

<b>NAME</b>	slap – print text labels on a Smart Label Printer										
<b>SYNOPSIS</b>	slap [ -b <i>maxbaud</i> -c <i>num</i> -f <i>font</i> -l -m <i>size</i> -o <i>port</i> -p <i>type</i> -portrait -s -x <i>num</i> -version ] [ <i>files</i> ]										
<b>DESCRIPTION</b>	<p><b>slap</b> prints the specified text <i>files</i> on any Seiko Instruments' Smart Label Printer ®. It is needed because such printers are not ASCII devices - they can only natively print raster images and communicate with the computer via a proprietary protocol.</p> <p>If no <i>files</i> are specified, input is read from standard-input.</p> <p>Text that would fall off the bottom of a label is printed on the next label. Text that would fall off the side of a label is silently discarded. A new label is started for each input file.</p> <p>The Smart Label Printers allow a printed label to be "torn off" without having to feed an extra (blank) label first. <b>slap</b> deliberately avoids printing blank labels, even those caused by <i>explicit</i> formfeeds or linefeeds.</p> <p><b>slap</b> recognises and interprets the common "control" characters:</p> <table border="0" style="margin-left: 2em;"> <tr> <td style="padding-right: 2em;">carriage return</td> <td>the print position is moved to the left margin.</td> </tr> <tr> <td>linefeed</td> <td>the print position is moved down by the height of the current font, and is also moved to the left-hand margin. In this sense, <b>slap</b> interprets "linefeed" in the same way as most other UNIX programs: as a "newline".</td> </tr> <tr> <td>formfeed</td> <td>the current label (if not blank) is ejected and the print position is moved to the start of the next label.</td> </tr> <tr> <td>backspace</td> <td>the print position is moved back to where the last character was started, resulting in "overprinting". Some other programs expect to be able to generate emboldened or underlined text using this method. A backspace as the first character of a line has no effect.</td> </tr> <tr> <td>horizontal tab</td> <td>moves the print position to the next tab-stop. Tab-stops are set at every 8 spaces.</td> </tr> </table> <p>All other control characters cause a (possibly blank) glyph to be printed.</p>	carriage return	the print position is moved to the left margin.	linefeed	the print position is moved down by the height of the current font, and is also moved to the left-hand margin. In this sense, <b>slap</b> interprets "linefeed" in the same way as most other UNIX programs: as a "newline".	formfeed	the current label (if not blank) is ejected and the print position is moved to the start of the next label.	backspace	the print position is moved back to where the last character was started, resulting in "overprinting". Some other programs expect to be able to generate emboldened or underlined text using this method. A backspace as the first character of a line has no effect.	horizontal tab	moves the print position to the next tab-stop. Tab-stops are set at every 8 spaces.
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<b>OPTIONS</b>	<p>-b <i>maxbaud</i> specifies the maximum baud-rate for communication with the printer. This is only needed to avoid bugs in some serial-port drivers. See NOTES.</p> <p>-c <i>num</i> print <i>num</i> copies of each label. Default is 1.</p> <p>-f <b>font</b> display text using <b>font</b>. The default is "areal-10". <b>slap</b> comes with the following fonts as standard:</p>										

Typefaces	Point-Sizes	Variations
career, areal, strait, thames	8, 10, 12, 14, 18, 24	bold, italic, bold-italic

Career is a monospaced "typewriter" typeface. Areal is a Swiss-style sans-serif typeface. Strait is a thin version of areal. Thames is a classical serif font, similar to that used in newspapers and books.

All the standard fonts use the ISO-8859-1 (ECMA-94 Latin-1) character-set.

If *font* is not a filename, the directories listed in the **SLAP\_FONTPATH** environment-variable are searched to locate a file with the name:

*typeface-variation-pointsize.type*

where *type* is the printer-type (see -p flag, below), and the other components are as given in the table above. Note that *-variation* is omitted for non-bold, non-italic fonts.

-l emit warnings and error-messages in LaserWriter format (some print-spooling systems require this). Default is to emit undecorated messages.

-m *media-type*

tells **slap** what kind of labels are loaded in the printer, according to the following table:

Description	Size	<i>media-type</i>
Standard Address Labels	28 x 89 mm	std
Euro Address Labels	36 x 89 mm	euro
Diskette Labels	54 x 70 mm	disk
Shipping Labels	54 x 101 mm	ship
Small Labels	28 x 51 mm	small
Thin Labels	14 x 87 mm	strip
35mm Slide Labels	38 x 11 mm	slide
Cassette Labels	9 x 71 mm	cass
Leitz-Folder Labels	36 x 190 mm	leitz
Large Labels	51 x 190 mm	large

The default is "std".

