

Process Explorer User Guide

Purpose

Process Explorer starts where task managers end. It lists all programs running on the phone, including server processes and device drivers that run invisibly in the background, and are not shown by task managers. Detailed information is presented on each process, including child threads and windows, that was never before available. Process Explorer can terminate any process on SonyEricsson phones. The *Cleanup* command performs automated multiple termination which may lead to free memory amounts previously unprecedented. While Process Explorer is most useful on early UIQ3 phones with notoriously low memory, it is also a valuable general tool on any UIQ3 device, for analytical purposes and for killing the occasional "stray process".

Compatibility

Process Explorer can be installed and executed on all smartphones running on Symbian 9.x with UIQ 3.x.

Installation

The distribution package can be installed directly by using the PC install program, or after uploading the .sis file to the phone. Refer to your phone's User Guide for details on installing.

Process view

Process Explorer has five view pages, the first one of which is the Process view. This view lists all processes currently running on the phone.

Each list item represents a process with type icon, process name, and a detail column on the right. You can change the list's contents and ordering in the *Settings* dialog (see below).

Processes can be ordinary *applications* (in which case its application icon is also displayed) or *servers* (invisible background programs). You can view the detailed characteristics of each process in the *Properties* view (see below).

All processes can be terminated, and application processes can be invoked, using the respective commands (see below).



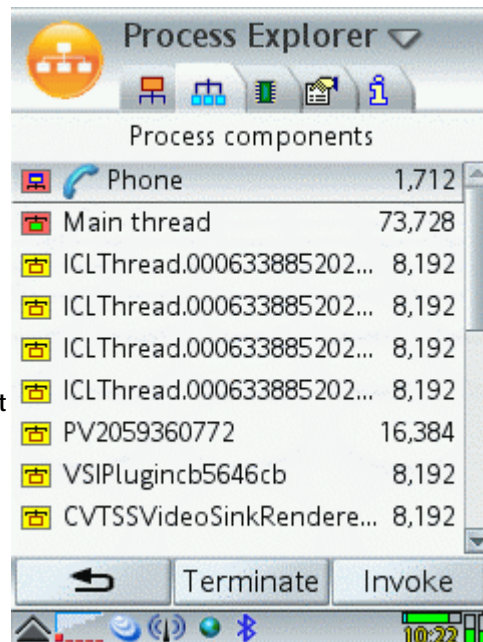
Components view

The Components view lists items that constitute the process selected in the Process view.

The first list item represents the *process* itself. In addition, each process can have one or more *threads* which are independent lineages of code execution. Threads are listed below the process, and can be terminated individually. Terminating the main thread is equivalent with terminating the process.

At the bottom of list the *windows* (visible components) associated with the process are shown. Ordinary applications always have a *task window* (that you interact with), and optionally secondary windows. Server programs may not have any window.

You can view the detailed characteristics of the selected process component in the *Properties* view (see below).



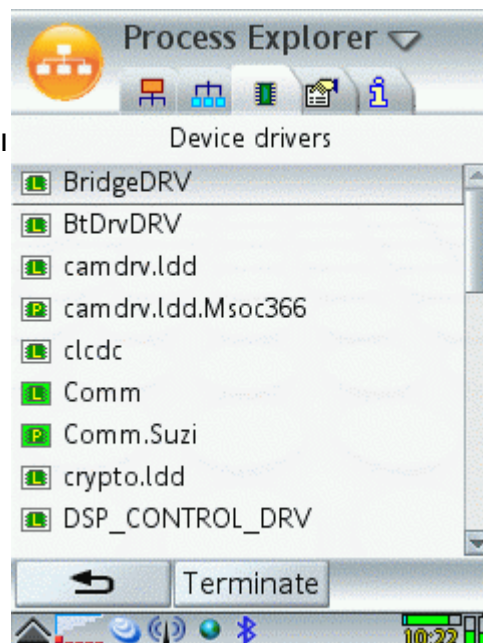
Driver view

The Driver view lists all device drivers that are currently loaded in memory.

Device drivers are special programs that provide low-level communication between hardware and software. Two types of such software, *physical* and *logical* device drivers, are indicated by icons depicting a *P* and *L* letter, respectively.

Device drivers can be unloaded by using the *Terminate* command. As drivers are normally small programs, the expected memory gain is not significant.

You can view the detailed characteristics of the selected driver in the *Properties* view (see below).



Properties view

The Properties view lists technical data about the selected process (if you arrived to the Properties view from the Process view), or about the selected process component (if the Components view was previously shown), or the device driver selected in the Driver view.

