Autodesk® FBX®

Autodesk FBX Converter Help

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Contents

Autodesk FBX Converter Help

1

Autodesk FBX is a platform-independent 3D authoring and interchange format that provides access to 3D content from all major 3D vendors and platforms. FBX is a file format that supports all major 3D data elements, as well as 2D, audio, and video media elements.

For more information on the FBX format, visit the FBX SDK and Plug-ins page at the Autodesk web site: *www.autodesk.com/fbx*.

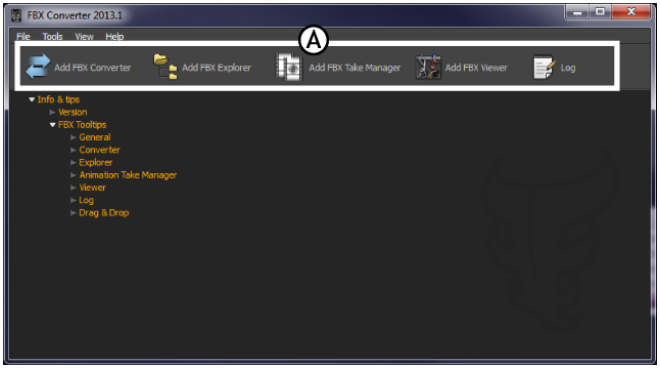
Converter basics

2

The FBX Converter application is a multi-purpose file management tool. It combines four tools, an FBX Converter, an FBX Viewer, an FBX Explorer and an FBX Take Manager.

The FBX Converter is the default tool when you launch the application for the first time. You can find the other tools on the menu bar (A):

Tool	Use
FBX Converter	The FBX Converter lets you convert files into different file formats and FBX versions. With the FBX Converter, you can convert 3DS, DXF, OBJ, & COLLADA files to FBX or FBX files to DXF, OBJ, DAE, or other versions of FBX. See FBX Converter (page 11).
FBX Explorer	The FBX Explorer lets you search and compare data and structure in FBX files. See FBX Explorer (page 29).
FBX Take Manager	The FBX Take Manager lets you save individual animation takes from FBX files with multiple takes. See FBX Take manager (page 35).
FBX Viewer	The FBX Viewer lets you play back and interact with FBX files and 3D files from any major 3D application that have been converted into FBX format. See FBX Viewer (page 41).



FBX Converter *A*. Menu bar tools

The FBX Converter main application background is a "backdrop" for these other tools. Having the Converter as a backdrop with the other applications lets you benefit from drag and drop functionality. The FBX Converter main application background is where you can find tips and instructions for using the other Converter tools as you work.

All file conversion operations are performed in the background by the FBX Converter application using command lines. All commands are recorded and can be viewed by opening the Log tool. This lets you copy and use these operations as a script with the FBXConverter.exe in a batch file.

NOTE The FBX Converter lets you drag and drop files from any FBX Converter tool (e.g. FBX Viewer, FBX Explorer, and so on,) to any other converter tool.

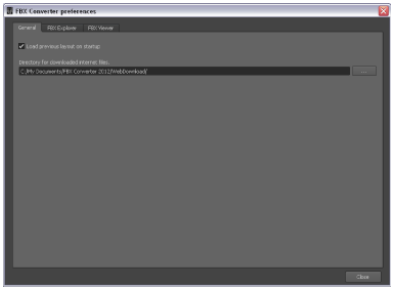
Other hints:

- Right-click the toolbar to show/hide the toolbar.
- Double-click the application background to expand/collapse all info items
- Use FBX files found in the Samples directory.

FBX Converter preferences

You can configure the FBX Converter with the **Preferences** window. Select File > Preferences to open the Preferences window.

FBX Converter preferences



The FBX Converter preferences window lets you set general options. The Preferences window has three tabs:

- General
- FBX Explorer
- FBX Viewer

General preferences

Use the FBX Converter preferences to specify general settings for the FBX Converter application, such as whether the current layout is saved and used at next launch and the preferred file path for downloaded FBX files.

FBX Explorer preferences

Use the FBX Explorer preferences to specify things such as data display maximums, files to exclude, and file types for comparison.
See Changing explorer preferences (page 31) for more.

FBX Viewer preferences

Use the FBX Viewer preferences to specify whether files start playing immediately on load or whether instances of the FBX Viewer should close on exit.
See Changing viewer preferences (page 49) for more.

Installation

3

This chapter describes how to install the Autodesk FBX Converter on Microsoft® Windows®, and Apple® Macintosh® OS X systems.

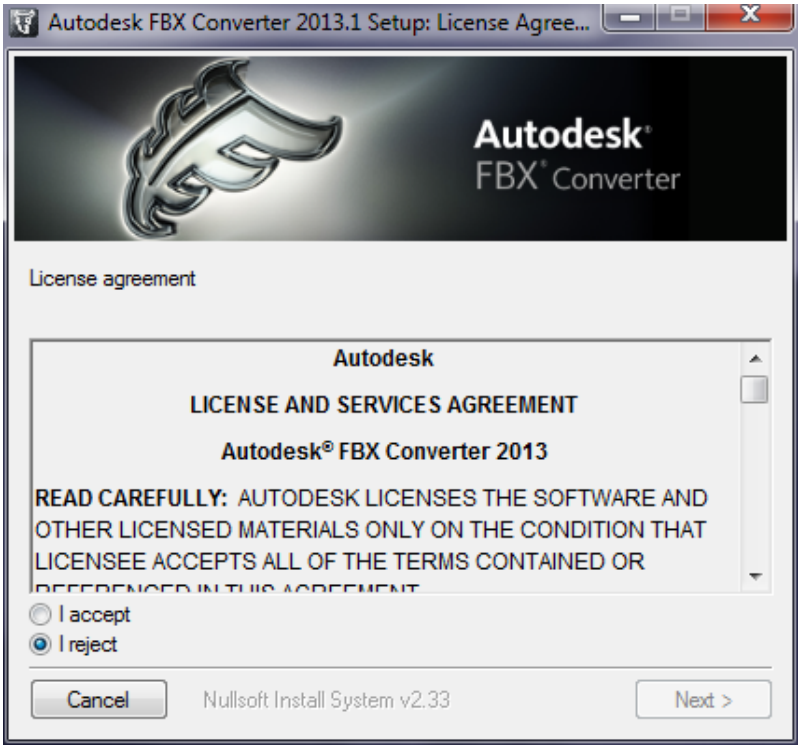
Windows installation

The FBX Converter is compatible with the following versions of Microsoft Windows:

- Windows 7 (32/64-bit)
- Windows Vista (32/64-bit)
- Windows XP (32/64-bit)

To install the FBX Converter:

1. Download the install file from the Autodesk web site (*www.autodesk.com/fbx*).
2. Select **x64** for the 64-bit version.
3. Double-click the install file to launch the FBX Converter installer.
4. Click I accept to accept the terms of the license agreement, and then click Next.



License agreement window

5 The next window shows the recommended installation location for the FBX Converter. If you want to specify another location, click Browse to launch the file browser. Click Next.

6 The next window asks if you want to "Add the Explorer shell extension for ADSK FBX Converter 2013?". Click Yes if you want to create right-click options for FBX files in Windows Explorer.

These contextual options let you launch the FBX Converter for the selected file. Clicking Yes also adds a new "FBX Information" tab in the File Properties dialog box that displays statistics for the FBX file.

7 The installation completed window appears. Click Close to exit the installer.

NOTE

To start the application, click Start > All Programs > Autodesk > Autodesk FBX Converter > FBXConverterUI. You can also double-click the FBX icon on the desktop.

Macintosh installation

The FBX Converter is compatible with the following Macintosh OS:

- Mac OS X 10.6
- Mac OS X 10.5

1. Download the .tgz file from the Autodesk web site to your desktop *www.autodesk.com/fbx*.
2. Double-click the .tgz file to extract the Installation disk image.
3. Double-click the package icon to start the installation. The Welcome pane appears.
4. Click Continue to start the installation process. The Software License Agreement pane appears.
5. Read the License Agreement and click Continue. A dialog box appears asking if you accept the terms and continue with the installation.
6. Click Agree to accept. The Select a Destination pane appears. Select the destination disk where you want to install the FBX Converter and click Continue.
7. A dialog box appears asking you to enter your name and login password to continue the installation.

