

## A utility to capture and print *screenshots* under Windows.

### Purpose

*Otto's PrtScr (OPS)* enhances the built-in screen capture ability of Windows. When you press **PrtScr** or **Alt-PrtScr** Windows places a bitmap image of the screen or active window on the clipboard. *Otto's PrtScr* will capture these snapshots and print them for you. You can also 'snap' any region of the screen and treat it just like a print screen request. You can choose to print from 1 to 6 snapshots on a page or save the page to disk as a **.BMP** file.

### Prerequisites:

Windows 3.1 running in *enhanced* mode, Windows 95 or Windows NT. The 16 bit version of OPS (PRTSCR.EXE) runs under both Windows 3.1 and Windows 95. The 32 bit version (PRTSCR32.EXE) runs only under Windows 95 or NT.

### Constraints:

Sufficient memory to store the screen snapshots until printed. The actual requirements vary with the video mode (VGA, SuperVGA or True Color) and number of snapshots per page. The printer driver must support StretchDIBits(). Only Letter, Legal and A4 paper sizes are supported.

### Installation:

There are 16 bit and 32 bit versions of *Otto's PrtScr*. Unzip either PRTSCR16.ZIP for the 16 bit version or PRTSCR32.ZIP for the 32bit one.

For 16 bit version:

☞ Copy PRTSCR.EXE, PSHOOK.DLL and the help file PRTSCR.HLP to any suitable directory. You must place the PSHOOK.DLL file in the same directory as the program, or in the path.

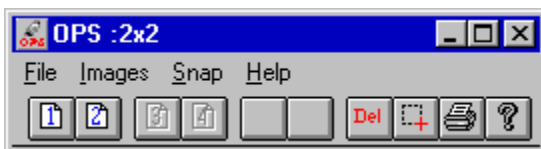
for 32 bit version:

☞ Copy PRTSCR32.EXE, PSHOOK32.DLL and the help file PRTSCR32.HLP to any suitable directory. You must place the PSHOOK32.DLL file in the same directory as the program, or in the path.

### The OPS Display

When OPS starts it restores itself to the last position it had on the screen. You can start it either as an icon or an open window.

The open window looks like this:



The title bar displays the current grid - in this case 2 across by 2 down. This also determines the number of snapshots on a printed page. If OPS is inactive, the title bar reads ': ~~';

Below are a row of iconic buttons. The first 6 display graphically the current configuration and status. If a button is empty, it is not used in the current configuration. If it displays a page icon it is storing a snapshot; if the icon is grayed out, it is waiting for a snapshot.

In the sample above, 4 buttons are configured: the first two are active and contain images, the second two are inactive and waiting for snaps. The last two buttons are unused in this configuration.

The remaining buttons let you

- \*Delete all snapshots
- \*Snap a region of the screen
- \*Print all snapshots
- \*Get help

There are menu choices that correspond to the toolbar buttons. The most frequently used menu items are also available on the **System Menu** which can be reached from the program icon. The **File/Print To Disk...** option is only available from the menu bar.

*Win32 Only:* the toolbar buttons have a tooltip feature that appears when you place the mouse pointer over a button.

## Using Otto's PrtScr

### *The First Time*

After you launch the program, first time users will want to choose **File/Configure...** to set the printing margins and the snapshot grid. You can choose these options from either the *System Menu* or the *File* menu. The grid you choose determines the number of snapshots stored by OPS before printing. For example, a 2 by 2 grid would store 4 snapshots before printing. For the details on configuring OPS, see the **Configuration** section below.

### *Taking Snapshots*

Once you have selected a grid you can start taking snapshots. Just hit **PrtScr** to snap the whole desktop or **Alt-PrtScr** to snap the active window (the combination of **alt** and **shift** may vary depending upon your keyboard). As each new snapshot is stored the next button on the button bar is activated (as well as the corresponding **Snap** on the *Pages* menu).

To take a snapshot of a *portion* of the screen, click on the **Snap** button or menu item. The cursor will change to a cross. You can then click and draw out a rectangular selection box anywhere on the screen. When you let up the mouse button, that region will be 'snapped', copied to the clipboard, and captured in OPS just like any other snapshot. This way you can select a part of a window, or several windows together. You can cancel the snap by clicking with the right mouse button.

When you have filled the grid ( for example 3 snapshots for a 1 by 3 grid ) OPS starts printing. It pops up a **Printer Options** dialog box that lets you confirm the printer (and change the orientation using the **Options** button). Once you choose OK, printing begins. If you wish, you can choose **Cancel** and go back to work. You can also choose to **Print to Disk** which will save the output as a bitmap file. See the section on **Print to Disk** for the details.

While the OPS (and Windows) is at work printing, you can return to other applications. If you try to take more snapshots (**NOT** a good idea) OPS ignores them.

When the print job is over, the current snapshots are deleted from memory and you can start over accumulating snaps.

