PC Card
CD ReWritable
Installation Manual

CRW-740

EXP COMPUTER, INC.

EXP MEMORY PRODUCTS.

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INTRODUCTION

The CD ReWriter is a portable CD-ROM drive, which consists of a low-power CD rewritable drive, a small 26 pin universal connector, a cable for Parallel port (printer port),. It is compatible with either computer's **Parallel Port** or **PC CARD** (PCMCIA) 2.1 Type II or I slot. The CD Rewriter can write to CD-R (write-once) or CD-RW (rewritable) disk and read other variety of CD formats. The drive required an external power supply adapter (included). CD ReWriter dual connection gives user flexibility to add more storage space or transfer data between your notebook and/or your desktop computer.

SYSTEM REQUIREMENTS

- Notebook or desktop computer with Pentium 133 Mhz or higher
- 32 MB RAM
- 75 MB free HD space
- A Parallel port (EPP or bi-directional) or If using the PC Card interface, the computer should have at least one PC Card (PCMCIA) 2.1 slot.
- Windows 95/98, Windows NT 4.0

- Suitable for the following disk standard: CD R/RW, CD- DA, CD-ROM, CD-I, C—ROM XA, CD-Bridge, Photo CD, Video CD, CD Extra
- Power source: AC Adapter
  Input: 120-240 VAC 50-60 Hz 0.4 A.
  Output: 12 VDC 1000 mA.
- CD-RW and CD-R disc and application software included.

PACKAGE CONTENTS

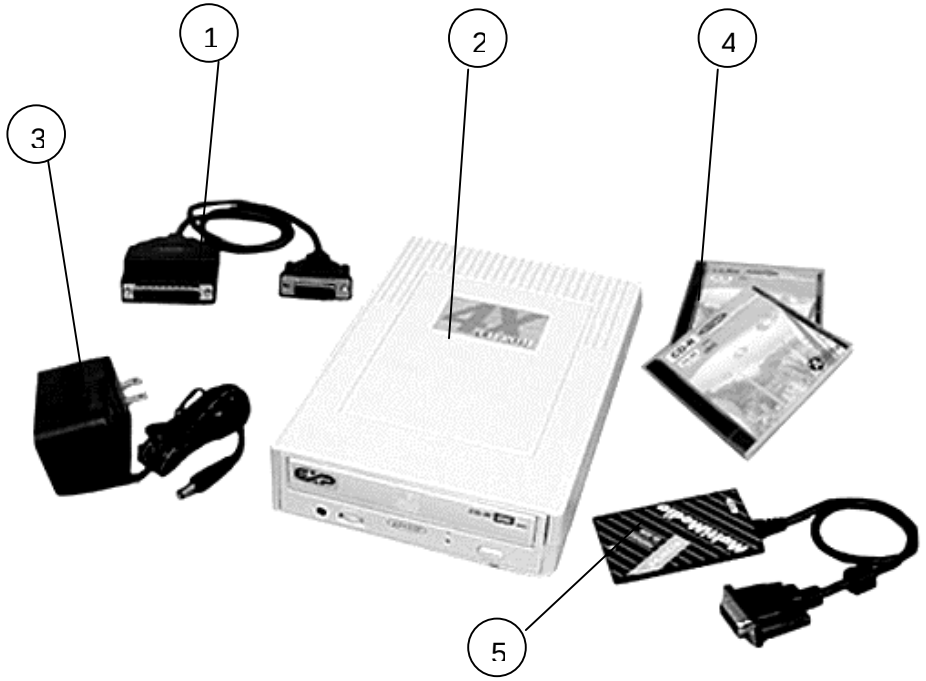
1. **Parallel Port interface cable**
   Standard 25 pin Parallel port connector and 26 pin small connector.

2. **CD drive assembly**
   CD drive with the power indicator, a DC input jack

3. **AC Adapter**
   Input: 100-240 VAC, 50-60 Hz. 0.4A.
   Output: +12 VDC/1000mA.

4. **Blank CD-RW and CD-R disk**

5. **PC Card**



PART NAMES AND FUNCTIONS

FRONT PANEL

The front panel of your CD Rewriter may look slightly different from the figure shown below. The important parts and functions, however, are the same regardless their locations.

1. **Eject button:**
   Press this button to eject the tray.
2. **Access LED:**
   This LED will blink when the drive is accessing the disc.
3. **Emergency Hole:**
   Insert a pin shaped item to manually eject the tray while power-off.
4. **Power LED:**
   This LED will light when power is on.
5. **Head Phone jack:**
   The CD-Audio sound output. Connect a headphone or external speaker here.
6. **Volume Control:**
   CD-Audio volume control.

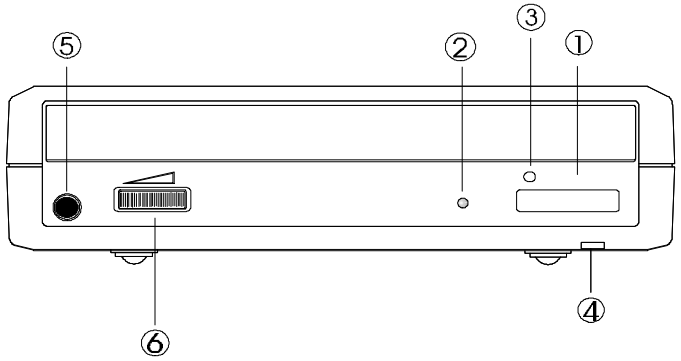


Figure 1

REAR PANEL

1. **Power Button:**
   Press the button to manually power on/off the drive.
2. **DC in Jack:**
   This jack connects to the AC adapter.
3. **Interface Connector:**
   Connect the drive to the Parallel port cable or PCMCIA interface card.
4. **Audio Line-Out Jack:**
   Send audio signal to an external amplifier.

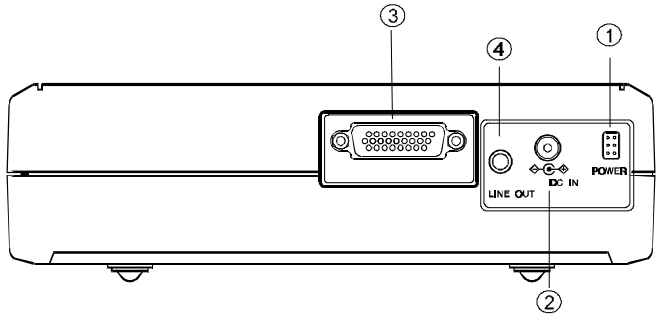


Figure 2

POWER SOURCE

The CD Rewriter Drive powered by an AC adapter. The POWER LED indicates the power status. It always light up when the power supply is in the normal condition.

