This document describes the installation and operation of Executive Software International's Diskeeper Administrator Edition for Microsoft® Windows. It is intended primarily for Windows system administrators and managers.

Revision/Update Information: This is a new manual

Software Versions: Diskeeper 8.0 Administrator Edition

Windows XP Professional
Windows 2000 Server
Windows 2000 Professional
Windows NT® 4.0 Server (SP 6 or higher)
Windows NT 4.0 Workstation (SP 6 or higher)

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Preface

What This Book is About
Welcome to the Diskeeper Administrator Edition User Manual. This book will first give you a quick look at the major features in Diskeeper Administrator Edition, then help you get it quickly installed and running. Next, it describes the various features in Diskeeper Administrator Edition and how to use them. It also describes the key features available in the Diskeeper Professional and Server editions. Finally, it explains about disk fragmentation on your Windows system.

Structure of This Book
- Chapter 1 gives a brief overview of Diskeeper Administrator Edition.
- Chapter 2 describes how to install Diskeeper Administrator Edition.
- Chapter 3 explains how to use the various features of Diskeeper Administrator Edition.
- Chapter 4 gives an overview of the features available in the Diskeeper Professional and Server editions.
- Chapter 5 presents the theory of Diskeeper operation.
- Appendix A has tables showing the different Diskeeper editions, and the operating systems, features, and capacities they support.
- Appendix B explains how to contact your Executive Software Customer Service Representative for Support Services.
- The Glossary provides definitions of technical terms used in this manual.
Throughout its history, Diskeeper has improved with each new version. Diskeeper version 8.0 continues this tradition with the introduction of an expanded product line with innovative new features and approaches to solving fragmentation problems for everyone, from home users to huge enterprise IT departments.

Since the introduction of Diskeeper for Windows NT in 1995, disk capacities have increased significantly, particularly in server environments. Nowadays, it is not uncommon to see disk volumes in the terabyte range (1,000 gigabytes, or approximately a thousand billion bytes) with millions of files. High-capacity disks need a specialized approach to defragmentation, since it can take a ‘typical’ defragmenter days to analyze and defragment such a disk volume. To address this specialized need, Executive Software has expanded its family of defragmentation products to match the broad range of operating system choices now available from Microsoft, particularly the Windows Server 2003 offerings. Each Diskeeper edition in this expanded product lineup was specifically designed to maximize the potential of the operating systems it supports.

The Diskeeper 8.0 family of products includes Diskeeper Administrator Edition. Diskeeper Administrator Edition is not a defragmenter, but an application that provides a single point of control by which you can control all the Diskeeper 8.0 installations on your network, including editions that can efficiently handle multi-terabyte disk volumes. This solves the following problems:

Diskeeper Administrator Edition makes the Diskeeper Server editions more powerful and efficient. All the ‘network administration’ features have removed from the Diskeeper Server editions to increase their performance and reliability. The Diskeeper Administrator Edition takes over the network administration duties, allowing the Server Editions to better emphasize the core functionality of defragmentation, especially on very large disk volumes.

Diskeeper Administrator Edition provides very flexible control of Diskeeper in a network environment. Key to this control are these network administration features:

- Active Directory® and Custom Grouping support—This feature allows you to define groups of computers you want to defragment, then control these groups as a single unit. Use groups you have established with the Active Directory in Windows 2000 Server and Windows Server 2003, or you can create your own custom groups.

- Enhanced monitoring of Diskeeper-related statuses on remote systems—Diskeeper now provides reports and alerts about several performance and reliability factors, and gives you concise reports on the condition of the disks and computers in your network.
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- Network-Wide Scheduling capability—As in previous versions of Diskeeper Server, you can create a defragmentation schedule and send it to a few (or a few thousand) computers with just a few mouse clicks.

- PushInstall—The Diskeeper PushInstall feature allows you to install Diskeeper Professional Edition or Diskeeper Server Standard Edition on any number of remote computers network-wide from a single, central location (such as your desk).

About Fragmentation

As used in this manual, the term *disk fragmentation* means two things:

- a condition in which pieces of individual files on a disk volume are not contiguous, but rather are broken up and scattered around the disk; and

- a condition in which the free space on a disk volume consists of little pieces of space here and there rather than a few large free spaces.

The effects of excessive fragmentation are twofold as well:

- file access takes longer because a file must be collected in pieces here and there, requiring several disk accesses instead of just one; and

- file creations take longer because space for the file must be allocated in little pieces here and there instead of just one contiguous allocation.

The bottom line—fragmentation slows Windows system performance. The longer you wait to defragment your disk volumes, the slower your computer runs.

With Diskeeper, all the disks in a Windows system can be kept defragmented indefinitely. Diskeeper cleans them up and keeps them that way.

Running either invisibly as a background job or as a manual defragmenter, Diskeeper carefully rearranges files and free space on a disk volume so they consist of as few pieces as possible. Because Diskeeper runs online, there is no need to lock users off a disk while it is being defragmented.

Diskeeper is the complete “Set It and Forget It” solution to the loss in system performance caused by disk fragmentation!

Other Important Products

Executive Software is known throughout the computer industry for its focused development of system management tools. If you are running Windows NT, Windows 2000, Windows XP or Windows Server 2003, you should also use:
Undelete® for Windows

Instantly recover files that have been accidentally deleted anywhere on your network. Undelete sets up a Recovery Bin that caches all deletions—even versions created between backups—and saves you the time and money of wading through backups. Undelete also includes a recovery tool for files that have been deleted before Undelete was installed. Data is your business. Complete your data protection solution with Undelete, available from your local reseller or directly from Executive Software.

Sitekeeper® System Management Software

Get at-a-glance updates on every software version, build, update and patch. Also see detailed hardware information including processor speed, RAM, hard drive size, logical free space and asset management tags from the BIOS and motherboard. Install/uninstall programs with a few clicks of the mouse.
Chapter 1

Overview of Diskeeper Administrator Edition

Diskeeper introduced the concept of enterprise-wide defragmentation, and Diskeeper Administrator Edition represents the next generation of this technology.

If you are a new Diskeeper user, welcome to the leading edge of defragmentation technology! If you have used Diskeeper in the past, you will notice many changes in this version. These changes are the result of Executive Software’s continual research to find what system administrators need and want in their defragmentation solutions. Rest assured, Diskeeper still provides the reliable, *Set It and Forget It* operation you’ve become accustomed to, while adding unprecedented levels of control to your disk defragmentation operations.

Recent marketing research has shown that computer system performance and reliability are major concerns among system administrators. Diskeeper Administrator Edition addresses these concerns by separating the administration of the defragmentation process from the defragmentation operation itself.

As disk sizes have increased and server duties have multiplied, it has become clear that a standalone administration console dedicated to controlling defragmentation operations network-wide provided a more efficient use of computer resources, especially on large server disk volumes. Starting with Diskeeper 8.0, this remote control functionality has been removed from the server versions of Diskeeper, and is now incorporated into Diskeeper Administrator Edition. The Administrator Edition only controls Diskeeper operation—it does not perform defragmentation itself.

With Diskeeper Administrator Edition, you can install, schedule, monitor, and control Diskeeper 8.0 on computers throughout your network.

Here are the major features provided by Diskeeper Administrator Edition:

- The PushInstall feature makes it easy to deploy Diskeeper Professional or Diskeeper Server Standard Edition to any supported computer on your network. Need to install Diskeeper on a few hundred machines? Diskeeper Administrator Edition can do it in a few mouse clicks.

- Scheduling defragmentation operations is simple, whether you’re managing a handful of computers or thousands network-wide. You can specify times when
you want Diskeeper to run, or let the Diskeeper Smart Scheduling® feature automatically determine the optimum defragmentation schedule for each disk.

- For ease of management, you can arrange the computers on your network into logical groups. Diskeeper Administrator Edition supports Microsoft Active Directory groups, or you can create your own customized groups. For example, you can easily set up different defragmentation schedules, reports or preferences for the computers in the Finance department compared to those in Engineering—or PushInstall Diskeeper to all the computers on the fourth floor.

- Diskeeper Administrator Edition provides a wealth of report and alert options detailing the fragmentation on the computers across your network, and also collects performance and reliability data that you can use to proactively maintain your systems.

- The Diskeeper Administrator Edition interface gives you the status of Diskeeper operations throughout your network at a glance. You can quickly see which machines have which versions of Diskeeper installed, and also see which systems have Diskeeper scheduled to run.

- You can use Diskeeper Administrator Edition to remotely-control Diskeeper 8.0 on computers all over your network. Without ever leaving your desk, you can perform any Diskeeper task as if you were sitting in front of the remote machine.

In a typical scenario, you would use Diskeeper Administrator Edition to PushInstall Diskeeper Professional or Server Standard Edition to remote machines throughout your network. Then, you would use Diskeeper Administrator Edition to create schedules for the defragmentation of those remote machines. These remote computers can optionally be divided into groups—you can use your existing Active Directory grouping structure or create your own custom groups. After setting defragmentation schedules, you can specify which alert messages you’d like to see, and how often you’d like to see them. At this point, you’re done! Diskeeper will automatically handle the disk fragmentation throughout your network. At any time thereafter, you can easily check up on Diskeeper operations network-wide—without ever leaving your desk!

Diskeeper Administrator Edition consists of two main components—the Administrator Console and the Administrator Data Controller.

- The Administrator Console is the “control panel” by which you send commands to Diskeeper installations throughout your network.

- The Administrator Data Controller handles scheduling, logging and other informational data for all the machines on your network that have been scheduled by Diskeeper Administrator Edition. The Administrator Data Controller component also contains a storage area for the information gathered as well as the files used by the Diskeeper Administrator PushInstall feature.
Note: The console and the data controller components can be installed on separate machines. For example, you could install the data controller component on a file server, and install the console on your laptop or the workstation at your desk.

Remember Diskeeper Administrator Edition is not a defragmenter. In order to defragment the machine(s) it is installed on, it is necessary to also install either Diskeeper Professional Edition or Diskeeper Server Standard Edition on the machine(s).

Other Useful Information

The first time you start Diskeeper Administrator, the data controller component polls all the computers on your network, looking for Diskeeper 8.0 (or higher) installations. This is done in several stages—first a fast enumeration (check) is done to detect the remote machines, then a full enumeration is done to see if Diskeeper is installed on those machines. (You can also control how often Diskeeper Administrator refreshes its network data, or manually refresh the data any time you want.)

After Diskeeper Administrator has found the other Diskeeper installations on your network, it can then gather any existing scheduling information for the remote machines. Based on the schedules detected, it gathers post-defragmentation performance and reliability information about each individual computer and stores that data in the data controller storage area. From then on, each time a disk is defragmented on one of the remote machines, the Diskeeper Administrator data controller updates its database, so current, up-to-date information about the condition of the remote computers is always instantly available.

Since the data collection is based on the defragmentation schedule, new data is collected at the end of each defragmentation run on each computer. Therefore, the data is updated more often for computers that are being defragmented more frequently. (By updating only after defragmentation and not on an arbitrary schedule, network traffic is kept to a minimum. Why poll the machine daily if it’s being defragmented weekly?) This polling action is repeated automatically on a periodic basis, based on the defragmentation schedules detected.

In order to gather the Diskeeper data from remote machines, Diskeeper Administrator must use login credentials for an account that is a member of the Administrators group on the domain or workgroup being polled. (This account information is also used by the PushInstall feature described on page 23.) Diskeeper Administrator allows you to use different login information for each domain on which you want to control remote Diskeeper installations. See page 21 for more information about entering account information.
Chapter 2

Installing Diskeeper Administrator Edition

This chapter provides information you need before, during, and after installing Diskeeper Administrator Edition.

Before the Installation

Platforms and Windows Versions Supported
Diskeeper Administrator runs on the Intel® x86 platform (including Pentium™ and compatible CPUs from other manufacturers).

Diskeeper Administrator is supported on Windows Server 2003, Windows XP Professional, Tablet PC and Media Center Editions, Windows 2000 Professional and Server, as well as on Windows NT 4.0 Server and Workstation operating systems.

Note that Service Pack 6 or higher is required on Windows NT 4.0 systems.

Resource Requirements
The disk space requirements for Diskeeper Administrator depend on several factors. On most systems, Diskeeper Administrator will need less the 20 megabytes. Allow about 20 MB of extra free space for temporary files during the installation. If Internet Explorer is not present on your computer, some other needed files (hhupd.exe, 50comupd.exe, and wintdist.exe) may be added. Further, your system may require a new or updated version of DCOM (less than 3 MB) and/or MMC (less than 6 MB).

Diskeeper Administrator stores data collected from machines running Diskeeper throughout your network. This data storage amounts to approximately 5 to 10 KB per machine, plus about 5 to 10 MB for the Diskeeper Administrator log files.
Additional Software Requirements

On Windows NT 4.0 computers, Service Pack 6 is required for Diskeeper Administrator to function properly. Diskeeper Administrator will not install on Windows NT systems running Service Pack 5 or lower.

