

CLOUD COMPUTING

LAB:05

Submitted By:

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Registration.no:

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Section:

5B

Task 1 - Discover missing command & install Java using apt suggestion

```
serat060@ubuntu60:~$ java
Command 'java' not found, but can be installed with:
sudo apt install openjdk-17-jre-headless # version 17.0.14+7-1~24.04, or
sudo apt install openjdk-21-jre-headless # version 21.0.6+7-1~24.04.1
sudo apt install default-jre             # version 2:1.17-75
sudo apt install openjdk-11-jre-headless # version 11.0.26+4-1ubuntu1~24.04
sudo apt install openjdk-8-jre-headless  # version 8u442-b06~us1-0ubuntu1~24.04
sudo apt install openjdk-19-jre-headless # version 19.0.2+7-4
sudo apt install openjdk-20-jre-headless # version 20.0.2+9-1
sudo apt install openjdk-22-jre-headless # version 22~22ea-1

404 Not Found [IP: 185.125.190.83 80]
Get:63 http://archive.ubuntu.com/ubuntu noble/main amd64 libglvnd0 amd64 1.7.0-1build1 [69.6 kB]
Get:64 http://archive.ubuntu.com/ubuntu noble/main amd64 libx11-xcb1 amd64 2:1.8.7-1build1 [7,800 B]
Get:65 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-dri3-0 amd64 1.15-1ubuntu2 [7,142 B]
Get:66 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-glx0 amd64 1.15-1ubuntu2 [24.8 kB]
Get:67 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-present0 amd64 1.15-1ubuntu2 [5,676 B]
Get:68 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-xfixes0 amd64 1.15-1ubuntu2 [10.2 kB]
Get:69 http://archive.ubuntu.com/ubuntu noble/main amd64 libxxf86vm1 amd64 1:1.1.4-1build4 [9,282 B]
Get:70 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libdrm-amdgpu1 amd64 2.4.122-1~ubuntu0.24.04.1 [20.7 kB]
Get:71 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpciaccess0 amd64 0.17-3ubuntu0.24.04.2 [18.9 kB]
Get:72 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libdrm-intel1 amd64 2.4.122-1~ubuntu0.24.04.1 [63.8 kB]
Get:73 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libllvm19 amd64 1:19.1.1-1ubuntu1~24.04.2 [28.7 MB]
Get:74 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-randr0 amd64 1.15-1ubuntu2 [17.9 kB]
Get:75 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-sync1 amd64 1.15-1ubuntu2 [9,312 B]
Get:76 http://archive.ubuntu.com/ubuntu noble/main amd64 libxshmfence1 amd64 1.3-1build5 [4,764 B]
Err:77 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 mesa-libgallium amd64 25.0.7-0ubuntu0.24.04.1
 404 Not Found [IP: 185.125.190.83 80]
Get:78 http://archive.ubuntu.com/ubuntu noble/main amd64 libwayland-server0 amd64 1.22.0-2.1build1 [33.9 kB]
Err:79 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libgbm1 amd64 25.0.7-0ubuntu0.24.04.1
 404 Not Found [IP: 185.125.190.83 80]
Get:80 http://archive.ubuntu.com/ubuntu noble/main amd64 libvulkan1 amd64 1.3.275.0-1build1 [142 kB]
73% [Waiting for headers]
```

```
Adding debian:Telefonica_Root_CA_v2.pem
Adding debian:TeliaSonera_Root_CA_v1.pem
Adding debian:TrustAsia_Global_Root_CA_G3.pem
Adding debian:TrustAsia_Global_Root_CA_G4.pem
Adding debian:Trustwave_Global_Certification_Authority.pem
Adding debian:Trustwave_Global_ECC_P256_Certification_Authority.pem
Adding debian:Trustwave_Global_ECC_P384_Certification_Authority.pem
Adding debian:T-TeleSec_GlobalRoot_Class_2.pem
Adding debian:T-TeleSec_GlobalRoot_Class_3.pem
Adding debian:TUBITAK_Kamu_SM_SSL_Kok_Sertifikasi_-_Surum_1.pem
Adding debian:TunTrust_Root_CA.pem
Adding debian:TWCA_Global_Root_CA.pem
Adding debian:TWCA_Root_Certification_Authority.pem
Adding debian:UCA_Extended_Validation_Root.pem
Adding debian:UCA_Global_G2_Root.pem
Adding debian:USERTrust_ECC_Certification_Authority.pem
Adding debian:USERTrust_RSA_Certification_Authority.pem
Adding debian:vTrus_ECC_Root_CA.pem
Adding debian:vTrus_Root_CA.pem
Adding debian:XRamp_Global_CA_Root.pem
done.
Setting up openjdk-21-jre:amd64 (21.0.8+9~us1-0ubuntu1~24.04.1) ...
Setting up default-jre-headless (2:1.21-75+exp1) ...
Setting up default-jre (2:1.21-75+exp1) ...
Processing triggers for libgdk-pixbuf-2.0-0:amd64 (2.42.10+dfsg-3ubuntu3.2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

```
serat060@ubuntu60:~$ java --version
openjdk 21.0.8 2025-07-15
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
```

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

```
serat060@ubuntu60:~$ java --version
```

```
openjdk 21.0.8 2025-07-15
```

```
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
```

```
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
```

```
serat060@ubuntu60:~$ sudo apt remove default-jre -y
```

```
Reading package lists... Done
```

```
Building dependency tree... Done
```

```
Reading state information... Done
```

The following packages were automatically installed and are no longer required:

```
adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service
default-jre-headless fontconfig fonts-dejavu-extra gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme ja
libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64 libavahi-cl
libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolorh2 libcolor2t64 libdatrie1 libdconf1 libdrm-amdgpu1 libdrm-intel1
libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-mesa-dri libglvnd0 libglx-mesa0 libglx0 libgraphite2
libgtk-3-bin libgtk-3-common libharfbuzz0b libice6 liblcms2-2 libllvm20 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0
libpixman-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libthai0 libvulkan1 libwayland-client0 libwayland-cursor0 libwayland-egl1 libw
libx11-xcb1 libxaw7 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xf
libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxrandr2 libxrender1 libxshmfence1 libx
libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-drivers openjdk-21-jre openjdk-21-jre-headless session-migration ubuntu-mono x1
x11-utils
```

Use 'sudo apt autoremove' to remove them.

The following packages will be REMOVED:

```
default-jre
```

0 upgraded, 0 newly installed, 1 to remove and 67 not upgraded.

After this operation, 6,144 B disk space will be freed.

(Reading database ... 101562 files and directories currently installed.)

Removing default-jre (2:1.21-75+exp1) ...

