

# Autodesk® MotionBuilder® 2011

## What's New



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# What is New in this Release

# 1

The following topics provide an overview of the new features and changes in the MotionBuilder 2011 software product release, a list and description of resolved and unresolved issues, as well as any software limitations deemed important to document.

- [New features and enhancements in MotionBuilder 2011 release](#) on page 2
- [Additional changes in MotionBuilder 2011 release](#) on page 11
- [Resolved issues in MotionBuilder 2011 release](#) on page 12
- [Unresolved issues and limitations in MotionBuilder 2011 release](#) on page 18

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**NOTE** The *Autodesk MotionBuilder 2011 Release Notes* supersede information related to new features, changes, resolved and unresolved issues as well as any software/hardware limitations contained in this chapter.

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## Related Topics

For information about the MotionBuilder software, go to: <http://www.autodesk.com/motionbuilder>

For additional last minute information about the MotionBuilder software, or for any downloads, consult our Support page at: <http://www.autodesk.com/motionbuilder-support>.

For last minute updates to the Autodesk MotionBuilder 2011 software product, refer to the *Autodesk MotionBuilder 2011 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at: <http://www.autodesk.com/motionbuilder2011-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2011 documentation.

For information about the Autodesk Media & Entertainment products and solutions, visit: <http://www.autodesk.com/products-me>.

# New features and enhancements in MotionBuilder 2011 release

The following describes the new features and enhancements in this release of the MotionBuilder software product.

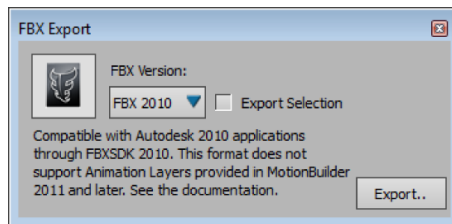
See also:

- [Additional changes in MotionBuilder 2011 release](#) on page 11
- [Resolved issues in MotionBuilder 2011 release](#) on page 12
- [Unresolved issues and limitations in MotionBuilder 2011 release](#) on page 18

## File I/O Support

This release uses the FBX SDK 7.0 as the mechanism to handle file I/O, thus allowing optimum compatibility with other Autodesk 3D software products such as Autodesk® Maya® and Autodesk® 3ds Max®. The following summarizes the changes to the file I/O:

- You can now open in MotionBuilder 2011 *.fbx* files created in earlier versions of MotionBuilder, however, all files saved in MotionBuilder 2011 are saved by default in the new FBX file format (version 7.0).
- You can save (export) *.fbx* files created in MotionBuilder 2011 to an earlier version of FBX by choosing from the main menu Python Tools > FBX Export > FBX 2010.



### FBX Export

Saving MotionBuilder 2011 to FBX version 2010 ensures compatibility with Autodesk version 2010 applications.

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**NOTE** See limitation to [File I/O](#) on page 19.

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- You can now choose File > Open to open or import any *.fbx* file. As a result, the File menu options “FBX Plug-in Import” and “Import” have been removed.
- You can now choose File > Merge to merge any *.fbx* file. As a result, the File menu option “FBX Plug-in Merge” has been removed.
- You now import motion capture files via File > Motion File Import. As a result, the File menu option “Import” has been removed.
- You now export motion capture files via File > Motion File Export. As a result, the File menu option “Export” has been removed.

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**NOTE** See limitation to [File I/O](#) on page 19.

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## Animation Layers Enhancements

The new Animation Layer editor replaces the Layer pane in the FCurves window. The Animation Layer editor lets you create, select, and merge layers of animation. The Animation Layer editor lets you manage layer order, and parent, mute, solo, and lock layers. It also lets you select various layer blending modes, such as Additive and Override, and layer accumulation modes. Each layer has a Weight value that can be changed and animated to determine how much of its animation plays in the result animation.

The shades of green used to indicate selected layers in the Animation Layer editor and the current layer have been modified to improve visibility.