Diskeeper Administrator relies on both the Distributed Component Object Model (DCOM) and the Microsoft Management Console (MMC).

- DCOM is used for communication between the various components that make up Diskeeper. For example, when a Diskeeper defragmentation operation is scheduled to begin, the Diskeeper controller module uses DCOM to send a message to the defragmentation engine to begin the defragmentation process.

- The MMC provides a single point of control for system utilities such as Diskeeper. The MMC is used as a central location for a variety of Microsoft and third party administrative tools.

Note: The MMC normally has to be installed separately on Windows NT. The Diskeeper Administrator setup process will automatically install DCOM and/or the MMC on your computer, if needed.

Installation Procedure—The Short Version

The Diskeeper Administrator installation is typically fast and simple. Here are the basic steps:

Note: Make sure you are logged onto an account that is a member of the Administrators group to install Diskeeper Administrator.

1. Insert the Diskeeper Administrator CD-ROM into the appropriate drive on your computer. (If you are installing from a downloaded file, double-click the file you downloaded.)

2. Follow the screens displayed, answering the questions asked as prompted. Be aware that you can select separate locations to install the different Diskeeper Administrator components. You will also be asked for the domain name and computer name of the location where you are installing the Data Controller component of Diskeeper Administrator.

That’s it! It would still be a good idea to read “After the Installation” on page 10, but you’re done with the installation.
Installation Procedure—The Details

Perhaps one of the most useful options in the Diskeeper Administrator installation is the ability to install different parts of it in different locations—even on different computers. To fully use this feature, some explanation is in order.

An mentioned previously, Diskeeper Administrator consists of two main parts plus remote installation files. To refresh your memory:

- The **Administrator Console** component is the “control panel” by which you send commands to Diskeeper installations throughout your network. Since it is the “hands-on” piece of the Diskeeper Administrator package, it can be installed on one or more computers that are easily accessible by the people who need to use Diskeeper Administrator.

- The **Administrator Data Controller** component works as a background task to collect and store the scheduling, logging, reports, alerts and other informational data for all the machines on your network that have been scheduled by Diskeeper Administrator Edition. This component is actually two separate pieces—the Data Controller and the actual Diskeeper data files collected by the Data Controller.

  Most of the data stored is in an XML format, and the disk space used to store data collected by the Data Controller is surprisingly small, usually about 5 to 10 KB per machine. However, the disk space requirements for this data may be sizable on a network with a very large number of computers running Diskeeper. In this scenario, it makes sense to install the Diskeeper data controller component on a system with ample disk space.

- The **Remote Installation Files** component contains the files used by the Diskeeper Administrator PushInstall feature to remotely-install Diskeeper across your network. This component is actually a sub-component of the Administrator Data Controller described above.

  In addition to the executable program files that perform the PushInstall operation, the Remote Installation Files component also includes the actual installable Diskeeper packages. Note, however, that these installation packages are not installed when you install Diskeeper Administrator. Instead, you will be prompted to locate them the first time you use the PushInstall feature.

Of course, the various components can all be installed on the same computer, but you do have the flexibility of installing them separately on different machines.
Installation Overview

Diskeeper Administrator is installed by the \texttt{SETUP.EXE} program supplied on the Diskeeper CD-ROM (or within the installation package, in the case of a downloaded version). The \texttt{SETUP.EXE} program:

- Confirms that you have Administrator privileges.
- Determines which Windows version you are running.
- Checks for sufficient space on the disk for the installation.
- Detects and removes any previously installed Diskeeper Administrator software.
- Allows you to specify which components to install and where to install them.
- Copies the necessary files to the destination directories, updates the Windows registry, starts the Diskeeper Administrator service, and creates a link in the Windows Start menu for \textit{Diskeeper Administrator Console}.

Installation Procedure

Diskeeper Administrator Edition can be installed from a CD-ROM, or it may be downloaded from the Web. This procedure applies to both methods. Before you start the installation, please note the following:

- Windows NT 4.0 machines must have Service Pack 6 or higher installed
- You must be logged into an account that is a member of the Administrators group to install Diskeeper Administrator.

This installation procedure assumes you are installing from CD-ROM. If the Diskeeper software was downloaded from the Web, double-click the executable file in the directory into which it was downloaded and go directly to step 3.

1. Insert the Diskeeper CD-ROM into the appropriate drive on your computer.

2. The Windows AutoPlay feature automatically displays a screen that allows you to install Diskeeper Administrator or choose from an assortment of Trialware versions of Executive Software products.

   If you have disabled the AutoPlay feature, simply double-click the \texttt{Setup.exe} file in the root-level folder on the CD-ROM and follow the instructions displayed.

3. If you are installing an upgrade version of Diskeeper Administrator and do not have the previous version currently installed on your computer, you will be asked to verify your previous version. You can skip this step if you are installing a full or trialware version of Diskeeper Administrator.

   - If you do not have a full version installed, but have an ESD (Electronic Software Distribution) version of Diskeeper Administrator on your system,
you will be asked for its location. This must be the only file located in the
folder location. When Setup has verified the version is valid, the installation
will continue.

- If you do not have a full version installed but have a CD of a full version,
you will be asked to insert the CD. After Setup checks the CD, you will
need to re-insert the CD you are installing the new version from. Press the
SHIFT key when inserting the older CD as well as the newer CD, to
disengage the AutoPlay feature.

4. Click **Next** when the welcome message appears.

5. After you have read and accepted the license agreement, click **Next** to continue.

6. The next dialog box shows the different Diskeeper Administrator components,
and allows you to specify which are installed. By default, all the components are
installed. To prevent either the Administrator Console or Data Controller from
being installed, click the ![icon](image.png) icon next to component you do **not** want to
install, and select **This feature will not be available**.

For each component, you can also change the destination location for the
program files. By default, the components that make up Diskeeper
Administrator are installed in these locations:

- `\Program Files\Executive Software\DiskeeperAdministrator\`
- `\Program Files\Executive Software\DiskeeperAdministrator\Console\`
- `\Program Files\Executive Software\DiskeeperAdministrator\Controller\`
- `\Program Files\Executive Software\DiskeeperAdministrator\RemoteInstall\`

You can choose a different disk volume or directory for the any component as
follows:

a) Highlight the component (such as Diskeeper Data Controller).

b) Select the **Change** option button and navigate to the location where
you want the files for that component installed.

You can see the available disk space on all your local volumes by clicking **Space**.

7. After making any desired changes to the installed components and file
destinations, click **Next** to accept your choices. If any directory you specified
does not exist, a new directory will be created.

8. If Internet Explorer 4.01 or higher is not installed on your computer, another
installation program is started and a package of necessary components is
installed on your computer. Microsoft Management Console (MMC), which is
the interface for Diskeeper Administrator, requires these components. These
components are a small subset of Internet Explorer—not the complete Internet
Installation

Explorer product. Installing these components (hhupd.exe, 50comupd.exe, and wintdist.exe) will not affect your current web browser. Note that you must restart your computer after installing Diskeeper Administrator if these components are installed.

9. If the MMC is not installed on your computer, the MMC Setup program is started automatically. After the MMC files are installed, the Diskeeper Administrator Setup program resumes.

10. After the Diskeeper Administrator files have been copied to your system, you may be presented with the opportunity to register Diskeeper Administrator online.

11. On a Windows 2000, Windows XP or Windows Server 2003, after Setup is complete, you can immediately start Diskeeper Administrator by clicking Finish. On Windows NT systems, you may be required to restart your computer before running Diskeeper Administrator.

To run Diskeeper Administrator, click the Windows Start button, select Programs, and then Diskeeper Administrator Console.

After the Installation

Registering Diskeeper Administrator Edition

After the installation is complete, you may be given the option to register your Diskeeper Administrator Edition purchase online. Alternatively, you can register Diskeeper by mailing or faxing the registration card that comes with the CD.

Be sure to register your purchase to receive the free 90 days of telephone support included with Diskeeper Administrator Edition.

About Windows Service Packs

Since Diskeeper Administrator uses mechanisms built into Windows that allow the safe movement of files on a disk that is actively being accessed by users, there is no need to upgrade Diskeeper Administrator each time you install a new Windows Service Pack upgrade.

Repairing Windows Systems

Performing an emergency repair or reinstallation of a Windows system can possibly change or disable certain system information or services, which may make it necessary to reinstall Diskeeper Administrator after repairing your Windows system.
About the Diskeeper Administrator Service

Diskeeper Administrator creates a Windows service. The service allows the Administrator Data Controller to run in the background while other applications are running. As long as your operating system is up and running, Diskeeper Administrator can do its job, whether you are logged on or not.

After installation, the Diskeeper Administrator service starts automatically each time your computer is restarted. This service runs all the time, whether or not and Diskeeper Administrator actions are occurring. This service consumes negligible system resources, and in most cases will never need to be disabled.

The Windows Application Event Log

Diskeeper Administrator messages are placed in the Windows Application Event Log. By default, this log is 512 kilobytes in size (except on Windows Server 2003), and is set to overwrite events older than 7 days. Diskeeper Administrator may quickly fill the log file if these default settings are used. To prevent this, perform the following steps to change the size and overwriting characteristics of the Application Event Log:

On Windows 2000 and Windows XP

1. Right-click My Computer on your desktop and select Manage.
2. When the Computer Management Console is displayed, select System Tools, and then Event Viewer.
3. Expand the Event Viewer by double-clicking it and select Application.
4. Next, click the Action menu and select Properties.
   a) Set the Maximum log size to 2048 KB.
   b) Enable the Overwrite events as needed option.
   c) Click OK.

On Windows NT 4.0

1. From the Windows NT Start button, choose Programs, then the Administrative Tools Program Group.
2. In the Administrative Tools Program Group, choose the Event Viewer.
3. In the Event Viewer, open the Log menu and choose the Log Settings option.
4. In the Event Log Settings dialog box, perform these steps:
   a) Set the Change Setting to Application Log.
   b) Set the Maximum Log Size to 2048 KB.
   c) Enable the Overwrite Events as Needed option.
Uninstalling Diskeeper Administrator Edition

To uninstall Diskeeper Administrator, you must be logged into an account that is a member of the Administrators group.

Note that the controls may have slightly different names, depending on the version of Windows.

Follow these steps to completely remove and uninstall Diskeeper Administrator from your computer:

1. From the Control Panel, double-click Add/Remove Programs.
2. Highlight the Diskeeper Administrator entry.
3. Click Remove. This removes the Diskeeper Administrator program files from your computer. In most cases, the Diskeeper Administrator installation directories will not be removed.
4. Manually delete the Diskeeper Administrator installation directories if they exist.

Note: If the MMC has been installed on your computer, it will not be removed when Diskeeper Administrator is uninstalled.

Also Note: Any data or installation files stored by the Administrator Data Controller are not removed when you uninstall Diskeeper Administrator (in the event you are planning to re-install Diskeeper Administrator). Manually delete these files if they are no longer needed.

Remote Installation

Diskeeper Professional Edition or Diskeeper Server Standard Edition can be installed simultaneously on multiple computers in a network, using the PushInstall feature in Diskeeper Administrator.

Remote installation can be a tremendous time saver for system administrators, especially on large networks, where you may have to install Diskeeper on hundreds, or even thousands of computers.

For more information on remotely installing Diskeeper, see PushInstall on page 23.
This chapter describes the features available with Diskeeper Administrator Edition, and what you can do with them.

**Overview**

These are the main Diskeeper Administrator Edition features:

- **Network Scheduler**—Set and view Diskeeper defragmentation schedules on selected systems in your network.
- **Reports**—Establish and view several Diskeeper reports showing information about selected systems in your network.
- **Alerts**—Get e-mail notification of critical issues regarding the condition of the disk volumes all through your network.
- **PushInstall**—Install or uninstall Diskeeper Professional Edition or Diskeeper Server Standard Edition on selected systems in your network.
- **Logical Grouping Control**—Supports Active Directory groups, or you can create custom logical groups of systems on which to manage Diskeeper operations.
- **Single Remote Computer Control**—Connect directly to a remote system and have full control of Diskeeper on that system.
- **Cross-Platform Support**—Diskeeper Administrator Edition runs on a variety of Windows operating system platforms, from Windows NT through Windows Server 2003.
Main Display

The main Diskeeper Administrator Edition display shows information about which computers in your network have Diskeeper installed, and which of them have been scheduled for defragmentation. This display is the starting point for all Diskeeper Administrator Edition operations.

