



UNIVERSITY OF UTAH
STUDENT COMPUTING LABS

Workarounds for Poorly-made Applications & Installers

By
Scott Doenges

What's the Issue?

- **Some apps want write access by default, either to the entire application folder/package, or to individual files therein.**
- **Some apps and installers won't work properly with custom privileges.**
- **Be wary of installers that ask you for admin username/password...**



Examples

- **Final Cut Pro 3.x!**
 - Wants write access to license file inside app
- **Painter 7:**
 - Wants write access to certain files & folders
- **OmniPage Pro X:**
 - Installer must be run in Classic
 - Wants write access to entire app directory
- **QuarkXPress 4.1 1:**
 - Wants write access to entire app directory



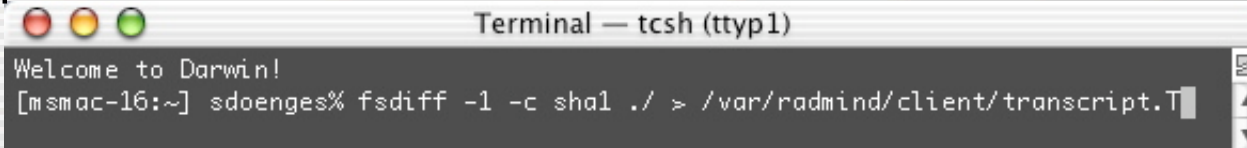
Examples

- **Virtual PC 6:**
 - Wants write access to Windows image file
 - Non-admin Mac OS X users can't print!
- **Now Up To Date**
 - Wants write access to a file in the app package.
- **Freehand 10**
 - Wants write access to certain files.

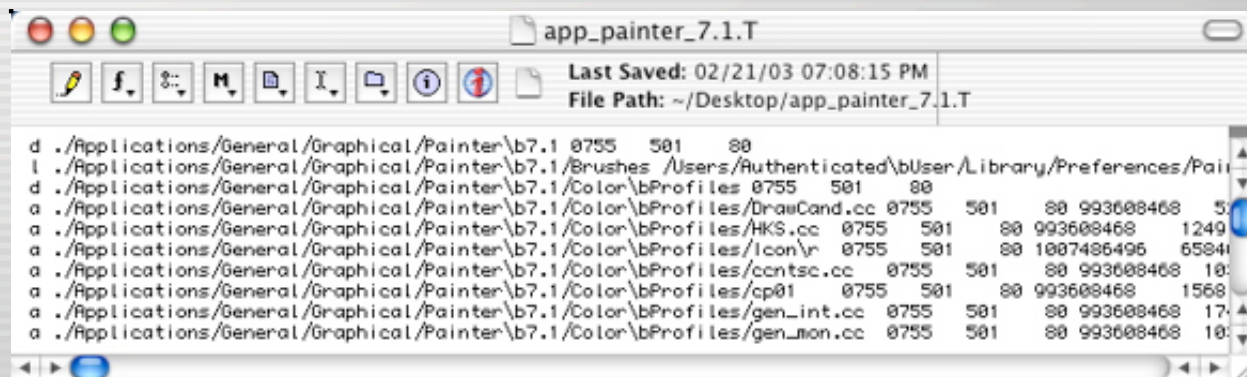


Determine what was installed

- Radmind's fsdiff command:
 - Makes a transcript of everything added or modified, including permissions.



```
Terminal — tcsh (tty1)
Welcome to Darwin!
[msmac-16:~] sdoenges% fsdiff -l -c sha1 ./ > /var/radmind/client/transcript.T
```

