if you have enough space on another drive. If you do something wrong while attempting to recover a partition, you will be able to recover these deleted files and folders from the Raw Disk Image of that partition.

A Raw Disk Image consists of a configuration file (with an extension .DIM) and set of files having extensions .000, .001, .002 ... Each file has a size of 2Gb.



Important Do not save a Raw Disk Image back onto the disk that you are backing up. The target location to save the Raw Disk Image must always be another drive.

To create a Raw Disk Image:

1. In the Active@ Partition Recovery workspace, select a logical drive or a physical device.
2. Click **Image**. The **Create Disk Image** dialog box appears.
3. In the **Save In** drop-down list, select another physical device or another logical drive.
4. Browse to the folder where you want to save the Disk Image.
5. In **File Name**, give the Disk Image file a descriptive name.
6. Click **Save**. A progress bar appears.

Watch the progress and wait while drive's contents are copied to the new location. You may cancel the process of image creation anytime by clicking Stop.

2.2.2.3 Fixing or creating the MBR

The MBR (Master Boot Record) is created when you generate the first partition on a hard disk. It is probably the most important data structure on the disk. The location is always track (cylinder) 0, side (head) 0, and sector 1. The MBR contains the partition table for the disk and a small amount of executable code. On x86-based computers, the executable code examines the Partition Table, and identifies the system partition. The MBR then finds the system partition's starting location on the disk, and loads a copy of its Partition Boot Sector into memory. The MBR then transfers execution to executable code in the Partition Boot Sector.

To fix or create a typical MBR:

1. In the Active@ Partition Recovery workspace, in the **Local System Devices** list, select a disk.
2. From the **Tools** menu, choose **Fix MBR (Create Typical MBR)**. A **Warning** message appears.
3. Click **Yes**.

The MBR is fixed.

2.2.3 Active@ File Recovery Help

Active@ File Recovery is a data recovery utility that you can use to restore accidentally deleted files and folders located on existing drives, and even on deleted or damaged partitions.

It is best to save recovered data onto another logical, removable, network or floppy drive. Make sure that you have access to another physical or logical drive before attempting to recover a file.

To run Active@ File Recovery:

1. From the **Active@ Boot Disk** shell, click **Data Recovery > Active@ File Recovery**. The **Active@ File Recovery** workspace appears with all available devices listed in a tree view under **Local System Devices**.
2. To scan a logical drive, select it. A message in the right pane reads **Disk not scanned yet...**
3. To scan the drive in basic mode, do the following:
 - a. Click **Quick Scan**. The status bar displays the progress of the scan.
 - b. After the scan is complete, a list of all folders and files appears in the right pane.
4. If you cannot locate or find your deleted files and folders, to process the whole surface of a disk, select it and click **SuperScan**. The **SuperScan Options** dialog box appears. Do the following:
 - a. From the **Scan What** drop-down list, choose the drive that you want to scan.
 - b. To restrict the scan to a small number of sectors, indicate the **From sector** and the number of sectors to scan.
 - c. Select the check box next to each type of partition that you want to search for deleted files and folders.
 - d. To use utility tools to re-build image files (BMP, JPG, DOC, ZIP, etc.) from partial data, select options in File types to be recognized based on signatures area.

- e. Click **Start**. The status bar displays the progress of the scan.
 - f. After the scan is complete, a list of detected partitions appears in the right pane. You may search through these partitions.
 - g. If you chose to re-build image files, a folder named Files Recognized by Signatures appears. You may search through the contents of this folder.
5. After you have scanned a drive, to search for deleted or damaged folders or files:
 - a. To search manually, browse through the contents of each folder in the **Local System Devices** list.
 - b. To use the search tool, click **Search**. The **Advanced Search** dialog box appears.
 - c. In the **Find What** field, enter all or part of a file or folder name. You may use wildcard characters to locate all files or folders that include that part in a name.
 - d. In the **Find Where** drop-down list, select a device or a partition to search.
 - e. In the **File Type** drop-down list, select the type of file or folder to search for.
 - f. In the next three check boxes, you may choose to:
 - **Include deleted files and folders** - Select this check box to search through files and folders marked as deleted. If you know that the file or folder you are searching for has not been deleted, that is - if the file or folder is damaged and still exists in the file table - clear this check box.
 - **Include non-deleted files and folders** - Select this check box to search through existing files and folders. If you know that you are searching for a deleted file or folder, clear this check box.
 - **Case insensitive search** - File Recovery will search for the **Find What** file or folder name without regard to upper or lower case letters. To search for a file or folder using only the upper or lower case letters specified in **Find What**, clear this check box.
 6. To search for files or folders based on a specified date range, select any combination of check boxes for **Created**, **Modified** or **Accessed (Deleted)** and indicate the date range.
 7. To search for files or folders based on the size of the file, select the **Size** check box and indicate a size range.
 8. To start the search, click **Find**. The status bar displays the progress of the search.
 9. After the search is complete, a new folder named **Search** appears in the **Local System Devices** list.
 10. Select a file or folder that you want to restore.

11. Click **Recover**. The **Recovery Options** dialog box appears. Do the following:
 - a. In the **Name** field, revise the file name.
 - b. In the **Recover To** field, enter a path to a drive other than the drive where you found this file or folder. You may also browse to another drive.
 - c. Click **Recover**.

The file or folder is recovered to the new path.



Note A device scan or a search may take a long time. To stop a device scan or a search, click Stop at any time.

2.2.4 Active@ Password Changer Help

You can use Active@ Password Changer to recover your passwords and user account attributes in a Windows Vista environment.

Active@ Password Changer is designed for resetting the local administrator password on Windows Vista systems in case the administrator's password is forgotten or lost. You do not need to re-install and re-configure the operating system.

This utility supports multiple hard disk drives, detects several SAM databases (if multiple operating systems were installed on one volume) and provides the opportunity to pick the right SAM before starting the password recovery process. It also displays a list of all local users.

Other Windows login security restrictions can be reset, for example:

- 'Account is disabled'
- 'Password never expires'
- 'Account is locked out'
- 'User Must Change Password at Next Logon'
- 'Logon Hours'

With Active@ Password Changer you can log in as a particular user with a blank password.

To use Active@ Password Changer:

1. From the Active@ Boot Disk shell, click **Data Recovery > Active@ Password Changer**. The **Active@ Password Changer** dialog box appears.
2. To change passwords on the current drive, click **Choose the Logical Drive**.

3. To scan the disk and detect multiple operating systems, do the following:
 - a. Click Search for MS SAM Database(s).
 - b. Click **Next**. The progress bar indicates the status of scanning. A list of SAM hives appears.
 - c. Select a database from the list.
4. Click **Next**. The list of users appears.
5. Select a user from the list and click **Next**. The parameters for the selected user appear.
6. Select parameter check boxes to create the situation that you want.
7. Click **Save**. A confirmation dialog box appears.
8. Click **Yes**. An information message indicates that the changes have been made.
9. Click **OK**.
10. For each user that you want to change, repeat steps 5 through 9.

2.2.5 Active@ HEX Editor Help

Active@ HEX Editor is a utility to help you edit a disk's raw sector data. The editor displays information in binary and text modes at the same time. You can use this view to analyze the contents of data storage structure elements such as hard disks and partitions.

The Open Disk dialog box displays a list of available storage devices and a list of logical drives.

The Data Inspector displays whatever is currently under the cursor. It does so in ten different formats. This may help you interpret data as displayed in HEX Editor. If you choose to view the Data Inspector, the window always appears at the top level when you are using Active@ HEX Editor.

A destructive virus may damage the MBR (Master Boot Record) and make it impossible to start the computer from the hard disk. When you start the computer, the code in the MBR executes before the operating system is started. If the MBR is corrupted, the operating system cannot start. The location of the MBR is always track (cylinder) 0, side (head) 0, and sector 1. You may use Active@ HEX Editor to repair a damaged MBR.

This section contains help with the following:

- 2.2.5.1 Starting Active@ HEX Editor
- 2.2.5.2 Setting Default Options for the Utility
- 2.2.5.3 Navigating to Key Sectors

- 2.2.5.4 Editing Tools
- 2.2.5.5 Changing the Workspace View

2.2.5.1 Starting Active@ HEX Editor

To start Active@ HEX Editor:

1. From the Active@ Boot Disk shell, click Data Recovery > Active@ HEX Editor. The Open Disk dialog box appears.
2. Click a device or a logical drive to select it.
3. Click **Open**. The **Active@ HEX Editor** workspace appears.
4. To browse through the content of the open item:
 - a. Click either the hexadecimal area or the text area to focus on it.
 - b. Use the scroll bar, keyboard arrows or the mouse wheel.
5. To toggle the focus between hexadecimal and text panes, press **TAB**.

2.2.5.2 Setting preferences for the utility

When you start Active@ HEX Editor, the default view shows the Info Pane on the left and the editing pane on the right, with a Status Pane across the bottom. You may change the default configuration of the workspace so that it opens with your custom settings each time.

To change Active@ HEX Editor default options:

1. In Active@ HEX Editor, click **Preferences**. The **Preferences** dialog box appears.
2. You may show or hide the Status Pane at the bottom of the workspace:
 - To hide the Status Pane, clear the **Show Status pane** check box.
 - To show the Status Pane, select the **Show Status pane** check box.
3. You may show or hide the Info Pane on the left of the workspace:
 - To hide the Info pane, clear the **Show Info pane** check box.
 - To show the Info Pane, select the **Show Info pane** check box.
4. To change the default size of the font in the editing pane, select a size from the **Font size** drop-down list.
5. To show only selected values in the **Data Inspector**:
 - Select the check box next to each value that you want to display.
 - Clear the check box next to values that you do not want to display.

2.2.5.3 Changing the workspace view

You may change the workspace configuration at any time while you are working in Active@ HEX Editor.

To change the configuration of the workspace:

1. To toggle the **Info Pane** between view and hide, from the **View** menu, select **Info Pane**.
2. To toggle the **Status Pane** between view and hide, from the **View** menu, select **Status Pane**.
3. To toggle the **Data Inspector** between view and hide, from the **View** menu, select **Show Data Inspector**.
4. To change the size of the font in the editing pane, from the **View** menu, choose **Text Size** and select a different size.
5. To toggle the display of the current address offset between hexadecimal and decimal, from the **View** menu, choose **Hexadecimal Offset**.

