Configure your RPi for BLE

Your RPi has a built in Bluetooth protocol implementation called Bluez. However, as you will be creating a Bluetooth Low Energy service, it's a good idea to download, compile, install, and configure the latest stable version of Bluez on the Raspberry Pi.

Install Dependencies

Your BLE service will require a few additional libraries on the RPi. Update the package list on your RPi and install these dependencies as follows:

```
$ sudo apt-get update
$ sudo apt-get install libdbus-1-dev libglib2.0-dev libudev-dev libical-dev libreadline-dev -y
```

You'll have to wait a short while for the dependencies to install.

Check current Bluez version

Open a command prompt on your RPi and check the BlueZ Version you have currently on your RPi:

```
$ bluetoothctl -v
```

You should see a reasonably current version (probably 5.43). If it's already 5.50 or greater then that's fine and you can move to the next section of the exercise.

Download and install BlueZ 5.50

Download the BlueZ 5.50 source code on to your RPi using the `wget` command. Make sure your RPi has an internet connection.

```
$ wget www.kernel.org/pub/linux/bluetooth/bluez-5.50.tar.xz
```

Uncompress the downloaded file using the `tar` command and change directory to the new uncompressed directory:

```
$ tar xvf bluez-5.50.tar.xz && cd bluez-5.50
```

To install Bluez, you need to follow the standard configure-make-install process for most Linux software packages:

```
./configure --prefix=/usr --mandir=/usr/share/man --sysconfdir=/etc --localstatedir=/var --enable-experimental
```

Once the configure script has successfully run you can compile the Bluez code. This compilation will take about 10 minutes. Compile the code by running the `make` command:

```
make -j4
```

After Bluez has been compiled it can be installed on the RPi by running the following command:

```
sudo make install
```

If all the above runs without any difficulty then you've updated your Bluetooth stack to Bluez 5.50. Now reboot the RPi for it to fully take effect.

```
sudo reboot
```

Verify Update

Verify the BlueZ version by issuing the command below.

```
$ bluetoothctl -v
bluetoothctl: 5.50
```

Install python-dbus

```
sudo apt-get install python-dbus
```

Install Git

You will need to download starter code for this lab from an online Git repo. To make this easy, install Git on your RPi by running the following command on the RPi:

```
sudo apt-get install git
```