1. Connect the AC adapter plugs to the DC IN jack at the rear panel of the drive.
2. Attach the AC adapter to the AC power outlet.

INSTALLATION

The installation procedures have two sections for each type of interface.

1. Parallel Port interface
2. PC Card (PCMCIA) interface

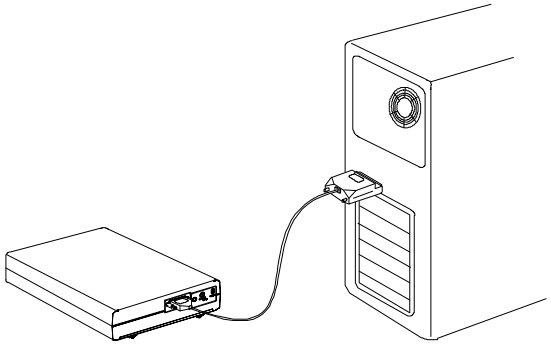
The procedure includes hardware and software installation. Just follow along the interface of your choice.

INSTALLATION FOR PARALLEL PORT INTERFACE

HARDWARE INSTALLATION

Before you begin, make sure you turn OFF all power to your system before connecting the CD ReWriter to your computer.

1. Connect the DC Input adapter cable to the EXP CD drive assembly.
2. Connect one end of the Parallel cable to EXP CD (26 pin small connector), and connect the other end to computer parallel port. (standard 25 connector)



3. Plug-in the AC adapter to a working AC receptacle.

4. Press power button.

You are now ready to install the software.

CAUTION

The CD and electronic components installed on the CD ReWriter are very sensitive to damage from static electricity. Before handling the unit, touch a grounded metal surface. DO NOT connect/disconnect the CD ReWriter unit to/from the parallel cable when the system is in power-on state.

SOFTWARE INSTALLATION FOR WINDOWS 95/98

Check all the connection as states in the “Hardware Installation” section.

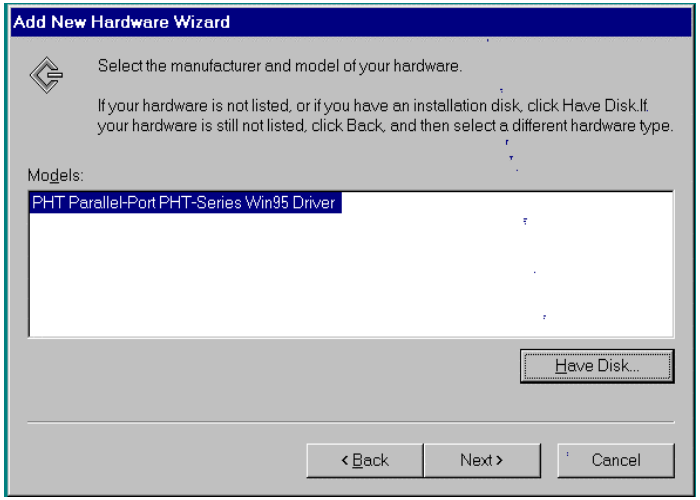
From the Desktop Click ‘My Computer’ icon, ‘Control Panel’ and then ‘Add New Hardware’

1. Click "Next>" to begin.

2. When prompted whether to search for your new hardware, Select "No" and click "Next>".

3. Open "SCSI controllers". Click "Have Disk...".

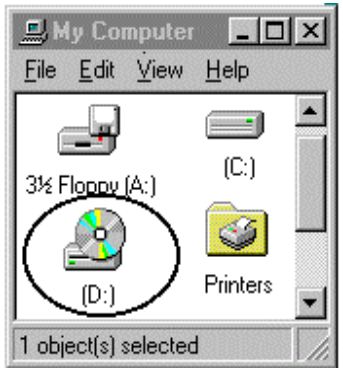
4. Insert Installation Diskette into the drive selected, then click "OK". If you're installing from a directory containing downloaded installation files, specify the full path of the directory and click "OK".
5. Select "P.H.T. Parallel-Port Trans-Series Win95/98 Driver", and click "Next>".



6. Click "Finish" to complete installation.
7. Remove Installation diskette.
8. Restart system, when prompted.

VERIFY YOUR INSTALLATION

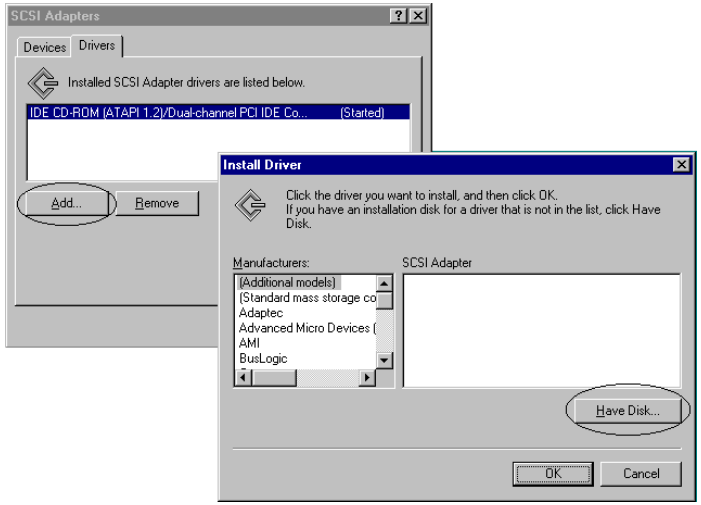
From “desk top” click on “my computer” icon. There should be addition CD-ROM drive’s icon displayed.



