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Student ID: 8935540

Lab Activity2

Professor Name: Jason Paul

Vsphere Link: <https://wfd-vcenter001.conestogac.on.ca/ui/webconsole.html?vmId=vm-136753&vmName=Week2&numMksConnections=0&serverGid=6ea79d3e-d131-46b6-abbc-b8e3379f5344&locale=en-US>

IP: 172.23.78.7

Username: aagam
Password: Secret55

1. Minimum Requirements

Official websites and find the minimum and recommended hardware requirements for the latest stable releases of following:

1. Ubuntu Desktop standard
2. Xubuntu
3. Linux Mint – Cinnamon Desktop
4. Debian

Ubuntu Desktop standard

The screenshot shows a web browser window with multiple tabs open at the top. The active tab is titled "help.ubuntu.com/community/Installation/SystemRequirements". The page content is the "Ubuntu documentation" for "Installation/SystemRequirements". The main heading is "Recommended Minimum System Requirements". Below it, a numbered list provides the requirements:

1. 2 GHz dual core processor
2. 4 GB RAM (system memory)
3. 25 GB (8.6 GB for minimal) of hard-drive space (or USB stick, memory card or external drive but see LiveCD for an alternative approach)
4. VGA capable of 1024x768 screen resolution
5. Either a CD/DVD drive or a USB port for the installer media
6. Internet access is helpful

Below the requirements, there is a note about screen resolution and a statement that hardware produced in the last few years or with an efficient architecture or machines built for a specific purpose can often work well.

Xubuntu

The screenshot shows the Xubuntu website's "System Requirements" page. It includes sections for "Minimum system requirements" and "Recommended system resources". A sidebar on the right features icons of a microchip and a ruler.

Minimum system requirements

To install and use Xubuntu, you need an **Intel or AMD 64-bit processor** with at least **1 GB of memory**. You may need more if you have integrated graphics.

You can [try Xubuntu running from a USB or DVD before installing](#). Keep in mind that running the system this way will be slower than an installed system.

When you install Xubuntu, you need at minimum **8.6 GB of free space** on your hard disk.

Recommended system resources

To get a smooth experience when running multiple applications parallel on the desktop, it is recommended to have a 1.5Ghz Dual Core processor with at least **2 GB** of memory.

It is recommended to have at least **20 GB** of free space on your hard disk. This allows new application installations as well as saving your personal data on the hard disk in addition to the core system.

Social media: @Xubuntu on Twitter | Xubuntu Users on Facebook | @Xubuntu@floss.social on Mastodon

The screenshot shows the Linux Mint website's "FAQ" page. It features a green header with the Linux Mint logo and navigation links for Home, Download, Project, About, Links, and Donate.

General

What is Linux Mint? +

Is Linux Mint suitable for individuals? +

Is Linux Mint suitable for companies? +

What are the system requirements to run Linux Mint? -

• 2GB RAM (4GB recommended for a comfortable usage).
• 20GB of disk space (100GB recommended).
• 1024×768 resolution (on lower resolutions, press ALT to drag windows with the mouse if they don't fit in the screen).

Licensing

17°C Sunny

8:41 PM 5/15/2024

Debian

A screenshot of a web browser window displaying the Debian 11 architecture support page. The URL in the address bar is debian.org/releases/bullseye/amd64/ch02s01en.html#idm186. The page title is "2.1. Supported Hardware". It contains text about hardware requirements and a table listing supported architectures.

2.1. Supported Hardware

Debian does not impose hardware requirements beyond the requirements of the Linux or kFreeBSD kernel and the GNU tool-sets. Therefore, any architecture or platform to which the Linux or kFreeBSD kernel, libc, gcc, etc. have been ported, and for which a Debian port exists, can run Debian. Please refer to the Ports pages at <https://www.debian.org/ports/amd64/> for more details on 64-bit PC architecture systems which have been tested with Debian GNU/Linux.

Rather than attempting to describe all the different hardware configurations which are supported for 64-bit PC, this section contains general information and pointers to where additional information can be found.

2.1.1. Supported Architectures

Debian GNU/Linux 11 supports 9 major architectures and several variations of each architecture known as "flavors".

Architecture	Debian Designation	Subarchitecture	Flavor
AMD64 & Intel 64	amd64		
Intel x86-based	i386	default x86 machines	default
		Xen PV domains only	xen
ARM	armel	Marvell Kirkwood and Orion	marvell
		multiplatform	armmp
64bit ARM	arm64		
64bit MIPS (little-endian)	mips64el	MIPS Malta	5kc-malta
		Cavium Octeon	octeon
		Loongson 3	loongson-3
32bit MIPS (little-endian)	mipsel	MIPS Malta	4kc-malta
		Cavium Octeon	octeon
		Loongson 3	loongson-3
Power Systems	ppc64el	IBM POWER8 or newer machines	
64bit IBM S/390	s390x	IPL from VM-reader and DASD	generic

This document covers installation for the *64-bit PC* architecture using the *Linux* kernel. If you are looking for information on any of the other Debian-supported architectures take a look at the [Debian Ports](#) pages.

A screenshot of a web browser window displaying the Debian 11 minimum hardware requirements page. The URL in the address bar is debian.org/releases/bullseye/amd64/ch03s04en.html. The page title is "3.4. Meeting Minimum Hardware Requirements".

3.4. Meeting Minimum Hardware Requirements

Once you have gathered information about your computer's hardware, check that your hardware will let you do the type of installation that you want to do.

Depending on your needs, you might manage with less than some of the recommended hardware listed in the table below. However, most users risk being frustrated if they ignore these suggestions.

A Pentium 4, 1GHz system is the minimum recommended for a desktop system.

Table 3.2. Recommended Minimum System Requirements

Install Type	RAM (minimum)	RAM (recommended)	Hard Drive
No desktop	256 megabytes	512 megabytes	2 gigabytes
With Desktop	1 gigabytes	2 gigabytes	10 gigabytes

The minimum values assumes that swap will be enabled and a non-liveCD image is used. The "No desktop" value assumes that the non-graphical (text-based) installer is used.

The actual minimum memory requirements are a lot less than the numbers listed in this table. With swap enabled, it is possible to install Debian with as little as 350MB. The same goes for the disk space requirements, especially if you pick and choose which applications to install; see [Section D.2, "Disk Space Needed for Tasks"](#) for additional information on disk space requirements.

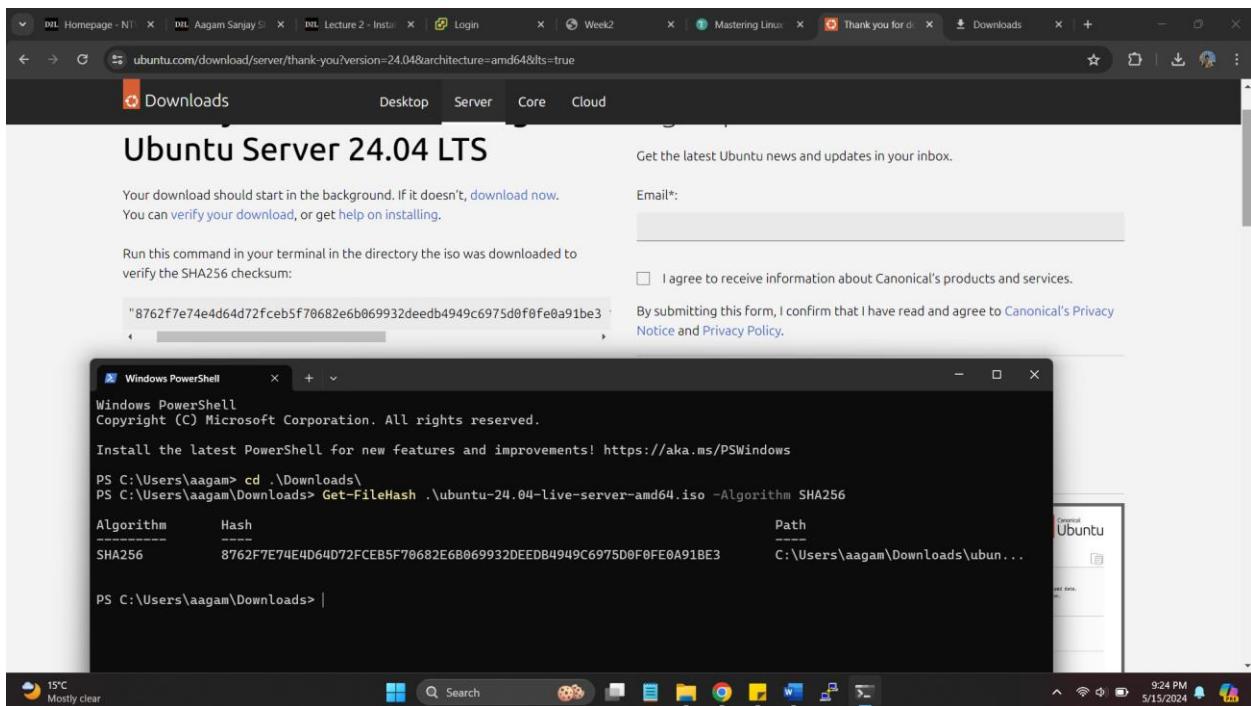
It is possible to run a graphical desktop environment on older or low-end systems, but in that case it is recommended to install a window manager that is less resource-hungry than those of the GNOME or KDE Plasma desktop environments; alternatives include `xfce4`, `icewm` and `wmaker`, but there are others to choose from.

It is practically impossible to give general memory or disk space requirements for server installations as those very much depend on what the server is to be used for.

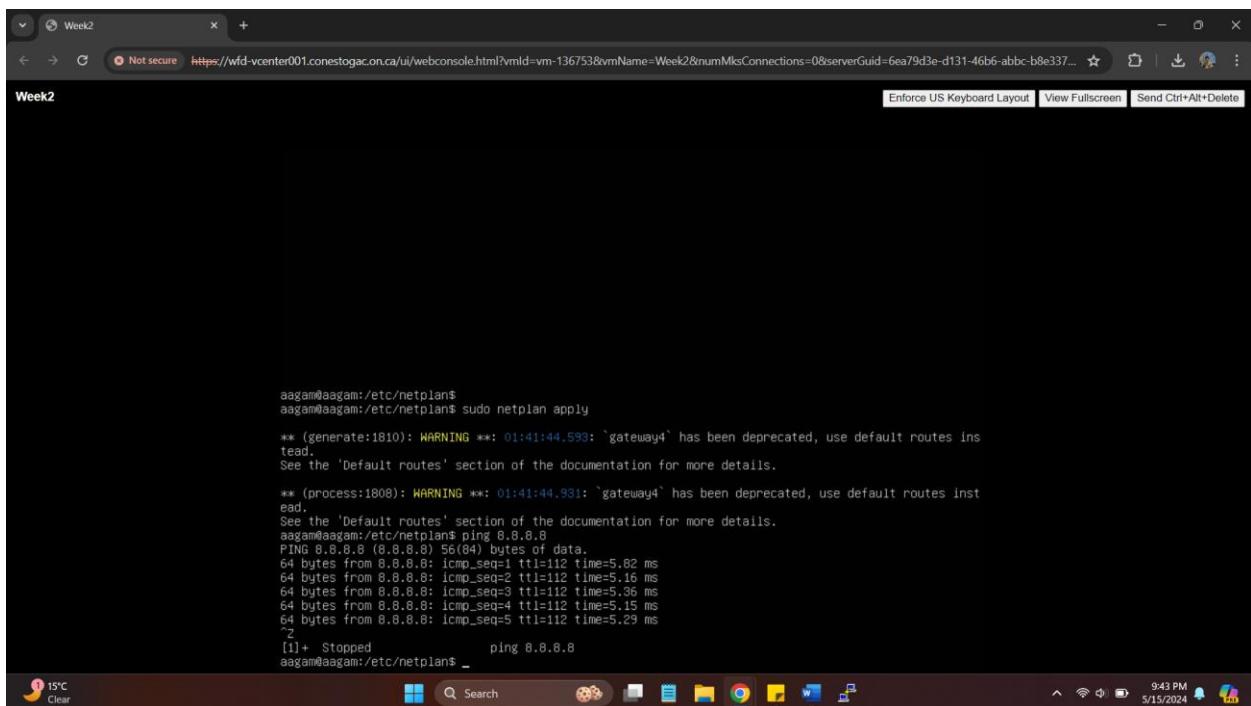
A screenshot of a web browser window displaying the Ubuntu Server ISO image file page. The URL in the address bar is www.ubuntu.com/download/server. The page title is "2. Checking the Ubuntu Server ISO Image File" for the latest version of Ubuntu Server".

