



User's Manual

Diskeeper® Administrator for Windows®

Maximizing System Performance and Reliability — Automatically™

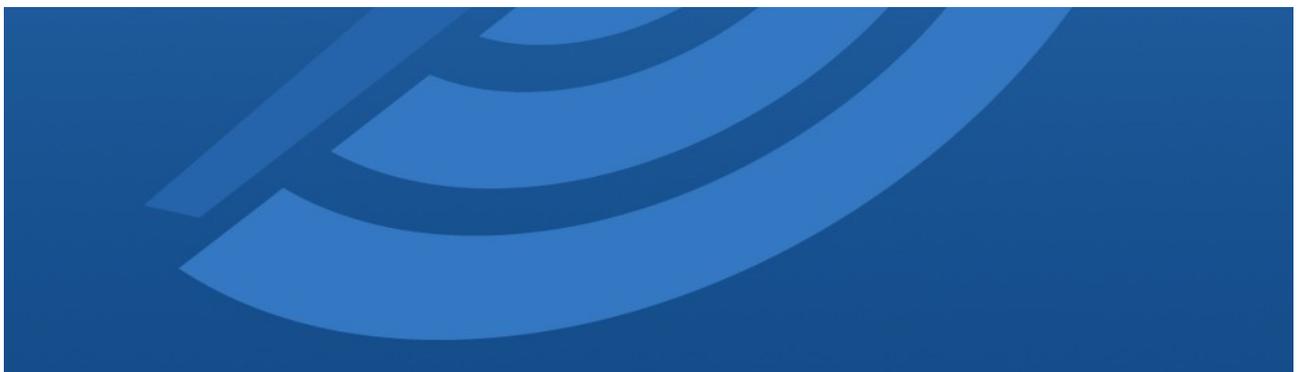
October 2007

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

Revision/Update Information:	This is a revised manual
Software Versions:	Diskeeper 2008 Administrator
Operating Systems:	Windows Vista™ Windows Server® 2003 Windows XP (all editions except Home) Windows 2000



Diskeeper Corporation, Burbank, California, USA



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Preface

What This Book is About

Welcome to the Diskeeper Administrator User's Manual. This book will first give you a quick look at the major features in Diskeeper Administrator, then help you get it installed and running. Next, it describes the various features in Diskeeper Administrator and how to use them. It also describes the key features available in the Diskeeper Professional and Server editions. Finally, it defines disk fragmentation and its effect on your Windows systems.

Structure of This Book

- Chapter 1 gives a brief overview of Diskeeper Administrator.
- Chapter 2 describes how to install Diskeeper Administrator.
- Chapter 3 explains how to use the various features of Diskeeper Administrator.
- 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 tells you where to get answers to Frequently Asked Questions
- Appendix C lists all the available menu options
- Appendix D lists possible error messages and their causes
- Appendix E explains how to contact your Diskeeper Corporation Customer Service Representative for Support Services.
- The Glossary provides definitions of technical terms used in this manual.

Introduction

The Diskeeper family of products includes *Diskeeper Administrator*. Diskeeper Administrator is not a defragmenter, but an application that provides a single point of control by which you can centrally manage all the Diskeeper versions 9.0 through 2008 installations on your network.

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

- The PushInstall feature makes it easy to deploy Diskeeper to any supported computer on your network. Need to install Diskeeper on a few hundred machines? Diskeeper Administrator can do it in a few mouse clicks.
- Controlling defragmentation operations is simple, whether you're managing a handful of computers or thousands network-wide. You can establish policies that dictate how Diskeeper runs on one or multiple computers at a time.
- For ease of management, you can arrange the computers on your network into logical groups. Diskeeper Administrator supports Microsoft Active Directory® groups, or you can create your own customized groups. For example, you can easily set up different defragmentation policies, reports or preferences for the

computers in the Finance department compared to those in Engineering—or deploy Diskeeper to all the computers on the fourth floor.

- Diskeeper Administrator provides a wealth of report and exception-based alert notification 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 Updates and Upgrades module enables Diskeeper Administrator to detect and deploy Diskeeper updates and upgrades to all your managed Diskeeper computers. Note that an *update* is a no-cost incremental version of a specific Diskeeper version number (such as from version 2008 build 100 to version 2008 build 101). No additional Diskeeper licenses are necessary to update a Diskeeper installation. An *upgrade* is a change from one major version number to another (such as from Diskeeper 2007 to Diskeeper 2008). You must own or purchase the appropriate Diskeeper license to upgrade a Diskeeper installation.
- You can use Diskeeper Administrator Edition to remotely-control Diskeeper 9.0 through 2008 installations 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.

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 volumes in a Windows operating system can be kept defragmented indefinitely. Diskeeper cleans them up and keeps them that way. This includes volumes with compressed, encrypted and sparse files on NTFS volumes.

Running either invisibly as a background process 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. Diskeeper runs when other processes are active on the computer, so there is no need to lock users off a disk while it is being defragmented. The end result: Your computer will run faster when Diskeeper is enabled.

Chapter 1

Overview of Diskeeper Administrator

Diskeeper introduced the concept of enterprise-wide defragmentation, and Diskeeper Administrator represents the next generation of this technology. Diskeeper 2008 Administrator advances the concept of policy-based centralized management of Diskeeper throughout your network.

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

Here are the major features provided by Diskeeper Administrator:

- **Diskeeper Deployment** — Install or uninstall Diskeeper Professional, Pro Premier, Server or EnterpriseServer on selected computers throughout your network.
- **Logical Grouping Control** — Supports Active Directory groups, or you can create custom logical groups of systems on which to manage Diskeeper operations.
- **Policy-Based Centralized Management** — Set and view Diskeeper defragmentation properties that control how and when Diskeeper runs on selected computers on your network.
- **Single-Point Management of Diskeeper Licensing and Activation** — Manage your Diskeeper licenses and activation network-wide, from a single location.
- **Reports** — Establish and view several Diskeeper reports showing information about selected computers on your network.
- **Alerts** — Get e-mail notification of critical issues regarding the condition of the disk volumes all through your network.
- **Single Remote Computer Control** — Connect directly to a remote system and have full control of Diskeeper on that system.
- **Cross-Platform Support** — Diskeeper Administrator runs on a variety of Windows operating system platforms, from Windows 2000 through Windows Server 2003.

In a typical scenario, you would use Diskeeper Administrator to deploy Diskeeper Professional, Pro Premier, Server, or EnterpriseServer to remote computers throughout your network. Then, you would optionally use Diskeeper Administrator to establish policies that control the manner in which Diskeeper would run on those computers. 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 establishing any desired defragmentation policies, 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 fragmentation throughout your network. At any time thereafter, you can use Diskeeper Administrator to generate reports that allow you to easily check up on Diskeeper operations network-wide—without ever leaving your desk!

Diskeeper Administrator consists of two main components — the Administrator Console and the Administrator Database.

- The **Administrator Console** is the “control panel” by which you send commands to Diskeeper computers throughout your network.
- The **Administrator Database** component works in the background to collect and store the policies and properties, logging, reports, alerts and other informational data for all the computers on your network with valid Diskeeper licenses.

2 Overview

Remember Diskeeper Administrator is not a defragmenter. In order to defragment the computers(s) it is installed on, it is necessary to also install Diskeeper on the machine(s).

Other Useful Information

In order to start using Diskeeper Administrator, it is necessary to first configure the Administrator Database. This includes specifying whether to use an existing SQL Server 2005, SQL Server 2000 or Microsoft SQL Server Desktop Engine (MSDE) database, or installing MSDE locally on the computer running Diskeeper Administrator. If neither of these are installed on your computer, you will be prompted to download and install a free version of MSDE from the Diskeeper Corporation web site. The database configuration also includes naming the database, and specifying where it resides. See *Configuring the Database* page 15 for information about configuring the Administrator Database.

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 18.) Diskeeper Administrator allows you to use different login information for each domain on which you want to control remote Diskeeper installations. See page 16 for more information about entering account information.

After Diskeeper Administrator has found the other Diskeeper installations on your network, it can then gather any existing defragmentation-related data from the remote machines. It gathers post-defragmentation performance and reliability information about each individual computer and stores that data in the Administrator database. From then on, any time Diskeeper-related activity occurs on one of the remote computers, the Diskeeper Administrator database is updated, so information about the condition of the remote computers is always instantly available. You can view reports showing either the information currently in the database, or poll specific Diskeeper computers for reports showing up-to-the-minute information (including data from computers that have been temporarily off the network—such as laptop systems).

Chapter 2

Installing Diskeeper Administrator

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

Before the Installation

Platforms and Windows Versions Supported

Diskeeper Administrator runs on the Intel® x86 platform (including Pentium™ and compatible CPUs from other manufacturers) running Windows Vista™, Windows Server 2003, Windows XP (all editions except Home), and Windows 2000.

Important Note: If you are installing Diskeeper Administrator on a computer running Windows XP Service Pack 2, be sure to visit www.diskeeper.com/sp2 for the latest information about running Diskeeper with Service Pack 2.

Additional Software Requirements

Diskeeper Administrator requires either SQL Server 2005, SQL Server 2000, or the Microsoft SQL Server Desktop Engine (MSDE) to store Diskeeper-related information. The MSDE provides local data storage and is based on the data engine used in Microsoft SQL Server 2000. It is provided on the Diskeeper Administrator CD-ROM, and is also available free of charge from the Diskeeper Corporation web site.

Diskeeper Administrator also relies on the Microsoft .NET 2.0 Framework and the Microsoft Management Console (MMC).

The .NET 2.0 Framework provides the communication facilities necessary for the various Diskeeper Administrator components.

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

Note: The Diskeeper Administrator setup process will automatically install the .NET Framework or MMC on your computer if needed.

Resource Requirements

The disk space requirements for Diskeeper Administrator depend on several factors. On most systems, Diskeeper Administrator will need 80 megabytes or less. Allow up to 450 MB of extra free space for temporary files during the installation. If the Microsoft .NET Framework is not installed on your computer, this requires approximately 70 MB of additional disk space. Further, your system may require a new or updated version of the Microsoft Management Console (less than 6 MB). Finally, if Internet Explorer is not present on your computer, some other needed files (hhupd.exe, 50comupd.exe, and wintdist.exe) may be added.

4 Installation

If you install the MSDE when you first configure the Diskeeper Administrator database, it initially requires less than 70 MB of disk space, although as the database grows, the additional disk space requirements will increase. Also, the MSDE uses the Microsoft Data Access Components (MDAC), which will require approximately 26 additional MB of disk space if not already present on your system.

A Note About Firewalls

As a normal part of its operation, Diskeeper Administrator acts as a server on your network. If you are running a hardware or software firewall, you may see messages indicating Diskeeper Administrator is trying to act as a server. These messages are expected; you can safely allow these events.

You may also be notified that Diskeeper Administrator is trying to access the Internet. It is important to note that Diskeeper Administrator does not access the Internet (except when you specifically use the Check for Updates feature), but it does use Windows mechanisms that may trigger these alerts from your firewall. Again, these messages are expected and you can safely allow the events.

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.

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.

That's it! It would still be a good idea to read "After the Installation" on page 5, but you're done with the installation.

Installation Procedure—The Details

Installation Overview

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

Installation Procedure

Diskeeper Administrator 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:

- 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 Diskeeper Corporation products.

If you have disabled the AutoPlay feature, simply double-click the **Setup.exe** file in the root-level folder on the CD-ROM and follow the instructions displayed.
3. Click **Next** when the welcome message appears.
4. After you have read and accepted the license agreement, click **Next** to continue.
5. You can choose a different disk volume or directory for the installation. Click **Change** and navigate to the location where you want the files for Diskeeper Administrator installed.
6. After making any desired changes to the file destinations, click **Next** to accept your changes. If any directory you specified does not exist, a new directory will be created.
7. 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 Explorer product. Installing these components (hhupd.exe, 50comupd.exe, and windist.exe) will not affect your current web browser. Note that you must restart your computer after installing Diskeeper Administrator if these components are installed.
8. 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.
9. After the Diskeeper Administrator files have been copied to your system, you may be presented with the opportunity to register Diskeeper Administrator online.
10. You can immediately start Diskeeper Administrator by clicking **Finish**.
11. To run Diskeeper Administrator, click the Windows **Start** button, select **Programs**, and then **Diskeeper Administrator**.

After the Installation

Registering Diskeeper Administrator

After the installation is complete, you may be given the option to register your Diskeeper Administrator purchase online. Be sure to register your purchase to receive the free 90 days of telephone support included with Diskeeper Administrator.

Check for Product Update

The first time you run Diskeeper Administrator, it automatically checks to see if a more recent version of Diskeeper Administrator is available. If so, you are given the option to download and install the newer version. When the download screen is displayed, click **Run this program from its current location** to begin installing the update. Or, click **Save this program to disk** to save the Diskeeper Administrator update installation package on your computer for later installation. (To install an update stored on your computer in this manner, simply double-click the file you download and follow the instructions displayed.)

6 Installation

You can check for Diskeeper Administrator updates any time you want. Select the **Configure Diskeeper Administrator** option under the **Configure** task group in the Quick Launch task pane and choose **Diskeeper**

Administrator Properties . From the Properties Console, select the **Diskeeper Administrator Updates** option on the left to see if a newer version of Diskeeper is available.

About Windows Service Packs

There is typically no need to upgrade Diskeeper Administrator each time you install a new Windows Service Pack upgrade.

Important Note: Windows XP Service Pack 2 (SP2) establishes default security settings that can prevent Diskeeper Administrator from communicating with Diskeeper computers throughout your network. Be sure to visit www.diskeeper.com/sp2 for the latest information about configuring your Windows XP SP2 computers to run Diskeeper Administrator and Diskeeper.

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 any 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:

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 **Actions** menu and select **Properties**.
 - a) Set the **Maximum log size** to **2048 KB**.
 - b) Enable the **Overwrite events as needed** option.
 - c) Click **OK**.

Repairing Windows Systems

Performing an emergency repair, upgrade 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.

Uninstalling Diskeeper Administrator

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 reinstall Diskeeper Administrator). Manually delete these files if they are no longer needed.

Chapter 3

Diskeeper Administrator Operation

This chapter describes the features available with Diskeeper Administrator, and what you can do with them.

Overview

These are the main Diskeeper Administrator features:

- **Diskeeper Deployment** — Install or uninstall Diskeeper Professional, Pro Premier, Server or EnterpriseServer on selected computers throughout your network.
- **Logical Grouping Control** — Supports Active Directory groups, or you can create custom logical groups of systems on which to manage Diskeeper operations.
- **Policy-Based Centralized Management** — Set and view Diskeeper defragmentation properties that control how and when Diskeeper runs on selected computers on your network.
- **Single-Point Management of Diskeeper Licensing and Activation** — Manage your Diskeeper licenses and activation network-wide, from a single location.
- **Reports** — Establish and view several Diskeeper reports showing information about selected computers on your network.
- **Alerts** — Get e-mail notification of critical issues regarding the condition of the disk volumes all through your network.
- **Single Remote Computer Control** — Connect directly to a remote system and have full control of Diskeeper on that system.
- **Cross-Platform Support** — Diskeeper Administrator runs on a variety of Windows operating system platforms, from Windows 2000 through Windows Server 2003.

Using the Diskeeper Administrator Console

Navigation in Diskeeper Administrator is done through the Diskeeper Administrator console. This console provides a convenient central location to start all Diskeeper Administrator tasks and view reports.