```
-X print help on extra options to the error stream
--help-extra print help on extra options to the output stream
-ea[:<packagename>...[:<classname>]
-enableassertions[:<packagename>...[:<classname>]
    enable assertions with specified granularity
-da[:<packagename>...[:<classname>]
-disableassertions[:<packagename>...[:<classname>]
    disable assertions with specified granularity
-esa | -enablesystemassertions
    enable system assertions
-dsa | -disablesystemassertions
    disable system assertions
-agentlib:<libname>[=<options>]
    load native agent library <libname>, e.g. -agentlib:jdwp
    see also -agentlib:jdwp=help
-agentpath:<pathname>[=<options>]
    load native agent library by full pathname
-javaagent:<jarpath>[=<options>]
    load Java programming language agent, see java.lang.instrument
-splash:<imagepath>
    show splash screen with specified image
    HiDPI scaled images are automatically supported and used
    if available. The unscaled image filename, e.g. image.ext,
    should always be passed as the argument to the -splash option.
    The most appropriate scaled image provided will be picked up
    automatically.
    See the SplashScreen API documentation for more information
@argument files
    one or more argument files containing options
--disable-@files
    prevent further argument file expansion
--enable-preview
    allow classes to depend on preview features of this release
```

To specify an argument for a long option, you can use --<name>=<value> or

--<name> <value>.

Task 2 - Install & remove Java using apt-get (explicitly)

```
serat060@ubuntu60:~$ sudo apt-get update
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
```

```
serat060@ubuntu60:~$ sudo apt-get install default-jre -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  default-jre
0 upgraded, 1 newly installed, 0 to remove and 67 not upgraded.
Need to get 0 B/922 B of archives.
After this operation, 6,144 B of additional disk space will be used.
Selecting previously unselected package default-jre.
(Reading database ... 101561 files and directories currently installed.)
Preparing to unpack .../default-jre_2%3a1.21-75+exp1_amd64.deb ...
Unpacking default-jre (2:1.21-75+exp1) ...
Setting up default-jre (2:1.21-75+exp1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

```
serat060@ubuntu60:~$ java --version
openjdk 21.0.8 2025-07-15
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
```

```

serat060@ubuntu60:~$ sudo apt-get remove default-jre -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-servic
default-jre-headless fontconfig fonts-dejavu-extra gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme humanity-icon-them
libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64 libavahi
libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolord2 libcups2t64 libdatatr1 libdconf1 libdrm-amdgpu1 libdrm-inte
libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-mesa-dri libglvnd0 libglx-mesa0 libglx0 libgraphi
libgtk-3-bin libgtk-3-common libharfbuzz0b libice6 liblcms2-2 libllym20 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciacce
libpixmap-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libthai0 libvulkan1 libwayland-client0 libwayland-cursor0 libwayland-egl1 l
libx11-xcb1 libxaw7 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb
libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxrandr2 libxrender1 libxshmfence1 l
libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-drivers openjdk-21-jre openjdk-21-jre-headless session-migration ubuntu-mono
x11-utils
Use 'sudo apt autoremove' to remove them.
The following packages will be REMOVED:
  default-jre
0 upgraded, 0 newly installed, 1 to remove and 67 not upgraded.
After this operation, 6,144 B disk space will be freed.
(Reading database ... 101562 files and directories currently installed.)
Removing default-jre (2:1.21-75+exp1) ...

```

```

--help          print this help message to the output stream
-X             print help on extra options to the error stream
--help-extra    print help on extra options to the output stream
-ea[:<packagename>...[:<classname>]]
-enableassertions[:<packagename>...[:<classname>]]
    enable assertions with specified granularity
-da[:<packagename>...[:<classname>]]
-disableassertions[:<packagename>...[:<classname>]]
    disable assertions with specified granularity
-esa | -enablesystemassertions
    enable system assertions
-dsa | -disablesystemassertions
    disable system assertions
-agentlib:<libname>[=<options>]
    load native agent library <libname>, e.g. -agentlib:jdwp
    see also -agentlib:jdwp=help
-agentpath:<pathname>[=<options>]
    load native agent library by full pathname
-javaagent:<jarpath>[=<options>]
    load Java programming language agent, see java.lang.instrument
-splash:<imagepath>
    show splash screen with specified image
    HiDPI scaled images are automatically supported and used
    if available. The unscaled image filename, e.g. image.ext,
    should always be passed as the argument to the -splash option.
    The most appropriate scaled image provided will be picked up
    automatically.
    See the SplashScreen API documentation for more information
@argument files
    one or more argument files containing options
--disable-@files
    prevent further argument file expansion
--enable-preview
    allow classes to depend on preview features of this release
To specify an argument for a long option, you can use --<name>=<value> or
--<name> <value>.

```

Task 3 - apt update vs apt upgrade - run & explain

```
serat060@ubuntu60:~$ sudo apt update
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
67 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

```
Get:22 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libsystemd0 amd64 255.4-1ubuntu0.11 [454 kB]
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpam-modules-bin amd64 1.5.3-5ubuntu5.5 [51.9 kB]
Get:24 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpam-modules amd64 1.5.3-5ubuntu5.5 [286 kB]
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpython3.12t64 amd64 3.12.3-1ubuntu0.8 [2,355 kB]
Get:26 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 python3.12 amd64 3.12.3-1ubuntu0.8 [651 kB]
Get:27 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpython3.12-stdlib amd64 3.12.3-1ubuntu0.8 [2,068 kB]
Get:28 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 python3.12-minimal amd64 3.12.3-1ubuntu0.8 [2,334 kB]
Get:29 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpython3.12-minimal amd64 3.12.3-1ubuntu0.8 [836 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libsqlite3-0 amd64 3.45.1-1ubuntu2.5 [701 kB]
Get:31 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-sftp-server amd64 1:9.6p1-3ubuntu13.14 [37.3 kB]
Get:32 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-server amd64 1:9.6p1-3ubuntu13.14 [510 kB]
Get:33 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-client amd64 1:9.6p1-3ubuntu13.14 [906 kB]
Get:34 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 ubuntu-drivers-common amd64 1:0.9.7.6ubuntu3.4 [65.8 kB]
Get:35 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libxml2 amd64 2.9.14+dfsg-1.3ubuntu3.5 [763 kB]
Get:36 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 open-vm-tools amd64 2:12.5.0-1~ubuntu0.24.04.2 [742 kB]
Get:37 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 distro-info-data all 0.60ubuntu0.5 [6,934 B]
Get:38 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 locales all 2.39-0ubuntu8.6 [4,229 kB]
Get:39 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssl amd64 3.0.13-0ubuntu3.6 [1,003 kB]
Get:40 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd-hwe-hwdb all 255.1.6 [3,684 B]
Get:41 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 vim amd64 2:9.1.0016-1ubuntu7.9 [1,881 kB]
Get:42 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 vim-common all 2:9.1.0016-1ubuntu7.9 [386 kB]
Get:43 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 vim-tiny amd64 2:9.1.0016-1ubuntu7.9 [803 kB]
Get:44 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 vim-runtime all 2:9.1.0016-1ubuntu7.9 [7,281 kB]
Get:45 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 xxd amd64 2:9.1.0016-1ubuntu7.9 [63.8 kB]
Get:46 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 bind9-dnsutils amd64 1:9.18.39-0ubuntu0.24.04.2 [156 kB]
Get:47 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 bind9-host amd64 1:9.18.39-0ubuntu0.24.04.2 [50.5 kB]
Get:48 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 bind9-libs amd64 1:9.18.39-0ubuntu0.24.04.2 [1,257 kB]
Get:49 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 powermgmt-base all 1.37ubuntu0.1 [7,650 B]
Get:50 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 tcpdump amd64 4.99.4-3ubuntu4.24.04.1 [479 kB]
Get:51 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 firmware-sof-signed all 2023.12.1-1ubuntu1.10 [7,382 kB]
Get:52 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libfwupd2 amd64 1.9.31-0ubuntu1~24.04.1 [136 kB]
Get:53 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 fwupd amd64 1.9.31-0ubuntu1~24.04.1 [4,592 kB]
Get:54 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 landscape-common amd64 24.02-0ubuntu5.6 [93.2 kB]
Get:55 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libtiff6 amd64 4.5.1+git230720-4ubuntu2.4 [199 kB]
Get:56 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 udisks2 amd64 2.10.1-6ubuntu1.3 [297 kB]
Get:57 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libudisks2-0 amd64 2.10.1-6ubuntu1.3 [175 kB]
Get:58 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 linux-firmware amd64 20240318.git3b128b60-0ubuntu2.19 [538 MB]
45% [58 linux-firmware 241 MB/538 MB 45%]
```