2.2.5.4 Navigating to Key Sectors

To navigate to key sectors on the open item:

1. To open a different device or logical drive:
 - a. Click **Open Disk**. The **Open Disk** dialog box appears.
 - b. Click a device or a logical drive to select it. Click **Open**.
 - c. The **Active@ HEX Editor** workspace appears.
2. To jump to a named offset:
 - a. From the **Navigate** menu, choose **Jump to...** The **Goto offset** dialog box appears.
 - b. To jump to a named sector, in the **Sector** field, type the sector number.
 - c. To jump to a place defined by disk geometry, click the **Disk geometry** radio button and type the cylinder, head and sector numbers in the appropriate fields.
 - d. Click **Go**. The sector appears in the editing panel.
3. To jump to the boot sector, from the **Navigate** menu, choose **Boot Sector (0)**. The boot sector appears.
4. To jump to the partition table, from the **Navigate** menu, choose **Partition Table**. The partition table sector appears in the editing panel.
5. To edit the partition table template:
 - a. From the **Navigate** menu, choose **Partition Table (Template)**. The **Partition Table** dialog box appears. The Signature (55 AA) marks the end of the Partition Table.

- b. Review and modify the settings for partition table entries 1, 2, 3 and 4.
 - c. To restore all default settings, click **Set Defaults**.
 - d. To save changes, click **Save**.
6. From the **Navigate** menu, you may jump to many named sectors. These sectors are listed with the sector name and a number that is unique to your hard drive.
 - To jump to the unallocated boot sector, from the **Navigate** menu, choose **Unallocated (<your partition size>Kb) > Boot Sector (<your sector number>)**.
 - To jump to various primary NTFS locations, from the **Navigate** menu, choose **Primary NTFS (<your partition size> GB)** and do one of the following:
 - To jump to the boot sector, click **Boot Sector (<your sector number>)**. The primary boot sector appears in the editing panel.
 - To jump to the boot sector copy, click **Boot Sector Copy (<your sector number>)**. The primary boot sector copy appears in the editing panel.
 - To edit the boot sector template, click **Boot Sector (Template)**. The **Edit Boot Sector Template** dialog box appears. Make changes to the fields and click **Save**.
 - To jump to the MFT (Master File Table) sector, click **\$MFT (<your sector number>)**. The MFT sector appears in the editing panel.
 - To jump to the MFT mirror, click **\$MFT Mirror (<your sector number>)**. The MFT mirror sector appears in the editing panel.
 7. To jump to the unallocated boot sector, from the **Navigate** menu, choose **Unallocated (<your partition size> Mb) > Boot Sector (<your sector number>)**.
 8. To jump to the unallocated MFT (Master File Table) sector, from the **Navigate** menu, choose **\$MFT (<your sector number>)**. The MFT sector appears.
 9. To jump to the MFT Mirror sector, from the **Navigate** menu, choose **\$MFT Mirror (<your sector number>)**. The MFT Mirror sector appears.

2.2.5.5 Editing tools

You may paste code or text from the Windows Clipboard. Use these tools to copy and paste selected code.

To use editing tools:

1. To toggle whether or not to allow editing in the editing pane, from the **Edit** menu, choose **Allow Edit content**.
2. To select a whole sector:
 - a. Click anywhere in a sector.
 - b. From the **Edit** menu, choose **Select Sector**. The whole sector is selected.
3. To select part of a sector, click and drag the cursor over some code. You may select code this way in either the HEX area or in the text area.
4. To copy HEX data, if you selected code in the HEX area, from the **Edit** menu, choose **Copy HEX**. Selected HEX data is copied to the Clipboard.
5. To copy text data, if you selected code in the text area, from the **Edit** menu, choose **Copy Text**. Selected text data is copied to the Clipboard.
6. To copy both HEX and text data:
 - a. Select some data, using one of the methods above.
 - b. From the **Edit** menu, choose **Copy Screen**. Selected data is copied to the Clipboard.
7. To paste data from the Clipboard:
 - a. Click the cursor in the area where you want to paste data.
 - b. From the **Edit** menu, choose **Paste**. The data appears.
8. To discard all changes that you have not saved yet (if any were made) and roll back settings to the way they were at the last save, from the **Edit** menu, click **Revert All**.
9. To save changes, click **Save**.



Note By default, you cannot edit content in Active@ HEX Editor. You must choose "Allow Edit Content" in the Edit menu in order to change the code.

2.3 Data Security Utility

Active@ KillDisk is a quality security application that destroys data permanently from any computer. This utility can destroy all data on all storage devices.

Active@ KillDisk conforms to four international standards for clearing and sanitizing data. You can be sure that after you erase a disk with Active@ KillDisk, sensitive information is destroyed forever.

You may use Active@ KillDisk to:

- Erase data permanently, with no chance of recovery
- Wipe deleted data, securely removing all data in unoccupied sectors

2.3.1 Active@ KillDisk Help

Active@ KillDisk is a powerful utility that will:

- Wipe confidential data from unused space on your hard drive
- Erase data from partitions or from an entire hard disk
- Destroy data permanently

Wiping the logical drive's deleted data does not delete existing files and folders. It processes all unoccupied drive space so that data recovery of previously deleted files becomes impossible. Installed applications and existing data are not touched by this process. Active@ KillDisk wipes unused data residue from file slack space, unused sectors, and unused space in MFT records or root records.

When you erase data with Active@ KillDisk, you destroy data permanently, conforming to any one of six international standards or your own custom settings.

Wiping drive space or erasing data can take a long time, so perform these operations when you are prepared to wait. For example, these operations may be run overnight.

To run Active@ KillDisk:

1. From the **Active@ Boot Disk** shell, click **Data Security > Active@ KillDisk**. After initializing, the **Active@ KillDisk** workspace appears with all available devices listed under **System Local Disks**.
2. Click a physical drive or a logical drive to select it. Properties of the selected device appear in the **Properties** tab to the right.
3. To scan the selected logical drive, click **Scan**. The **Progress** tab appears, showing the status of the scan while **Time Left** counts down the remaining time.

After the scan completes, sub-folders appear in the System Local Disks list and the folders and files in the selected drive appear in the **Folders and Files** tab.

Available files and folders appear with a coloured icon. Deleted files and folders appear with a gray icon.

4. After the scan has completed, you may do the following:
 - Select existing and deleted folder and file information in the **Folders and Files** tab.
 - To view sectors of data in a device or logical drive, select a device or drive and click **View data**. The **Data Viewer** appears. Scroll through the available data.

- To view sectors of data in a file:
 - a. Select a logical drive. Files and folders appear in the right panel.
 - b. In the right panel, select a file.
 - c. Click **View data**. The **Data Viewer** appears. Scroll through the available data.
- To clear data residue from unused sectors:
 - a. Select the check box next to a device or logical drive or multiple devices or logical drives.
 - b. Click **Wipe**. The **Wipe Free Disk Space** dialog box appears.
 - c. Choose a method from the **Wipe Method** drop-down list. (Method descriptions appear below.)
 - d. Set other parameters for wiping. (Parameter descriptions appear below.)
 - e. Click **Start**.
 - If the **Skip Confirmation** check box is clear, the **Confirm Action** dialog box appears.
 - Click **Yes**.
 - f. The **Progress** bar appears.
 - g. To stop the process at any time, press **ESC**.
- To erase data completely:
 - a. Select the check box next to a device or logical drive or multiple devices or multiple logical drives.
 - b. Click **Kill**. The **Kill** dialog box appears.
 - c. Choose a method from the **Erase Method** drop-down list. (Method descriptions appear below.)
 - d. Set other parameters for erasing. (Parameter descriptions appear below.)
 - e. Click **Start**.
 - If the **Skip Confirmation** check box is clear, the **Confirm Action** dialog box appears.
 - This is the final step before removing data from the selected drive for ever. Type **ERASE-ALL-DATA** in the text box and press **ENTER** or click **YES**.
 - f. The **Progress** bar appears.
 - g. To stop the process at any time, press **ESC**.

After the Wipe or Kill operation is complete, information about the wipe or erase session is displayed in the **Session Log**.

2.3.1.1 Wiping or Erasing Methods

Select a wipe method or an erase method from the Method drop-down list.

One Pass Zeros or One Pass Random: The number of passes is fixed and cannot be changed. When the write head passes through a sector, it writes only zeros or a series of random characters.

US DoD 5220.22-M: The write head passes over each sector three times. The first time with zeros (0x00), second time with 0xFF and the third time with random characters. There is one final pass to verify random characters by reading.

German VSITR: The write head passes over each sector seven times.

Russian GOST p50739-95: The write head passes over each sector five times.

Gutmann: The write head passes over each sector 35 times.

User Defined: You indicate the number of times the write head passes over each sector. Each overwriting pass is performed with a buffer containing random characters.

2.3.1.2 Parameters for Wiping or Erasing

Verification: To set the amount of area the utility reads to verify the wipe method, select the **Verification** check box. Because verification is a long process, you may specify a percentage of the surface to be verified. To wipe or erase without verification, clear this check box.

Retry Attempts: To specify the number of retries to do when an error is encountered, enter the number in Retry Attempts.

Ignore Errors: To hide error messages while data wiping, erasing or verification is in progress, select the Ignore Errors check box. To show all error messages during wiping, erasing or verification, clear the Ignore Errors check box. All errors are written to the session log in either case.

Clear Log File before Start: To truncate the session log before erasing or wiping starts, select the Clear Log File before Start check box. To append this session's information to the existing session log, clear the Clear Log File before Start check box.

Skip Confirmation: The confirmation dialog box is the final step before either erasing or wiping data. To bypass this dialog box, select the Skip Confirmation check box. To include this safety step, clear the Skip Confirmation check box. It is safer to run Active@ KillDisk with this check box cleared (default state).

Initialize device(s) after Kill: This check box appears only when you are erasing data from a disk. Before you can use a disk, you must initialize it. To initialize a disk as a basic disk automatically after the erasing process, select this check box. To initialize a disk as a basic disk manually, clear this check box.

Wipe unused space in MFT/Root area: This check box appears only when you are wiping data from unused space on the drive. To clear data

residue from unoccupied space in the MFT (Master File Table)/Root area on the drive, select this check box. To skip this area, clear the check box.

