



## WindSock SRM V3.20 - Windows System Resources Monitor

FreeWare by Chris Hewitt, CompuServe 100036,133 Copyright (c) 1992, 1993 Technical Pixies

WindSock SRM keeps track of Windows resource heaps and the usage of Global (System) memory. The resource heaps monitored are the GDI heap and the User heap. For Windows 3.1 the Menu and String heaps are also monitored. For a detailed description of these see [Windows Resource Heaps](#).

Become a registered user of WindSock and we will send you a disk containing the latest versions of the WindSock performance analyzer and WindSock SRM. See [Registration](#) for details.

System resources are displayed in two forms: using bars to show the percentage of each resource used, and as a histogram. These displays are in two sizes, small to monitor resources without using too much screen space, and large to display more details. When the SRM is reduced to an icon, resource usage is tracked within the icon (this is a little hard to see).

The SRM has an extra button when it is maximized which allows the resource usage history of the system to be reviewed. This option includes 'Resource accounting' which records the number of GDI objects which exist at any time and documents task starts and finishes. There is also an option which allows resource usage details to be written to a log file.

Please report any bugs/suggestions to Chris Hewitt on CompuServe ID 100036,133.

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## Registration

Registration? I thought this was Freeware!

I dislike crippled software as much as the next person (actually I hate it), so this Freeware version of WindSock SRM has the same capabilities as the registered version. The advantages of registering the software are:

- You will be sent a copy of the latest versions of WindSock SRM and the WindSock performance analysis utility, as well as a copy of the performance database.
- By making a contribution you will be helping to make it possible for us to continue to upgrade the utilities and to create other useful programs.

There are two ways that you can register:

### 1) Register through CIS:SWREG

If you have a CompuServe ID you can register WindSock via the Shareware Registration Forum on CompuServe. Just 'GO SWREG' and follow the instructions to register shareware. WindSock SRM and WindSock share the same registration ID (When you register for one you register for both). The program title is WINDSOCK 3.20 and the Registration ID is 874. A US\$10 fee will be charged to your CompuServe ID.

### 2) Send me some money.

Send a cheque or money order for US\$10 to:

Chris Hewitt  
Technical Pixies  
25 Coleman St,  
North Fitzroy, VIC 3068  
AUSTRALIA

Once you have registered you will receive a disk containing a copy of the latest version of WindSock SRM, a copy of the latest version of WindSock, and all the .WSK performance statistics files available so far. You should receive your copy within 3 weeks of our receiving your registration.

All disks will be 3.5" 1.4MB unless you notify us that you require a different media.



## WindSock SRM Options

The WindSock SRM Options Dialog controls various option settings for the SRM. These settings are saved under the heading [WnskSRM] in the WINDSOCK.INI file in your windows directory.

### Check Boxes:

#### Alarm Enabled

When this control is checked, An audible alarm will sound if the threshold of any Windows resource is exceeded.

#### Float on Top

When this control is enabled, the SRM will float above any other Window.

#### Resource Acct

When this switch is set, resource accounting will be performed every interval. Turn this off if running the SRM in the background because the accounting function uses a lot of CPU time.

#### Logfile Active

When this control is checked, Resource data will be written to a file called WNSKSRM.LOG. The log file is initialized every time the SRM starts.

### Monitor Every n Seconds

The number of seconds between observations.

### Thresholds

#### Memory

If the amount of Global memory remaining falls below this figure, the SRM alarm will be sounded.

#### GDI Heap

If the amount of space in the GDI heap exceed this figure, the alarm is sounded.

#### User Heap

If the amount of space in the User heap exceed this figure, the alarm is sounded.

#### Menu Heap

If the amount of space in the Menu heap exceed this figure, the alarm is sounded.

#### Strng Heap

If the amount of space in the String heap exceed this figure, the alarm is sounded.

### Other Options (in WINDSOCK.INI):

### Start Iconic

When this switch is set, the SRM will start as an Icon (Default is Off).



## Displays and Controls

When Windsock SRM starts the small resource usage window is displayed. This window shows the percentage of Global memory and each resource heap that is used, and the amount remaining. Clicking on any of the resource bars will display a description of each resource. The Global memory bar shows light red for RAM memory used, and dark red for swapfile - using swapfile memory will slow your system down.

There are five buttons at the top of the window. These buttons are: About, Help, Display Toggle, Options, and Stop. The Display Toggle button shows an icon representing the history window, clicking this button changes the display to a graph of resource history, and also changes the button to one representing the usage window.

Clicking the maximize button expands the window to its largest size. The large display contains the same buttons as the small window, and performs the same functions. There is an additional button in the large window which changes the SRM to step mode. When the step button is clicked, the SRM changes to a history display with the addition of a resource usage 'player' at the bottom of the screen.

