Creating a Multi-Boot DVD

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:: Introduction ::

Anyone who works in a multi-os environment or in IT knows that it is a pain to have to carry around multiple cds and floppies filled with operating systems and diagnostic and support software. This guide hopes to simplify those problems. I will show you just how easy it is to create your very own DVD consisting of every Windows based operating system you could want as well as how to add support and diagnostic tools as well. You will have one disc with every operating system and support tool you could ever need!

Info

TextLikeThis = code or commands
TextLikeThis = files
TextLikeThis = folders

All links to external sites will open in a new window, so there is no need to worry about accidently navigating away from the site!

Credits

Most people save credits for the very end of a project, whether it be a movie, music cd insert, or anything else for that matter. I feel that the people who inspired me to create this site deserve to be credited before anything else, for without them you wouldn't be reading any of this.

I would like to thank everyone that has contributed to MSFN, whether it be through providing guides, answering questions, or even asking them so that we are aware of other problems and possibilities. Specifically I'd like to thank AaronXP, GreenMachine, Webmedic, gosh, Numinous, DaveXP, and b0red for their contributions to the community. Also I would like to thank xper for allowing me to host my guide here.

UPDATES

03/28/04
» Updated PDF guides for both sites
» Added *"Longhorn Build 4051"* in the *"Operating Systems"* section
» Added mouse-over tooltips to each item in the *"My DVD Layout"* section
» Renamed *"PM8, Ghost, Etc."* to *"Support Tools"*
» Fixed information on how to make floppy images in *"Support Tools"*
» Added *"Site Updates"* section in *"Other"*

:: Introduction ::

Anyone who works in a multi-os environment or in IT knows that it is a pain to have to carry around multiple cds and floppies filled with operating systems and diagnostic and support software. This guide hopes to simplify those problems. I will show you just how easy it is to create your very own DVD consisting of every Windows based operating system you could want as well as how to add support and diagnostic tools as well. You will have one disc with every operating system and support tool you could ever need!

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» Added *"Site Updates"* section in *"Other"*

:: Site Updates ::

03/03/04
» Updated PDF guide for this site
» Added *"My DVD Layout"* section under *"Finishing Up"*, which contains the entire layout to my DVD

03/01/04
» Added PDF versions of the *Multi-Boot DVD* and *Unattended CD* websites
» Fixed some frame layout issues that were bothering me

02/29/04
» Tons of weird HTML code cleanup
» Added *"Adding Unattended"* in the *"Extras"* section
» Added info on how to fix the extra boot option on restart after creating the boot folder

02/28/04
» Re-edited the ENTIRE site, fixed lots of HTML code
» Added coloring system for file names, folder names, and code/commands
» Fixed ALL links
» Corrected all spelling errors
» Added extra space between each little section on a page
» Removed Windows NT 4 from the operating system section. No one uses it

11/01/03
» Added unattended.txt file to *"Clean Up"* section.
» Custom setup.exe section under *"Extras"* is finally finished!
» Frame layout revised so it will center on page resize
» PDF version of this site available under *"Downloads"*

10/31/03
» Updated setupldr.dll references to setupldr.bin
» Changed chain PRO1.DAT to be chain /PRO1.DAT
» Updated cdshell.ini file in *"Downloads"* with proper chain and memdisk commands.
» txtsetup.sif is originally in the i386 folder for the operating system
» Revised how code is displayed. Instead of *italics* it is now surrounded by a black border.
» Added some special code to the end of *"Creating a Boot Menu"*
» Changed the search command (Alt+F) to read the proper key command (Ctrl+F)

:: Getting Started ::

What you will need:

- A LOT of time and patience. Don't expect to get everything to work the first time
- Various operating system cds
- SUFFICIENT drive space (5+ GB to be safe)
- Enable *"Show Hidden Files & Folders"*
- Disable *"Hide extensions for known file types"*
- Disable *"Hide protected operating system files (Recommended)"*
- WinImage 6.10
- A hex editor (I HIGHLY recommend Hex Workshop 4.23)
- CDIMAGE 2.47
- CD Shell 2.0.11
- Optional - VMware Workstation 4.0.5 or Virtual PC 2004
- Any program capable of burning ISO files to DVD

TIP!: Work on one operating system at a time. Test once you have that operating system added to make sure everything works right, then move onto the next OS. It will save yourself time when something goes wrong and you have no idea where to look.

Preparation

Before we get started copying cds and modifying files, we should figure out where we want to store our files. For this entire site, I will be using the D:\ in all of my examples. Keep in mind that my 4.0GB DVD actually takes up 7.8 GB of hard drive space before CDIMAGE optimizes files, so make sure you have plenty of room on your target drive.

1. In your C:\ (or the root of your OS drive) you should find a file called boot.ini. Make a copy of this file and store it somewhere, we will need it later!
2. Create a directory on your target drive called AIO-DVD.
3. Make a folder *inside* of AIO-DVD called SETUP that will store all of the cds.
4. If you haven't already downloaded CD Shell from the link above, please do so. Extract the zip file and move the BOOT folder for CD Shell and all of it's contents into AIO-DVD.
5. Place the tools folder from the CD Shell zip file into the BOOT folder.

Your directory structure should look something like this so far:
D:\AIO-DVD\
D:\AIO-DVD\SETUP\
D:\AIO-DVD\BOOT\
D:\AIO-DVD\BOOT\tools\

NOTE: My guide does not use Gosh's *Reducing Size of Source* method to trim down installs, nor will this guide cover that method. Using the full cd allows you to call the setup.exe file for each OS in case you want to check for hardware compatibility or install from within the Windows GUI. This will also allow you to install upgrades if you so choose.

NOTE 2: All images used throughout this guide are used for demonstration purposes only. For example: If the image shows *PRO1* on it somewhere yet you are working on a Windows 2000 Pro cd, just modify the file according to the guide, not necessarily the image.

Understanding The Boot Process

Okay, before we go on it helps to understand the boot process for NT based operating systems. When a bootable XP cd is created, a file called xpboot.bin is used to create the boot sector. It is possible to extract the boot sectors from your cd, but it's a pain so I will be providing them for you. This boot sector says to access the i386 folder and load setupldr.bin. setupldr.bin has instructions on where to access txtsetup.sif which starts the text-mode setup for Windows.

Are you ready yet? Here we go...

:: Windows XP Pro SP1 ::

Well, I think we're ready to start copying our first cd. If you haven't read Getting Started please do so before proceeding.

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called XP and then create another folder inside of it called Professional.

eg. - D:\AIO-DVD\SETUP\XP\Professional\

Copy the entire XP Professional cd to the Professional folder.

Creating the Boot Folder

Thanks to gosh from the MSFN forums, I have discovered a much better way to obtain the boot files. While this method is a slight pain, it ensures that everyone has the proper boot files for their DVD. Go to *Start -> Run* and type or paste the following command with the correct drive letter of course:

D:\AIO-DVD\SETUP\XP\Professional\i386\winnt32.exe /noreboot

Windows XP setup should come up. Choose *"New Installation"* and go through the options as usual. Do NOT download updated setup files. At the *"Setup Options"* screen, click on *"Advanced Options"* and make sure *"copy all installation files from the CD"* is checked. If it is grayed out don't worry about it.

Setup *should* create 2 folders in the root of your main drive. They will be hidden so make sure *"Show hidden files and folders"* is enabled.

WIN_NT.~BT - the boot folder
WIN_NT.~LS - installation files folder

Rename WIN_NT.~BT to PRO1 and move the entire folder into the AIO-DVD folder.

eg. - D:\AIO-DVD\PRO1\

Now in the PRO1 folder delete the following files:

BOOTSECT.DAT
migrate.inf
winnt.sif

IMPORTANT: Now there's just one last thing we have to do. When we ran setup like we just did, it expects us to be installing a new operating system the next time we reboot, so setup adds an extra boot option in the boot.ini file and changes the default boot choice to it. If you followed the

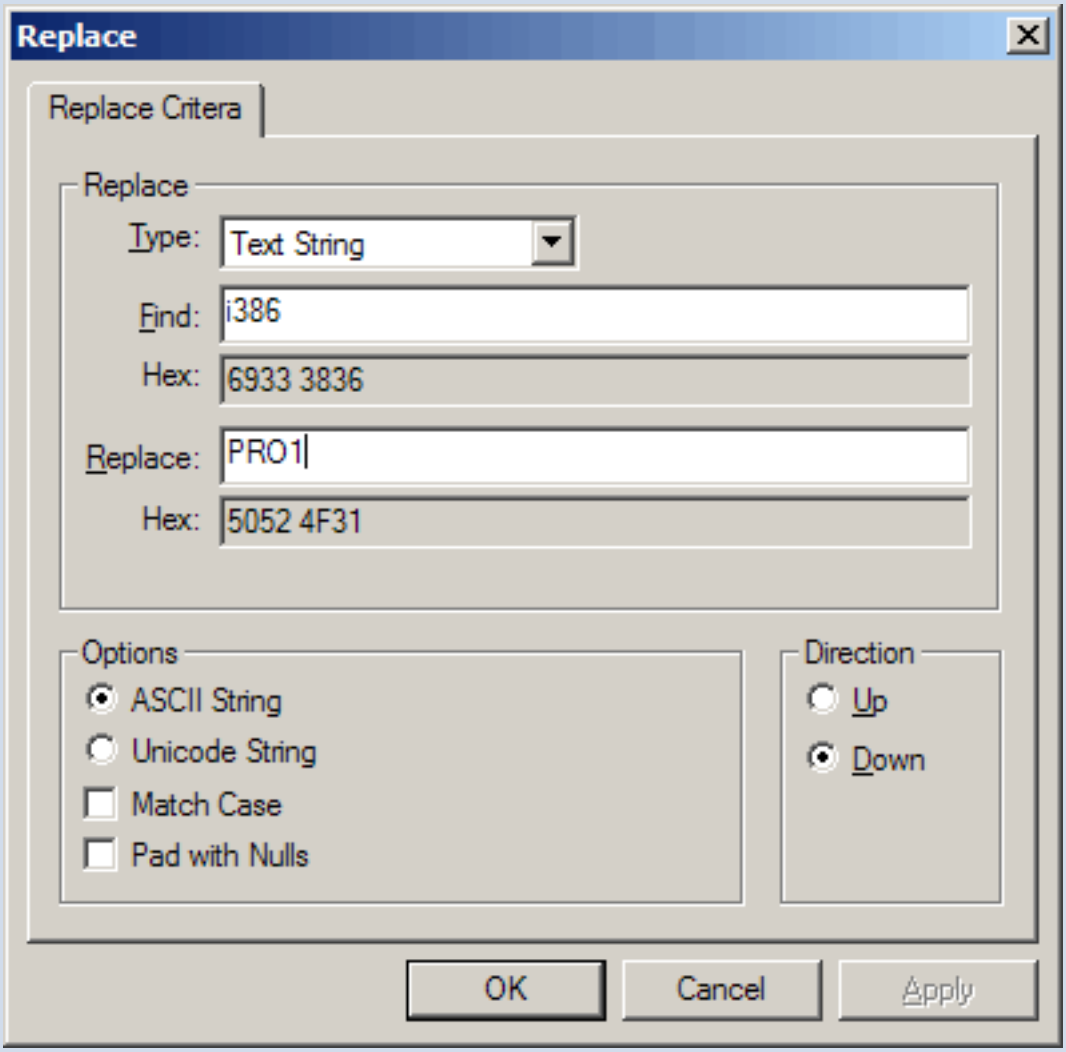
instructions in *"Getting Started"*, you should have made a copy of your boot.ini file. Take this copy, and *copy* it back over the boot.ini file in the C:\. Don't get rid of your original boot.ini, you will need it again if you plan on using other portions of this guide to add more operating systems.