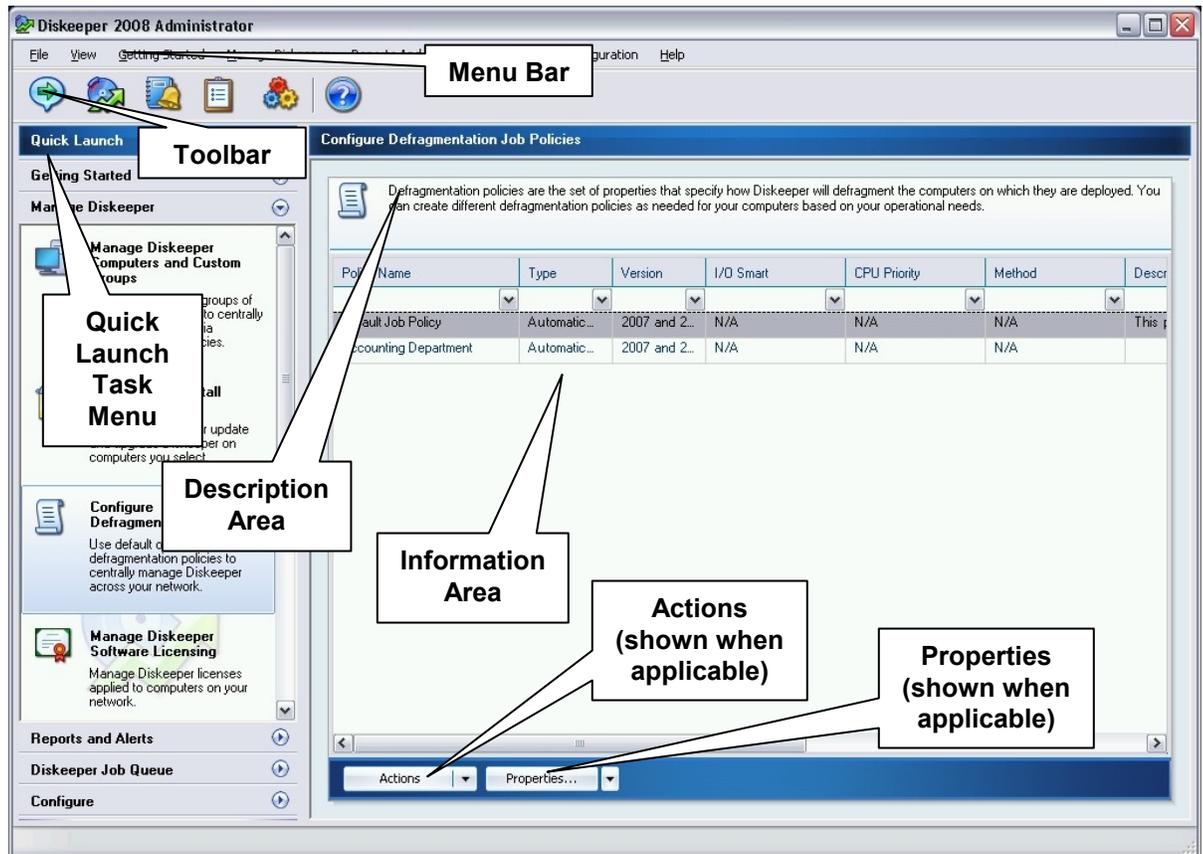
Some Diskeeper Administrator tasks are performed in separate “Wizard” windows. These wizards guide you through the steps necessary to perform that particular task. The layout of the wizards is similar to the main Diskeeper Administrator console, and like the main console, the information and options displayed differs depending on the task.

The Diskeeper Administrator console and various wizards were designed to guide you through all of the available tasks quickly and easily. If any information or variables are required for a task, Diskeeper Administrator takes you to the appropriate page and prompts you for the necessary input.

Common operations, such as scheduling a task, are presented in a consistent manner—scheduling a report scan is done the same way as scheduling a Diskeeper deployment operation. Because of this, you will see similar screens as you use the different the Diskeeper Administrator modules.

10 Diskeeper Administrator Operation

Although the information displayed differs depending on the task you are performing, this example shows a typical view of the main console:



Here are brief descriptions of the different sections of the Diskeeper Administrator console:

Toolbar

The Toolbar at the top of the display allows you to select common Diskeeper Administrator tasks, grouped into these main categories:



Getting Started – Includes the Task Overview, which provides a graphic representation of the recommended tasks, and how they relate to each other. Also includes an overview of Diskeeper Administrator, answers to Frequently Asked Questions, and easy access to the Diskeeper Administrator Help system.



Manage Diskeeper – This group includes tasks to manage Diskeeper computers and groups, install and uninstall Diskeeper, configure defragmentation properties, and manage your Diskeeper licenses.



Reports and Alerts – Includes a variety of reporting options, as well as exception-based alerts triggered by events that could affect the performance and reliability of your computers.



Diskeeper Job Queue – View information about pending, running, or completed Diskeeper jobs.



Configure – View and modify Diskeeper Administrator settings.

Menu Bar

The menu bar of the display offers a menu-based (and keyboard-accessible) path to all of the different Diskeeper Administrator tasks and features. See *Menu Options* on page 55 for a listing of all the menu options available.

Quick Launch Task Pane

The Quick Launch task pane mirrors the options available via the toolbar, providing another convenient way to start any Diskeeper Administrator task.

Description Area

This section of the display gives a brief description of the page displayed, telling you what it does and what you need to do.

Information Area

This is where the various Diskeeper Administrator tasks display requested information, and where you can initiate tasks based on the information displayed. Here you can select the computers you want to manage, select available task actions, make policy changes, and display reports. Many of the screens shown in the work area also include **Actions** and/or **Properties** buttons, which give you options that are related to the current task.

Action and Properties Buttons—These buttons provide quick access to a wide variety of available options. They are displayed when there are applicable options for the tasks you are performing, and the options available vary by task. Since these buttons are only displayed for options where they are applicable, at times they will not be displayed.

Other Navigational Tips

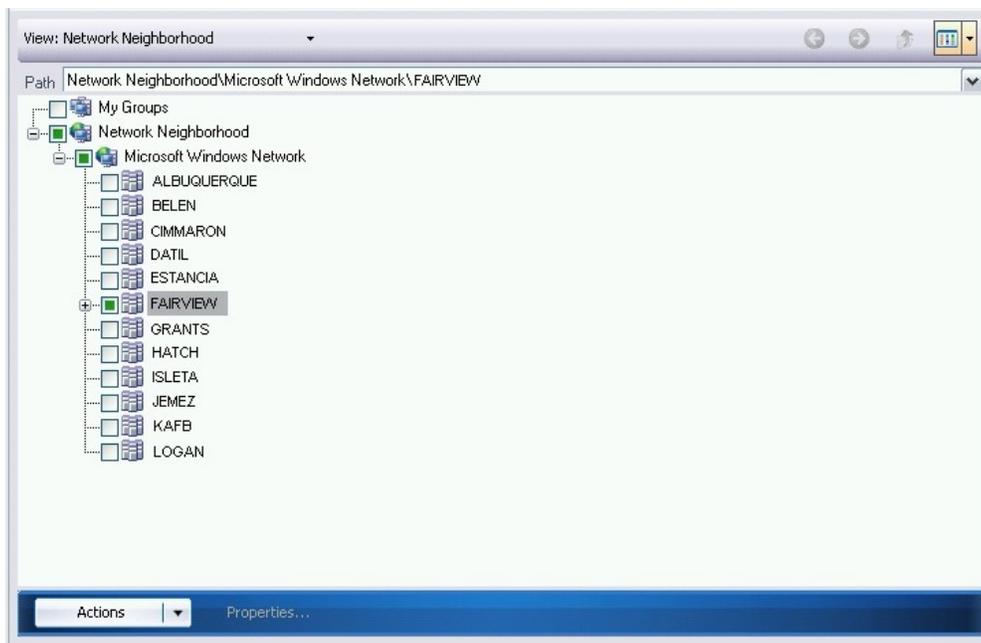
You will notice Diskeeper Administrator uses several methods for getting your input or displaying information that are consistent from one task to another. For example, selecting computers for a Diskeeper deployment task is done in the same manner as selecting computers from which to generate reports. Or, filtering the data within the different Diskeeper Administrator reports is done in the same way for each report type. This section briefly describes some tips for using this consistency to your advantage.

Selecting Computers

Many Diskeeper Administrator tasks—such as creating reports or deploying Diskeeper—include a page for you to select computers on which you want to perform the task. You can choose between two different views of your network hierarchy: a tree view or a detail view.

Here is an example of the tree view:

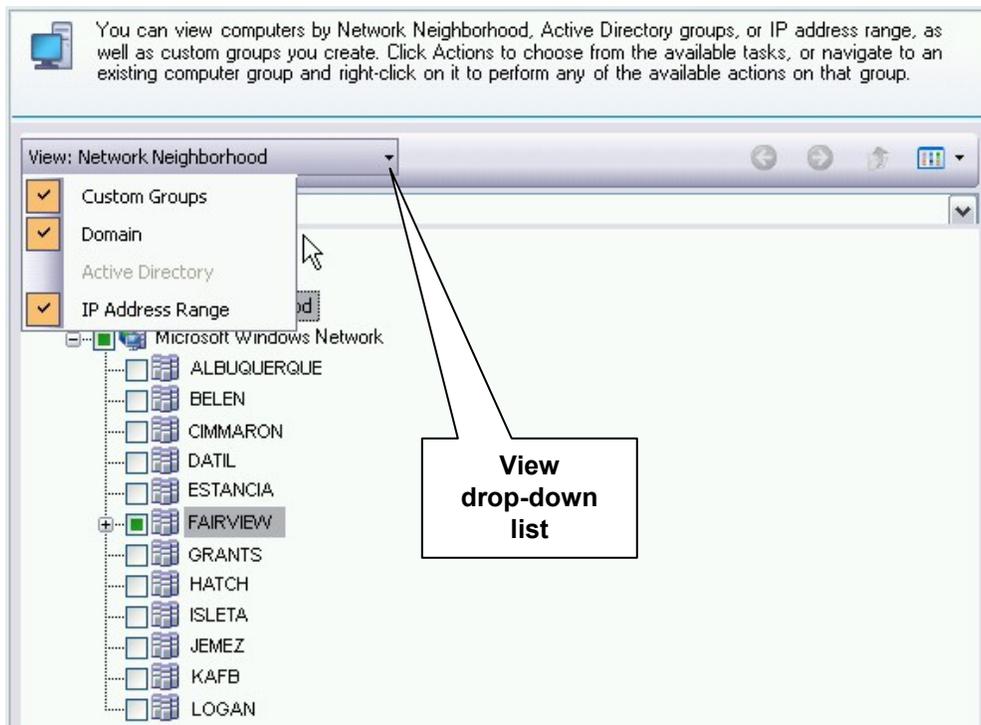
12 Diskeeper Administrator Operation



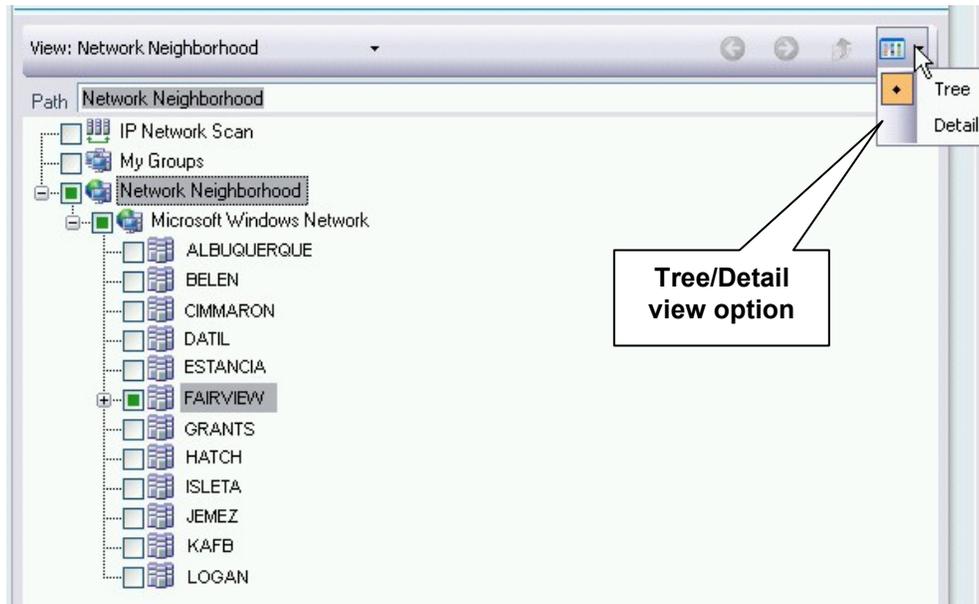
Navigating the tree view is done in a manner very similar to other Windows-based applications like Windows Explorer.

Click the plus sign  in the tree to expand a branch, or click the minus sign  to collapse the branch.

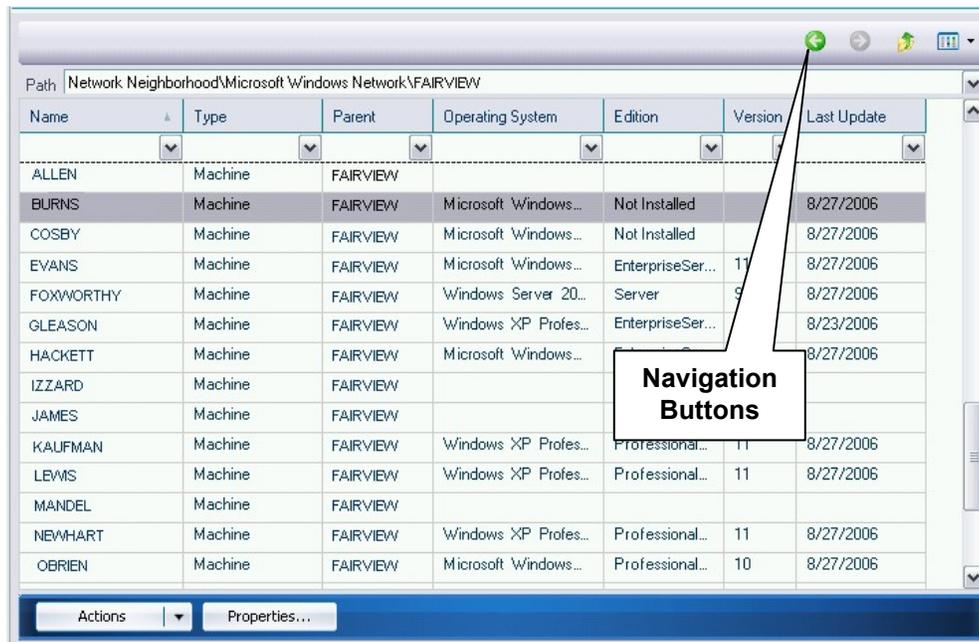
Click the **View** drop-down list to include custom groups, domains, Active Directory Organizational Units, or computers grouped by IP address range:



Click the Tree/Detail view option  to switch between the tree view and the detail view:



Here is an example of the Detail view:



Use the navigation buttons to move back, forward, and up through your network hierarchy to the desired computers.

In either view, you select a computer by clicking on it. To select more than one computer, hold the <Ctrl> key while clicking on the computers you want to select.

After selecting the desired computers or groups, use the **Actions** and **Properties** buttons (when displayed) to perform a wide variety of tasks on the selected computers.

If you choose to display computers by IP address range, a page is displayed allowing you to provide the starting and ending IP addresses for the range you want to display. See the following section for more information about specifying an IP address range.

Specifying an IP Address Range

When you select **Add IP Addresses** from the **Action** option at the bottom of either the Tree or Detail computer views, you can view a specific group of computers by entering an Internet Protocol (IP) address range. If you enter an address in only the **IP Address Start** field, only the computer with that IP address is included. If you specify an end address, all computers between the start and end addresses are included.

If the IP range covers multiple domains, you must enter the trusted domain name in the **Domain** field. When one domain “trusts” another, the user name and password defined in the “trusted” domain can be used for authentication and authorization in the “trusting” domain(s).

