Tugas 1 Ansible

Disusun oleh:

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Dokumen ini berisi langkah-langkah pengerjaan tugas Ansible, mulai dari instalasi hingga menjalankan perintah ad-hoc.

Lingkungan yang Digunakan:
- **Control Node:** Arch Linux (Komputer/VM tempat Ansible dijalankan)
- **Managed Node:** Ubuntu Server (Server yang akan dikonfigurasi oleh Ansible)

1. Instalasi Ansible

Instalasi hanya perlu dilakukan di **Control Node (Arch Linux)**. Managed Node (Ubuntu) tidak memerlukan instalasi Ansible, hanya perlu Python dan server SSH.

a. Di Control Node (Arch Linux):

Buka terminal dan jalankan perintah berikut untuk menginstal Ansible menggunakan package manager pacman.
# Update dulu database paket
sudo pacman -Syu

Install Ansible

sudo pacman -S ansible

```
● ▶ sudo pacman -S ansible
```

```
   ● ▶ sudo pacman -S ansible
resolving dependencies...
looking for conflicting packages...

Package (6)                 New Version  Net Change  Download Size

extra/ansible-core          2.19.2-1       22.25 MiB      3.43 MiB
extra/python-bcrypt         4.3.0-1         0.52 MiB      0.21 MiB
extra/python-paramiko       3.5.1-1         2.36 MiB      0.35 MiB
extra/python-pynacl         1.6.0-1         0.92 MiB      0.12 MiB
extra/python-resolvelib     1.2.0-2         0.17 MiB      0.04 MiB
extra/ansible               12.0.0-1      506.15 MiB     36.84 MiB

Total Download Size:    40.98 MiB
Total Installed Size:  532.36 MiB

:: Proceed with installation? [Y/n] y
```

Setelah instalasi selesai, verifikasi instalasi dengan memeriksa versinya.
ansible --version

```
● ▶ ansible --version
ansible [core 2.19.2]
  config file = None
  configured module search path = ['/home/ketopraksx/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3.13/site-packages/ansible
  ansible collection location = /home/ketopraksx/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.13.7 (main, Aug 15 2025, 12:34:02) [GCC 15.2.1 20250813] (/usr/bin/python)
  jinja version = 3.1.6
  pyyaml version = 6.0.2 (with libyaml v0.2.5)
```

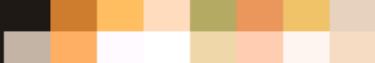**b. Di Managed Node (Ubuntu Server):**

```
          .-/+oosssssoo+/-.                minkwaq@minkwaq-thinkpad
      `:+ssssssssssssssssss+:`             -----------------------
    -+ssssssssssssssssssyyssss+-           OS: Ubuntu 25.04 x86_64
  .ossssssssssssssssssdMMMNysssso.         Host: 20AMS4B500 ThinkPad X240
 /ssssssssssshdmmNNmmyNMMMMhssssss/        Kernel: 6.14.0-32-generic
+ssssssssshmydMMMMMMMNddddyssssssss+       Uptime: 4 mins
/sssssssshNMMMyhhyyyyhmNMMMNhssssssss/     Packages: 1750 (dpkg), 16 (snap)
.ssssssssdMMMNhsssssssssssshNMMMdssssssss. Shell: fish 4.0.2
+sssshhhyNMMNyssssssssssssyNMMMysssssss+   Resolution: 1366x768
ossyNMMMNyMMhsssssssssssssshmmmhssssssso   Terminal: /dev/pts/1
ossyNMMMNyMMhsssssssssssssshmmmhssssssso   CPU: Intel i5-4300U (4) @ 2.900GHz
+sssshhhyNMMNysssssssssssssyNMMMysssssss+  GPU: Intel Haswell-ULT
.ssssssssdMMMNhsssssssssssshNMMMdssssssss. Memory: 2048MiB / 7308MiB
 /sssssssshNMMMyhhyyyyhdNMMMNhssssssss/
  +sssssssssdmydMMMMMMMMddddyssssssss+
   /ssssssssssshdmNNNNmyNMMMMhssssss/
    .ossssssssssssssssssdMMMNysssso.
      -+sssssssssssssssssyyyssss+-
       `:+ssssssssssssssssss+:`
          .-/+oosssssoo+/-.
```