In addition, Animation layer functionality is exposed through the new `FBAnimationLayer` class.

## Animation Layers Naming Convention

The default layer naming convention for layers in the Animation Layer editor has been updated to ensure proper interoperability between the MotionBuilder and Maya software. As a result, the “Base Layer” is now named “BaseAnimation”, the “Layer 1” is now named “AnimLayer1”, and layers you create are now named “AnimLayer2” and so on. The same is true when layers are duplicated.

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**NOTE** If you open a file containing older animation layers, the layers are not renamed. For example, you may still see a layer called "Layer 1". When you import to the Maya software, "Layer 1" is renamed "Layer\_1" and when you import back to MotionBuilder, the layer name "Layer\_1" is retained.

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## Materials and Textures Enhancements

Various enhancements have been made to the materials and textures. The following summarizes the main improvements.

The material, texture, and shader assets are now grouped under the new Asset browser's Shading Elements directory. The Shading Elements folder contains the Material asset, as well as a Texture asset and a Layered Texture asset meant for use with materials. The Global Lighting Texture folder under the Shading Elements directory contains various texture and Layered texture assets meant for use with shaders. The Shaders folder under the same directory contains all the shaders, including any custom shaders you may have on your system.

### Materials

The Material settings include new properties and settings. The new properties are Displacement, Bump Map, and Normal Map. The new settings include the Intensity (or Factor) settings and the Texture list and button. The Intensity settings let you adjust and animate each property's influence on the material result. The Texture list and button let you attach and detach textures to each property.

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**NOTE** To see the results of textures attached to material properties other than Diffuse, Bump Map, and Normal Map, use custom shaders (created using the Open Reality® SDK).

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The Material settings can be sorted into two categories: basic and advanced settings. The advanced settings require a corresponding shader to display the result in the Viewer. For example, to see the result of a texture attached to the Bump Map property, a Bump Map or Dynamic Lighting shader needs to be applied to the model. Some advanced settings, such as Specularity textures or Reflectivity RGB, need custom shaders created using the Open Reality SDK to display the result in the Viewer. You can use the Advanced Mode option to disable or activate the advanced settings.

When a model has more than one material (such as a Multi/Sub-Object material) applied to it when you import it from a 3D modeling software, such

as Autodesk 3ds Max, these materials are now listed in the Scene browser and are attached to the model. MotionBuilder includes all the materials imported with the model, and assumes that material has a corresponding polygon region (also called material IDs) on the model. You can modify, replace, or delete materials applied to regions. However these regions are set in the 3D modeling software and cannot be altered using MotionBuilder.

## Textures

The material, texture, and shader assets are now organized differently in the Asset browser. In addition, textures are now sorted under two categories: textures to be used with materials, and Global Lighting textures. In previous versions of MotionBuilder, the Texture asset was attached directly to the model. Now, textures, meant to add color and detail to a model's appearance, are attached to a material property, such as the Diffuse and Bump Map properties. To create textures to be used with materials, drag the asset from the Shading Elements folder in the Asset browser. Either drop the texture onto a model in the Viewer, or drop it onto a material in the Scene browser. A menu appears to let you select the material property to which you want to attach the texture.

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**NOTE** To see the results of textures attached to material properties other than Diffuse, Bump Map, and Normal Map, use custom shaders created using the Open Reality SDK.

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Global Lighting textures are applied directly to the model and are generated by or interact with various shaders, such as Shadow Map, Lighted, and Reflection shaders. To create Global Lighting textures, expand the Shading Elements folder and drag the asset from the Global Lighting Texture folder.

The new Layered Texture assets let you blend multiple textures, then adjust the result as if it were a single texture. The Layered Texture settings consist of the Texture Settings pane (which contain the usual settings), and the Layer Settings pane, where you add, manage, and blend multiple textures.

In Texture settings, there is a new UV Set field that lets you select different UV sets (also known as Map Channels) when a model has more than one. Also, the Rotation settings have additional functionality.

