

**NAME**

srec\_binary – binary file format

**DESCRIPTION**

It is possible to read and write binary files using *srec\_cat(1)*.

**File Holes**

A file hole is a portion of a regular file that contains null characters and is not stored in any data block on disk. Holes are a long-standing feature of Unix files. For instance, the following Unix command creates a file in which the first bytes are a hole:

```
$ echo -n "X" | dd of=/tmp/hole bs=1024 seek=6
```

Now /tmp/hole has 6,145 characters (6,144 null characters plus an X character), yet the file occupies just one data block on disk.

File holes were introduced to avoid wasting disk space. They are used extensively by database applications and, more generally, by all applications that perform hashing on files.

See <http://www.oreilly.com/catalog/linuxkernel2/chapter/ch17.pdf> for more information.

**Reading**

The size of binary files is taken from the size of the file on the file system. If the file has "holes" these will read as blocks of zero data, as there is no elegant way to detect Unix file holes. In general, you probably want to use the **-unfill** filter to find and remove large swathes of zero bytes.

**Writing**

In producing a binary file, *srec\_cat(1)* honours the address information and places the data into the binary file at the addresses specified in the hex file. This usually results on "holes" in the file. Sometimes alarmingly large file sizes are reported as a result.

If you are on a brain-dead operating system without file "holes" then there are going to be real data blocks containing real zero bytes, and consuming real amounts of disk space. Upgrade – I suggest Linux.

To make a file of the size you expect, use

```
srec_info foo.s19
```

to find the lowest address, then use

```
srec_cat foo.s19 --intel -offset -n -o foo.bin -binary
```

where *n* is the lowest address present in the `foo.s19` file, as reported by *srec\_info(1)*. The **negative** offset serves to move the data down to have an origin of zero.

**COPYRIGHT**

*srec\_binary* version 1.47

Copyright © 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Peter Miller

The *srec\_binary* program comes with ABSOLUTELY NO WARRANTY; for details use the '*srec\_binary -VERsion License*' command. This is free software and you are welcome to redistribute it under certain conditions; for details use the '*srec\_binary -VERsion License*' command.

**AUTHOR**

Peter Miller    E-Mail:    pmiller@opensource.org.au  
 ^^\*            WWW:        http://miller.emu.id.au/pmiller/