

Lecture 3: Basic Network Config

matthew@dhcp178 ~ % ssh root@129.24.245.16

root@129.24.245.16's password:

Last failed login: Wed Jan 24 09:45:26 CST 2024 from 167.71.93.172 on ssh:notty

There were 1051 failed login attempts since the last successful login.

Last login: Sun Jan 21 17:05:30 2024 from 129.24.240.92

[root@localhost ~]#



Chat

Keyboard

Screen Capture

Refresh

Full Screen

Connect Virtual Media

Disconn

Rocky Linux 9.3 (Blue Onyx)
Kernel 5.14.0-362.8.1.el9_3.x86_64 on an x86_64

moonshine login:
moonshine login:

Last login: Sun Jan 21 17:05:30 2024 from 129.24.240.92

[root@localhost ~]# hostname moonshine

[root@localhost ~]# exit

logout

Connection closed

```
[root@moonshine ~]# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eno1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8c brd ff:ff:ff:ff:ff:ff
    altname enp1s0f0
3: eno2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8d brd ff:ff:ff:ff:ff:ff
    altname enp1s0f1
4: eno3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8e brd ff:ff:ff:ff:ff:ff
    altname enp2s0f0
5: eno4: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8f brd ff:ff:ff:ff:ff:ff
    altname enp2s0f1
```

```
[root@moonshine ~]# nmtui
```

NetworkManager TUI

Please select an option

Edit a connection

Activate a connection

Set system hostname

Radio

Quit

<OK>

Ethernet

eno1

eno4

eno3

eno2

InfiniBand

ibp65s0

<Add>

<Edit...>

<Delete>

<Back>

Edit Connection

Profile name eno1
Device eno1 (D4:AE:52:8B:72:8C)

= ETHERNET

= 802.1X SECURITY

= IPv4 CONFIGURATION <Manual>

Addresses 129.24.245.16/22 <Remove>
<Add...>

Gateway 129.24.244.1

DNS servers 129.24.246.110 <Remove>
129.24.246.118 <Remove>
<Add...>

Search domains hpc.unm.edu <Remove>
<Add...>

Routing (No custom routes) <Edit...>

- ☐ Never use this network for default route
- ☐ Ignore automatically obtained routes
- ☐ Ignore automatically obtained DNS parameters
- ☐ Require IPv4 addressing for this connection

= IPv6 CONFIGURATION <Automatic>

<Show>

Your linux server
address here
129.24.245.TeamID/22

Edit Connection

= 802.1X SECURITY

<Show>

= IPv4 CONFIGURATION <Manual>

<Hide>

Addresses 129.24.245.16/22 <Remove>

<Add...>

Gateway 129.24.244.1

DNS servers 129.24.246.110 <Remove>

129.24.246.118 <Remove>

<Add...>

Search domains hpc.unm.edu <Remove>

<Add...>

Routing (No custom routes) <Edit...>

[] Never use this network for default route

[] Ignore automatically obtained routes

[] Ignore automatically obtained DNS parameters

[] Require IPv4 addressing for this connection

= IPv6 CONFIGURATION <Automatic>

<Show>

[X] Automatically connect

[X] Available to all users

<Cancel> <OK>

Ethernet

eno1

eno4

eno3

eno2

InfiniBand

ibp65s0



<Add>

<Edit...>

<Delete>



<Back>

NetworkManager TUI

Please select an option

Edit a connection

Activate a connection

Set system hostname

Radio

Quit

<OK>

Ethernet (eno1)

* eno1

Ethernet (eno2)

eno2

Ethernet (eno3)

eno3

Ethernet (eno4)

eno4

<Deactivate>

<Back>

Apply the new network settings

```
[root@moonshine ~]# nmcli device reapply eno1  
Connection successfully reapplied to device 'eno1'.  
[root@moonshine ~]#
```

Check the new settings

```
[root@moonshine ~]# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eno1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether d4:ae:52:8b:72:8c brd ff:ff:ff:ff:ff:ff
    altname enp1s0f0
    inet 129.24.245.TeamID/22 brd 129.24.247.255 scope global noprefixroute eno1
        valid_lft forever preferred_lft forever
    inet6 fe80::d6ae:52ff:fe8b:728c/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: eno2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8d brd ff:ff:ff:ff:ff:ff
    altname enp1s0f1
4: eno3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8e brd ff:ff:ff:ff:ff:ff
    altname enp2s0f0
5: eno4: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen 1000
    link/ether d4:ae:52:8b:72:8f brd ff:ff:ff:ff:ff:ff
    altname enp2s0f1
```

matthew@dhcp178 ~ % ssh root@129.24.245.16

root@129.24.245.16's password:

Last failed login: Wed Jan 24 11:31:45 CST 2024 from 112.28.209.66 on ssh:notty

There were 8 failed login attempts since the last successful login.