Wipe slack space in file clusters: This check box appears only when you are wiping data from unused space on the drive. For a more thorough wiping of data residue from unused portions of clusters without touching existing data, select this check box. For a quick process, clear this check box.

2.4 Network Operations Utilities

This section describes the following:

2.4.1 Map Network Drive - A Mapped Drive is typically a place on a network server's hard drive that has been created or designated as a shared folder and assigned a local drive letter. It is given specific permissions of use as the folder will store information for particular users or groups.

2.4.2 View Network Status - ipconfig (IP Configuration) in Windows is a utility to print the local computer's current network configuration and to control the Windows Service that acts as its DHCP (Dynamic Host Configuration Protocol) Client. DHCP is a set of rules used by communications devices such as a computer, router or network adapter to allow the device to request and obtain an IP address from a server which has a list of addresses available for assignment.

2.4.3 Network Configurator - In computer networking, the ARP (Address Resolution Protocol) is the method for finding a host's hardware address when only its network layer address is known. Use the Network Configurator utility to configure IP settings and Windows firewall settings.

2.4.4 Remote Desktop Connection - As part of Microsoft Terminal Services, use this utility to allow a remote user to take control of your computer (Remote Desktop). Microsoft provides the client software Remote Desktop Connection for most Windows operating systems that allows a user to connect to and work with a remote server running Terminal Services.

2.4.1 Map Network Drive

To map a network drive:

1. From the Active@ Boot Disk shell, click **Network > Map Network Drive**. The **Map Network Drive** dialog box appears.
2. In **Drive**, select a drive letter.

3. In **Folder**, type the server and share name of the computer or folder you want. For example: \\servername\sharename.
4. To search for the computer or folder, click **Browse**.
5. If it is necessary to change the user name in order to map the selected drive, do the following:
 - a. Click the link at **Connect using a different name**. The **Connect As...** dialog box appears.
 - b. Enter the domain name and the user name that has permission to connect to the selected computer or folder.
 - c. Enter the password for the user named above.
6. Click **OK** to return to the **Map Network Drive** dialog box.
7. To reconnect to the mapped drive every time you log on, select the **Reconnect at logon** check box.
8. Click **Finish**.



Note Mapped drives are available only when the host computer is available. Network drives are assigned letters from Z to A, and local drives (your hard drive and removable storage devices) are assigned letters from A to Z. You can assign a computer or shared folder to a different drive letter by disconnecting from the drive and then reassigning it to a new drive letter.

2.4.2 View Network Status

This utility works only on computers with network adapters.

The ipconfig utility displays current TCP/IP network configuration values, updates, or releases, DHCP (Dynamic Host Configuration Protocol) allocated leases, and display, register, or flush DNS (Domain Name System) names.

To view the status of a local area connection:

1. From the Active@ Boot Disk shell, click **Network > View Network Status**. The **View Network Status** DOS session appears showing Windows IP Configuration.

```

C:\X:\Windows\System32\cmd.exe
Windows IP Configuration

Host Name . . . . . : minint-58gnre9
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection 2:

Connection-specific DNS Suffix . . :
Description . . . . . : Intel 21140-Based PCI Fast Ethernet Adapt
er (Emulated) #2
Physical Address. . . . . : 00-03-FF-D4-68-2F
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::60cd:d641:b61:8f3e%3(Preferred)
Autoconfiguration IPv4 Address. . . : 169.254.143.62(Preferred)
Subnet Mask . . . . . : 255.255.0.0
Default Gateway . . . . . :
DHCPv6 Iaid . . . . . : 50332671
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                       fec0:0:0:ffff::2%1
                       fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix . . :
Description . . . . . : Intel 21140-Based PCI Fast Ethernet Adapt
er (Emulated)
Physical Address. . . . . : 00-03-FF-4D-81-CD
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::6dd9:cc5c:e270:9947%2(Preferred)
IPv4 Address. . . . . : 192.168.1.241(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Monday, April 21, 2008 11:55:18 AM
Lease Expires . . . . . : Wednesday, April 23, 2008 12:06:09 AM
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DHCPv6 Iaid . . . . . : 33555455
DNS Servers . . . . . : 192.168.1.1
NetBIOS over Tcpip. . . . . : Enabled
Press any key to continue . . .

```

2. To close the DOS session, press a key on the keyboard.

2.4.3 Network Configurator

This utility works only on computers with adapters that are configured to obtain an IP address automatically. It renews DHCP configuration for all adapters.

To configure the IP address:

1. From the Active@ Boot Disk shell, click **Network > Network Configurator**. The **Network Configurator** dialog box appears.
2. From the **Ethernet Adapters** drop-down list, select an adaptor.
3. To view details about the selected adaptor, hover the mouse over the Ethernet Adapters field. A drop-down text screen appears.
4. In the IP tab, do the following:
 - To get an IP address automatically from the network server, select the **Obtain an IP address automatically** radio button.

- To use a specific IP address, select the **Use the following IP address** radio button and type the information in the fields below.
5. In the DNS tab, do the following:
 - To get a DNS automatically from the network server, select the **Obtain DNS Server address automatically** radio button.
 - To use a specific DNS address, select the **Use the following DNS Server address** radio button and type the information in the fields below.
 6. In the Network Identification tab, to specify a workgroup for group access, type the workgroup name in the **Workgroup** field and click **Set**.
 7. In the Firewall tab, you may set the status of the firewall in the **Firewall status** drop-down list:
 - To turn the firewall on, choose **On**.
 - To turn the firewall off, choose **Off**.

2.4.4 Remote Desktop Connection

To use this utility, **Remote Desktop Web Connection** must be installed and running on the Web server.

Use the Active@ Boot Disk **View Network Status** utility to ensure that your client computer has an active network connection and that the WINS server service (or other name resolution method) is functioning.

To connect to another computer using Remote Desktop Web Connection:

1. From the Active@ Boot Disk shell, click **Network > Remote Desktop Connection**. The **Remote Desktop Connection** dialog box appears.
2. In the **Computer** field, type the URL for the home directory of the Web server hosting Remote Desktop Web Connection.
3. To set more parameters for the connection, click **Options >>** and specify information for your connection.
4. Click **Connect**.

2.5 Utilities

Use these utilities to explore parameters around existing hard drives.

Active@ Hard Disk Monitor – Check various attributes of hard drives in the system.

Active@ Partition Manager – Create, delete, format and name partitions for devices in the system.

Explore My Computer – Use ExplorerXP to access the file system. Copy, move and delete files and folders. ExplorerXP is a very fast, small, compact and innovative file manager. Unlike the regular Windows Explorer, it displays the total size of each folder and allows you to browse multiple folders from a tabbed interface.

Notepad – Run Notepad text editor. When you are performing maintenance on a hard disk or if you are repairing or recovering lost or damaged data on a disk, you might want to record technical information about the disk before making changes. This information may be helpful if you need to remember the original configuration when restoring data after a system crash or when contacting technical support.

Registry Editor – View and edit registry information for the current (Windows PE) operating system.

2.5.1 Active@ Hard Disk Monitor help

Use this utility to perform maintenance tasks on hard drives in the system.



Note This is the free version of this utility and some functions are disabled. Some functions that are enabled apply only when using the stand-alone version of Active @ Hard Disk Monitor.

To use Active@ Hard Disk Monitor:

1. From the Active@ Boot Disk shell, click **Utilities > Active@ Hard Disk Monitor**. The **Active@ Hard Disk Monitor** workspace appears.
2. To change the settings of the utility, click **Preferences**. The **Preferences** dialog box appears. Do the following:
 - a. In the Poll settings tab:
 - To change the frequency for checking status of the device, make changes in the **Check every** fields.
 - To change the frequency for checking the amount of free disk space, make changes in the **Check Free Disk Space every** fields.
 - To show which disk to monitor, choose it from the **Disk** drop-down list.
 - To start Active@ Hard Disk Monitor when Windows starts, select the **Enable at Windows startup** check box.

- b. In the **Environment** tab:
 - To change how drive temperature is displayed, choose a different setting in the **Show temperature in** drop-down list.
 - To change the appearance of the workspace, choose a different setting in the **Style** drop-down list.
 - The Hard Disk Monitor tray icon can show three states. To change the default color for each of these states, change them in the **TrayIcon color** drop-down lists.
3. From the **Local System Disks** list, click a device to select it. Information about the selected device appears in the right panel.
4. To display attributes about the device, click the **Disk Info** tab. Attributes appear in the panel.
5. To display SMART attributes, click the **SMART Info** tab. Performance and health attributes appear in the panel.
6. To scan the selected device to detect bad blocks, click the **Scan Disk** tab and do the following:
 - a. To change the block size, in the Check Block Size area, choose a different size.
 - b. To specify a start sector and a stop sector for the scan, type the sector numbers in the **From sector** and **To sector** fields.
 - c. Click **Start Scan**. The progress bar indicates progress of the scan.
 - d. To stop the scan at any time, click **Stop Scan**.
 - e. After the scan is complete, the Scan Disk Complete message box appears with details of the scan.
 - f. To view a list of events run in the session, click **Event Log**. A list of events appears in the panel.

2.5.2 Active@ Partition Manager help

Use this utility to perform maintenance tasks on hard drive partitions.

To use Active@ Partition Manager:

1. From the Active@ Boot Disk shell, click **Utilities > Active@ Partition Manager**. The **Active@ Partition Manager** workspace appears.
2. From the **Data Storage Devices and Partitions** list, click a device to select it.
3. To view the properties of the selected device, click **Properties**. The device properties report box appears. To close it, click **OK**.
4. To create a partition:
 - a. On a hard disk device, click an **Unallocated** area in the list to select it.