2. Checking the Ubuntu Server ISO Image File

for the latest version of Ubuntu Server



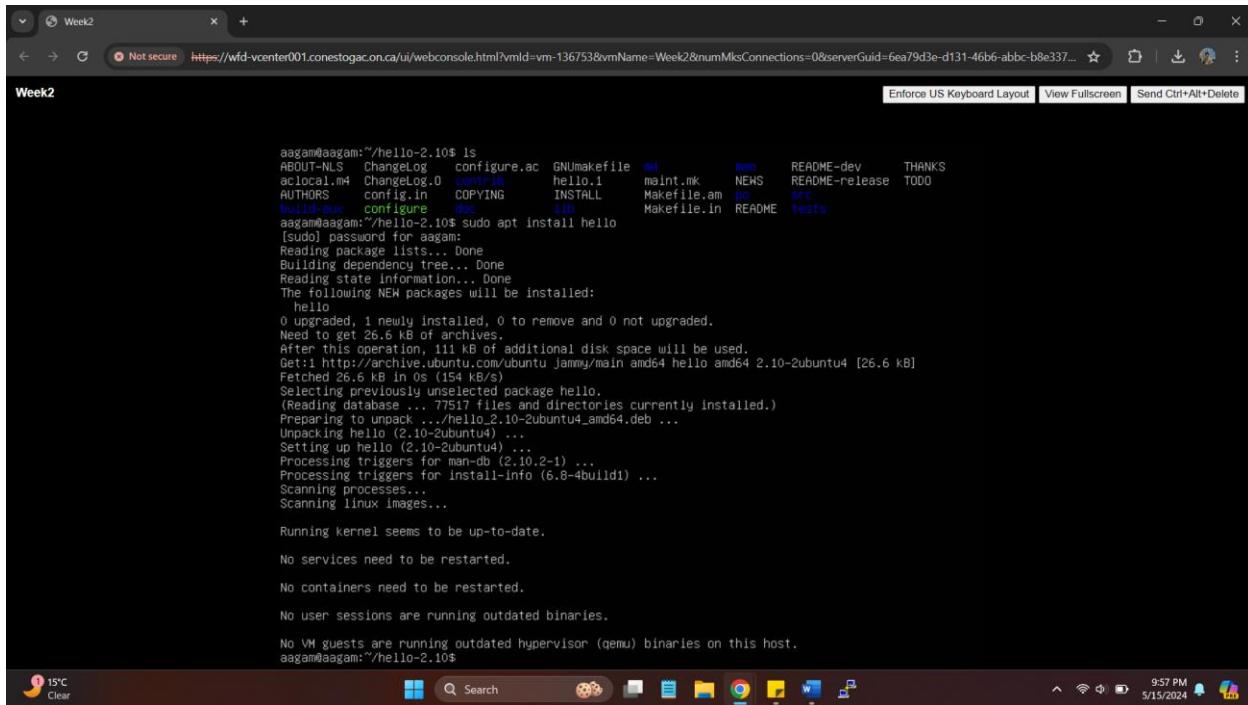
3. Installing Software Using apt



```
aagam@aagam:~$  
aagam@aagam:~$ wget https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
--2024-05-16 02:10:16-- https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
Resolving ftp.gnu.org (ftp.gnu.org) ... 209.51.188.20, 2001:470:142:3::b  
Connecting to ftp.gnu.org (ftp.gnu.org)|209.51.188.20|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 725946 (709K) [application/x-gzip]  
Saving to: 'hello-2.10.tar.gz'  
  
hello-2.10.tar.gz      100%[=====] 708.93K  3.46MB/s  in 0.2s  
2024-05-16 02:10:16 (3.46 MB/s) - 'hello-2.10.tar.gz' saved [725946/725946]  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$ -
```

```
aagam@aagam:~$  
aagam@aagam:~$ wget https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
--2024-05-16 02:10:16-- https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
Resolving ftp.gnu.org (ftp.gnu.org) ... 209.51.188.20, 2001:470:142:3::b  
Connecting to ftp.gnu.org (ftp.gnu.org)|209.51.188.20|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 725946 (709K) [application/x-gzip]  
Saving to: 'hello-2.10.tar.gz'  
  
hello-2.10.tar.gz      100%[=====] 708.93K  3.46MB/s  in 0.2s  
2024-05-16 02:10:16 (3.46 MB/s) - 'hello-2.10.tar.gz' saved [725946/725946]  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$  
aagam@aagam:~$ ls  
Hello-2.10  hello-2.10.tar.gz  
aagam@aagam:~$
```

sudo apt install hello



The screenshot shows a terminal window titled "Week2" running on a web console. The command "sudo apt install hello" is being executed. The terminal output shows the package being downloaded from the archive. The desktop environment at the bottom includes icons for weather (15°C), search, file manager, browser, and other system tools.

```
aagam@aagam:~/hello-2.10$ ls
ABOUT-NLS ChangeLog configure.ac GNUmakefile.in NEWS README-dev THANKS
aclocal.m4 ChangeLog.0 config.h hello.1 maint.mk NEWS README-release TODO
AUTHORS config.in COPYING INSTALL Makefile.am DEPSEC README
BUILD-MK configure.in DEPSEC Makefile.In README TESTS

aagam@aagam:~/hello-2.10$ sudo apt install hello
[sudo] password for aagam:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  hello
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 26.6 kB of archives.
After this operation, 111 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu Jammy/main amd64 hello amd64 2.10-2ubuntu4 [26.6 kB]
Fetched 26.6 kB in 0s (154 kB/s)
Selecting previously unselected package hello.
(Reading database ... 77517 files and directories currently installed.)
Preparing to unpack .../hello_2.10-2ubuntu4_amd64.deb ...
Unpacking hello (2.10-2ubuntu4) ...
Setting up hello (2.10-2ubuntu4) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for install-info (6.8-4build1) ...
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.

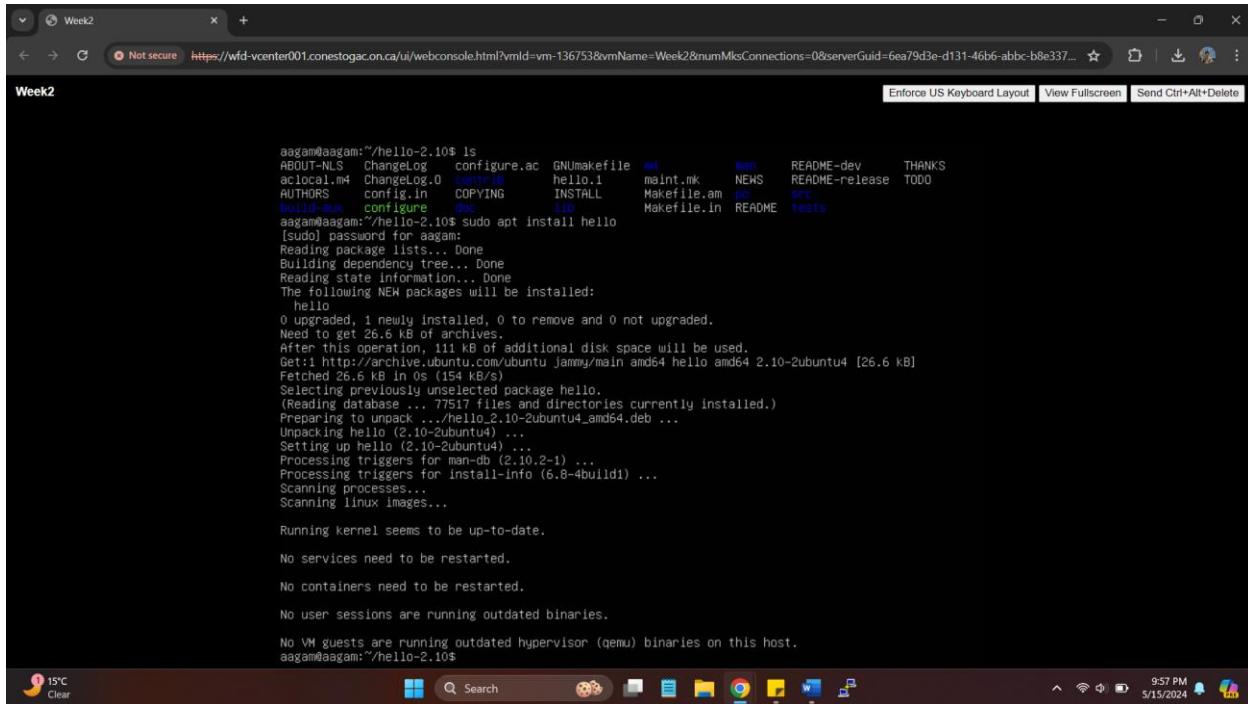
aagam@aagam:~/hello-2.10$
```

4. INSTALLING SOFTWARE FROM SOURCE CODE

Download the `hello` tarball package to your Ubuntu server. Go to the GNU software download website ftp.gnu.org/gnu/hello/. Click the link to download the current version of the package. The current filename is `hello-2.10.tar.gz`.

```
aagan@aagam:~$  
aagan@aagam:~$ wget https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
--2024-05-16 02:10:16-- https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
Resolving ftp.gnu.org (ftp.gnu.org) ... 209.51.188.20, 2001:470:142:3::b  
Connecting to ftp.gnu.org (ftp.gnu.org)[209.51.188.20]:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 725946 (709K) [application/x-gzip]  
Saving to: 'hello-2.10.tar.gz'  
  
hello-2.10.tar.gz      100%[=====] 708.93K 3.46MB/s   in 0.2s  
2024-05-16 02:10:16 (3.46 MB/s) - 'hello-2.10.tar.gz' saved [725946/725946]  
  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$ -
```

```
aagan@aagam:~$  
aagan@aagam:~$ wget https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
--2024-05-16 02:10:16-- https://ftp.gnu.org/gnu/hello/hello-2.10.tar.gz  
Resolving ftp.gnu.org (ftp.gnu.org) ... 209.51.188.20, 2001:470:142:3::b  
Connecting to ftp.gnu.org (ftp.gnu.org)[209.51.188.20]:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 725946 (709K) [application/x-gzip]  
Saving to: 'hello-2.10.tar.gz'  
  
hello-2.10.tar.gz      100%[=====] 708.93K 3.46MB/s   in 0.2s  
2024-05-16 02:10:16 (3.46 MB/s) - 'hello-2.10.tar.gz' saved [725946/725946]  
  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$  
aagan@aagam:~$ ls  
Hello-2.10 hello-2.10.tar.gz  
aagan@aagam:~$
```



```
aagam@aagam:~/hello-2.10$ ls
ABOUT-NLS ChangeLog configure.ac GNUmakefile.in NEWS README-dev THANKS
aclocal.m4 ChangeLog.0 hello.i maint.mk NEWS README-release TODO
AUTHORS config.in COPYING INSTALL Makefile.am PKG-INFO README.Trusty
hello.h configure.in libhello.a Makefile.In README.Trusty

aagam@aagam:~/hello-2.10$ sudo apt install hello
[sudo] password for aagam:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  hello
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 26.6 kB of archives.
After this operation, 111 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 hello amd64 2.10-2ubuntu4 [26.6 kB]
Fetched 26.6 kB in 0s (154 kB/s)
Selecting previously unselected package hello.
(Reading database ... 77517 files and directories currently installed.)
Preparing to unpack .../hello_2.10-2ubuntu4_amd64.deb ...
Unpacking hello (2.10-2ubuntu4) ...
Setting up hello (2.10-2ubuntu4) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for install-info (6.8-4build1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

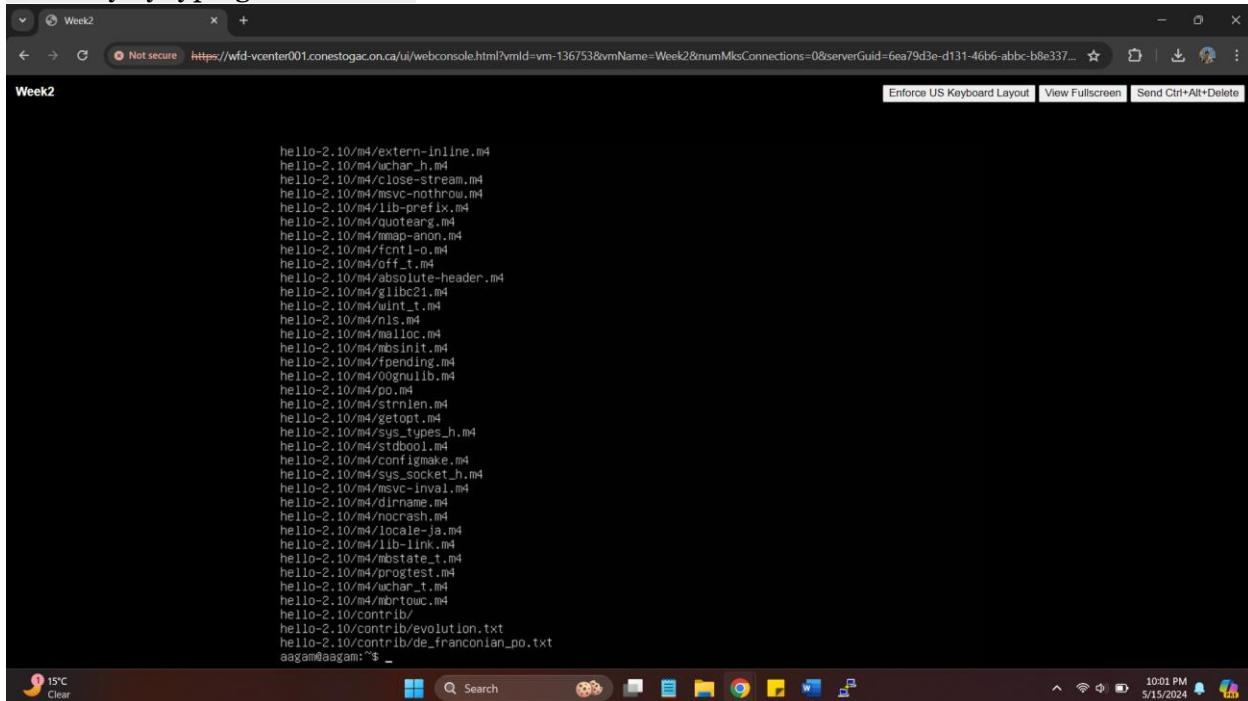
No containers need to be restarted.

No user sessions are running outdated binaries.

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

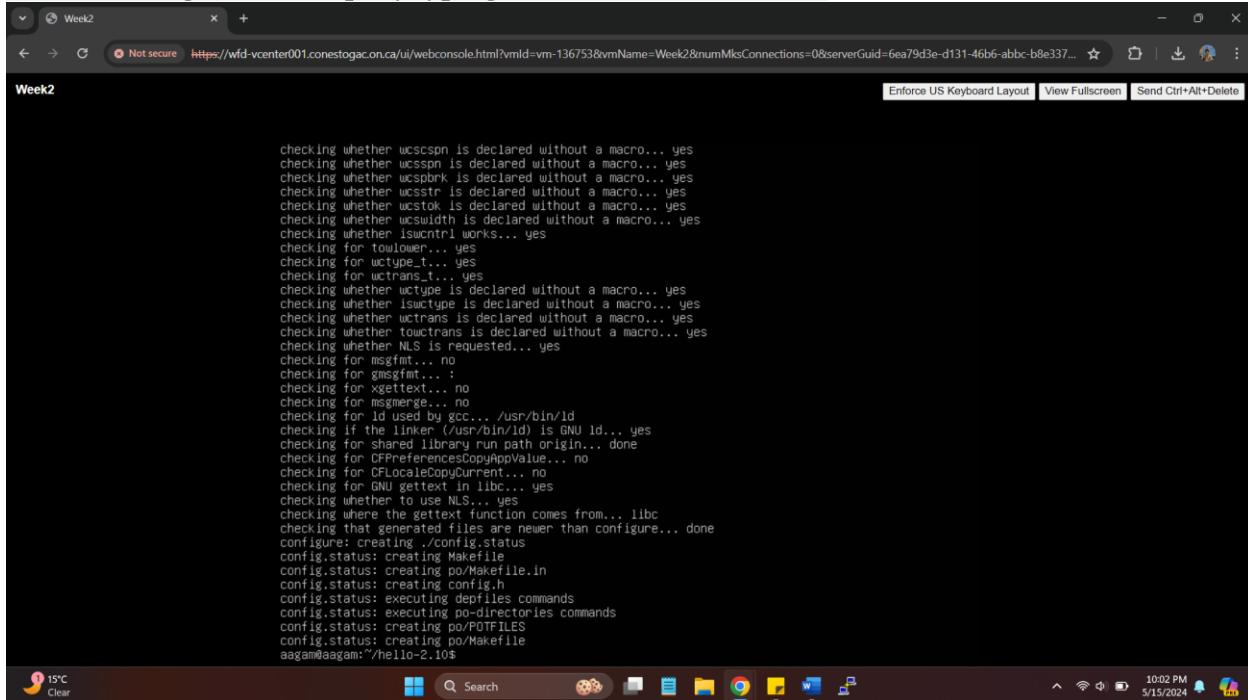
aagam@aagam:~/hello-2.10$
```