Last login: Wed Jan 24 11:25:30 2024 from 129.24.246.178

[root@moonshine ~]#

[root@moonshine ~]# yum install tar
Last metadata expiration check: 0:53:22 ago on Wed 24 Jan 2024 10:44:48 AM CST.
Dependencies resolved.

=====

Package	Architecture	Version	Repository	Size
---------	--------------	---------	------------	------

=====

Installing:

tar	x86_64	2:1.34-6.el9_1	baseos	876 k
-----	--------	----------------	--------	-------

Transaction Summary

=====

Install 1 Package

Total download size: 876 k
Installed size: 3.0 M
Is this ok [y/N]:

Is this ok [y/N]: y
Downloading Packages:
tar-1.34-6.el9_1.x86_64.rpm 89 kB/s | 876 kB 00:09

Total 86 kB/s | 876 kB 00:10

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.

Running transaction
Preparing : 1/1
Installing : tar-2:1.34-6.el9_1.x86_64 1/1
Running scriptlet: tar-2:1.34-6.el9_1.x86_64 1/1
Verifying : tar-2:1.34-6.el9_1.x86_64 1/1

Installed:
tar-2:1.34-6.el9_1.x86_64

Complete!

[root@moonshine ~]#

```
[root@moonshine ~]# tar --version
```

```
tar (GNU tar) 1.34
```

```
Copyright (C) 2021 Free Software Foundation, Inc.
```

```
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
```

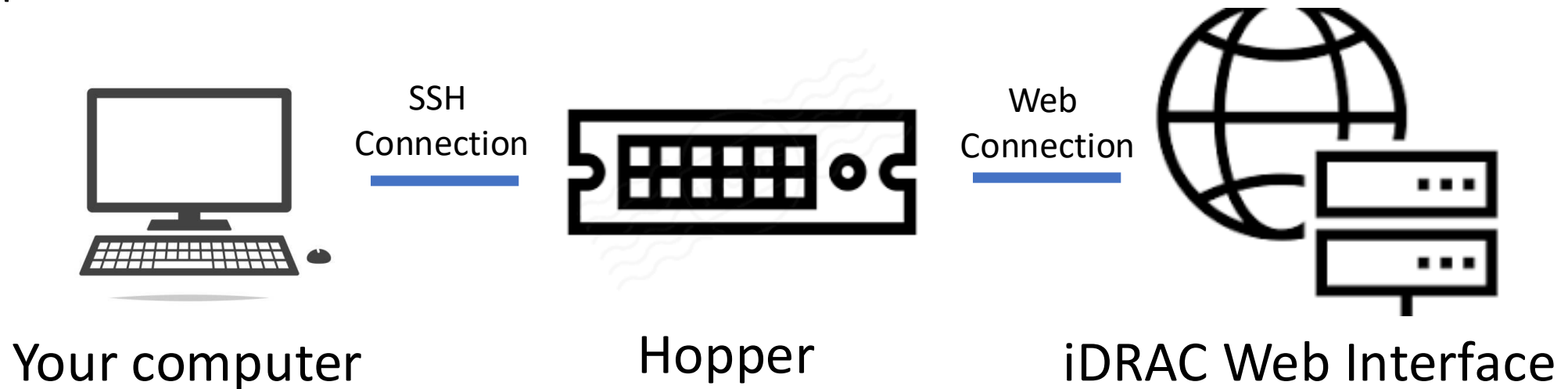
```
This is free software: you are free to change and redistribute it.
```

```
There is NO WARRANTY, to the extent permitted by law.
```

Written by John Gilmore and Jay Fenlason.

