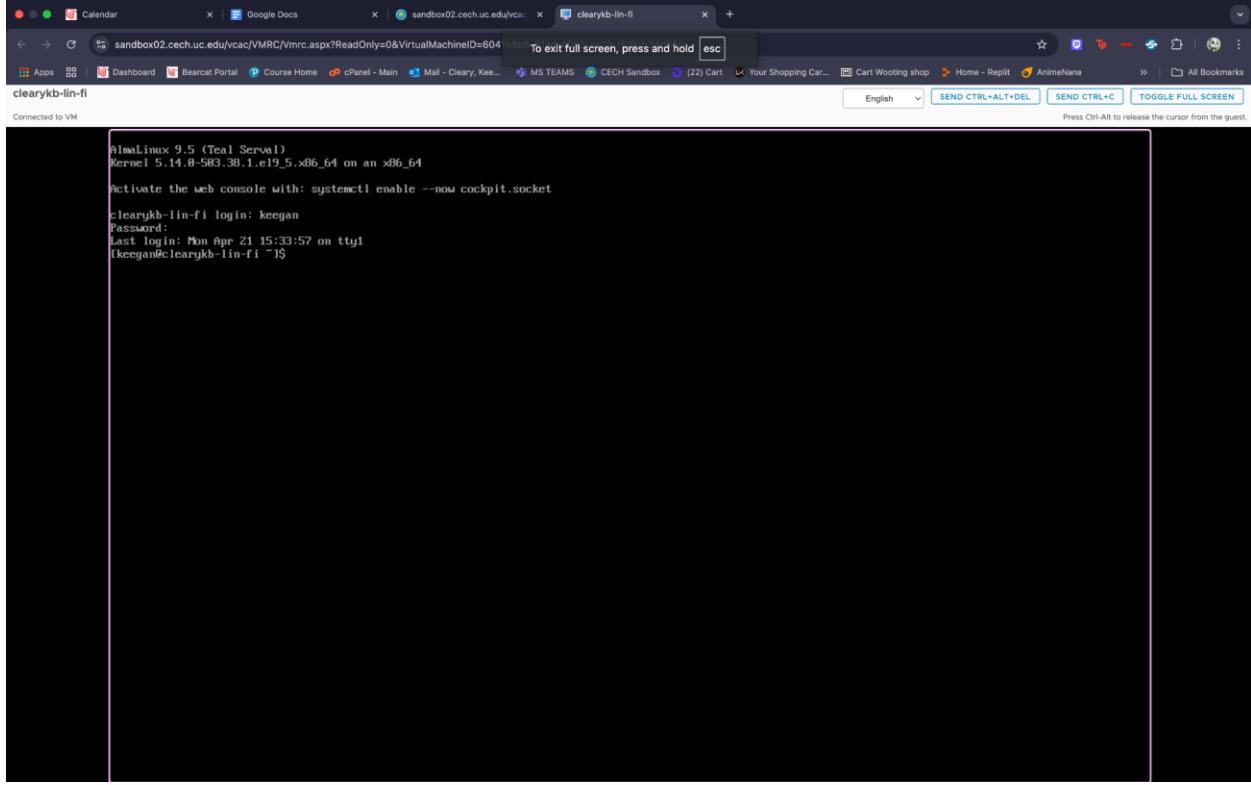
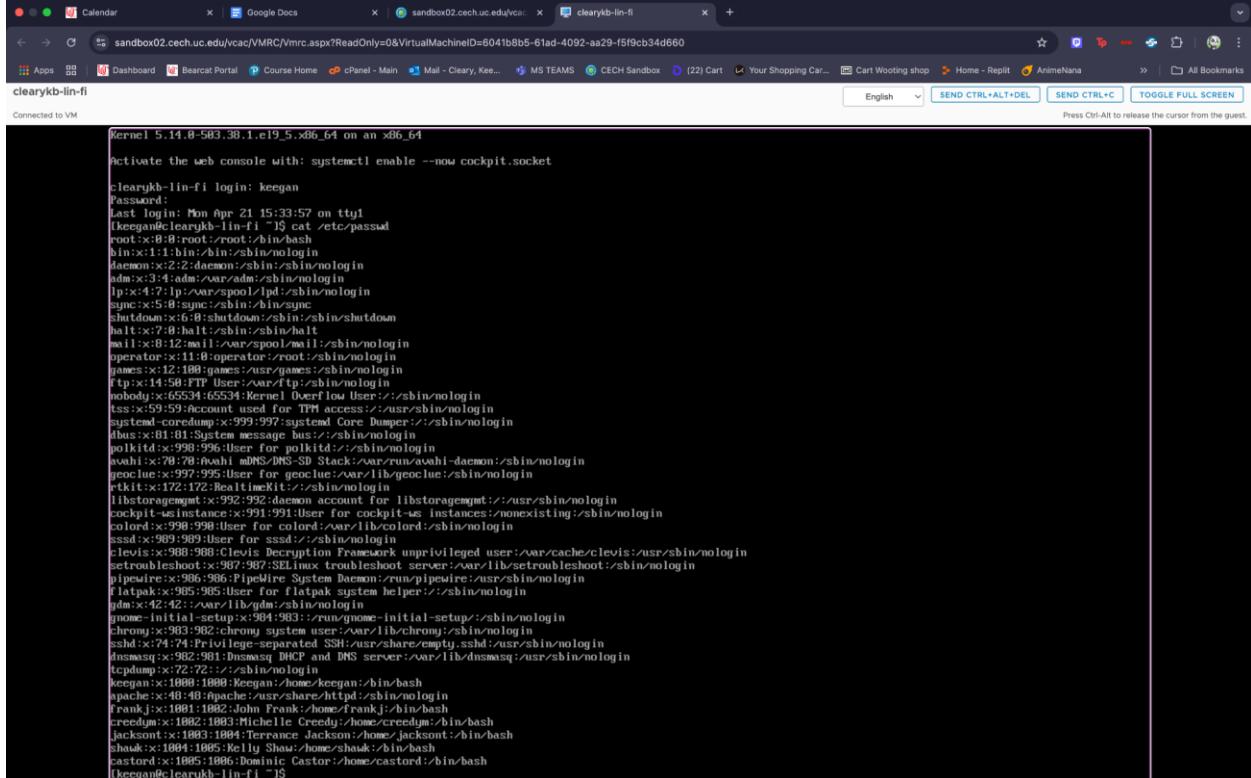