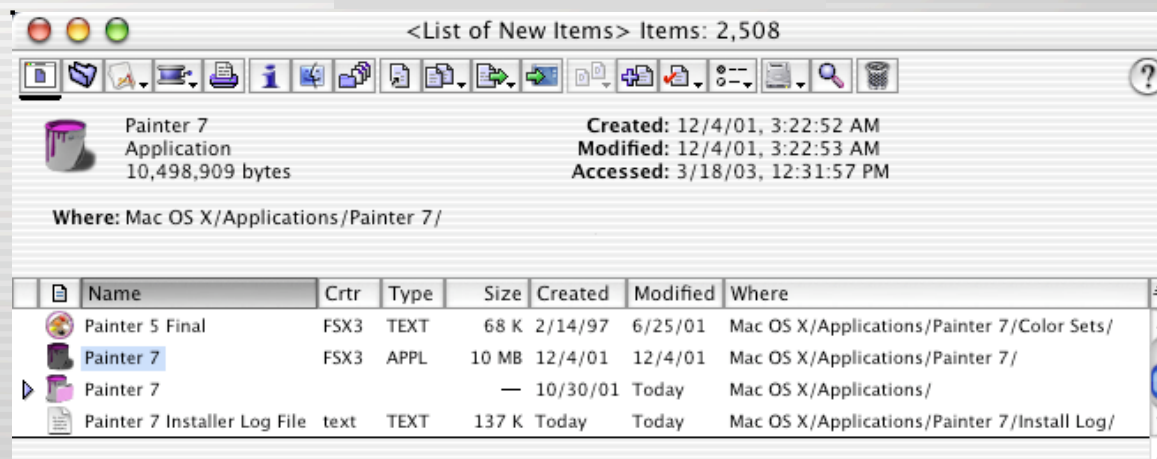


appPainter_7.1.T
Last Saved: 02/21/03 07:08:15 PM
File Path: ~/Desktop/appPainter_7.1.T

```
d ./Applications/General/Graphical/Painter\b7.1 0755 501 80
l ./Applications/General/Graphical/Painter\b7.1/Brushes /Users/Authenticated\bUser/Library/Preferences/Pai
d ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles 0755 501 80
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/DrawCand.cc 0755 501 80 993608468 5
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/HKS.cc 0755 501 80 993608468 1249
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/Icon\r 0755 501 80 1007486496 6584
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/cantsc.cc 0755 501 80 993608468 10
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/cp01 0755 501 80 993608468 1568
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/gen_int.cc 0755 501 80 993608468 17
a ./Applications/General/Graphical/Painter\b7.1/Color\bProfiles/gen_mon.cc 0755 501 80 993608468 10
```

Determine what was installed

- File Buddy snapshots
 - Compares system state before/after installation

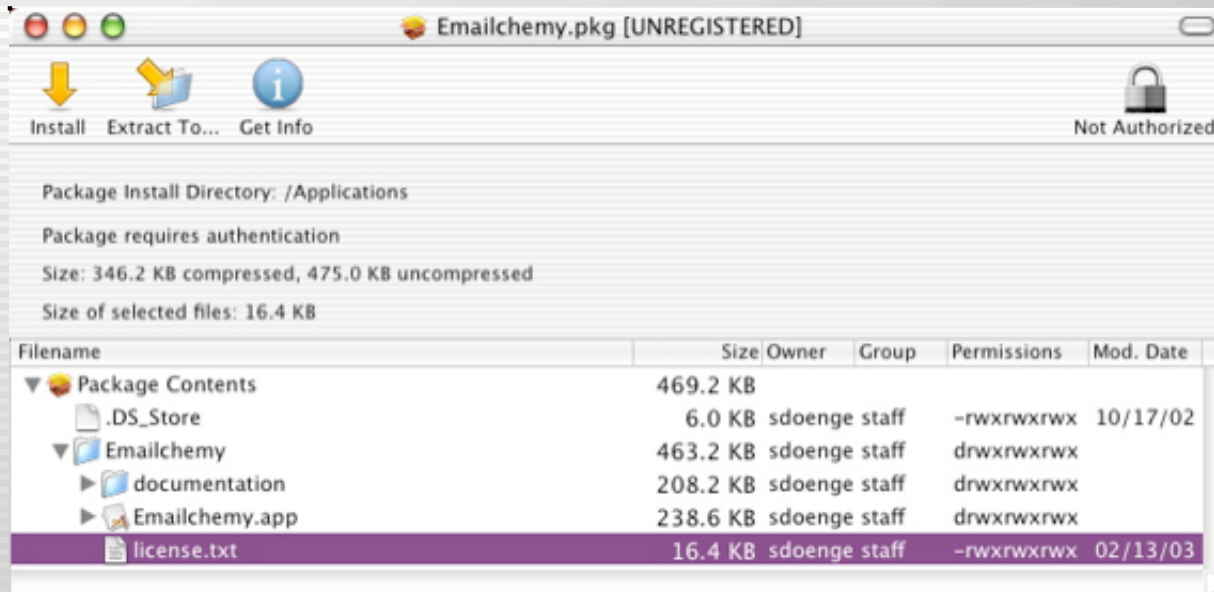


Painter 7
Application
10,498,909 bytes
Created: 12/4/01, 3:22:52 AM
Modified: 12/4/01, 3:22:53 AM
Accessed: 3/18/03, 12:31:57 PM
Where: Mac OS X/Applications/Painter 7/