When the SRM is in step mode recording of resource usage stops. The controls on the player allow you to step back through the resource history. Below the controls a number of variables are displayed which show the status of resource usage at the point shown on the history graph. These include the names of tasks started and ended in a particular interval, and the number of GDI objects which existed at the time. GDI objects are recorded because these are the most likely to be allocated by programs and not deleted.



## Windows Resource Heaps

WindSock SRM monitors Global memory and four Windows memory resource heaps, GDI Heap, User Heap, Menu Heap, and String Heap. Global Memory, is the total amount of memory including swapfile space that is available to Windows to store programs and data. New tasks may not be able to be started if System memory falls below 300KB.

The resource heaps (GDI, User, Menu, and String) are Local Heaps belonging to two system DLLs: GDI.EXE and USER.EXE. These store GDI and User objects for Windows applications. The objects are stored these local heaps to speed up access to resources by Windows GDI and User services. The maximum size of a heap is 64KB. If insufficient space remains in one of these heaps, Windows may become unstable.

There is some confusion about Windows resource heap accounting. The 'Free System Resources' figure reported by Windows is the percentage remaining of the largest heap: either GDI or User. The Menu and User heaps are not accounted for in this figure (these do not exist in Windows 3.0). In Windows 3.1 the Menu heap is often larger than the default User heap, so the free system resources figure is not always accurate.

There is also confusion about the **number** of GDI and User resource heaps. There are actually three resource heaps in Windows 3.0, although only two of these are important. There are six resource heaps in Windows 3.1. To make matters worse there are other heaps allocated by User and GDI, but these are not used for application resources and are ignored by the SRM.

The following is a summary of the resource heaps found in Windows 3.0 and 3.1:

### Windows 3.0 heaps

GDI Heap	Graphic resources (pens, brushes device contexts etc.)
User Heap	Class, Menu, and other Window resources.
User Atom Heap	Global atoms and text (very small)

### Additional Windows 3.1 heaps

GDI Atom Heap	GDI atom table (very small - removed from GDI heap)
User Menu Heap	Menus (removed from User heap)
User String Heap	Menu strings (removed from User heap)

The atom heaps are too small to worry about and are ignored by the SRM.



## Common Questions and Answers

*What other Software do you make, and where can it be found?*

Actually, I write Mainframe system software (including system monitoring software) for a living, and write Windows code as a hobby, but under the 'Pixie' label are currently:

### **WindSock**

Performance Analyser, Current release 3.30, release 4.0 due 1 Aug 93.

### **WindSock SRM**

Resource Monitor, Current release 3.2, release 3.3 due 1 Aug 93.

All of these programs are Freeware. If you are on CompuServe they can usually be found on WINSHARE or ZENITH forums, keyword 'WindSock'.

**Global Memory**

Memory available to Windows. This includes real, extended, and swapfile memory. Used to hold programs currently being executed and associated data. If this runs low, close applications.

**GDI Heap**

Stores graphic objects (pens, brushes, bitmaps, device contexts etc.) In Windows 3.0 this heap also contains atoms for GDI.EXE. This heap is usually has the highest usage in Windows 3.1.

**User Heap**

Stores window objects (classes, windows, and menu objects in Windows 3.0). In Windows 3.1 menus are stored in the menu heap, and menu strings in the string heap. This heap usually has the highest usage in Windows 3.0.

**Menu Heap**

Stores menu structures (Windows 3.1 only). This heap is often larger than the User heap in Windows 3.1.

**String Heap**

Stores menu strings (Windows 3.1 only).

**Local Heap**

Local heaps are blocks of memory of up to 64KB which can be referenced by a Windows program with a 16 bit near pointer. Access to local heaps is faster than using a 32 bit far pointer to the Global heap (system memory).



## **Freeware License**

This program and associated files may be copied, used and posted on any BBS without charge or permission. WindSock SRM may be included in a companion disk with any book or magazine, and included in any shareware library, as long as the program and associated documentation are not modified.

The program and associated documentation may not otherwise be modified, sold, or used as part of a commercial package without the express permission of the author.

This Program was developed using Borland C++ 3.1 and the Borland ObjectWindows Library.

I would like to thank all the people who reported bugs with the previous versions of this product, or made suggestions for improvements and new features.

Chris Hewitt, 18 May 1993



## Release Notes

### **Release 3.1 7 Mar 93**

Release 3.1 was a major enhancement to release 1.3. The new features were:

- Ability to use the monitor as an icon, small, or large window
- addition of step mode resource usage replay
- addition of a log file
- GDI accounting - count of GDI objects currently used
- Task accounting - records tasks starting/stopping
- facelift of all dialogs, buttons, and displays

### **Release 3.2 18 May 93**

Release 3.2 is a minor enhancement to release 1.3. The new feature is:

- New Option: 'Resource Acct' which allows resource accounting to be turned off.



## **Known Bugs and Incompatibilities**

### *Norton Desktop for Windows 1.0*

There is a problem with message handling between BC++ programs and NDW 1.0. This is not a problem with NDW 2.0. The symptom is a UAE after clicking a button.