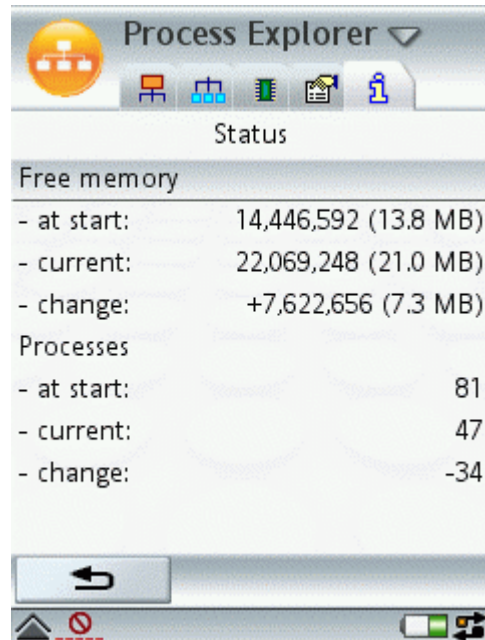
The first list item is the process or driver. The second item can be thread or window, in case thread or window properties are displayed (not process or driver properties). Additional list items depend on the subject displayed.



Status view

The Status view displays process counts and the amount of free memory. Data collected when Process Explorer started up are compared to current data.

These data can be used to examine the overall effect of using Process Explorer on the status of the phone.



Termination

To perform termination, select an item in Process, Components or Driver view, and press the *Terminate* button. Consider the risk associated, as indicated by the type icon. Multiple processes can be terminated after marking them on the list.

On SonyEricsson phones ordinary applications and device drivers can be terminated without restriction. On Motorola phones applications flagged as "system" can not be terminated.

Terminating server processes and threads is only possible on SonyEricsson phones, and requires that the respective option is enabled in *Settings/Terminate*.

Risks

The leftmost column displays an icon for each process and driver. The background color of the icon indicates the risk associated with terminating the item as listed in the table below:

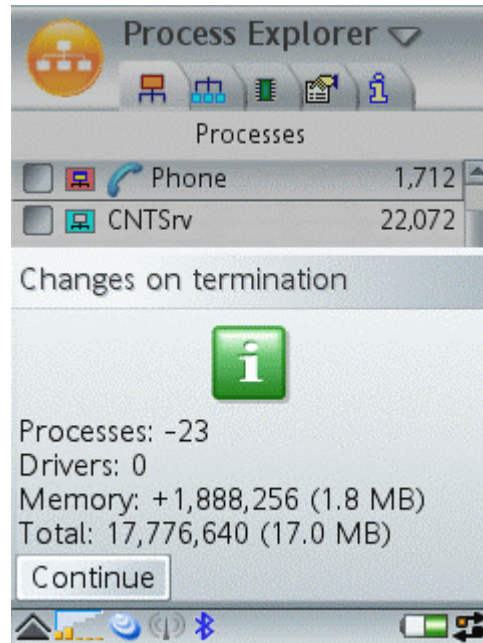
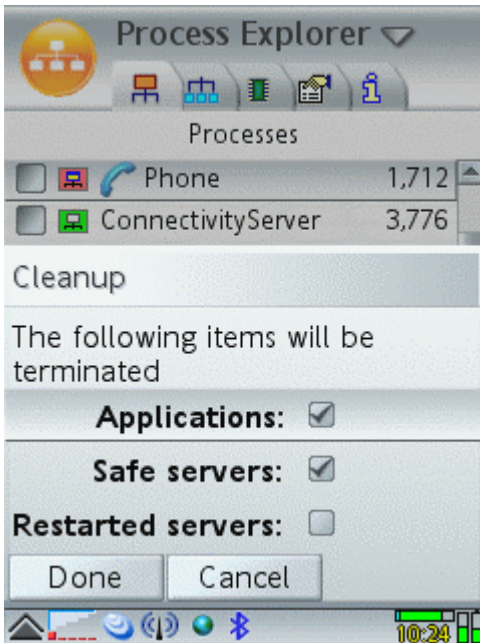
Color	Risk	Description
Green	Safe	No known side-effect when terminated
Cyan	Restarted	Like Safe, but the process is automatically restarted right after termination
White	Unknown	No data available about the effect of termination
Yellow	Risky	Some malfunction is known to occur upon termination
Red	Fatal	Immediate reboot, or serious malfunction that can only be fixed by manual reboot

The risk categorization is based on currently available experience, and may not be correct in all cases.

Cleanup

The Cleanup command (located in the menu) performs automated multiple termination. If any process is marked on the list then those processes are terminated. If no process is marked then the Cleanup control dialog appears. In the dialog set the range(s) of termination, then press the *Done* button. Wait until termination ends and its result is reported. You may want to visit the Status page afterwards, as the amount of free memory can change further.