   NOTE

   You must obtain administrator privileges to continue installation.

8. The installation begins. A progress bar indicates the time remaining of the installation. When the progress reaches 100%, the Finish Up pane appears.
9. Click Close to exit the installation program.

   NOTE

   The FBX Converter installs to the following directory: <Macintosh Drive>/Applications/Autodesk/FbxConverter.

FBX Converter

4

The FBX Converter lets you convert 3DS, DXF, OBJ, or DAE (COLLADA) files to the FBX file format. You can also use it to convert FBX files to DXF, OBJ or DAE (COLLADA) format, as well as convert FBX files to previous FBX versions.

Supported FBX conversion formats

Click the Destination format dropdown menu to select an FBX version.

The FBX Converter converts files to the following FBX formats:

Version	Description
FBX 2013	Select this FBX version to export a file that is compatible with Autodesk 2013 products, plug-ins, and MotionBuilder 2013 files. This is the default FBX version. **NOTE** The FBX 2013 version lets you save in ASCII, but you can also embed media with your file if you activate the Embed Media option
FBX 2012	Select this FBX version to export a file that is compatible with Autodesk 2012 products, plug-ins, and MotionBuilder 2012 files. **NOTE** The FBX 2012 version lets you save in ASCII, but you can also embed media with your file if you activate the Embed Media option

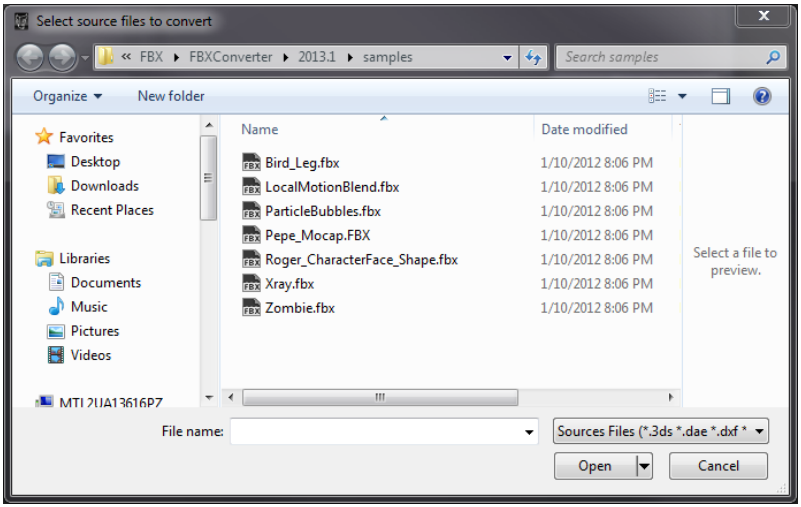
Version	Description
FBX 2011	Select this FBX version to export a file that is compatible with Autodesk 2011 products, plug-ins, and MotionBuilder 2011 files. **NOTE** The FBX 2011 version lets you save in ASCII, but you can also embed media with your file if you activate the Embed Media option.
FBX 2010	Select this FBX version to export a file that is compatible with Autodesk 2010 applications, 2010 FBX plug-ins, and MotionBuilder 2009.
FBX 2009	Select this FBX version to export a file that is compatible with the 2009.00 FBX plug-ins.
FBX 2006	Select this FBX version to export a file that is compatible with Autodesk 2006 FBX plug-ins and MotionBuilder versions 7.5, 7.0, and 6.0.

Converting files

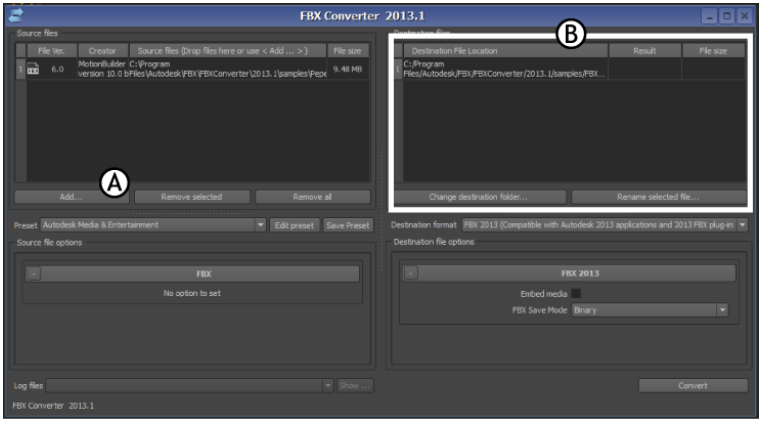
The FBX Converter lets you drag and drop files to convert them to supported file formats. You can convert an FBX file to FBX, DXF, OBJ, or DAE (COLLADA) but you can only convert 3DS, DXF, OBJ, or DAE (COLLADA) to FBX format.

To convert files:

1. Drag a file into the Source Files area, or click the **Add** button to open a browser to locate files.



The file appears in the Destination files area to show you where converted file(s) will be saved. You can change the destination later.



FBX Converter *A*. Add button *B*. Destination files area

NOTE

To remove files from the Source Files list, select the files and click **Remove Selected**. Click **Remove All** to clear the list.

2 Select a preset from the Presets drop-down menu, if applicable. See Creating a conversion preset (page 16).

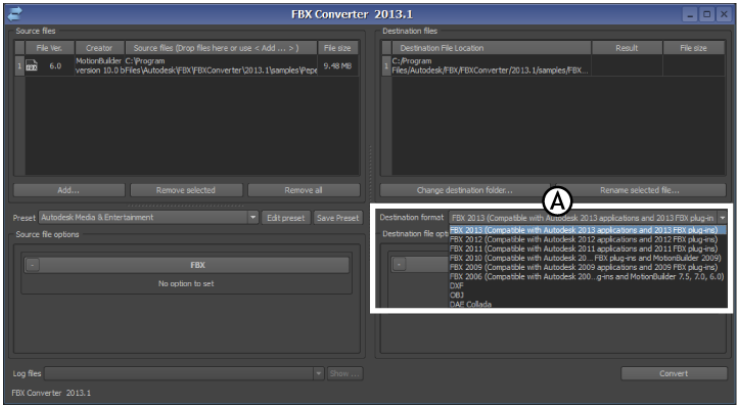
- To save your converted file to another location, click **Change Destination Folder** to open a file browser where you can specify a location.

  NOTE

  When you perform an FBX to FBX conversion, the files are stored in a folder named for the FBX version you specified.

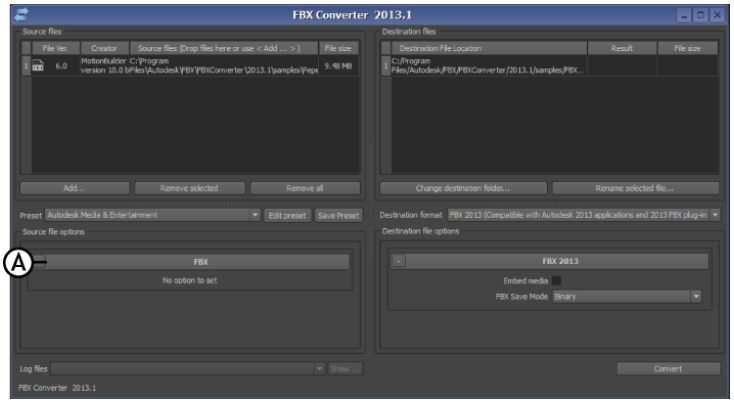
- To save your converted file with a different name from the original, click **Rename Selected File**.

3 Select a conversion format from the Destination Format menu.



Expand the Destination format menu (*A*) to view a list of available conversion formats.

4 Activate or disable any conversion options from the Source File Options menu (if applicable). See Conversion options (page 18) for a list of available options.