Additionally, if you want to indicate a mask used to determine the subnet an IP address belongs to, you can do so on this page.

Follow these steps to enter an IP address range:

1. In the **Domain** field, enter the name of the domain containing the machine(s) with the IP address or IP address range you want to enter.
2. You can include a single computer by entering an address in the **IP Address Start** field only.
3. If you select the option to **Specify End IP Address** and enter an address, all computers with IP addresses falling within the range are included.
4. If you want to indicate the mask used to determine what subnet an IP address belongs to, select the **Specify IP Mask** option and enter the mask in the accompanying field.

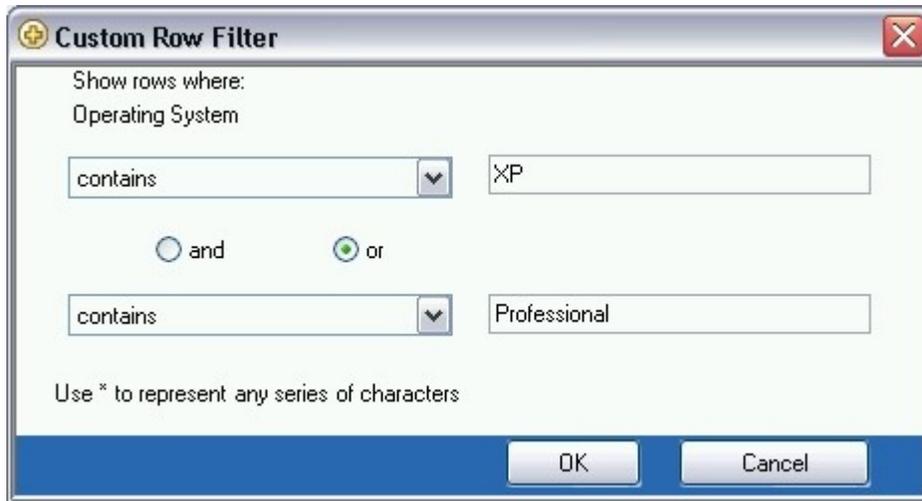
Filtering Reports

Grids in the various Diskeeper Administrator displays feature “Quick Filtering.” Quick Filtering allows you to quickly and easily display only the information you want to see in the grid. Click the down arrow at the top of any column and choose filtering options to determine what displays in the entire grid.



When you select an item, only that item appears in the grid. When you select “(none)” no filtering is applied and all items appear in the grid.

When you select “(custom)” the Custom Row Filter screen appears so you can build a custom filter statement to determine the information that appears in the grid.



First Things First

Before using Diskeeper Administrator for the first time, there are several steps you should take.

Configuring the Database

Diskeeper Administrator relies on a database of Diskeeper-related information gathered from remote computers across your network. Before using Diskeeper Administrator for the first time, you must configure the database. You can also change the database configuration later with the **Diskeeper Administrator Database Configuration Wizard** option available from the **Configure** task in the Quick Launch pane or Diskeeper Administrator menu bar.

There are several steps involved in configuring the Diskeeper Administrator database. The entire process is explained on-screen as you go through the configuration process.

Click **Configure Database**  in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane to open the Configure Database Wizard, which guides you through the configuration process.

Here is a summary of the steps:

Specifying whether to use Microsoft SQL Server or MSDE

As the first step of configuring the Diskeeper Administrator database, you must specify whether to use Microsoft SQL Server 2005, Microsoft SQL Server 2000 or the Microsoft SQL Server Desktop Engine (MSDE) for the Diskeeper Administrator database.

The MSDE provides local data storage and is based on the data engine used in Microsoft SQL Server 2000. It is provided on the Diskeeper Administrator CD-ROM, and is also available free of charge from the Diskeeper Corporation web site.

Specifying the database server location

If you opt to use an existing database, the next step in the database configuration task is to specify which computer you want to use as the database server for Diskeeper Administrator. The **Database Servers:** drop-down list shows you the database servers detected on your network by Diskeeper Administrator.

Also as part of this step, you have the option of using your Windows login authentication to access the Diskeeper Administrator database, or you can enter your SQL Server authentication login name and

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password. Note that if the SQL database is not in the same domain as the instance of Diskeeper Administrator you are running, you must use the SQL Server authentication method.

Specifying whether to use a new or existing database

This step allows you to specify whether to use a new or an existing database. You can also configure more than one database as long as you give each database a unique name.

Specifying the database information

During this step you specify the directory folder where you want the Diskeeper Administrator database to reside. You will also specify the maximum size for the database and optionally specify a name for the database.

Note that you cannot create a directory on a remote server from this task. We recommend you create a C:\Diskeeper Administrator directory folder on the remote server for the Diskeeper Administrator database.

Update Legacy Database

This step is only displayed in cases where you have chosen to use an existing Diskeeper Administrator database from an earlier version of Diskeeper Administrator. This step will update the older database to be compatible with Diskeeper 2008 Administrator .

Summary

The final screen displayed in the Database Configuration Wizard confirms the successful configuration of your Diskeeper Administrator database.

Setting Up Administrative Permissions

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 Diskeeper Deployment feature described on page 17.) Diskeeper Administrator allows you to use different login information for each domain or workgroup on which you want to perform remote Diskeeper installations.

If you have not already specified login credentials, you will be prompted to do so the first time you initiate a Diskeeper Administrator task requiring it.

You can change previously-entered account information at any time by following these steps:

1. Click **Configure**  in the toolbar to display the Configure task group, select **Diskeeper Administrator Properties**, then select **Administrative Permissions** from the task pane on the left.
2. Highlight the domain(s) or workgroup(s) for which you want to specify login credentials.
3. In the **Type** column, click the drop-down menu and select either **Domain**, **Workgroup**, or **Local Admin**, depending on the type of account you are using to access the selected domain(s) or workgroup(s).
4. Click the **User Name** field and enter the user name for an account that is a member of the Administrators group on the selected domain or workgroup.
5. Click the **Password** field and enter the password for the account entered in the previous step.
6. If you are using a Domain account (as opposed to a Workgroup or Local Admin account), you can optionally click the button in the **Verify Account** column to check the validity of the user name and password you have entered.
7. 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.

Ports Used by Diskeeper Administrator

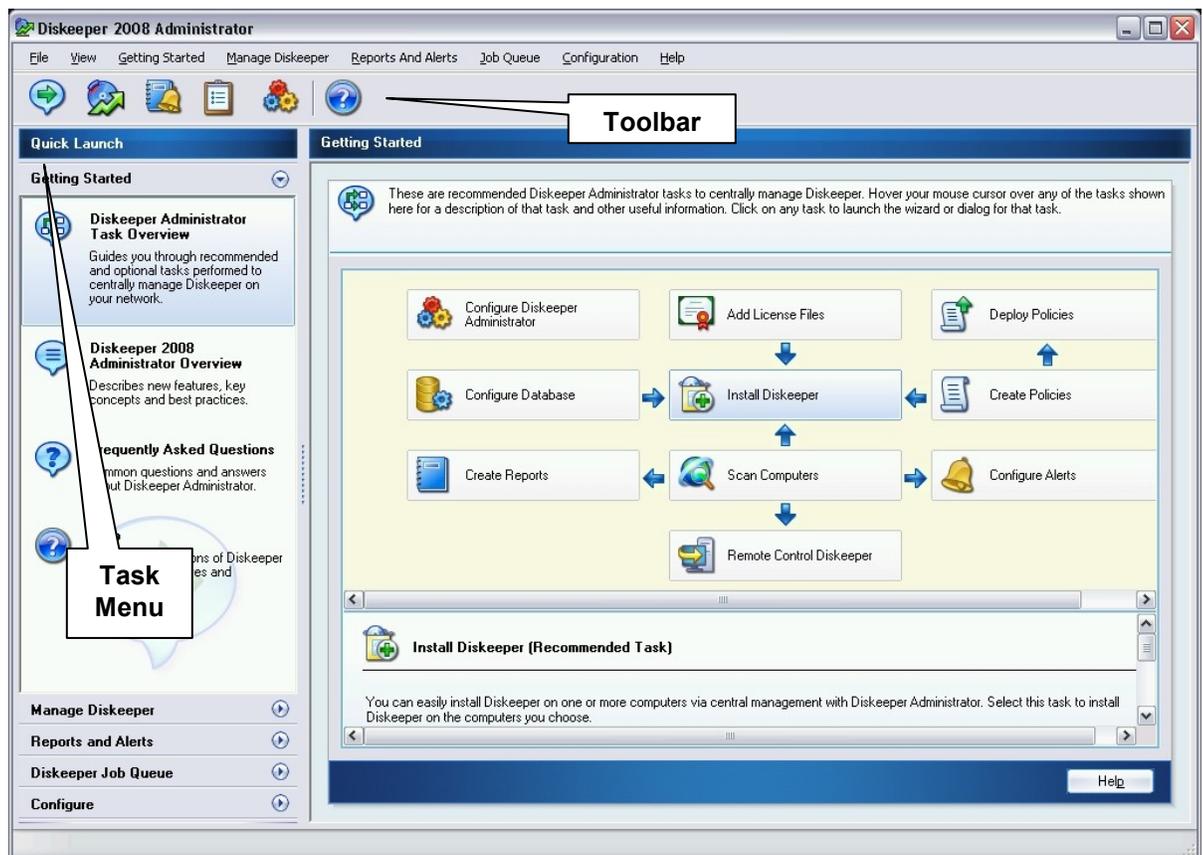
In order to deploy Diskeeper and remotely control Diskeeper computers with Diskeeper Administrator, the computers running Diskeeper must be configured to allow Diskeeper Administrator to communicate via these ports:

- Diskeeper Administrator PushInstall port: 31029 — Diskeeper Administrator uses this port to deploy Diskeeper to remote computers.
- Diskeeper Administrator console port: 31036 — Diskeeper Administrator remote control console receives data from remote Diskeeper computers via this port.
- Spare Diskeeper Administrator console ports: 31056, 31076, 31096, 31116, 31136, 31156, 31176, 31196, and 31216 — Diskeeper Administrator will use these ports if the default ports are unavailable.
- Diskeeper Administrator SQL port: 1434 — Diskeeper Administrator uses this port if the SQL database is located on a remote computer.

Getting Started Display

After you have configured the Diskeeper Administrator database, the Getting Started task overview is displayed.

You can also display this page at any time by clicking **Getting Started** in the toolbar. This is a central starting point for the primary Diskeeper Administrator operations.



From this page, you can:

- Use the **Configure Diskeeper Administrator** task to launch the Configure Diskeeper Administrator properties page to view and edit the Diskeeper Administrator configuration settings. Once specified, most Diskeeper Administrator configuration settings need no additional action.
- Use the **Add License Files** task to add Diskeeper licenses to the Diskeeper Administrator database for use with Diskeeper installations throughout your network. A license is required for each instance of Diskeeper on your network unless you install Diskeeper in Try and Buy mode—a fully functional 30-day trial.
- Use the **Deploy Policies** task to deploy defragmentation policies to the computers or groups you select. Defragmentation policies are used to centrally manage how Diskeeper defragments your computers. You can deploy the policies immediately, or at a later scheduled time.
- Use the **Install Diskeeper** task to install Diskeeper on the computers you choose. You can easily install Diskeeper on one or more computers via central management with Diskeeper Administrator.
- Use the **Create Policies** task to establish and save different defragmentation policies for your computers or groups. After the policies are created, you can then deploy them via central management to your Diskeeper computers.
- Use the **Create Reports** task to launch the New Report Wizard and create a report. Diskeeper Administrator Reports show useful information about the computers on your network, the versions of Diskeeper installed on them, and a variety of other data related to the performance and reliability of your computers.
- Use the **Scan Computers** task to scan your network and gather data from your remote Diskeeper computers for use in the Diskeeper Administrator database. In order to have meaningful data, you can run a one-time scan now or at a later time, or schedule recurring scans. After the initial scan, the database is updated each time a Diskeeper-related task or job occurs.
- Use the **Configure Alerts** task to configure the thresholds at which Diskeeper Administrator Alerts are triggered, and customize the list of recipients and the message they receive with the alert. Diskeeper Administrator Alerts are sent when exception-based events occur that could affect the performance and reliability of your computers.
- Use the **Remote Control Diskeeper** task to connect to an individual Diskeeper computer and control Diskeeper on it as if you sitting in front of that computer. You can perform any Diskeeper operations on that computer in the same manner as running Diskeeper on a local computer.
- Use the **Configure Database** task to launch the Diskeeper Administrator Database Configuration Wizard, which will guide you through the necessary steps for the initial database configuration, or to make changes to a previously-set configuration.

Scanning the Network

Diskeeper Administrator can scan your network to gather information about Diskeeper installations and properties network-wide. By scanning the network, you will increase the accuracy ease of use of the other Diskeeper Administrator tasks and features. You can choose to scan all your computers or a selected subset. You can run a one-time scan, or schedule recurring scans.

Network scans are done via the Scan Computers Wizard. Follow these steps to use the Scan Computers Wizard to scan one or any number of remote computers:

1. Click **Scan Computers** in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane. (Or you can select the **Scan Computers** option in the **Manage Diskeeper** task, then click **Scan Computers**.) This opens the Scan Computers Wizard in a separate window.

2. In the introduction screen displayed, enter an optional name and description for the network scan job. The details of the network scan will be displayed in the Diskeeper Administrator Job Queue, so having a recognizable job name and description can be useful. When you have made your selections, click **Next**.
3. The next screen displays a tree view of your network. (You can also switch to a Detail view as described on page 11.) Select any combination of one or more computers, groups or domains you want to scan. After selecting the computers to scan, click **Next**.
4. Since scanning a large number of computers across the network can take some time and use network bandwidth, you are next given the option to schedule the network scan task for a later time, or perform it now. If you select to schedule the task for a later time, you are prompted to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to perform the task at a time when network bandwidth will not be impacted. Choose when to scan the network, and click **Next**.
5. Next, a summary is displayed, showing you the ongoing status of the network scan task. When the task is complete, the summary is automatically saved in the Diskeeper Administrator Job Queue, along with other similar reports. See page 42 for more information about the Job Queue. When you are done reviewing the report, or when you are ready to perform another task, click **Close**.

Deploying Diskeeper

Use the **Install and Uninstall Diskeeper** task to install or uninstall Diskeeper Professional, Pro Premier, Server, or EnterpriseServer on selected computers across your network. Be aware that you must have valid Diskeeper licenses for the computers on which you intend to install Diskeeper. If you do not have licenses available, Diskeeper will be installed in Try and Buy mode, with full functionality, but for a limited time only.

Note that you must have administrative permissions on all the selected computers to deploy Diskeeper. If necessary, you will be prompted for the appropriate credentials.

Also note that the deployment operation requires the presence of a shared folder named ADMIN\$ on each of the target computers. The ADMIN\$ share exists by default on Windows systems, unless it has been specifically disabled or removed. See page 21 for information about determining if the ADMIN\$ share exists on your computer(s)

The Install and Uninstall Diskeeper task 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 deploy Diskeeper, you are prompted to browse for the installation package you intend to use. 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 database. If you have previously selected an installation package, the Install Diskeeper 2008 wizard will display the edition and version of the package, and allow you to browse for a different package if desired.

If you try to deploy 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.

Diskeeper installation is performed as a “job”, meaning the operation can be run immediately or scheduled to run at a later time

Installing Diskeeper Across the Network

Follow these steps to use the Install Diskeeper 2008 Wizard to deploy Diskeeper to one or a few hundred remote computers:

1. Click **Install Diskeeper** in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane. (Or you can select the option to install Diskeeper in the **Manage Diskeeper** task, then click **Next**.) This opens the Install Diskeeper 2008 Wizard in a separate window.