If you don't have a backup of your boot.ini file, you can edit it yourself. This is what it normally looks like if you have XP Pro installed on the first or only partition of your hard drive:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Professional" /fastdetect
```

Editing "setupldr.bin"

Let's start modifying some files. First in your PRO1 directory open up the file setupldr.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl+H) search for Type: "Text String." We want to find *i386* and replace it with *PRO1*, as shown in the screenshot below.

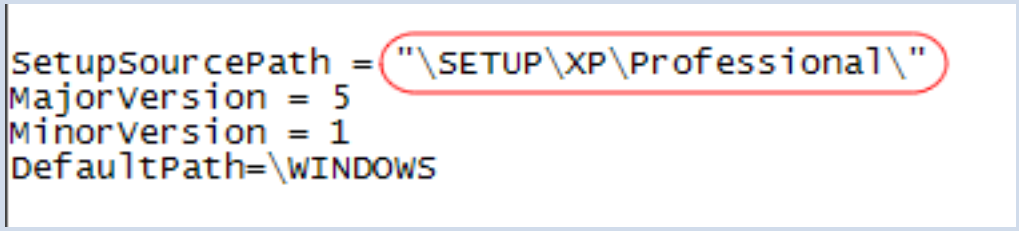


Click *OK* and then choose *Replace All*. It should say *"4 Occurrences Replaced."* If it does not find 4 occurrences, there may be a problem somewhere. When done, save the file and choose not to back it up.

Editing "txtsetup.sif"

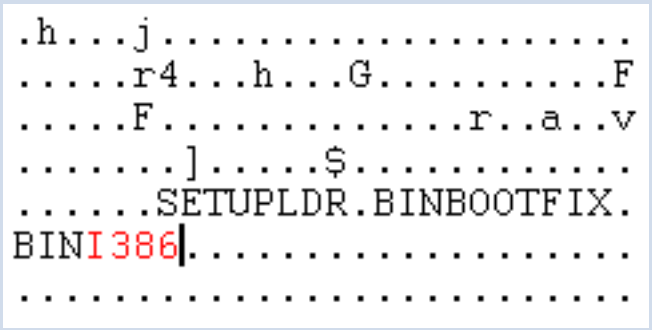
In your PRO1 folder find the file txtsetup.sif and open it in NotePad. Choose *Edit -> Find* (Ctrl+F) and search for *SetupSourcePath*. You will need to change the default "\" to reflect the directory you copied your XP Pro cd to. In this case it is "\SETUP\XP\Professional\"

SetupSourcePath = "\SETUP\XP\Professional\"



Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the PRO1.zip file. Extract the file and then open PRO1.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace I386 with PRO1.



Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

Navigate to your setup folder \AIO-DVD\SETUP\XP\Professional\ and *copy* (not move) the following files into the root folder, AIO-DVD.

- readme.html
- spnotes.html (only found on an SP1 cd)
- win51
- win51ip
- win51ip.sp1 (only found on an SP1 cd)

:: Windows XP Home SP1 ::

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called XP and then create another folder inside of it called Home.

eg. - D:\AIO-DVD\SETUP\XP\Home\

Copy the entire XP Home cd to the Home folder.

Creating the Boot Folder

Thanks to gosh from the MSFN forums, I have discovered a much better way to obtain the boot files. Go to *Start -> Run* and type or paste the following command with the correct drive letter of course:

D:\AIO-DVD\SETUP\XP\Home\i386\winnt32.exe /noreboot

Windows XP Home setup should come up. Choose *"New Installation"* and go through the options as usual. Do NOT download updated setup files. At the *"Setup Options"* screen, click on *"Advanced Options"* and make sure *"copy all installation files from the CD"* is checked. If it is grayed out don't worry about it.

Setup *should* create 2 folders in the root of your main drive. They will be hidden so make sure *"Show hidden files and folders"* is enabled.

WIN_NT.~BT - the boot folder
WIN_NT.~LS - installation files folder

Rename WIN_NT.~BT to HOM1 and move the entire folder into the AIO-DVD folder.

eg. - D:\AIO-DVD\HOM1\

Now in the HOM1 folder delete the following files:

BOOTSECT.DAT
migrate.inf
winnt.sif

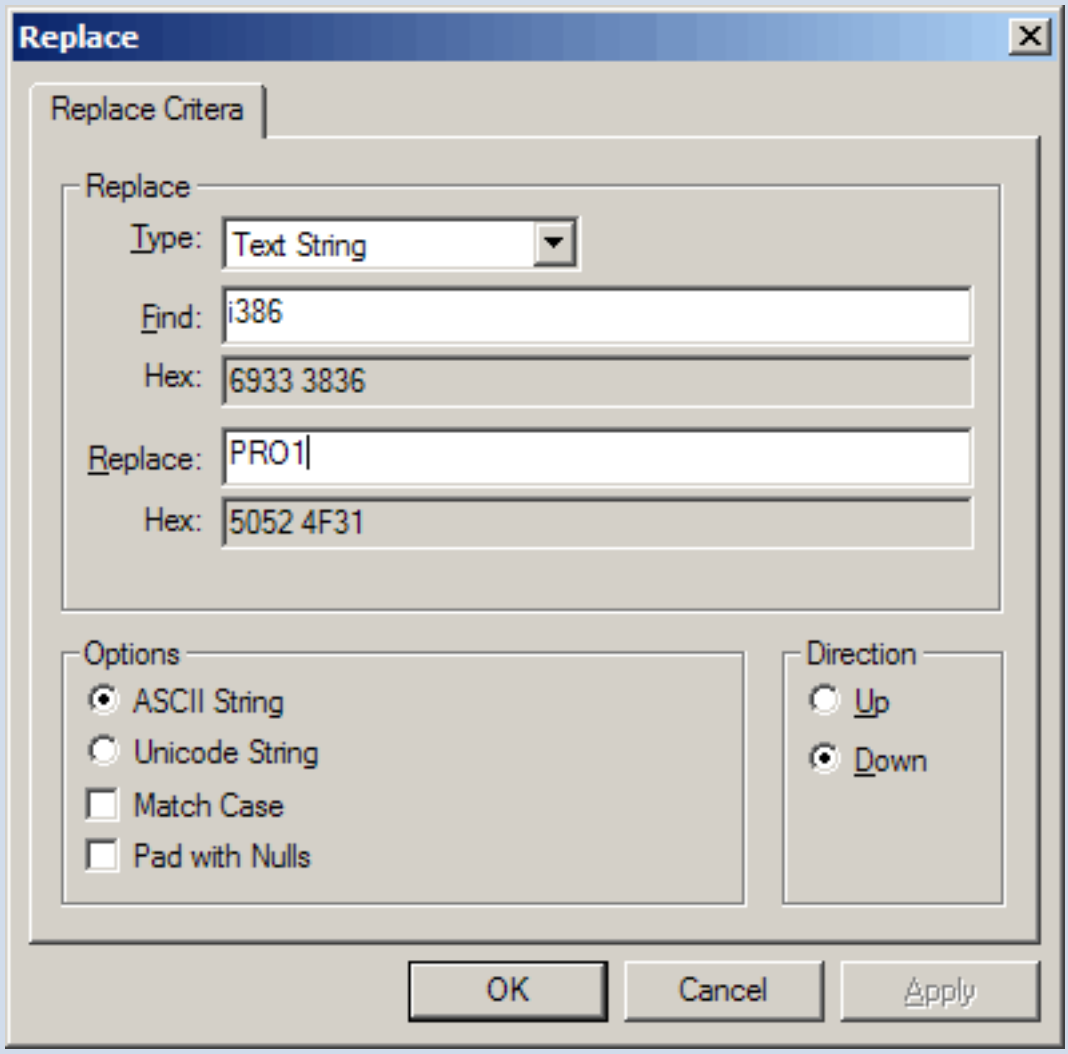
IMPORTANT: Now there's just one last thing we have to do. When we ran setup like we just did, it expects us to be installing a new operating system the next time we reboot, so setup adds an extra boot option in the boot.ini file and changes the default boot choice to it. If you followed the instructions in *"Getting Started"*, you should have made a copy of your boot.ini file. Take this copy, and *copy* it back over the boot.ini file in the C:\. Don't get rid of your original boot.ini, you will need it again if you plan on using other portions of this guide to add more operating systems.

If you don't have a backup of your boot.ini file, you can edit it yourself. This is what it normally looks like if you have XP Home installed on the first or only partition of your hard drive:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Home" /fastdetect
```

Editing "setupldr.bin"

Let's start modifying some files. First in your HOM1 directory open up the file setupldr.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl+H) search for Type: "Text String." We want to find *i386* and replace it with *HOM1*. The screenshot below is just for reference.

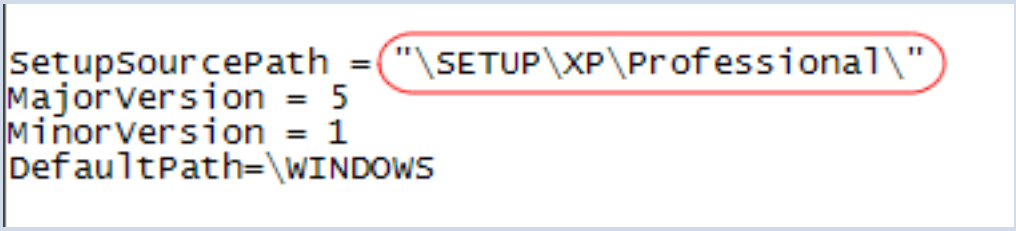


Click *OK* and then choose *Replace All*. It should say *"4 Occurrences Replaced."* If it does not find 4 occurrences, there may be a problem somewhere. When done, save the file and choose not to back it up.

Editing "txtsetup.sif"

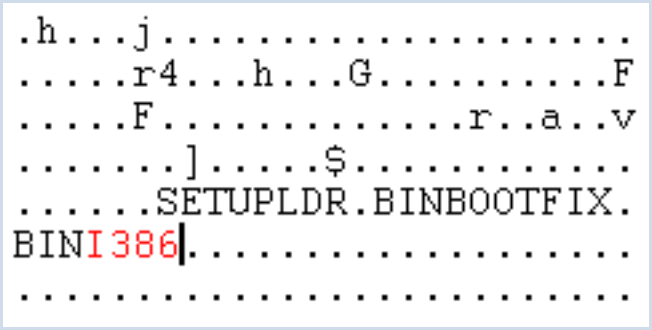
In your HOM1 folder find the file txtsetup.sif and open it in NotePad. Choose *Edit -> Find* (Ctrl+F) and search for *SetupSourcePath*. You will need to change the default "\" to reflect the directory you copied your XP Home cd to. In this case it is "\SETUP\XP\Home\"

SetupSourcePath = "\SETUP\XP\Home\"



Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the HOM1.zip file. Extract the file and then open HOM1.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace I386 with HOM1.



Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

Navigate to your setup folder \AIO-DVD\SETUP\XP\Home\ and *copy* (not move) the following files into the root folder, AIO-DVD.

- readme.html
- spnotes.html (only found on an SP1 cd)

- win51
- win51ic
- win51ic.sp1 (only found on an SP1 cd)

:: Windows Server 2003 ::

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called Server2003.

eg. - D:\AIO-DVD\SETUP\Server2003\

Inside of this folder create a folder for each edition of Server 2003 that you are including. For my DVD I have DataCenter, Enterprise, Standard, and Web. Copy the entire Server 2003 cds into their corresponding folders.

Examples:
D:\AIO-DVD\SETUP\Server2003\DataCenter\
D:\AIO-DVD\SETUP\Server2003\Enterprise\
D:\AIO-DVD\SETUP\Server2003\Standard\
D:\AIO-DVD\SETUP\Server2003\Web\

NOTE: For this guide, we will be using Server 2003 Standard for the examples. If adding Enterprise, Data Center, or Web editions just change the necessary elements to fit your needs.

Creating the Boot Folder

Thanks to gosh from the MSFN forums, I have discovered a much better way to obtain the boot files. Go to *Start -> Run* and type or paste the following command with the correct drive letter of course:

D:\AIO-DVD\SETUP\Server2003\Standard\i386\winnt32.exe /noreboot

Windows Server 2003 setup should come up. Choose *"New Installation"* and go through the options as usual. Do NOT download updated setup files. At the *"Setup Options"* screen, click on *"Advanced Options"* and make sure *"copy all installation files from the CD"* is checked. If it is grayed out don't worry about it.

Setup *should* create 2 folders in the root of your main drive. They will be hidden so make sure *"Show hidden files and folders"* is enabled.

WIN_NT.~BT - the boot folder
WIN_NT.~LS - installation files folder

Rename WIN_NT.~BT to 3STD and move the entire folder into the AIO-DVD folder.

eg. - D:\AIO-DVD\3STD\

Now in the 3STD folder delete the following files:

BOOTSECT.DAT
migrate.inf
winnt.sif

IMPORTANT: Now there's just one last thing we have to do. When we ran setup like we just did, it expects us to be installing a new operating system the next time we reboot, so setup adds an extra boot option in the boot.ini file and changes the default boot choice to it. If you followed the instructions in *"Getting Started"*, you should have made a copy of your boot.ini file. Take this copy, and *copy* it back over the boot.ini file in the C:\. Don't get rid of your original boot.ini, you will need it again if you plan on using other portions of this guide to add more operating systems.

