MSWally. User's Guide

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Introduction

`MSWally` is a little tool for hacking the walls in a set of the scenes in a `Moviestorm` movie description file, including:

- Height of selected walls
- Thickness of selected walls
- Z-Offset of selected walls, for creating skewed and raised walls

For the original description of the hacks in which MSWally was inspired, please refer to the Annex I.

Requirements

Microsoft .NET runtime version 4.x must be installed for the application to be properly executed. Otherwise, an error will happen on launching.

Also a graphics resolution of at least 1280x780 is required.

Installation

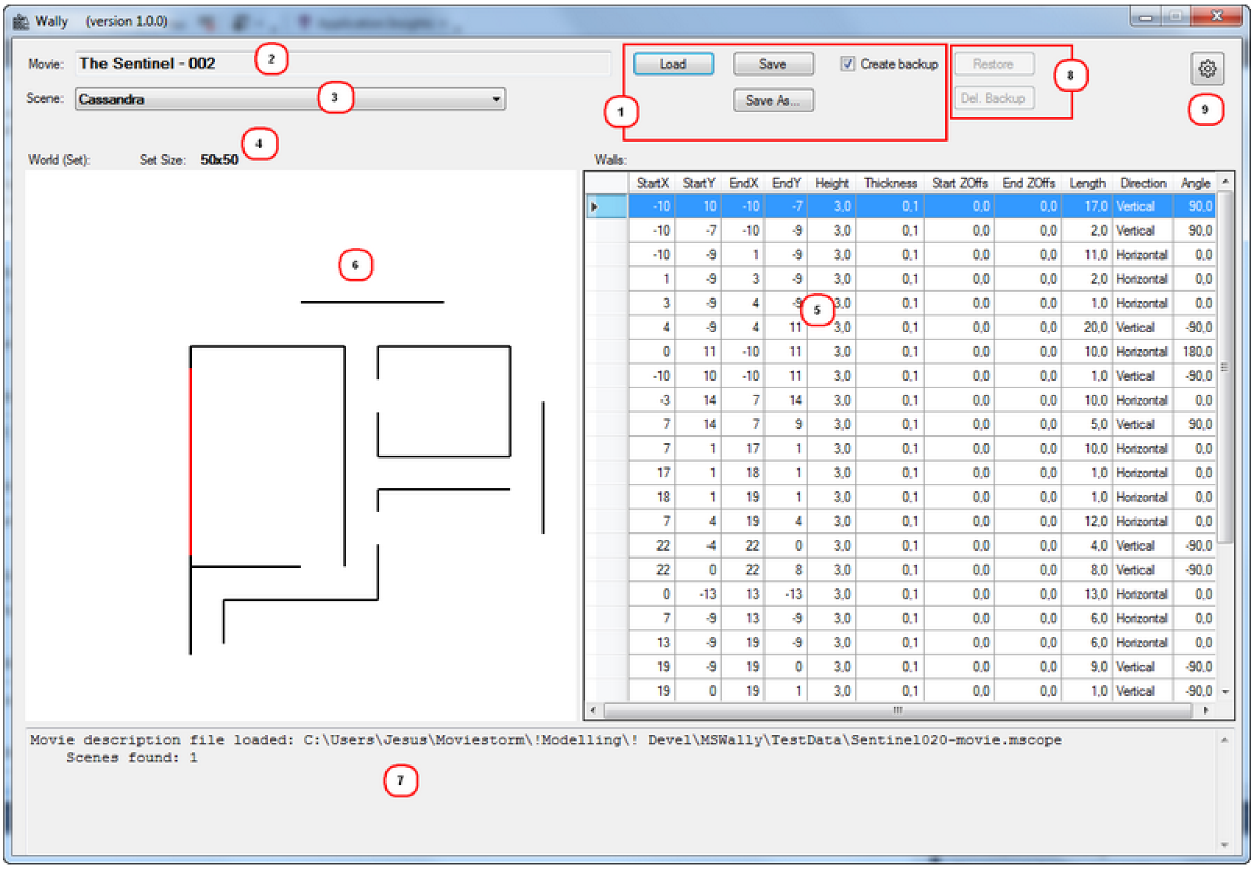
Installing `MSWally` is pretty straightforward. The program, along with its documentation, is distributed as a ZIP archive.

For installing the program, simply extract the files in the archive inside a folder at your discretion. Just be sure that the application has writing permissions for the folder it has been installed, for it needs to create a file for saving its configuration.

Also, you might like to create a direct link to the program on the desktop or anywhere else for your convenience.

1. The Main Form

Whenever you launch `MSWally` the Main Form of the application will hopefully show up. Here's how the form looks (please note the description file of a movie has already been loaded):



Movie: The Sentinel - 002

Scene: Cassandra

World (Set): Set Size: 50x50

☑ Create backup

Walls:

StartX	StartY	EndX	EndY	Height	Thickness	Start ZOffs	End ZOffs	Length	Direction	Angle
-10	10	-10	-7	3,0	0,1	0,0	0,0	17,0	Vertical	90,0
-10	-7	-10	-9	3,0	0,1	0,0	0,0	2,0	Vertical	90,0
-10	-9	1	-9	3,0	0,1	0,0	0,0	11,0	Horizontal	0,0
1	-9	3	-9	3,0	0,1	0,0	0,0	2,0	Horizontal	0,0
3	-9	4	-9	3,0	0,1	0,0	0,0	1,0	Horizontal	0,0
4	-9	4	11	3,0	0,1	0,0	0,0	20,0	Vertical	-90,0
0	11	-10	11	3,0	0,1	0,0	0,0	10,0	Horizontal	180,0
-10	10	-10	11	3,0	0,1	0,0	0,0	1,0	Vertical	-90,0
-3	14	7	14	3,0	0,1	0,0	0,0	10,0	Horizontal	0,0
7	14	7	9	3,0	0,1	0,0	0,0	5,0	Vertical	90,0
7	1	17	1	3,0	0,1	0,0	0,0	10,0	Horizontal	0,0
17	1	18	1	3,0	0,1	0,0	0,0	1,0	Horizontal	0,0
18	1	19	1	3,0	0,1	0,0	0,0	1,0	Horizontal	0,0
7	4	19	4	3,0	0,1	0,0	0,0	12,0	Horizontal	0,0
22	-4	22	0	3,0	0,1	0,0	0,0	4,0	Vertical	-90,0
22	0	22	8	3,0	0,1	0,0	0,0	8,0	Vertical	-90,0
0	-13	13	-13	3,0	0,1	0,0	0,0	13,0	Horizontal	0,0
7	-9	13	-9	3,0	0,1	0,0	0,0	6,0	Horizontal	0,0
13	-9	19	-9	3,0	0,1	0,0	0,0	6,0	Horizontal	0,0
19	-9	19	0	3,0	0,1	0,0	0,0	9,0	Vertical	-90,0
19	0	19	1	3,0	0,1	0,0	0,0	1,0	Vertical	-90,0

```
Movie description file loaded: C:\Users\Jesus\Moviestorm\!Modelling\! Devel\MSWally\TestData\Sentinel020-movie.mscope
     Scenes found: 1
```

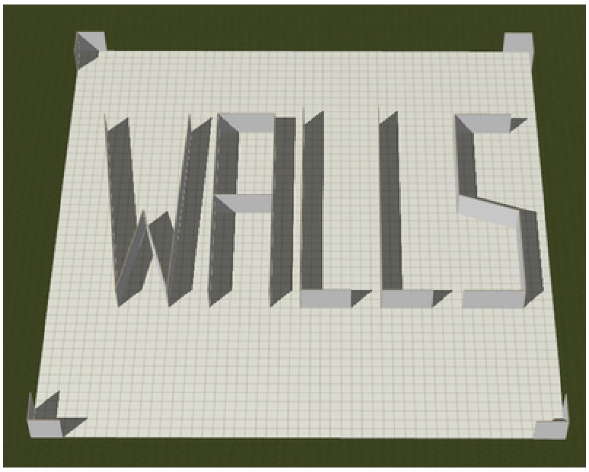
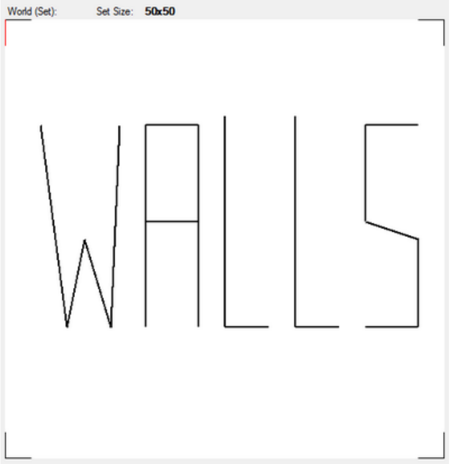
There are a few controls on this form which deserve some description:

1. A group of buttons for loading and saving the description. Please check the sections:
   Loading a Movie Description file
   Saving the current Movie Description file
   There's also a check box for automatically create a backup file, containing the original text of the current movie description file, when its saved for the first time.
2. The title of the movie. If the mouse cursor hovers for a short while over this control, the full path for the path will be displayed.
3. A selector of Scenes inside the movie's description file. In case a movie file includes more than one scene, a label reporting the number of scenes will be displayed just on the right of the scene selector.
4. The dimensions of the current scene's set.
   The standard dimensions for the set are 50x50 or 100x100, but sometimes some non-standard (usually larger) set sizes can be found.
   Also there will be times, when there's some incongruence between the dimensions stated in the file or simply they can't be determined, this value will be an estimation, and so it will be indicated.
5. A table with the information of every wall in the current scene's set, including:
   - Start (StartX, StartY) and end (EndX, EndY) coordinates of the wall
   - Height of the wall, in grid units (usually 1 grid unit = 1 meter). Standard wall height is 3.0 units
   - Thickness of the wall in grid units. Standard wall thickness is 0.1 units
   - ZOffset for the start and end point of the wall, in grid units. Usually they are both 0.0.
   - Length of the wall in grid units
   - Direction of the wall (horizontal, vertical, oblique)
   - Angle of the wall in relation to the horizontal axis.

By clicking on a row, the wall be selected (and it will also be highlighted on the graphical representation of the set).
By clicking while the Control key is pressed will allow to select additional walls, or deselecting a wall previously selected.
By clicking while the Shift key is pressed will select a range of walls.
In any case, provided a graphical representation of the set is available, every wall selected in the table will be highlighted there.
By right-clicking on the table, if one or more walls have been selected, a menu will pop up. Please refer to the section Contextual Menu of the Wall Table.

