Implementing and Interfacing with KVM

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A Kernel-based Virtual Machine (KVM) is a type of VM that turns the Linux kernel into a bare-metal hypervisor.

KVM allows the host machine to treat every guest (VM) as if it were a Linux process.

Some of the benefits of a bare-metal VM are efficient usage of resources for smaller, specialized tasks, ease of testing, etc.

The main benefits of KVM specifically is that it is built into Linux and is extremely efficient.
Implementation and Tools

- Virt-manager is a GUI tool commonly used to manage KVM guests
- libvirt is the tool/package for managing guests via the command line
- Installing a variety of Linux distributions manually on individual guests is time consuming.
- Using tools such as BASH scripting and Ansible can automate this process.
  - Kickstart allows for pre-configuration of the operating system prior to installation.
High Level Goals

- Set up environment for testing MSR-safe kernel modules
- Create base images for various Linux distributions with configuration
  - Required packages
  - Test user with sudo privileges
  - Automated installation
  - Documentation for future admin use/maintenance
- Respond to Gitlab Continuous Integration requests
  - script/tool to run the CI request on the allocated image
  - capture results/logs
  - deallocate/clean up instance