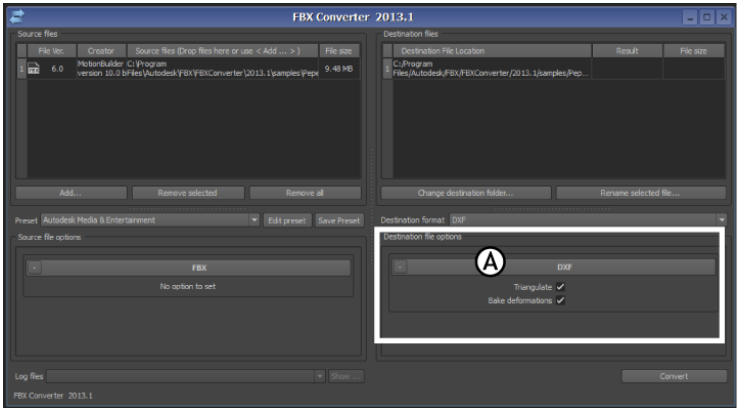


FBX Converter *A*. Source file options. In this case, no options are offered.

NOTE

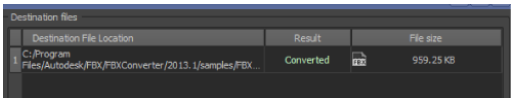
When you convert more than one file, your conversion options are limited based on the format of the files you are converting. To expand your options, convert files in batches by format, such as all 3DS or all FBX.

5 Activate or disable any conversion options from the Destination file options (if applicable). See Conversion options (page 18) for a list of available options.



FBX Converter *A*. Destination file options

6 Click **Convert**.



Completed conversion

If the files already exist in the destination folder, a dialog box appears asking you to Overwrite, Skip, or Rename the file. You can also abort the conversion process which would cancel the remainder of the conversions.

Conversion errors

If any conversion errors occurred, they are displayed in the Destination file Result column and an error log is created. View this file in the FBX Converter's Log file menu.

Destination files

	Destination File Location	Result	File size
1	C:/My Documents/Schnorg.fbx	Skipped	
2	C:/My Documents/FBX 2006/Windtunnel.fbx	Converted	10.51 MB
3	C:/My Documents/CH_Bridge.fbx	Converted	2.49 MB
4	C:/My Documents/FBX 2006/CH_Bridge.fbx	Converted	2.57 MB
5	C:/My Documents/FBX 2006/library__cv1.fbx	Not enough pramameters	550 bytes
6	C:/My Documents/mia_walk_cycle.fbx	Skipped	

Conversion errors appear in the Result column.

If a file converts successfully, the result column turns green and the word "Converted" appears. If the conversion is unsuccessful, the corresponding cell becomes red. Skipped files are shown as "Skipped".

Creating a conversion preset

You can create a preset that you can apply when you wish to use the same conversion options repeatedly.

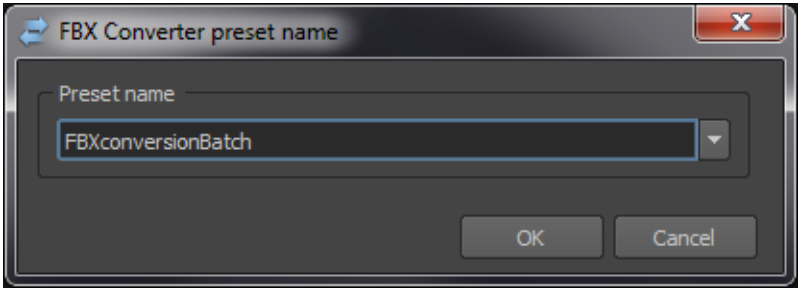
To create a conversion preset:

1. From the main FBX Converter menu, select Presets.
2. Select **Edit.**

3 A list of all applicable options for import and export appears.

Select any desired options to uses these as your preset settings.

4 Select **Preset** > **Save**. An FBX Converter Preset Name window appears for you to enter the name of your preset.



FBX Converter Preset name window

To edit a preset, select **Edit** from the Presets menu, make your changes and click **Save.**

Preset locations

The FBX Converter presets are saved in the following locations:

Preset	Location
Windows default	C:\Program Files\Autodesk\FBX Converter 2013\presets
Windows custom (user)	C:\Users\myName\Documents\FBX Converter 2013\presets\2013.1
Macintosh default	/Applications/Autodesk/FbxConverter/FBXConverterUI.app/Contents/MacOS/presets
Macintosh custom (user)	/Users/myName/FBX Converter 2013/presets/2013.1

Conversion options

The following section describes each conversion option and their related settings. This section also contains a special section on naming conventions for FBX files that are converted into other FBX versions. We recommend leaving the default conversion options as they are, except in special cases. For example, if your scene is large and you do not need textures or materials imported, you would alter the default conversion settings.

FBX to FBX conversion options

The following option is available if you are converting FBX files to another FBX format:

Option	Behavior
Embed Media	Activate this option to include (or embed,) all media associated with your scene in the FBX file. **NOTE** You can embed media with files converted to ASCII if you convert to the FBX 2013, 2012, and 2011 versions. The FBX Converter has no other conversion types that let you embed media with ASCII files.
FBX Save Mode	Select Binary to save the FBX file in the standard format. Select ASCII to save the FBX file in ASCII format.

3DS conversion options

The following are the options for converting files from the 3DS file format.

NOTE

You can only export to FBX format when converting from 3DS format.

3DS to FBX Source File options

The following options are available if you are converting 3ds Max 3DS files to the FBX format:

Option	Behavior
Textures	Activate this option to include texture mapping with the file conversion.
Materials	Activate this option to include materials with the file conversion. If you disable this option, the texture option is ignored.
Animation	Activate this option to include animation with the file conversion.
Mesh	Activate this option to include geometry with the file conversion. If you disable this option, mesh geometry is converted into Null or dummy objects, but the animation and hierarchy are preserved.
Lights	Activate this option to include lights with the file conversion.
Cameras	Activate this option to include cameras with the file conversion.
Convert Units	Activate this option to convert file units to centimeters. If you disable this option, the source application scale might not match once it is converted to or from the FBX file format.
Ambient Light	Activate this option to retain Ambient light settings with the file conversion.
Split Normals	Activate this option to split geometry Normals based on their edge continuity. This

Option	Behavior
	option splits per-vertex Normals and should be used only in specific workflows where you want to ensure visual fidelity of surface continuity in applications that do not support Smoothing Group conversion.
Apply Constant Key Reducer	Activate this option to apply the Constant Key Reducer filter to animation curves. This reduces the number of redundant keyframes.
Add Root Node	Activate this option to add a root node to all elements of your scene in the file conversion. Doing this adds a null or dummy object at the top of the hierarchy.

3DS to FBX Destination file options

The following options are available if you are converting 3ds Max 3DS files to the FBX format:

Option	Behavior
FBX Save Mode	Select Binary to save the FBX file in the standard format. Select ASCII to save the FBX file in ASCII format.

DXF conversion options

The following are the options for converting files to and from the AutoCAD DXF file format.

NOTE

You can only export to FBX format when converting from DXF format.

DXF to FBX Source Files options

The following options are available if you are converting AutoCAD DXF files to the FBX format:

Option	Behavior
Add Root Node	Activate this option to add a root node to all elements of your scene in the file conversion. Doing this adds a null or dummy object at the top of the hierarchy.
Weld Vertices	Activate this option to compare and merge vertices if they are found to be of equal value.
Derive Primitives	Activate Layer to derive one object from each layer. Activate Block to group all entities into one single object. Only block imports are considered separate objects. Activate Entity to derive one object from each entity in the file.

DXF to FBX Destination Files options

The following options are available if you are converting AutoCAD DXF files to the FBX format:

Option	Behavior
Embed Media	Activate this option to include (or embed,) all media associated with your scene in the FBX file. **NOTE** You can embed media with ASCII if you convert to the FBX 2013, 2012, and 2011 versions. The FBX Converter offers no other conversion versions that let you embed media with ASCII files.

Option	Behavior
FBX Save Mode	Select Binary to save the FBX file in the standard format. Select ASCII to save the FBX file in ASCII format.

FBX to DXF Destination Files options

The following options are available if you are converting FBX files to AutoCAD DXF format:

Option	Behavior
Triangulate	Activate this option to force the conversion of quads to triangles. The FBX converter always triangulates NURBS and Patch geometries, regardless of how you set this option. The FBX Converter approximates NURBS and Patch geometry using a polygon mesh made of triangles since the DXF format does not support NURBS or Patch geometry.
Bake Deformations	Activate this option to "bake" (or Plot) link and shape deformations on the resulting geometry.

