

AUTODESK® MOTIONBUILDER® 2009 FOR MICROSOFT® WINDOWS®

RELEASE NOTES

- CONTENTS
- SYSTEM REQUIREMENTS
- NOTES ABOUT INSTALLATION
- WHAT IS NEW IN THIS RELEASE
- ADDITIONAL CHANGES
- RESOLVED ISSUES
- UNRESOLVED ISSUES AND LIMITATIONS

The Autodesk MotionBuilder 2009 software for Microsoft Windows is now available for purchase through Autodesk resellers. Please visit: <http://www.autodesk.com>.

For current MotionBuilder Subscription customers, the Autodesk MotionBuilder 2009 software can be downloaded through the Autodesk Subscription Center (Subscription with Gold Support). Please visit: <http://subscription.autodesk.com>.

These Release Notes document last minute updates to the Autodesk MotionBuilder 2009 software product/documentation.

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 updates to the MotionBuilder documentation, please visit the [Autodesk MotionBuilder Product Documentation](#) web site.

You can find information about the MotionBuilder software at: <http://www.autodesk.com/motionbuilder>.

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

System Requirements

Following are the recommended minimum system requirements for the MotionBuilder 2009 software product release.

- 32-bit Intel® or AMD® Athlon®-based PC systems or 64-bit Intel or AMD Athlon-based PC systems
- Microsoft Windows XP Professional Service Pack 2 (SP2 highly recommended), Windows XP Professional x64 Edition or Windows Vista® Business x64 Edition
- 1 GB of RAM (4 GB recommended)
- 600 MB of free disk space
- A qualified OpenGL® graphics card

Note: For information on qualified system requirements, please visit:
<http://www.autodesk.com/motionbuilder-hardware>.

- Microsoft Internet Explorer® 6.0 or higher, Mozilla® Firefox® 2.0 or higher, or Netscape® 7 or higher

Note: The MotionBuilder 2009 software release does not support hardware dongles.

Notes About Installation

Install the MotionBuilder 2009 software product by following the on-screen installation instructions.

Important: You need to have Administrator privileges to install the MotionBuilder software.

The default installation path for the MotionBuilder 2009 software product on the Windows XP 32-bit version is *C:\Program Files\Autodesk\MotionBuilder 2009* and on the Windows XP 64-bit version and Windows Vista is *C:\Program Files (x86)\Autodesk\MotionBuilder 2009*.

Note: The default installation path for the License Server tools on the Windows XP 32-bit version is *C:\Program Files\Common Files\Alias Shared\Licensing\bin* and on the Windows XP 64-bit version and Windows Vista is *C:\Program Files (x86)\Common Files\Alias Shared\Licensing\bin*.

Note: The default installation path for the ClipArt sample files is:
C:\Autodesk\MotionBuilder 2009\ClipArt.

What is New in This Release

The following describes the new features and enhancements in the MotionBuilder 2009 software product release.

Rigid Body Dynamics

- You can now set up a real-time, rigid body simulation using the 3D objects within a scene. The MotionBuilder Rigid Body dynamics now supports real-time collisions, which you can use to prevent interpenetration of characters, objects and other scene elements. This can be invaluable if you want to edit 3D animations involving characters interacting with objects efficiently.

Ragdoll Physical Property

- The addition of a new Ragdoll Physical Property provides results for simulating complex interactions between a character and its environment that can prove to be difficult to achieve using keyframes and motion capture techniques.

The Ragdoll Physical Property lets you simulate and record collisions and collapses on characters with Control rigs.

FBX® SDK

- MotionBuilder now includes the latest version of the FBX SDK, enhancing file compatibility with software packages such as the Autodesk® 3ds Max® and Autodesk Maya® products.

Python Console Redesign

- An intelligent, fully integrated Python Editor now lets you develop, test, and refine scripts within MotionBuilder. The new Python Editor provides support for single and multi-line entries, tabbed workspaces, line numbering, color coding, history, keyboard shortcut support, drag & drop support, color coded error messages, searching, and auto-completion.

Updated Python Support

- The MotionBuilder Python libraries have been upgraded to version 2.5.1 – the same version used in the Autodesk Maya 2009 product.

Updated CgFX Support

- MotionBuilder now supports version 2.0 of the CgFX library, enabling you to take advantage of the latest CgFX shader technology.

OR SDK Customizable Plug-in Paths

- A new setting in the Preferences window lets you specify additional plug-in paths so that you can access plug-ins that reside in external directories.

