

Encryption Plus[®] CD-ROM

Windows 95/98 and NT

Data Security for Notebooks & Desktops

Version 4.0
192-bit encryption

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Chapter One

INTRODUCTION

About PC Guardian

Founded in 1984, PC Guardian designs, develops, and markets two lines of computer security products in the USA and abroad. The product lines include:

- **Computer Anti-Theft.** Our anti-theft products provide strong protection against computer theft, unauthorized access to internal components, and unauthorized use of disk drives. Many of our anti-theft products also protect computer peripherals, LCD projectors, and video equipment.
- **Information Security.** We enhance information security through our award-winning Encryption Plus® software. Encryption Plus® software products encode and protect data on computer hard disks, folders, and files; on CD-ROMs or other removable media; in email messages and attachments; and over Internet or network transmissions.

PC Guardian's products are priced and designed to meet the needs of the commercial marketplace. Among PC Guardian's clients are over 400 of the Fortune 500 companies, major agencies of the U.S. government, branches of the U.S. military, and many major colleges and universities. PC Guardian has built a reputation for quality, service, and reliability which is evidenced by a loyal and repeat customer base in over 20 different countries.

Mission Statement

We are committed to being the market leader in building award-winning computer security products and solutions that incorporate the most advanced technology, are exceptionally easy-to-use and backed by extraordinary customer service.

About Encryption Plus® CD-ROM for Windows 95/98/NT

Encryption Plus® CD-ROM (EP CD-ROM) is an encryption application designed for organizations that create and distribute CD-ROMs containing proprietary information which requires protection against access by unauthorized persons.

Introduction

Using EP CD-ROM technology, the EP CD-ROM administrator can encrypt proprietary information, transfer this data to a CD-ROM, and then distribute the CD-ROM with full assurance that only authorized users will be able to access the protected data.

EP CD-ROM provides this state-of-the-art protection by implementing a compact, fast decryption engine on the user's workstation (Workstation Authentication) or directly on a CD-ROM (CD-ROM Authentication or Remote Activation). This "smart" EP CD-ROM decryption engine gives only those users with the correct password the ability to read the encrypted CD-ROM data. The decryption is on-the-fly and transparent to the user.

When data is encrypted with EP CD-ROM, users can still read the directory and file names. However, the directory and files can only be opened and viewed by the authorized user.

Not all files on a CD-ROM have to be encrypted. EP CD-ROM "smart" decryption engine identifies which files have been encrypted and decrypts them for the authorized user.

Need Help?

EP CD-ROM has been designed to be installed and administered by any individual having some familiarity with basic Windows 95/98/NT operation. Advanced computer knowledge is not required. Users will find EP CD-ROM's menu intuitive and easy to use.

PC Guardian encourages individuals evaluating EP CD-ROM to call our technical support line with any questions or for a personal walk-through of the EP CD-ROM installation process, if desired. We always look forward to explaining our products to interested users. Contact us for further information.

System Requirements

EP CD-ROM system requirements are the same as those required to support a standard Windows 95/98/NT configuration. If your computer is running Windows 95/98/NT applications now, you should have no problems using EP CD-ROM.

Five MB of hard disk space is required on the administrator's workstation. Memory requirements are the same as those required to run Windows 95/98 or Windows NT.

Chapter Two

OVERVIEW

EP CD-ROM Implementation Overview

The installation and implementation of EP CD-ROM takes place as follows:

Step One: Install EP CD-ROM Administrator.

Install EP CD-ROM Administrator program and select Settings to enter your Privacy Code and Master Password.

Step Two: Encrypt data files.

At the EP CD-ROM Administration Main menu, select Encrypt File/Directory. Create or designate a Target Folder and select the files or folders that you would like to encrypt. You will transfer these files to a CD-ROM in Step Four.

Step Three: Select an Authentication Option and Create User Install Program Files.

At the EP CD-ROM Administration Main menu, select Create User Install. The User Install program gives the authorized user a way to access the protected data on a CD-ROM. Once the user is authenticated, EP CD-ROM will load a decryption engine that will decrypt files on the CD-ROM as they are accessed.

You may select from the following User Installations:

CD-ROM Authentication

Requires a password each time a user tries to access the EP CD-ROM-protected CD. The protected CD-ROM can be accessed from any workstation with the correct password. The administrator also has the option of setting an expiration date for the password.

Remote Activation

Provides a challenge-response mechanism for remote users to access an EP CD-ROM-protected CD-ROM. Once activated, the user will always be able to access the CD-ROM from the workstation on which it was originally run.

Overview

Workstation Authentication

Creates a user install program that can be installed on a workstation. Once installed, the user has access to EP CD-ROM-protected CDs only from that particular workstation. The Administrator may also require the user to enter a password during logon to the protected workstation in order to have access to EP CD-ROM-protected CDs.

Step Four: Prepare CD-ROM and User Install.

If you have selected CD-ROM Authentication or Remote Activation User Install, you will transfer the encrypted data and the User Install program files to a CD-ROM.

If you have selected Workstation Authentication User Install, you will distribute the Workstation Authentication program files to users for installation on their workstations. You will also copy or transfer the EP CD-ROM-protected files to a CD-ROM.

You may then distribute protected CD-ROMs (and Workstation Authentication User Install program files, if applicable) to users.

In addition, if you have chosen Remote Activation, you will need to distribute the Remote Activation Program files to your support desk personnel so that they may generate activation codes for users.

Chapter Three

EP CD-ROM ADMINISTRATION

Installing the Administrator Program

To install the EP CD-ROM program files on the administrator's workstation:

1. Make sure that you have 5 MB of space on your hard drive.
2. Insert your EP CD-ROM program CD into the CD-ROM drive.
3. From the Windows Start menu, select Run.
4. Type in [x]:\setup.exe and click OK (where [x] is the drive letter of your CD-ROM drive).
5. This will run the setup program. Follow the setup directions, clicking Next and Start Install to install the program.
6. When the installation is complete, click OK. You will be able to access EP CD-ROM through the Start menu.

Note: The EP CD-ROM Administrator Program cannot be installed on a removable drive.

EP CD-ROM Main Menu

To begin using the program, find the EP CD-ROM icon in the Start menu by choosing Start>Programs>PC Guardian>EP CD-ROM.



Settings

1. At the EP CD-ROM Administration Main menu, click Settings.

The screenshot shows a dialog box titled "Encryption Plus® CD-ROM - Settings". It contains two sections: "Privacy Code" and "Master Password". Each section has a text box for the code/password, a "Change" checkbox, and a description of the requirements. The "Privacy Code" section states it must be exactly 24 characters in length and is case-sensitive. The "Master Password" section states it must be 6 - 24 characters in length and is case sensitive. At the bottom of the dialog are three buttons: "Save", "Cancel", and "Help".

Encryption Plus® CD-ROM - Settings

Privacy Code
The Privacy Code is required for encryption. It must be exactly 24 characters in length and is case-sensitive.
☐ Change Privacy Code
Privacy Code:

Master Password
The Master Password is required for you to access the EPCDROM Administration application. It must be 6 - 24 characters in length and is case sensitive.
☐ Change Master Password
Master Password:

2. Enter a 24 character Privacy Code.
3. Enter a 6–24 character Master Password.
4. Click Save. A screen will prompt you to confirm both your Privacy Code and Master Password.

