

# Appending Files to EXE's

By Charles Jones

Appending Files to EXEs.

After seeing several questions on appending files to EXEs, I decided to write this text. I did NOT originate this idea. While this text describes "a" way of implementing the technique it may not be the best way for your needs. I have simply attempted to supply you with a basic understanding of the process.

WHY?

A couple years ago, I purchased a copy of Ultima 7. After installing it I looked at the directory. There were a lot of files and moving any one of them out of the directory crashed the program. When I got Unreal by Future Crew all of my preconceived ideas went out the window.

1. You can't run a 2meg EXE, can you?!
2. Where are the music and graphic files?!
3. How'd they do that? (This includes the effects :)

The answer to #1 : "It runs; therefore, you must be able to do it. Idiot!" The answer to #2 : "All the music and graphic files are contained IN the EXE." Question #3 is a little harder to explain, I still don't know exactly what FC did, but the technique I discuss in this file gives you similar results.

Appending a file

Before you append a file to the end of your EXE, ask yourself how do access it. If your adding 10 files how do you know where they are? This is actually really simple once you think it through. Create a directory structure of your own and make it the very last file you append! Use your own structure if you want but feel free to use mine.

Directory structure:

```
repeat
  name - string
  filepos - long int, pointer to the first byte of the file
  filesize - long int
for each file being attach

long int - number of entries
```

Since this is similar to a WAD file, we'll call it a KAD file. KAD = Kodiak Wad file, get it a KAD file. Okay, so it wasn't that good, lets move on. To build the KAD file all you have to do is tack one file after another INTO a single file and add the directory to the end of it.

see packer.c

```
Open output file
repeat
  save the output's file position in directory structure
  save the input's file name, ignoring path, in directory structure
  save the input's file size in directory structure
  open input file
  copy input file to output file
  close input file
```

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```
until all files are appended
save directory info
close file
```

Simple, eh?

Now that you have the KAD file what do you do with it?

To access the KAD your code should read the directory into a memory array. Just read the last dword of the KAD multiply by 8 (2 dwords) add 4, and seek from the end of the file back that many bytes and fill your directory array from there.

Now if you want to load the first file from the KAD, get the file offset from your directory array, seek to the file position and load. What could be simpler? How about using a pre-written function GETFILE. :)

While you are developing your program use the KAD file. Once your code is done your ready for the final step. Instead of reading from the KAD file, change the input name your program is looking for, to itself. Then repack the files to the end of your EXE.

see packer.c

```
Open EXE file
seek the end of the EXE file
repeat
    save the output's file position in directory structure
    save the input's file type in directory structure
    save the input's file size in directory structure
    open input file
    copy input file to output file
    close input file
until all files are appended
save directory info
close file
```

That's it! YOUR DONE!

Keep in mind that this is NOT the only way to accomplish this. I have included a fully functional KAD system implemented for Watcom C. It includes LZARI decompression routine. If this file has helped you, let me know. Feel free to use the code included, but if you do greet me. A postcard would be nice too. :)

NOTE: I have heard it said "you can't do this when using an EXE compression loader like Pklite." I have one thing to say.....BULL! The trick is to compress your EXE prior to appending the KAD to it.

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