



KOMOTION FOR MAYA

V1.2.4 – REFERENCE MANUAL

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Welcome

Welcome

Welcome to Komotion for Maya. This page is intended to direct you in setting up the Komotion for Maya software, learning fully procedural rigging, the wide range of animation features and controls, and the auto-skinning toolset.

Komotion License Agreement and Confidentiality

Please note that your usage of this software is governed by the Software License Agreement your Studio has executed with Komotion Ltd. Also, be aware that some of the provided Komotion materials (non-public technical documentation, provided Maya scene files, etc.) are CONFIDENTIAL under the Licensee Confidentiality section in the Software Licence Agreement.

For first-time users

Software Download

If you are a new user, you will receive an email confirming your permission to setup an account for the Komotion Help Centre. Please check your junk mail folder, and contact Komotion Support if you have not received the email.

Step 1. Get your license key and download Komotion software

After installation, you will need to have an activated license to use Komotion.

Step 2. Read the Getting Started documentation

For Komotion for Maya:

As a first time user, we recommend starting with the [Getting Started with Komotion for Maya](#) guide for a short introduction to Komotion, the learning path for a first-time user, system requirements, and licenses.

For experienced users the [Komotion Maya User Guide](#) has a [Reference](#) section, and numerous [Quick start guides](#) on using Komotion for Rigging and Animation.

About This Documentation and Support

About This Documentation

This documentation is available in the following formats:

- In a compiled HTML format (CHM) offering
- In a PDF format suitable for printing or viewing on any platform. It is available on request.

Updated versions of this documentation may be posted on the Komotion support portal, and included with Komotion software in updates.

Structure

• Welcome	The current section, outlining this documentation and other available support options.
• Presenting Komotion for Maya	Introducing the software, its place in the industry, and the optimal mindset users' should adopt
• Getting Started with Komotion	Software requirements and installation for first-time users
• Komotion - Maya User Guide	Komotion for Maya software reference manual, a general introduction to the Komotion software, and everything users' need to know on the Komotion auto-rig, exporting, auto-skinning, and utilising advanced Komotion features
• Komotion Supplement	Additional miscellaneous notes and instructions for users
• Legal Notice	Licence, copyright and trademark notices

Feedback

If you have any suggestions, or find any errors, please e-mail: support@komotion.co.uk

Support

Komotion offers assistance and technical support to all users and studios. At this time, the optimal way of contacting is via e-mail. Support queries and tickets can be opened and addressed by e-mail sent to the following address:

support@komotion.co.uk

Key Challenges in the 3D Industry Today

Current auto-rigging software consist of templates and/or scripts that build modular or templated structures, that are limiting and complex to edit. These are typically just biped and quadruped variations, restricting what 3D artists and animators can produce, limiting their creativity and what they can achieve with their skills. Ultimately, production projects are impacted, restricting creativity, unique concepts and ideas.

Even with non-modular auto-rigs, they have just simple animation controls, complex interfaces, and productive use requires extensive training. Rigs built with Auto-rigging software often only have a subset of standard animation controls, further impacting on creativity and even quality. Overall, nothing has fundamentally improved, and this part of production can be a time sink.

Either way, highly skilled rigging specialists are needed to build and/or extend rigs for complex production needs, and build standard animation controls needed for baseline production requirements.

Rigging and animation itself has always been a linear process from start to finish. Animation work depends entirely on stable, completed rigs built earlier in the production pipeline. Simple mistakes in rigs can massively set back production pipelines, and pipelines may not be able to easily accommodate fixes and changes late in production. Even early on in production or pre-production, rigging block-outs are often too time consuming, and too challenging to build due to technical limitations imposed by auto-rigging software.

Some of the key issues in 3D Production Projects today is with current industry-standard auto-rigging tools and software. To summarise, there is:

- No big improvements or real innovation in auto-rigging software
- Many failed efforts to improve techniques, or introduce new approaches
- Long standing limits in tools bottlenecking creativity and productivity
- Incumbent tools that don't often effectively meet the needs of creatives
- No good common standards or capabilities in tools across DCC platforms

With Komotion, this all changes...

Komotion for Maya



Komotion for Maya is the industry's first fully procedural auto-rigging software for Autodesk Maya. Whilst fitting into existing pipelines, Komotion takes a completely new approach bringing completely new, industry-first innovations to 3D professionals.

- **Industry's first fully procedural auto-rigging software**

AdvancedSkeleton, for example, is a 'limited procedural' auto-rig; like many others, it relies solely on constrained manual editing, fixed templates and pre-built modules for rigging.

Komotion for Maya is a 'fully procedural' auto-rig; from end-to-end, all chains are procedurally created and configured from scratch for any possible rigging need.

With Komotion for Maya, users can build complex rigs (from scratch!) meeting extensive technical requirements in minutes; instead of many hours or even days. Rigging is a far easier and significantly reduced technical challenge, wiping out massive R&D effort, making Production Pipelines less rigid, and far more agile than ever before. Komotion is not an incremental improvement over existing auto-rigging tools; it brings disruptive innovation to existing techniques for new creative and technical possibilities. Komotion Bone Chains can be used to extend and integrate with existing custom rigs, characters and creatures, for easy integration into existing production pipelines.

- **Unprecedented productivity and creativity**

Creatives can freely bring to life creatures, abstract characters and even the environment itself, with no rigging constraints and no need for rigging skills. Komotion Rig structures and chains can grow, evolve, and mutate seamlessly during keyframe animation. Completely new creative possibilities are opened up with Komotion, that are not possible with conventional rigs. The posing and animation of creature and abstract rigs is simple and efficient, with full mirroring and posing, and non-uniform scaling of chains giving animators complete freedom during keyframe animation.

Introduction to Komotion

About Komotion



The Komotion software suite is the culmination of years of focused R&D building cutting-edge 3D Character Rigging and Animation tools for the Animation, Game and VFX industries.

Komotion is the industry's first fully procedural auto-rigging software, with several additional industry-first innovations in Rigging and Animation, bringing unprecedented productivity and creativity through tools, configuration, and controls, unlike any other Auto-Rigging software. Users' don't need to be skilled and experienced in Technical Animation to productively build Character, abstract, or even complex Rigs.

Komotion opens up brand new technical and creative possibilities, while keeping a sharp focus on high productivity, integration with existing Studio pipelines, to build a new future for 3D Animation and VFX. The key features of Komotion are:

Fully Procedural Auto-Rigging	Industry-First - Unmatched creativity and configuration to auto-rig any character, object or model, with complete mirroring and posing. Komotion Chain configuration with innovative linking opens up new and productive solutions to creative and technical challenges.
IK/FK Mode	Industry-First - Full 6DOF Rotation and Positioning of Bone Chains in IK and FK mode opens up complete freedom for Animation.
Fully Dynamic Parenting and Linking	Industry-First - Every Komotion Chain is built with 8 different control systems on creation. These chains can be parented to any object within a scene whilst always maintaining the control systems.
Inverse and Free Animation controls	Industry-First - Built-in Pinning and Stretching of Rigs and Bone Chains, for unique posing and animation.
Flexible Rigging and inter-operation	Komotion Rigs and Chains can be flexibly integrated and used with other rigs and tools.
Export to Game Engine	Everything, from full, highly complex Rigs, right down to individual Bone Chains, can be exported to FBX for Game Engines such as Unity and UE4.
Minimal Learning Curve	Built-in controls and straight-forward configuration automate Rig creation.

System Requirements - Maya

System Requirements - Maya

Pre-requisites and Minimum Requirements

For Maya 2016-2018, Komotion is dependent on .NET Framework 4.6.2, which will automatically be installed if it is not already present on the workstation. For Maya 2019+, Komotion is dependent on .NET Framework 4.8. Offline standalone installers for .NET Framework 4.6.2 and 4.8 are provided alongside the installers.

For minimum Maya requirements, some versions of Maya (for example, Maya 2018 with Update 2) are not supported, as they have had issues that prevent correct operation of the Komotion plug-ins. It is recommended that Users ensure before Komotion installation that they have the appropriate updates installed for Maya. Maya LT is not supported. macOS and Linux are not supported. 32-bit Windows operating systems are not supported.

Komotion (Maya 2016 Ext. 2)	Komotion (Maya 2017)	Komotion (Maya 2018)	Komotion (Maya 2019)
<p>Maya: Autodesk Maya 2016 Extension 2</p>	<p>Maya: Autodesk Maya 2017 Update 4+</p> <p>Note: Due to fixes in Maya 2018 Update 4, Maya 2017 Update 3 and earlier are not supported.</p>	<p>Maya: Autodesk Maya 2018 Update 3+</p> <p>Note: Due to fixes in Maya 2018 Update 3, Maya 2018 Update 2 and earlier is not supported.</p>	<p>Maya: Autodesk Maya 2019</p>

System Requirements

The system requirements for the Komotion for Maya plug-ins should be regarded as the associated minimum system requirements for the host Maya software. Below are the general minimum system requirements for recent Autodesk Maya releases, with some notes:

OS: Windows 7 SP1, Windows 8.1, Windows 10

CPU: 64-bit Intel® or AMD® multi-core processor with SSE4.2 instruction set

RAM: 8 GB RAM*

Disk Space: 25MB disk space for installation

Network adapter and Internet access for Online license activation**

* For complex character rigs in large scenes, we recommend at least 16GB RAM.

** Offline license activation is also available through Komotion Support. Internet access may also be required for downloading and installing dependencies.

Komotion for Maya v1.2 - Update

Komotion for Maya v1.2.x - New Features

Exporting

- Komotion Export panel with extensive Game Engine export configuration and commands

Bone Chain Configuration and Cloning

- Implemented full configuration of Bones and Controllers for Bone Chain Creation
- Expanded X/Y/Z axis Lock Position and Lock Rotation configuration options
- Head Bone configuration option implemented for controlling the final bone chain bone segment
- Chain Twists configuration for improving control of bone segment twists
- Corrective Joints to assist with smoothing out deformations, and for reducing reliance on corrective blend shapes
- Batch cloning of bone chains with automated parenting to scene selected nodes

Spline and Accessory Controls

- New Spline Path Controls for working with Path Objects and Path Joints in Komotion bone chains
- New Accessory Rotation Weight control with separate Accessory Position Weight
- Added Accessory Realign Rotation and Realign Position commands for accessory resets

General

- From feedback, the layout of controls, configuration and system controls was refactored
- v1.2.1 - New combined installer for Komotion for Maya

Komotion for Maya v1.2.x - Fixes

v1.2.0 Fixes

- Fixed Accessory translation offset issue on particular scene selections
- Fixed tooltips and other labels, and added core functionality for upcoming floating licences
- Fixed multiple rotation and orientation issues
- IK usage improved for certain use cases
- Resolved issues for some uses of the Freeze Rig Transforms command

v1.2.1 Fixes

- Corrected installer .NET Framework detection
- Corrected front-end reset on Open Scene
- Improved Freeze Rig Transforms command
- Fixed keyframing issue
- Fixed chain reset issue for Twist controls
- Fixed controls state with Mirror/Flip Selection
- Fixed Mirror/Flip Selection with Root control

v1.2.2 Fixes

- Fixed window initialisation error for Maya 2016 Ext. 2 and 2017
- Improved exception messaging
- Updated TurboActivate and TurboFloat libraries to v4.1.3.0
- Updated gong-wpf-dragdrop to v2.0.1
- Updated Newtonsoft.Json to v12.0.2

v1.2.3 Fixes

- Updated website and help links
- Updated TurboActivate and TurboFloat libraries to v4.1.7
- Fixed issues with Mirror Direction value changes and Mirror Controls
- Resolved Spline Knot Selection Lock issue after running 'Run Scene Collection'
- Fixed minor licence switching and initialisation issue

v1.2.4 Fixes

- Resolved issue with Bezier curve degree 3 built into Komotion Chains
- Node selection between Path objects and Path joints selection fixed
- Komotion Chains without inheritance will now follow the Rig base
- Selection order for Exporting is improved and simplified
- Resolved issues when exporting a Komotion Chain without Corrective Joints
- Fixed back-end licence checking issues

Komotion for Maya v1.1 - Update

Komotion for Maya v1.1

New Features

Maya 2019 Support

- Komotion for Maya now supports Maya 2019. A plug-in installer is now available, and available to all licensees.

Run Scene Collection

- Added new 'Run Scene Collection' button for invoking manual scene collection in Maya scenes.
- The automatic scene collections that happen when Maya Scenes are saved/loaded/changed have been removed.
- Users should now click the 'Run Scene Collection' button when they need the Komotion front-end to sync with the Komotion Rig(s) in the Maya Scene.
- This change has been implemented to allow users to render large completed scenes, without the need for collecting Komotion Rigs.

Fixes

- Fixed Jitter Issues
 - Cause: Over population of keys caused by Matrix history stored in Maya API.
 - Resolution: Maya API history deleted.
- Fixed 6 DOF IK
 - Cause: Maya API Issue.
 - Resolution: New function set in place to stop IK calculations being over written.
- Fixed Window creation errors for Maya 2017 and below
 - Cause: Window initialisation changes made for Maya 2018+.
 - Resolution: Added workaround that resolves the issue.

Komotion for Maya v1.1.1 and v1.1.2

- Added Website Link and updates to disclaimers
- Fixed Window Creation issue on Komotion plugin unload
- Icons fixed for Maya 2019 installer

1. Installation

Installation

Note: Before starting, please ensure that you have read the [System Requirements - Maya guide](#), and have a compatible version of Maya.

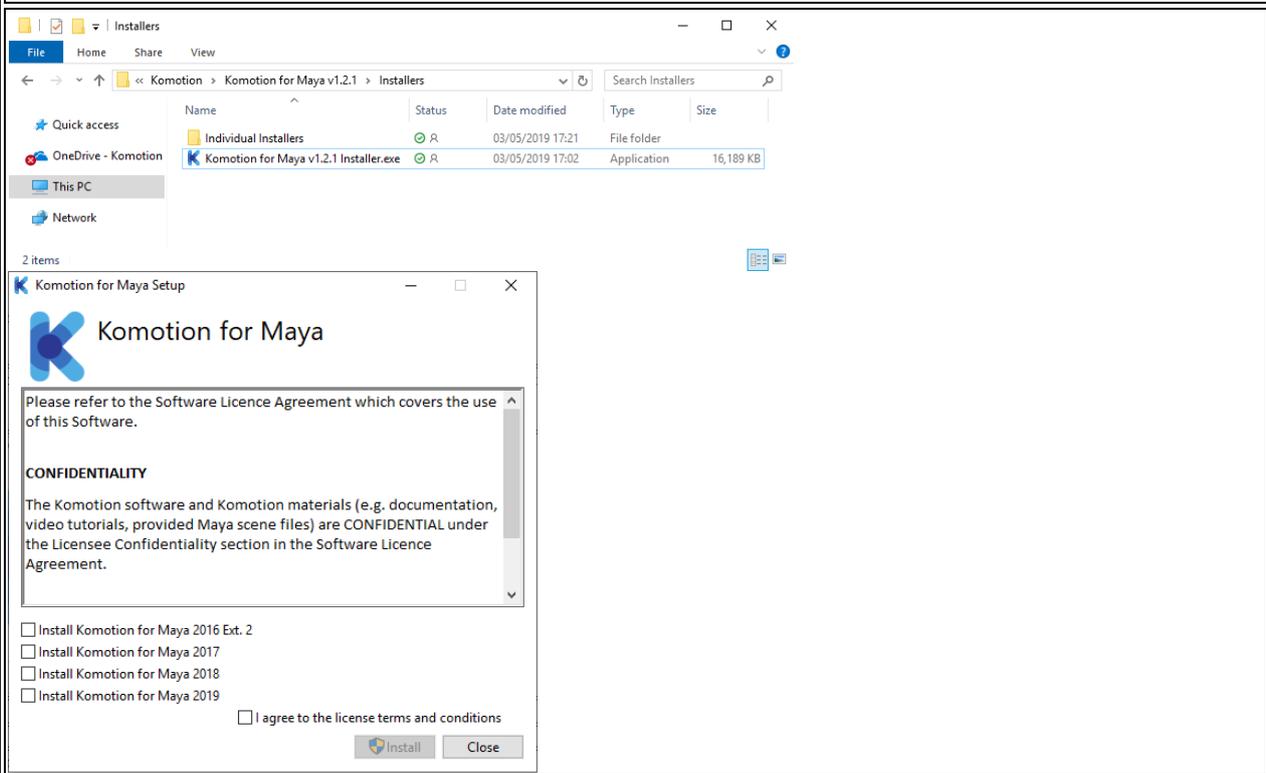
For installing Komotion for Maya, there are two options: using the combined installer (the 'Komotion for Maya v1.x.x Installer.exe'), or the individual Komotion for Maya plug-in installers ('Komotion v1.x.x for Maya 2019.msi'). The individual installers are primarily for advanced users or other custom deployments.

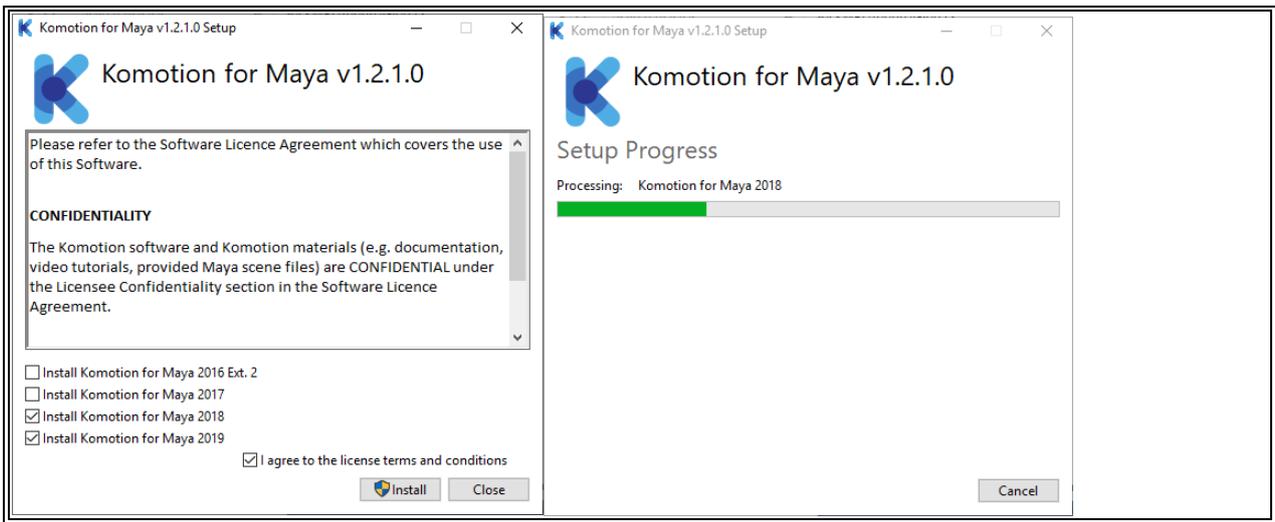
We recommend users use the Combined Installer.

Note: If the Combined Installer is launched and .NET Framework 4.8 is not already installed, the Combined Installer will download .NET Framework 4.8 from the internet and install it. After installation, the user will have to click 'Restart' to reboot their workstation. If no internet connection is available, the installation will not be able to proceed.

For the Combined Installer:

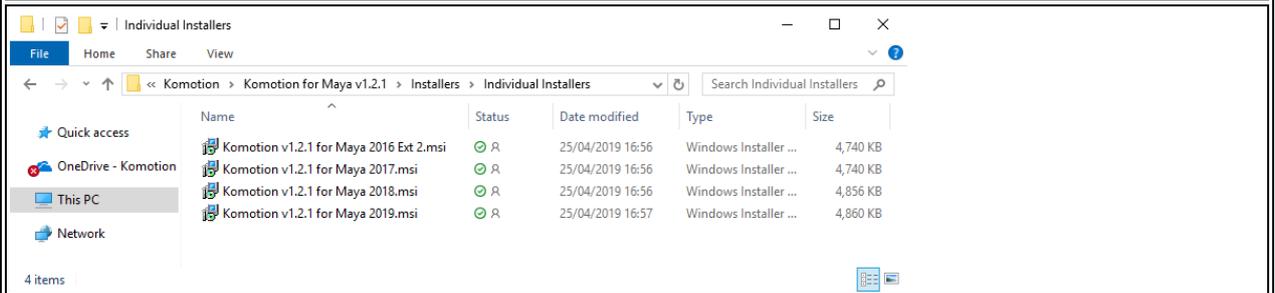
1. In the 'Komotion v1 - Software' folder, double-click on 'Komotion for Maya v1.2.1 Installer.exe'. This will launch the combined installer shown on the bottom-right. Select the installation(s) of Komotion required, click 'I agree to the license terms and conditions', and finally click 'Install' to proceed.



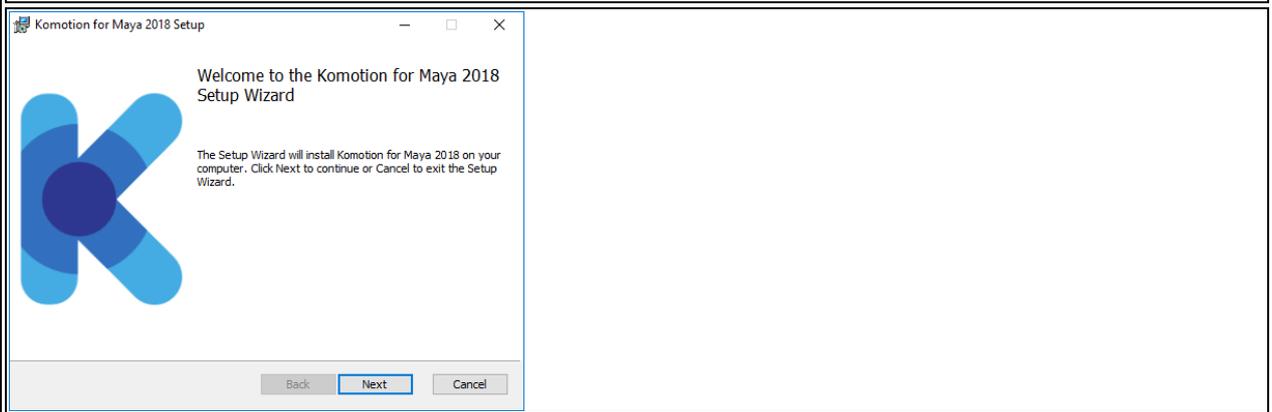


For the Individual Installers:

1. Double-clicking the MSI installer for the version of Maya on your workstation will launch the installer.

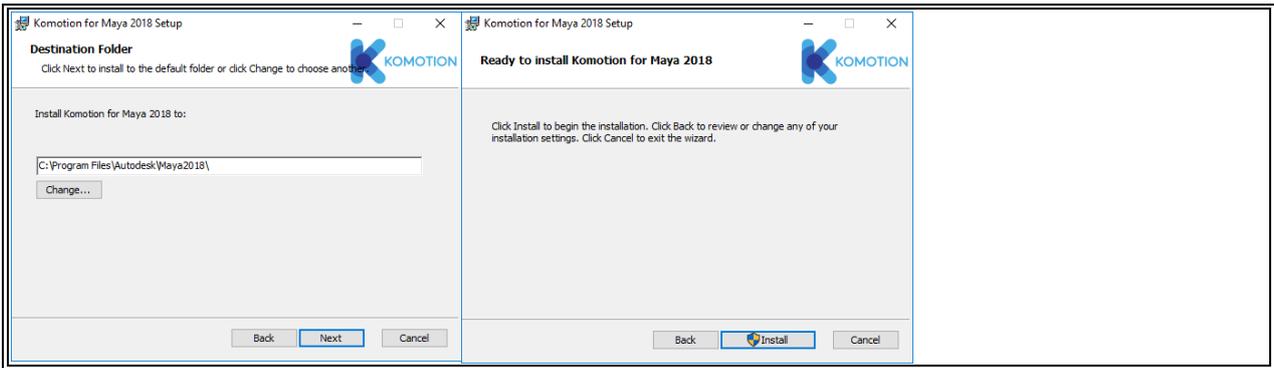


2. When the installer(s) launches, click 'Next' to proceed.

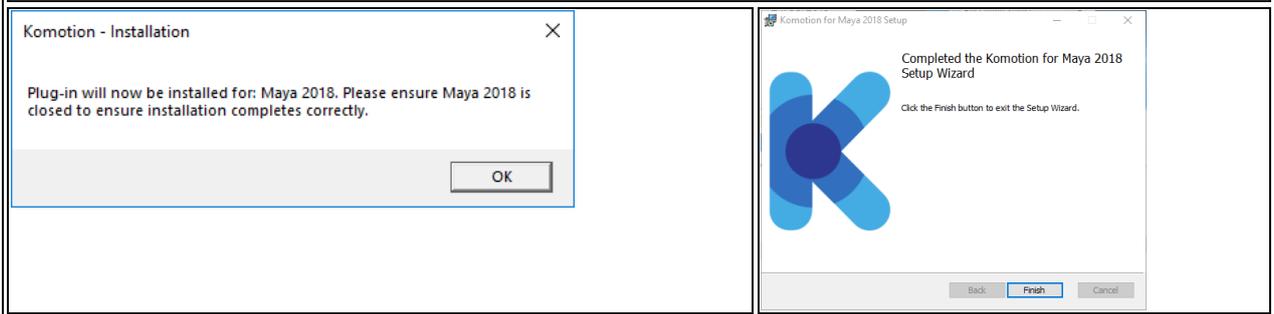


3. The Komotion plug-in will by default install to the Maya installation folder. Click 'Next' to proceed forward, and then 'Install'.

NOTE: As Komotion is a Maya plug-in, this path should always be set to the root of the Maya Installation.