- b. Click **Create**. The **Create Partition** dialog box appears.
 - c. At the top of the dialog box, select the partition type. It may be one of:
 - Primary Partition
 - Extended Partition
 - Logical Drive in the extended partition
 - d. In Partition geometry, type the partition offset (in sectors) and the partition size (in megabytes).
 - To use the maximum available size for this partition, in **Partition size in MB** type **0**.
 - e. In Drive Letter, select a drive letter from the drop-down list.
 - f. To format this partition, select the **Format this partition with the following settings** radio button and set parameters for the format action.
 - g. To leave the partition unformatted, click the **Do not format this partition** radio button.
 - h. Click **OK**. The partition is created.
5. To delete a partition:
 - a. Click a partition in the list to select it.
 - b. Click **Delete**. A confirmation message appears.
 - c. Click **Yes**. The partition is deleted.
 6. To format a partition:
 - a. Click a partition in the list to select it.
 - b. Click **Format**. The **Format** dialog box appears.
 - c. Give the partition a volume label in **Volume Label**.
 - d. Select a file system type in the **File System** drop-down list.
 - e. Select an allocation unit size in the **Allocation unit size** drop-down list.
 - f. To perform a quick format, select the **Perform a quick format** check box.
 - g. To perform a full format, clear the **Perform a quick format** check box.
 - h. Click **OK**. A progress bar appears.
 7. To change the letter for a device,
 - a. Click a device in the list to select it.
 - b. Click Change Letter. The **Change Drive Letter** dialog box appears with the first available letter selected.
 - c. To change the drive letter, select a letter from the **Assign the following drive letter** drop-down list.

- d. Click **OK**. The letter is assigned.

2.5.3 Registry Editor help

You can review and change local registry parameters after loading a registry hive from any partition that is detected by Active@ BootDisk utilities. If your computer cannot complete a boot-up and if the boot failure is related to registry parameters of a driver or another bootable configuration, you may be able to fix it by changing registry parameters using Registry Editor.

To use Registry Editor:

1. From the Active@ Boot Disk shell, click **Utilities > Registry Editor**. The **Registry Editor** workspace appears.
2. In the registry hierarchy list, choose either **HKEY_LOCAL_MACHINE** or **HKEY_USERS** hive.
3. From the **File** menu, choose **Load Hive...** The **Load Hive** dialog box appears.
4. Browse to a primary logical drive (for example, C:) and navigate to **Windows\System32\config**. Contents of the **config** folder appear.
5. Choose a registry hive. For example choose one of:
 - SYSTEM
 - COMPONENTS
 - SOFTWARE
6. Click **Open**. The **Load Hive** dialog box appears.
7. In **Key Name**, type a custom name for the hive that you are loading. For example MY_SOFTWARE_HIVE.
8. Click **OK**. The new hive appears in the registry hierarchy under the root level that you selected in step 2.
9. Open the loaded hive and view and edit registry values, create new entries and keys or delete values and keys.
10. After you have completed all the changes in the loaded hive, close Registry Editor. All changes are written to the registry hive that was attached.
11. Exit Active@ Boot Disk and restart the computer.

2.6 System

Many of these utilities are familiar Windows functions. With Active@ Boot Disk, you can access them even if your hard drive is damaged.

Windows Task Manager – Get information about computer performance and details about running applications, processes, network activity, logged-in users, and system services. View or modify currently running services. View the full name of a process. Monitor applications and services running system performance and resources.

Partition Manager – Command line tool to create, delete, format and resize basic partitions and logical partitions, and manage dynamic volumes and RAIDs.

Partition Manager (GUI) – Same as above with a Graphical User Interface.

Check Disk – An applet that helps you create and display a status report for your hard drive.

Command Prompt – Run command prompt utility (cmd.exe) to create and run batch files or perform other DOS commands.

Display Configurator – Choose the resolution and number of colors displayed.

2.6.1 Partition Manager help

DiskPart is a text-mode command interpreter in Windows Vista, Windows® XP, and the Windows Server 2003® family. This tool enables you to manage objects (disks, partitions, or volumes) by using scripts or direct input at a command prompt.

This section describes:

- 2.6.1.1 DiskPart Commands
- 2.6.1.2 DiskPart Syntax and Parameters
- 2.6.1.3 DiskPart Scripting

2.6.1.1 DiskPart Commands

Before you can use DiskPart commands on a disk, partition, or volume, you must first list and then select the object to give it focus. When an object has focus, any DiskPart commands that you type act on that object.

You can list the available objects and determine an object's number or drive letter by using the list disk, list volume, and list partition commands. The list disk and list volume commands display all disks and volumes on the computer. However, the list partition command displays only partitions on the disk that have focus. When you use the list commands, an asterisk (*) appears next to the object with focus. You select an object by its number or drive letter, such as disk 0, partition 1, volume 3, or volume C.

When you select an object, the focus remains on that object until you select a different object. For example, if the focus is set on disk 0, and you select volume 8 as on disk 2, the focus shifts from disk 0 to disk 2, volume 8. Some commands automatically change the focus. For example, when you create a new partition, the focus automatically changes to the new partition.

You can give focus only to a partition on the selected disk. When a partition has focus, the related volume (if any) also has focus. When a volume has focus, the related disk and partition also have focus if the volume maps to a single specific partition. If this is not the case, then focus on the disk and partition is lost.

When using the DiskPart command as a part of a script, it is recommended that you complete all of the DiskPart operations together as part of a single DiskPart script. You can run consecutive DiskPart scripts, but you must allow at least 15 seconds between each script for a complete shutdown of the previous execution before running the DiskPart command again in successive scripts. Otherwise, the successive scripts might fail. You can add a pause between consecutive DiskPart scripts by adding the timeout /t 15 command to your batch file along with your DiskPart scripts.

For more information about DiskPart, see Disk Management at the Microsoft TechNet Web site <<http://go.microsoft.com/fwlink/?LinkID=584>>.

2.6.1.2 DiskPart Syntax and Parameters

This table identifies the syntax and parameters of the DiskPart commands.

| Command | Syntax | Description |
|-----------------|-----------------------------------|--|
| active | active | <p>On basic disks, marks the partition with focus as active. This informs the BIOS (basic input/output system) or EFI (Extensible Firmware Interface) that the partition or volume is a valid system partition or system volume.</p> <p>Only partitions can be marked as "active."</p> <div data-bbox="711 632 1458 884" style="border: 1px solid black; padding: 5px;"> <div style="display: flex; align-items: center;">  <p>Important:</p> </div> <p>DiskPart verifies that only the partition is capable of containing an operating system's startup files. DiskPart does not check the contents of the partition. If you mark a partition as "active" and it does not contain the operating system's startup files, your computer might not start.</p> </div> |
| add disk | add disk= <i>n</i> [noerr] | <p>Mirrors the simple volume with focus to the specified disk.</p> <p><i>n</i></p> <p>Specifies the disk to contain the mirror. You can mirror only simple volumes. The specified disk must have unallocated space at least as large as the size of the simple volume that you intend to mirror.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |

| Command | Syntax | Description |
|-------------------|---|---|
| assign | assign [{letter= <i>d</i> mount= <i>path</i> }] [noerr] | <p>Assigns a drive letter or mount point to the volume with focus. If no drive letter or mount point is specified, then the next available drive letter is assigned. If the assigned drive letter or mount point is already in use, an error is generated.</p> <p>By using the assign command, you can change the drive letter associated with a removable drive.</p> <p>You cannot assign drive letters to system volumes, boot volumes, or volumes that contain the paging file. You cannot assign a drive letter to an OEM partition or any GPT partition other than a basic data partition.</p> <p>letter= <i>d</i></p> <p>Specifies the drive letter that you intend to assign to the volume.</p> <p>mount= <i>path</i></p> <p>The mount point path that you intend to assign to the volume.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| attributes | attributes volume [{set clear}] [{hidden readonly nodefaultdriveletter shadowcopy}] [noerr] | <p>volume</p> <p>Displays the attributes of the selected volume.</p> <p>set</p> <p>Sets the specified attribute (hidden, read-only, nodefaultdriveletter, or shadowcopy volume) on the selected volume.</p> <p>clear</p> <p>Clears the specified attribute (hidden, read-only, nodefaultdriveletter, or shadowcopy volume) from the selected volume.</p> <p>hidden</p> <p>Specifies that the volume is hidden.</p> <p>readonly</p> <p>Specifies that the volume is read-only.</p> <p>nodefaultdriveletter</p> <p>Specifies that the volume does not receive a drive letter by default.</p> <p>shadowcopy</p> <p>Specifies that the volume is a shadow copy volume.</p> |

| Command | Syntax | Description |
|-------------------|---|--|
| | | <p>noerr</p> <p>For scripting only. When an error is encountered, DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| automount | automount [enable] [disable] [scrub] [noerr] | <p>When enabled (the default), Windows automatically mounts the file system for a new basic volume when it is added to the system, and then assigns a drive letter to the volume. In system area network configurations, disabling automount prevents Windows from automatically mounting or assigning drive letters to any new basic volumes added to the system.</p> <p>enable</p> <p>Enables Windows to automatically mount new basic volumes added to the system and to assign them drive letters.</p> <p>disable</p> <p>Prevents Windows from automatically mounting any new basic volumes that are added to the system.</p> <p>scrub</p> <p>Removes volume mount point directories and registry settings for volumes that are no longer in the system. This prevents volumes that were previously in the system from being automatically mounted and given their former volume mount point(s) when they are added back to the system.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| break disk | break disk= <i>n</i> [nokeep] [noerr] | <p>Applies to dynamic disks only. Breaks the mirrored volume with focus into two simple volumes. One simple volume retains the drive letter and any mount points of the mirrored volume, while the other simple volume receives the focus so that you can assign it a drive letter.</p> <p>By default, the contents of both halves of the mirror are retained; each half becomes a simple volume. If you use the nokeep parameter, only one-half of the mirror is retained as a simple volume, while the other half is deleted and converted to free space. Neither volume receives the focus.</p> <p><i>n</i></p> <p>Specifies the disk that contains the mirrored volume.</p> |

| Command | Syntax | Description |
|------------------------|--------------------------------|---|
| | | <p>nokeep</p> <p>Specifies that only one of the mirrored volumes is retained; the other simple volume is deleted and converted to free space. Neither volume receives the focus.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| clean | clean [all] | <p>Removes any and all partition or volume formatting from the disk with focus. On master boot record (MBR) disks, only the MBR partitioning information and hidden sector information are overwritten. On GUID partition table (GPT) disks, the GPT partitioning information, including the Protective MBR, is overwritten; there is no hidden sector information.</p> <p>all</p> <p>Specifies that each and every sector on the disk is zeroed, which completely deletes all data contained on the disk.</p> |
| convert basic | convert basic [noerr] | <p>Converts an empty dynamic disk into a basic disk.</p> <div data-bbox="717 1033 1448 1194" style="border: 1px solid gray; padding: 5px;">  <p>Important: The disk must be empty to convert it to a basic disk. Back up your data, and then delete all partitions or volumes before converting the disk.</p> </div> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| convert dynamic | convert dynamic [noerr] | <p>Converts a basic disk into a dynamic disk. Any existing partitions on the disk become simple volumes.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |

| Command | Syntax | Description |
|-----------------------------|---|--|
| convert gpt | convert gpt [noerr] | <p>On Itanium-based computers, converts an empty basic disk with the MBR (master boot record) partition style into a basic disk with the GPT (GUID partition table) partition style.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  <p>Important: The disk must be empty to convert it to a GPT disk. Back up your data and then delete all partitions or volumes before converting the disk.</p> </div> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| convert mbr | convert mbr [noerr] | <p>On Itanium-based computers, converts an empty basic disk with the GPT (GUID partition table) partition style to a basic disk with the MBR (master boot record) partition style.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  <p>Important: The disk must be empty to convert it to an MBR disk. Back up your data and then delete all partitions or volumes before converting the disk.</p> </div> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| create partition efi | create partition efi [size=<i>n</i>] [offset=<i>n</i>] [noerr] | <p>On Itanium-based computers, creates an EFI (Extensible Firmware Interface) system partition on a GPT (GUID partition table) disk. After the partition has been created, the focus is given to the new partition.</p> <p>size= <i>n</i></p> <p>Specifies the size of the partition in megabytes (MB). If no size is given, the partition continues until there is no more free space in the current region.</p> <p>offset= <i>n</i></p> <p>Specifies the byte offset at which to create the partition. If no offset is given, the partition is placed in the first disk extent that is large enough to hold it.</p> |

| Command | Syntax | Description |
|---|---|--|
| | | <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| <p>create partition extended</p> | <p>create partition extended [size=<i>n</i>] [offset=<i>n</i>] [noerr]</p> | <p>Creates an extended partition on the current drive. After the partition has been created, the focus automatically shifts to the new partition. Only one extended partition can be created per disk. This command fails if you attempt to create an extended partition within another extended partition. You must create an extended partition before you can create logical drives.</p> <p>size= <i>n</i></p> <p>Specifies the size of the extended partition in megabytes (MB). If no size is given, then the partition continues until there is no more free space in the region. The size is cylinder snapped; that is, the size is rounded to the closest cylinder boundary. For example, if you specify a size of 500 MB, the partition size rounds up to 504 MB.</p> <p>offset= <i>n</i></p> <p>Applies to MBR (master boot record) disks only. Specifies the byte offset at which to create the extended partition. If no offset is given, the partition starts at the beginning of the first free space on the disk. The offset is cylinder snapped; that is, the offset is rounded to the closest cylinder boundary. For example, if you specify an offset that is 27 MB and the cylinder size is 8 MB, the offset is rounded to the 24-MB boundary.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| <p>create partition logical</p> | <p>create partition logical [size=<i>n</i>] [offset=<i>n</i>] [noerr]</p> | <p>Creates a logical drive in the extended partition. After the partition has been created, the focus automatically shifts to the new logical drive.</p> <p>size= <i>n</i></p> <p>The size of the logical drive in megabytes (MB). If no size is given, then the partition continues until there is no more free space in the current region.</p> |

| Command | Syntax | Description |
|------------------------------------|--|---|
| | | <p>offset= <i>n</i></p> <p>Applies to MBR (master boot record) disks only. Specifies the byte offset at which to create the logical drive. The offset is cylinder snapped; that is, the offset rounds up to completely fill whatever cylinder size is used. If no offset is given, then the partition is placed in the first disk extent that is large enough to hold it. The partition is at least as long in bytes as the number specified by size=<i>n</i>. If you specify a size for the logical drive, it must be smaller than the extended partition.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| <p>create partition msr</p> | <p>create partition msr [size=<i>n</i>] [offset=<i>n</i>] [noerr]</p> | <p>On Itanium-based computers, creates a Microsoft reserved (MSR) partition on a GPT (GUID partition table) disk.</p> <div data-bbox="712 856 1453 1234" style="border: 1px solid gray; padding: 5px;"> <div style="display: flex; align-items: center;">  <p>Caution:</p> </div> <p>Be very careful when using the create partition msr command. GPT disks require a specific partition layout, and so creating Microsoft Reserved Partitions can cause the disk to become unreadable. On GPT disks that are used to start Windows XP 64-Bit Edition or the 64-bit versions of the Windows Server 2003 family, the EFI system partition is the first partition on the disk, followed by the Microsoft Reserved Partition. GPT disks used only for data storage do not have an EFI system partition; the Microsoft Reserved Partition is the first partition.</p> </div> <p>Windows XP and the Windows Server 2003 family do not mount Microsoft Reserved Partitions. You cannot store data on them and you cannot delete them.</p> <p>size= <i>n</i></p> <p>Specifies the size of the partition in megabytes (MB). The partition is at least as long in bytes as the number specified by size=<i>n</i>. If no size is given, the partition continues until there is no more free space in the current region.</p> <p>offset= <i>n</i></p> <p>Specifies the byte offset at which to create the partition. The partition starts at the byte offset specified by offset=<i>n</i>. It is sector-snapped; that is, the offset rounds up to completely fill whatever sector size is used. If no offset is given, then the partition is placed in the first disk extent that is large enough to hold it.</p> |

| Command | Syntax | Description |
|---------------------------------|--|--|
| | | <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| create partition primary | create partition primary [size= <i>n</i>] [<i>offset</i> = <i>n</i>] [ID = {byte GUID}] [align= <i>n</i>][noerr] | <p>Creates a primary partition on the current basic disk. After you create the partition, the focus automatically shifts to the new partition. The partition does not receive a drive letter; you must use the assign command to assign a drive letter to the partition.</p> <p>size= <i>n</i></p> <p>Specifies the size of the partition in megabytes (MB). If no size is given, the partition continues until there is no more unallocated space in the current region. The size is cylinder snapped; that is, the size rounds to the closest cylinder boundary. For example, if you specify a size of 500 MB, the partition size rounds up to 504 MB.</p> <p>offset= <i>n</i></p> <p>Specifies the byte offset at which to create the partition. If no offset is given, the partition starts at the beginning of the first free space on the disk. For MBR (master boot record) disks, the offset is cylinder snapped; that is, the offset rounds to the closest cylinder boundary. For example, if you specify an offset that is 27 MB and the cylinder size is 8 MB, the offset rounds to the 24-MB boundary.</p> <p>ID={byte GUID}</p> <p>Intended for OEM use only.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <div style="display: flex; align-items: center;">  <p>Caution:</p> </div> <p>Creating partitions with this parameter might cause your computer to crash or be unable to start. Unless you are an OEM or an IT professional experienced with GPT disks, do not create partitions on GPT disks by using the ID=byte GUID parameter. Instead, always use the create partition efi command to create EFI system partitions, the create partition msr command to create Microsoft Reserved Partitions, and the create partition primary command (without the ID=byte GUID parameter) to create primary partitions on GPT disks.</p> </div> |

| Command | Syntax | Description |
|---------|--------|--|
| | | <p>align= <i>n</i></p> <p>Typically used with hardware RAID Logical Unit Number (LUN) arrays to improve performance when the logical units (LUs) are not cylinder aligned. Aligns a primary partition that is not cylinder aligned at the beginning of a disk and rounds the offset to the closest alignment boundary, where <i>n</i> is the number of kilobytes (KB) from the beginning of the disk to the closest alignment boundary. The align= <i>n</i> command fails if the primary partition is not at the beginning of the disk. If used with offset= <i>n</i>, the offset is within the first usable cylinder on the disk.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> <p>Comments</p> <p>To partition a GPT disk with an OEM partition generate an OEM-GUID:</p> <p>Use this command to create an EFI partition:</p> <p>create partition efi size= <i>n</i></p> <p>Use this command to create a primary partition:</p> <p>create partition primary size= <i>n</i> ID={byte GUID}</p> <p>Use this command to create an MSR partition:</p> <p>create partition MSR size= <i>n</i></p> <div data-bbox="712 1142 1453 1272" style="border: 1px solid black; padding: 5px;">  <p>Important: You must create the OEM partition between the EFI and MSR partitions.</p> </div> <p>Never create the LDM metadata or LDM data partitions explicitly as partitions. Instead, convert the disk to dynamic.</p> |

| Command | Syntax | Description |
|---------------------------|---|---|
| | | <p>For MBR (master boot record) disks, you can specify a partition type byte, in hexadecimal form, for the partition. If you do not specify a partition type byte on an MBR disk, the create partition primary command creates a partition of type 0x6. Any partition type byte can be specified with the ID=byte GUID parameter. DiskPart does not verify the validity of the partition type nor does it verify the ID parameter.</p> <ul style="list-style-type: none"> • For GPT disks, you can specify a partition type GUID for the partition that you create. • EFI system partition: c12a7328-f81f-11d2-ba4b-00a0c93ec93b • Microsoft reserved partition: e3c9e316-0b5c-4db8-817d-f92df00215ae • Basic data partition: ebd0a0a2-b9e5-4433-87c0-68b6b72699c7 • LDM metadata partition on a dynamic disk: 5808c8aa-7e8f-42e0-85d2-e1e90434cfb3 • LDM data partition on a dynamic disk: af9b60a0-1431-4f62-bc68-3311714a69ad <p>If you do not specify a partition type GUID, the create partition primary command creates a basic data partition. Any partition type can be specified with the ID=byte GUID parameter. DiskPart does not verify the validity of the partition GUID nor does it verify the ID parameter.</p> |
| create volume raid | create volume raid [size= <i>n</i>] [disk= <i>n,n,n[,n,...]</i>] [noerr] | <p>Creates a RAID-5 volume on three or more specified dynamic disks. After you create the volume, the focus automatically shifts to the new volume.</p> <p>size= <i>n</i></p> <p>Specifies the amount of disk space, in megabytes (MB), that the volume occupies on each disk. If no size is given, the largest possible RAID-5 volume is created. The disk with the smallest available contiguous free space determines the size for the RAID-5 volume and the same amount of space is allocated from each disk. The actual amount of usable disk space in the RAID-5 volume is less than the combined amount of disk space because some of the disk space is required for parity.</p> |

