Lab Assignment

Networking and System Management

LNX-04-L4
Service Debugging

Lab Objective

Understand how to troubleshoot service errors by identifying their cause.

Lab Mission

Install the Apache and Nginx services, and resolve a port conflict.

Lab Duration

20–30 minutes

Requirements

- Knowledge of networking, listening ports, and commands.
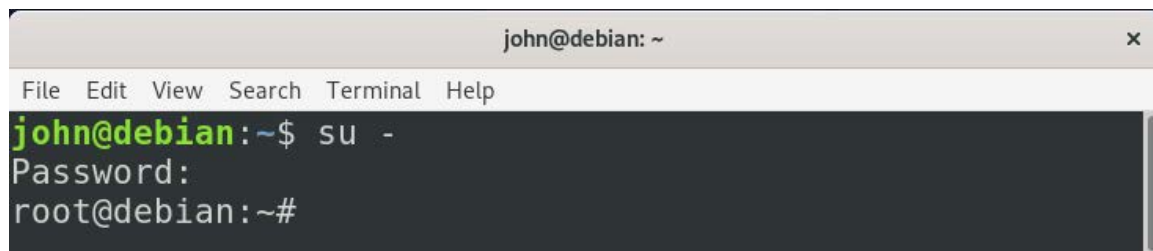- Knowledge of Linux commands and configuration files.

Resources

- Environment & Tools
  - VirtualBox
    - Debian
  - Nginx
  - Apache

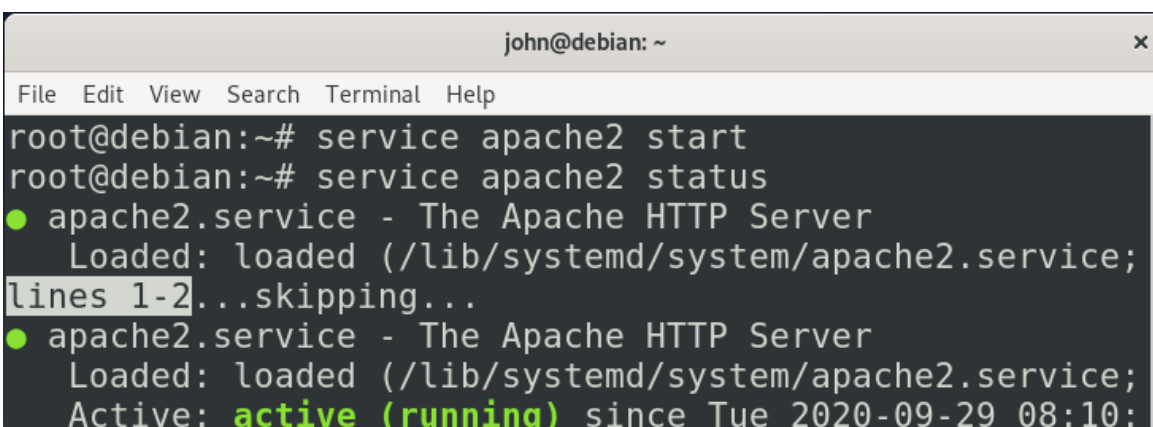## Lab Task

In the following scenario, the Nginx service does not operate.
Your task is to troubleshoot and solve the issue.

1 Open the terminal and use the command **su –** to switch to the root user.
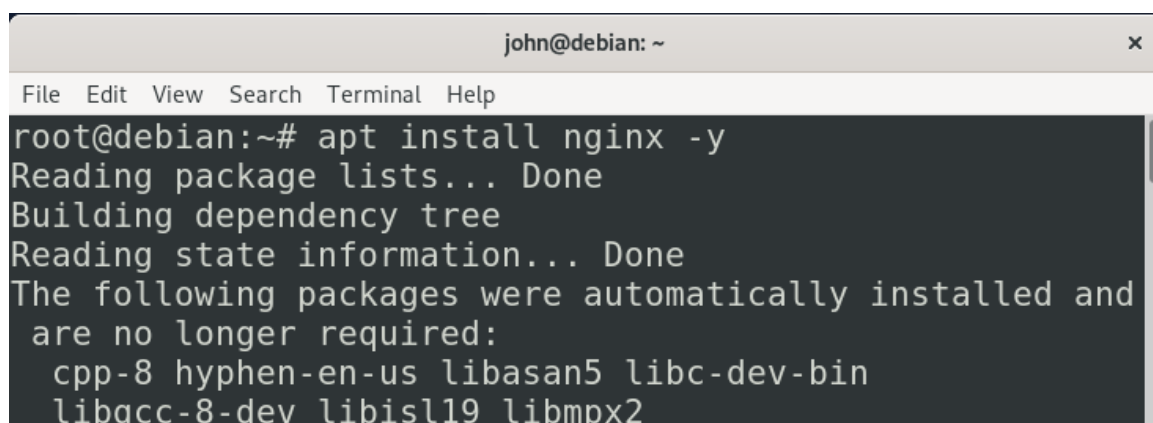

2 Use the command **service apache2 start** to turn on the Apache2 service.
Verify that it is active using the command **service apache2 status**.