If you don't have a backup of your boot.ini file, you can edit it yourself. This is what it normally looks like if you have Server 2003 installed on the first or only partition of your hard drive:

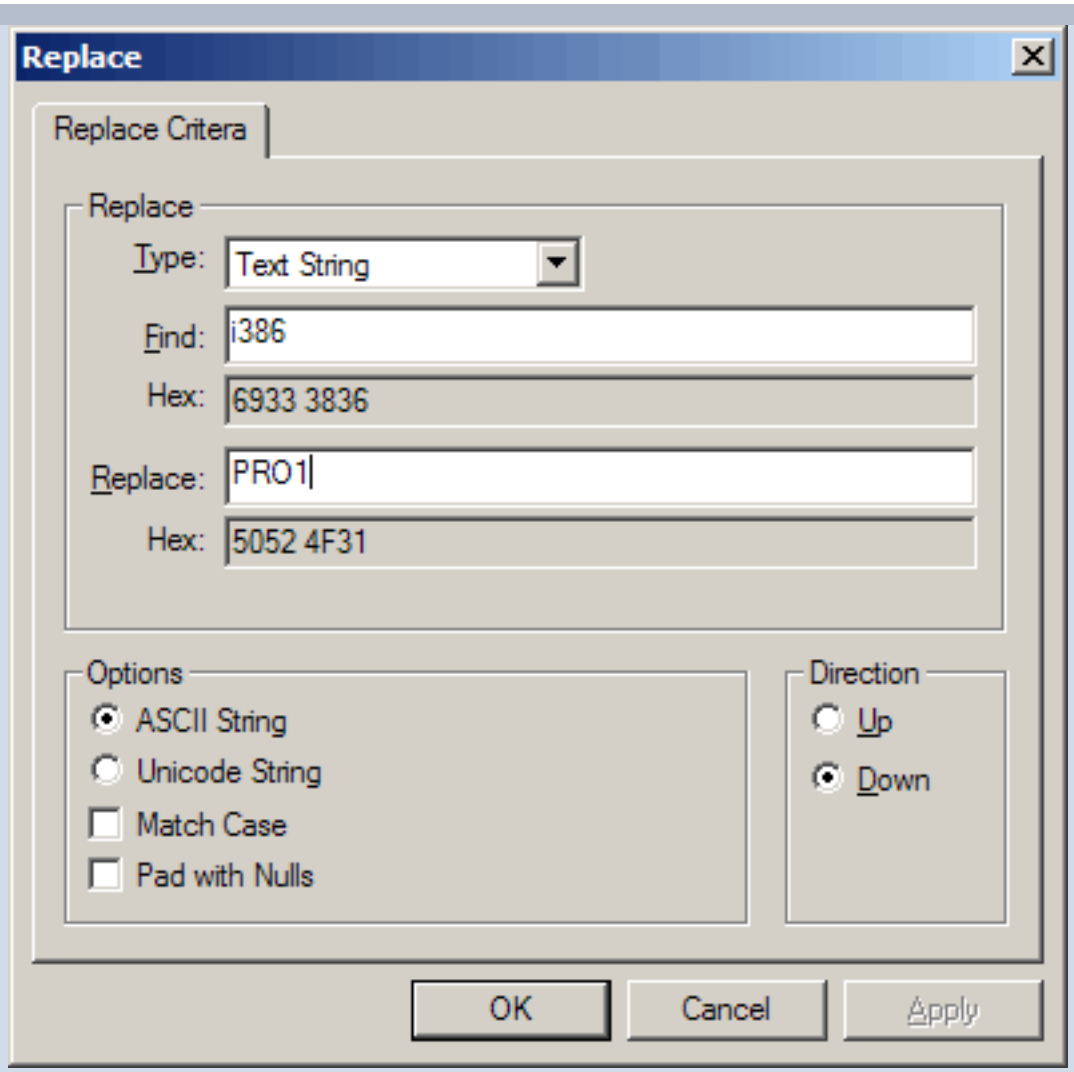
```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Windows Server 2003, Standard" /fastdetect
```

I included other Server 2003 versions as well on my DVD and chose to use the following boot folder naming scheme:

3STD - Standard
3ENT - Enterprise
3DCT - Data Center
3WEB - Web

Editing "setupldr.bin"

Let's start modifying some files. First in your 3STD directory open up the file setupldr.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl+H) search for Type: "Text String." We want to find *i386* and replace it with *3STD*. The screenshot below is just for reference.



Click *OK* and then choose *Replace All*. It should say *"4 Occurrences Replaced."* If it does not find 4 occurrences, there may be a problem somewhere. When done, save the file and choose not to back it up.

Editing "txtsetup.sif"

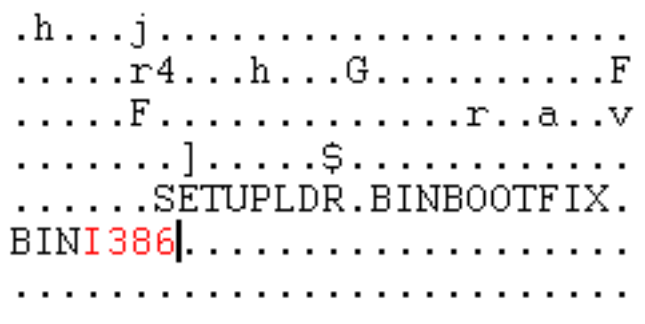
In your 3STD folder find the file txtsetup.sif and open it in NotePad. Choose *Edit -> Find* (Ctrl+F) and search for *SetupSourcePath*. You will need to change the default "\" to reflect the directory you copied your Server 2003 cd to. In this case it is "\SETUP\Server2003\Standard\"

SetupSourcePath = "\SETUP\Server2003\Standard\"

```
SetupSourcePath = "\SETUP\XP\Professional\"
MajorVersion = 5
MinorVersion = 1
DefaultPath=\WINDOWS
```

Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the 3ALL.zip file. Extract the files and then open 3STD.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace I386 with 3STD.



Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

Navigate to your setup folder \AIO-DVD\SETUP\Server2003\Standard\ and *copy* (not move) the following files into the root folder, AIO-DVD.

- readme.html
- win51s (Standard only)
- win51d (Datacenter only)
- win51a (Enterprise only)
- win51b (Web only)

:: Windows 2000 SP4 ::

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called 2000.

eg. - D:\AIO-DVD\SETUP\2000\

Inside of this folder create a folder for each edition of 2000 that you are including. For my DVD I have AdvServer, Professional, and Server . Copy the entire 2000 cds into their corresponding folders.

Examples:
D:\AIO-DVD\SETUP\2000\AdvServer\
D:\AIO-DVD\SETUP\2000\Professional\
D:\AIO-DVD\SETUP\2000\Server\

NOTE: For this guide, we will be using 2000 Professional for the examples. If adding Advanced Server or Server editions just change the necessary elements to fit your needs.

Creating the Boot Folder

If you've already gone through any of the XP sections on this site, you have probably used the method that I discovered from gosh to create the boot folders. However, when creating this DVD from inside of any XP based OS, we cannot go that route.

So, there are a few things we can do:

1. The first and easiest thing you can try is using the boot folders that I am providing from my own DVD. I currently only have boot folders for Professional SP4 and Server SP4. If you use this method, just download the proper zip file and extract the contents into our AIO-DVD folder.

   Examples:
   D:\AIO-DVD\2PRO\
   D:\AIO-DVD\2SRV\

2. This method is bit more complicated and time consuming, but it's the best way and worth it. We CAN use gosh's method as for the XP operating systems, however we must do it from a Windows 2000 installation. I chose to install an ISO image of 2000 Professional in VMware. I then copied the contents of the ISO into a folder on the virtual installation's desktop, and slipstreamed SP4 into the source files. (To move files or folder in or out of VMware and onto your PC, you will need to install VMware tools)

   Afterwards I ran winnt32.exe from the i386 folder. Windows 2000 setup should come up. Choose *"New Installation"* and go through the options as usual. Do NOT download updated setup files. At the *"Setup Options"* screen, click on *"Advanced Options"* and make sure *"copy all installation files from the CD"* is checked. If it is grayed out don't worry about it. When it's done do NOT let it reboot.

Setup *should* create 2 folders in the root of your main drive. They will be hidden so make sure *"Show hidden files and folders"* is enabled.

WIN_NT.~BT - the boot folder
WIN_NT.~LS - installation files folder

Rename WIN_NT.~BT to 2PRO and move the entire folder out of VMware and into our AIO-DVD folder.

eg. - D:\AIO-DVD\2PRO\

Now in the 2PRO folder delete the following files:
BOOTSECT.DAT
migrate.inf
winnt.sif

3. If you have Windows 98 or 2000 already installed on a real computer, copy the entire CD to the desktop. Slipstream SP4 if you want (there are countless guides out there on how to do this). Then run winnt32.exe and follow the instructions in the 2nd paragraph of choice 2.

4. Find boot disk files for whichever Windows 2000 edition you are using with the right service pack, and extract all of the files into the right boot folders.

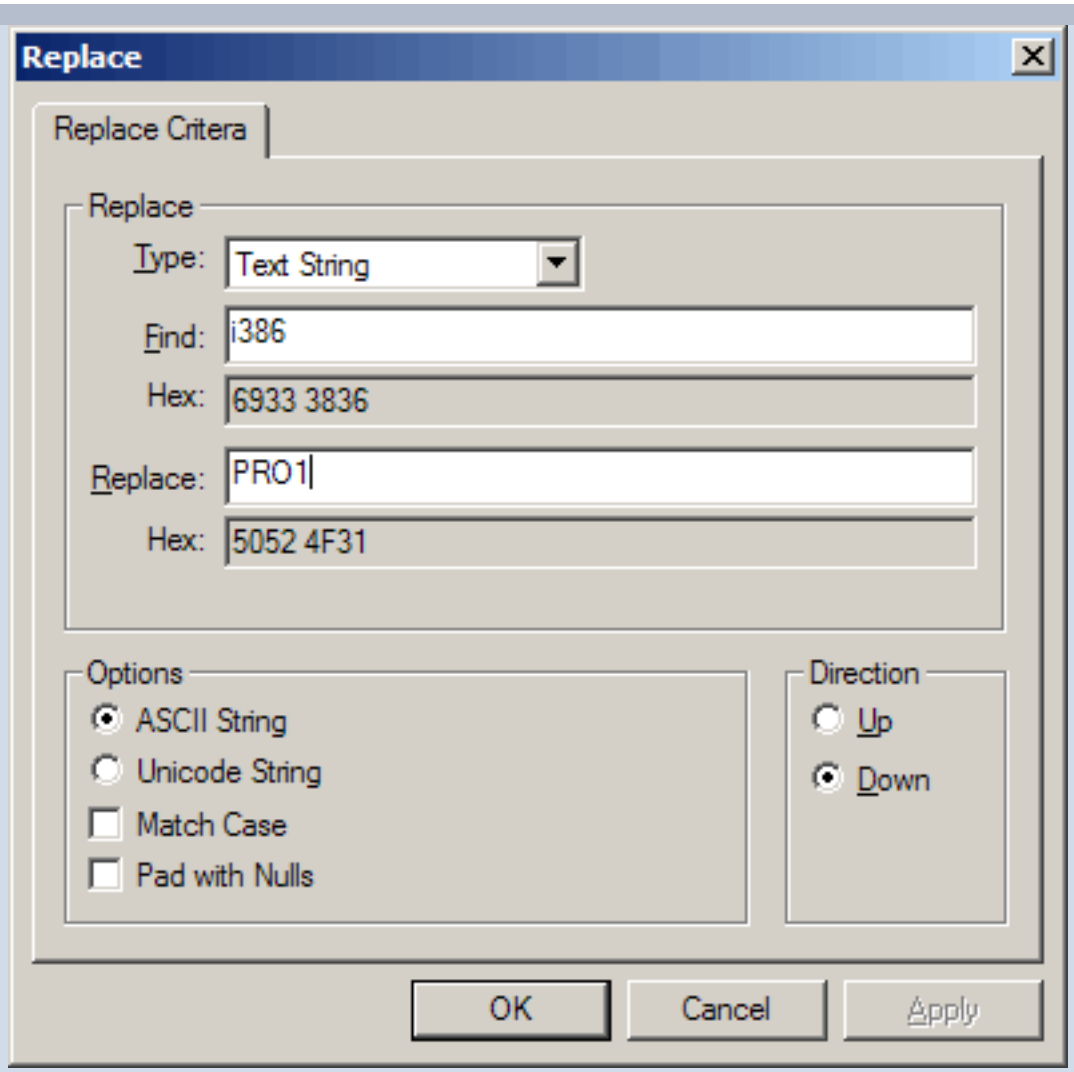
IMPORTANT: If you used methods 2 or 3, it expects us to be installing a new operating system the next time we reboot, so setup adds an extra boot option in the boot.ini file and changes the default boot choice to it. If you followed the instructions in *"Getting Started"*, you should have made a copy of your boot.ini file. Take this copy, and *copy* it back over the boot.ini file in the C:\. Don't get rid of your original boot.ini, you will need it again if you plan on using other portions of this guide to add more operating systems.

