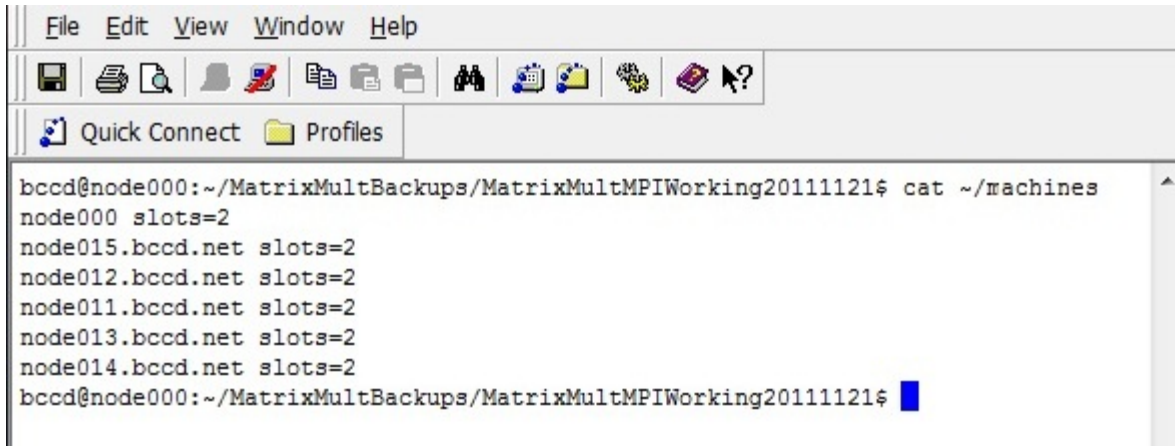Logging off *Kraken* while a program is running. *Draft version 2011.12.29*

If you are logged via SSH into Kraken, and are running a program that is going to take a significant amount of time, you cannot simply disconnect from Kraken, as it will also terminate your program. There is a way around this, and it is to use *screen*. There is thorough documentation for *screen* on the web, in particular, http://man-wiki.net/index.php/1:screen.
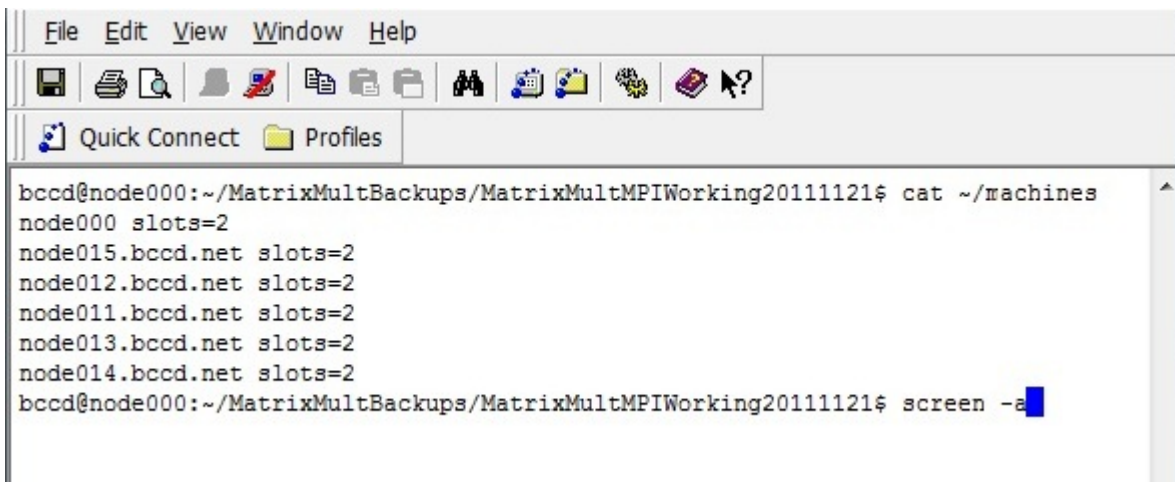
We will go through a step by step process of how this process works.