| Command | Syntax | Description |
|-----------------------------|--|--|
| | | <p>disk= <i>n</i>, <i>n</i>, <i>n</i>[,<i>n</i>,...]</p> <p>Specifies the dynamic disks on which to create the volume. You need at least three dynamic disks in order to create a RAID-5 volume. An amount of space equal to size=<i>n</i> is allocated on each disk.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| create volume simple | create volume simple [size= <i>n</i>] [disk= <i>n</i>] [noerr] | <p>Creates a simple volume. After you create the volume, the focus automatically shifts to the new volume.</p> <p>size= <i>n</i></p> <p>Specifies the size of the volume in megabytes (MB). If no size is given, the new volume takes up the remaining free space on the disk.</p> <p>disk= <i>n</i></p> <p>Specifies the dynamic disk on which to create the volume. If no disk is given, the current disk is used.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| create volume stripe | create volume stripe [size= <i>n</i>] [disk= <i>n</i> , <i>n</i> [, <i>n</i> ,...]] [noerr] | <p>Creates a striped volume by using two or more specified dynamic disks. After you create the volume, the focus automatically shifts to the new volume.</p> <p>size= <i>n</i></p> <p>Specifies the amount of disk space, in megabytes (MB), that the volume occupies on each disk. If no size is given, the new volume takes up the remaining free space on the smallest disk and an equal amount of space on each subsequent disk.</p> <p>disk= <i>n</i>, <i>n</i>[,<i>n</i>,...]</p> <p>Specifies the dynamic disks on which to create the volume. You need at least two dynamic disks to create a striped volume. An amount of space equal to size=<i>n</i> is allocated on each disk.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |

| Command | Syntax | Description |
|-------------------------|--|--|
| delete disk | delete disk [noerr] [override] | <p>Deletes a missing dynamic disk from the disk list.</p> <p>noerr</p> <p>For scripting only. When an error is encountered, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> <p>override</p> <p>Enables DiskPart to delete all simple volumes on the disk. If the disk contains half of a mirrored volume, the half of the mirror on the disk is deleted. The delete disk override command fails if the disk is a member of a RAID-5 volume.</p> |
| delete partition | delete partition [noerr] [override] | <p>On a basic disk, deletes the partition with focus. You cannot delete the system partition, boot partition, or any partition that contains the active paging file or crash dump (memory dump).</p> <div data-bbox="711 846 1453 999" style="border: 1px solid gray; padding: 5px;">  <p>Caution: Deleting a partition on a dynamic disk can delete all dynamic volumes on the disk, thus destroying any data and leaving the disk in a corrupted state. To delete a dynamic volume, always use the delete volume command instead.</p> </div> <p>You can delete partitions from dynamic disks, but you must not create them. For example, it is possible to delete an unrecognized GPT (GUID partition table) partition on a dynamic GPT disk. However, deleting such a partition does not cause the resulting free space to become available. This command is intended to enable space reclamation on a corrupted, offline dynamic disk in an emergency situation where the clean command cannot be used.</p> <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> <p>override</p> <p>Enables DiskPart to delete any partition regardless of type. Normally, DiskPart enables you to delete only known data partitions.</p> |

| Command | Syntax | Description |
|-------------------------|---|--|
| delete volume | delete volume [noerr] | <p>Deletes the selected volume. You cannot delete the system volume, boot volume, or any volume that contains the active paging file or crash dump (memory dump).</p> <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| detail disk | detail disk | Displays the properties of the selected disk and the volumes on that disk. |
| detail partition | detail partition | Displays the properties of the selected partition. |
| detail volume | detail volume | Displays the disks on which the current volume resides. |
| exit | exit | Exits the DiskPart command interpreter. |
| extend | extend [size=<i>n</i>] [disk=<i>n</i>] [noerr] | <p>Extends the volume with focus into the next contiguous unallocated space. For basic volumes, the unallocated space must be on the same disk as, and must follow (have a higher sector offset number than) the partition with focus. A dynamic, simple, or spanned volume can be extended to any empty space on any dynamic disk. By using this command, you can extend an existing volume into newly created space.</p> <p>If the partition was previously formatted with the NTFS file system, the file system is automatically extended to occupy the larger partition. No data loss occurs. If the partition was previously formatted with any file system format other than NTFS, the command fails with no change to the partition.</p> <p>You cannot extend the current system or boot partitions.</p> <p>size= <i>n</i></p> <p>Specifies the amount of space, in megabytes (MB), to add to the current partition. If you do not specify a size, the disk is extended to take up all of the next contiguous unallocated space.</p> <p>disk= <i>n</i></p> <p>Specifies the dynamic disk on which to extend the volume. An amount of space equal to size=<i>n</i> is allocated on the disk. If no disk is specified, the volume is extended on the current disk.</p> |

| Command | Syntax | Description |
|-----------------------|---------------------------------|---|
| | | <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| gpt attributes | gpt attributes= <i>n</i> | <p>On basic GPT disks, assigns the GPT attribute(s) to the partition with focus. GPT partition attributes give additional information about the use of the partition. Some attributes are specific to the partition type GUID.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  <p>Important: Changing the GPT attributes might cause your basic data volumes to be unmountable or fail to be assigned drive letters. Unless you are an OEM or an IT professional experienced with GPT disks, do not change GPT attributes.</p> </div> <p><i>n</i></p> <p>The hexadecimal that pertains to the attribute that you intend to apply to the partition with focus. The GPT attribute field is a 64-bit field that contains two subfields. The higher field is interpreted only in the context of the partition ID, while the lower field is common to all partition IDs.</p> <p>All partitions have the following attribute:</p> <ul style="list-style-type: none"> • 0x0000000000000001 marks the partition as required. This indicates to all disk management utilities that the partition must not be deleted. The EFI system partition contains only those binaries necessary to start the operating system. This makes it easy for OEM- or operating system-specific binaries to be placed in other partitions. <p>For basic data partitions, the following attribute is defined:</p> <ul style="list-style-type: none"> • 0x8000000000000000 prevents the partition from having a drive letter automatically assigned. By default, each partition is assigned a new drive letter. Setting this attribute ensures that, when a disk is moved to a new computer, a new drive letter will not be automatically generated. Instead, the user can manually assign drive letters. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  <p>Note: Other attributes can be added at any time.</p> </div> |
| help | help | Displays a list of the available commands. |

| Command | Syntax | Description |
|-----------------------|-----------------------|--|
| import | import [noerr] | <p>Imports a foreign disk group into the local computer's disk group. The import command imports every disk that is in the same group as the disk that has focus.</p> <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| inactive | inactive | <p>On basic MBR (master boot record) disks, marks the system partition or boot partition with focus as inactive. The computer starts from the next option specified in the BIOS such as the CD-ROM drive or a Pre-Boot eXecution Environment (PXE)-based boot environment (such as Remote Installation Services (RIS)) when you restart the computer.</p> <div data-bbox="721 785 1448 1010" style="border: 1px solid black; padding: 5px;"> <div style="display: flex; align-items: center;">  <p>Caution: Your computer might not start without an active partition. Do not mark a system or boot partition as inactive unless you are an experienced user with a thorough understanding of the Windows Server 2003 family.</p> </div> </div> <p>If you are unable to start your computer after marking the system or boot partition as inactive, insert the Setup CD in the CD-ROM drive, restart the computer, and then repair the partition by using the Fixmbr and Fixboot commands in the Recovery Console.</p> |
| list disk | list disk | <p>Displays a list of disks and information about them, such as their size, amount of available free space, whether the disk is a basic or dynamic disk, and whether the disk uses the MBR (master boot record) or GPT (GUID partition table) partition style. The disk marked with an asterisk (*) has focus.</p> |
| list partition | list partition | <p>Displays the partitions listed in the partition table of the current disk. On dynamic disks, these partitions may not correspond to the dynamic volumes on the disk. This discrepancy occurs because dynamic disks contain entries in the partition table for the system volume or boot volume (if present on the disk). Dynamic disks also contain a partition that occupies the remainder of the disk and reserves space for use by dynamic volumes.</p> |
| list volume | list volume | <p>Displays a list of basic and dynamic volumes on all disks.</p> |

| Command | Syntax | Description |
|---------------|--|---|
| online | online [noerr] | <p>Brings an offline disk or volume with focus online. Resynchronizes the mirrored or RAID-5 volume with focus.</p> <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| rem | rem | <p>Provides a way to add comments to a script. For example:</p> <pre>rem These commands set up 3 drives. create partition primary size=2048 assign d: create partition extend create partition logical size=2048 assign e: create partition logical assign f:</pre> |
| remove | remove [{ letter= <i>d</i> mount= <i>path</i> all }] [dismount][noerr] | <p>Removes a drive letter or mount point from the volume with focus. If the all parameter is used, all current drive letters and mount points are removed. If you do not specify a drive letter or mount point, then DiskPart removes the first drive letter or mount point that it encounters.</p> <p>You can use the remove command to change the drive letter associated with a removable drive. You cannot remove the drive letters on system, boot, or paging volumes. In addition, you cannot remove the drive letter for an OEM partition, any GPT partition with an unrecognized GUID, or any of the special, non-data, GPT partitions such as the EFI system partition.</p> <p>letter= <i>d</i></p> <p>Specifies the drive letter to remove.</p> <p>mount= <i>path</i></p> <p>Specifies the mount point path to remove.</p> <p>all</p> <p>Removes all current drive letters and mount points.</p> |

| Command | Syntax | Description |
|--------------------|--------------------------------------|---|
| | | <p>dismount</p> <p>Dismounts the basic volume, when all drive letters and mount points have been removed from the volume, and takes the basic volume offline, making it unmountable. If other processes are using the volume, DiskPart closes any open handles before dismounting the volume. You can make the volume mountable by assigning it a drive letter or by creating a mount point path to the volume. Dismount will fail if used on a volume that has any remaining drive letters or mount points. For scripting, using remove all dismount is recommended.</p> <p>noerr</p> <p>For scripting only. When an error occurs, specifies that DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| repair disk | repair disk= <i>n</i> [noerr] | <p>Repairs the RAID-5 volume with focus by replacing the failed RAID-5 member with the specified dynamic disk. The specified dynamic disk must have free space greater than or equal to the total size of the failed RAID-5 member.</p> <p><i>n</i></p> <p>Specifies the dynamic disk that replaces the failed RAID-5 member. The specified disk must have free space equal to or larger than the total size of the failed RAID-5 member.</p> <p>noerr</p> <p>For scripting only. When an error occurs, DiskPart continues to process commands as if the error did not occur. Without the noerr parameter, an error causes DiskPart to exit with an error code.</p> |
| rescan | rescan | Locates new disks that might have been added to the computer. |
| retain | retain | <p>Prepares an existing dynamic simple volume to use as a boot or system volume.</p> <p>On an x86-based computer, creates a partition entry in the MBR (master boot record) on the dynamic simple volume with focus. To create an MBR partition, the dynamic simple volume must start at a cylinder aligned offset and be an integral number of cylinders in size.</p> <p>On an Itanium-based computer, creates a partition entry in the GPT (GUID partition table) on the dynamic simple volume with focus.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>Note: The retain command is intended for use only during unattended Setup or by OEMs.</p> </div> |

