Expanding Disk Storage with LVM and RAID on Machine E

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This project involves expanding and managing disk storage on **Machine E** using **Linux Logical Volume Manager (LVM)** and software RAID to enhance flexibility, scalability, and performance. The updated storage configuration addresses disk space constraints on /tmp and /home, ensuring efficient system operation and meeting user requirements.

Key Features

1. **Partitioning New Drives**:
    - Created a single Linux LVM partition on all newly attached drives.
    - Utilized the full recommended space available on each drive.
2. **Volume Group Setup**:
    - Created a **volume group** named savg using all newly added storage.
3. **Logical Volumes and Filesystems**:
    - Created a **logical volume** named tmp:
        - Allocated **1GB** for /tmp.
        - Formatted with the ext4 filesystem.
        - Configured with nodev, nosuid, and noexec mount options to enhance security.
    - Created a **logical volume** named home:
        - Allocated **80%** of the remaining storage.
        - Formatted with the xfs filesystem.
        - Configured with the nodev mount option to enhance security.
4. **Permanent Mount Configuration**:
    - Updated the system's /etc/fstab file to ensure the new /tmp and /home filesystems are persistently mounted on reboot with the appropriate security options.
5. **RAID Configuration**:
    - Configured a **Linux software RAID array** using multiple drives for redundancy and performance before integrating with LVM.

This project showcases effective disk management techniques using LVM and RAID to meet modern system demands.