

General

A plugin is a computer library which gets loaded and used by the host program.

A computer library is a collection of functions or routines which have been compiled into machine code and are stored in a file with an index.

Different plugin types: VST, DirectX, RTAS, AU, MAS, Max externals all work in this same way.

Programming kits for the different plugin types with example code can be obtained from:

VST: www.steinberg.net
DirectX: msdn.microsoft.com
RTAS: www.digidesign.com
AU: developer.apple.com
MAS: www.motu.com
Max: www.cycling74.com

RTAS and MAS are given to “serious” developers only. Best to contact the developer support people in these companies directly via email or phone so they know your intent.

All of these developer kits are based in C++ or C. On Mac, the examples will use either Xcode or Metrowerks Codewarrior compilers(with a trend toward Xcode), on Windows most developer kit examples will use Visual C++ 7.

Plugin Structure

The following types of functions are expected to be in a plugin:

1 - a sound processing function

This is where the DSP (digital signal processing) code lives. This function is called by the host program and given a block of samples for each input channel. It is expected to create a block of samples for every output channel.

2 - parameter functions

Here the host sets and gets parameters, values that correspond to knob settings. The host calls `getparameter` when it needs to display a control, `setparameter` when the user changes an onscreen control. There are also functions which allow the host to find out how a parameter is to be labelled and what its range is.

3 - initialization and termination functions

The initialization function is where the plugin can set up default values and request memory space from the computer. The termination function is usually only used to give memory space back to the computer.

4 - user interface initialization

If there is a custom user interface for the plugin (always the case for commercial plugins), it needs to be initialized and terminated. The user interface then responds to the mouse and keyboard, and calls the parameter functions to talk to the plugin.