If you don't have a backup of your boot.ini file, you can edit it yourself. This is what it normally looks like if you have 2000 installed on the first or only partition of your hard drive:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1)\WINNT
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows 2000 Professional " /fastdetect
```

Editing "setupldr.bin"

Let's start modifying some files. First in your 2PRO directory open up the file setupldr.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl+H) search for Type: "Text String." We want to find *i386* and replace it with *2PRO*. The screenshot below is just for reference.



Click *OK* and then choose *Replace All*. It should say *"3 Occurrences Replaced."* If it does not find 3 occurrences, there may be a problem somewhere. When done, save the file and choose not to back it up.

Editing "txtsetup.sif"

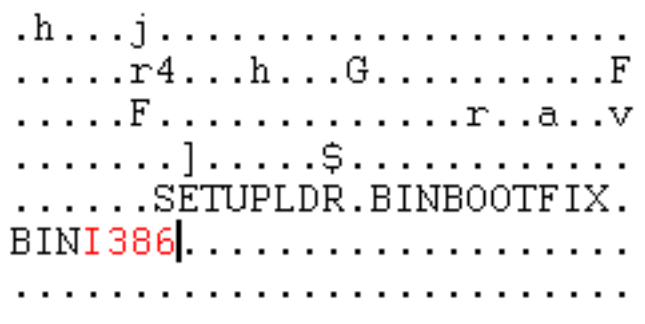
In your 2PRO folder find the file txtsetup.sif and open it in NotePad. Choose *Edit -> Find* (Ctrl+F) and search for *SetupSourcePath*. You will need to change the default "\" to reflect the directory you copied your XP Pro cd to. In this case it is "\SETUP\2000\Professional\"

SetupSourcePath = "\SETUP\2000\Professional\"

```
SetupSourcePath = "\SETUP\XP\Professional\"
MajorVersion = 5
MinorVersion = 1
DefaultPath=\WINDOWS
```

Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the 2ALL.zip file. Extract the file and then open 2PRO.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace *I386* with *2PRO*.



Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

Navigate to your setup folder \AIO-DVD\SETUP\2000\Professional\ and *copy* (not move) the following files into the root folder, AIO-DVD.

- readme.doc
- spnotes.htm
- cdrom_nt.5
- cdrom_is.5 (2000 Server only)
- cdrom_ia.5 (2000 Advance Server only)
- cdrom_ip.5 (2000 Professional only)

:: Windows 98 SE ::

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called 98SE.

eg. - D:\AIO-DVD\SETUP\98SE\

Copy the entire 98 Second Edition cd to the 98SE folder.

Creating the Boot Image

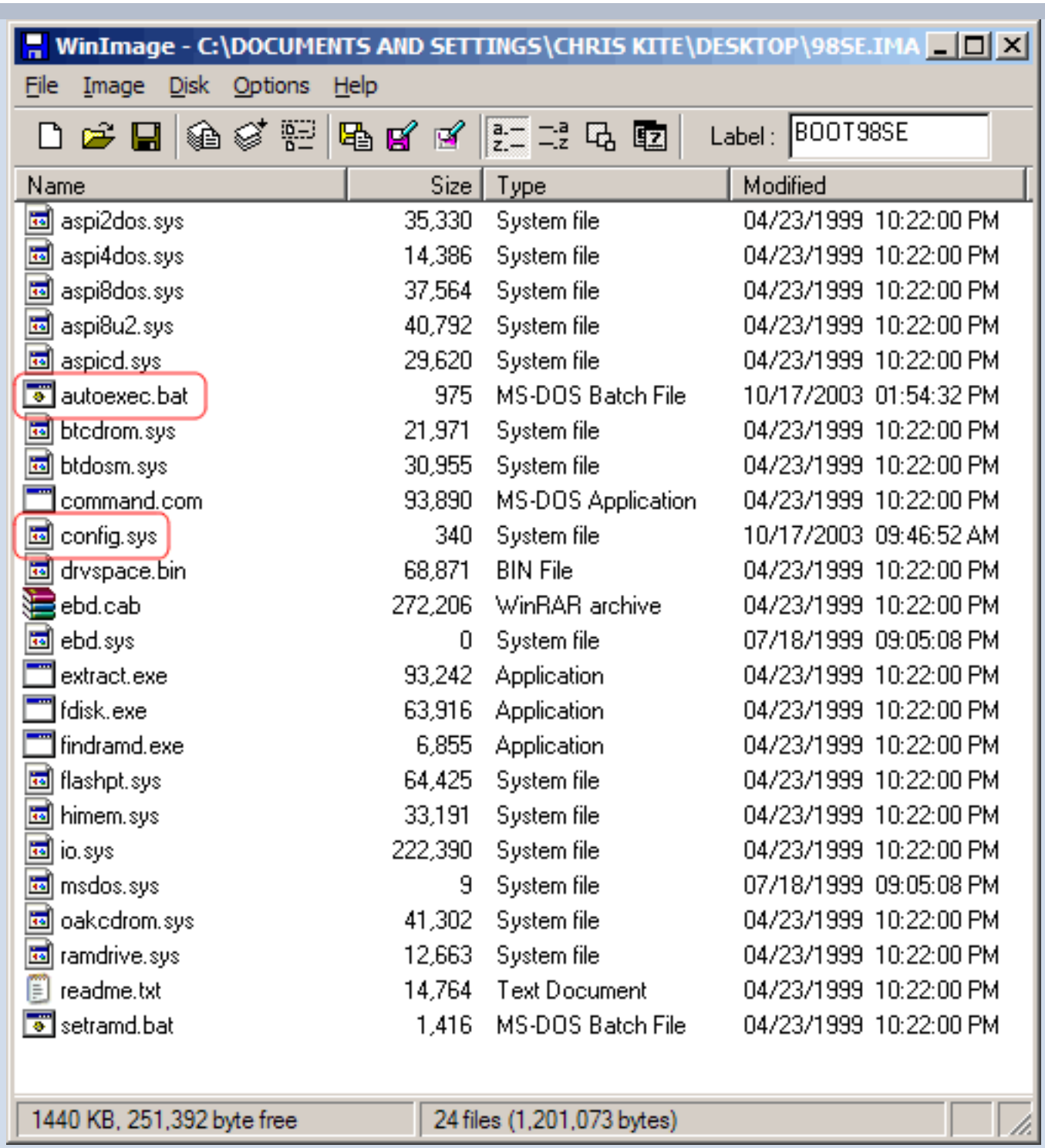
Only the NT based operating systems use the boot folder method to startup, so we have to take a slightly different approach for Windows 98.

The easiest way to do this is to just download my 98SE.zip file and extract the file within it into your AIO-DVD folder. However, if you'd like to learn how to actually create and edit the image, then please feel free to read on.

You will need a Windows 98 SE OEM boot disk or just a Windows 98 OEM boot disk if not using an SE cd. You can find a boot disk for either version here. Extract the .IMA file from the downloaded exe file with WinRAR. WinRAR will give you an error message about the archive being corrupt but ignore it.

Editing "autoexec.bat"

Now, we need to edit the files autoexec.bat and config.sys. Open the .ima file with WinImage. Drag the files from WinImage to your desktop. Right click autoexec.bat and choose *"Edit"*.



Edit the "EXT:" section to show this IF in your "\SETUP\98SE\WIN98\" folder you have a file called oemsetup.exe.

```
:EXT
%RAMD%:\extract /y /e /l %RAMD%: ebd.cab > NUL
echo The diagnostic tools were successfully loaded to drive %RAMD%.
echo.
LH %ramd%:\MSCDEX.EXE /D:mscd001 /L:%CDROM%
echo.
cls
echo Now installing Windows 98 SE
echo.
```

```
echo Loading...
path=%RAMD%:\;a:\;%CDROM%:\SETUP\98SE\WIN98\
OEMSETUP.EXE
echo.
GOTO QUIT
```

If your cd does not contain the oemsetup.exe file, then copy that code and edit the bold line to point to your normal setup.exe file. It will more than likely read this:

```
path=%RAMD%:\;a:\;%CDROM%:\SETUP\98SE\
SETUP.EXE
```

NOTE: Make sure there is NO extra white space (blank spaces) at the end of your lines in your autoexec.bat file. If you copy and pasted that code there shouldn't be, but double check to make sure.

Editing "config.sys"

Right click config.sys and choose *"Open With..."*. In the dialog box that comes up click *"Open With..."* then *"Select the program from a list"*. Now edit the file to show this and ONLY this.

```
files=10
buffers=10
dos=high,umb
stacks=9,256
lastdrive=z
device=himem.sys /testmem:off
device=oakcdrom.sys /D:mscd001
device=btdosm.sys
device=flashpt.sys
device=btcdrom.sys /D:mscd001
device=aspi2dos.sys
device=aspi8dos.sys
device=aspi4dos.sys
device=aspi8u2.sys
device=aspicd.sys /D:mscd001
devicehigh=ramdrive.sys /E 2048
```

Finishing Up

Drag the edited autoexec.bat and config.sys back into WinImage. It will ask if you want to inject the files. Choose *"Yes"* and then when it asks if you want to replace the existing files. Click *"All"*. Now save the file *File -> Save* and then close WinImage.

Rename your file to 98SE.IMA and copy it into your AIO-DVD folder.

:: Windows ME ::

Copying the CD Contents

Inside of your SETUP folder which should be in AIO-DVD create a folder called ME.

eg. - D:\AIO-DVD\SETUP\ME\

Copy the entire Millenium Edition cd to the ME folder.

Creating the Boot Image

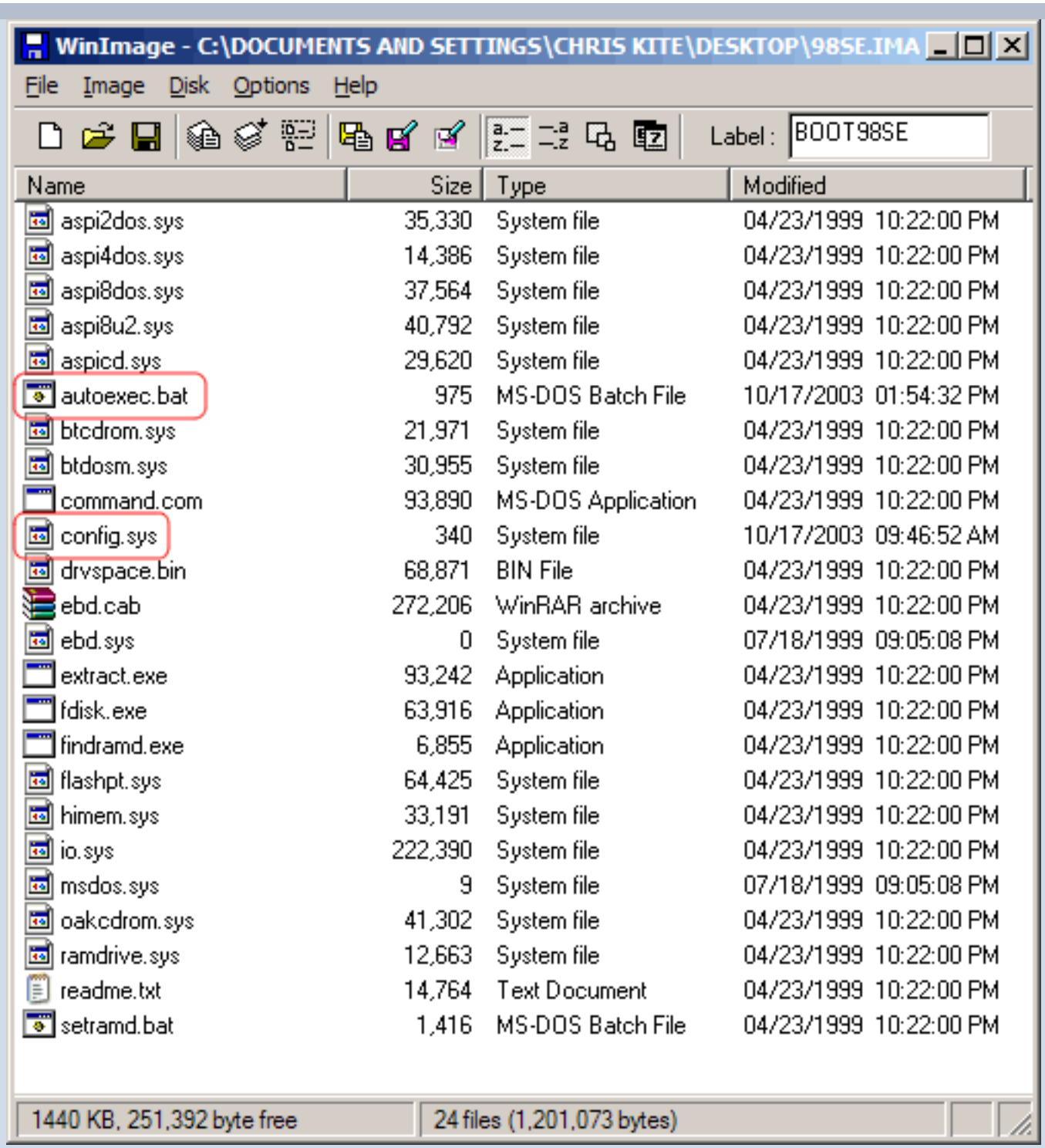
Only the NT based operating systems use the boot folder method to startup, so we have to take a slightly different approach for Windows 98.

The easiest way to do this is to just download my ME.zip file and extract the file within it into your AIO-DVD folder. However, if you'd like to learn how to actually create and edit the image, then please feel free to read on.

You will need a Windows ME OEM boot disk. You can find a boot disk here. NOTE: Download the *"Windows 98 SE OEM"* boot disk (this method is the easiest). Extract the .IMA file from the downloaded exe file with WinRAR. WinRAR will give you an error message about the archive being corrupt but ignore it.

Editing "autoexec.bat"

Now, we need to edit the files autoexec.bat and config.sys. Open the .ima file with WinImage. Drag the files from WinImage to your desktop. Right click autoexec.bat and choose *"Edit"*.



Edit the *"EXT:"* section to show this exactly. If the location of your setup.exe file is different, then copy this code for your "EXT:" section and change the line in bold to reflect the location of your file.

```
:EXT
%RAMD%:\extract /y /e /l %RAMD%: ebd.cab > NUL
echo The diagnostic tools were successfully loaded to drive %RAMD%.
echo.
LH %ramd%:\MSCDEX.EXE /D:mscd001 /L:%CDROM%
echo.
cls
echo Now installing Windows ME
echo.
```

```
echo Loading...
path=%RAMD%:\;a:\;%CDROM%:\SETUP\WINME\
SETUP.EXE
echo.
GOTO QUIT
```

NOTE: Make sure there is NO extra whitespace (blank spaces) at the end of your lines in your autoexec.bat file. If you copy and pasted that code there shouldn't be, but double check to make sure.

Editing "config.sys"

Right click config.sys and choose *"Open With..."*. In the dialog box that comes up click *"Open With..."* then *"Select the program from a list"*. Now edit the file to show this and ONLY this.

