

proc

Description:

Proc filesystem is a pseudo file system which provides the information of cpu,memory that are stored in kernel data structures.Some of important files and their outputs are shown below.

Command

```
cat /proc/cpuinfo
```

Description

/proc/cpuinfo provides the information of processor like cpu family,cache size,model name.If system is multiple processor it gives information of each processor.

Output

```
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 142
model name     : Intel(R) Core(TM) i5-7200U CPU @ 2.50GHz
stepping       : 9
microcode      : 0xea
cpu MHz        : 900.016
cache size     : 3072 KB
physical id    : 0
siblings       : 4
core id        : 0
cpu cores      : 2
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 22
wp             : yes
flags          : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single pti ssbd ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid mpx rdseed adx snap clflushopt intel_pt xsaveopt xsavec xgetbv1 xsaves dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp md_clear flush_lid
vmx flags      : vmx1 preempton_timer invvpid ept_x_only ept_ad ept_1gb flexpriority tsc_offset vtptr mtf vapic ept vpid unrestricted_guest pte pml ept_mode_based_exec
bugs           : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds
bogomips       : 5399.81
clflush size   : 64
cache alignment : 64
address sizes   : 39 bits physical, 48 bits virtual
```

Command

```
cat /proc/meminfo
```

Description

/proc/meminfo provides the information on memory like total memory , how much memory is available for applications to load,how much memory is not registered for allocation by kernel,etc.

Output

```
MemTotal:      8015312 kB
MemFree:       350816 kB
MemAvailable:  4633656 kB
Buffers:       470680 kB
Cached:        4448384 kB
SwapCached:    0 kB
Active:        2510164 kB
Inactive:      4580332 kB
Active(anon):  153264 kB
Inactive(anon): 2542424 kB
Active(file):  2356900 kB
Inactive(file): 2037908 kB
Unevictable:   159244 kB
Mlocked:       48 kB
SwapTotal:     2097148 kB
SwapFree:      2095600 kB
Dirty:         28 kB
Writeback:     0 kB
AnonPages:     2330544 kB
Mapped:        677656 kB
Shmem:         534360 kB
KReclaimable:  196792 kB
Slab:          306480 kB
SReclaimable:  196792 kB
SUnreclaim:    109688 kB
KernelStack:   14368 kB
PageTables:    32744 kB
NFS_Unstable:  0 kB
Bounce:        0 kB
WritebackTmp:  0 kB
CommitLimit:   6104804 kB
Committed_AS:  8154076 kB
```

command

```
cat /proc/iomem
```

Description

This provides the address mapping of memories like RAM,ROM in the system. Total address range is between 0x00000000 to 0xffffffff

Output

```

000f0000-000fffff : System ROM
00100000-60a1c017 : System RAM
60a1c018-60a2c057 : System RAM
60a2c058-60fcbfff : System RAM
60fcc000-60fccfff : ACPI Non-volatile Storage
60fcd000-60fcdfff : Reserved
60fce000-6f006fff : System RAM
6f007000-6f007fff : Reserved
6f008000-6f616fff : System RAM
6f617000-6f620fff : Reserved
6f621000-8910dfff : System RAM
8910e000-8a00dfff : Reserved
8a00e000-8a6fdfff : ACPI Non-volatile Storage
8a6fe000-8aefdfff : ACPI Tables
8aefe000-8aefefff : System RAM
8aeff000-8fffffff : Reserved
8c000000-8fffffff : Graphics Stolen Memory
90000000-dfffffff : PCI Bus 0000:00
90000000-9001ffff : pnp 00:08
a0000000-ffffffff : 0000:00:02.0
b0000000-b0ffffff : 0000:00:02.0
b1000000-b10fffff : PCI Bus 0000:02
b1000000-b1001fff : 0000:02:00.0
b1000000-b1001fff : iwlwifi
b1100000-b11fffff : PCI Bus 0000:01
b1100000-b1100fff : 0000:01:00.0
b1100000-b1100fff : rtsx_pci
b1200000-b120ffff : 0000:00:14.0
b1200000-b120ffff : xhci-hcd
b1208070-b120846f : intel_xhci_usb_sw
b1210000-b121ffff : 0000:00:1f.3
b1210000-b121ffff : ICH HD audio
b1220000-b1227fff : 0000:00:04.0

```

Command

```
cat /proc/ioports
```

Description

This provides the address mapping of these peripherals, as you can see I am addresses starting from 0x0000 to 0xffff getting in below output

Output

```
0000-0cf7 : PCI Bus 0000:00
  0000-001f : dma1
  0020-0021 : pic1
  0040-0043 : timer0
  0050-0053 : timer1
  0060-0060 : keyboard
  0062-0062 : PNP0C09:01
    0062-0062 : EC data
  0064-0064 : keyboard
  0066-0066 : PNP0C09:01
    0066-0066 : EC cmd
  0068-006f : PNP0C09:01
  0070-0077 : rtc0
  0080-008f : dma page reg
  00a0-00a1 : pic2
  00c0-00df : dma2
  00f0-00ff : fpu
  0400-041f : iTCO_wdt
  0680-069f : pnp 00:02
0cf8-0cff : PCI conf1
0d00-ffff : PCI Bus 0000:00
  164e-164f : pnp 00:02
  1800-18fe : pnp 00:02
    1800-1803 : ACPI PM1a_EVT_BLK
    1804-1805 : ACPI PM1a_CNT_BLK
    1808-180b : ACPI PM_TMR
    1810-1815 : ACPI CPU throttle
    1850-1850 : ACPI PM2_CNT_BLK
    1854-1857 : pnp 00:04
    1880-189f : ACPI GPE0_BLK
  2000-20fe : pnp 00:01
  3000-303f : 0000:00:02.0
  3040-305f : 0000:00:1f.4
    3040-305f : i801_smbus
  3060-307f : 0000:00:17.0
    3060-307f : ahci
  3080-3087 : 0000:00:17.0
```