

Oracle Flash Storage System Statistics Tools User's Guide



FLASH STORAGE
SYSTEMS

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Preface

Oracle Resources

Table 1: Oracle resources

For help with...	Contact...
Support	http://www.oracle.com/support (www.oracle.com/support)
Training	https://education.oracle.com (https://education.oracle.com)
Documentation	<ul style="list-style-type: none">• <i>Oracle Technology Network Documentation:</i> (http://docs.oracle.com)• From the Oracle FS System Manager (GUI): Help > Documentation• From Oracle FS System HTTP access: (http://system-name-ip/documentation.php where system-name-ip is the name or the public IP address of your system.)
Documentation feedback	http://www.oracle.com/goto/docfeedback (http://www.oracle.com/goto/docfeedback)
Contact Oracle	http://www.oracle.com/us/corporate/contact/index.html (http://www.oracle.com/us/corporate/contact/index.html)

Typographical Conventions

Table 2: Typography to mark certain content

Convention	Meaning
<i>italics</i>	Within normal text, words in italics indicate one of the following: <ul style="list-style-type: none"> • A reference to a book title • New terms and emphasized words • Command variables
monospace	Indicates one of the following, depending on the context: <ul style="list-style-type: none"> • The name of a file or the path to the file • <i>Output</i> displayed by the system on the command line
monospace (bold)	<i>Input</i> provided by an administrator on the command line.
>	Indicates a menu item or a navigation path in the Oracle FS System Manager (GUI). For example, “Click SAN > Storage > LUNS > Action > Clone ” means to click the Clone link on the SAN page in the GUI.
...	Indicates that one or more steps have been omitted from the path or menu structure. The ellipsis is used within an expression of a navigation path or within a cascading menu structure. For example, in the SAN > Storage > LUNS > ... > Clone menu structure, the ... implies that one or more menu items have been omitted.

Command Syntax Conventions

Table 3: Typography to mark command syntax

Typographic symbol	Meaning
[]	Square brackets. Delimits an optional command parameter or a set of optional command parameters.
{ }	Braces. Delimits a set of command parameters, one of which must be selected.
	Vertical bar. Separates mutually exclusive parameters.
...	Ellipsis. Indicates that the immediately preceding parameter or group of parameters can be repeated.
monospace	Indicates the name of a command or the name of a command option (sometimes called a <i>flag</i> or <i>switch</i>).
<i>italic</i>	Indicates a variable for which you need to supply a value.

Command parameters that are not enclosed within square brackets ([]) are required.

Important: The above symbols (and font styling) are based on the POSIX.1-2008 specification. These symbols are used in the command syntax only to clarify how to use the command parameters. *Do not enter these symbols on the command line.*

Introduction to Oracle Flash Storage System Statistics Tools

Oracle FS System Statistics Overview

The Oracle FS System collects statistics data on many system operations. Each component of the Oracle FS System periodically collects key statistics covering such areas as read and write performance, block-level read and write performance, and error counts. These system operation statistics can be downloaded from the Oracle FS System Manager (GUI) for analysis. The Statistics Tools utilities make it possible to process these statistics, which are in binary format, for analysis in statistical applications and spreadsheets.

The system operation statistics are historical compared to real-time statistics. These system operations were collected over intervals for a period of time, up to the point when the statistics were generated and downloaded. The same time and duration are included in the statistics file for each system component. When analyzing statistics, the real-time statistics on the GUI, provide an instance of performance data whereas the system operation statistics represent a longer period of time and include a system wide collection of statistics. These statistics can help determine whether the system is being fully utilized and help determine sizing for future system expansion

Statistical data captured in a binary format on the Oracle FS System is downloaded from the Systems Logs page from the GUI for processing on a client machine.

The Statistics Tools provided with the Oracle FS System make it possible to process this data into a format usable by statistical applications or spreadsheets. In that format, the statistical data can be used to:

- Analyze the Oracle FS System to determine bottlenecks and determine what needs to be tuned in order to optimize performance.
- Track Oracle FS System load and capacity.
- Produce reports and graphs for presentation.
- Integrate with existing performance monitoring and reporting applications.

Note: Additional information on other statistics, including real-time statistics, is provided in the *Oracle Flash Storage System Administrator's Guide*.