```
files=10
buffers=10
dos=high,umb
stacks=9,256
lastdrive=z
device=himem.sys /testmem:off
device=oakcdrom.sys /D:mscd001
device=btdosm.sys
device=flashpt.sys
device=btcdrom.sys /D:mscd001
device=aspi2dos.sys
device=aspi8dos.sys
device=aspi4dos.sys
device=aspi8u2.sys
device=aspicd.sys /D:mscd001
devicehigh=ramdrive.sys /E 2048
```

Finishing Up

Drag the edited autoexec.bat and config.sys back into WinImage. It will ask if you want to inject the files. Choose *"Yes"* and then when it asks if you want to replace the existing files. Click *"All"*. Now save the file *File -> Save* and then close WinImage.

Rename your file to ME.IMA and copy it into your AIO-DVD folder.

:: ERD Commander 2003 ::

There are many different configurations for ERD Commander 2003, and I am only explaining the way mine is set up. Yours may differ, but hopefully you can use the information here to suite your needs

ERD Commander 2003 is a tad different than XP. Basically, it has no setup folder. It's boot folder IS it's setup folder, because ERD runs from the DVD and doesn't actually install anything to a fixed disk.

Copying the ERD Commander 2003 Contents

Inside of your AIO-DVD folder create a folder called ERD1.

eg. - D:\AIO-DVD\ERD1\

Copy the entire contents of the ERD Commander 2003 i386 folder into the ERD1 folder. Your folder contents should look something like this:

Contents of D:\AIO-DVD\ERD1\

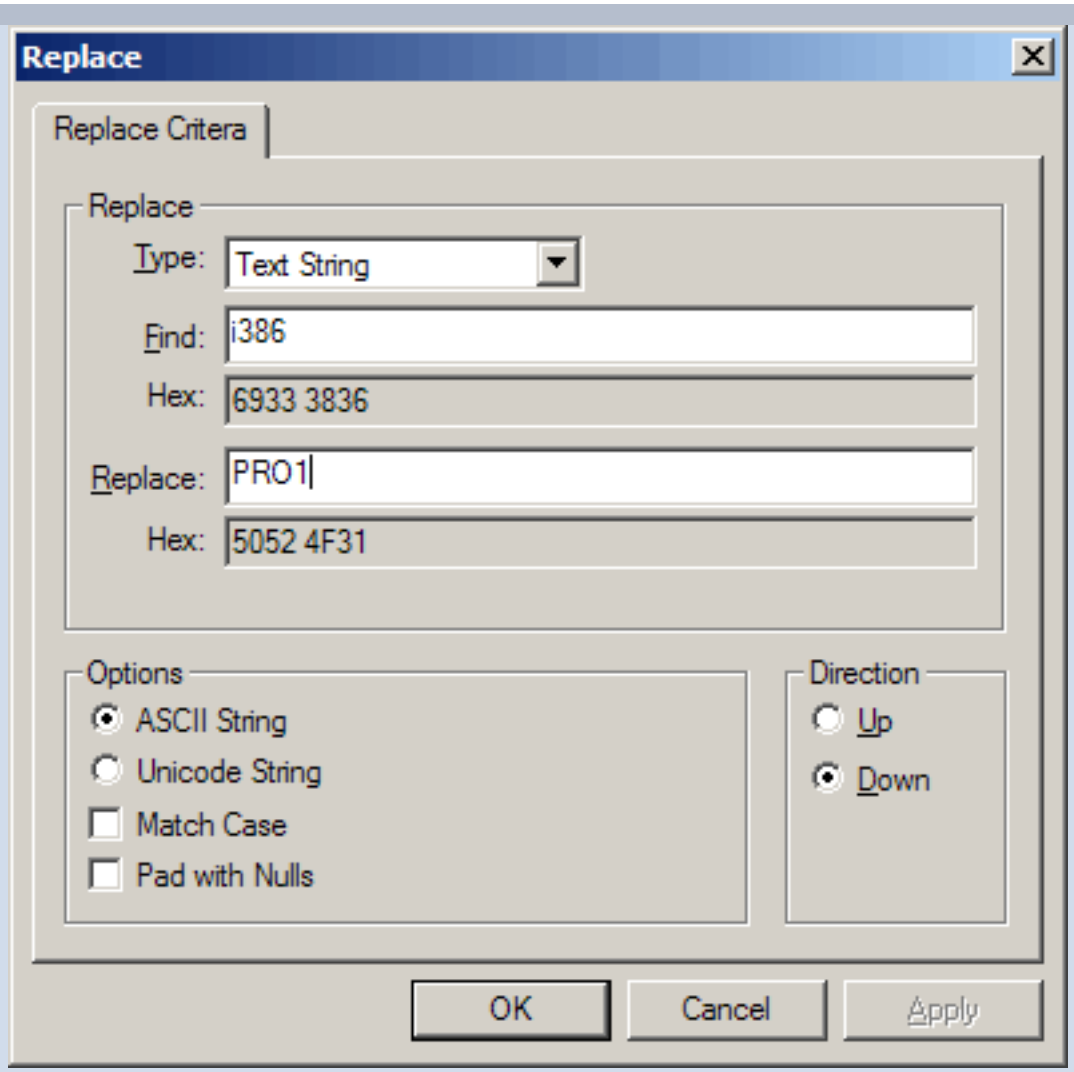
- FONTS
- HELP
- INF
- MSAGENT
- SYSTEM32
- UTILS
- WINSXS

biosinfo.inf
ntdetect.com
setupldr.bin
spcmdcon.sys
txtsetup.sif

IF your directory doesn't at least look something like this you need to find the folder that contains the system32 and winsxs folders. The entire contents of that folder should be copied straight to the ERD1 directory.

Editing "setupldr.bin"

Let's start modifying some files. First in your ERD1 directory open up the file setupldr.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl+H) search for Type: "Text String." We want to find *i386* and replace it with *ERD1*. The screenshot below is just for reference.



Click *OK* and then choose *Replace All*. It should say *"4 Occurrences Replaced."* If it does not find 4 occurrences, there may be a problem somewhere. When done, save the file and choose not to back it up.

Editing "txtsetup.sif"

In your HOM1 folder find the file txtsetup.sif and open it in NotePad. Choose *Edit -> Find* (Ctrl+F) and search for *SetupSourcePath*. You will need to change the default "\" to reflect the directory you copied your XP Home cd to. In this case it is "\".

SetupSourcePath = "\"

Note: This image is from XP Pro SP1 section. Do NOT change it to show what the picture shows.

```
SetupSourcePath = "\SETUP\XP\Professional\"
MajorVersion = 5
MinorVersion = 1
DefaultPath=\WINDOWS
```

Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the ERD1.zip file. Extract the file and then open ERD1.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace I386 with ERD1.

```
.h...j.....................
.....r4...h...G..........F
.....F.............r..a..v
.......].....$.............
......SETUPLDR.BINBOOTFIX.
BINI386.....................
.........................
```

Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

There's one last thing to do now. We need to copy our cd identification files to the root of our project. The following files need to be copied from your ERD Commander 2003 cd to your AIO-DVD folder:

- winbom.ini
- win51
- win51ip
- win51ip.sp1

Extra Boot Option

Thanks to gosh from MSFN for this tip. If you would like to be able to switch cds while using ERD, you have to set up a special boot option that will load ERD Commander 2003 into ram.

First of all, create a new folder called ERD2 in AIO-DVD and copy the entire contents of ERD1 into it.

Now, edit setupldr.bin to reflect the new folder. Then, edit the *"OsLoadOptions"* line in txtsetup.sif to read:

```
OsLoadOptions ="/fastdetect /minint /inram"
```

Now, create a copy of the ERD1.DAT file, place it in the AIO-DVD folder and rename it to ERD2.DAT. Open it in Hex Workshop and this time change what now reads ERD1 to ERD2. We also need to setup our boot menu to be able to load ERD. Only do this once you have read through *"Creating a Boot Menu"* and you are somewhat comfortable with CD Shell.

In your *"menu:"* section you should add something along these lines: Of course edit the code to display whatever you want.

```
print "8) ERD Commander 2003 \n"
print "9) ERD Commander 2003 /inram \n"
```

Now in the *"MainKey:"* section add something along the lines of:

```
if $lastKey == key[8]; then chain /ERD1.DAT
if $lastKey == key[9]; then chain /ERD2.DAT
```

:: Windows Longhorn 4051 ::

Copying the CD Contents

Copy the SOURCES folder from the Longhorn cd into the AIO-DVD folder.

eg. - D:\AIO-DVD\SOURCES\

Renaming the CD Shell Folder

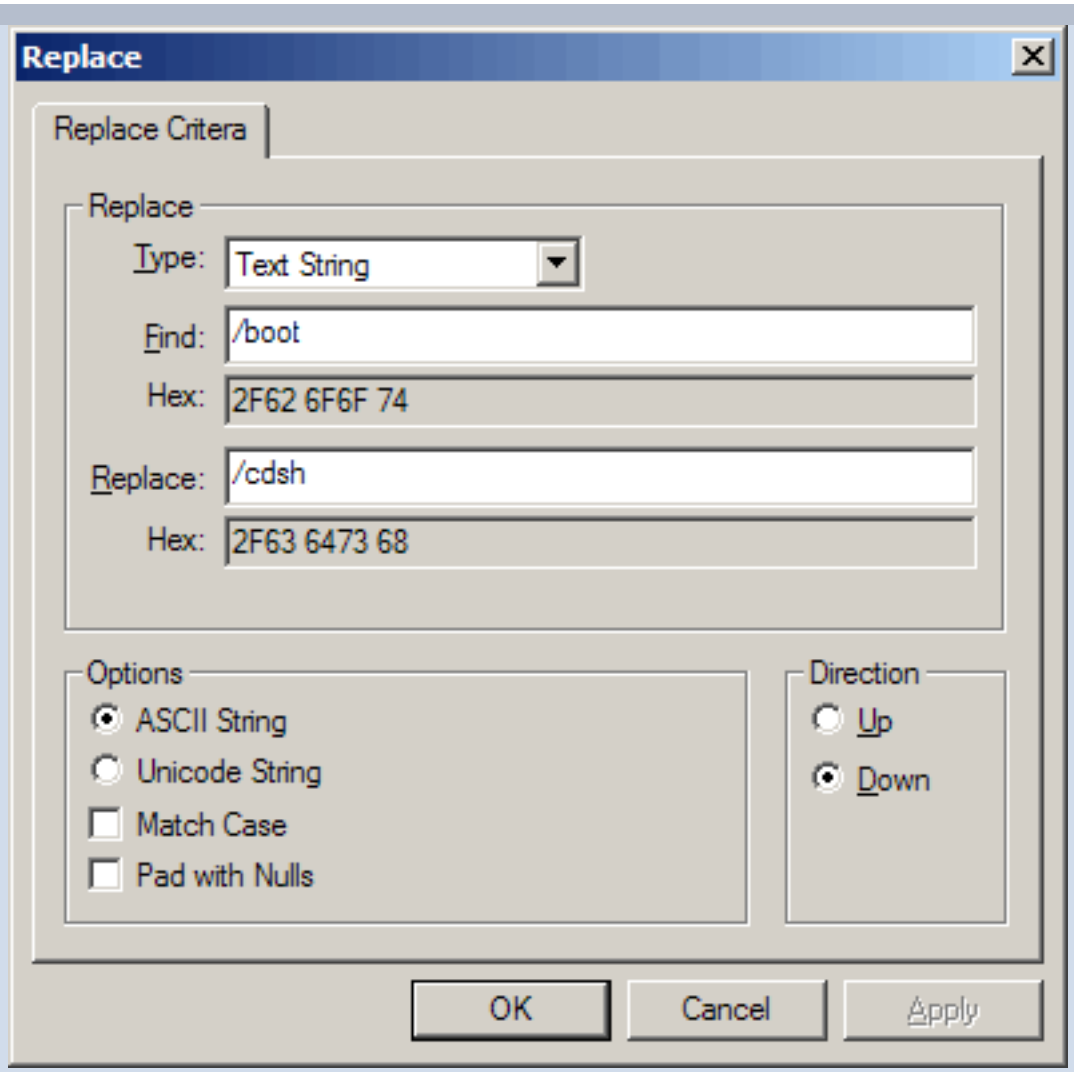
Longhorn has a seperate boot folder already on the cd. This makes things a little easier, except for the fact that it is named BOOT which is what the base folder for the new version of CD Shell is now called. So, we have to rename one of the folders. I've tried renaming the Longhorn boot folder and it is *much* more complex than I would like to deal with, so we are going to rename the CD Shell folder.

Rename the CD Shell folder from BOOT to CDSH.

Now copy the BOOT folder from the Longhorn cd into the AIO-DVD folder.

Editing "cdsh.bin"

In your new CDSH directory open up the file cdsh.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl +H) search for Type: "Text String." We want to find */boot* and replace it with */cdsh*, as shown in the screenshot below.



Click *OK* and then choose *Replace All*. It should say *"1 Occurrence Replaced."* If it finds more than 1 occurrence, there may be a problem somewhere. When done, save the file and choose not to back it up.

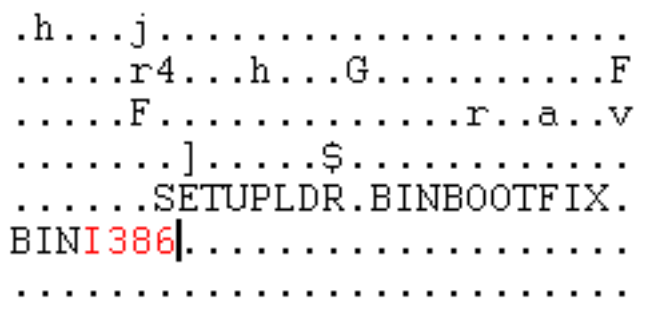
Editing "loader.bin"

In your new CDSH directory open up the file loader.bin in Hex Workshop. Under *Edit -> Replace* (Ctrl +H) search for Type: "Text String." We want to find */boot* and replace it with */cdsh*, just as in the screenshot above.

Click *OK* and then choose *Replace All*. It should say *"1 Occurrence Replaced."* If it finds more than 1 occurrence, there may be a problem somewhere. When done, save the file and choose not to back it up.

Creating the Boot Sector

Now we will need to create the boot sector file that will actually load the text-mode setup for our operating system. Download the 4051.zip file. Extract the file and then open 4051.dat in Hex Workshop. Scroll down until you see the following text in the right hand side. The red text is what we will be replacing. Replace I386 with 4051.



Save the file, choose not to back it up and then place it in the AIO-DVD folder.

Finishing Up

Copy the following files from the Longhorn cd to the AIO-DVD folder. Overwrite any previous files that are there if asked.

- readme.htm
- win51
- win51ip
- winbom.ini

:: Adding Unattended ::

What does Unattended Mean?

If you're looking at this section, and this is the first time you've heard anything about unattended installatoins, then you need to check out Creating an Unattended Windows XP CD.

How To

Okay so great, we've almost got our DVD done, now what if we wanted to add all of our unattended installation files?

Well, it's very easy actually. First of all, copy your OEM folder to the same directory as your i386 folder, so that they are *parallel*.

Example:
D:\AIO-DVD\SETUP\XP\Professional\i386\
D:\AIO-DVD\SETUP\XP\Professional\OEM\

Now, all you have to do is take your winnt.sif answer file and place it into the boot folder for that operating system, which in this example would be PRO1.

Multiple OS Boot Options

But wait, there is more! Most of us who are taking on a project such as this will probably be using our DVD to help our friends/family/co-workers. So if we are re-installing XP on someone else's computer, we don't want all of our unattended information and programs being installed as well. Luckily, there is a simple fix to this.

To allow ourselves to be able to install a regular OS installation or an unattended installation, we will need multiple boot options for that OS. To do this, we must create multiple boot folders and boot sectors.

Taking XP as the example, copy the PRO1 folder, paste it back into the AIO-DVD folder and rename it from Copy of PRO1 to PRO2. Do the same thing with PRO1.DAT and rename it to PRO2.DAT. So now we should have two folders and two DAT files with the same contents:

D:\AIO-DVD\PRO1\
D:\AIO-DVD\PRO2\

D:\AIO-DVD\PRO1.DAT
D:\AIO-DVD\PRO2.DAT

Now we need to edit setupldr.bin in the PRO2 folder so that all references to PRO1 now point to PRO2, and hex-edit PRO2.DAT so that it points to PRO2 as well.

If you want the first boot option to be a regular installation and the second option to be an unattended installation, add your winnt.sif file to the PRO2 folder.

All that's left is to add the correct entries to our boot menu so we can select different installation options. The following is an example of what I mean:

```
XP_Pro:
print c "\n\cXXMicrosoft Windows XP Professional SP1 Corporate \n"
print "1) Regular \n"
print "2) Unattended \n"

XP_Pro_Key:
if $lastKey == key[1]; then chain /PRO1.DAT
if $lastKey == key[2]; then chain /PRO2.DAT
```

:: Custom "setup.exe" Autorun File ::

Coming Soon! (Again)

:: CD Shell Boot Image ::

Change the CD Shell Boot Image

When your DVD boots up CD Shell displays an image for a few seconds and then displays your custom menu. Well this section will help you change that image to whatever you want. In the tools folder that was included in the CD Shell zip file, we will be using the convert.exe program.

Before we can convert an image however, we need a BMP file that is 640x480 in size at 24bit color depth. Save this picture into your tools folder. Now, open a command prompt and navigate to tools by typing cd D:\AIO-DVD\BOOT\tools.

Then the command you enter to convert the BMP file is:

convert -bmp2csi -o splash.csi logo.bmp

Parameters Explained

What this does is run the convert.exe program with the following options:

-bmp2csi
Says we are converting a bmp file to a csi file.

-o splash.csi
Says to call the new file splash.csi

logo.bmp
Name of our 640x480 bmp file to convert.

Finishing Up

Copy your newly created CSI file into the \BOOT\graphics\ folder. It must be named splash.csi to work properly.

:: Support Tools ::

I would like to thank iCEhOT from the MSFN forums for providing me with the correct way to make these image files.

Creating Additional Image Files

If you would like to add tools to your DVD such as Partition Magic 8, Ghost, or any other tools that use bootable diskettes it is a simple process. Just follow these steps.

1. Open WinImage.
2. Insert the first floppy disk into your computer. Go to *Disk -> Read Disk* (Ctrl+R)
3. If including a second floppy insert it into your drive. Go to *Image -> Change format...* and select *2.88 MB*. Next select *Image -> Inject...* Browse to your floppy drive, select all of the files, and then choose *Open*. It will ask if you want to inject the files, choose *Yes*.
4. Now save the file: *File -> Save*. Give the image file a name and save as an IMA file by selecting *"Image file (*.IMA)" in the "Save as type:"* drop-down box .
5. Once saved, move the file into the AIO-DVD folder if you didn't already save it to there.
6. Create the appropriate entry for your new image file in your boot menu.

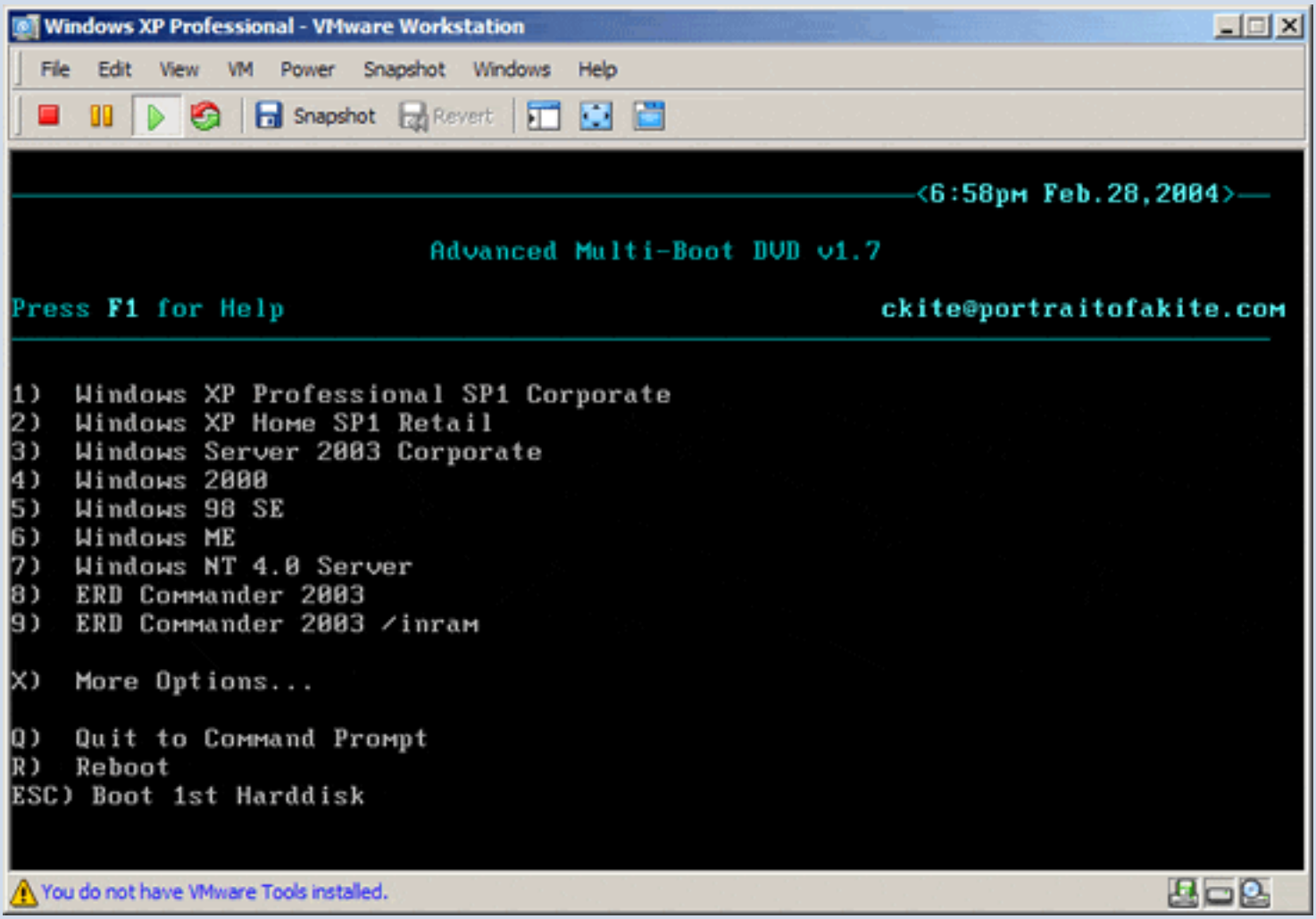
To access the image files on your DVD you will have to setup boot menu to access the image file. Please consult the *"Creating a Boot Menu"* section for more information.

:: Creating a Boot Menu ::

To create our boot menu we will be using CD Shell 2.0.11. If you choose to use the old diskemu.cmd method, you are more than welcome to. However, that method will not be discussed here. There are many benefits to using CD Shell. Directory listing in CD Shell is more organized and clean looking. You can use colors. You can view .txt files without having to open them in the ugly blue DOS *"Edit"* screen. You can even debug your menus without having to burn a cd or load an ISO into Virtual PC or VMware.

You can find my actual CD Shell file in the "*Downloads*" section. Take a look at my cdshell.ini file while you read through this to get an understanding of how CD Shell scripting works. If you copy this file into your BOOT folder and run the debugger, you can see exactly how my boot menu looks and operates. Don't worry about accidently running some program, the debugger will not actually execute any files if you choose any of the options, but it gives you an idea of what happens.

Here is an example of a possible boot menu created with CD Shell:



If you followed the *"Getting Started"* guide you should have a folder called BOOT in your AIO-DVD directory. The cdshell.ini file is what will contain the code for our menu. Open that file in Notepad or your favorite text editor.

About CD Shell Scripting

CD Shell uses an extensive scripting language to create the boot menu, much like writing php or java scripts. There is much more it can do than I will be covering in this guide, but I will provide you with the information to get your boot menu up and working.

For more information and help with CD Shell please consult the following site: http://www.cs.uic.edu/~mter/cdshell/buildcd.html

More documentation is available on that site under *Information -> Documentation*.

Creating Sections

Sections are used to keep the code clean and organized, and allow commands to jump to certain sections to execute specific code. To create a section type the name of the section followed by a colon. I like to call my very first section menu:. Keep in mind that code is executed exactly in the order it is listed. So always make sure that after operating system sections to create a key section for that OS. You will see what I mean when we get to *Operating System Sections*.

Examples of sections:

```
boot:
xp_pro:
moreoptions
```

Printing the Interface

```
cls
print "1) Windows XP Professional SP1 Corporate \n"
```

The cls command will first clear the entire screen before printing text. ALL printed text must be enclosed in quotes. Multiple print commands can be used on a line by using a semicolon (;) after each command. The \n command creates a line return. If we wanted a space between our menu options we would just use \n\n after the first print command or before the next print command.

To center, left align, or right align text, use the c, l, and r commands.

```
print c "This is an example of centered text"
```

If you just want a comment, use the # character.

