3.3.1 Editors - Animation - Timeline

Timeline Editor

The *Timeline* window, identified by a clock icon, is shown by default at the bottom of the screen.
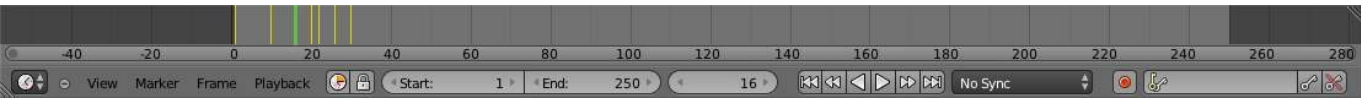
Timeline

The *Timeline* is not much of an editor, but more of a information and control window.

Here you can have an overview of the animation part of your scene
> What is the current time frame, either in frames or in seconds, where are the keyframes of the active object, the start and end frames of your animation, markers, etc...

The *Timeline* has *Player Controls*, to play, pause the animation, and to skip though parts of the scene.

It also has some tools for *Keyframes*, *Keying Sets*, and *Markers*.

Timeline Elements

Time Cursor
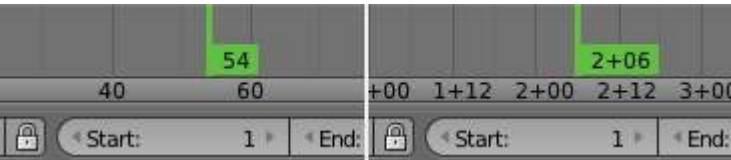
Time Cursor

The *Time Cursor* is the green line, its used to set and display the current time frame.

The *Time Cursor* can be set or moved to a new position by pressing or holding `LMB` in the Timeline window.

The current frame or second can be displayed on the *Time Cursor*, check the View menu for settings.

The *Time Cursor* can be moved in steps by pressing `Left` or `Right`, or in steps of 10 frames by pressing `Shift-Up` or `Shift-Down`.

Keyframes

For the active and selected objects, keyframes are displayed as a yellow line.

For *Armatures*, the object keyframes and the pose bones keyframes are drawn.

Only Selected Channels can be enabled. *Timeline > View > Only Selected Channels*. For *Armatures*, this will draw the object keyframes, and the keyframes for the active and selected pose bones.

Markers

Markers are the small triangles, with their name near them.

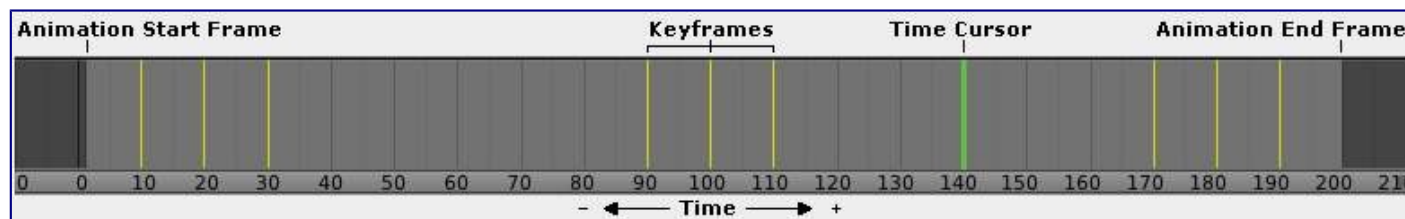Markers are usually used to identify key parts of the animation.
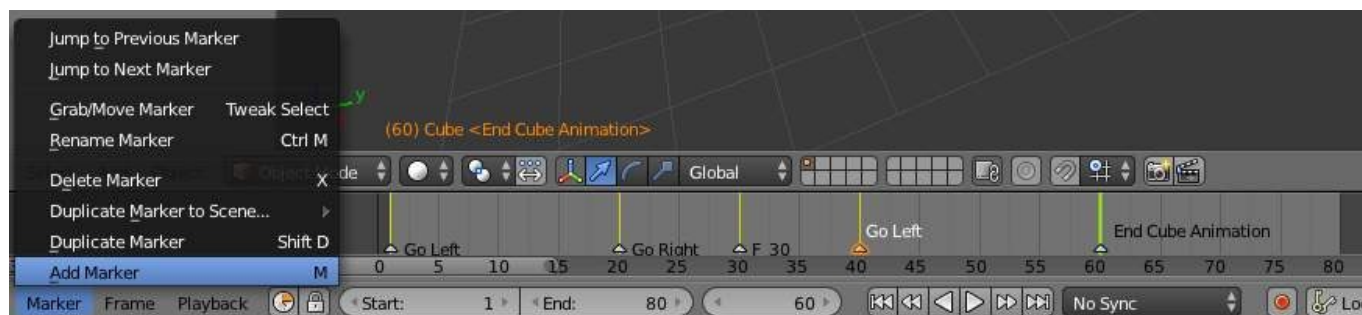
Markers

Markers can be selected by pressing `RMB` or `Shift-RMB` to select more.