## The command prompt for the server.



A screenshot of a web browser window displaying a terminal session. The title bar shows the URL as "sandbox02.cech.uc.edu/vvac/Vmrc.aspx?ReadOnly=0&VirtualMachineID=6041bBb5-61ad-4092-aa29-f5f9cb34d660". The terminal window displays a Almalinux 9.5 (Teal Serial) kernel message followed by a login prompt for "clearykb-lin-fi login: keegan". The password is masked. The terminal window has a dark background and white text. Buttons at the bottom right include "SEND CTRL+ALT+DEL", "SEND CTRL+C", and "TOGGLE FULL SCREEN".

The /etc/passwd file showing user accounts for the Web Dev team.



A screenshot of a web browser window displaying a terminal session. The title bar shows the URL as "sandbox02.cech.uc.edu/vvac/Vmrc.aspx?ReadOnly=0&VirtualMachineID=6041bBb5-61ad-4092-aa29-f5f9cb34d660". The terminal window displays the full contents of the /etc/passwd file, listing numerous user accounts. The file starts with "Kernel 5.14.8-583.38.1.el9\_5.x86\_64 on an x86\_64" and ends with "keegan@clearykb-lin-fi ~\\$". The terminal window has a dark background and white text. Buttons at the bottom right include "SEND CTRL+ALT+DEL", "SEND CTRL+C", and "TOGGLE FULL SCREEN".