```
serat060@ubuntu60:~$ cat ~/apt_update_vs_upgrade.md
The command 'sudo apt update' refreshes the local package index, so the system knows about the latest versions of packages available in repositories. It does not install or upgrade any software by itself.
```

The command 'sudo apt upgrade' uses the updated index to install the newest versions of already installed packages.

Running 'apt upgrade' without updating first could mean your system misses recent updates because the package list is outdated.

Task 4 - Install Visual Studio Code via snap on CLI and verify (DO NOT remove Code)

```
serat060@ubuntu60:~$ sudo snap install --classic code
2025-10-24T04:54:59Z INFO Waiting for automatic snapd restart...
Download snap "code" (211) from channel "stable"
Download snap "code" (211) from channel "stable"
code 7d842fb8 from Visual Studio Code (vscode) installed
```

```
serat060@ubuntu60:~$ snap list code
Name Version Rev Tracking Publisher Notes
code 7d842fb8 211 latest/stable vscode classic
```

```

serat060@ubuntu60:~$ code --version
1.105.1
7d842fb85a0275a4a8e4d7e040d2625abbf7f084
x64
serat060@ubuntu60:~$ ls -l /snap/bin | grep code
lrwxrwxrwx 1 root root 13 Oct 24 05:07 code -> /usr/bin/snap
lrwxrwxrwx 1 root root 13 Oct 24 05:07 code.url-handler -> /usr/bin/snap

```

Task 5 – Install XFCE GUI + XRDP + Launch VS Code

```

serat060@ubuntu60:~$ sudo apt update && sudo apt upgrade -y
[sudo] password for serat060:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Fetched 268 kB in 2s (126 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-ser
default-jre-headless fontconfig fonts-dejavu-extra gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme humanity-icon-th
libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64 libava
libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolorctl2 libcupst2t64 libdatrie1 libdconf1 libdrm-amdgpu1 libdrm-in
libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-mesa-dri libglvnd0 libglx-mesa0 libglx0 libgrap
libgtk-3-bin libgtk-3-common libharfbuzz0b libice6 liblcms2-2 liblvm20 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciacc
libpixman-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libthai0 libvulkan1 libwayland-client0 libwayland-cursor0 libwayland-egl1
libx11-xcb1 libxaw7 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libx
libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxrandr2 libxrender1 libxshmfence1
libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-drivers openjdk-21-jre openjdk-21-jre-headless session-migration ubuntu-mc
x11-utils
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

```

```

aspell-autobuildhash: processing: en [en_GB-wo_accents-only].
aspell-autobuildhash: processing: en [en_GB-ise-w_accents-only].
aspell-autobuildhash: processing: en [en_GB-ise-wo_accents-only].
aspell-autobuildhash: processing: en [en_GB-ize-w_accents-only].
aspell-autobuildhash: processing: en [en_GB-ize-wo_accents-only].
aspell-autobuildhash: processing: en [en_GB-variant_0].
aspell-autobuildhash: processing: en [en_GB-variant_1].
aspell-autobuildhash: processing: en [en_US-w_accents-only].
aspell-autobuildhash: processing: en [en_US-wo_accents-only].
Processing triggers for sgml-base (1.31) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!
Running kernel version:
 6.8.0-71-generic
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.8.0-86-generic.

Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.

Restarting services...

Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
serat060 @ session #1: login[1316]
serat060 @ user manager service: systemd[1419]

No VM guests are running outdated hypervisor (qemu) binaries on this host.

```



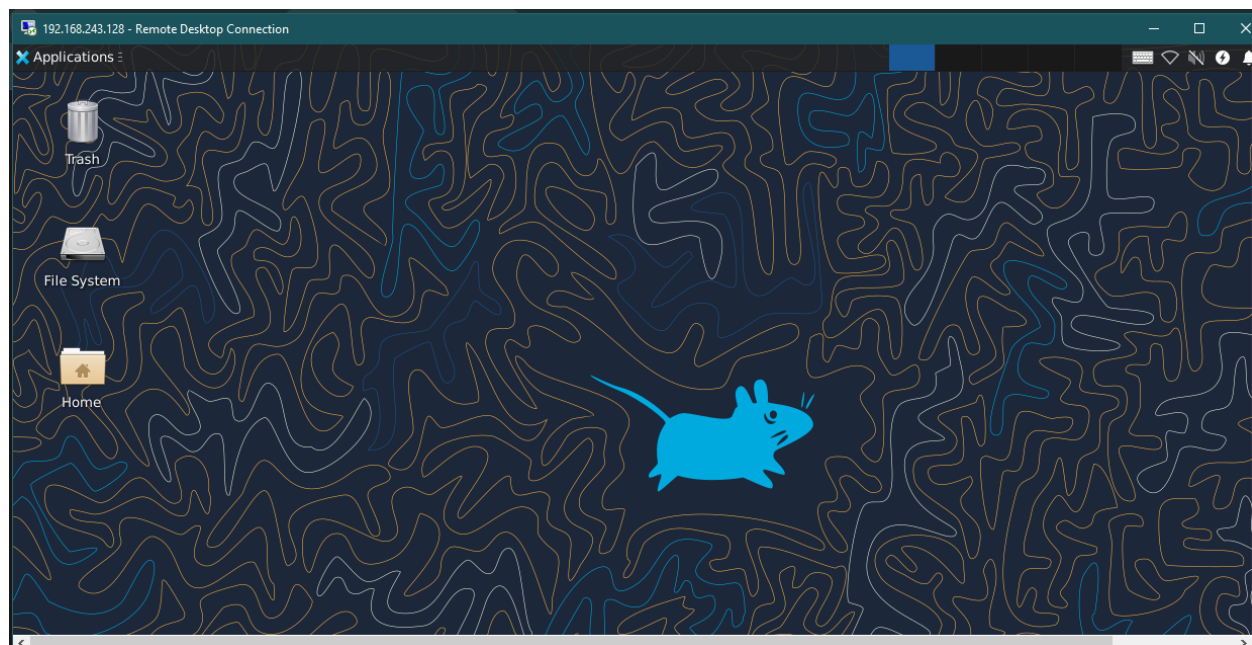
```
serat060@ubuntu60:~$ sudo systemctl enable --now xrdp
Synchronizing state of xrdp.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable xrdp
```

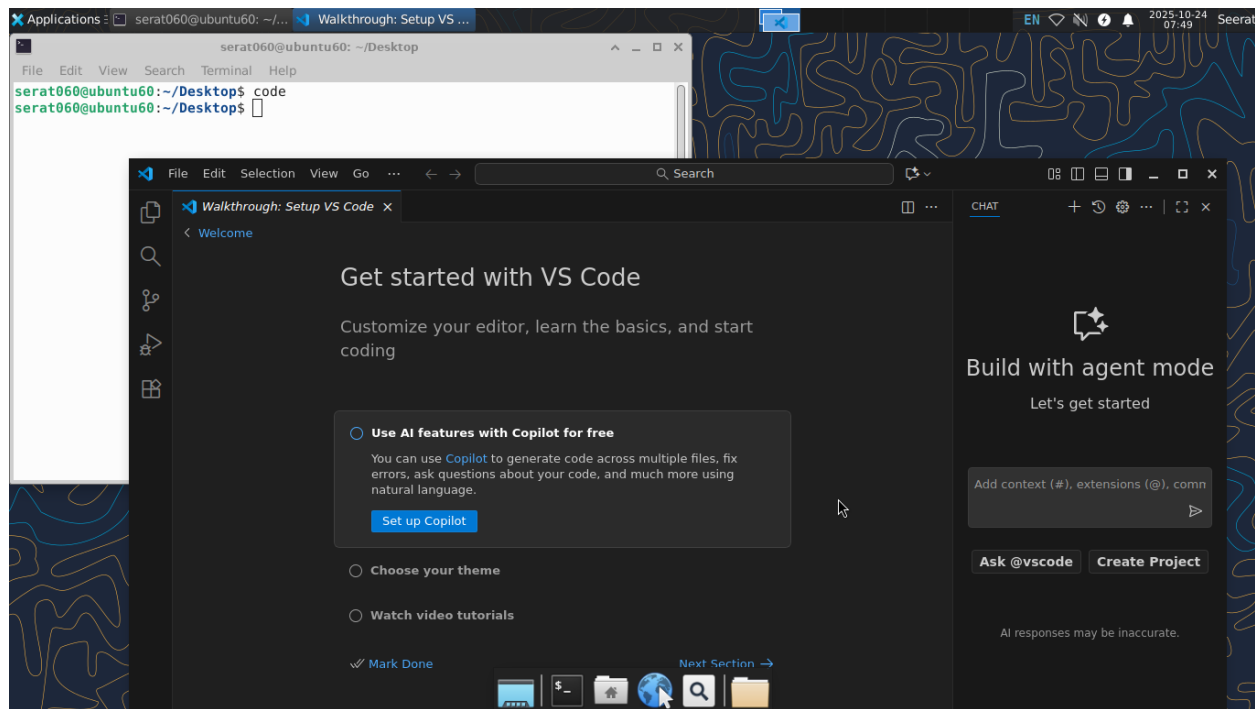
```
serat060@ubuntu60:~$ sudo systemctl enable --now xrdp
Synchronizing state of xrdp.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable xrdp
```