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2. In the introduction screen displayed, enter an optional name and description for the deployment job. The details of the installation job will be displayed in the Diskeeper Administrator Job Queue, so having a recognizable job name and description can be useful. When you have made your selections, click **Next**.
3. In the next screen displayed, select the Diskeeper edition you want to install on your computers, and select the installation file to use. You can choose to download and install the latest build of the selected Diskeeper edition, or click **Browse** to navigate to and specify an existing Diskeeper installation file in a shared network folder or CD-ROM. Select from these options and click **Next**.
4. Next, you are given options to allow each instance of Diskeeper to activate silently and automatically (which requires the remote computers to have Internet access), or to use Diskeeper Administrator as a proxy activation server, allowing it to activate computers that do not have Internet access.
5. The next screen shows the number of licenses available for the selected Diskeeper edition, and displays a tree view of your network. (You can also switch to a Detail view as described on page 11.) Select any combination of one or more computers, groups or domains on which you want to install Diskeeper. After selecting the computers on which to install Diskeeper, click **Next**.
6. Next, you are given the opportunity to select a defragmentation policy to apply to the Diskeeper installation job. Select from any of the policies displayed. You can modify an existing defragmentation policy by clicking **Properties**, or click **Actions** and select the option to create a new policy. After selecting the defragmentation policy, click **Next**.
7. In the next screen displayed, specify whether to install Diskeeper in the default location (%SYSTEMROOT%\Program Files\Diskeeper Corporation\Diskeeper) or a folder location you specify. Note that Diskeeper Administrator will append any location you specify with \Diskeeper Corporation\Diskeeper. After making any selections, click **Next**.
8. Since installing Diskeeper on a large number of computers across the network can take some time and use network bandwidth, you are next given the option to schedule the Diskeeper deployment task for a later time, or perform it now. If you select to schedule the task for a later time, you are prompted to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to perform the task at a time when network bandwidth will not be impacted. Choose when to perform the installation job, and click **Next**.
9. Next, a summary is displayed, showing you the ongoing status of the Diskeeper installation task. When the task is complete, the summary is automatically saved in the Diskeeper Administrator Job Queue, along with other similar reports. See page 42 for more information about the Job Queue. When you are done reviewing the report, or when you are ready to perform another task, click **Close**.

Uninstalling Diskeeper Across the Network

Using the Install and Uninstall Diskeeper to uninstall Diskeeper from remote machines is easy. The uninstaller will remove *any* version of Diskeeper (Professional or Server) from the computers you select.

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

1. Click **Manage Diskeeper** in the Quick Launch task pane, then select **Install and Uninstall Diskeeper**.
2. In the next screen displayed, select **Uninstall Diskeeper from Computers**. This opens the Uninstall Diskeeper 2008 wizard in a separate window.
3. In the introduction screen displayed, enter an optional name and description for the uninstallation job. The details of the job will be displayed in the Diskeeper Administrator Job Queue, so having a recognizable job name and description can be useful. When you have made your selections, click **Next**.
4. In the tree view that is displayed next, select any combination of one or more computers, groups or domains from which you want to uninstall Diskeeper. (You can also switch to a Detail view as described on page 11.) After selecting the computers, click **Next**.

5. Since uninstalling Diskeeper on a large number of computers across the network can take some time and use network bandwidth, you are next given the option to schedule the task for a later time, or perform it now. If you select to schedule the task for a later time, you are prompted to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to perform the task at a time when network bandwidth will not be impacted. Choose when to perform the uninstallation job, and click **Next**.
6. After specifying when to perform the uninstall task, a summary is displayed, showing you the ongoing status of the task. When the task is complete, the summary is automatically saved in the Diskeeper Administrator Job Queue, along with other similar reports. See page 42 for more information about the Job Queue. When you are done reviewing the report, or when you are ready to perform another task, click **Close**.

Stopping a Diskeeper Installation Operation

Follow these steps to stop an ongoing Diskeeper installation or uninstallation task:

1. In the Quick Launch task pane, click **Job Queue**. This will display a listing of Diskeeper Administrator tasks that are completed, currently running, or pending.
2. Select the currently-running or pending installation (or uninstallation) task, click **Actions**, and select **Stop**.

Note: This option only stops any installation or uninstallation operations that are in progress or pending. It does not “roll back” installations that have already been done.

About the ADMIN\$ Share

The Diskeeper Administrator PushInstall feature relies on a shared folder named ADMIN\$ on each of the target computers. The ADMIN\$ share exists by default on Windows systems, unless it has been specifically disabled.

Here are two ways to check for the presence of the ADMIN\$ share on your computers:

- Open Windows Explorer and enter `\\computer_name\ADMIN$` in the Address field (where *computer_name* is the name of the computer you are checking). If the share does not exist, an error message will be displayed. If it does exist, the contents of the WINNT folder will be shown.
- Right-click **My Computer** and select **Manage** to open the Windows Computer Management applet. Next, select **System Tools | Shared Folders | Shares**. The right-hand pane will display a list of all shares for that computer, including ADMIN\$ if it exists.

If the ADMIN\$ share has been removed or disabled on your computer, contact Diskeeper Corporation Technical Support for assistance.

Updates and Upgrades

In addition to installing Diskeeper across your network, Diskeeper Administrator can check the Diskeeper Corporation website for newer versions of Diskeeper, and when found, deploy the new versions to your managed Diskeeper computers.

You can set Diskeeper Administrator to check daily for updates, and send an e-mail message or display a desktop notification message to inform you when updates are available. You can also manually check for updates any time you want.

There are several steps involved in updating or upgrading Diskeeper on your remote computers. The entire process is explained on-screen as you go through the steps.

Update and Upgrade — What's the Difference?

Before we start, it is important to understand the difference between updates and upgrades:

- *Updates* are no-cost incremental versions of Diskeeper, based on a common version number. For example, version 2008 build 101 would be an update from 2008 build 100. No additional Diskeeper licenses (beyond those currently in use) are required to deploy a Diskeeper update.
- *Upgrades* are changes from one major version number to the next (such as from version 2007 to version 2008). You must own or purchase the appropriate Diskeeper license to upgrade a Diskeeper installation.

Update or Upgrade Step-By-Step

The steps for installing Diskeeper updates or upgrades are similar to deploying new Diskeeper installations. You select the computers you want to update or upgrade, select several other parameters, then let Diskeeper Administrator perform the task unattended.



For both updates and upgrades, the starting point is the **Install and Uninstall Diskeeper** task under **Manage Diskeeper** in the Quick Launch task pane or the Diskeeper Administrator menu bar. Select this task and choose either the **Update Diskeeper** or the **Upgrade Diskeeper** options to launch a wizard-based series of steps to guide you through the update or upgrade operation. After starting the appropriate wizard, follow the steps displayed to either update or upgrade one or more Diskeeper installations. These steps are described in the following sections.

Introduction

The Introduction page of the Update Diskeeper Wizard (or the Upgrade Diskeeper Wizard) provides spaces for you to enter an optional name and description for the update or upgrade job. The details of the job will be displayed in the Diskeeper Administrator Job Queue, so having a recognizable job name and description can be useful. Make any desired changes, then click **Next**.

Select Computers

This page of the wizard displays a tree view of your network. (You can also switch to a Detail view as described on page 11.) Select any combination of one or more computers, groups or domains on which you want to install the update or upgrade. After selecting the computers on which to install Diskeeper, click **Next**.

Select Data Source

Before performing any update or upgrade task, Diskeeper Administrator must determine what versions of Diskeeper are running on your remote managed computers. It can do this by either scanning the computers now, or using previously-collected data stored in the Diskeeper Administrator database.

- Using “live” data ensures you are basing the update or upgrade on the most currently-available data. However, a live data scan can take a considerable length of time on a large network. Also, a “live” data scan will not take into account any remote managed computers that happen to be off-line at the time of the data scan (such as notebook or laptop computers).
- Using data from the Diskeeper Administrator database is typically faster than using live data, but keep in mind that it is only as current as the database. This database is updated whenever Diskeeper-related changes occur on your remote managed computers. However, this data may not be current if the Diskeeper Administrator database has been off-line for any length of time. When database data is used, any remote managed computers (notebook or laptop computers) that happen to be off-line at the time of the data scan will still be taken into account, since in most cases the database contains the most recent information about the Diskeeper version on those computers.

After selecting the data source, click **Next** to continue.

Select Version

This page of the wizard shows the Diskeeper versions available, and allows you to specify the Diskeeper version you want to deploy.

The Select Computers and Upgrades page of the Update and Upgrade module lists the computers you have selected to update, and shows this information about each:

- Domain Name
- Computer Name
- Operating System
- Diskeeper Edition
- Current Version
- Selected Version

The **Current Version** column shows the Diskeeper version that is currently installed on the remote computer. The **Selected Version** column contains a drop-down list of available Diskeeper versions. Use this drop-down list to select the Diskeeper version you want to install on each selected computer.

If you are installing an upgrade, you will also see a table showing the type and number of Diskeeper licenses you have available for deployment. For each type of license available, the table shows:

- Diskeeper Edition
- Combined License Count (includes volume and retail licenses)
- Number of Licenses Used
- Number of Licenses Available

Schedule Deployment

Since deploying Diskeeper updates or upgrades to a large number of computers across the network can take some time and use network bandwidth, the Update and Upgrade module gives you the option to schedule the deployment task for a later time, or perform it now.

If you select to schedule the task for a later time, use the controls provided to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to perform the update or upgrade deployment at a time when network bandwidth will not be impacted. Make your selections and click **Next**.

Summary

Deployment to each individual computer is considered a “job”, so deployment to many computers could consist of many jobs. The Update and Upgrade Summary shows the progress of the individual jobs that make up the update or upgrade deployment task. As the jobs progress, you can see this information:

- Domain
- Computer Name
- Job Status
- Description
- Time the job started

When you are done reviewing the report, or when you are ready to perform another task, click **Close**. Keep in mind that you can also see current and historical information about the update or upgrade tasks in the Diskeeper Job Queues. See page 42 for more information about the Job Queues.

Managing Diskeeper Software Licensing

Your Diskeeper licenses are stored in the Diskeeper Administrator database, and assigned to remote computers as needed. The Manage Diskeeper Software Licensing module gives you complete control over the distribution and use of your Diskeeper licenses. You can easily see the number and types of licenses in use and how many are available. You can also convert Try and Buy licenses into full licenses (or full licenses into trialware) or purchase additional licenses online, all from a single location.

The Manage Diskeeper Software Licensing module can detect and manage existing Diskeeper licenses on your network. It is also used by the PushInstall deployment option to manage the licenses of the Diskeeper installations done by this instance of Diskeeper Administrator.

To open the Manage Diskeeper Software Licensing module, click **Manage Diskeeper** in the Quick Launch task

pane and select **Manage Diskeeper Software Licensing** . This displays the License Usage Report, and a table showing specific licenses you have added to the Diskeeper Administrator database. (See the following sections for more information about adding Diskeeper licenses.)

The License Usage report includes this information:

- **Edition** – The Diskeeper edition, such as Professional, Pro Premier, Server, or EnterpriseServer
- **Version** – The major version number
- **Full** – The count of full Diskeeper licenses for this Diskeeper edition and version
- **Upgrade** – The count of upgrade Diskeeper licenses for this Diskeeper edition and version
- **Combined** – The full and upgrade license counts combined
- **Available** – The total number of licenses available for this Diskeeper edition and version
- **Used** – The total number of licenses used for this Diskeeper edition and version
- **Retail Count** – The count of licenses detected by Diskeeper Administrator on computers where Diskeeper was installed independently of Diskeeper Administrator.
- **Trial Count** – The number of Try and Buy trialware licenses detected by Diskeeper Administrator

The Licenses table includes this information:

- **License Number** – The unique alphanumeric number assigned to each license pack
- **Type** – The type of license
- **Edition** – The Diskeeper edition, such as Professional, Pro Premier, Server, or EnterpriseServer
- **Version** – The major version number
- **Licensee** – The name of the company or organization to which the license was granted
- **Full License Count** – The number of full licenses for this Diskeeper edition and version represented by this license pack
- **Reseller** – The name of the company or organization from which the license was purchased
- **Trial Period** – The length of time allowed for Try and Buy licenses represented by this license pack. This is not applicable for full licenses.
- **Expiry Date** – The date when the trial licenses will expire. This is also not applicable to full licenses.

Software License Management Actions

There are a number of actions you can perform from within the Manage Diskeeper Software Licensing module. Click **Actions** at the bottom of the screen to perform these tasks:

Purchase Additional Licenses

Use this option to purchase additional Diskeeper licenses directly from Diskeeper Corporation. When this option is selected, Diskeeper Administrator opens your web browser to the appropriate page of the Diskeeper Corporation online store, where you will be guided through your purchase.

Install Diskeeper

Use this option to launch the Install Diskeeper 2008 Wizard and install Diskeeper on the computers of your choice.

Upgrade Try and Buy Computers

Use this option to upgrade computers running trial versions of Diskeeper into fully-licensed Diskeeper computers.

Add License

Use this option to add recently (or previously) purchased Diskeeper licenses to the Diskeeper Administrator database.

Remove Selected License

Use this option to remove a license pack from the Diskeeper Administrator database.

Managing Diskeeper Product Activation

Diskeeper must be activated on each computer on which it is installed. This process is simple and fast, and it helps ensure you are running legitimate copies of Diskeeper. In a typical single-license installation, Diskeeper contacts the Diskeeper Corporation Activation server via the Internet and requests activation. The activation server verifies the product, then sends an activation response back to the requesting computer.

This procedure can present problems at sites with a large number of Diskeeper installations to activate, or sites where the Diskeeper computers do not have access to the Internet. Diskeeper Administrator addresses these problems and manages the activation of Diskeeper on all your remote computers, regardless of whether they are connected to the Internet or not. When used in this manner, Diskeeper Administrator acts as a proxy (substitute) activation server, verifying and responding to activation requests from remote computers as the need arises.

To better understand this process, a few definitions are in order:

Activation Request — This is an encoded file generated by Diskeeper on the remote computer. This activation request file is sent to the activation server, requesting activation of Diskeeper on that particular computer.

Activation Response — This is an encoded file sent by the activation server in response to an activation request from an individual computer. When this file is successfully read by Diskeeper, the activation is complete.

Activation Server — This is a computer that receives Diskeeper activation requests, and sends activation responses back to the requesting computers. The primary activation server is operated by Diskeeper Corporation.

Proxy Activation Server — You can use Diskeeper Administrator as a proxy (substitute) activation server. When used in this manner, activation requests are sent to Diskeeper Administrator, and Diskeeper Administrator sends the activation responses back to the requesting computers. This eliminates the need for the remote computers to be connected to the Internet. In order to perform the proxy activation server duties, the Diskeeper Administrator computer contacts the Diskeeper Corporation activation server and requests the necessary activation responses. Once received, these responses are used to activate the remote computers.

Offline Activation — This term refers to the activation of computers that do not have direct access to the Internet. When Diskeeper Administrator is used as a proxy activation server, it is not necessary for the remote computers to have Internet access. In fact, even when the Diskeeper Administrator computer is not connected to the Internet, you can still use it as an activation proxy server. This is done by exporting an Activation Request file, sending it to Diskeeper Corporation (from a computer that does have Internet access), then importing the Activation Response file to the Diskeeper Administrator computer. With this imported Activation Response file, the Diskeeper Administrator computer then distributes activation responses to the individual remote computers requesting activation.

In a typical scenario, you would first use Diskeeper Administrator to PushInstall Diskeeper to the intended remote computers. Installed in this manner, Diskeeper runs as trialware, with a time limit on its full functionality. In order to convert the Diskeeper trialware into the full, non-expiring version, you must activate each instance (subject to the number of Diskeeper licenses you have purchased).