See Marker Menu below or *Markers* for more info.

Adjusting the View

Timeline Area

The main *Timeline* area displays the animation frames over time.

Timeline Main Area

The *Timeline* can be panned by holding MMB, then dragging the area left or right.

You can zoom the *Timeline* by using `Ctrl-MMB`, the mouse `Wheel`, or pressing the `Minus` and `Plus` keys on the numpad.

By default, the *Playback/Rendering Range* (Frame Start 1 to Frame End 200) is a lighter shade of gray. The start and end frame can be set to the *Time Cursor* by pressing `S` or `E`. The *Playback Range* can also be set by pressing `P` then drawing a box.

Timeline Header

View Menu

The *View Menu* controls what you see, and what it looks like.

Toggle Full Screen
> Maximize or minimize the *Timeline* window. `Ctrl-Up` or `Ctrl-Down`

Duplicate Area into New Window
> This creates a new OS window, and sets the editor window to the *Timeline*.

Bind Camera to Markers
> This is used switch cameras during animation. It binds the active camera to the selected markers. First select a camera. Then select the marker(s). Then use the function. `Ctrl-B`

Cache
> This will display the baked *Cache Steps* for the active object.

Timline Cache

Show Cache
> Show all enabled types.

Softbody, Particles, Cloth, Smoke, Dynamic Paint, Rigid Body.

Only Selected Channels
> For *Armatures*, this will draw the object keyframes, and the keyframes for the active and selected pose bones.

Show Frame Number Indicator
> This will draw the current frame or seconds on the *Time Cursor.*

View All
> Maximize the *Timeline* area based on the Animation Range. `Home`

Show Seconds
> Show time in seconds for the *Timeline* and the *Time Cursor* based on the FPS. `Ctrl-T`

Marker Menu

Jump to Previous Marker

Jump to Next Marker

Grab/Move Marker
> Grab/Move the selected markers. `G`

Rename Marker
    Rename the active marker. `Ctrl-M`
Delete Marker
    Delete selected markers. `X`
Duplicate Marker to Scene...
    Duplicate the selected markers to another scene.
Duplicate Marker
    Duplicate the selected markers. `Shift-D`
Add Marker
    Add marker to the current frame. `M`

Frame Menu

Auto-Keyframing Mode

This controls how the Auto Keyframe mode works. Only one mode can be used at a time.

Add & Replace
    Add or Replace existing keyframes.
Replace
    Only Replace existing keyframes.

Playback Menu

- *Audio Scrubbing* If your animation has sound, this option plays bits of the sound wave while you move the time cursor with LMB or keyboard arrows.
- *Audio Muted* Mute the sound from Sequence Editors.
- *AV-sync* Play back and sync with audio clock, dropping frames if frame display is too slow. See 4. Synchronize Playback for more info.
- *Frame Dropping* Play back dropping frames if frames are too slow. See 4. Synchronize Playback for more info.
- *Clip Editors* While playing, updates the *Movie Clip Editor*.
- *Node Editors* While playing, updates the Node properties for the *Node Editor*.
- *Sequencer Editors* While playing, updates the *Video Sequence Editor*.

Note
Image Editors
TODO Not sure what is updated, maybe gif images or, image sequence.

- *Image Editors* Todo
- *Property Editors* When the animation is playing, this will update the property values in the UI.
- *Animation Editors* While playing, updates the *Timeline, Dope Sheet, Graph Editor, Video Sequence Editor*.
- *All 3D View Editors* While playing, updates the *3D View* and the *Timeline*.
- *Top-Left 3D Editor* While playing, updates the *Timeline* if *Animation Editors* and *All 3D View Editors* disabled.

Header Controls

The Timeline header controls.

Timeline header controls.

1. Range Control

Use Preview Range

This is an alternative range used to preview animations. This works for the UI playback, this will not work for rendering an animation.

Lock Time Cursor to Playback Range

This limits the *Time Cursor* to the *Playback Range*.

2. Frame Control

Start Frame

The start frame of the animation / playback range.

End Frame

The end frame of the animation / playback range.

