

JSWED v2.0.3

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Abstract

JSWED is an editor for games based on the *Jet Set Willy* engine. This document describes how to use it.

Contents

1	For updates	4
2	Changes In This Version	4
3	Legal Bits	4
4	Installing JSWED	4
4.1	Installing under Windows	4
4.2	Installing under Unix	4
4.3	Installing under BeOS	4
5	Running JSWED	5
5.1	Load file	5
5.1.1	+3DOS file support	5
5.2	Save file	5
5.3	Edit game	5
5.4	Configure	5
5.5	About JSWED	5
5.6	Leave program	6
6	The user interface	6
7	Editing games	6
7.1	Game	6
7.1.1	Adjacent ropes	6
7.1.2	Black Willy	6
7.1.3	Fall any height	7
7.1.4	No auto pause	7
7.1.5	Softricks death	7
7.1.6	Attract mode	7
7.1.7	Fix victory bug (Henry's Hoard only)	7
7.2	Message	7
7.3	Memory	7
7.4	Sprites	7
7.5	The Room Editor	8
7.5.1	Moving between rooms	8
7.5.2	Editing exits	8
7.5.3	Clipboard	8
7.5.4	Room options	8
7.5.5	Guardians	9
7.5.6	Conveyor options	9
7.5.7	Guardian / guardian start frame	9
7.5.8	Cell editors	9
7.6	Teleport editor	9
7.7	Start position editor	10
7.8	Font editor	10
7.9	Screen editor	10
7.9.1	The Zoom window	10
7.9.2	Editing pixels	10

7.9.3	Editing attributes	10
7.9.4	Grids	10
7.9.5	Next / Previous	11
7.9.6	Undo	11
8	The Guardian editor	11
8.1	Guardian types	12
8.2	Editing conventional guardians	12
8.3	Rope editing	12
8.4	Arrow editing	12
8.5	Hex editing	12
8.6	Geoff Mode bounds	12
9	Good Advice	12

1 For updates

Updated versions of JSWED will be downloadable at <<http://www.seasip.demon.co.uk/Jsw/jswed.html>>. Before reporting bugs, check if there is a newer version that fixes these bugs.

2 Changes In This Version

In 128k games, it is now possible to edit the text printed at the bottom of the title screen.

3 Legal Bits

This version of JSWED is released under the GNU General Public License(sic). If you are just using JSWED, this won't affect you; but if you intend to distribute copies, then you must distribute all the source code as well as the programs. See the file COPYING (in the Windows version, COPYING.TXT) for details.

4 Installing JSWED

4.1 Installing under Windows

This release of JSWED requires Windows 95, 98, ME, NT or 2000. The .ZIP file contains the setup programs; unzip it and run SETUP.EXE.

If you are troubled by frequent crashes, this is probably caused by bugs in JSWED. However, it may also be an idea to stop JSWED using DirectX, to see if this improves stability. To disable DirectX, add the following line to your AUTOEXEC.BAT file:

```
SET SDL_VIDEODRIVER=windib
```

and reboot.

4.2 Installing under Unix

Full instructions are given in INSTALL.txt; but provided you have the SDL and SDL_image libraries on your system, you should just be able to get away with

```
make
su root
make install
```

4.3 Installing under BeOS

See INSTALL.txt. The program should compile with a simple make, but to get it to install correctly you need to edit the file makedefs.i and set the correct install directories before doing the make install.

5 Running JSWED

In Windows, double-click JSWED.EXE or start it from the Start menu. In Unix, type `jswed` at a command prompt, or set up a shortcut to it in your preferred desktop environment.

When JSWED is started, the main window will appear. There will be six menu options:

5.1 Load file

Brings up a file selector from which you can choose the file to load. JSWED supports +3DOS, TAP, SNA and Z80 formats. Note that 128k .SNA files are not supported, and if you intend to use +3DOS files you should read the notes below (section 5.1.1)

To change to a different drive (Windows only), tab to the filename field at the bottom of the screen, clear out what's in there (Press CTRL+Y) and type its drive name, followed by a colon. Then press RETURN.

Once a file is successfully loaded the top line of the screen shows the loaded file and its type (48k, 128k, Softricks, Henry's Hoard, etc.).

5.1.1 +3DOS file support

As far as 48k games go, this is quite easy. The file format JSWED uses is a single file, CODE 32768,32768. The fun comes with 128k games, because they are stored in multiple +3DOS files.

When loading or saving, JSWED must be given the filename of the BASIC loader (`JetSet.128`). The other files that make up JSW128 are assumed to be in the same directory as the loader, and have the standard +3DOS filenames for JSW files (`rtime.js2`, `rooms.js6` etc.) Be especially careful when saving, because files with these names will be overwritten without asking.

The loader program (`JetSet.128`) saved in +3DOS mode is designed for +3 disc loading rather than tape loading. It won't work on a 128 or +2.

