

Hands-on Lab: Working with Networking Commands



Estimated time needed: **30** minutes

Learning Objectives

After completing this lab, you will be able to:

- View your network configuration using the `hostname` and `ip` commands
- Test a network connection using the `ping` command
- Transfer data using the `curl` and `wget` commands

About Skills Network Cloud IDE

Skills Network Cloud IDE (based on Theia and Docker) provides an environment for hands on labs for course and project related labs. Theia is an open source IDE (Integrated Development Environment), that can be run on desktop or on the cloud. To complete this lab, you will be using the Cloud IDE based on Theia.

Important notice about this lab environment

Please be aware that sessions for this lab environment are not persisted. Thus, every time you connect to this lab, a new environment is created for you and any data or files you may have saved in a previous session will be lost. To avoid losing your data, plan to complete these labs in a single session.

Exercise 1 - View configuration info about your network

1.1. Display your system's hostname and IP address

`hostname`

A **hostname** is a name that is assigned to a computer or device on a network, and it is used to identify and communicate with that device.

To view the current hostname, run the command below:

`hostname`

An **IP address** (Internet Protocol address) is a numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication.

You can use the `-i` option to view the IP address of the host:

`hostname -i`

1.2. Display network interface configuration

Please execute the below commands to install the `iproute2` package:

```
sudo apt update  
sudo apt install iproute2
```

iproute2

The `ip` command is used to configure or display network interface parameters for a network.

To display the configuration of all network interfaces of your system, enter:

```
ip a
```

To display the configuration of a particular device, such as the ethernet adapter `eth0`, enter:

```
ip addr show eth0
```

`eth0` is usually the primary network interface that connects your server to the network.

You can see your server's IP address in line 2 after the word `inet`.

Exercise 2 - Test network connectivity

2.1. Test connectivity to a host

```
ping
```

Use the `ping` command to check if `www.google.com` is reachable. The command keeps pinging data packets to server at `www.google.com` and prints the response it gets back. (Press `Ctrl+c` to stop pinging.)

```
ping www.google.com
```

If you want to ping only a limited number of times, use `-c` option.

```
ping -c 5 www.google.com
```

Exercise 3 - View or download data from a server

3.1. Transfer data from a server

```
curl
```

You can use curl to access the file at the following URL and display the file's contents on your screen:

```
curl https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DB0250EN-SkillsNetwork/labs/Bash%20Scripting/usdoi.txt
```

To access the file at the given URL and also save it in your current working directory, use the -O option:

```
curl -O https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DB0250EN-SkillsNetwork/labs/Bash%20Scripting/usdoi.txt
```

You can also use curl to view the HTML code for any web page if you know its URL.

3.2. Download file(s) from a URL

wget

The wget command is similar to curl, however its primary use is for file downloading. One unique feature of wget is that it can recursively download files at a URL.

To see wget in action, first remove usdoi.txt from your current directory:

```
rm usdoi.txt
```

then download it again using wget as follows:

```
wget https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DB0250EN-SkillsNetwork/labs/Bash%20Scripting/usdoi.txt
```

Practice exercises

Before you begin, ensure you're in your /home/project directory by entering:

```
cd ~/home/project  
pwd
```

1. Display your host's IP address.

► Click here for Hint

- Click here for Solution

```
hostname -i
```

2. Get connectivity stats on your connection to www.google.com.

- Click here for Hint
- ▼ Click here for Solution

```
ping www.google.com
```

3. View info about your ethernet adapter eth0.

- Click here for Hint
- ▼ Click here for Solution

```
ip addr show eth0
```

4. View the HTML code for www.google.com's landing page.

- Click here for Hint
- ▼ Click here for Solution

```
curl www.google.com
```

5. Download the HTML code for www.google.com's landing page.

- Click here for Hint
- ▼ Click here for Solution

```
wget www.google.com
```

Note: wget saves the HTML code as index.html. You can check this with:

```
ls -l
```

Summary

In this lab, you learned how to:

- View your network configuration using the `hostname` and `ip` commands
- Test a network connection using the `ping` command
- Transfer data using the `curl` and `wget` commands

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