The /etc/group file containing a group for the Web Dev team with user accounts.

```
floppy:x:19:
games:x:20:
tape:x:33:
dialin:x:39:
tftp:x:58:
lock:x:54:
audio:x:63:
users:x:100:
nobody:x:65534:
utmp:x:22:
utempter:x:35:
ssh_keys:x:101:
tss:x:59:clevis
input:x:999:
xam:x:36:
render:x:998:
system-journal:x:198:
systemd-coredump:x:997:
ibus:x:81:
polkit:x:996:
avahi:x:78:
geoclue:x:995:
printadmin:x:994:
rtkit:x:172:
sgx:x:993:
libstoragemgmt:x:992:
cockpit-wsinstance:x:991:
colorl:x:990:
sssd:x:999:
clevis:x:988:
setroubleshoot:x:987:
pipewire:x:986:
flatpak:x:985:
hrlapix:x:984:
gdm:x:42:
gnome-initial-setup:x:983:
chromy:x:982:
slocate:x:21:
sshd:x:74:
dnsmasq:x:981:
tcpdump:x:72:
keegan:x:1000:
webdev:x:1001:frankj,creedy,m,jackson,shauk,castord
apache:x:49:
FrankJ:x:1002:
creedy:x:1003:
Jackson:x:1004:
shauk:x:1005:
castord:x:1006:
[keegan@clearykb-lin-fi ~]$
```

The /etc/group file containing a group for the Web Dev team with user accounts.

```
lock:x:54:
audio:x:63:
users:x:100:
nobody:x:65534:
utmp:x:22:
utempter:x:35:
ssh_keys:x:101:
tss:x:59:clevis
input:x:999:
xam:x:36:
render:x:998:
system-journal:x:198:
systemd-coredump:x:997:
ibus:x:81:
polkit:x:996:
avahi:x:78:
geoclue:x:995:
printadmin:x:994:
rtkit:x:172:
sgx:x:993:
libstoragemgmt:x:992:
cockpit-wsinstance:x:991:
colorl:x:990:
sssd:x:999:
clevis:x:988:
setroubleshoot:x:987:
pipewire:x:986:
flatpak:x:985:
hrlapix:x:984:
gdm:x:42:
gnome-initial-setup:x:983:
chromy:x:982:
slocate:x:21:
sshd:x:74:
dnsmasq:x:981:
tcpdump:x:72:
keegan:x:1000:
webdev:x:1001:frankj,creedy,m,jackson,shauk,castord
apache:x:49:
FrankJ:x:1002:
creedy:x:1003:
Jackson:x:1004:
shauk:x:1005:
castord:x:1006:
[keegan@clearykb-lin-fi ~]$ ls -al <share
total 9
drwxr-xr-x  3 root root  21 Apr 21 17:05 .
dr-xr-xr-x  19 root root 248 Apr 21 17:05 ..
drwxrwxrwx  2 root webdev 24 Apr 21 18:02 <share
[keegan@clearykb-lin-fi ~]$
```

The settings for the shared directory in the samba configuration file.

Connected to VM

```
netbios name = clearlykb-lin-fi
workgroup = workgroup
short
[share]
path = /share/website
read only = no

Keegan
krovboy

"/etc/samba/smb.conf" [New] 8L, 109B written
[keegan@clearlykb-lin-fi ~]$ _
```

