Operating Systems
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List of Executable File Extensions

Executable file extensions are files which have extensions that indicate an action is to be taken from the OS when processing the file. Unlike other files which require a simple sound byte to be played or an image to appear. Executable will run some kind of program will be run by your operating system in response to the executable. Through various operating systems there are potentially dangerous file extensions you would want to only run from trusted file sources and application companion sites.

DOS exe files utilize memory limitations for 64K compilers therefore there is an intense introduction of memory models in the development of these files into the Windows OS using Tiny memory models which access memory only in 16 bit registers which produce COM files instead of EXE files inside of your system. These files are built with a memory model of compact usage fthe compact memory model data is addressed with both segmentation registers and offset, reloading the DS or ES registers for code access that doesn't change the CS registers, allowing more larger code bases. When Building an EXE for MS-DOS it is important to explain limitations the OS might face running your program and the limitations on the data that the system will allow, and Choosing the appropriate memory Model will account for the correct development techniques you will need to implement when constructing EXEs for your programs. According to the article EXEs are listed as potentially dangerous under the Microsoft Category and rightfully so. There are many different constructed memory models and allowing malicious code into your registers in userspace could affect the overall performance of your computer. According to the Lifewire article associated with the EXE files. Emails and the internet can transmit common place applications with malicious code hidden inside of EXEs

and those can run processed code in the background of your system and do internal harm to your computer. Most email providers for liability do NOT allow the transmission and sharing of these file extensions through their email provider services. .EXE extensions are only ever used to Launch Applications and never videos or images so be aware of the file nomenclature and act accordingly if you see something off putting on a file and exercise caution.

The MS PE or (Portable executable) files have many additional extensions and executable types .acm, .ax, .cpl, drv, .efi, are just a few to name in the grand scheme of microsoft files, this file format is used in both 32 and 64 bit Operating System version of Windows. The File type is itself a data structure that will call out to external sources for the Windows loader to import for the file to be executed on the system. It might make external calls to APIs and import specific external libraries for the system to process the file correctly. The layouts of these files usually consist of a .text section like another ARM assembly but these variables are READ-only and are mapped on pages that are not on the disc and to save memory these types of file are able to assign the linker to attach the code to disc and allow mapping permissions for the files to be executed from the import table of the program these are used to call functions and program logic from external modules that might not be on the system disc. Allowing external libraries to import only the required modules through API calls into the program and compile the program or application desired for your system to process the data. There is no mention of the maliciousness of this specific type of program in the Lifewire list which is very concerning as the external modules which can be programed for corruption and hidden inside of the program executable for the program to call.

MS COFF (Common object File format) files are also executable files the acronym and creation on this executable can be accredited to UNIX systems in the 1980s. This expressed improvements over the a.out file executables in the systems which did not "adequately support shared libraries" which can be difficult as UNIX is an Open source system. With the improvements of the common object file being able to use external libraries was used to improve the existing system by being both "too limited and incompletely specific" this limited the number of sections the binary files and assembly file could be coded into the program. Which was off putting and made debugging difficult. This made language compatibility difficult for C and C++ libraries to link and debug code bases for these file extensions. IBM and other computer manufacturers produced their own versions of COFF. With the Release of SVR4, AT&T replaced the COFF on UNIX systems with ELF. The only real existing version of the MS COFF exists in the form of the MS PE which was mentioned to pull exteral libraries in the header structure of the program in order to be appropriately linked and deployed. The main appeal for the COFF over the a.out file on UNIX was its ability to have featured sections where different sections of code could be named.

The Java Class file format a modern approach to utilizing multiple Java files for an executable program can be used to execute and run many java class files and their associated metadata from a .JAR file archive this can be used to allow Java classes to be efficiently deployed as an entire application, and its resources in a single request executable. However the standard hava file of .class filename extension contains Java Byte code. Which can be executed by the JVM and is usually then produced from a Java compiler.

All Java Classes and other files have a Magic Number of sorts that is featured as allows the programs to be read and executed appropriately. This list of file signatures is often referred to as a Magic number, This number is used to verify the contents of a file based on this number alone a deduction of the file's contents can be inferred by the OS and appropriate action from the underlying OS can be taken in response to that specific number .

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