

NAME

getauxval - retrieve a value from the auxiliary vector

SYNOPSIS

```
#include <sys/auxv.h>
```

```
unsigned long getauxval(unsigned long type);
```

DESCRIPTION

The `getauxval()` function retrieves values from the auxiliary vector, a mechanism that the kernel's ELF binary loader uses to pass certain information to user space when a program is executed.

Each entry in the auxiliary vector consists of a pair of values: a type that identifies what this entry represents, and a value for that type. Given the argument *type*, `getauxval()` returns the corresponding value.

The value returned for each *type* is given in the following list. Not all *type* values are present on all architectures.

AT_BASE

The base address of the program interpreter (usually, the dynamic linker).

AT_BASE_PLATFORM

A string identifying the real platform; may differ from `AT_PLATFORM` (PowerPC only).

AT_CLKTCK

The frequency with which `times(2)` counts. This value can also be obtained via `sysconf(_SC_CLK_TCK)`.

AT_DCACHEBSIZE

The data cache block size.

AT_EGID

The effective group ID of the thread.

AT_ENTRY

The entry address of the executable.

AT_EUID

The effective user ID of the thread.

AT_EXECPD

File descriptor of program.

AT_EXECFN

Pathname used to execute program.

AT_FLAGS

Flags (unused).

AT_FPUCW

Used FPU control word (SuperH architecture only). This gives some information about the FPU initialization performed by the kernel.

AT_GID

The real group ID of the thread.

AT_HWCAP

A pointer to a multibyte mask of bits whose settings indicate detailed processor capabilities. The contents of the bit mask are hardware dependent (for example, see the kernel source file `arch/x86/include/asm/cpufeature.h` for details relating to the Intel x86 architecture). A human-readable version of the same information is available via `/proc/cpuinfo`.

AT_ICACHEBSIZE

The instruction cache block size.

AT_PAGESZ

The system page size (the same value returned by `sysconf(_SC_PAGESIZE)`).

AT_PHDR

The address of the program headers of the executable.

AT_PHEENT

The size of program header entry.

AT_PHNUM

The number of program headers.

AT_PLATFORM

A pointer to a string that identifies the hardware platform that the program is running on. The dynamic linker uses this in the interpretation of `rpath` values.

AT_RANDOM

The address of sixteen bytes containing a random value.

AT_SECURE

Has a nonzero value if this executable should be treated securely. Most commonly, a nonzero value indicates that the process is executing a set-user-ID or set-group-ID program; alternatively, a nonzero value may be triggered by a Linux Security Module. When this value is nonzero, the dynamic linker disables the use of certain environment variables (see [ld-linux.so\(8\)](#)) and glibc changes other aspects of its behavior. (See also [secure_getenv\(3\)](#).)

AT_SYSINFO

The entry point to the system call function in the vDSO. Not present/needed on all architectures (e.g., absent on x86-64).

AT_SYSINFO_EHDR

The address of a page containing the virtual Dynamic Shared Object (vDSO) that the kernel creates in order to provide fast implementations of certain system calls.

AT_UCACHEBSIZE

The unified cache block size.

AT_UID

The real user ID of the thread.

RETURN VALUE

On success, `getauxval()` returns the value corresponding to *type*. If *type* *e* is not found, 0 is returned.

ERRORS

ENOENT (since glibc 2.19)

No entry corresponding to *type* could be found in the auxiliary vector.

VERSIONS

The `getauxval()` function was added to glibc in version 2.16.

ATTRIBUTES

Multithreading (see [pthreads\(7\)](#))

The `getauxval()` function is thread-safe.

CONFORMING TO

This function is a nonstandard glibc extension.

NOTES

The primary consumer of the information in the auxiliary vector is the dynamic linker [ld-linux.so\(8\)](#). The auxiliary vector is a convenient and efficient shortcut that allows the kernel to

communicate a certain set of standard information that the dynamic linker usually or always needs. In some cases, the same information could be obtained by system calls, but using the auxiliary vector is cheaper.

The auxiliary vector resides just above the argument list and environment in the process address space. The auxiliary vector supplied to a program can be viewed by setting the **LD_SHOW_AUXV** environment variable when running a program:

```
$ LD_SHOW_AUXV=1 sleep 1
```

The auxiliary vector of any process can (subject to file permissions) be obtained via `/proc/PID/auxv`; see [proc\(5\)](#) for more information.

BUGS

Before the addition of the **ENOENT** error in glibc 2.19, there was no way to unambiguously distinguish the case where *type* could not be found from the case where the value corresponding to *type* was zero.

SEE ALSO

[secure_getenv\(3\)](#), [vdso\(7\)](#), [ld-linux.so\(8\)](#)

COLOPHON

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