-o *port* Send output to *port*, which should be the pathname of the serial-device file to which the printer is connected. By default, **slap** assumes that it's standard-output is already connected to the appropriate serial-device file.

-p *printer-model*

specifies the *type* of printer.

Printer Model	Short Name	<i>model</i>
Smart Label Printer	SLP	slp
Smart Label Printer Plus	SLP Plus	slp/plus
Smart Label Printer EZ30	SLP EZ30	slp/ez30
Smart Label Printer Pro	SLP Pro	slp/pro
Smart Label Printer 100	SLP 100	slp/100
Smart Label Printer 120	SLP 120	slp/120
Smart Label Printer 200	SLP 200	slp/200
Smart Label Printer 220	SLP 220	slp/220
Smart Label Printer 240	SLP 240	slp/240
auto-detect	auto	auto

The default is, of course, "auto".

- portrait Print in portrait orientation. The default is landscape.
- s Remove leading empty lines from the top of each printed label. The default is not to.
- x *num* selects the baud-rate-mapping scheme *num* (see PLATFORM ISSUES). Default is no mapping.
- version display program version information to standard-error. This option suppresses all other processing.

## SIGNALS

**slap** catches hangup, interrupt, quit, and terminate signals so that the printer can be put into a quiescent state if **slap** is terminated by an outside agent (eg: the print-spooling subsystem).

After tidying up, **slap** stops catching the offending signal and sends itself the same signal, which (this time) will terminate it, giving the impression that the first occurrence of the signal was not caught. This behaviour is needed to keep some print-spooling systems happy.

## WARNINGS

Are printed to the standard-error channel.

cannot read input file: *name*  
cannot create temporary file  
printer empty: load labels  
platen open: close lid

## ERRORS

Fatal errors detected by **slap**, and the usual corrective actions, fall into several categories. All error messages are printed to the standard-error channel.

## Media Faults

The corrective action for these is self-evident, but read the printer manual beforehand - pulling the label paper through the printer by hand could invalidate your warranty.

label jammed in printer!

<b>Printer Faults</b>	<p>These can usually be fixed by making sure that the printer is connected and actually switched on, or by resetting the printer with the power-switch.</p> <ul style="list-style-type: none"> <li>printer not responding to status requests</li> <li>printer not responding</li> <li>hardware fault</li> <li>communication error</li> <li>command-protocol error</li> <li>timeout waiting for printer to become ready</li> <li>timeout waiting for printer to become idle</li> </ul>
<b>Serial-Port Configuration Errors</b>	<p>Your System Administrator should be able to fix these. Check that your serial-ports are configured to operate according to the POSIX 1003.1 <b>termios(3)</b> specifications.</p> <ul style="list-style-type: none"> <li>cannot set baud-rate on serial-port: <i>name</i></li> <li>cannot set read-timeout on serial-port: <i>name</i></li> <li>cannot set tty modes on serial-port: <i>name</i></li> </ul>
<b>Permission Errors</b>	<p>Caused by a lack of permission to use a particular serial-port device:</p> <ul style="list-style-type: none"> <li>cannot open serial-port: <i>name</i></li> <li>cannot read from serial-port: <i>name</i></li> <li>cannot write to serial-port: <i>name</i></li> </ul>
<b>Physical I/O Faults</b>	<p>In some cases these can be corrected by verifying that the cabling to the printer is not damaged, and by resetting the printer with the power-switch.</p> <ul style="list-style-type: none"> <li>read error on <i>file/port-name</i></li> <li>write error on <i>file/port-name</i></li> </ul>
<b>Usage Errors</b>	<p>These mostly indicate command-line mistakes.</p> <ul style="list-style-type: none"> <li>usage: slap [-b## -c# -f* -l -m* -o* -p* -s -x# -version] [files]</li> <li>cannot locate font: <i>name</i></li> <li>invalid printer-model: <i>model</i></li> <li>invalid media-type: <i>type</i></li> <li>invalid media-size for <i>model</i> printer: <i>size</i></li> <li>invalid media-size for <i>model</i> printer: <i>size</i></li> <li>font is too tall for selected media-size or orientation</li> <li>serial-port <i>name</i> is already in use</li> <li><i>name</i> is not a serial-port</li> </ul>
<b>OTHER MESSAGES</b>	<p>Are also printed to the standard-error channel.</p> <ul style="list-style-type: none"> <li>labels loaded</li> <li>lid closed</li> </ul>
<b>RETURNS</b>	<p><b>slap</b> returns failure if any of the above error-messages is emitted. Otherwise <b>slap</b> returns success.</p>

**SEE ALSO** **lp(1)**, **lpfilter(1m)**, **lpadmin(1m)** (UNIX System V Reference Manual);  
**lpr(1)**, **lpd(8)**, **printcap(5)** (UNIX BSD 4.2 Reference Manual).