6. A graphical representation of the walls in the current scene's set will be displayed whenever possible unless:
    - The dimensions of the scene set couldn't be determined nor estimated.
    - The dimensions of the scene exceeds a maximum (currently 500x500 grid units)

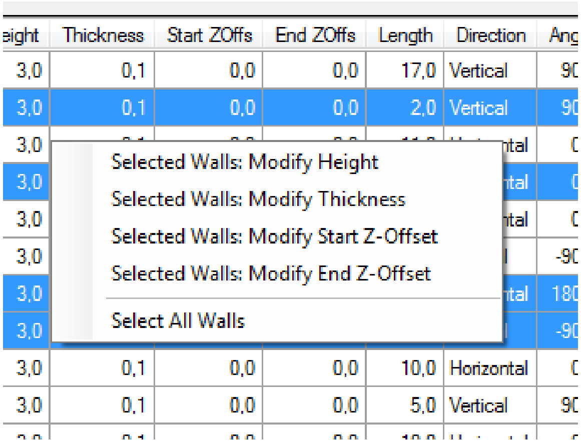
   Every wall selected in the table will be highlighted here.
   Also by clicking on a wall in the graphical representation, it will become selected.
   The thickness of the walls as drawn here and the tolerance for selecting walls on the graphical representation can be adjusted in the Setup form.
   Here you have a screenshot of an actual test set in `Moviestorm` and its graphical representation in `MSWally`:

7. The log of the application, where any relevant event will be written to.
8. A couple of buttons for:
    - Restoring the current movie's description file to its original state, provided a backup has been previously created. Please refer to section Restoring the Current Movie Description File.
    - Deleting a backup file previously created.
9. Finally, a button for opening the setup form, for modifying the default working parameters of the application.

Contextual Menu of the Wall Table

By right-clicking on the Wall Table, whenever at least one wall exists, a menu will pop up:

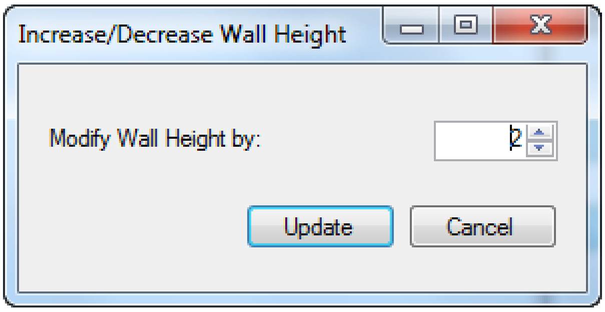


eight	Thickness	Start ZOffs	End ZOffs	Length	Direction	Ang
3,0	0,1	0,0	0,0	17,0	Vertical	90
3,0	0,1	0,0	0,0	2,0	Vertical	90
3,0					ntal	0
3,0					ntal	0
3,0					ntal	0
3,0					l	-90
3,0					ntal	180
3,0					l	-90
3,0	0,1	0,0	0,0	10,0	Horizontal	0
3,0	0,1	0,0	0,0	5,0	Vertical	90

Selected Walls: Modify Height
Selected Walls: Modify Thickness
Selected Walls: Modify Start Z-Offset
Selected Walls: Modify End Z-Offset
Select All Walls

It offers some options:

- **Select All Walls**: it does what it says
- A number of options reading "**Selected Walls: Modify** *<variable>*", where *<variable>* is any of the wall features that can be modified with `MSWally`: height, thickness and Z-Offset for the star and end points.
  Whenever one of those options are selected a new form will be opened:



Increase/Decrease Wall Height

Modify Wall Height by: 2

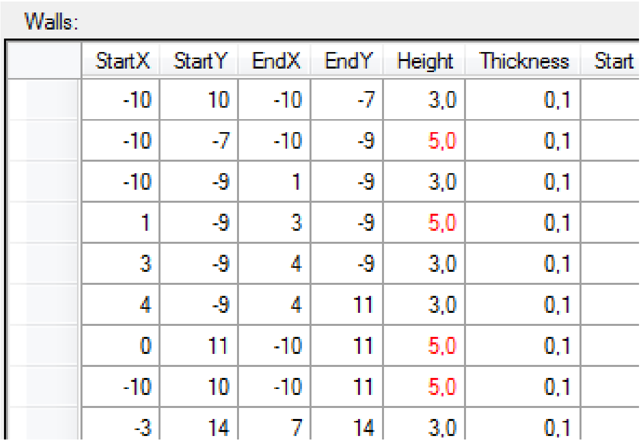
The text on the title of the form and the label will vary depending on the wall you chose to modify.

Also numeric up-down control will be displayed. This value:

- is always given in grid units
- will be the value the walls currently in the Wall Table will be incremented or decremented (if negative) by. So please note again it's not an absolute value, but an increment.
  So, if for example, you've decided to modify the selected walls by 3, and one selected wall's current value is 3.0, then it will become 3.0 + 3.0 = 6.0 after applying the modification.
- The value of the increment will be within a defined range. This range can be modified in the Setup form.

If you click the Update button the incremental modification will be applied to every wall currently selected in the Wall Table. However, take into account there some minimum and maximum values for every wall property, although these limit values can also be modified within some predefined ranges in the Setup form.