Unpack the software tarball using the command **tar -zxvf hello-2.10-tar.gz** and Change to that directory by typing **cd hello-2.10**



```
hello-2.10/m4/extern-inlne.m4
hello-2.10/m4/wchar.h.m4
hello-2.10/m4/close-stream.m4
hello-2.10/m4/msvc-nothrow.m4
hello-2.10/m4/lib-prefix.m4
hello-2.10/m4/quoteargs.m4
hello-2.10/m4/mmap-shm.m4
hello-2.10/m4/fontl-0.m4
hello-2.10/m4/off_t.m4
hello-2.10/m4/absolute-header.m4
hello-2.10/m4/glibc21.m4
hello-2.10/m4/wint_t.m4
hello-2.10/m4/nls.m4
hello-2.10/m4/malloc.m4
hello-2.10/m4/mbsinit.m4
hello-2.10/m4/freending.m4
hello-2.10/m4/00gnulib.m4
hello-2.10/m4/po.m4
hello-2.10/m4/strrlen.m4
hello-2.10/m4/getopt.m4
hello-2.10/m4/sys_types.h.m4
hello-2.10/m4/stdbool.m4
hello-2.10/m4/configmake.m4
hello-2.10/m4/sys_socket.h.m4
hello-2.10/m4/msvc-inval.m4
hello-2.10/m4/dirname.m4
hello-2.10/m4/noocrash.m4
hello-2.10/m4/locale-ja.m4
hello-2.10/m4/lib-link.m4
hello-2.10/m4/mbstowc.t.m4
hello-2.10/m4/progtest.m4
hello-2.10/m4/wchar.t.m4
hello-2.10/m4/mbrtowc.m4
hello-2.10/contrib/
hello-2.10/contrib/evolution.txt
hello-2.10/contrib/de_franconian.po.txt
aagam@aagam:~$
```

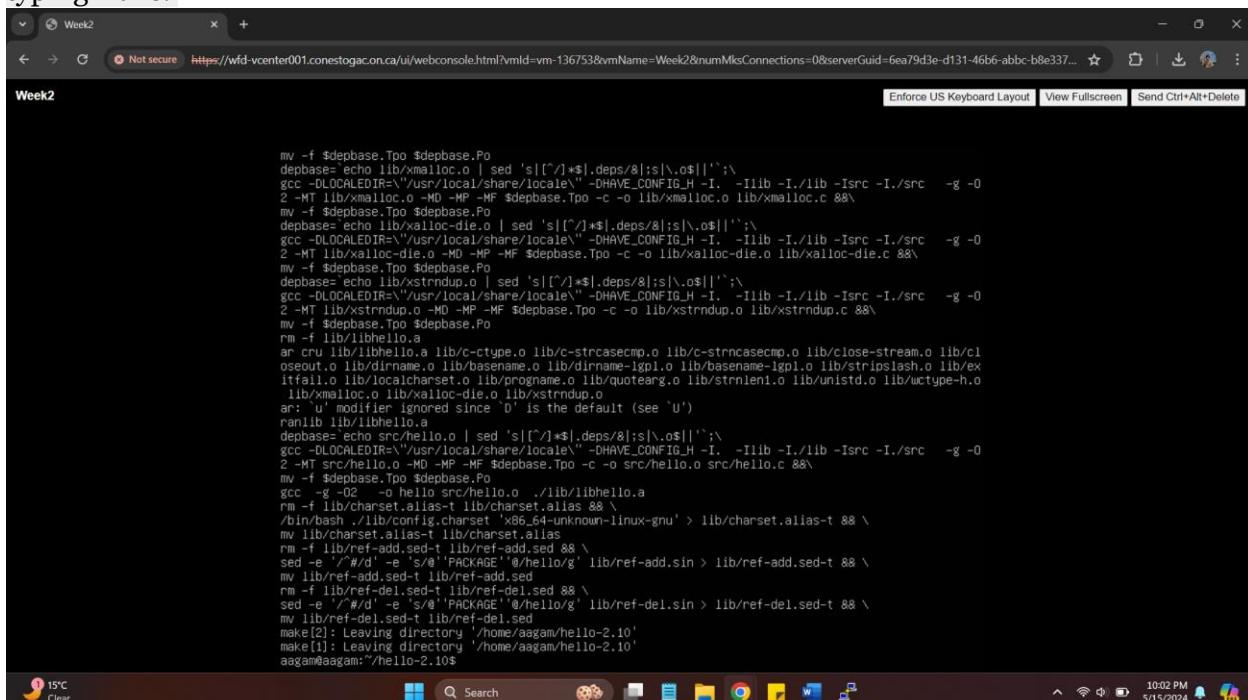
Run the configuration script by typing the command **./configure**



```
Week2
Not secure https://wfd-vcenter001.conestogac.on.ca/ui/webconsole.html?vmId=vm-136753&vmName=Week2&numMksConnections=0&serverGuid=6ea79d3e-d131-46b6-abbc-b8e337...
Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

checking whether wcscspn is declared without a macro... yes
checking whether wcscspn is declared without a macro... yes
checking whether wcspbrk is declared without a macro... yes
checking whether wcscstr is declared without a macro... yes
checking whether wcscstr is declared without a macro... yes
checking whether wcswidth is declared without a macro... yes
checking whether wcsctrl works... yes
checking for towlower... yes
checking for wctype_t... yes
checking for wctrans_t... yes
checking whether wctype_t is declared without a macro... yes
checking whether iswctype is declared without a macro... yes
checking whether wctrans is declared without a macro... yes
checking whether towctrans is declared without a macro... yes
checking whether NLS is requested... yes
checking for msgfmt... no
checking for gmsgfmt... :
checking for xgettext... no
checking for msgmerge... no
checking for ld used by gcc... /usr/bin/ld
checking if the linker (/usr/bin/ld) is GNU ld... yes
checking for shared library run path origin... done
checking for CPreferencesCopyAppValue... no
checking for CFLocaleCopyCurrent... no
checking for GNU gettext in libc... yes
checking whether to use NLS... yes
checking where the gettext function comes from... libc
checking that generated files are newer than configure... done
configure: creating ./config.status
config.status: creating Makefile
config.status: creating po/Makefile.in
config.status: creating config.h
config.status: executing depfiles commands
config.status: executing po-directories commands
config.status: creating po/POTFILES
config.status: creating po/Makefile
aaagam@aaagam:~/hello-2.10$
```

Compile the application by typing **make**.



```
Week2
Not secure https://wfd-vcenter001.conestogac.on.ca/ui/webconsole.html?vmId=vm-136753&vmName=Week2&numMksConnections=0&serverGuid=6ea79d3e-d131-46b6-abbc-b8e337...
Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

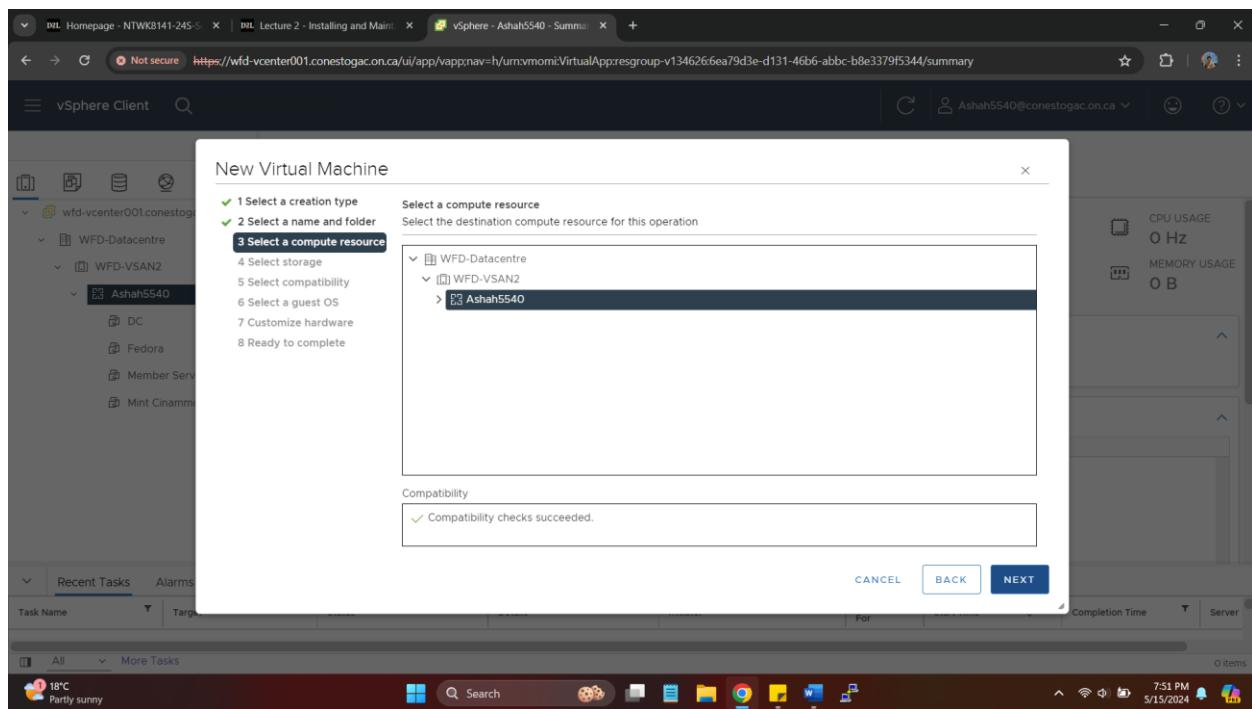
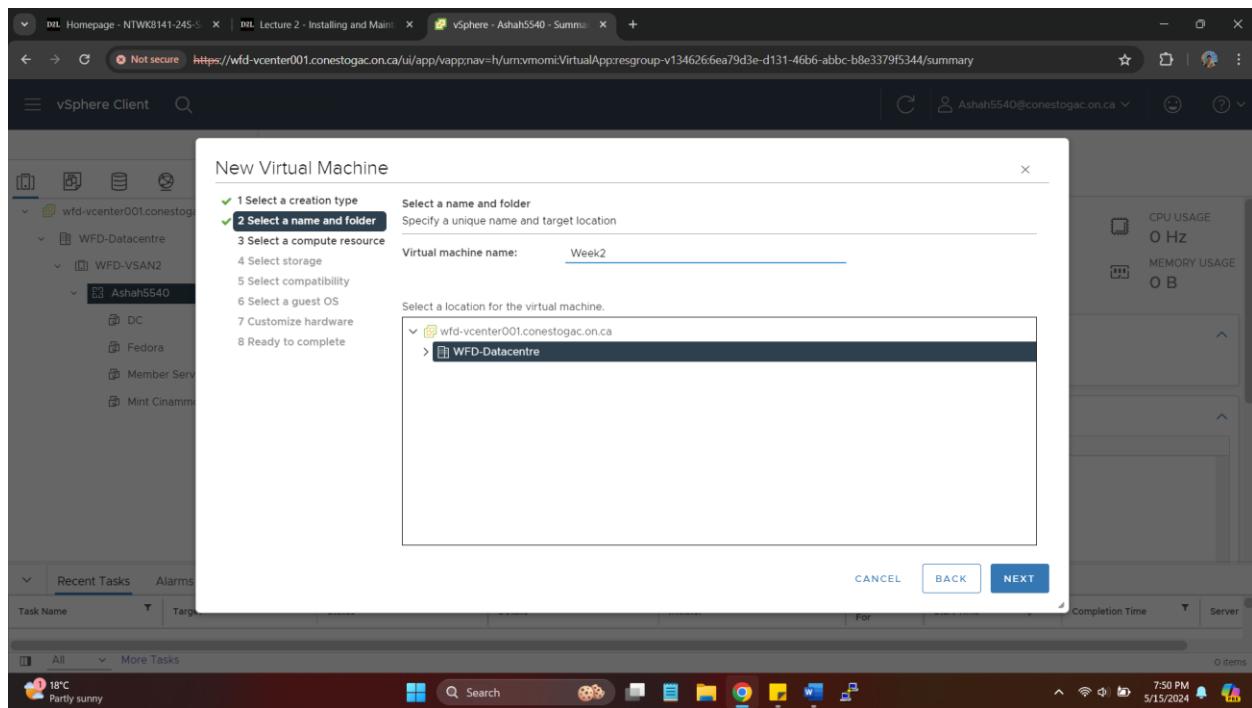
mv -f $depbase.Tpo $depbase.Po
depbase= echo lib/xmalloc.o | sed 's|[^/]*/$|,deps/8;s|\.\.o$||'|;
gcc -DLOCALLEDIR='"/usr/local/share/locale'" -DHAVE_CONFIG_H -I. -Ilib -Isrc -g -O2 -MT lib/xmalloc.o -MD -MP -MF $depbase.Tpo -c -o lib/xmalloc.o lib/xmalloc.c &&
mv -f $depbase.Tpo $depbase.Po
depbase= echo lib/xalloc-die.o | sed 's|[^/]*/$|,deps/8;s|\.\.o$||'|;
gcc -DLOCALLEDIR='"/usr/local/share/locale'" -DHAVE_CONFIG_H -I. -Ilib -Isrc -g -O2 -MT lib/xalloc-die.o -MD -MP -MF $depbase.Tpo -c -o lib/xalloc-die.o lib/xalloc-die.c &&
mv -f $depbase.Tpo $depbase.Po
depbase= echo lib/xstrndup.o | sed 's|[^/]*/$|,deps/8;s|\.\.o$||'|;
gcc -DLOCALLEDIR='"/usr/local/share/locale'" -DHAVE_CONFIG_H -I. -Ilib -Isrc -g -O2 -MT lib/xstrndup.o -MD -MP -MF $depbase.Tpo -c -o lib/xstrndup.o lib/xstrndup.c &&
mv -f $depbase.Tpo $depbase.Po
rm -f lib/libhello.a
ar cru lib/libhello.a lib/c-ctype.o lib/c-strcasecmp.o lib/c-strncasecmp.o lib/close-stream.o lib/closure.o lib/dlname.o lib/basename.o lib/dlname-igpl.o lib/basename-igpl.o lib/stripash.o lib/exitfail.o lib/localcharset.o lib/program.o lib/quotearg.o lib/strnlen.o lib/unlstd.o lib/wctype-h.o lib/xalloc.o lib/xalloc-die.o lib/xstrndup.o
ar: 'u' modifier ignored since 'b' is the default (see `U')
ranlib lib/libhello.a
depbase= echo src/hello.o | sed 's|[^/]*/$|,deps/8;s|\.\.o$||'|;
gcc -DLOCALLEDIR='"/usr/local/share/locale'" -DHAVE_CONFIG_H -I. -Ilib -Isrc -g -O2 -MT src/hello.o -MD -MP -MF $depbase.Tpo -c -o src/hello.o src/hello.c &&
mv -f $depbase.Tpo $depbase.Po
gcc -g -O2 -o hello src/hello.o ./lib/libhello.a
rm -f lib/charset.alias-t lib/charset.alias &&
/bin/bash ./lib/config.charset > x86_64-unknown-linux-gnu
mv lib/charset.alias-t lib/charset.alias
rm -f lib/ref-add.sed-t lib/ref-add.sed &&
sed -e '/#/d' -e '$!P' PKGNAME '@/hello/g' lib/ref-add.sin > lib/ref-add.sed-t &&
mv lib/ref-add.sed-t lib/ref-add.sed
rm -f lib/ref-del.sed-t lib/ref-del.sed &&
sed -e '/#/d' -e '$!P' PKGNAME '@/hello/g' lib/ref-del.sin > lib/ref-del.sed-t &&
mv lib/ref-del.sed-t lib/ref-del.sed
make[2]: Leaving directory '/home/aaagam/hello-2.10'
make[1]: Leaving directory '/home/aaagam/hello-2.10'
aaagam@aaagam:~/hello-2.10$
```

