



OSWbba

THE OS WATCHER BLACK BOX ANALYZER USER'S GUIDE

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Introduction

OS Watcher Black Box Analyzer (OSWbba) is a graphing and analysis utility which comes bundled with [OSWbb v4.0.0](#) and higher. OSWbba allows the user to graphically display data collected, generate reports containing these graphs and provides a built in analyzer to analyze the data and provide details on any performance problems it detects. The ability to graph and analyze this information relieves the user of manually inspecting all the files.

NOTE:OSWbba replaces the utility OSWg. This was done to eliminate the confusion caused by having multiple tools in support named OSWatcher. OSWbba is only supported for data collected by OSWbb and no other tool.

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Overview

OSWbba is written in java and requires as a minimum java version 1.4.2 or higher. OSWbba can run on any Unix X Windows or PC Windows platform. An X Windows environment is required because OSWbba uses Oracle Chartbuilder which requires it.

OSWbba parses all the OSWbb vmstat, iostat and top utility log files contained in an archive directory. Once the data is parsed, the user is presented with a command line menu which has options for both displaying graphs, creating binary gif files of these graphs, generating an html report containing all the graphs with narrative on what to look for, and new in this release, the ability to self-analyze the files OSWbb creates.

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Supported Platforms

OSWbba is certified to run on the following platforms:

- AIX
- Solaris
- HP-UX
- Linux
- Windows XP

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Installing OSWbba

OSWbba requires no installation. It comes shipped as a standalone java jar file with OSWbb v4.0.0 and higher.

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Starting OSWbba

Before starting the OSWbba utility you must have java version 1.4.2 or higher installed on your system. Java can be downloaded for free from <http://www.java.com>. Also if you are running Oracle you have already a version of java installed. To verify you have the correct version of java installed on your system issue the following command...

```
$ java -version
```

This should be version 1.4.2 or higher. If not, contact your system administrator to get the current version of java installed. Alternatively, you can use the version of java that comes shipped with Oracle. Here is an example of using the version of java that comes shipped with the database...(depending upon the version of the database, the jre may be in a different location)

```
//Note: the location of the jre is in $ORACLE_HOME/jre/1.4.2/bin  
//now put this location in the UNIX PATH:  
$ export PATH=$ORACLE_HOME/jre/1.4.2/bin:$PATH
```

Once the correct version of java has been verified, you can start OSWbba. OSWbba requires an input directory to run. To specify the input directory you must use the -i option. The input directory is the fully qualified path name of an archive directory containing OSWbb logs. The archive directory must be the same directory structure as the archive directory for OSWbb. It must contain the respective subdirectories--oswvmstat, oswiostat, oswps, oswtop, oswnetstat, etc. It is very important to note the program requires an archive directory not an individual log directory.

```
$java -jar oswbba.jar -i /u02/home/osw/archive  
  
Starting OSWbba V4.0.0  
OSWatcher Black Box Analyzer Written by Oracle Center of Expertise  
Copyright (c) 2012 by Oracle Corporation
```

```
Parsing Data. Please Wait...

Enter 1 to Display CPU Process Queue Graphs
Enter 2 to Display CPU Utilization Graphs
Enter 3 to Display CPU Other Graphs
Enter 4 to Display Memory Graphs
Enter 5 to Display Disk IO Graphs

Enter 6 to Generate All CPU Gif Files
Enter 7 to Generate All Memory Gif Files
Enter 8 to Generate All Disk Gif Files

Enter L to Specify Alternate Location of Gif Directory
Enter T to Specify Different Time Scale
Enter D to Return to Default Time scale
Enter R to Remove Currently Displayed Graphs
Enter P to Generate A Profile
Enter A to Analyze Data
Enter Q to Quit Program

Please Select an Option:
```

OSWbba parses all the archive files in memory prior to generating graphs or performing an analysis. If you have a large amount of files to parse you may need to allocate more memory in the java heap. If you experience any error messages regarding out of memory such as `java.lang.OutOfMemoryError`, you may have to increase the size of the java heap. To increase the size of the java heap use the `-Xmx` flag.

```
$java -jar -Xmx512M OSWbba.jar -i /u02/home/oswbb/archive

Starting OSWbba V4.0.0
OSWatcher Black Box Analyzer Written by Oracle Center of Expertise
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Parsing Data. Please Wait...
```

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Stopping OSWbba

To stop the OSWbba utility select option "Q" from the menu.

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Using OSWbba

OSWbba has multiple user interface options. If OSWbba is started as above, the user will be able to choose from a list of options on a menu. In all cases OSWbba must be supplied the archive directory location with the `-i` flag. Not all of the Disk I/O options will be available to all users. These options are only available for solaris, linux and aix, and only if `iostat` is collected with the extended disk statistics option. These options will also not be available if OSWbba encountered any parsing issues while parsing `iostat` archive files.

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Using OSWbba: Menu Option

OSWbba can be run with a menu driven user interface. This option gives the user the most flexibility and allows

graphs to be displayed real-time. To start OSWbba with the menu option issue the following on the command line...

```
java -jar OSWbba.jar -i <fully qualified path name of an oswbb archive
directory>
```

After starting OSWbba, a set of options will display. Enter an option value and hit return.