SOFTWARE INSTALLATION FOR WINDOWS NT 4.0

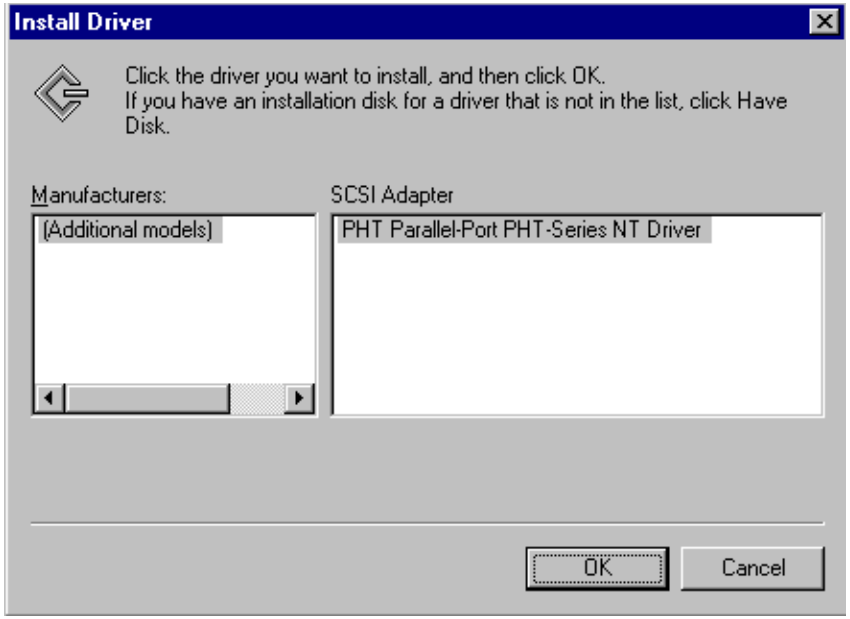
In Windows NT 4.0, you may select “Control Panel” under “Settings” from the “Start” menu to open the “Control Panel” folder, double click the “SCSI Adapter” icon)

Click “Drivers” tab, and a figure illustrated as below will be displayed.



Click “Add” button, and click “Have Disk...” button.

Windows NT will then prompt you to insert the manufacturer installation disk. Insert the device driver disk into your floppy drive. Specify the directory as A:\ (or A:\WINNT if the directory exist) and select OK.



On the ‘SCSI Adapter’ column shows “PHT Parallel-Port PHT-Serial NT Drivers”

Click OK to select the driver.

Follow the on-screen instruction to continue. After finishing, Windows NT will prompt you to restart your computer to activate the new device driver for Windows NT.

INSTALLATION FOR PCMCIA INTERFACE

HARDWARE INSTALLATION

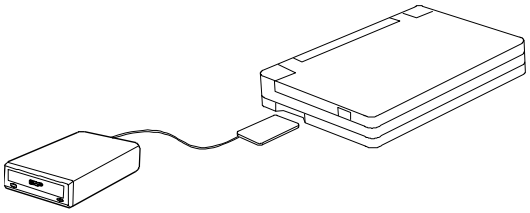
If install on a NT station, make sure you turn OFF all power to your system before connecting the CD ReWriter to your computer. However, you are allowed to install the CD with power while using Windows 95/98, because OS support plug-and-play.

1. Connect the PCMCIA interface card to the CD ReWriter drive. Push firmly until the CD-RW connector is seated, and then tighten the two screws on the cable connector.

2. Place the CD drive in the horizontal position

3. Consult your computer's documentation to locate the PCMCIA slot.

4. Align the PCMCIA interface card with the arrow sign pointing to the computer's slot. (Please note that the card is keyed to guide for proper orientation.)



5. Slowly insert the PCMCIA interface card into the slot and press firmly until the card is seated.

6. You are now ready to install the CD ReWriter device driver.

CAUTION

The CD drive and electronic components installed on the CD ReWriter are very sensitive to damage from static electricity. Before handling the unit, touch a grounded metal surface. DO NOT connect/disconnect the CD ReWriter unit to/from the parallel cable when the system is in power-on state.

SOFTWARE INSTALLATION FOR WINDOWS 95/98

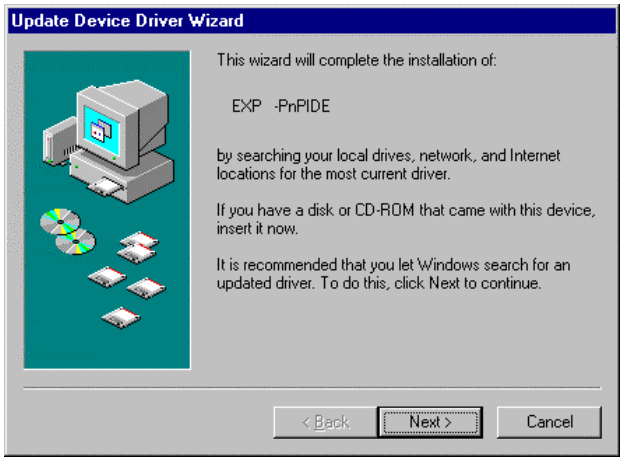
The "New Hardware Found" dialog box* will appear when you insert the CD ReWriter card under Windows 95 for the **very first time.**

Select "Driver from disk provided by hardware manufacturer" and click on the OK button. Insert the CD ReWriter device driver disk into your floppy drive. (If the dialog box does not appear, please refer to the "Trouble Shooting" section.)

If a dialog box come up select the CD-ROM , then click OK.

* Your dialog box may be different from the one shown depending on your Windows 95 version

For user with a newer revision of Windows 95 od Windows 98, “Update Device Driver Wizard” box * will appear. Click on “Next” button, let Windows 95 search for driver. Make sure to insert the CD device driver diskette into your floppy drive.

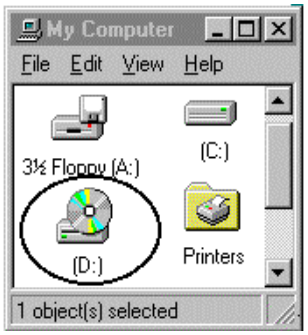


(If the dialog box does not appear, please refer to the “Trouble Shooting” section.)

Click on the “Finish” button.

VERIFY YOUR INSTALLATION

From “Desk Top” click on “My Computer” icon. There should be addition CD-ROM drive’s icon displayed.