First, make sure you are logged in to Kraken.

```
File  Edit  View  Window  Help

  Quick Connect    Profiles

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ cat ~/machines
node000 slots=2
node015.bccd.net slots=2
node012.bccd.net slots=2
node011.bccd.net slots=2
node013.bccd.net slots=2
node014.bccd.net slots=2
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$
```
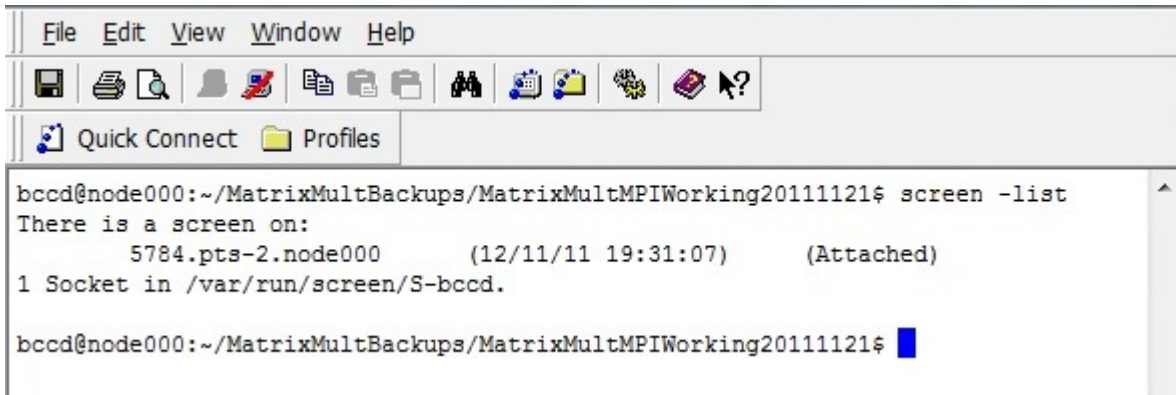
Next, run the command: screen -a

```
File  Edit  View  Window  Help

  Quick Connect    Profiles

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ cat ~/machines
node000 slots=2
node015.bccd.net slots=2
node012.bccd.net slots=2
node011.bccd.net slots=2
node013.bccd.net slots=2
node014.bccd.net slots=2
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -a
```
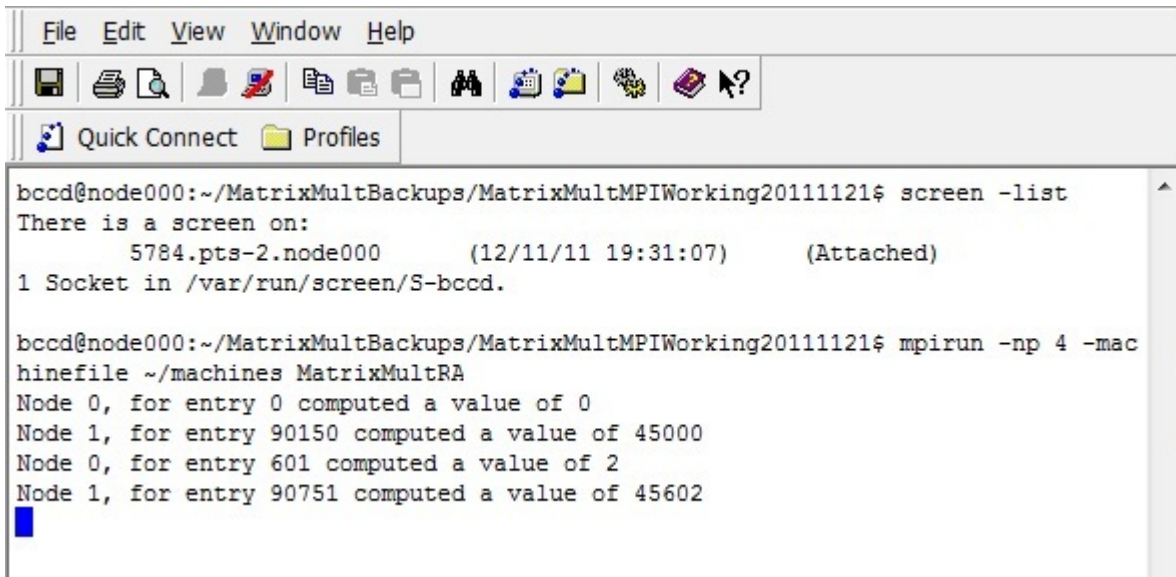
This will clear the screen, be patient as the command prompt comes up. To ensure that it is working correctly, execute the command: screen -list.
You should see something similar to the following:

```
File  Edit  View  Window  Help

Quick Connect    Profiles

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -list
There is a screen on:
        5784.pts-2.node000      (12/11/11 19:31:07)      (Attached)
1 Socket in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$
```

