What is a computer virus?



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You have probably heard the word virus used about computers. A computer virus is malicious software that copies itself by attaching to other files or programs. That is the short answer, and it gives you a clear starting point. The pages that follow explain each part of that answer in plain language, so you can understand what a virus is and how it works.



Software is the set of instructions a computer follows, like a recipe that tells you what to do step by step. Programs and files on a computer are made of software. Without software, a computer would not know what to do. Understanding this sets the stage for seeing where a virus can hide and how it can act.



Malicious means made to cause harm or do unwanted things on purpose. So malicious software is software built to hurt a computer or misuse it. It is not there to help you; it is there to do something you did not ask for. This word matters because a computer virus belongs to the group of malicious software.



A computer virus is one kind of malicious software with a special trick: it makes copies of itself. It does this by attaching to other files or programs. That copying is what makes it a virus rather than just any harmful program. So a virus is harmful software that spreads by sticking to things you already have.



Picture a virus as a small extra piece that sticks onto a normal file or program. The file still looks normal, but the virus travels with it. When that file or program runs, the virus goes along with it. This attaching is the key move that lets a virus get carried from one place to another.



Malware is the big family of harmful software, and a virus is just one member of that family. Other members exist too, such as worms, which spread in their own ways. So not every harmful program is a virus. Remembering this helps you use the word virus correctly and understand what makes a virus special.



A virus only acts when the file or program it is attached to is run. Until then, it just sits there attached. Once running, it can modify files or do other harmful actions. So the moment of running is when the virus gets its chance to do something. This is why opening and running unknown files can be risky.



Here is a concrete example: a running virus can change or damage files on the computer. It might alter a document so it no longer opens correctly, or change a program so it behaves strangely. This file modification is one way a virus causes trouble. The harm comes from the changes it makes while it is running.



How a virus spreads depends on its type. Some viruses spread through files, moving from one file to another when those files are shared or run. Others spread in different ways. There is no single pattern that fits every virus. So when you hear about a virus, its type tells you how it likely moves.



What a virus does also depends on its type. Some cause small problems, like a file that will not open. Others cause bigger damage, such as many files being changed or lost. Effects are not all the same. So you cannot assume every virus behaves the same way; each type has its own behavior.



One basic protection step is to keep your software up to date. Updates fix known weaknesses that harmful software can use. When you install updates, you close doors that a virus might try to open. Make updating a regular habit, and let your programs and operating system receive the fixes their makers provide.



Another basic protection step is to get files and programs from reliable sources. Trusted sources lower the chance of picking up harmful software. Download from official websites and known app stores rather than unfamiliar links. Before you open an attachment or run a file, ask where it came from and whether you trust that source.



A common mistake is calling every harmful program a virus. Remember that a virus is only one type inside the larger malware family. Worms and other kinds exist, and they do not all work the same way. Using the right word helps you understand what you are dealing with and what kind of protection makes sense.



Another common mistake is thinking a virus does something by itself. It needs a file or program to be run before it can act. If the infected file is never opened or run, the virus stays inactive. So being careful about what you run is part of protection, because the virus waits for that moment.



It is also a mistake to think one rule fits all viruses. Spreading and effects vary by type, so treat each case on its own. A virus that spreads through files may behave differently from one that spreads another way. Learn the general idea, then look at the specific type when you need details.



To sum up: a computer virus is malicious software that copies itself by attaching to files or programs. It is one type of malware, and it acts when the file it is attached to is run. Spreading and effects vary by type. Keep your software up to date and use reliable sources to help protect yourself.