## NAME

**profil** - control process profiling

## LIBRARY

Standard C Library (libc, -lc)

## SYNOPSIS

**#include <unistd.h>**

*int*
**profil**(*char *samples*, *size_t size*, *vm_offset_t offset*, *int scale*);

## DESCRIPTION

The **profil**() system call enables or disables program counter profiling of the current process.  If profiling is enabled, then at every profiling clock tick, the kernel updates an appropriate count in the *samples* buffer.  The frequency of the profiling clock is recorded in the header in the profiling output file.

The buffer *samples* contains *size* bytes and is divided into a series of 16-bit bins.  Each bin counts the number of times the program counter was in a particular address range in the process when a profiling clock tick occurred while profiling was enabled.  For a given program counter address, the number of the corresponding bin is given by the relation:

[(pc - offset) / 2] * scale / 65536

The *offset* argument is the lowest address at which the kernel takes program counter samples.  The *scale* argument ranges from 1 to 65536 and can be used to change the span of the bins.  A scale of 65536 maps each bin to 2 bytes of address range; a scale of 32768 gives 4 bytes, 16384 gives 8 bytes and so on. Intermediate values provide approximate intermediate ranges.  A *scale* value of 0 disables profiling.

## RETURN VALUES

The **profil**() function returns the value 0 if successful; otherwise the value -1 is returned and the global variable *errno* is set to indicate the error.

## FILES

*/usr/lib/gcrt0.o*  profiling C run-time startup file
*gmon.out*        conventional name for profiling output file

## ERRORS

The following error may be reported:

[EFAULT]              The buffer *samples* contains an invalid address.

**SEE ALSO**

gprof(1)

**HISTORY**

The **profil**() functionality first appeared in Version 3 AT&T UNIX.

**BUGS**

This routine should be named **profile**().

The *samples* argument should really be a vector of type *unsigned short*.

The format of the gmon.out file is undocumented.