4. Click 'OK' on the dialog box after confirming that Maya is closed, and click 'Finish' to complete setup.



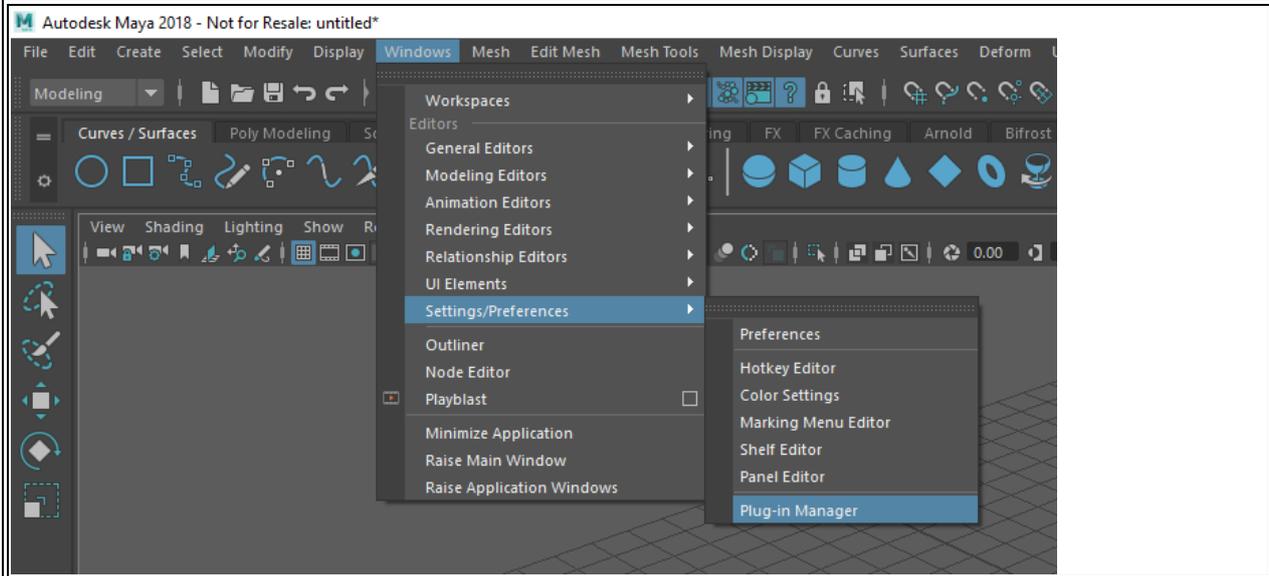
5. Launch Maya to start the [next part of installation](#).



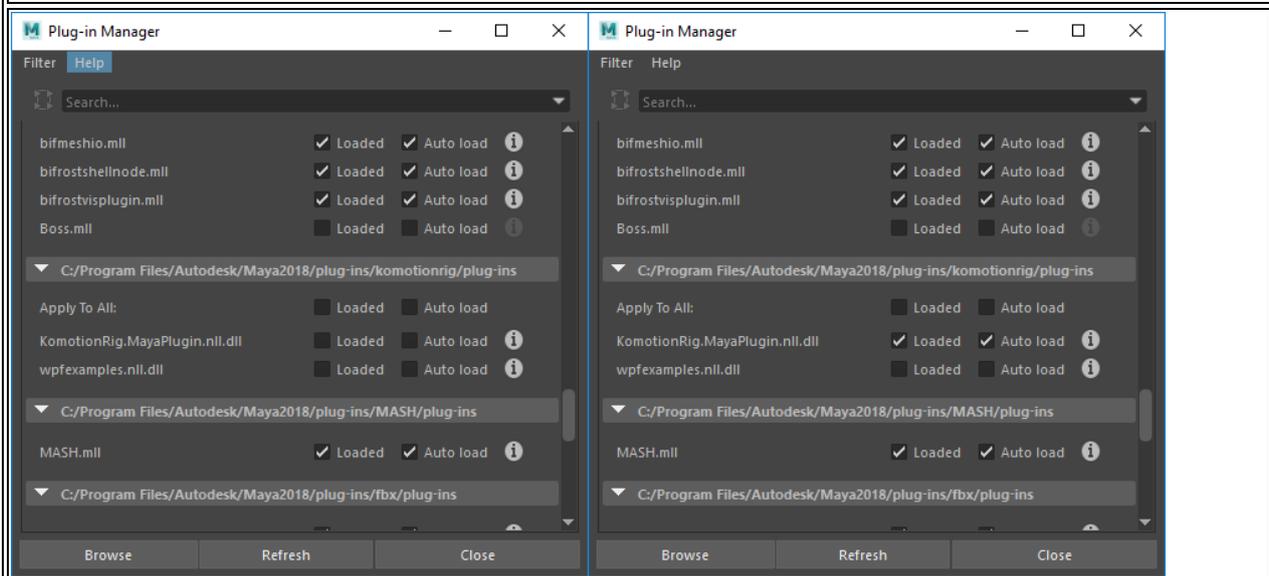
2. Loading Komotion in Maya

Loading Komotion in Maya

1. In Maya, click 'Windows' > 'Settings/Preferences' > 'Plug-in Manager' to open the Plug-in Manager.

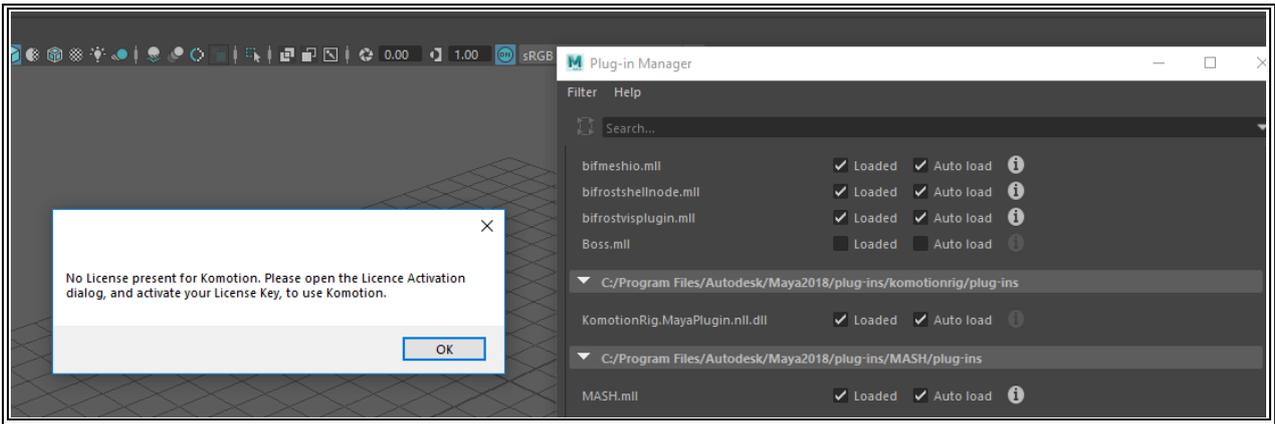


2. In the Plug-in Manager, find 'KomotionRig.MayaPlugin.nll.dll', and **check 'Loaded'** to load Komotion, and **check 'Auto load'** so Komotion will always be loaded on Maya startup.

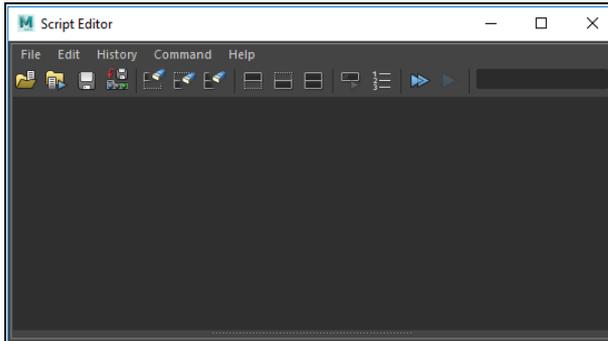


- **If none or an expired Komotion license is present:**

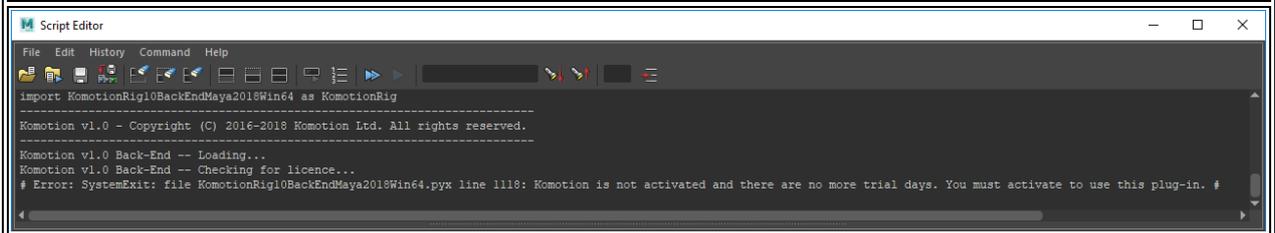
3. A dialog box will pop-up notifying that no license is present for Komotion software. Click 'OK' to proceed, and then follow the instructions in [Launching Komotion](#).



Note: With none or an invalid license, the Komotion software back-end will not load during Maya startup.

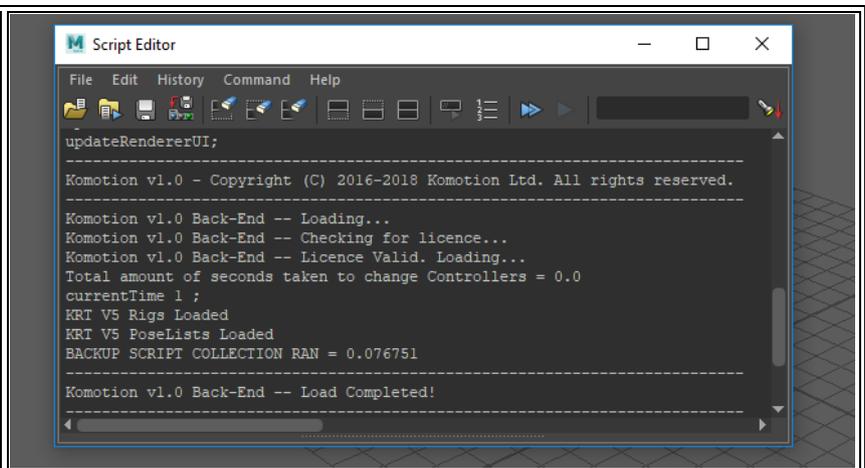


Note: In cases where the Komotion back-end is manually loaded, the activation check will stop the Komotion back-end from loading and initializing.



- If a valid Komotion license is already present:

3. During Maya Startup, the Komotion software back-end automatically starts loading and initializing. [Proceed to the next section for Launching Komotion.](#)



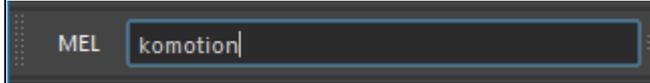
3. Launching Komotion

Launching Komotion

Komotion MEL Command

1. Launch the Komotion UI by running the 'komotion' MEL command.

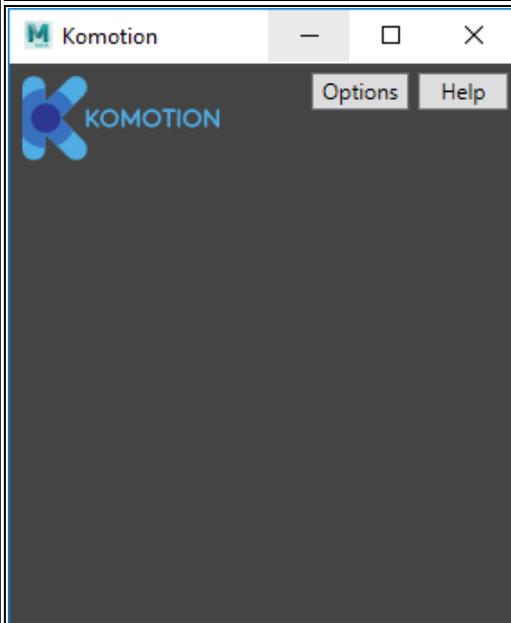
MEL Command: komotion



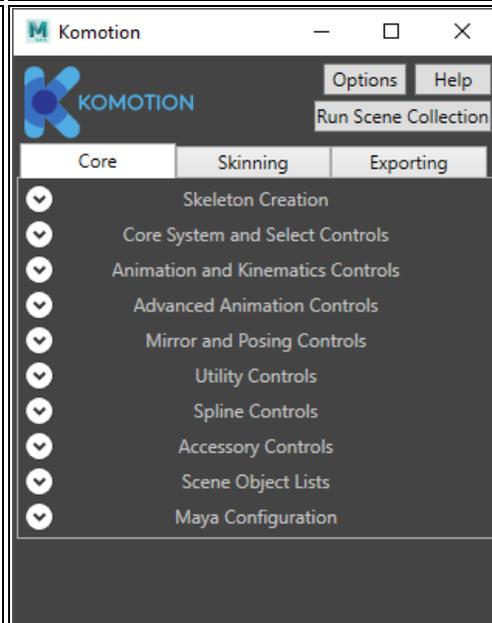
Komotion UI

2. The Komotion UI Window will load. Note that the window integrates with the Maya workspace and can be freely docked and undocked. **We recommend working with Komotion as a floating window.**

With No License, the UI will load as shown below:



With an Existing Valid License, the UI will load as shown below:



3. If Komotion license activation is required, proceed to the [License Activation](#) section. If a valid license is present, proceed to the [Getting Started with Komotion](#) section.

4. Workstation License Activation

Workstation License Activation

Komotion has two ways of activating a workstation license: Online Activation and [Manual Offline Activation](#).

We recommend Online Activation, with Offline Activation only to be used if Online Activation is not possible or available.

The following guide shows Online Activation but these steps can be supplanted with the Offline Activation steps.

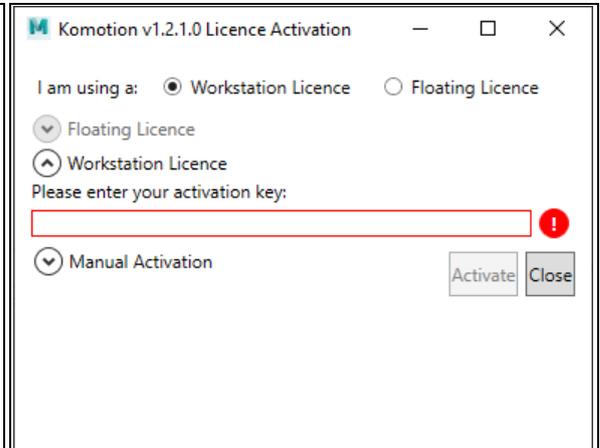
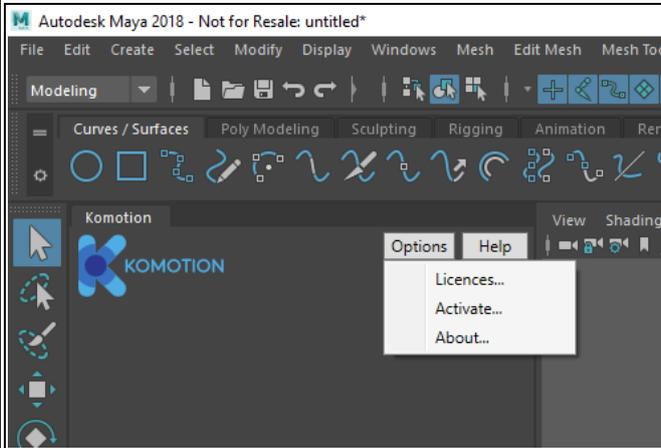
Online License Activation

Note: Before starting this process, please ensure that your workstation can connect to the Internet.

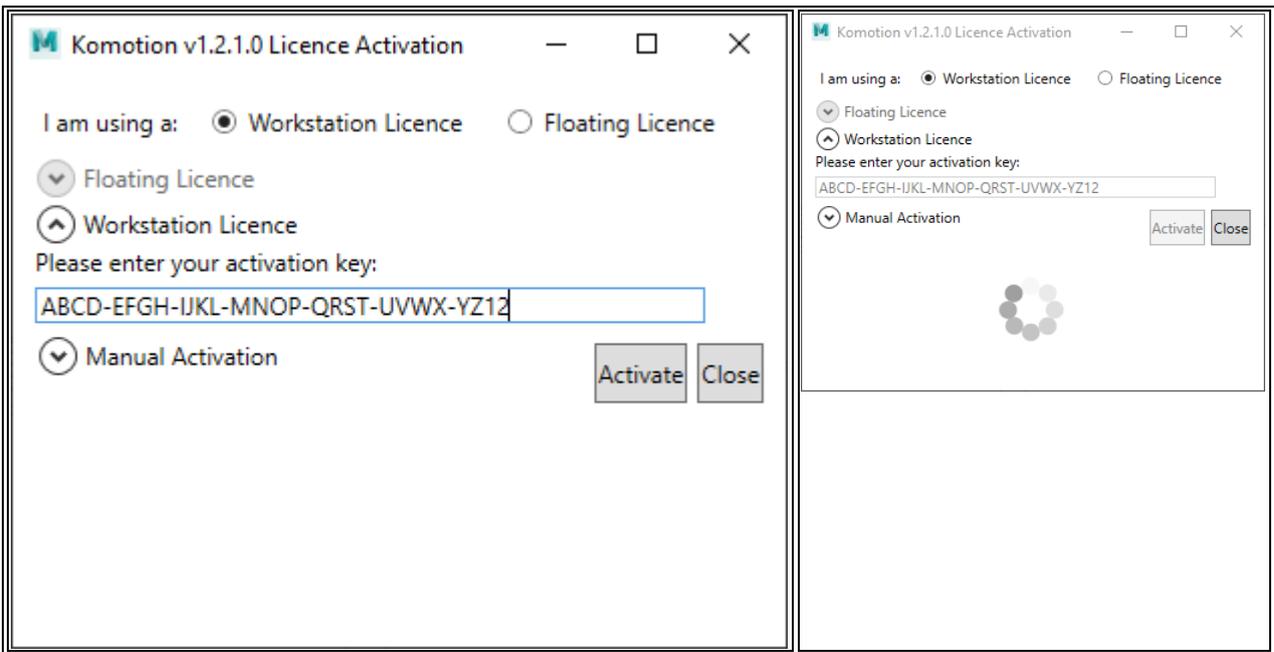
1. Click on 'Options' and then 'Activate... ' to open the Komotion Licence Activation dialog.

2. A new dialog called 'Komotion Licence Activation' will pop-up.

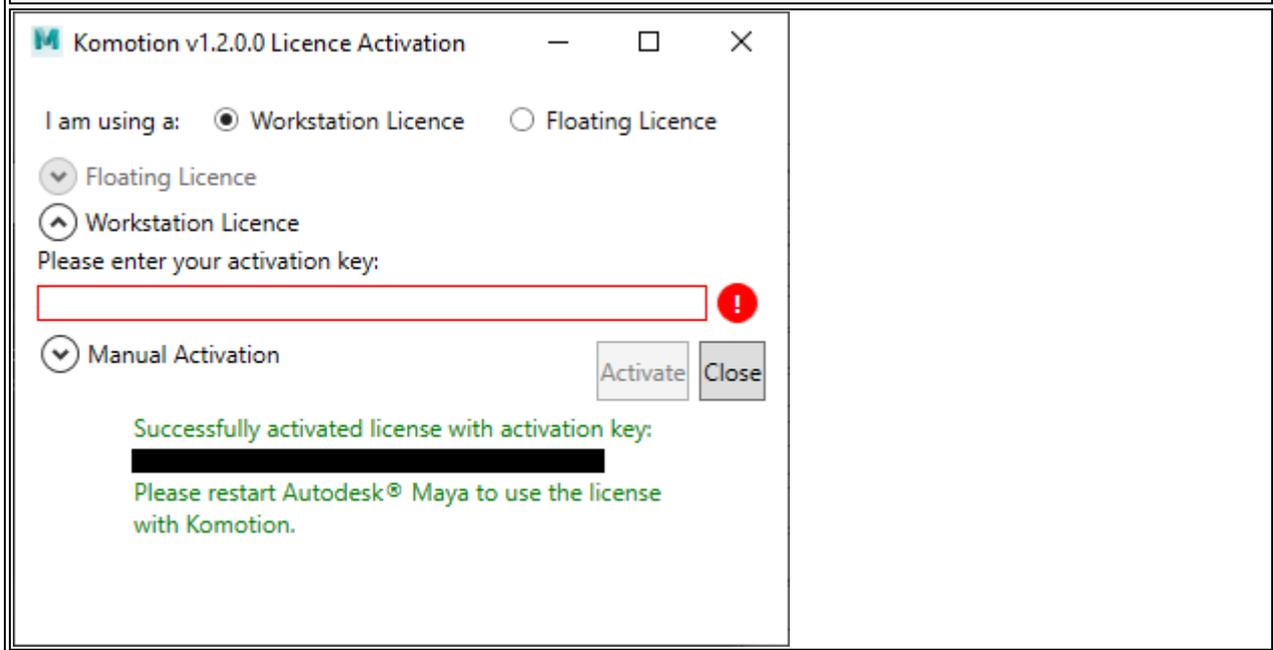
Enter or copy-and-paste your license key in the activation key text box. It will have the following format: XXXX-XXXX-XXXX-XXXX-XXXX



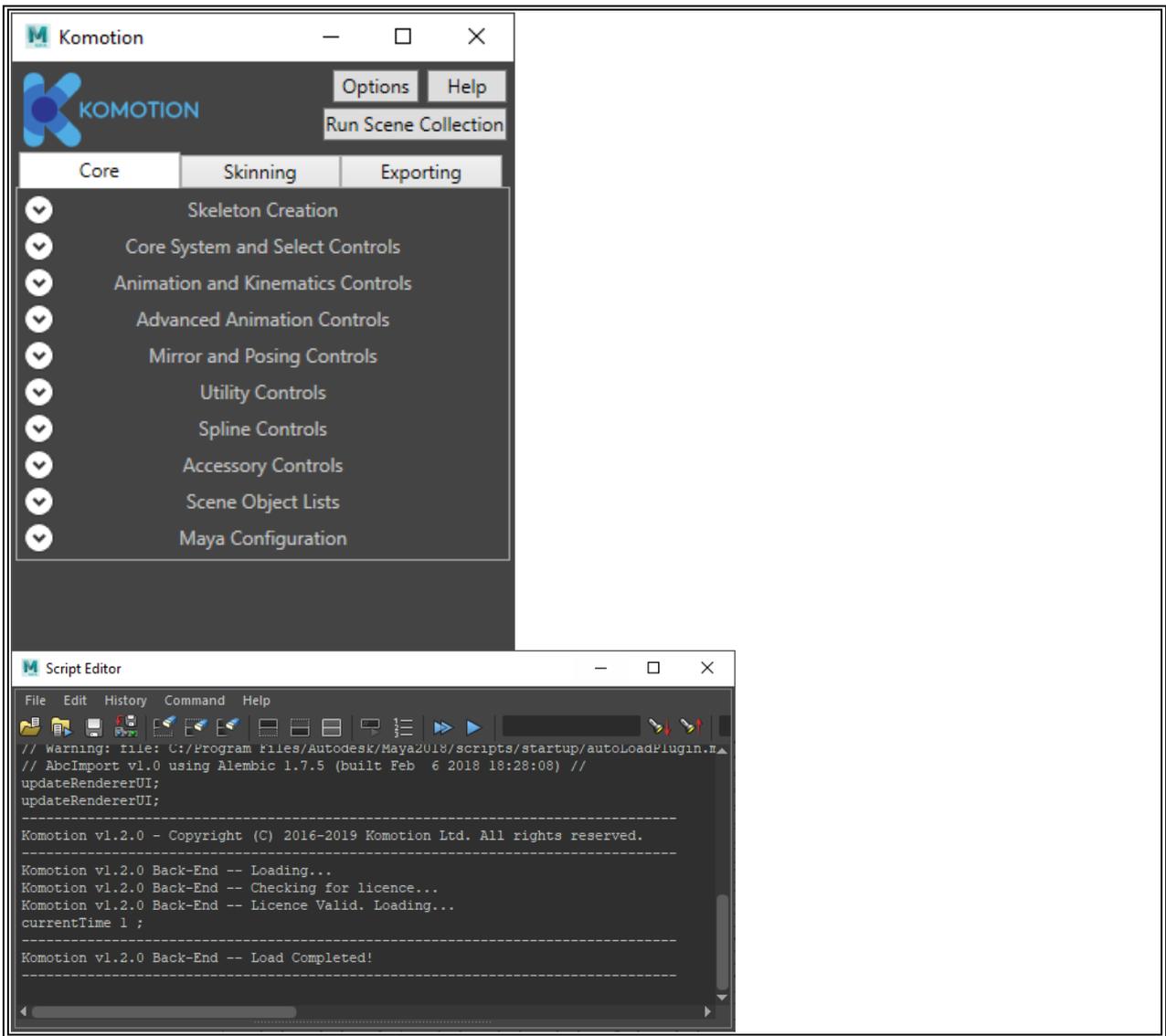
3. Click on 'Activate' to start online license activation. With a valid license accepted, the automated Online Activation process will start, shown with the circular animation. The activation process may take up to 20 seconds to complete. Contact Komotion Support if you encounter any issues.



4. On a successful activation, it will display the message 'Please restart Autodesk Maya to use the license with Komotion Rig'. Close the Activation dialog, and then close and restart Maya.



5. On reloading Maya, the Komotion User Interface will now load fully for use. In the Script Editor output, the Komotion Back-End will also fully load.



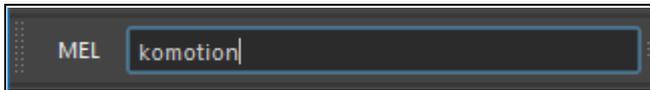
User Interface - Komotion

User Interface - Komotion

Komotion MEL Command

Launch the Komotion UI by running the 'komotion' MEL command.

