

SA Homework 0

Debian & WireGuard

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Outline

- CS Workstation
- VM Hypervisor
- System Installation
- Basic Setup
- Package Repository
- WireGuard
- Appendix
 - NASA OJ
 - 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”).
 - Make sure all packages are up-to-date
- Use online installation instructions as reference.
- <https://www.debian.org/releases/stable/installmanual>

Basic Setup

- Set hostname to **sa2026**
- Create user
 - Create a user named **judge**
 - This user should be able to run sudo without password
- 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-2026`
 - Judge user will be using this to evaluate on your machine.

Package Repository

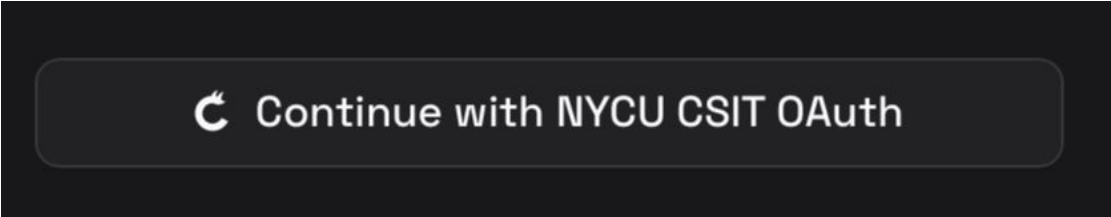
- As a system administrator, you are responsible for managing packages on a system.
- CSIT provides mirrors for a variety of Linux distributions, serving boot images, packages, and even Linux Kernel sources!
- <https://it.cs.nycu.edu.tw/equipment-linux-mirror>
- Generally speaking, choosing mirrors nearby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

Appendix - NASA OJ

- In this course, all homework should be submitted to NASA OJ.
 - <https://nasaoj-v3.it.cs.nycu.edu.tw>
- You can login with CSIT OAuth.
 - If you do not have account yet, please apply in <https://account.it.cs.nycu.edu.tw/>

A dark gray rectangular button with rounded corners. On the left is a white circular icon containing a stylized flame or 'C' shape. To the right of the icon, the text "Continue with NYCU CSIT OAuth" is written in white sans-serif font.

Appendix - NASA OJ - Homework Submission

- You can get Wireguard config with Wireguard tool.

Wireguard

Reload Wireguard (prod)
Generate wireguard config and reload

View

Reload Wireguard (prod) 95d95ba2

Generate wireguard config and reload

Previous Execution Result

Output

```
===== client config =====  
  
# ===== router =====  
[Interface]  
Address = 192.168.6.145/28  
PrivateKey = 8Cke6kNZPdC3zvE+NG4rw0EE0MMExXiX6  
[Peer]  
PublicKey = H1KhIFAp6q+//LCs0CbQn/wkPt6jrcYYL6  
PresharedKey = u05D0/9Q5CaKiJ860dMLhYRWBIRQ6ts  
AllowedIPs = 192.168.0.0/16  
Endpoint = 140.113.17.2:5000  
PersistentKeepalive = 5
```

Appendix - NASA OJ - Homework Submission

- Submit to OJ when you finish your homework, and OJ will jump into your machine via Wireguard to check your works.

Task	Deadline	Revision	Total Score	Action
2026 SA HWO	2026-12-31 23:59:59	e681dd09	-	View

2026 SA HWO

e681dd09

2026 Fall System Administration Homework 0 - Debian & Wireguard

Deadline: **2026-12-31 23:59:59**

[Submit](#)

Last submitted at: 2026-09-07 09:26:01

Appendix - Useful Utilities

- Familiar with these tools in advance will be helpful for upcoming homeworks.
- [tmux\(1\)](#)
- [git\(1\)](#)
- [vim\(1\)](#)
- You can refer to <https://it.cs.nycu.edu.tw/unix-basic-commands> for basic commands.