

NAME

panel - panel stack extension for curses

SYNOPSIS

```
#include <panel.h>
```

```
cc [flags] sourcefiles -lpanel -lcurses
```

```
PANEL *new_panel(WINDOW *win);
```

```
int bottom_panel(PANEL *pan);
```

```
int top_panel(PANEL *pan);
```

```
int show_panel(PANEL *pan);
```

```
void update_panels(void);
```

```
int hide_panel(PANEL *pan);
```

```
WINDOW *panel_window(const PANEL *pan);
```

```
int replace_panel(PANEL *pan, WINDOW *window);
```

```
int move_panel(PANEL *pan, int starty, int startx);
```

```
int panel_hidden(const PANEL *pan);
```

```
PANEL *panel_above(const PANEL *pan);
```

```
PANEL *panel_below(const PANEL *pan);
```

```
int set_panel_userptr(PANEL *pan, const void *ptr);
```

```
const void *panel_userptr(const PANEL *pan);
```

```
int del_panel(PANEL *pan);
```

```
/* ncurses-extensions */
```

```
PANEL *ground_panel(SCREEN *sp);
```

```
PANEL *ceiling_panel(SCREEN *sp);
```

DESCRIPTION

Panels are **curses(3X)** windows with the added feature of depth. Panel functions allow the use of stacked windows and ensure the proper portions of each window and the curses **stdscr** window are hidden or displayed when panels are added, moved, modified or removed. The set of currently visible panels is the stack of panels. The **stdscr** window is beneath all panels, and is not considered part of the stack.

A window is associated with every panel. The panel routines enable you to create, move, hide, and show panels, as well as position a panel at any desired location in the stack.

Panel routines are a functional layer added to **curses(3X)**, make only high-level curses calls, and work anywhere terminfo curses does.

FUNCTIONS

bottom_panel

bottom_panel(*pan*) puts panel *pan* at the bottom of all panels.

ceiling_panel

ceiling_panel(*sp*) acts like **panel_below**(NULL), for the given **SCREEN** *sp*.

del_panel

del_panel(*pan*) removes the given panel *pan* from the stack and deallocates the **PANEL** structure (but not its associated window).

ground_panel

ground_panel(*sp*) acts like **panel_above**(NULL), for the given **SCREEN** *sp*.

hide_panel

hide_panel(*pan*) removes the given panel *pan* from the panel stack and thus hides it from view. The **PANEL** structure is not lost, merely removed from the stack.

move_panel

move_panel(*pan, starty, startx*) moves the given panel *pan*'s window so that its upper-left corner is at *starty, startx*. It does not change the position of the panel in the stack. Be sure to use this function, not **mvwin(3X)**, to move a panel window.

new_panel

new_panel(*win*) allocates a **PANEL** structure, associates it with *win*, places the panel on the top of the stack (causes it to be displayed above any other panel) and returns a pointer to the new panel.

panel_above

panel_above(*pan*) returns a pointer to the panel above *pan*. If the panel argument is **(PANEL *)0**, it returns a pointer to the bottom panel in the stack.

panel_below

panel_below(*pan*) returns a pointer to the panel just below *pan*. If the panel argument is **(PANEL *)0**, it returns a pointer to the top panel in the stack.

panel_hidden

panel_hidden(*pan*) returns **TRUE** if the panel *pan* is in the panel stack, **FALSE** if it is not. If the panel is a null pointer, return **ERR**.

panel_userptr

panel_userptr(*pan*) returns the user pointer for a given panel *pan*.

panel_window

panel_window(*pan*) returns a pointer to the window of the given panel *pan*.

replace_panel

replace_panel(*pan,window*) replaces the current window of panel *pan* with *window*. This is useful, for example if you want to resize a panel. In **ncurses**, you can call **replace_panel** to resize a panel using a window resized with **wresize**(3X). It does not change the position of the panel in the stack.

set_panel_userptr

set_panel_userptr(*pan,ptr*) sets the panel's user pointer.

show_panel

show_panel(*pan*) makes a hidden panel visible by placing it on top of the panels in the panel stack. See **COMPATIBILITY** below.

top_panel

top_panel(*pan*) puts the given visible panel *pan* on top of all panels in the stack. See **COMPATIBILITY** below.

update_panels

update_panels() refreshes the *virtual screen* to reflect the relations between the panels in the stack, but does not call **douupdate**(3X) to refresh the *physical screen*. Use this function and not **wrefresh**(3X) or **wnoutrefresh**(3X).

update_panels may be called more than once before a call to **douupdate**, but **douupdate** is the function responsible for updating the *physical screen*.

DIAGNOSTICS

Each routine that returns a pointer returns **NULL** if an error occurs. Each routine that returns an int value returns **OK** if it executes successfully and **ERR** if not.

Except as noted, the *pan* and *window* parameters must be non-null. If those are null, an error is returned.

The **move_panel** function uses **mvwin(3X)**, and will return an error if **mvwin** returns an error.

COMPATIBILITY

Reasonable care has been taken to ensure compatibility with the native panel facility introduced in System V (inspection of the SVr4 manual pages suggests the programming interface is unchanged). The **PANEL** data structures are merely similar. The programmer is cautioned not to directly use **PANEL** fields.

The functions **show_panel** and **top_panel** are identical in this implementation, and work equally well with displayed or hidden panels. In the native System V implementation, **show_panel** is intended for making a hidden panel visible (at the top of the stack) and **top_panel** is intended for making an already-visible panel move to the top of the stack. You are cautioned to use the correct function to ensure compatibility with native panel libraries.

NOTE

In your library list, `libpanel.a` should be before `libncurses.a`; that is, you should say `"-lpanel -lncurses"`, not the other way around (which would give a link-error with static libraries).

PORTABILITY

The panel facility was documented in SVr4.2 in *Character User Interface Programming (UNIX SVR4.2)*.

It is not part of X/Open Curses.

A few implementations exist:

- ⊕ Systems based on SVr4 source code, e.g., Solaris, provide this library.
- ⊕ **ncurses** (since version 0.6 in 1993) and **PDCurses** (since version 2.2 in 1995) provide a panel library whose common ancestor was a public domain implementation by Warren Tucker published in *u386mon* 2.20 (1990).

According to Tucker, the SystemV panel library was first released in SVr3.2 (1988), and his implementation helped with a port to SVr3.1 (1987).

Several developers have improved each of these; they are no longer the same as Tucker's implementation.

- ⊕ NetBSD 8 (2018) has a panel library begun by Valery Ushakov in 2015. This is based on the AT&T documentation.

panel(3X)

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FILES

panel.h interface for the panels library

libpanel.a the panels library itself

SEE ALSO

curses(3X), **curs_variables(3X)**,

This describes **ncurses** version 6.2 (patch 20210220).

AUTHOR

Originally written by Warren Tucker <wht@n4hgf.mt-park.ga.us>, primarily to assist in porting *u386mon* to systems without a native panels library.

Repackaged for ncurses by Zeyd ben-Halim.

Juergen Pfeifer and Thomas E. Dickey revised/improved the library.

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