| Name | Crtr | Type | Size | Created | Modified | Where |
|------------------------------|------|------|-------|----------|----------|--|
| Painter 5 Final | FSX3 | TEXT | 68 K | 2/14/97 | 6/25/01 | Mac OS X/Applications/Painter 7/Color Sets/ |
| Painter 7 | FSX3 | APPL | 10 MB | 12/4/01 | 12/4/01 | Mac OS X/Applications/Painter 7/ |
| Painter 7 | | | — | 10/30/01 | Today | Mac OS X/Applications/ |
| Painter 7 Installer Log File | text | TEXT | 137 K | Today | Today | Mac OS X/Applications/Painter 7/Install Log/ |

Determine what was installed

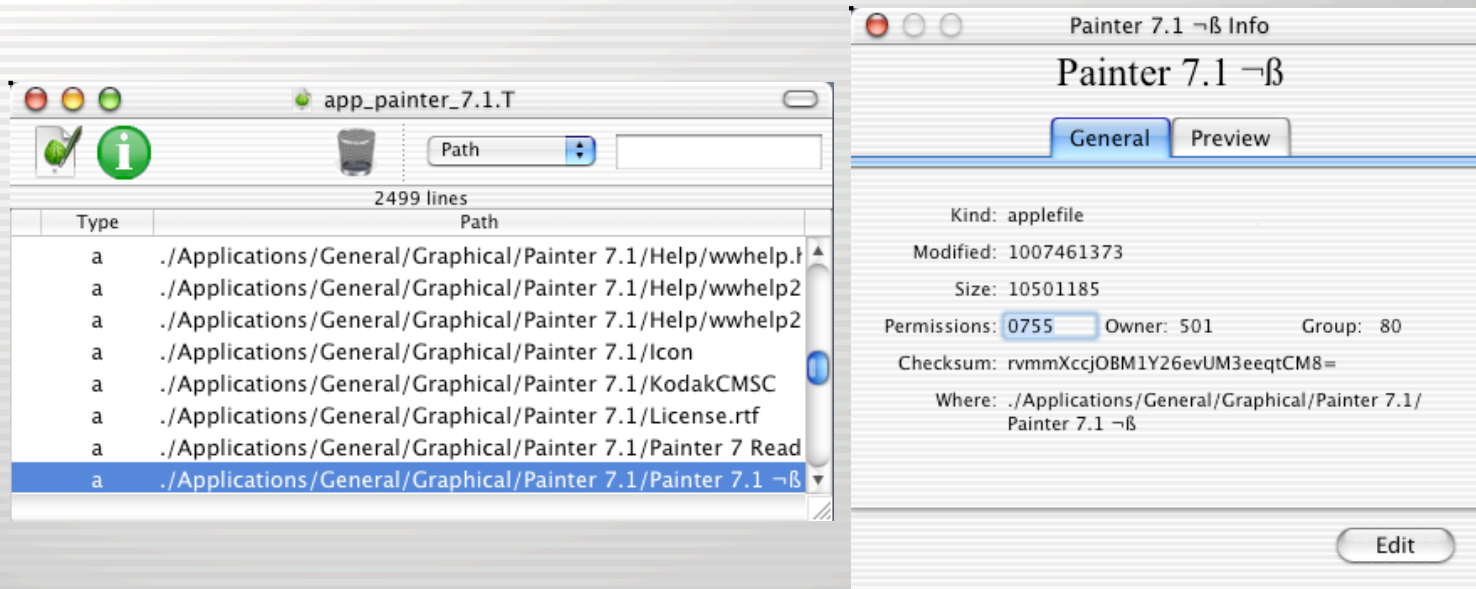
- Pacifist
 - Lists contents of package installers.