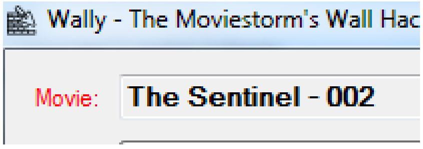
In any case, the values modified will be displayed on red in the Wall Table:



Walls:

	StartX	StartY	EndX	EndY	Height	Thickness	Start
	-10	10	-10	-7	3,0	0,1	
	-10	-7	-10	-9	5,0	0,1	
	-10	-9	1	-9	3,0	0,1	
	1	-9	3	-9	5,0	0,1	
	3	-9	4	-9	3,0	0,1	
	4	-9	4	11	3,0	0,1	
	0	11	-10	11	5,0	0,1	
	-10	10	-10	11	5,0	0,1	
	-3	14	7	14	3,0	0,1	

Also the label Movie: on the left of the movie title will be displayed in red, as a reminder of the changes made to the file:



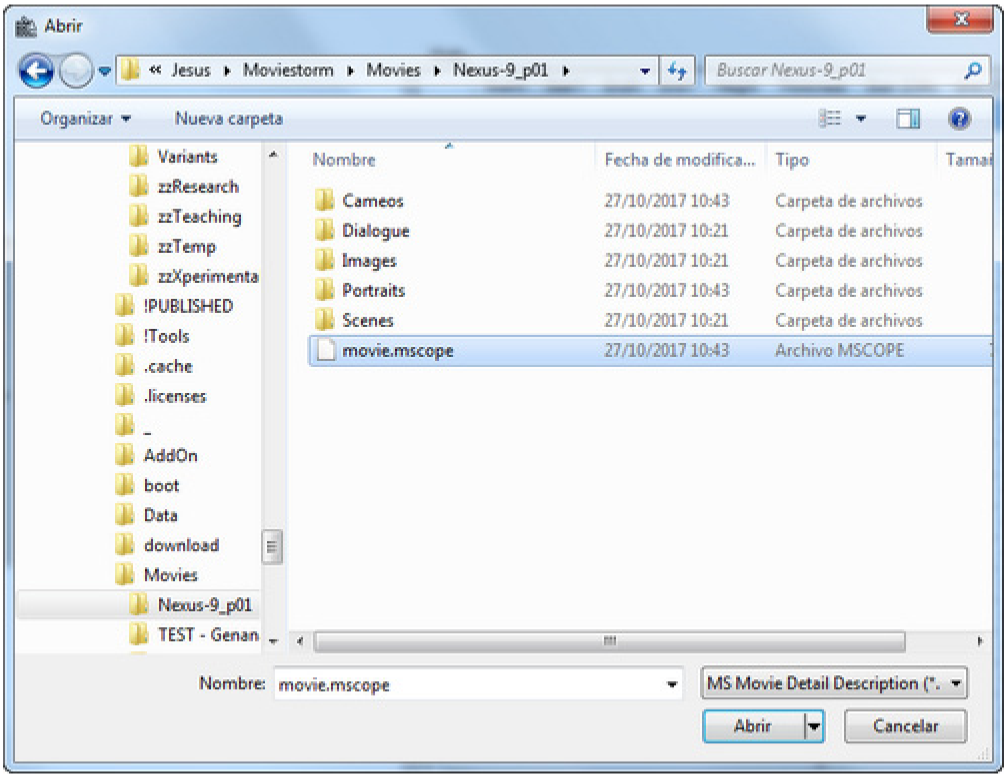
Wally - The Moviestorm's Wall Hac

Movie: The Sentinel - 002

Please refer to this section for an overview of the different modifications that can be made on the walls.

Loading a Movie Description file

By clicking the **Load** button a dialog form will open, for selecting a movie description file (NOTE: by default, `MSWally` will start searching in the default `Moviestorm` movie folder, provided it has been able to determine its location):



Nombre	Fecha de modifica...	Tipo	Tamai
Cameos	27/10/2017 10:43	Carpeta de archivos	
Dialogue	27/10/2017 10:21	Carpeta de archivos	
Images	27/10/2017 10:21	Carpeta de archivos	
Portraits	27/10/2017 10:43	Carpeta de archivos	
Scenes	27/10/2017 10:21	Carpeta de archivos	
movie.mscope	27/10/2017 10:43	Archivo MSCOPE	

Nombre: movie.mscope

MS Movie Detail Description (*.

By default, only files with the extension `.mscope` will be displayed, for the name of the actual movie description file is `movie.mscope`. However, other files can also be displayed by selecting another filter option:

- Backup files -previous versions of `movie.mscope` - (`*.bak*`)
- All files (`*.*`)

After selecting a file to be loaded, it will be read and, if valid, its information will be displayed on the Main Form. Should any error happen, it will be reported and the load will be aborted.

Saving the current Movie Description file

By clicking the **Save** button, the current movie description will be saved to disk, overwriting the original file. However, before the operation is performed:

- if the **Create backup** option is checked (which is much advised to do so), a backup file will be created.
  The backup files is created inside the same folder than the original file, and its name will be formed by appending the suffix `–WallyBackup` to its name. For example, the backup file for the file `mscope.bak1` will be `mscope-WallyBackup.bak1`
- otherwise the user will be asked to confirm the operation before proceeding

On the other hand, by clicking the **Save As** button, a dialog form will opened to choose the name and location of the file the current movie description will be saved to. After the file is written, it will be loaded, so the subsequent modifications will be made on this file, instead of the original.

In this case, no backup file will be created automatically.

Restoring the Current Movie Description File

If a backup file for the file currently file exists, by clicking the **Restore** button, the backup file will be copied onto the original file and then the latter will be loaded, with its original content restored.