OR SDK Optimization

- We have optimized the way the OR SDK properties are mapped to the MotionBuilder internal properties.

Previously, when you created a property through the SDK, there was a noticeable delay before it was created in MotionBuilder. The creation of complex SDK objects such as the Midi device was a long process. Now, such process is almost instantaneous.

Dynamic Lighting Shader

- MotionBuilder now has a new Dynamic lighting shader. MotionBuilder uses vertex per-face lighting by default, but you can use the Dynamic lighting shader to give a softer per-pixel falloff for more realistic effects.

The Dynamic lighting shader supports real-time display of normal maps (created in Autodesk Maya, Mudbox™ or 3ds Max) which greatly enhance the look and feel of a scene. It also lets you use a fall-off on the light, enabling new levels of subtlety and realism.

Note: This support is limited to the NVIDIA® board.

Autodesk HumanIK Integration

- The HumanIK middleware library has been integrated within MotionBuilder as a plug-in built on the Open Reality SDK. This means that developers using the Autodesk HumanIK middleware library can use the same library within MotionBuilder, creating a one-to-one relationship with the library they are using within their game engine.

The MotionBuilder HumanIK libraries have been updated to reflect the latest version of the HIK library, providing enhanced character solving. A new menu, Character Solver Selector, located in the Character Settings pane has also been added to let you select between HumanIK libraries (if applicable).

Interface for Accessing Animation Layers

- You can now write plug-ins that have access to the animation layers within MotionBuilder. This means you can, within the plug-in, add and remove keys to the currently selected layer.

Character “Reset Properties” Function

- Access to the character “Reset Properties” function means Open Reality plug-ins can now be created that allow you to reset a character’s properties from within the plug-in.

Scaling Keys in the FCurve Window

- You can now scale a group of keys using the selected keyframes as the pivot point of scaling within the FCurve window.

Foreground and Background Camera Plate Support

- You can now set foreground elements to appear in front of a 3D scene, similar to the way the background plane is drawn behind the 3D scene.

Pivot Offset

- You can now offset an object's pivot in the Viewer window instead of adjusting the offset values in the Properties window.

Starting MotionBuilder from the Command Line

- If you start MotionBuilder from the command line (motionbuilder.exe on Windows), there are various startup options you can specify. Running MotionBuilder by command line can be a very effective way to assist you in optimizing your pipeline and helping you automate certain tasks.

For example, you can open a file at startup by adding the filename to the end of the MotionBuilder executable like this:

```
motionbuilder.exe [filename]
```

Additional MotionBuilder Startup Flags

- The following table lists the MotionBuilder startup flags. The generic syntax would look like this:

```
motionbuilder.exe [flags] [Python script or filename]
```

Note: A command line cannot consist of a user specifying a python script and a filename for startup because for efficiency your Python script can open the file you want on startup using FBApplication if you need both.

COMMAND LINE ARGUMENT	DESCRIPTION
-console	Opens an output window used by FBTrace in the OR SDK, where the appropriate stdout/err stream goes. If you choose to use this console output window for Python output, you also need to specify the -verbosePython flag.
-g [width] [height]	Sets the window size of MotionBuilder to the values you specified. The default value is as large as the screen size.
-S	Starts MotionBuilder in Full Screen Mode. This is the same as choosing Display > Full Screen inside the Viewer. To exit out of Full Screen Mode, press Alt+Enter.
-suspendMessages	Disables all the warnings and dialogs. This flag is useful for automation purposes when you do not want the script to be interrupted by dialogs. By default, all warnings and dialogs are shown.
-T[UI Name]	Finds a tool with the matching name among the tools that MotionBuilder has registered, and if it is found it activates it. This flag parameter is case sensitive. Note: Unlike the other flags, there is no space between the flag name and the UI Name parameters.
-verbosePython	Outputs all python messages to the appropriate stdout/err stream. This puts the Python print messages to the window that you activate as well as to the Python Editor using the console flag. This is the same location that FBTrace outputs to when using the OR SDK. By default, we do not output python output to stdout/err, only to the Python Editor.

If you know every single time you run MotionBuilder you always want a flag to be executed, instead of using the command line which can be inefficient, you can edit your Windows shortcut for the MotionBuilder application to include the flag parameter you want so that when you double click the application icon the flag is executed. A good use of this is for the `-console` flag.

Following are some examples.

