

## collgui (8)

### NAME

collgui - A graphical front-end for Collect.

### SYNOPSIS

```
/usr/sbin/collgui [-b [batchfilename ] ] [-c] [-d] [-vga] [-size [num ] ] [file [file
[... ] ] ]
```

### OPTIONS

- b [*batchfilename* ]  
Creates a shell script to replay an entire session.
- c  
Enables collgui to reflect dynamic CPU changes on the target system that occurred during the data collection period. By default, collgui only reflects the hardware configuration at the start of the collection period.
- d  
Turns on debugging output.
- live  
Displays and continuously updates the current values.
- size [*number* ]  
Sets the fontsize to *number*, which influences size of window. The default size is 12.
- vga  
Allows collgui to be used on a VGA-sized (640x480) display.

### DESCRIPTION

collgui helps evaluate data collected by Collect. It operates as a go-between among Collect, *cfilt*, and *gnuplot*. Understanding *cfilt* is particularly helpful if you

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want to do complicated or non-standard things. Help on `cfilt` can be obtained by reading the `cfilt(8)` reference page or invoking the usage command `cfilt-h`.

`collgui` automates the extraction of information from a binary data file written by `Collect`, and directs it to `gnuplot` to produce a graphical rendition of the data.

The utilities `collgui` and `cfilt` are written in perl for thorough data processing, and therefore are slow in operation. This is reflected in `collgui`'s slow startup time, but doesn't have an important impact on continued operation.

`collgui` offers two different methods for selecting samples for graphing. Close to the top of the GUI, you can set the *START* and *END* times. These arguments get passed to `Collect`. If your data file contains lots of samples, but you only want a fraction of them, using *START* and *END* will substantially speed up your extraction because the selection is handled by `Collect` itself. Further down, you can set an *X Range* for `gnuplot`. This has similar effect as setting *START* and *END*, but `Collect` provides all samples, and `cfilt` must extract for all selected subsystems from this data. This is slower. The difference is where the time selection is done. You may want to set *START* and *END*, and still set the *X Range* in order to give `gnuplot` explicit instructions as to what should be displayed. `gnuplot` tends to use round numbers for the beginning and end of ranges.

If you invoke `collgui` with the `-live` option, the times displayed in the *START* and *END* fields are the times for a very short `Collect` run that gathers the system configuration for the number of CPUs and disks. Do not change them; in live mode *X Units* are always samples.

When you save a user-defined setting/configuration, a unique ID is saved with it, consisting of filename (no path) plus file size. When you recall this setting, if the unique ID of your current open data file matches the saved one, values such as *START*, *END*, *X-range*, *Y-range*, *average samples*, *X-units*, and *samples w/process data* are also restored. If the unique ID's don't match, then only the subsystem settings are restored.

## Selection Mechanisms

The following features aid in selection.

The mechanism for selecting one of many objects (such as LSM Volumes, Disks, Tapes, Single CPUs) can be selected is particular. If there are less than a fixed number of objects (~30), a Menu Button is created (when *Add* is pressed a dropdown list is presented). If the number is greater than this constant, a separate window is created with a listbox containing all possible objects. Doubleclicking on an object in the listbox will add it to the selection list.

The selection mechanism for processes is always a separate window with a listbox and a slider marked *sample* and a button marked *List Processes* next to it. Using the slider, a sample (record) can be selected from the collection period, and double clicking on a pro-

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cess will enter its PID in the selection listbox. Currently, it is only possible to select processes using their PIDs. In the future it may be possible to select using usernames or commands. At the top of each column is a button that turns red when the mouse is over it. Pressing the button will sort the list using the values in the button's column.

## Interface

The following table describes the main window of collgui, working from top to bottom.

Menu or Button	Description
<i>Top menus and buttons</i>	
File	A dropdown selection list presenting the following selections:
Open	Opens a dialog box with a directory browser for selecting Collect binary data files. The top window displays selected files, the lower window displays the selection list, and the left window browses directories. Doubleclick on a file to add it to the selection list, click the Delete button to delete a file from the list, and click OK when you are finished selecting. Collect reads input files in the order of this list.
Exit	Choosing Exit closes collgui.
Options	A dropdown selection list presenting the following selections:
Legend Position	Set the position of the labels for the various lines graphed. Options are Right Top, Right Bottom, and Below.
X Axis Label	Provides ON/OFF toggle for label, providing choice in graphing space.
X Axis Time Format	Controls the time label format, providing these choices: MM:SS HH:MM:SS DD/HH:MM:SS MM-DD/HH:MM:SS 2 lines: MM-DD/HH:MM:SS
X Axis Units	Provides unit choice of Time or Samples.
Set Y Label	Allows you to specify the label for the Y-Axis, rather than using the default, <i>KB/Transfers/Packets/Pages/etc.</i>