The settings for the Document Root directory in the Apache configuration file.

```
GNU nano 5.6.1          /etc/httpd/conf/httpd.conf
ServerName gives the name and port that the server uses to identify itself.
This can often be determined automatically, but we recommend you specify
it explicitly to prevent problems during startup.

If your host doesn't have a registered DNS name, enter its IP address here.

ServerName www.example.com:80

Deny access to the entirety of your server's filesystem. You must
explicitly permit access to web content directories in other
<Directory> blocks below.

<Directory >
    AllowOverride none
    Require all denied
</Directory>

Note that from this point forward you must specifically allow
particular features to be enabled - so if something's not working as
you might expect, make sure that you have specifically enabled it
below.

DocumentRoot: The directory out of which you will serve your
documents. By default, all requests are taken from this directory, but
symbolic links and aliases may be used to point to other locations.

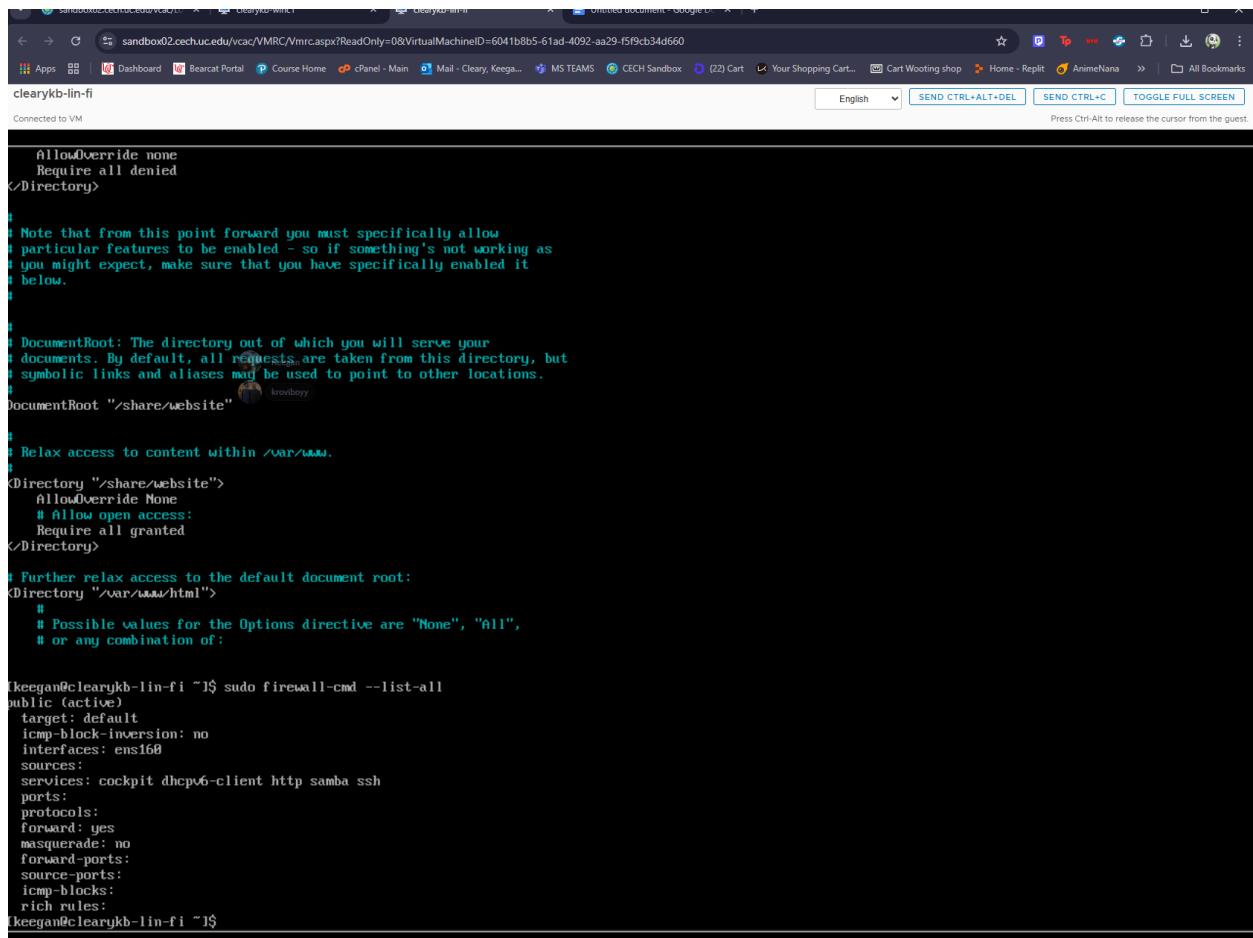
DocumentRoot "/share/website"

Relax access to content within /var/www.

<Directory "/share/website">
    AllowOverride None
    # Allow open access:
    Require all granted
</Directory>

Further relax access to the default document root:
<Directory ">/var/www/html">
    #
    # Possible values for the Options directive are "None", "All",
    # or any combination of:
File Name to Write: /etc/httpd/conf/httpd.conf
G Help      M-D DOS Format      M-A Append      M-B Backup File
C Cancel    M-M Mac Format      M-P Prepend     M-T Browse
```

Allowed services through the system firewall.