OPTIONS

The following options are available:

- 1:3** These options display graphs of specific CPU components of vmstat. Option 1 displays the process run, wait and block queues. Option 2 displays CPU utilization graphs for system, user and idle. Option 3 displays graphs for context switches and interrupts.
- 4** This option displays memory graphs for free memory and available swap.
- 5** This option uses the extended disk statistics option of iostat to display a list of all devices for solaris, aix and linux platforms only. The device name along with the average service time of each device is then listed. The user then selects one of the devices out of the list of devices. Graphs are available for reads/second, writes/second, service time and percent busy.
- 6:8** These options generate images of the graph to a file without displaying them to the screen. All graphs for that specific category, CPU, memory or IO will be generated and placed in the directory where OSWbba is located. To override this directory and name an alternative location to place these files use option L discussed below.
- L** This option allows the user to specify an alternative location to place the image files for options 6-8 above.
- T** By default OSWbba parses all the OSWbb log files contained in the input directory and the default graphs are based on the entire time span of all the logs. By default, OSWbb keeps the last 48 hours of logs in the archive. This means the default graph will graph all 48 hours of data. This option allows the user to specify a different subset of times within the entire collection. An example would be only to graph a 2 hour period out of the entire 48 hour collection.
- D** This option resets the graphing timescale back to the time encompassing the entire log collection.
- R** This option removes all previously displayed graphs from the screen.
- P** This option generates an html profile.
- A** This option analyzes the files in the archive and produces a report.
- Q** Exits the program.

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Using OSWbba: Command Line Option

All graphing, profile and analysis options are available to be passed into OSWbba from the command line. Only the -i option is required. Use the table below to add additional options. Please note if the -F option is used all other options are ignored as the -F option requires input to be read in from a text file.

Please note all options are case sensitive.

```
java -jar oswbba.jar -i <fully qualified path name of an osw archive directory>
-P <name> -L <name> -6 -7 -8 -B <time> -E <time>
```

Example:

```
java -jar oswbba.jar -i archive -6 -7 -P tuesday_crash
```

OPTIONS

The following options are supported:

- i <archive dir> Required. This is the input archive directory location.
- 6 Same as option 6 from the menu. Will generate all cpu gif files.
- 7 Same as option 7 from the menu. Will generate all memory gif files.
- 8 Same as option 8 from the menu. Will generate all disk gif files.
- L <location name> User specified location of an existing directory to place any gif files generated by OSWbba. This overrides the OSWbba automatic convention for placing all gif files in the /gif directory. This directory must pre-exist!
- A <analyze> Same as option A above. This option analyzes the files in the archive and produces a report
- P <profile name> User specified name of the html profile generated by OSWbba. This overrides the OSWbba automatic naming convention for html profiles. All profiles whether user specified named or auto generated named will be located in the /profile directory.
- B <start time> Same as option T from the menu. The start time will allow the user to select a start time from within the archive of files to graph/profile. This overrides the default start time which is the earliest time entry in the archive directory. The format of the start time is Mon DD HH:MM:SS YYYY. (Example :Jul 25 11:58:01 2007). An end time is required if selecting this option.
- E <end time> Same as option T from the menu. The end time will allow the user to select an end time from within the archive of files to graph/profile. This overrides the default end time which is the latest time entry in the archive directory. The format of the end time is Mon DD HH:MM:SS YYYY. (Example :Jul 25 11:58:01 2007). A start time is required if selecting this option.
- F <filename> Filename of a text file containing a list of options. The user can script as many options as desired by using this option. If the -F option is entered on the command line all other options are ignored and commands are only allowed through the file interface. See a sample file named oswbba_input.txt in the src directory.

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Using OSWbba: Input File Option

All graphing, profile and analysis options are available to be read from a user specified text file. The format of the file is individual lines containing command line options (see above). An example file exists in the src directory (oswbba_input.txt). To specify the input file option the user must specify the -F <filename> option when running OSWbba.

```
java -jar oswbba.jar -i <fully qualified path name of an oswbb archive directory> -F <fully qualified path name of an input text file>
```

Example:

```
java -jar oswbba.jar -i archive -F src/oswbba_input.txt
```

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Using the Analyzer

New in this release is the ability to analyze osw logs. An overview of the Analyzer (pdf document) can be found by [clicking here](#).

Sample Profile

Generating an htmp profile is a useful feature of OSWbba. This html document contains all the graphs along with some text directing the user on what to look for. A sample OSWbba profile can be found by [clicking here](#).

To add database metrics consider running [LTOM](#). To see what an LTOM profile looks like [click here](#).

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Sample Charts





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Known Issues

Because OSWbba builds graphs based on the unix operating system date function, the time stamp must be in standard English LANG format. The time stamp is formatted automatically by default (setting the parameter oswgCompliance = 1) in the OSWatcher.sh file.

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Reporting Feedback

If you encounter problems running OSWbba which are not listed under the [Known Issue](#) section or would like to provide comments/feedback about OSWbba (including enhancement requests) please send email to carl.davis@oracle.com

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