MEL Command: komotion



Komotion UI

<p>The screenshot shows the Komotion UI window. At the top, there's a title bar 'Komotion' and buttons for 'Options' and 'Help'. Below that is a 'Run Scene Collection' button. A menu is open with the following items: Core, Skinning, Exporting, Skeleton Creation, Core System and Select Controls, Animation and Kinematics Controls, Advanced Animation Controls, Mirror and Posing Controls, Utility Controls, Spline Controls, Accessory Controls, Scene Object Lists, and Maya Configuration.</p>	<p>1. Skeleton Creation - Komotion Auto-Rigging panel for configuring, building, and linking Komotion Bone Chains and Rigs.</p>
	<p>2. Core System and Select Controls - Komotion Chain and Rig selection controls and system controls.</p>
	<p>3. Animation and Kinematics Controls - Core Komotion Bone Chain, IK/FK and Animation controls used for Rigging and Animation.</p>
	<p>4. Advanced Animation Controls - Controls for unique posing and animation</p>
	<p>5. Mirror and Posing Controls - Mirror and Flip commands for Komotion Bone Chains and Rigs.</p>
	<p>6. Utility Controls - Visibility Controls for Bones and Skins.</p>

<p>7. Spline Controls - Komotion Bone Chain Knots controls, and spline selection.</p>	<p>8. Accessory Controls - Komotion Bone Chain Accessory visibility, weight and alignment controls.</p>
<p>9. Scene Object Lists - Configuration and controls for Komotion Scene Object List.</p>	<p>10. Maya Configuration - Configure Maya for optimal use with Komotion.</p>
<p>11. Options - Komotion settings, license management and activation.</p>	<p>12. Help - Links to reference, tutorials and support.</p>

Skeleton and Chain Creation

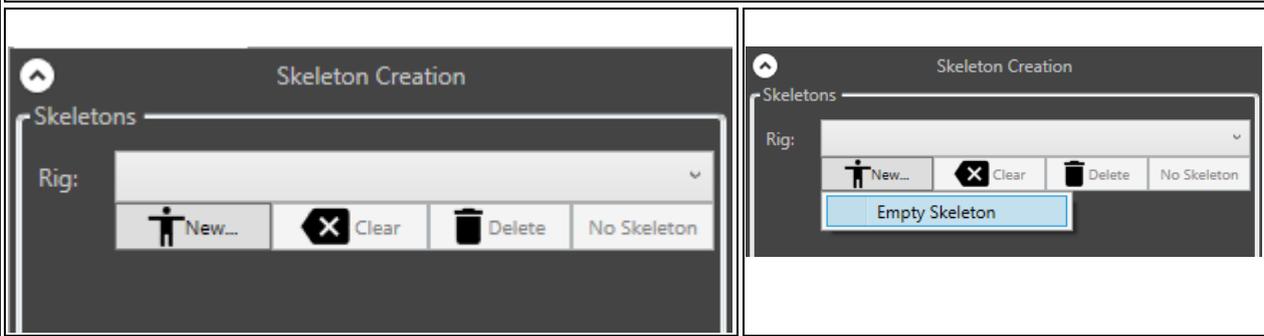
Basic Skeleton and Chain Creation

The configuration and creation of Komotion Rigs and Bone Chains are done through the Skeleton Creation panel. Bone Chain Linking for building Komotion Rigs works from the current selection in the Maya Scene. As Komotion is fully procedural, there are many different ways Bone Chains can be configured, created and linked for many technical and creative needs, as well as for building unique structures in unconventional ways, and linking and integrating chains and structures with other custom rigs.

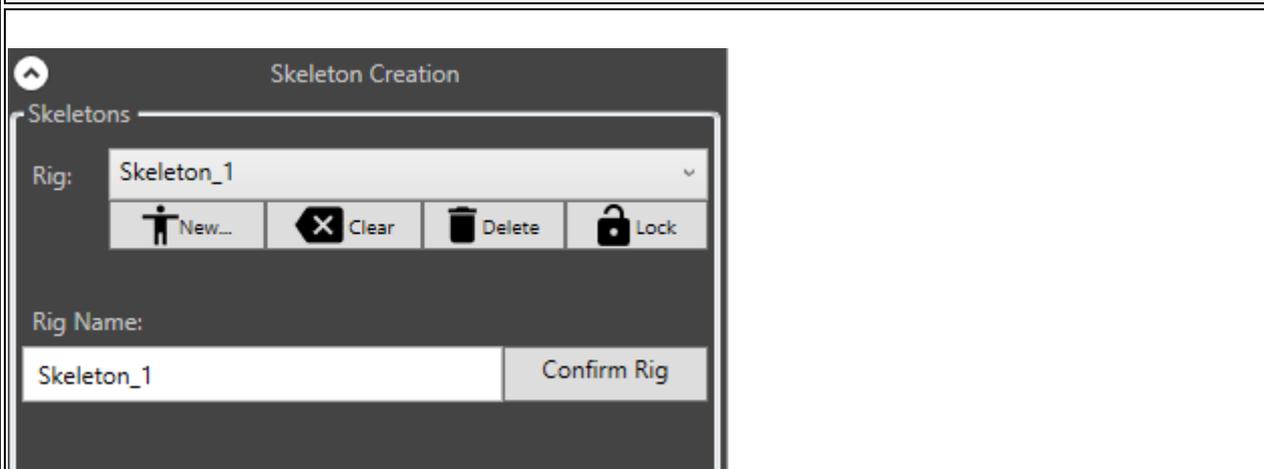
For starting off, below is a basic example for creating a simple structure with 3 configured Bone Chains linked together (similar to a Spine with Left and Right arms):

Creating Chains

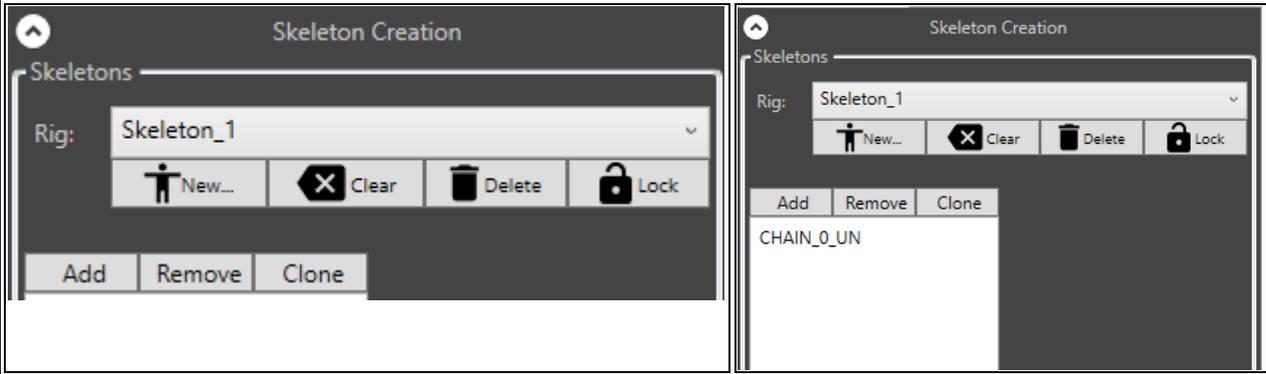
1. On the Komotion UI, click 'New...' and then 'Empty Skeleton'.



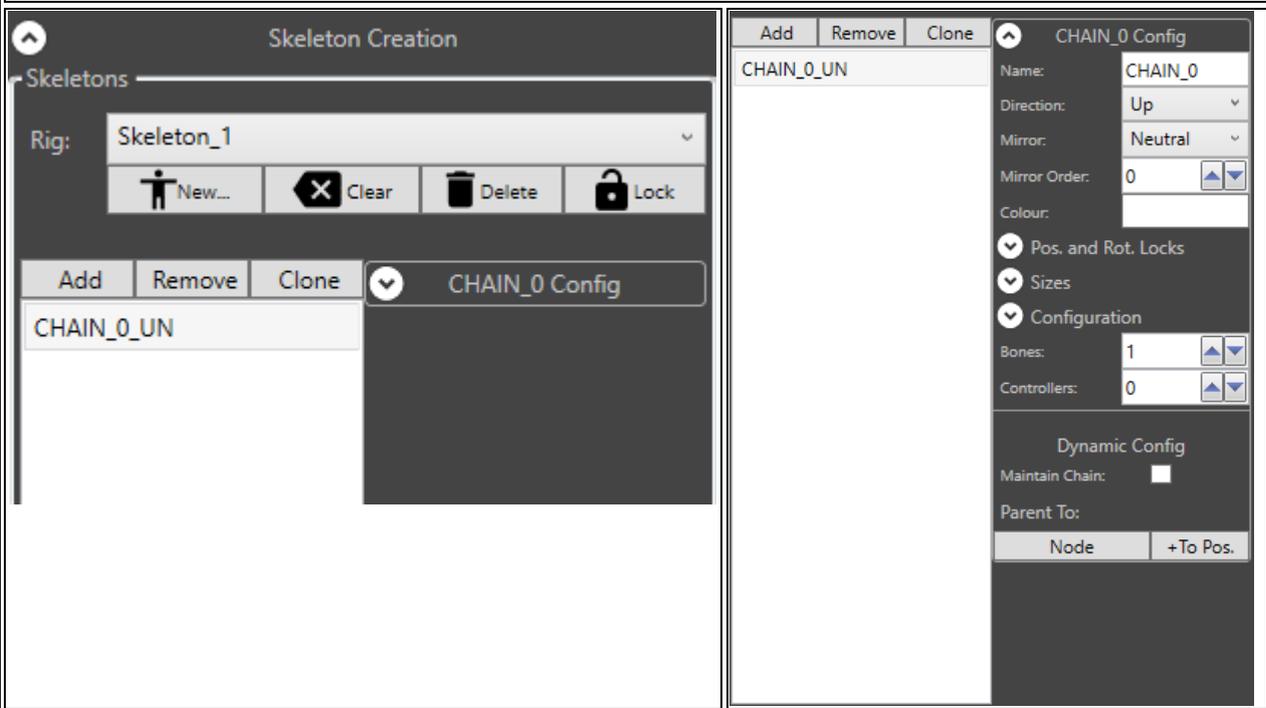
2. Enter a new Rig Name or leave it as the auto-generated name, and click 'Create Rig'.



3. Click the 'Add' button to add a new Bone Chain to the Rig, and select the new chain named 'CHAIN_0'. A new collapsed panel called 'CHAIN_0 Config' will show on the right-hand side.

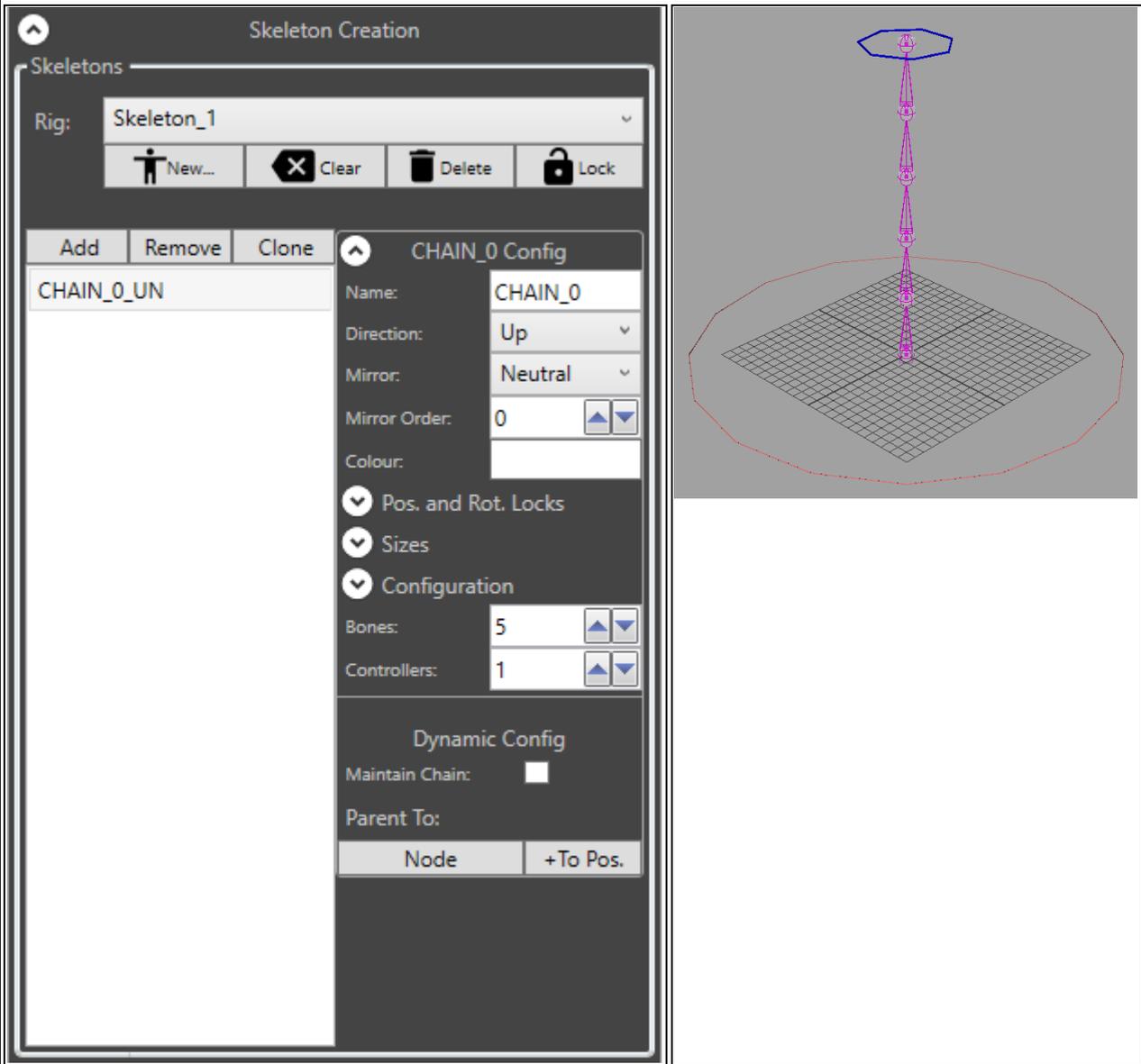


4. Click on the Expand button to see the Bone Chain Configuration for 'CHAIN_0'.

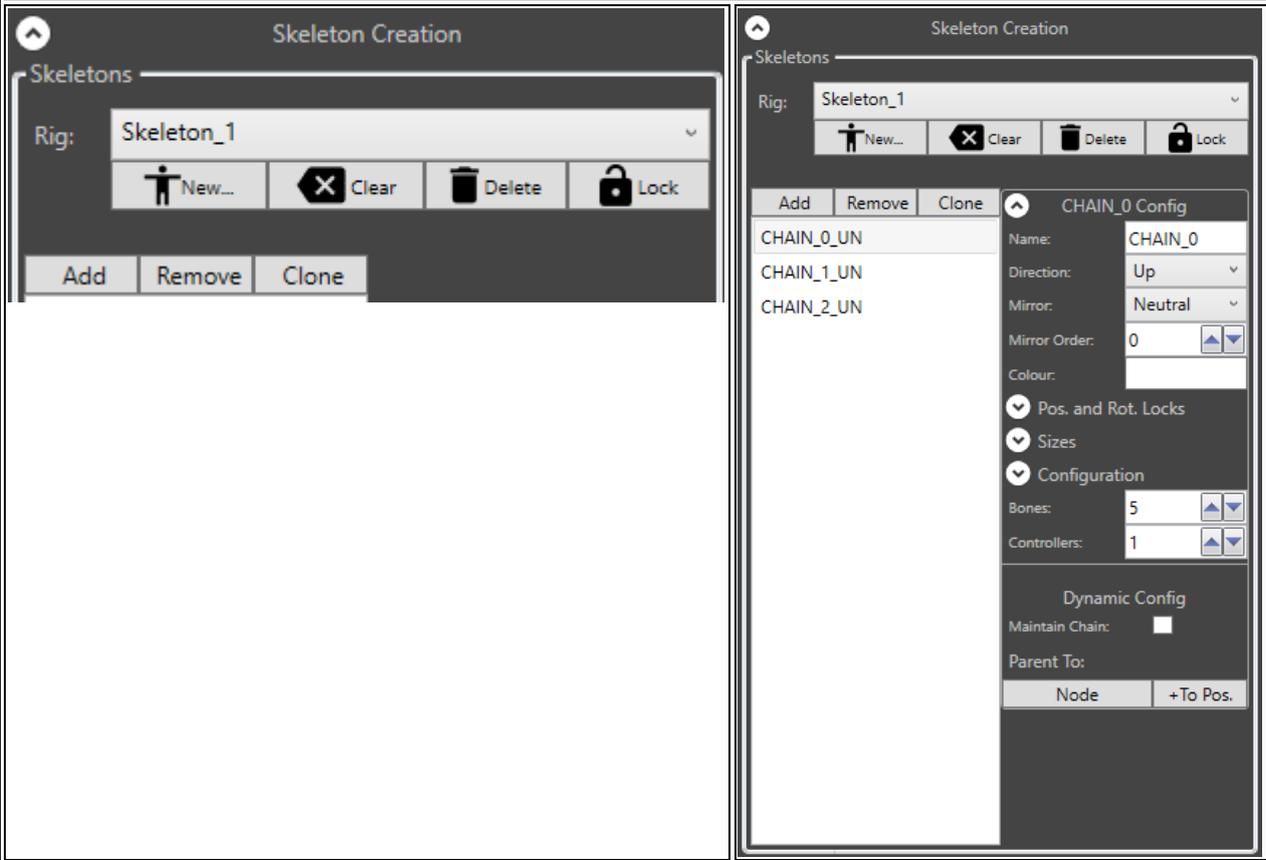


5. For the Bones value, change it from '0' to '5'. This can be done either with the Up and Down buttons, or by entering the number '5' and pressing 'Enter' or 'Tab' on the keyboard. For the Controllers value, change it from '0' to '1' to create the chain in the scene.

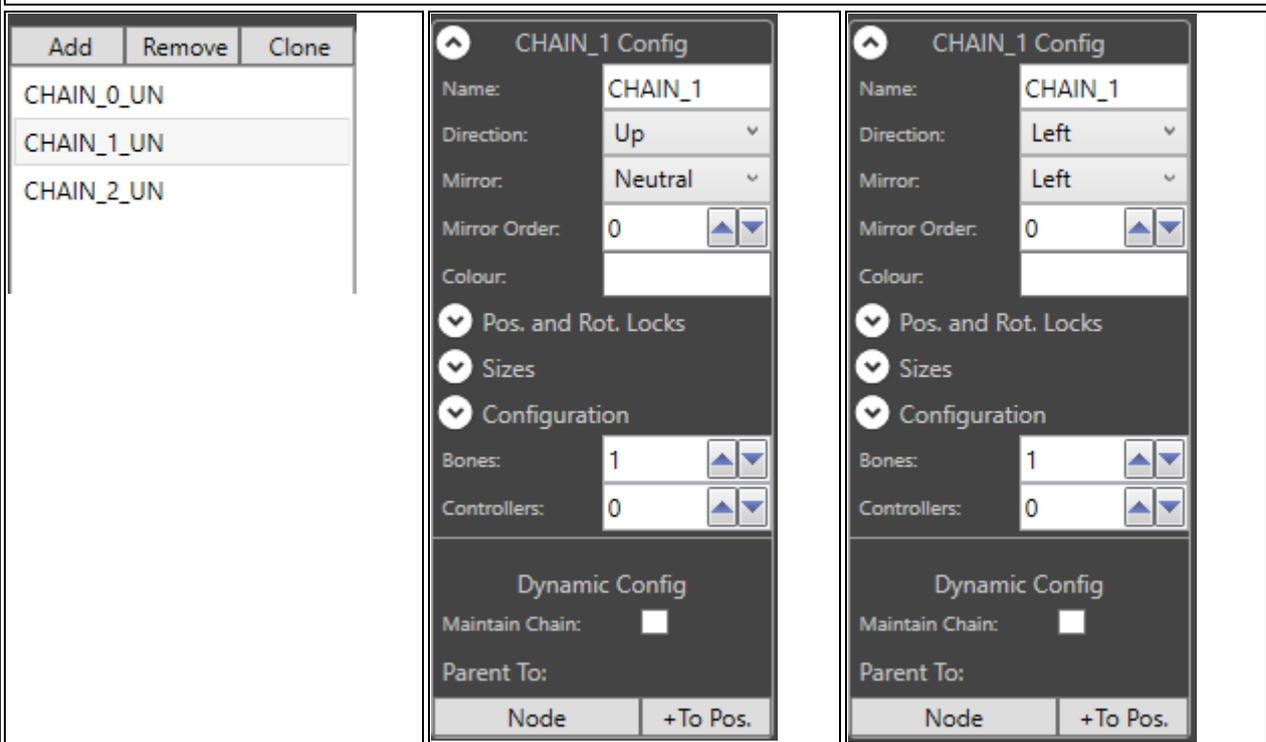
In the Maya Scene, you will now see that a Bone Chain is created with 5 Bone Segments going in an Upwards direction.



6. Add two more Bone Chains by clicking the 'Add' button twice.



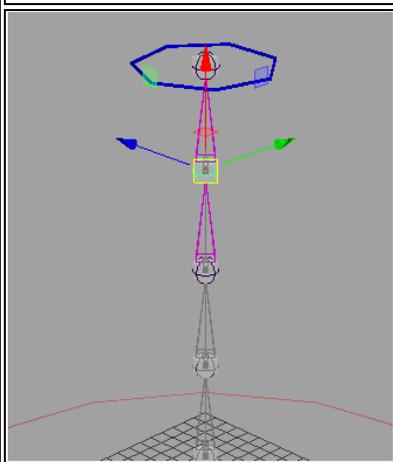
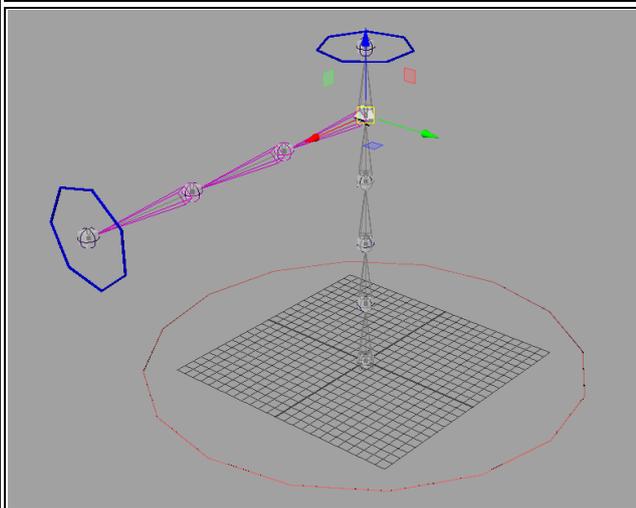
7. Select 'CHAIN_1' and change the Direction to 'Left' and the Mirror to 'Left'.



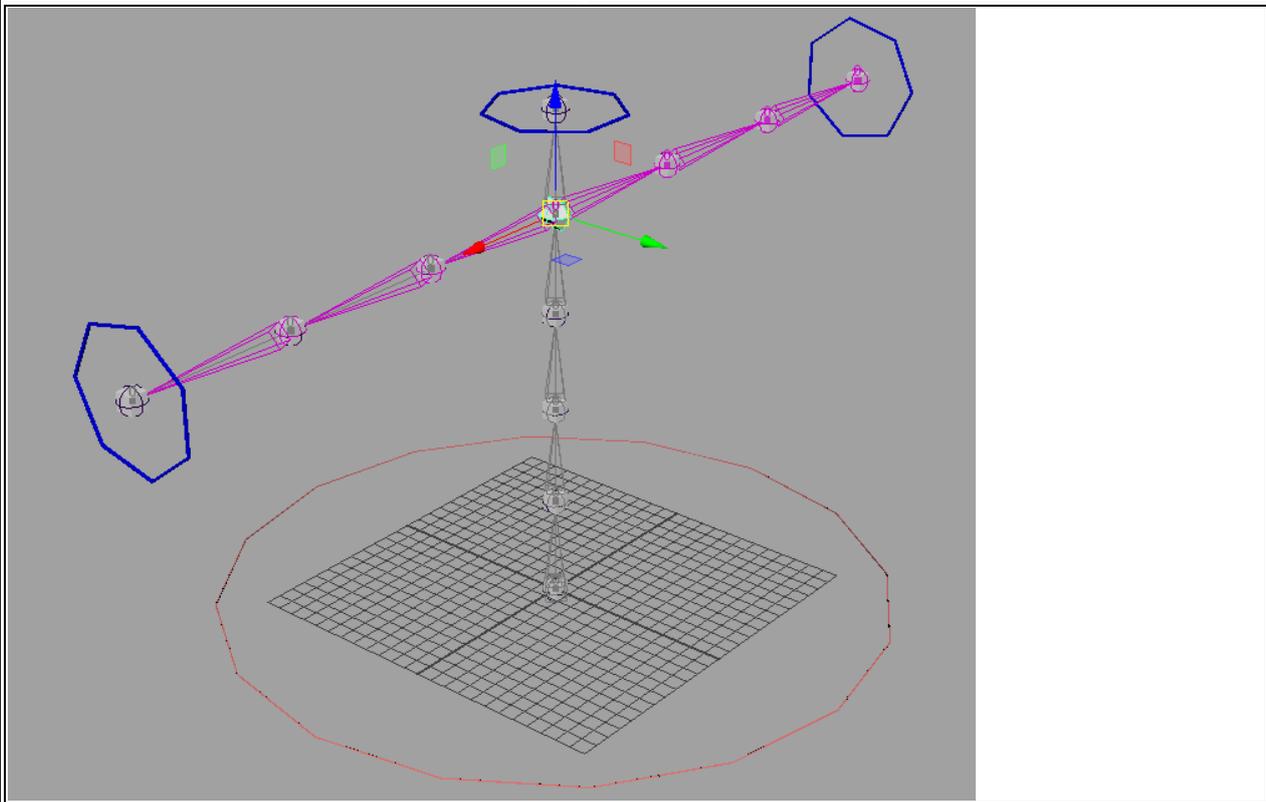
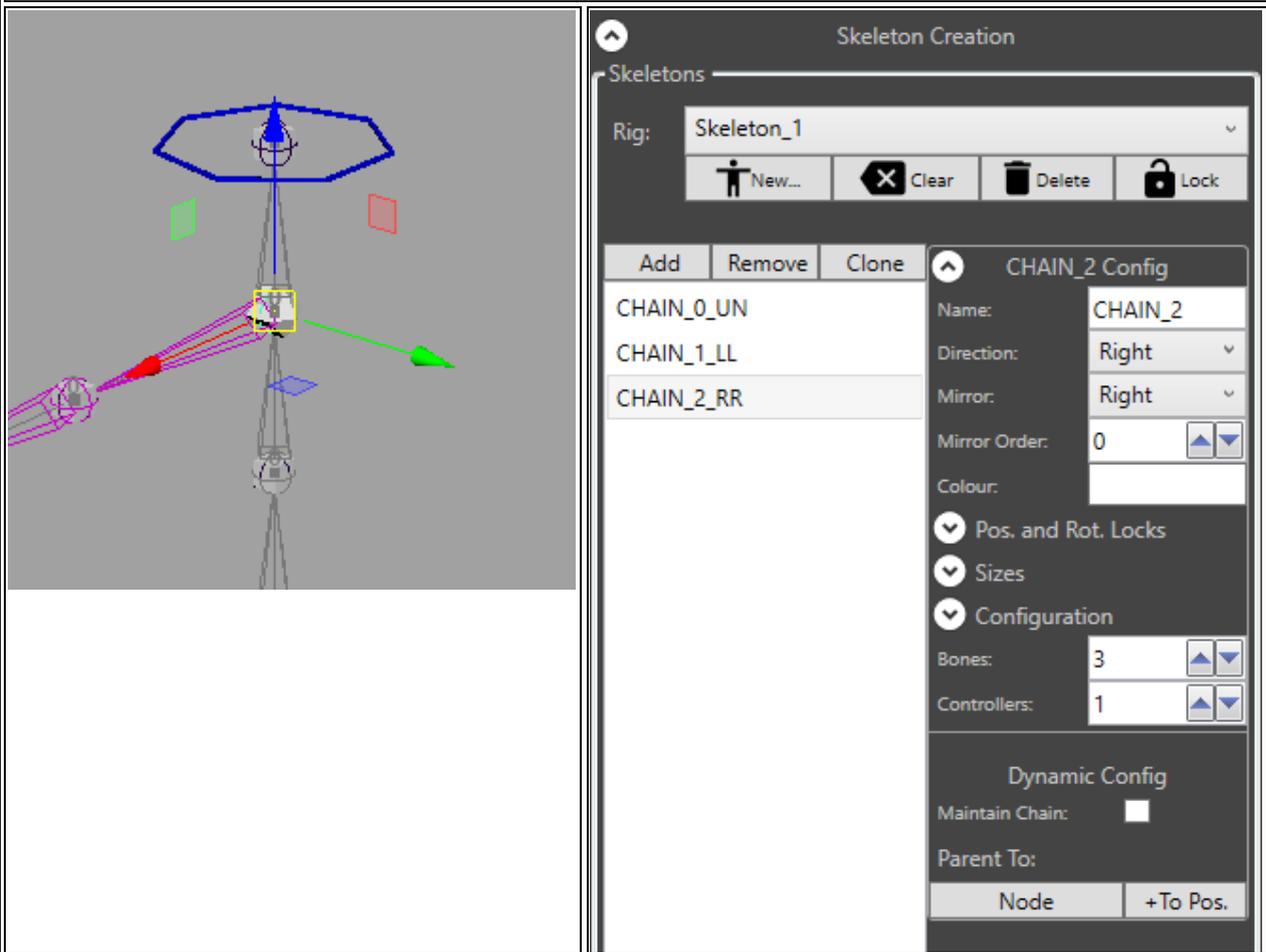
8. Select 'CHAIN_2' and change the Direction to 'Right' and the Mirror to 'Right'.