Related Links

[Oracle FS System Statistics Terminology and Definitions](#)

Supported Platforms

The Oracle FS System Statistics Tools are supported on the following platforms:

- CentOS 5.x or higher
- Microsoft Windows Server 2008 or higher
- Microsoft Windows XP or 7.0 or higher
- Oracle Linux 5.x or higher
- Oracle Solaris 10.x or higher on SPARC systems
- Oracle Solaris 10.x or higher on x86 systems
- Red Hat Enterprise Linux (RHEL) 5.x or higher

Audience

This guide is intended for system administrators and storage administrators, who analyze Oracle FS System statistics. The results can be used to make system configuration and performance improvements.

Oracle recommends that you have the following skills and experience:

- Understand storage management.
- Perform system administration tasks including gathering storage system statistics from the Oracle FS System.
- Analyze storage system statistics.
- Use Linux, Solaris, or Windows storage management tools to improve system and storage performance.

Statistics Tool Descriptions

The Oracle FS System provides two application tools, Statistics Parser and Statistics Formatter, to prepare and format statistical data used for storage management analysis.

The statistics tools are downloaded from the Oracle FS System and you use these tools on your client workstation to perform tasks. The following table provides the tool name, the executable name, and a brief description of the tasks you can complete with the tool.

Table 4: Statistics tools descriptions

Tool	Executable name	Description
Statistics Parser	<code>fsstatsparser</code>	A command line utility that runs on the client machine and translates the raw Oracle FS System statistics into an intermediate format. The intermediate format data is stored in a file on the client machine to provide quick access to the data in the subsequent analysis phase. The intermediate format cannot be read by applications, such as a spreadsheet, until the data is formatted with the Statistics Formatter.
Statistics Formatter	<code>fsstatsformatter</code>	A command line utility that runs on the client machine and reads Oracle FS System statistics from the intermediate format created by the Statistics Parser. The Statistics Formatter exports statistical data to comma-separated value (CSV) files that can be imported into spreadsheets and other applications for analysis.

You run the Oracle FS System Statistics Parser tool whenever you download a new statistics bundle from the Oracle FS System to parse the binary statistics bundle into an intermediate statistics file. After you parse the data, you run Oracle FS System Statistics Formatter to generate one or more subsets of the data which can be read by applications like a spreadsheet. To help you with your analysis, the statistical data can be sorted by Oracle FS System component, time range, and other categories. Information is provided in this document on how to organize and sort the statistical data.

Oracle FS System Statistics Terminology and Definitions

Oracle FS System statistics are organized by component, subcomponent, and statistics type.

The statistics are grouped by component, such as RAID, any subcomponent, and statistic type, such as user interface. The statistics presented vary by component. For example, the statistics generated for RAID are different than the statistics generated for SAN. The table provides terminology and definitions of the component, subcomponents, statistics type as well as how the statistics are organized. For a detailed description of the component and subcomponent statistics, refer to the `fsstatsdefinitions.html` file which is part of the statistics tool package.

Table 5: Statistics terms defined

Term	Description
Component	<p>An Oracle FS System software module.</p> <p>The following software module components provide data that is included in the statistics file:</p>
	<p>Module Description</p>
	<p>BS Block Services.</p> <p>Supplies all read and write cache management, including mirroring.</p>
	<p>CIFS Common Internet File System.</p> <p>Provides Windows and other CIFS clients access to the Oracle FS System filesystems from network shares.</p>
	<p>DMS Diagnostic and Monitoring Services.</p> <p>Runs diagnostics and monitors various components of the system.</p>
	<p>DPS Data Protection Services.</p> <p>Provides the functions necessary for backup services.</p>
	<p>MQFS Meta File System.</p> <p>Provides a protocol neutral file system that supports files, directories, and other filesystem objects.</p>
	<p>NFS Network File System.</p> <p>Provides UNIX, Linux, and other NFS clients access to the Oracle FS System filesystem by means of mount points.</p>
	<p>RAID Redundant array of independent disks (RAID)</p> <p>Provides a disk subsystem that consists of a set of drives and a controller that operate as a single logical drive.</p>
	<p>SAN Storage Area Network.</p> <p>Provides the host network with a SCSI interface to the Oracle Flash Storage System on a SAN Controller to LUNs.</p>
	<p>VS Virtual Server</p> <p>Manages NAS-only File Servers that are used to assign security, network, and protocol access attributes. These attributes apply to all filesystems</p>

Table 5: Statistics terms defined (continued)