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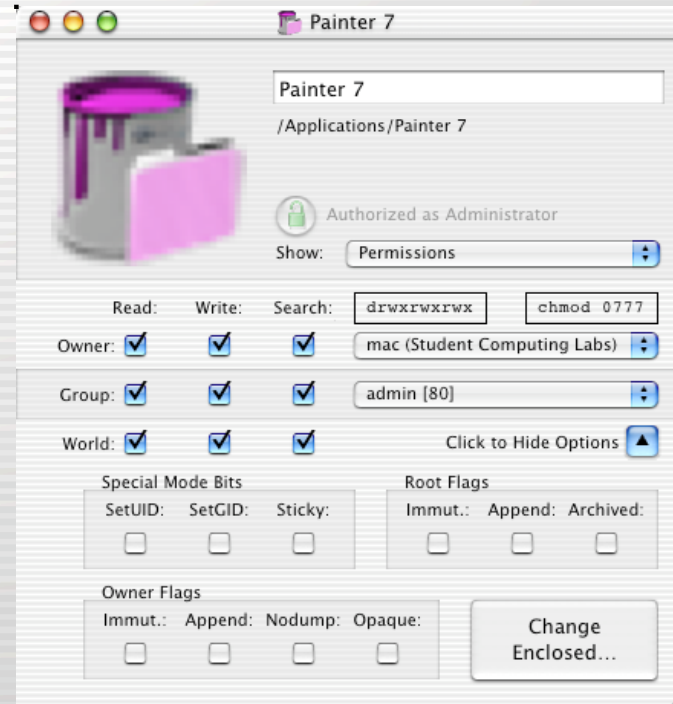
Setting Permissions

- Radmind Transcript Editor



Setting Permissions

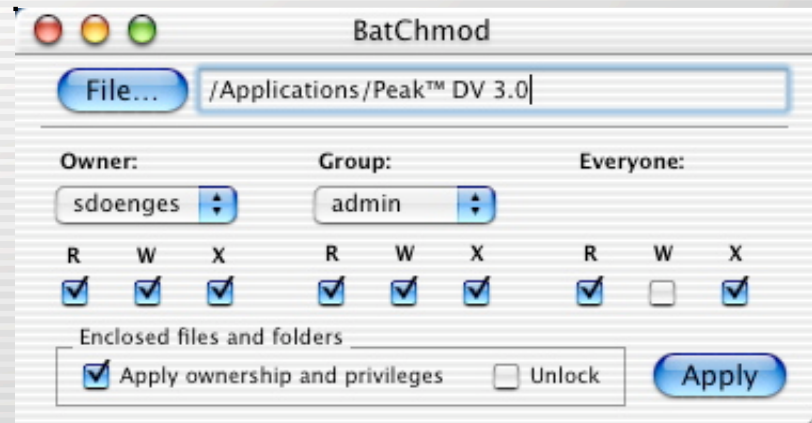
- XRay



Setting Permissions

- **BatChmod**

-
-



Setting Permissions

- Who Owns What?



| Owner | Group | Directories | # of Files |
|----------|-------|-------------|------------|
| sdoenges | | 10 | 108 |
| sdoenges | admin | 10 | 108 |

Top Level Path: Hard Disk X:/Applications/Peak™ DV 3.0/

Report for User sdoenges
Starting Directory is Hard Disk X:/Applications/Peak™ DV 3.0/

Hard Disk X:/Applications/Peak™ DV 3.0/

- rw-rw-rw- 1 sdoenges admin 6148 May 13 14:06:58 2002 .DS_Store
- rwxrwxr-x 1 sdoenges admin 102854 Nov 14 12:29:54 2001 FREE Gift from BIAS!!
- rwxrwxr-x 1 sdoenges admin 0 Jul 27 18:16:38 2000 Icon
- rwxrwxrwx 1 sdoenges admin 8265 May 13 12:21:53 2002 Installer Log File
- rwxrwxr-x 1 sdoenges admin 1010851 May 13 12:24:12 2002 Peak™ DV 3.0
- rwxrwxr-x 1 sdoenges admin 6321 Nov 14 12:15:44 2001 Peak™ DV 3.0 *READ* ME
- rwxrwxr-x 1 sdoenges admin 3511256 Nov 14 12:28:21 2001 Register Peak DV

./ASIO Drivers/
-rwxrwxr-x 1 sdoenges admin 0 May 11 15:37:52 1997 ASIO SoundManager

/Applications/Peak™ DV 3.0/Peak™ DV 3.0

Type: Volume, Directory, File, Link

Permissions:

| Owner | Group | Other |
|---|---|---|
| <input checked="" type="checkbox"/> Read | <input checked="" type="checkbox"/> Read | <input checked="" type="checkbox"/> Read |
| <input checked="" type="checkbox"/> Write | <input checked="" type="checkbox"/> Write | <input type="checkbox"/> Write |
| <input checked="" type="checkbox"/> Execute | <input checked="" type="checkbox"/> Execute | <input checked="" type="checkbox"/> Execute |