Here are descriptions of the different sections of the main display:

The Menus

These are the options available from the Diskeeper Administrator Edition menus:

Schedule  View  Reports  Deploy Diskeeper  Remote Control  Configure  Group  Help

Schedule Menu

- Set Schedule—Set a defragmentation schedule for one or multiple computers
- Stop Scheduling—Stop an ongoing network scheduling operation
View Menu

- **Home Page**—View the main Diskeeper Administrator screen
- **Status bar**—Toggle the Status bar on and off

Reports Menu

- **Select**—Select a report type to view
- **Open**—Open a report
- **Print**—Print a report
- **Save**—Save a report

Deploy Diskeeper Menu

- **PushInstall**—PushInstall Diskeeper Professional or Diskeeper Server Standard to remote computers
- **Stop PushInstall**—Stop an ongoing PushInstall operation

Remote Control Menu

- **Diskeeper**—Connect to another computer to directly control Diskeeper 8.0 on the remote computer.

Configure Menu

- **Alerts**—Customize situation alerts sent by Diskeeper
- **Purge Options**—Set how often you want to clear out previously-stored reports and alerts
- **Controller**—Specify the name of the computer running the Diskeeper Administrator Data Controller component
- **Account Information**—Enter the login credentials for the domains or workgroups on which you want to administer Diskeeper
- **Refresh Settings**—Determine how often Diskeeper Administrator should poll your network, and also allows you to manually refresh the network information

Group Menu

- **Edit**—Create, modify and delete custom groups of computers
Diskeeper Administrator Edition Operation

- **Refresh Group Info**—Poll the network and gather current information about Active Directory and custom groups

**Help Menu**

- **Help Contents**—Opens the main Diskeeper Administrator Edition help system
- **About Diskeeper Administrator**…—Shows the version number and other information about Diskeeper Administrator Edition
- **Check for product update**—Opens a browser window and automatically checks the Executive Software website to see if an update is available for Diskeeper Administrator

**The Toolbar**

These are the options available from the Diskeeper Administrator Edition toolbar:

- The **Home** button returns you to the main Diskeeper Administrator screen.
- The **Scheduling** buttons allow you to create and cancel defragmentation schedules for Diskeeper installations across your network.
- The **Groups** button is used to add, edit and delete user-defined groups.
- The **Reports** buttons let you view, open, save, and print Diskeeper reports.
- The **Alerts** button is used to configure the settings for alert information that Diskeeper Administrator can gather and send to you.
- The **PushInstall** buttons allow you to install (or uninstall) Diskeeper throughout your network.
- The **Remote Control** button is used to control Diskeeper 8.0 operations on a remote computer
- The **Help** button displays additional information about using Diskeeper Administrator.
The Machine Pane

The machine pane on the left-hand side of the Diskeeper Administrator Edition display shows the computers on your network, and shows which of them have Diskeeper installed, and which have been scheduled for defragmentation. The machine pane also displays any Active Directory groups, as well as any custom groups of computers you have established.

Note: In order for Diskeeper Administrator to detect Diskeeper versions and schedules across your network, the remote installations and schedules must be initially done from Diskeeper Administrator.
The Task Pane

The task pane is the central point of control for most common Diskeeper tasks. The icons are self-explanatory, and they perform the same tasks as their menu and toolbar counterparts.

The task pane is the fast way to:

- Create a defragmentation schedule
- Get Diskeeper reports
- PushInstall Diskeeper to remote computers
- Configure situation alerts
- Remotely-control Diskeeper 8.0 on another computer

Click on an option below to get started.

- Schedule
- Configure Alerts
- Reports
- Remote Control Diskeeper
- PushInstall
- Help
The Status Pane

The Status Pane gives a quick view of the status of ongoing Diskeeper Administrator operations and Diskeeper tasks you have scheduled with Diskeeper Administrator Edition.

Note the information displayed in the Status pane is also stored by the Diskeeper Administrator Controller, and can be recalled using the Status and Error report option described on page 36.

The Status Bar

The Status Bar at the bottom of the Diskeeper Administrator Edition display shows the progress of any ongoing Diskeeper Administrator operations.

Setting Up Login Information

In order to gather the Diskeeper data from remote machines, Diskeeper Administrator must use login credentials for an account that is a member of the Administrators group on the domain or workgroup being polled. (This account information is also used by the PushInstall feature described on page 23.) Diskeeper Administrator allows you to use different login information for each domain or workgroup on which you want to control remote Diskeeper installations.
Select **Account Information** in the **Configure** menu to display this dialog box:

![Account Information](image)

Follow these steps for each domain or workgroup displayed in the dialog box:

1. Highlight a domain or workgroup
2. Click the **Username** field and enter the username for an account that is a member of the Administrators group on the selected domain or workgroup
3. Click the **Password** field (or press the Tab key) and enter the password for the account entered in the previous step
4. Click the **Confirm Password** field (or press the Tab key again) and re-enter the password
5. Click **OK**

When you click **OK**, the login credentials are verified on each domain or workgroup. A message is displayed if any of the verification processes fail. You can use the **Verify Account** button to manually verify the credentials of any account selected in the dialog box.

To clear the credentials for an account, select it and click **Clear Account**. The **Clear All Accounts** button clears the account information for all the accounts listed.
**PushInstall**

Use the Diskeeper PushInstall feature to install or uninstall Diskeeper Professional Edition or Diskeeper Server Standard Edition on selected computers throughout your network. Note that you must have valid Diskeeper licenses for the machines on which you intend to install Diskeeper.

You must have Administrator access on all the selected computers to PushInstall Diskeeper to Windows NT, Windows 2000, Windows XP and Windows Server 2003 systems. See page 21 for information about setting up network login credentials.

The PushInstall feature establishes a network connection with the selected machines, then installs the selected Diskeeper edition to those computers. It relies on having the installable Diskeeper package(s) available to be installed. The first time you use the PushInstall feature, the program attempts to detect the installable files. If they cannot be found, you will see a dialog box prompting you for the location of the installation package. You can use either a CD-ROM or downloaded installation package. Once you choose the Setup.exe file, the installation package is copied to the Administrator data storage area.

If you try to PushInstall a Diskeeper version that is not compatible with the target machine, a message explaining the situation is displayed. Messages are also displayed to let you know the status of the installations.

Before the PushInstall operation begins, you will see a message asking you to confirm the version and build numbers of the installable package.

**Installing Diskeeper Across the Network**

To open the PushInstall screen in the task pane, do one of the following:

- Select **PushInstall** from the **Deploy Diskeeper** menu
- Click the **PushInstall** toolbar button
- Click **PushInstall** in the main task pane
You’ll see a screen like this:

Follow these steps to PushInstall Diskeeper to anywhere between one and a few thousand computers:

1. Open the PushInstall pane as described earlier.

2. In the Machine pane, select any combination of one or more computers, groups or domains on which you want to install Diskeeper. (See Using Groups on page 43 for information about using Active Directory groups or custom groups.) As is common in Windows applications, you can select more than one item in the machine pane by holding the CTRL key while clicking on the item you want to select.

3. Select the Diskeeper version you want to install. You can install either Diskeeper Professional Edition or Diskeeper Server Standard Edition (but not both at the same time). Keep in mind that you must have valid Diskeeper licenses for the machines on which you intend to install Diskeeper.

4. Optionally, select the option to set a Smart Schedule on all the disk volumes on all the selected machines. The new Smart Schedule will overwrite any schedules
that have previously been set on the target machines. The Smart Scheduling feature is described in detail on page 50.

5. Finally, click **Install** to start the PushInstall operation.

The first time you perform a PushInstall of either Diskeeper Professional or Diskeeper Server Standard Edition, you will be prompted to specify the location where you have the installable Diskeeper package. This can be a Diskeeper Professional or Server Standard Edition CD-ROM, or a downloaded file. For either edition, a single **Setup.exe** file contains the entire Diskeeper installation package for that edition. After you navigate to the installation file, Diskeeper Administrator notes the Diskeeper edition, version and build number of the file and copies it into the Administrator data storage area where it is accessible to the PushInstaller. Once the installable file has been copied, any subsequent PushInstall operations will automatically use that file.

After you click **Install** to start the PushInstall operation, Diskeeper Administrator begins pushing the Diskeeper installation files to the target machines. If for some reason you decide to stop the PushInstall operation after it has been started (but before it has completed), simply click **Stop PushInstall** in the PushInstall pane, or select **Stop PushInstall** from the **Deploy Diskeeper** menu.

Note the **Stop PushInstall** option only stops any PushInstall operations that are in progress or pending. It does not “roll back” installations that have already been done.

**Uninstalling Diskeeper Across the Network**

Using the PushInstall feature to uninstall Diskeeper from remote machines is easy. The uninstaller will remove any version of Diskeeper (Professional or Server) from the computers you select in the Machines pane.

Follow these steps to uninstall Diskeeper from one or more computers:

1. Open the PushInstall pane as described earlier.

2. In the Machine pane, select any combination of one or more computers, groups or domains from which you want to uninstall Diskeeper. (See Using Groups on page 43 for information about using Active Directory groups or custom groups.) As usual, you can select more than one item in the machine pane by holding the **CTRL** key while clicking on the item you want to select.

3. Click **Uninstall** to start removing Diskeeper from the selected computers.

4. Like the PushInstall operation, if you decide to stop the uninstall operation after it has been started (but before it has completed), simply click **Cancel** in the PushInstall pane, or select **Stop PushInstall** from the **Deploy Diskeeper** menu.
Stopping a PushInstall Operation

To stop an ongoing PushInstall operation, or a remote uninstall operation, do one of the following:

- Select Stop PushInstall from the Deploy Diskeeper menu.
- Click the Stop PushInstall toolbar button.
- Click PushInstall in the main task pane, then select Stop PushInstall.

Note the Stop PushInstall option only stops any PushInstall operations that are in progress or pending. It does not “roll back” installations that have already been done.

Scheduling Diskeeper Across the Network

You can create defragmentation schedules for other computers on your network (if they are also licensed to run Diskeeper). Diskeeper Administrator Edition allows you to easily set the same “Set It and Forget It” schedule on one or more computers at a time. You can set the same schedule on all the disk volumes on the remote machines, or you can set different schedules for separate disks.

The Network Scheduler is a unique feature of Diskeeper Administrator Edition. You don’t have to connect individually to each computer you want to schedule and then specify the schedule(s) for each volume on that computer. Not an easy task if you have a few hundred (or thousand) computers on your network!

The Network Scheduler feature allows you to easily set the same “Set It and Forget It” schedule for some or all of the volumes on one or more computers at a time.

To use this feature fully, it is important to understand the method by which Diskeeper creates and controls defragmentation schedules on remote computers. When you create a schedule for a computer, Diskeeper stores all the necessary scheduling information in a control file (Diskeep.ctl) on the computer for which the schedule was created. Then, the Diskeeper Service on the scheduled machine periodically checks the control file to determine whether to start the Diskeeper defragmentation engine on that computer.

In Diskeeper Administrator Edition, the Network Scheduling Engine performs the work of updating the Diskeeper control files on one or more remote computers, without the need for you to individually connect to each computer. This is the sequence of events:
First, the scheduling information for any selected computers is stored on the local computer from where you are creating schedules. (The computer that’s running Diskeeper Administrator Edition.) This information is stored in the \Data folder under the folder where you installed the Data Controller component. Individual files are written to this folder for each computer on which you schedule Diskeeper to run.

Next, the Network Scheduling Engine sends the new or changed information to the Diskeeper control file on the remote computer(s).

Then, when the Diskeeper Service on each of the individual remote computers checks its control file, it begins running as directed by the schedule. The Diskeeper Service checks its control file once a minute.

The Diskeeper Smart Scheduling option, which lets Diskeeper automatically determine the best schedule for each disk volume, is available in the Network Scheduler feature. Smart Scheduling is available from the Select type of schedule drop-down option list in the scheduling pane. See page 50 for more information about Smart Scheduling.

To open the scheduling screen in the task pane, do one of the following:

- Select Set Schedule from the Schedule menu
- Click the Set Schedule toolbar button
- Click Schedule in the main task pane
You’ll see a screen like this:

Follow these steps to create a defragmentation schedule for anywhere between one and a few thousand computers:

1. Open the Scheduling pane as described earlier.

2. In the machine pane, select any combination of one or more computers, groups or domains for which you want to set a schedule. (See “Using Groups” on page 43 for information about creating custom groups.) As is common in Windows applications, you can select more than one item in the machine pane by holding the CTRL key while clicking on the item you want to select.

3. Select the disk volumes you want to schedule for defragmentation. Again, you can use the CTRL key to select more than one volume. The schedule you specify will be applied to all the selected volumes on all the selected machines.

4. Next, select the schedule options from the drop-down lists. These options are described in detail in the following section.

5. Finally, click **Set Schedule** to send the schedule to the selected computers.
Scheduling Options

The scheduling pane offers four main scheduling controls.