<table border="1"> <thead> <tr> <th>Add</th> <th>Remove</th> <th>Clone</th> </tr> </thead> <tbody> <tr> <td>CHAIN_0_UN</td> <td></td> <td></td> </tr> <tr> <td>CHAIN_1_LN</td> <td></td> <td></td> </tr> <tr> <td>CHAIN_2_UN</td> <td></td> <td></td> </tr> </tbody> </table>	Add	Remove	Clone	CHAIN_0_UN			CHAIN_1_LN			CHAIN_2_UN			<p>CHAIN_2 Config</p> <p>Name: CHAIN_2</p> <p>Direction: Up</p> <p>Mirror: Neutral</p> <p>Mirror Order: 0</p> <p>Colour:</p> <p>Pos. and Rot. Locks</p> <p>Sizes</p> <p>Configuration</p> <p>Bones: 1</p> <p>Controllers: 0</p> <p>Dynamic Config</p> <p>Maintain Chain: <input type="checkbox"/></p> <p>Parent To:</p> <p>Node +To Pos.</p>	<p>CHAIN_2 Config</p> <p>Name: CHAIN_2</p> <p>Direction: Right</p> <p>Mirror: Right</p> <p>Mirror Order: 0</p> <p>Colour:</p> <p>Pos. and Rot. Locks</p> <p>Sizes</p> <p>Configuration</p> <p>Bones: 1</p> <p>Controllers: 0</p> <p>Dynamic Config</p> <p>Maintain Chain: <input type="checkbox"/></p> <p>Parent To:</p> <p>Node +To Pos.</p>
Add	Remove	Clone												
CHAIN_0_UN														
CHAIN_1_LN														
CHAIN_2_UN														

9. Select the controller shown below, and change the 'CHAIN_1' Bones value to 3, and then Controllers to 1.

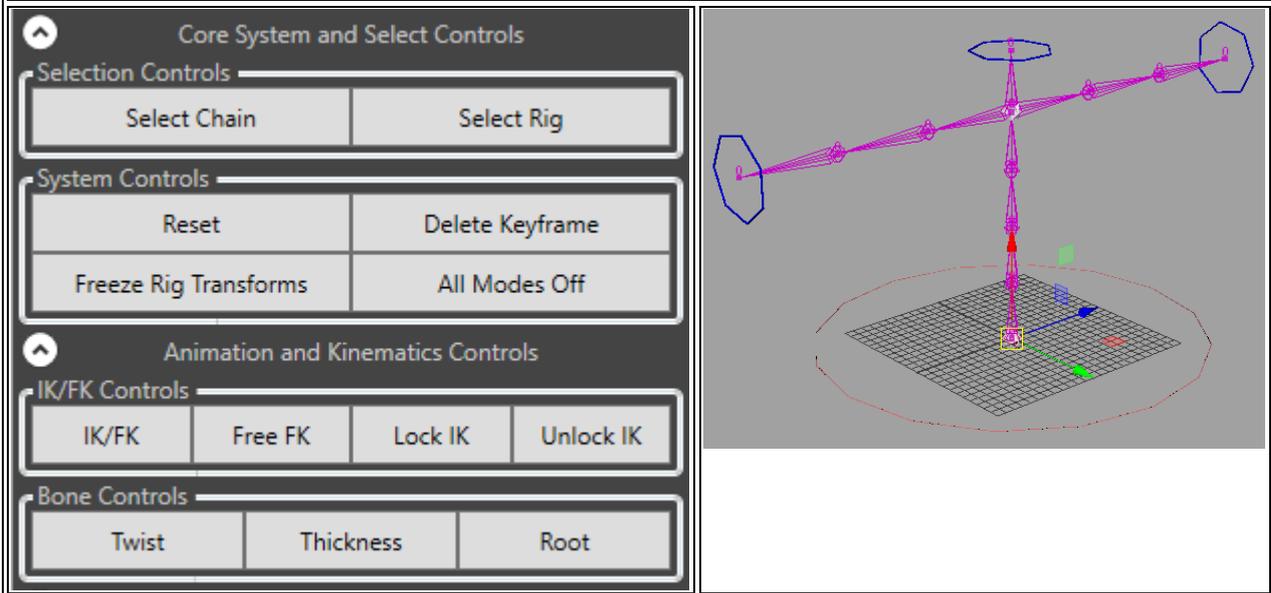
	<table border="1"> <thead> <tr> <th>Add</th> <th>Remove</th> <th>Clone</th> <th>CHAIN_1 Config</th> </tr> </thead> <tbody> <tr> <td>CHAIN_0_UN</td> <td></td> <td></td> <td>Name: CHAIN_1</td> </tr> <tr> <td>CHAIN_1_LL</td> <td></td> <td></td> <td>Direction: Left</td> </tr> <tr> <td>CHAIN_2_RR</td> <td></td> <td></td> <td>Mirror: Left</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Mirror Order: 0</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Controller: 4.0000</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Colour:</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Rotation <input type="checkbox"/> Lock (X, Y)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Ignore Parent: <input type="checkbox"/> Rotation</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Stretch Type: <input type="checkbox"/> Uniform</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Curve Type: <input type="checkbox"/> Apply</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Auto Scale (X): <input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Base Bone: <input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Add Skin: <input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Bone Count: 3</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Dynamic Config</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Maintain Chain: <input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Parent To:</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Node +To Pos.</td> </tr> </tbody> </table>	Add	Remove	Clone	CHAIN_1 Config	CHAIN_0_UN			Name: CHAIN_1	CHAIN_1_LL			Direction: Left	CHAIN_2_RR			Mirror: Left				Mirror Order: 0				Controller: 4.0000				Colour:				Rotation <input type="checkbox"/> Lock (X, Y)				Ignore Parent: <input type="checkbox"/> Rotation				Stretch Type: <input type="checkbox"/> Uniform				Curve Type: <input type="checkbox"/> Apply				Auto Scale (X): <input type="checkbox"/>				Base Bone: <input type="checkbox"/>				Add Skin: <input checked="" type="checkbox"/>				Bone Count: 3				Dynamic Config				Maintain Chain: <input type="checkbox"/>				Parent To:				Node +To Pos.
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10. With the same selected Spline controller, select 'CHAIN_2' and change the Bone Count to 3.

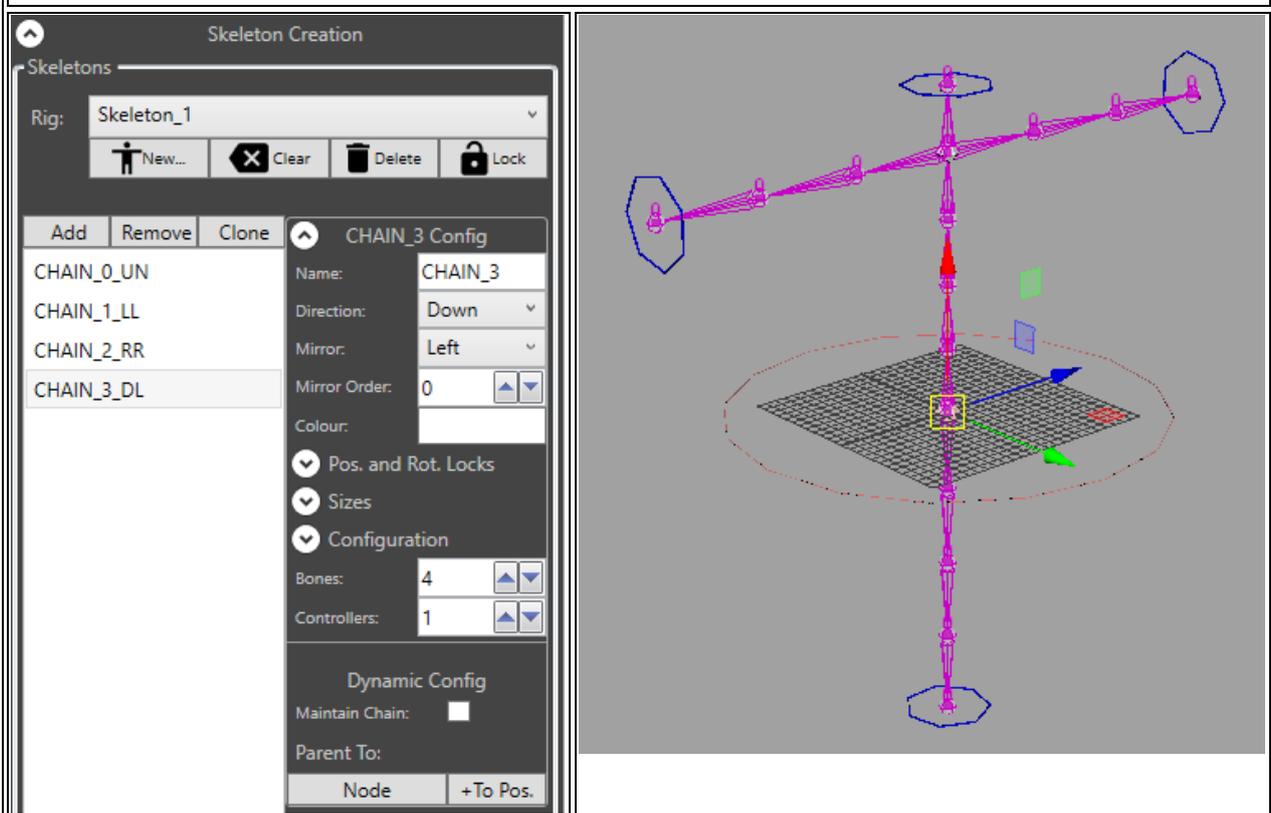


Creating Legs

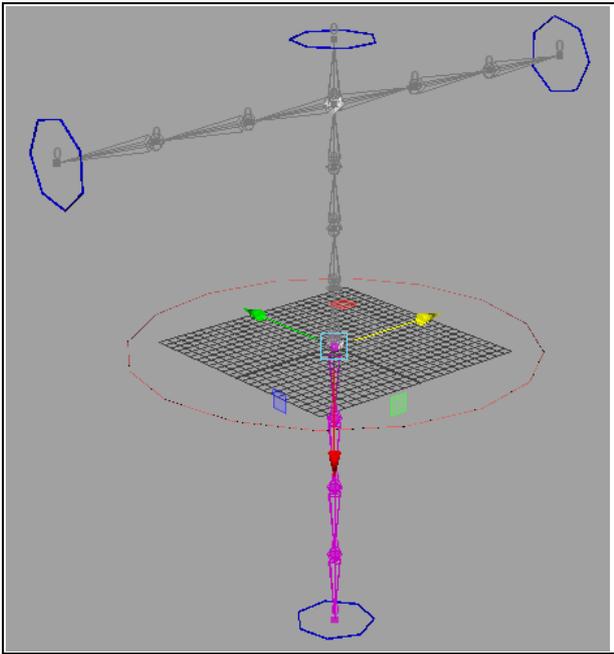
11. For setting the Pelvis controller, click on 'Root' and then select the base of the Spine in the scene. (The 'All Modes Off' command may have to be clicked first if other controls have been used beforehand.)



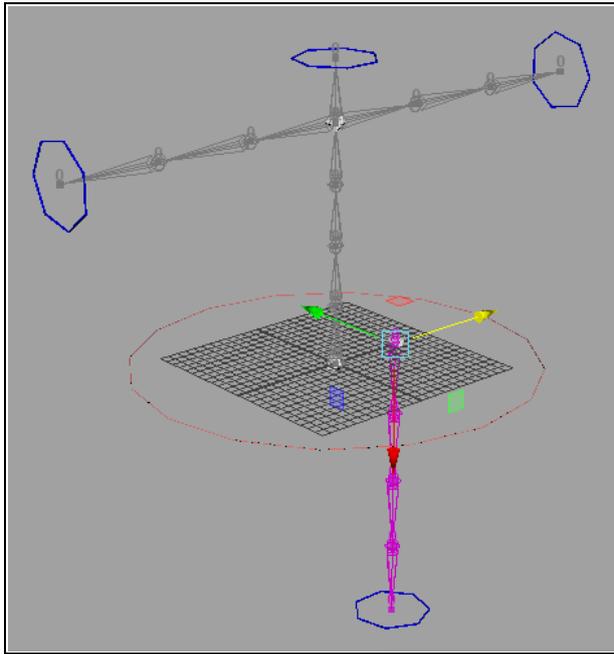
12. Create a new bone chain with a 'Down' Direction, and 'Left' Mirror setting.



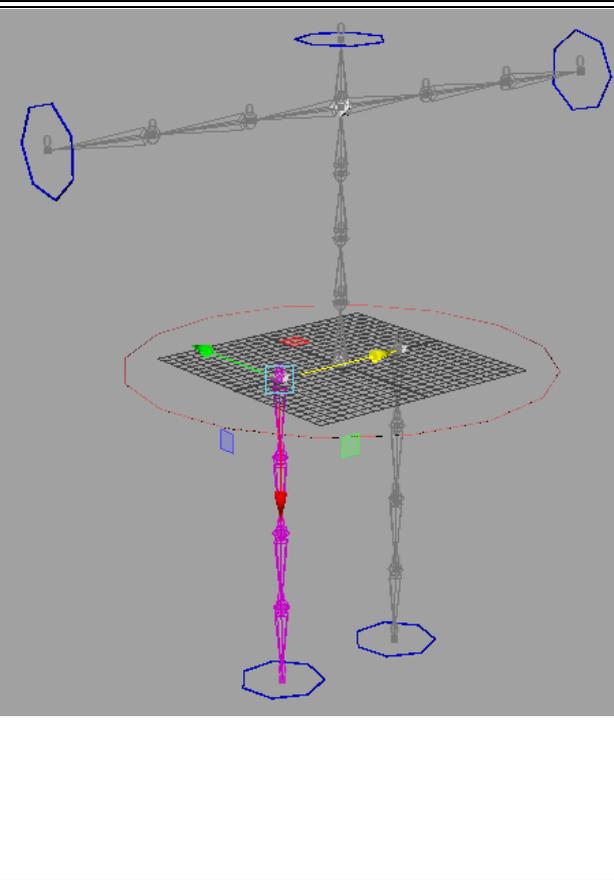
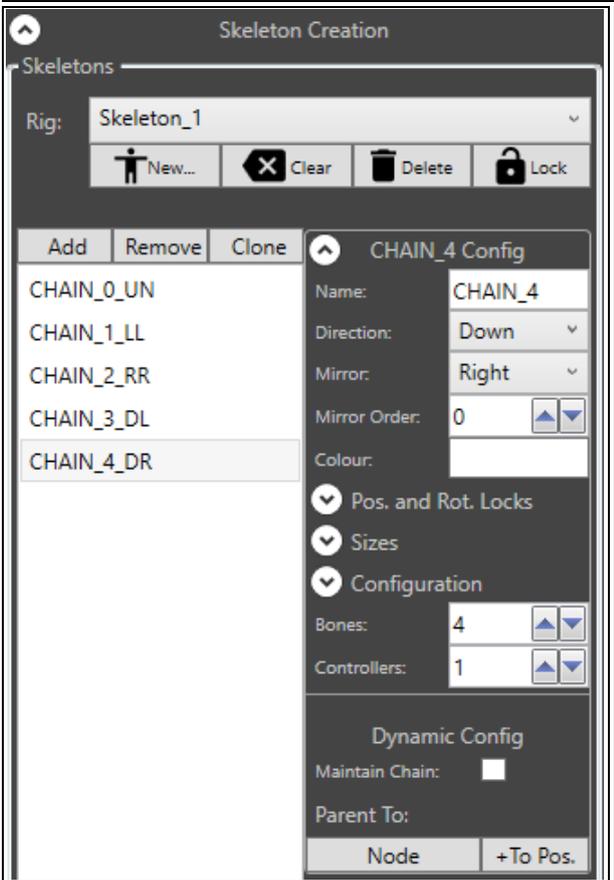
13. With the 'Root' control, select the Left Leg chain



14. Using the Translate Gizmo, move the Left Leg chain into the correct position.



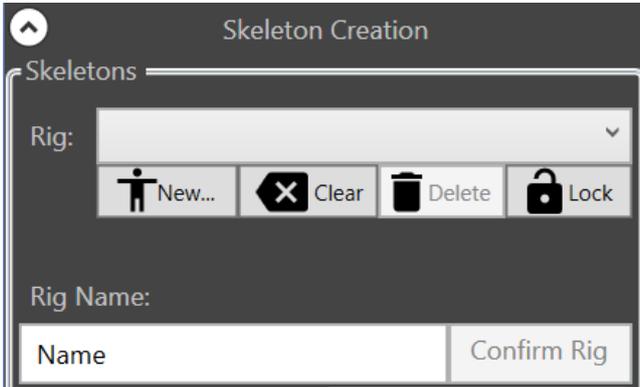
15. Re-select the Spine chain with the 'Root' control, and create the Right Leg Chain, and move it into position.



Skeleton Creation

Skeleton Creation

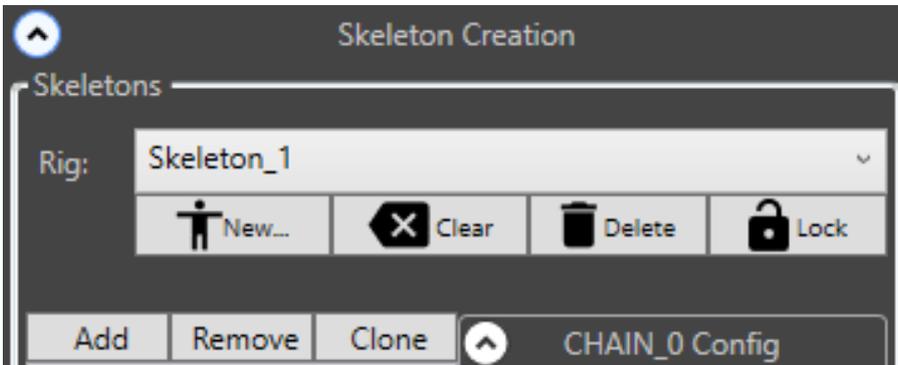
The 'Skeleton Creation' panel is for Rig Creation, Chain Creation, Chain Linking, customizing Bone Chain properties, and setting default Dynamic Rig templates for Animation.



Rig Selection	Rig Selection control for all Komotion Rigs present in the current Maya Scene. Changing the current Rig Selection in this control will switch the Komotion Skeleton Creation UI to the newly selected Komotion Rig.
New Skeleton	Start creation of a new Komotion Rig. The 'Empty' option will create an empty rig structure with no pre-configured Bone Chains. Note: Currently, a Komotion Rig Name cannot be changed following creation after 'Create Rig' is invoked.
Clear Selected Skeleton	For the current Selected Skeleton, it will set the Bone Chain Length property for all Bone Chains to a value of 0. If the Selected Skeleton has Bone Chain(s) that already exist in the current Maya Scene, they will be changed automatically. Note: This process may take some time if there's a large structure in the scene.
Delete Selected Skeleton	Delete the Selected Skeleton and all of its Bone Chains from the Maya Scene (if they exist). Note: Child Bone Chains linked to the deleted Rig will be partially deleted and result in breakage, and the Deletion process may take some time if it is a large rig.
Lock	Lock the Selected Skeleton in the UI from any further changes in the UI. When 'Unlock' is clicked, the Selected Skeleton is unlocked for changes.
Rig Name and Confirm Rig	For a new rig, a valid Rig Name must be entered, and clicking Confirm Rig will finalize and create the new Rig.

Bone Chain Creation

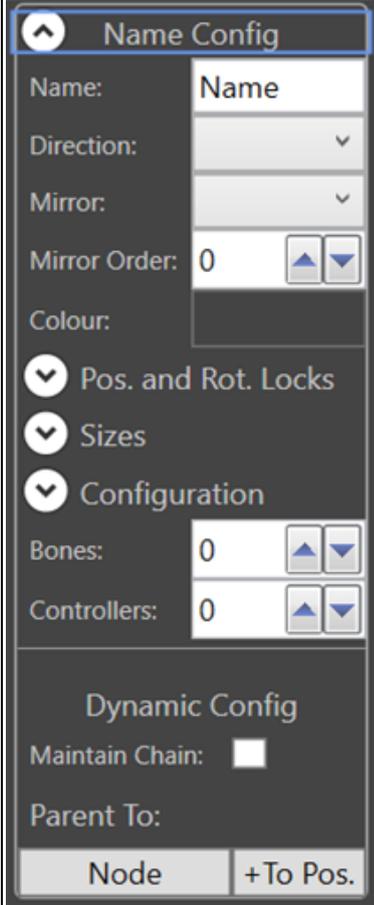
Chain Creation



Add	Creates a new Bone Chain for the Selected Skeleton. Selecting the new Bone Chain in the Bone Chain List below the 'Add' button will display the Bone Chain Configuration panel. This can be access through the panel to the right of the Bone Chain List. Rigs must be initialized before Bone Chains can be created.
Remove	Deletes the Selected Bone Chain for the Selected Skeleton. Note: If the Selected Chain for deletion has Child Chains or is Linked, they will be broken. This type of change may alter the Rig significantly or cause other Rig issues.
Clone	Creates Clones of the Selected Bone Chain for the Selected Skeleton. The configuration for the newly Cloned Bone Chains will match the original, except the Bone Chain Names will be different. The post-fix '_C' will be appended to the cloned Bone Chain Name to differentiate it from the original Selected Chain. A clone will be created for every object selected in the scene (multi-cloning).

