

Autodesk® MotionBuilder® 2010

What's New



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What is New in this Release

1

Welcome to the Autodesk MotionBuilder 2010 software product release.

The following topics provide an overview of the new features and changes in the MotionBuilder 2010 software product release, a list and description of resolved and unresolved issues, and of any software limitations deemed important to document.

NOTE The *Autodesk MotionBuilder 2010 Release Notes* supersede information related to new features, changes, resolved and unresolved issues as well as any limitations contained in this chapter.

For last minute updates to the Autodesk MotionBuilder 2010 software product, refer to the *Autodesk MotionBuilder 2010 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at: <http://www.autodesk.com/motionbuilder-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2010 documentation.

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

New features and enhancements in MotionBuilder 2010

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

See also:

- [Additional changes in MotionBuilder 2010](#) on page 6
- [Resolved issues in MotionBuilder 2010](#) on page 8
- [Unresolved issues and limitations in MotionBuilder 2010](#) on page 13

For last minute updates to the Autodesk MotionBuilder 2010 software product, refer to the *Autodesk MotionBuilder 2010 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at: <http://www.autodesk.com/motionbuilder-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2010 documentation.

Physics Joints

A new Joint Physical property is included with the Ragdoll and Rigid Body Physical properties. The Joint Physical property lets you create connections between objects to simulate joint behavior, such as a hinge, a ball-and-socket, or universal joint.

You can use the Joint Physical property to create object animation that reacts to other animation in a scene, such as making a character push a door open, or swing a chain.

Ragdoll Pose Matching

You can now use character poses in conjunction with the Ragdoll Physical property. Using character poses with the Ragdoll solve is useful if you want to create a specific reaction or impression with the character's collapse, such as landing in a certain position or making a gesture while falling.

Custom Keying Group

You can create custom keying groups to facilitate object animation and to enhance your character animation workflow. A custom keying group is a set of user-defined properties that define where keys will be set when the user creates keyframes. There are different types of custom keying groups:

- A global keying group can be applied to any character or object in a scene.

- A local keying group can only be applied to the object(s) that are selected at the time the keying group is created.
- An object type keying group will paste corresponding channel information from objects of the same type to other objects of that type.

Pose Control Enhancements

You can now take poses from any object in a scene, not just characters. The pose browser will contain all the poses you've created from your scene, and you can organize them all into folders according to what you need for your project.

NOTE When you create a pose, the character pose will always take precedence. So if you have a character and an object selected when you create the pose, only the character pose will be created.

The Pose Controls window has also been updated to include a thumbnail view of a pose. This is useful for at-a-glance identification of poses in your library. When you make changes to a pose and update it, the thumbnail is updated as well.

This release of MotionBuilder has a new relationship between poses and keying groups (also referred to as “keying modes”)—you can create relationships between poses and specific keying groups using the new Connection Editor. This allows you to create the specific properties-mapping you need. The pose will remember any keying group mapping you have established, and the relationship will save or load with the pose in the Connection Editor.

Namespace Enhancements

The Namespace enhancements now enable you to set the namespace preference to display the names with the namespaces or without the namespaces, and to prepend a namespace to all objects in an incoming file. In addition, namespaces are now carried over to other areas such as the Character Controls' current Character menu, the Asset Browser Properties Property References, and the Scene browser. Properties and property references now also take into account an element's or a branch's inherited namespace.

The namespace enhancements also include the ability to search branches by their namespaces and to apply namespaces to all objects within a branch in the current scene. If two identical names are used, a warning message appears

enabling you to cancel the action. You can also find a Model by its name, including namespace.

Python Editor Enhancements

The Python Editor now includes the Python Logger tool—a debugging tool that lets users debug python scripts by identifying the line(s) of scripts that cause MotionBuilder to crash. You can access the Python Logger tool via the Python Editor toolbar (Debug Current Script button).

Enhancements to the Python Editor include a contextual Help. You can access the Python Editor contextual Help via the Python Editor toolbar (Contextual Help button). The information displayed depends on whether or not the interactive console is populated, on whether you selected text in the interactive console or in the active work area, or on whether or not the cursor is positioned at the end of a line of code in the interactive console. Included in the Python contextual Help is a list of Python Editor keyboard shortcuts.

Actor Finger-Solving

The new Actor Finger-Solving feature allows for a more flexible marker system to solve motion-capture data for the fingers. With this new feature, marker data that is brought into MotionBuilder can be mapped to more phalanges on the fingers than in the previous version. This allows you to calibrate how to derive the movement of un-marked fingers from data captured on only one or a couple of fingers.

