

**NAME**

**setclasscontext**, **setclasscpumask**, **setclassenvironment**, **setclassresources**, **setusercontext** - functions for using the login class capabilities database

**LIBRARY**

System Utilities Library (libutil, -lutil)

**SYNOPSIS**

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

```
#include <login_cap.h>
```

*int*

```
setclasscontext(const char *classname, unsigned int flags);
```

*void*

```
setclasscpumask(login_cap_t *lc);
```

*void*

```
setclassenvironment(login_cap_t *lc, const struct passwd *pwd, int paths);
```

*void*

```
setclassresources(login_cap_t *lc);
```

*int*

```
setusercontext(login_cap_t *lc, const struct passwd *pwd, uid_t uid, unsigned int flags);
```

**DESCRIPTION**

These functions provide a higher level interface to the login class database than those documented in `login_cap(3)`. These functions are used to set resource limits, environment and accounting settings for users on logging into the system and when selecting an appropriate set of environment and resource settings for system daemons based on login classes. These functions may only be called if the current process is running with root privileges. If the `LOGIN_SETLOGIN` flag is used this function calls `setlogin(2)`, and due care must be taken as detailed in the manpage for that function and this affects all processes running in the same session and not just the current process.

The `setclasscontext()` function sets various class context values (resource limits, umask and process priorities) based on values for a specific named class.

The `setusercontext()` function sets class context values based on a given `login_cap_t` object and a specific `passwd` record (if `login_cap_t` is `NULL`), the current session's login, and the current process

user and group ownership. Each of these actions is selectable via bit-flags passed in the *flags* parameter, which is comprised of one or more of the following:

**LOGIN\_SETLOGIN** Set the login associated with the current session to the user specified in the *passwd* structure using `setlogin(2)`. The *pwd* parameter must not be NULL if this option is used.

**LOGIN\_SETUSER** Set ownership of the current process to the *uid* specified in the *uid* parameter using `setuid(2)`.

**LOGIN\_SETGROUP** Set group ownership of the current process to the group id specified in the *passwd* structure using `setgid(2)`, and calls `initgroups(3)` to set up the group access list for the current process. The *pwd* parameter must not be NULL if this option is used.

**LOGIN\_SETRESOURCES** Set resource limits for the current process based on values specified in the system login class database. Class capability tags used, with and without `-cur` (soft limit) or `-max` (hard limit) suffixes and the corresponding resource setting:

<code>cpulimit</code>	<code>RLIMIT_CPU</code>
<code>filesizelimit</code>	<code>RLIMIT_FSIZE</code>
<code>datasizelimit</code>	<code>RLIMIT_DATA</code>
<code>stacksizelimit</code>	<code>RLIMIT_STACK</code>
<code>coredumpsize</code>	<code>RLIMIT_CORE</code>
<code>memoryuselimit</code>	<code>RLIMIT_RSS</code>
<code>memorylocklimit</code>	<code>RLIMIT_MEMLOCK</code>
<code>maxproclimit</code>	<code>RLIMIT_NPROC</code>
<code>openfileslimit</code>	<code>RLIMIT_NOFILE</code>
<code>sbsizelimit</code>	<code>RLIMIT_SBSIZE</code>
<code>vmemoryuselimit</code>	<code>RLIMIT_VMEM</code>
<code>pseudoterminallimit</code>	<code>RLIMIT_NPTS</code>
<code>swapuselimit</code>	<code>RLIMIT_SWAP</code>
<code>kqueuelimit</code>	<code>RLIMIT_KQUEUES</code>
<code>umtxplimit</code>	<code>RLIMIT_UMTXP</code>

**LOGIN\_SETPRIORITY** Set the scheduling priority for the current process based on the value specified in the system login class database. Class capability tags used:

`priority`

**LOGIN\_SETUMASK** Set the umask for the current process to a value in the user or system login class database. Class capability tags used:

umask

**LOGIN\_SETPATH** Set the "path" and "manpath" environment variables based on values in the user or system login class database. Class capability tags used with the corresponding environment variables set:

path      PATH  
manpath    MANPATH

**LOGIN\_SETENV** Set various environment variables based on values in the user or system login class database. Class capability tags used with the corresponding environment variables set:

lang      LANG  
charset    MM\_CHARSET  
timezone   TZ  
term      TERM

Additional environment variables may be set using the list type capability "setenv=var1 val1,var2 val2...,varN valN".

**LOGIN\_SETMAC** Set the MAC label for the current process to the label specified in system login class database.

**LOGIN\_SETCPUMASK** Create a new cpuset(2) and set the cpu affinity to the specified mask. The string may contain a comma separated list of numbers and/or number ranges as handled by the cpuset(1) utility or the case-insensitive string 'default'. If the string is 'default' no action will be taken.

**LOGIN\_SETLOGINCLASS** Set the login class of the current process using setloginclass(2).

**LOGIN\_SETALL** Enables all of the above settings.

Note that when setting environment variables and a valid passwd pointer is provided in the *pwd* parameter, the characters '~' and '\$' are substituted for the user's home directory and login name respectively.

The **setclasspumask()**, **setclassresources()** and **setclassenvironment()** functions are subsets of the setcontext functions above, but may be useful in isolation.

## RETURN VALUES

The **setclasscontext()** and **setusercontext()** functions return -1 if an error occurred, or 0 on success. If an error occurs when attempting to set the user, login, group or resources, a message is reported to syslog(3), with LOG\_ERR priority and directed to the currently active facility.

## SEE ALSO

cpuset(1), ps(1), cpuset(2), setgid(2), setlogin(2), setloginclass(2), setuid(2), getcap(3), initgroups(3), login\_cap(3), mac\_set\_proc(3), login.conf(5), termcap(5)

## HISTORY

The functions **setclasscontext()**, **setclasspumask()**, **setclassenvironment()**, **setclassresources()** and **setusercontext()** first appeared in FreeBSD 2.1.5.