```
serat060@ubuntu60:~$ sudo systemctl status xrdp
```

```
• xrdp.service - xrdp daemon
   Loaded: loaded (/usr/lib/systemd/system/xrdp.service; enabled; preset: enabled)
   Active: active (running) since Fri 2025-10-24 07:25:00 UTC; 2min 35s ago
     Docs: man:xrdp(8)
           man:xrdp.ini(5)
  Main PID: 28874 (xrdp)
    Tasks: 1 (limit: 4548)
   Memory: 876.0K (peak: 1.5M)
      CPU: 59ms
  CGroup: /system.slice/xrdp.service
          └─28874 /usr/sbin/xrdp
```

```
Oct 24 07:24:59 ubuntu60 systemd[1]: Starting xrdp.service - xrdp daemon...
Oct 24 07:24:59 ubuntu60 xrdp[28872]: [INFO ] address [0.0.0.0] port [3389] mode 1
Oct 24 07:24:59 ubuntu60 xrdp[28872]: [INFO ] listening to port 3389 on 0.0.0.0
Oct 24 07:24:59 ubuntu60 xrdp[28872]: [INFO ] xrdp_listen_pp done
Oct 24 07:24:59 ubuntu60 systemd[1]: xrdp.service: Can't open PID file /run/xrdp/xrdp.pid (yet?) after start: No such file or directory
Oct 24 07:25:00 ubuntu60 systemd[1]: Started xrdp.service - xrdp daemon.
Oct 24 07:25:01 ubuntu60 xrdp[28874]: [INFO ] starting xrdp with pid 28874
Oct 24 07:25:01 ubuntu60 xrdp[28874]: [INFO ] address [0.0.0.0] port [3389] mode 1
Oct 24 07:25:01 ubuntu60 xrdp[28874]: [INFO ] listening to port 3389 on 0.0.0.0
Oct 24 07:25:01 ubuntu60 xrdp[28874]: [INFO ] xrdp_listen_pp done
```





Task 6 — Install LightDM + Verify GUI

```
selecting previously unselected package lightdm-gtk-greeter.
Preparing to unpack .../lightdm-gtk-greeter_2.0.9-0ubuntu3_amd64.deb ...
Unpacking lightdm-gtk-greeter (2.0.9-0ubuntu3) ...
Setting up gnome-themes-extra-data (3.28-2ubuntu5) ...
Setting up gnome-accessibility-themes (3.28-2ubuntu5) ...
Setting up gtk2-engines-pixbuf:amd64 (2.24.33-4ubuntu1.1) ...
Setting up lightdm-gtk-greeter (2.0.9-0ubuntu3) ...
update-alternatives: using /usr/share/xgreeters/lightdm-gtk-greeter.desktop to provide /usr/share/xgreeters/lightdm-gtk-greeter
Setting up gnome-themes-extra:amd64 (3.28-2ubuntu5) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!
Running kernel version:
  6.8.0-71-generic
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.8.0-86-generic.

Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.

Restarting services...

Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

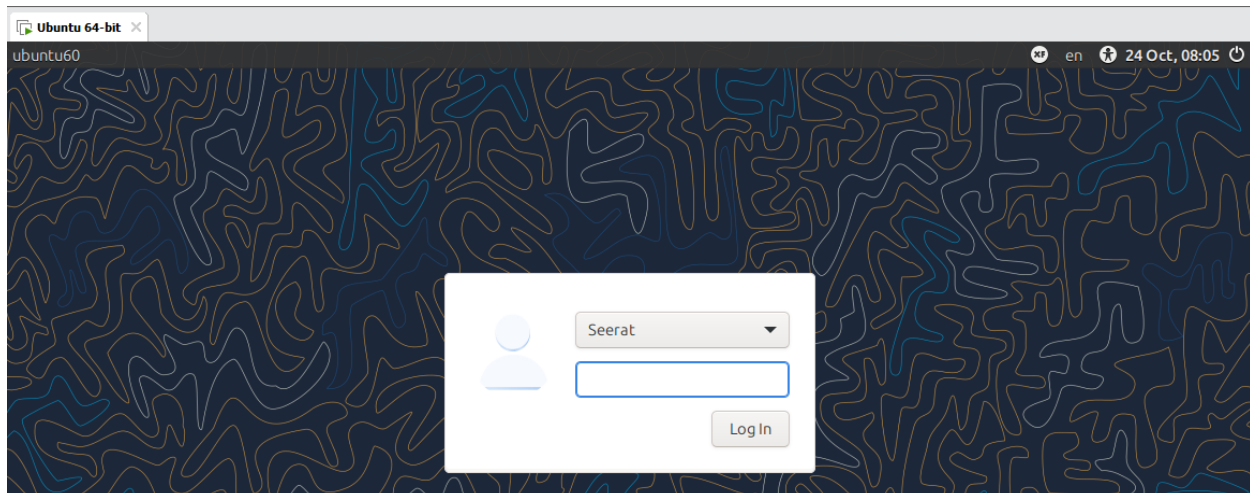
User sessions running outdated binaries:
serat060 @ session #1: login[1316]
serat060 @ user manager service: systemd[1419]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

```
serat060@ubuntu60:~$ sudo mkdir -p /etc/lightdm/lightdm.conf.d
serat060@ubuntu60:~$ echo -e "[Seat:*]\ngreeter-session=lightdm-gtk-greeter\nuser-session=xfce\nautologin-user-timeout=0" | sudo tee /etc/lightdm/lightdm.conf.d/99-xfce.conf
```

```
[Seat:*]
greeter-session=lightdm-gtk-greeter
user-session=xfce
autologin-user-timeout=0
```