Term	Description
	Module Description associated with the File Server. Includes virtual interfaces (VIFs).
Duration	The amount of time in seconds that data was collected.
Statistics bundle	The portion of the system information collection that contains statistical data.
Statistics column	A column heading in the statistics output that identifies a discrete statistic, such as <code>Write_through_Ops</code> (the number of write-through operations). These column headings are listed and described in the HTML file <code>fsstatsdefinitions.html</code> . The <code>fsstatsdefinitions.html</code> is downloaded with the statistics tools.
Stats time	The time the system began collecting data for the software module component.
Statistics type	The type of statistical data. Each component can contain different types of data: Error Error statistics count operations that have failed. UI User interface statistics are user-visible statistics normally shown on the GUI. General General statistics contain any detailed statistics that a component collects that cannot be classified as error or user visible statistics.
Subcomponent	A constituent part of a primary component. Subcomponents are also known as <i>resource types</i> . The value of <i>none</i> is displayed if there is no subcomponent.

For a detailed description of the component and subcomponent statistics, refer to the `fsstatsdefinitions.html` file that is part of the package. The package includes the Oracle FS System Statistics Parser and Oracle FS System Statistics Formatter tools. The package is available for downloading from the Oracle FS System.

Related Links

[Oracle FS System Statistics Overview](#)

Display Help for the Statistics Tools

To display help for either the Statistics Parser or the Statistics Formatter too, use the `-h` option.

- 1 Log on to the client machine where you installed the statistics tools.
- 2 From a command line, choose one of the following tasks:
 - Run `fsstatsparser -h` to display a procedure for using the statistics tools, as well as the syntax, command options, and examples for using the Statistics Parser tool.
 - Run `fsstatsformatter -h` to display a procedure for using the statistics tools, as well as the syntax, command options, and examples for using the Statistics Formatter tool.

Download, Format, and Prepare System Statistics

This section describes the process for downloading, formatting, and preparing the statistics for analysis by applications such as a spreadsheet.

System Statistics Process Overview

To obtain Oracle FS System statistics for use with your analysis tools, you will need to collect, download, extract, process, and format the statistics. The following provides an overview of the process.

- 1 Download the statistics tools from the Oracle FS System using the Oracle FS System Manager (GUI).

Note: You only need to download the tools once unless the Oracle FS System was updated or upgraded. After a update or upgrade, Oracle recommends you download the tools.

- 2 Collect and download system statistics from the Oracle FS System.
- 3 Extract system statistics from the compressed file you downloaded.
- 4 Run the statistics parser tool to create a file that can be formatted in preparation for use with applications such as spreadsheets.
- 5 Run the statistics formatter tool to convert the statistics into a format that can be read by applications such as a spreadsheet.

After you have processed and formatted the statistics, you can import them into a tool such as Microsoft Excel for statistical analysis.

Related Links

[Download the Statistics Tools](#)

[Extract System Statistics](#)

[Collect and Download System Statistics](#)

[Run the Statistics Parser](#)

[Run the Statistics Formatter](#)

Download the Statistics Tools

To run the Oracle FS System Statistics Tools, download the Oracle FS System Statistics Parser and Oracle FS System Statistics Formatter software which is contained in single compressed file. The compressed file also contains the `fsstatsdefinitions.html` file.

Prerequisite: You need network access to the Oracle FS System to download the statistics tool package from the Oracle Flash Storage Portal.

Oracle recommends that you perform this task on the workstation from where you manage the Oracle FS System. You can download the tools to any client that has network access to the Oracle FS System.

Note: The statistics tools run on Linux operating systems, Oracle Solaris operating system, and Microsoft Windows operating systems. Review the list of supported operating systems provided in this document.

- 1 Start a web browser on your workstation to access the Oracle Flash Storage Portal.
- 2 In the address field, enter the Oracle FS System address:
Valid address options:
 - The IP address of the Pilot. An example is the default address:
10.0.0.2
 - The Name of the Oracle FS System, if DNS name resolution is available. An example is: `systemname.example.com`
- 3 Click **Utility Software**.
- 4 Select the version for your operating system from **Downloads**:
 - **Oracle FS Statistics Tool for Linux**
 - **Oracle FS Statistics Tool for Solaris 10/11 SPARC**
 - **Oracle FS Statistics Tool for Solaris 10/11 x86**
 - **Oracle FS Statistics Tool for Windows**
- 5 Save the file to your client workstation.
- 6 Extract the contents to a directory where you expect to be working with the statistics data files. Oracle recommends you download the tools to the same directory you download the statistic data files.