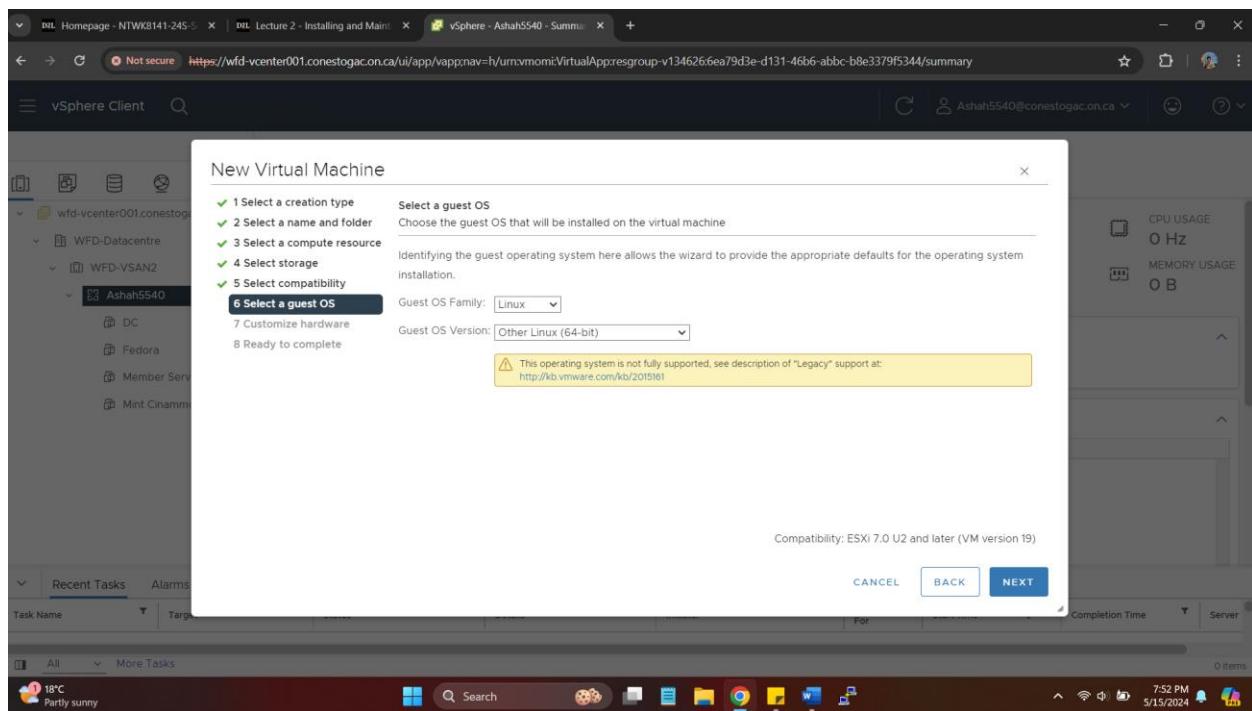
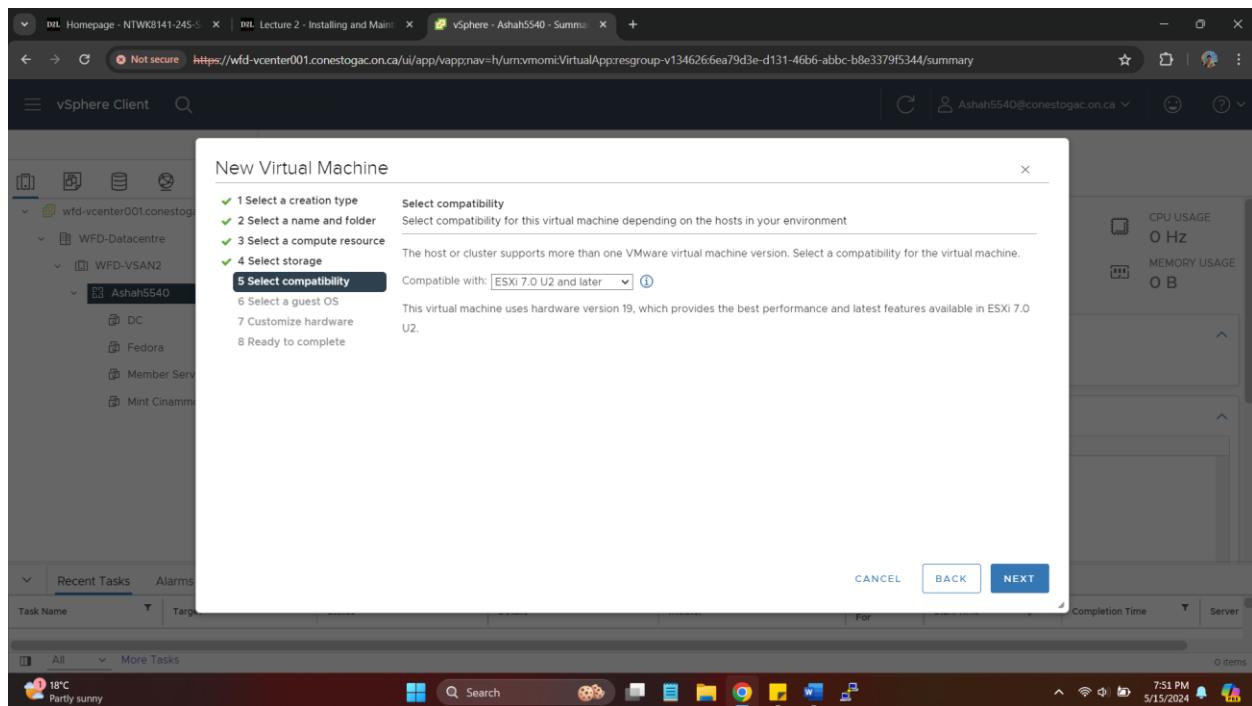
Install the application by typing **sudo make install**. Now the **hello** application is installed on your Linux system.

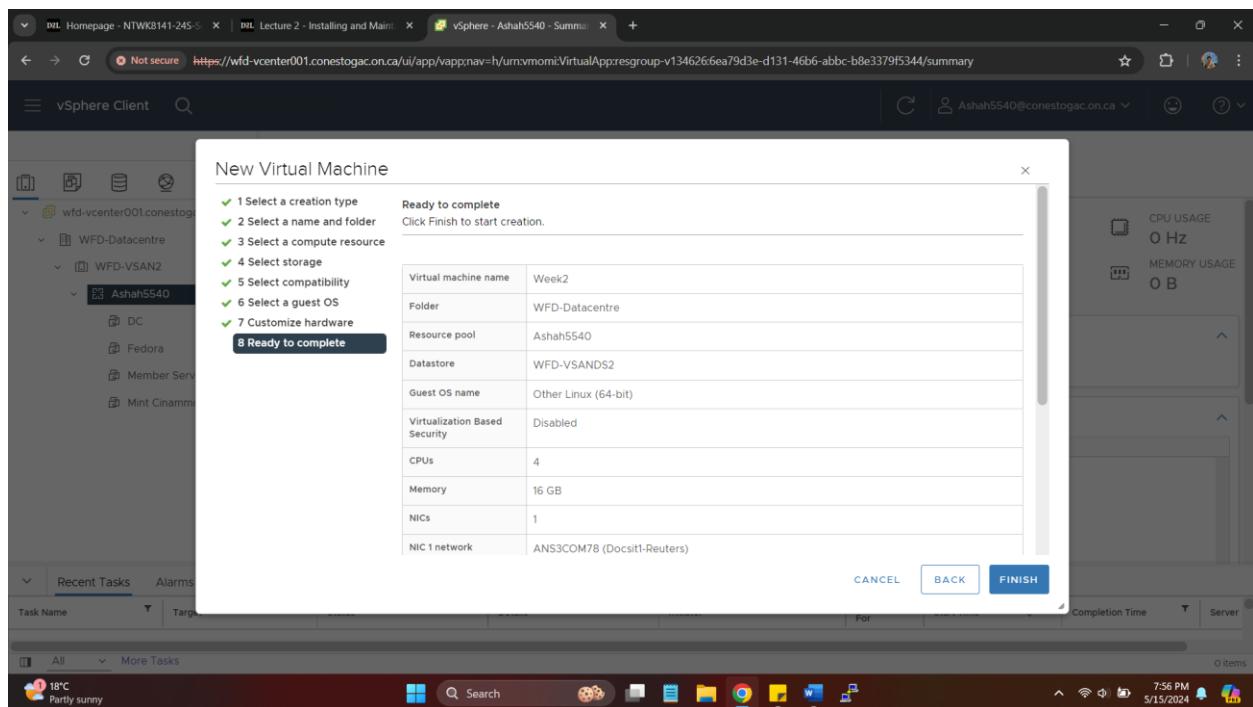
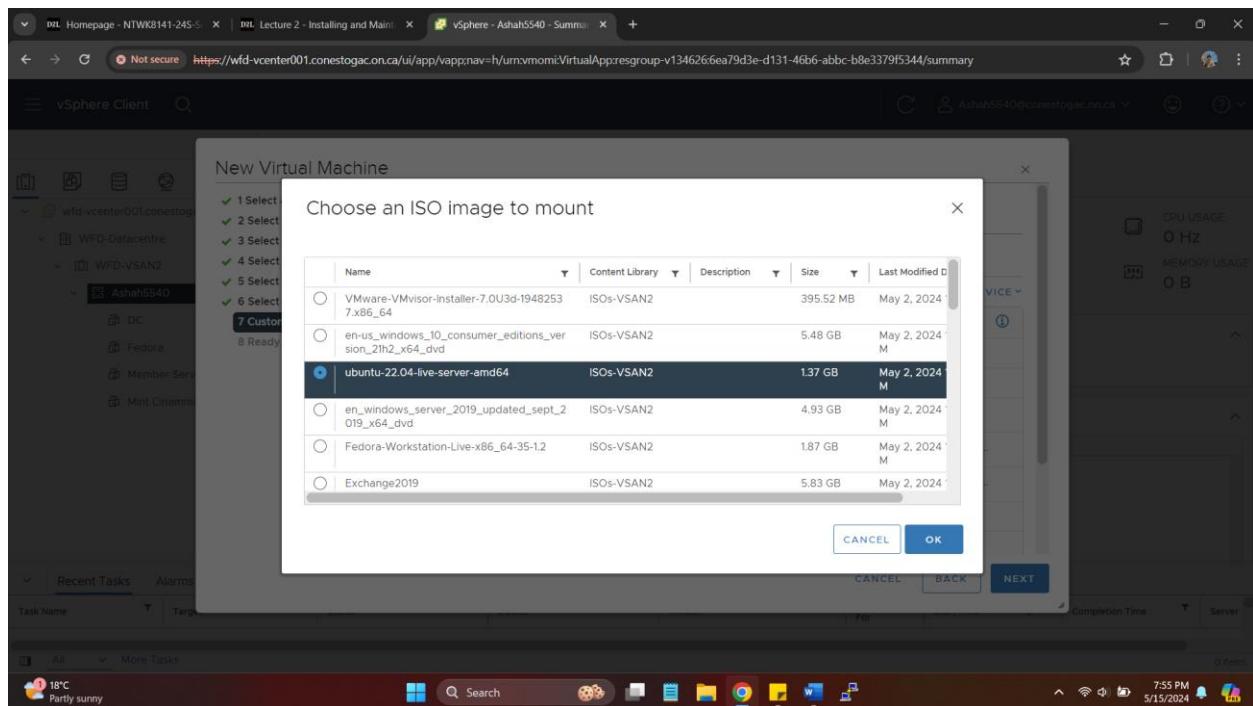
Week2