5.2 Save file

Brings up the same sort of file selector, so you can save the game. The type of file used will be the same as the one used in loading, unless you changed it while editing.

5.3 Edit game

This is the heart of JSWED and is described fully in section 7.

5.4 Configure

This is used to set up the filename of the Spectrum emulator used for testing. It must be able to load .Z80 files.

5.5 About JSWED

Displays the current version, and supported game types.

5.6 Leave program

Will leave JSWED instantly. Unsaved work will be lost. Closing the JSWED window also has this effect.

6 The user interface

The JSWED user interface is based on the Spectrum 128 editor, plus features from more recent GUIs. On most screens, the current control will be highlighted by a blue dotted border, and you can use TAB to move from one to the next. Text controls contain a blue/white flashing cursor, which can be moved by the cursor keys (the control will scroll if there's more text than can be seen).

In the menus, use the cursor keys and ENTER to choose an option; PageUp/PageDown allow scrolling menus to move a page at a time. Press ESCAPE to cancel the menu.

7 Editing games

The game editor is composed of a series of pages, with a list in the top left-hand corner. To choose a page, click on its title or use ALT+UP / ALT+DOWN to choose between them.

Each page has a context menu, which can be accessed by right-clicking the screen or pressing the “menu” key (next to the bottom right-hand CTRL key).

At any time while editing a game, you can press F2 to save your file, or F5 to run it in a Spectrum emulator.

The screens are:

7.1 Game

This page allows you to change the file format used for saving. The page also contains a list of patches which can be applied to the game engine. Each patch is accompanied by a tickbox which is either ticked (the patch is applied), empty (the patch can be applied) or shaded (the patch cannot be applied).

At the bottom of this screen is a button marked “Convert to JSW128”. Click it to upgrade a 48k game to 128k. If you click it and then confirm your request, you will see all the upgrades being applied and then be returned to the main menu. Geoff Mode games and Henry's Hoard games cannot be upgraded to 128k.

The patches that can be applied are:

7.1.1 Adjacent ropes

Normally, if you want multiple ropes in a room, you have to put blank guardians between them. If you turn this patch on, it should be possible to have all eight guardian slots occupied by ropes. In practice this patch is buggy and it's still a wise idea to use blank guardians for spacing.

7.1.2 Black Willy

Make Willy black. You will need to set backgrounds to light colours.

7.1.3 Fall any height

Allow Willy not to die by falling too far.

7.1.4 No auto pause

Normally JSW pauses if left by itself for too long. To disable it, apply this patch.

7.1.5 Softricks death

For some reason games written with the Softricks editor show the title screen briefly when Willy dies, and the “death” sound effect is different. This patch switches the effect on and off.

7.1.6 Attract mode

After the title screen music has played, all the screens in the game will be displayed in turn.

7.1.7 Fix victory bug (Henry’s Hoard only)

The earlier (1985) version of Henry’s Hoard doesn’t show the victory screen when you win the game. Put a tick in this box to fix the bug.

7.2 Message

This page contains messages printed by the game - the title screen message, the “Game Over” message, and the “objects collected” message. You can edit them as you like; the program will not allow you to enter more text than will fit.

If you are editing Henry’s Hoard, then the messages will all be in capitals. The game engine can only print in capitals, so don’t try entering lower-case messages.

7.3 Memory

This page is only present on JSW128 versions. It shows the memory being used for various game aspects such as sprites and guardian tables. Click on a cell (or tab to it and press SPACE) to change its meaning; note that to allocate a guardian table you will need four consecutive memory pages (eight for upgraded Softricks games).

7.4 Sprites

The sprite editor screen is divided into two parts. The bottom half contains a list of sprites; select these using the left and right cursor keys (use PageUp/PageDown to move faster) and click or press ENTER on the chosen sprite. You can also scroll the list with the mouse, by clicking on the arrows in the bottom corners.

Once you have chosen a sprite, switch to the editor using TAB and use the four cursor keys to move the cursor, SPACE to toggle the cell colour (or use the mouse). The context menu for this screen allows you to reflect, rotate, move, invert and clear the bitmap.

Press CTRL+Z or CTRL+U to undo changes to the current sprite. Press it again to undo the undo.

7.5 The Room Editor

The room editor is controlled a bit differently from the other screens. Instead of using TAB to move between controls and SPACE to select, the cursor keys are used to move the blue/white cursor in the room display. The keyboard is used to choose what to do under that cursor. The full list of keys is:

Key	Meaning
Cursor keys	Move room cursor
CTRL+Cursor keys	Go to another room, following the JSW exits
< >	Go to room numbered 1 higher or 1 lower
J	Go to a room chosen from a menu
X	Set up the room's exits (7.5.2)
B	Clipboard (7.5.3)
O	Room options (7.5.4)
G	Guardians. (7.5.5)
ALT+C	Conveyor options (7.5.6)
1-8	Choose guardian to position using the cursor
ALT+1-8	Change guardian start frame (7.5.7)
A/W/E/F	Draw Air/Water/Earth/Fire cell under the cursor when SPACE is pressed
R	Ramp editor
C	Conveyor editor
O	Toggle object under the cursor when SPACE is pressed
^Z or ^U	Undo changes to current room.