<table>
<thead>
<tr>
<th>Schedule Type</th>
<th>When to Run</th>
<th>Starting Times</th>
<th>Ending Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Time</td>
<td>every day</td>
<td>all day</td>
<td>all day</td>
</tr>
<tr>
<td>Continuously</td>
<td>weekends</td>
<td>12:00 midnight through 11:00 pm</td>
<td></td>
</tr>
<tr>
<td>every 2 hours</td>
<td>weekdays</td>
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<td>every 4 hours</td>
<td>Monday</td>
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<td>every 8 hours</td>
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<td>every 12 hours</td>
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<td>every 24 hours</td>
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<td>every 48 hours</td>
<td>Friday</td>
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<tr>
<td>every 72 hours</td>
<td>Saturday</td>
<td></td>
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</tr>
<tr>
<td>Smart Scheduling</td>
<td>Sunday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen Saver</td>
<td>except every day</td>
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<td>except Monday</td>
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<td></td>
<td>except Sunday</td>
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</tbody>
</table>

About the Schedule Type

Use this section of the scheduling pane to specify how often Diskeeper should run on the selected volumes.

- **One Time**—As the name implies, a schedule created with this option will only run once. When this option is selected, you can select the time and day the
single defragmentation run will be done. For example, you could create a schedule that will run one time only, on Saturday at 2:00 am.

- **Continuously**—A schedule created with this option will run continuously. In other words, after the defragmentation run is completed, another run is started shortly thereafter. For example, you could create a schedule that runs continuously every day between 2:00 am and 3:00 am. As another example, you could create a schedule that runs continuously except every day between 6:00 am and 10:00 pm. This would effectively prevent Diskeeper from running during the specified hours, but allow it to run continuously outside of those hours.

- **Every X hours**—These options allow you to further define when Diskeeper will run on the scheduled machines. To continue with the example above, you could create a schedule that runs every four hours except every day between 6:00 am and 10:00 pm. In this case, Diskeeper would only run every four hours between 10:00 pm and 6:00 am daily.

- **Smart Scheduling**—Use the Smart Scheduling option to allow Diskeeper to automatically determine the optimum defragmentation schedule for each of your disk volumes and adjust it accordingly. Smart Scheduling is described in detail on page 50.

- **Screen Saver**—When enabled, Screen Saver mode automatically starts defragmenting the selected disk volume(s) any time the screen saver starts on your computer. More information about Screen Saver mode on page 52.

**About When to Run**

Use this section of the scheduling pane to specify days the Diskeeper job will (or will not) be allowed to run on the selected volumes.

- **Every day**—A schedule created with this option will run every day between the starting and ending times you specify. For example, you could create a schedule that runs every day between 2:00 am and 3:00 am.

- **Weekends**—A schedule created with this option will run only on weekends (Saturday and Sunday) between the starting and ending times you specify. For example, you could create a schedule that only runs Saturday and Sunday between 2:00 am and 3:00 am.

- **Weekdays**—A schedule created with this option will run only on weekdays (Monday through Friday) between the starting and ending times you specify. For example, you could create a schedule that only runs during the week between 5:00 am and 6:00 am.

- **Monday … Sunday**—Like the weekend and weekday options, a schedule created with this option will run only on the specified day between the starting
and ending times you specify. For example, you could create a schedule that
only runs on Friday between 9:00 pm and 1:00 am.

- **Except every day**—This is the opposite of the Everyday option. Like all the
  other “except” options, use this option to specify time when Diskeeper will not
  be allowed to run. A schedule created with this option will run every day except
  between the starting and ending times you specify. For example, you could
  create a schedule that runs every eight hours daily except between 7:00 am and
  6:00 pm.

- **Except weekends**—Similar to the “Except every day” option, a schedule
  created with this option will run except on weekends (Saturday and Sunday)
  between the starting and ending times you specify. For example, you could
  create a schedule that runs every 24 hours except all day on Saturday and
  Sunday, when it would not run at all.

- **Except weekdays**—Like the “Except weekends” option, a schedule created
  with this option will run except on weekdays (Monday through Friday) between
  the starting and ending times you specify. For example, you could create a
  schedule that runs every 12 hours except on weekday between 6:00 am and
  10:00 pm, when it wouldn’t run at all.

- **Except Monday ... Except Sunday**—Like the other “Except” options, a
  schedule created with any of these options will run except on the specified day
  between the starting and ending times you specify. For example, you could
  create a schedule that runs every 48 hours except on Friday between 9:00 pm
  and 1:00 am, when it wouldn’t run.

**About Starting and Ending Times**

Use these sections of the scheduling pane to specify the start and end of a time
period the Diskeeper job will (or will not) be allowed to run on the selected volumes.

- **All day**—A schedule created with this option will run (or not run, depending on
  other options you choose) all day on the days you specify. For example, you could
  create a schedule that runs every two hours all day on Sunday (from 12:00 am to
  11:59pm). As an opposite example, you could create a schedule that runs every two
  hours except all day on weekdays, when it wouldn’t run at all.

- **12:00 midnight through 11:00 pm**—Similar to the “All day” option, a schedule
  created with these options will run (or not run) between the starting and ending times
  you specify. For example, you would use these options to create a schedule that only
  runs during the week between 5:00 am and 6:00 am—or one that does not run on
  weekdays between 7:00 am and 7:00 pm.
Stopping a Network Scheduling Operation

To cancel an ongoing network scheduling operation, do one of the following:

- Select Stop Scheduling from the Schedule menu.
- Click the Stop Scheduling toolbar button.
- Click Schedule in the main task pane, then select Stop Scheduling.

Note the Stop Scheduling option only stops any network scheduling operations that are in progress or pending. It does not “roll back” schedules that have already been set.

Diskeeper Reports

Diskeeper Administrator Edition provides a variety of useful reports regarding the computers on your network. These reports can be for any number of machines, based on the computers you have selected in the machine pane.

All reports are shown in the main task pane of the Diskeeper Administrator Edition display.

To open the Diskeeper Reports screen in the task pane, do one of the following:

- Choose Select from the Reports menu
- Click the View Reports toolbar button
- Click Reports in the main task pane
You'll see a screen like this:

![Diskeeper Administrator Edition Operation](image)

**Details about the Reports**

Diskeeper Administrator Edition gathers information each time a scheduled Diskeeper 8.0 defragmentation job completes and stores that information in the location you chose for the Administrator Data Controller component when you installed Diskeeper Administrator. Since this data is stored in a central location, reports are generated quickly, as there is no need to request data from each individual computer. The information in those reports is current and reflects the last post-defragmentation data received from each Diskeeper 8.0 installation.

To generate a report via the Diskeeper Administrator, select one or more machines in the machine pane on the left side of the display, then select the report type you want to generate. The first three of the following report types display data for the selected machines on your network. The Status and Error Report shows messages generated by Diskeeper Administrator itself.

The **Machine Information Report** shows the volumes and current defragmentation schedule status of the selected machines. This report answers questions like: “How much free space do I have?”, “What schedule is set” or “When will Diskeeper next...
Diskeeper Administrator Edition Operation

The only machines and volumes that appear in the Machine Information Report are those which have been network-scheduled by Diskeeper Administrator. If Diskeeper Administrator has received no post-defragmentation report for a volume, the volume is simply described as “scheduled”, but no other information is displayed.

When Diskeeper Administrator Edition is first installed, there are no Diskeeper 8.0 installations on the LAN that have been network-scheduled by Diskeeper Administrator. As a result, the Machine Information Report will show no volumes for any machines because none have been network-scheduled by Diskeeper Administrator.

The Performance and Reliability Report shows factors that directly affect the reliability of your disk volumes—MFT fragmentation, paging file fragmentation and the level of free space. This report is a useful way to show Diskeeper is maintaining the good health of the system.

Like the Machine Information Report, only machines and volumes that have been network-scheduled by Diskeeper Administrator can be shown in the Performance and Reliability Report.

The Alerts Report shows you information normally sent via e-mail Alerts. This is useful for situations where you don’t want to wait for the daily “Alerts” e-mail report, or cases where you want to view a period of time other than the previous day. The Alerts Report fulfills those needs.

The Status and Error Report shows any status or error messages generated by Diskeeper Administrator. This is a good way to view the contents of the Diskeeper Administrator Status pane over a specific date and time range. Any messages that have been displayed in the Diskeeper Administrator Status pane can be retrieved using the Status and Error Report.

Machine Information Report

The Machine Information Report shows the following information for each selected computer:

- Machine URL
- Diskeeper edition and version

For each volume:

- Volume ID
- Volume label
- Volume size
- File system type
- Paging file size
- Free space
- Schedule settings
- Next scheduled defragmentation
- Boot time schedule details

**Performance Reliability Report**

This report shows this information for each selected computer:

- Machine URL

For each volume:

- Volume ID
- Volume label
- As of date and time (when the data was reported by Diskeeper)
- Free space amount and percent
- Before defragmentation, after defragmentation, percent change figured for the following values:
  - MFT fragments
  - Paging file fragments
  - Total fragments

**Alerts Report**

The Alerts report duplicates the information shown in the Daily Alerts Reports sent daily via e-mail to specified recipients. (The Diskeeper Administrator Alerts features are described in detail on page 38.) The Alerts Report includes this information:

- Date range of report (start, end date/time)

For each alert in the specified date range:

- Time stamp
- Machine URL
- Volume ID
- Volume label
- Alert type – One of the following:
  - Job Failed to Complete
Diskeeper Administrator Edition Operation

- Free Space Critically Low
- Excessive MFT Fragmentation
- Excessive Paging File Fragmentation
- Invalid Alert Received

- Recommendation text accompanying alert type.

The Alerts Report is in the same format as the Daily Alerts Report, but since you can specify a starting and ending time period to examine, it is useful for seeing a compilation of Diskeeper Alerts covering a specific time period.

**Note:** Even if you have disabled automatic e-mail notification of Alerts, the alerts data is still stored in the Diskeeper Administrator data controller area. This allows you to produce an Alerts Report on-demand at any time.

### Status and Error Report

This report shows the following information for each selected computer:

- Date range of report (start, end date/time)
- For each message:
  - Time stamp
  - Displayed message

Any messages that have been displayed in the Diskeeper Administrator Status pane can be retrieved using the Status and Error Report.

### Viewing a Report

Follow these steps to view a report:

1. Open the Reports pane as described earlier.
2. Select the type of report you want to view.
3. If you select either the **Alerts Report** or the **Status and Error Report**, select the starting and ending dates of the period you want the report to cover. By default, these reports will use the current date.
4. Click **OK**. The selected report is displayed in the task pane of the Diskeeper Administrator display.
Here is an example of an Alerts report—other reports have a similar look:

![Diskeeper Administrator Edition Operation](image)

**Saving a Report**

After you have viewed a report, you can save it for future reference.

Select **Save** from the Reports menu or click the **Save Report** button on the toolbar to save the report. You are given the option of specifying the location where the report file will be saved. By default, Diskeeper Administrator Edition reports are saved in the \My Documents folder, but you can navigate to the disk volume and folder of your choice.

**Printing a Report**

Saved reports can be printed.

Select **Print** from the Reports menu or click the **Print Report** button on the toolbar to print the report. A standard Windows print dialog box is displayed where you can select which printer to send the report to, and other printing options.
Diskeeper Administrator Edition can be set up to send you e-mail Alerts informing you of situations that affect the performance and reliability of the computers being controlled by Diskeeper Administrator.

Alerts are based on post-defragmentation data received from Diskeeper 8.0 installations throughout your network. Diskeeper Administrator examines post-defragmentation data to determine whether an Alert should be generated. This data is gathered during the polling process that Diskeeper Administrator performs on a periodic basis as defragmentation jobs complete throughout your network. Note that you can disable the polling process if you want, but doing so will effectively disable the Alerts feature, since no data is gathered when polling is disabled.

Alerts are logged and stored in the Administrator data controller storage area as they are detected. Alerts are sent to you (or the people you designate) as individual e-mail messages for each Alert, and/or by a Daily Report, which is also sent via e-mail. You control whether (and to whom) these e-mail messages are sent.

Alerts are generated under these conditions:

- If free space or the Reliability Index has reached a critical level on an individual machine. (The Reliability Index is described in detail shortly.) You can set the threshold at which these Alerts are generated.
- A Diskeeper defragmentation job does not complete on a volume for any reason

Executive Software has done extensive research into the causes of disk performance and reliability problems. This research has shown these factors play a significant role in regards to disk performance and reliability:

- Overall fragmentation
- MFT fragmentation
- Paging file fragmentation
- Available free space

Diskeeper uses these factors to determine a disk reliability index each time it analyzes or defragments a disk volume.

Disk reliability is rated into three categories—Healthy, Warning and Critical.

---

1 Overall fragmentation is calculated by dividing the time required to read the fragmented files on the volume by the time required to read all the files on the volume, and multiplying the result by 100.
This table shows the Warning and Critical levels used in determining the reliability index.

