

NAME

curs_sp_funcs - *curses* screen-pointer extension

SYNOPSIS

```
#include <curses.h>
```

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int alloc_pair_sp(SCREEN* sp, int fg, int bg);
int assume_default_colors_sp(SCREEN* sp, int fg, int bg);
int baudrate_sp(SCREEN* sp);
int beep_sp(SCREEN* sp);
bool can_change_color_sp(SCREEN* sp);
int cbreak_sp(SCREEN* sp);
int color_content_sp(SCREEN* sp, short color, short* r, short* g, short* b);
int curs_set_sp(SCREEN* sp, int visibility);
int def_prog_mode_sp(SCREEN* sp);
int def_shell_mode_sp(SCREEN* sp);

int define_key_sp(SCREEN* sp, const char * definition, int keycode);
int delay_output_sp(SCREEN* sp, int ms);
int doupdate_sp(SCREEN* sp);
int echo_sp(SCREEN* sp);
int endwin_sp(SCREEN* sp);
char erasechar_sp(SCREEN* sp);
int erasewchar_sp(SCREEN* sp, wchar_t *wc);
int extended_color_content_sp(SCREEN * sp, int color, int * r, int * g, int * b);
int extended_pair_content_sp(SCREEN* sp, int pair, int * fg, int * bg);
int extended_slk_color_sp(SCREEN* sp, int pair);

void filter_sp(SCREEN* sp);
int find_pair_sp(SCREEN* sp, int fg, int bg);
int flash_sp(SCREEN* sp);
int flushinp_sp(SCREEN* sp);
int free_pair_sp(SCREEN* sp, int pair);
int get_escdelay_sp(SCREEN* sp);
int getmouse_sp(SCREEN* sp, MEVENT* event);
WINDOW* getwin_sp(SCREEN* sp, FILE* filep);
int halfdelay_sp(SCREEN* sp, int tenths);
bool has_colors_sp(SCREEN* sp);

bool has_ic_sp(SCREEN* sp);
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bool has_il_sp(SCREEN* sp);
int has_key_sp(SCREEN* sp, int c);
bool has_mouse_sp(SCREEN* sp);
int init_color_sp(SCREEN* sp, short color, short r, short g, short b);
int init_extended_color_sp(SCREEN* sp, int color, int r, int g, int b);
int init_extended_pair_sp(SCREEN* sp, int pair, int fg, int bg);
int init_pair_sp(SCREEN* sp, short pair, short fg, short bg);
int intrflush_sp(SCREEN* sp, WINDOW* win, bool bf);
int is_cbreak_sp(SCREEN* sp);

int is_echo_sp(SCREEN* sp);
int is_nl_sp(SCREEN* sp);
int is_raw_sp(SCREEN* sp);
bool is_term_resized_sp(SCREEN* sp, int lines, int columns);
bool isendwin_sp(SCREEN* sp);
int key_defined_sp(SCREEN* sp, const char *definition);
char* keybound_sp(SCREEN* sp, int keycode, int count);
NCURSES_CONST char* keyname_sp(SCREEN* sp, int c);
int keyok_sp(SCREEN* sp, int keycode, bool enable);
char killchar_sp(SCREEN* sp);

int killwchar_sp(SCREEN* sp, wchar_t *wc);
char* longname_sp(SCREEN* sp);
int mprint_sp(SCREEN* sp, char *data, int len);
int mouseinterval_sp(SCREEN* sp, int erval);
mmask_t mousemask_sp(SCREEN* sp, mmask_t newmask, mmask_t *oldmask);
int mcur_sp(SCREEN* sp, int oldrow, int oldcol, int newrow, int newcol);
int napms_sp(SCREEN* sp, int ms);
WINDOW* newpad_sp(SCREEN* sp, int nrows, int ncols);
SCREEN* new_prescr(void);
SCREEN* newterm_sp(SCREEN* sp, const char *type, FILE *outfd, FILE *infd);

WINDOW* newwin_sp(SCREEN* sp, int nlines, int ncols, int begin_y, int begin_x);
int nl_sp(SCREEN* sp);
int nocbreak_sp(SCREEN* sp);
int noecho_sp(SCREEN* sp);
void nofilter_sp(SCREEN* sp);
int nonl_sp(SCREEN* sp);
void noqiflush_sp(SCREEN* sp);
int noraw_sp(SCREEN* sp);

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int pair_content_sp(SCREEN* sp, short pair, short* fg, short* bg);
void qiflush_sp(SCREEN* sp);

int raw_sp(SCREEN* sp);
void reset_color_pairs_sp(SCREEN* sp);
int reset_prog_mode_sp(SCREEN* sp);
int reset_shell_mode_sp(SCREEN* sp);
int resetty_sp(SCREEN* sp);
int resize_term_sp(SCREEN* sp, int lines, int columns);
int resizeterm_sp(SCREEN* sp, int lines, int columns);
int ripoffline_sp(SCREEN* sp, int line, int (*init)(WINDOW* win, int fmt));
int savetty_sp(SCREEN* sp);
int scr_init_sp(SCREEN* sp, const char *filename);

int scr_restore_sp(SCREEN* sp, const char *filename);
int scr_set_sp(SCREEN* sp, const char *filename);
int set_escdelay_sp(SCREEN* sp, int ms);
int set_tabsize_sp(SCREEN* sp, int cols);
int slk_attrset_sp(SCREEN* sp, const chtype a);
int slk_attr_set_sp(SCREEN* sp, const attr_t attrs, short pair, void* opts);
int slk_attroff_sp(SCREEN* sp, const chtype a);
int slk_attron_sp(SCREEN* sp, const chtype a);
attr_t slk_attr_sp(SCREEN* sp);
int slk_clear_sp(SCREEN* sp);

