Rocky Enterprise Linux 9.2 Manual Pages on command 'query_module.2'

$ man query_module.2

QUERY_MODULE(2) Linux Programmer's Manual QUERY_MODULE(2)

NAME

query_module - query the kernel for various bits pertaining to modules

SYNOPSIS

#include <linux/module.h>

int query_module(const char *name, int which, void *buf,
size_t bufsize, size_t *ret);

Note: No declaration of this system call is provided in glibc headers; see NOTES.

DESCRIPTION

Note: This system call is present only in kernels before Linux 2.6.

query_module() requests information from the kernel about loadable modules. The returned
information is placed in the buffer pointed to by buf. The caller must specify the size
of buf in bufsize. The precise nature and format of the returned information depend on
the operation specified by which. Some operations require name to identify a currently
loaded module, some allow name to be NULL, indicating the kernel proper.

The following values can be specified for which:

0 Returns success, if the kernel supports query_module(). Used to probe for avail?
ability of the system call.

QM_MODULES

Returns the names of all loaded modules. The returned buffer consists of a se?
quence of null-terminated strings; ret is set to the number of modules.

QM_DEPS

Returns the names of all modules used by the indicated module. The returned buffer consists of a sequence of null-terminated strings; ret is set to the number of mod? ules.

QM_REFS

Returns the names of all modules using the indicated module. This is the inverse of QM_DEPS. The returned buffer consists of a sequence of null-terminated strings; ret is set to the number of modules.

QM_SYMBOLS

Returns the symbols and values exported by the kernel or the indicated module. The returned buffer is an array of structures of the following form

```
struct module_symbol {
    unsigned long value;
    unsigned long name;
};
```

followed by null-terminated strings. The value of name is the character offset of the string relative to the start of buf; ret is set to the number of symbols.

QM_INFO

Returns miscellaneous information about the indicated module. The output buffer format is:

```
struct module_info {
    unsigned long address;
    unsigned long size;
    unsigned long flags;
};
```

where address is the kernel address at which the module resides, size is the size of the module in bytes, and flags is a mask of MOD_RUNNING, MOD_AUTOCLEAN, and so on, that indicates the current status of the module (see the Linux kernel source file include/linux/module.h). ret is set to the size of the module_info structure.

RETURN VALUE

On success, zero is returned. On error, -1 is returned and errno is set appropriately.

ERRORS

EFAULT At least one of name, buf, or ret was outside the program's accessible address space.

EINVAL Invalid which; or name is NULL (indicating "the kernel"), but this is not permitted with the specified value of which.

ENOENT No module by that name exists.

ENOSPC The buffer size provided was too small. ret is set to the minimum size needed.

ENOSYS query_module() is not supported in this version of the kernel (e.g., the kernel is version 2.6 or later).

VERSIONS

This system call is present on Linux only up until kernel 2.4; it was removed in Linux 2.6.

CONFORMING TO

query_module() is Linux-specific.

NOTES

Some of the information that was formerly available via query_module() can be obtained from /proc/modules, /proc/kallsyms, and the files under the directory /sys/module.

The query_module() system call is not supported by glibc. No declaration is provided in glibc headers, but, through a quirk of history, glibc does export an ABI for this system call. Therefore, in order to employ this system call, it is sufficient to manually de?clare the interface in your code; alternatively, you can invoke the system call using syscall(2).

SEE ALSO

create_module(2), delete_module(2), get_kernel_syms(2), init_module(2), lsmod(8), mod?info(8)

COLOPHON

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