```
# This is a comment. It will not print anything on the screen.
```

User Input

Let's create a section called MainKey:. This section should be placed after the menu: section. Here are the first two lines of my MainKey section:

```
MainKey:
getkey 20 boot 0x80
if $lastKey == key[1]; then goto XP_Pro
```

The first line creates the section name. The second line uses the getkey command to catch the key the user presses. The 20 is a timeout. It means that if no key is pressed within 20 seconds, the command boot 0x80 will run. boot 0x80 boots the first hard drive on the system. If no OS is installed then nothing will boot of course. You do not have to include a timeout. If you don't, the menu will stay on the screen until you do something.

The last line uses an if command to check the key press. It says that if the last key pressed was "1", then it will goto the XP_Pro section.

Running Files and Jumping to Sections

chain /PRO1.DAT
Runs the PRO1.DAT file. The forward slash "/" tell CD Shell that PRO1.DAT is in the root of the cd.

memdisk /98SE.IMA
Runs the image of our 98 SE boot disk to start the setup for Windows 98 SE. The memdisk command must be used for image files (.IMG or .IMA).

goto XP_Pro:
Jumps to the "XP_Pro:" section and executes the code there.

type /example.txt
Prints the contents of example.txt onto the screen. It does not actually open the file, it just inputs the contents onto the screen.

Operating System Sections

Using the *"User Input"* directions as an example, let's now create a section called XP_Pro:. Each OS section must also be followed by it's own key section. This section will create a new menu with our XP options. Here is my *"XP_Pro"* section code. Note that the "Ä" character when used repeatedly will print a *continuous* line, instead of using hyphens which produces something like "-----".

```
XP_Pro:
cls
print r "\n\cXXPress \c0BF1 \cXXfor Help \n"
print c "\n\cXXMicrosoft Windows XP Professional SP1 Corporate \n"
print c "\cXXÄÄÄ
```

```
print c "\n\n"
print "Press any key to return to main menu... \n"

MoreOptions_Key:
getkey 20 goto menu
if $lastKey == key[1]; then memdisk NTFS.IMA
if $lastKey == key[2]; then memdisk PM8.IMG
if $lastKey == key[3]; then memdisk GHOST.IMA
if $lastKey == key[4]; then goto SerialNumbers
goto menu
```

Setting Colors - OPTIONAL

I would worry about setting colors AFTER you have everything else working and down pat.

Use the following commands at the very beginning of your first section to set colors for the whole boot menu.

```
menu:
set textColor= color[grey on black]
set boldColor= color[cyan on black]
```

Valid color names are: black, blue, green, cyan, red, magenta, brown, grey, brightgrey, brightblue, brightgreen, brightcyan, brightred, brightmagenta, yellow, and white.

To highlight specific portions of text with a different color use the \cXX and \cxx commands. \cXX indicates that the text following it is the bold color, and \cxx says the text following it reverts back to normal color. If you want to use more colors without having to set the color each time, then XX will be replaced with two numbers, the first indicating the background color and the second indicating the text color. So:

```
print "\cXXThis text is boldcolor. \cxxThis text is normal color."
```

Prints *"This text is boldcolor"* in cyan on black and then prints *"This text is normal color."* in grey on a black background

Code	Color	Code	Color
0	black	8	grey
1	blue	9	brightblue
2	green	A	brightgreen
3	cyan	B	brightcyan
4	red	C	brightred
5	magenta	D	brightmagenta
6	brown	E	yellow

7	brightgrey	F	white

So if you look at the screen shot at the beginning of the guide and the following code you can see what happens:

```
print l "\cXXPress \c0BF1 \cXXfor Help"; print r "\c0Bckite@portraitofakite.com \n"
```

The word *"Press"* is printed in cyan on a black background, then *"F1"* is printed in bright cyan on a black background. *"For Help"* is printed in the cyan again, and then my e-mail is printed again in the brightcyan color.

The End

The very last line of your cdshell.ini file MUST read *end*.

```
end
```

That's all. The end command signifies the end of the script and will bring you to a cd shell command prompt. It is much like a dos command prompt but supports more commands and has a nicer directory listing display. Type *HELP* at the prompt to see all what you can do.

Debugging

One of the greatest things about cdshell is debugging. To debug just double click the file cdshw.com in the BOOT folder. This will run a simulation of what the boot process will look like. Don't worry about accidentally installing XP or anything like that, because the debugger does not allow actual commands to be executed. To exit the debugger type exit at the command prompt. If you can't access the command prompt then just *Ctrl+Alt+Del* out.

Extra Fun

The following code I place as the VERY beginning code in my cdshell.ini file. It does a few things:

First, it starts off with a boot: section. This section first prints *"Press enter to boot from DVD..."* before the menu. If Enter is not pressed in 5 seconds, it boots whatever OS is loaded onto the first hard drive and skips the menu.

The next two sections are custom functions I wrote to print out the current date and time. An example of this can be seen in the screen shot at the top of this page.

```
boot:
cls
print "\n"
print "Press Enter to boot from DVD... \n"
getkey 5 boot 0x80
if $lastKey == key[enter]; then goto time
# When no key found...
goto boot


# Function to display time of day
time:
set hour = $timeHour
set ampm = "am"
if $timeHour > 12; then set hour = $timeHour - 12
if $timeHour > 12; then set ampm = "pm"
set time = "$hour:$timeMinute$ampm"


# Function to display date
date:
set month = "n/a"
if $dateMonth == 1; then set month = "Jan."
if $dateMonth == 2; then set month = "Feb."
if $dateMonth == 3; then set month = "Mar."
if $dateMonth == 4; then set month = "Apr."
if $dateMonth == 5; then set month = "May."
if $dateMonth == 6; then set month = "Jun."
if $dateMonth == 7; then set month = "Jul."
if $dateMonth == 8; then set month = "Aug."
if $dateMonth == 9; then set month = "Sep."
if $dateMonth == 10; then set month = "Oct."
if $dateMonth == 11; then set month = "Nov."
if $dateMonth == 12; then set month = "Dec."
set date = "$month$dateDay,$dateYear"
```

To print the line with the time and date in it I use this piece of code:

```
print c "\n\cXXÄÄÄ
```

:: Downloads ::

PDF Site Versions

Creating a Multi-Boot DVD - Updated 03/03/04
Creating an Unattended CD - Updated 03/01/04

DAT Files

Windows XP Pro SP1
Windows XP Home SP1
Windows 2000
Windows Server 2003
ERD Commander 2003

Boot Folders

Windows 2000 Professional
Windows 2000 Server

IMA Files

Windows 98 SE
Windows ME

CD Shell

cdshell.ini
splash.csi

Miscellaneous

CDIMAGE
Longhorn "setup.exe"

:: My DVD Layout ::

In case some of you are still slightly confused, I have decided to layout how my DVD is setup for you. Hopefully this helps!

Folders in **bold** expand! Just click on them and they will open up.

- **D:**
  - cdimage.exe
  - makeiso.bat
  - **AIO-DVD**
    - 2PRO
    - 2SRV
    - 3DCT
    - 3ENT
    - 3STD
    - 3WEB
    - **BOOT**
      - cdshell.ini
    - ERD1
    - ERD2
    - HOM1
    - PRO1
    - PRO2
    - PRO3
    - **SETUP**
      - 98SE
      - **2000**
        - Professional
        - Server
      - ME
      - **Server2003**
        - DataCenter
        - Enterprise
        - Standard
        - Web
      - **XP**
        - Home
        - **Professional**
          - OEM
          - I386
    - WINBOM.INI
    - CDROM_S.40
    - CDROM_IP.5
    - CDROM_IS.5
    - CDROM_NT.5
    - 2PRO.DAT
    - 2SRV.DAT
    - 3DCT.DAT
    - 3ENT.DAT
    - 3STD.DAT
    - 3WEB.DAT
    - ERD1.DAT

- ERD2.DAT
- HOM1.DAT
- PRO1.DAT
- PRO2.DAT
- PRO3.DAT
- WIN51
- WIN51IA
- WIN51IB
- WIN51IC
- WIN51ID
- WIN51IP
- WIN51IS
- README.HTM
- spnotes.htm
- README.DOC
- WIN51IC.SP1
- WIN51IP.SP1
- READ1ST.TXT
- SERIALNUMBERS.TXT
- CDROMSP4.TST
- 98SE.IMA
- DOS.IMG
- NTFS.IMA
- PM8.IMG

:: Summary ::

This section of the site will sum up the basics of setting up NT and non-NT based operating systems for a multi-boot CD or DVD.

NT Based Operating Systems
Windows XP Pro, XP Home, 2000, NT 4.0, etc.

A normal NT based operating system has the i386 folder in the root of the cd. This directory also contains the files necessary to boot that certain OS. When a bootable CD or DVD is made, generally a file named xpboot.bin is used to create the proper boot sector.

This is what happens when the disc boots:

1. The bootsector tells the computer to look in i386 for setupldr.bin.
2. setupldr.bin instructs the computer to look for a file called txtsetup.sif in i386.
3. txtsetup.sif contains the information needed to run the text-mode installation for the operating system.

When modifying an operating system install for a multi-boot dvd, we must do a few things.

1. A new 4 letter boot folder must be created outside of the folder that the operating system cd was copied to. This folder will contain the files necessary to start the installation of a particular operating system..
2. setupldr.bin must be edited so that all references to the i386 folder are changed to the new 4 letter boot folder.
3. The *"SetupSourcePath="* line in txtsetup.sif must be edited to reflect the location of where we copied the install cd.
4. A new boot sector must be created. The reference to i386 in the boot sector must be changed to the name of our boot folder for our OS.
5. The boot sector is renamed to xxxx.DAT, where xxxx is the name of the boot folder that the boot sector will access (eg. - PRO1.DAT, HOM2.DAT, etc)
6. Put all .DAT files in the root folder, which for this guide is AIO-DVD.

Non-NT Based Operating Systems
Windows 95, 98 SE, ME, etc.

A non-NT based OS generally uses a boot disk inserted into a floppy drive to start the setup for that OS. While there *are* Windows 98 bootable cds, the boot disk method is the easiest for us to follow.

Basic steps for setting up a non-NT based OS:

1. Download a boot disk image or create one from an actual boot disk with WinImage.
2. In WinImage extract the autoexec.bat and config.sys files.
3. Edit autoexec.bat to reflect the location of the setup.exe file.
4. Edit config.sys to include only options for booting from cd.
5. Save file as an .IMA file.

6. Copy all .IMA or .IMG files to the root folder, which for this guide is AIO-DVD.

:: Cleanup ::

For our DVD to work properly we need to do some file cleanup.

Cleanup

Use the Search feature to search the AIO-DVD folder and *ALL* subdirectories for the following files:

unattended.txt
Delete all of these files.

bootfix.bin
This file is what displays *"Press any key to boot from cd...."*. If you don't want it to display this just delete the file and it will jump right into setup for whichever OS you chose. Otherwise leave it as is.

txtsetup.si_
If any exist, these should be deleted.

setupldr.bi_
If any exist, these should be deleted.

.bak
Delete any backup files that may exist.

:: Testing and Burning ::

Creating the ISO

To create our ISO files we will use CDIMAGE. Unfortunately there is no way to add a file to the ISO once it has been created with CDIMAGE. The only thing you can do is create a new ISO each time.

If you don't have CDIMAGE you can get it from the Getting Started section or *"Downloads"*. I prefer to keep CDIMAGE in the same directory as my AIO-DVD folder. Example:

D:\cdimage.exe
D:\AIO-DVD\

Open a command prompt and navigate to the directory you stored CDIMAGE in. Once there use this command. Please note that it is all on one line. It is only shown on two lines here due to the cell width. Note that I stored my DVD on my D:\, yours may be different.

```
start cdimage.exe -lAIODVD -t08/23/2001,09:00:00 -b\AIO-DVD\BOOT\loader.bin -h -n -o -m \AIO-DVD C:\AIODVD.iso
```

Parameters Explained

start cdimage.exe
Runs the CDIMAGE program with command line arguments. Notice that no exact file location is specified. As long as cdimage.exe is in the same folder as the batch file, it is not needed.

-lAIODVD
Gives the ISO a label of AIODVD. This can be anything you want. Please note that it is a hyphen then a lowercase L (-l) as in label, not an i or a 1 or anything else.

-t08/23/2001,09:00:00
Sets DVD timestamp. Leave as is.

-b\AIO-DVD\BOOT\loader.bin
Location of our boot sector file, loader.bin. Again, notice no exact folder location is needed as long as our root folder (AIO-DVD) resides in the same location as our batch file.

-h -n -o -m
Special switches. Leave as is.

\AIO-DVD
Location of the folder that acts as the root of our DVD.

C:\AIODVD.iso
Where we want our ISO file stored and what we want to call it. In this case I am calling it customdvd.iso and storing it in my C:\. You MUST have the extension listed. Your target drive where the ISO will be saved must have sufficient space. If not, you will not get an ISO file.

Occasionally CDIMAGE will say something along the lines of:

WARNING: These two files are identical for the first 65536 bytes, but differ at some point beyond that. This could be intentional, but it might indicate that one of these two source files is corrupt:
D:\AIO-DVD\PRO1\SETUPLDR.BIN
D:\AIO-DVD\PRO2\SETUPLDR.BIN

This is normal. CDIMAGE thinks that these files are supposed to be identical since their contents are almost the exact same. However, we both know that each one specifies a different boot folder and are supposed to be different. Therefore, you can disregard this message.

Automate the ISO Creation

A good idea is to make a batch file that you can run whenever you want to make the ISO. The following code is only 2 lines in the .bat file. If copied and pasted you shouldn't have a problem. Just modify it to suit your specific needs.