Bone Chain Configuration

Bone Chain Configuration

Core Configuration and Creation		
	<p>Name:</p>	<p>Sets the Selected Bone Chain Name property. The Bone Chain Name can be freely changed during the Skeleton Creation process and working with the Skeleton Controls. The Name is also relied upon for Mirroring and Flipping sets of Bone Chains. The Name can freely be changed at any point through Character Rigging and Animation. Users should be aware that if object names have been manually changed in the Scene, changing this property will override those names. Changes after a Bone Chain has been created in the Maya Scene may take some time to complete.</p> <p>Only ASCII characters can be used in the Name, and if incorrect characters are added, it will immediately undo the change.</p>
	<p>Direction:</p>	<p>Configures the Selected Bone Chain Direction for initial Chain Creation. If the Direction is changed after Chain Creation, the Chain will not change Direction until a Bone Chain refresh is invoked through one of the following property changes: Bone Count, Base Bone, Stretch Type, and Ignore Parent. Changes to the property will update the Bone Chain Nodes Mirror Configuration and update the Bone Chain Nodes names with the new Direction.</p>
	<p>Colour:</p>	<p>Set the colour of the selected bone chain colours.</p>

Bone Chain Mirroring

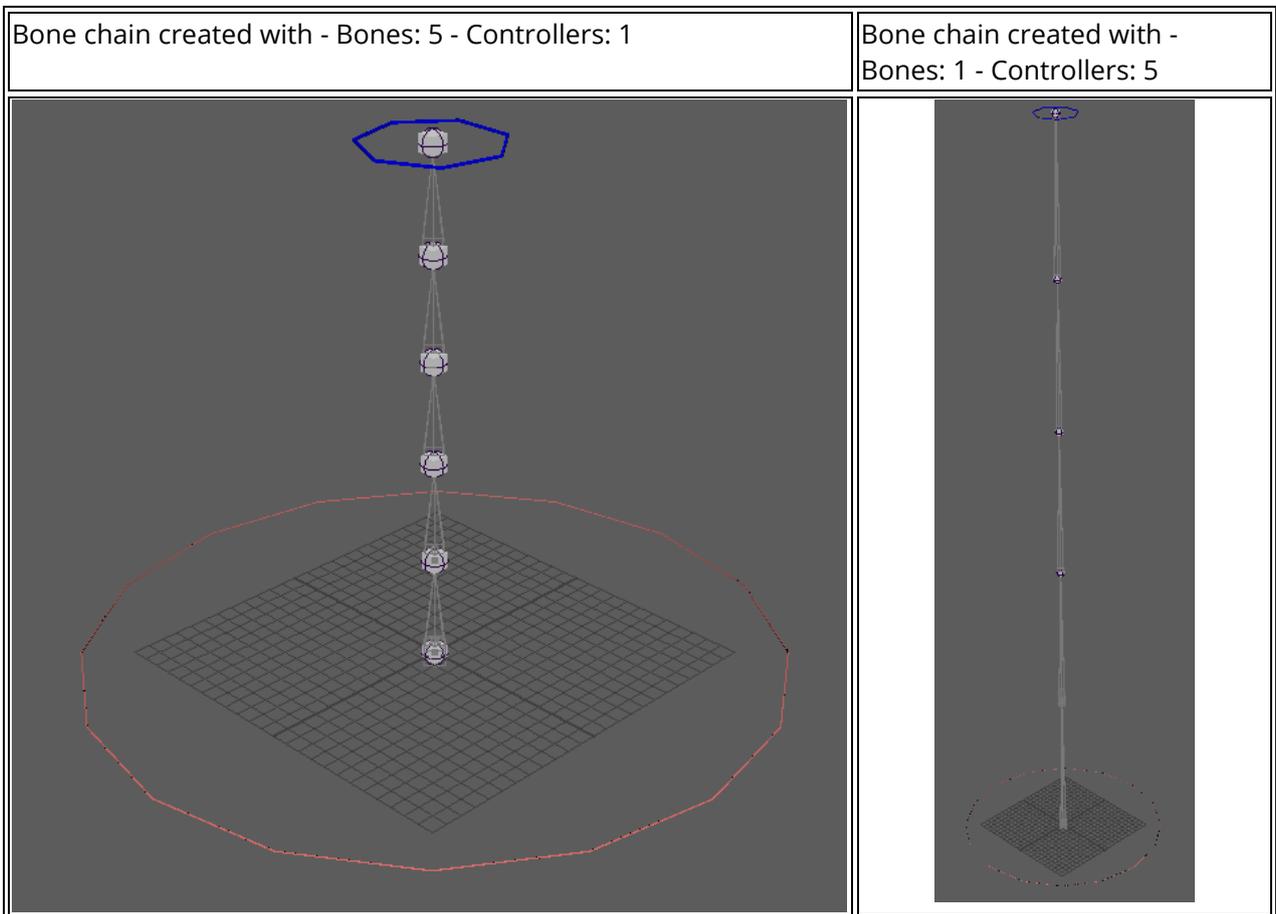
<p>Mirror:</p>	<p>Configures the Mirror direction for the Selected Bone Chain for the Mirroring and Flipping controls. Changes to the property will update the Bone Chain Nodes Mirror Configuration and update the Bone Chain Nodes names with the new Direction.</p>	<p>For mirroring Komotion chains, at least two Bone Chains in the Selected Skeleton must have:</p> <ul style="list-style-type: none"> • Identical Bone Chain names • Matching 'Mirror Order' values • Differing Mirror Directions values (e.g. Left and Right), with neither set as Neutral
<p>Mirror Order:</p>	<p>Used to configure sets of Bone Chains for use with the Mirroring and Flipping controls. Bone Chains must be setup with identical Bone Chain Names and identical Mirror and Direction properties for creating these sets.</p>	

Bone Chain Creation

The created Chain will have a key set for nearly every object to allow for instant auto-keying when necessary.

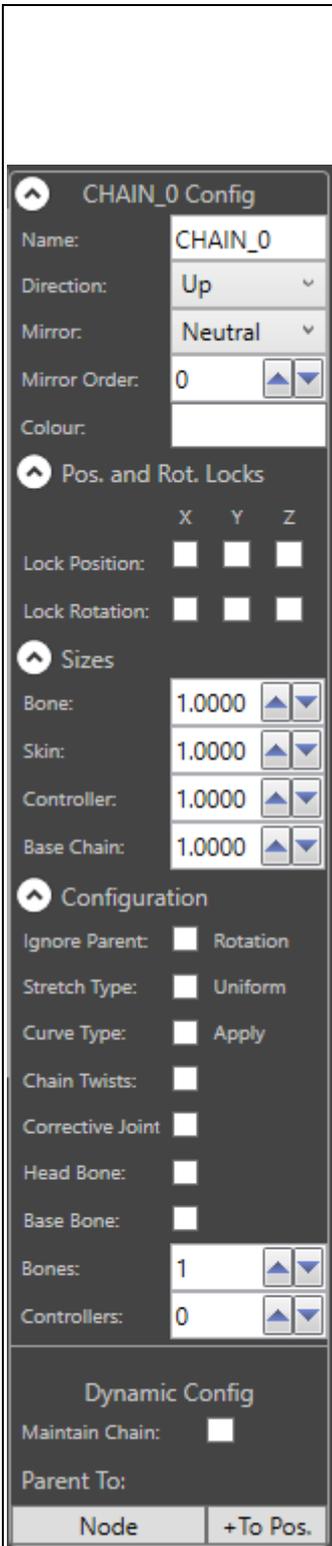
Bones:	Set the Bone Count for the Selected Bone Chain.	These values can be changed before and after Chain Creation. Changes will be visible in the Viewport if the Chain exists in the Scene.
Controllers:	When the value is set, the Selected Bone Chain is created in the Maya Scene. If the Selected Bone Chain exists in the scene and the Bone Count value changes, the Chain in the scene is immediately updated. Setting the value back to 0 will remove the chain from the Maya Scene.	

For example, setting 'Bones' to '10' and 'Controllers' to '30' will configure the resulting 'Bone Count' as '300'. **A chain multiplies together the 'Bones' and 'Controllers' values for the total bone count (10 x 30 = 300).**



Configuration

NOTE: These properties should only be changed during the Skeleton Creation/Rigging process.

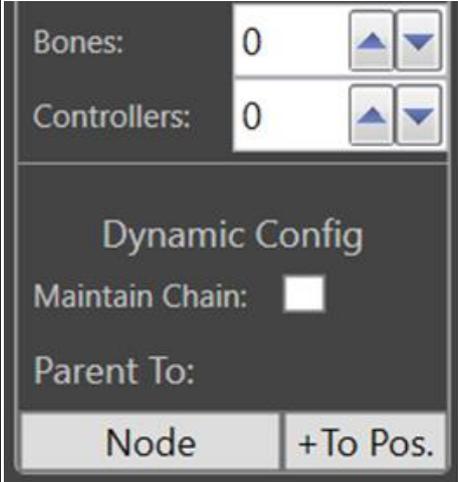


<p>Panel: Pos. and Rot. Locks</p> <p>Lock Position and Lock Rotation</p>	<p>Locks the local 'Rotation' and 'Position' attributes of the selected bone chain in the X, Y and Z axes. One key use is for configuring a Bone Chain for use as a Human Leg. This property causes Kinematic controls to have their local axis properties (attributes) changed.</p>
<p>Panel: Sizes</p>	<p>Bone - Sizing bone segments for the selected Chain. Skin - Sizing for the selected Chain skins. Controller - Sizing for the selected Chain Controllers. Base Chain - Sizing elements for the selected Chain base.</p>
<p>Ignore Parent: Rotation</p>	<p>Configures the Bone Chain to ignore parent chain rotations, with one use cases being a humanoid or creature's foot. This configures the Kinematic Matrix (Node) to have no orientation constraint to the current parent chain.</p>
<p>Stretch Type: Uniform</p>	<p>Configures the Bone Chain 'Path Objects' to have non-parametric (uniform) bone stretching. By default, it is unchecked for Parametric (non-uniform) stretch.</p> <p>When this property changes with the Bone Chain existing in the scene, the bone chain will be deleted, re-calculated and refreshed. During this process, any manual modifications or links to the chain created by the user will be removed. The path is re-calculated and refreshed, and Child Chains will be rendered useless.</p>
<p>Curve Type: Apply</p>	<p>Change the chain spline to a Bezier type. The 'curve' property Degree changes from '1' to '3'.</p> <p>When this property changes with the Bone Chain existing in the scene, the bone chain will be deleted, re-calculated and refreshed. During this process, any manual modifications or links to the chain created by the user will be removed. The path is re-calculated and refreshed, and Child Chains will be rendered useless.</p>
<p>Chain Twists</p>	<p>Set bone segments between controllers to twist more naturally. Useful for wrist deformations and more.</p>
<p>Corrective Joints</p>	<p>Smooth out deformations such as elbows and more. Often needed when corrective blend shapes are too expensive</p>

		(such as for game engines), and in general a quick way for obtaining relatively smooth joint deformations.
	Head Bone	The Head Bone references the end bone in the chain. An example use case is for a head joint.
	Base Bone	<p>Causes the chain 'IK' to start on the Second Bone Segment of the chain. By default, it starts on Bone Segment One. One use case is for a Spine which needs a stable Pelvis.</p> <p>The Bone Chain IK property (Attribute) 'Start Joint' changes from Bone Segment One to Bone Segment Two. During this process, any modifications or links to the Bone Chain created by the user will be removed. The first 'IK/FK' object will only interact with FK translation.</p>

Bone Chain Dynamic Configuration

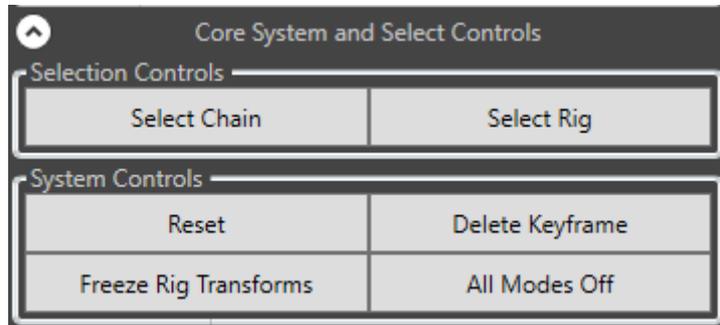
These configurations are passive, and they are only applied during the Bone Chain Creation process (when the Controllers value is changed). They are not linked to the Selected Rigs and Bone Chains, or any others. These should only be changed during the Skeleton Creation/Rigging process, and before modifying the Bone Chain in the scene with Manual Edits.

	<p>Maintain Chain:</p>	<p>This Passive Configuration option will result in Bone Chains maintaining their current offset in World Space, on Chain Creation and Chain Refresh events.</p>
	<p>Parent To: Node + To Position</p>	<p>This Passive Configuration option changes the chains position to the new parent object when 'Node' pressed.</p> <p>The 'Node' Button with '+To Pos' unchecked will parent the Selected Bone Chain to another selected chain or object within the scene.</p> <p>The 'Node' Button with '+To Pos' checked will parent and position the Bone Chain on the new parent object.</p> <p>When the chain is parented to an object, a new torus object will be created and acts as the Chain's controller. The User can edit the torus size. When the Chain is parented to a Komotion Chain, no torus will be added, and if a torus already exists, it will be deleted.</p> <p>Currently child chains orient themselves locally to parent objects during normal chain creation and parent button methods.</p>

Core System and Select Controls

Core System and Select Controls

These controls are used for resetting bone chains, and turning off Komotion Controls.



System Controls

Reset - Resets Selected Nodes to the last created Frozen Rig Template.

This command disables all other controls, and a bone chain must be selected in the Maya Scene. The '_BASE_' (Torus) will reset everything except for 'IK' handle positions within the rig when selected.

We recommend **saving your scene** beforehand as a precaution, as your rig may obtain unwanted matrix changes within the hierarchy, which will affect animations already on the time slider.

Delete Keyframe - Delete any Key found on a Selected Node, or IK Handle and its IK/FK controller system.

Deletes visible key frames within the time slider from selected nodes. If the user selects an 'IK' handle and invokes 'Delete Keyframe', '_TRANS_' and '_IK_' node key frame keys are deleted from the current frame.

For Knot and Accessory keys refer to the 'Graph Editor' within Maya to visibly see them. Accessory keys are two position/orient constraints found on '_SWIV_B_' objects.

All Modes Off - Turns off all Komotion Controls. This can be used during Rigging and Animation.

This can be used during Rigging and Animation.

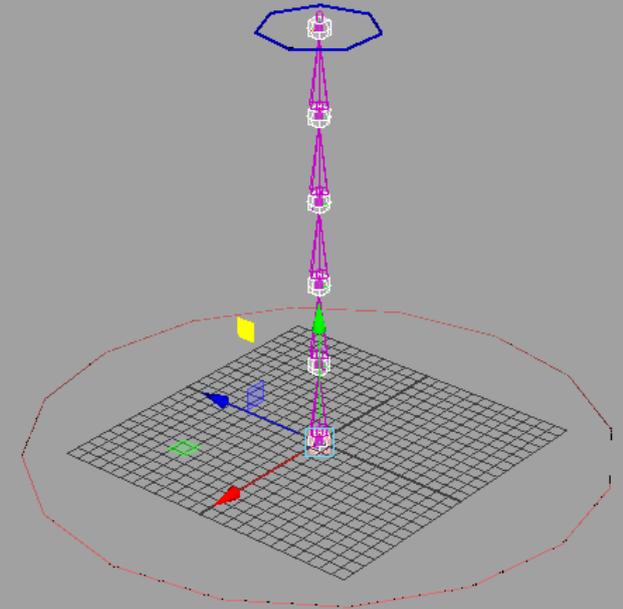
Note: This does not change any Maya tools or commands, and does not impact Skeleton Creation.

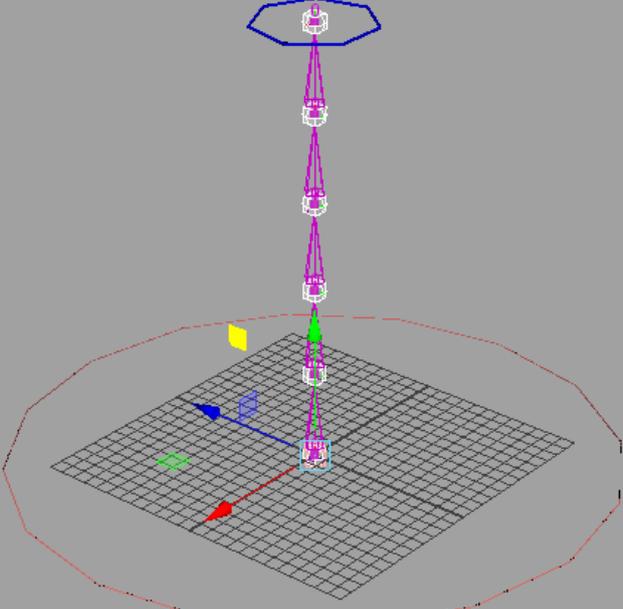
Freeze Rig Transforms - Creates a 'freeze' state for all Bone Chains in the Komotion Rig selected in the Maya Scene, and sets all IK Handles Weights to 0.

If inconsistent controller angles exist within the Kinematic controls on a parametric (Non-Uniform) chain, then the chain will get re-evaluated and adjusted currently on Frame Zero.

The end result will produce a dynamic rig template for the button 'Reset' found in the 'Bone Controls' panel. This Mimics Maya feature 'Freeze Transformations' without the side effects for the current Rig.

Selection Controls

<p>Select Chain</p>	<p>Select entire chain node hierarchies efficiently when components are selected.</p> <p>This will select specific controllers based on the current control in use. If no animation control is in use, then it will select all the controls. For example, press 'All Modes Off' after using an animation control with a controller and press this button.</p>	
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<p>Select Rig</p>	<p>Select an entire rig node hierarchy efficiently when components are selected.</p> <p>This will select specific controllers based on the current control in use. If no animation control is in use, then it will select all the controls. For example, press 'All Modes Off' after using an animation control with a controller and press this button.</p>	
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Animation and Kinematics Controls

Animation and Kinematics Controls

Rig and Animation Control commands work with the current selection in the Maya Scene of Komotion rigs and chains.



IK/FK Controls

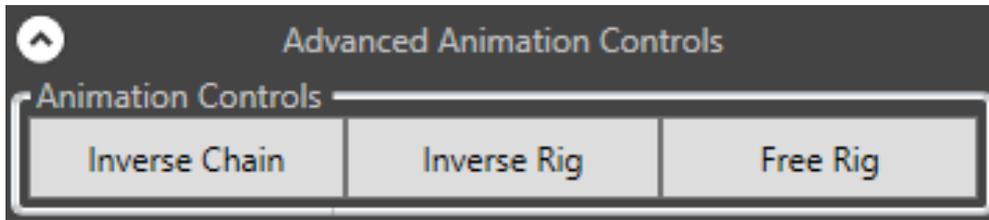
IK/FK - Switch between Forward Kinematics (FK) and Inverse Kinematics (IK) on the Selected Chain in the Scene.	
Use the Maya Move and Rotate tools to manipulate. To make an 'IK/FK' switch, at least one object from a chain must be selected to make the transition from IK to FK, and vice versa.	It uses no constraints for blending or snapping (Extra Key needed for snapping).
Lock/Unlock IK - Locks/Unlocks the Scene Selected Chain IK handle and stops IK/FK switching. Useful for controlling performance when animating large rigs.	
Select a chain in the Scene whilst in a controls system, then press 'Lock/Unlock IK'.	This causes the IK handle to stop switching on selected chain, remaining on the last state. This feature has no impact on any user customizations. 'Unlock IK' will re-activate IK/FK dynamic updating and switching, and restart the 'Live Chain' state.
Free FK - Freely move Chain Controllers.	
Used during Rigging and Animation, and should only be used on one chain at a time. When selecting '_Trans_' or '_ROOT_' node(s), the selection direction must be down the chain towards the root, otherwise, the control may not function.	Causes Selected Chain(s) to have their IK Handle(s) Blend Weight set to 0.0. This prevents the IK Handle from interfering with the bone movement. 'Free Chain' uses a technique called pinning.

Bone Transform Controls

Twist	<p>Twist controls are enabled for bone chains</p> <p>Click on these to perform sub-controller twists for any Komotion bone. This allows the user to rotate bones without affecting the chains entire hierarchy.</p> <p>This feature disables all other controls except for Accessory. It causes the property (Attribute) Visibility to turn on for twist nodes which contain '_TWIST_' in its name. Make sure bone visibility is not hidden (Utility controls) if you want to see the skeleton structure change.</p>
Thickness	<p>Thickness controls are enabled for bone chains</p> <p>This feature disables all other controls except for Accessory. When a user selects a thickness node, this will initialize a secondary selection which selects the Komotion bone 'Head' which contains '_JTHICK_' in its name. Make sure bone visibility is not hidden (Utility controls) if you want to see the skeleton structure change.</p>
Root	<p>Root selection is enabled for bone chains and enables Torus and Controllers</p> <p>This feature disables all other controls except for Accessory. It causes the property (Attribute) Visibility to turn on for the Kinematic nodes which contain '_TRANS_' in their names. Other nodes that can cause unwanted behaviour have their visibility turned off. The Root is affected by the bottom Kinematic controller rotation on Komotion chains.</p>

Advanced Animation Controls

Advanced Animation Controls



Inverse Chain - Move chains based on the Selected Chain IK Weight Value of 0.0 or 1.0.	
<p>Select or drag over a Kinematic controller. Scrubbing the Time Slider will alter tangents produced. With a '_Brute_' node object selected, IK/FK hybrid movement is applied. On completion, deselect the '_BRUTE_' object node. This control can be stopped when the node object types are modified for '_TRANS_', '_IK_', '_BRUTE_' and '_ROOT_' nodes.</p>	<p>The control applies an inverse foot mimicking technique. To affect its parent chain IK, causes the hierarchy to reverse on the Selected Chain using its IK handle as a temporary root or guide. The selected node will affect either the parent chains IK handle or root. On scrubbing completion, chain tangents are altered (places node keys).</p>
Inverse Rig - Move the entire rig in the Scene.	
<p>Select or drag over a Kinematic controller. The selected node will affect the rigs base chain root. Scrubbing the Time Slider will alter tangents produced. On completion, the '_BRUTE_' object node should be deselected. This control can be stopped when the node object types are modified for '_TRANS_', '_IK_', '_BRUTE_' and '_ROOT_' nodes.</p>	<p>Reverses the hierarchy on the selected rig, applies an inverse foot mimicking technique to an entire rig structure. With a '_Brute_' node object selected, it initiates IK/FK hybrid movement. The movement type is based on the IK Weight of the chain at the bottom of the rig hierarchy. On completion of scrubbing, chain tangents are altered (places node keys).</p>
Free Rig - Freely move Chain Controllers while pinning all other Child Chains. This process is designed for rigging, with the main uses for correcting bone and placement mistakes.	
<p>Should only be used on one chain at a time. When selecting '_Trans_' or '_ROOT_' node(s), the selection direction must be down the chain towards the root.</p>	<p>When in use the user must not change frames, The Selected Chain(s) will have their IK Handle(s) Blend Weight set to 0.0, preventing the IK Handle from interfering with bone movement. All kinematic nodes are set to not inherit transforms when this control is active.</p>

Mirror and Pose Controls

Pose Controls

Dynamic Chain Mirroring and Flipping

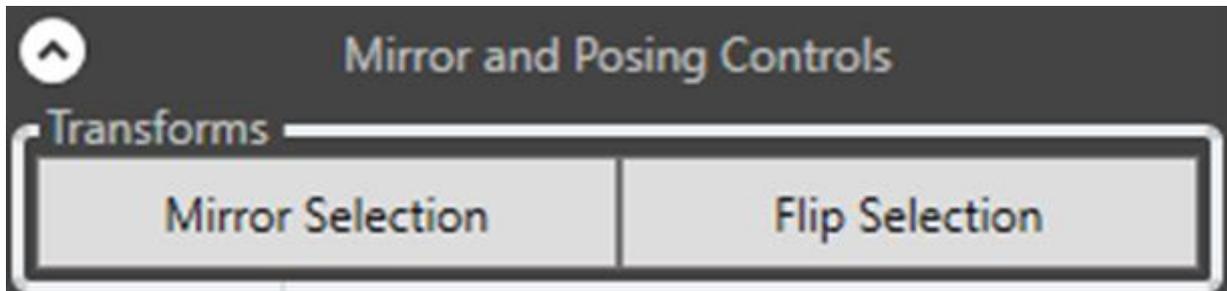
Mirror and Direction tags that are changed after a chain exists will not update the current chain. This is because chain names, Mirrors, Directions and Orders can be changed during rigging and animation to allow chains to affect other chains when needed.

For mirroring Komotion chains, at least two Bone Chains in the Selected Skeleton must have:

- Identical Bone Chain names
- Matching 'Mirror Order' values
- Differing Mirror Directions values (e.g. Left and Right), with neither set as Neutral

Using Mirror Selection and Flip Selection

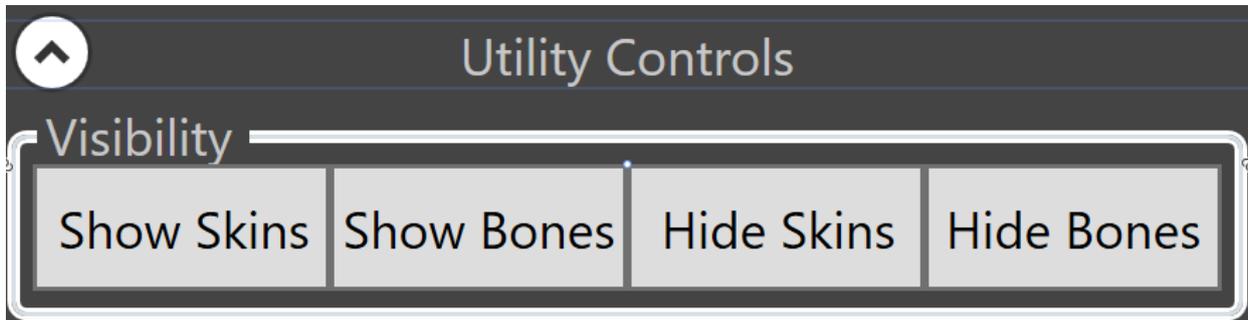
Generally, Nodes can be Mirrored or Flipped at any time during Rigging or Animation, with exception only for the 'Inverse Chain' and 'Inverse Rig' controls which do not allow this when activated. When a pose panel button is pressed by mistake while an 'Inverse' control is activated, the pose panel buttons will automatically stop the control systems prevent animation errors.



Mirror Selection	Performs a Mirror on the Maya Scene selected Bone Chain.	For both the Original and Secondary Opposite Bone Chains, the 'Name' and 'Mirror Order' must be identical for correct behaviour.
Flip Selection	Performs a Flip on the Maya Scene selected Bone Chain.	

Utility Controls

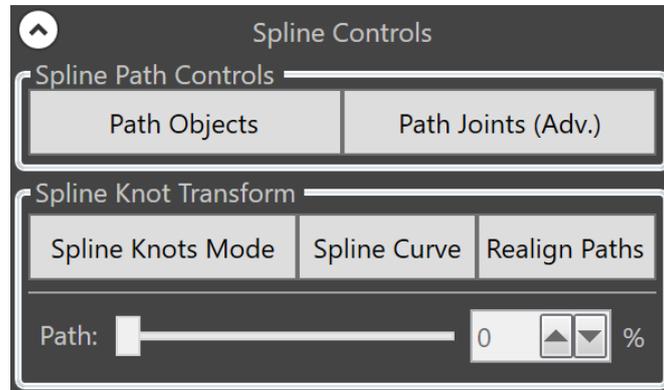
Utility Controls



Show/Hide Skins	With no chains selected in the scene: it will globally toggle the visibility of Skins With chain(s) selected in the scene: it will toggle the visibility of the Skins for selected chain(s)
Show/Hide Bones	With no chains selected in the scene: it will globally toggle the visibility of Bones With chain(s) selected in the scene: it will toggle the visibility of the Bones for selected chain(s)

Spline Controls

Spline Controls



Path Objects - Access bone path objects on the chain ribbon

With a Path Object selected on a Bone Chain, this control allows the Selected Path Object controller named '_PATH_' to be updated.

Path Joints (Adv.) - Access secondary kinematic controls on the chain ribbon

With a Bone Chain Path Joint selected, this allows the native Path Object Value to be updated. Path Joints are controls with the '_PATHX_' prefix found on ribbons for secondary Kinematic controls.

Spline Knots Mode - Access curve weights to manipulate the chain ribbon

Spline Knots are named and controlled exactly how a spline curve is controlled. The actual knots of the spline have their weights cached to these controls, so there's no need for sub-editing levels of the curve.

This disables all other controls except for the Accessory. The property (Attribute) Visibility will turn on for the Knot controllers with the prefix ('_WEIGHT_').

Spline Curve - Change the Selection to the Spline in the Bone Chain.

For the current Scene Selected Bone Chain, clicking 'Spline Curve' will change selection to the curve.

Realign Knots - Sets a currently selected Path Object back to the default path value, from the stored Frozen Rig Transform values.