The screenshot shows a web browser window with multiple tabs open. The active tab displays a configuration file, likely an Apache httpd.conf file, with syntax highlighting for code. The file contains various directives such as AllowOverride, Require, DocumentRoot, and Directory. A note in the file states: "Note that from this point forward you must specifically allow particular features to be enabled - so if something's not working as you might expect, make sure that you have specifically enabled it below." Another note says: "DocumentRoot: The directory out of which you will serve your documents. By default, all requests are taken from this directory, but symbolic links and aliases may be used to point to other locations." The file also includes a comment about "Relax access to content within /var/www." and a "Further relax access to the default document root:" section. At the bottom of the file, there is a command-line prompt: "keegan@clearykb-lin-fi ~]\$ sudo firewall-cmd --list-all".

```
allowOverride none
Require all denied
</Directory>

# Note that from this point forward you must specifically allow
# particular features to be enabled - so if something's not working as
# you might expect, make sure that you have specifically enabled it
# below.

# DocumentRoot: The directory out of which you will serve your
# documents. By default, all requests are taken from this directory, but
# symbolic links and aliases may be used to point to other locations.
DocumentRoot "/share/website" krowboy

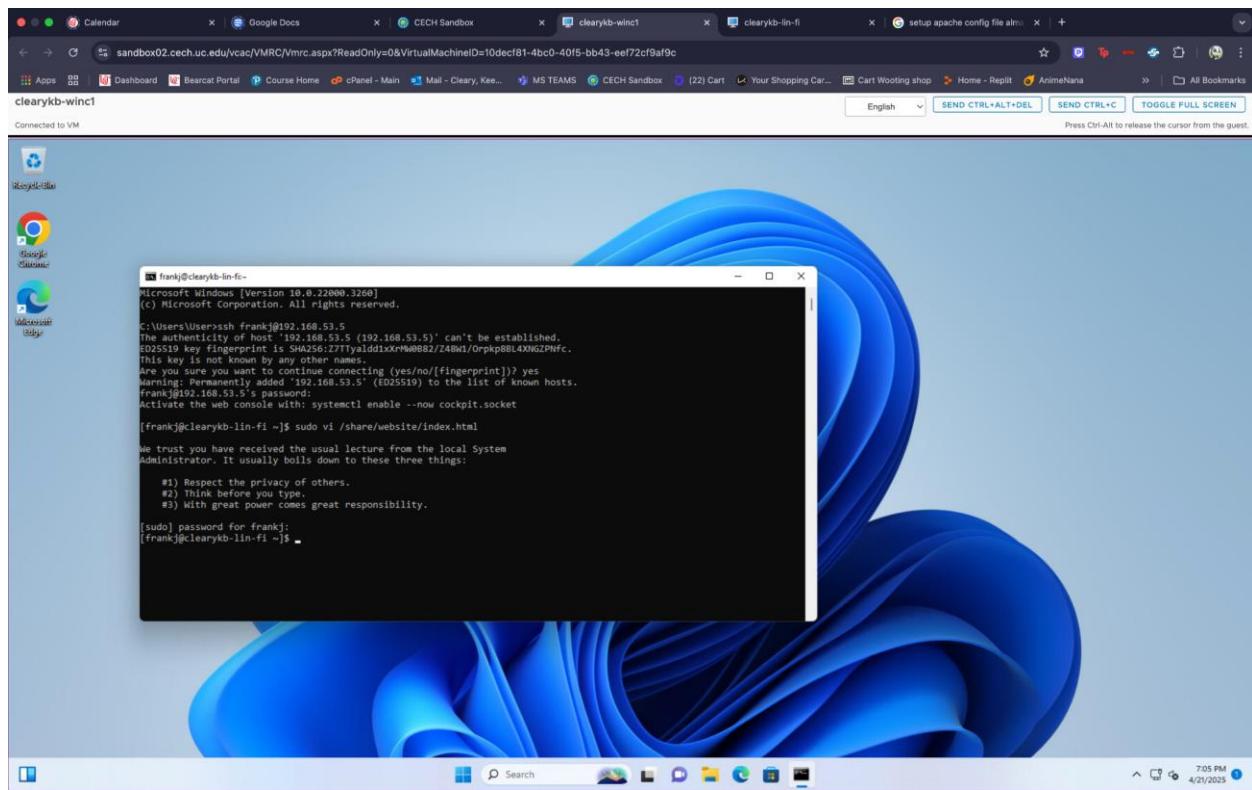
# Relax access to content within /var/www.

<Directory "/share/website">
    AllowOverride None
    # Allow open access:
    Require all granted
</Directory>

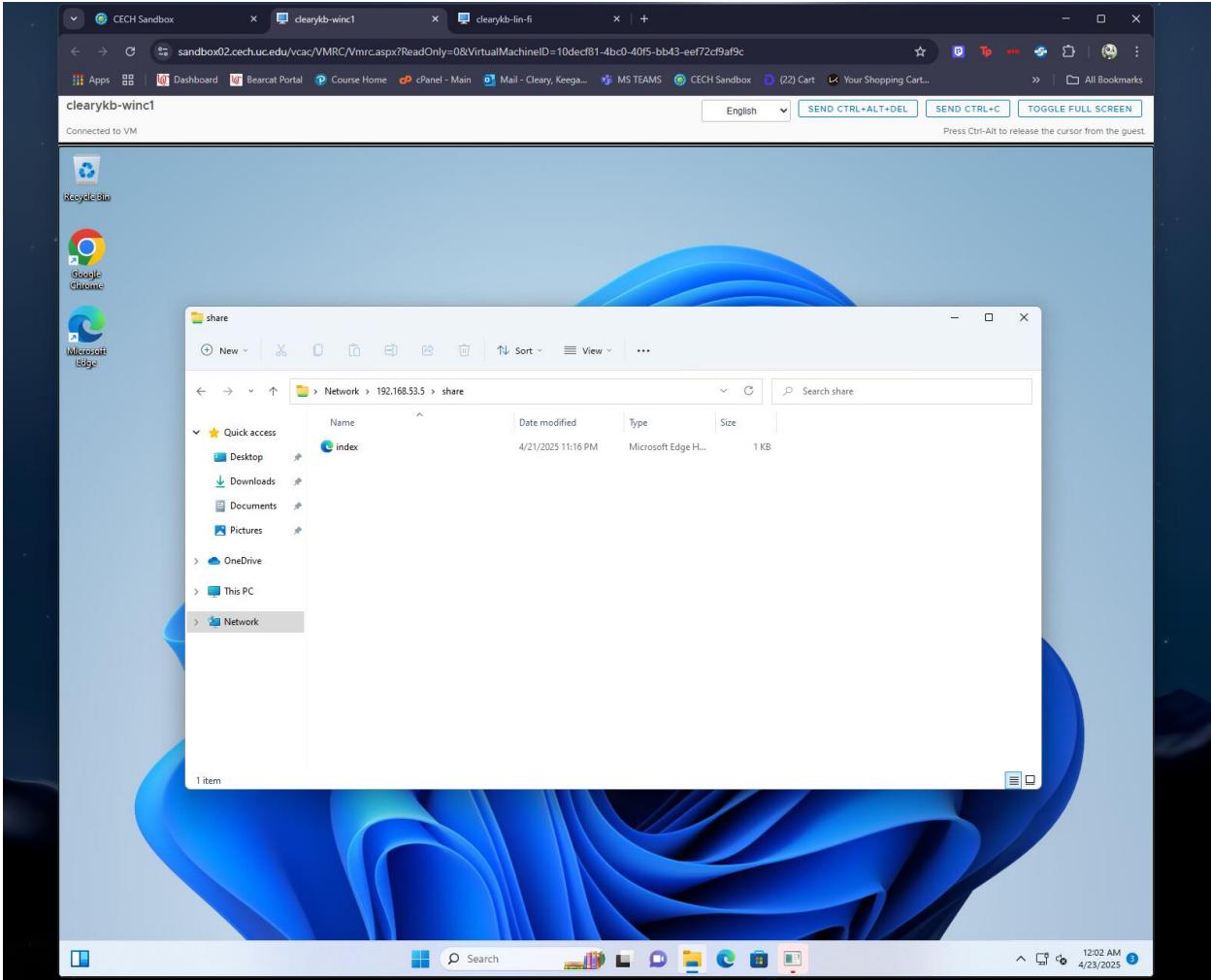
# Further relax access to the default document root:
<Directory "/var/www/html">
    #
    # Possible values for the Options directive are "None", "All",
    # or any combination of:
    #index, include, exec, followSymLinks, symLinks, includePaths,
    #followSymlinks, and others.
</Directory>

keegan@clearykb-lin-fi ~]$ sudo firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens160
  sources:
  services: cockpit dhcpv6-client http samba ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
keegan@clearykb-lin-fi ~]$
```

Connecting to the system from a Windows 11 workstation through SSH as one of the 5 users you created and running a command as sudo.



Connecting to the system from a Windows 11 workstation to access the shared directory through Windows File Explorer.



Connecting to the system from a Windows 11 workstation through a web browser using http.