Next, using the Manage Diskeeper Product Activation module, you would scan these remote computers for their activation status. This process gathers the necessary activation information from the individual Diskeeper computers and creates an Activation Request file. This file is sent to the Diskeeper Corporation activation server, and an Activation Response file is sent back in return, authorizing the activation of

Diskeeper on these individual computers. Diskeeper Administrator then acts as a proxy activation server and sends activation responses to the individual remote computers, activating them silently in the background.

In the event your Diskeeper Administrator computer is not connected to the Internet, you have the option of creating and exporting an Activation Request file, then sending it to Diskeeper Corporation from a separate, Internet-connected computer. The resulting Activation Response file is then imported into Diskeeper Administrator, when then acts as an proxy activation server as described above.

Activating Diskeeper Across the Network

You can use Diskeeper Administrator to silently activate Diskeeper installations on remote computers. Remote Diskeeper activation is done via the Activate Diskeeper Clients module. To start, click **Manage Diskeeper** in

the Quick Launch task pane, then select **Manage Diskeeper Product Activation** .

This causes a report to be displayed listing any Activation Requests received from remote Diskeeper computers. Use the **Actions** menu at the bottom of the screen to select from these options:

Scan for Activation Status

Use this option to scan one or more remote computers to determine their Diskeeper activation status. This scan also causes any non-activated Diskeeper computers to generate an activation request. When you choose this option, you will be presented with a tree view of your network. Select the computers you want to scan, then click **Scan Now**.

While the scan is occurring, a report is displayed showing the progress and status of the scan operation. When the scan is complete, a more detailed Activation Report is displayed, showing the activation status of the selected computers. In the event any errors are indicated, click **View Status** to see additional information about the errors.

Activate Now

Use this option to activate Diskeeper on any computers that are currently awaiting activation responses. (These are computers that have sent an activation request, but have not yet received a response.)

When you choose this option, Diskeeper Administrator contacts the Diskeeper Corporation activation server and requests activation responses for the computers that have requested them. Once these responses are received, they are deployed to the appropriate computers, which are then silently activated.

When Diskeeper Administrator is acquiring the activation responses from the Diskeeper Corporation activation server, a progress meter is displayed showing the progress and status of the operation.

During the deployment of the activation responses, a report is displayed showing the activation status of the affected computers.

Offline Activation

Use this option to activate Diskeeper in environments where the Diskeeper Administrator computer does not have Internet access. This option gathers information about computers needing activation and creates an Activation Request file. You then send this file to Diskeeper Corporation (from a computer that does have Internet access), and an Activation Response file is returned to the e-mail address you specify. After copying the Activation Response file to a location that is visible to the Diskeeper Administrator computer, you import the file into the Diskeeper Administrator database, allowing Diskeeper Administrator to deploy the appropriate activation responses to the Diskeeper computers requesting them.

When you choose this option, the Offline Activation Wizard is displayed. The wizard walks you through these steps:

- **Step 1** — Enter the e-mail address where you want the Activation Response file to be sent, and click **Export to File**. This creates the Activation Request file that you will send to the Diskeeper Corporation activation server. When you export the Activation Request file, a standard Windows file saving dialog is displayed, allowing you specify a filename and to browse to the location where you want to save the file.
- **Step 2** — On a computer with Internet access, go to the www.diskeeper.com/activation/upload web page and upload the Activation Request file you created in the previous step. An Activation Response file will be sent to the e-mail address you specified above.
- **Step 3** — Copy the Activation Response file you receive from Diskeeper Corporation to a location visible to your Diskeeper Administrator computer, then click **Import File** to import the Activation Response file into the Diskeeper Administrator database. The encoded data in this file will be used to activate those computers that requested activation at the time the Activation Request file was created and sent to Diskeeper Corporation.
- **Step 4** — After the Activation Response file has been imported to the Diskeeper Administrator database, click **Close** to close the Offline Activation Wizard, then select **Activate Now** from the Actions menu to activate Diskeeper on the computers that requested activation.

Assign Activation Proxy

Use this option to specify the computers or groups for which you want this instance of Diskeeper Administrator to serve as the Diskeeper Activation proxy server.

When you choose this option, a tree view of your network is displayed. Select the computers you want you want to be served my Diskeeper Administrator, then click **Set Proxy**.

Configure Activation Proxy

Use this option to configure how Diskeeper Administrator will handle proxy Diskeeper activation. You are given these options:

- **Process Activation Requests automatically and silently** — When this option is enabled, Diskeeper Administrator will record any new Activation Requests from remote Diskeeper computers, then automatically contact the Diskeeper Corporation Activation server daily to request and receive Activation Responses for those computers. These responses are then used to automatically activate the remote Diskeeper computers. This is the recommended mode of operation.
- **Process Activation Manually** — When this option is enabled, Diskeeper Administrator will notify you automatically when product activation is necessary on any remote Diskeeper computers. When notified, you can then manually activate the Diskeeper computers as necessary.
- **Activation Alert Configuration** — Use these options to specify how Diskeeper Administrator will notify you about remote computers needing Diskeeper activation.

Delete Selected Requests

Use this option to delete activation requests you have selected in the Manage Diskeeper Product Activation display.

Defragmentation Policies

Diskeeper Administrator introduced the concept of policy-based centralized defragmentation management. Defragmentation policies are a set of properties (or options) that specify how Diskeeper will defragment the computers on which they are deployed. As an example, you use a defragmentation policy to specify which volumes on your remote computers will have Automatic Defragmentation enabled, or the periods of time you want Automatic Defragmentation turned off. Once a policy has been defined, it can be saved and used again.

Diskeeper 2008 Administrator supports defragmentation policies for computers running Diskeeper 2007 and Diskeeper 2008, as well as legacy systems running Diskeeper 10 or Diskeeper 9. Note that the available property options vary, depending on the version of Diskeeper the policy is intended to control.

Creating Defragmentation Policies

Diskeeper Administrator includes a default policy for computers running Diskeeper 2008, but you can also create your own policies to meet your specific needs, including policies for older versions of Diskeeper.

Defragmentation policies are created from within the New Job Policy Wizard. To open the wizard, select the

New Job Policy  option in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane. Alternatively, click **Manage Diskeeper** in the Quick Launch task pane and select **Configure Defragmentation Policies**.

This opens a listing of the existing defragmentation policies. Click **Actions** at the bottom of the screen, then select **New Job Policy**. This launches the New Job Policy Wizard.



Tip: You can create new defragmentation policies from the **Actions** menu at other times when they are needed, such as when deploying Diskeeper to remote computers.

It is important to note that Diskeeper 2007 and Diskeeper 2008 contain a number of significant improvements over Diskeeper versions 9 and 10. First and foremost, Diskeeper 2007 and Diskeeper 2008 offer Automatic Defragmentation, which simplifies Diskeeper operation (and administration) considerably. With Automatic Defragmentation there is no longer a need for multiple and potentially confusing Primary, Secondary, and I-FAAST™ defragmentation schedules, different defragmentation methods, or any need to be concerned with disk or CPU priorities.

When you launch the New Job Policy Wizard, you will see options to create policies for Diskeeper 2007 and Diskeeper 2008, or for legacy Diskeeper versions 9 and 10. The options available differ, depending on the Diskeeper version they are intended for, and the policy type selected. Select the version and policy type, specify a name for the policy, and click **Next** to continue and select the specific policy options you need. Note that the policy options you choose will only be applied to the volumes you select from the list at the top of the New Job Policy Wizard.

The following sections give an overview of the options available for both “modern” and “legacy” policies.

Diskeeper Defragmentation Policy Options

When you create a new Diskeeper defragmentation policy, the wizard guides you through these steps:

General Page

The General page of the New Job Policy Wizard allows you select the Diskeeper version for which you want to create a new policy, and provides spaces to specify a name for the policy and any desired description.

Automatic Defragmentation

The Automatic Defragmentation page of the New Job Policy Wizard offers options to enable Automatic Defragmentation on the volumes you've selected, and using the Automatic Defragmentation Timeline, you can specify time periods when Automatic Defragmentation will be turned off on those volumes. Keep in mind that performance will be maintained at peak levels when Automatic Defragmentation is left enabled at all times.

I-FAAST

I-FAAST (Intelligent File Access Acceleration Sequencing Technology), available on selected editions of Diskeeper, accelerates performance by intelligently sequencing files on the volume.

The I-FAAST page of the New Job Policy Wizard provides the option to enable I-FAAST on the selected volumes. You can select from these options:

Allow Diskeeper to enable or disable I-FAAST when beneficial — When this option is enabled, I-FAAST will only be enabled on volumes that will benefit from I-FAAST acceleration. While most volumes will show a noticeable performance improvement when I-FAAST is enabled, there are cases where the performance gain is not significant enough to warrant the negligible system resources needed to support I-FAAST.

Always enable I-FAAST — Select this option to enable I-FAAST on the selected volumes, even if there will be little or no potential performance gain.

Always disable I-FAAST — Select this option to disable I-FAAST on the selected volumes, even if there will be beneficial potential performance gain.

Note that I-FAAST is only available on volumes on which Automatic Defragmentation is also enabled.

Volume Shadow Copy Service (VSS) Options

The Windows Volume Shadow Copy Service (VSS), available on the Windows Server 2003 and Windows Vista operating systems, provides the ability to create snapshots, or point-in-time (PIT) copies, of shares and volumes. These snapshots are images of the data on the disk as it looks at a particular point in time. By keeping these images of data, you can quickly recover individual files or entire volumes directly from the disk as they appeared when the snapshot was taken.

It is important to be aware that when VSS is enabled on a volume with a cluster size smaller than 16 KB, VSS will see file movement done by the defragmentation process as “changed data” and take a point-in-time snapshot, even though only the location of the data has changed. Unnecessary snapshots will cause the VSS storage area to increase in size, possibly resulting in earlier VSS snapshots being purged. Diskeeper provides special defragmentation methods to allow you to defragment these VSS enabled volumes, yet minimize the possibility that older VSS snapshots will be purged.

When the VSS defragmentation option is enabled, Diskeeper uses proprietary defragmentation engines to help reduce the chance of the defragmentation operation causing new VSS snapshots from being created, thus potentially preventing older snapshots from being purged. In order to do this, the VSS defragmentation engines use more conservative file movement algorithms, which can result in slightly less thorough defragmentation of the volume. Despite this, performance is still improved when this method is enabled. (Keep in mind that a large file in two pieces has virtually no performance loss, but it shows as much red color in the Volume Map tab as a file in several thousand pieces, which does suffer from performance loss.)

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The VSS defragmentation method is enabled by default on VSS enabled volumes with cluster sizes smaller than 16 KB.

The Volume Shadow Copy Service (VSS) Options page offers these options:

Automatic Defragmentation VSS Options

Diskeeper provides these options for Automatic Defragmentation of VSS enabled volumes:

- **Defragment using VSS defragmentation method** — Select this option to use special Automatic Defragmentation engines optimized for VSS enabled volumes. This option minimizes growth of the VSS storage area caused by file movement and reduces the chance of older VSS snapshots being purged.
- **Defragment using standard defragmentation method** — Select this option to use the standard Automatic Defragmentation engines on VSS enabled volumes. Be aware that enabling this option can increase the size of the VSS storage area and can result in some or all of the VSS snapshots being purged.
- **Do not defragment VSS enabled volumes** — Select this option to prevent Automatic Defragmentation from running on any VSS enabled volumes.

Manual Defragmentation VSS Options

Diskeeper provides these options for Manual Defragmentation of VSS enabled volumes:

- **Defragment using VSS defragmentation method** — Select this option to use special Manual Defragmentation engines optimized for VSS enabled volumes. This option minimizes growth of the VSS storage area caused by file movement and reduces the chance of older VSS snapshots being purged.
- **Defragment using standard defragmentation method** — Select this option to use the standard Manual Defragmentation engines on VSS enabled volumes. Be aware that enabling this option can increase the size of the VSS storage area and can result in some or all of the VSS snapshots being purged.

Frag Shield

One situation that can impair the performance and reliability of your computer is fragmentation of the Master File Table (MFT) on NTFS volumes and your paging files. Since the operating system relies heavily on the MFT and paging file, the effect of fragmentation is often much greater than when a normal file is fragmented. Frag Shield is the first and only technology to prevent system file fragmentation.

Frag Shield performs two vital tasks: It helps keep your MFTs from becoming fragmented, and it assists you in setting up your paging files such that fragmentation will be very unlikely to occur in the future.

The MFT fragmentation prevention technology in Frag Shield is fully automatic and it operates invisibly using InvisiTasking technology.

Frag Shield also helps you configure your paging files on NTFS volumes as recommended in published Microsoft guidelines.

The Frag Shield page of the New Job Policy Wizard offers the option to enable Frag Shield on the volumes you've selected.

Summary

The Summary page of the New Job Policy Wizard shows information about the new policy you have created, including the policy name, the Diskeeper version it applies to, the policy type, and any description you included when you named the policy.

Legacy Diskeeper (versions 9 and 10) Job Policy Options

Since Diskeeper version 9 and 10 differ significantly from Diskeeper 2007 and Diskeeper 2008, the job policy options available are also quite different. Of particular note are the different policy types. When creating

defragmentation policies for Diskeeper 9 and 10, you can create separate policies for Primary Defragmentation, Secondary Defragmentation, I-FAAST Defragmentation, and Manual Defragmentation.

The New Job Policy Wizard displays slightly different steps as appropriate, depending on the type of job policy you are creating. The steps are described in the following sections:

General Page

Similar to creating a Diskeeper 2008 defragmentation policy, the General page of the New Job Policy Wizard allows you select the Diskeeper version for which you want to create a new policy, and provides spaces to specify a name for the policy and any desired description.

Job Schedule

The Job Schedule page is displayed when creating a new defragmentation policy for Primary, Secondary, or I-FAAST defragmentation jobs. It offers options to enable the respective defragmentation job type on the volumes you've selected. Use the other options available on the page to specify times when that type of defragmentation job will run (or will not be allowed to run, depending on your choices). Job schedules are applied on a per volume basis. In other words, you can apply different schedules to different volumes. If you have used Diskeeper 9 or 10 before, the scheduling options will be familiar. If necessary, refer to the Diskeeper 9 or Diskeeper 10 Help or User's Manual for full descriptions of the scheduling options available.

Defragmentation Methods

Available for Primary, Secondary, and Manual defragmentation jobs, the Defragmentation Methods page allows you to specify the defragmentation method Diskeeper will use when all jobs of this type are run. Unlike job schedules, which are applied on a per-volume basis, defragmentation methods are applied on a per-job type basis. For example, when you select a defragmentation method for Primary Defragmentation jobs, that defragmentation method will be applied to all Primary Defragmentation jobs. These defragmentation methods are available:

- **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.
- **Recommended Defragmentation** — 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.
- **Comprehensive Defragmentation** — 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. Since the Comprehensive Defragmentation method is best suited for scheduled defragmentation jobs, it is not available for Manual Defragmentation Jobs.

In addition to these options, you can specify how Diskeeper handles large files. When the **Efficiently defragment large files** option is enabled, Diskeeper defragments large files only to the point where access time is improved and further defragmentation will not return a significant improvement. This can save considerable system resources and can significantly reduce the time to run a job.

Disk and CPU Priorities

You can control the amount of disk input/output (I/O) and CPU resources used by Diskeeper for Primary, Secondary, and Manual defragmentation jobs. For each of these job types, the New Job Properties Wizard allows you to control the disk and CPU priority.

Running at the lowest CPU priority minimizes the system performance impact when Diskeeper is defragmenting a volume. However, defragmentation jobs running at the lowest priority can take substantially longer to complete than those running at higher priorities, since Diskeeper “backs off” for any process running at a higher

priority (even screen savers). For this reason, you may have occasions where you want to run Diskeeper at a higher CPU priority. Keep in mind, though, that your system performance may be impaired when Diskeeper is run at higher priorities.