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**NOTE** The Use Material option has been removed, and the Texture Type menu remains only to indicate which type of texture you created.

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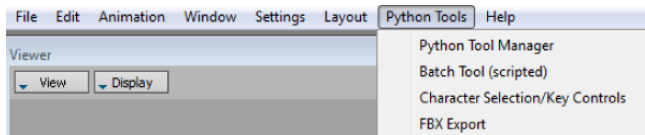
## Materials and Textures Handling

The handling of materials and textures has been updated to support the FBX geometry model and provide better interoperability with Autodesk Maya and 3ds Max, and to improve shader performance.

The texture / material model now allows transport of currently-dropped channels, and all materials now contain mapping channels where you can apply textures to different components of the material. This change impacts the SDK as follows: FBFastTessellator has been removed.

## Python Tools Menu

You can now access the Python tools via the Python Tools menu.



### Python Tools menu

The Python tools now include a batch tool script and an FBX Export option to save MotionBuilder 2011 files to FBX 2010.

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**NOTE** The FBX 2010 files are not MotionBuilder files. Therefore, anything specific to MotionBuilder (such as Story information, devices, etc.) is discarded when using Python Tools > FBX Export or when using the FBX Converter.

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## Joint Physical Property Enhancements

Two options have been added to the Joints solver: Disable collision and Creation type.

### Disable Collision

The Disable collision option gives you the ability to deactivate the collision effect during a solve, letting you control whether the Rigid body objects strike or pass through each other. When you activate the Disable collision option, the Rigid body objects affected by the solve collide and react with each other. When you disable the Disable Collision option, the Rigid Body object reaction

to the Joint solve is not affected if it collides with another Rigid body object. This ability to disable the collision behavior of the solve is useful when you want joint behavior from Rigid Body objects but do not want them to collide.

## Creation Type

The Creation type menu has been added to the Joints solver to let you choose between the default Joint solve behavior or the ability to activate the Joint behavior only upon setting the solve to live. In previous versions of MotionBuilder, joint behavior was created only at the moment when the solver is set to Online. Because of this, you must position the affected rigid body objects correctly at the moment of solver initialization. To use this behavior, select At Solver Initialization from the Joint > Setup > Creation type menu. If you want to activate the joint solve at a specific time other than the start of the simulation, select At enable from the Joints > Setup > Creation type menu. This new Joint option lets you activate the joint at a point in the simulation other than the start, for example when you want a character to catch something. This behavior is similar to being able to key and animate the joint behavior, much the same way you can turn a constraint on after a certain time has elapsed.

## Dynamic Lighting Shader

Two settings have been added to the Dynamic Lighting shader: Transparency Factor slider and the Affecting Lights field.

### Transparency Factor slider

The Transparency Factor slider lets you manipulate or animate the Transparency value for the Dynamic Lighting shader. The default setting is 1.00. A material's Transparency settings can also interact with the Dynamic Lighting shader's Transparency values and affect the result.

### Affecting Lights field

The Affecting Lights field lets you specify which lights illuminate the object to which the Dynamic Lighting shader is applied. Since there is a maximum of eight lights available in any given MotionBuilder scene due to OpenGL limitations, you can use the Affecting Lights field to add lights to the scene.

*Alt*-drag any light in your scene into the Affecting Lights field. You can also click the Affecting Lights button next to the field to display the Asset list, where you can choose from the lights in your scene.

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**NOTE** The Affecting Lights field has the same function as the Selective Lighting shader. Do not use the Selective Lighting shader with the Dynamic Lighting shader; this may cause problems. Use the Dynamic Lighting shader's Affecting Lights field instead.

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## Time-independent Keyframes

Changes have been made to preserve the Bezier-Auto and Bezier-Clamp key types when transferring animation in a Maya-MotionBuilder-Maya workflow.