7.5.1 Moving between rooms

The panel in the bottom left-hand corner contains controls used to move between rooms. When you go to another room the current room is saved.

The four arrows (corresponding to CTRL+cursor keys) move you to neighbouring rooms in the JSW map. The < > signs use the room number sequence, and "Enter no." (press J) lets you choose the new room from a menu.

7.5.2 Editing exits

When you ask to edit exits, a menu appears showing the current exit assignments. Press ESC to leave them as they are, or choose the exit to set. If you chose an exit, a list of rooms then appears for you to choose the new destination.

7.5.3 Clipboard

The clipboard allows you the usual copy/cut/paste options, plus the ability to clear the room to any of the four cell types and to mirror the structure of the room horizontally or vertically. Note that mirroring does not alter ramps, conveyors or exit assignments.

7.5.4 Room options

The room options menu gives you three options:

- **General:** Allows you to set the border colour, room title and (in 128k games) Willy's sprite.
- **Shapes:** Shows the bitmaps for the seven cell types, and allows you to edit them. Right-click a bitmap for reflect/rotate/move options, as in the sprite editor.
- **Colours:** Allows you to edit the colours of the cells.

7.5.5 Guardians

If you don't have a guardian currently selected, you are given the option of adding another one (assuming, that is, that you don't have eight in the room already). If you do have a guardian selected, you are also able to delete it from the room or to edit it (section 8).

7.5.6 Conveyor options

Use the conveyor options menu to set four special conveyor types:

- **Ramp left / Ramp right:** Turn the ramp into a conveyor ramp, with no separate conveyor.
- **Sticky / off:** The conveyor is stationary.

7.5.7 Guardian / guardian start frame

To choose a guardian to work with, click its number in the second menu from the right. The guardian's eight frames will appear at the bottom of the screen, and an outline of its path will be visible at the top. To position a guardian, use the cursor or mouse.

To change the guardian's start frame, press ALT+numbers, or click on the animations within the guardian list.

7.5.8 Cell editors

Edit the layout of the room by pressing A,E,W,F,R or C, moving the cursor to where you want, and pressing SPACE or clicking the mouse. You can drag the mouse to draw shapes.

The ramp and conveyor editors need two presses of SPACE (or two clicks), one at each end. For a ramp, start at the bottom; as you press left/right, the ramp will grow. For a conveyor, start at the "from" end and move the cursor towards the "to" end. If you press SPACE twice without moving in between, the ramp/conveyor will be deleted; to create a ramp/conveyor one character long, grow it to two characters and then shrink it.

Objects are superimposed on the other cell types. Select the object type by pressing "O". To add an object, click where one is not; to remove it, click where one is.

7.6 Teleport editor

The teleport overlay is supported for JSW48 and JSW128 games. By default teleportation is not supported; to get teleporter support you must load the overlay. In JSW48 you then have to sacrifice a room to the teleporter code; in JSW128 it is allocated from the memory map.

Once the teleporter overlay is loaded, you can click on the room to create a teleporter (which will appear as an orange “T”). You will then be asked to choose its destination.

If you click on an existing teleporter, you can delete it or change its destination.

7.7 Start position editor

This editor allows you to position three special sprites - Willy’s initial position, Maria and the toilet. Click the sprites (or press W / M / T) and then position them in the room you want. Note that in Henry’s Hoard you can only position Willy/Henry. In a Geoff Mode game you can’t have Maria and the toilet in the same room.

7.8 Font editor

The font editor works exactly like the sprite editor - click on a letter, and edit its bitmap.

7.9 Screen editor

The screen editor works like the room editor - use cursor keys or the mouse to move the cursor within the image, and press SPACE or click the mouse to draw. Depending on which screen you are editing, you may be able to edit just the pixels, just the attributes, or both. Press the “M” key or click the “Mode” icon to switch between pixel and attribute modes.

7.9.1 The Zoom window

To the left of the main screen window is a zoom window. This shows a scaled-up version of the character cell the cursor is currently in. Clicks in this window have no effect; it’s for viewing only.

7.9.2 Editing pixels

Click on a pixel to toggle it between ink and paper; you can drag the mouse to set several pixels to the same colour. The keyboard control may be more useful here because moving the mouse by one pixel at a time is quite fiddly.

7.9.3 Editing attributes

The current attribute that will be used is set using I(nk), P(aper), B(right), F(lash). Once you have chosen the attribute combination you want, click on a character square to set its colours.

