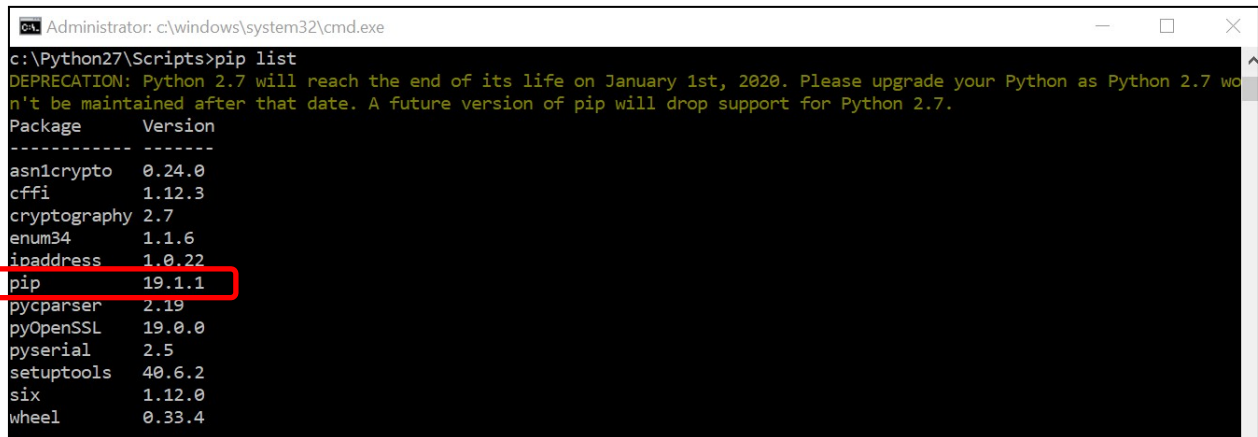


## Setting up and using Cperft to transmit UDP packets

- 1) Install [Python 2.7.16 \(32-bit\)](#). Download the “Windows x86 MSI Installer”. This is the 32-bit version.
- 2) Pip should already be installed with Python. You can check by opening the Command Prompt, navigating to C:\Python27\Scripts and entering the following command:

**pip list**



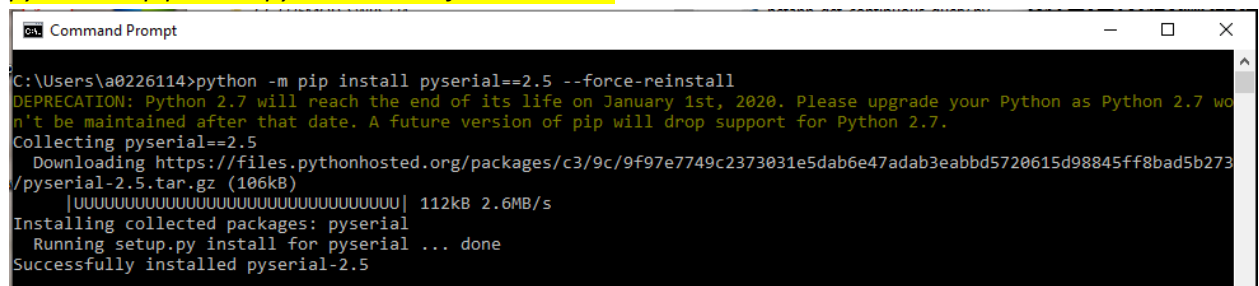
```
Administrator: c:\windows\system32\cmd.exe
c:\Python27\Scripts>pip list
DEPRECATION: Python 2.7 will reach the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 will no longer be maintained after that date. A future version of pip will drop support for Python 2.7.
Package          Version
-----
asn1crypto       0.24.0
cffi              1.12.3
cryptography     2.7
enum34           1.1.6
ipaddress        1.0.22
pip             19.1.1
pycparser        2.19
pyOpenSSL        19.0.0
pyserial         2.5
setuptools       40.6.2
six              1.12.0
wheel            0.33.4
```

- 3) If it is not installed, install pip by downloading the [“get-pip.py” installer script](#). Open the Command Prompt and navigate to the “get-pip.py” file. Run the following command:

**python get-pip.py**

- 4) Install pyserial (v2.5) using the following command on Command Prompt

**python -m pip install pyserial==2.5 --force-reinstall**



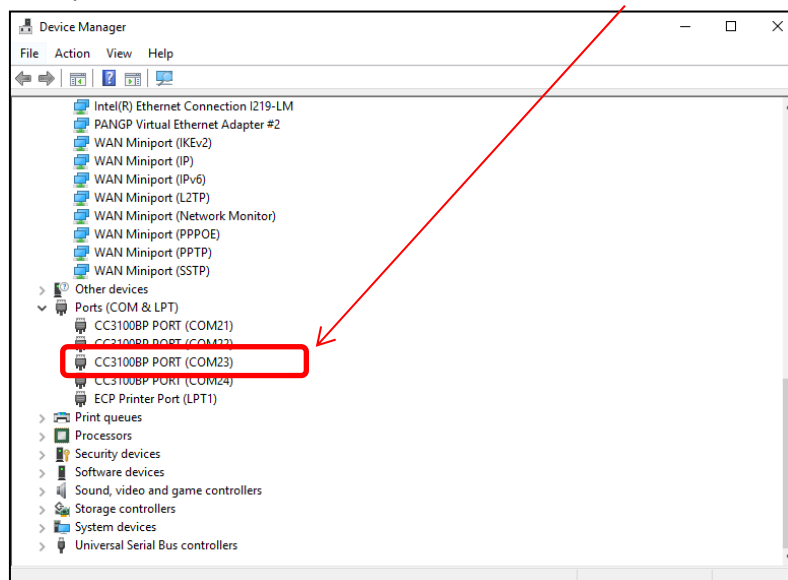
```
Command Prompt
C:\Users\A0226114>python -m pip install pyserial==2.5 --force-reinstall
DEPRECATION: Python 2.7 will reach the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 will no longer be maintained after that date. A future version of pip will drop support for Python 2.7.
Collecting pyserial==2.5
  Downloading https://files.pythonhosted.org/packages/c3/9c/9f97e7749c2373031e5dab6e47adab3eabbd5720615d98845ff8bad5b273/pyserial-2.5.tar.gz (106kB)
    [#####] 112kB 2.6MB/s
Installing collected packages: pyserial
  Running setup.py install for pyserial ... done
Successfully installed pyserial-2.5
```

- 5) Install pyopenssl using the following command on Command Prompt

**python -m pip install pyopenssl --force-reinstall**

```
Command Prompt
C:\Users\A0226114>python -m pip install pyopenssl --force-reinstall
DEPRECATION: Python 2.7 will reach the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 won't be
maintained after that date. A future version of pip will drop support for Python 2.7.
Collecting pyopenssl
  Downloading https://files.pythonhosted.org/packages/01/c8/ceb170d81bd3941cbeb9940fc6cc2ef2ca4288d0ca8929ea4db5905d904d/pyOpen
SSL-19.0.0-py2.py3-none-any.whl (53kB)
    |#####| 61kB 1.2MB/s
Collecting six>=1.5.2 (from pyopenssl)
  Downloading https://files.pythonhosted.org/packages/73/fb/00a976f728d0d1fecfe898238ce23f502a721c0ac0ecfedb80e0d88c64e9/six-1.
12.0-py2.py3-none-any.whl
Collecting cryptography>=2.3 (from pyopenssl)
  Downloading https://files.pythonhosted.org/packages/11/7b/998951367688566f44bc922dad428ec1ae2f8af2d774cf29a567a419c5c6/crypt
ography-2.7-cp27-cp27m-win32.whl (1.3MB)
    |#####| 1.3MB 2.0MB/s
Collecting enum34; python_version < "3" (from cryptography>=2.3->pyopenssl)
  Downloading https://files.pythonhosted.org/packages/c5/db/e56e6b4bbac7c4a06de1c50de6fe1ef3810018ae11732a50f15f62c7d050/enum34
-1.1.6-py2-none-any.whl
Collecting cffi!=1.11.3,>=1.8 (from cryptography>=2.3->pyopenssl)
  Downloading https://files.pythonhosted.org/packages/46/f7/10149b0ba8d6323b118bbeb4ca76b6ec2754c0665522d2335a908e9c6a09/cffi-1.
12.3-cp27-cp27m-win32.whl (157kB)
    |#####| 163kB 2.0MB/s
Collecting asn1crypto>=0.21.0 (from cryptography>=2.3->pyopenssl)
  Downloading https://files.pythonhosted.org/packages/ea/cd/35485615f45f30a510576f1a56d1e0a7ad7bd8ab5ed7cdc600ef7cd06222/asn1cr
ypto-0.24.0-py2.py3-none-any.whl (101kB)
    |#####| 102kB 2.0MB/s
Collecting ipaddress; python_version < "3" (from cryptography>=2.3->pyopenssl)
  Downloading https://files.pythonhosted.org/packages/fc/d0/7fc3a811e011d4b388be48a0e381db8d990042df54aa4ef4599a31d39853/ipaddr
ess-1.0.22-py2.py3-none-any.whl
Collecting pycparser (from cffi!=1.11.3,>=1.8->cryptography>=2.3->pyopenssl)
  Using cached https://files.pythonhosted.org/packages/68/9e/49196946aee219aead1290e00d1e7fdeab8567783e83e1b9ab5585e6206a/pycpar
ser-2.19.tar.gz
Installing collected packages: six, enum34, pycparser, cffi, asn1crypto, ipaddress, cryptography, pyopenssl
Found existing installation: pycparser 2.19
Uninstalling pycparser-2.19:
  Successfully uninstalled pycparser-2.19
Running setup.py install for pycparser ... done
Found existing installation: cffi 1.5.2
Uninstalling cffi-1.5.2:
  Successfully uninstalled cffi-1.5.2
Successfully installed asn1crypto-0.24.0 cffi-1.12.3 cryptography-2.7 enum34-1.1.6 ipaddress-1.0.22 pycparser-2.19 pyopenssl-19
.0.0 six-1.12.0
```