Tip: Statistical data files can be large and consume resources when being processed; Oracle recommends you select a file directory on locally attached storage with a minimum of 200 MB of storage space available.

- For Linux or Solaris operating systems, use `tar` to extract the files from the downloaded *.tgz archive file.
- For Windows, use a utility to extract the files from the downloaded *.zip archive file.

Before you can use the statistics tools, collect and download the Oracle FS System statistics. The process is described in this document.

Related Links

[Supported Platforms](#)

[Collect and Download System Statistics](#)

Collect and Download System Statistics

System statistics are collected and downloaded from the Oracle FS System Manager (GUI) from **Support System Logs**.

Collect and download the system statistics from the Oracle Flash Storage System.

-
- 1 Log in to the Oracle FS System Manager (GUI).
 - 2 From the **Support** tab, click **System Logs**.
 - 3 Select **Actions > Create** from the menu.
The Create Log Bundle dialog box displays with all of the components selected for data collection.
 - 4 Click **Deselect All**.
 - 5 Under the **Collect** column, select **Collect** beside the component **Statistics**.
 - 6 Select a collection period.
 - **Most Recent Logs:** Choose the extent of the collection period in hours or days.
 - **All Logs:** Collects all available logs since the last collection.
 - 7 Under **SAN Host Log Selection**, click **Select Hosts**.
 - a) Under the **Collect** column, select one or more SAN Hosts by clicking **Collect**.
 - b) Click **OK**.
 - 8 (Optionally). You can add notes to the log. For example, you might enter a support case number.
 - 9 (Optionally). You can send the log to the Call-Home server or download to a directory on a local drive. A copy of the log is stored under the System Logs list.
 - a) To send the log to the Call-Home server, select **Send to Call-Home Server**.
 - b) To save the log to a directory on a local drive or network drive, select **Download to**.
 - 10 Click **OK**.
 - 11 Select the collection when it appears in the System Logs list.
 - 12 Choose **Download Log Bundle** from the **Actions** menu.
 - 13 Select a directory on a local drive as the **Target Download Location**, and click **OK**.

After downloading the statistics bundle, extract the statistics.

Related Links

[Extract System Statistics](#)

Extract System Statistics

The statistics bundle downloaded from the Oracle FS System is a compressed tar file containing multiple `tar` and `gz` archive files. These files must be extracted before you can use the statistics tools to process and format the statistics.

For Linux and Solaris, use the `tar` command to extract the files. For Windows, you need a `tar` and `gz` utility to extract the files.

- 1 For Linux and Solaris, use the following command to extract the statistics `gz` files from the system information collection tar file:

```
tar -xf Log_Bundle_Name.tar
```

`Log_Bundle_Name.tar` is the name of the system information collection you downloaded.

- 2 To extract the individual data files from the `gunzip` file, use the following commands:

```
tar -x ID_number.stats.tar.gz
tar -x ID_number.chsh.xml.tar.gz
```

`ID_number` is the system-generated ID number of the data file.

Note: The `ID_number.stats.tar.gz` file contains the raw statistical data from the statistics bundle, and the `ID_number.chsh.xml.tar.gz` file identifies the statistics gathered from your Oracle FS System and displays these statistics using the names you have defined.

The `ID_number.chsh.xml.tar.gz` file is extracted to the current directory, and a new `PillarStatistics` directory is created in the current directory. The contents of the `ID_number.stats.tar.gz` file are extracted to the new `PillarStatistics` directory.

- 3 For Windows, extract the files in the same directory you downloaded the statistics file from the Oracle FS System.

Once the `chsh` and `stats` files have been extracted, process the files with the Statistics Parser tool.

Related Links

[Run the Statistics Parser](#)

System Statistics Data Processing Overview

The data from the statistics bundle needs to be processed before the data can be formatted for use by applications such as a spreadsheet.

The Statistics Parser tool translates the data from the statistics bundle to an intermediate format. This intermediate format is then processed into a format that can be read by applications such as a spreadsheet.

Related Links

[Run the Statistics Formatter](#)

Run the Statistics Parser

The Statistics Parser tool creates a file that can be formatted for use with applications such as spreadsheets.

Prerequisite: Before you can process the statistics files with the Statistics Parser tool, extract the individual statistics files, along with the `ID_name.chsh.xml`, file from the statistics bundle.