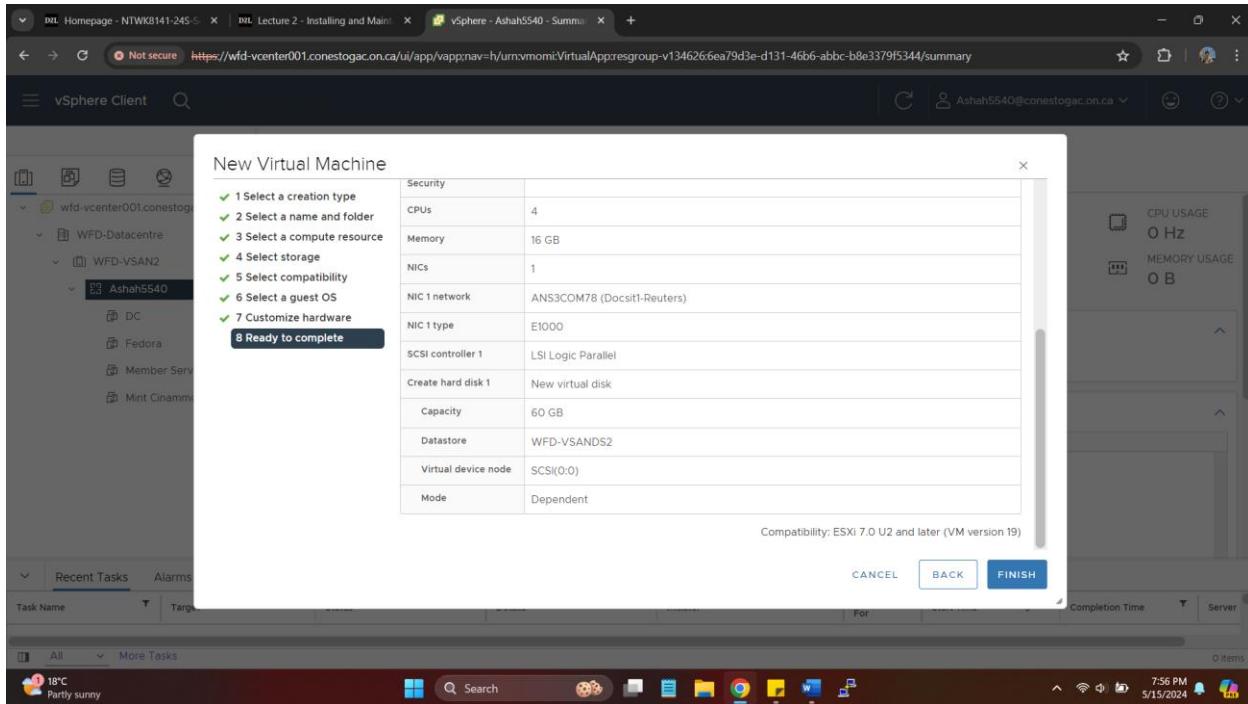
```
/usr/bin/mkdir -p '/usr/local/bin'  
/usr/bin/install -c hello '/usr/local/bin'  
if test yes = no; then  
    case 'linux-gnu' in  
        darwin[56]* )  
            need_charset_alias=true ;;  
        darwin* | cygwin* | mingw* | pu92* | cegcc* )  
            need_charset_alias=false ;;  
        *)  
            need_charset_alias=true ;;  
    esac ;;  
else  
    need_charset_alias=false ;;  
fi ;;  
if $need_charset_alias; then  
    /bin/bash /home/aagam/hello-2.10/build-aux/install-sh -d /usr/local/lib ;  
fi ;  
if test -f /usr/local/lib/charset.alias; then  
    sed -f lib/ref-add.sed /usr/local/lib/charset.alias > /usr/local/lib/charset.tmp ;  
    /usr/bin/install -c -m 644 /usr/local/lib/charset.tmp /usr/local/lib/charset.alias ;  
    rm -f /usr/local/lib/charset.tmp ;  
else  
    if $need_charset_alias; then  
        sed -f lib/ref-add.sed lib/charset.alias > /usr/local/lib/charset.tmp ;  
        /usr/bin/install -c -m 644 /usr/local/lib/charset.tmp /usr/local/lib/charset.alias ;  
        rm -f /usr/local/lib/charset.tmp ;  
    fi ;  
fi  
/usr/bin/mkdir -p '/usr/local/share/info'  
/usr/bin/install -c -m 644 ./doc/hello.info '/usr/local/share/info'  
install-info --info-dir='/usr/local/share/info' '/usr/local/share/info/hello.info'  
/usr/bin/mkdir -p '/usr/local/share/man/man1'  
/usr/bin/install -c -m 644 hello.1 '/usr/local/share/man/man1'  
make [3]: Leaving directory '/home/aagam/hello-2.10'  
make [2]: Leaving directory '/home/aagam/hello-2.10'  
make [1]: Leaving directory '/home/aagam/hello-2.10'  
aagam@aagam:~/hello-2.10$
```

Now the `hello` application is installed on your Linux system.