<table>
<thead>
<tr>
<th>Reliability Factor</th>
<th>Warning Level</th>
<th>Critical Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Fragmentation</td>
<td>&gt; 10% fragmentation</td>
<td>&gt; 50% fragmentation</td>
</tr>
<tr>
<td>MFT Fragmentation</td>
<td>&gt; 250 fragments</td>
<td>&gt; 2000 fragments</td>
</tr>
<tr>
<td>Paging File Fragmentation</td>
<td>&gt; 250 fragments</td>
<td>&gt; 1500 fragments</td>
</tr>
<tr>
<td>Free Space</td>
<td>&lt; 15% free space</td>
<td>&lt; 5% free space</td>
</tr>
</tbody>
</table>

Diskeeper Administrator Edition delivers Alerts in three ways:

- Immediate e-mail notifications
- An e-mailed Daily Alerts Report
- An On-Demand Alerts Report (viewed in the Reports pane)

By default, all alert messages are disabled when you install Diskeeper Administrator Edition. Alerts are sent by e-mail, but no e-mail can be sent until you specify an e-mail address. The Alerts Configuration pane allows you to specify the address(es) to which e-mail Alerts are sent. You can also control which Alerts are reported, by enabling them individually.

Each Alert includes a recommendation for handling the problem noted in the Alert. In this example, an Alert occurred because free space on the volume is critically low. The message states:

Volume \\DOMAIN1\SERVER2 on C:\ has less than 8% free space. This is a severe problem that is known to reduce computer reliability. Here are some things you can do to remedy this situation:

1. Run Disk Cleanup to remove unnecessary files from this volume.

   Disk Cleanup can be accessed from the Windows Start Menu (Start | Programs | Accessories | System Tools | Disk Cleanup) or from a command prompt (Start | Run | cleanmgr).

2. Configure System Restore to use less disk space.

   System Restore is described in the Windows Help system.

3. Remove downloaded files such as pictures and music files.

4. Uninstall any programs you are not currently using that occupy space on this volume.

5. Uninstall programs from this drive and move them to another drive.
You have control over which Alerts are reported to you. For each type of e-mailed alert, your options are:

- **Instant e-mail**—Send the Alert by e-mail to the specified list of e-mail addresses as soon as the alert occurs.

- **Daily e-mail**—Include the Alert in a daily report of alerts events received. The report is sent to the specified list of e-mail addresses, daily at midnight.

You can specify one or more e-mail addresses to receive the instant and daily e-mail Alerts. The list of addresses applies to both the instant e-mail and daily e-mail. Note that e-mail addresses must be separated by semicolons, similar to the way they are entered in many e-mail programs.

You can also choose to generate a daily report even if no alerts occurred the previous day. In that case, the daily report simply informs you there were no situations to report.

The alerting options above apply to all scheduled Diskeeper defragmentation jobs controlled by the Diskeeper Administrator. Diskeeper Administrator Edition controls all Alerts system-wide with a single enable/disable control.

**Note:** Even if you have disabled automatic notification of Alerts, the alerts data is still stored in the Diskeeper Administrator data controller area (unless you have disabled the polling operation by which this data is gathered). This allows you to produce a report, on-demand, of alerts that have occurred over a selected time period, as described in the Alerts Report section on page 35.

### Setting Up Alerts

To open the **Configure Alerts** screen in the task pane, do one of the following:

- Select **Alerts** from the **Configure** menu

- Click the **Alerts** toolbar button

- Click **Configure Alerts** in the main task pane
You’ll see a screen like this in the task pane:

Once set up, Diskeeper Administrator will automatically e-mail the selected alerts to the address(es) you name.

To clear previously-set alerts, simply clear the settings and click OK.

To confirm the SMTP server and e-mail addresses, click Test E-mail.

If you do not want to collect any alerts data (which saves the resources normally used to poll the remote machines on your network), check the Disable Polling checkbox.

Setting Up Report and Alert Purge Options

Diskeeper Administrator stores the reports and alerts data in the Administrator data controller component. Over time, this information must be purged to avoid consuming unacceptable amounts of disk space. You have control over how often this data is cleared out.
Select **Purge Options** from the **Configure** menu to display this dialog box:

**Configure Purge Options**

<table>
<thead>
<tr>
<th>Alerts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alerts are messages that you have selected to receive through e-mail or in a daily report. Alert data is stored in the Diskeeper Administrator Data Storage area for a maximum of 180 days.</td>
</tr>
<tr>
<td>Days to keep Alerts in the database: <strong>30</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status/Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status and error messages show the progress and completions of Diskeeper actions. These messages can be seen in the Output pane or you can view them in the Status/Error report. These messages are stored in the Diskeeper Administrator Data Storage area for a maximum of 180 days.</td>
</tr>
<tr>
<td>Days to keep status/error messages <strong>30</strong></td>
</tr>
</tbody>
</table>

As the dialog box explains, you can specify how many days to keep alerts and status/error messages in the Diskeeper Administrator database. You can also clear alerts and status/error messages by clicking the respective **Clear** button.

**Refreshing Network Information**

Diskeeper Administrator updates its network information and stores the data in the Administrator data controller component. By default, this information is refreshed automatically once daily, but you can choose any time span from daily to once every seven days, and the refresh will occur at the time you specify. You can also run a manual refresh, which immediately polls the network.
Select **Refresh Settings** from the **Configure** menu to display this dialog box:

![Network Refresh Settings dialog box](image)

**Using Groups**

Diskeeper Administrator Edition give you the ability to create and use logical groups of computers on your network. These groups can then be controlled and managed as a single unit. For example, you might create a group that consists of all the computers in the Accounting Department, or all the workstations on the third floor. Then, when you need to perform a Diskeeper Administrator task such as scheduling defragmentation or PushInstalling Diskeeper to multiple machines, you simply highlight the group of computers (as a single unit) instead of each computer in the group.

In addition to custom groups you create, Diskeeper Administrator also supports any groups you have created within Microsoft Active Directory. Here again, you can apply Diskeeper Administrator tasks to any Active Directory groups in the same manner as applying them to a single machine.

The Machine pane section of the Diskeeper Administrator display shows any groups detected on your network with the ![Groups icon](image) icon. You can create new groups, edit existing groups, and delete groups you now longer need. Any custom groups you create are saved under the **My Groups** icon in the Machine pane.
Creating Custom Groups

To create a custom group of computers, select the **Edit** option from the **Groups** menu. You’ll see a dialog box like this:

To create a new custom group, follow these steps:

1. Click **New Group** and enter a name for your new group. (Or, right-click on the **My Groups** icon and select **Create New Group**).
2. Select the machines and/or groups you want to include in the new group from the right-hand pane.
3. Click **Add Group/Machine**.
4. Click **OK** to save the new group.
Editing Custom Groups

To edit an existing group, follow these steps:

1. Highlight the group you want to edit (in the left-hand pane).

2. To add new machines or groups to the existing group, select the machines and/or groups you want to add (in the right-hand pane) and click **Add Group/Machine**.

3. To rename a group, select the groups you want to rename and click **Rename**.

4. To remove a machine or group from the existing group, select the machines and/or groups you want to remove and click **Delete**.

5. After making the changes you want, click **OK** to save the edited group.

Remote Control

You can use Diskeeper Administrator Edition to remotely control Diskeeper 8.0 operations on computers all over your network. (Of course, Diskeeper Professional or Diskeeper Server must be licensed and installed on the remote computers.) Without ever leaving your desk, you can perform any Diskeeper task as if you were sitting in front of the remote machine.

To connect to and control a remote computer, do one of the following:

- Select **Diskeeper** from the **Remote Control** menu
- Click the **Remote Control** toolbar button
- Click **Remote Control Diskeeper** in the main task pane
You’ll see a screen like this:

![Diskeeper Administrator Console](image)

Choose the computer on which you want to run Diskeeper, and then click OK. Once the computer is connected, the Diskeeper interface opens in a new window and the name of the computer being controlled is shown at the top of the Diskeeper display.

Error messages will be displayed if Diskeeper fails to connect to a network computer.

After connecting to Diskeeper on the remote computer, perform any Diskeeper operations on that computer in the same manner as running Diskeeper on a local computer.

**Run Schedules Across a Network**

To create or alter “Set It and Forget It” run schedules on remote computers on your network, you must have sufficient permissions to edit a file in the Diskeeper directory on the remote computer. If you do not have sufficient permissions, an error message is displayed stating that access is denied to the run schedule. If you cannot create or alter a run schedule that you think you have permission to use, there are two likely possibilities:
- You logged on with a username that the target computer recognizes and a password that it does not recognize. A common example is to log on to your computer as Administrator and then try to edit an exclusion list on a computer that has its own Administrator account established with a different password.

- Your computer is not running a network protocol that is running on the target computer.

**Editing Exclusion Lists on a Network**

Diskeeper allows you to list files and directory folders that you do not want moved. This “exclusion list” is checked by Diskeeper each time defragmentation is run. To edit exclusion lists on remote computers on your network, you must have sufficient permissions to edit a file in the Diskeeper directory on the remote computer. If you do not have sufficient permissions, an error message is displayed stating that access is denied to the exclusion list. If you cannot edit an exclusion list that you think you have permission to use, there are two likely possibilities:

- You logged on with a username that the target computer recognizes and a password that it does not recognize. A common example is to log on to your computer as Administrator and then try to edit an exclusion list on a computer that has its own Administrator account established with a different password.

- Your computer and the remote computer do not share the same network protocol.

For more information about Diskeeper Exclusion Lists, see page 53.

**Troubleshooting Network Connections**

This section describes several situations that can occur when running Diskeeper on remote network computers.

**Network Error Messages**

Error messages are displayed if Diskeeper fails to connect to a network computer. The following circumstances can prevent Diskeeper from connecting to a network computer, thus causing an error message to be displayed:

- Diskeeper is not installed on the remote computer.
- The Diskeeper service has not been started on the remote computer.
- The Diskeeper main menu is open on the remote computer.
- There is a problem within the Windows network.
- You are not logged onto an account that has Administrator privileges on the remote computer.
Also, if your computer does not have a network card installed or the network is not started, a message box is displayed stating that the network is not present or not started.

### Connecting the Console to Another Controller

If you are running the Diskeeper Administrator Data Controller component on more than one machine (to administer separate domains or workgroups, for example), you can easily connect the Administrator Console component to those machines.

Use the **Controller** option in the **Configure** menu to specify which controller is connected to the console. You’ll see a dialog box like this:

![Configure Server Information dialog box](image)

By default, this dialog box displays the name of the computer where the data controller component was initially installed. To connect the console to a different controller, simply enter the name of the machine where the controller you want to connect to resides and click **OK**.
Chapter 4

Overview of Diskeeper Features

This chapter describes key features available in Diskeeper Professional and the various Diskeeper Server editions. Not all these features are directly available within Diskeeper Administrator Edition, but they are available via the Remote Control feature described starting on page 45. This information is provided in this manual simply for reference.

Diskeeper Defragmentation Modes

Diskeeper Professional and the Diskeeper Server editions are designed to operate in three different ways. The “Set It and Forget It” and “Manual Defragmentation” modes run while your disk volumes are online and available to other users. The Boot-Time defragmentation mode runs only when you restart your computer.

Note: The Boot-Time defragmentation feature is only available on Diskeeper running Windows NT, Windows 2000, Windows XP, or Windows Server 2003.

Set It and Forget It—“Set It and Forget It” allows Diskeeper to run automatically in the background, either after hours or while users and other processes are active on the system, according to a predetermined schedule you set. As with manual defragmentation jobs, you can select several different defragmentation methods to suit your needs.

Set It and Forget It defragmentation jobs are scheduled using one of several scheduling options:

- **Smart Scheduling**—This feature is available within the Disk Volume Scheduler feature. Smart Scheduling allows Diskeeper to automatically determine the optimum defragmentation schedule for your disk volumes. Smart Scheduling is described further on page 50.

- **Disk Volume Scheduler**—The Disk Volume Scheduler allows you to specify the times or days of the week that Diskeeper will (or will not) be allowed to run.

- **Screen Saver Mode**—Screen Saver mode automatically starts defragmenting the selected disk volume(s) any time the screen saver starts on your computer. The defragmentation operation is paused whenever keyboard or mouse activity is detected on the computer. Screen Saver mode is described further on page 52.
Manual Defragmentation—Manual defragmentation gives you direct control over Diskeeper operation. You have control over which disk volumes are defragmented, when defragmentation is started and stopped, and the priority at which Manual defragmentation jobs run. You can also choose between different defragmentation methods, to emphasize system performance or defragmentation speed. Manual defragmentation is not the preferred method of defragmentation, since it typically runs at a higher process priority and consumes more system resources than Set It and Forget It background defragmentation.

Boot-Time Defragmentation—The Boot-Time defragmentation feature is only available on the Windows NT, Windows 2000, Windows XP, and Windows Server 2003 versions of Diskeeper. Boot-Time defragmentation has three main parts:

- **Directory Consolidation**—In Windows NT (and FAT volumes in Windows 2000, Windows XP and Windows Server 2003), a directory is actually a file, which cannot be moved safely while the operating system is active. These directory files are usually scattered over the disk volume, presenting a barrier to effective defragmentation. Directory Consolidation, done at boot-time, before the system starts up, moves directories to a single location on the disk, which frees up larger portions of the disk for defragmenting.