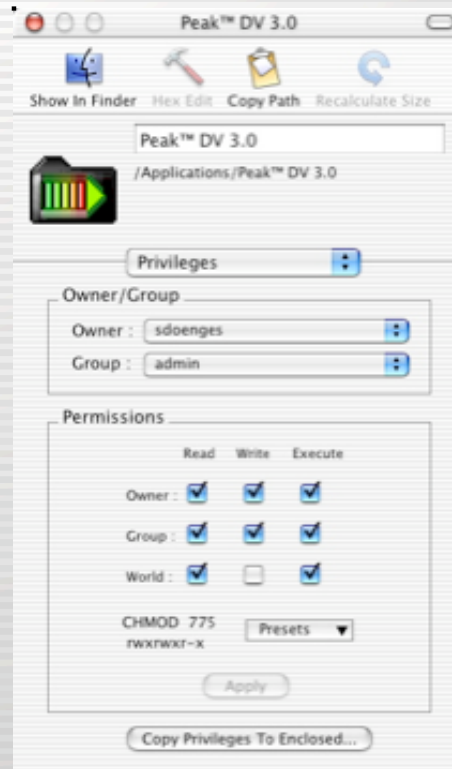
Owner : Group
Owner: sdoenges
Group: admin
Mac Type: APPL
Creator: auFM



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Setting Permissions

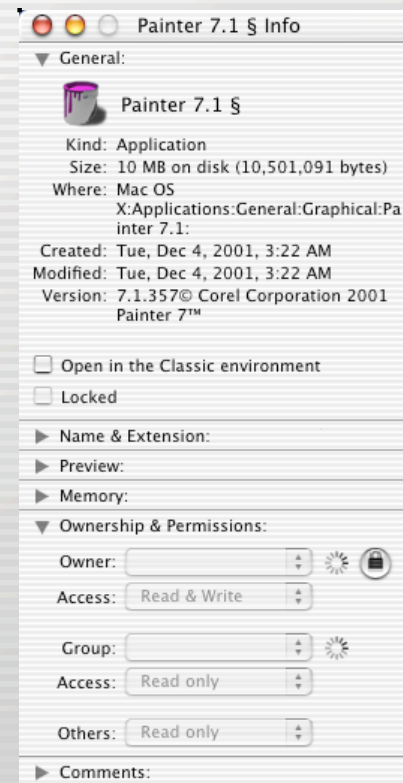
- FileXaminer



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Setting Permissions

- Finder's Get Info
 - Bad news...



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Determine the Culprits

- **Trial and error**
 - **Grant write access to pref files/folders one at a time, narrow down the problematic files.**



Determine the Culprits

- Run “sudo fs_usage -w” while opening app
 - Look through the results and look for suspects

```
Terminal — tcsh (tty1)
09:20:33.369 getattrlist      /Applications/Adobe Photoshop 7/Adobe Photoshop 7.0
           0.000070 LaunchCFMApp
09:20:33.369 getattrlist      /.vol/234881041/312460
           0.000033 LaunchCFMApp
09:20:33.369 getattrlist      /.vol/234881041/312351
           0.000017 LaunchCFMApp
09:20:33.375 getattrlist      /.vol/234881041/37343/Adobe Photoshop 7
           0.000070 LaunchCFMApp
09:20:33.375 getattrlist      /.vol/234881041/312351
           0.000019 LaunchCFMApp
09:20:33.375 getattrlist      /.vol/234881041/312351
           0.000017 LaunchCFMApp
09:20:33.375 getattrlist      /.vol/234881041/37343
           0.000015 LaunchCFMApp
09:20:33.375 getattrlist      [ 2] /.vol/234881041/312351/Adobe Photoshop 7.0 Settings
```



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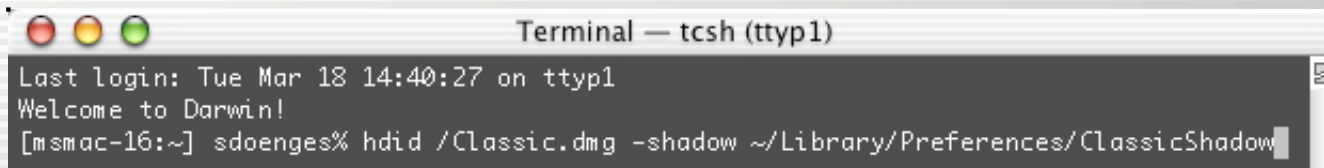
Determine the Culprits

- Run “`ktrace -cp <pid>`” while opening app
 - enables kernel trace logging for the specified process.
 - Look through the results for suspicious files.