- 6) Download [python\\_script.zip](#) and extract it.
- 7) Connect the CC3xxx board to the computer.
- 8) Open the device manager. See under Ports (COM & LPT). Note the third COMxx number. In this example shown below, the third of this list is COM23. This is the UART port.



- 9) Edit the “configurations.py” file from the python\_script folder. Change the SERIAL\_COM\_PORT to the UART port number found from step 7 above. Save the file after making the modification.

```
1 import utils
2
3 WAIT_FOR_EVENT = -1
4 USE_INTERNAL_SOCKET_INSTEAD = 1000
5 SERIAL_COM_PORT = 23 # USE_INTERNAL_SOCKET_INSTEAD #22 fpga #6
6 #SERIAL_COM_PORT = 20
7
8 UART_MODE = "Normal" # Normal / Legacy / Stellaris
9 # This switch forces the Python enviroment to use legacy UART configuration and format when set to True
10
11 if (UART_MODE == "Normal"):
12     SERIAL_BAUD_RATE = 115200
13     SERIAL_FLOW_CTL_EN = True
14     SERIAL_RX_SYNC_PATTERN = "\xBA\xDC\xCD\xAB"
15     SERIAL_TX_SYNC_PATTERN = "\x21\x43\x34\x12"
16     XML_PROTO_FILE = "SL2_proto.xml"
```

- 10) Open a new command prompt and navigate to the directory where the python\_script folder was saved and extracted.
- 11) Enter the following command to set the CC3xxx device to a default STA mode configuration

```
set_ip_config_to_flash.py
```

- 12) Restart the CC3xxx device after the script finishes to load the new configuration
- 13) Enter the following command to connect the CC3xxx to an AP

```
wlan_connect.py -n <Insert AP SSID> -x <Insert security type: 0=Open, 1= WEP, 2=WPA/WPA2>
```

**Example)** For an open AP called “myAP”:

```
wlan_connect.py -n myAP -x 0
```

- 14) Wait for the device to be successfully connected to the AP and then press “Esc” to return on the CMD line in order to run another command
- 15) Enter the following command to transmit UDP packets

```
cperf.py -u -p 5001 -c <gateway IP> -l 1400 -b 20000000 -i 2 -t 60
```

“-u” – UDP mode  
“-p” – the port number  
“-c” – client mode  
“-l” – length of buffer  
“-b” – Set target bandwidth to n bits/sec  
“-i” – set the information interval time (in seconds)  
“-t” – the time we wish to transmit (in seconds)

- 16) If the AP's gateway IP is unknown, you can find out by connecting your PC to the AP. Open the command prompt and enter "ipconfig". The "Default Gateway" IP is shown here.