- **Paging File Defragmentation**—The paging file is a file that the Windows NT, Windows 2000, Windows XP, and Windows Server 2003 operating systems use and cannot be defragmented safely while the operating system is active, but it can be defragmented at boot-time, using the Boot-Time Paging File Defragmentation feature.

- **MFT Defragmentation**—The Master File Table (MFT) is another file that cannot be defragmented safely while Windows NT, Windows 2000, Windows XP, or Windows Server 2003 are active, but it can be defragmented at boot-time, using the Boot-Time MFT Defragmentation feature.

**Smart Scheduling**

With Smart Scheduling, you no longer have to decide how often to defragment your disks—Diskeeper will automatically determine the optimum defragmentation schedule for each of your disk volumes and adjust it accordingly.

The method used to determine how often Diskeeper should run is elegant in its simplicity. When Smart Scheduling is enabled, Diskeeper keeps track of the number of files moved every time it runs on each disk volume. When the number of fragmented files moved during a defragmentation run increases, Diskeeper is automatically scheduled to run more often. When the number of files moved decreases, the time between defragmentation runs is increased.

The Smart Scheduling option is available within the **Select type of schedule** drop-down list in the Set It and Forget It pane.
You can also set exclusion times when the Smart Scheduling option will be prevented from scheduling a defragmentation run. When Smart Scheduling is selected, the Select which days to run drop-down option list will be limited to these times:

- Except Everyday
- Except Weekends
- Except Weekdays
- Except Monday
- Except Tuesday
- Except Wednesday
- Except Thursday
- Except Friday
- Except Saturday
- Except Sunday

You can use the “starting” and “ending” time drop down lists to further define times when the scheduling of automatic defragmentation runs will not be allowed. For example, a schedule set like this:

<table>
<thead>
<tr>
<th>TYPE OF SCHEDULE</th>
<th>WHICH DAY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMART SCHEDULING</td>
<td>EXCEPT WEEKDAYS</td>
</tr>
<tr>
<td>STARTING TIME</td>
<td>ENDING TIME</td>
</tr>
<tr>
<td>1:00 AM</td>
<td>3:00 AM</td>
</tr>
</tbody>
</table>

will allow Diskeeper to automatically determine how often to run, but will also prevent it from running between 1:00 am and 3:00 am on weekdays (i.e., when your nightly backup is running).
Overview of Diskeeper Features

Here’s another example, showing a Smart Schedule that will run everyday, but only between the hours of 7:00 pm and 7:00 am:

<table>
<thead>
<tr>
<th>TYPE OF SCHEDULE</th>
<th>WHICH DAY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMART SCHEDULING</td>
<td>EVERYDAY</td>
</tr>
<tr>
<td>STARTING TIME</td>
<td>ENDING TIME</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>7:00 AM</td>
</tr>
</tbody>
</table>

Tip: The Set It and Forget It option on the Diskeeper Command pane on the remote computer includes several commonly-used defragmentation schedules, pre-configured and ready to use.

Screen Saver Mode

When enabled, Screen Saver mode automatically starts defragmenting the selected disk volume(s) any time the screen saver starts on your computer. The defragmentation operation is paused whenever keyboard or mouse activity is detected on the computer. This option is available under the Select type of schedule drop-down list in the Diskeeper Set It and Forget It pane. Note that you must have a screen saver enabled for this option to function.

If you only have a single disk volume selected for Screen Saver mode, the defragmentation operation is re-started at the logical "beginning" of the volume each time the screen saver re-starts after being interrupted (by keyboard activity, for example).

When more than one disk volume is selected for Screen Saver mode, the volumes are handled in a round-robin manner. If a defragmentation pass is stopped, the operation resumes on the next volume when the screen saver starts again. For example, if you select volumes C and D for Screen Saver mode, when your screen saver starts, Diskeeper begins a defragmentation pass on volume C. If that pass is interrupted, and then the screen saver starts again, Diskeeper will begin a pass on volume D.

If the screen saver has not been interrupted after Diskeeper completes the defragmentation pass on each of the selected disk volumes, Diskeeper is automatically scheduled to re-start the defragmentation operation in one hour.

Because of the "start and stop" nature of the Screen Saver mode, it is not recommended on disk volumes that are heavily fragmented, unless you expect the computer's screen saver to be on for several hours. In cases where your screen saver activity is only for short periods of time, a thorough manual defragmentation or
scheduled Set It and Forget It defragmentation should be performed before running Diskeeper in Screen Saver mode.

**Note:** Screen Saver mode is not recommended for servers. Many servers spend a good deal of time with the screen saver active, which could cause Diskeeper to run more often than necessary. This can cause unnecessary system resource use on the server at times when it is under heavy demand.

### Exclusion List

In some cases, you may have files or directories of files you do not want to defragment. For example, you may not want to defragment temporary files that will soon be deleted. Any files or directories can be excluded from Diskeeper processing by adding them to the exclusion list.

Choose the *Exclude selected files and folders* option from the *Change your settings* menu in the Diskeeper Command pane on the remote computer to open the *Exclude* dialog box. (This option is also available from the *Action* menu.)

Additional information about exclusion lists is available in the Diskeeper Help or User Manual.

### Priority

The default priority for scheduled Set It and Forget It defragmentation jobs is “Lowest”, while manual defragmentation jobs run at “Normal” priority. You can change the priority independently for both Set It and Forget It and manual defragmentation jobs on the remote computer. If you raise the priority, defragmentation runs tend to complete faster, but may also slow down the users on the system. Lowering the priority will have the opposite effect.

Click *Change your settings* in the Command pane on the remote computer then select *Change the priority of defragmentation* to change the priority at which Diskeeper defragmentation jobs run. The *Priority* option is also available in the *Action* menu.

For more information about setting Diskeeper priority, see the Diskeeper Help or User Manual.
Defragmentation Options

Most editions of Diskeeper allow you to choose the type of defragmentation that best suits your needs, for both manual and scheduled “Set It and Forget It” defragmentation jobs. Diskeeper provides defragmentation methods that emphasize:

- **Maximum disk performance**—This is the default, proven and balanced mix of file defragmentation and free space consolidation. It is designed to gain the best disk performance without using excessive system resources. This is the defragmentation method used by Diskeeper Professional Edition and Diskeeper Home Edition.

- **Quick defragmentation**—This method provides the fastest defragmentation. It reduces the defragmentation time by placing the emphasis on defragmenting the fragmented files, rather than free space consolidation, since this returns the greatest system performance gain. This defragmentation method will complete faster and use fewer resources, but note that the free space consolidation will not be as thorough as the other methods.

- **Improved free space consolidation**—This defragmentation method performs additional free space consolidation. This method performs a normal Diskeeper defragmentation, but then additionally performs extra processing to further improve free space consolidation. It is important to note this method requires additional processing and time, and free space consolidation improvement will be gradual as the option is used over time. Because of this, the Improved Free Space option is only available for Set It and Forget It defragmentation jobs. On Windows NT 4.0 systems, you should run a boot-time directory consolidation before using this option, to make more contiguous free space available. On Windows XP systems, free space consolidation may be improved by running a boot optimization from the Windows Command Prompt before using this option. See Using the Command Line Interface in the Diskeeper Help system for more information about boot optimization and the command prompt.

Click **Change your settings** in the Diskeeper Command pane on the remote computer then select **Change the defragmentation method** to select the method Diskeeper uses for both manual and Set It and Forget It defragmentation jobs. The **Defragmentation Options** option is also available in the **Action** menu.

The Diskeeper Help or User Manual has additional information about the different defragmentation options.

Event Logging

Diskeeper allows you to record information about its activity in a log file. The logging method varies, depending on the version of Windows you are using.
Click **Change your settings** in the Command pane on the remote computer then select **Set event logging options** to alternately enable or disable the logging of various events to the Diskeeper Event Log. The **Event Logging** option is also available from the **Action** menu.

Additional information about logging Diskeeper activity is available in the Diskeeper Help or User Manual.
Chapter 5

Theory of Diskeeper Operation

This chapter describes the Diskeeper design goals and how those goals were met.

About Disk Fragmentation

As mentioned in the introduction of this manual, the term *disk fragmentation* means two things:

- a condition in which pieces of individual files on a disk are not contiguous, but rather are broken up and scattered around the disk volume; and

- a condition in which the free space on a disk volume consists of little pieces of space here and there rather than a few large free spaces.

The effects of excessive fragmentation are twofold as well:

- file access takes longer because a file must be collected in pieces here and there, requiring several disk accesses instead of just one; and

- file creation takes longer because space for the file must be allocated in little pieces here and there instead of just one contiguous allocation.

Before the introduction of Diskeeper, there was no method for completely correcting the problems of file and free space fragmentation on Windows NT computers or in a mixed Windows network.

Design Goals

In designing Diskeeper for Windows, the following goals were established:

- The product must be completely safe to use.

- It must improve Windows system performance. It is not designed to make the disk look “pretty”—it is designed to improve disk performance and, as a result, overall system performance.

- It should process live disks without interfering with user access to files.

- It should run without operator intervention.
Theory of Operation

- It must defragment all possible files and consolidate free space into the smallest possible number of large spaces.

Diskeeper defragments files and free space on a disk, allowing access to the files on the disk at any time while Diskeeper is running.

Safety

Diskeeper is designed with safety as the highest priority.

To ensure the safe movement of files on Windows NT, Windows 2000, Windows XP, and Windows Server 2003 systems, Diskeeper uses mechanisms built into Windows that were developed and implemented by Executive Software, and fully incorporated into the operating system by Microsoft. On Windows 95, Windows 98, and Windows Me systems, Diskeeper uses similar mechanisms used by Microsoft and others.

By using these built-in mechanisms, Diskeeper maintains cache coherency, file security and permissions information, and file content integrity no matter how fragmented the files on the disk are.

The foremost design goal for Diskeeper is to make sure that no data is ever lost. To accomplish this goal Diskeeper uses the following criteria for accessing files:

- the contents of data files are never modified under any circumstances
- only one file is processed at a time, not the whole disk
- each processing pass is independent of the other passes
- no information is stored on any other device or in a “scratch space”
- Diskeeper accesses a file in such a way that no user access can conflict with Diskeeper during the critical portion of the relocation process
- file relocation is aborted if any error is encountered, leaving the file in its original state

Diskeeper was designed to err on the side of caution. In other words, it only moves a file on the volume when it is absolutely certain that no data will be lost, including file attributes. The only change to file attribute-type information is the physical location of the file on the volume. None of the file dates are changed and no other fields in the file record header are used to store Diskeeper information.

Diskeeper never defragments or moves files that are specifically stored at a specific physical location on the volume.

If anything causes your computer to crash while Diskeeper is running, or if you abort the Diskeeper defragmentation run in the middle of the file relocation process, no data is ever at risk.
Windows 95/98/Me Note: Stopping or pausing a Diskeeper job through its menus or toolbars is completely safe. Note, however, that in the event of a system crash or other non-standard termination of the Diskeeper process while it is running, it is possible for free space and file information to be stored incorrectly. Executive Software strongly recommends running the Windows Scandisk error checking utility immediately when Diskeeper is stopped abnormally. Scandisk will correct any potential file errors.

Performance
When running in the “Set It and Forget It” mode, Diskeeper is designed to run in the background, without adversely affecting performance of your Windows computer. Steps have been taken to assure that, by default, Diskeeper overhead has the lowest possible impact on system performance. Diskeeper can be run at the lowest possible Windows priority, using only otherwise unused CPU cycles. Diskeeper was designed in such a way to ensure it will not interfere with other processes on your Windows computer.

However, for cases where you want to defragment disks more quickly, Diskeeper allows you to increase the defragmentation priority. For more information, see the Diskeeper Help or User Manual.

Process Live Disks
It is not acceptable to force users off the disk while performing routine defragmentation. To do so would be a case of the cure being worse than the disease. Access to fragmented files is better than no access at all.

The best solution is to defragment online with users active on the same disk volume. Diskeeper was designed with this in mind. During most of the time Diskeeper is processing a file, it shares the file with any other users that may access the same file. The last step of processing the file, however, involves locking the file for a very brief period, a matter of milliseconds. If another user requests a file that Diskeeper has locked, that request is suspended for the brief period until Diskeeper releases the file. Then the request is serviced. There is never an interruption of either process as a result of this delay.

This solution allows Diskeeper to defragment open files safely, regardless of whether they are open for read operations or for write operations.