Previously, MotionBuilder only allowed a very standardized derivation of finger movement from captured data using the tip of the finger as a reference. But with the new finger-solver, your options for finger movement allow for a more customizable marker setup during capture.

Enhanced 3ds Max Biped Template

The enhanced 3ds Max Biped Template (in the Asset browser's Characters folder) now lets you characterize 3ds Max Bipedes with the default base name "Bip01" as well as with custom base names.

Previously, the 3ds Max Biped Template would only characterize 3ds Max bipeds with the default base name "Bip01". You can also now edit the template to customize the library and save a new version. Once you save a customized template, it appears in the Asset browser's Characters folder.

This new template is built on a flexible Python script that enables users to customize the template to support other types of rigs.

Enhanced Interoperability

In addition to the enhanced 3ds Max Biped Template, this release of MotionBuilder gives users improved support for the transfer of Biped and Softimage rigs.

This release of MotionBuilder also supports the latest version of the Autodesk® HumanIK® middleware. In addition, the MotionBuilder Pose controls, Character controls and the character definition list can now be used when working with the HumanIK plug-in.

Save and Load Filter Options

You can now choose to load, append, merge or discard assets such as Bones, Keying Groups, Optical Data, Physical Properties, and Solvers with the current scene. These assets are now included in the list of assets in the Open Options, Merge Options, FBX Plug-in Import Options, and FBX Plug-in Merge Options dialogs.

Qt Support

MotionBuilder supports Graphical User Interfaces (GUI) created in Qt with the MotionBuilder SDK. For example, if you create a plug-in using Qt as the UI, you can load the plug-in in MotionBuilder.

The Qt support enables developers to use an industry-standard UI toolkit to build Open Reality SDK plug-ins.

NOTE Since MotionBuilder uses the Lesser General Public License (LGPL) license of Qt and includes the source on the DVD, you don't need to have a Qt license to use QtDesigner.

Qt enables you to write applications once and deploy them across many desktop and embedded operating systems without rewriting the source code.

Additional changes in MotionBuilder 2010

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

For last minute updates to the Autodesk MotionBuilder 2010 software product, refer to the *Autodesk MotionBuilder 2010 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at: <http://www.autodesk.com/motionbuilder-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2010 documentation.

Updated Python Support

The MotionBuilder libraries are upgraded to Python version 2.6.1 (released in December 2008) – the same version used in the latest Autodesk Maya product.

This 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.

HIK Properties Integrated with Character Tool

Some of the properties associated with HIK in previous versions of MotionBuilder are now integrated with the Character tool. For example, in previous versions of MotionBuilder, you drag bones into HIK properties and click Characterize Extra Shoulders to characterize the extra shoulders. Now, with the integration of HIK into the Character, these properties are now in the Character definition pane.

Actor Tool Exposed

You can now script the actor setup process via Python, including automate marker data importing and assigning the Actor tool to this marker cloud for solving. This can be especially useful if you have very large numbers of optical data files that need to be retargeted to a character.

Updated FBX SDK Support

MotionBuilder supports the latest version of the Autodesk® FBX® SDK software so that plug-in writers can develop tools that enable MotionBuilder to interoperate with the latest versions of Autodesk products such as 3ds Max, Maya and Softimage.

Updated Alienbrain Support

MotionBuilder now supports the Avid Alienbrain® asset management software product version 8.2.2.x. The Alienbrain software product version 8.2.2.x supports the 64-bit version of the MotionBuilder software product as well as other 64-bit version of 3D Autodesk products such as the Autodesk 3ds Max, Autodesk Maya, and Autodesk Softimage software products.

MotionBuilder 5.5 Limitations

The MotionBuilder 5.5 Limits property has been removed from the User Interface (UI). As a result, a warning message now appears when you load MotionBuilder scenes that contain a character or characters that use the “Enable MB 5.5 Limits” property option.

The recommended workaround for this change is to update the Control rig to remain compatible with MB scene files created in MotionBuilder versions post version 7.5 Extension 2. Following is the procedure.

To update the Control rig:

- 1 Load in a version of MotionBuilder prior version 2009 your file containing the character that uses the “Enable MB 5.5 Limits” property.
- 2 Select all the skeleton's bones and open the Properties window.
- 3 Select the All (Type) view in the View menu to display all available properties.
- 4 Expand Degrees of Freedom > Rotation > Post Rotation and disable the “Enable MB5.5 Limits” option.
Once you disable the “Enable MB5.5 Limits” option, you are ready to update the rig.
- 5 If there is no animation, follow the instructions in steps, 6, 7, and 8. If there is animation, proceed to step 9.