SOFTWARE INSTALLATION FOR WINDOWS NT 4.0

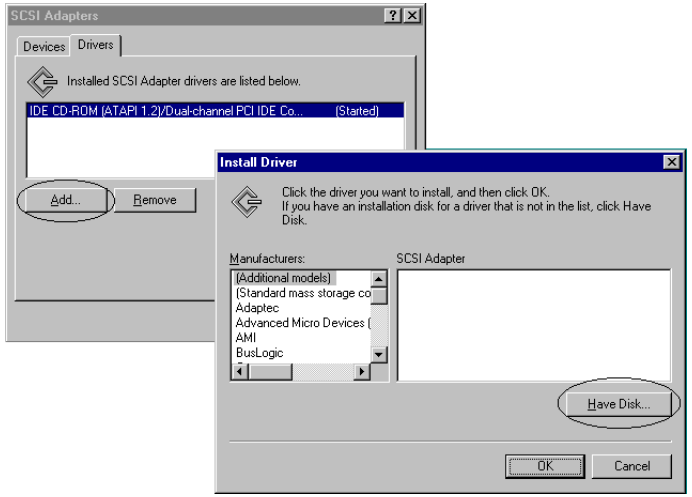
PC CARD Interface

Currently there is no Plug and Play support for PC Card (PCMCIA) on the Windows NT 4.0. User can install the device driver without the PC Card, however after you finishing the installation you should insert the PC Card before restart the computer.

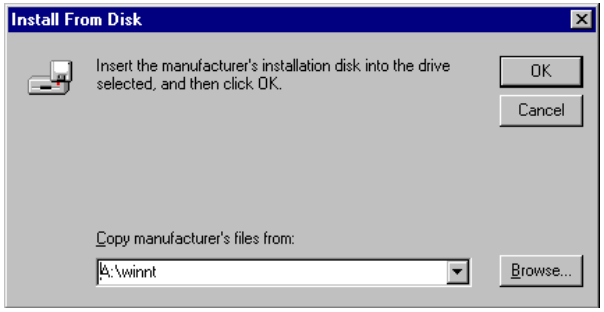
Follow the instructions to install the device driver:

Click on My Computer > Control Panel > SCSI Adapters.

Choose Drivers tab and the click on “Add”. From the Install Driver click “Have Disk” button.

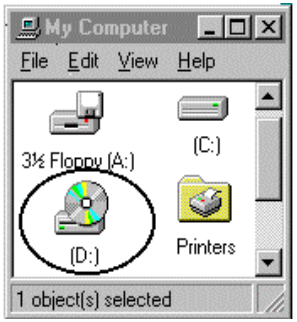


Install from disk dialog box will prompt for device driver diskette.
Either using “Browse” button or type in the path A:\winnt the click OK to finishing the installation.



Make sure to insert the CD PC Card into the PC Card slot before restart the computer.

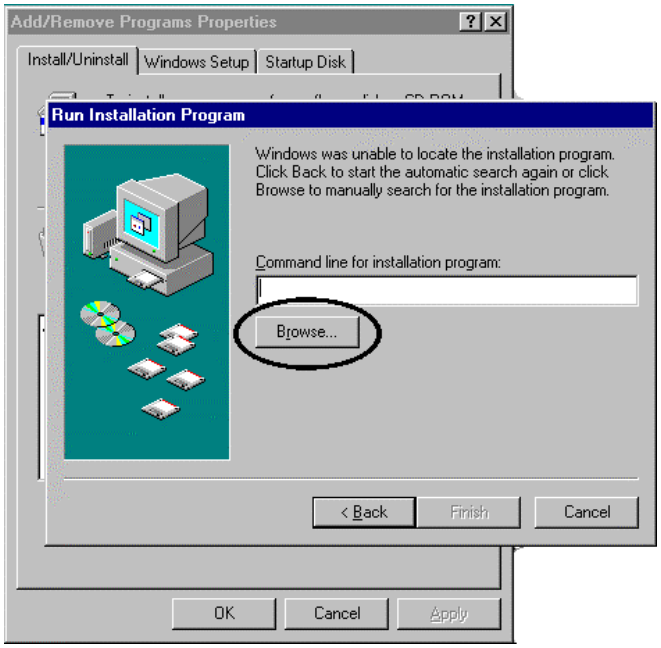
VERIFY YOUR INSTALLATION



After computer boot up from “Desk Top” click on “My Computer” icon. You should have an addition CD-ROM icon.

INSTALLING THE APPLICATION SOFTWARE

From “Start” go to “Setting”, “ Control Panel” then “Add/Remove Program”
Click on “Install” button. The installation program will search for ‘Setup.exe’ program from the CD-ROM. Usually the application will start automatically.
If not click “Browse” button then open the sub-folder contain the setup program.



Follow the program instructions to create your own CD. Most of the CD related program would allow you create both CD-Audio and data CD.

WARNING

If you are using the CD Rewriter or software supply by EXP Computer Inc. to reproduce copyright data, you must obtain permission from the copyright owner. Consult your legal adviser before you proceed. You may be violate the copyright law if you do not own the copyright data or have the permission

TROUBLE SHOOTING

PARALLEL PORT INTERFACE

Symptom: No additional drive icon in “My Computer”. The EXP CD driver installed without any incident.

Solution:

1. Check your cable connection, along with the AC adapter at the wall receptacle make sure there is no lose connection. The green LED on the front of EXP CD assembly should lit up.

2. Check your computer CMOS or BIOS setup. Some computer allows user to set printer type to be: Standard, EPP Only or Bi-directional. A setting to “EPP Only” is preferred for a better performance.

3. Check if other hardware devices are connected to the same parallel port. Daisy-chaining with other hardware devices is NOT recommended. Other devices include but not limited to the following: security device (key, lock), audio port, parallel-to SCSI device, tape backup device, network device, A/B switch, printer-sharing device.

4. If you connect the equipment in daisy-chain fashion, always turn on the device farthest away from the computer first (in this case the EXP CD), then turn on the device next on the chain. Turn the computer last.

Symptom: The EXP CD starts to become excessively slow or behave differently on a battery-powered notebook computer.

Solution: If you are using a notebook or laptop computer, without the AC adapter. The performance of the parallel port may become sluggish and unreliable if the battery runs low. Try reconnecting the AC adapter to your computer or recharging the battery.

