

**NAME**

**freeenv**, **kern\_getenv**, **getenv\_int**, **getenv\_long**, **getenv\_string**, **getenv\_quad**, **getenv\_uint**, **getenv\_ulong**, **getenv\_bool**, **getenv\_is\_true**, **getenv\_is\_false**, **kern\_setenv**, **testenv**, **kern\_unsetenv** - kernel environment variable functions

**SYNOPSIS**

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

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

*void*

```
freeenv(char *env);
```

*char \**

```
kern_getenv(const char *name);
```

*int*

```
getenv_int(const char *name, int *data);
```

*int*

```
getenv_long(const char *name, long *data);
```

*int*

```
getenv_string(const char *name, char *data, int size);
```

*int*

```
getenv_quad(const char *name, quad_t *data);
```

*int*

```
getenv_uint(const char *name, unsigned int *data);
```

*int*

```
getenv_ulong(const char *name, unsigned long *data);
```

*int*

```
getenv_bool(const char *name, bool *data);
```

*bool*

```
getenv_is_true(const char *name);
```

*bool*

```
getenv_is_false(const char *name);
```

*int*

```
kern_setenv(const char *name, const char *value);
```

*int*

```
testenv(const char *name);
```

*int*

```
kern_unsetenv(const char *name);
```

## DESCRIPTION

These functions set, unset, fetch, and parse variables from the kernel's environment.

The **kern\_getenv**() function obtains the current value of the kernel environment variable *name* and returns a pointer to the string value. The caller should not modify the string pointed to by the return value. The **kern\_getenv**() function may allocate temporary storage, so the **freeenv**() function must be called to release any allocated resources when the value returned by **kern\_getenv**() is no longer needed.

The **freeenv**() function is used to release the resources allocated by a previous call to **kern\_getenv**(). The *env* argument passed to **freeenv**() is the pointer returned by the earlier call to **kern\_getenv**(). Like `free(3)`, the *env* argument can be *NULL*, in which case no action occurs.

The **kern\_setenv**() function inserts or resets the kernel environment variable *name* to *value*. If the variable *name* already exists, its value is replaced. This function can fail if an internal limit on the number of environment variables is exceeded.

The **kern\_unsetenv**() function deletes the kernel environment variable *name*.

The **testenv**() function is used to determine if a kernel environment variable exists. It returns a non-zero value if the variable *name* exists and zero if it does not.

The **getenv\_int**(), **getenv\_long**(), **getenv\_quad**(), **getenv\_uint**(), and **getenv\_ulong**() functions look for a kernel environment variable *name* and parse it as a signed integer, long integer, signed 64-bit integer, unsigned integer, or an unsigned long integer, respectively. These functions fail and return zero if *name* does not exist or if any invalid characters are present in its value. On success, these function store the parsed value in the integer variable pointed to by *data*. If the parsed value overflows the integer type, a truncated value is stored in *data* and zero is returned. If the value begins with a prefix of "0x" it is interpreted as hexadecimal. If it begins with a prefix of "0" it is interpreted as octal. Otherwise, the value is interpreted as decimal. The value may contain a single character suffix specifying a unit for the

value. The interpreted value is multiplied by the unit's magnitude before being returned. The following unit suffixes are supported:

| Unit | Magnitude       |
|------|-----------------|
| k    | 2 <sup>10</sup> |
| m    | 2 <sup>20</sup> |
| g    | 2 <sup>30</sup> |
| t    | 2 <sup>40</sup> |

The **getenv\_string()** function stores a copy of the kernel environment variable *name* in the buffer described by *data* and *size*. If the variable does not exist, zero is returned. If the variable exists, up to *size* - 1 characters of its value are copied to the buffer pointed to by *data* followed by a null character and a non-zero value is returned.

The **getenv\_bool()** function interprets the value of the kernel environment variable *name* as a boolean value by performing a case-insensitive comparison against the strings "1", "0", "true", and "false". If the environment variable exists and has a valid boolean value, then that value will be copied to the variable pointed to by *data*. If the environment variable exists but is not a boolean value, then a warning will be printed to the kernel message buffer. The **getenv\_is\_true()** and **getenv\_is\_false()** functions are wrappers around **getenv\_bool()** that simplify testing for a desired boolean value.

## RETURN VALUES

The **kern\_getenv()** function returns a pointer to an environment variable's value on success or NULL if the variable does not exist.

The **kern\_setenv()** and **kern\_unsetenv()** functions return zero on success and -1 on failure.

The **testenv()** function returns zero if the specified environment variable does not exist and a non-zero value if it does exist.

The **getenv\_int()**, **getenv\_long()**, **getenv\_string()**, **getenv\_quad()**, **getenv\_uint()**, **getenv\_ulong()**, and **getenv\_bool()** functions return a non-zero value on success and zero on failure.

The **getenv\_is\_true()** and **getenv\_is\_false()** functions return true if the specified environment variable exists and its value matches the desired boolean condition, and false otherwise.