Privacy Code or Master Password Changes

To change the Privacy Code or Master Password:

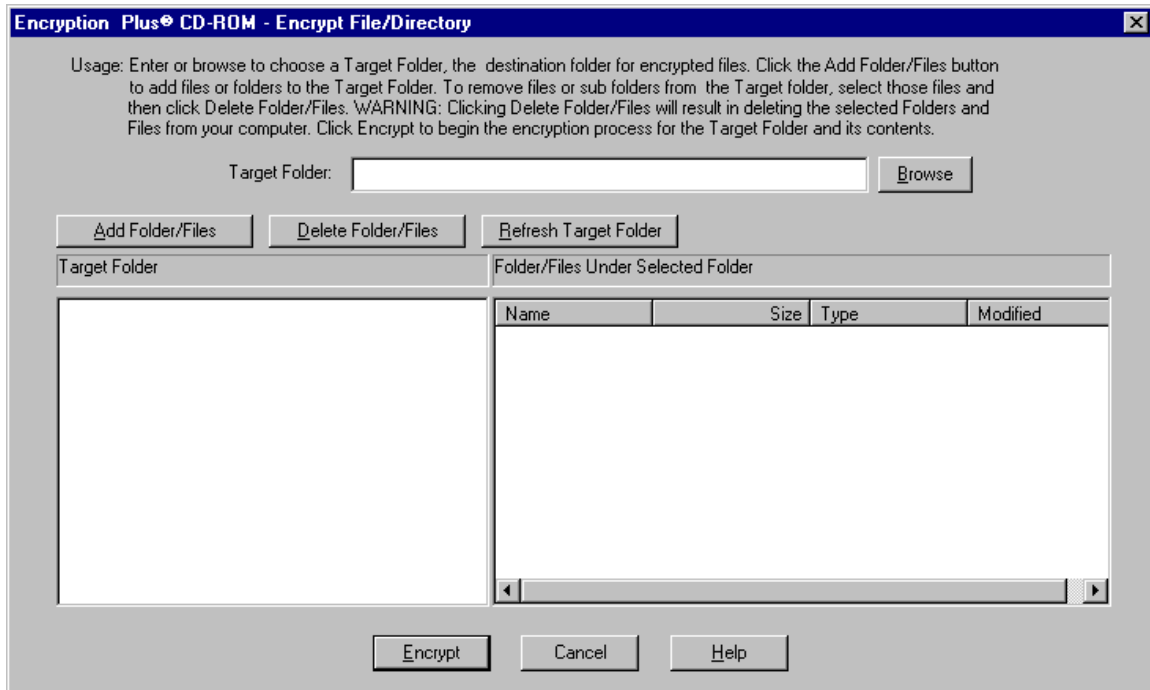
1. Click the appropriate check box.
2. The text box will change from gray to white. Enter the new password(s) and click Save.
3. A screen will prompt you to verify the new password.

Note: If you change the Privacy Code, you will also be prompted to update and verify the User Password. You can re-enter the existing User Password or enter a new User Password.

4. After you have verified your password(s) click Save again to return to the Main menu.

Encrypt File/Directory

1. At the EP CD-ROM Administration Main menu, select Encrypt File/Directory.



2. Enter or browse to the full path of Target Folder. **This is the folder that will be encrypted.** The OK button will be disabled if you have chosen an invalid folder, such as a root drive or system folders.

Tip: If you do not want to encrypt your existing folders, you can make a copy of them. In order to do this, follow the steps in Creating a Target Folder Method 1 or Method 2.
3. Enter or browse to the path of the files you want to encrypt. If the files are not already in the Target Folder when you select them, they will be copied into it.

Creating a Target Folder—Method 1

1. Create a new folder in Windows Explorer by either selecting File> New>Folder or right-clicking and choosing New>Folder.
2. If the EP CD-ROM administrator program is not already running, open it from the Start menu. At the Main menu, click Encrypt File/Directory.
3. Click Browse, find the folder you just created, and click OK. This will be your Target Folder.
4. Click Add Folder/Files and select the folders or files you want to add to the Target Folder that you created in Windows Explorer.
5. Click OK. The selected file(s) and/or folder(s) will be copied to the new Target

Administration

4. Click the Encrypt button to encrypt the Target Folder selected in Step 2.

Note: You may not select a drive's root directory for encryption.

If for some reason EP CD-ROM cannot encrypt a file or files, or the data has already been encrypted, you will receive an error message. All errors are logged to a text file titled enerror.log. This file is stored within the EP CD-ROM directory and can be viewed with any text editor.

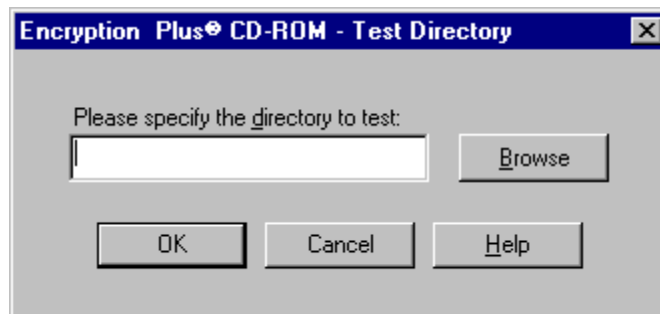
Creating a Target Folder—Method 2

1. If the EP CD-ROM administrator program is not already running, open it from the Start menu. At the Main menu, click Encrypt File/Directory.
2. Type the desired drive letter and a new folder name in the Target Folder text box. Click Refresh Target Folder.
3. A message box will appear saying that the Target Folder does not exist. Click Yes to create a new folder.
4. Click Add Folder/Files and select the files and/or folders you want to add to the newly created Target Folder.
5. Click OK. The selected folder(s) will be copied to the new Target Folder.

Test Directory

This function provides you with a way to verify that your files have been correctly encrypted.

1. At the EP CD-ROM Administration Main menu, select Test Directory.



2. Enter the full path or browse to the location of the directory (Target Folder) you selected for encryption. Select OK. EP CD-ROM will test your encrypted directory for errors. If an invalid folder has been chosen, such as a root drive other than the floppy diskette drive, the OK button will be disabled.
3. If errors are detected, EP CD-ROM will generate an eptest.log file. The log will be stored in the EP CD-ROM Administrator Program folder if you choose to review it later. The eptest.log can be opened with any text editor.

Decrypt File/Directory

1. At the EP CD-ROM Administration Main menu, select Decrypt File/Directory.



2. Enter or browse to the path of the files you want to decrypt. Click OK to decrypt your data files. If you have chosen an invalid folder, such as a root drive other than the floppy diskette drive, the OK button will be disabled.

Note: Make sure that your Settings are the same as when you originally encrypted your files. If for some reason EP CD-ROM cannot decrypt a file or files, or the files were never encrypted, you will receive an error message. All errors are logged to a text file titled `enerror.log`. This file is stored within the EP CD-ROM directory and can be viewed with any text editor.

