Chapter 12. System Initialization, Message Logging, and System Tuning

System Initialization (init/systemd):

- Configure the default runlevel or target for system boot.
- Create a custom systemd service unit file for a specific application or task.
- Set up automatic login for a specific user at system startup.
- Configure the system to run a script or command at boot time using systemd.

Message Logging (syslog/rsyslog):

- Configure syslog/rsyslog to log messages to a remote server.
- Filter and redirect specific log messages to separate log files.
- Set up log rotation to manage log file sizes and ensure proper log file maintenance.
- Customize syslog/rsyslog settings to include or exclude specific log messages.

System Tuning:

- Optimize network settings for better performance, such as adjusting TCP/IP stack parameters.
- Adjust file system parameters for improved disk I/O performance, such as adjusting the disk scheduler or file system mount options.
- Configure kernel parameters to optimize memory usage, process scheduling, or other system behaviors.
- Monitor system performance using tools like top, vmstat, or sar, and make appropriate tuning adjustments based on the observed metrics.
- Implement security-related tuning, such as hardening the system against various types of attacks or vulnerabilities.

Kernel Module Management:

- Load/unload kernel modules manually.
- Configure kernel modules to load automatically at boot time.
- Blacklist kernel modules to prevent them from loading automatically.

Resource Management (CPU, Memory, I/O):

- Set CPU affinity for specific processes or groups of processes.
- Configure memory limits using cgroups or other mechanisms to control memory usage by specific processes.
- Tune I/O scheduler settings to optimize disk I/O performance for different workload types.

Network Tuning:

- Adjust network buffer sizes to optimize network performance.
- Configure TCP/IP stack parameters, such as TCP window size or congestion control algorithms, to improve network throughput and latency.
- Implement Quality of Service (QoS) policies to prioritize network traffic for critical applications or services.

Chapter 13. Basic Storage Partitioning

Identify the Disk:
Determine the disk you want to partition by using the lsblk or fdisk -l command.

Select a Partitioning Tool:
Linux provides several partitioning tools, including fdisk, parted, and gdisk. Choose the one you're comfortable with.

Launch the Partitioning Tool:
Launch fdisk with the disk you want to partition.

Create Partitions (inside fdisk)

Set Partition Types

Format Partitions:
After partitioning, you need to format the partitions with a file system

Mount Partitions:
Finally, mount the formatted partitions to directories in the file system.

Configure Automatic Mounting (Optional):
To ensure partitions are automatically mounted at boot, add entries to the /etc/fstab file. This file contains information about partitions and their mount points.