3 Use the command **apt install nginx -y** to install the Nginx service.
Nginx is a web server, similar to Apache2.

4   Use the command **service nginx start** to start the **Nginx** service.
Note the message that appears.

5   Use the command **systemctl status nginx.service** as suggested in the output.
Note that a message states that port 80 is already in use.

6 Check which service is listening on port 80 using **lsof -i :80**.

7 Use the command **nano /etc/nginx/sites-enabled/default** to open the nginx configuration file.

```
john@debian: ~                                          ×

File   Edit   View   Search   Terminal   Help

root@debian:~# nano /etc/nginx/sites-enabled/default
```

8 Scroll down until you see **server {…**, and change port 80 to 8080.
Save the file and exit it.

```
john@debian: ~                                          ×

File   Edit   View   Search   Terminal   Help

  GNU nano 3.2          /etc/nginx/sites-enabled/default          Modified

# available underneath a path with that package name, such as /drupal$
#
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed exa$
##

# Default server configuration
#
server {
        listen 8080 default_server;
        listen [::]:8080 default_server;

        # SSL configuration
        #
        # listen 443 ssl default_server;

^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell
```

9 Use the command **service nginx start** to start the nginx service. Verify that it is active using the command **service nginx status**.

```
john@debian: ~                                          ×

File  Edit  View  Search  Terminal  Help
root@debian:~# service nginx start
root@debian:~# service nginx status
● nginx.service - A high performance web server and a reverse proxy se
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor
lines 1-2...skipping...
● nginx.service - A high performance web server and a reverse proxy se
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor
   Active: active (running) since Tue 2020-09-29 08:33:27 EDT; 58s ago
lines 1-3...skipping...
```

10 Verify that the Apache2 service is still active using the command **service apache2 status**.

```
john@debian: ~                                          ×

File  Edit  View  Search  Terminal  Help
root@debian:~# service apache2 status
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendo
   Active: active (running) since Tue 2020-09-29 08:10:01 EDT; 25min a
     Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 3825 (apache2)
    Tasks: 55 (limit: 4689)
   Memory: 21.5M
   CGroup: /system.slice/apache2.service
           └─3825 /usr/sbin/apache2 -k start
```