Now that you have attached yourself to a screen, go ahead and start running your program.

```
File  Edit  View  Window  Help

Quick Connect    Profiles

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -list
There is a screen on:
        5784.pts-2.node000      (12/11/11 19:31:07)      (Attached)
1 Socket in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ mpirun -np 4 -mac
hinefile ~/machines MatrixMultRA
Node 0, for entry 0 computed a value of 0
Node 1, for entry 90150 computed a value of 45000
Node 0, for entry 601 computed a value of 2
Node 1, for entry 90751 computed a value of 45602
```
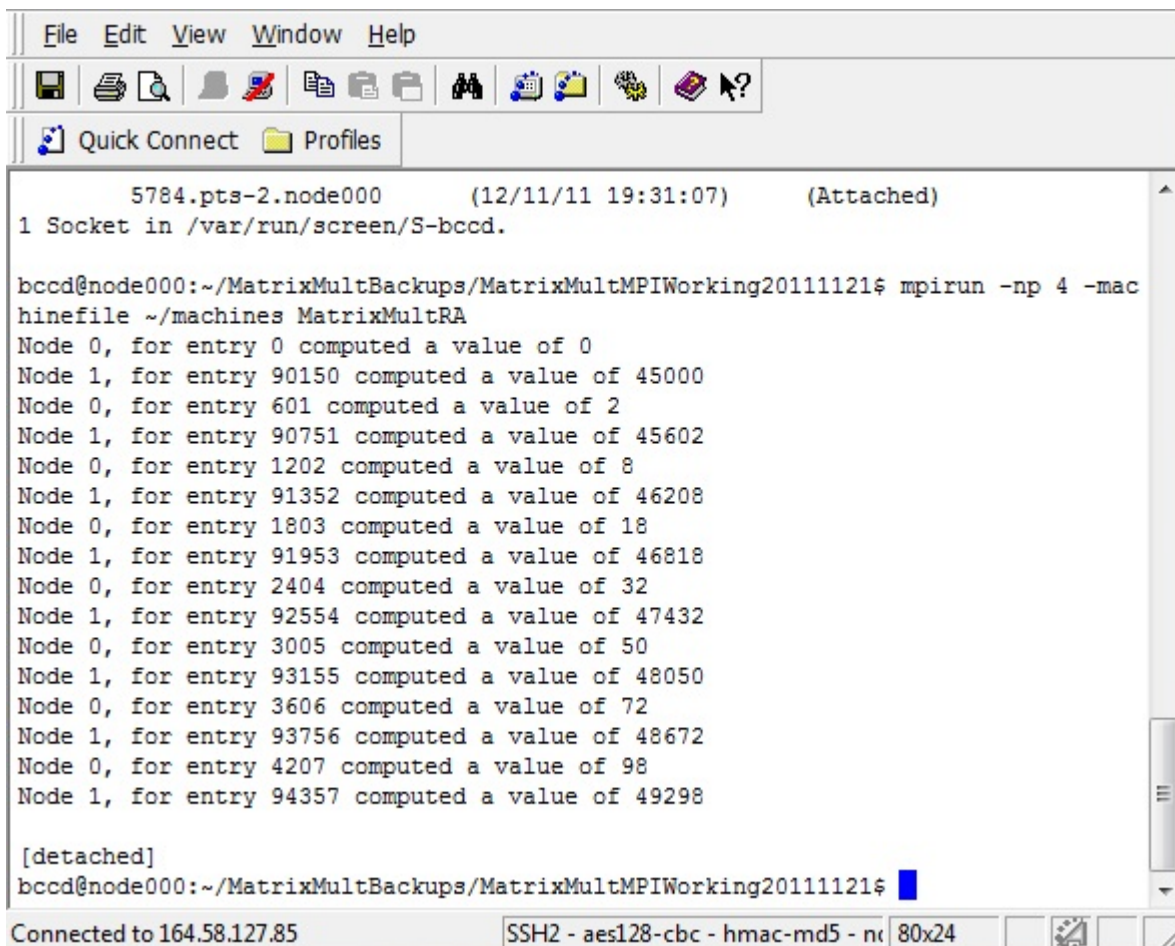
At this point, press ctrl+a, then press d.  This will detach your session from the screen.  You will get a message which states [detached], as in the following image:

```
  File  Edit  View  Window  Help

        5784.pts-2.node000        (12/11/11 19:31:07)        (Attached)
1 Socket in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ mpirun -np 4 -mac
hinefile ~/machines MatrixMultRA
Node 0, for entry 0 computed a value of 0
Node 1, for entry 90150 computed a value of 45000
Node 0, for entry 601 computed a value of 2
Node 1, for entry 90751 computed a value of 45602
Node 0, for entry 1202 computed a value of 8
Node 1, for entry 91352 computed a value of 46208
Node 0, for entry 1803 computed a value of 18
Node 1, for entry 91953 computed a value of 46818
Node 0, for entry 2404 computed a value of 32
Node 1, for entry 92554 computed a value of 47432
Node 0, for entry 3005 computed a value of 50
Node 1, for entry 93155 computed a value of 48050
Node 0, for entry 3606 computed a value of 72
Node 1, for entry 93756 computed a value of 48672
Node 0, for entry 4207 computed a value of 98
Node 1, for entry 94357 computed a value of 49298


[detached]
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$

Connected to 164.58.127.85        SSH2 - aes128-cbc - hmac-md5 - nc 80x24
```

