

Op:sys_sem.h

sys/sem.h - XSI semaphore facility

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

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DESCRIPTION

The `<sys/sem.h>` header shall define the following constants and structures.

Semaphore operation flags:

SEM_UNDO

Set up adjust on exit entry.

Command definitions for the `semctl()` function shall be provided as follows:

GETNCNT

Get `semncnt`.

GETPID Get `sempid`.

GETVAL Get `semval`.

GETALL Get all cases of `semval`.

GETZCNT

Get `semzcnt`.

SETVAL Set `semval`.

SETALL Set all cases of *semval*.

The *semid_ds* structure shall contain the following members:

```
struct ipc_perm  sem_perm  Operation permission structure.
unsigned short   sem_nsems Number of semaphores in set.
time_t          sem_otime Last semop
                 () time.
time_t          sem_ctime Last time changed by semctl
                 ().
```

The *pid_t*, *time_t*, *key_t*, and *size_t* types shall be defined as described in *<sys/types.h>* .

A semaphore shall be represented by an anonymous structure containing the following members:

```
unsigned short   semval    Semaphore value.
pid_t           sempid    Process ID of last operation.
unsigned short   semncnt  Number of processes waiting for semval
                        to become greater than current value.
unsigned short   semzcnt  Number of processes waiting for semval
                        to become 0.
```

The *sembuf* structure shall contain the following members:

```
unsigned short   sem_num   Semaphore number.
short           sem_op     Semaphore operation.
short           sem_flg    Operation flags.
```

The following shall be declared as functions and may also be defined as macros. Function prototypes shall be provided.

```
int  semctl(int, int, int, ...);
int  semget(key_t, int, int);
int  semop(int, struct sembuf *, size_t);
```

In addition, all of the symbols from *<sys/ipc.h>* shall be defined when this header is included.

The following sections are informative.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

RELATED

<sys/ipc.h> , *<sys/types.h>* , *semctl()* , *semget()* , *semop()*

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