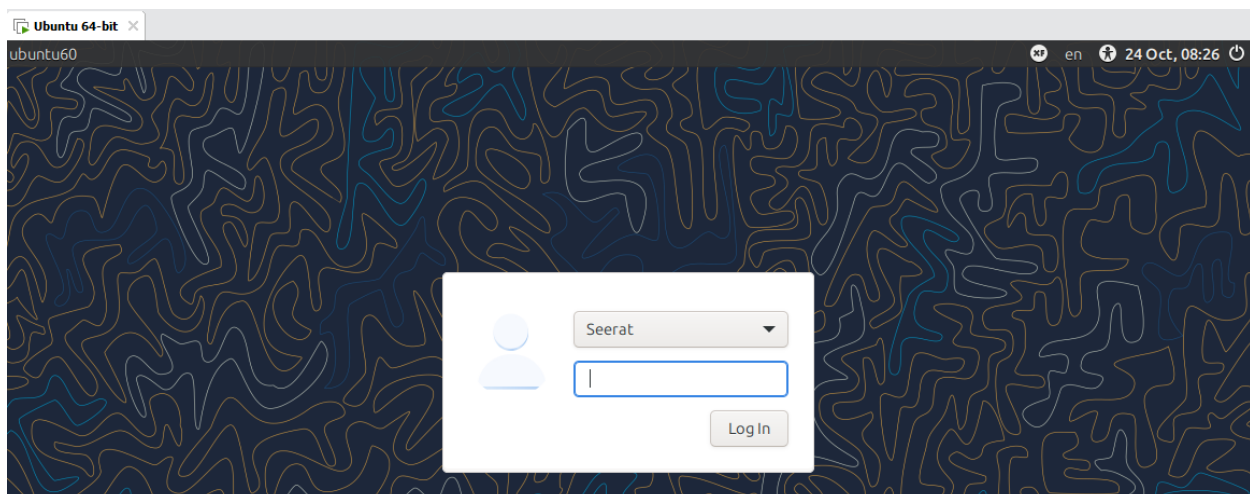
```
serat060@ubuntu60:~$ sudo -rm -f /var/lib/lightdm/.Xauthority
sudo: invalid option -- 'f'
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]
        [-u user] [command [arg ...]]
usage: sudo [-ABbEHkNnPS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] [VAR=value] [-i | -s] [command [arg ...]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] file ...
serat060@ubuntu60:~$ sudo -rm -f ~/.Xauthority
sudo: invalid option -- 'f'
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]
        [-u user] [command [arg ...]]
usage: sudo [-ABbEHkNnPS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] [VAR=value] [-i | -s] [command [arg ...]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] file ...
serat060@ubuntu60:~$ sudo -rm -rf ~/.cache/sessions
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]
        [-u user] [command [arg ...]]
usage: sudo [-ABbEHkNnPS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] [VAR=value] [-i | -s] [command [arg ...]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory]
        [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
        [-u user] file ...
serat060@ubuntu60:~$ sudo chown -R $USER:$USER /home/$USER
```



```
serat060@ubuntu60: ~/Desktop
File Edit View Search Terminal Help

serat060@ubuntu60:~/Desktop$ sudo systemctl set-default multi-user.target
[sudo] password for serat060:
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/multi-user.target.
serat060@ubuntu60:~/Desktop$ sudo systemctl enable lightdm
Synchronizing state of lightdm.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable lightdm
The unit files have no installation config (WantedBy=, RequiredBy=, UpheldBy=, Also=, or Alias= settings in the [Install] section, and DefaultInstance= for template units). This means they are not meant to be enabled or disabled using systemctl.

Possible reasons for having these kinds of units are:
• A unit may be statically enabled by being symlinked from another unit's .wants/, .requires/, or .upholds/ directory.
• A unit's purpose may be to act as a helper for some other unit which has a requirement dependency on it.
• A unit may be started when needed via activation (socket, path, timer, D-Bus, udev, scripted systemctl call, ...).
• In case of template units, the unit is meant to be enabled with some instance name specified.
serat060@ubuntu60:~/Desktop$ sudo systemctl set-default graphical.target
Removed "/etc/systemd/system/default.target".
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/graphical.target.
serat060@ubuntu60:~/Desktop$
```



```
serat060@ubuntu60: ~/Desktop
File Edit View Search Terminal Help
serat060@ubuntu60:~/Desktop$ sudo systemctl set-default multi-user.target
[sudo] password for serat060:
Removed "/etc/systemd/system/default.target".
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/multi-user.target.
serat060@ubuntu60:~/Desktop$ sudo systemctl disable lightdm
Synchronizing state of lightdm.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install disable lightdm
Removed "/etc/systemd/system/display-manager.service".
serat060@ubuntu60:~/Desktop$
```

```
Ubuntu 24.04.3 LTS ubuntu60 tty1
ubuntu60 login: serat060
Password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-86-generic x86_64)

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

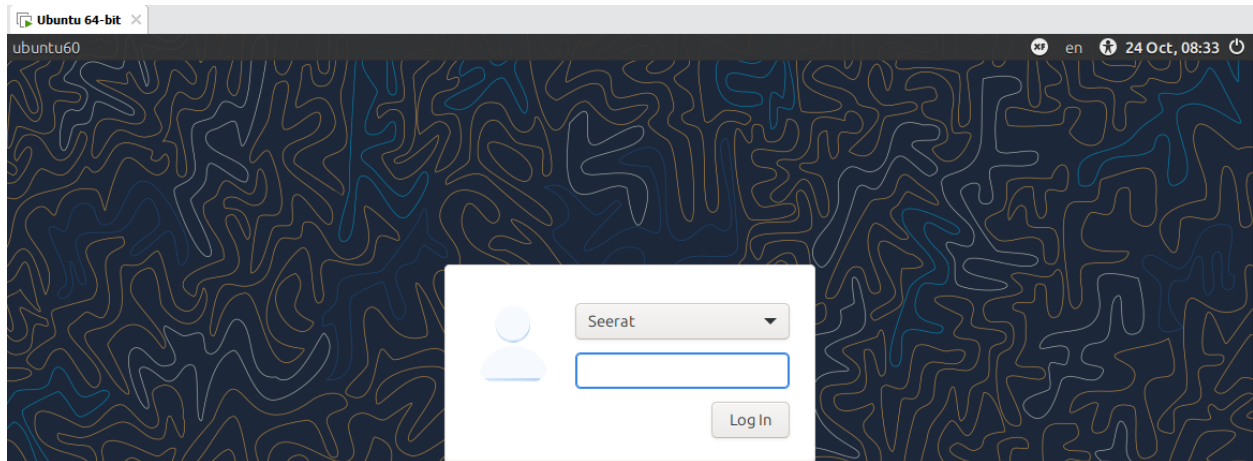
System information as of Fri Oct 24 08:32:02 AM UTC 2025

System load:  1.27           Processes:            254
Usage of /:   51.3% of 9.75GB Users logged in:        0
Memory usage: 8%           IPv4 address for ens33: 192.168.243.128
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

6 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm
```



```
Ubuntu 24.04.3 LTS ubuntu60 tty1
```

```
ubuntu60 login: serat060
```

```
Password:
```

```
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-86-generic x86_64)
```