COMMAND LINE ARGUMENT	DESCRIPTION
<code>motionbuilder.exe mia_blue.fbx opens</code>	opens the file mia_blue.fbx on MotionBuilder startup
<code>motionbuilder.exe -S mia_blue.fbx</code>	starts MotionBuilder in Full Screen opening the scene mia_blue.fbx
<code>motionbuilder.exe -suspendMessages testScript.py</code>	launches the script testScript.py on startup and suppresses all messages boxes that the script might generate
<code>motionbuilder.exe -console -verbosePython Script.py</code>	launches the script Script.py and sends the output to the console output window
<code>motionbuilder.exe -g 500 500 -S mia_blue.fbx</code>	specifies the full screen mode to be 500 by 500 with the scene mia_blue.fbx open
<code>motionbuilder.exe -TAudio</code>	launches the tool Audio from the toolaudio folder in the Samples\tools\ directory on start up. (You need to compile it first.)
<code>motionbuilder.exe -console "-TPython Editor" mia_blue.fbx</code>	launches the tool Python Editor and console opening the scene mia_blue.fbx

64-Bit Windows Operating System Support

- MotionBuilder 2009 supports the Microsoft Windows XP Professional x64 Edition as well as the Windows Vista Business x64 Edition.

Customer Involvement Program

- MotionBuilder now supports the Autodesk Customer Involvement Program (CIP).

The CIP involves the automated collection and sending of system and usage information about the Autodesk products installed on your machine to Autodesk. It dramatically improves the way Autodesk designs software and measures product performance and quality. It also provides a way for customers to become involved in helping make Autodesk products meet their needs better.

The first time you launch the software, the Customer Involvement Program window appears, inviting you to join the CIP. By joining the CIP, information about your system configuration and how you use the MotionBuilder product is automatically collected and transmitted to Autodesk for analysis.

CIP lets you participate either anonymously or non-anonymously. It does not collect information such as your name, address, phone number, or product serial number without your consent. If you participate anonymously, you will not be contacted through CIP.

Customer Involvement Program

Autodesk

Let us know what is important to you!

Your participation in the Customer Involvement Program (CIP) can help Autodesk design new features and improve existing features. The CIP program involves the automated collection and sending of system and usage information about the Autodesk products installed on your machine to Autodesk.

You can start or stop participating at any time by clicking Customer Involvement Program in the Help menu and following the relevant instructions. To review additional important information about the program, the nature of the data collected, its use, and the privacy statement, follow the link below.

[Privacy Statement](#)

☐ **Participate anonymously**

Information about your system configuration and how you use Autodesk products will be automatically collected and transmitted to Autodesk for analysis. Your information will remain anonymous in our system.

☐ **Participate - with contact information**

Information about your system configuration and how you use Autodesk products will be automatically collected and transmitted to Autodesk for analysis. You are willing to provide additional information for Autodesk to contact you if needed.

Your email (required):

Your company name (optional):

☒ **Do not participate at this time**

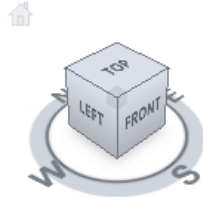
You can join the program at any time by clicking Customer Involvement Program in the Help menu and following the relevant instructions.

OK Cancel

For additional information on CIP, refer to the Autodesk Customer Involvement Program Privacy Policy.

Autodesk® ViewCube®

- The Autodesk ViewCube, available in the MotionBuilder product as well as in a number of other Autodesk 3D products, is an on-screen, cube-shaped widget that gives you feedback about the current viewing angle in relation to the model world. You can also click a face or rotate the ViewCube to change the view.



Autodesk® SteeringWheels™

- The Autodesk SteeringWheels, available in the MotionBuilder product as well as in a number of other Autodesk 3D products, are tracking menus that allow you to access 2D and 3D navigation tools from a single tool. It supports zooming, panning and traversing.



Additional Changes

The following describes additional changes to the MotionBuilder 2009 software product release.

Dongle Support

- The Autodesk MotionBuilder 2009 release does not support hardware dongles.

Legacy Devices

- MotionBuilder no longer ships with drivers for the following legacy devices: Gloves, UltraTrack, and MotionStar. For the latest drivers, contact the hardware vendors.

FBX Converter

- MotionBuilder no longer includes the FBX Converter.

You can download the FBX Converter from the Autodesk FBX Downloads page at: <http://www.autodesk.com/fbx/downloads>.

Resolved Issues

The following describes the issues addressed by the MotionBuilder 2009 software product release.

Auto Key Undo

- You can now perform undo operations on keys set with the with Auto Key function.

Position Offset

- When you merge and append a Parent/Child constraint to elements with Namespace in the scene, the constrained object now retains its position offset.