Bezier-Auto and Bezier-Clamp keyframe types have a new "time-independent" mode. When exported to Maya, the new "time-independent" key types are not converted to "Fixed" (User) keys. They preserve instead the exact same key type (Maya exact equivalent). So when "time-independent", Bezier-Auto keys are Spline in Maya, and Clamp keys are Clamp keys in Maya.

The behavior of the Bezier-Auto and Bezier-Clamp keyframes created in previous versions of MotionBuilder is supported in this release. When exported to Maya, these keyframes are still converted to a "Fixed" (User) key type.

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**NOTE** Changing the interpolation of any keyframe "resets" the key and the key uses the new "time-independent" mode from then on.

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## Camera Back/Front Plate

Image and video files are no longer directly attached to a camera's Back Plate or Front Plate. To apply an image or video clip to a camera's Back or Front Plate, drag a texture onto the camera or into the Background Texture field in the Camera settings.

## New Default Layouts

The default layouts have been revisited and updated. In addition, new default layouts have been added to support screen resolutions of 1920 x 1200.

The updates to the default layouts include the following:

- The Dynamic Editor window is replaced by the Animation Layer editor.

- The Navigator window in the Editing layout no longer includes the Motion Blend tab. You can however access the Motion Blend window via the MotionBuilder Window menu.
- The Creation, Animation, Editing, Preview, and Story default layouts now include a default layout configuration for monitors with a display resolution of 1920x1200.

The default layouts reside in the MotionBuilder root directory under `\bin\config\Layouts\base`. These default layouts are also added under `C:\Users\<username>\AppData\Local\Autodesk\MB2011\config\Layouts\Base` after first launching the application.

The custom layouts are saved under `C:\Users\<username>\AppData\Local\Autodesk\MB2011\config\Layouts` on a Vista and Windows 7 OS, and in the MotionBuilder root directory under `\bin\config\Layouts` on a Windows XP OS.

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**NOTE** If you installed MotionBuilder 2011 Release Candidate on a Windows Vista or Windows 7 operating system, make sure to delete your MB2011 user data saved under `C:\Users\<username>\AppData\Local\Autodesk` before first launching MotionBuilder 2011 Release Candidate. Otherwise, the new default layouts will not overwrite the old default layouts saved in the user data.


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## Motion Capture on Bones

Motion capture sensor data can now be associated directly in the motion capture hardware with a character's skeleton nodes. This mechanism is demonstrated by the new sample Skeleton mocap: deviceskeleton.

## Python Batch Tool Script

There is a new Python-UI-based batch tool script. The Python code (*BatchTool.py*) can be found in the MotionBuilder root directory under the `bin\config\PythonStartup\` folder.

The Python Batch Tool is accessible via the MotionBuilder Python Tools menu and via the Python Editor Tool Manager  button.

## New FBFCurve Functions

With `FBFCurve::KeyDelete` you can delete keys within an index range, which is much faster than multiple uses of `FBFCurve::KeyRemove`.

## Embedding .cgfx Shader Files

When saving a file, enabling the Embed Medias option in the Save File dialog box now embeds CgFX shader media files in the `.fbx` file. When you reopen the file with the embedded media, the media files are extracted to an `.fbm` folder and the path in the CgFX shader settings is updated to point to this `.fbm` folder.

## New Shape Editing Interface

The shape editing interface is now exposed to ORSDK & Python. For usage, see *ShapeCreation.py*.

## New function `FBComponent::HardSelect()`

In the Viewer or Navigator this both selects an item and shows it in the right pane, ready for the user to edit.

## New Sample Code

`FBKeyingGroupLocal.py`: shows how to create a cube and add translation, rotation and scaling properties of the cube into a custom keying group.

## Autodesk Installation and Licensing

This release supports the standard Autodesk Installation and licensing scheme to align MotionBuilder with the other Autodesk software products and to improve the user-experience.

# Additional changes in MotionBuilder 2011 release

The following describes additional changes to this release of the MotionBuilder software product.