Create User Install

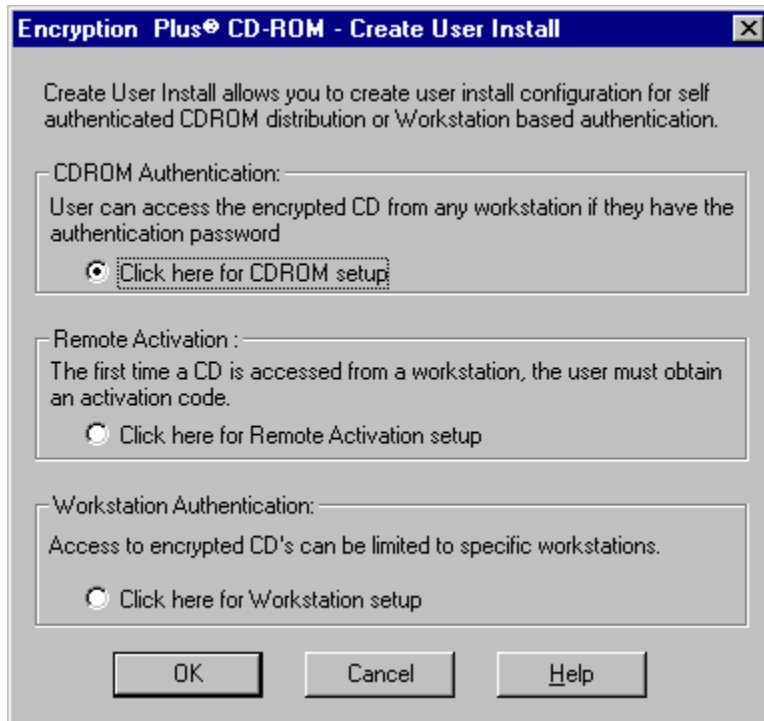
The User Install is a set of program files that authenticate the user or the user's workstation so that the encrypted CD-ROMs can be read. The authentication is achieved when the user enters a password or activation code.

EP CD-ROM allows you to create three different types of User Installs:

- CD-ROM Authentication
- Remote Activation
- Workstation Authentication

Administration

At the EP CD-ROM Administration Main menu, select Create User Install and click OK.



When creating the User Install, you will be asked to select the destination to which the User Install program files should be copied. For CD-ROM Authentication and Remote Activation, you will eventually need to include the User Install program files on the encrypted CD.

Administration

CD-ROM Authentication

With CD-ROM Authentication, the user must enter a password to access encrypted data on a CD-ROM. The protected CD-ROM can be logged into from any workstation because the User Install program resides on the CD-ROM. The User Install program is not installed on the workstation.

Note: The User Install files must be transferred to the root directory of the CD-ROM in order for automang.exe to activate when the CD-ROM is placed in the workstation's CD-ROM drive.

The screenshot shows a Windows-style dialog box titled "Encryption Plus® CD-ROM - CDROM Authentication Setup". It contains three main sections: "Destination" with a text field and a "Browse" button; "Access Password" with instructions, radio buttons for "Yes" and "No" (with "No" selected), and a "User Access Password" field; and "Expiration Information" with radio buttons for "Yes" and "No" (with "No" selected) and an "Expiration date" field showing "9/15/00 10:46:05 AM". At the bottom are "OK", "Cancel", and "Help" buttons.

Complete the following steps to create the CD-ROM Authentication User Install program.

1. Enter the full path and name for the destination to which you want to copy the CD-ROM Authentication User Install program files. Any root drive except for the floppy diskette drive is an invalid folder. If you select an invalid installation folder, the OK button will be disabled.

Reminder: The User Install program and encrypted data files must be transferred to the root directory of the CD-ROM in order for the user authentication (automang.exe) to activate when the CD-ROM is placed in the workstation's CD-ROM drive. A required autorun.inf is also created and must be transferred to the CD-ROM.

2. Enter the CD-ROM access password. This required password must be entered by the user in order to access the CD-ROM. The password must be 5-23 characters and is case sensitive.

Note: You may change the User Password at any time by clicking the Yes option button.

Encryption Plus® CD-ROM

Administration

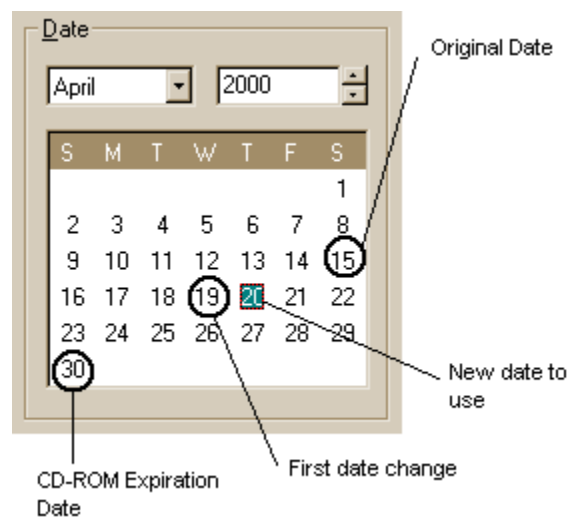
3. Set an expiration date for the access password, if desired. EP CD-ROM will prompt you to change the date if the date has already passed or if the expiration date is less than one week from the current date.

Note: If a user attempts to bypass the expiration date by changing the system date or sets the system date forward for some reason, the following error message will appear:

Encryption Plus® for CD-ROM has detected that your PC system time was changed. Resetting the system time back to the current date will not re-enable this CD. You must contact the creator of this CD for assistance.

EP CD-ROM will deny further access to the protected CD-ROM. This error happens when the authentication program detects a change in the system date. The system date can be adjusted; however, it must be changed back to the original date before starting EP CD-ROM.

If the system date was changed forward to a future date, in order for the user to regain access to the CD-ROM, the date must be changed to at least a day after the future date. For example, if you have a CD-ROM that expires on April 30 and on April 15 you changed the date forward to April 19 and started EP CD-ROM, the next time the program is accessed, the system date must be April 20 or later.

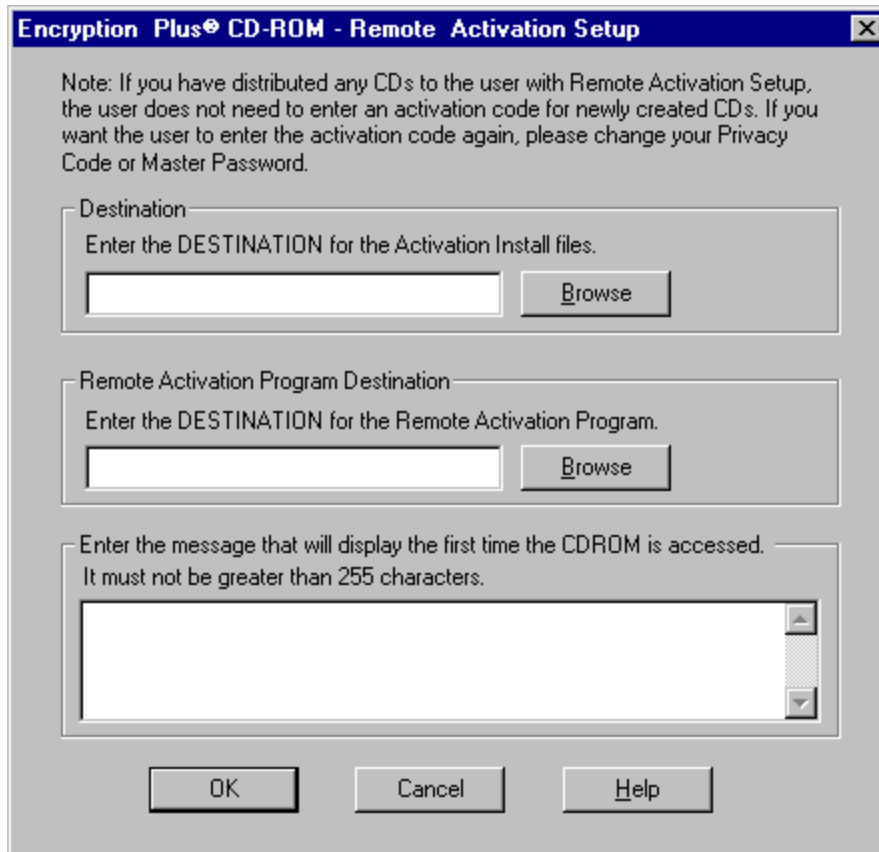


If changing the date forward does not resolve the problem, PC Guardian Technical Support can provide you with a utility program.