If you exit or close OPS and there are unprinted snapshots, you will be given a chance to print them before

exiting.

### ***Managing Snaps***

There are a couple of options that let you control the snapshots stored by OPS. You can click the button of an active snapshot to delete that snapshot. If you delete a snapshot in the middle, the following snaps are moved up to fill the gap. Proceeding this way you can delete all the snapshots one by one. If you press the **Del** button, you delete all the snapshots at one stroke. The **Images** menu also lets you delete active snapshots. Inactive items are grayed.

For example, if you click the #2 page icon below,



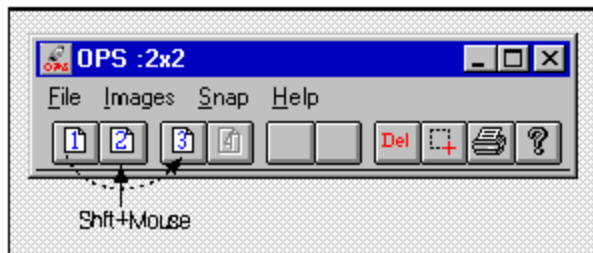
the second snapshot will be deleted, and #3 will become #2.

### ***Previewing Snaps***

To see a *preview* screen of the currently stored snaps, just click the **Printer** icon on the toolbar. OPS will zoom to full screen and let you see the snaps. You can use the "magnify" cursor to enlarge the view. The snaps are captioned with a number that corresponds to their icon. If you see a snapshot you no longer want, cancel the preview and click the icon with the same number. Remember that the other snaps will be moved up to occupy the empty slot.

### ***Rearranging Snaps using Drag & Drop***

You can rearrange the snapshots using drag and drop. To make this work, hold down the **Shift** key throughout the operation.



Now, press with the primary mouse button over an existing snap. The cursor changes to an Up-Arrow. Move it to another active snapshot (while holding down the shift key), and let up on the mouse button. The first snap will be inserted at this point and the other snapshots moved to fill the space. You are not deleting snapshots with this operation - you are merely moving them on the printing grid.

If you "drop" the snap on an inactive button, or on anything other than an active snapshot, the operation is cancelled.

To make this worthwhile, you really need to use **PrintPreview** to verify the existing layout, then make some moves, and do a final check.

### ***Deactivating OPS***

You can turn off the print screen capture by choosing **File/Deactive PrtScr**. This "unhooks" OPS without closing the application. You can reactivate OPS by choosing **File/Activate PrtScr**. OPS always starts up active. Right clicking on the title bar/icon also toggles the current state.

### ***Emptying the Clipboard***

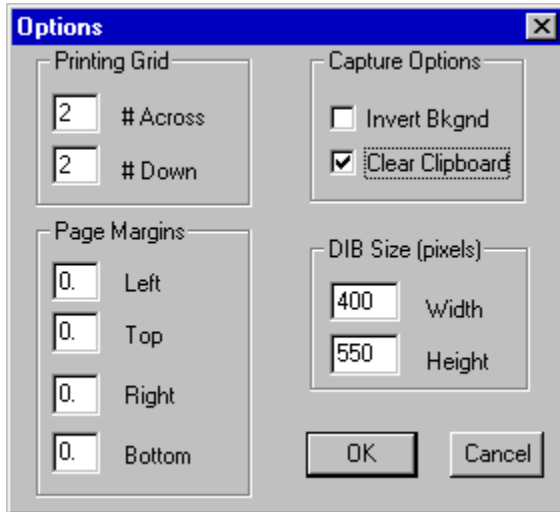
Under the **File** menu there is an option to empty the clipboard. In high resolution graphics modes (16 and 24 bit color), the size of a snapshot on the clipboard is often substantial. You can recover this memory if

you wish by deleting the object with this menu option.

You can **Configure** OPS to automatically delete the image on the clipboard after it captures it. This helps to keep memory consumption under control. See the **File/Configure** options below.

## Configuration

Choose **File/Configure** to set printing and the grid options.



OPS stores and prints snapshots based on a grid that you specify (within limits!). You can choose a grid with :

across: 1 or 2 cells  
down 1, 2 or 3

Thus you can print from 1 to 6 snapshots per page.

The margins you set affect the entire page. Regretfully the measurements must be in **inches**. These margins are specified from the *edge of the paper* and must be greater than the printer minimum (usually .25 to .5 inch) to have an effect. For example, specifying a left margin of .125 inch is likely to have no effect since the printer minimum (say .25) is probably greater.

Between the printed snapshots there is also a 10% gutter.

You can change the printing grid at any time without losing snapshots. But, if you reduce the number of snapshots on the grid (for example going from a 2x3 grid to a 2x2) and already have a #5 snapshot stored in memory, that fifth snapshot will never print -- unless you change the grid again.

