IoT Platform
Intel® Edison Tutorial 2: WiFi Interface and Network Access
(Modified for CS111)

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Revision history		
Version	Date	Comment
1.0	9/23/2015	Initial release
1.1	10/1/2015	Eduroam is included

Introduction

One of most powerful features of the Intel Edison is the integrated WiFi. With no extra hardware, the Edison can connect to the Internet using the integrated WiFi.
In this tutorial, you will:
1. Learn to enable WiFi on the Edison,
2. Learn to connect to the Edison via SSH, and
3. Try internet-based examples.

Things Needed

• An Intel Edison with Arduino-compatible breakout,
• Two micro USB cables, and
• A PC or Mac

Setting up WiFi

Unlike other popular Linux distributions such as Ubuntu and Debian, the Yocto embedded Linux OS does not use /etc/network/interfaces to manage the network. Instead, it comes with a convenient command-line tool to set up WiFi.
1. Establish a serial connection as described in Tutorial 2.
2. In the serial terminal, enter "**configure_edison --wifi**".
3. A WiFi configuration screen is displayed and it starts scanning for available networks.

```
Configure Edison: WiFi Connection

Scanning: 1 seconds left

0 :     Rescan for networks
1 :     Exit WiFi Setup
2 :     Manually input a hidden SSID
3 :     MEDGUEST
4 :     HP03A73F
5 :     Desmond's Wi-Fi Network
6 :     NETGEAR38
7 :     MEDWIFI
8 :     eduroam
9 :     Brant and JP Office
10 :    TP-LINK_E79C74
11 :    karlin-5G
12 :    ShafferLab
13 :    LS 5323
14 :    karlin
15 :    LS5309
16 :    NIMS-LS
17 :    Lohmueller_Lab_5G
18 :    NIMS GTO
19 :    Peshkel
20 :    Lohmueller_Lab_Guest
21 :    Lohmueller_Lab
22 :    NIMS
23 :    Peshkel 5G


Enter 0 to rescan for networks.
Enter 1 to exit.
Enter 2 to input a hidden network SSID.
Enter a number between 3 to 23 to choose one of the listed network SSIDs:
```

Figure 1 WiFi Configuration

4. Follow the instructions on the screen.
5. For operation on the UCLA campus, use the select the **eduroam** network [2] and enter your credentials.

6. If you are having issues with WiFi connection, press **Ctrl-C** to quit and enter the following commands. Then, repeat steps 2-5.
   1. **$ ifconfig usb0 down**
   2. **$ ifconfig wlan0 down**
   3. **$ ifconfig usb0 up**
   4. **$ ifconfig wlan0 up**

SSH connection

1. Make sure WiFi connection is working. You many enter "**ping google.com**" to check.


```
root@edison:/etc# ping google.com
PING google.com (216.58.216.14): 56 data bytes
64 bytes from 216.58.216.14: seq=0 ttl=53 time=4.561 ms
64 bytes from 216.58.216.14: seq=1 ttl=53 time=20.964 ms
64 bytes from 216.58.216.14: seq=2 ttl=53 time=5.200 ms
```

Figure 3 Check WiFi Connenction

2. Press **Ctrl-C** to quit.

3. Make sure your computer and your Edison are connected to the same network. For instance, if your Edison is connected to eduroam, your computer also needs to be connected to eduroam.

4. In order to access via SSH (Secure Shell) [3], you need to set up the password on the Edison.

5. **$ configure_edison --password**

6. Follow the instructions on the screen.

7. Find out the IP address of the Edison by establishing a serial connection, and then enter "**configure_edison --showWiFiIP**".


```
root@edison:~# configure_edison --showWiFiIP
10.140.135.216
```

Figure 3: IP address

   • In this case, 10.140.135.216 is the IP address of your Edison.

8. SSH into your Edison as you would normally SSH into a Linux box with a known IP address. There are several clients available to do this:

   a. MobaXterm (has both GUI based SFTP and command line SSH)
      http://mobaxterm.mobatek.net/

   b. PuTTy (text based SSH client)
      http://www.putty.org/

   c. FileZilla (GUI for SFTP)
      https://filezilla-project.org/