Remote Activation

With Remote Activation, the user will be directed to request an activation key that, when entered correctly, will allow access to the protected CD-ROM. Once the user successfully accesses the protected CD-ROM, access from that workstation will be ongoing. If the user attempts to use the protected CD-ROM at another workstation, a new activation key must be obtained.

Administration



Complete the following steps to create the Remote Activation User Install program.

1. Enter the full path and name for the destination to which you want to copy the Remote Activation User Install program files. Any root drive except for the floppy diskette drive is an invalid folder. If you select an invalid installation folder, the OK button will be disabled.

Reminder: The User Install program and encrypted data files must be transferred to the root directory of the CD-ROM in order for the user authentication program (`automang.exe`) to activate when the CD-ROM is placed in the workstation's CD-ROM drive. A required `autorun.inf` is also created and must be transferred to the CD-ROM.

Remote Activation Program

The Remote Activation Program is created when the EP CD-ROM administrator selects Remote Activation User Install. It consists of two files: `winactiv.exe` and `remactiv.exe`.

winactiv.exe is a Windows-based program that is used by the EP CD-ROM Administrator or help desk to return a remote activation code to a user.

remactiv.exe is a DOS-based program that can be incorporated into a web site script or used by another method to return a remote activation code to a user.

2. Enter the destination for the Remote Activation Program. This is the program that will return an activation key to a user who has supplied an authentication code. This program is

Administration

typically created and saved to the administrator's hard drive and then incorporated into a help desk procedure or into a web site script.

3. Enter the message that will display the first time the CD-ROM is accessed. You may direct the user to a help desk phone number or to a specific web site to obtain an activation key.
4. When a user runs a CD-ROM protected with Remote Activation, a logon screen will provide the user with a one-time challenge key.
5. The user relays this key to the EP CD-ROM Administrator, who then generates the Administrator Activation Code. The administrator provides the user with the code to enter in the Authentication Process screen. Alternatively, a web site may be used to return a code to the user.
6. Once the activation code is entered in the Authentication Process screen, the user will subsequently be able to access the CD-ROM every time without re-entering a password by double-clicking on automang.exe.

Note: If you create other CD-ROMs with the same Privacy Code and Master Password, users will be able to access them without obtaining any additional activation codes. If you would like to require users to enter an activation code again, change your Master Password or Privacy Code and create a new User Install Program.

Administrator Activation Code

administrator runs winactiv.exe, enters the user's challenge key into the corresponding text box, and clicks Generate.

activation code is generated. The administrator supplies this code to the user. The user enters the activation code, clicks OK, and the decryption engine is loaded.

reafter, the user will always be able to run the protected CD-ROM at the workstation where it was originally authenticated. If the user wishes to change workstations, the remote activation process will need to be repeated.

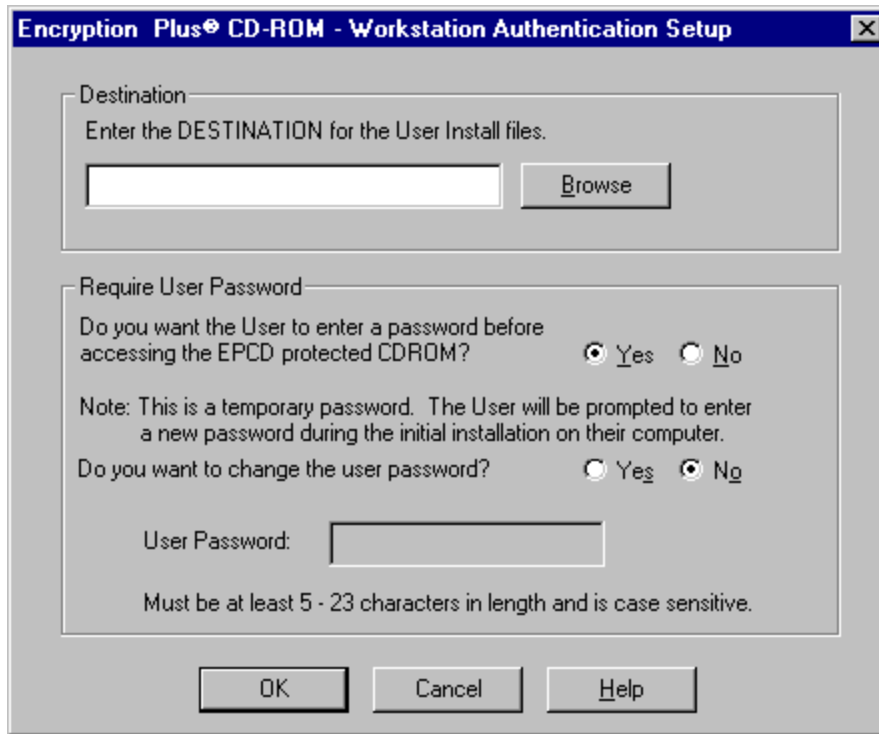
Workstation Authentication

With Workstation Authentication, you create a User Install program that will reside on a workstation. After installation, the user will be able to read any protected CD-ROMs you have created with the same Privacy Code and Master Password that you used when you created the User Install program.

You may also select a network drive for the Workstation Authentication User Install program files so that it can be run on many computers.

Note: First-time access to a protected CD-ROM on a Windows NT workstation must be made by a Windows NT Administrator. Once a Windows NT administrator has initialized the CD-ROM, other users may access encrypted data with the correct password.

Administration



Complete the following steps to create the Workstation Authentication User Install program.

1. Enter the full path and name of the destination to which you want to transfer the Workstation Authentication User Install program files. Any root drive except for the floppy diskette drive is an invalid folder. If you select an invalid installation folder, the OK button will be disabled.

This User Install contains a `setup.exe` file, which must be executed on a workstation before protected CD-ROMs can be read at that workstation.

Note: The destination for the Workstation Authentication User Install files is typically a floppy disk drive. Once you have created the User Install on a floppy disk, then you may copy the disk for distribution to users. Each disk may only be used once; when the `setup.exe` is executed, the floppy disk program files will be initialized with information from the user's workstation. Thereafter, the User Install program files on the floppy disk cannot be used on a different workstation.

2. Choose whether or not to require a User Password.

If you select yes: the user will be required to enter a password during logon to the protected workstation in order to access the protected CD-ROMs. The password must be at least five characters and is case-sensitive. Users will be prompted to change the password the first time they access the workstation.

Note: If you want to change the User Password at any time, click the Yes option button.

3. After the Workstation Authentication User Install has been executed on a user's computer, the user will be able to access protected CD-ROMs. If you have chosen to require a user password, then the user must first enter a password before attempting to access a protected CD-ROM
4. If no user password is required, the user will not need to be authenticated before accessing the protected CD-ROM. This means that anyone with access to the computer can read a protected CD-ROM as long as it was encrypted using the same Master Password and Privacy Code..