If a chain spline is selected and 'Realign' is pressed, then all path objects on the spline will be set back to their default positions.

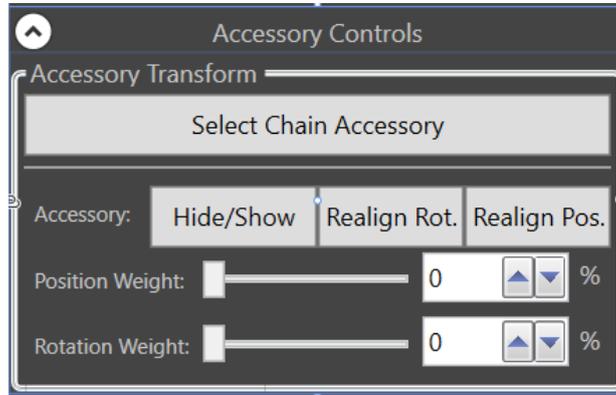
Every Path Object in a Komotion chain contains an animation path UValue, the knots will first reference their stored default UValues.

Knot Percentage - Updates positions between the Chain Root and Chain Accessory.

The percentages correspond to the opposite ends of the Spline, used for moving the bone path objects along the spline (uses highest UValue in a selection). No change to the chain hierarchy is caused when overlap occurs.

Accessory Controls

Accessory Controls



Select Chain Accessory - Show the Accessory controller (a Torus node) for the Scene Selected Bone Chain.

Use the Maya Move Tool and Rotate Tool to manipulate.

With a Scene Selected Bone Chain, this will enable the Accessory controller (a Torus node) on the chain, and change the selection to the Accessory.

Hide/Show Accessory - Toggles the visibility of the selected Accessory controller.

Used for viewing where accessories are within the Maya Scene.

Toggles the visibility of all Accessory controllers in the scene.

Realign Position/Rotation Accessory - Set the selected chain to the original position/rotation.

The value on selection change is displayed in the Position/Rotation Weight control.
 0% = Original Chain Transform
 100% = Original Accessory Transforms

Apply Position Weight Value - Updates positions of the Chain between the Chain Root and Chain Accessory.

This control is activated a valid Bone Chain Selected in the Scene. Each Accessory and Chain Root in a Komotion chain have a point constraint linked to bottom kinematic controller '_TRANS_' are found in these controller node names with the number Zero count as a Suffix. Any currently selected object part of that chain will cause the bottom Kinematic controller to change weight on the point constraint values.

Apply Rotation Weight Value - Updates rotations of the Chain between the Chain Root and Chain Accessory.

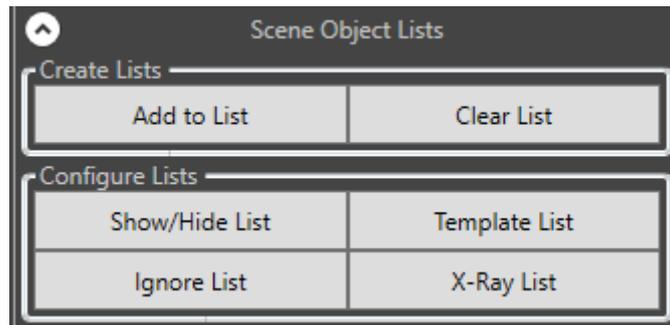
This control is activated when there is a valid Bone Chain Selected in the Scene. Each Accessory and chain matrix in a Komotion chain have an orient constraint linked to the chains bottom controller '_SWIV_B_'. Any currently selected object part of that chain will cause this controller to change weight when value changes.

Scene Object Lists

Scene Object Lists

The features are based on node connections e.g. 'Ignore List'. Bear in mind that they will not always work, as the panel features will not take into account if a layer is in a particular state e.g. Reference state.

The lists are stored within the scene by setting an attribute on each node when 'Add to List' is pressed. When opening a scene that contains a 'Scene Object list', the Komotion system will collect them when 'Run Scene Collection' is pressed. The list will continue to work until it is cleared, and clearing the list will remove the attribute that was applied when they were added to the 'Scene Object List'.



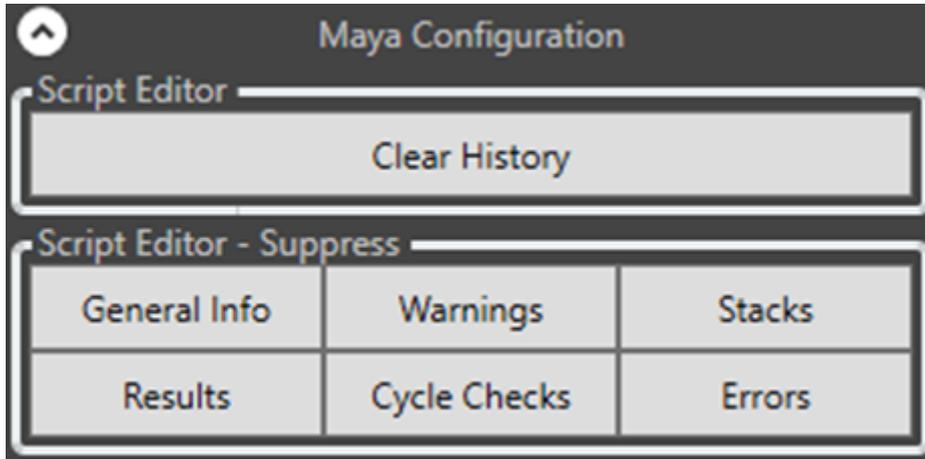
Add to List	Add Scene Selected nodes to a random Komotion Scene List system. This list can be continuously expanded during use of Komotion by pressing this button gain with newly selected nodes.
Clear List	Clears the random Komotion Scene Object List.

Show/Hide List	Toggle visibility state of the Scene Object List.
Template List	Toggle template state of the Scene Object List.
Ignore List	Toggle reference state of the Scene Object List objects. This feature will not work with objects that have skins applied to them.
X-Ray List	Toggle X-Ray state for Komotion Scene Object List objects.

Maya Configuration

Maya Configuration

This panel configures Maya outputs for optimizing use with the Komotion system. The two most used features are 'Results' and 'Cycle Checks'. If you are not doing technical work we recommend also suppressing 'Warnings'.



Clear History	Clear Maya script editor history.
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General Info	Suppress Maya script editor 'General Information' output.
Warnings	Suppress Maya script editor 'Warnings' output.
Stacks	Suppress Maya script editor 'Stacks' output.
Results	Suppress Maya script editor 'Results' output.
Cycle Checks	Suppress Maya script editor 'Cycle Checks' output.
Errors	Suppress Maya script editor 'Errors' output.

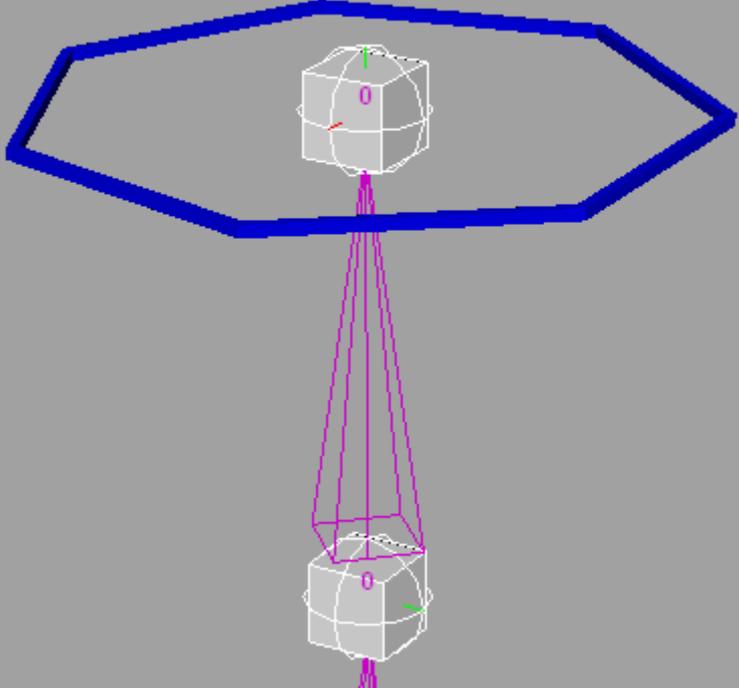
IK Weight

IK Weights and Handles

Built into the IK Handle are visual indicators and cues, for working with IK Weights across keyframes.

IK Weights

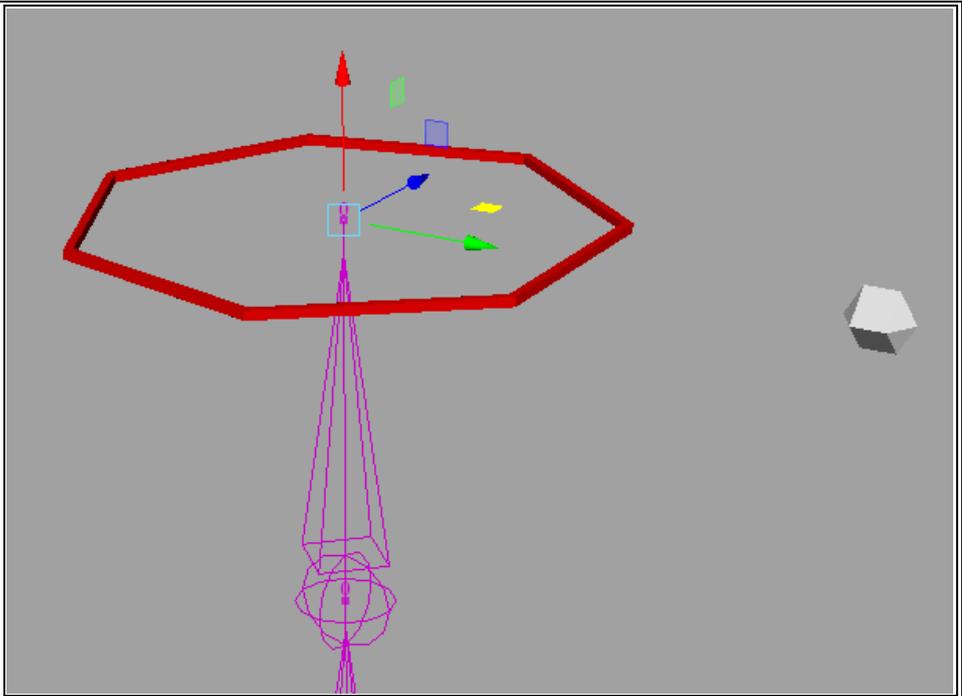
When a user has set keys for an IK handle on a chain, and there are differing weights on the individual keyframes, the user will see visual cues built into the IK Handle torus shape used for selecting the Handle. This is primarily a visual indicator for identifying when the key is weight '0.0', '1.0' or between '0.001' and '0.999'.

IK Handle Weight:	Visual Indicator on Handle:
<p>Weight = 0.0</p> <p>FK Movement</p>	

**Weight =
1.0**

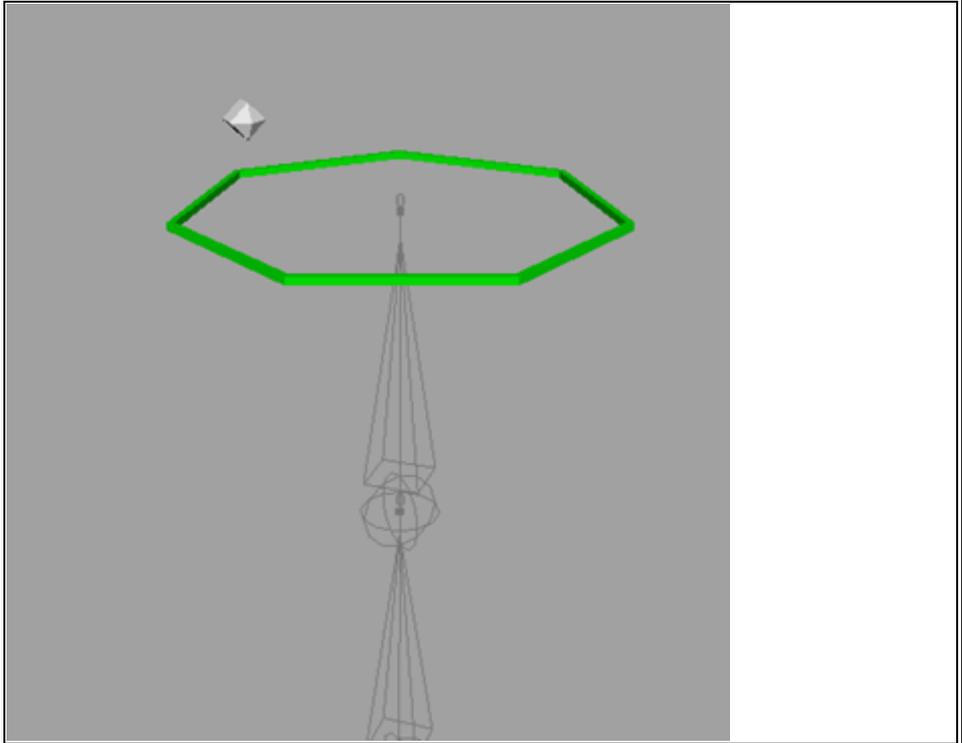
**IK Handle
Movement**

FK type movement is
not recommended.



**Weight
between:
0.001 and
0.999**

Snap or blend is
required.



Mirror and Flip Combinations

Mirror and Flip Combination Table

The below Mirror and Direction combination table shows which combination will cause which chains to interact with each other. A chains bone count does not matter, and does not get considered during a mirror or flip process.

For correct mirroring and flipping of chains, the following must be followed:

- The Name on both the original chain and secondary opposite chain must be identical
- The Mirror Order on both the original chain and secondary opposite chain must be identical

Mirror/Flip Combination Table

Original Chain		Opposite Chain	
Mirror	Direction	Mirror	Direction

Neutral	Right	N/A	N/A
Neutral	Left	N/A	N/A
Neutral	Up	N/A	N/A
Neutral	Down	N/A	N/A
Neutral	Front	N/A	N/A
Neutral	Back	N/A	N/A

Right	Right	Left	Left
Right	Left	Left	Right
Right	Up	Right	Up
Right	Down	Right	Down
Right	Front	Right	Front
Right	Back	Right	Back

Left	Right	Right	Left
Left	Left	Right	Right
Left	Down	Left	Up
Left	Front	Left	Down
Left	Back	Left	Front
Left	Up	Left	Back

Up	Right	Up	Left
Up	Left	Up	Right
Up	Up	Up	Up
Up	Down	Up	Down
Up	Front	Down	Front

Up	Back	Down	Back
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Down	Right	Up	Left
Down	Left	Up	Right
Down	Up	Down	Up
Down	Down	Down	Down
Down	Front	Up	Front
Down	Back	Up	Back
Front	Right	Front	Left
Front	Left	Front	Right
Front	Up	Front	Up
Front	Down	Front	Down
Front	Front	Back	Front
Front	Back	Back	Back

Back	Right	Back	Left
Back	Left	Back	Right
Back	Up	Back	Up
Back	Down	Back	Down
Back	Front	Front	Front

General Usage

General Usage

Maya - Set/Preferred and Assume Angles

The user should not use Set Preferred Angles, or Assume Preferred Angles with Komotion Rigs. For Rig Interoperability and Komotion Rigs, Set and Preferred Angles, and Assume Angles, should be used before the Komotion Rig inter-op is performed. If either of these rules are not followed, Komotion Rigs may become unstable or break.

Komotion - Controls

Undo (Ctrl+Z) for Controls

Undo functionality is not fully supported for some controls. Currently, undo functionality is implemented into the 'IK/FK', 'Free FK', 'Twist', and 'Thickness' controls. Currently undo can only be achieved while controls are selected, once control is de-selected the user will no longer be able to undo. However, for 'Free FK' the opposite applies to a degree. If one controller is selected during 'Free FK' then the user will have to deselect and then undo, however if a user has more than one controller selected then the user can just undo.

IK/FK Evaluation

When Scrubbing the time slider backwards, an IK jumping glitch can occur. This should be ignored, it does not have an impact on animation.

Komotion - Rigs and Bone Chains

Large Bone Chains and Selection

Users are advised that bone chains with a long length (>50) and/or a high number of changes, will be very demanding on performance, particularly when working with Kinematics and Animation controls.

Our advice: Use the Show/Hide Bones and Skins found in the [Utility Controls](#) panel, this will dramatically improve viewport refresh performance.

Parenting

- Komotion Chains currently orientate locally to its parent during normal chain creation linking and using parent button methods.
- Always use the 'Dynamic Config' group in 'Skeleton Creation' for correct parenting of Komotion

Chains.

- In terms of their node hierarchy, Komotion Rigs are very unique. When building a Komotion structure, we recommend that there's only one rig base per rig.
- When parenting a chain to a custom structure or other auto-rig structure, the user must parent the chain to an actual bone structure. Komotion chains always assume they are being parented to the clean exportable structure.
- When a new chain is parented, a new torus will appear parented to the selected object in the structure. This is a controller that the user can re-size (use default shape attributes) and connect in whatever manner they may require to the control system of another custom structure.

Child Parenting with Child Chain Accessories and the IK PAR Node

The 'Parent To' options currently allows for one chain to be evaluated and re-parented to another object. Child chains of selected chain will not be evaluated. This will be updated in a future release to allow for child chain evaluation. The user is recommended to not move big chain structures due to this current limitation.

Multiple Scenes

Maya scenes with duplicated Komotion Rigs. Currently, identical rigs from different scenes (referenced or not referenced) will clash. Future updates for new and existing features may mitigate or resolve this.

Rigging and Animation - FAQ

Frequently Asked Questions

Question: Can I Snap the IK and FK?

Answer: Yes. The user will need to place an extra key to create a snap transition to prevent blending.

Question: What is 6-DOF IK?

Answer: The user can non-uniformly change any transform of the chain when it is not in IK. The IK will update its plane angle based on the new chain transforms on the next switch from FK to IK. Good use cases for this are tentacles, and limb separation.

There are currently two tangent curve limitations:

- Changing an entire chain's rotation over 180 degrees between two keys. The algorithm used for 6DOF IK will decide how the chain will rotate/jitter to its newly updated plane transform.
- Drastic non-linear diagonal changes to a chain segment that is over 90 degrees using two axis during a time line between two keys. The algorithm used for 6DOF IK will decide how the chain will rotate/jitter to its newly updated plane transform.

Question: Do all animations created with Komotion chains carry over to Game Engines?

Answer: Yes

Question: Can I create a foot or a palm with a Komotion Chain?

Answer: Currently No. A chain can be setup to create a moderately good foot/palm. For animation, the 'IK/FK', 'Inverse chain' and 'Inverse Rig' controls can be used to mimic foot and palm movement to a certain degree. Look at the 'Mimicking Foot and Palm animation' video to get a complete demonstration of this.

Nodes

Komotion Nodes

Node Deletion

If the user modifies or deletes these nodes, nothing catastrophic will happen to the software. It can handle cases where nodes are deleted, and preserve manual changes done by the user. However please read all of the node details and have a solid understanding before undertaking any other work for custom exporters or other tools. If the user saves their scene after deleting or modifying the node, this act can cause the rig to lose functionality and collection errors when re-loading the scene.

Reference Table Key

Name:	The Node Reference name present in the Maya Scene Node name
Use:	How the Node(s) are used for Komotion Rig Creation, Controls or Export
Object Type:	Maya Scene Object used for visualization and interaction
Manipulation Type(s):	Maya Gizmo Rotate, Move and Scale Tools

Node Reference

Name	Use	Object Type	Manipulation Type(s)
('_BASE_')	Chain Bone	Torus	Move, Rotate
The IK parents with IK handles parented to them are typically constrained to this object. The Base can be used to move a rig around in the scene if needed. However, the base of the rig bone structure attached to this is not located at the object pivot point.			

Name	Use	Object Type	Manipulation Type(s)
('_BASE_SCALE_')	Rig Scale	Locator, Torus	Move, Rotate
Usually the bottom of the rigs animation system. This node is part of a future feature to allow scaling all of a rig at once without changing the systems main properties (Attributes). Currently this node should not be modified unless it is a torus object on an inconsistent object (Random object).			

Name	Use	Object Type	Manipulation Type(s)
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('_ROOT_')	Chain Root Chain Accessory	Sphere	Move
<p>Located at the bottom of every chain. This node allows positioning of an entire chain anywhere in the viewport, and the chain root is affected by the bottom kinematic node when it is rotated. This node is used to parent chain rig systems together allowing users to create custom hierarchies, and for Accessory features 'Position Weight'.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_ACCESS_')	Chain Accessory	Sphere	Move, Rotate
<p>Usually parented to the Rig Base node. It can be modified and re-parented to other objects if required by the user. The node allows users to position there chain using animatable point constraints. For best chain results tick the 'Ignore Parent Chain' option in the skeleton creation panel.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_SOCK_')	Code engine node	Joint	None
<p>Socket nodes are the primary bone Structure which are not affected by the secondary scale and twist systems, this means their matrix is unaffected by the system. This is very useful for setting up mechanics, weapon swaps, scripts and more within game engines. For VFX chains, the user may require modifications to perform exceedingly complicated animation techniques and procedures which generally require clean matrices to work with. This node can be used for your main bone structure after editing your chain, however the user could lose 'Bone Thickness' functionality.</p> <p>Current flaw for nodes in game engines: Users will have to manually set up constraints for systems such as PHAT in 'UE4' for organic ragdoll physiques, however it works very well with characters, objects or other meshes that fall apart when the user does not modify bone chain constraints in said systems for ragdoll physiques.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_BTHICK_')	Chain Bone Thickness	Locator	Local (Object) Scaling
<p>Used for non-uniform scaling in the 'Y' and 'Z' axis only. The user can attach (Parent) new nodes to the node to inherit scaling and twist on new inconsistent (Random) objects. These nodes become part of the bone structure. During 'Twist' and 'Thickness' Control manipulation these nodes are affected. Locators are used to minimize memory on Komotion bone structures in game engines.</p> <p>Game engine: 'Chain Bone Thickness nodes' are children of 'Code engine nodes'. For ragdoll and other effects, users will need to manually configure constraints within game engines for '_BTHICK_' and '_SOCK_' nodes.</p>			

Name	Use	Object Type	Manipulation Type(s)
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('_BONE_')	Chain Bone	Joint	None
<p>Used for skinning and exporting only. The user can attach (Parent) new insistent nodes (Random objects) to the Bone nodes to inherit scaling and twist through using the 'Twist' and Thickness' controls. These nodes become part of the bone structure. These nodes are hidden when particular controls are used with selections to help maintain viewport performance.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_BSPROX_')	Chain Bone End	Joint	None
<p>This node is purely for visuals when animating, to reference bone orientations and bone scaling with the bone node '_BSPROX_'. These nodes have no side effects for the Komotion system when deleted. These nodes are always hidden to maintain viewport performance.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_JTHICK_')	Chain Joint Thickness	Locator	None
<p>Used for non-uniform Scaling in the 'Y' and 'Z' axis only. The user can attach (Parent) new nodes to the node to inherit scaling and 50% of twist on new inconsistent (Random) objects. These nodes become part of the bone structure. During 'Twist' and 'Thickness' Control manipulation these nodes are affected, however these nodes are always hidden to maintain viewport performance. Locators are used to minimise memory increase on Komotion bone structures in game engines.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_JOINT_')	Chain Joint	Joint	None
<p>Used for skinning and exporting only. The user can attach (Parent) new insistent nodes (Random objects) to the Bone nodes to inherit scaling, and 50% of twists through using the 'Twist' and Thickness' controls. These nodes become part of the bone structure. These nodes are always hidden for to maintain viewport performance.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_TRANS_')	Chain Transformer	Sphere*	Move, Rotate
<p>Used for transforming the main bone structure in world space and Kinematics have been applied to these nodes for optional use. These are used in a number of controls allowing hierarchical stretching, non-hierarchy stretching, reversed chain and rig pivoting. The bottom Nodes movement is locked due to the 'Accessory' controls. A user should move the 'Chain Root' when the action is required. The functionality of these nodes will continue to expand through future updates. *The Top node is a Torus. All 'Chain Transform' nodes are object instances using a default green colour.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_TWIST_')	Chain Twist	Flat Square	Rotate
<p>Used for producing non-hierarchical twists on a chain using its Local (Object) X-axis. These nodes affects the Code engine node. Twist nodes have many applications, such as wheels, orbits, drills, smoothing organic deformations, the list of uses is numerous. A 'Code engine node' will be found constrained to each Path Object node.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_ORIENT_')	Chain Orient	Joint	None
<p>Used for twist constraint purposes. It is recommended that the user ignore these nodes, modifying these nodes will break the system. These are usually templated or hidden when animation system is active. The node is part of a future update called 'Static Bones'.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_STRE_')	Chain Stretch Lock	Joint	None
<p>These nodes are reserved for a future update called 'Static Bones'. This update will allow for FK movement without bones stretching (temporary static length'), It will also maintain the bones correct hierarchical orientation. This means in the future users will not have to necessarily rotate bones to achieve correct orientation for FK bones. This will introduce a fast and intuitive posing feature. This node will not affect other stretch functionality for controls in use by the user.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_CBK_')	Chain Bone IK	IK Handle	None
<p>These nodes are reserved for a future feature called 'Static Bones'. This update will allow for FK movement without bones stretching (temporary static length'), It will also maintain the bones correct hierarchical orientation. This means in the future, users will not have to necessarily rotate bones to achieve correct orientation for FK bone movement. This will introduce a fast and intuitive posing feature. This node will not affect other stretch functionality for controls in use by the user.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_MATRIX_')	Chain Matrix	Locator	None
<p>Used for world and local Matrix posing. This is currently used by the 'Local Mirror' and 'Local Flip' control buttons, these produce results using selected nodes. The functionality of these nodes will continue grow with future features.</p>			

Name	Use	Object Type	Manipulation Type(s)
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('_MATRIE_')	Chain Accessory	Locator	None
These nodes are used for chain 'Rotation weight'.			