OBJ conversion options

The following are the options for converting files to and from the OBJ file format.

NOTE

You can only export to FBX format when converting from OBJ format.

OBJ to FBX Source files options

The following options are available if you are converting OBJ files to the FBX format:

Option	Behavior
Add Root Node	Activate this option to add a root node to all elements of your scene in the file conversion. Doing this adds a null or dummy object at the top of the hierarchy.

OBJ to FBX Destination files options

The following options are available if you are converting OBJ files to the FBX format:

Option	Behavior
Embed Media	Activate this option to include (or embed,) all media associated with your scene in the FBX file. **NOTE** You can embed media with ASCII if you convert to the FBX 2013, 2012, and 2011 versions. The FBX Converter offers no other conversion versions that let you embed media with ASCII files.
FBX Save Mode	Select Binary to save the FBX file in the standard format. Select ASCII to save the FBX file in ASCII format.

FBX to OBJ

The following options are available if you are converting FBX files to the OBJ format:

Option	Behavior
Triangulate	Activate this option to force the conversion of quads to triangles. The FBX converter always triangulates NURBS and Patch geometries, regardless of how you set this option. The FBX Converter approximates NURBS and Patch geometry using a polygon mesh made of triangles since the OBJ format does not support NURBS or Patch geometry.
Bake Deformations	Activate this option to "bake" (or Plot) link and shape deformations on the resulting geometry.

COLLADA conversion notes

COLLADA (DAE) files converted to the FBX format are limited to what the FBX format supports. The conversion process loses anything that is not supported by the current FBX version, even if it was previously supported by the DAE format before conversion.

COLLADA conversion can export meshes, bones, skin and morph controllers, as well as basic assets, materials, light and cameras with transforms animation (without shearing). It can re-import what has been exported. Only a Y-up axis is supported.

NOTE You can only export to FBX format when converting from DAE format.

The following is a list of what is supported in the COLLADA

Category	Feature	COLLADA reader	COLLADA writer
Animation	**1** Single Animation **2** Animation Clip* **3** Step Interpolation **4** Linear Interpolation **5** Bezier Interpolation **6** B-Spline Interpolation **7** Hermite Interpolation **8** Combined Interpolation **9** Animation Instances * corresponds to the FBX animation stack.	**1** Supported **2** Supported **3** Supported **4** Supported **5** Supported **6** Unsupported **7** Supported **8** Supported **9** Supported	**1** Supported **2** Unsupported **3** Supported **4** Supported **5** Supported **6** Unsupported **7** Unsupported **8** Unsupported **9** Unsupported
Camera	**1** Orthographic **2** Perspective **3** Camera Target* **4** Camera Instance * with FBX extension.	**1** Supported **2** Supported **3** Supported **4** Supported	**1** Supported **2** Supported **3** Supported **4** Unsupported
Controller	**1** Morph*	**1** Supported	**1** Supported

Category	Feature	COLLADA reader	COLLADA writer
	2 Skin **3** Controllor instance *corresponds to FBX Shape Deformation.	**2** Supported **3** Unsupported	**2** Supported **3** Unsupported
Geometry	**1** Lines **2** Linestrips **3** Mesh **4** Spline **5** NURBS* **6** Multiple Geometries **7** Geometry Instances * no NURBS support with COLLADA.	**1** Supported **2** Supported **3** Supported **4** Unsupported **5** Unsupported **6** Supported **7** Supported	**1** Unsupported **2** Unsupported **3** Supported **4** Unsupported **5** Unsupported **6** Unsupported **7** Unsupported
Lighting	**1** Ambient **2** Directional **3** Spot **4** Point **5** Light Instance	**1** Supported **2** Supported **3** Supported **4** Supported **5** Supported	**1** Supported **2** Supported **3** Supported **4** Supported **5** Unsupported
Material	**1** Constant **2** Lambert **3** Phong **4** Blinn **5** Transparency **6** 2D Texture	**1** Supported* **2** Supported **3** Supported **4** Unsupported **5** Supported **6** Unsuppor-	**1** Unsupported **2** Supported **3** Supported **4** Unsupported **5** Supported

Category	Feature	COLLADA reader	COLLADA writer
	7 Parameter Binding* **8** External Shader Path** **9** Material Instance * for Shaders ** with NVidia extension.	ted **7** Supported **8** Supported **9** Supported * converts to Lambert	**6** Supported **7** Unsupported **8** Unsupported **9** Unsupported
Transform	**1** Visibility* **2** Rotation order * with COLLADA/Maya extension.	**1** Supported **2** Supported	**1** Supported **2** Supported
Physics	**1** n/a	**1** Unsupported	**1** Unsupported
Metadata	**1** Meta **2** Unit	**1** n/a **2** Supported	**1** n/a **2** Supported

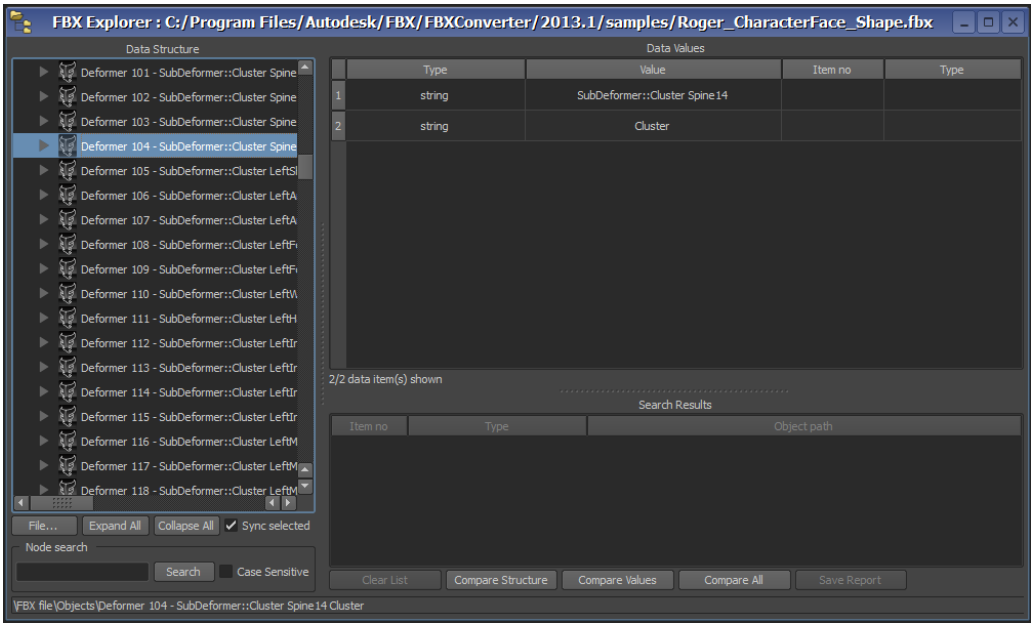
NOTE

Export or import to DAE (COLLADA) can destroy or produce unpredictable results for some elements.

FBX Explorer

5

The FBX Explorer lets you browse the contents of your ASCII or binary FBX files, search for items and compare files with each other.



FBX Explorer

NOTE If you load large (more that 100mb) FBX files, the process is slow. You can speed this up if you use the **Load data structure only** option from the FBX Explorer preferences. This option lets you load only the data structure without all the data contents.

With the FBX explorer you can:

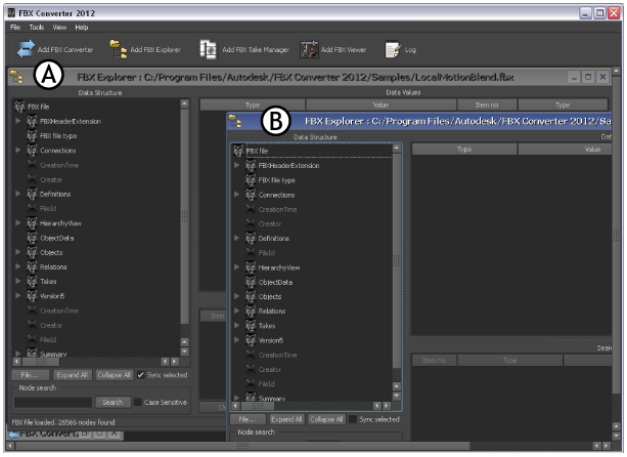
- Search for a string in the data structure or the data content for all nodes.
- Compare the data structure or the data content of all nodes between two different FBX files.