Installing the User Program

If you selected the **Workstation Authentication** option as the User Install method, users will be installing the program files on their workstations from a diskette drive or network drive.

Note: First time installation of the Workstation Authentication program on Windows NT requires a Windows NT Administrator log on. This administrator log on is only required for the initial run of the Workstation Authentication program on the user's workstation.

1. You must have access to the Workstation Authentication User Install program created by the EP CD-ROM administrator. In addition, if the administrator has chosen to require an access password, you will need access to the temporary password assigned by the administrator.
2. If the User Install program is on a diskette, click Start and then Run. Type in A:\setup.exe from the EP CD-ROM Program Disk. If the User Install program has been copied to a network drive, at the Windows desktop, click Start and then Run. Browse to the appropriate path for the EP CD-ROM setup.exe file.
3. The setup program will create a folder on your workstation and copy files into this directory. You will receive a confirmation message when the install is completed.
4. After you have installed the Workstation Authentication program, we recommend that you restart your computer. If the Administrator has required that you enter a password to access encrypted CD-ROMs, you will be prompted to enter the temporary password. Then you will be prompted to enter your own, personalized password. You will need to enter this password each time you restart your system. After you have entered the correct password, the Workstation Authentication program will load the EP CD-ROM decryption engine.
5. After the EP CD-ROM decryption engine has loaded, a message will appear informing you that the EP CD-ROM protected CD is now accessible.

To Uninstall EP CD-ROM

EP CD-ROM can be removed from the administrator's or user's workstation using standard Windows Add/Remove procedures.

1. From the Windows Desktop, click Start>Settings>Control Panel.
2. At the Control Panel window, double-click on Add/Remove Programs.
3. At the Add/Remove Programs Properties window in the Install/Uninstall Tab, select Encryption Plus for CD-ROM. Click Add/Remove. This will automatically remove the program files and directory from your workstation. Click OK when the process is complete.

Chapter Four

EP CD-ROM QUICK TEST

This section is for those who are concerned about compatibility of their files with the EP CD-ROM encryption process. Using the Step-By-Step Guide will familiarize you with basic EP CD-ROM operations and Authentication Options, and provide a platform on which all common EP CD-ROM functions can be quickly tested.

A Step-by-Step Guide For Quickly Testing EP CD-ROM

To expedite this Quick Test, you will be using a floppy disk rather than a CD-ROM. However, the same procedures apply to creating a CD-ROM. These steps assume that you have previously installed EP CD-ROM and have set your Privacy Code and Master Password.

Prepare for your test

1. In Windows Explorer, create a test directory called C:\EP CD-ROM Test.
2. Copy some files into this test directory. Include samples of the type of files you will be encrypting and distributing on a CD-ROM. Because you will be copying these files and the User Install Program to a floppy disk, your test files should total 700 KB or less.
3. Have blank, formatted floppy disks available.

Encrypt your test data

1. From the EP CD-ROM Administration Main menu screen, select Encrypt File/Directory.
2. Browse to your test directory as the Target Folder and click OK.
3. Select Encrypt to encrypt the files in your test directory. A message will appear stating that the encryption has been successfully completed.

Quick Test

Test your directory of encrypted files

1. From the EP CD-ROM Administration Menu screen, select Test Directory.
2. Using the browser, locate your test directory and click OK.
3. Click OK again to start the directory test. If successful, a message will prompt you that no errors were found or the eptest.log will report any errors.

CD-ROM Authentication

Creating the User Install Disk

1. Label a blank, formatted floppy disk *CD-ROM Authentication Test*.
2. If you have previously tested another authentication option on your workstation and the EP CD-ROM decryption engine is currently loaded, you will need to unload the engine. To do so, right-click on the EP CD-ROM icon in the status area and select Close. This will unload the active decryption engine from your system. If you have not previously tested another authentication option, skip directly to Step 3.
3. From the EP CD-ROM Administration Menu screen, select Create User Install.
4. At the Create User Install menu, select Setup and click OK.
5. When prompted to enter the location where the User Install program files should be copied, use the Browse button to locate your floppy diskette drive. Click OK.
6. Enter an Access Password. This password must be at least 5-23 characters and is case sensitive.
7. If you would like to set an expiration date, click Yes and type in an expiration date.
8. When all boxes are complete, click OK.
9. You will be asked to verify the user password. Re-enter the password and click OK.
10. Click OK and program files will be copied into your test directory. When completed, the screen will verify that the CD-ROM install files have been successfully copied. Click OK.
11. Copy all the files in your test directory to your CD-ROM Authentication Test disk.

Quick Test

Testing the CD-ROM Authentication Test Disk

Note: If you are testing on the administrator's workstation, be sure to terminate the EP CD-ROM Administration application before proceeding with the following test. If you are testing on a Windows NT system, you will need to be logged on as an NT Administrator for first-time access to the encrypted CD-ROM.

1. Insert your CD-ROM Authentication Test disk into the floppy drive. In your Windows browser, double-click on one of the encrypted files to verify that it is not yet accessible.
2. From your Windows browser, double-click on the file a:\automang.exe. This will run the encryption/decryption engine. If using a CD-ROM, this engine will run automatically after inserting the CD-ROM into your CD-ROM drive.
3. At the prompt, enter your Access Password and click OK.
4. A message will confirm that your encryption engine was loaded successfully and your CD-ROM is now accessible. Click OK.
5. From Windows Explorer, locate the test files on your floppy disk.
6. Double-click on one of your encrypted files. You should now be able to access your files.

Workstation Authentication

Note: Though the user install can be tested from a floppy disk, the encrypted data must be burned on to a CD-ROM to fully test this authentication option.

Creating the User Install Disk

1. Label a blank, formatted floppy disk *Workstation Install Disk*.
2. If you have previously tested another authentication option on your workstation and the EP CD-ROM decryption engine is currently loaded, you will need to unload the engine. To do so, right-click on the EP CD-ROM icon in the status area and select Close. This will unload the active decryption engine from your system. If you have not previously tested another authentication option, skip directly to Step 3.
3. From the EP CD-ROM Administration Main menu, select Create User Install.
4. At the Create User Install menu, select Click Here for Workstation Setup and click OK.
5. At the Destination box, enter or browse to the floppy diskette drive and click OK.
6. If you'd like to set a workstation password, click Yes and enter a password that is at least five characters and then click OK. The password is case sensitive.
7. Verify your password as prompted and click OK.
8. Click OK on the Setup screen to copy the files and OK again to confirm the destination.

Quick Test

9. When the copy is complete, the screen will indicate that the user disk has been successfully created. Click OK.
10. Copy all the encrypted files from your test directory to a CD-ROM

Testing the Workstation Authentication CD-ROM

Note: If you are testing on the Administrator's workstation, be sure to terminate the administration application before proceeding with the following test.

1. Insert the Workstation Install Disk into the floppy disk drive. From Windows Explorer, select drive A:\ and double-click on the setup.exe icon to install the program. Follow the on-screen directions to complete the installation.
2. Insert the CD-ROM containing the encrypted files into your CD-ROM drive.
3. From the Start menu, select Programs>PC Guardian>Encryption Plus for CD-ROM User.
4. EP CD-ROM will prompt you for the workstation password. Enter the password and click OK.
5. From Windows Explorer, locate the test files on your CD-ROM.
6. Double-click on one of your encrypted files. You should now be able to access all the files.