Script Device Instability

- Scenes are no longer corrupted when you add script devices to scenes already containing scripts. Previously, deleting scripts or performing File > Open/New operations would cause a crash because of multiple deletions.

SpaceBall Device

- There are no longer problems with the speed of translating with the SpaceBall device.

Combined Mesh Import

- MotionBuilder no longer corrupts imported textured UV mapped meshes that have been “combined” to form a single mesh.

Dopesheet Window

- Problems with copying and pasting keys in the Dopesheet window are now resolved.

Animating Particle Quantity Attribute

- You can now key and animate the number of particles generated by the Particle shader to create dynamic environmental effects.

Default Save to ASCII Option

- You can now set the default Save function to save files as FBX ASCII, as opposed to FBX binary. When you save an FBX file as ASCII or Binary, using the File > Save or Save As options, MotionBuilder now remembers what format you last selected.

ASCII files give you a "plain language" version of the file format, which lets you search the file for information retrieval.

Note: We do not recommend that you use the Save as ASCII option to edit FBX files with a text editor. Doing so risks making your file unstable or corrupt.

Filter Preview

- Clicking the Preview button in the Filters window now deactivates the selected region in the FCurves window.

Camera Flips After Deleting Camera Interest

- Cameras with their camera interest deleted no longer flip when you try to dolly in the Viewer window. However, some problems remain:

If you delete the camera interest, the camera changes direction. The camera dolly speed depends on the distance between the lookat and camera position; you cannot change this distance if there is no camera interest.

Rendering to a .MOV File Format

- You can now continue working in MotionBuilder when rendering a file to a .mov file format if you have the latest QuickTime® player installed on your computer.

Mandelbrot.cg Sample File

- The example file provided in the Open Reality SDK can now be loaded.

FBFilter

- You can now continue working in MotionBuilder after using Start and Stop in FBFilter.

FBAudioClip

- You can now continue working in MotionBuilder after executing FBAudioClipTest.py.

Camera Animation Clip

- You can now reload the scene after making a Camera animation clip Writeable in the Story window and saving your scene.

Note: The topic “Editing Story data in the FCurves and Dopesheet windows” in the *MotionBuilder_Help.chm* file will be updated at the next release to reflect this change.

Sending Debugging Messages to the Console

- The FILMBOX_CONSOLE environment variable is no longer used by pyfbSDK::FBTrace to launch a console. Instead, the console is now launched by passing the argument "-console" when launching MotionBuilder.

Functions Requiring Arguments

- Documentation previously wrongly implied that some functions did not need arguments. This has now been fixed for FBModelMarker, FBObjectPose, FBImage, FBFCurveKey, and FBFCurve.

LoadIsCompleted() Deprecated

- The function LoadIsCompleted() should not be used as it may not return a correct value. Please use the Load() and LoadEnd() functions instead.

Getting / Setting Node Labels

- A new property, Label, and a new function FindByLabel() have been added to the class FBAnimationNode. The Label property can be used to write or read the node label. The FindByLabel() function takes the UI name of animation node to find and returns a handle to the animation node.

Animation Node Type Vector

- In previous versions of MotionBuilder, creating an animation node of type ANIMATIONNODE_TYPE_VECTOR in a custom constraint caused an unhandled exception. This is now fixed.

FBDelete()

- In previous versions of MotionBuilder, when you deleted a relations constraint box using the UI or FBDelete(), the contents of FBConstraintRelation's Boxes list still showed the box that you just deleted. The FBDelete() now updates boxes list.

FBClass_TypeInfo()

- This global function is now documented. It returns the TypeInfo which can then be used in a ::Is() call.

Set a Constant Input Value for a Constraint Relation Box

- In the SDK, you can now use `WriteData` to set a constant input value for a constraint relation box. In Python, use `SetCandidate.py`.

UseGlobalTransforms in SDK and Python

- In previous versions of MotionBuilder, using the SDK or Python to set the `UseGlobalTransforms` property of `FBModelPlaceHolder` broke the relations constraint. This is now fixed.

Resetting Character Controls with SDK and Python

- You can now reset character properties with the function `ResetProperties` in the SDK and Python.

Importing and Exporting Multiple .amc and .asf Files

- When using `FBAApplication.Import` and `FBAApplication.Export` to import or export two files at the same time, separate the file paths with a comma, e.g. "`Path1.amc,Path2.asf`".