Note: Due to the Windows NT 4.0 design, directories, MFT and paging files cannot be moved safely on live disks (NTFS directories can be moved on Windows 2000/XP). Therefore, Diskeeper performs these operations at the only safe time, while the computer is starting up.
No Operator Intervention

In keeping with the design goals, after Diskeeper has been started in the “Set It and Forget It” mode, it runs automatically in the background, without the need for operator intervention. It runs indefinitely, unless told otherwise by you.
Appendix A

Table of Diskeeper Editions

The table below shows the different editions of Diskeeper available, as well as the features and capabilities of each:

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Defragmentation</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
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<tr>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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</tr>
<tr>
<td>Fragmentation Analysis</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>Set it and Forget It Scheduling</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
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<td>Adjustable Priority</td>
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<td>✓</td>
<td>✓</td>
<td>N/A</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Maximum single volume size supported</td>
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<td>768 GB</td>
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<td>Total disk space supported (all volumes)</td>
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<td>No limit</td>
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<td>Simultaneous operations</td>
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<td>4</td>
<td>8</td>
<td>16</td>
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<td>Remote control of local Diskeeper editions</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Can be controlled by Diskeeper Administrator</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>
This table shows the different Diskeeper editions available and the Windows operating systems they support:

<table>
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<tr>
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<tr>
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<td>Windows Server 2003 Advanced Server</td>
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<td>Windows Server 2003 Datacenter</td>
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<td>Windows 2000 w/Server Appliance Kit</td>
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<tr>
<td>Windows Server 2003 w/Server Appliance Kit</td>
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</table>
Appendix B

Answers to Frequently Asked Questions

The list of Frequently Asked Questions (FAQs) about Diskeeper Administrator Edition is currently being developed. For the most current list, visit the Executive Software website at www.executive.com.
Appendix C

Support Services

U.S. Support Services

Registered users are entitled to 90 days of free telephone support, as well as special upgrade pricing, from Executive Software. Our free U.S. technical support is available Monday through Friday during the first 90 days from 7:00 A.M. to 5:30 P.M. Pacific time. If you have not yet registered your Diskeeper for Windows purchase, use the registration card in your Diskeeper box and do so now. Or, register your purchase online via our Web site at:

http://www.executive.com

Most technical support questions can be answered from the Technical Support section of our Web site at the address shown above.

You may also contact our technical support team via the Internet at:

tech_support@executive.com

Or via FAX at:

818-252-5514

If you are within your 90-day free support period, or have purchased telephone support, you can call:

818-771-1600

When your 90-day free support period has expired, you may purchase the support plan which best suits your needs. Executive Software offers 24-hour, 7-day support plans. Contact Executive Software to find out which support options suit you best.

Executive Software’s address is:

Executive Software

7590 North Glenoaks Boulevard

Burbank, California 91504, USA
European Support Services

Registered users are entitled to 90 days of free telephone support, as well as special upgrade pricing, from Executive Software. Our free European technical support is available Monday through Friday during the first 90 days from 8:30 to 17:30 GMT. If you have not yet registered your Diskeeper for Windows purchase, use the registration card in your Diskeeper box and do so now. Or, register your purchase online via our Web site at:

http://www.execsoft.co.uk

Most technical support questions can be answered from the Technical Support section of our Web site at the address shown above.

You may also contact our technical support team via the Internet at:

tech.support@execsoft.co.uk

Or via FAX at:

+44 (0) 1342-327390

If you are within your 90-day free support period, or have purchased telephone support, you can call:

+44 (0) 1342-327477

When your 90-day free support period has expired, you may purchase the support plan which best suits your needs. Executive Software offers 24-hour, 7-day support plans. Contact Executive Software to find out which support options suit you best.

Executive Software’s address is:

Executive Software UK Inc.

Kings House, Cantelupe Road

East Grinstead, West Sussex RH19 3BE

England
access: To store data on, or retrieve data from, a disk drive or other peripheral device. See also file.

administrator: See system administrator.

applet: A small application program that is usually built into an operating system or a larger application program. For example, the built-in writing and drawing programs that come with Windows are sometimes called “applets.”

application: A computer program, which causes a computer system to perform some useful work for the user.

AutoPlay: A feature of some Windows applications on CD-ROM that causes the program to start automatically when the CD-ROM is placed in the drive.

background processing: The execution of certain operations during momentary lulls in the primary (foreground) process. An example of a background process is printing while a word processor is waiting for keystrokes.

binary: From Latin “bini,” meaning two by two and “ary,” meaning of, or pertaining to. Computers use the binary number system, which is a way of counting in which only two digits (0 and 1) are used. Contrast with the familiar decimal number system, in which we count with 10 digits (0 through 9).

bit: Short for binary digit. The smallest unit of information handled by a computer. Like a light switch, a bit is either on or off, which corresponds to a numerical value of one or zero. Larger numbers are expressed by groups of bits. See also byte.

boot: Refers to the initial start-up of a computer, such as when you turn on the computer’s power. From the word “bootstrap,” indicating the computer “lifts itself by the bootstraps;” that is, it gets itself going.

boot-time: The time during which a computer boots; that is, the computer is starting up and the operating system has not yet taken over control of the computer.

browser: A software program, such as Microsoft’s Internet Explorer, designed to locate and view Web pages on the Internet. In addition to displaying text, modern browsers also can display pictures and play sounds.

byte: A group of eight bits, which can represent a number from zero through 255, a letter of the alphabet, or a variety of other things.

cache: From the French word cache, meaning “to hide.” A temporary storage facility designed to speed things up by providing information to software that would
otherwise have to be obtained from a slower medium. Caches exist for Web browsers, disk drives and CPUs. See also cache memory.

**cache coherency:** A condition where the data contained in the cache memories in a computer with multiple processors is kept consistent at all times.

**cache memory:** In computers, a cache is a small amount of very fast memory that is placed close to (or inside) the CPU chip, in order to improve performance. The cache memory holds copies of recently accessed data. Because computer programs often run the same instructions repeatedly, many times the CPU will find the data it needs in the cache and therefore will run faster because it does not need to access the computer’s main memory.

**CD-ROM:** Compact Disk Read-Only Memory. A stiff plastic disk commonly used by software manufacturers to distribute software to customers. As the name implies, the original contents of a CD-ROM cannot be changed.

**central processing unit (CPU):** The part of the computer hardware that controls the computer’s overall operation and performs computations. Most modern CPUs are built into a single integrated circuit or chip. See also Pentium, x86.

**chip:** See integrated circuit.

**CHKDSK:** A program (supplied with Windows NT, Windows 2000, Windows XP, and Windows Server 2003) that checks the integrity of a disk and corrects disk errors such as lost clusters. See also scandisk.

**client:** In a computer network, a computer that uses the services of another computer, called a server. For example, a client can “ask” a server to provide it with needed data, or to print a file for the client. See also server, workstation.

**cluster:** Smallest addressable unit of space on a disk. A one-byte file will actually use a cluster of disk space. The minimum size of a cluster depends on the size of the disk volume. The FAT file system allows a maximum of 65,536 clusters per volume, which means that the cluster size on a 64-megabyte disk volume is one kilobyte, while a 128-megabyte volume uses two-kilobyte clusters. Thus, the FAT file system can be very wasteful of disk space on large volumes. The NTFS file system does not suffer from this limitation.

**COM:** Acronym for Component Object Model, a specification developed by Microsoft for building software components that can be made into programs or add functionality to existing programs running on Microsoft Windows platforms.

**component:** A small modular program that performs a specific function and is designed to work interactively with other components and applications. See also applet, COM, DCOM.
**Glossary**

**contiguous:** Adjacent; placed one after the other. A contiguous file is not fragmented; that is, it takes up a single “chunk” of disk space. See also fragmentation, defragmentation.

**control file:** A file (*Diskeep.ctl*) used by *Diskeeper* to keep track of and control scheduled defragmentation of disk volumes. See also *Set It and Forget It*.

**controller:** A specialized electronic circuit, which serves as an *interface* between a *device*, such as a *disk drive*, and a computer. See also IDE, SCSI.

**CPU:** see central processing unit.

**data:** Information, as processed by a computer. Plural of the Latin word *datum*, meaning an item of information.

**database:** A collection of related information about a subject, organized in a useful manner that provides a base or foundation for procedures such as retrieving information, drawing conclusions, and making decisions.

**datum:** Singular of *data*.

**DCOM:** Acronym for Distributed Component Object Model, a version of the Component Object Model (COM) software developed by Microsoft to support objects distributed across a network. For example, the *Set It and Forget It* feature of *Diskeeper* uses DCOM to start a scheduled defragmentation.

**defragmentation:** The reduction or elimination of fragmentation, by making files and/or free disk space more contiguous.

**device:** A machine, such as a printer or a *disk drive*.

**digit:** From Latin “digitus,” meaning finger. Any of the numbers 0 through 9 in the decimal number system, called a digit because people originally used their fingers for counting. Computers use a binary number system with only two digits (0 and 1).

**directory:** A file that contains a catalog of files and other directories stored on a disk, which allows you to organize your files into groups, making them easier to find.

**directory consolidation:** A *Diskeeper* feature which, at *boot-time*, gathers (almost) all directory entries on a disk *volume* into a single area on the disk, instead of scattered in many places. The only exceptions are the \Recycler and \Recycled directories, which *Windows* expects to find at a fixed location on the volume. Directory consolidation makes defragmentation more effective than it would otherwise be. Directory consolidation requires sufficient contiguous free disk space into which the directories can be moved.

**disk drive:** A *device* containing one or more disks, treated as a unit by a computer.
Diskeeper: A software product that increases system performance through disk defragmentation. It eliminates resource-wasting file fragmentation safely, by consolidating fragmented files and free space.

diskette: See floppy disk.

domain: In Windows NT, Windows 2000, Windows XP and Windows Server 2003, a group of workstations and servers, defined by an administrator, that share a common directory database and allow a user to log onto any resource in the domain with a single user ID and password. Each domain in a network has a unique name.

drive: See disk drive.

drive letter: In Windows and MS-DOS operating systems, the naming convention for disk drives, consisting of a letter, followed by a colon. Drives A: and B: are normally reserved for floppy disk drives and C: typically indicates the first hard drive. See also volume.

encrypted file: A file that has been scrambled and made unrecognizable by anyone who does not have the proper “key” to decode it. The Windows 2000, Windows XP and Windows Server 2003 Encrypting File System (EFS) allows users to encrypt files and folders on an NTFS volume to prevent access by unauthorized individuals.

event logging: The process of recording audit information when certain events occur, such as services starting and stopping, users logging on and off and accessing resources. When running Diskeeper on Windows NT, Windows 2000, Windows XP, and Windows Server 2003 systems, logged events can be viewed with the Event Viewer utility (in Administrative Tools.) When run on Windows 95/98/Me systems, Diskeeper logs events to a text file that can be viewed with a variety of text editor programs such as Notepad.

Event Viewer: A utility available on Windows NT, Windows 2000, Windows XP, and Windows Server 2003, which permits the viewing of logged events. See also event logging.

extended partition: A type of partition that permits the limitation of four partitions per disk drive to be overcome. A disk drive may be partitioned into a maximum of four primary partitions, or three primary partitions plus an extended partition. One or more logical drives may be created within an extended partition.

FAT: See file allocation table.

FAT file system: The file system used by MS-DOS and adapted for Windows to store information on disks, which makes use of a file allocation table. There are three types of FAT file system. The FAT12 (12-bit) is used on FAT volumes smaller than 16 megabytes in size, such as floppy disks—it is not supported by Diskeeper. FAT16 can be found on all versions of Windows from Windows 95 through Windows Server 2003. Windows Server 2003, Windows 2000, Windows Me,
Windows 98, and the later OSR 2 version of Windows 95 also support FAT32; Windows NT does not.

**field**: A subdivision of a record in a file. For example, a record in a customer file may contain a name field, an address field and a phone number field.

**file**: A complete, named collection of data, such as a program, a set of data used by a program, or a user-created document. See also record, field.

**file allocation table (FAT)**: A table or list maintained by some operating systems, to keep track of how files are stored on a disk.

**file system**: The method used by an operating system, of naming, accessing and organizing files and directories on a disk. See also NTFS, FAT file system.

**floppy disk**: A removable storage medium, consisting of a small magnetic disk made of flexible plastic, housed in a square protective envelope or cartridge. Originally, floppy disks really were “floppy,” because they were enclosed in a paper envelope. Also called a diskette, which is a better name for the more recent design that uses a stiff plastic cartridge. Contrast with hard disk.

**formatting**: A method of preparing a disk surface for use by placing certain magnetic patterns on it, which are used by the file system in storing and retrieving data.

**fragmentation**: The word fragmentation means “the state of being fragmented.” The word fragment means “a detached, isolated or incomplete part.” It is derived from the Latin “fragmentum,” which in turn is derived from “frangere,” meaning “break.” So, fragmentation means that something is broken into parts that are detached, isolated or incomplete.

**graphical user interface (GUI)**: Pronounced “gooey.” A user interface, as used in the Windows operating systems, which uses a mouse and graphic displays to interact with the user, with the purpose to make the computer system easier to use than other operating systems, such as MS-DOS.