You can always execute a top command to be sure that your program is still running:

```
File  Edit  View  Window  Help

 Quick Connect    Profiles

top - 19:37:28 up 4 days,  8:48,  3 users,  load average: 2.20, 1.28, 0.63
Tasks: 130 total,   3 running, 127 sleeping,   0 stopped,   0 zombie
Cpu(s):  1.2%us,  2.5%sy,  0.0%ni, 91.2%id,  4.5%wa,  0.0%hi,  0.6%si,  0.0%st
Mem:   2071236k total,  2010256k used,    60980k free,   156576k buffers
Swap:  4145148k total,      264k used,  4144884k free,  1554328k cached

  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
 5913 bccd      20   0 78692 4212 2812 D   41  0.2   1:21.37 MatrixMultRA
 5912 bccd      20   0 78836 4208 2800 D   39  0.2   1:21.21 MatrixMultRA
 8038 root      20   0     0    0    0 S   15  0.0  16:57.25 nfsd
 8041 root      20   0     0    0    0 S   15  0.0  17:08.52 nfsd
 8029 root      20   0     0    0    0 S   13  0.0   0:55.82 lockd
 8034 root      20   0     0    0    0 R   13  0.0  18:52.08 nfsd
 8039 root      20   0     0    0    0 R   13  0.0  19:06.01 nfsd
 2562 root      20   0     0    0    0 D    7  0.0 111:59.69 kjournald
 8036 root      20   0     0    0    0 D    7  0.0  17:57.00 nfsd
 5984 bccd      20   0  2132  964  740 R    4  0.0   0:00.02 top
 9405 bccd      20   0 46972  13m 5128 S    2  0.7   5:11.70 gnome-terminal
    1 root      20   0  2028  604  548 S    0  0.0   0:09.13 init
    2 root      20   0     0    0    0 S    0  0.0   0:00.00 kthreadd
    3 root      20   0     0    0    0 S    0  0.0   0:00.25 ksoftirqd/0
    5 root      20   0     0    0    0 S    0  0.0   0:00.18 kworker/u:0
    6 root      RT   0     0    0    0 S    0  0.0   0:00.00 migration/0
    7 root      RT   0     0    0    0 S    0  0.0   0:00.00 migration/1

Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24
```

Once you have verified that your program is still running, you can log off, do other stuff etc... When you wish to go back and visit your program, you need to determine the ID of your screen. To view all screens, type: screen -list
You should get a list (let us assume you only do one at a time, which is suggested) as follows:

```
    1 root      20   0  2028  604  548 S    0  0.0   0:09.13 init
    2 root      20   0     0    0    0 S    0  0.0   0:00.00 kthreadd
    3 root      20   0     0    0    0 S    0  0.0   0:00.25 ksoftirqd/0
    5 root      20   0     0    0    0 S    0  0.0   0:00.18 kworker/u:0
    6 root      RT   0     0    0    0 S    0  0.0   0:00.00 migration/0
    7 root      RT   0     0    0    0 S    0  0.0   0:00.00 migration/1
    8 root      20   0     0    0    0 S    0  0.0   0:00.00 kworker/1:0
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -list
There is a screen on:
        5784.pts-2.node000      (12/11/11 19:31:06)     (Detached)
1 Socket in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$

Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24
```