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

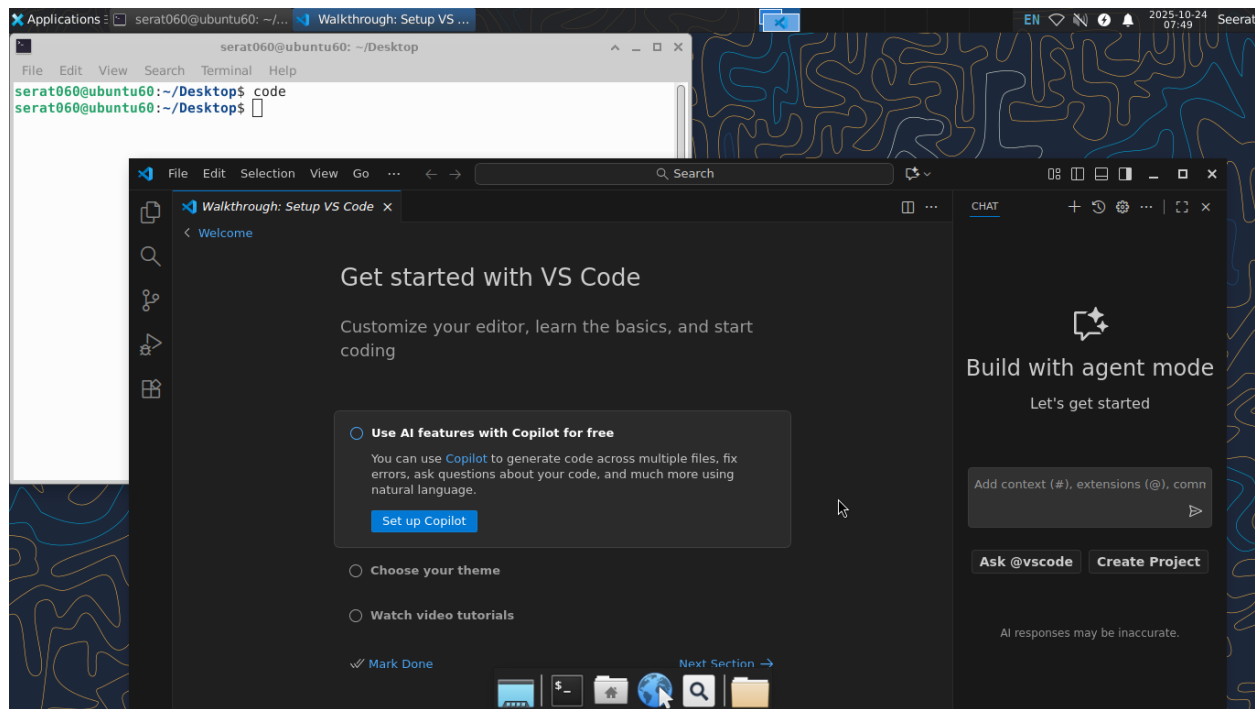
```
System information as of Fri Oct 24 08:32:02 AM UTC 2025
```

System load:	1.27	Processes:	254
Usage of /:	51.3% of 9.75GB	Users logged in:	0
Memory usage:	8%	IPv4 address for ens33:	192.168.243.128
Swap usage:	0%		

```
Expanded Security Maintenance for Applications is not enabled.
```

```
0 updates can be applied immediately.
```

```
6 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm
```



Task 7 - Install Google Chrome by adding its apt source & key (Chrome)

```
serat060@ubuntu60:~$ sudo apt install google-chrome-stable -y
[sudo] password for serat060:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package google-chrome-stable
```

```
serat060@ubuntu60:~$ ls -ls /etc/apt
total 32
4 drwxr-xr-x 2 root root 4096 Oct 24 04:45 apt.conf.d
4 drwxr-xr-x 2 root root 4096 Mar 31 2024 auth.conf.d
4 drwxr-xr-x 2 root root 4096 Mar 31 2024 keyrings
4 drwxr-xr-x 2 root root 4096 Aug 5 17:14 preferences.d
4 drwxr-xr-x 2 root root 4096 Aug 5 17:14 preferences.d.save
4 -rw-r--r-- 1 root root 70 Sep 30 16:44 sources.list
4 drwxr-xr-x 2 root root 4096 Sep 30 16:44 sources.list.d
4 drwxr-xr-x 2 root root 4096 Aug 5 17:01 trusted.gpg.d
```

```
serat060@ubuntu60:~$ cat /etc/apt/sources.list
# Ubuntu sources have moved to /etc/apt/sources.list.d/ubuntu.sources
```

```
serat060@ubuntu60:~$ ls -la /etc/apt/sources.list.d/
total 16
drwxr-xr-x 2 root root 4096 Sep 30 16:44 .
drwxr-xr-x 9 root root 4096 Sep 30 16:13 ..
-rw-r--r-- 1 root root 383 Sep 30 16:13 ubuntu.sources
-rw-r--r-- 1 root root 2552 Aug 5 17:02 ubuntu.sources.curtin.orig
```

```
serat060@ubuntu60:~$ cat /etc/apt/sources.list.d/ubuntu.sources
```

```
Types: deb
```

```
URIs: http://archive.ubuntu.com/ubuntu/
```

```
Suites: noble noble-updates noble-backports
```

```
Components: main restricted universe multiverse
```

```
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

```
Types: deb
```

```
URIs: http://security.ubuntu.com/ubuntu/
```

```
Suites: noble-security
```

```
Components: main restricted universe multiverse
```

```
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

```
Types: deb
```

```
URIs: http://archive.ubuntu.com/ubuntu/
```

```
Suites: noble noble-updates noble-backports
```

```
Components: main restricted universe multiverse
```

```
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

```
Types: deb
```

```
URIs: http://security.ubuntu.com/ubuntu/
```

```
Suites: noble-security
```

```
Components: main restricted universe multiverse
```

```
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

```
Types: deb
```

```
URIs: http://dl.google.com/linux/chrome/deb/
```

```
Suites: stable
```

```
Components: main
```

```
Architectures: amd64
```

```
Signed-By: /etc/apt/keyrings/google.gpg
```

```
serat060@ubuntu60:~$ sudo mkdir -p /etc/apt/keyrings
```

```
serat060@ubuntu60:~$ curl -fsSL https://dl.google.com/linux/linux_signing_key.pub | sudo gpg --dearmor -o /etc/apt/keyrings/google.gpg
```

```
serat060@ubuntu60:~$ sudo apt update
```

```
E: Malformed stanza 3 in source list /etc/apt/sources.list.d/ubuntu.sources (type)
```

```
E: The list of sources could not be read.
```

```
serat060@ubuntu60:~$ sudo apt remove google-chrome-stable -y
```

```
Reading package lists... Done
```

```
Building dependency tree... Done
```

```
Reading state information... Done
```

```
Package 'google-chrome-stable' is not installed, so not removed.
```

```
The following packages were automatically installed and are no longer required:
```

```
ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-wrapper-java-jni libgif7 openjdk-21-jre  
openjdk-21-jre-headless
```

```
Use 'sudo apt autoremove' to remove them.
```

```
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```



