

SA Homework 0

Debian & WireGuard

ytshih

Outline

- CS Workstation
- VM Hypervisor
- System Installation
- Basic Setup
 - Hostname
 - User, Group
 - NTP
- Package Repository
- WireGuard
- Appendix
 - Useful Utilities

CS Workstation

- CSIT provides four Linux workstations for CS students and faculties.
 - <https://it.cs.nycu.edu.tw/workstation-guide>
- You will need an CS account to use this service.
 - <https://it.cs.nycu.edu.tw/account-guide>

VM Hypervisor

- QEMU / KVM (recommended on Linux)
- VMware Workstation Pro (recommended on Windows)
- Proxmox Virtual Environment (recommended on bare-metal machines)
- Oracle VirtualBox
- Microsoft Hyper-V

System Installation

- Install newest debian release (Debian 13 “Trixie”).
- Use online installation instructions as reference.
- <https://www.debian.org/releases/stable/installmanual>

Basic Setup

- Your machine should boot using **UEFI**
- Set hostname to **sa2025**
- Create user
 - Create a user named **judge**
- Create group
 - Create a group **nycusa**
 - Add **judge** user to this group
- Set your machine to [National Standard Time](#) and enable ntp.
 - Using [systemd-time](#) and [timedatectl](#).

Basic Setup - SSH

- Secure Shell
 - Enable sshd.service
- Install this public key to /home/judge/.ssh/authorized_keys.
 - `ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAILti+rM2UdvYTUgBKihp0b/9o2W+KvJVmA2ex0/u8pCV judge@sa-2025`
 - Judge user will be using this to evaluate on your machine.

Package Repository

- As a system administrator, you are responsible for managing packages on a system.
- CSIT provides mirrors for a variety of Linux distributions, serving boot images, packages, and even Linux Kernel sources!
- <https://it.cs.nycu.edu.tw/equipment-linux-mirror>
- Generally speaking, choosing mirrors nearby improves download speed.
- Configure your package manager to use CSIT mirror.

WireGuard

- Install WireGuard Tools on your system
 - WireGuard lives inside Linux kernel modules, only userspace tools need to be installed.
 - <https://packages.debian.org/trixie/wireguard-tools>
- Use wg-quick to start / stop the connection
 - For detailed usage, please consult the manuals of [wg-quick\(8\)](#) and [wg\(8\)](#).
 - If you want to setup your own wireguard connections, see [this](#).
- You will get a wg-quick configuration on NASA Online Judge during HW1.

Appendix - Useful Utilities

- Familiar with these tools in advance will be helpful for upcoming homeworks.
- [tmux\(1\)](#)
- [git\(1\)](#)
- [vim\(1\)](#)