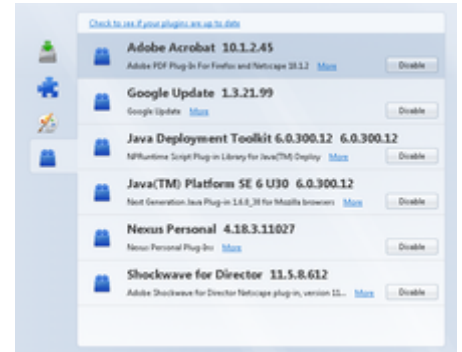


# Plug-in (computing)

In computing, a **plug-in** (or **plugin**, **add-in**, **addin**, **add-on**, or **addon**) is a software component that adds a specific feature to an existing computer program. When a program supports plug-ins, it enables customization.

A theme or skin is a preset package containing additional or changed graphical appearance details, achieved by the use of a graphical user interface (GUI) that can be applied to specific software and websites to suit the purpose, topic, or tastes of different users to customize the look and feel of a piece of computer software or an operating system front-end GUI (and window managers).



Mozilla Firefox displaying a list of installed plug-ins

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## Purpose and examples

Applications support plug-ins for many reasons. Some of the main reasons include:

- to enable third-party developers to create abilities which extend an application
- to support easily adding new features
- to reduce the size of an application
- to separate source code from an application because of incompatible software licenses.

Types of applications and why they use plug-ins:

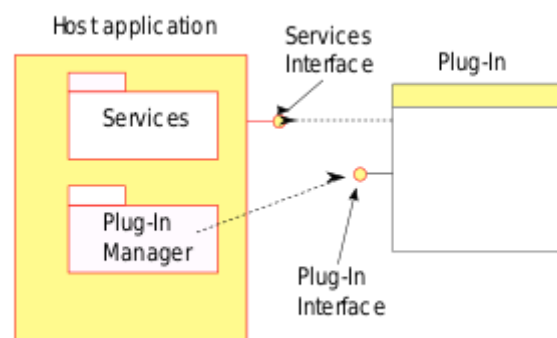
- Digital audio workstations and audio editing software use audio plug-ins to generate, process or analyze sound. Ardour, Audacity, Logic Pro X and Pro Tools are examples of such systems.
- Email clients use plug-ins to decrypt and encrypt email. Pretty Good Privacy is an example of such plug-ins.
- Video game console emulators often use plug-ins to modularize the separate subsystems of the devices they seek to emulate.<sup>[1][2][3][4][5][6][7][8][9]</sup> For example, the PCSX2 emulator makes use of video, audio, optical, etc. plug-ins for those respective components of the PlayStation 2.
- Graphics software use plug-ins to support file formats and process images. (c.f. Photoshop plugin)

- Media players use plug-ins to support file formats and apply filters. foobar2000, GStreamer, Quintessential, VST, Winamp, XMMS are examples of such media players.
- Packet sniffers use plug-ins to decode packet formats. OmniPeek is an example of such packet sniffers.
- Remote sensing applications use plug-ins to process data from different sensor types; e.g., Opticks.
- Text editors and Integrated development environments use plug-ins to support programming languages or enhance development process e.g., Visual Studio, RAD Studio, Eclipse, IntelliJ IDEA, jEdit and MonoDevelop support plug-ins. Visual Studio itself can be plugged into other applications via Visual Studio Tools for Office and Visual Studio Tools for Applications.
- Web browsers have historically used executables as plug-ins, though they are now mostly deprecated. Examples include Adobe Flash Player, Java SE, QuickTime, Microsoft Silverlight and Unity. (Contrast this with browser extensions, which are a separate type of installable module still widely in use.)

## Mechanism

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The host application provides services which the plug-in can use, including a way for plug-ins to register themselves with the host application and a protocol for the exchange of data with plug-ins. Plug-ins depend on the services provided by the host application and do not usually work by themselves. Conversely, the host application operates independently of the plug-ins, making it possible for end-users to add and update plug-ins dynamically without needing to make changes to the host application.<sup>[10][11]</sup>



Example Plug-In Framework

Programmers typically implement plug-in functionality using shared libraries, which get dynamically loaded at run time, installed in a place prescribed by the host application. HyperCard supported a similar facility, but more commonly included the plug-in code in the HyperCard documents (called *stacks*) themselves. Thus the HyperCard stack became a self-contained application in its own right, distributable as a single entity that end-users could run without the need for additional installation-steps. Programs may also implement plugins by loading a directory of simple script files written in a scripting language like Python or Lua.

## Mozilla definition

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In Mozilla Foundation definitions, the words "add-on", "extension" and "plug-in" are not synonyms. "Add-on" can refer to anything that extends the functions of a Mozilla application. Extensions comprise a subtype, albeit the most common and the most powerful one. Mozilla applications come with integrated add-on managers that, similar to package managers, install, update and manage extensions. The term, "plug-in", however, strictly refers to NPAPI-based web content renderers. Mozilla deprecated plug-ins for its products.<sup>[12]</sup> But UXP-based applications, like web browsers Pale Moon and Basilisk, keep supporting (NPAPI) plugins.<sup>[13][14][15]</sup>

## History

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Plug-ins appeared as early as the mid 1970s, when the EDT text editor running on the Unisys VS/9 operating system using the UNIVAC Series 90 mainframe computers provided the ability to run a program from the editor and to allow such a program to access the editor buffer, thus allowing an external program to access an edit session in memory.<sup>[16]</sup> The plug-in program could make calls to the editor to have it perform text-editing services upon the buffer that the editor shared with the plug-in. The Waterloo Fortran compiler used this feature to allow interactive compilation of Fortran programs edited by EDT.

Very early PC software applications to incorporate plug-in functionality included HyperCard and QuarkXPress on the Macintosh, both released in 1987. In 1988, Silicon Beach Software included plug-in functionality in Digital Darkroom and SuperPaint, and Ed Bomke coined the term *plug-in*.

## See also

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- Applet
- Browser extension

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