- Only the first 20 data items load for each node, by default. (You can change this default setting in the **Preferences** window. See Changing explorer preferences (page 31).)

Comparing files

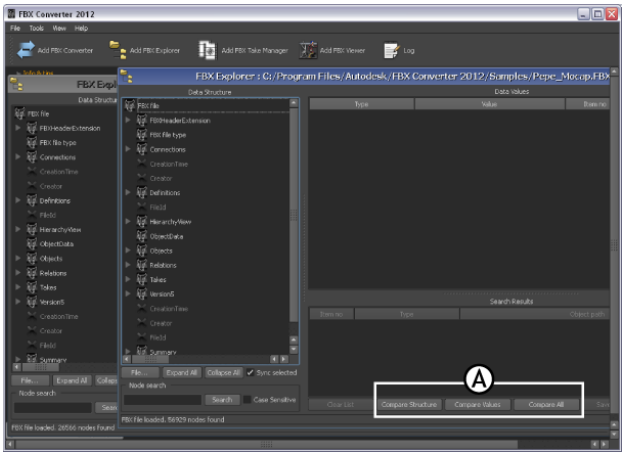
To compare files:

1. Launch two FBX Explorers.



Two FBX Explorers *A*, *B*.

2. Load an FBX file in each FBX Explorer.
3. Click **Compare Structure**, **Compare Values**, or **Compare All**.



FBX Explorer: *A*. Compare buttons

Compare structure

Lets you contrast differences between data structures.

Compare values

Lets you find differences between data values.

Compare all

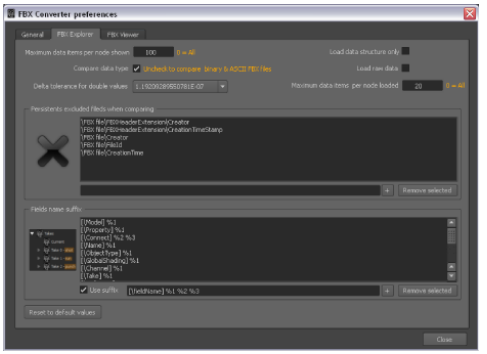
Lets you find differences in both data structure and values.

Changing FBX Explorer Preferences

Use the FBX Explorer preferences to specify things such as data display maximums, files to exclude, and file types for comparison.

To change the Explorer preferences:

1. Launch the Preferences dialog from the File > **Preferences** menu
2. Select the **FBX Explorer** tab.
3. Edit the settings.



FBX Explorer preferences

NOTE Click **Reset to default values** to restore the original settings for the FBX Explorer.

Explorer preferences options

Option	Description
Maximum data items per node shown	Lets you specify the maximum number of data rows in the **Data Values** grid/per node. Use this setting to limit the number of rows shown which can be slow if there are more than 100 rows. Set to 0 if you want to show all data associated with nodes in the file.
Load data structure only	Use this option to load the data structure without the data values. This is helpful if you have a large file with millions of vertices where you only want to check the data structure. This is a quick way to large files.
Compare data type	Lets you compare binary and ASCII files without checking the data type. **NOTE** In ASCII all data types are "STRING", so if you try to compare the same file in ASCII and binary errors occur.

Option	Description
Load raw data	Lets you load a suite of bytes (as in blob data, or for example, when a texture is embedded in an FBX file) in the rare case where you need to load and compare this kind of data.
Delta tolerance for double values	When two double values are compared, the two double values are subtracted. If the difference is greater than the delta tolerance, errors are reported. Otherwise the two double values are considered equal. This can be useful when there is rounding applied to double values.
Maximum data items per node loaded	Lets you specify the maximum number of data read for a node on load. This setting is used to limit the memory usage of the FBX Explorer by applying a limit for large file, as data can require many bytes. **TIP** Generally, the first 1 to 10 data items per node are of some interest. The default value is 20. Set this option to 0 if you want to load all data associated with nodes in the file.
Persistents excluded fields when comparing	Lets you exclude data from a comparison. For example, the creation time of two files. This list of excluded fields lets you compare two files and report a perfect match even if some data are not equal.
Field name suffix	Use this field to configure what is shown to the right of the node label and number in the tree view. For example, setting [\P] %1 shows all node named "P" with its first data value.

Option	Description
Reset to default values	Restores the original FBX Explorer values.

FBX Take manager

6

The Take Manager lets you store FBX files with single or multiple takes without the need to open the file in MotionBuilder. This tool was created because of the need for an efficient way to extract animation takes from FBX files and create separate FBX files with each of them.

FBX Take Manager

In the past, extracting animation takes required opening MotionBuilder. But using MotionBuilder can be time-consuming when working with several FBX files that contain a large number of animation takes.

Select the FBX file in the left pane, and the takes contained in the file display in the right pane.

- Save data from any take from the loaded FBX file. For example, you can save data with or without characters. See Supported Take Elements for more information.
- Rename a take without opening the file in MotionBuilder.
- Add prefixes or suffixes to multiple take names in single or multiple FBX files.

Using the FBX Take Manager

1 Drag and drop the FBX file(s) into the FBX Take Manager **Source Files** window. You can also click **Add FBX files** to select FBX files to load.

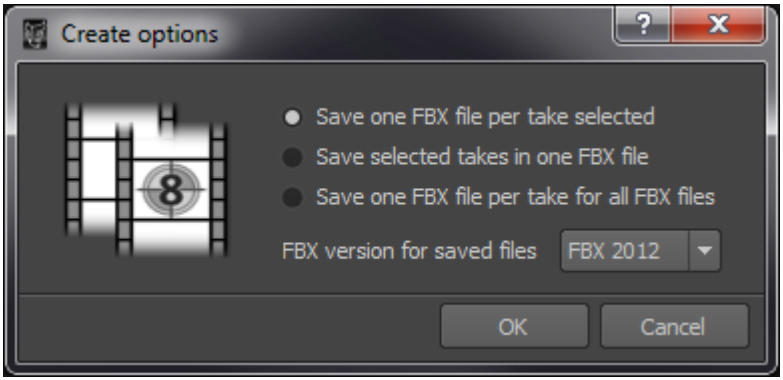
FBX Take Manager

When you select files in the Source Files window, relevant information appears in the **Take Name**, **New Take Name**, **Character**, and **Destination File Location** columns.

Column	Description
Take Name	Shows the current take(s) in your FBX file.
New Take Name	Shows the new take name(s) you will create when you click **Create FBX Files**.
Character	Indicates whether or not the MotionBuilder Character rig is included with the take.
Destination file location	Specifies the location where the new take to be extracted is copied into a separate FBX file.

2 Select the take(s) in the Destination File pane and click **Create FBX Files**.

The **Create options** dialog box appears. There are three options:



Create options dialog box

- Save one FBX file for every selected take in the tool
- Save multiple selected takes to one FBX file
- Save one FBX file per take for every file listed in the **Source Files** window

NOTE You can save the resulting FBX files in FBX version 2013, 2012, 2011, 2010, and 2009.

3 In the Animation Takes pane, click any of the Takes to:

- Add a prefix/suffix to the file: click **Add Prefix/Suffix** and enter
- Rename a take: double-click and enter a new name. Or click **Rename Take** for more options. See Renaming takes (page 38).
- Remove the character: Disable the checkbox in the take's corresponding Character column.

The **Destination File Location** and **File Size** columns display relevant information.