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Menu or Button	Description
Image Format	Provides choice of the following image formats: JPEG PBM PPM PS(20pt PS(10pt)
Image Scale	Provides choice of the following image scales: 0.25 0.5 0.75 1.0 1.25 1.5 1.75 2.0
Graph Style	Provides a choice of Lines or Bars.
Font Size	Provides a choice of Bigger or Smaller.
Settings	A dropdown selection list presenting the following selections:
Save	Saves the current configuration; that is, all the information needed to reproduce the current graph. The information is saved in \$HOME/.collguirc and read in on start.
Delete	Opens the dialog box <i>Delete a User Defined Configuration</i> . This dialog lists user-defined settings. Doubleclicking on an entry will remove it from the list, clicking on Commit will save your changes.
Built In	Provides some basic default settings for looking at data: Disk(summary): Transfers/s,KB/s Network: Packets/s,KB/s Basic: I/O,Net,Mem,CPU Memory: Free,Paging
User Defined	Opens a dialog box to define your configurations.
DISPLAY	Graphs your selections in a Gnuplot display.
ALL	Refreshes the display of all Gnuplot windows. Use it after changing the time range.
PRINT	Sets the output device to <i>postscript</i> , and opens a dialog box to choose the output file, which can be redirected to a printer.
JPEG	Opens a dialog box to choose the output image file in the corresponding format.
RESET	Restores the GUI to default values.

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Menu or Button	Description
START and END	<p>Use these entries to specify a time-range for extracting samples from the binary data file. They are set to the times of the first and last sample respectively (of the whole run) when you open a file. The RESET button at the bottom of the window will restore these to their default values. This is the fastest method for extracting a sub-range from your collection period, as these values are passed directly to collect during playback.</p> <p>In live mode these fields are ignored.</p>
X: From            To	Set the range for the X coordinate. Accepts <i>Time</i> units. In live mode the number of samples per window can be set in this field.
Y: From            To	Set the range for the Y coordinate.
Average Samples Intervals	Enter the number of samples to average over. In live mode this field is replaced by <i>Interval</i> to adjust the sampling period (default is 2s).
Samples w/Proc	<p>Samples w/Process Data can be toggled on/off. This allows you to plot intermittently gathered process data against constantly gathered other data. Clicking this button on will use only samples with data, preventing the output of zeros for samples for which no data was gathered.</p> <p>For example: Collect process data at four-second intervals and plot against CPU Idle Time (gathered every second). Zero process data will be reported for 3 of every 4 samples because none was gathered. Toggle <i>Samples w/Proc</i> on and only samples with data will be used; in this case, every fourth sample.</p>
Win	<p>A dropdown list provides selection of the window to use for the next display command. You can reuse an existing window or select a new number to create a new window. To close a window, type <i>q</i> in the window.</p> <p>When creating a new window, the data selection settings of the previous windows are saved for the refresh by ALL button. However, before you create a new window, the setting of the earlier one is left in place, so make sure to clear the setting if it doesn't fit the need of the new window.</p>
X Units	Allows you to specify either <i>time</i> or <i>samples</i> for the horizontal axis of the graph.

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Menu or Button	Description
<i>Subsystem Section</i>	All of the subsections have a toggle for <i>sum</i> , buttons for <i>Add/No Data</i> , <i>Delete</i> , <i>Expressions</i> , and <i>Clear</i> , plus a text entry box.
Single CPU	
Processes	
Disks	
LSM Volumes	
Tapes	
Message Queues	
Network	
Filesystems	
CPU Summary	
Memory & Swap	
Terminal IO	
	The <i>sum</i> checkbox is the equivalent of adding a plus sign at the end of a subsystem name in an expression.
	The <i>No Data</i> button changes to <i>Add</i> when a data file is opened, and <i>Expressions</i> is no longer grayed out.
	The <i>Add</i> button opens a dropdown list for data sources with choices appropriate to each subsystem. The <i>Delete</i> button removes a selected data source. The <i>Expressions</i> button functions similarly, with an appropriate dropdown list, and <i>Clear</i> button removes a selected expression. You may use the text box to directly enter an expression.

