

Xtras for Director

“Xternal code for Xtending and Xpanding the Xtensive functionality
Of Director...”

-Director Web

Introduction: What are Xtras?

Xtras are tools Macromedia uses to encapsulate functions within Director. They are "plug-in" code modules that let users add specialized capabilities and extended functionality to Macromedia products. In other words, Xtras are extensions to Macromedia products that provide features not built in to the product itself.

This brief document describes the technology that supports Xtras, and provides resources for the interested reader seeking further information.

Significance of Xtras

As modern day consumers (both commercial and educational) get habituated to rich, dazzling, engaging and interactive presentations, multimedia designers need tools for creating just such experiences, without “reinventing the wheel” every time they do so. When placed in an application's Xtra extensions folder, Xtra extensions integrate their commands, palettes, and functionality into the application. For example, when a new media type needs to be added to Director, it can be added as an Xtra, without modifying all the source code for Director. Application users simply drag Xtras into their application's Xtras folder to augment its functionality. Xtras work with Director 5 and above and have no problem running on NT.

Some examples of extensions are:

- ***Behavior*** is an Xtra that adds the ability to create custom actions using a graphical interface. It is developed and marketed by Design Lynx Ltd
- ***BrowserController*** tells Netscape or Internet Explorer where to go. Developed by Magister Ludi
- ***DirectImage Xtra*** is a cross-platform, easy to use Scripting Xtra for Macromedia Director and Shockwave that provides applications with the ability to export, import, and capture and manipulate images (DirectXtras Inc).
- ***Audio Xtra*** records sound in Director, Authorware and Shockwave. It can record to external files, movie members or to memory. Audio Xtra initially records to WAV files on the PC and AIFF files on the Mac. After recording, it can convert recorded sound to AIFF, WAVE or AU format on either platform. Audio Xtra is Shockwave-safe and downloadable, which means that it will automatically install itself if it is not already present on the end-user's system. Recording features include support for 8 or 16-bit recording and 11 kHz through 44 kHz sampling rates (all of these are available if the input device supports it). A recording may

be stopped, paused and resumed at any point. Audio Xtra records and plays back sound asynchronously, meaning that animation, Lingo scripts and anything else in Director can run while a sound is being recorded.



For Director, there are four kinds of Xtras:

- Transitions
- Sprites
- Tools
- Scripting (also known as Lingo) Xtras.

Together, they allow developers to control movies, casts, cast members, scores, media, and other features of Director. They can be effectively used to incorporate advanced interactive features like user-end speech-recognition, and 3D objects that respond to user input and exhibit unique, autonomous behavior.

Discussion

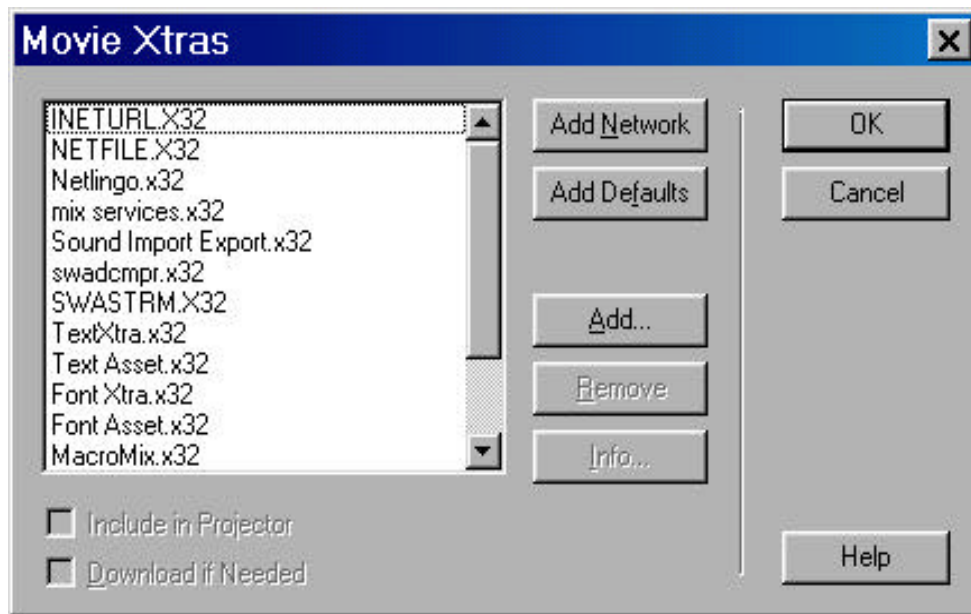
Xtra extensions are based on the Macromedia Open Architecture (MOA), which provides a common extension mechanism for Macromedia and third-party developers to enhance the capabilities of Macromedia products. The advantage of this architecture is the development of Xtras that work not only across the Windows and Macintosh platforms, but will also work across multiple products (such as a Transition Xtra that works in both Director and Authorware). By having an architecture that is both cross-platform and

cross-product, MOA assures seamless integration with existing infrastructures, thus reducing time and effort of development.

