Programming Example: SSA/SVA analyzer screen image capture using Python over LAN

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Here is a brief code example written in Python 3.4 that uses a socket to pull a display image (screenshot) from a SIGLENT SSA/SVA analyzer via LAN
and save it to the local drive of the controlling computer.

NOTE: This program saves the picture/display image file in the same directory that the .py file is being run from. It will overwrite any existing file that has the same name.

Download Python 3.4, connect an analyzer to the LAN using an Ethernet cable, get the scope IP address, and run the attached .PY program to save an image of the analyzer display. The type of file saved is determined by the instruments setting when the program is run.

You can download the .PY file here: [Download not found]

Tested with:

Python 3.4
SSA3000X
SSA3000X Plus
SVA1000X

```
&lt;/pre&gt;
#!/usr/bin/env python
#-*- coding:utf-8 –*-
#------------------------------------------------------------------------------
# The short script is a example that open a socket, sends a query to return a
#screen dump from the spetrum analyzer, saves the screen dump as a BMP in the
python folder,
#and closes the socket.
#
#Currently tested on SIGLENT SSA3X, SSA3X Plus, and SVA1X
#
#No warranties expressed or implied
#
#SIGLENT/JAC 01.2020
#
#------------------------------------------------------------------------------
import socket # for sockets
import sys # for exit
import time # for sleep
#------------------------------------------------------------------------------

remote_ip = "192.168.55.121" # should match the instrument’s IP address
port = 5025 # the port number of the instrument service
```

```
def SocketConnect():
    try:
        #create an AF_INET, STREAM socket (TCP)
        s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    except socket.error:
        print ('Failed to create socket.')
        sys.exit();
    try:
        #Connect to remote server
        s.connect((remote_ip , port))
        s.setblocking(0) # non-blocking mode, an exception occurs when no data
is detected by the receiver
        #s.settimeout(3)
    except socket.error:
        print ('failed to connect to ip ' + remote_ip)
    return s

def SocketQuery(Sock, cmd):
    try :
        #Send cmd string
        Sock.sendall(cmd)
        Sock.sendall(b'\n') #Command termination
        time.sleep(1)
    except socket.error:
        #Send failed
        print ('Send failed')
        sys.exit()

    data_body = bytes()
    while True:
        try:
            time.sleep(0.01)
            server_replay = Sock.recv(8000)
            #print(len(server_replay))
            data_body += server_replay
        except BlockingIOError:
            print("data received complete..")
            break
    return data_body
    '''
    PACK_LEN = 1843255 #the packet length you will receive;
    '''

def SocketClose(Sock):
    #close the socket
    Sock.close()
    time.sleep(5)
```

```
def main():
    global remote_ip
    global port
    global count

    #Open a file
    file_name = "SSA_Image.bmp"

    # Body: Open a socket, query the screen dump, save and close
    s = SocketConnect()
    qStr = SocketQuery(s, b':HCOPy:SDUMp:DATA?') #Request screen image
    print(len(qStr))
    f=open(file_name,'wb')
    f.write(qStr)
    f.flush()
    f.close()

    SocketClose(s)
    sys.exit

if __name__ == '__main__':
    proc = main()
```

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