Remote Activation

Creating the User Install Disk

1. Label a blank, formatted floppy disk *EP CD-ROM Remote Activation Test*.
2. If you have previously tested another authentication option on your workstation and the EP CD-ROM decryption engine is currently loaded, you will need to unload the engine. To do so, right-click on the EP CD-ROM icon in the status area and select Close. This will unload the active decryption engine from your system. If you have not previously tested another authentication option, skip directly to Step 3.
3. Create a new directory on your hard disk called C:\Remote. You will copy the Remote Activation program files to this location. These are the files the EP CD-ROM administrator or other personnel will use to generate and return activation codes to users.
4. From the EP CD-ROM Administration Main menu screen, select Create User Install.
5. At the Create User Install menu, select Click Here for Remote Activation Setup and click OK.
6. Use the Browse button or type A:\ to select the floppy disk drive in the box labeled Destination for the Activation Install Files and click OK.
7. Type C:\Remote in the box labeled Remote Activation Program Destination. This will create a directory on your hard drive and copy the Remote Activation Program files to this directory.

Quick Test

8. Though it is not necessary for the purpose of this test, the last box is where you would type in a message that would be displayed the first time a user accesses the CD-ROM. Click OK.
9. The Copy Files window will confirm the location of the files again for both the Activation Install and the Remote Activation Program. Click OK.
10. When the program confirms that the files have been successfully copied, copy the EP CD-ROM Test directory to your EP CD-ROM Remote Activation Test disk. You will not be able to read these files until you run the User Install program files.

Testing the Remote Activation Test Disk

Note: If you are testing on the administrator's workstation, be sure to close the Administration program before proceeding with the following test.

1. Insert your EP CD-ROM Remote Activation Test disk into the floppy drive. In Windows Explorer, double-click on one of your files to verify that you cannot yet read the encrypted files on your EP CD-ROM Remote Activation Test disk.
2. From Windows Explorer, double-click on the file A:\automang.exe. This will run the Authentication Process Screen that displays your customized message, a One Time Challenge Key, and prompts you for an Activation Code.
3. To simulate the generation of an activation code from Windows Explorer, double-click on the file C:\Remote\Winactiv.exe.
4. This will run the Remote Activation Program. Enter the 24-character key from the Authentication screen and click Generate to produce an activation code.

Tip: You can copy the key from the Authentication screen (CTRL+C) and paste it into the Remote Activation screen (CTRL+V).

5. Enter the activation code in the Authentication screen and click OK. A message will confirm that the encryption engine was loaded successfully. Click OK.
6. From Windows Explorer, locate the test files on your floppy diskette.
7. Double-click on one of your encrypted files. You should be able to view the now decrypted files.

Chapter Five

REFERENCE

EP CD-ROM Glossary

CD-ROM Authentication

A User Install option selected by the administrator. CD-ROM Authentication requires a user password to decrypt the files on an EP CD-ROM-protected CD-ROM. The protected CD-ROM can be accessed from any workstation with the correct password. With this user install, the administrator also has the option to set an expiration date for the password authentication, which will not allow the user to access the EP CD-ROM-protected CD-ROM after a certain date.

EP CD-ROM

This refers to Encryption Plus® CD-ROM.

EP CD-ROM Administrator

This is the person installing the EP CD-ROM Administration program and creating the encrypted CD-ROM. The EP CD-ROM administrator makes administrative decisions about the setup of the encrypted data and the User Install authentication method.

Master Password

The Master Password must be entered by the EP CD-ROM Administrator each time the EP CD-ROM Administrator program is executed. This ensures that only the administrator has access to the EP CD-ROM Administration program. This value must be 6–24 characters in length and is case sensitive.

Privacy Code

The Privacy Code is a key used in the encryption/decryption process. This value must be 24 characters in length and is case sensitive.

Note: Once the Privacy Code is set, any time it is subsequently changed, the administrator will also be prompted to change the User Password.

Remote Activation

A User Install option selected by the administrator. Remote Activation requires the user to enter an activation code before accessing an EP CD-ROM-protected CD-ROM. The activation code is automatically generated by the administrator's or help desk personnel's Remote Activation

Encryption Plus® CD-ROM

Reference

program (`winactiv.exe`). The first time a user runs the EP CD-ROM-protected CD-ROM, a screen will display a one time challenge key. The user must provide this key to a help desk or web site and the `winactiv.exe` program returns the correct activation code to access the EP CD-ROM-protected CD-ROM.

User

This is the person who will access a protected CD-ROM or who uses a workstation on which EP CD-ROM user program files will be installed.

User Install Program

These are the program files that give authorized users access to an EP CD-ROM-protected CD-ROM. In the case of **CD-ROM Authentication** and **Remote Activation**, these files are transferred to a CD-ROM, along with the encrypted files. In the case of **Workstation Authentication**, these files are typically created to a network location accessible to the user or copied and distributed on floppy disks for installation on a particular workstation.

Workstation Authentication

A User Install option selected by the administrator. Workstation Authentication creates a User Install program that will only allow an EP CD-ROM-protected CD-ROM to be accessed from a specific workstation. This requires the installation of a Workstation Authentication program on the user's hard drive. Password protection with Workstation Authentication is optional.

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Basics About Encryption

Why should I use encryption?

Encryption is the most secure and the only practical way to protect your private files from being read by others. During the encryption process, a mathematical formula is employed to transform data into some unreadable form. In order for someone to access the data, a correct password must be entered to launch the decryption process. Decryption is the reverse of encryption; it is the transformation of encrypted data back into readable form.

PC Guardian's Encryption Plus® CD-ROM (EP CD-ROM) brings the power and security of encryption to a simple, effective, and transparent application that users at all levels of ability can quickly learn to use.

Why would I want to encrypt CD-ROMs?

As someone with sensitive or proprietary data that you want to protect, you may want to encrypt all or portions of the data that will be distributed on a CD-ROM. By encrypting this information, you will protect it from unauthorized use or access. Encryption will help limit which employees can see restricted information and will render the CD-ROM useless to others if lost or stolen.

What is encryption on-the-fly?

Encryption on-the-fly means that the data on the CD-ROM is decrypted only as it enters the computer's memory. Before installation, EP CD-ROM encrypts all of the data copied onto a CD-ROM. After installation, EP CD-ROM user program functions as a decryption engine. As information is read from the CD-ROM, the decryption engine automatically decrypts data before it is loaded into the computer's memory. The process is transparent to the user.

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What is an algorithm? What algorithm does EP CD-ROM use?

In mathematics and computer science, an algorithm is defined as a set of rules or instructions for solving a problem or procedure. During the encryption process, the algorithm—also referred to as a cipher—is employed to systematically scramble the data. EP CD-ROM uses the Blowfish algorithm to encrypt data.

What is Blowfish?

Blowfish is a well-known and well-documented 56-bit block cipher developed by Bruce Schneier. This cipher is significantly faster than DES (Data Encryption Standard, the current government endorsed encryption standard). Currently, EP CD-ROM implements the Blowfish algorithm in the CBC "Cipher Block Chaining" mode using a 192-bit key.

Is EP CD-ROM exportable? Can I take my laptop out of the U.S. if EP CD-ROM is installed on it? Can my company send EP CD-ROM to our employees who work outside of the US?

The Department of Commerce has cleared EP CD-ROM for exportation. You can send CD-ROMs encrypted with EP CD-ROM out of the United States, including international employees. This is possible because EP CD-ROM implements the Blowfish algorithm in a modified form to address the requirements of the export laws.