- 6 Put the character in a t-stance.
- 7 In the Navigator scene browser, delete the character constraint.
- 8 From the Asset Browser's *Templates* folder, drag and drop a new Character constraint on your character's bones in the Viewer window and choose Characterize.
- 9 If there is animation, plot the animation onto the skeleton.
- 10 In the Character Controls window, put the character in a t-stance.
- 11 In the Navigator scene browser, delete the character constraint.
- 12 From the Asset Browser's *Templates* folder, drag and drop a new Character constraint on your character's bones in the Viewer window and choose Characterize.
- 13 Scrub the timeline to verify the animation is still present.
- 14 Plot animation to a new rig.

Resolved issues in MotionBuilder 2010

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

See also:

- [New features and enhancements in MotionBuilder 2010](#) on page 1
- [Additional changes in MotionBuilder 2010](#) on page 6
- [Unresolved issues and limitations in MotionBuilder 2010](#) on page 13

For last minute updates to the Autodesk MotionBuilder 2010 software product, refer to the *Autodesk MotionBuilder 2010 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at:

<http://www.autodesk.com/motionbuilder-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2010 documentation.

HIK Shoulder Effectors

HIK shoulder effectors are now deleted when the control rig is deleted. Previously, these effectors were left behind and had to be manually deleted.

Key Button Deleting Keyframes

A problem where setting a key with the Key Controls window Key button deleted keyframes if the Transport controls Timeline indicator is positioned at a keyframe location has been resolved. The functionality has been reverted to the earlier behavior where it would not delete keys.

Reload Option Merges Instead

Scenes are no longer merged when you use the "Do you want to reload?" dialog box that appears when you change to a scene outside of MotionBuilder when MotionBuilder is running. The scene is now refreshed instead of being merged with itself.

Layer Naming Convention

When you open a MotionBuilder 2009 file containing multiple layers in MotionBuilder 2010 RC, the layer naming convention now respects the layer naming convention in Motionbuilder 2009 where there are now two spaces between "Layer" and the number of the layer.

Python Editor Toolbar Shortcuts

If a keyboard shortcut in the Python editors is identical to a global MotionBuilder shortcut, the global shortcut takes precedence, except when the Python interactive console or work area have focus.

Saving Python Scripts

Python scripts are now automatically saved when executed or when added to a scene. Users are no longer prompted to save a script on scene change (open or new).

Character Extension Labels

Extensive work has been done to improve the behavior of Character extension labels. The work includes the following improvements:

You can now rename Character Extension labels properly. Previously, changes made to the Character Extension labels were lost after saving.

Warning dialog boxes for Character Extension labels have been scaled to a more reasonable size.

Assign Sources to Destinations

When you use the Story window Assign Sources to Destinations dialog box to reassign a clip's linked assets, the reassignments are now saved with the file.

Story Window and Constraints

You can now animate in the Story window Animation track objects whose parent object is constrained to another animated object that has an active Constraint Track in Story Mode.

Story Window Clip Offsets

A problem where offsetting Story window clips created with Control rigs that had Hip translation animation on their skeleton has been resolved.

Story Window Properties and FCurves

You can now display keying information of animated object properties from the Story window tracks in the FCurves window.

Story Cannot Use Character Reference Node

The following Note has been added in the Animating Characters | Character settings | Character Definition pane | Mapping List | Reference slot section, and in the Animating within the Story Window | Story tracks | Character Animation tracks section of the MotionBuilder Help:

Note: Story Character Animation tracks cannot use data mapped to a Character Reference Node as part of its characterization. The Travelling Node in the Character Animation track prevents access to this data.

Camera FOV

You can now activate and disable the Active option of a Relation constraint applied to a camera without distorting the Field of View (FOV) values.

Physics Solver

The Physics solver no longer requires Administrator privileges to work properly on a Windows operating systems.

Maya Blendshape Data

Using Maya Blendshape data with the Animation Trigger tool no longer causes instability.

FCurves Window Keyboard Shortcuts

You can now use the "F" (Frame selected keyframes) and "A" (Frame all keyframes) keyboard shortcuts when there is only one keyframe in a scene.

Device Start Recording Time

A problem where devices start recording at the one hour mark has been resolved.

PropertyDrop.py Sample Script

Because FBDragAndDropState.kFBDragAndDropDrag no longer has the attribute AcceptDragAndDrop, the sample script PropertyDrop.py did not work as expected. This is now fixed.

FBBBox Selected Return Value

The FBBBox Selected now returns correct value. Previously, when a box in a relation constraint was selected, the corresponding FBBBox::Selected property returned false.