SOCKS Proxy

- We would like to access the web interface from outside the UNM Network, but web traffic is restricted for security reasons.
- We will forward the web traffic through an SSH connection to Hopper. Since Hopper is inside the firewall it can open a web connection to the iDRAC server.



```
matthew@Erebus .ssh % ssh -v -D 1337 -N -f {username}@hopper.alliance.unm.edu
```

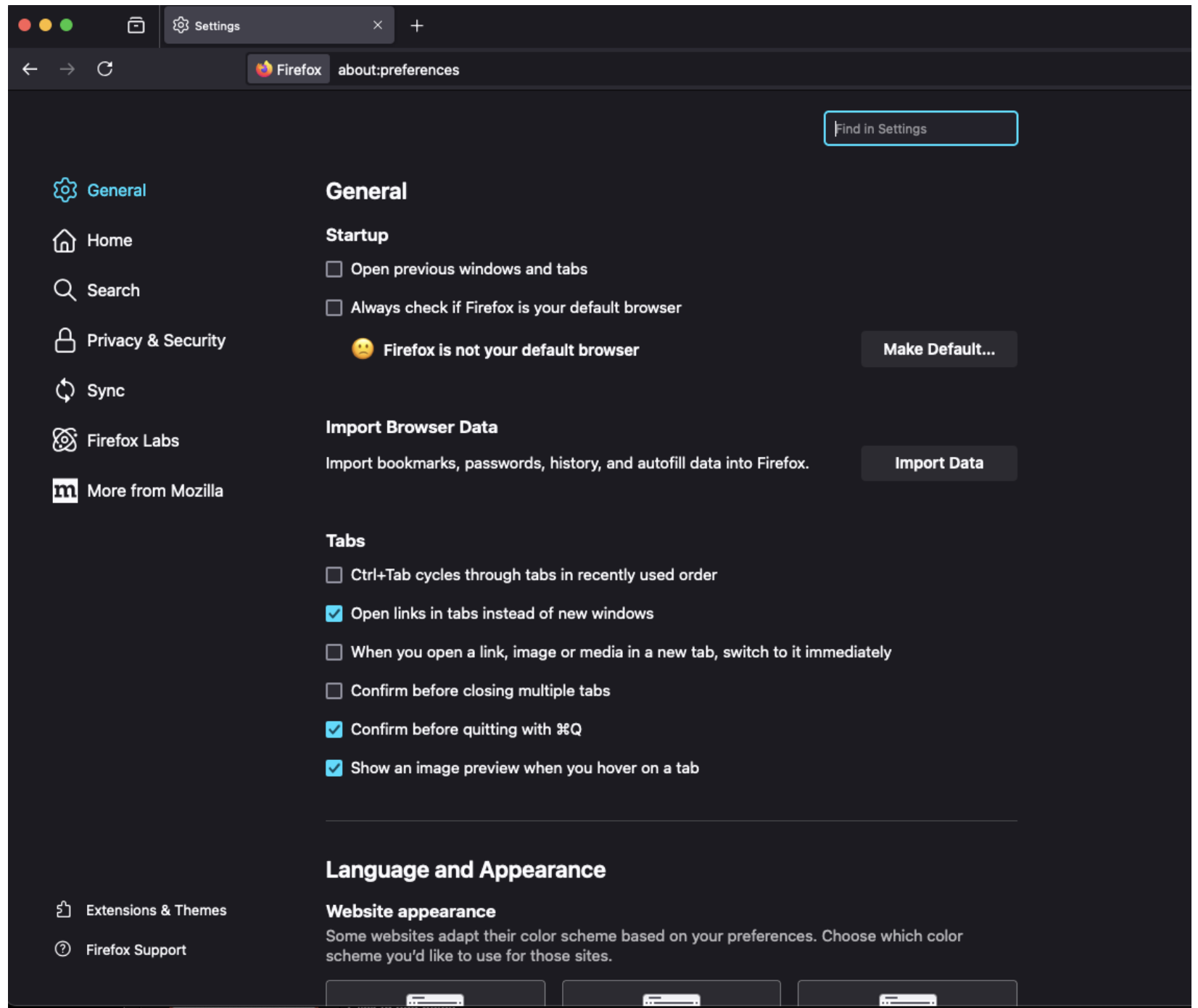
```
(mfricke@hopper.alliance.unm.edu) Password:
```