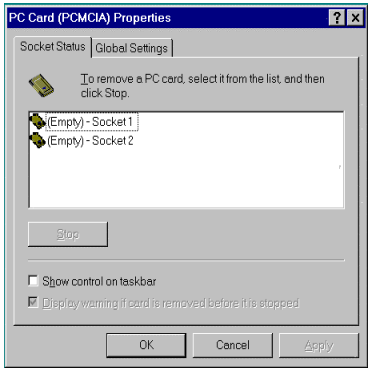
Symptom: The EXP CD starts to become excessively slow or does not work at all.

Solution: The parallel port on your machine may be able to a number of different modes, standard, Bi-directional, EPP or ECP. These different setting can effect performance of the EXP CD. In some cases, the standard setting will even shut off signals the EXP CD needs, while if the same port is set to Bi-directional or EPP produce an excellent performance.

PCMCIA INTERFACE

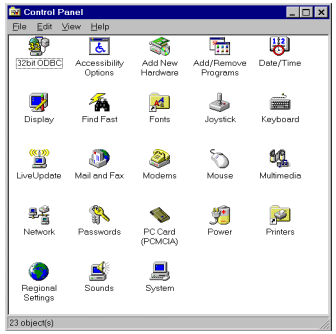
Symptom: No “New Hardware Found” dialog box display.

Solution: 1. The EXP card is NOT fully inserted.



The card status will show empty if Windows PCMCIA driver did not detect any card. Some time, there is other dialog box displayed, and the PC Card Properties still show empty. You may need to disable such a program (i.e. CardWork, CardWiz) consult your notebook User Manual.

2. The 32-bit card support is NOT enabled.



To enable the 32-bit support, click on “Start”, “Settings”, “Control Panel” from the “Control Panel” folder Click on PC Card (PCMCIA)

If you see the screen below, it means the PCMCIA device driver is not using 32-Bit Card Support. Follow on screen instructions by except all the default setting. At the end of the installation, you will be asked to restart the computer.

After the computer restart, you can insert the EXP CD card, at this time the “New Hardware Found” or “Update Device Driver Wizard” dialog box will be displayed.

3. No PC Card (PCMCIA) icon in Control Panel

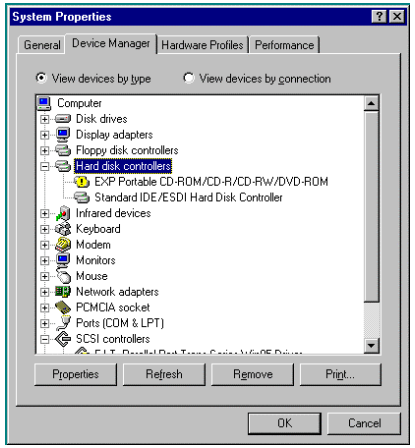
If the PCMCIA Socket is not found, then you must add a PCMCIA socket to your system. Please click on the “Add New Hardware” icon in the Control Panel folder and select “PCMCIA socket”. Select the appropriate type of PCMCIA Controller that matches yours (call your notebook manufacturer for detail) and follow the on-screen instruction.

Symptom: No additional drive icon in “My Computer”.
The EXP CD driver installed without any incident.

Solution: 1. System resources for the EXP CD are not available.
Click on “Start”, “Settings”, “Control Panel” from the “Control Panel” folder Click on “System” then “Device Manager”

The EXP entry may have a yellow circle with an exclamation point.

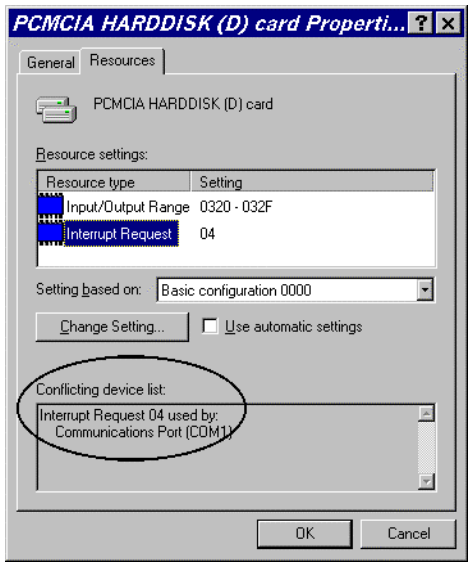
This is an indication that the EXP CD did not working properly.



Double click on EXP entry line and then select “Resources” You can make some change to the following entry:

‘Basic Configuration xxxx’, I/O Range, and Interrupt request.

During resources changing, observe the “Conflicting Device List”. You should select the resource(s), which the “Conflicting device list” shows **“No Conflict ”**



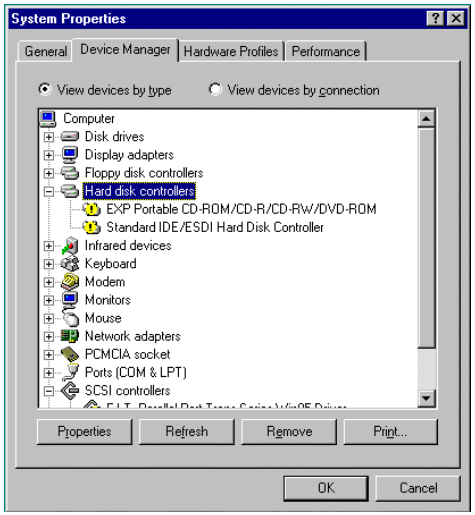
2. Device Manager shows resource for the EXP CD is available and there is no conflicting device.

In some computer, the I/O Range XXX, Interrupt Request 15 may be use by a built-in secondary IDE controller. Try changing the interrupt to 9,10 or 11. You can also try different I/O addresses.

3. The EXP entry may have a yellow circle with an exclamation point. Device Manager shows resource for the EXP CD is available and there is no conflicting device.

Check all connection to the EXP CD drive assembly, such as AC Adapter. Your notebook PC Card sockets may not have enough power for the EXP CD. If you already connect the AC adapter, make sure to secure all connectors and the adapter plug into a good AC out let.

