

# 201.3 - Kernel runtime management and troubleshooting

## Weight: 4

Description: Candidates should be able to manage and/or query a 2.6.x, 3.x or 4.x kernel and its loadable modules. Candidates should be able to identify and correct comm-on boot and run time issues. Candidates should understand device detection and management using udev. This objective includes troubleshooting udev rules.

## Key Knowledge Areas:

- Use command-line utilities to get information about the currently running kernel and kernel modules
- Manually load and unload kernel modules
- Determine when modules can be unloaded
- Determine what parameters a module accepts
- Configure the system to load modules by names other than their file name.
- /proc filesystem
- Content of /, /boot/ , and /lib/modules/
- Tools and utilities to analyze information about the available hardware
- udev rules

## Terms and Utilities:

- /lib/modules/kernel-version/modules.dep
  - module configuration files in /etc/
  - /proc/sys/kernel/
  - /sbin/depmod
  - /sbin/rmmod
  - /sbin/modinfo
  - /bin/dmesg
  - /sbin/lspci
  - /usr/bin/lshw
  - /sbin/lsmode
  - /sbin/modprobe
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- /sbin/insmod
  - /bin/uname
  - /usr/bin/lshusb
  - /etc/sysctl.conf, /etc/sysctl.d/
  - /sbin/sysctl
  - udevmonitor
  - udevadm monitor
  - /etc/udev/
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