**See also:**

- [New features and enhancements in MotionBuilder 2011 release](#) on page 2
- [Resolved issues in MotionBuilder 2011 release](#) on page 12
- [Unresolved issues and limitations in MotionBuilder 2011 release](#) on page 18

## Story Tool Optimization

The work on Story tool optimization to improve the overall stability and performance is ongoing.

The Story tool evaluation is now part of the MotionBuilder engine.

## Updated Qt Support

This release of MotionBuilder supports Qt™ version 4.5.2.

## Updated Python Support

The MotionBuilder libraries are upgraded to Python® version 2.6.4 (released in October 2009) – the same version used in the latest Autodesk Maya product.

This release (as the previous release) of the MotionBuilder software includes the entire Python Package – a benefit to users who no longer need to download the entire package from <http://www.python.org> to make use of specific functions that ship with the standard Python install.

## NVIDIA PhysX Support

This release support the NVIDIA® PhysX® solver plug-in.

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**NOTE** You need the NVIDIA PhysX driver to be able to use the this plug-in.

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**NOTE** See the limitation of [NVIDIA PhysX Soft Body](#) on page 22.

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## Perforce Support

This release supports Perforce®.

## Customer Involvement Program Support

This release enables you to preview your CIP data. To preview your CIP data, go to the MotionBuilder Help menu and choose the Customer Involvement Program menu, then click the Preview MY CIP Data at the bottom right corner of the Autodesk Customer Involvement Program window.

## Windows 7 Support

This release of MotionBuilder is supported on the Microsoft Windows® 7 Professional on 64-bit Operating Systems (OS).

## IPv6 Support

This release supports the Internet Protocol version 6 (IPv6, the successor of IPv4). IPv6 supports the use of a 128-bit address whereas IPv4 supports only the use of a 32-bit address.

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**NOTE** IPv6 is on by default.

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See the limitations for the [IPv6 Network](#) on page 20.

## Resolved issues in MotionBuilder 2011 release

The following describes the issues addressed by this release of the MotionBuilder software product.

See also:

- [New features and enhancements in MotionBuilder 2011 release](#) on page 2
- [Additional changes in MotionBuilder 2011 release](#) on page 11
- [Unresolved issues and limitations in MotionBuilder 2011 release](#) on page 18

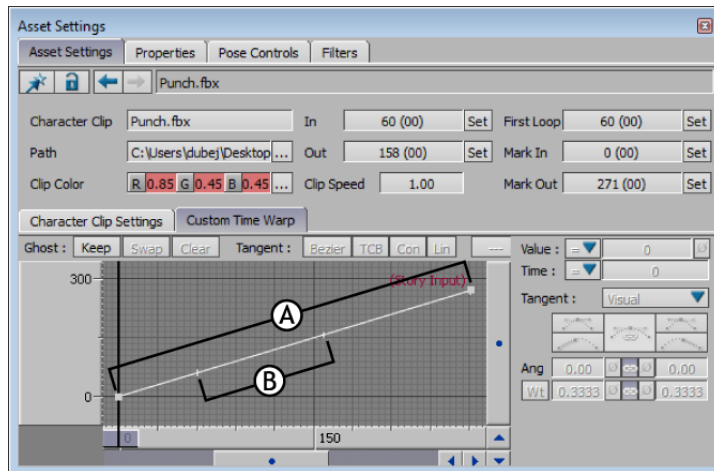
## Plotting to a New Clip

When you use “Process Tracks/Subtrack To New Clip”, the processed clip now contains all the animation from the selected clips.

## Story Custom TimeWarp Curve

When you edit a Story clips' TimeWarp curve, the TimeWarp curve is now drawn correctly and matches the modified Clip In and Mark In settings.

MotionBuilder differentiates between the length of a clip and the original animation data it contains. When you modify a clip, such as shortening or looping, the original length of the animation data is not lost. Now, short vertical lines on the TimeWarp curve, shown in the following figure (B), indicate the Clip In and Clip Out.