The ID corresponding to the program we were executing earlier was 5784, notice it has status (Detached).
To reattach to that screen, we type the command: screen -r 5784

```
  2 root      20   0     0     0     0 S    0   0.0   0:00.00 kthreadd
  3 root      20   0     0     0     0 S    0   0.0   0:00.25 ksoftirqd/0
  5 root      20   0     0     0     0 S    0   0.0   0:00.18 kworker/u:0
  6 root      RT   0     0     0     0 S    0   0.0   0:00.00 migration/0
  7 root      RT   0     0     0     0 S    0   0.0   0:00.00 migration/1
  8 root      20   0     0     0     0 S    0   0.0   0:00.00 kworker/1:0
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -list
There is a screen on:
        5784.pts-2.node000      (12/11/11 19:31:06)      (Detached)
1 Socket in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -r 5784
```
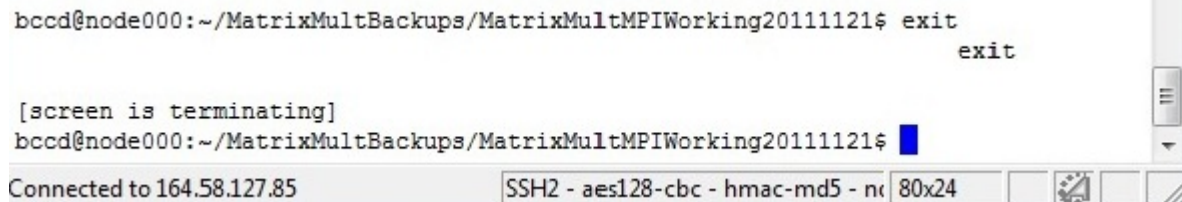Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24

And viola!  We are back to the screen in which the program is running.

```
File   Edit   View   Window   Help

Quick Connect      Profiles

Node 1, for entry 138230 computed a value of 105800
Node 0, for entry 48080 computed a value of 12800
Node 1, for entry 138831 computed a value of 106722
Node 1, for entry 139432 computed a value of 107648
Node 0, for entry 48681 computed a value of 13122
Node 1, for entry 140033 computed a value of 108578
Node 0, for entry 49282 computed a value of 13448
Node 1, for entry 140634 computed a value of 109512
Node 0, for entry 49883 computed a value of 13778
Node 1, for entry 141235 computed a value of 110450
Node 0, for entry 50484 computed a value of 14112
Node 1, for entry 141836 computed a value of 111392
Node 0, for entry 51085 computed a value of 14450
Node 1, for entry 142437 computed a value of 112338
Node 0, for entry 51686 computed a value of 14792
Node 1, for entry 143038 computed a value of 113288
Node 0, for entry 52287 computed a value of 15138
Node 1, for entry 143639 computed a value of 114242
Node 0, for entry 52888 computed a value of 15488
Node 1, for entry 144240 computed a value of 115200
Node 0, for entry 53489 computed a value of 15842
Node 1, for entry 144841 computed a value of 116162
Node 0, for entry 54090 computed a value of 16200
```
Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24

Once the program is done running, and you have done all that you need to do, you should exit the screen.  To do this, simply type: exit
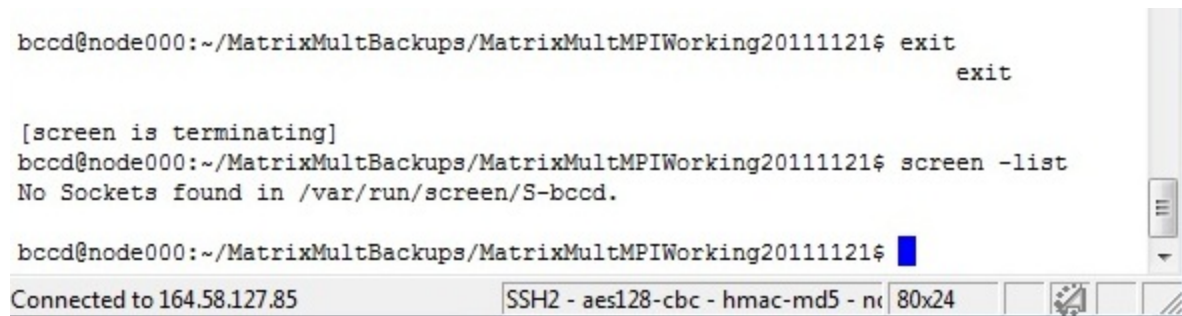
Notice that it will say [screen is terminated].

```
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ exit
                                                            exit


[screen is terminating]
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ █
Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24
```

If you are not sure you have exited out of all your screens, simply run another screen -list

```
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ exit
                                                            exit


[screen is terminating]
bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ screen -list
No Sockets found in /var/run/screen/S-bccd.

bccd@node000:~/MatrixMultBackups/MatrixMultMPIWorking20111121$ █
Connected to 164.58.127.85          SSH2 - aes128-cbc - hmac-md5 - n  80x24
```