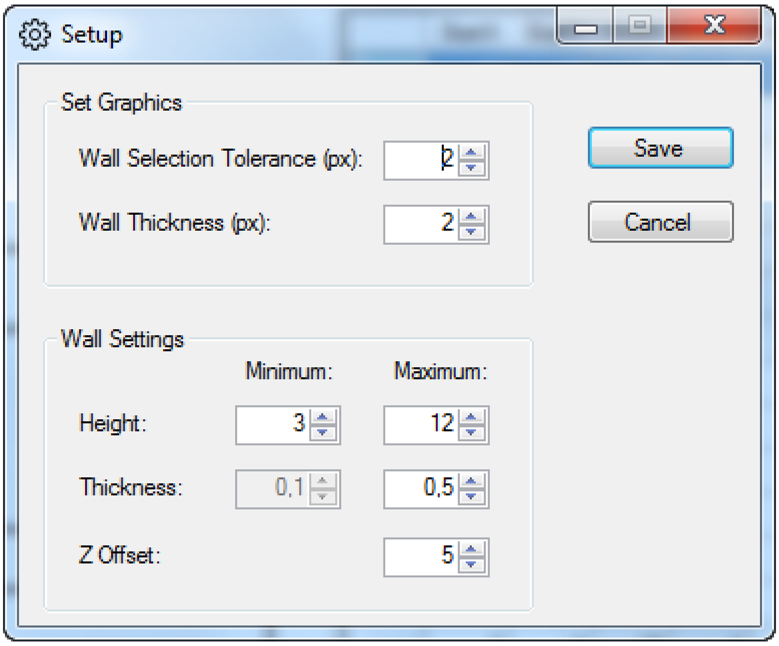
Please note that the backup file might have been created on a previous session, and it will detected as long it has not been deleted.

2. The Setup Form

In this form some of the working parameters of the application can be adjusted within some predefined ranges.

Please refer to the tables below for details of the parameters that can be adjusted.

By clicking the Save button the modifications will be checked and, if valid, the changes will be written to the configuration file (so they will be restored whenever the application is launched).



Set Graphics

Wall Selection Tolerance (px): 2

Wall Thickness (px): 2

Wall Settings

	Minimum:	Maximum:
Height:	3	12
Thickness:	0,1	0,5
Z Offset:		5

Values and adjustable range for Set Graphics parameters:

Parameter	***Default value***	**Minimum**	**Maximum**
Tolerance for wall selection (px)	*2*	0	3
Wall thickness (px)	*2*	1	4

Values and adjustable range for the dimensions of walls in a scene set:

Parameter	***Original value***	**Minimum**		**Maximum**	
		Default	**Adjustable range**	**Default**	**Adjustable range**
Height of walls (grid units)	*3.0*	**3.0**	2.0-3.0	**12.0**	4.0-36.0
Thickness of walls (grid units)	*0.1*	**0.1**	n/a	**0.5**	0.2-0.7
Z-Offset of wall ends (grid units)	*0.0*	**0.0**	n/a	**5.0**	15.0

3. Modifying the Wall Settings

Please refer to this section for details about how modifying the characteristics of one of more walls in the current scene set.

The variables that can be modified with `MSWally` are:

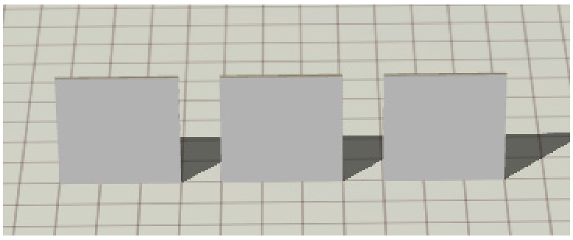
- Height of the wall
- Thickness of the wall
- Z-Offset of the start and end points

These wall dimensions can be modified within a range of values specific for each one of them. Please refer to the values and range table for details.

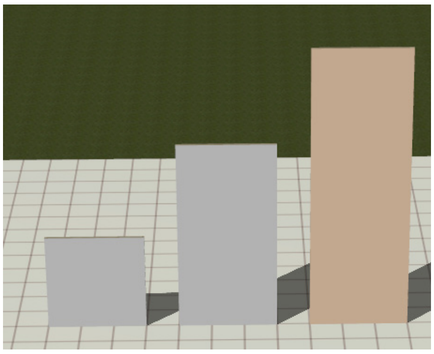
Height of the Wall

The standard height of the walls is 3.0 grid units (by default 1 grid unit = 1 meter).

These are the original walls, each with a height of 3.0 units:



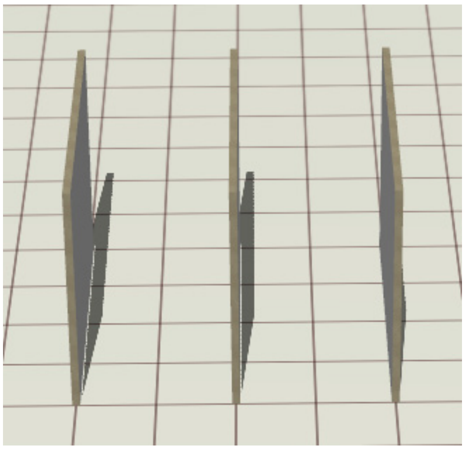
And the same walls after increasing the heights of the second (6.0 units) and the third (9.0 units):



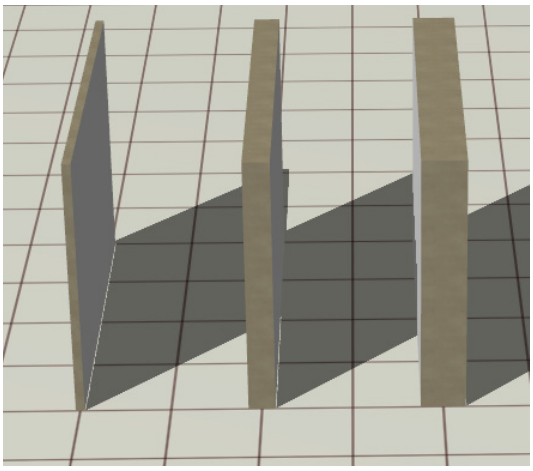
Thickness of the Wall

The standard thickness of the walls is 0.1 grid units.