4. The EXP CD and the ‘Standard IDE/ESDI Hard Disk Controller’ entry have a yellow circle with an exclamation point.



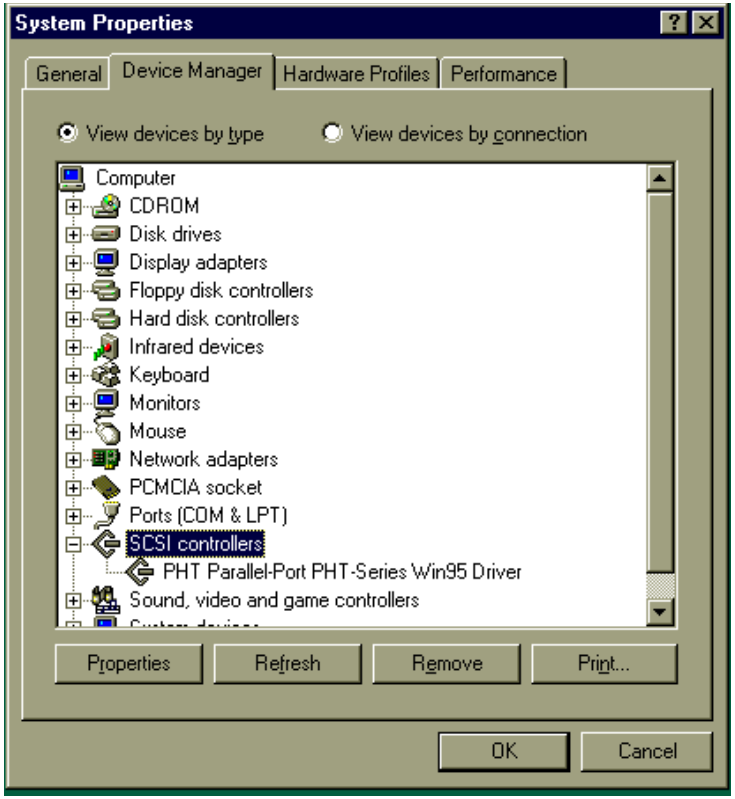
Your notebook may have been infected with some kind of computer virus. The virus disabled Windows 95 32-bit device driver for the hard disk. The EXP CD requires the driver for its operation. Check the “Performance” tab to confirm the symptom.

You need to run an anti-virus program first, once the 32-bit driver is running the EXP CD will be installed.

REMOVING OR RE-INSTALLING THE DRIVER

PARALLEL PORT INTERFACE

Go to “My Computer” icon, “Control Panel”, “System”,“ Device Manager” Click on “SCSI Controller ”. The EXP CD should be listed



To remove EXP CD-ROM.

- Click on the EXP entry line (P.H.T. …) then click “Remove” button. You may need to restart the computer to complete the task.

To reinstall EXP CD-ROM.

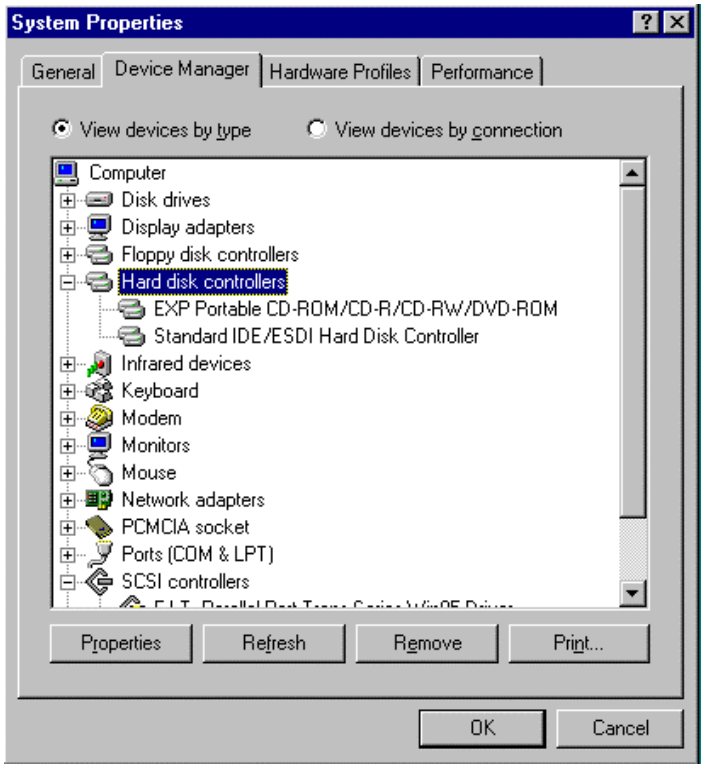
- Click on “Refresh” button, either the “New Hardware Found”or “Update Device Driver Wizard” will be displayed.

Follow the instruction on Installation for “Parallel Port Interface” section.

PCMCIA INTERFACE

If you need to remove or reinstalling the driver, make sure the EXP CD-ROM disk card is inserted.

- Go to “My Computer” icon, “Control Panel”, “System”,“ Device Manager” Click on “Hard Disk Controller”. The EXP CD should be listed



To remove EXP CD-ROM.

- Click on the EXP entry line then click “Remove” button. You may need to restart the computer to complete the task.

To reinstall EXP CD-ROM.

- Click on “Refresh” button, either the “New Hardware Found”

  or “Update Device Driver Wizard” will be displayed.

Follow the instruction on “Installation for PCMCIA Interface” section.

APPENDIX A

FCC COMPLIANCE STATEMENTS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the Distance between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

CAUTION

CHANGE OR MODIFICATIONS NOT EXPRESSLY APPROVED BY PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

APPENDIX B

Media consideration

The media for the CDRW is important. CDRW disk that is made for a 2x rewrite will not work in this drive. This means that you cannot create a CDRW disk that is made for a 2x rewriter. A 2x CDRW can be read, but it cannot be written to. The CDRW disk must be of a 4x rewrite type in order to be able to write to the CRW disk in this drive.

APPENDIX C

Tips

1. What does "buffer underrun" mean?

The CD writing process can't be interrupted in mid-session. To prevent this from happening, the makers of CD recorders put a write buffer in the drive, usually 512K or 1MB. Data read from the hard drive, tape, or another CD is stored in the buffer, and pulled out as needed by the recorder.

If the recorder requests data from the write buffer, but there's none there, it's called a buffer underrun. The disc is still spinning, but
there's no data to write, so the recording process aborts.