Note: Statistical data files are downloaded to the `PillarStatistics` directory by default. The `fsstatsparser` looks for its input files in the `PillarStatistics` directory by default. Oracle recommends that you do not change `PillarStatistics` directory name or location.

- 1 Navigate to the directory where you extracted the statistics files.

Note: This directory is the parent directory of the newly-created `PillarStatistics` directory.

- 2 From a command prompt, run the `fsstatsparser` command.

If you have not changed the `PillarStatistics` folder name or location, the command begins processing the statistics into an intermediate file, which is named `fsstats.sps`.

- If the statistics files are in a location different from the default `PillarStatistics` directory, you need to specify the location. To specify this location use the `-i` option to select a folder directory other than the default folder. We recommend you use the default folder, `PillarStatistics`.
- To specify an output filename other than the default `fsstats.sps`, use the `-o` option. We recommend that you use the default output filename.

Once the output file has been created, format the output file with the Statistics Formatter tool.

Related Links

[Extract System Statistics](#)

[Run the Statistics Parser](#)

[Run the Statistics Formatter](#)

Statistics Parser Syntax

The Statistics Parser (`fsstatsparser`) tool translates raw statistics from the individual statistics files extracted from the statistics bundle into an intermediate format for the Statistics Formatter.

Syntax

Use the Statistics Parser to process a statistics bundle into an intermediate format to provide quick access to the statistics data in the subsequent analysis phase. You can then format this intermediate file using the Statistics Formatter tool.

```
fsstatsparser [-h | -i | -o]
```

Options

-h

Displays the help page.

-i = INPUT_FILE_PATH

Specifies the path to the input files.

- Default = `PillarStatistics`
- Use the default unless you extracted the statistics files to a different location.

-o = OUTPUT_FILE_NAME

Specifies the name of the output file.

- Default = `fsstats.sps` in the current working directory.
- If not specified, the output defaults to the default file.

Examples

Use the following command to create the `fsstats.sps` file from the statistics files that are located in the default `PillarStatistics` directory:

```
fsstatsparser
```

Use the following command to create a `mystats.sps` file from the statistics files that are located in the `/tmp/stats` directory:

```
fsstatsparser -i=/tmp/stats -o=mystats.sps
```

Related Links

[Run the Statistics Formatter](#)

Formatting System Statistics Overview

To obtain data that spreadsheets and other applications can read directly, you need to format the statistical data processed by the Statistics Parser with the Statistics Formatter tool.

The Statistics Formatter tool uses the output of the Statistics Parser tool and converts the output to comma-separated value (CSV) data.

Run the Statistics Formatter

The Statistics Formatter tool is used to convert the statistics data into a format that can be read by an application such as a spreadsheet.

Prerequisites: Collect statistics, extract the statistics files, and run the Statistics Parser tool to convert the statistics into a format that the Statistics Formatter tool can read.

-
- 1 Verify that the intermediate format file (default = `fsstats.sps`) has been created.
 - 2 At a command prompt, run the `fsstatsformatter` command with any appropriate options.

Related Links

[Statistics Formatter Syntax](#)

[Run the Statistics Formatter](#)

Statistics Formatter Syntax

The Statistics Formatter (`fsstatsformatter`) tool processes files generated by the Statistics Parser tool to create formatted output suitable for import into spreadsheets or other analysis tools.

Syntax

To format a statistics file generated by the Statistics Parser tool, use the Statistics Formatter tool: `fsstatsformatter [-c | -C | -f | -h | -H | -i | -l | -m | -n | -o | -r | -s | -t | -T | -v | -V]`

Options

`-c=COMPONENT`

Specifies the name of the component for which statistics are collected. If a subcomponent or statistics type is not specified, the statistics for all subcomponents and statistics types for this component are collected.

`-C=COLUMNS`

Specifies the column names to include in the collected statistics. *COLUMNS* is a comma separated list of the column names to retrieve. If column names contain a space, the *COLUMNS* list must be double-quoted:

```
fsstatsformatter -C="first name, second name, third name"
```

The `statsTime` and `duration` columns are always included and do not need to be specified.