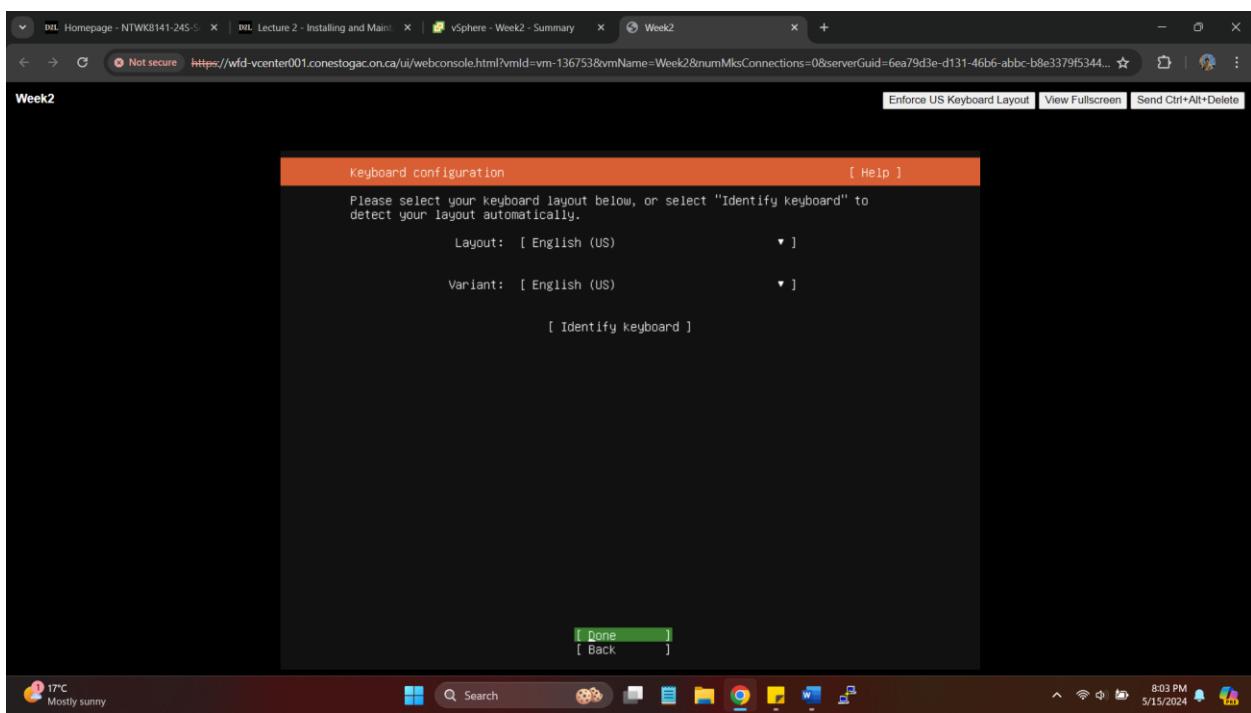
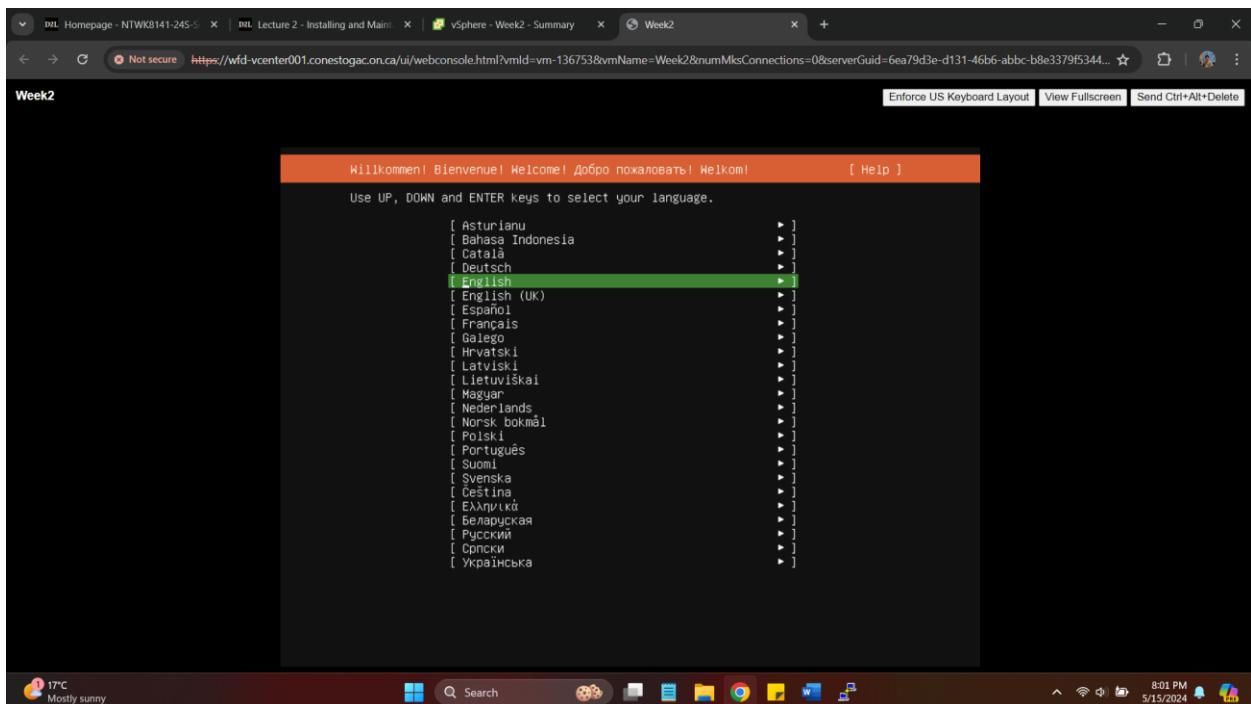
```

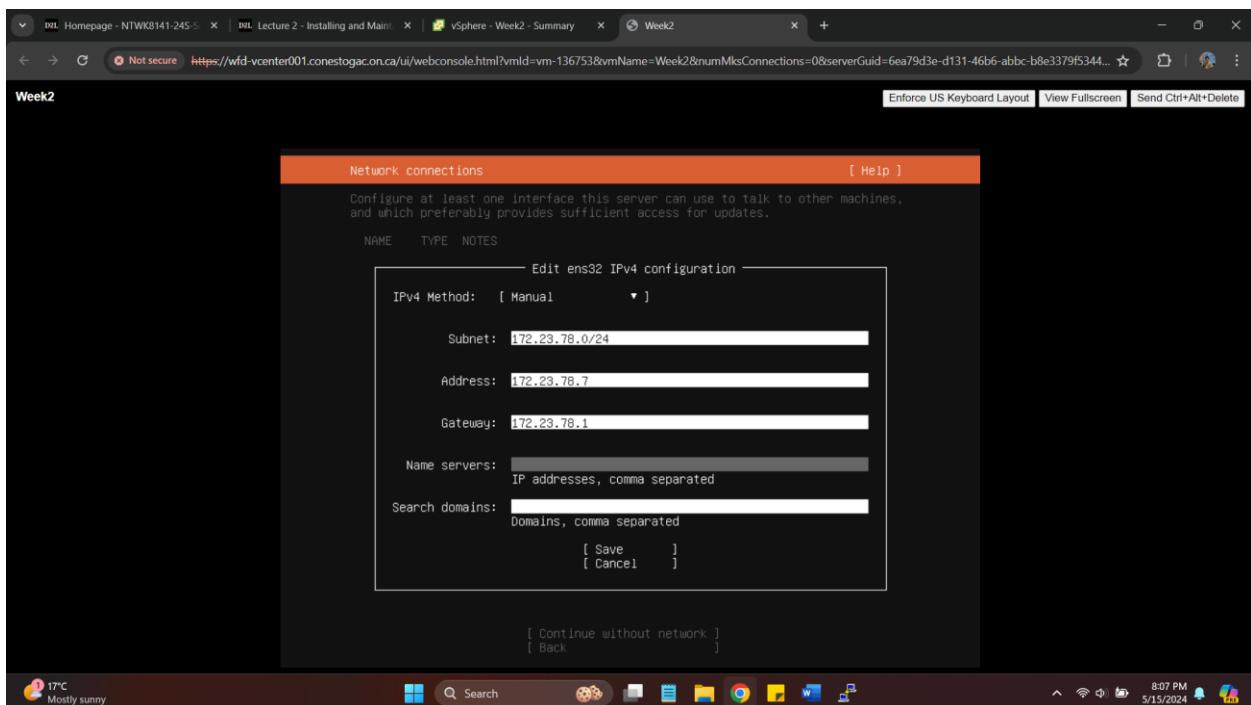
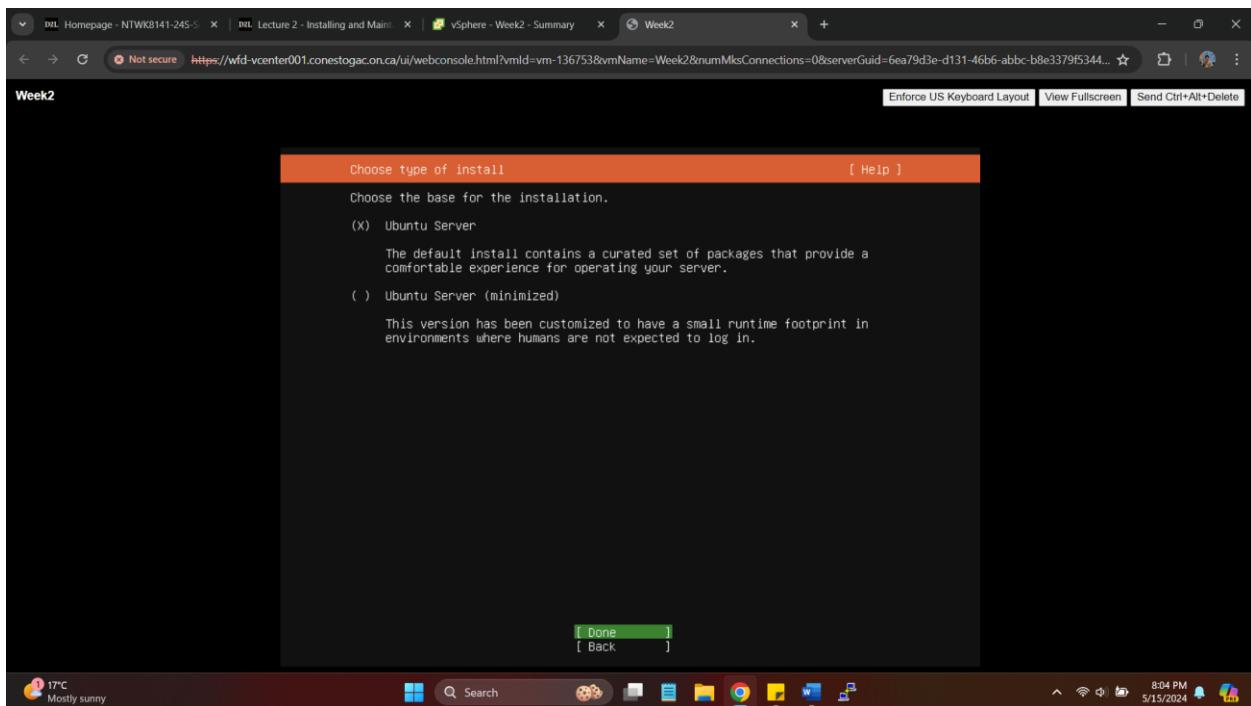
Homepage - NTWK8141-245- | Lecture 2 - Installing and Main... | vSphere - Week2 - Summary | Week2 | + | Not secure https://wfd-vcenter001.conestogac.on.ca/ui/webconsole.html?vmId=vm-136753&vmName=Week2&numMksConnections=0&serverGuid=6ea79d3e-d131-46b6-abbc-b8e3379f5344... ☆ | Enforce US Keyboard Layout | View Fullscreen | Send Ctrl+Alt+Delete

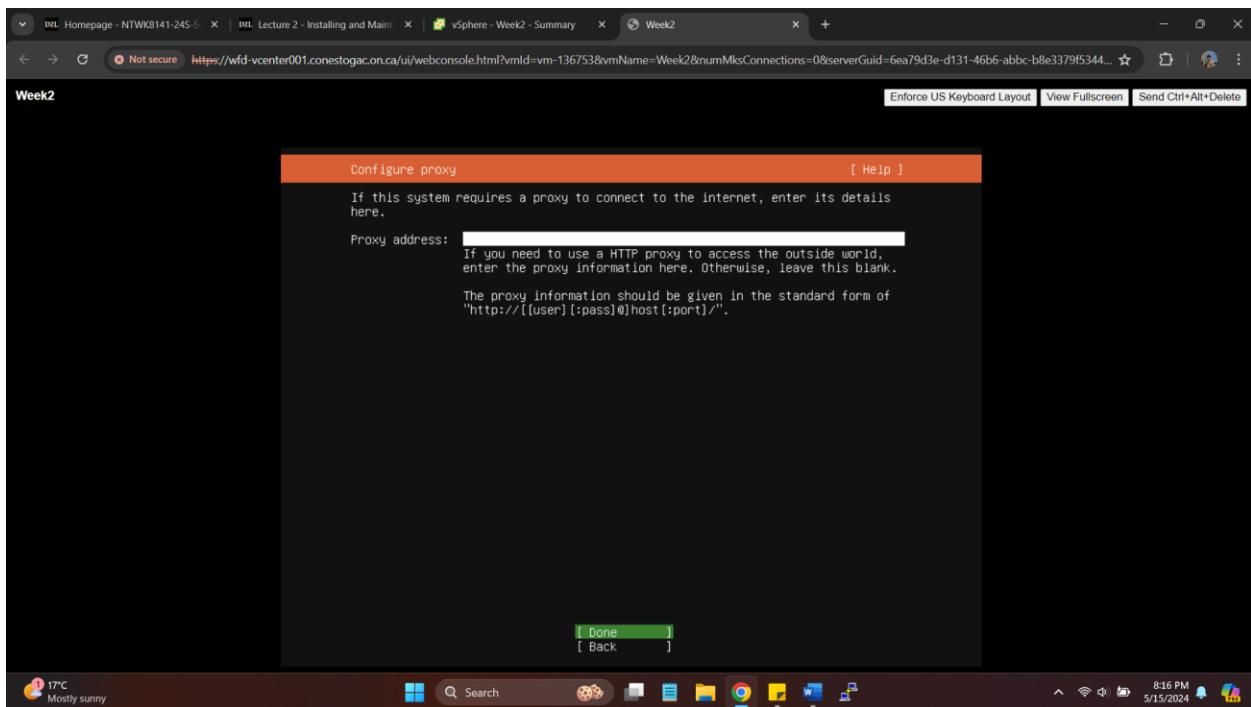
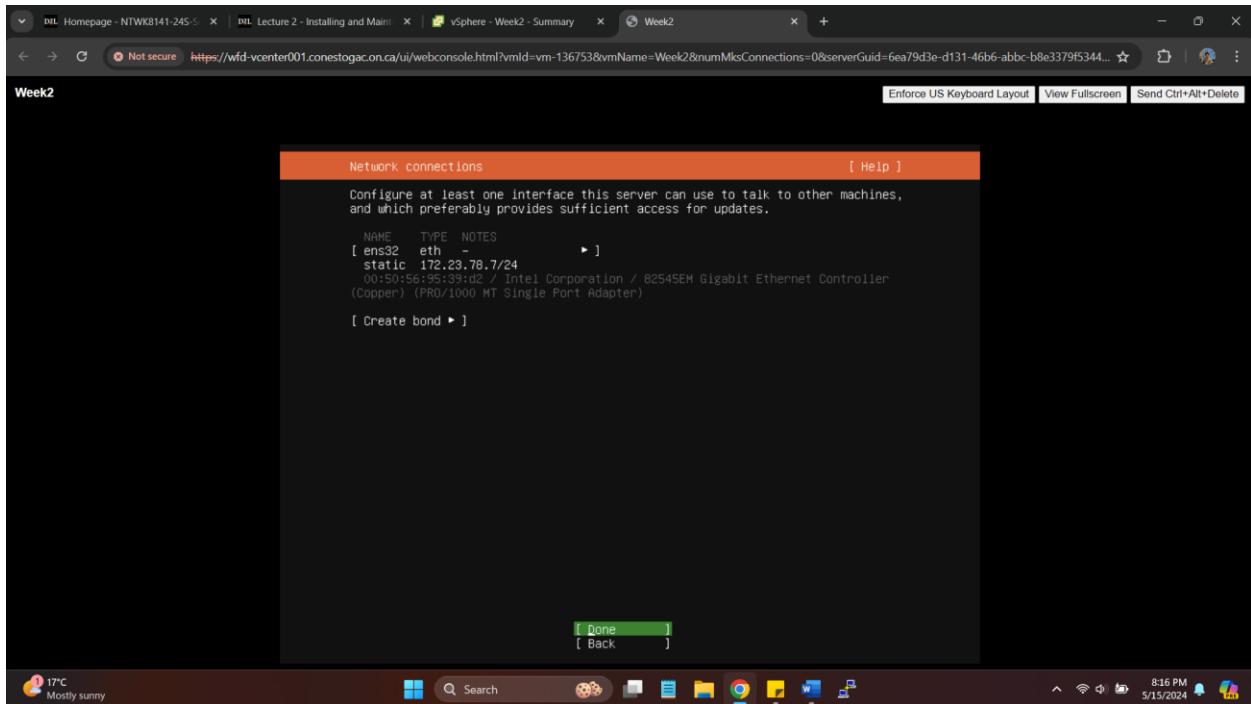
[ OK ] Reached target Preparation for Local File Systems.
Mounting Mount unit for core20, revision 1405...
Mounting Mount unit for lxd, revision 22923...
Mounting Mount unit for snapd, revision 15534...
Mounting Mount unit for subiquity, revision 3359...
Mounting /tmp...
[ OK ] Mounted /tmp.
[ OK ] Started Rule-based Manager for Device Events and Files.
[ OK ] Started Dispatch Password Requests to Console Directory Watch.
[ OK ] Reached target Local Encrypted Volumes.
[ OK ] Mounted Mount unit for subiquity, revision 3359.
[ OK ] Mounted Mount unit for snapd, revision 15534.
[ OK ] Mounted Mount unit for lxd, revision 22923.
[ OK ] Mounted Mount unit for core20, revision 1405.
[ OK ] Reached target Local File Systems.
Starting Set console font and keymap...
Starting Create final runtime dir for shutdown pivot root...
Starting Tell Plymouth To Write Out Runtime Data...
Starting Load AppArmor profiles managed internally by snapd...
Starting Create Volatile Files and Directories...
Starting Uncomplicated firewall...
[ OK ] Finished Create final runtime dir for shutdown pivot root.
[ OK ] Finished Uncomplicated firewall.
[ OK ] Finished Tell Plymouth To Write Out Runtime Data.
[ OK ] Finished Create Volatile Files and Directories.
Starting Network Time Synchronization...
Starting Record System Boot/Shutdown in UTMP...
[ OK ] Started Authentication service for virtual machines hosted on VMware.
Starting Service for virtual machines hosted on VMware.
Starting Initial cloud-init job (pre-networking)...
[ OK ] Finished Record System Boot/Shutdown in UTMP.
[ OK ] Started Network Time Synchronization.
[ OK ] Reached target System Time Set.
[ OK ] Finished Set console font and keymap.
[ OK ] Finished Load AppArmor profiles managed internally by snapd.
[ OK ] Listening on Load/Save RF Kill Switch Status /dev/rfkill Watch.

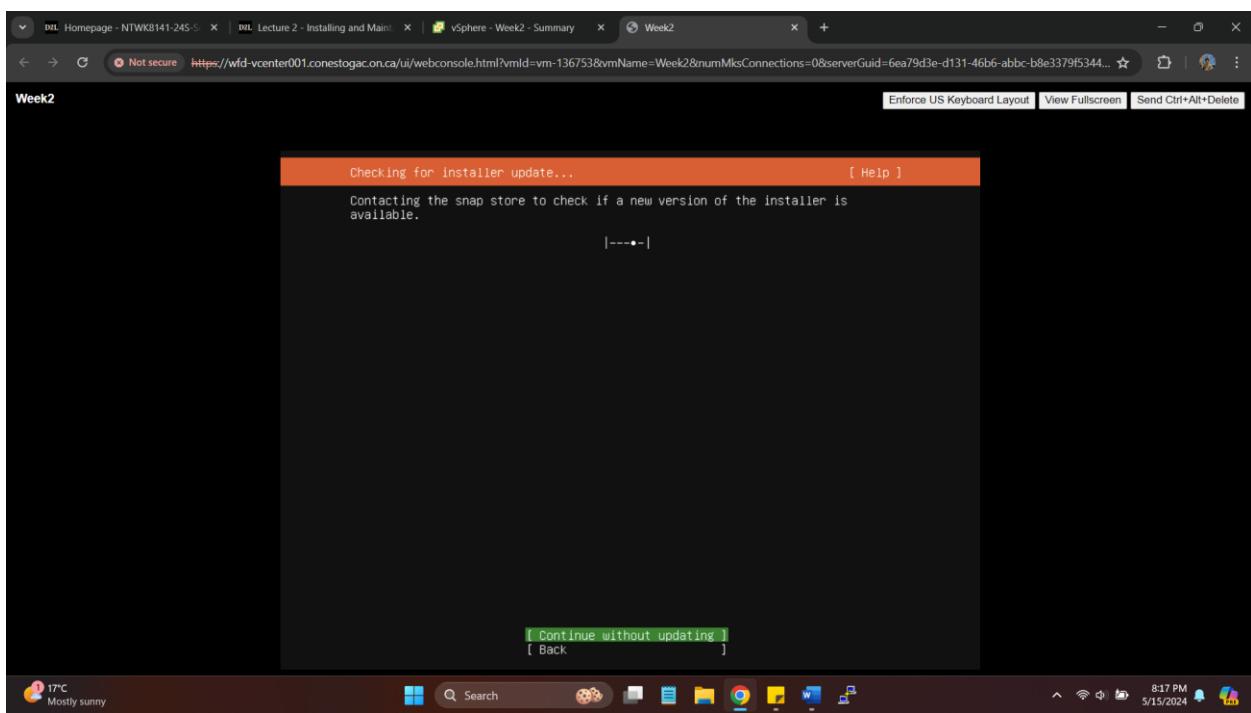
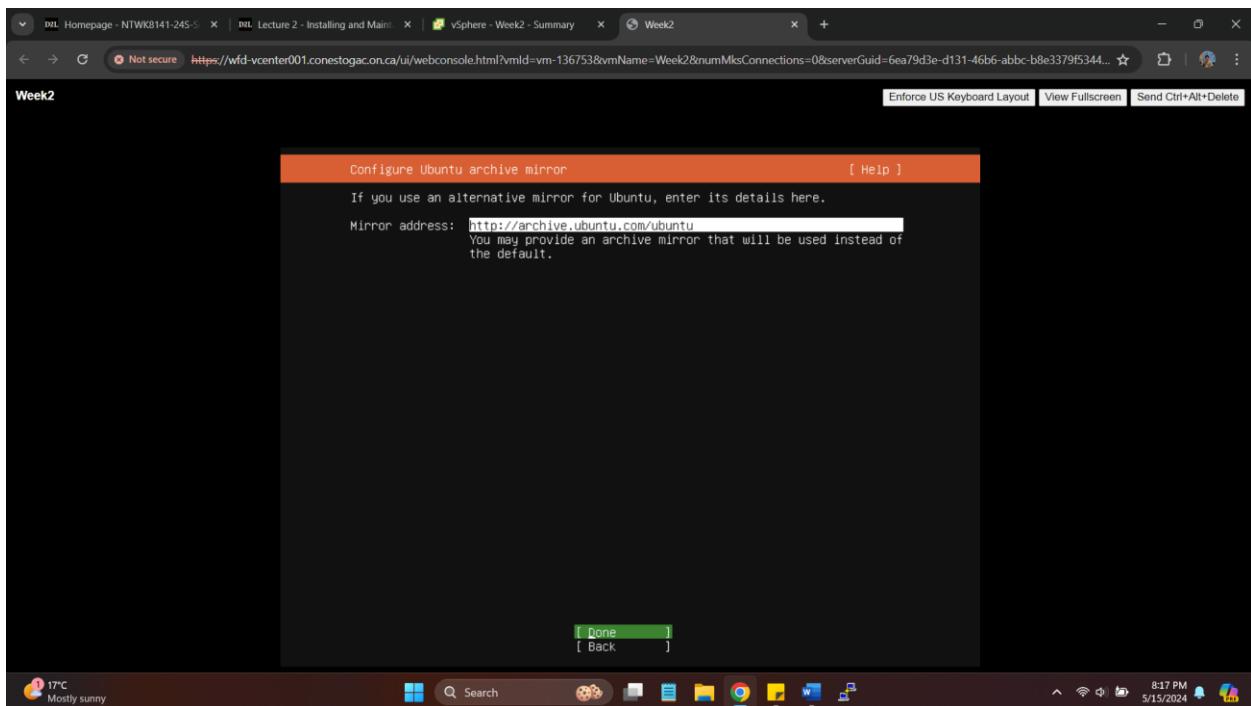
7:56 PM 5/15/2024

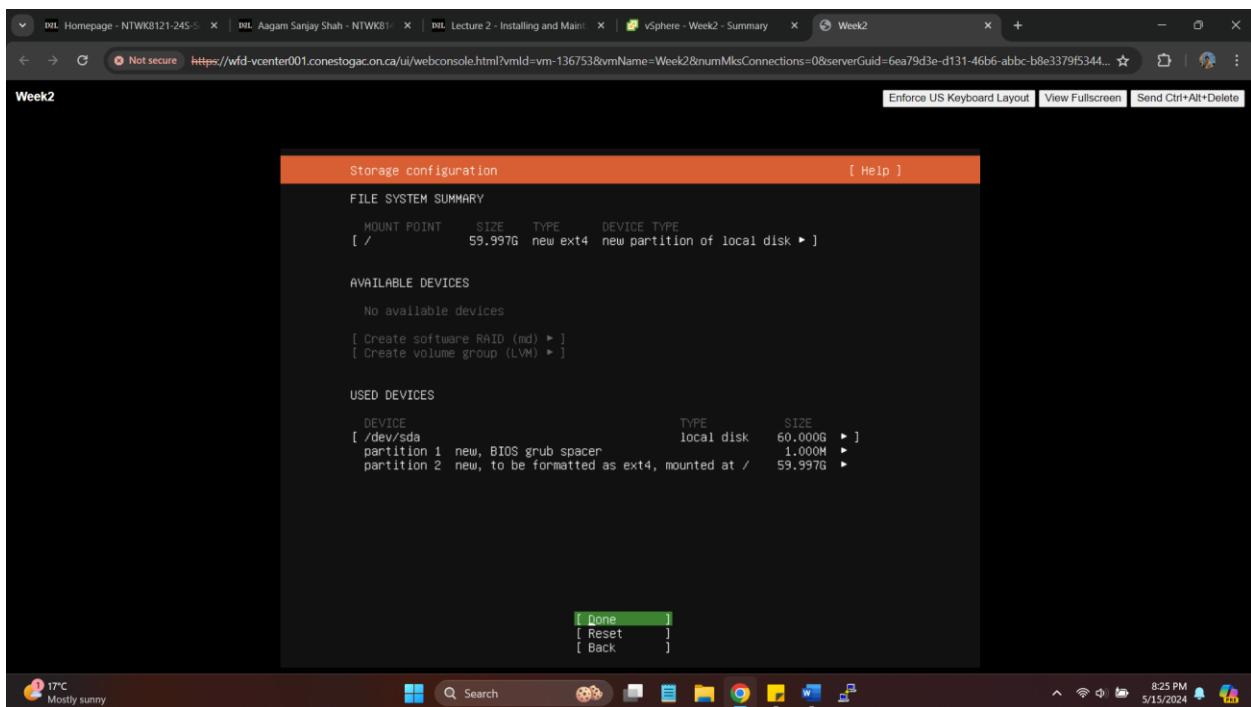
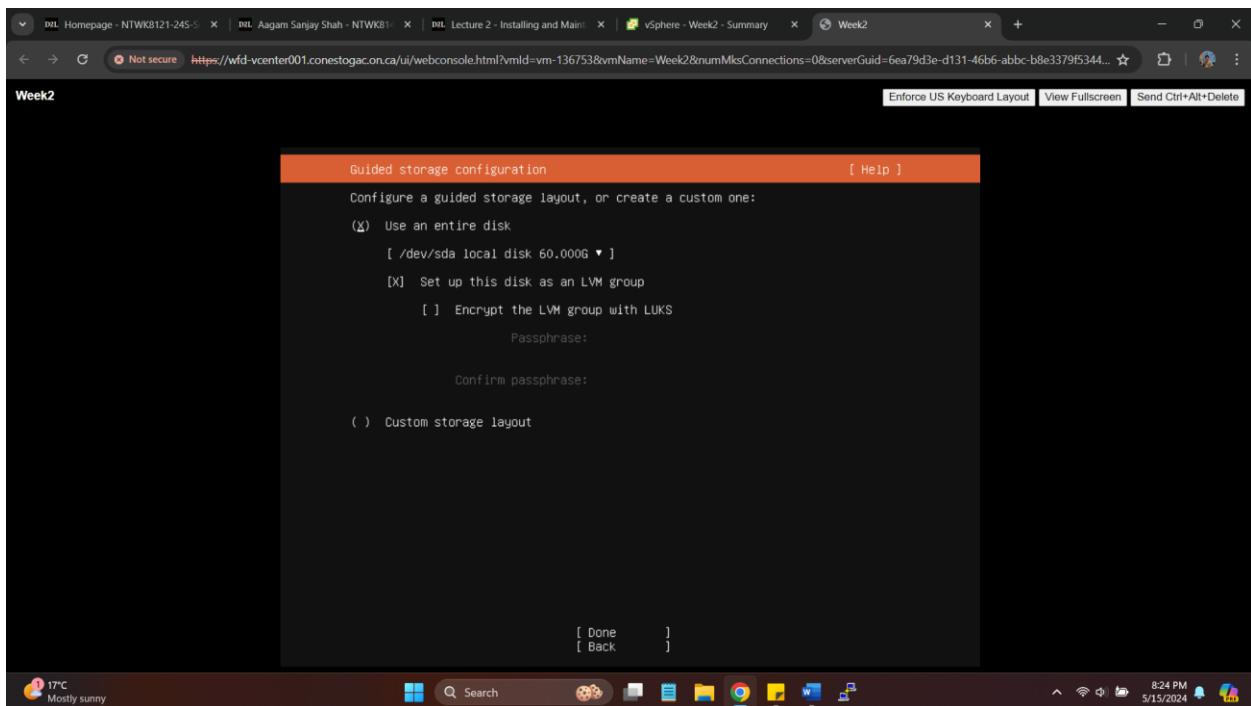
```