2. How to prevent " buffer underrun"?

A brief summary:

- Use a fast hard drive.
- Record at a slow speed - it takes longer to empty the buffer when recording at 1x.
- Don't do anything else with the computer while recording. Don't record from a file server.
- Defragment your HD, especially if you're doing on-the-fly recording.
- Record from an ISO image file rather than on-the-fly.
- Depending on your setup, putting the recorder and your hard drive on separate SCSI controllers may be necessary.
- Keep your CD-R cool. Sometimes the drives fail when they overheat.
- Keep CD-Rewiter read/write head cleaning.
- Also watch out for things like anti-virus programs that wake up, virtual memory settings that cause swapping, screen savers that activate during the CD creation process, unusual network activity, and background downloads of data or faxes.
- Stabilize Your System for CD-R.
- Shut Down Other Applications.
- Test before writing.
- Another important tip for Win95 is to limit the size of the file cache, which by default is unrestricted. The procedure is simple:

    1. Open the file SYSTEM.INI with a text editor. This file is usually C:\WINDOWS\SYSTEM.INI.
    2. Find the section labeled "[vcache]".
    3. Add the following lines *after* the "[vcache]" line:
        MinFileCache = 512
        MaxFileCache = 4096
    4. Save the changes to the file, and reboot.

3. Should I turn off Auto Insert Notificaton ?

Most Win95-based recording software recommend turning off Auto Insert Notification. Having this on can interfere with closing sessions or even just inserting discs into the drive. You can disable it by opening the "System" icon in the Control Panel, and selecting "Device Manager". For each item under CD-ROM, select the device, click on the "Settings" tab, and make sure the "Auto Insert Notification" checkbox is unchecked. (Some programs requires that the auto insertion be turned on.)

If you're using WinNT, you can turn it off with the "TweakUI" program available in PowerToys, or by modifying a registry key with

Regedit32
(0=disabled, 1=enabled):

    HKEY_LOCAL_MACHINE \ SYSTEM \ CurrentControlSet \ Services \
    Cdrom \ Autorun

The trouble with Auto Insert Notification is that it periodically attempts to find a valid disc in the CD recorder. A blank disc isn't very interesting to Windows, so nothing happens. When the table of contents is written to the disc, it suddenly becomes interesting, and enough activity is generated by Windows' attempts to read the disc that the write fails.

4. I can't read the multi-session CD I just made

One possible cause of this problem is writing a multisession disc in MODE-1 format. Some older CD-ROM drives incorrectly assume that a MODE-1 disc can't be multi-session, so they don't look for additional sessions unless it's written in MODE-2 (CD-ROM) format.

Also, if the final session on the CD isn't closed, standard CD players may become confused. This doesn't mean that the *disc* must be closed, just that the *session* must be closed.

5. Write process keeps failing N minutes in

There's a couple of possibilities. One is that your data source can't keep up with the CD-R; try using disc-at-once writing from an ISO image with the speed set to 1x. If it seems to be getting worse over time, you may just need to defragment your hard drive.

If that fails, a number of people have discovered that the problem is a faulty CD-R unit, which have different mechanisms. You should try 1x writing from a fast source and with different sets of data.

Be sure that there aren't environmental factors creating difficulties. CD-R units are usually built to handle small shocks, but having a set of speakers playing loud music on the same table as a CD-R may cause it to skip, resulting in a failed write. Sonic booms, heavy construction equipment, and nuclear detonations may have similar effects.

It's also possible that you simply have a bad batch of media. Try a different type and brand of disc. Some distributors (e.g. dataDisc) will exchange media that's provably defective.

Be careful with Advanced Power Management functions on some PCs. If the keyboard and IDE devices are completely idle, the system may decide that nothing is going on and switch to a low-power mode. Ditto for screen savers that kick in after the system has been idle for a certain period.

6. Why did my CD-R eject between the "test" and "write" passes?

CD rewriter needs to clear their memory between the "test" pass and the "write" pass. For CD rewriter, the only command that does this is "eject". If the recorder has a tray it just goes out and back in, but if it uses a caddy manual intervention is needed.

7. Why CD-ROM drive doesn't like *any* CD-R discs

A very simple test is to take a CD that DOES work, copy it, and try both (this ensures that your problems aren't being caused by, for example, a drive that doesn't support multi-session CDs).

Sometimes the firmware can be at issue.

If it fails with different kinds of media, the CD-ROM drive either doesn't like discs written with your recorder, or doesn't like CD-R media at all.

In one case, returning the CD-ROM for an identical unit resolved the problems.

8. I keep getting timeout errors

Basically, check your cabling, turn off features you don't need, and make sure Auto Insert Notification is off.

9. Getting errors reading the first (data) track on mixed-mode CD

There's a 150-sector postgap at the end of the data track. Some programs deal with this automatically, some don't. If you're getting errors, try subtracting 150 from the total number of sectors to read for that track. (How to do that?)

10. My CD-R ejects blank discs immediately

There are a few of possibilities, some software and some hardware.

It may be that the system is looking at the disc, not finding a TOC (table of contents), and ejecting it as useless. One way to tell the difference between the operating system rejecting the CD and the drive rejecting the CD is to unplug the IDE cable from the back of the CD recorder before inserting the disc.

If the problem is the operating system, you probably need to disable certain features. Under Win95, disable auto insertion for all CD-ROM devices. One user found that reinstalling Win95 helped.

If that doesn't work, make sure the CD-R drive is perfectly level.
Apparently some units are sensitive to being tilted at an angle. Some users have had trouble when a CD-R has been on for a while and has overheated, so if you only have trouble when the machine has been powered on for a while, try putting a small fan above the unit to blow air over it.

11. I can't see all the files on the CD-R

There's a couple of possibilities: either they aren't there, or they're there but you can't see them. Looking at the disc from different machines should give you some idea.

Out-of-date versions of MSCDEX have been known to "forget" certain files when browsing a disc. If you're using DOS or are using the "real mode" drivers from within Win95, make sure you're using the most recent version of MSCDEX.

12. My multi-session disc only has data from the last session

A common mistake when burning a multisession CD is to forget to link the files from the previous session into the current one. This results in a CD where you can see the new files but none of the old, unless you have a program that lets you choose which session you look at.

If you're using Easy-CD Pro for Win31, CD Creator, or Adaptec Easy CD Creator 3, you can load the contents of all the previous sessions, and burn a new session that has all the files you want. This feature isn't available in Easy-CD Pro 95, which only allows you to link to one previous session.

The files themselves aren't lost forever though: most packages will allow you to extract a track as an ISO-9660 image, and you can use WinImage to pull individual files out of it. If all else fails, CD-R Diagnostic claims to be able to recover data from "lost" sessions.