Pastikan server Ubuntu memiliki Python (yang biasanya sudah ada) dan openssh-server sudah terinstal dan berjalan.
# Update daftar paket
sudo apt update && sudo apt upgrade -y

```
minkwaq@minkwaq-thinkpad ↝ sudo apt update && sudo apt upgrade -y
Hit:1 https://download.docker.com/linux/ubuntu plucky InRelease
Hit:2 https://pkg.cloudflare.com/cloudflared any InRelease
Hit:3 http://id.archive.ubuntu.com/ubuntu plucky InRelease
Hit:4 http://id.archive.ubuntu.com/ubuntu plucky-updates InRelease
Hit:5 http://id.archive.ubuntu.com/ubuntu plucky-backports InRelease
Get:6 http://security.ubuntu.com/ubuntu plucky-security InRelease [126 kB]
Get:7 https://pkgs.tailscale.com/stable/ubuntu plucky InRelease
Get:8 http://security.ubuntu.com/ubuntu plucky-security/main amd64 c-n-f Metadata [4,568 B]
Hit:9 https://packages.microsoft.com/repos/code stable InRelease
Fetched 137 kB in 3s (54.5 kB/s)
```

# Install Python jika belum ada (umumnya sudah terinstal)
sudo apt install python3 -y

```
minkwaq@minkwaq-thinkpad ↝ sudo apt install python3 -y
```

# Install OpenSSH Server
sudo apt install openssh-server -y

```
minkwaq@minkwaq-thinkpad ↝ sudo apt install openssh-server -y
```

# Cek status layanan SSH untuk memastikan sudah berjalan
sudo systemctl status ssh

```
minkwaq@minkwaq-thinkpad ~> sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
     Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
     Active: active (running) since Tue 2025-09-23 17:36:46 WIB; 6h ago
 Invocation: 4d3362339c8f408e8e2841beeca7c5d4
TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 14109 (sshd)
      Tasks: 1 (limit: 8580)
     Memory: 5M (peak: 6.1M)
        CPU: 96ms
     CGroup: /system.slice/ssh.service
             └─14109 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"
```

ini tanda kalau openssh sudah aktif

2. Konfigurasi SSH (Passwordless)

Agar Ansible bisa terhubung ke managed node tanpa perlu memasukkan
password setiap saat, kita akan menggunakan SSH key.
a. Di Control Node (Arch Linux):
Buat SSH key jika Anda belum memilikinya.
ssh-keygen

Tekan Enter beberapa kali untuk menerima lokasi default dan tanpa passphrase.

b. Salin SSH Key ke Managed Node (Ubuntu Server):
Gunakan perintah ssh-copy-id untuk menyalin public key Anda ke server Ubuntu. Ganti nama_user dengan username Anda di server Ubuntu dan ip_address_managed_node dengan alamat IP server Ubuntu Anda.
ssh-copy-id nama_user@ip_address_managed_node

c. Uji Coba Koneksi:
Sekarang, coba login ke server Ubuntu dari Arch Linux. Seharusnya Anda bisa **masuk tanpa diminta password**.
ssh nama_user@ip_address_managed_node

```
 ●  ▶  ssh minkwaq@192.168.100.215
Welcome to Ubuntu 25.04 (GNU/Linux 6.14.0-29-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

0 updates can be applied immediately.

*** System restart required ***
Last login: Tue Sep 23 23:10:31 2025 from 192.168.100.213
8840d1743e49fdeedb3bcec2d0edf14a3bb65786d593f3cf68193df9b1dbcd40
036d0a10ac71c88368540312691e2c6e92e0ed9a43790050e43ecce8986fee77
Welcome to fish, the friendly interactive shell
Type help for instructions on how to use fish
minkwaq@minkwaq-thinkpad ⇝ |
```

Kemudian proses instalasi ansible di control node.