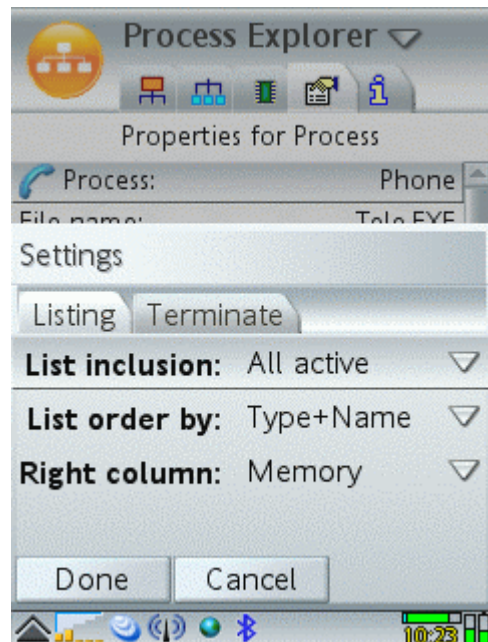
After cleaning up all applications you can access your programs from the built-in Task manager.



Settings - Listing

The following options let you fine tune the appearance and contents of the process list.

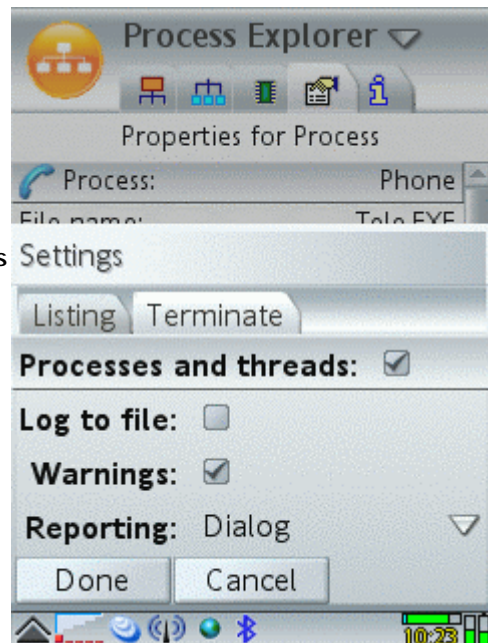
- **List inclusion:** Select what range of processes you want displayed.
- **List order by:** Select the sorting order of processes.
- **Right column:** Select the information to be displayed in the right column of the process list.



Settings - Terminate

Use the provided options to configure how terminations are performed.

- **Processes and threads:** When this option is on, processes and threads can be terminated. When the switch is off, then only ordinary applications can be closed. This option is available only on phones where process termination is possible.
- **Log to file:** Check the option to record all terminations to a log file (d:\PELog.txt), for later analysis. This option is available only when terminating processes is enabled. Log file lines contain the subject of termination, and the resulting change in available memory. Missing memory data in the end of a line indicates that the termination caused a fatal effect (immediate reboot).
- **Warnings:** Check the option to enable displaying a warning dialog when the selected termination has a known risk.
- **Reporting:** Select the kind of report to be presented after executing the *Cleanup* command.



Process Explorer FAQ

General

Q: Why do I need Process Explorer?

A: Process Explorer is useful when you need detailed information about running programs, including server processes. The program can also terminate processes, which can lead to significant increase of free memory, available for running other programs.

Q: Which phones is Process Explorer compatible with?

A: Process Explorer can be installed and executed on all smartphones running on Symbian 9.x with UIQ 3.x.

Q: How does Process Explorer differ from task managers?

A: Process Explorer can list not only ordinary applications, but also server processes (programs running invisibly in the background) that are not displayed by ordinary task managers. The servers can be terminated just like normal applications, resulting in more available memory for running other programs. In addition, detailed technical information is provided about each process, thread and window present in the system, which is not available when using an ordinary task manager.

Display

Q: Can I sort processes differently?

A: Yes, in the Settings/Listing dialog you can select several options for ordering the process list.

Q: How can I display only normal applications?

A: By using the Settings/Listing dialog you can choose what ranges of processes will be included in the process list.

Termination

Q: How to terminate a program?

A: Select the desired application, process, thread or window, and press the Terminate button.

Q: Why is the Terminate button disabled?

A: Processes and threads can only be terminated when the respective master switch is enabled in the Settings/Terminate dialog.

Q: Why is the Processes and threads option disabled in Settings/Terminate?

A: Termination of processes and threads is only possible on SonyEricsson phones. The switch to enable termination is disabled on Motorola phones.

Q: Can I terminate several programs at once?

A: Yes, by using the Cleanup menu command you can select what ranges of processes to terminate successively.

Q: How much memory can I retrieve by terminations?

A: The maximum amount of achievable free memory by terminating multiple processes depends on various conditions, like phone model, branding, etc.. As an example, on the P990 it is possible to have 19.7 MB of free memory by using the Cleanup command.

Q: What to do if I can not use the phone normally after termination?

A: If it does not work normally after terminating processes, just reboot the phone. According to extensive testing process terminations can not make any permanent harm to the device. Please report to our support Email address if you were able to determine some adverse side-effect of any process that is currently categorized as Safe or Restarted.

We at CellPhoneSoft hope you enjoy using Process Explorer, and find it useful in making your smartphone a more pleasant experience. Thank you for using our product!