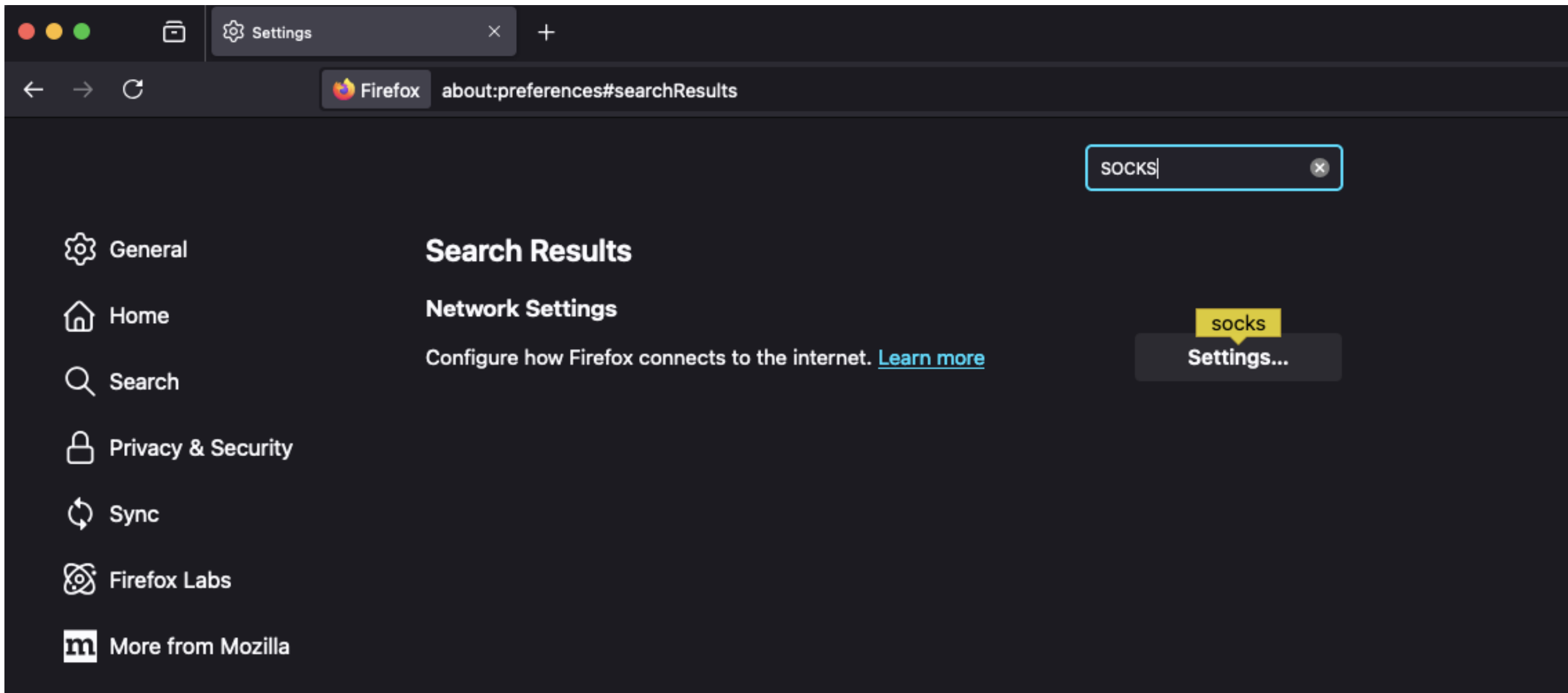
This command uses **SSH (Secure Shell)** to create a **SOCKS (Secure Socket) proxy**. The **-D** flag specifies a local port (e.g. 1337) on which the SOCKS proxy will listen. All traffic routed through this local port will be forwarded via the SSH connection to the remote host.

-v verbose, **-f** fork process so we don't tie up the terminal,

In Firefox, click the hamburger dropdown menu at the top right of the main window. Click on settings.

(There are other ways to setup a SOCKS proxy but this doesn't depend on the OS)