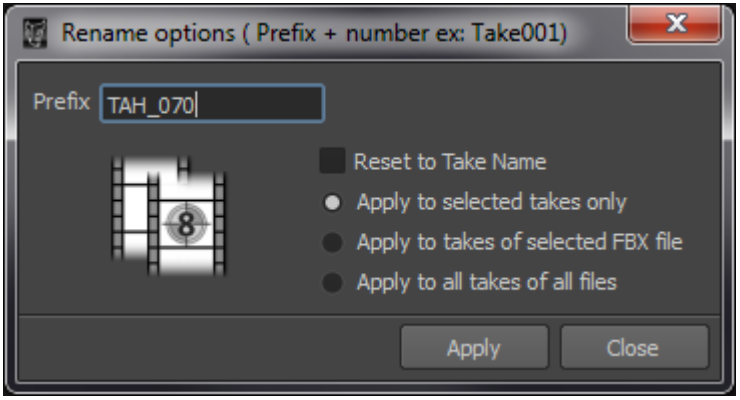
NOTE If the files already exist in the folder, you have the choice to overwrite, skip, or rename the file. You can also end the conversion process which cancels the rest of the conversion.

Every file extracted by the Take Manager contains every object used in the scene but with only one extracted take.

You can also use the **Prefix/Suffix** renaming tool at this point. See Prefix/Suffix options (page 38)

Renaming takes

Click **Rename Take** to open the Rename options dialog box for more ways to rename your take:



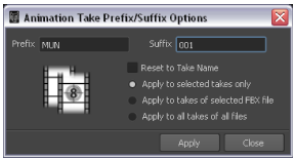
Rename options

Option	Description
Reset to Take Name	Restores the original take name, for example, "Take 001".
Apply to Selected Takes only	Applies your changes only to selected takes.
Apply to takes of selected FBX file	Applies your changes only to takes in the file selected in the Source file pane.
Apply to all takes of all files	Applies your changes to all the takes contained within files in the Source pane.

Prefix/Suffix options

To apply a prefix or suffix to your extracted take names:

1. Click **Prefix/Suffix** in the Take Manger to access the Prefix/Suffix options.



Prefix/Suffix options dialog box

The Prefix/Suffix options let you customize the names of your extracted takes. The renamed takes appear in the New Take Name column. To add text to the beginning of the take name, enter text in the **Prefix** field. To add text to the end of the take name, enter text in the **Suffix** field.

2 Select from the following options:

Option	Description
Reset to take name	Clears changes and restores the original take name.
Apply to selected takes only	Adds the prefix/suffix to the highlighted files
Apply to takes of the selected FBX file	Adds the prefix/suffix to every take in the selected file.
Apply to all takes of all files	Adds the prefix/suffix to all files in the Take Manager.

3 Click **Apply**.

Searching for takes

Enter text in the Take Manager **Search** field to locate a take. The **Search** function examines only the takes listed in Take Name column. When the queried text is located, these takes are exclusively selected.

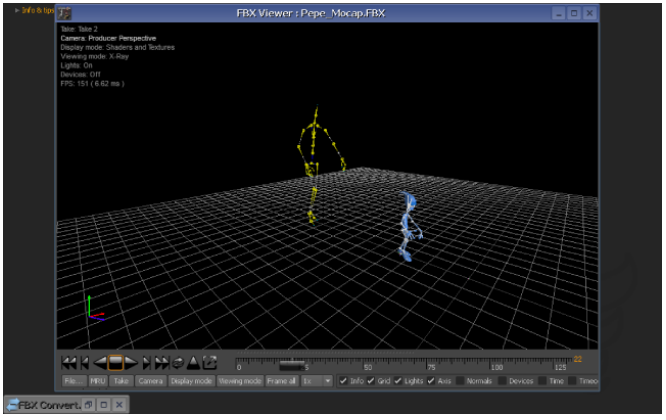
For example, if you had three takes named Jogging, Walk, and WalkResult, and then searched for the text *Walk*, the last two takes would be selected. The first take, *Jogging* is not. This is a quick way to select specific takes from files that contain hundreds of takes.

NOTE The search updates as you enter the text in the **Search** field, so that the selection changes in as you type. This is useful if you do not know the exact spelling of a take name.

FBX Viewer

7

The FBX® Viewer lets you play back and interact inside with 3D files from any major 3D application that have been converted into FBX format. Pairing the FBX Viewer with the FBX Converter in one package lets you view files before and after conversions, without opening another application.



FBX Viewer

NOTE You can open several instances of the viewer. See Viewing FBX files (page 42).

FBX Viewer and COLLADA, 3DS, OBJ, DXF files

You can drag and drop COLLADA, 3DS, OBJ, and DXF files into the FBX Viewer to view them. This is because the FBX Viewer automatically converts these files to FBX before opening them. This lets you use the FBX Viewer as a COLLADA, 3DS, OBJ, DXF and FBX Viewer.

When you drop a native FBX file on the FBX Converter application background, the file is loaded automatically in the FBX Viewer. If the file is OBJ/Collada DAE/DXF/3DS format, it is converted automatically using the FBX default options to an FBX temporary file. This temp file then loads in the FBX Viewer.

See Default FBX options (page 50) for a list of the FBX defaults that are applied to the COLLADA, 3DS, OBJ, and DXF files.

Viewing FBX files

To load FBX files into the Viewer, do the one of the following:

- Click the **File** button to load an FBX file in the Viewer.
- Drag a native FBX file onto FBX Converter application background.
- Drag an OBJ/COLLADA DAE/DXF/3DS file onto the FBX Converter application background and the file is converted automatically, creating an FBX temp file using default options. This temp file is then displayed in the FBX Viewer. See Default FBX options (page 50) for a list of the FBX default options.
- Drag links to FBX files from web pages into the FBX Viewer or the FBX Converter application background, and the FBX file downloads to the local hard drive, and loads in the FBX Viewer.

You can also:

Use the Transport Controls to frame advance, play, loop, eject or switch to full screen.

- Click the **Take** button to play different takes.
- Click the **Camera** button to move through the camera views associated with the file.
- Click the **Display mode** to select a different display for the scene.

Display mode	Description
Wireframe	Displays selected objects as wireframe.
Flat	Displays selected objects using a constant color. This option ignores light sources in a scene, and overrides any custom shading, textures, and materials applied using the Shader settings.

Display mode	Description
Lighted	Displays selected objects using their custom shaders created in the Shader settings. Textures do not display.
Textures	Displays selected objects with their applied textures. This option is available only when the Lighted option is selected, in which case Use Textures is active by default.
Shaders	Displays selected objects using the default shader. This option is available only when the Lighted option is selected, in which case Use Shaders is active by default.
Shaders and Textures	Displays selected objects with both the default shader and their applied textures.

- Click the Viewing mode to select a different view for the scene.

Viewing mode	Description
Normal	Sets the current camera view to Normal Display mode, which shows all assets. Normal is the default viewing mode.
Models only	Sets the current camera view to Models Only mode, which displays models only and hides all Nulls, lights, cameras, and other elements.
X-Ray	Sets the current camera view to X-Ray mode, which shows a model's skeleton, Nulls, and elements.

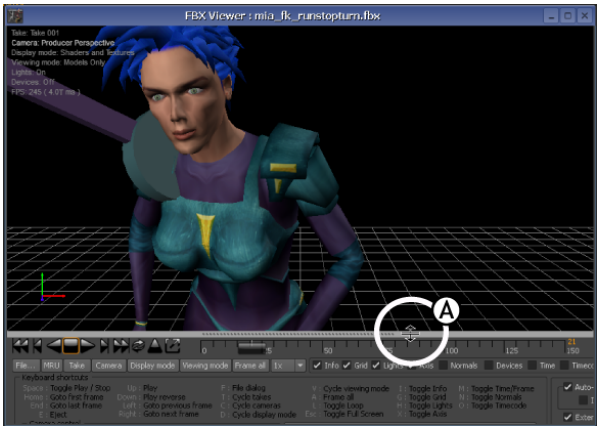
- Frame the objects in the scene with the **Frame all** button.

See FBX Viewer controls (page 45) for more information.

NOTE You cannot manipulate animated cameras, as the camera position is driven by animation constraints in the file.

The Take name, Camera view, Display mode, and Viewing mode, lights, devices and real time frame rate display in the top left corner.

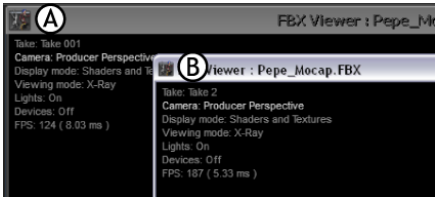
NOTE Drag the splitter up to display tips, shortcuts, and information.



