Linux IPC: Shared Memory

Shared Memory is an efficeint means of passing data between programs. One program will create a memory portion which other processes (if permitted) can access.

```
int shmget(key_t key, size_t size, int shmflg);
```

A process creates a shared memory segment using shmget(). When the call succeeds, it returns the shared memory segment ID. This call is also used to get the ID of an existing shared segment (from a process requesting sharing of some existing memory portion).

```
void *shmat(int shmid, const void *shmaddr, int shmflg);

int shmdt(const void *shmaddr);
```

Once created, a shared segment can be attached to a process address space using shmat(). shmat() returns a pointer, shmaddr, to the head of the shared segment associated with a valid shmid. shmdt() detaches the shared memory segment located at the address indicated by shmaddr

Once attached, the process can read or write to the segment, as allowed by the permission requested in the attach operation.