The **Invert Bkgnd** option changes the way screen shots are captured and printed. When active, the screen shots are converted to monochrome bitmaps at the time of capture. At print time the monochrome images are inverted so that dark become light and *vice versa*. This rather specialized option helps to print DOS text windows and certain Windows applications emulating text based sessions, such as mainframe terminal emulators.

The **Clear Clipboard** option will automatically empty the clipboard after each image is captured. For systems running in 16 or 24 bit color modes, the size of the the bitmap on the clipboard is often substantial - 1 mb or greater is not unusual. You can have OPS automatically recover this memory by checking this option.

The **DIB Size** option lets you set the dimensions (in pixels) of the bitmap created by **Print To Disk**. These dimensions, like a piece of paper, correspond to the "portrait" printing mode. You can set the DIB Width between 0 and 2200, and the DIB Height between 0 and 3200.

## Printing

OPS stores snapshots for only one printed page at a time. The grid you establish in **File/Configure...** determines the number of snapshots. When you have 'filled' the current grid, OPS prints the page.

You can force OPS to print the current page, even if not full, by clicking the Printer icon. A print preview screen will be built showing the current snapshots. To continue with the print click **Print**, or **Cancel** to exit.

The individual snapshots are scaled to fit in the grid based on the aspect ratio of the original image- You will have to experiment a bit with the printer orientation to see what works best for a given grid. I find that portrait usually works best with 1x2 and 2x3 grids, while landscape is best with 1x1 and 2x2.

If you click **Cancel** from the print dialog box, the snapshots are not deleted from memory. You can then add another snapshot, but remember that printing will be based on the current grid regardless of how many snapshots there are.

OPS supports letter, legal and A4 paper sizes.

OPS remembers the printer orientation from session to session. When it starts, it temporarily changes the system printer orientation to match the last session. You can override this setting by using the **File/Print Setup** menu option. You can also discover the current orientation by looking at the display in **Print Preview**. This magic is designed for those who pretty much use one kind of setup and don't wish to configure the printer each time.

## Printing To Disk

The **File/Save To Disk** option lets you save the print image as a graphic rather than producing printed output. This option is modal - it places a checkmark by the option on the menu, and remains active until you select the option again to turn it off.

It works like this. When OPS is ready to print (or you choose **File/Print Page** ), OPS will prompt you for an output file name (with a standard file selection dialog box). Choose an existing file to overwrite, or type in a new name. OPS will then create an output bitmap that is sized according to the DIB Width and DIB Height options you have configured. If your current printing setup calls for landscape output, the width and height dimensions are *exchanged* to simulate landscape output.

Then all the snapshots are placed on this bitmap just as on the printed page (except that page margins are ignored). The result is converted to a device independent bitmap and written to disk. The output file is a single **.BMP** file that contains the snapshots arranged and scaled just as if they had been printed. You can control the size and proportion of the output image by setting the **Width** and **Height** parameters in the configuration dialog. You control the number of snapshots in the output image by configuring the printing grid.

**Printing To Disk** does not affect the *Print Preview* capability - you can activate **Print To Disk** and still use **File/Print Preview** to check out the page before it 'prints' to disk.

## Notes

It takes a while to print a page since everything is printed as a graphic. There is considerable work involved in the scaling and color reduction which are needed to generate usable printed output. A 2x3 grid involves more scaling than a 1x2.

OPS installs a system-wide hook (when it starts up) that looks at each keystroke before it is processed.

There is a small hit on system performance with this kind of filtering, but it allows OPS to unobtrusively capture the **PrtScr** activity regardless of what application is active. If you find this performance loss too great, you can deactivate OPS and later activate it when needed. Generally the rate of keystrokes is fairly slow and the performance loss is unnoticed.

It is possible that an application will take control of the **Screen Print** key and "monopolize" it when active. If this happens OPS will fail to take snapshots. Such anti-social behavior is deplorable; unfortunately we have to live with it.

### **Copyright**

Otto's PrtScr is a copyrighted work of Doug Overmyer. It may be used freely in any non-commercial setting, but all other use must be approved by the author.

### **Disclaimer**

You use Otto's PrtScr entirely at your own risk. Only you can determine its suitability for your configuration and needs. No other warranties are offered or implied.

### **Acknowledgements**

Thanks to David Brookes for needing this application and beta-testing along the way. Also David Patow for pointing out certain scaling problems.

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Changes: 1.1 - added: print preview, page based margins, A4 support, empty clipboard option.

1.1a - fix problem with hook code. Never released.

1.2 - add background inversion, support for unequal printer resolution

1.3 - add snap region and print to disk option; preloaded Print Setup dialog with current setting

1.4 - not released

1.5 - revised snap code to work with WIN32 systems; 1st release of PRTSCR32.EXE. Revise hook to use broadcast communication model. Added drag & drop, auto-clear clipboard. Renamed some of the menu items.

1.5b - fix problem with disappearing 'snap' button on toolbar.