Suspend Messages

It is now possible to suspend all popup messages with a startup switch. The switch `-suspendMessages` now disables all warnings and dialogs. This switch is useful for automation when you do not want the script to be interrupted by messages.

NOTE By default, all warnings and dialogs are shown.

FbxRetrieve() Called

FbxRetrieve() is now called when reopening a file. In previous versions, this command was not called when opening a file.

Saving Shaders with ORSDK Code

In previous versions, a workaround was required when saving shaders while using an ORSDK plug-in. This is fixed. Now, to create a shader, use `FBShaderManager::CreateShader()` and use as a parameter the first string given to the `FBRegisterShader()` macro. For example:

```
FBShaderManager lMgr;  
ORShaderScreen* lDefault =dynamic_cast<ORShaderScreen*>(lMgr.CreateShader(ORSHADERSCREEN__DESCSTR));  
lDefault->Name = "ORScreenToolShader";
```

Accessing Segments/Gaps of FBModelMarkerOptical

Previously, accessing segments or gaps properties of `FBModelMarkerOptical` when the `ModelOptical` of the `MarkerOptical` was not set resulted in a crash. This has been corrected, but when using `FBModelMarkerOptical`, if no optical model is given, be sure to add one before accessing the segments and gaps properties.

Using ORSDK to Determine if a Clip is Attached

You can now use the `FBScene::OnChange` callback after calling `kFBSceneChangeAttach` to determine if a clip is attached to a scene. Previously, this caused a crash.

Saving a Custom Property on a Take Using Python

Previously, you could use Python to create custom properties on a take, but they were not saved to the FBX file. This is now fixed.

Call to `FBStoryClip::GetAffectedObjects()` or `GetAffectedAnimationNodes()`

Previously, a workaround was required to avoid a crash when calling `FBStoryClip::GetAffectedObjects()` or `FBStoryClip::GetAffectedAnimationNodes()`. This is now fixed.

Setting the Base Layer for Animation Layers in Python

It is now possible to set the base layer for animation layers using Python, following changes to these methods in `FBTake`: `SetCurrentLayer`, `SetLayerName`, `GetLayerName`, `GetLayerCount`, `RemoveLayer`.

CharacterFace Extensions in Python and ORSDK

`FBCharacterFace` is now derived from `FBBox` rather than `FBComponent` to allow it to be constrained via `FBConstraintRelation`. Many new functions have been added. See the ORSDK and Python Reference Guides for more information.

Unresolved issues and limitations in MotionBuilder 2010

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 2010](#) on page 8
- [New features and enhancements in MotionBuilder 2010](#) on page 1
- [Additional changes in MotionBuilder 2010](#) on page 6

For last minute updates to the Autodesk MotionBuilder 2010 software product, refer to the *Autodesk MotionBuilder 2010 Release Notes* posted to the Autodesk MotionBuilder Product Documentation page at: <http://www.autodesk.com/motionbuilder-documentation>. You can also download (from this web site) all the latest updates to the MotionBuilder 2010 documentation.

Licensing

Since the Autodesk MotionBuilder 2010 software product license uses the AdLM licensing architecture, an Autodesk MotionBuilder 2010 software product license cannot be used to run the MotionBuilder 2009 software product version.

To be able to use the MotionBuilder 2009 software product version, a MotionBuilder 2009 software product license is required.

Network License Borrowing

If you have the same product installed twice on the same machine and borrow a license from both of the products, returning one product license early will cause that product to crash. This can happen when the products are installed in two different languages or when one product is 32-bit and one product is 64-bit.

Since both products use the same license, you do not need to borrow a license from the second product.

Vista Client and Vista Server

A valid license cannot be obtained by the Network License Manager when client and server are both Vista™ machines (IPv4).

A workaround for this issue is to turn off the IPv6 stack on your client and server machines. Note that this workaround is not valid if the client and server are the same Vista machine.

Performance Issue on Vista OS

There is a performance issue on Vista OS when trying to check out a standalone license.

A workaround for this issue is to turn off automatic protection in Norton AntiVirus.

Undoing keyframes on a path-constrained object

Undoing keyframes on a path-constrained object causes a permanent offset.

A workaround for this issue is to align the object to the path before activating the constraint to snap the object to the first vertex point of the constraint.

The align operation is taken into account in the undo stack, unlike the position change on activating a constraint.

Moving Character with Rig While Ragdoll Solving

The Ragdoll cannot write data on Character roll bones. Therefore, rig manipulation in Animation Mixing mode is allowed but only when the Character Keying mode is set to Selection. This ensures that none of the character roll bones get key candidate set.

