

TE IT

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Inter-process Communication using Shared Memory using System V.
Application to demonstrate: Client and Server Programs in which server process creates a shared memory segment and writes the message to the shared memory segment. Client process reads the message from the shared memory segment and displays it to the screen.

Client program:

```
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <stdio.h>
#include <stdlib.h>
```

```
#define MAXSIZE 27
```

```
void die(char *s)
{
    perror(s);
    exit(1);
}
```

```
int main()
{
    int shmid,retval;
    key_t key;
    char *shm, *s;

    key = 5678;

    if ((shmid = shmget(key,MAXSIZE, IPC_CREAT | 0666)) < 0)
        die("shmget");
    if ((shm = shmat(shmid,NULL,0)) == (char *)-1)
        die("shmat");

    for (s = shm; *s != '\0'; s++)
        putchar(*s);
    putchar('\n');

    *shm = '*';
    retval=shmdt(shm);
    if(retval<0)
    {
        printf("Detachment Failure");
        return 0;
    }
    retval=shmctl(shmid,IPC_RMID,NULL);

    exit(0);
}
```

```
}
```

Server program:

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

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

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

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
#define MAXSIZE 27
```

```
void die(char *s)
```

```
{
```

```
    perror(s);
```

```
    exit(1);
```

```
}
```

```
int main()
```

```
{
```

```
    char c;
```

```
    int shmid,retval;
```

```
    key_t key;
```

```
    char *shm, *s;
```

```
    key = 5678;
```

```
    if ((shmid = shmget(key,MAXSIZE, IPC_CREAT | 0666)) < 0)
```

```

        die("shmget");
    if ((shm = shmat(shmid,NULL,0)) == (char *)-1)
        die("shmat");

    s = shm;

    for (c = 'a'; c <= 'z'; c++)
        *s++ = c;

    while(*shm != '*');
    //sleep(1);
    retval=shmdt(shm);
    if(retval<0)
    {
        printf("Detachment Failure");
        return 0;
    }

    exit(0);

}

```

Server Output:

```
~$ gcc ass8ser.c -o s1
```

```
~$ ./s1
```

```
~$
```

Client Output:

~\$ gcc ass8cli.c -o c1

~\$./c1

abcdefghijklmnopqrstuvwxyz