int slk_color_sp(SCREEN* sp, short pair);
int slk_init_sp(SCREEN* sp, int fmt);
char* slk_label_sp(SCREEN* sp, int labnum);
int slk_noutrefresh_sp(SCREEN* sp);
int slk_refresh_sp(SCREEN* sp);
int slk_restore_sp(SCREEN* sp);
int slk_set_sp(SCREEN* sp, int labnum, const char * label, int fmt);
int slk_touch_sp(SCREEN* sp);
int start_color_sp(SCREEN* sp);
attr_t term_attrs_sp(SCREEN* sp);

chtype termattrs_sp(SCREEN* sp);
char* termname_sp(SCREEN* sp);
int typeahead_sp(SCREEN* sp, int fd);
int unget_wch_sp(SCREEN* sp, const wchar_t wc);

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int ungetch_sp(SCREEN* sp, int c);  
int ungetmouse_sp(SCREEN* sp, MEVENT* event);  
int use_default_colors_sp(SCREEN* sp);  
void use_env_sp(SCREEN* sp, bool bf);  
int use_legacy_coding_sp(SCREEN* sp, int level);  
void use_tioctl_sp(SCREEN *sp, bool bf);  
  
int vid_attr_sp(SCREEN* sp, attr_t attrs, short pair, void * opts);  
int vid_puts_sp(SCREEN* sp, attr_t attrs, short pair, void * opts, NCURSES_SP_OUTC putc);  
int vidattr_sp(SCREEN* sp, chtype attrs);  
int vidputs_sp(SCREEN* sp, chtype attrs, NCURSES_SP_OUTC putc);  
wchar_t* wunctrl_sp(SCREEN* sp, cchar_t *wch);  
  
#include <form.h>  
  
FORM* new_form_sp(SCREEN* sp, FIELD **fields);  
  
#include <menu.h>  
  
MENU* new_menu_sp(SCREEN* sp, ITEM **items);  
  
#include <panel.h>  
  
PANEL* ceiling_panel(SCREEN* sp);  
PANEL* ground_panel(SCREEN* sp);  
void update_panels_sp(SCREEN* sp);  
  
#include <term.h>  
  
int del_curterm_sp(SCREEN* sp, TERMINAL *oterm);  
int putp_sp(SCREEN* sp, const char *str);  
int restartterm_sp(SCREEN* sp, NCURSES_CONST char*term, int files, int *errret);  
TERMINAL* set_curterm_sp(SCREEN* sp, TERMINAL*nterm);  
int tgetent_sp(SCREEN* sp, char *bp, const char *name);  
int tgetflag_sp(SCREEN* sp, const char *capname);  
int tgetnum_sp(SCREEN* sp, const char *capname);  
char* tgetstr_sp(SCREEN* sp, const char *capname, char **area);  
char* tgoto_sp(SCREEN* sp, const char *capname, int col, int row);  
int tigetflag_sp(SCREEN* sp, const char *capname);
```

```

int tigetnum_sp(SCREEN* sp, const char *capname);
char* tigetstr_sp(SCREEN* sp, const char *capname);
/* tparm_sp may use 9 long parameters rather than being variadic */
char* tparm_sp(SCREEN* sp, const char *str, ...);
int tputs_sp(SCREEN* sp, const char *str, int affcnt, NCURSES_SP_OUTC putc);

#include <unctrl.h>

NCURSES_CONST char* unctrl_sp(SCREEN* sp, chtype ch);

```

DESCRIPTION

This implementation can be configured to provide a set of functions which improve the ability to manage multiple screens. This feature can be added to any of the configurations supported by *ncurses*; it adds new symbols without changing the meaning of any of the existing ones.

Improved Functions

Most of the functions are new versions of existing functions. A parameter is added at the front of the parameter list. It is a *SCREEN* pointer.

The existing functions all use the current screen, which is a static variable. The extended functions use the specified screen, thereby reducing the number of variables which must be modified to update multiple screens.

New Functions

Here are the new functions:

`ceiling_panel`

this returns a pointer to the topmost panel in the given screen.

`ground_panel`

this returns a pointer to the lowest panel in the given screen.

`new_prescr`

when creating a new screen, the library uses static variables which have been preset, e.g., by `use_env(3X)`, `filter(3X)`, etc. With the screen-pointer extension, there are situations where it must create a current screen before the unextended library does. The `new_prescr` function is used internally to handle these cases. It is also provided to allow applications to customize library initialization.

NOTES

This extension introduces some new names:

NCURSES_SP_FUNCS

This is set to the library patch-level number. In the unextended library, this is zero (0), to make it useful for checking if the extension is provided.

NCURSES_SP_NAME

The new functions are named using the macro *NCURSES_SP_NAME*, which hides the actual implementation. Currently this adds a "_sp" suffix to the name of the unextended function. This manual page indexes the extensions showing the full name. However the proper usage of these functions uses the macro, to provide for the possibility of changing the naming convention for specific library configurations.

NCURSES_SP_OUTC

This is a new function-pointer type to use in the screen-pointer functions where an *NCURSES_OUTC* is used in the unextended library.

NCURSES_OUTC

This is a function-pointer type used for the cases where a function passes characters to the output stream, e.g., **vidputs(3X)**.

PORTABILITY

These routines are specific to *ncurses*. They were not supported on Version 7, BSD or System V implementations. It is recommended that any code depending on *ncurses* extensions be conditioned using *NCURSES_SP_FUNCS*.

SEE ALSO

curses(3X), **curs_opaque(3X)**, **curs_threads(3X)**