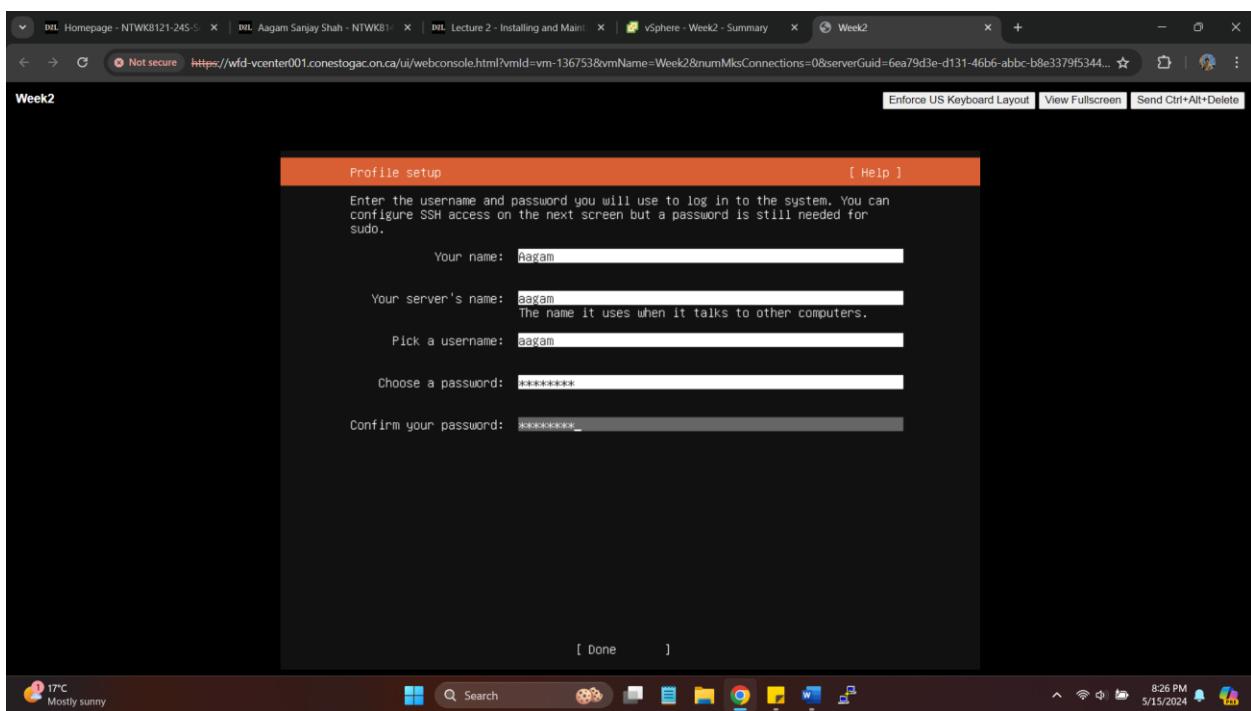
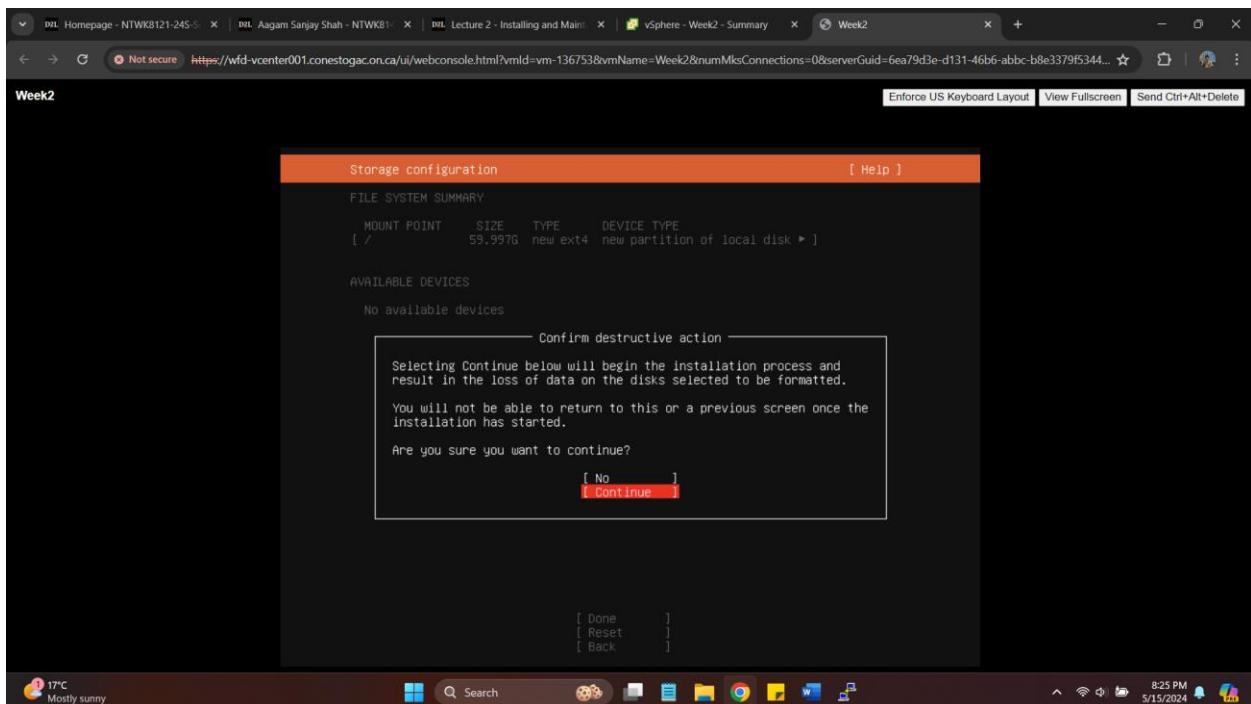