Langkah pertama yang dilakukan adalah menambahkan repositori ansible
dengan perintah berikut.

```
minkwaq@minkwaq-thinkpad ⇝ sudo apt-add-repository ppa:ansible/ansible -y|
```

Kemudian install ansible.

```
minkwaq@minkwaq-thinkpad ⇝ sudo apt install ansible
```

Kemudian ssh-keygen.

```
minkwaq@minkwaq-thinkpad ⇝ ssh-keygen |
```

Kemudian copy ssh id dengan perintah berikut.

```
minkwaq@minkwaq-thinkpad ~> ssh-copy-id ketopraksx@192.168.100.213
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/minkwaq/.ssh/id_ed25519.pub"
The authenticity of host '192.168.100.213 (192.168.100.213)' can't be established.
ED25519 key fingerprint is SHA256:/8ofcB/zm//fhvk4ksdodYykP3mCopBGK4LeVoB4WnU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ketopraksx@192.168.100.213's password:
                    -`                   ketopraksx@archlinux
                   .o+`                  -------------------
                  `ooo/                  OS: Arch Linux x86_64
                 `+oooo:                 Host: LENOVO LNVNB161216
                `+oooooo:                Kernel: 6.16.7-arch1-1
                -+oooooo+:               Uptime: 59 mins
              `/:-:++oooo+:              Packages: 1758 (pacman)
             `/++++/+++++++:             Shell: fish 4.0.6
            `/++++++++++++++:            Resolution: 1920x1080, 1920x1080
           `/+++oooooooooooo/`           CPU: 12th Gen Intel i5-12450HX (12) @ 4.400GHz
          ./ooosssso++osssssso+`         GPU: NVIDIA GeForce RTX 2050
         .oossssso-````/ossssss+`        Memory: 4312MiB / 11730MiB
        -osssssso.      :ssssssso.
       :osssssss/        osssso+++.
      /ossssssss/        +ssssooo/-
    `/ossssso+/:-        -:/+osssso+-
   `+sso+:-`                 `.-/+oso:
  `++:.                          `-/+/
  .`                                `/
```

Kemudian seperti sebelumnya yaitu masukkan password, lalu exit

Lakukan perintah berikut di /etc/ansible (harus root) jika tidak menemukan file konfigurasi ansible di /etc/ansible.

```
▶ ansible-config init --disabled > ansible.cfg
```

Kemudian buka IDE atau teks editor, saya menggunakan vim. Lalu buat/edit file hosts menjadi seperti ini.

```
[minkwaq-thinkpad]
192.168.100.215 ansible_ssh_private_key_file=~/.ssh/id_ed2551? ansible_user=minkwaq
~
```

diharapkan untuk menyesuaikan ip,lokasi ssh_private_key nya dan usernya.

Jika sudah, lakukan perintah ini

```
 113              /etc/ansibte
   ●▶ ansible all -i hosts -m ping
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
[WARNING]: Unhandled error in Python interpreter discovery for host '192.168.100.215': unexpected o
utput from Python interpreter discovery

Unhandled error in Python interpreter discovery for host '192.168.100.215'.

<<< caused by >>>

unexpected output from Python interpreter discovery

[WARNING]: Host '192.168.100.215' is using the discovered Python interpreter at '/usr/bin/python3',
 but future installation of another Python interpreter could cause a different interpreter to be di
scovered. See https://docs.ansible.com/ansible-core/2.19/reference_appendices/interpreter_discovery
.html for more information.
[WARNING]: sftp transfer mechanism failed on [192.168.100.215]. Use ANSIBLE_DEBUG=1 to see detailed
 information
[WARNING]: scp transfer mechanism failed on [192.168.100.215]. Use ANSIBLE_DEBUG=1 to see detailed
information
192.168.100.215 | SUCCESS ⟹ {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
 12s  ~  /etc/ansible
```

4. Menulis Playbook Sederhana

Pada sesi ini silahkan untuk membuat direktori kerja baru. Kemudian buka IDE favorit anda, kalau saya pribadi menggunakan nvim. Lalu buat file dengan nama update.yaml dengan isi sebagai berikut.

```
---
- hosts: all
  become: true
  tasks:
    - name: Update apt cache
      apt:
        update_cache: yes
    - name: Upgrade Packages
      apt:
        upgrade: dist
```

Kemudian masuk ke mode normal lalu ketik :wq untuk menyimpan file.