Name	Use	Object Type	Manipulation Type(s)
('_IK_') ('_IK_END_') ('_IK_TUNER_') ('_RESETK_')	Chain IK Handle Sp. Chain Effector Sp. IK Aim (Pole) Sp. IK Aim (Pos.)	IK Handle Effector Dynamic Pole Holds Pole Pos.	Move, Rotate N/A Move N/A
<p>The '_IK_' node is unaffected by custom objects added by the user to Komotion chains. These nodes are used for Inverse Kinematic movement and chain swivel, and IK/FK switching.</p> <p>The '_IK_END_' node is a hidden node that uses Komotion to affect the '_IK_' algorithm.</p> <p>The '_IK_TUNER_' node is used for fine tuning '_IK_' node twists during IK animation.</p> <p>The '_RESETK_' node is used for positioning the '_IK_TUNER_' node through the '_IK_END_' node.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_PATH_')	Chain Path Object	Cube	UValue (Path Animation Constraint)
Used for spline animation, and these nodes can be freely moved up and down the Spline (Chain Curve). They are affected by the chain configuration 'Stretch Type' (Uniform) on chain creation, configuring the nodes to use either parametric or non-parametric values. These nodes are commonly used for squash, stretch and growing effects along with many other techniques required by curve-based rigs.			

Name	Use	Object Type	Manipulation Type(s)
('_PATHX_')	Chain Path Kinematic	Joint	UValue (Path Animation Constraint) Path Kinematics
Used for singular bone animation. The user can move bones freely, and these are affected by the chain configuration 'Stretch Type' (Uniform) on chain creation. The nodes are an advanced option used for fine tuning secondary animations, stretching and growing effects along with many other techniques required by curve-based rigs.			

Name	Use	Object Type	Manipulation Type(s)
('_SPLINE_')	Chain Spline	Curve	Modifiers and Dynamics
Used for spline animation. The user can move these freely up and down the Spline (Chain Curve). These are affected by the chain feature 'Stretch Type' (Uniform) on chain creation. The features			

cause the nodes to use either Parametric or non-parametric values. The nodes are commonly used for squash, stretch and growing effects along with many other techniques required by curve-based rigs. A 'Code engine node' will be found constrained to each Knot node.

Name	Use	Object Type	Manipulation Type(s)
('_SKIN_')	Chain Bone Skin	Cylinder	Editable Vertices

The key use of these nodes are for Animation drafting and visual feedback for thickness and twist nodes. However, these nodes can be used with 'Skin Wrap' and 'Skin Transfer' operations. The object is a cylinder containing a basic skin cluster, deleting it will not cause harm to the controls system, however deletion is not recommended due to their usefulness.

Name	Use	Object Type	Manipulation Type(s)
('_RESETR_')	Chain Reset Rig	Cylinder	None

Used for world and local Matrix posing. This is currently used by the 'Local Mirror' and 'Local Flip' control buttons and 'Reset', these produce results using selected nodes. The functionality of these nodes will continue grow with future features.

Name	Use	Object Type	Manipulation Type(s)
('_RESETZ_')	Chain Reset Zero	Locator	None

Used for world and local Matrix posing. This is currently used by the 'Local Mirror' and 'Local Flip' control buttons and 'Reset', these produce results using selected nodes. The functionality of these nodes will continue grow with future features.

Name	Use	Object Type	Manipulation Type(s)
('_RESETO_')	Chain Reset Orient	Locator	None

Used for world and local Matrix posing. This is currently used by the 'Local Mirror' and 'Local Flip' control buttons and 'Reset', these produce results using selected nodes. The functionality of these nodes will continue grow with future features.

Name	Use	Object Type	Manipulation Type(s)
('_RESETT_')	Chain Reset Thickness	Locator	None

Used for world and local Matrix posing. This is currently used by the 'Local Mirror' and 'Local Flip' control buttons and 'Reset', these produce results using selected nodes. The functionality of these nodes will continue grow with future features.

Name	Use	Object Type	Manipulation Type(s)
('_SHAPE_')	Chain Shapes	Torus, Sphere	Primary shape properties (Attributes)
<p>Used for changing the controller sizes. Transformation nodes use these objects for their instanced object shapes. It is best for the user to interact with these shapes via the Komotion UI bone chain 'Controller' sizing controls. These shapes will affect their respective 'IK/FK' chains controller size and others.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_BRUTE_')	Chain Brute	Torus, Sphere	Move, Rotate
<p>Used and manipulated by the user when certain animation controls are active, such as 'Inverse Chain'.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_IK_REFERENCE_')	Chain Brute	Torus	None
<p>Used for IK weight visual feedback on the chain with the 'IK/FK' controller. The colour on nodes update when the time slider, selection or IK weight changes. Refer to the IK Weight Table for more details.</p>			

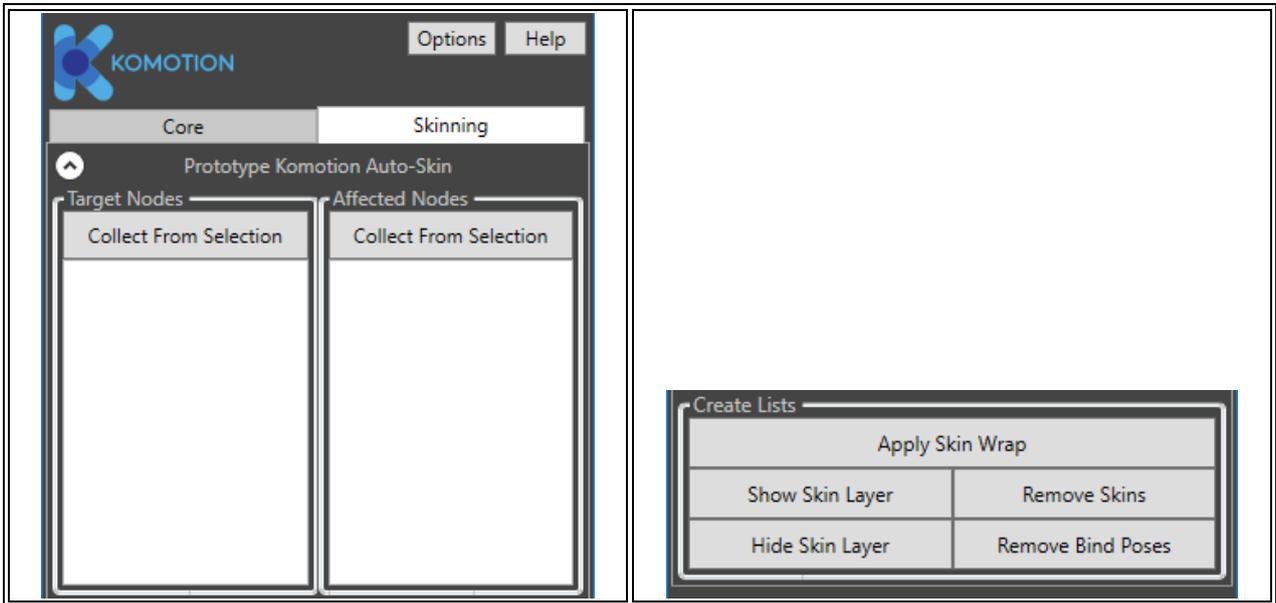
Name	Use	Object Type	Manipulation Type(s)
('_M_SWIV_B_')	Chain Swivel	Locator	None
<p>This is required by features and controls in the Accessory panel.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_IK_PAR_')	Chain Brute	Locator	None
<p>For moving IK's around with the rig base when rig Transformations need to be altered.</p>			

Name	Use	Object Type	Manipulation Type(s)
('_WEIGHT_')	Chain Ribbon	Joint	Curve Knots
<p>This is for ribbon manipulations, bending/stretching bone chain segments and lifting the entire chain away from the control system (however it will not negate the system affecting the bone chains). These nodes are an advanced option used for fine tuning secondary animations, stretching and growing effects along with many other techniques required by curve-based rigs.</p>			

Skinning Controls

Skinning Controls



Target Nodes - Collect From Selection - Collect reference objects with 'Skin Clusters' applied to them.

Select nodes in the Scene, and click the button to add the nodes to the list.

This selection is a reference list for the 'Affected' list collected before applying a 'Skin Wrap'.

Affected Nodes - Collect From Selection - Collect objects that will skin wrap using reference objects.

Select nodes in the Scene, and click the button to add the nodes to the list.

The Affected list will obtain skins from the Target list when 'Skin Wrap' is pressed.

Apply Skin Wrap - Creates new Skin Clusters found based on the 'Targets' list to the 'Affected' list.

Click to run the 'Apply Skin Wrap' command.

Note: The Skin Wrap is computationally very expensive. We recommend saving your Maya scene before applying this operation.

Remove Skins - Checks every selected object for skins and deletes the skin if they exist.

Remove Bind Poses - Removes all original Bind Poses (Frame Zero for Skin) from any selected bone structure, except for a Komotion Structure.

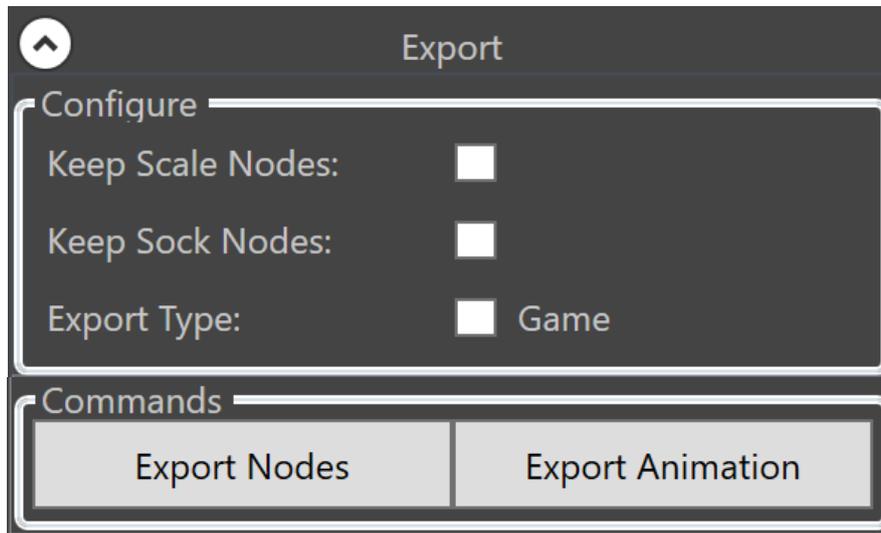
Export Commands and Options

Export Commands and Options

The Export panel can be used with Komotion structures and a user's own structures.

When exporting a Komotion structure, at least one component from the animation structure/structures needs to be selected for the Export commands to run. When exporting a random structure such as an Advanced Skeleton/HumanIK structure, ensure the bone structure is selected and not its control system.

This manual selection process allows users to specify what models they want included for export. This is useful when exporting animated accessories for games animation purposes.



Undo After Export - Creates an 'undo chunk' after Export is completed.

Export configuration option for creating an 'undo chunk' as part of the 'Export Nodes'/'Export Animation' commands. After the export is complete, the associated 'Finalise Nodes/Animation Export' button must be clicked to undo scene changes that took place during export.

Intended for use for small structures, and small animation timeline ranges.

Save Before Export - Prompts user to save their scene before Export is started.

Export configuration option for stripping the control system as part of the 'Export Nodes'/'Export Animation' commands. When checked, it will show a prompt for saving a scene before the Export commands are started. After the export is complete, the prior Maya scene must be reloaded.

Intended for use for exporting big structures and/or long animation timeline ranges.

Export Type: Game - Exports structures optimized for use in game engines.

This export configuration option will strip off all control system connections from a selected structure. Exporting destroys any control system on an exportable structure.

Export Nodes - Export structure pose on current frame.

<p>Exports a structure without any animation, using the currently selected frame. For basic use, Frame Zero should be selected on the animation timeline. The 'one rig for all' solution in a project is another way that this export can be used. This method is great for obtaining different rigs using the same animations productively.</p>	<p>This export command is used to export T-Poses from frames. User can have models selected for the process, and these will be taken into account for the export.</p>
<p>Export Animation - Export structure animation within timeline range.</p>	
<p>Exports animation on structures cleanly. It bakes the selected structure using the currently available timeline range, meaning for export, options do not have to be manually set in the Maya export window.</p>	<p>Note: Currently, game engine ragdoll physiques are not easily compatible with Komotion structure exports.</p>

Workstation Licences and Activation

Workstation Licenses and Activation

Deactivation

For deactivating Komotion Licenses on workstations, users' can either:

- Contact Komotion Support, or;
- Deactivate through the [Komotion for Maya plug-in uninstallation](#) process

Automatic Online Checks

Once a valid Workstation License is activated for Komotion, the license system will perform an Online check every 28 days to verify that the present license is valid and genuine. This is done automatically in the background, and no action is required from the user. If the license system is unable to perform the Online check (for example, if the user's workstation is unable to connect to the Internet), it will enter a Grace Period of 7 days, where the User can continue using the software as normal, and the Online check will still be performed if is able to.

If the Grace Period passes, there will be a dialog prompt informing the user that an Online check must be performed if they are to continue using the Komotion software. If the check is successful at this point, the Komotion software will load as normal, and the next Online check will be performed in 28 days. If the check is unsuccessful, the Komotion software will not fully load for the User, and the Komotion software license will still be present on the workstation with no deactivation or change to the expiration date.

Expired, Deactivated and Revoked Workstation Licenses

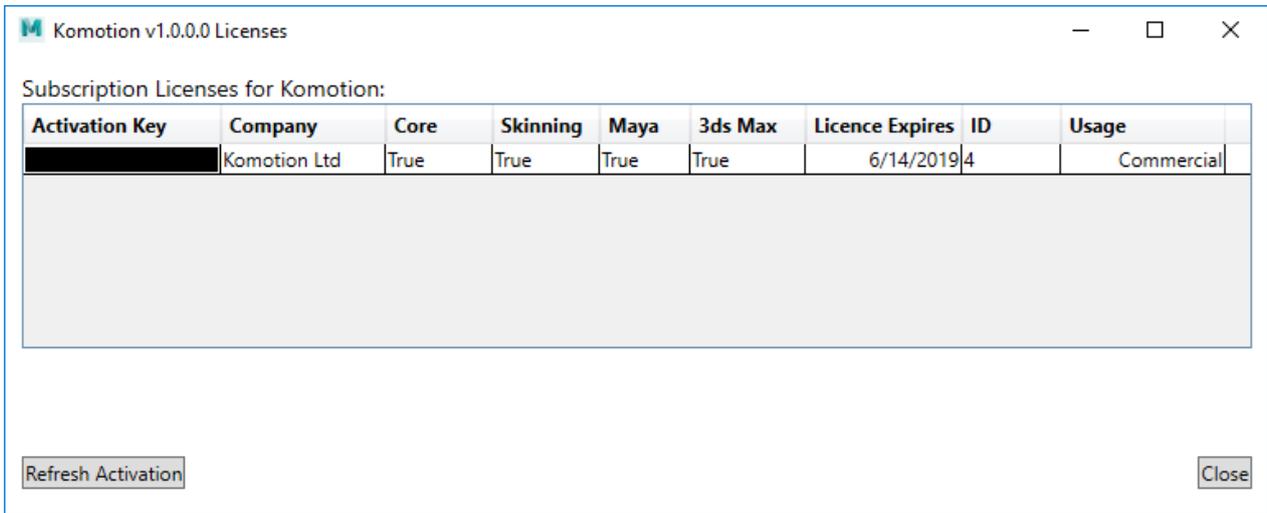
Expired and deactivated licenses will also enter the Grace Period of 7 days, and the User can continue using the Komotion software as normal in that period. A new valid license key will need to be activated before the end of that period to ensure continual use of the Komotion software, though new licenses can still be activated after that Grace Period.

Licenses can be deactivated either manually through Komotion Support, or through the deactivation prompt in the [Komotion Uninstallation](#) process.

For some Komotion license upgrades and migration scenarios, existing activated licenses in use on workstations may be revoked by Komotion Ltd. If a license is revoked, the activated license will expire at the next Online check (≤ 28 days), and then enter the Grace Period for 7 days. At the end of the Grace Period, a new valid license must be activated to use Komotion.

License Manager

License Manager



Refresh Activation	<p>Retrieve the latest license Features for the current Activated license, and manually perform the Online Check.</p> <p>For example, if the Komotion Skinning feature is enabled for an activated License Key, for the Komotion Software to show the new feature, the User can click 'Refresh Activation', restart the DCC platform (i.e. Maya), and the new Skinning feature will be usable. The new feature will also be usable after the next automatic Online Check is performed (<= 28 days) and the User restarts the DCC platform (i.e. Maya).</p>
Close	Close Window

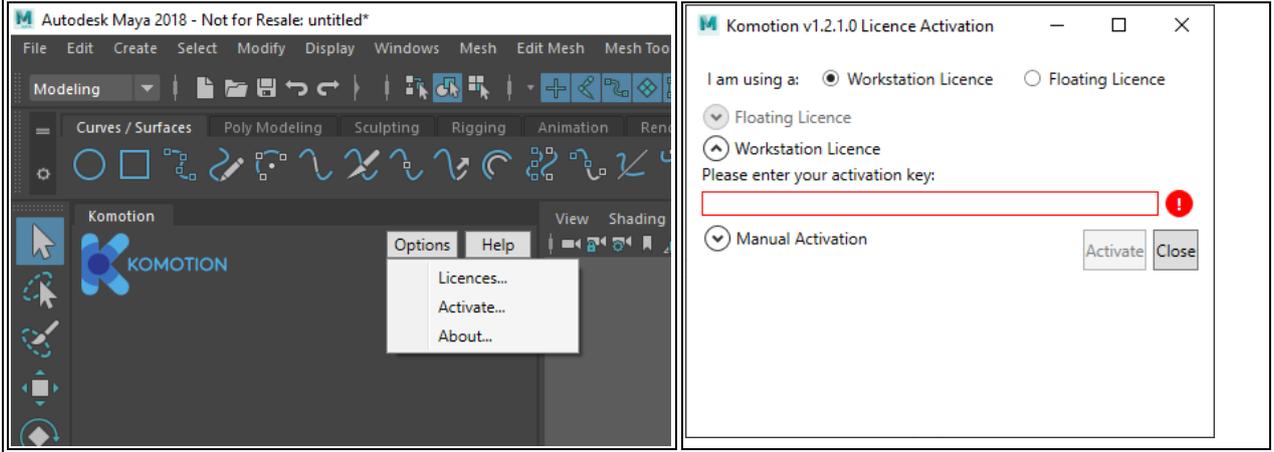
Online Activation

Online Activation

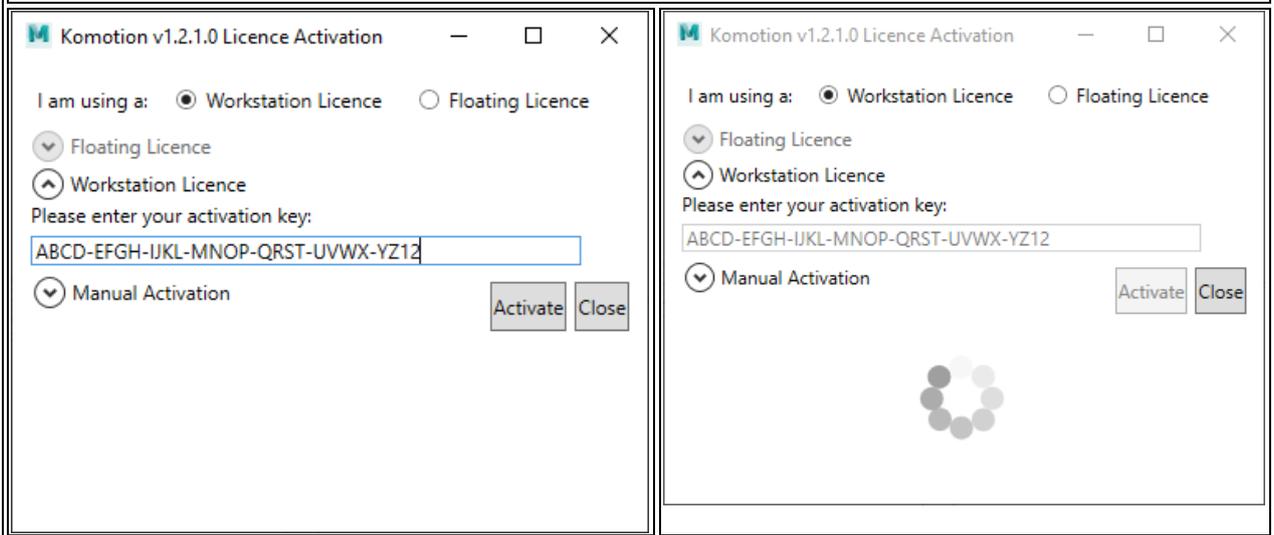
Note: Before starting this process, please ensure that your workstation can connect to the Internet.

1. Click on 'Options' and then 'Activate...' to open the Komotion Licence Activation dialog.

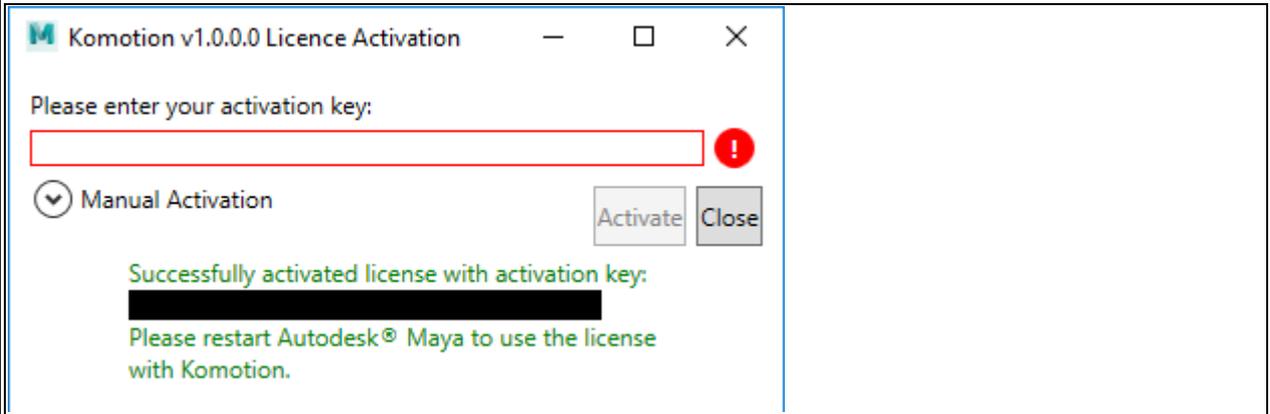
2. A new dialog called 'Komotion Rig v1.0.0.0 Activation' will pop-up. Enter or copy-and-paste your license key in the activation key text box. It will have the following format: XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX



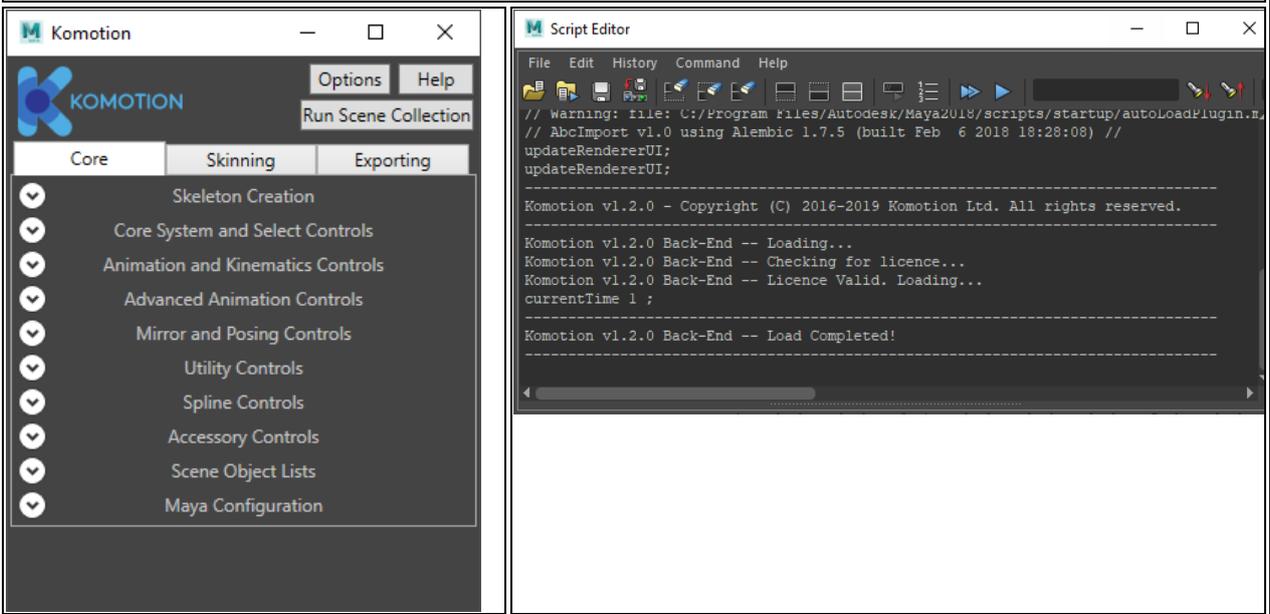
3. Click on 'Activate' to start online license activation. With a valid license accepted, a circular animation will then display, with the activation process taking up to 20 seconds to complete.



4. On a successful activation, it will display the message 'Please restart Autodesk Maya to use the license with Komotion Rig'. Close the Activation dialog and restart Maya.



5. On reloading Maya, the Komotion User Interface will now load fully for use. In the Script Editor output, the Komotion Back-End will also fully load.