TimeWarp for Story clip: A. Original length of animation data B. Current start and end of clip

## Cutting Multiple Clips

In the Story window, clicking the Razor button can now slice multiple clips at the same time. To razor multiple clips, place the Timeline indicator over the selected clips, then click the Razor button. Clips that are not selected are not sliced.

## Blend Properties in Story

Blend properties in the Story are now saved correctly. Previously, edited blend properties were discarded.

## C3D File Import

C3D files with animation on negative frames no longer cause MotionBuilder to become unstable.

## CgFX Shader Parameters

Changing the path to CgFX shaders no longer resets its parameters. The CgFX shader settings now include the Merge Parameters option. When loading or reloading CgFX shaders, activate the Merge Parameters option to keep the shader's property settings and references to *.dds* files. Disable the option to clear these settings when you load or reload CgFX shaders.

## Constrained Lights Selected as Affecting Lights

When lights are part of a constraint, selecting them as the Dynamic Lighting shader's Affecting Lights no longer causes MotionBuilder to crash.

## Auxiliary Effectors in the Story Window

Auxiliary effectors included in additive Character tracks in the Story window now retain their Reach and pinning values when the file is saved and reopened. Before, the influence of Auxiliary effectors was lost.

## Clip Mark In/Out Values in the Story Window

In the Story window, when you insert a clip from the current take, and then trim and copy/paste the clip, the modified Mark In and Mark Out values are retained. Before, these values for the pasted clip were lost.

## Using Box Connectors in Relations Constraint

In a Relations constraint, clicking a box connector and then pressing Delete no longer causes MotionBuilder to crash.

## Bezier Curve Box in Relations Constraint

When you use a Bezier Curve box in a Relations constraint, switching from Global to Local no longer reassigns the connections. The Bezier Curve box now has Vector connectors instead of Translation connectors.

## Use Constant Key Reducer Option

In the Filters preferences of the Preferences window, disabling the Use Constant Key Reducer option now turns off both the Constant Key reducer and the Runtime Constant Key Reducer.

## Selecting Takes in the Scene Browser

When you select takes from the Navigator's Scene browser, the Zoom bar in the Transport Controls now remains the correct length for each Take. The Zoom bar no longer resizes to fit the length of the previously selected take.

## Resizing the Zoom Bar and Merging Scenes

When you resize the zoom bar in the Transport controls, then merge a file that contains a take, the Zoom bar remains the same and no longer resets to the full length of the timeline.

## Pose Controls and Namespace

Stored poses now work correctly when you merge a scene containing a character with the same namespace. You can paste the poses on both characters and obtain the expected results. This fix includes poses that involve Character Extensions.

## Far Plane for Producer Top Camera

When using the Producer Top orthographic camera, you can now use the Far Plane value in the Camera Settings to affect clipping beyond 4000 in the Y-axis. In previous versions, the maximum functioning value for the Far Plane was 4000.

## Importing Layers: Scale Additive Accumulation Mode

Since MotionBuilder does not support Maya animation layers that use the Scale Additive Accumulation mode, a warning dialog now appears when you import a scene that uses this type of layer. You can either use Scale Multiply Accumulation mode in Maya and export the file again or you can bake your layers to retain the visual fidelity of your animation.

## Reloading Local Keying Group

When you create a custom Local Keying Group, then save and reload the file, MotionBuilder no longer crashes.

## FBPlotPopup in OR SDK and Python

The dialog that is used to set Plot options is now exposed in the OR SDK and Python. FBPlotPopup now displays this dialog that enables users to retrieve FBPlotOptions.

## Accessing Properties on Custom User Object

You can now access properties on a custom C++ user objects from Python or from C++.

## OR SDK FBProgress Class

An interrupt callback function has been exposed into the FBProgress class to enable users to interrupt operations. See *FBProgress.py* for usage. Also, Progress bars created with FBProgress can now be cancelled in the UI by pressing the escape key.