One caution: without something like Adaptec's Session Selector, you may not see the last session on the disc anyway. Some CD-ROM drives stop looking for sessions after a certain point.

13. Why doesn't the copy of an audio CD sound the same?

There are actually two questions here, so I've split them into separate sections. The most common problem is that the audio extracted to the hard drive doesn't quite match the original.

14. Why doesn't the audio data on the copy match the original?

Most problems are due to poor digital audio extraction from the source media. Some CD-ROM drives will return slightly different data every time an audio track is read.

The most fundamental problem is that, if the CD is dirty, the error correction may not be able to correct all of the errors. Some drives will interpolate the missing samples, some won't.

15. The audio data matches exactly, why do they sound different?

Suppose you extract the audio track from the copy, and it's an exact binary match of the track you wrote from your hard drive, but the CDs don't sound quite the same. What then?

Most people don't notice any difference between originals and duplicates. Some people notice subtle differences, some people notice huge differences. Some say CD-R is better, some say worse. While it's true that "bits are bits", there *are* reasons why CD-Rs may sound different even when the data matches exactly.

The manual for the CDD-2000 reportedly states that the drive uses 4x oversampling when playing back pressed CDs, but switches to 1x for CD-R. This affects the quality of the D/A conversion, and can make an audible difference.

It has been suggested that the D/A conversion process in the CD player is more susceptible to "jitter" when reading CD-Rs, because the clocking of the bits isn't as precise. A quality CD player will compensate for this automatically.

Others have asserted that *any* two CDs, pressed or otherwise, will sound slightly different.

Some people believe that audio CDs should be recorded at 1x, while others have asserted that, for various technical reasons, 2x is better. Certain kinds of media may work best at specific speeds.

16. I can't play extracted audio files by double-clicking in Win95

The default audio player in Win95 tries to load the entire file into memory. When an extracted track is 40 or 50MB, and you don't have that much RAM, Win95's virtual memory system starts writing pieces out to disk. The disk thrashes, and you get nowhere.

There are several ways around this. If you right-click on the file and select "properties", you will see a "preview" tab. This will play it directly from disk. Another way is to use a different program. One possibility is the Media Player, which is optionally installed with Win95. You can make it the default WAV file player by selecting View/Options from Win95 explorer, clicking on the "File Types" tab, and choosing "Wave Sound". Double-click on Play and change the program name from "sndrec32.exe" to "mplayer.exe", leaving the "/play" and "/close" flags intact.

You can also use a program like CoolEdit, which will let you preview WAV files from the Open File dialog.

17. Having trouble playing an audio CD in a home or car player

There are a few possibilities. First and foremost is media compatibility. Not all players get along with all brands of CD-R media. You need to find a combination of recorder, media, and player that get along.

Another common problem is failing to close the disc at the end of writing. You can't play an audio CD on a common CD player until the session has been closed. You may be able to play it back with the CD recorder though. Also, don't forget that you have to write all of the audio data into the first session of a multisession CD. CD players don't know how to find the later sessions, so tracks written there won't get played.

Sometimes the CD player will have no problem playing the tracks, but will have a great deal of difficulty seeking between tracks or moving fast-forward. Using a different brand of media or a different CD player may produce better results.

Some media works better at 1x, 2x, or 4x than it does at other speeds. You may find that slowing down or speeding up the recorder helps.

Finally, remember that you have to write the disc in CD-DA format! If you just write a bunch of WAV files to a CD-ROM, it's not going to work in your home stereo.

18. Having trouble using a CD-ROM on somebody else's machine

As with audio CDs, discussed in the previous section, there are several possibilities. The media compatibility issues mentioned above apply to CD-ROM as well.

If you're using CD-RW media rather than CD-R media, you have to be sure that the CD-ROM drive in question is MultiRead compliant. Some older drives are able to read CD-RW media, but most are not.

If the disc was written using a packet writing application like DirectCD, some CD-ROMs will stumble on packet boundaries. Refer to section (4-21) for information and a possible workaround.

19. I can't copy a VideoCD

If you put a VideoCD (White Book) into your CD-ROM drive, you will see a bunch of files and directories like you would on any other CD-ROM. In fact, with the appropriate software installed, on some platforms you can double-click on a file to play the video.

In practice, however, the video files are stored on separate tracks, using CD-ROM/XA MODE-2 FORM-2. This allows more data to be stored on a VideoCD, at the price of less error correction. If the video is short enough, you may be able to copy the disc as a collection of files, but some players may be unable to play back selections if the original disc had more than one track.

You need to use a program like Adaptec's CD Copier to copy the disc track-by-track, preserving the mode of the original.

If you let your drive to make a track-at-once recording, you may have trouble copying VideoCDs because the starting address gets shifted when the drive writes a gap between tracks.

20. The test write succeeds, but the actual write fails

Most often this is a problem with auto-insert notification being enabled when it shouldn't be.

One person supposedly fixed a similar problem by replacing the power supply in their computer. Apparently the 200W supply wasn't enough to handle everything that was connected to it.

21. Trouble formatting CD-RW discs with DirectCD for Windows

"When Adaptec DirectCD refuses to format a CD-RW for packet-writing, it's possible that the disc is not completely blank. This may happen because you chose the "quick" option when you last erased it. The quick-erase option only erases the lead-in area to make the hardware and software think the disc is empty. This is fine if you're going to use the disc for "normal" writing as a CD-ROM, audio disc or whatever.

The packet-writing formatter in DirectCD 2.0a however (apparently) requires the disc to be totally empty, so you really have to do a full erase if the disc contained data previously.

BUT: there's another problem: after you do a full erase and shut down the program you erase with it's possible that the DirectCD program won't recognize the disc as valid media, and you still won't be able to format it, until you restart the computer.

Unfortunately this means that if you want to start using a previously recorded CD-RW for packet writing, you'll have to wait a total time of at least an hour and a half for the erase and format to complete..."

22. I can't write CD-Rs after installing Windows 98

There are people successfully writing discs with Windows 98, so it *can* be done.

With Easy CD Creator 3, try uninstalling ECDC, rebooting, and reinstalling it. This seems to fix the problems for the people reporting them. Doing the same for other software may have similar beneficial effects.