Adding New Takes to the Scene with Python

- In previous versions of MotionBuilder, when you created a take with the Python `FBTake` constructor, there was no way to add it to the scene. The way to append a new take to the scene is now `FBSystem().Scene.Components.append(FBTake("My new take"))`.

Hyperlinks in the Documentation

- The *MotionBuilder_Help.chm*, the *MB_UsersGuide.pdf*, and the *MB_Tutorials.pdf* files contain broken hyperlinks.

This issue is resolved in the updated files posted at the [Autodesk MotionBuilder Product Documentation](#) web site.

Installation Guide

- On page 8, the statement following step two states the license server version should be 9.5. This is incorrect. The license server version is 11.5.0.0.
- On page 12 the *MB_InstallationGuide.pdf*, the second statement (Printed on the inside of the DVD case within your MotionBuilder package [available from selected resellers]) is incorrect. The statement should read as follows: Printed on the DVD case (package available from selected resellers).
- On page 12 of the *MB_InstallationGuide.pdf*, the second statement in the Note (If you have not received an e-mail as expected, look in your spam folder for e-mail from <opausers@Autodesk.com> with a subject line of 'Software Product Activation Serial Numbers'.) is incorrect. The same

is true for the second Note on page 14. The statement should read as follows: If you have not received an e-mail as expected, look in your spam folder for an e-mail from eregconfirmations@autodesk.com with the subject line “Autodesk Registration & Activations”.

- On page 13, the last bulleted item in step 8, on page 16, the third bulleted item, and on page 17, in the “Install Your Product License” topic, step 2 and 3, the statements should read as follows: In the Product Configuration Wizard main screen, select “I have a license that I need to install.” and click “Next”.
- The default installation path for the License Server tools on the Windows XP 32-bit version is *C:\Program Files\Common Files\Alias Shared\Licensing\bin* and on the Windows XP 64-bit version and Windows Vista is *C:\Program Files (x86)\Common Files\Alias Shared\Licensing\bin*.

These issues are resolved in the updated *MB_InstallationGuide.pdf* file posted at the [Autodesk MotionBuilder Product Documentation](#) web site.

Unresolved Issues and Limitations

The following describes the unresolved issues as well as any limitations in the MotionBuilder 2009 software product release.

Rigid Body and Ragdoll Custom Property View

- When trying to create the local property views for the rigid bodies and ragdolls, the customized view doesn't allow for the use of the same name in a folder as one of the assigned properties.

HIK 3.6 Creates Additive Offsets

- HIK 3.6 may create additive offsets during user manipulation in certain situations. This problem occurs if a character uses the HIK 3.6 solver.

SteeringWheels

- When you orbit using the SteeringWheels, you do not get the same result as when you orbit using the MotionBuilder keyboard shortcuts because the SteeringWheels orbit center differs from the MotionBuilder orbit center.

Offset Normals on Import

- MotionBuilder does not support ByPolygonVertex Normals.
The workaround for this issue is to split any vertices that have multiple normals.

Normals Support for Shapes

- The MotionBuilder software supports Normals for shapes. However, it is off by default. To activate this support, you must modify the application configuration .txt file by setting ShapeBlendNormals under the [Display] heading to Yes.

The <computername>.Application.txt file is located by default in the following directory: C:\Program Files\Autodesk\MotionBuilder 2009\bin\config.

SpaceBall Device

- The SpaceBall device is not supported on the MotionBuilder 64-bit version of the software.

Loading Older Versions of FBX Files

- This release of MotionBuilder does not support MotionBuilder files from releases previous to version 6.

Converting Spherical Angles to Euler Angles

- Converting spherical angles to euler angles can lead to unpredictable results.

Unconventional Story Window Character Setup

- If you use a skeleton connected to another skeleton to drive a mesh in the Story window, offsets occur with the mesh's position. MotionBuilder does not support this workflow.

Frame Rate

- When doing real time playback, the SteeringWheels and the ViewCube may cause slow down in the frame rate.

The workaround for this issue is to disable Show SteeringWheels and Show ViewCube in the MotionBuilder SteeringWheels and ViewCube preferences.

ATI™ Graphics Cards Performance

- There are some performance issues with some of the ATI graphics cards when using the non-power-of-two textures.

To help increase the performance, the workaround for this issue is to manually set to "No" the Non-Power-Of-Two Texture in the *application.txt* file.

Note: The *application.txt* file is in C:\Program Files\Autodesk\MotionBuilder 2009\bin\config\ on a 32-bit OS and in C:\Program Files (x86)\Autodesk\MotionBuilder 2009\bin\config\ on a 64-bit OS.

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