## OR SDK Sample Constraint Position

The ORSDK sample constraintposition has been modified. A change to SetupAllAnimationNodes() in orconstraintposition.cxx fixes an issue where local FBAnimationNodes could not be created on custom constraints.

## New Functions in FBFCurve

With FBFCurve::KeyDelete you can delete keys within an index range, which is more efficient than multiple uses of FBFCurve::KeyRemove. New functionality is demonstrated in *CopyAninamation.py*.

## Python FBProgress Object

The Python version of FBProgress::ProgressDone() now resets the progress bar UI after finishing a task.

## FBGeometry Issues with Python Exposure

The Python versions of FBGeometry::VertexGet and FBGeometry::VertexUVGet now function correctly.

## FBApplication::FileAppend()

This function did not work correctly in previous releases and is now fixed.

## BoxLayout in Python

You can now center a control inside a BoxLayout in Python using the AddRelative method. This is demonstrated in the updated *BoxLayout.py* script.

## Auto Completion in Python Editor

In the Python editor, the auto completion popup no longer appears off the visible screen area in some circumstances.

## Multibyte Characters in Python

If you edit a script outside of MotionBuilder, it must be encoded with UTF-8 before you can open it in the MotionBuilder Python editor. By default, Python assumes all scripts are written in ASCII. To use Unicode, declare the encoding in the first or second line of your script according to the instructions found at: <http://www.python.org/dev/peps/pep-0263/>.

## FBVector4d in C++

In MotionBuilder version 2009 and version 2010, it was not possible to create custom properties for this type FBVector4d in C++. This is now fixed.

## Optical Device Template C++ sample updated

The OR - Optical Device Template has been updated to correct a behavior in MotionBuilder version 2009 and version 2010 where the incoming data stream was not being mapped to an optical marker.

## Setting Values with FBSpread

In previous versions of MotionBuilder, with FBSpread it was only possible to set the cell value with SetCellValue. It was not possible to set the value after having chosen a specific 'Style' enumeration. This is now fixed.

## Unresolved issues and limitations in MotionBuilder 2011 release

The following describes the unresolved issues as well as any limitations in this release of the MotionBuilder software product deemed important to document.

**See also:**

- [Resolved issues in MotionBuilder 2011 release](#) on page 12
- [New features and enhancements in MotionBuilder 2011 release](#) on page 2
- [Additional changes in MotionBuilder 2011 release](#) on page 11

## File I/O

The following describes the File I/O limitations.

- FBX files saved in MotionBuilder 2011 cannot be loaded in previous versions of MotionBuilder.  
A workaround for this limitation is to either export the MotionBuilder 2011 *.fbx* files to an earlier version of FBX by choosing from the main menu Python Tools > FBX Export > FBX 2010 or by using the Autodesk FBX Converter.

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**NOTE** You can download the FBX Converter from <http://www.autodesk.com/fbx>.

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- FBX files exported via Python Tools > FBX Export > FBX 2010 tool or the FBX Converter tool are FBX SDK files and not MotionBuilder files. This means that anything specific to MotionBuilder will be discarded (story information, Devices, ect)
- FBX file format version 2010 does not support the MotionBuilder 2011 Animation layers.

## Namespaces Specified with FBFBxOptions

In previous versions of MotionBuilder, a namespace could be specified with FBApplication::FileAppend. This is now down with FBFBxOptions::CustomImportNamespace.

## Receiver Type Box in a Relation Constraint

There is a problem getting animation nodes when a sender and receiver box has local nodes on both side. A workaround for this issue is to set them to global.

# IPv6 Network

The following describes issues related to IPv6 network.

- Network server and Network client don't work between Windows 7 and Windows Vista in IPv6.
- On Windows® XP Professional OS, the Autodesk Network License Manager doesn't come with IPv6 packages. See [Autodesk Network License Manager IPv6 Support](#) on page 21.
- The license server cannot be detected when activating a network license on IPv6. If you are using a license server on an IPv6 network, the license server will not work.