11 Use the command **lsof -i :80** to verify that Apache is listening to port 80.
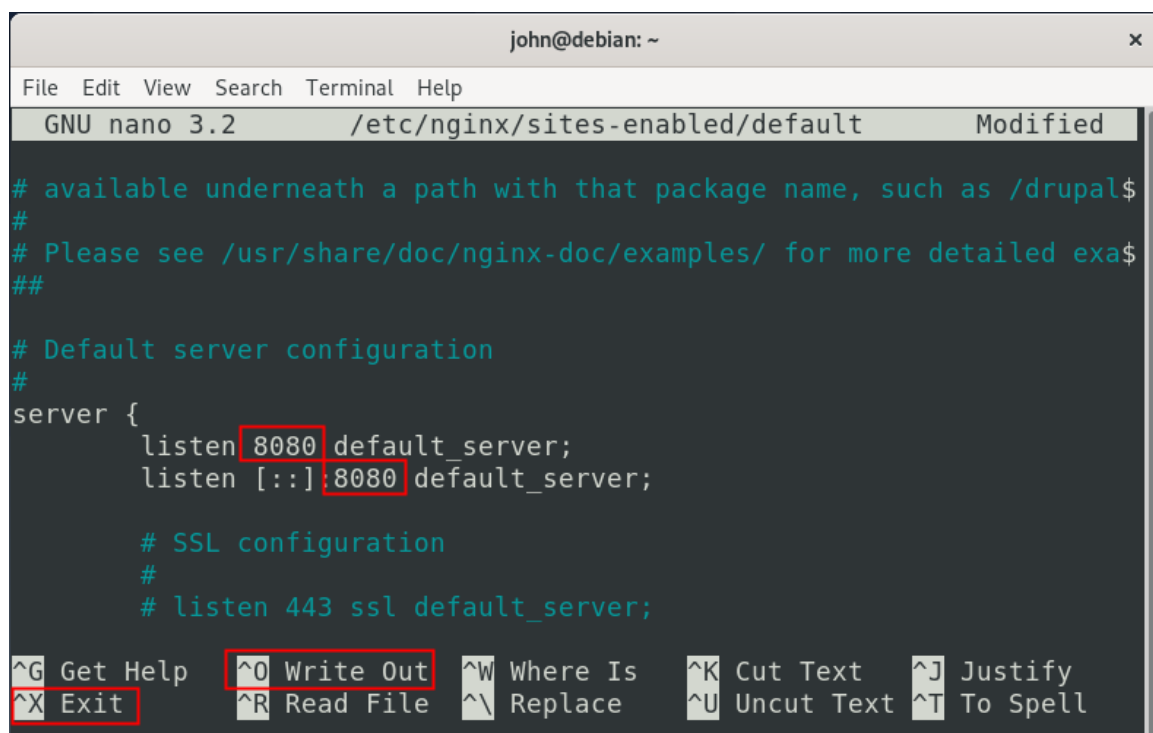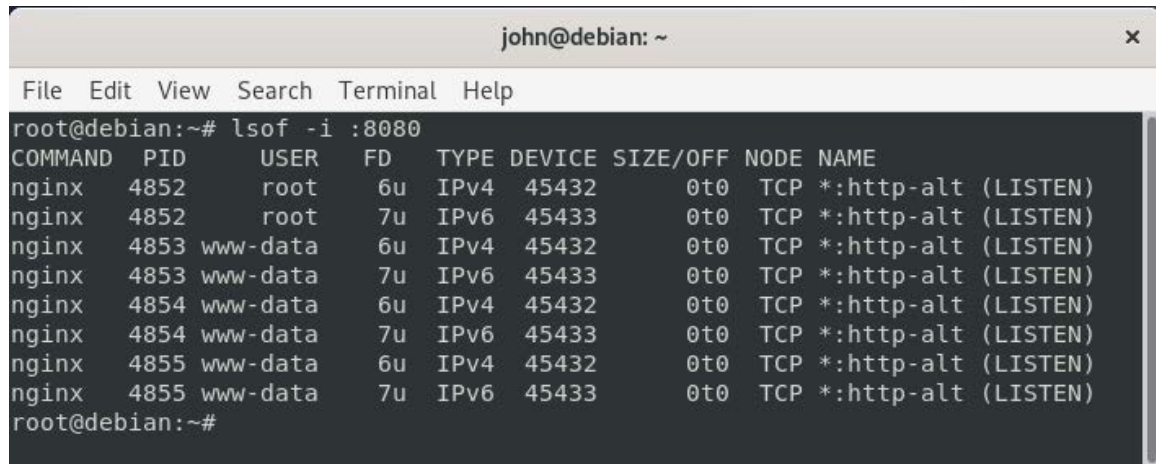
```
john@debian: ~                                          ×

File  Edit  View  Search  Terminal  Help
root@debian:~# lsof -i :80
COMMAND  PID       USER   FD   TYPE DEVICE SIZE/OFF NODE NAME
apache2 3825       root   4u   IPv6  38564      0t0  TCP *:http (LISTEN)
apache2 3826 www-data   4u   IPv6  38564      0t0  TCP *:http (LISTEN)
apache2 3827 www-data   4u   IPv6  38564      0t0  TCP *:http (LISTEN)
root@debian:~#
```

12 Use the command **lsof -i :8080** to verify that nginx is listening to port 8080.

```
                        john@debian: ~                    ×

 File  Edit  View  Search  Terminal  Help
root@debian:~# lsof -i :8080
COMMAND   PID       USER   FD    TYPE DEVICE SIZE/OFF NODE NAME
nginx    4852       root   6u    IPv4  45432      0t0  TCP *:http-alt (LISTEN)
nginx    4852       root   7u    IPv6  45433      0t0  TCP *:http-alt (LISTEN)
nginx    4853 www-data   6u    IPv4  45432      0t0  TCP *:http-alt (LISTEN)
nginx    4853 www-data   7u    IPv6  45433      0t0  TCP *:http-alt (LISTEN)
nginx    4854 www-data   6u    IPv4  45432      0t0  TCP *:http-alt (LISTEN)
nginx    4854 www-data   7u    IPv6  45433      0t0  TCP *:http-alt (LISTEN)
nginx    4855 www-data   6u    IPv4  45432      0t0  TCP *:http-alt (LISTEN)
nginx    4855 www-data   7u    IPv6  45433      0t0  TCP *:http-alt (LISTEN)
root@debian:~#
```