In addition to the different levels of CPU priorities to choose from, you are also given the option to enable I/O Smart™ on the selected volumes. This option takes the concept of run priorities one step farther by “throttling” (suspending) the defragmentation process whenever disk I/O activity is detected on a disk while it is being defragmented. This ensures the defragmentation process will be transparent to users, no matter how active the disk.

Similar to the defragmentation method options, the Disk and CPU priority settings are applied on a per per-job type basis. For example, when you specify disk and CPU priority options for Secondary Defragmentation jobs, those settings will be applied to all Secondary Defragmentation jobs.

Keep in mind that even with the disk and CPU priority options, Diskeeper versions 9 and 10 do not provide the performance gain and “invisible” operation offered by newer versions of Diskeeper with Automatic Defragmentation.

Summary

The Summary page of the New Job Policy Wizard shows information about the new policy you have created, including the policy name, the Diskeeper version it applies to, the policy type, and any description you included when you named the policy.

Deploying Defragmentation Policies

After you have created defragmentation policies, you can deploy them to the computers of your choice. (Of course, the remote computers must have Diskeeper installed on them.)

Defragmentation policies are deployed from within the Job Policy Deployment Wizard. Follow these steps to open the wizard and deploy a defragmentation policy to one or a few hundred remote computers:

1. Click **Deploy Job Policy** in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane. This opens the Job Policy Deployment Wizard in a separate window. Alternatively, click **Manage Diskeeper** in the Quick Launch task pane and select **Configure Defragmentation Policies**. This opens a listing of the existing defragmentation policies. Click **Actions** at the bottom of the screen, then select **Deploy Job Policy**.
2. In the introduction screen displayed, enter an optional name and description for the deployment job. The details of the policy deployment job will be displayed in the Diskeeper Administrator Job Queue, so having a recognizable job name and description can be useful. When you have made your selections, click **Next**.
3. The next screen displays a tree view of your network. (You can also switch to a Detail view as described on page 11.) Select any combination of one or more computers, groups or domains on which you want to deploy the selected defragmentation policies. After selecting the computers on which to deploy the policy, click **Next**.
4. Next, you are given the opportunity to select the defragmentation policy you want to deploy. Select from any of the policies displayed. You can modify an existing defragmentation policy by clicking **Properties**, or click **Actions** and select the option to create a new policy. After selecting the defragmentation policy, click **Next**.
5. Since deploying defragmentation policies to a large number of computers across the network can take some time and use network bandwidth, you are next given the option to schedule the policy deployment task for a later time, or perform it now. If you select to schedule the task for a later time, you are prompted to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to perform the task at a time when network bandwidth will not be impacted. Choose when to perform the policy deployment job, and click **Next**.

- Next, a summary is displayed, showing you the ongoing status of the defragmentation policy deployment task. When the task is complete, the summary is automatically saved in the Diskeeper Administrator Job Queue, along with other similar reports. See page 42 for more information about the Job Queue. When you are done reviewing the report, or when you are ready to perform another task, click **Close**.

Editing Existing Defragmentation Policies

Defragmentation policies are edited from within the Defragmentation Policy Properties pages. To open the properties page for an existing defragmentation policy, click **Manage Diskeeper** in the Quick Launch task pane and select **Configure Defragmentation Policies**. This opens a listing of the existing defragmentation policies. Select the policy you want to edit and click **Properties** at the bottom of the page. This launches the Defragmentation Policy Properties pages for the selected policy.



Tip: You can simply double-click a defragmentation policy in the Configure Defragmentation Policies listing to quickly open the Defragmentation Policy Properties pages for that policy.

After opening the Defragmentation Policy Properties pages, choose from the steps listed on the left of the page and make any changes desired, similar to creating a new defragmentation policy. When you have made your changes, click **OK** to save the changes and return to the Configure Defragmentation Policies listing, or click **Apply** to save the changes without closing the Defragmentation Policy Properties pages for that policy.

Also note that when editing an existing defragmentation policy, you can click the **Associated Computers** step shown on the left side of the page to see a listing of the computers to which the policy has been applied.

Diskeeper Reports

Diskeeper Administrator 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.

All reports are shown in a secondary window, independent of the main Diskeeper Administrator console. Reports can be saved and printed. Following the “centralized management” concept, Diskeeper Administrator allows you to perform a number of tasks directly from a report. After a report has been generated, you can select one or more computers in the report, then use the **Actions** button at the bottom of the report to install or uninstall Diskeeper, update or upgrade Diskeeper, deploy defragmentation policies, or remotely-control a Diskeeper computer.

Details about the Reports

Diskeeper Administrator gathers information each time Diskeeper-related changes occur on any remote Diskeeper computers being managed by that instance of Diskeeper Administrator. This information is stored in the Diskeeper Administrator database.

You can generate reports based on real-time data or data stored in the Diskeeper Administrator database. Real-time data offers the most current view of your managed Diskeeper computers, since Diskeeper Administrator polls each selected computer when this option is selected. However, this polling process can take a considerable length of time on a large network, and a certain amount of network traffic occurs. Database data gathering is typically much faster, but it may not be completely current, especially if the Diskeeper Administrator database has been off-line for any length of time.

Diskeeper Administrator reports are comprised of specific sets of data, presented in a tabbed format. Each report can contain any or all of these individual data sets (also known as report sections):

Diskeeper Computers – shows information about the Diskeeper status on the computers managed by this instance of Diskeeper Administrator.

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Fragmentation and Performance – shows factors that directly affect the performance and reliability of your disk volumes, such as MFT fragmentation, paging file fragmentation and the level of free space. This data set is a useful way to show Diskeeper is maintaining the good health of the system. The Fragmentation and Performance report can also utilize Disk Performance Analyzer for Networks (DPAN) to collect performance data from computers that do not have Diskeeper installed.

Computers and Policies – shows information about Diskeeper versions installed and defragmentation policies in place on the computers managed by this instance of Diskeeper Administrator.

Alert History – shows information about any Diskeeper alerts that have been generated on the computers managed by this instance of Diskeeper Administrator.

Also note that you can save and print reports you create. Click **Actions** at the bottom of the report window to see the available report options.

Diskeeper Computers Data Set

The Diskeeper Computers data set shows general information about all the Diskeeper installations on your network. This is an easy way to see which computers on your network have Diskeeper installed.

This information is gathered for each selected computer:

- Domain
- Computer name
- Operating system name
- Diskeeper edition
- Diskeeper version
- Latest available Diskeeper version and type
- Last Diskeeper update

Fragmentation and Performance Data Set

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

This information is gathered for each selected computer:

- Domain name
- Computer name

For each volume:

- Volume name
- Volume space
- Free space %
- MFT fragments
- Paging file fragments
- Fragments per file
- I-FAAST actual gain (%)
- I-FAAST potential gain (%)
- Total files defragmented
- Total fragments eliminated

The Fragmentation and Performance data set also includes the option to use Disk Performance Analyzer for Networks (DPAN) to gather fragmentation data from remote computers that do not have Diskeeper installed. DPAN provides real-time performance metrics with high-level visual graphs and detailed fragmentation data.

Computers and Policies Data Set

The Computers and Policies data set shows detailed information about the computers managed by this instance of Diskeeper Administrator, and the defragmentation policies in place on them.

This information is gathered for each selected computer:

- Domain
- Computer name
- Operating system name
- Diskeeper edition
- Diskeeper version

For each volume:

- Volume Name
- Defragmentation policy enabled

Alert History Data Set

The Alert History data set duplicates the information shown in the Alert 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:

- Alert type
- Domain
- Computer name
- Diskeeper edition
- Diskeeper version
- Volume name
- Alert Time

When the Alert History data set is selected, you are given the option to include all Diskeeper Administrator alerts in the report, or specify a range of time for you want to see any alerts.

The Alert History data set is similar to the standard Diskeeper Administrator alerts (as described on page 38), 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.

Creating a Report

The Create Report Wizard guides you through the steps necessary to create a report. Here is an overview of those steps:

To open the Create Report Wizard, select the **Create Reports** option in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane. Alternatively, click **Reports and Alerts** in the Quick Launch task pane and click **Create Report** at the bottom of the screen. This launches the Create Report Wizard.

Naming the Report

The first page of the Create Report Wizard offers allows you to specify and name and description for the report you are creating. Since reports can be saved and recalled at a later time, a meaningful report name and description can be useful. Enter a name and description as desired, then click **Next** to continue.

Selecting the Data Sets

Use this page of the wizard to specify the data sets (or report sections) to be included in the report. You can choose from these available data sets. (See page 33 for descriptions of these data sets):

- Diskeeper Computers
- Fragmentation and Performance
- Computers and Policies
- Alert History

When the Alert History data set is selected, you are given the option to include all Diskeeper Administrator alerts in the report, or specify a range of time for you want to see any alerts.

After selecting the data sets to include in the report, click **Next**.

Selecting Computers and Groups

Use this page of the wizard to select the computers and/or groups to be included in the report. This page shows a tree view of your network. (You can also switch to a Detail view as described on page 11.) Select any combination of one or more computers, groups or domains you want included in the report. After making your choices, click **Next**.

Specifying the Data Source

Use this page of the wizard to specify the source for the data used in the report. You can use data that is already in the Diskeeper Administrator database, or create the report based on real-time data gathered immediately or at a later time you specify.

Note that managed Diskeeper computers automatically send report and alert data to Diskeeper Administrator after completion of a scheduled defragmentation job.

Real-time data offers the most current view of the managed Diskeeper computers on your network, but gathering the data can take some time and incur network overhead.

Using data from the Administrator database is faster and less costly in network bandwidth, but it may not reflect the most current Diskeeper information on your network. This is especially true if the Diskeeper Administrator database has been off-line for any period of time.

Choose the data source you want to use for your report, then click **Next** to continue.

Specifying the Report Schedule

Since gathering report data from a large number of computers across the network can take some time and use network bandwidth, this page of the Create Report Wizard gives you the option to schedule the report collection task for a later time, or perform it now.

If you select to schedule the task for a later time, use the controls provided to specify when the task is to begin. You can also specify a time for the task to be stopped, even if it has not yet completed. This gives you the flexibility to gather the report data at a time when network bandwidth will not be impacted.

Choose the desired schedule, then click **Next** to continue.

Report Wizard Summary

Next, a summary is displayed, showing any schedule you specified for the reporting task. The Summary page also allows you to specify whether to save the report as a template in the Reports Console for later use. You can also choose to e-mail a copy of the report to the recipients of your choice.

When you are done making any of these optional choices, click **Finish**.

Saving a Report

When you are viewing a report, you can save it for future reference. Click **Actions** at the bottom of the report and select **Save as** to save the report. You are given the option of specifying the location where the report file will be saved. You can navigate to the disk volume and folder of your choice.

Printing a Report

Saved reports can be printed. Click **Actions** at the bottom of the report and select **Print** 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.

Launching Other Actions from a Report

In addition to viewing, printing, and saving a report, you can select one or more computers in a report, then launch other actions to perform on them, directly from the report. Using the options available in the Actions menu at the bottom of each report, you can install, uninstall, update, or upgrade Diskeeper on the selected computers, deploy defragmentation policies, move computers or groups in the Custom Groups hierarchy, or remotely control Diskeeper on a single computer.

For example, you can create a report using the “Diskeeper Computers” data set to show which computers do or don’t have Diskeeper installed, select the computers on which you want to install Diskeeper, and immediately begin the deployment, directly from the report. As you use the Diskeeper Administrator reporting capability, you will likely find numerous ways where Diskeeper Administrator can save time and effort in your management of Diskeeper across your network.

Diskeeper Alerts

Diskeeper Administrator 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 data received from managed Diskeeper installations throughout your network. Diskeeper Administrator examines this data to determine whether an alert should be generated. This data is gathered as Diskeeper-related events occur on managed Diskeeper computers throughout your network.

Alerts are logged and stored in the Administrator database as they are detected. Alerts are sent to you (or the people you designate) as individual e-mail messages for each Alert. You control whether (and to whom) these e-mail messages are sent.

Alerts are generated under these conditions:

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

Diskeeper Corporation 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 (described below)
- 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.

This table shows the Warning and Critical levels used in determining the reliability index.

Reliability Factor	Warning Level	Critical Level
Overall Fragmentation	> 10% fragmentation	> 50% fragmentation
MFT Fragmentation	> 250 fragments	>2000 fragments
Paging File Fragmentation	> 250 fragments	>1500 fragments
Free Space	< 15% free space	< 5% free space

The *Overall fragmentation* figure 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.

How to Receive Alerts

Diskeeper Administrator delivers alerts in two ways:

- An Alert Report displayed directly in the Diskeeper Administrator console
- An Alert Report e-mailed to you or the people you designate

You have control over which alerts are reported to you. For each type of e-mailed alert, your options are:

- All alerts
- Alerts occurring between the starting and ending dates you specify

In order to receive alerts by e-mail, you must specify at least one e-mail address. You will be prompted for this information the first time you set up any type of Diskeeper Administrator task that requires an e-mail address.

Configuring Alerts

Alerts are based on post-defragmentation data received from remote Diskeeper 9.0 (or higher) installations throughout your network. Diskeeper Administrator examines this data to determine whether an alert should be generated. This data is sent to Diskeeper Administrator any time Diskeeper-related activity or changes occur on your managed Diskeeper computers.

Alerts are logged and stored in the Administrator database 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.

Follow these steps to configure alerts:

1. Click **Configure Alerts**  in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane to open the Alerts Properties dialog.
2. In the General page displayed, select the exception-based events that will trigger an alert. You can choose to have alerts triggered by incomplete defragmentation due to engine failure, or when free space on a volume reached a threshold you set, or both.

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3. Click **Select Computers** in the Properties task pane on the left side of the Alerts Properties dialog, then use the tree view displayed to select the computers for which you want alerts to be generated. (You can also switch to a Detail view as described on page 11.)
4. Next, click **Alert E-mail** in the Properties task pane on the left side of the Alerts Properties dialog. On the page displayed, select your choice of options to send a daily Alert Summary report via e-mail, and specify the e-mail address(es) intended to receive the Alert Summary. You can also optionally edit the subject line and body of the message.
5. After selecting the settings you want, click **OK** to close the Alerts Properties dialog.

Setting Up Alert and Task Purge Options

Diskeeper Administrator stores Diskeeper alert data and details about Diskeeper Administrator tasks in the Diskeeper Administrator database. Over time, this information should be purged to avoid consuming unacceptable amounts of disk space. By default, Diskeeper Administrator keeps Alert data for 30 days, and task data for 15 days, but you have control over how often this data is cleared out.

You can specify how long to save Diskeeper alerts and one-time tasks in the Diskeeper Administrator database. Diskeeper Administrator will keep alerts and one-time tasks in the database for a maximum of 180 days. Note that repeating tasks (such as scheduled report scans) are not purged.

Follow these steps to change the purge options:

1. Click **Configure** in the Quick Launch task pane, then select **Diskeeper Administrator Properties** .
2. Click **Purge Queue and Alert History** in the Configure task pane on the left side of the display.

This page provides these options:

- **Clear Alerts**
- **Clear Tasks**

For each option, you can set the number of days (from 0 to 180) for Diskeeper Administrator to keep the alerts or tasks in the database. You can also click the respective button to clear alerts or tasks immediately.

3. When you have made any desired changes, click **OK** to close the dialog and return to the main Diskeeper Administrator console.

Using Groups

Diskeeper Administrator allows you 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 deploying Diskeeper or defragmentation policies to multiple machines, you simply select 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 Active Directory groups in the same manner as applying them to a single machine.

Creating Custom Groups

Custom groups are made up of one or more of the computers on your network. A group can include entire domains or workgroups, and can also include other groups.

Click **Manage Diskeeper** in the Quick Launch task pane, then select **Manage Diskeeper Computers and Custom Groups** . This displays a tree view of your network.