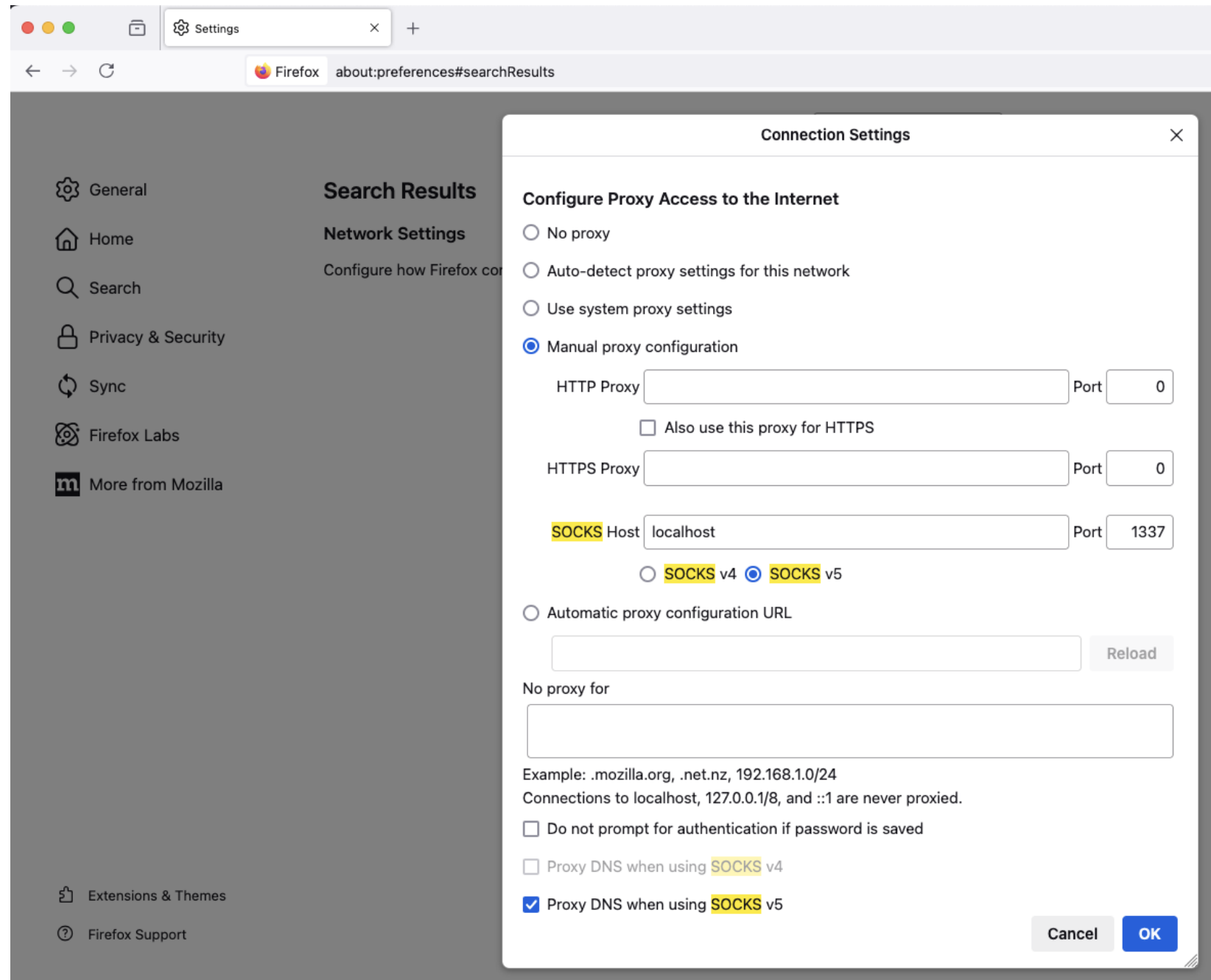
Search settings for “SOCKS”

Click the SOCKS settings button.

Select manual configuration.

SOCKS host “localhost”
Port: 1337

Select **SOCKS v5**
Check Proxy DNS when using SOCKS v5



Now you can connect to the IP address of the iDRAC server.

```
debug1: channel 11: free: direct-tcpip: listening port 1337 for 129.24.245.1 port 62350 to 127.0.0.1 port 1337, nchannels 13
debug1: channel 6: free: direct-tcpip: listening port 1337 for aus5.mozilla0.1 port 62328 to 127.0.0.1 port 1337, nchannels 12
debug1: Connection to port 1337 forwarding to socks port 0 requested.
debug1: channel 2: new dynamic-tcpip [dynamic-tcpip] (inactive timeout: 0)
channel 2: open failed: connect failed: Name or service not known
debug1: channel 2: free: direct-tcpip: listening port 1337 for mozilla.clourom 127.0.0.1 port 62390 to 127.0.0.1 port 1337, nchannels 12
debug1: channel 23: free: direct-tcpip: listening port 1337 for r11.o.lencr.1 port 62367 to 127.0.0.1 port 1337, nchannels 11
debug1: channel 9: free: direct-tcpip: listening port 1337 for r11.o.lencr.1 port 62341 to 127.0.0.1 port 1337, nchannels 10
debug1: channel 24: free: direct-tcpip: listening port 1337 for r11.o.lencr.1 port 62368 to 127.0.0.1 port 1337, nchannels 9
debug1: channel 25: free: direct-tcpip: listening port 1337 for r11.o.lencr.1 port 62369 to 127.0.0.1 port 1337, nchannels 8
```

Close the terminal when you want to close the connection.