A workaround for this issue is to download an updated version of the Autodesk Network License Manager from <http://www.autodesk.com/nlm2011-ipv6-windows>. This update enables the Autodesk Network License Manager to support IPv6 networks using Microsoft Windows Server 2008, Windows Vista 32-bit and Windows Vista 64-bit.

## To install the patch:

- 1 Shut down your license server.
- 2 Back up the contents of the license manager files. By default, these are in *C:\Program Files\Autodesk Network License Manager*.
- 3 Download the patch from <http://www.autodesk.com/nlm2011-ipv6-windows>.
- 4 Unzip the patch and paste the new files over the old ones; these are located by default in *\Program Files\Autodesk Network License Manager*. (Four files will be overwritten.)
- 5 Restart your license server.

# Autodesk Network License Manager IPv6 Support

The following describes issues related to the updated version of the Autodesk Network License Manager.

- The Autodesk Network License Manager version that ships with the Autodesk version 2011 products does not support early return of borrowed licenses.
- The Autodesk Network License Manager version that ships with the Autodesk version 2011 products supports only a mixed IPv4 and IPv6 environment. It does not support network license checkouts in an IPv6-only environment.

## OpenGL

There is a maximum number of eight lights available in any given MotionBuilder scene due to OpenGL® limitations.

The workaround for this limitation is to use Selective Lighting shaders to add lights to the scene. For example, you can use Selective Lighting shaders to set up association between lights and objects to increase the number of lights in your scene to eight per object.

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**NOTE** Do not append a Selective Lighting shader on the same object to which a Dynamic Lighting shader is applied. To work around the OpenGL limitation, you can use the Dynamic Lighting shader's Affecting Lights field instead.

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## Dynamic Lighting Shader

If you select Append to apply the Dynamic Lighting shader when the Default shader is also applied to the model, you may see undesirable results, such as flickering. Select Replace By Type or Replace All when you apply the Dynamic Lighting shader to detach the Default shader.

## FCurves Interpolation

Some interpolations are lost on merge back to MotionBuilder regardless of how you set the Smart Plot option.

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**NOTE** This issue does not occur when merging to a layer other than the BaseAnimation layer.

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## Layered Textures Set to Additive

Layered textures set to Additive become combined and clamped between 0 and 1.

## Customizing Control Rigs and HIK

The Control rig properties "Solid" look does not show the Extra FK Models.

The workaround to this limitation is to use the "Default" setting in the Properties Look menu when customizing the look of HIK rigs.

## Appending Takes to a Scene

If you use FBTake to append a take to a scene, the new take does not register with the transport controls, as it should.

The workaround for this issue is to use FBTake::CopyTake. For more information, see the FBTake Class Reference in the Python or C++ Reference.

## NVIDIA PhysX Soft Body

The PhysX Soft Body feature is not supported on a 64-bit OS.

## Physics Solving

The Physics solver does not process degenerated polygons or invalid normals correctly. The following issues occur:

- The Elements > Primitives folder Sphere element contains geometry that may produce unpredictable results during these solves. To avoid this issue, use the polySphere element in the Asset browser Primitives folder when you require a sphere model for Physics solves (such as Rigid body, Joint, or Ragdoll).

- On 64-bit systems, the Physics solver cannot process objects that have degenerated polygons or invalid normals. When this occurs, a warning message appears to identify the models that have this problematic geometry, stating bounding boxes will be used to approximate these shapes instead. These bounding boxes provided by MotionBuilder in these cases may produce solve results that differ from the expected behavior. If possible, use the Cube, Capsule, or Sphere approximations to match your geometry with more precision. For more complex geometry, reconstruct the model with the degenerated geometry or invalid polygons using 3D software to avoid these non-standard geometry problems.