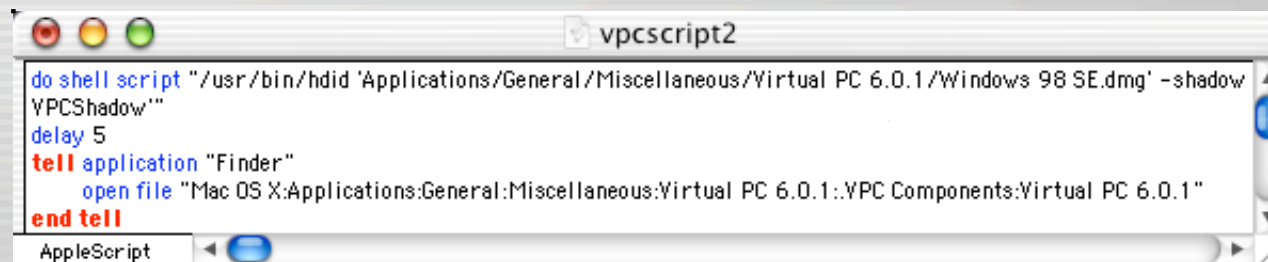
Solutions

- Mount a read-only disk image of the app as a read-write volume using “hdid -shadow”



```
Terminal — tcsh (tty1)
Last login: Tue Mar 18 14:40:27 on tty1
Welcome to Darwin!
[msmac-16:~] sdoenges% hdid /Classic.dmg -shadow ~/Library/Preferences/ClassicShadow
```

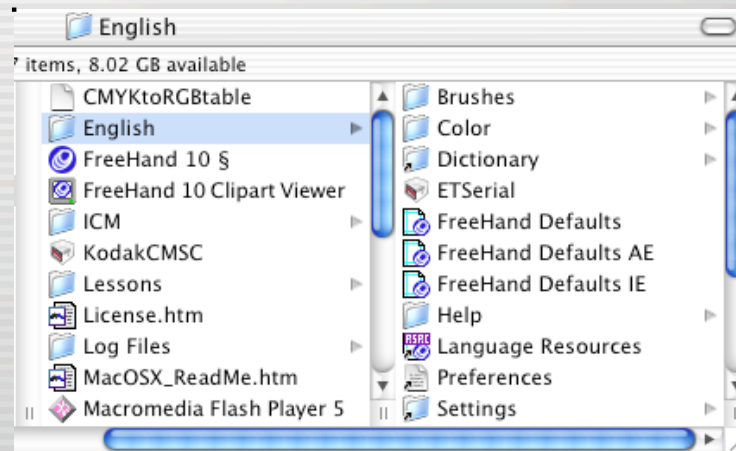
- Write an AppleScript that performs this command then opens the actual app.



```
vpcscript2
do shell script "/usr/bin/hdid 'Applications/General/Miscellaneous/Virtual PC 6.0.1/Windows 98 SE.dmg' -shadow
VPCShadow"
delay 5
tell application "Finder"
    open file "Mac OS X:Applications:General:Miscellaneous:Virtual PC 6.0.1:VPC Components:Virtual PC 6.0.1"
end tell
AppleScript
```

Solutions

- Move the files/folders to a user-writable directory, then put aliases or symbolic links in the original locations.
 - “In `-s /path/to/source/file /path/to/target/file`”



Solutions

- **Include the application in the user's home directory, so it gets deleted at logout, and refreshed at next login.**
- **If you must, grant write access to the individual files – but not to folders.**
- **Email the developers and MacFixit to urge them to fix their app.**



Links

- <http://developer.apple.com/tools/debuggers.html>

http://developer.apple.com/techpubs/macosx/Essentials/Performance/PerformanceTools/Analyzing_Performance.html



Q&A



Next up...

- **Enterprise Directory Integration – by
Darren Davis**