7.9.4 Grids

Press “G” or click on the “Grid” icon to switch between the two available grids. They are the Pixel grid (attributes show as normal, but a pattern of squares appears instead of the pixels) and the Attribute grid (pixels show as normal, but the attributes are a fixed pattern).

7.9.5 Next / Previous

Press “<” / “>” or click the same symbols onscreen to move from one picture to the next. The following pictures exist in the different games:

Game	Screen no.	Screen name	Comments
JSW 48k	1	Bottom third	256x64, attributes only
	2	Title screen	256x128, attributes only
JSW 128k	1	Bottom third	256x64, attributes only
	2	Title screen	256x128, bitmap and attributes
	3	Title screen animation	attributes only
	4	Title screen animation	attributes only
Henry’s Hoard	1	Title screen 2 of 3	Only present in 1985 version
	2	Victory screen	256x64, bitmap only

7.9.6 Undo

Press Control-Z or Control-U to undo everything you have done to a picture since the last “<” or “>”. Press Control-Z again to undo the undo.

8 The Guardian editor

When a guardian is being edited, the top half of the screen shows a preview of the result, while the bottom half contains controls. The controls shown vary for different guardian types, but include:

Control	Types	Description
Type	All	Change guardian type
Sprite	All except arrow & rope	Change sprite page
Y	Horizontal, diagonal	Vertical position
Y	Vertical	Initial vertical position
right of Y	Vertical, diagonal	Vertical step
L/R?	All except vertical	Initial direction - left or right
Colour & bright	All except arrow & rope	Guardian colour
Animation	All except arrow & rope	Animation type
Bounds	All except arrow & rope	Left/right or up/down limits of travel
Rope pos	Rope	Initial position of rope..
Rope len.	Rope	Length of the rope
Rope swing	Rope	How far the rope swings out
Bitmap	Arrow	Top / bottom of the arrow.
Start pos	Arrow	Initial position of the arrow.
!	All	Edit the guardian as hex (section 8.5)
Wrap	Geoff Mode	Is the guardian one-way?
H/D?	Geoff Mode	Horizontal or diagonal?

8.1 Guardian types

In JSW48, there are four guardian types - horizontal, vertical, arrow and rope. In JSW128 there are ten; the four mentioned earlier, two diagonal types, and flashing versions of all except the arrow and the rope. In general JSWED tries to preserve guardian data when changing from one type to another, but this is not always possible; so changing from a vertical guardian to a rope and back won't give you the guardian you had before.

In Geoff Mode, there are four guardian types (horizontal/diagonal, vertical, arrow and rope). Use the "H/D" setting to switch between horizontal and diagonal.

8.2 Editing conventional guardians

There are no real pitfalls with editing conventional guardians. If for some reason the preview of the guardian's bounding rectangle gets out of step with the values you are entering, it is possible to force a recalculation. To do this, click [!] for the hex editor, and then click [OK] to dismiss it - don't change any of the fields!

8.3 Rope editing

The initial position of the rope is positive if the rope starts in the right-hand half of the screen, negative if the rope starts in the left-hand half, and zero if the rope starts dead centre. It should be less than the rope "swing" value.

The rope length can be 1-32; 32 is the usual value.

Unless you are using the "adjacent ropes" patch, ropes must be stored last in a room, *or* be followed by an instance of a blank guardian such as Guardian 0. This is because a bug (or feature?) in the game engine causes a rope to write bytes into the following guardian's data.

8.4 Arrow editing

Arrows have 256 possible positions. Numbers 0-31 are onscreen; the others are off-screen. This is set up by the "start pos" field. The small bitmap editor above it is used to set the pattern used on the top and bottom of the arrow.

8.5 Hex editing

Press the [!] button to edit a guardian as hexadecimal bytes. It is possible to create guardians that crash JSW by doing this, so take care.

8.6 Geoff Mode bounds

In Geoff Mode, the guardian bounds are, respectively, an "initial frame count" and a "maximum frame count", rather than "left limit" and "right limit".

9 Good Advice

The following notes come from the documentation of Paul Rhodes's JSW editor:

1. Don't put anything in the path of a guardian.

2. Don't have arrows passing through anything with white INK.
3. If you have white background INK, any objects in the room will be automatically collected on entry to the room (see swimming pool).
4. Do not have two characters with the same attributes, especially if one is a guardian.
5. Having the same attributes for ramp and conveyor creates a 'conveyor ramp' (see Chapel).
6. Avoid having a guardian at the top of the screen above a gap at the bottom (see right-hand half of Under the Roof).
7. Do not put anything in the path of a rope (try it and see!), and do not allow an arrow to pass through a rope (especially not a white rope).
8. Never allow guardians to overlap.
9. Objects on top of other characters (floors, walls, etc.) cannot be collected.