Some Xtras are product-specific, while others are designed to work across multiple applications. The table below provides a sampling of how the Xtras can be supported in Macromedia applications and where those Xtras appear in Director's user interface.

Xtras	Appears In	Behavior
Transition	Transition Dialog	Performs screen transition effect.
Asset	Insert Menu	Creates an instance of an add-in media type.
Pixel Filter	Auto Filter, Paint	Runs filters (Photoshop and others) that can modify single bitmaps or a range of bitmaps over time (in the Paint or Cast window).
Scripting	Lingo scripting language	Provides additional functions and objects in the Lingo scripting language

Director ships with built-in Xtras that can be accessed via the Xtras folder, and viewed in the Movie Xtras window.



Director automatically opens Xtra files it finds in its Xtras folder when it launches. When additional Xtras are used in the movie, there are several ways that Xtras are added to the

list box in the Movie Xtras window. Xtras can be manually added by selecting the "Add" button in the Movie Xtras window. A Sprite Xtra is automatically added to the list when it is inserted into the cast. For instance, when a Custom Button is inserted, the Button Editor Xtra is automatically added to the list. A Transition Xtra is automatically added to the list when the transition provided by the Xtra is first placed in the score. Xtras listed in the Movie Xtras window will only be added to the projector (the stand-alone software program that the user will run) if "Check Movie for Xtras" is selected in the Projector Options. For the Xtras to work, they should be placed in the same folder as the projector.

Where to look for third-party Xtras

The Macromedia website hosts links to a large number of companies and individuals that develop and market Xtras for Director. While most of them come with a price tag, a few are downloadable as freeware, and some can be used on trial bases. Most of the sites support demos of the Xtras as short movies.

Director XStuff is a searchable index of Director Xtras registered at Director Web , the most comprehensive Director resource on the Net.

Xtra extensions with implications for Educators

While most extensions for Macromedia products are being judiciously used by educators for enhancing student learning experiences, a couple stand out in this research as high-potential plug-ins.

- Havok Xtra

The Havok Xtra is a fully integrated rigid body physics simulation engine for Macromedia Director. It enables the developer to assign properties such as mass and elasticity to physical objects, apply forces, impulses or torques and set velocities and momentum. The developer can also register interest in specific rigid body collisions or even disable them completely. Havok HKE (Havok Export) files can also be imported, which allow full physics scenes to be constructed in a 3D modeler (like 3ds max) without requiring additional Lingo scripts. The Havok Xtra is a standard feature of Director 8.5 and Shockwave 3D and does not require the purchase of any additional licenses.

- SpeechPlugin from DirectXtras

SpeechPlugin is a free, cross browser (Netscape and IE) plug-in that provides web sites with the ability to talk by transforming text to speech. Developers can utilize SpeechPlugin to create talking web sites. All manner of text, visible and invisible, can be made to speak. This allows websites to be accessible to visually challenged students. The plug-in can be fully controlled by and accessed from Java, JavaScript, and various web applications that communicate with Java or JavaScript, such as Macromedia Shockwave and Flash. SpeechPlugin includes support for high quality lip-synching,

allowing the creation of guides, coaches, entertainers, and other types of assistants or specialists for web sites.

Summary

Xtras extensions play the key role in creation of advanced multimedia presentations using a cross-platform technology. They afford entirely new types of interactions and experiences, both for educators and students, in a learning environment.

References

Gross, Phil (2000). *Director 8 and Lingo Authorized*. Macromedia Press. Berkeley, CA.

Gross, Phil & Gross, Mike (2002). *Director 8.5 ShockWave Studio for 3D*. Macromedia Press. Berkeley, CA.

Vaughan, Tay (2001). *Multimedia. Making it Work*. Osborne/McGraw-Hill. Berkeley, CA.

Useful WebSites

Director Web

<http://www.mcli.dist.maricopa.edu/director/>

Design Lynx Ltd

<http://www.macromedia.com/software/xtras/director/designlynx.html>

Magister Ludi

<http://www.macromedia.com/software/xtras/director/magisterludi.html>

DirectXtras Inc

<http://www.directxtras.com/main.asp?UUID=1174071&>

Macromedia website

<http://www.macromedia.com/software/xtras/director>

Director XStuff

http://www.mcli.dist.maricopa.edu/cgi-bin/search_dx.pl

Havok Xtra

<http://www.havok.com/xtra/index.html>

Additional online resources that support Havok Xtra users:

<http://www.director-online.com/accessArticle.cfm?id=1021>

Wreaking Havok with Physics Part 1

<http://www.director-online.com/buildArticle.cfm?id=1023>

Wreaking Havok with Physics Part 2

<http://www.director-online.com/buildArticle.cfm?id=1025>

Wreaking Havok with Physics Part 3

<http://www.director-online.com/accessArticle.cfm?id=1093>

Bowling with Havok, Part 1

<http://www.director-online.com/accessArticle.cfm?id=1095>

SpeechPlugin from DirectXtras

<http://www.directxtras.com/Main.asp?UUID=1173188>

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