| Command | Syntax | Description |
|-------------------------|--|--|
| select disk | select disk =[<i>n</i>] | <p>Selects the specified disk and shifts the focus to it.</p> <p><i>n</i></p> <p>Specifies the disk number of the disk to receive focus. If you do not specify a disk number, the select command lists the disk that currently has the focus. You can view the numbers for all disks on the computer by using the list disk command.</p> |
| select partition | select partition =[{ <i>n</i> <i>d</i> }] | <p>Selects the specified partition and gives it focus. If you do not specify a partition, the select command lists the current partition with focus. You can view the numbers of all partitions on the current disk by using the list partition command.</p> <p><i>n</i></p> <p>Specifies the number of the partition to receive the focus.</p> <p><i>d</i></p> <p>Specifies the drive letter or mount point path of the partition to receive the focus.</p> |
| select volume | select volume =[{ <i>n</i> <i>d</i> }] | <p>Selects the specified volume and shifts the focus to it. If you do not specify a volume, the select command lists the current volume with focus. You can specify the volume by number, drive letter, or mount point path. On a basic disk, selecting a volume also gives the corresponding partition focus. You can view the numbers of all volumes on the computer by using the list volume command.</p> <p><i>n</i></p> <p>Specifies the number of the volume to receive the focus.</p> <p><i>d</i></p> <p>Specifies the drive letter or mount point path of the volume to receive the focus.</p> |

2.6.1.3 DiskPart Scripting

By using the DiskPart Command-Line Options command-line tool, you can create scripts to automate disk-related tasks, such as creating volumes or converting disks to dynamic disks. Scripting these tasks is useful if you deploy Windows by using unattended Setup or the Sysprep tool, which do not support creating volumes other than the boot volume.

To start a DiskPart script, at the command prompt, type:

```
diskpart /s scriptname .txt
```

where scriptname is the name of the text file that contains your script.

To redirect DiskPart's scripting output to a file, type:

```
diskpart /s scriptname .txt > logfile .txt
```

where logfile is the name of the text file where DiskPart writes its output.

When DiskPart starts, the DiskPart version and computer name display at the command prompt. By default, if DiskPart encounters an error while attempting to perform a scripted task, DiskPart stops processing the script and displays an error code (unless you specified the noerr parameter). However, DiskPart always returns errors when it encounters syntax errors, regardless of whether you used the noerr parameter. The noerr parameter enables you to perform useful tasks such as using a single script to delete all partitions on all disks regardless of the total number of disks.

The table below lists the DiskPart error codes.

| Error | Description |
|-------|--|
| 0 | No errors occurred. The entire script ran without failure. |
| 1 | A fatal exception occurred. There might be a serious problem. |
| 2 | The parameters specified for a DiskPart command are incorrect. |
| 3 | DiskPart was unable to open the specified script or output file. |
| 4 | One of the services that DiskPart uses returned a failure. |
| 5 | A command syntax error occurred. The script failed because an object was improperly selected or was invalid for use with that command. |

2.6.2 Check Disk help

Check Disk is an applet that will help you create and display a status report for your hard drive. The applet also lists and corrects error on the disk.

Similar to Windows CHKDSK, Check Disk has a list of parameters that help you perform various functions on your hard drive.

To use Check Disk:

1. In the Active@ Boot Disk shell, click **Utilities > Check Disk**. The **Check Disk Applet** workspace appears. A list of all hard drives appears in the **Local Disks** list.
2. To select a hard drive, select the check box next to the drive name.

3. You may add parameters to the command:
 - /F – If an error is encountered, Check Disk will fix the issue that causes the error.
 - /V – On a FAT or FAT32 file system, the full path and name of every file is displayed. On NTFS file system, only cleanup messages are displayed.
 - /R – Locates bad sectors and recovers readable information.
 - /I [NTFS only] – Performs a less vigorous check of indexes.
 - /C [NTFS only] – Skips checking of cycles within the folder structure.
 - On a FAT or FAT32 file system, you may specify an individual file to check. To do this, click Browse and choose the file from the Select File dialog box.
4. After you have selected a drive and parameters, click **Add all marked disks**. The chkdsk.exe command appears in the **Command** list along with the drive letter and all parameters.
5. To add another drive, repeat steps 2 to 4.
6. To remove a drive from the **Command** list, select it and click **Delete command > Delete Current**.
7. To remove all drives from the **Command** list, click **Delete command > Delete All**.
8. To run all commands in the Command list, click **Execute**. A DOS session appears.
9. Watch as the functions proceed.

After the command is complete, the DOS session closes.

2.6.3 Display Configurator help

To use Display Configurator:

1. In the Active@ Boot Disk shell, click **System > Display Configurator**. The **List All Modes** list appears with a list of all valid modes.
2. Click a mode to select it. The **Apply** button is enabled.
3. Click **Apply**. The **Monitor Settings** dialog box appears.
4. To keep the mode, click **Yes**.

The display mode is changed.

2.7 Internet

The Active@ Boot Disk Web utilities include:

1. **K-Meleon Web Browser** – An extremely fast, customizable, lightweight web browser for the Windows platform. K-Meleon is free, open source software released under the GNU General Public License.

For more information about K-Meleon see
<http://kmeleon.sourceforge.net/>.

2. **FTP Client** – A console utility to help you download or upload files from an FTP site.
3. **Telenet Client** – A console utility to help you access remote sites in a terminal session.

2.7.1 FTP Client

Use Microsoft FTP Client (console) to transfer files to and from your computer running an FTP (File Transfer Protocol) server service such as Internet Information Services. FTP can be used interactively or in batch mode by processing ASCII text files.

To open FTP client:

1. From the **Active@ Boot Disk shell**, click **FTP Client**. The **FTP Client** DOS session appears.

2.7.1.1 FTP Client Syntax and Parameters

Syntax

```
ftp [-v] [-d] [-i] [-n] [-g] [-s:FileName] [-a] [-w:WindowSize] [-A] [Host]
```

This table identifies parameters of the FTP command.

| Parameter | Description |
|-------------|--|
| -v | Suppresses the display of FTP server responses. |
| -d | Enables debugging, displaying all commands passed between the FTP client and FTP server. |
| -j | Disables interactive prompting during multiple file transfers. |
| -n | Suppresses the ability to log on automatically when the initial connection is made. |
| -g | Disables file name globbing. Glob permits the use of the asterisk (*) and question mark (?) as wildcard characters in local file and path names. |
| -s;FileName | Specifies a text file that contains FTP commands. These commands run automatically after FTP starts. This parameter allows no spaces. Use this parameter instead of redirection (<). |
| -a | Specifies that any local interface can be used when binding the FTP data connection. |
| -w | WindowSize Specifies the size of the transfer buffer. The default window size is 4096 bytes. |
| -A | Logs onto the FTP server as anonymous. |
| Host | Specifies the computer name, IP address, or IPv6 address of the FTP server to which to connect. The host name or address, if specified, must be the last parameter on the line. |
| /? | Displays help at the command prompt. |



Notes

- You must prefix ftp parameters with a hyphen (-) rather than a slash (/).
- FTP command-line parameters are case-sensitive.
- This command is available only if the Internet Protocol (TCP/IP) protocol is installed as a component in the properties of a network adapter in Network Connections.
- FTP can be used interactively. After it is started, FTP creates a subenvironment in which you can use FTP commands. You can return to the command prompt by typing the quit command. When the FTP subenvironment is running, it is indicated by the FTP > command prompt.
- Ftp supports the use of IPv6 when the IPv6 protocol is installed. For more information, see IP version 6 and IPv6 applications.

Examples

To log on to the FTP server named ftp.example.microsoft.com, type the following command:

```
ftp ftp.example.microsoft.com
```

To anonymously log on to the FTP server named ftp.example.microsoft.com, type the following command:

```
ftp -A ftp.example.microsoft.com
```

To log on to the FTP server named ftp.example.microsoft.com and run the ftp commands contained in a file named Resynch.txt, type the following command:

```
ftp -s:resynch.txt ftp.example.microsoft.com
```

2.7.2 Telenet Client

With Telnet Client, Windows users can connect to a remote computer running a Telnet server and run applications on the remote computer or perform administrative tasks on it.

Telnet uses the Telnet protocol (part of the TCP/IP protocol suite) to connect to a remote computer over a network.