Currently, the US government permits PC Guardian to export EP CD-ROM to any country except Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria. PC Guardian cannot provide assurances about the laws of any particular country in respect to the use of encryption.

The Department of Commerce Export Commodity Control for EP CD-ROM is 5D002.C.

Why use Encryption Plus® CD-ROM?

Why should I use PC Guardian's Encryption Plus® CD-ROM?

Most encryption products have not been designed with complete ease of use in mind. PC Guardian's EP CD-ROM is different. EP CD-ROM is the most simple and effective way for a corporate administrator to implement complete CD-ROM encryption in a manner that does not change the way that users work.

How does EP CD-ROM work?

EP CD-ROM is designed to encrypt any or all of a CD-ROM. Before burning information onto a CD-ROM, the administrator encrypts the data to be written to the CD-ROM. Next, EP CD-ROM creates files that are used for authentication (checking the user's password or workstation) that will allow the decryption process to start once the user accesses the CD-ROM. Finally, the administrator copies the encrypted data and the authentication files onto the CD-ROM.

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Is EP CD-ROM difficult to use?

When EP CD-ROM is used to encrypt a CD-ROM, the decryption process is automatic and transparent to authorized users because it is on-the-fly. Users do not waste time and effort decrypting data—all they need to know is the password.

Is my data really secure with EP CD-ROM?

Encryption is the most secure method of protecting information. In order to unscramble or decrypt the data, a correct password must be entered (or, with Workstation Authentication, the CD-ROM must be accessed on a computer that has access to the workstation user install files). The data on an encrypted CD-ROM is unintelligible to unauthorized users.

Installation / Administration Questions

How do I install EP CD-ROM?

EP CD-ROM is easy to install. Although EP CD-ROM has many safeguards against loss of data during installation and encryption, PC Guardian recommends that you read the Important Pre-Installation Notes prior to beginning installation.

What should I do before installing EP CD-ROM?

The following Pre-Installation Notes represent common sense precautions. They should be performed before installing any type of security applications.

These steps should be performed before installing EP CD-ROM:

- Run a hard disk performance scanner such as Microsoft ScanDisk.
- Run a virus scanner to insure an infection free hard disk.
- Backup your hard disk data.

If you are unsure about performing any of the above, please contact your help desk or PC Guardian Technical Support.

Does EP CD-ROM affect how I create CD-ROMs?

EP CD-ROM does not affect the process that you currently use to create or distribute CD-ROMs. Before you create the CD-ROMs, you prepare the data that will be placed on the CD-ROM by encrypting it using the powerful and well-known Blowfish algorithm. Once data is encrypted, simply transfer it as before onto CD-ROMs for distribution.

What is Workstation Authentication?

Workstation Authentication can be selected by the administrator for security against information theft from a CD-ROM. Access of a CD-ROM encrypted by EP CD-ROM is restricted to computers with the user program installed. Encrypted CD-ROMs are useless if they are not

Encryption Plus® CD-ROM

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accessed on these authorized computers. The user may also be required to enter a password at these workstations to ensure further security. With Workstation Authentication, the PC Guardian authentication files must be copied onto each computer that will be allowed to read encrypted CD-ROMs. Once these files have been copied on these computers, all CD-ROMs encrypted by that administrator using the same Privacy Code and Master Password can be accessed on these computers. The authentication files cannot be copied to another computer because they verify the unique serial number of the hard disk onto which they were installed.

What is CD-ROM Authentication?

CD-ROM Authentication enables users to read an EP CD-ROM-protected CD on any workstation by entering an authorized password. If the CD-ROM is lost or stolen, it will be useless and unreadable to an unauthorized user. The administrator copies the PC Guardian authentication files (about 1 MB in size) onto the CD-ROM as the CD-ROM is created. Each session, before accessing the CD-ROM, the user is required to enter a password before the decryption engine will be loaded into memory.

What is Remote Activation?

If the administrator selected Remote Activation, the user will be prompted with a one time challenge key upon loading a protected CD-ROM. He/she then either visits a web site or calls a help desk to submit the challenge key and receive an Activation Code. Correct entry of the Activation Code will load the decryption engine on the user's workstation and will provide access to the CD-ROM.

Do I have to encrypt all of the data on a CD-ROM?

No. The administrator selects the data to be encrypted before burning it on to the CD-ROM. Therefore, the administrator could choose to encrypt only selected files or directories among those being copied onto a CD-ROM. However, since performance loss is virtually unnoticeable and encryption time is minimal, we recommend that the administrator encrypt all of the information for complete security.

How many passwords does EP CD-ROM use?

Two. The Master Password and User Password. The Master Password is used by the administrator only during the encryption of data bound for a CD-ROM. The User Password is the password entered by the user each session during which the CD-ROM is accessed. This password is first assigned by the administrator but can be changed by the daily user. Additionally, the administrator will enter a Privacy Code when first installing EP CD-ROM. The Privacy Code is not used as a password, but a symmetric key is used by EP CD-ROM in the encryption/decryption process. The administrator can change both the initial Master Password and the Privacy Code.

How long does encryption take?

The encryption process is very fast. It takes less than five minutes to encrypt the maximum amount of data that can be placed on a CD-ROM (about 600 megabytes). Decryption takes place on-the-fly as the user accesses data from the CD-ROM. Performance loss is negligible and virtually unnoticeable to most users.

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CD-ROM Usability Questions

Does EP CD-ROM affect how users use CD-ROMs?

EP CD-ROM will not affect the user. The actual decryption of information from the CD-ROM occurs on-the-fly as the user accesses data (performance loss is negligible). The user simply needs to enter a password the first time they access the CD-ROM, which is started automatically by Auto-Run (CD-ROM Authentication and Remote Activation), or, for more security, when they first begin a session at their workstation (Workstation Authentication). If the user does not enter the correct password, the information will be inaccessible.

Can files be copied or modified if they are encrypted?

CD-ROMs are read-only. In other words, a user cannot write or save any information directly onto a CD-ROM. Therefore, files stored on a CD-ROM can never be modified. Files encrypted by EP CD-ROM can be copied in a decrypted form onto an authorized user's local hard drive (or floppy drive). In order to edit the file, its attribute must be changed from Read-Only to Archive in the Properties screen.

Note: Because of the potential risk for file modification, administrators should not use rewritable CD-ROMs (CD-RW) to distribute encrypted files.

How long does decryption take?

The decryption process is very fast. Decryption takes place on-the-fly as the user accesses data from the CD-ROM. Performance loss is negligible and virtually unnoticeable to most users.

Will unencrypted CDs work as before on computers with EP CD-ROM?

Yes. EP CD-ROM will have no effect on CD-ROMs that are not encrypted. EP CD-ROM detects whether or not the CD-ROM being accessed is encrypted.

Hardware/Software Compatibility Questions

What hardware and software are supported?

EP CD-ROM is designed to run on 80486 and Pentium (or equivalent) processors under Windows 95/98/NT and is compatible with all network operating systems. One hard disk and one CD-ROM drive (any speed) are required.

How much memory is required?

EP CD-ROM is a memory resident program that is loaded when the authentication process occurs. The installed memory requirement is approximately 4K in Windows extended memory.

Will EP CD-ROM slow down my machine?