```
DEL C:\*.ISO
start cdimage.exe -lAIODVD -t08/23/2001,09:00:00 -b\AIO-DVD\BOOT\loader.bin -h -n -o -m \AIO-DVD C:\AIO-DVD.iso
```

Testing the ISO

VMware 4.0.5 and Virtual PC 2004 are both a great way to test your ISO before burning it, and something that I HIGHLY recommend.

Virtual PC 2004

1. Create a New PC. Name it whatever you would like.
2. Choose *Guide Me* and select *Windows XP* as the OS.
3. Adjust the memory allocation if you want to. Just keep it at 128+ if possible.
4. Create a new hard disk image and name it whatever you want.
5. Start up the new PC and then choose *CD -> Capture Image*. Find your ISO file.
6. Choose *PC -> Restart* and you should be good to go.

VMware

1. Create a New Virtual Machine.
2. Choose "Custom" then choose "Windows XP Professional" as the OS.
3. Adust the allocated RAM if needed.
4. Set up your Network Connection. I generally choose "Do not use a network connection" because it screws with my internet.
5. Choose "Create a new virtual disk" and then edit the size if you need to. The size is the maximum that it CAN become. If you just test and install XP and don't need 4.0GB, it won't use 4.0GB, but it *can* if you need to. So, if you choose to install XP OEMPreinstall and know you will need 6.0GB total for the install, change it.
6. Once done, choose *"Edit virtual machine settings"*. Select the CD-ROM drive and then choose

"Use ISO Image". Select your ISO file, hit okay, then start up your virtual machine.

Burning the ISO

Basically you just need any burner capable of burning an image file. I use Nero 6.3.0.29. Generally I just right-click my ISO file and choose "Open With..." and find the Nero executable. Nero automatically opens up with the Burn dialog. Click Burn and there you go. That's all there is to it!

:: FAQ ::

Q: This guide was great! Is there anything I can do to repay you?

A: Yes actually, there is. You can contact me with any possible problems you have run into or any suggestions you may have for the guide. I'm always open to new ideas. If you would like to contact me, please consult the *Get Help* section for more information.

Q: I don't have *insert OS name here*. Where can I get it?

A: http://shop.microsoft.com/

Q: Which do you prefer, VMware or Virtual PC?

A: While they are both great products, I *prefer* VMware. Everything seems to be easier to understand and I like the layout of the program. VMware also provides a nice little feature called a "Snapshot" which is very useful to me. However, VMware is not without it's problems of course. What normally does not work in VMware tends to work in Virtual PC, and vice versa.

:: Get Help ::

Problems

Having trouble getting something to work with your DVD? Do you have a question about something not covered here?

Ask for help at the MSFN forums, in the Multi-Boot CD/DVD section! It takes less than a minute to sign up!

General

Are there broken links? Is any information missing? Do you have any comments or suggestions on how to make the site better?

If so, then please feel free to e-mail me. You can contact me at flyakite19@hotmail.com. Please be sure to include the words ***multi-boot*** in the subject.

:: Links ::

If you know of a link that relates to this site and would like to see it listed here, contact me.

MSFN - Where People Go to Know
For the latest news in technology, check this site out. Also stop by the forums for any questions you may have.

Creating an Unattended CD
Have you ever wanted a Windows XP CD that would install Windows XP by automatically putting in your name, product key, timezone and regional settings? Followed by silently installing all your favourite applications along with DirectX 9.0b, .Net Framework 1.1 and then all the Pre-SP2 hotfixes, updated drivers, registry tweaks, and a readily patched UXTheme.dll without any user interaction whatsoever? Then this guide will show you how you can do just that!

Windows XP SP1 in 185 MB
The purpose of this guide is to remove Windows components and drivers from the installation CD, in order to save space and increase performance, both during setup and in the installed operating system. This is done by a series of batchfiles that do everything to remove files and prevent setup from displaying any errors.

Tech-Hints

CD Shell 2.0.11
CD Shell is a scriptable menu system that provides the ability to create interactive multi-boot optical discs. It will make PC-bootable compact discs or DVD's that can select from several program loaders or kernels located on the disc, or boot from other local disk drives that are attached to the system.

AutoPlay Media Studio 5.0
Build professional autorun CD/DVD ROMs, interactive presentations, custom Windows software, and much more the easy way with AutoPlay Media Studio 5.0 by Indigo Rose Software. This powerful development tool will save you time, save you money, and increase the quality of your output.

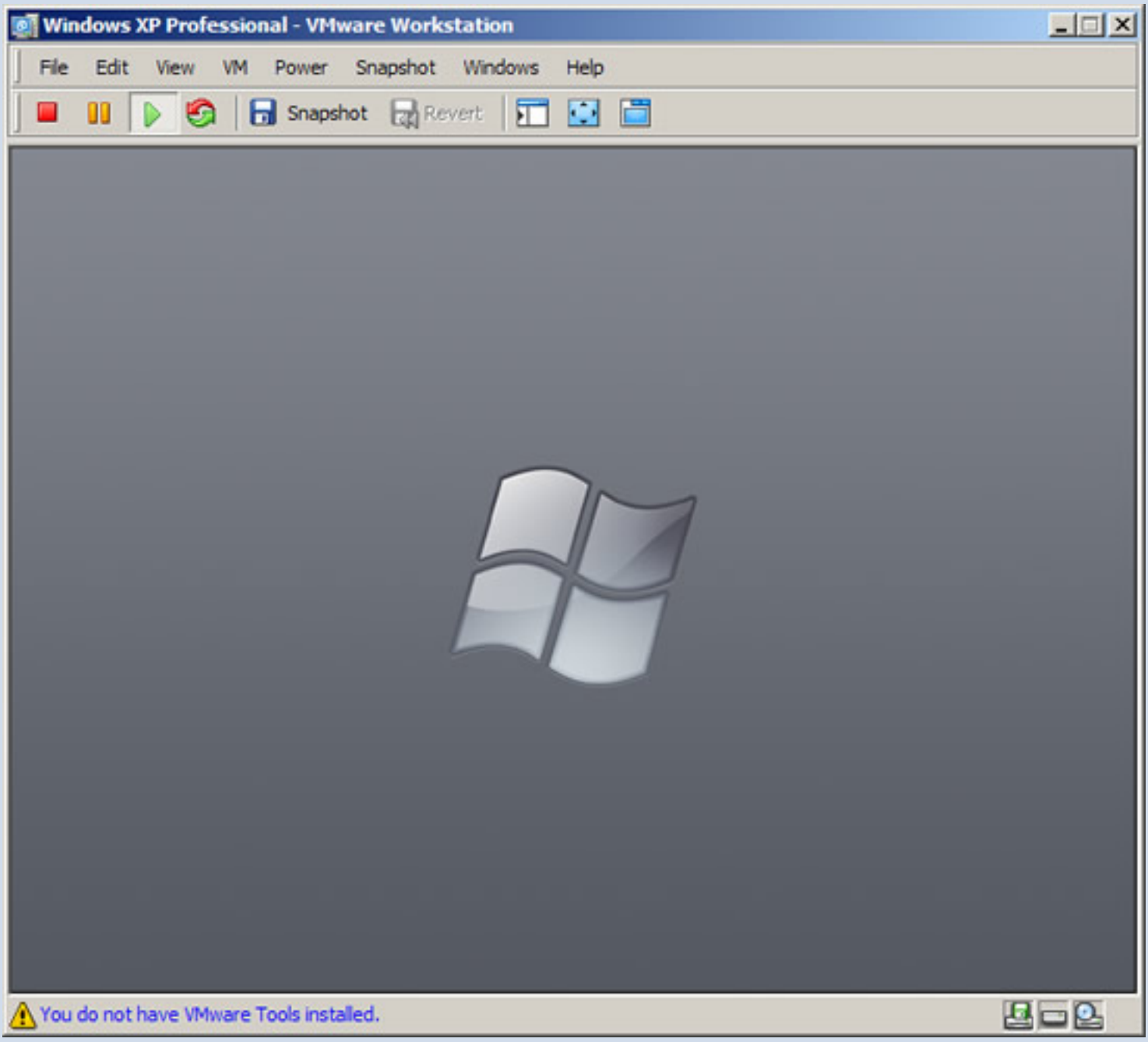
DrDs Boot Disks
Home of the Village Idiot's boot disks, dll's, and more...

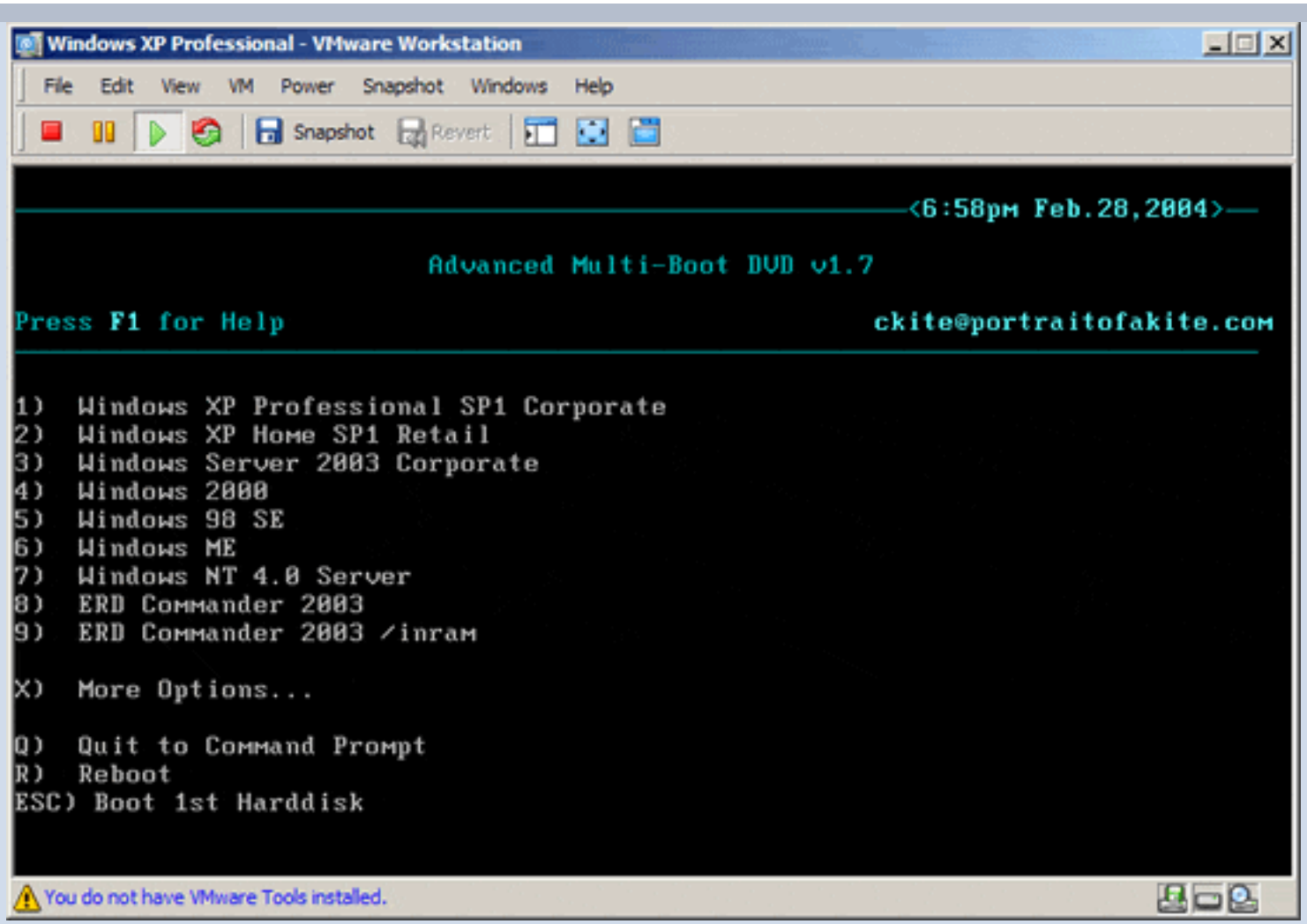
Bootdisk.com
Another great resource for boot disks.

:: Screenshots ::

These are actual images from my current DVD:

This image is the "splash.csi" that CD Shell loads when first booting the DVD. To learn how to change it, read the "CD Shell Boot Image" section in *"Extras"*.




Windows XP Professional - VMware Workstation
File Edit View VM Power Snapshot Windows Help
Snapshot Revert
<6:58pm Feb.28,2004>
Advanced Multi-Boot DVD v1.7
Press F1 for Help
ckite@portraitofakite.com
1) Windows XP Professional SP1 Corporate
2) Windows XP Home SP1 Retail
3) Windows Server 2003 Corporate
4) Windows 2000
5) Windows 98 SE
6) Windows ME
7) Windows NT 4.0 Server
8) ERD Commander 2003
9) ERD Commander 2003 /inram
X) More Options...
Q) Quit to Command Prompt
R) Reboot
ESC) Boot 1st Harddisk
You do not have VMware Tools installed.


welcome
What do you want to do?
Install Microsoft Windows XP Professional SP1 Corporate
Install Microsoft Windows XP Home SP1 Retail
Install Microsoft Windows Server 2003 Corporate
Install Microsoft Windows 2000
Install Microsoft Windows 98 SE
Install Microsoft Windows Millenium Edition
Install Microsoft Windows NT 4.0 Server
Perform additional tasks
Exit