2.7.2.1 Telnet Commands

This table identifies syntax and parameters of the Telnet commands that you may use at the Telnet prompt.

| To do this | Syntax | Short | Parameters |
|--|---|-------|---|
| Start Telnet Client and to enter the Telnet prompt | telnet [\\RemoteServer] | | \\RemoteServer Specifies the name of the server to which you want to connect. /? Displays help. |
| Stop Telnet Client | quit | q | none |
| Connect Telnet Client to a remote computer | open [\\RemoteServer] [Port] | o | \\RemoteServer Specifies the name of the server to which you want to connect. Port Specifies the port that you want to use. If you do not specify a port, the default port is assumed. |
| Disconnect Telnet Client from a remote computer | close [\\RemoteServer] | c | \\RemoteServer Specifies the name of the server that you want to manage. If you do not specify a server, the local server is assumed. |
| Set Telnet Client options | set [\\RemoteServer] [ntlm] [localecho] [term {ansi vt100 vt52 vtnt}] [escape Character] [logfile FileName] [logging] [bsasdel] [crlf] [delasbs] [mode {console stream}] [?] | | \\RemoteServer Specifies the name of the server that you want to manage. If you do not specify a server, the local server is assumed. ntlm Turns on NTLM authentication if it is available on the remote server. localecho Turns on local echo. term {ansi vt100 vt52 vtnt} Sets the terminal to the specified type. escape Character Sets the escape character. The escape character can be a single character, or it can be a combination of the CTRL key plus a character. To set a control-key combination, hold down CTRL while you type the character that you want to assign. |

| To do this | Syntax | Short | Parameters |
|--|--|-------|---|
| | | | <p>logfile FileName Sets the file to be used for logging Telnet activity. The log file must be on your local computer. Logging begins automatically when you set this option.</p> <p>logging Turns on logging. If no log file is set, an error message appears.</p> <p>bsasdel Sets BACKSPACE to be sent as delete.</p> <p>crlf Sets the new line mode, which causes the ENTER key to send 0x0D, 0x0A.</p> <p>delasbs Sets DELETE to be sent as backspace.</p> <p>mode {console stream} Sets the mode of operation.</p> <p>? Allows you to view the complete syntax for this command.</p> |
| Turn off an option that was previously set, at the Telnet prompt | unset [Option] | | |
| Set the escape character, type | -e Character | | |
| Set the current code set to a non-English language | codeset Option | | <p>Option Can be any one of the following: Shift JIS, Japanese EUC, JIS Kanji, JIS Kanji (78), DEC Kanji, NEC Kanji.</p> <p>You should set the same code set on the remote computer.</p> |
| Send Telnet Client commands | send [\\RemoteServer] [ao] [ayt] [esc] [ip] [synch] [?] | | <p>\\RemoteServer Specifies the name of the server that you want to manage. If you do not specify a server, the local server is assumed.</p> <p>ao Aborts output command.</p> <p>ayt Sends an "Are you there?" command.</p> <p>esc Sends the current escape character.</p> <p>ip Interrupts the process command.</p> <p>synch Performs the Telnet sync operation.</p> <p>? Allows you to view the complete syntax for this command.</p> |

| To do this | Syntax | Short | Parameters |
|---|---------|-------|--|
| View the current settings for the Telnet client | display | | <p>The display command lists the current operating parameters. If you are in a Telnet session (connected to a Telnet server), to modify the parameters, press CTRL+]. This escapes from the Telnet session. (To return to the Telnet session, press ENTER.)</p> <p>The following operating parameters are available:</p> <ul style="list-style-type: none"> - WILL AUTH (NTLM Authentication) - WONT AUTH - WILL TERM TYPE - WONT TERM TYPE - LOCALECHO off - LOCALECHO on |

To switch from Telnet Client to command mode, at the Telnet prompt, press CTRL+]. To switch back to Telnet Client, press ENTER.

2.8 Load Drivers

Load Drivers will help if you have SCSI drive controllers or an older or uncommon RAID type. Load Drivers will also help if you cannot find any other type of driver, for example, video driver, sound card driver, etc.

If you have successfully booted from the CD and you do not see your C: drive because it is a Stripe Array (Raid-0) or if you are using an older or non-standard controller the Load Drivers dialog box appears. Do the following:

1. In the Active@ Boot Disk shell, click Load Drivers. The **Active@ Driver Installer** dialog box appears.
2. In the **INF** file field, enter the path to the driver information file.
3. To browse to the file, click **Browse**.
4. If you do not have the driver information file on the current drive, do the following:
 - Load a CD with the correct drivers into the CD drive or plug a USB device with the correct drivers into a USB port.
 - Use one of the Web utilities to download the driver from an Internet URL and save it to your hard drive.
 - In the **INF** file field, enter the path to the driver information file.
5. Click **INSTALL DRIVER!**

After the driver is installed, if you needed a driver for your hard disk, you should be able to see your C: drive in Windows Explorer after you refresh its tree content. Similarly, you should be able to see and use any other driver that you have installed.



Note You may load drivers automatically at boot time. For more information, see 1.4 BootDisk_Drivers and BootDisk_Scripts.

3.0 About Boot Priority

To boot from a CD, DVD or USB device, make sure that the device has the boot sequence priority over the hard drive.

BIOS (Basic Input Output Subsystem) is a programmable chip that controls how information is passed to various devices in the computer system. A typical method to access the BIOS settings screen is to press ESC, F1, F2, F8 or F10 during the boot sequence.

BIOS settings allow you to run a boot sequence from a floppy drive, a hard drive, a CD-ROM drive or an external device. You may configure the order that your computer searches these physical devices for the boot sequence. The first device in the order list has the first boot priority. For example, to boot from a CD-ROM drive instead of a hard drive, place the CD-ROM drive ahead of the hard drive in priority.

While you are in the BIOS Setup Utility, you will not be able to use your mouse. Use the keyboard arrow keys to move around the screen.

Before you set boot priority for a USB device, plug the device into a USB port.

To specify the boot sequence:

1. Start the computer and press ESC, F1, F2, F8 or F10 during the initial startup screen. Depending on the BIOS manufacturer, a menu may appear.
2. Choose to enter BIOS setup. The BIOS setup utility page appears.
3. Use the arrow keys to select the BOOT tab. System devices appear in order of priority.
4. To give a CD or DVD drive boot sequence priority over the hard drive, move it to the first position in the list.
5. To give a USB device boot sequence priority over the hard drive, do the following:
 - Move the hard drive device to the top of the boot sequence list.
 - Expand the hard drive device to display all hard drives.
 - Move the USB device to the top of the list of hard drives.
6. Save and exit the BIOS setup utility.

The computer will restart with the changed settings.

Some computer manufacturers allow you to select the device that contains the boot sequence from a special device selection menu. The example below uses a Dell system board.

To set boot priority using a device selection menu:

1. When the computer starts to boot up, after the manufacturer's ID screen, press F12 several times. The device selection menu appears.
2. Use the up and down arrows to select **CD-ROM**.
3. To boot from the selected device, press **ENTER**.



Note Using an incorrect BIOS setting can cause a system malfunction. Please follow the BIOS guide provided with your computer motherboard. If you read these instructions and you are not sure how to change a setting, it is better to leave it as the default setting.

4.0 Glossary

BIOS settings Basic Input Output Subsystem. Programmable chip that controls how information is passed to various devices in the computer system. A typical method to access the BIOS settings screen is to press ESC, F1, F2, F8 or F10 during the boot sequence.

boot priority First device, or any device that is higher in the order list having preference over devices that are lower in the order. BIOS settings allow you to run a boot sequence from a floppy drive, a hard drive or a CD-ROM drive. You may configure the order that your computer searches these physical devices for the boot sequence. For example, to boot from a CD-ROM drive instead of a hard drive, place the CD-ROM drive ahead of the hard drive in priority.

boot record See MBR.

compressed cluster Data that uses less disk space. When you set a file or folder property to compress data, the file or folder uses less disk space. While the size of the file is smaller, it must use a whole cluster in order to exist on the hard drive. As a result, compressed clusters contain "file slack space". This space may contain residual confidential data from the file that previously occupied this space. KillDisk can wipe out the residual data without touching the existing data.

cluster Logical group of disk sectors, managed by the operating system, for storing files. Each cluster is assigned a unique number when it is used. The operating system keeps track of clusters in the hard disk's root records or MFT records. (See lost cluster)

exclusive access Lock that is applied to a partition for exclusive writing access, for example while recovering deleted or damaged files or folders. The recover operation must have exclusive access to the target partition while recovering files. If another application or the operating system is using the target partition, you must close all applications or system processes that may be using the target partition before you may lock it.

FAT File Allocation Table. File that contains the records of every other file and directory in a FAT-formatted hard disk drive. The operating system needs this information to access the files. There are FAT32, FAT16 and FAT versions.

free cluster Cluster that is not occupied by a file. This space may contain residual confidential data from the file that previously occupied this space.

file slack space Unused portion of a cluster. The smallest file (and even an empty folder) takes up an entire cluster. A 10-byte file will take up 2,048 bytes if that is the cluster size. This space may contain residual confidential data from the file that previously occupied this space.

deleted boot records Damaged or erased MBR. In a damaged disk, if the location of the boot records is known, the partition table can be reconstructed.

hive Highest level of organization in the Windows registry. At this level, system and local variables are stored.

ISO Informal term for a disk image in the ISO 9660 file standard format. ISO 9660 file system is a standard, published by the International Organization for Standardization. It defines a file system for CD-ROM or DVD-ROM media that allows you to read the same CD or DVD whether you're on a PC, Mac, or other major computer platform. Making a disk image in the ISO 9660 file standard (an ISO image) is a common way to electronically store and transfer the contents of a hard drive. An ISO image often has the filename extension .ISO (although not necessarily), and is commonly referred to as an "ISO".

lost cluster Cluster with an assigned number in the file allocation table, even though it is not assigned to any file. You can free up disk space by reassigning lost clusters. In DOS and Windows, you can find lost clusters with the ScanDisk utility.

MBR Master Boot Record. All disks start with a boot sector. When you start the computer, the code in the MBR executes before the operating system is started. The location of the MBR is always track (cylinder) 0, side (head) 0, and sector 1. The MBR contains a file system identifier.

MFT records Master File Table. File that contains the records of every other file and directory in an NTFS-formatted hard disk drive. The operating system needs this information to access the files.

root records See FAT.

SAM Security Account Manager. Database stored as a registry file in Windows. It stores users' passwords in a hashed format. Since a hash function is one-

way, this provides some measure of security for the storage of the passwords.

sector Smallest unit that can be accessed on a disk. Sectors are segments within each track.

track Circle of data around a disk. Tracks form concentric circles on a disk.

unallocated space Space on a hard disk where no partition exists. A partition may have been deleted or damaged or a partition may not have been created.

unused space in MFT records The performance of the computer system depends a lot on the performance of the MFT. When you delete files, the MFT entry for that file is not deleted, it is marked as deleted. This is called unused space in the MFT. If unused space is not removed from the MFT, the size of the table could grow to a point where it becomes fragmented, affecting the performance of the MFT and possibly the performance of the computer. This space may also contain residual confidential data (file names, file attributes, resident file data) from the files that previously occupied these spaces.

Windows system caching Windows reserves a specified amount of volatile memory for file system operations. This is done in RAM because it is the quickest way to do these repetitive tasks.

Windows system records The Windows registry keeps track of almost everything that happens in windows. This enhances performance of the computer when doing repetitive tasks. Over time, these records can take up a lot of space.