Once the tree view is displayed, follow these steps to create a new custom group:

1. Click **My Groups** in the tree view display.
2. Click **Actions** in the bottom of the console, and select **New Custom Group**. Alternatively, right-click **My Groups** and select **New Custom Group**. A dialog is displayed, allowing you to specify the name of the new custom group.
3. Edit the name of the new group displayed in the **Computer View** section of the page.
4. Next, navigate the tree view to display the domains, workgroups or computers you want to include in the new group. Drag and drop your choices into the new group displayed under My Groups. The new group will now be available from the various Select Computer pages throughout Diskeeper Administrator.

Managing Custom Groups

To add computers to an existing group, open the tree view display and simply drag and drop the computers into the custom group.

To remove a computer from a custom group, right-click on that computer in the group and select **Remove Selected Computers**. You can also remove multiple computers in this manner – select the computers you want to remove from the group, then right-click one of the selected computers and select **Remove Selected Computers**.

You can also add, modify or delete custom groups using the options available from the **Action** button in any of the tree view pages shown for Diskeeper Administrator tasks that allow you to select computers or groups.

Remote Control

You can use Diskeeper Administrator to remotely control Diskeeper 9.0 through 2008 operations on computers all over your network. (Of course, Diskeeper Professional, Pro Premier, Server, or EnterpriseServer 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 at the remote machine.

To connect to and control a remote computer, follow these steps:

1. Click **Remote Control Diskeeper** in the Diskeeper Administrator Task Overview under **Getting Started** in the Quick Launch task pane.
2. In the tree view displayed, select the computer on which you want to run Diskeeper, and then click **Remote Control**. (If the computer you want to control remotely is not visible in the tree view, you can enter the appropriate domain and computer name or IP address in the space provided at the bottom of the dialog.)
3. Once the computer is connected, the Diskeeper console 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 the remote 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.

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

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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.

Diskeeper Job Queue

The Diskeeper Job Queue option provides a centralized location for information about any pending, running or completed Diskeeper Administrator tasks (or jobs) you have performed. You can stop a current or pending job, and view the status of a job to see detailed information about whether it completed successfully for all selected computers.

Select **Diskeeper Job Queue** in the Quick Launch task pane to open a view of the job queue.

The Job Queue filter at the top of the Job Queue console offers these views:

- All Jobs
- Reporting Jobs
- Configure Setting Jobs
- Deployment Jobs
- Scan Machine(s) Jobs

Select any of these filtering options to see a listing of past, present and scheduled jobs of that category. The typical listing shows the job name, the task type (such as Deployment tasks or Scan Machine(s) jobs), the job type (one-time or scheduled, for example) and the last run time and date.

Double-click any of the jobs listed to see a detailed report about the status of the job. This is a useful way to see the computers on which a specific job was or was not successful. You can see details about the domain, the machine name, the status of the job, a description or explanation of the reported status, and the date and time the status was recorded.

The **Actions** button at the bottom of the console offers a number of options, including allowing you to print listings from the job queues or to delete selected jobs from the queue.

Configuring Diskeeper Administrator

Diskeeper Administrator gathers necessary configuration information from you the first time that information is needed. Once established, most Diskeeper Administrator configuration settings need no additional action. The Configure Diskeeper Administrator console provides a method to view and edit the Diskeeper Administrator configuration properties.

Click **Configure**  in the Diskeeper Administrator toolbar or select **Configure** in the Quick Launch task pane, then select **Diskeeper Administrator Properties** to open the Configure Diskeeper Administrator console. Alternatively, select **Configure Diskeeper Administrator** in the Getting Started task overview. Once open, this dialog allows you to view or edit the following Diskeeper Administrator Configuration properties.

General — About Diskeeper Administrator

This page of the Configure Diskeeper Administrator console shows general information about the version of Diskeeper Administrator installed on your computer, and a variety of contact information.

Diskeeper Administrator Updates

Use this page of the Configure Diskeeper Administrator console to check the Diskeeper Corporation website for a newer version of Diskeeper Administrator. If a newer version is available, follow the instructions displayed to download and install the update.

Diskeeper Local Updates and Upgrades

This page of the Configure Diskeeper Administrator console allows you to check the Diskeeper Corporation website for a newer version of Diskeeper for your remote computers. You are given the option to check immediately for updates, or to enable automatic checking for Diskeeper updates. If you enable automatic update checking, you can also select to have e-mail notification sent to the recipients of your choice when Diskeeper Administrator detects a newer version of Diskeeper is available.

Proxy Server

Use this page of the Configure Diskeeper Administrator console to specify any proxy settings that may be necessary for Internet access at your site. If no proxy settings are specified, Diskeeper Administrator uses your default Internet connection settings.

Outgoing Mail Server (SMTP)

Diskeeper Administrator can optionally send alerts, reports, and update/upgrade notifications via e-mail. Use this page of the Configure Diskeeper Administrator console to specify any outgoing mail server (SMTP) settings necessary, including the SMTP mail server address, any Secure Password Authentication (SPA) if required, and the recipient(s) you want to receive e-mail notifications from Diskeeper Administrator. You can specify more than one recipient, using a colon (:) to separate the e-mail addresses.

Administrative Permissions

Diskeeper Administrator needs permissions information to access licensed computers and include them in tasks. Use this page of the Configure Diskeeper Administrator console to enter or edit user name and password information for your domains, workgroups, or computers, and appropriate for your site.

Purge Queue and Alert History

This page of the Configure Diskeeper Administrator console provides options to specify how long Diskeeper Administrator Alerts should remain in the database, and to purge completed tasks from the Diskeeper Job Queue

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, but they are available via the Remote Control feature described starting on page 41. This information is provided in this manual simply for reference.

What's New in Diskeeper 2008

For over a decade, Diskeeper has led the way in Windows system defragmentation technology, and Diskeeper 2008 continues with the tradition of true Set It and Forget It performance enhancement that is a hallmark of the Diskeeper name.

Whether you've used Diskeeper before or not, you may already be familiar with some of its features, but Diskeeper 2008 adds refinements to these features, and a number of other core enhancements. New users will find Diskeeper to be easy to use, yet comprehensive in its capabilities. Experienced Diskeeper users will recognize familiar features, but see improvements in Diskeeper (and their system) performance. Here is a summary of what's new in this version:

- **Complete file and free space defragmentation in the most *extreme* of conditions**
Diskeeper 2008 introduces the most powerful defragmentation engine ever developed. Even if your systems only have a percent or two of free space left available or a file in millions of fragments, Diskeeper can restore lost performance and save the applications reliant on those files from major reliability concerns.
- **Core “Defragmentation Intelligence” enhancements**
The brains behind defragmentation is the Diskeeper “controller”, which has been re-designed to deliver performance benefit faster and more efficiently. The controller’s job is to detect various volume and system conditions and choose the most effective algorithm from the vast arsenal of Diskeeper defragmentation engines.
- **Frag Shield™ 2.0**
Frag Shield, the first and only technology to prevent system file fragmentation, gets better. No more need to run a manual and resource-intensive process. The Frag Shield MFT fragmentation prevention technology is now fully automatic and re-written to operate invisibly using InvisiTasking technology.
- **Volume Shadow Copy Service (VSS) Compatibility Mode**
Defragmenting VSS-enabled volumes has been complicated, until now. Diskeeper 2008 eliminates the need to choose between the benefits of VSS and defragmentation. The new VSS-compatible mode in Diskeeper 2008 affords you the ability to leverage the data protection of VSS and the performance and reliability of Diskeeper defragmentation.
- **Disk Performance Analyzer for Networks (DPAN)**
The award winning network analysis product from Diskeeper Corporation with over 30,000 downloads is now integrated into Diskeeper Administrator. In Diskeeper 2008 the clientless performance analysis technology gets a full update and tight integration with the industry-pioneering performance management functionality in Diskeeper Administrator. Now you can get real-time performance metrics with high-level visual graphs and detailed fragmentation data on-demand or e-mailed automatically.
- **A special Diskeeper Edition for Windows Home Server (WHS)**
Diskeeper 2008 HomeServer is the only defragmentation solution specifically designed for Windows Home Server operating system. Diskeeper HomeServer provides a snap-in to the new WHS console, supporting full remote management and configuration capability from any PC in a SOHO network.

- ...and of course the InvisiTasking technology continues as the underlying technology in Diskeeper. InvisiTasking is not merely an enhancement to existing features; it allows the Set It and Forget It tradition of Diskeeper to evolve to a new level of autonomous operation that provides real-time defragmentation of files without any administrative effort.

Diskeeper Features

The following list summarizes the most important Diskeeper features:

Automatic Operation — Diskeeper is designed to operate without your intervention. Simply install Diskeeper, then sit back and let it take care of the details. Of course, you can also run Diskeeper manually. (But you probably have better things to do with your time. That’s what Automatic Defragmentation with InvisiTasking is for!)

Diskeeper Family of Products — The Diskeeper family of products offers specialized automatic defragmentation of Windows operating systems ranging from Windows 2000 through Windows XP, Windows Vista, Windows Home Server, and Windows Server 2003 Datacenter. See the tables in *Appendix A* for the complete Diskeeper lineup.

Descriptive Console Interface — The Diskeeper console provides an intuitive and informative defragmentation experience. Common commands are grouped together in the Quick Launch pane, and a group of tabbed panes show you a wide variety of information. Diskeeper shows you the condition of your disks, and provides suggestions for improving or maintaining your disks.

Performance and Volume Health Analysis — Diskeeper collects and displays data regarding the performance and overall health of your volumes in the Dashboard tab. This information allows you to be more proactive in the management and maintenance of your computers.

I-FAAST — Intelligent File Access Acceleration Sequencing Technology (I-FAAST) improves file access/creation by up to 80% (average 10%-20%) above and beyond the improvement provided by defragmentation alone. This is the first industry implementation of “Disk Performance Calibration”, the modern evolution of the outdated and inconclusive disk optimization strategies of the past.

Frag Shield 2.0 — One situation that can impair the performance and reliability of your computer is fragmentation of the Master File Table (MFT) on NTFS volumes and your paging files. Since the operating system relies heavily on the MFT and paging file, the effect of fragmentation is often much greater than when a normal file is fragmented. Frag Shield is the first and only technology to prevent system file fragmentation. No more need to run a manual and resource-intensive process. The Frag Shield MFT fragmentation prevention technology is now fully automatic and re-written to operate invisibly using InvisiTasking technology.

Terabyte Volume Engine — A Diskeeper exclusive, the Terabyte Volume Engine (TVE) is designed to efficiently defragment extremely large (larger than 60 GB) volumes. This feature is available in selected Diskeeper editions. The table in *Appendix A* shows the Diskeeper editions with TVE support.

Boot-Time Defragmentation — Defragment files at boot-time that cannot be moved safely when Windows is running.

Selectable Disk and CPU Priority — You can set the disk and CPU priorities at which Manual Defragmentation jobs run. Note that priority changes are unnecessary when running Diskeeper in Automatic Defragmentation mode.

Exclusion Lists — Diskeeper exclusion lists allow you to specify files and directories that will not be allowed to be processed by Diskeeper.

Event Logging — Diskeeper records information about its activity in two ways. First, general information about previously-run defragmentation job is shown in the Log tab within the Diskeeper console. Additional information can also be stored in a log file. A wide variety of information can be saved for future reference.

Simultaneous Analysis or Defragmentation Operations — You can analyze and/or defragment more than one disk volume at a time. Different Diskkeeper editions support different numbers of simultaneous operations. See *Appendix A* for more information.

Command Line Operation — You can use commands from the Windows Command Prompt or a batch file to control Diskkeeper.

Group Policy Support — Diskkeeper can be configured network-wide with the Group Policy Editor provided with Windows 2000 Server and Windows Server 2003.

Chapter 5

Theory of Operation

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

Introduction

As described 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[®] (and later) computers or in a 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.
- 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, Diskeeper uses mechanisms built into the operating system that were developed and implemented by Diskeeper Corporation (then known as Executive Software), and fully incorporated into Windows 2000, Windows XP, Windows Server 2003, and Windows Vista™ by Microsoft.

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.

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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
- 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.

Performance

When running in the Automatic Defragmentation mode, Diskeeper is designed to run in the background, without adversely affecting performance of your Windows computer. The exclusive InvisiTasking technology ensures Diskeeper keeps your volumes at peak performance without negatively impacting system performance while it is running. Diskeeper was designed in such a way to ensure it will not interfere with other processes on your Windows computer.

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.

No Operator Intervention

In keeping with the design goals, after Diskeeper has been started in the Automatic Defragmentation 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

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

	Diskeeper 2008 Editions						
	Home	HomeServer	Professional	Pro Premier	Server	EnterpriseServer	Administrator
Defragmentation	✓	✓	✓	✓	✓	✓	N/A
Performance Analysis	✓	✓	✓	✓	✓	✓	N/A
Reliability Analysis	✓	✓	✓	✓	✓	✓	N/A
Fragmentation Analysis	✓	✓	✓	✓	✓	✓	N/A
Automatic Defragmentation	✓	✓	✓	✓	✓	✓	N/A
Boot-Time Defragmentation	✓	✓	✓	✓	✓	✓	N/A
Efficient Defragmentation of Large Files		✓	✓	✓	✓	✓	N/A
Comprehensive Defragmentation		✓	✓	✓	✓	✓	N/A
Improved Free Space Consolidation		✓	✓	✓	✓	✓	N/A
Exclusion List	✓	✓	✓	✓	✓	✓	N/A
Event Logging	✓	✓	✓	✓	✓	✓	N/A
Adjustable Priority		✓	✓	✓	✓	✓	N/A
I/O Smart (Disk I/O Throttling)	✓	✓	✓	✓	✓	✓	N/A
Frag Shield 2.0 Paging File and MFT Maintenance		✓	✓	✓	✓	✓	N/A
I-FAAST 2.0 (Intelligent File Access Acceleration Technology)				✓	✓	✓	N/A
Command Line Interface		✓	✓	✓	✓	✓	N/A
Maximum Single Volume Size Supported	768 GB	No limit	768 GB	2 TB	2 TB	No limit	N/A
Total Disk Space Supported (all volumes)	No limit	No limit	No limit	No limit	No limit	No limit	N/A
Terabyte Volume Engine (TVE 2.0)						✓	N/A
64-bit Processor Compatible	✓	✓	✓	✓	✓	✓	N/A
Support for 64-bit Operating Systems		✓	✓	✓	✓	✓	N/A
Allows Control by Diskeeper Administrator		✓	✓	✓	✓	✓	N/A
Group Policy Support		✓	✓	✓	✓	✓	N/A
Remote Control of Local Diskeeper Editions							✓

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This table shows the different Diskeeper editions available and the Windows operating systems they support:

	Diskeeper 2008 Editions						
	Home	HomeServer	Professional	Pro Premier	Server	EnterpriseServer	Administrator
Windows 2000 Professional	✓		✓	✓			✓
Windows XP Home	✓		✓	✓			
Windows XP Tablet PC	✓		✓	✓			
Windows XP Media Center	✓		✓	✓			
Windows XP Professional	✓		✓	✓			✓
Windows XP Professional for x64			✓	✓			
Windows Vista Home Basic	✓		✓	✓			
Windows Vista Home Premium	✓		✓	✓			
Windows Vista Ultimate	✓		✓	✓			✓
Windows Vista Business			✓	✓			✓
Windows Vista Enterprise			✓	✓			✓
Windows Vista Home Basic x64			✓	✓			
Windows Vista Home Premium x64			✓	✓			
Windows Vista Ultimate x64			✓	✓			✓
Windows Vista Business x64			✓	✓			✓
Windows Vista Enterprise x64			✓	✓			✓
Windows 2000 Server					✓	✓	✓
Windows Server 2003 Web					✓	✓	
Windows Server 2003 Standard					✓	✓	✓
Windows Server 2003 Standard for x64					✓	✓	✓
Windows Server 2003 Enterprise					✓	✓	✓
Windows Server 2003 Enterprise for x64					✓	✓	✓
Windows Server 2003 Enterprise (Itanium)						✓	
Windows Home Server (2003)		✓					
Windows 2000 Advanced Server					✓	✓	✓
Windows 2000 Datacenter Server						✓	
Windows Server 2003 Datacenter Server						✓	
Windows Server 2003 Datacenter Server (Itanium)						✓	
Windows Storage Server 2003					✓	✓	
Windows Server 2003 w/Server Appliance Kit					✓	✓	
Windows 2000 w/Server Appliance Kit					✓	✓	

* Diskeeper Administrator installs and runs only in "compatibility mode" on x64 systems

Appendix B

Answers to Frequently Asked Questions

The list of Frequently Asked Questions (FAQs) about Diskeeper Administrator is updated periodically. For the most current list, visit the Diskeeper Corporation website at www.diskeeper.com/support/support.asp.