Three walls before their original thickness were modified:



After modifying their thickness (center wall, 0.3; right wall, 0.5):

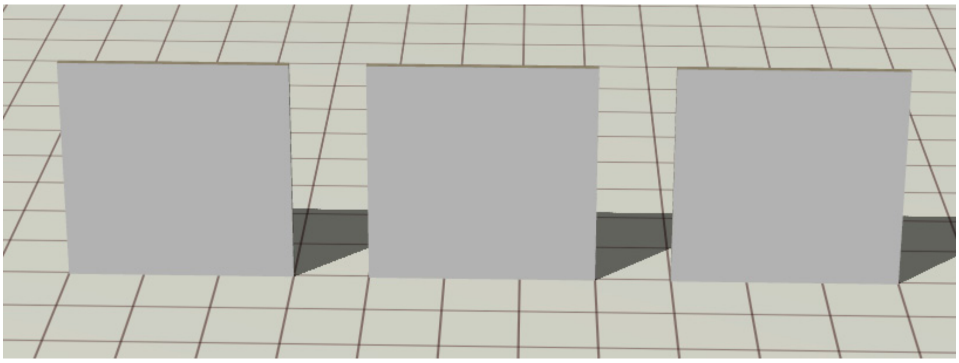


Z-Offset of the start and end points of the Wall

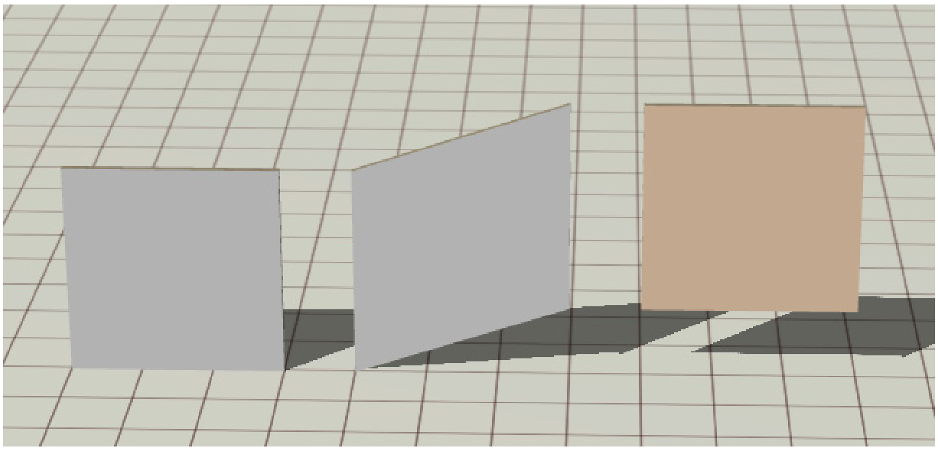
Usually, both ends of an wall are lying at the floor level, ie, with a Z-Offset = 0.0 grid units.

`MSWally` can raise one or both of the ends of a wall, by increasing its start/end Z-Offset, rendering some interesting effects.

These are three walls in their original state:



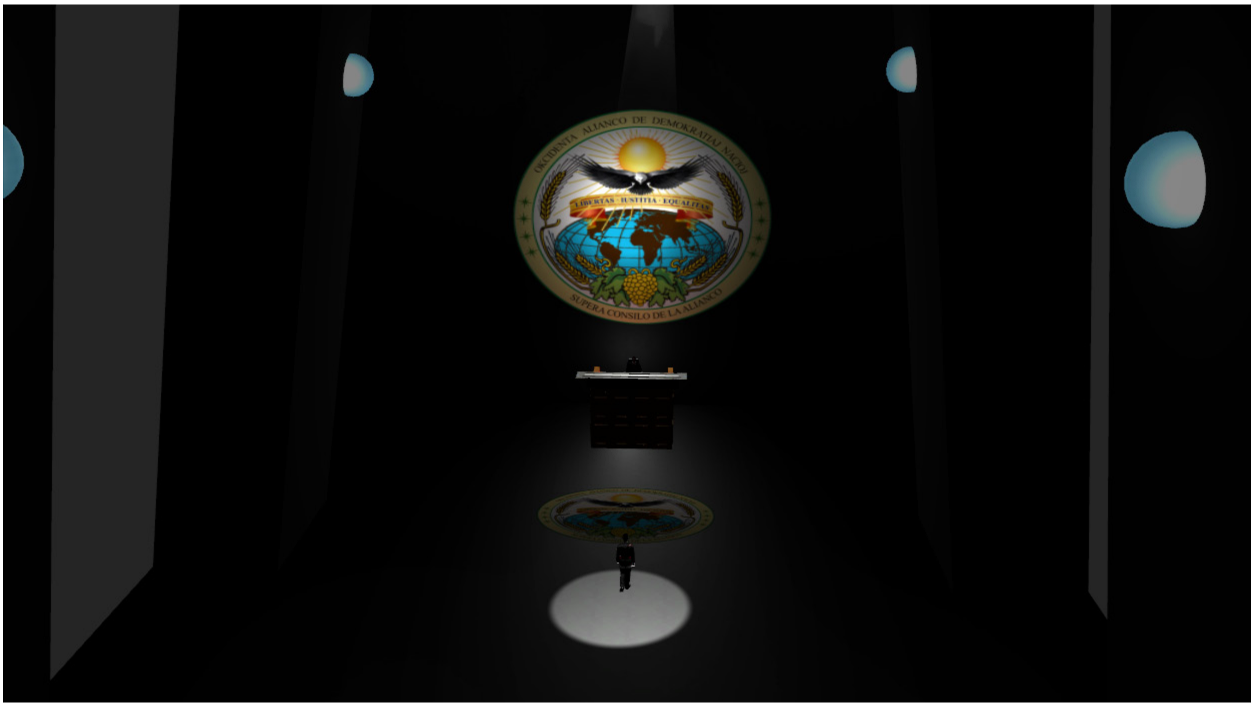
The end Z-offset of the wall in the middle has been raised up to 1.0 grid unit, so it has become a tilted or skewed wall. And the wall on the right has both of its ends raised to 1.0, so it has become a fully raised wall itself, floating aloft:



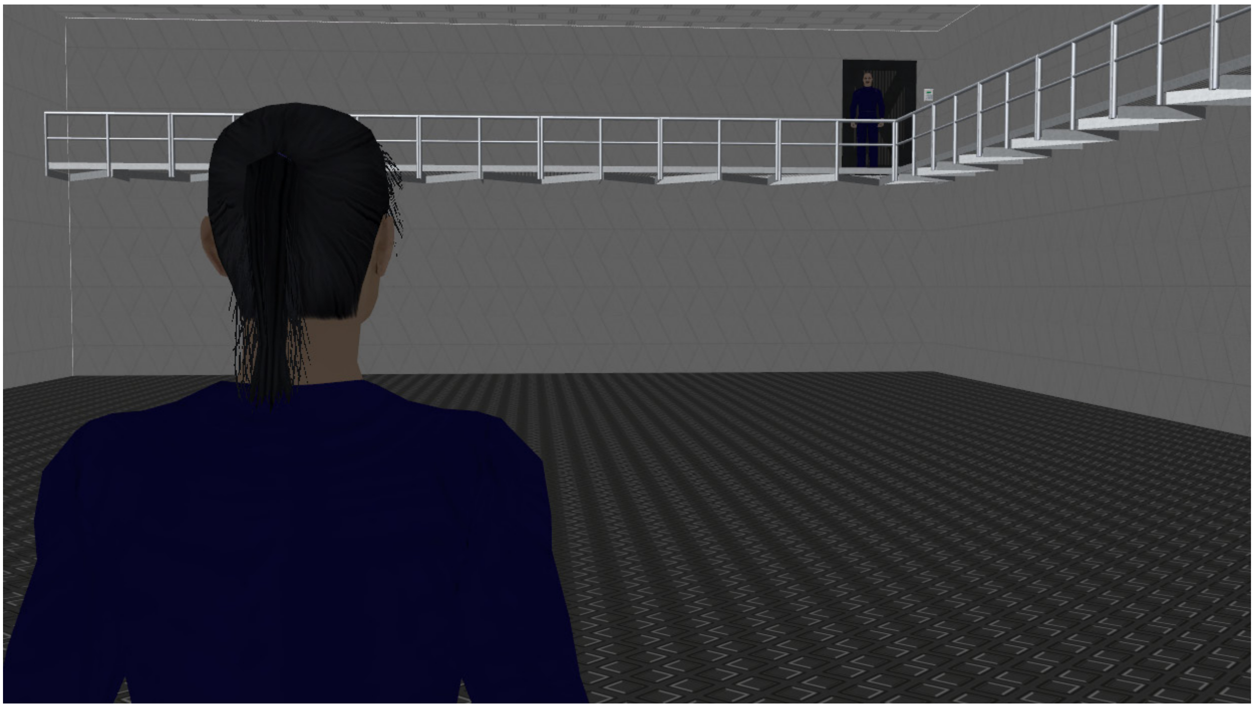
Some "real-life" examples

Here you'll find a couple of example of scenes with its walls modified.

<u>Example 1.</u> ***The traitor, scene 401***. A huge intimidating audience room, with walls raising up to 18 meter high:


OKCIDENTA ALIANCO DE DEMOKRATIAJ NACIOJ
LIBERTAS · IUSTITIA · EQUALITAS
SUPERA CONSILO DE LA ALIANCO

Example 2. A test clip with a room with walls 6 meter high with a catwalk extending on two of the sides at 3 meter over the floor level.



Annex I.

In this section, you will find a recopilation, reformatted for your convenience, of a thread created by Overman on the official Moviestorm forums, which was the inspiration for this tool.

As of the time of writing this document, the original thread could still be accessed at: http://www.moviestorm.co.uk/forums/index.php?showtopic=1712

Hacking the MSCope Volume 1

In the root folder of every movie you create in Moviestorm is a file called **movie.mscope**. This is a plain text file, structured in XML, and it stores virtually all of the important info about your movie... characters, sets, activities on the timeline, etc.

If you're new to XML, there's a decent primer here. If you plan to really get into the nitty-gritty of Moviestorm, a basic familiarity with XML will prove invaluable.