## Quick Start

If you wish to start working with collgui without first studying `cfilt`, use this example as a guide:

Take *Disks* for an example. If you click on *Expressions* and select *KB/Sec*, then, without selecting any specific disks, click on the *DISPLAY* button, you will get the *TOTAL Kilo-Bytes/Second* throughput for all disks for which data was collected. Data is totalled because the list on the right is empty. `cfilt` assumes, since you have not selected any particular disk(s), you want a grand total. If, however, you now add **rz0** and **rz1** (assuming these disks exist on your system, and you collected data for them), two lines will be graphed, KB/Sec for rz0 and KB/Sec for rz1. If you click on *Expressions* and select *%Busy*, you will get 4 lines: KB/Sec and %Busy for rz0, and KB/Sec and %Busy for rz1. If you click on the *sum* Checkbutton, (and the *DISPLAY*), you will get only 2 lines this time: KB/Sec for rz0+rz1, and %Busy for rz0+rz1. *sum* sums over all objects in the listbox, or over all objects for which data was collected if no specific object has been selected (the listbox is empty).

It is sometimes useful to graph dissimilar data together, for example *CPU Idle* and *Disk KB/sec*. Using `gnuplot`, you only have one vertical scale. In order to get such incongruous data together in a reasonable fashion on the same graph, data may have to be *normalized* (scaled to fit into a particular range, typically 0-100). Placing a number sign (#) on the end of an expression will normalize the data. Many expression possibilities offer *Normalized* and *Raw* options. The only difference is the percent sign on the end of the expression. You can choose the end of the normalized range yourself by giving that value after the percent sign, for example:

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**disk:rkb/s+wkb/s#150**

The *Normalize* option is disabled in live mode, but you can still apply arithmetic to the values for display, for example, divide them by 200:

**disk:rkb/s+wkb/s~200**

## Batch Features

The following features enhance batch operations with collgui:

- Scripts

To create a shell script that replays an entire session, use the `-b` option (`collgui -b batch_file`). To prevent destroying data files, collgui stops if *batch\_file* already exists. The script has two optional arguments, the time slice in the `-C` Collect syntax and the Collect file name.

To reuse the script with another time slice, use the following syntax:

```
batch_file -Cyy:mm:dd:hh:mm:ss,yy:mm:dd:hh:mm:ss
```

To take the entire time range, use empty single quotes ( `' '` ) as the argument.

To reuse the script with another Collect file, use the following syntax:

```
batch_file 'filename'
```

- Graphics

The `-b` option records the full pathname of the graphics created by JPEG (or other graphic format) button. Then you can edit the script to replace the a part of the pathname with `$3`, adding a third argument that will be the prefix of the graphics file names.

- Line Widths

You can edit the script to modify some gnuplot line attributes, for example, adding at the end of the plot command line:

```
" ` /tmp/collbat.$$1' using 1:4 title 'cpu=user+sys' \
with lines lw 2,"
```

For more information on gnuplot capability, type `gnuplot`, then type `help`.

## X Resources

collgui relies on the default colors of Tk. However, under CDE there are problems. If you have difficulty seeing text in the entry widgets, try placing the following lines in your `~/.Xdefaults` file: **Collgui\*foreground: black**

**Collgui\*background: white**

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Merge this change into your in-memory resource database using the following command:

```
xrdb -merge ~/.Xdefaults
```

## RESTRICTIONS

The following restriction applies when using `collgui`:

Using large data files causes a slow start for `collgui`. Once the file has been parsed, normal operation resumes.

## EXAMPLES

- Use the following syntax to run `collgui` in the live mode:  

```
collgui -live
```
- Use the following syntax to view a compressed data file:  

```
collgui datafile.cgz
```

## ENVIRONMENT VARIABLES

### COLLECT

The name and path of `collect`, if other than `collect`, or if `if` is not your path. For example, `collect3` or `/usr/foo/bin/collect4`.

### CFILT

The name and path of `cfilt`, if other than `cfilt`, or if `cfilt` is not your path.

### GNUPLOT

The name and path of `gnuplot`, if other than `gnuplot`, or if `gnuplot` is not your path.

### CJPEG

The name and path of the `cjpeg` program, used to convert PPM image files to JPEG.

## FILES

`/usr/sbin/collgui`  
The executable image.



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## **SEE ALSO**

Commands: `cfilt(8)`, `collect(8)`

Manuals: *System Configuration and Tuning Guide*, *System Administration Guide*