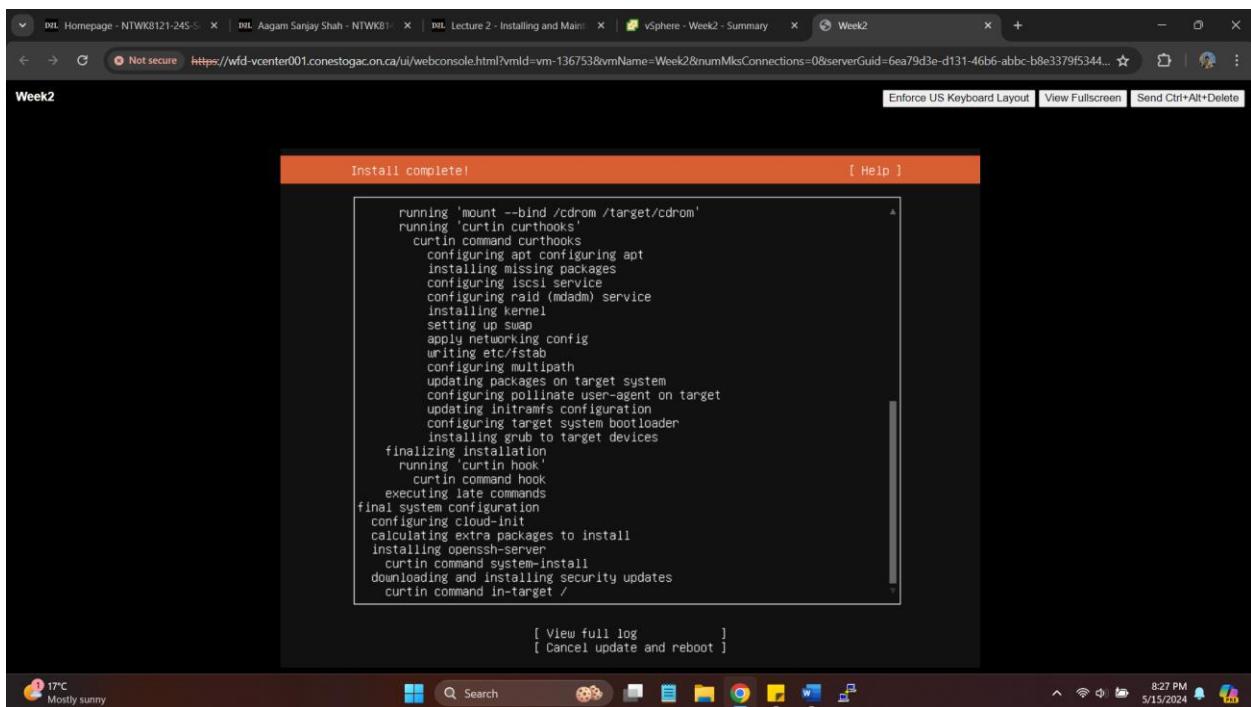
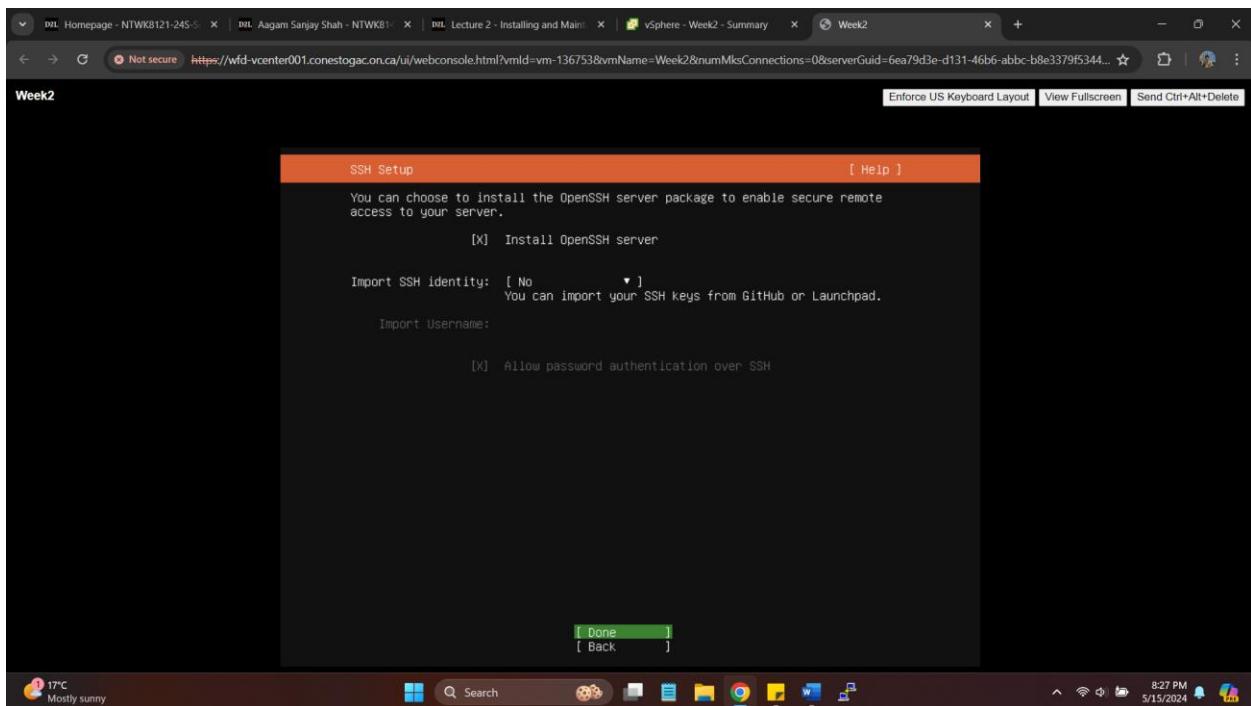












The screenshot shows a Windows desktop environment with a terminal window open in a browser. The terminal window displays log output from the cloud-init process on a VM. The log includes messages about generating locales, SSH key fingerprints, and host key keys. It ends with a warning about a failed datasource. The desktop taskbar at the bottom shows various icons, and the system tray in the bottom right corner indicates the date and time as 5/15/2024 at 9:30 PM.

```
[ 54.186097] cloud-init[1470]: Generating locales (this might take a while)...
[ 55.702666] cloud-init[1470]: en_US.UTF-8... done
[ 55.703116] cloud-init[1470]: Generation complete.
[ 56.181321] cloud-init[1517]: Cloud-init v. 22.1-14-g2e17a0d6-0ubuntu1~22.04.5 running 'modules:final' at Thu, 16 May 2024 00:31:40 +0000. Up 56.25 seconds
cl-Info: no authorized SSH keys fingerprints found for user aagam.
(14-May 16 00:31:41 cloud-init: ##### BEGIN SSH HOST KEY FINGERPRINTS #####
(14-May 16 00:31:41 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
(14-May 16 00:31:41 cloud-init: 1024 SHA256:FVXelmsPLgC1tgAONP2EAQCBzJRHh6Wxk0NauhN9w root@aagam (DSA)
(14-May 16 00:31:41 cloud-init: 256 SHA256:10TUrdnQWLp9x04V3q4ECbc5406227JAQ+016mj+utY root@aagam (ECCSA)
(14-May 16 00:31:41 cloud-init: 256 SHA256:JAm3gVOEJuuhSXKAwn9Kf9akIn2zn1tp/qKLvKNODE root@aagam (DSS)
(14-May 16 00:31:41 cloud-init: 3072 SHA256:tvdiquIrhtzpSmFjFaV+vnxFdFKSL/Eyvgpbvou5ris root@aagam (RSA)
(14-May 16 00:31:41 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
(14-May 16 00:31:41 cloud-init: ##### BEGIN SSH HOST KEY KEYS #####
ecdsa-sha2-nistp256 AAAAE2VjZHNlWNoYT1bmIzdHRYNTYAA8BBAl1tqlJ59V21HvyZS/u0FhYT11k7Un78nytfr156BmtL/3f1l02Wk0HmnmmbvK+NPto40M_PSl2JVEeqvU5 root@aagam
ssh-ed25519 AAAAC3NzaC1lZDI1NTESAAAIALSzceJvbLeBHMDR8GmJ21W8yguw24VbbXuS6FUghTT root@aagam
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQABAAAABgqD0Uu01BnrcsYFUMJ/XG4zJsn16YDGpxvLL13t5a0tbLo3q12E6Gmfo7hls
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQABAAAABgqD0Uu01BnrcsYFUMJ/XG4zJsn16YDGpxvLL13t5a0tbLo3q12E6Gmfo7hls
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQABAAAABgqD0Uu01BnrcsYFUMJ/XG4zJsn16YDGpxvLL13t5a0tbLo3q12E6Gmfo7hls
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQABAAAABgqD0Uu01BnrcsYFUMJ/XG4zJsn16YDGpxvLL13t5a0tbLo3q12E6Gmfo7hls
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQABAAAABgqD0Uu01BnrcsYFUMJ/XG4zJsn16YDGpxvLL13t5a0tbLo3q12E6Gmfo7hls
90C7d13aLIxfSA4+42unJLHaBXcZ5nCaFjYX2z/8dF6q0lg17taDyvfhcs8aNHcgri282ulUsaWC2va4LXRJ1jmJ2DcmehT0
VQCbwvDnCc7E10N7/9iCT9unbtMrJupnb/X2oAVCsaFmluDs4q0tNNUh3e5Nfq07nITf01VaE110yd16sv/OSv+taQuz5vFb1
ukRD9011f20D700135Mw1LK1LUDsQffffxsyyU150J0ryJ6J0E= root@aagam
-----END SSH HOST KEY KEYS-----
[ 56.252039] cloud-init[1517]: Cloud-init v. 22.1-14-g2e17a0d6-0ubuntu1~22.04.5 finished at Thu, 16 May 2024 00:31:41 +0000. Datasource DataSourceNone. Up 56.25 seconds
[ 56.252335] cloud-init[1517]: 2024-05-16 00:31:41,027 - cc_final_message.py[WARNING]: Used fallback datasource
```