**GUI**: See graphical user interface.

**hard disk**: One or more rigid metal platters, coated with magnetic material. Contrast with floppy disk, or diskette, which is made of plastic. Also used to refer to the physical unit that makes up a disk drive.

**hardware**: The physical parts of a computer system, including devices such as printers and disk drives. Contrast with software.

**IDE**: Integrated Device Electronics. One of two common types of interfaces between a disk drive and a computer, where the controller is built into the disk drive, which eliminates the need for a separate controller card in the computer. See also SCSI.
**Glossary**

**integrated circuit**: Also called a *chip*. A collection of electronic parts with a specific purpose, built into a single physical package. See also *central processing unit*.

**Intel**: Manufacturer of *processor chips*, known especially for the *Pentium* and *x86* processors.

**interface**: The connection and interaction between *hardware*, *software* and/or the user. For example, a disk controller provides a physical interface between a computer and a *disk drive*. The keyboard, mouse and display are an interface between a computer and the user.

**Internet**: A global *network* that links millions of computers. One popular section of the Internet is the World Wide Web, which allows computer users to view text and pictures with the aid of a browser, such as *Internet Explorer*. E-mail (electronic mail) is another popular part of the Internet, which allows computer users to send and receive written messages.

**Internet Explorer**: A software package developed by Microsoft for browsing the Internet, but increasingly used with other applications.

**job**: A request to have the computer or its *peripherals* perform some activity. In relation to *Diskeeper*, it is a request to have a disk defragmented.

**log file**: A file that keeps track of certain events as they occur. The *Windows NT/2000/XP operating system* maintains several log files that can be viewed with the *Event Viewer*. On *Windows 95/98/Me* systems, *Diskeeper* uses a specially created text file for the same purpose. See also *Event Logging*.

**logical drive**: That portion of the space on a *disk drive* that is considered by the *software* to be a single unit. In this context, *logical* means “conceptual.” because there is no direct relationship between the name and a physical object. See also *partition, volume*.

**login credentials**: The username and password that allows access to a computer user account.

**long filenames**: In the DOS operating system, filenames were limited to a maximum of eight characters, followed by a period and up to three characters to indicate the type of file. This is also referred to as the 8.3 file naming convention. The *Windows 95/98/Me, Windows NT, Windows 2000, Windows XP, and Windows Server 2003* operating systems allow filenames that are over 200 characters long. In addition, these filenames may contain a mixture of upper- and lowercase characters and embedded spaces.

**master file table (MFT)**: On an *NTFS volume*, the master file table is a file, which contains information about all other files in that volume. This includes the name of each file, its physical location on the disk, and other information.
**media:** A collective word for the physical material on which computer-based information is stored, such as a *CD-ROM* or *floppy disk*. Media is the plural of *medium*, but like *data* is often used in the singular form.

**medium:** See *media*.

**memory:** The computer’s temporary working storage, where *program* instructions and *data* are kept, permitting the *CPU* to process the instructions.

**MFT:** See *master file table*.

**Microsoft:** A computer *software* company, with its head office in the state of Washington; creators of the *MS-DOS* and *Windows operating systems*.

**MMC:** Microsoft Management Console. MMC can be used to create, save and open administrative tools (called *snap-ins*), such as Diskeeper. MMC provides a common user interface for system tools, as well as a system for managing hardware, software and network components.

**MS-DOS:** Microsoft Disk Operating System. An *operating system* designed for a small computer with a single user running one *application program* at a time.

**multitasking:** A feature of an *operating system*, where the computer can work on more than one *task* at a time. See also *background processing*.

**network:** A group of computers that are connected together and capable of exchanging data with each other. See also *server*, *client*.


**OEM:** Acronym for original equipment manufacturer. The term is misleading, because an OEM typically buys computers from another manufacturer, customizes them for a particular application, and then sells them under the OEM’s own brand name.

**operating system:** A collection of *programs*, which perform *system* functions and control the running of *application* programs and the allocation of *resources*.

**OSR 2:** Acronym for *OEM* Service Release 2, a version of *Windows 95* released in late 1996, which features an improved file system, called *FAT32*, while the original version of Windows 95 used FAT16.

**page file** or **paging file:** An area of a disk that is set aside to hold *data* intended to reside in the computer’s *memory*. Portions of the paging file are copied to memory as needed. This mechanism requires a much smaller amount of physical memory than would be required if the entire *program* were to be loaded into memory all at once. See also *swap file*. 
partition: A subdivision of the space on a disk drive that is treated as though it were a separate physical unit. A computer with only one hard disk drive can have a single partition, often called drive C:, or it can have several partitions, such as drive C:, drive D:, and drive E:. See also volume, drive letter, primary partition, extended partition, logical drive.

Pentium: The name of a type of processor, introduced by Intel in 1993. It is the successor to the 80486 and equivalent to the 80586 chip in the x86 series.

peripheral device: (Related to periphery, roughly meaning “on the outside.”) A device, such as a disk drive, printer, keyboard or mouse, connected to and used by a computer.

permission: The ability of a user on a computer system to access or modify files, especially those that he or she did not create. Permissions exist for security reasons, to prevent unauthorized access to sensitive information. The system administrator assigns permissions, or “who has access to what.”

platform: The environment, in which a computer system operates, either based on the computer’s CPU or its operating system. For example: the x86 platform, or the Windows Server 2003 platform.

platter: A disk drive consists of one or more platters, each of which can receive magnetic recordings on both sides. The platter spins like a phonograph record on a turntable.

primary partition: In Windows and MS-DOS operating systems, the disk space on a disk drive may be divided into a maximum of four primary partitions; or three primary partitions plus an extended partition, which in turn can contain one or more logical drives.

priority: On a Windows system, several programs can appear to be running at once, even though the CPU can only process one instruction at a time. With the help of the operating system, the CPU processes a few instructions from one program, then a few instructions of the next program, and so on, over and over. Without priority assignments, each program would be given about the same amount of time in each “time slot.” but by assigning priorities, the more important programs can be given longer time intervals than the less important ones, allowing them to complete faster.

process: A program, along with the system resources the program requires to run. A process represents a unit of resource ownership and work to be done. The operating system creates processes to keep track of resources and to ensure the proper scheduling of tasks.

processor: See central processing unit.

program: A set of instructions that tell a computer what to do. Synonym: software.
**RAID:** Redundant Array of Independent Disks. A method of combining several disk drives to make one large volume. Typically used on a network file server to achieve faster access, greater protection against disk failure, or both.

**record:** A collection of related data items, treated as a unit. For example, in a file containing information about a company’s customers, one record would consist of the particulars (name, address, phone number, etc.) of one customer. See also field.

**registry:** A database that contains information about current hardware settings, installed software, user preferences and associations between file types, and applications that access those files.

**resource:** Any part of a computer system, such as a disk drive, printer, or memory, which can be used by a program.

**scandisk:** A program (supplied with Windows 95, Windows 98 and Windows Me) that checks the integrity of a disk and corrects disk errors such as lost clusters. See also CHKDSK.

**SCSI:** Small Computer System Interface. One of two common methods of interfacing disk drives and other devices to computers. See also IDE.

**server:** On a computer network, a computer that makes resources available to other computers (clients or workstations.) For example, all the computers on a network can be set up to share a single high-speed printer, which is connected to the server. Usually, the server is faster and more powerful than the client computers connected to it.

**service:** A process that performs a specific system function and often provides an application programming interface (API) for other processes to call. Diskeeper uses a Windows service, which allows Diskeeper to run in the background while other applications are running.

**Service Pack:** A collection of software used to issue corrections and updates to software between major releases. Usually refers to compilations of corrections and updates to a Windows operating system.

**Set It and Forget It:** A term that was created by Executive Software, which is a registered trademark and hallmark of the company. A “Set It and Forget It” product can operate transparently (unseen by the user) and in the background (concurrent with other applications). After a schedule is set up for its operation, it thereafter performs its functions at predetermined times, without further intervention or attention from the user or administrator.

**Smart Scheduling:** A feature, introduced with Diskeeper 6.0, which has a built-in mechanism to determine how frequently a disk volume needs to be defragmented. With Smart Scheduling, Diskeeper automatically schedules defragmentation runs to
occur more often when a disk volume becomes more fragmented, or less often when it becomes less fragmented.

**SMS:** System Management Server. A *software* product from *Microsoft*, which permits the *system administrator* on a Windows NT, Windows 2000 or Windows Server 2003 *network* to do such things as install and run new software on different computers on the network, all from a single location.

**snap-in:** A program, such as Diskeeper, that can be used with the Microsoft Management Console (*MMC*). For more information, see the MMC Help facility.

**software:** A generic term for computer *programs*, taken collectively. Contrast with *hardware*. Software can be categorized into *application* software and *system* software.

**sparse files:** A method of storing large files—that contain mostly empty space and not much data—in a way that uses much disk space than would otherwise be used. Sparse file support allows an application to create very large files without committing disk space for every byte.

**swap file:** A *file* on a *disk drive* that *Windows* 95/98/Me uses to hold temporary *data* that will not fit into *memory*. When needed, the *operating system* moves data from the swap file to memory. See also *paging file*.

**system:** The collection of one or more computers and *peripheral devices*. Sometimes used as a synonym for *operating system*, or the combination of *hardware* and *software*, as a logical unit.

**system administrator:** The person in charge of maintaining a multi-user computer *system*.

**system file:** In general, a *file* that is part of, or *accessed* by, the *operating system*. The Diskeeper Drive Map display shows certain system files in green, particularly the *master file table* (MFT) and several other files that cannot be moved safely by Diskeeper (or any other defragmenter). These are not the files that make up the *Windows* operating system, but the files that make up the *NTFS* file system.

**task:** A *program* or portion thereof that is run as an independent entity.

**trialware:** A free software package from *Executive Software*, such as Diskeeper, that has the same functionality as the official version of the software, but which works for a limited time period, after which it expires. Trialware allows you to try the software before making a buying decision.

**utility:** A *program* that provides basic services or functions.

**volume:** A subdivision of the space on a *disk drive* that is treated as though it were a separate physical unit, or a combination of physical disks treated as a single unit. A computer with only one hard disk drive can have a single volume, often called drive
C:, or it can have several volumes, such as drive C:, drive D:, and drive E:. See also drive letter, logical drive, partition.

**volume set:** In Windows, a single logical drive, which is composed of up to 32 areas of free space on one or more disk drives. Volume sets can be used to combine small areas of free space on one or more disk drives into a larger logical drive, or to create a single large logical drive out of two or more small disks.

**Windows:** A family of operating systems, first introduced by Microsoft in 1983, with a graphical user interface and which ran on MS-DOS based computers. See also Windows 95, Windows 98, Windows NT, Windows 2000, Windows XP and Windows Server 2003.


**Windows 95:** A version of Windows released in 1995. New features in Windows 95 with regard to its predecessor, Windows 3.1, include a new user interface and support for 32-bit applications. See also OSR 2.

**Windows 98:** Successor to the Windows 95 operating system, Windows 98 features support for the FAT32 file system, greater Internet integration, and supports recent hardware developments.

**Windows Me:** Short for Windows Millennium Edition, an operating system released by Microsoft in September 2000. Successor to Windows 98 and designed for home use, Windows Me offers enhancements in the areas of digital media, user interface, home networking, and the Internet.

**Windows NT:** An operating system released by Microsoft in 1993 (NT stands for New Technology.) It has a similar graphical user interface to Windows, but it does not run over MS-DOS and has been designed specifically for computer network environments.

**Windows Server 2003:** An operating system released by Microsoft in 2003 as the follow-up version to Windows 2000 Server. Like its predecessor, it has a similar graphical user interface to Windows, but it does not run over MS-DOS and has been designed specifically for computer network environments. Windows Server 2003 is available in Standard, Web, Enterprise, and Datacenter editions.

**Windows XP:** An operating system released by Microsoft in 2001 as the follow-up version to Windows 2000. Like its predecessor, it has a similar graphical user interface to other Windows versions, but it does not run over MS-DOS and has been designed specifically for computer network environments. Windows XP is available
in several editions for different uses, such as Windows XP Professional for corporate use, or Windows XP Home Edition for home users.

**workgroup:** In *Windows NT, Windows 2000, Windows XP,* or *Windows Server 2003,* a workgroup consists of one or more computers that do not participate in a *domain* and are therefore responsible for their own security and administration.

**workstation:** A computer that has been set up for use by an individual typically connected to a *network.* The term is also used to indicate a *client* computer, in contrast with a *server.*

**x86:** Symbol to represent a series of *CPUs,* manufactured by *Intel* and others, including model numbers 8086, 80286, 80386, 80486 and 80586 (*Pentium*). All of the CPUs in this series have certain characteristics in common, which permits *software* to be written that will run on any of them.
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