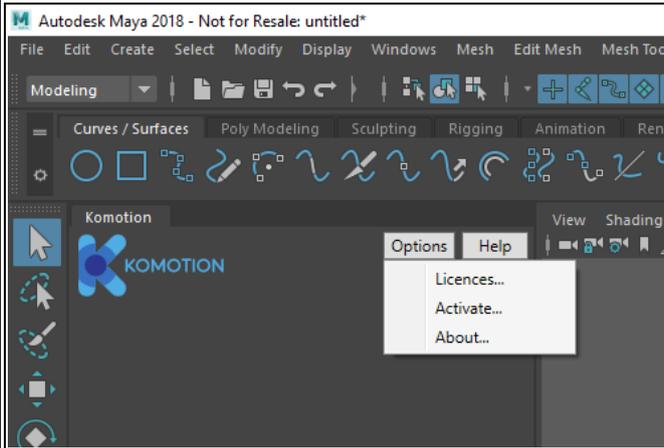


Offline Activation

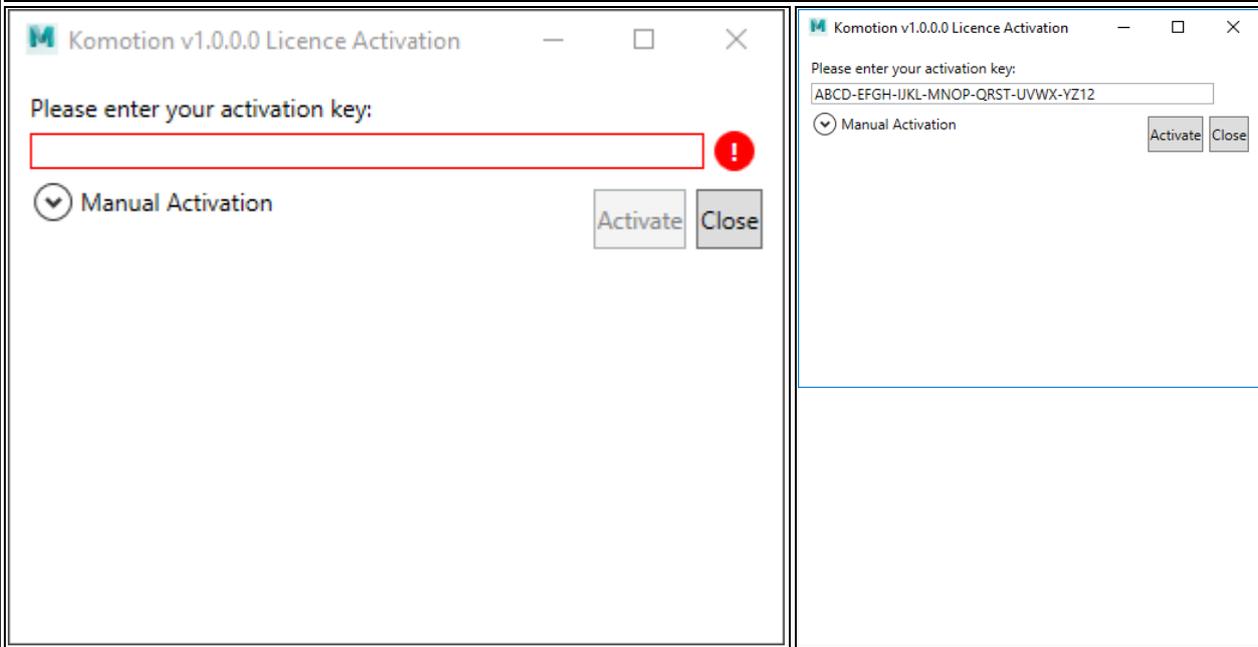
Offline Activation

Offline Activation requires generating an 'Activation Request File', sending the file to Komotion Support, and receiving back an 'Activation Response File' for activating Komotion.

1. Click on 'Options' and then 'Activate'

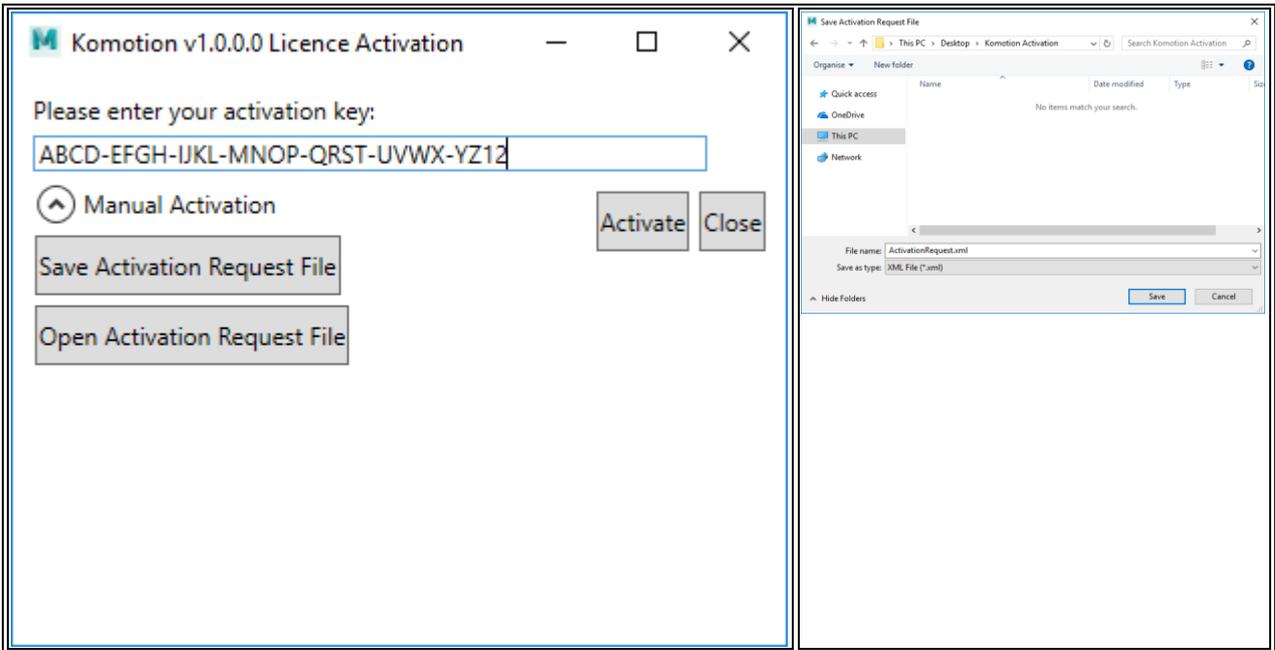


2. Enter the Activation Key



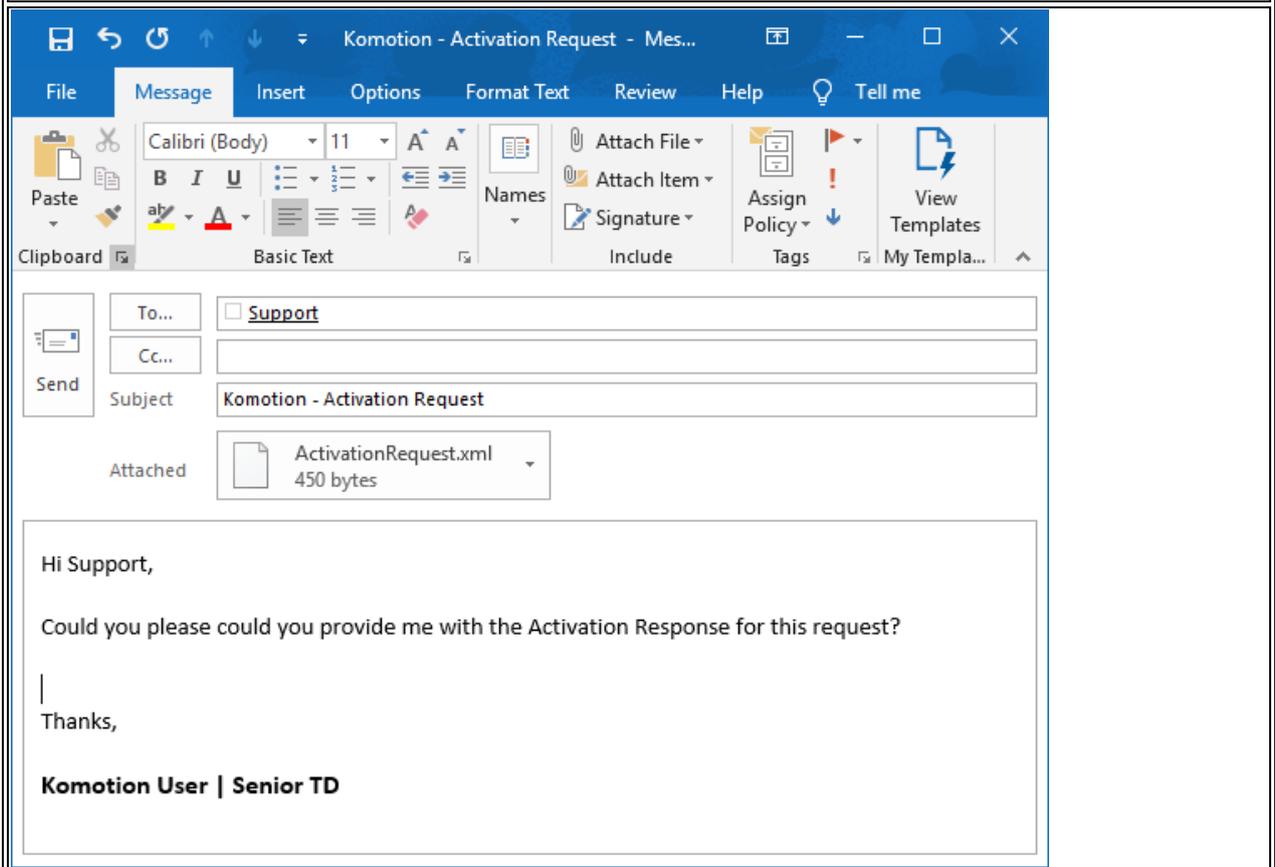
3. Click on 'Manual Activation'

4. Save the Activation Request XML file to your workstation



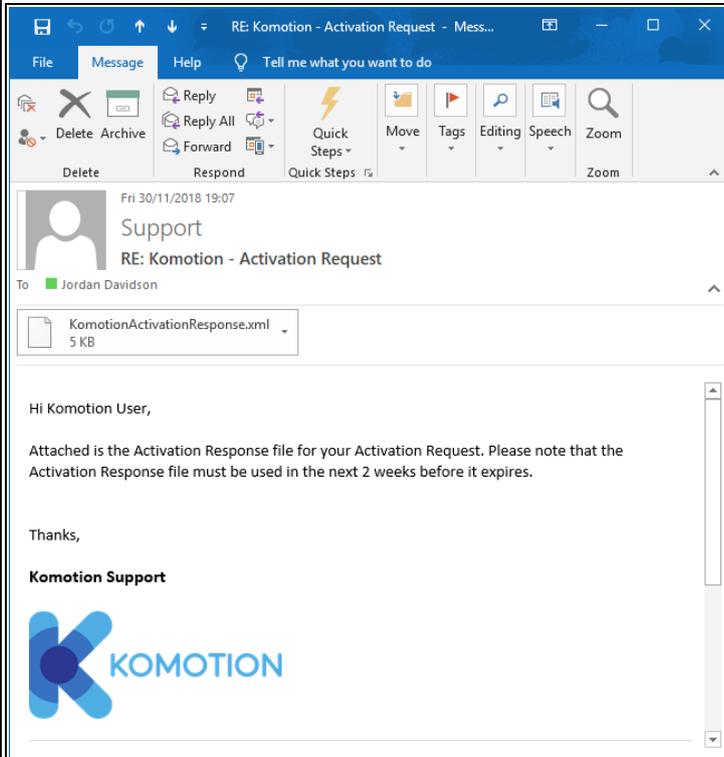
5. Send an e-mail with the valid Activation Request file attached to: support@komotion.co.uk

Typically, within the next 1-2 working days Komotion Support will reply to the e-mail.

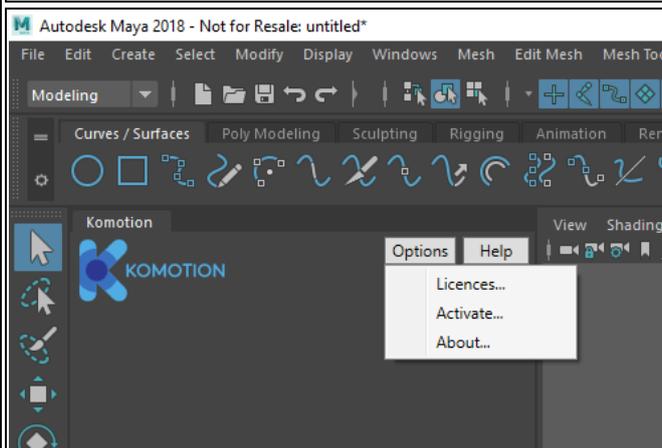


6. In the e-mail reply from Komotion Support, download the attached Activation Response file to your workstation

Note: Activation Response files will expire after a certain amount of time. This will typically be 2 weeks.

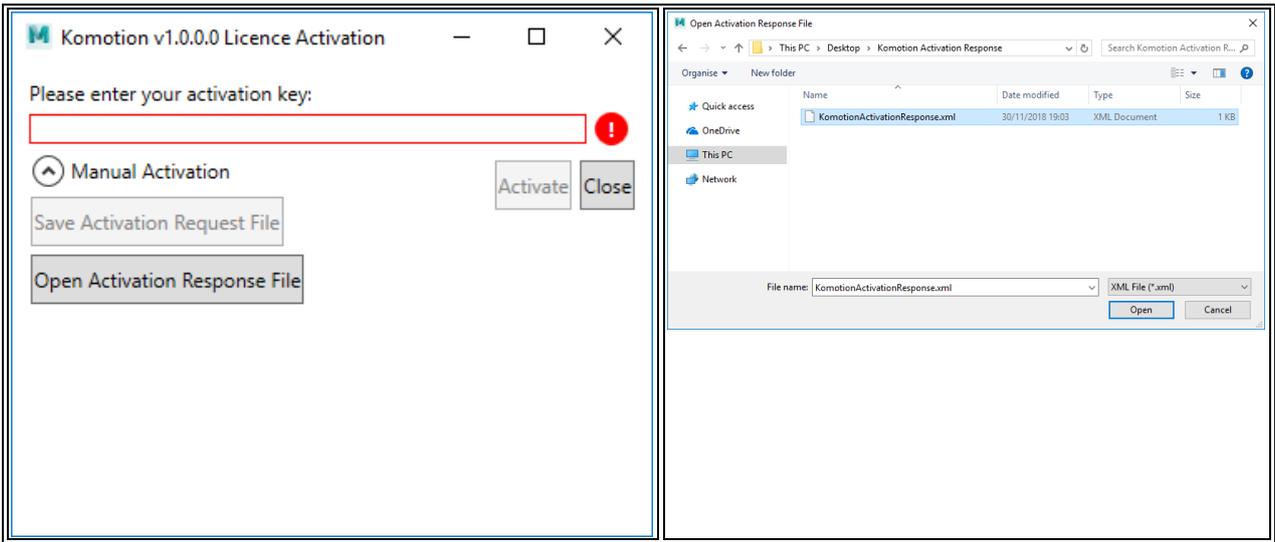


7. In the Komotion panel, click on 'Options' and then 'Activate'

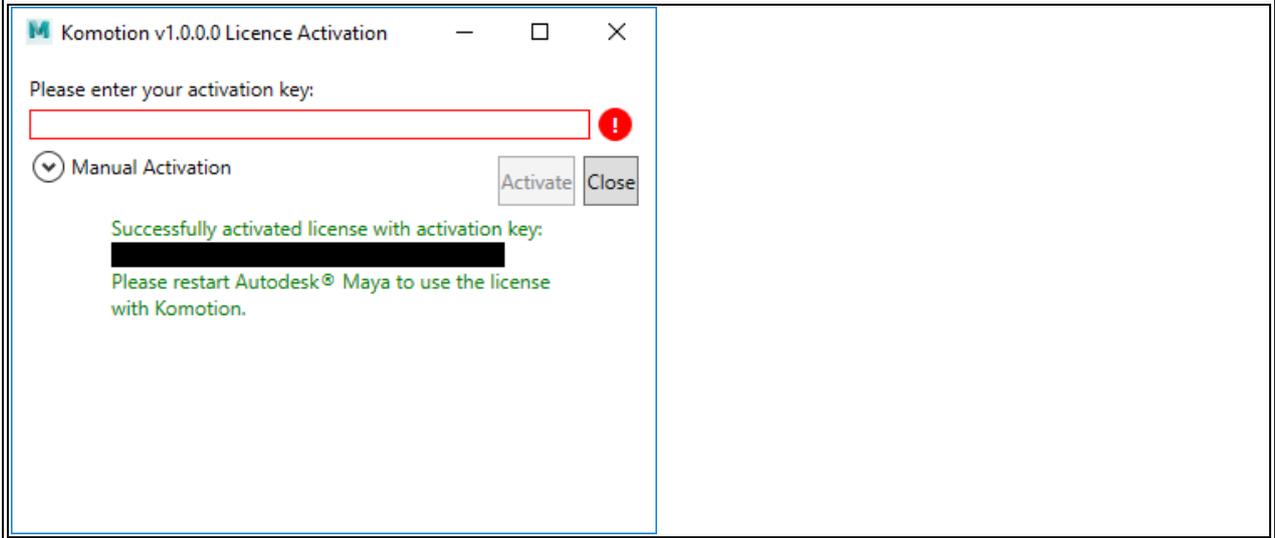


8. Click the 'Manual Activation' expander and then click 'Open Activation Response File'

9. Select the Activation Response file and click 'Open'



10. With the Activation Response, the license is activated. Restart Maya to use the Komotion software.



Komotion Terminology

Komotion Terminology

Blending and Snapping

Blending is designed for alternative techniques that can be used to work on top of IK and FK transitions. Snapping allows for instant transitions between 'IK' and 'FK' based on the current key, a previous key or possibly an after key.

Key Terms

Knot	Typically, a knot in Maya is a type of vertices or point on a curve. However, a Komotion 'Knot' is called '_WEIGHT_'. It is a controller that contains a cache weight that has influence on the spline curve knots.
Spline	The word 'Spline' is used for Komotion curve names within the Komotion tool, this curve allows bones to travel up and down their bone chain through 'Knot' 'UValue' manipulation.
Path Percentage	This refers to a number between 0% and 100%. It is used to determine how far a 'path object' has or will be moved based on the original spline length and the knots 'UValue'.
UValue - (Up Value)	This information can be found within Autodesk Maya documentation.
Code Nodes - Node prefix; '_SOCKET_'	Code nodes or 'Sockets' contain perfect Matrix values unaffected by structure scaling values. Users can attach accessories in game engines to Komotion structures in an easy straight forward manner. These nodes are designed to stop parent chain scaling being passed onto child objects.

Known Issues and Limitations

Known Issues and Limitations

Platform

Issue: With Komotion and KB4040973 Installed, Maya 2017/2018 may be hanging on exit of the Application.

Solution: Autodesk have written an article on this, detailing a workaround in the following link:

Link:

<https://knowledge.autodesk.com/support/maya/troubleshooting/caas/simplecontent/content/maya-net-hanging-after-the-microsoft-security-and-quality-rollup-for-the-net-framework-kb.html>

Issue: After uninstalling Maya that had the Komotion plug-in, and then re-installing Maya, attempting to re-install Komotion will fail.

Solution: Follow the [Uninstall Komotion](#) section and then reinstall Komotion.

Loading/Saving Scenes

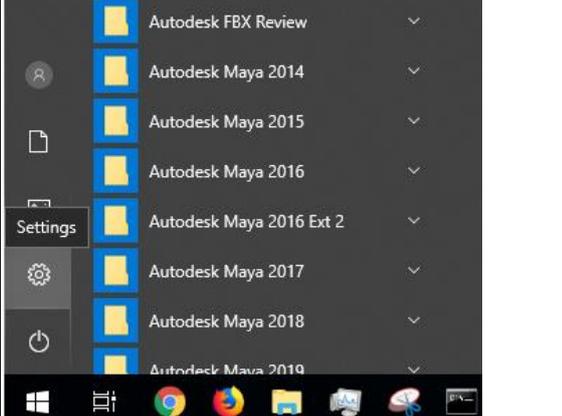
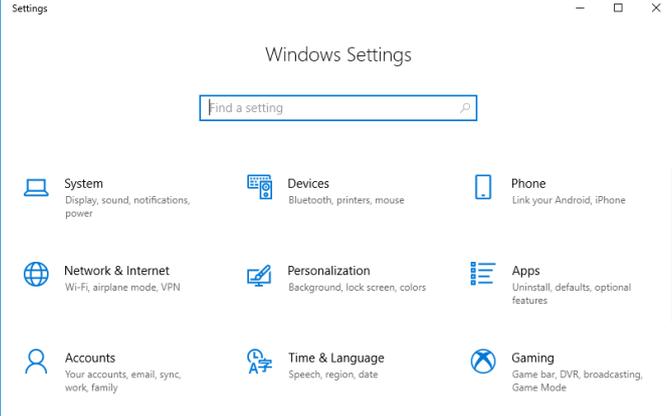
Limitation: Maya File I/O operations during Komotion Animation commands and/or Skeleton Creation

Workaround: Wait for all Komotion creation and controls to complete before saving/exporting Maya scenes.

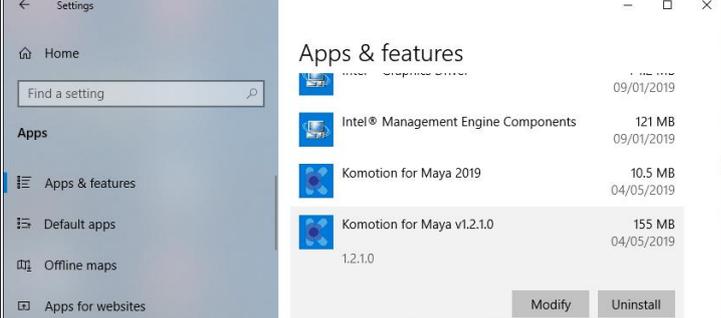
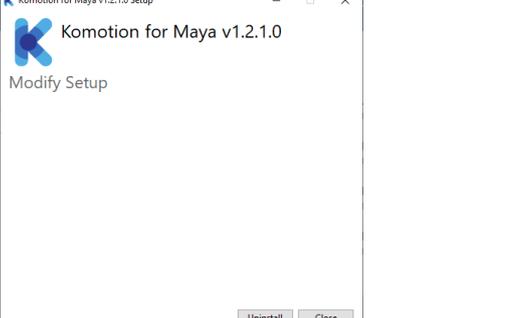
Uninstall Komotion

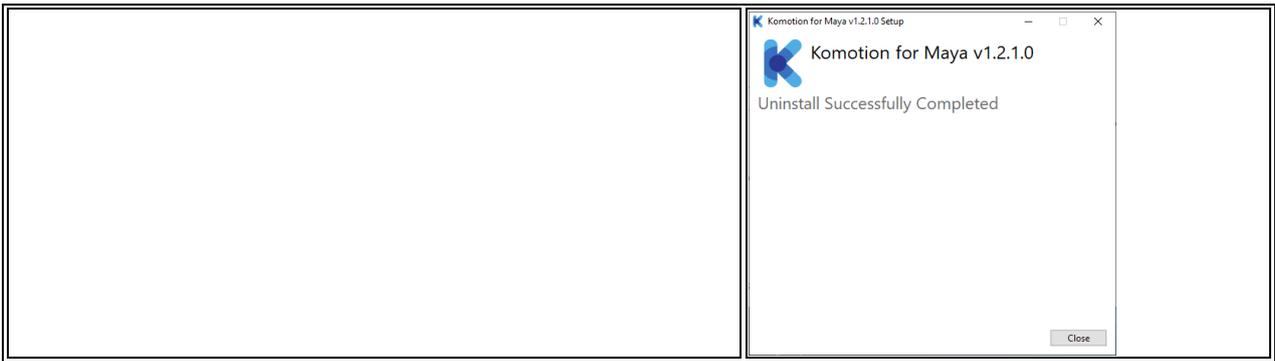
Uninstall Komotion

NOTE: Administrator permissions is required to uninstall Komotion, and an Internet connection is required for deactivating a Komotion license.

1. Click 'Start' and then click 'Settings'.	2. Click 'Apps'.
	

For uninstalling all Komotion software installs:

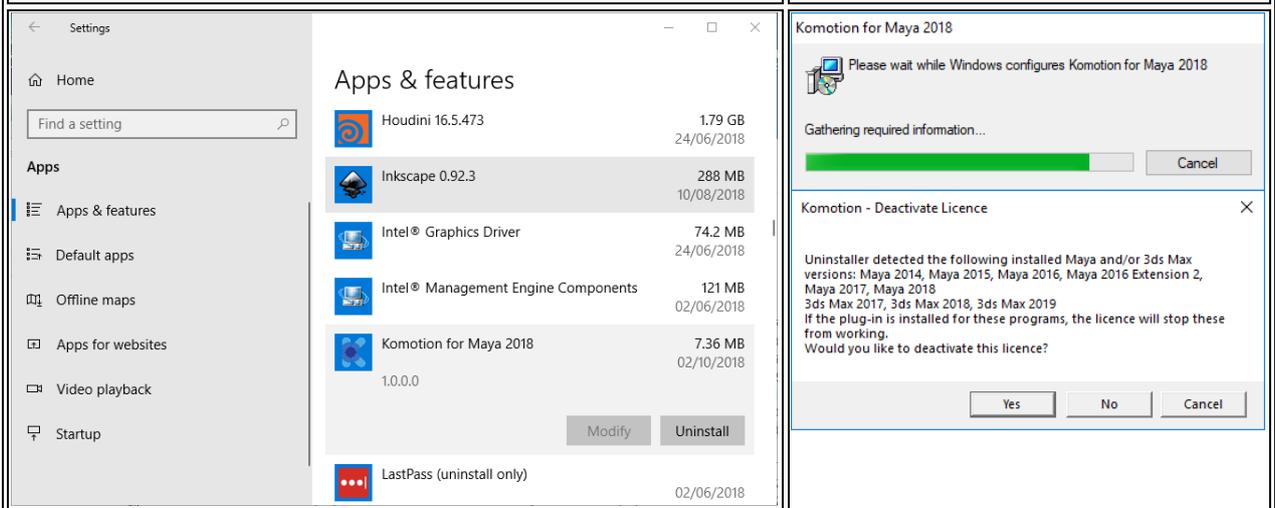
3. Find the 'Komotion for Maya v1.x.x' entry, and then click 'Uninstall'.	4. In the setup dialog prompt, click 'Uninstall'. All Komotion for Maya plug-ins and other components will be uninstalled. On completion, click 'Close' to finish.
	



For uninstalling a single Komotion plug-in:

3. Find 'Komotion for Maya 20XX' for uninstallation, and then click 'Uninstall'.

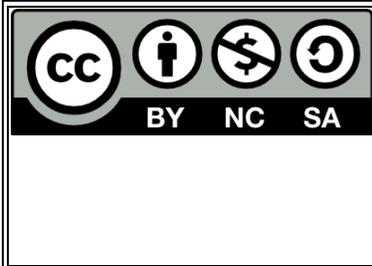
4. During the uninstallation process, if a valid Komotion license is present, a Dialog prompt will give you the option to deactivate the Komotion license present on the workstation. Clicking 'Yes' will deactivate the license, and 'No' will leave the license on the workstation.



Komotion Licensing Information

Komotion Licensing Information

Documentation



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