```
serat060@ubuntu60:~$ sudo rm -f /etc/apt/keyrings/google.gpg
serat060@ubuntu60:~$
```

```
serat060@ubuntu60:~$ echo "deb [arch=amd64 signed-by=/etc/apt/keyrings/google.gpg] http://dl.google.com/linux/chrome/deb/ stable main" | sudo tee
es.list.d/google-chrome.list > /dev/null
```

```
serat060@ubuntu60:~$ ls -la /etc/apt/sources.list.d/
total 16
drwxr-xr-x 2 root root 4096 Oct 24 21:03 .
drwxr-xr-x 9 root root 4096 Sep 30 16:13 ..
-rw-r--r-- 1 root root 197 Oct 24 21:03 google-chrome.list
-rw-r--r-- 1 root root 2552 Aug  5 17:02 ubuntu.sources.curtin.orig
```

```
serat060@ubuntu60:~$ sudo mkdir -p /etc/apt/keyrings
serat060@ubuntu60:~$ curl -fsSL https://dl.google.com/linux/linux_signing_key.pub | sudo gpg --dearmor -o /etc/apt/keyrings/google.gpg
serat060@ubuntu60:~$
```

```
serat060@ubuntu60:~$ sudo apt update
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
serat060@ubuntu60:~$ sudo apt install google-chrome-stable -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fonts-liberation fonts-liberation-sans-narrow
The following NEW packages will be installed:
  fonts-liberation fonts-liberation-sans-narrow google-chrome-stable
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 122 MB of archives.
After this operation, 401 MB of additional disk space will be used.
Get:1 http://dl.google.com/linux/chrome/deb stable/main amd64 google-chrome-stable amd64 141.0.7390.122-1 [120 MB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 fonts-liberation all 1:2.1.5-3 [1,603 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 fonts-liberation-sans-narrow all 1:1.07.6-4 [197 kB]
Fetched 122 MB in 42s (2,926 kB/s)
Selecting previously unselected package fonts-liberation.
(Reading database ... 179830 files and directories currently installed.)
Preparing to unpack .../fonts-liberation_1%3a2.1.5-3_all.deb ...
Unpacking fonts-liberation (1:2.1.5-3) ...
Selecting previously unselected package google-chrome-stable.
Preparing to unpack .../google-chrome-stable_141.0.7390.122-1_amd64.deb ...
Unpacking google-chrome-stable (141.0.7390.122-1) ...
Selecting previously unselected package fonts-liberation-sans-narrow.
Preparing to unpack .../fonts-liberation-sans-narrow_1%3a1.07.6-4_all.deb ...
Unpacking fonts-liberation-sans-narrow (1:1.07.6-4) ...
Setting up fonts-liberation (1:2.1.5-3) ...
Setting up fonts-liberation-sans-narrow (1:1.07.6-4) ...
Setting up google-chrome-stable (141.0.7390.122-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for fontconfig (2.15.0-1ubuntu2) ...
```

Task 8 - Install applications via PPA (Audacity & OBS) and launch

```
serat060@ubuntu60:~$ sudo add-apt-repository ppa:ubuntuhandbook1/audacity -y
Repository: 'Types: deb
URIs: https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu/
Suites: noble
Components: main
'
Description:
Unofficial build of Audacity audio editor

For help, please use Audacity forum: http://forum.audacityteam.org/

If the packages here are helpful, you may buy me a coffee:

    https://ko-fi.com/ubuntuhandbook1
More info: https://launchpad.net/~ubuntuhandbook1/+archive/ubuntu/audacity
Adding repository.
Hit:1 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:5 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease [18.1 kB]
Hit:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:7 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble/main amd64 Packages [1,064 B]
Get:8 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble/main Translation-en [492 B]
Fetched 19.6 kB in 3s (6,559 B/s)
Reading package lists... Done
```

```
serat060@ubuntu60:~$ sudo apt update
Hit:1 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:6 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
Setting up libpcres2-32-0:amd64 (10.42-4ubuntu2.1) ...
Setting up libsoundtouch1:amd64 (2.3.2+ds1-1build1) ...
Setting up libxcb-xinerama0:amd64 (1.15-1ubuntu2) ...
Setting up qttranslations5-l10n (5.15.13-1) ...
Setting up libportmidi0:amd64 (1:217-6.1build3) ...
Setting up libxkbcommon-x11-0:amd64 (1.6.0-1build1) ...
Setting up libsbsms10:amd64 (2.3.0-1build1) ...
Setting up libmd4c0:amd64 (0.4.8-1build1) ...
Setting up libwxbase3.2-1t64:amd64 (3.2.4+dfsg-4build1) ...
Setting up libopusfile0:amd64 (0.12-4build3) ...
Setting up libwxgtk3.2-1t64:amd64 (3.2.4+dfsg-4build1) ...
Setting up libserd-0-0:amd64 (0.32.2-1) ...
Setting up libqt5dbus5t64:amd64 (5.15.13+dfsg-1ubuntu1) ...
Setting up libqt5network5t64:amd64 (5.15.13+dfsg-1ubuntu1) ...
Setting up libqt5gui5t64:amd64 (5.15.13+dfsg-1ubuntu1) ...
Setting up libqt5qml5:amd64 (5.15.13+dfsg-1ubuntu0.1) ...
Setting up libsord-0-0:amd64 (0.16.16-2build1) ...
Setting up libsratom-0-0:amd64 (0.6.16-1build1) ...
Setting up liblilv-0-0:amd64 (0.24.22-1build1) ...
Setting up libqt5x11extras5:amd64 (5.15.13-1) ...
Setting up libqt5qmlmodels5:amd64 (5.15.13+dfsg-1ubuntu0.1) ...
Setting up libqt5widgets5t64:amd64 (5.15.13+dfsg-1ubuntu1) ...
Setting up libqt5svg5:amd64 (5.15.13-1) ...
Setting up audacity (3.7.5-0build1~ubuntu24.04) ...
Setting up qt5-gtk-platformtheme:amd64 (5.15.13+dfsg-1ubuntu1) ...
Setting up libqt5waylandclient5:amd64 (5.15.13-1) ...
Setting up libqt5quick5:amd64 (5.15.13+dfsg-1ubuntu0.1) ...
Setting up libqt5waylandcompositor5:amd64 (5.15.13-1) ...
Setting up qtwayland5:amd64 (5.15.13-1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for shared-mime-info (2.4-4) ...
Processing triggers for bamfdaemon (0.5.6+22.04.20220217-0ubuntu5) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
```