EP CD-ROM requires approximately 4K of extended memory. It reduces the average overall speed of a Pentium PC about 4% - 6%. For example, an operation normally taking 10 seconds may take 10.5 seconds with EP CD-ROM installed. Users will not notice any degradation in performance while running standard applications.

Reference

Advanced Features

What is the Privacy Code?

The Privacy Code is a string of characters that the administrator must enter when first using EP CD-ROM. The Privacy Code is used internally by EP CD-ROM during the encryption process. After the initial installation it need not be re-entered or changed, but it can be changed if necessary.

Can I access data on a CD-ROM if I boot from the floppy drive?

If the user boots from the floppy drive and then attempts to access files on the CD-ROM drive, they will see that the files are encrypted and unreadable. In order to access these files properly, the user must run Windows and go through the appropriate authentication process.

Can my encrypted data be copied to another drive?

Yes, but it will only be decrypted if the decryption engine is loaded. When data on a CD-ROM is encrypted, the information on the CD-ROM cannot be accessed until the authentication process is completed. However, once the decryption engine is loaded into the system, the user can copy information from the CD-ROM onto a hard drive or floppy disk.

Technical Support

What Technical Support is provided by PC Guardian?

Technical support is taken very seriously at PC Guardian. If you have any problem with our products, we want to know immediately and we promise to give you our best and most personal assistance. When you call us at (415) 459-0190 or (800) 288-8126 during normal business hours (Pacific time zone) and you will talk directly with a technical support representative or will be called back, usually within the hour. You can also email us at support@pcguardian.com.

Corporate support plans (Four Star Service Support Plan, Annual Extended Support and Maintenance Plan, and 7x24 Extended Support and Maintenance Plan) are available for purchase through PC Guardian. Visit our website for more details. If your organization has an Annual Maintenance and Support Contract, please contact your system administrator.

Contacting PC Guardian

Mailing Address

PC Guardian

1133 Francisco Boulevard East, Suite D

San Rafael, California 94901-5427 USA

Pre-sales general and technical questions

Our software sales team will be glad to answer any questions you may have regarding the implementation of Encryption Plus® CD-ROM.

From the USA: (800) 288-8126

From the United Kingdom: +44(0)1732 318078

From any other country: (415) 459-0190

Fax: (415) 459-1162

General E-Mail: pcg@pcguardian.com

Post-sales technical support

Registered users are entitled to one hour of free telephone support.

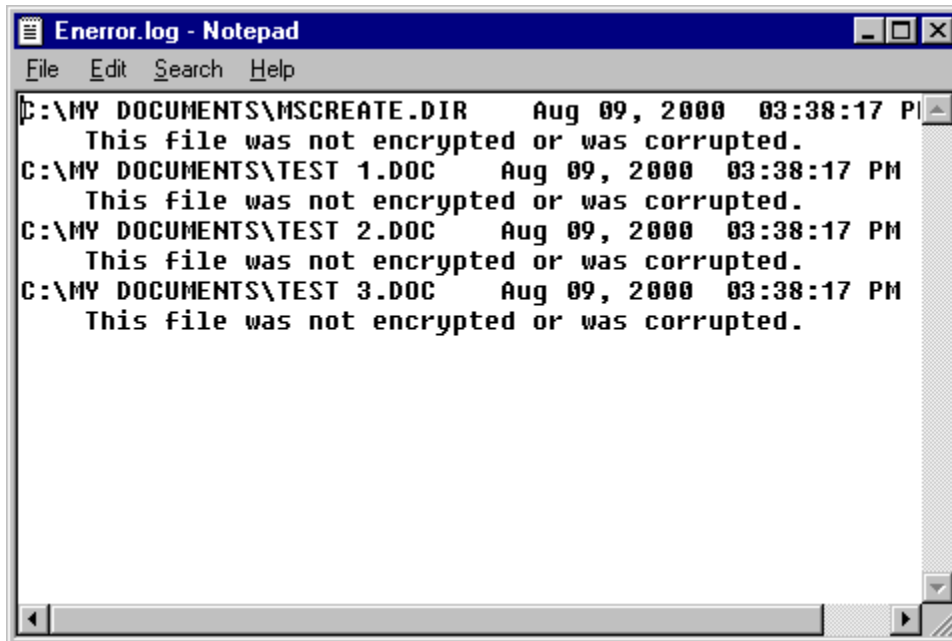
Web Site

Please visit our web site for more information on all of our products and services.

<http://www.pcguardian.com/>

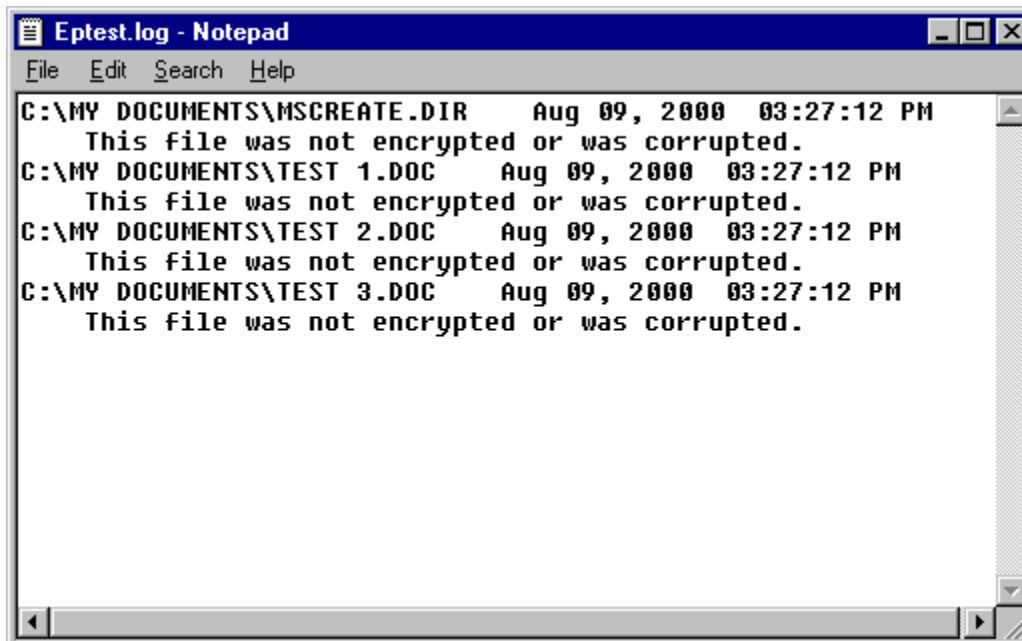
Appendix A—Sample Log files

Sample enerror.log



```
Enerror.log - Notepad
File Edit Search Help
C:\MY DOCUMENTS\MSCREATE.DIR Aug 09, 2000 03:38:17 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 1.DOC Aug 09, 2000 03:38:17 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 2.DOC Aug 09, 2000 03:38:17 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 3.DOC Aug 09, 2000 03:38:17 PM
This file was not encrypted or was corrupted.
```

Sample eptest.log



```
Eptest.log - Notepad
File Edit Search Help
C:\MY DOCUMENTS\MSCREATE.DIR Aug 09, 2000 03:27:12 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 1.DOC Aug 09, 2000 03:27:12 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 2.DOC Aug 09, 2000 03:27:12 PM
This file was not encrypted or was corrupted.
C:\MY DOCUMENTS\TEST 3.DOC Aug 09, 2000 03:27:12 PM
This file was not encrypted or was corrupted.
```

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