Current Frame

The current frame of the animation / playback range. Also the position of the *Time Cursor.*

3. Player Control

These button are used to set, play, rewind, the *Time Cursor.*

Player Controls.

Jump to start
This sets the cursor to the start of frame range. `Shift-Ctrl-Down` or `Shift-Left`
Jump to previous keyframe
This sets the cursor to the previous keyframe. `Down`
Rewind
This plays the animation sequence in reverse. `Shift-Alt-A` When playing the play buttons switch to a pause button.

Play

This plays the animation sequence. `Alt-A` When playing the play buttons switch to a pause button.

Jump to next keyframe
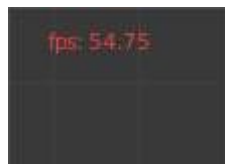
This sets the cursor to the next keyframe. `Up`

Jump to end

This sets the cursor to the end of frame range. `Shift-Ctrl-Up` or `Shift-Right`

Pause

This stops the animation. `Alt-A`

4. Synchronize Playback

3D View Red FPS. 60:54.75

When you play an animation, the FPS is displayed at the top left of the 3D View. If the scene is detailed and playback is slower than the set *Frame Rate* (see Dimensions Presets, these options are used to synchronize the playback.
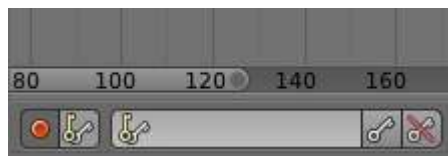
No Sync

Do not sync, play every frame.

Frame Dropping

Drop frames if playback is too slow. This enables *Frame Dropping* from the *Playback Menu*.

AV-sync

Sync to audio clock, dropping frames if playback is slow. This enables *AV-sync* and *Frame Dropping* from the *Playback Menu*.

5. Keyframe Control

Timeline Auto Keyframe.

Auto Keyframe

The "Record" red-dot button enables something called *Auto Keyframe* : It will add and/or replace existing keyframes for the active object when you transform it in the 3D view.

For example, when enabled, first set the *Time Cursor* to the desired frame, then move an object in the 3d view, or set a new value for a property in the UI.

When you set a new value for the properties, blender will add keyframes on the current frame for the transform properties.
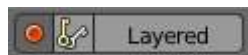
Auto Keying Set - Optional if Auto Keyframe enabled. *Auto Keyframe* will insert new keyframes for the properties in the active *Keying Set*.

Note that *Auto Keyframe* only works for transform properties (objects and bones), in the 3D views (i.e. you cant use it e.g. to animate the colors of a material in the Properties window...).
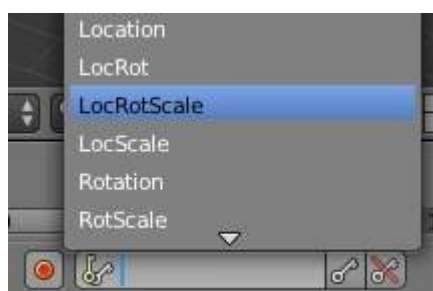
Note
Layered
Todo.

Timeline Layered.

Layered - Optional while playback. TODO.

Timeline Keying Sets.

Active Keying Set

Keying Sets are a set of keyframe channels in one.

They are made so the user can record multiple properties at the same time.

With a keying set selected, when you insert a keyframe, blender will add keyframes for the properties in the active *Keying Set*.

There are some built in keying sets, 'LocRotScale', and also custom keying sets.

Custom keying sets can be defined in the in the panels *Properties > Scene > Keying Sets + Active Keying Set*.

Insert Keyframes
Insert keyframes on the current frame for the properties in the active *Keying Set*.
Delete Keyframes
Delete keyframes on the current frame for the properties in the active *Keying Set*.

User Preferences

Some related user preferences from the **Editing** tab.

Playback
Allow Negative Frames
Time Cursor can be set to negative frames with mouse or keyboard. When using *Use Preview Range*, this also allows playback.

Keyframing

Visual Keying

When an object is using constraints, the objects property value doesnt actually change. *Visual Keying* will add keyframes to the object property, with a value based on the visual transformation from the constraint.

Only Insert Needed

This will only insert keyframes if the value of the propery is different.

Auto Keyframing

Enable *Auto Keyframe* by default for new scenes.

Show Auto Keying Warning

Displays a warning at the top right of the *3D View*, when moving objects, if *Auto Keyframe* is on.

Only Insert Available

With *Auto Keyframe* enabled, this will only add keyframes to channel F-Curves that already exist.