I'm going to show you a handful of very simple examples of how you can edit your **movie.mscope** file to get things to happen that you can't accomplish within Moviestorm itself. I do not know how useful you will find them, they are only examples. I cannot guarantee that Moviestorm will respond in a friendly manner to changes you may make; I can only tell you (and show you) that I've made these modifications I describe below and suffered no ill effects.

DISCLAIMER 1: I am not employed by Short Fuze, I am not a Moviestorm developer. I will do my best to help you if you want to venture into this territory, but I may have very limited time to do so.

DISCLAIMER 2: While Short Fuze has given us the ability to do these things by choosing an open architecture for these files, and while they do not explicitly forbid doing these things, **Short Fuze does NOT officially provide support for these activities.** Even simple hacking is, essentially, venturing out on a limb by yourself; be of this mindset before you proceed. If you are not comfortable with this, it would be best to not engage in this kind of activity.

DISCLAIMER 3: I cannot stress this enough. ALWAYS, ALWAYS, ALWAYS back up (make an extra copy of) any Moviestorm files you tinker with. This makes it easy to get back to your original movie should something not go as planned.

Disclaimers aside, here we go! I'm assuming at this point that you know how to basically navigate an XML hierarchy.

1) Tilted Wall

Walls are defined in movie.mscope under:

```
<movie>

  <scenes>

    <scene>

      <set>

        <scenery>
      <wall>
```

Under each wall, a left and right point are defined. Each wall is thought of as a line from the left point to the right.

```
      <left>
        <pt>0.0 -8.0 0.0</pt>
        <walls>
          <wall reference="../../.."/>
        </walls>
      </left>
      <right>
        <pt>0.0 0.0 0.0</pt>
        <walls>
          <wall reference="../../.."/>
        </walls>
      </right>
```

Note the "pt" defined under left and right, each. This is a set of space-separated X,Y,Z values... a coordinate in 3d space. The first two values correspond to a location on the Moviestorm set grid. The third value, which is currently unused by the Moviestorm interface, is the Z value... the elevation off the ground. By changing this value on one or both the left and right points, you can alter the elevation of one or both ends of the wall. In the demo video, I show you what one looks like if just one of the coordinates is raised. Something like this:

```
      <left>
        <pt>0.0 -8.0 0.0</pt>
      </left>
      <right>
        <pt>0.0 0.0 2.0</pt>
      </right>
```

Note that the Z value of the right point is now set to 2.0 instead of 0.0. This means the right point will be elevated the equivalent of 2 units (one unit = 1 square on the grid).

- Best I can tell, characters still respect the boundary of a wall, even when it is elevated.
- Note that the bottom "face" of a wall is not rendered by the engine. Keep this in mind for cosmetic reasons (not that the normal edge faces of walls are anything you'd want to see anyway, but at least they're there.)
- I have not yet experimented with negative Z values, but theoretically this could cause a wall to sink into the ground.
- Z values do not appear to need to be integers (whole numbers). One could set a wall's value to 1.5, for example.
- I do not know the upper limit of the Z value.

2) Thicker Wall
Further down under a wall definition, there is a thickness property.

```
<left>

  <pt>0.0 -8.0 0.0</pt>

</left>

<right>

  <pt>0.0 0.0 0.0</pt>

</right>

...

 <thickness>0.1</thickness>
```

Wall thickness is set to 0.1 for all walls created by Moviestorm at the time of this writing[1]. One can change this thickness value to values other than 0.1 to adjust the thickness of a particular wall.

In the demo video, I've set a wall thickness to 0.5.

- I've not tried a zero or below zero value for thickness; probably best to stay away from that, seems likely to cause a crash.
- The fraction (0.1) appears to be in terms of the standard unit of measurement used elsewhere in

[1] Unos 10 cm

Moviestorm: one grid square.
- I do not know the upper limit of the thickness value.

3) Higher Wall / Higher Ceiling

Further down under a wall definition, there is a height property.

```
<left>

  <pt>0.0 -8.0 0.0</pt>

</left>

<right>

  <pt>0.0 0.0 0.0</pt>

</right>

...

 <height>3.0</height>
```

Wall height is set to 3.0 for all walls created by Moviestorm at the time of this writing. One can change this height value to values other than 3 to adjust the height of a particular wall.

In the demo video, I've set a wall height to 5.0.

- Height values do not appear to need to be integers (whole numbers). One could set a wall's height to 3.5, for example. Keep in mind the texture mapping rule discussed here.
- When you place a door / window on a heightened wall, it breaks the wall height above it (if it's anything other than 3.0).

In that same section of the video, a ceiling height is also set to 5.0.

Ceiling height can only be given a value for an entire set, not on an individual tile basis. The default value is 3.0 (same default height as walls).

```
<movie>

  <scenes>

    <scene>

      <set>

        <scenery>

          <ceiling>

            <width>50</width>

            <depth>50</depth>

            <height>3.0</height>
    </ceiling>
```

- Props which attach to ceiling remain at 3.0 height, you can't move them up to other ceiling heights.

What else can you discover? Post your findings in this thread!

Here are some things I've also discovered, which were less exciting results:
- Doors / Windows have a Z-coordinate, but it elevates surrounding wall on a slope to its new height. Weird effect.
- Doors / Windows have a width value... this merely creates blank space around the portal, it does not widen it.
- I tried redefining the floor and ceiling grids to be 75x75 instead of 50x50. While the changes did take, the graphics engine would not successfully render a set that large. The 50x50 set size appears to be there for very good reason.