Viewer *A*. Drag the splitter bar upward.

Viewing multiple FBX files simultaneously

You can open multiple instances of the FBX Viewer at the same time. This is useful when you want to compare takes from the same file or the result of a file conversion.



Two FBX Viewers *A*. playing Take 001 *B*. playing Take 2

1. Select the first file in the FBX Viewer that is playing an FBX file and drop it into another FBX Viewer so that both viewers play the same file.
2. Click the **Share** checkbox in *both* FBX Viewers, then click the **Go to First Frame Button** in one viewers.

NOTE On systems running Windows, a firewall warning dialog appears. To unblock the communication between the two FBX Viewers, click **unblock**. Once done, the warning will not appear again.

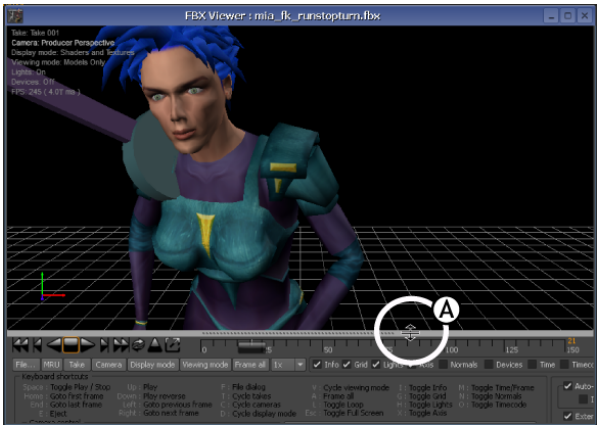
3 Click play in any viewer.

The players play the animations in sync, since the **Share** checkbox is active.

NOTE Any controls you activate are applied across all shared viewers. This includes the transport controls, so you can navigate to the same frame accurately and compare scenes.

FBX Viewer controls

The following are descriptions of the FBX Viewer controls. The Viewer controls are visible when you pull the splitter bar between the Viewer and the Transport controls.



Splitter *A*. Drag the Splitter bar upward to display tips, shortcuts, and options.

Option	Description
Info	Displays scene information in the upper left of the Viewer.
Grid	Shows/Hides the scene grid.
Lights	Uses the scene's lights.

Option	Description
Axis	Shows/Hides the axis in the lower left of the Viewer.
Devices	Activates keyboard triggering of the scene. (If applicable.)
Time	Switches the Timeline between frames and time display mode. Shows the display rate at the beginning of the timeline if checked. The timeline scales according to the rate selected. To specify the timecode display value and mode, see Changing viewer preferences (page 49).
Share	Activates/disables sharing of all commands between FBX Viewers in Share mode.See Sharing XYZ camera values (page 48).
Camera	Activates/disables sharing of camera navigation controls.
Timecode	Shows/hides the current timecode.
Normals	Shows/hides mesh normals.
Auto-adjust system cameras to view all	Activates/disables the **Frame all** operation when a new file loads or a Producer camera is viewed for the first time. This is useful when models in the scene are not centered, such as in Revit files. **NOTE** This applies only to camera names that start with *Producer*, for example, Producer Perspective, Producer Front, and so on.
Include Custom cameras	Activates/disables the **Frame all** operation when a new file or custom cameras loads.

Option	Description
	Also applies when a custom camera is viewed for the first time. **NOTE** A custom camera is a camera with a name that does not start with the word *Producer*.
Extend clipping planes on <Frame all>	When activated, this option extends the near and far clipping planes of active cameras in the Viewer. The near clipping plane moves closer to the camera and the far clipping plane moves further away from the camera. This way any objects that may have been clipped from camera view are visible.

Navigating an FBX file

Use these keyboard shortcuts to orbit, pan, and dolly around your FBX scene:

Orbit	Click+drag
Pan	Shift+click+drag
Dolly	Ctrl+click+drag

Controlling multiple scenes at the same time

How do I control multiple FBX scenes in parallel?

1. Launch 2 or more FBX Viewers.
2. Load an FBX file in each.
3. Click the **Share** button in all FBX Viewers.
4. All commands given for any FBX Viewer are "Shared" among viewers. For example: Play, Stop, Cycle Camera, etc.

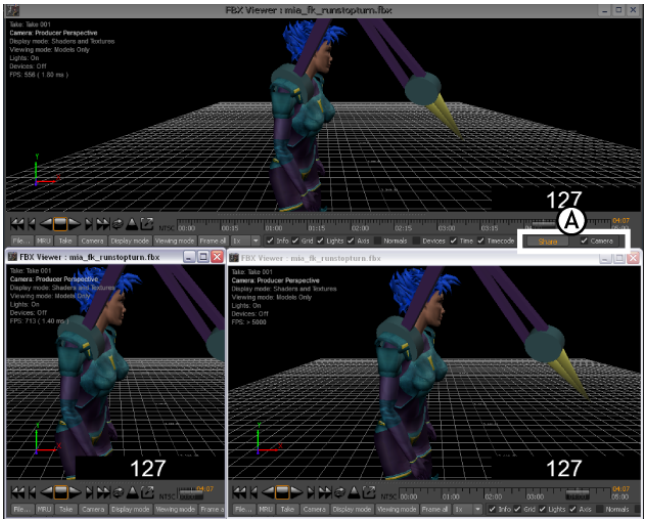
NOTE If you temporarily want to control only one of the shared FBX Viewers, disable **Share**, perform the operation, then reactivate the **Share** button. This lets you apply commands to a single Viewer.

FBX Viewer controls *A*. Share button.

A dialog box appears after a file is selected in the File open dialog to give you the option to load a file in all shared FBX Viewers.

Sharing camera position

You can share the position of the current camera.



3 shared Viewers *A*. Activate Camera and Share.

1. Check the **Share** option on all FBX Viewers.
2. Check the **Camera** option on every shared FBX Viewer.

NOTE You cannot control the position of an animated camera.

Triggering devices in the FBX Viewer

1. Activate the **Device** checkbox.
2. Click the scene to switch the Viewer's focus.
3. Use the special keyboard keys to trigger the scene.

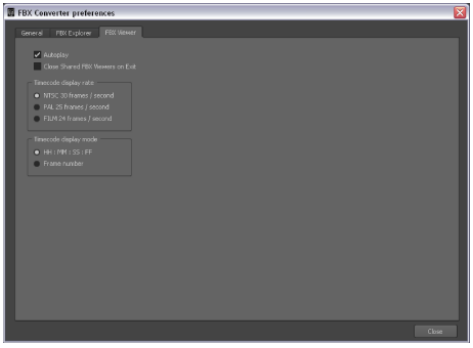
NOTE All trigger keys are shared among all FBX Viewers when in share mode. When the focus is on the scene, all keyboard shortcut keys are used to drive the scene. To switch the focus away from a scene, click anywhere below the scene in the control area.

Changing FBX Viewer preferences

Use the FBX Viewer preferences to specify whether files start playing immediately on load or whether instances of the FBX Viewer should close on exit.

To change the Viewer preferences:

1. Launch the **Preferences** dialog from the File > Preferences menu.
2. Select the FBX Viewer tab.
3. Edit the settings.



FBX Viewer preferences

Viewer preferences options

Option	Description
Autoplay	Plays files loaded in the Viewer automatically.
Close shared FBX viewers on exit	Closes shared Viewers when the Viewer is exited.
Timecode display value	Lets you set a default timecode display format for the Viewer: ■ NTSC 30 fps ■ PAL 25 fps ■ Film 24 fps
Timecode display mode	Lets you set a default timecode display mode for the Viewer: ■ HH:MM:SS:FF (Hours:Minutes:Seconds:Frames) ■ Frame number

FBX Viewer timnecode display *A*. Frames *B*. HH:SS:MM:FF.

Default FBX options

When the FBX Converter performs an automatic conversion, such as when you drag a non-native (OBJ/COLLADA DAE/DXF/3DS) file into the FBX Viewer defaults are applied.

The following are default FBX conversion settings:

Format	Converted by default
3DS	■ Textures ■ Materials ■ Animation ■ Mesh ■ Lights ■ Cameras ■ Convert Units ■ Split Normals
DXF	■ Add Root node ■ Weld vertices ■ Derive primitives by layer
OBJ	■ Add Root node
DAE	n/a
All	■ Embed media ■ Save as Binary

NOTE These defaults are the same as the FBX Plug-in Autodesk Media & Entertainment preset.