Jalankan perintah file yang telah kita buat barusan dengan perintah sebagai berikut.

```
ansible-playbook -i /etc/ansible/hosts update.yaml --ask-become-pass
```

```
< PLAY RECAP >
 -----------
        \   ^__^
         \  (oo)_____
            (__)\       )\/\
                ||----w |
                ||     ||
100.109.201.60          : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.100.215         : ok=1    changed=0    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0
```

pada host 192.------- itu berhasil, pertanda kita telah berhasil melakukan update. (abaikan ip 100.---- karena itu adalah ip saya jika menggunakan vpn)

5. Menjalankan Perintah Ad-hoc

```
● ▶ ansible 192.168.100.215 -m service -a "name=nginx state=restarted" -b --ask-become-pass
BECOME password:
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
[WARNING]: Unhandled error in Python interpreter discovery for host '192.168.100.215': unexpected output from Python interpreter discovery

Unhandled error in Python interpreter discovery for host '192.168.100.215'.

<<< caused by >>>

unexpected output from Python interpreter discovery

[WARNING]: Host '192.168.100.215' is using the discovered Python interpreter at '/usr/bin/python3', but future installation of another Python interpreter could cause a different interpreter to be discovere
d. See https://docs.ansible.com/ansible-core/2.19/reference_appendices/interpreter_discovery.html for more information.
[WARNING]: sftp transfer mechanism failed on [192.168.100.215]. Use ANSIBLE_DEBUG=1 to see detailed information
[WARNING]: scp transfer mechanism failed on [192.168.100.215]. Use ANSIBLE_DEBUG=1 to see detailed information
[ERROR]: Task failed: Module failed: Could not find the requested service nginx: host
Origin: <adhoc 'service' task>

{'action': 'service', 'args': {'name': 'nginx', 'state': 'restarted'}, 'timeout': 0, 'async_val': 0, 'poll': 15}

192.168.100.215 | FAILED! => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Could not find the requested service nginx: host"
}
```

Install htop

```
ansible minkwaq-thinkpad -m apt -a "name=htop state=present" -b --ask-become-pass
```

```
    "stdout_lines": [
        "Reading package lists...",
        "Building dependency tree...",
        "Reading state information...",
        "Solving dependencies...",
        "Suggested packages:",
        "  lm-sensors",
        "The following NEW packages will be installed:",
        "  htop",
        "0 upgraded, 1 newly installed, 0 to remove and 7 not upgraded.",
        "Need to get 195 kB of archives.",
        "After this operation, 510 kB of additional disk space will be used.",
        "Get:1 http://id.archive.ubuntu.com/ubuntu plucky/main amd64 htop amd64 3.4.0-2 [195 kB]",
        "Fetched 195 kB in 1s (148 kB/s)",
        "Selecting previously unselected package htop.",
        "(Reading database ... ",
        "(Reading database ... 5%",
        "(Reading database ... 10%",
        "(Reading database ... 15%",
        "(Reading database ... 20%",
        "(Reading database ... 25%",
        "(Reading database ... 30%",
        "(Reading database ... 35%",
        "(Reading database ... 40%",
        "(Reading database ... 45%",
        "(Reading database ... 50%",
        "(Reading database ... 55%",
        "(Reading database ... 60%",
        "(Reading database ... 65%",
        "(Reading database ... 70%",
        "(Reading database ... 75%",
        "(Reading database ... 80%",
        "(Reading database ... 85%",
        "(Reading database ... 90%",
        "(Reading database ... 95%",
        "(Reading database ... 100%",
        "(Reading database ... 229563 files and directories currently installed.)",
        "Preparing to unpack .../htop_3.4.0-2_amd64.deb ...",
        "Unpacking htop (3.4.0-2) ...",
        "Setting up htop (3.4.0-2) ...",
        "Processing triggers for desktop-file-utils (0.28-1) ...",
        "Processing triggers for hicolor-icon-theme (0.18-2) ...",
        "Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...",
        "Processing triggers for man-db (2.13.0-1) ..."
    ]
}
```