**VERSION** slap 2.4.4 09feb2001 MJS

**AVAILABILITY** **slap** can be built on any system conforming to IEEE Std 1003.1-1988 with Standard C Language Binding (ANSI X3.159-1989, hosted program environment).

In practice, this includes:

- UNIX System V release 3.2 and derivatives
- UNIX BSD 4.2 and derivatives, if you have an ANSI C compiler and libraries
- OSF/1
- Linux (Slackware, Redhat, SLS, Yygdrasil, etc)
- transIDRIS v3
- ESIX
- Coherent
- etc etc etc

**NOTES** "Smart Label Printer" is a registered trademark of Seiko Instruments USA Inc.

**PLATFORM ISSUES** Some platforms have a `tcdrain()` function that does not conform to POSIX.1 specifications. This manifests itself as the inability to drive the SLP-Pro, SLP-100, SLP-120, SLP-200, SLP-220 and SLP-240 (printer is always reported as "not reponding"). On such platforms, you may need to set `TCDRAIN_MAYBE_BROKEN=1` in the generated makefile.

The SLP-100, SLP-200 and SLP-240 printers only work with host serial-ports capable of 57600 baud. For x86 systems, ancient 8250 UARTs will not do for these specific printer models. SGI Iris-4D family systems will not be able to use these specific printers. See also "Buggy Serial-Port Drivers", below.

**Baud-Rate Mapping** Older UNIX systems do not provide a native way for programs to set a serial-port to operate at 57600 baud, even if the port hardware itself can do it. A few serial-port device-drivers can be configured to map requests for a lower speed into a hardware-specific command to set 57600 baud. This is known as "baud-rate mapping".

Unfortunately, the actual lower baud-rate to request to get 57600 baud is system- and often device-driver-specific, thus **slap** supports various mapping schemes, selected by the `-x#` flag:

- x2 uses "50 baud" as a synonym for 57600 baud. This allows use of the SLP-100, SLP-200 and SLP-240 on the IBM RS/6000 under AIX 4.x, if the printer is attached to either a 7318 8-port concentrator or a 128-port adaptor, and the port has been initialised with the command `"/usr/lbin/tty/stty-cxma fastbaud tty#"`.
- x3 uses "75 baud" as a synonym for 57600 baud. This allows use of the SLP-100, SLP-200 and SLP-240 on Sun SPARCstation and SPARCserver systems under

Solaris 2.1-2.4, if the printer is connected to a Magma 4SP, 8SP or 16SP SBus card (or one of their SYNC or DMA variants). NOTE: baud-rate mapping is not needed for Solaris 2.5 and later releases.

**Buggy Serial-Port Drivers**

The Solaris "zs" device-driver for the built-in serial-ports of Sun SPARCstation, SPARCserver, Ultra-1 and Ultra-2 systems claims to be able to support 57600 baud, but actually messes up if you try to set such a speed. Thus the **on-board** serial ports of these systems cannot be used with the SLP-100, SLP-200 and SLP-240 printers; and requires the "-b38400" flag to drive the SLP-120 and SLP-220 printers. This applies to all Solaris releases from 2.1 to 8.

Note that this driver bug does not apply to any known SBus add-on serial-port card.

**BUGS**

If someone is foolish enough to switch the printer off (or unplug the serial cable) whilst the printer is actually printing, it takes a little while (between 20 and 60 seconds) for **slap** to notice and complain.

There should be a flag to enable "auto-linefeed", to allow text that would fall off the side of the label to be printed on the next line down instead.

The ability to have multiple fonts per label (selected on the fly with inline escape-codes) is a possible future enhancement.

Automatic vertical-centering of text on the label is another possible future enhancement.

The ability to use fully scalable PostScript or TrueType fonts (instead of bitmap fonts in a custom format) would be handy - watch this space...