Kernel Modules

1. What is the advantage of modular kernel approach in Linux?

Ans.Most components of the Linux kernel can be compiled as dynamically loadable modules. This increases the functionality of the kernel without increasing the size of the kernel loaded at boot time.

2. Where does the kernel modules reside?

Ans. In /lib/modules/

3. Specify the commands used to control the modules?

Ans.

lsmod > lists the modules currently reside in the kernel

insmod > inserts module (Also used modprob)

rmmod > unloads module

depmod > module dependency database is generates

.4. What is the advantage of modprob over insmod?

Ans. modprob is used to load the kernel modules with three improvements over insmod:

It will load any underlying modules required by a given module.

It will consult /etc/modules.conf for default module parameters.

It can try a list of modules, and when it loads a module successfully, it will cease trying others in the list.

5. Which thread is responsible for executing the modprob as needed?

Ans. kmod.

6. In which file modules are configured?

Ans. /etc/modprobe.conf

7. How to see the module information?

Ans. By the command:

# modinfo

Question. What is Initial RAM Disk (initrd)? What is its function?

Ans.An initrd is a compressed image of a filesystem, which contains modules that may be necessary prior to kernel mounting the root filesystem.

9. Which command is used to create the initrd?

Ans. Mkinitrd

10- what is modinfo

Ans – display information about any available module

modinfo sd\_mod

filename: /lib/modules/2.6.32-71.el6.i686/kernel/drivers/scsi/sd\_mod.ko

alias: scsi:t-0x0e\*

alias: scsi:t-0x07\*

alias: scsi:t-0x00\*

alias: block-major-135-\*

alias: block-major-134-\*

alias: block-major-133-\*

alias: block-major-132-\*

alias: block-major-131-\*

alias: block-major-130-\*

alias: block-major-129-\*

alias: block-major-128-\*

alias: block-major-71-\*

alias: block-major-70-\*

alias: block-major-69-\*

alias: block-major-68-\*

alias: block-major-67-\*

alias: block-major-66-\*

alias: block-major-65-\*

alias: block-major-8-\*

license: GPL

description: SCSI disk (sd) driver

author: Eric Youngdale

srcversion: 0B4D557979D0BC8F39D9984

depends: crc-t10dif

vermagic: 2.6.32-71.el6.i686 SMP mod\_unload modversions 686

/proc is used to get or set kernel configuration

[root@google /]# cat /proc/cpuinfo

processor : 0

vendor\_id : GenuineIntel

cpu family : 6

model : 37

model name : Intel(R) Core(TM) i5 CPU M 460 @ 2.53GHz

stepping : 5

cpu MHz : 2527.060

cache size : 3072 KB

fdiv\_bug : no

hlt\_bug : no

f00f\_bug : no

coma\_bug : no

fpu : yes

fpu\_exception : yes

cpuid level : 11

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 nx rdtscp lm constant\_tsc up arch\_perfmon pebs bts xtopology tsc\_reliable nonstop\_tsc aperfmperf unfair\_spinlock pni ssse3 cx16 sse4\_1 sse4\_2 popcnt hypervisor lahf\_lm ida arat

bogomips : 5054.12

clflush size : 64

cache\_alignment : 64

address sizes : 40 bits physical, 48 bits virtual

power management:

[root@google /]# cat /proc/partitions

major minor #blocks name

8 0 10485760 sda

8 1 8192000 sda1

8 2 1048576 sda2

8 3 1048576 sda3

8 4 1 sda4