Appendix C

Menu Options

The following options are available from the Diskeeper Administrator menu bar:

File Menu

- **Open Report** — Opens a saved Diskeeper Administrator report
- **Exit** — Closes the Diskeeper Administrator interface and exits the program

View Menu

- **Toolbar** — Toggles the Diskeeper Administrator toolbar on and off

Getting Started Menu

- **Diskeeper Administrator Task Overview** — Opens the Diskeeper Administrator Task Overview page in the console, providing quick access to the most common Diskeeper Administrator tasks.
- **Diskeeper 2008 Administrator Overview** — Opens the Diskeeper Administrator Task Overview page in the console, and also launches the Diskeeper Administrator help, displaying an overview of the Diskeeper Administrator features.
- **Frequently Asked Questions** — Launches the Frequently Asked Questions topic in the Diskeeper Administrator help, providing a direct link to the Diskeeper Corporation website for the latest questions and their answers.
- **Help** — Launches the Diskeeper Administrator help.

Manage Diskeeper Menu

- **Manage Diskeeper Computers and Custom Groups** — Create and manage groups of computers on which to centrally manage Diskeeper via defragmentation policies.
- **Install and Uninstall Diskeeper** — Install and uninstall or update and upgrade Diskeeper on computers you select.
- **Configure Defragmentation Job Policies** — Use default or custom defragmentation policies to centrally manage Diskeeper across your network.
- **Manage Diskeeper Software Licensing** — Manage Diskeeper licenses applied to computers across your network.
- **Remote Control Diskeeper** — Connect to an individual computer and control Diskeeper on it as if you are sitting in front of that computer.

Reports and Alerts Menu

- **Reports** — Opens the Diskeeper Administrator Reports console.
- **Alerts** — Opens the Diskeeper Administrator Alerts console.

Job Queue Menu

- **Job Queue** — Opens the Diskeeper Administrator Job Queue.

Configuration Menu

- **Diskeeper Administrator Database Configuration Wizard** — Opens the Diskeeper Administrator Database Configuration Wizard, which guides you through configuring the database or reviewing the current configuration.
- **Diskeeper Administrator Properties** — Opens the Diskeeper Administrator Properties dialog, allowing access to properties such as updates, proxy and mail server settings, administrative permissions, and purging the Job Queue and Alert History.

Help Menu

- **Help Topics** — Opens the main Diskeeper Administrator help system
- **About Diskeeper Administrator** — Opens the Configure Diskeeper Administrator console, which shows the version and build numbers, as well as other pertinent contact information.

Appendix D

Troubleshooting

There are several situations that can cause Diskeeper Administrator to display error messages. This table shows Diskeeper Administrator error messages displayed, what can cause them, and how to resolve them.

In the event of an error message or other failure, select the affected computer and click **Show Error Details** in the Related Tasks pane for assistance with the error.

Error Message	Description	Solution
Computer is offline	The target computer is offline.	Ensure the computer is booted and connected to the network.
or Could not connect to the machine	Diskeeper is not installed on the target computer.	Install Diskeeper 9.0 build 505 or higher on the target computer.
	The target computer is running with a firewall enabled. This is especially common when the target computer is running Windows XP Service Pack 2.	A firewall (including 3rd party firewalls) may prevent Diskeeper Administrator from connecting to Diskeeper. If you are running Windows XP SP2, see www.diskeeper.com/sp2 for information about configuring the Windows XP SP2 firewall to be compatible with Diskeeper Administrator.
Incompatible Diskeeper version	The Diskeeper version on the remote computer is not compatible with Diskeeper 2008 Administrator.	The target computer must be running Diskeeper 9.0.505 or higher.
Operating System version not supported	The operating system on the target machine is not supported.	Refer to Appendix A to see the operating systems supported by Diskeeper.
Diskeeper is not installed	Diskeeper is not installed on the remote computer.	Use the Diskeeper Administrator PushInstall deployment option to install Diskeeper on the remote computer.
Access Denied	Access to the remote computer is denied with the specified user permissions.	Check to confirm the user account you specified in the Specify Permissions page is a member of the Administrators group.
	A firewall is preventing Diskeeper Administrator from communicating with Diskeeper.	A firewall (including 3rd party firewalls) may prevent Diskeeper Administrator from connecting to Diskeeper. If you are running Windows XP SP2, see www.diskeeper.com/sp2 for information about configuring the Windows XP SP2 firewall to be compatible with Diskeeper Administrator.

Error Message	Description	Solution
Access Denied (continued)	Local security policy is preventing communication between Diskeeper Administrator and Diskeeper.	Confirm that local security policies are set to allow local users to authenticate themselves. This setting is found at Administrative Tools Security Settings Local Policies Security Options Network access: Sharing and security model for local accounts. Confirm this policy is set to "Classic".
	User Account Control (UAC) on remote Windows Vista computers in a workgroup is enabled.	<p>Use Diskeeper Administrator from the "Administrator" account in order to deploy and manage Diskeeper on the workgroup computers. This is because under Windows Vista, default shares are disabled for any users other than "Administrator". Diskeeper Administrator relies on access to shares (i.e., Admin\$) in order to perform tasks such as software deployment.</p> <p>By default, the "Administrator" account is disabled on Windows Vista systems. This account must be enabled, and a password set for it in order for Diskeeper Administrator to manage the computer.</p> <p>Also note that when PushInstalling Diskeeper to workgroup computers running Windows Vista, you must use the "Administrator" account and login credentials.</p>
Machine offline or Diskeeper is not running	Diskeeper is not installed or is disabled.	Confirm Diskeeper is installed on the target computer and that the Diskeeper service is running.
	The computer is offline.	Ensure the computer is booted and connected to the network.
	A firewall is preventing Diskeeper Administrator from communicating with Diskeeper.	A firewall (including 3rd party firewalls) may prevent Diskeeper Administrator from connecting to Diskeeper. If you are running Windows XP SP2, see www.diskeeper.com/sp2 for information about configuring the Windows XP SP2 firewall to be compatible with Diskeeper Administrator.
	Unsupported Diskeeper version.	You must be running Diskeeper 9.0.505 or higher. If the correct version of Diskeeper is installed on the remote computer, make sure the Diskeeper service is running on the remote computer.
	Failure of the Remote Procedure Call (RPC) communication between Diskeeper Administrator and Diskeeper on a remote computer.	The required ports are not open on the target machine. See www.diskeeper.com/sp2 for complete information about the ports needed by Diskeeper Administrator and how to open them, and to download tools to automate the task.

Error Message	Description	Solution
This computer is being managed by another Diskeeper Administrator	This message is displayed if you attempt to manage a computer which is currently being managed by another instance of Diskeeper Administrator.	Remember you can take over management of the remote computer in the Manage Diskeeper Computers and Groups module of Diskeeper Administrator.
This computer was previously managed by another Diskeeper Administrator	This message is displayed when you take over management of a remote Diskeeper computer from another instance of Diskeeper Administrator.	No action needed.
Failed to start Setup.exe	This message is displayed during a PushInstall deployment when the Setup.exe file fails to start on the remote computer.	This is usually due to an error condition preventing the Diskeeper installation procedure from running on the remote computer. Check the Windows application event log on the remote computer for errors.

If you need assistance with any Diskeeper Administrator error messages, contact Diskeeper Corporation Technical Support as described in Appendix E of this manual.

Appendix E

Support Services

U.S., Asian and Latin American Support Services

Registered customers with Volume License Agreements are entitled to 90 days of free technical support, as well as special upgrade pricing, from Diskeeper Corporation.

Registered customers without Volume License Agreements, such as home users, home-based businesses and very small businesses, are entitled to 90 days of free e-mail technical support as well as special upgrade pricing, from Diskeeper Corporation.

If you have not yet registered your Diskeeper purchase, register your purchase online via our website at:

<http://diskeeper.com/register>

Technical support questions can be answered from the Technical Support section of our website at:

<http://diskeeper.com/support>

If you are a home or small business user, you should contact our technical support team at:

homesupport@diskeeper.com

You can also contact our technical support team by submitting e-mail to them directly from within our website at:

<http://diskeeper.com/supportrequest>

Or via fax at:

818-252-5514

If you are a registered Volume License Customer within your 90-day free support period (or you have purchased a support plan), you can call:

818-771-1600

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

Diskeeper Corporation's address is:

**Diskeeper Corporation
7590 North Glenoaks Boulevard
Burbank, California, USA 91504**

European Support Services

Registered customers with Volume License Agreements are entitled to 90 days of free technical support, as well as special upgrade pricing, from Diskeeper Corporation. Our free European technical support is available Monday through Friday during the first 90 days from 8:30 to 17:30.

Registered customers without Volume License Agreements, such as home users, home-based businesses and very small businesses, are entitled to 90 days of free e-mail technical support as well as special upgrade pricing, from Diskeeper Corporation.

If you have not yet registered your Diskeeper purchase, register your purchase online via our website at:

<http://diskeepereurope.com/register.htm>

Technical support questions can be answered from the Support section of our website at:

<http://diskeepereurope.com>

You can also contact our technical support team via e-mail at:

tech.support@diskeeper.co.uk

Or via fax at:

+44 (0) 1342-327390

If you are a registered Volume License Customer within your 90-day free support period (or you have purchased a support plan), you can call:

+44 (0) 1342-327477

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

Diskeeper Corporation's address is:

**Diskeeper Corporation
Kings House, Cantelupe Road
East Grinstead, West Sussex RH19 3BE
England**

Glossary

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.

ATA: Advanced Technology Attachment. One of several standard types of interfaces used to connect a disk drive and a computer. See also *PATA* and *SATA*.

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 *acher*, 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, Windows Server 2003, and Windows Vista) 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*.

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 Diskkeeper to keep track of and control defragmentation of disk volumes.

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*.

CPU priority: To further lessen the impact on a system when defragmenting, Diskkeeper provides five adjustable CPU Priority settings for Manual Defragmentation jobs. The default for Manual Defragmentation jobs is “Normal” which is the mid-level CPU base priority as assigned by the operating system.

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*.

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. Equivalent to *folder*.

directory consolidation: A Diskkeeper feature that gathers (almost) all directory entries on a volume into a single area on the disk, instead of scattered in many places. Directory consolidation requires sufficient contiguous free disk space into which the directories can be moved. This feature is available for Automatic, Manual, and Boot-Time Defragmentation operations.

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 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 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. Logged Diskeeper events can be viewed with the Event Viewer utility (in Administrative Tools.)

Event Viewer: A utility that is part of the Administrative Tools available in Windows, 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 Vista. FAT32 is supported on Windows Vista, Windows Server 2003, Windows XP, Windows 2000, Windows Me, Windows 98, and the later OSR 2 version of Windows 95; but not Windows NT.

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*.

folder: 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. Equivalent to *directory*.

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.

gigabyte: A measure of computer storage capacity equal to approximately a billion bytes. A gigabyte is two to the 30th power, or 1,073,741,824 bytes.

graphical user interface (GUI): Pronounced “gooley.” 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*.

I-FAAST: A Diskeeper exclusive, Intelligent File Access Acceleration Sequencing Technology (I-FAAST) improves file access and creation on NTFS volumes by up to 80% (average 10%-20%) above and beyond the improvement provided by defragmentation alone. This is the first industry implementation of “Disk Performance Calibration”, the modern evolution of the outdated and inconclusive disk optimization strategies of the past.

InvisiTasking: A proprietary technology developed by Diskeeper Corporation that carefully monitors resource consumption on a Windows computer system and injects Diskeeper processing into the unused portions—and *only* into the unused portions. InvisiTasking is so good that it is all but impossible to even detect whether Diskeeper is running.

I/O Smart: The Diskeeper I/O Smart feature intelligently monitors drive access during defragmentation to ensure top system speed. When this option is selected, Diskeeper will temporarily suspend defragmentation whenever other disk activity needs to occur (I/O throttling). This proprietary technology detects whether or not the disk is busy with other I/O requests and pauses defragmentation to eliminate any potential interference with user or system needs at the “disk” level.

IDE: Integrated Device Electronics. One of several 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 *ATA* and *SCSI*.

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. Windows maintains several log files that can be viewed with the Event Viewer.

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*.

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 98/Me, Windows NT, Windows 2000, Windows XP, Windows Server 2003, Windows Vista, and Windows Home Server 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 Diskkeeper. 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*.

NTFS: New Technology File System. A file system designed specifically for use with Windows NT, and carried into Windows 2000, Windows XP, Windows Server 2003, and Windows Vista.

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.

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*.

PATA: Parallel Advanced Technology Attachment. Originally called *ATA*, but retroactively renamed *PATA* with the introduction of Serial Advanced Technology Attachment (SATA) *interfaces*. One of several methods of interfacing disk drives and other devices to computers. See also *ATA*, *IDE*, *SATA* and *SCSI*.

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.

SATA: Serial Advanced Technology Attachment. A successor to *ATA* (which was later renamed *PATA*). One of several methods of interfacing disk drives and other devices to computers. See also *ATA*, *IDE*, *PATA* and *SCSI*.

SCSI: Small Computer System Interface. One of several methods of interfacing disk drives and other devices to computers. See also *ATA*, *IDE*, *PATA*, and *SATA*.

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 Diskeeper Corporation, 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). A Set It and Forget It product runs without further intervention or attention from the user or administrator.

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 less 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 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 Volume 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.

terabyte: A measure of computer storage capacity equal to 2 to the 40th power or approximately a thousand billion bytes (or a thousand gigabytes).

trialware: A free software package from Diskeeper Corporation, 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*, *Windows Server 2003* and *Windows Vista*.

Windows 2000: Originally named Windows NT 5.0, Windows 2000 is a family of operating systems for desktop computers and network servers, announced by Microsoft in 1998. Windows 2000 resembled Windows NT 4.0 and Windows 98, but had many enhancements and new features. Windows 2000 is available in several editions, ranging from Windows 2000 Professional to Windows 2000 Advanced Server.

Windows 95: A version of Microsoft Windows released in 1995. New features in Windows 95 with regard to its predecessor, Windows 3.1, included a new user interface and support for 32-bit applications.

Windows 98: Successor to the Windows 95 operating system, Windows 98 featured support for the FAT32 file system, greater Internet integration, and support for the latest (at the time) hardware developments.

Windows Home Server: Announced in 2007, a Microsoft operating system designed for home networks, offering easy-to-use file and printer sharing, remote administration, remote access, media streaming, and other home network administration features.

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 was 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 Vista: Previously known by the codename of “Longhorn”, Windows Vista is an operating system released by Microsoft in 2007 as the follow-up version to Windows XP. It has an updated graphical user interface as well as a number of other anticipated improvements. Windows Vista is available in a variety of editions for corporate and personal use.

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 2000, Windows XP, Windows Server 2003, or Windows Vista, 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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