```
serat060@ubuntu60:~$ audacity
serat060@ubuntu60:~$
```

```
serat060@ubuntu60:~$ audacity --version
serat060@ubuntu60:~$
```

```
serat060@ubuntu60:~$ sudo add-apt-repository ppa:obsproject/obs-studio -y
Repository: 'Types: deb
URIs: https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu/
Suites: noble
Components: main
'
Description:
Latest stable release of OBS Studio
More info: https://launchpad.net/~obsproject/+archive/ubuntu/obs-studio
Adding repository.
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:3 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:5 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelease [17.8 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Hit:7 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,536 kB]
Get:9 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble/main amd64 Packages [1,172 B]
Get:10 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble/main Translation-en [160 B]
Get:11 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:15 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,128 B]
Get:16 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:17 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 2,379 kB in 4s (634 kB/s)
Reading package lists... Done
```

```
serat060@ubuntu60:~$ sudo apt update
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:6 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelease
Hit:7 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.3 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Fetched 200 kB in 3s (60.9 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```

Setting up libswscale7:amd64 (7:6.1.1-3ubuntu5) ...
Setting up libqt6widgets6t64:amd64 (6.4.2+dfsg-21.1build5) ...
Setting up liblapack3:amd64 (3.12.0-3build1.1) ...
update-alternatives: using /usr/lib/x86_64-linux-gnu/lapack/liblapack.so.3 to
in auto mode
Setting up libmbedx509-1t64:amd64 (2.28.8-1) ...
Setting up libzmq5:amd64 (4.3.5-1build2) ...
Setting up qt6-qpas-plugins:amd64 (6.4.2+dfsg-21.1build5) ...
Setting up libqt6qml6:amd64 (6.4.2+dfsg-4build3) ...
Setting up libopenal1:amd64 (1:1.23.1-4build1) ...
Setting up libavformat60:amd64 (7:6.1.1-3ubuntu5) ...
Setting up libqt6opengl6t64:amd64 (6.4.2+dfsg-21.1build5) ...
Setting up libqt6qmlmodels6:amd64 (6.4.2+dfsg-4build3) ...
Setting up liblua5.1-2:amd64 (2.1.0+git20231223.c525bcb+dfsg-1) ...
Setting up libsphinxbase3t64:amd64 (0.8+5prealpha+1-17build2) ...
Setting up libqt6svg6:amd64 (6.4.2-4ubuntu3) ...
Setting up libqt6waylandclient6:amd64 (6.4.2-5build3) ...
Setting up libass9:amd64 (1:0.17.1-2build1) ...
Setting up qt6-gtk-platformtheme:amd64 (6.4.2+dfsg-21.1build5) ...
Setting up libqt6quick6:amd64 (6.4.2+dfsg-4build3) ...
Setting up libmbd1t64:amd64 (2.28.8-1) ...
Setting up libqt6wlshellintegration6:amd64 (6.4.2-5build3) ...
Setting up libqt6waylandcompositor6:amd64 (6.4.2-5build3) ...
Setting up libqt6waylandeglcompositorhwintegration6:amd64 (6.4.2-5build3) ...
Setting up libqt6waylandeglclienthwintegration6:amd64 (6.4.2-5build3) ...
Setting up libpocketsphinx3:amd64 (0.8.0+real5prealpha+1-15ubuntu5) ...
Setting up qt6-wayland:amd64 (6.4.2-5build3) ...
Setting up libavfilter9:amd64 (7:6.1.1-3ubuntu5) ...
Setting up libavdevice60:amd64 (7:6.1.1-3ubuntu5) ...
Setting up obs-studio (32.0.0-0obsproject1~noble) ...
Processing triggers for bamfdaemon (0.5.6+22.04.20220217-0ubuntu5) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Processing triggers for man-db (2.12.0-4build2) ...

```

```

serat060@ubuntu60:~$ obs
qt.qpa.xcb: could not connect to display
qt.qpa.plugin: Could not load the Qt platform plugin "xcb" in "" even though it was found.
This application failed to start because no Qt platform plugin could be initialized. Reinstalling the application may fix this problem.

Available platform plugins are: vnc, minimalegl, wayland-egl, wayland, offscreen, vkhrdisplay, xcb, minimal, linuxfb, eglfs.

Aborted (core dumped)

```

```

serat060@ubuntu60:~$ obs --version
OBS Studio - 32.0.0

```

Task 9 - Create a Kubernetes sample YAML using vim

```
Ubuntu 64-bit x
VIM - Vi IMproved
      version 9.1.697
      by Bram Moolenaar et al.
      Modified by team+vim@tracker.debian.org
      Vim is open source and freely distributable

      Help poor children in Uganda!
      type  :help iccf<Enter>      for information

      type  :q<Enter>              to exit
      type  :help<Enter> or <F1>   for on-line help
      type  :help version9<Enter> for version info
```

```
serat060@ubuntu60:~$ mkdir -p ~/Lab5
serat060@ubuntu60:~$ cd ~/Lab5
serat060@ubuntu60:~/Lab5$ pwd
/home/serat060/Lab5
```

```
Ubuntu 64-bit x
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
```

```
serat060@ubuntu60:~/Lab5$ ls -la
total 12
drwxrwxr-x  2 serat060 serat060 4096 Oct 24 23:04 .
drwxr-x--- 25 serat060 serat060 4096 Oct 24 23:04 ..
-rw-rw-r--  1 serat060 serat060  297 Oct 24 23:04 k8s-sample.yaml
```

Task 10 - Edit the Kubernetes YAML - add annotation, verify, then discard temporary change

```
"k8s-sample.yaml" 25L, 338B written
serat060@ubuntu60:~/Lab5$ cat k8s-sample.yaml
apiVersion: v1

kind: Pod

metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
```

```
kind: Pod

metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
      #temp: do not keep
```

```
serat060@ubuntu60:~/Lab5$ cat k8s-sample.yaml
apiVersion: v1
```

```
kind: Pod

metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
```


Task 11 - Vim editing practice - delete, undo, numeric deletes, navigation

```
metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
```

```
metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
```

```
iapiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
~
~
~
~
```

```
- containerPort: 80
  restartPolicy: Always
~
```

Task 12 - Vim search, add matches, substitute, undo

```
name: nginx-pod
annotations:
```

```
containers:
  - name: nginx
    image: nginx:1.19
```

```
name: nginx-pod
annotations:
```

```
containers:
  - name: nginx
    image: nginx:1.19
    ports:
      - containerPort: 80
    restartPolicy: Always
    # nginx test comment
    - # # another nginx example
```

```
'k8s-sample.yaml' 29L, 527B written
```

```
apiVersion: v1
kind: Pod
metadata:
  name: webapp-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: webapp
      image: webapp:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
      # webapp test comment
      # # another webapp example
```

```
iapiVersion: v1
kind: Pod
metadata:
- name: nginx-pod
  annotations:
    lab: lesson11
spec:
  containers:
    - name: nginx
      image: nginx:1.19
      ports:
        - containerPort: 80
      restartPolicy: Always
      # nginx test comment
      # # another nginx example
```

Exam Evaluation Question

- Install Docker Desktop on your VMWare Workstation Ubuntu Server. No commands or solutions are provided in this lab — treat this as an evaluation/exam question.
- Verify Docker Desktop is installed by launching the Docker Desktop application and confirming it runs.
- Capture a screenshot of Docker Desktop running (or other clear evidence that Docker Desktop is installed and started) and save it as: exam_evaluation_docker_desktop.png