Command line

8

The following is information on the FBX Command line.

These commands perform conversions between FBX and other file formats. Supported file formats are FBX, DXF, OBJ, 3DS and COLLADA.

Use the following commands:

- FBXCONVERTER source_file fbx_file [global_options] [import_options] [export_options]
- FBXCONVERTER fbx_file destination_file [global_options] [export_options]
- FBXCONVERTER /? (to access help)

Definitions

Command	Description
fbx_file	The name of the FBX file that you want to convert.
source_file	The name of the source file (FBX, DXF, OBJ, 3DS or DAE).
destination_file	The name of the destination file (FBX, DXF, OBJ, or DAE) **NOTE** Specify the format of the source and/or destination file(s) by the /sff and /dff switches. If you do not specify these switches, the application tries to determine what types of files it needs to process by checking the file extension. Note: If both the source and destination files are FBX files, the /f option is mandatory.

Global options

Command	Description
/sff	Source file format. This switch needs to be completed with one of the symbols listed below.
/dff	Destination file format. This switch needs to be completed with one of the symbols listed below. FBX, DXF, OBJ and COLLADA Example1: /sffFBX /dffCOLLADA. The source file is an FBX file and the destination is a COLLADA. Example2: /sffOBJ /dffFBX. The source file is an OBJ file and the destination is an FBX file.
/v	Verbose mode. This switch activates the display of messages from the FBX Converter to the standard command line output.
/l	Create log file. This switch writes messages from the FBX Converter into a log file: "<dest_filename>.log.txt". The file is created only if messages are generated.

FBX options

The available options specific to the FBX file format and are detailed below:

FBX writer options

Command	Description
/e	Embed media. Activate this option to include (or embed,) all media associated with your scene in the FBX file. You cannot embed media if the file is saved in ASCII format for FBX versions before 2011. You can embed media if the file is saved in ASCII format for FBX 2013, 2012 and 2011 versions. This option is disabled by default.

Command	Description
/-e	Activate this option if you do NOT want to embed media associated with your scene in the FBX file This option is enabled by default.

FBX to FBX conversion options

Command	Description
/f200611	Destination FBX file is saved as FBX200611 version (file version 6). This option is disabled by default.
/f200900	Destination FBX file is saved as FBX200900 version (file version 6). This option is disabled by default.
/f201000	Destination FBX file is saved as FBX201000 version (file version 6). This option is disabled by default.
/f201100	Destination FBX file is saved as FBX201100 version (file version 7.1). This option is disabled by default.
/f201200	Destination FBX file is saved as FBX201200 version (file version 7.2). This option is disabled by default.
/f201300	Destination FBX file is saved as FBX201300 version (file version 7.3). This option is active by default.
/ascii	The destination FBX file is written in ASCII file format. This option is disabled by default.

Command	Description
/tk	The destination FBX file is written based on take options.
/matconvert	The destination FBX file has converted serialized data into basic objects. This option is disabled by default.

FBX writer options

Command	Description
/e	Embed media. Activate this option to include (or embed,) all media associated with your scene in the FBX file. You cannot embed media if the file is saved in ASCII format for FBX versions before 2011. You can embed media if the file is saved in ASCII format for FBX 2013, 2012 and 2011 versions. This option is disabled by default.
/-e	Activate this option if you do NOT want to embed media associated with your scene in the FBX file This option is enabled by default.

3DS import and export options

The available reader and writer options specific to the 3DS file format are detailed below:

Import options

Command	Description
/tex	Texture. Activate this option to include texture mapping with the file conversion. This option is active by default.
/mat	Material. Activate this option to include materials with the file conversion. If you disable this option, the texture option is ignored. This option is active by default.
/anim	Animation. Activate this option to include animation with the file conversion. This option is active by default.
/mesh	Mesh. Activate this option to include geometry with the file conversion. If you disable this option, mesh geometry is converted into Null or dummy objects, but the animation and hierarchy are preserved. This option is active by default.
/light	Light. Activate this option to include lights with the file conversion. This option is active by default.
/cam	Camera. Activate this option to include cameras with the file conversion. This option is active by default.
/filter	Filter. Activate this option to apply the Constant Key Reducer filter to animation curves. This reduces the number of redundant keyframes. This option is disabled by default.

Command	Description
/ambientlight	Ambient light. Activate this option to retain Ambient light settings with the file conversion. This option is disabled by default.
/splitnormals	Split Normals. Activate this option to split geometry Normals based on their edge continuity. This option splits per-vertex Normals and should be used only in specific workflows where you want to ensure visual fidelity of surface continuity in applications that do not support Smoothing Group conversion. This option is active by default.
/addroot	Add root. Activate this option to add a root node to all elements of your scene in the file conversion. Doing this adds a Null or dummy object at the top of the hierarchy. This option is disabled by default.
/convertunit	Convert Units. Activate this option to convert file units to centimeters. If you disable this option, the source application scale might not match once it is converted to or from the FBX file format. This option is active by default.

OBJ import and export options

The available reader and writer options specific to the OBJ file format are detailed below:

Import options

Command	Description
/r	Add root. Activate this option to add a root node to all elements of your scene during the file conversion. Doing this adds a Null or dummy object at the top of the hierarchy. This option is active by default.

Export options

Command	Description
/t	Force triangulation of exported Triangulate. Activate this option to force the conversion of quads to triangles. The FBX converter always triangulates NURBS and Patch geometries, regardless of how you set this option. The FBX Converter approximates NURBS and Patch geometry using a polygon mesh made of triangles since the OBJ format does not support NURBS or Patch geometry. This option is active by default. To override the default setting, use /-t.
/d	Bake deformations. Activate this option to "bake" (or Plot) link and shape deformations on the resulting geometry. This option is active by default. To override the default setting, use /-d.

DXF import and export options

The available reader and writer options specific to the DXF file format are detailed below:

Import options

Command	Description
/r	Add root. Activate this option to add a root node to all elements of your scene in the file conversion. Doing this adds a Null or dummy object at the top of the hierarchy. This option is active by default.
/w	Weld vertices. Activate this option to compare and merge vertices if they are of equal value. This option is active by default. You can override (unset) default switches if you use - (hyphen) as a prefix. For example, /-w . In addition, one of the three following modes can be specified:
/layer	In this mode, one object derives from each layer. This is the default mode.
/block	Use this mode to group all entities into a single object. Only block imports are considered separate objects.
/entity	Use this mode to derive one object from each entity in the file.

Export options

Command	Description
/t	Triangulate. Activate this option to force the conversion of quads to triangles. The FBX converter always triangulates NURBS and Patch geometries, regardless of how you set this option. The FBX Converter ap-

Command	Description
	proximates NURBS and Patch geometry using a polygon mesh made of triangles since the DXF format does not support NURBS or Patch geometry. This option is active by default. To override the default setting, use /-t
/d	Bake deformations. Activate this option to "bake" (or Plot) link and shape deformations on the resulting geometry. This option is active by default. To override the default setting, use /-d

Take extractor

Activate the Take extractor option to copy takes from an FBX source file into an FBX destination file. For example, the command:

```
C:/MyDir/Test.fbx C:/MyDir/Take/Test.fbx /tk /f201300
{0,^new take name^,-ch}{3,^new take name^,-ch}
```

only extracts takes 0 and 3 from C:/MyDir/Test.fbx, to the C:/MyDir/Take/Test.fbx file. This will then rename take 0 and 3 to "new take name". The destination file will be FBX 2013 format since /f201300 can be /f201300 or /f201100 or /f201000

No Characters are saved since -ch is found in every take option.

- To extract only one take per file, use a single take option. For example:

  ```
  {3,^new take name^,-ch}
  ```

- To include all Characters in the saved file, use <ch>. For example:

  ```
  {3,^new take name^,ch}
  ```

- To list all take indices and take names of a file, use /tkln. For example:

  ```
  C:/MyDir/Test.fbx /tkln
  ```

You can also use FBX Take Manager to extract takes. Visit *www.autodesk.com/fbx* to download the FBX Converter.

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