When listing Controller components statistics for named columns, the `nodename` is an optional column that is not included by default. Oracle recommends you include the `nodename` on the list of named columns so that the data can be sorted and easily identified by node

`-f=FORMAT`

Specifies the output format. CSV (Comma-separated value) is the default format and currently the only option that can be specified, but a `.csv` extension is not automatically added to the output file name. To specify the `.csv` extension, specify an output file name using the `-o` option. Oracle recommends that you specify a file name extension with the output file name. If you are using a

spreadsheet application, Oracle recommends that you use the `.csv` as the file name extension.

`-h`

Displays this help page.

`-H=HEADERTYPE`

Header rows specify the component, subcomponent, type, and column names in the output file by default. Specify `NONE` to hide the headers and display only data rows.

`-i=FILENAME`

Specifies the name of the file from which to read the statistics data that was processed by `fsstatsparser`. If no file name is specified, the input defaults to the `fsstats.sps` file in the current working directory.

`-l`

Lists the available statistics in the statistics file. Statistics are listed by component, subcomponent, and statistics type.

`-m`

Specify this option to have a separate data file written for each component, subcomponent, and statistics type. This option applies only if the `-o` option is also used. The data file names include the component, subcomponent, and statistics type concatenated to the specified output file name. An output file name extension (such as `.csv`) can be specified with the file name. Oracle recommends that you specify a file name extension with the output file name. If you are using a spreadsheet application, Oracle recommends that you use the `.csv` as the file name extension.

`-n=NODENAME`

Specifies that only data records from this Oracle FS System Controller or Drive Enclosure are collected. Specify the World-Wide Name (WWN) of the Controller or Drive Enclosure that generated the statistical data you want to obtain.

`-o=FILENAME`

Specifies the name of the file to which to write the formatted output. If not specified, the output defaults to `stdout`. File name extensions are not automatically added to the output file name. See also the `-m` option, which may be used in conjunction with the `-o` option to separate the output by component, subcomponent, and statistics type. Note that errors are printed to `stderr`.

`-r`

Specifies that all data is displayed from the data file without any processing applied. Without the `-r` option, counter data is normalized to turn it into rates, and ID values are translated into Fully Qualified Names (FQNs) where possible. With the `-r` option, counter data is expressed as accumulated values rather than rates, and ID values will not be translated into FQNs.

`-s=NAME`

Specifies that statistics collected are limited to those that match the specified subcomponent.

`-t=STATISTICSTYPE`

Must be used with the `-c` option. Specifies that statistics collected are limited to those that match the specified *STATISTICSTYPE* for the specified component. *STATISTICSTYPE* must be expressed as one of the following values:

- ERROR
- GENERAL
- UI

`-T=TIME`

Specifies a time range within which to retrieve the statistics. *TIME* is specified in the following format:*START, END*. *START* and *END* are formatted as follows:

MMDDYY:HH:MM:SS

The time is the local time of the client machine on which `fsstatsformatter` is running.

`-v`

Prints the `fsstatsformatter` version number.

`-V`

Specifies verbose output. While the statistics formatting process is running, status progress is printed to standard output (`stdout`). If you use verbose output, you should also use the `-o` option to send program output to a file to avoid mixing program output with progress output in `stdout`.

Examples

Run the following command to send CSV-formatted data from the default `fsstatsparser` output file `fsstats.sps` to your standard output (`stdout`) device:

```
fsstatsformatter
```

Run the following command to list the names and definitions of all the statistical values in the default `fsstats.sps` file:

```
fsstatsformatter -l
```

Run the following command to list the names and definitions of the statistical values for the Block Services component:

```
fsstatsformatter -l -c=BS
```

Run the following command to send CSV-formatted data from an `fsstatsparser` output file named `my_stats.sps` to your standard output (`stdout`) device:

```
fsstatsformatter -i=my_stats.sps
```

Run the following command to send CSV-formatted port errors to a file named `porterrors.csv`:

```
fsstatsformatter -c=VS -s=Port -o=porterrors.csv
```

Run the following command to send CSV-formatted data from the default `fsstats.sps` file to a series of files, one for each component, subcomponent, and statistic type, while sending verbose progress output to your standard output (`stdout`) device:

```
fsstatsformatter -m -o=mystats.csv -V
```

The files will be named `mystats_component_subcomponent_type.csv`.

Run the following command to send CSV-formatted port error information for the time range 10:00 to 10:05 local client time on December 1, 2013 to your standard output (`stdout`) device:

```
fsstatsformatter -c=VS -s=Port -  
T=120113:10:00:00,120113:10:05:00
```


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