

## BoxIQ™

### Customized Controller Settings Procedure

#### Setting a Static IP address and designating an ACS address

The purpose of this guide is to describe how to configure and connect Proxess BoxIQ™ controllers\bridges to the ProxessIQ™ PC-based software.

We will begin by describing the simple, default configuration process, which is valid for simple networks, with both the software and the controllers on the same network segment.

Then we will fully describe the customization procedure for controllers that will reside outside of network the software resides on.

#### **Out-of-the-Box Controller Configuration**

The primary and simplest method for adding a BoxIQ Controller-Bridge to the ProxessIQ system is to connect both the BoxIQ™ controller and the computer with the ProxessIQ™ Server software into a common router. The router either needs to be a POE device, or the BoxIQ™ will need to be powered by a 12VDC or 24VDC source. When the “Controller” menu in the ProxessIQ™ software is entered, all connected controllers will appear in the window, asking the User if they wish to “Bind” (connect and encrypt) those controllers into the software (only to this specific instance of the software).

The software steps are detailed in the ProxessIQ™ Software Guide, which can be found online at:

[www.proxess.com/Proxess/media/Proxess/Images/Solutions/Proxess-Software-Manual.pdf?ext=.pdf](http://www.proxess.com/Proxess/media/Proxess/Images/Solutions/Proxess-Software-Manual.pdf?ext=.pdf) .

#### **Why do we need a router?**

The router is required for the initialization\programming\configuration, as it automatically assigns the IP address for the controller, as opposed to just a switch, which requires an IP address be programmed into each connected device, in order for them to communicate.

Once the router is used to configure and initialize the controller into the software, it is not necessarily needed for the day-to-day operation and communication between the software and controller.

#### **What if I have only a switch, but no router?**

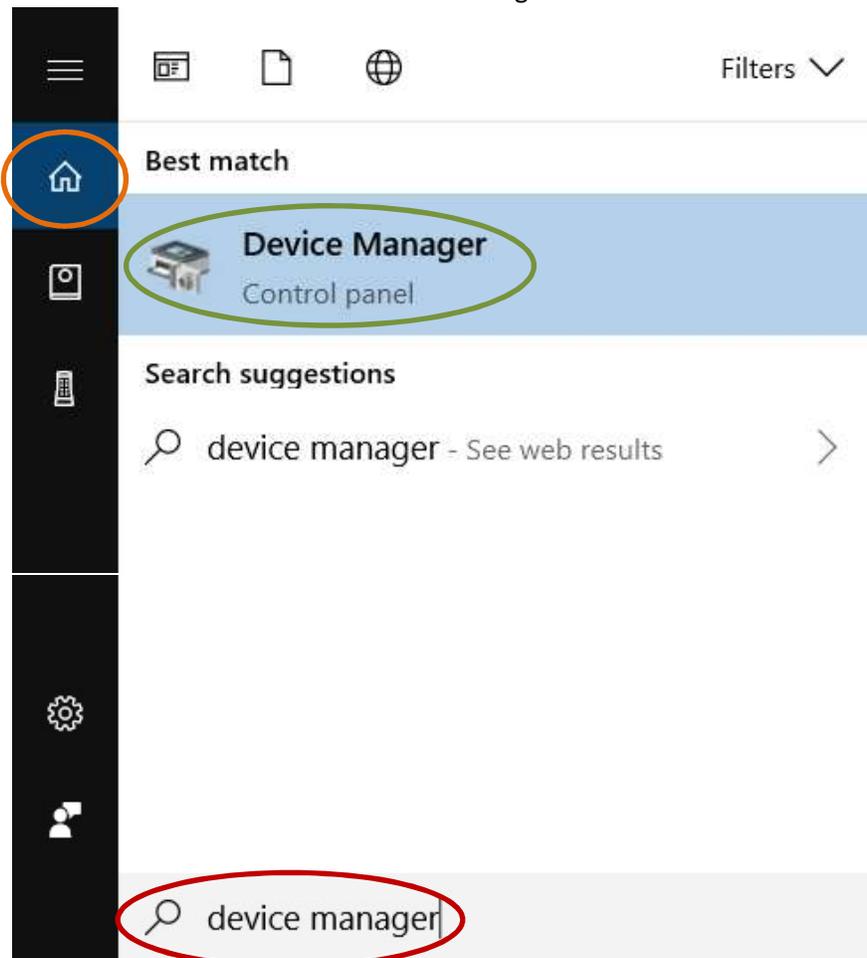
If only a switch is available for the initialization process and if the controllers will need to communicate with the software through an extended or open network (i.e. anything beyond a “flat” or single-level network, including the through the Internet), a static IP (as well as subnet and gateway addresses) will first need to be programmed into it, as well as the server IP address. To do this, the below process must be followed:

### What equipment do I need and how do I do it?

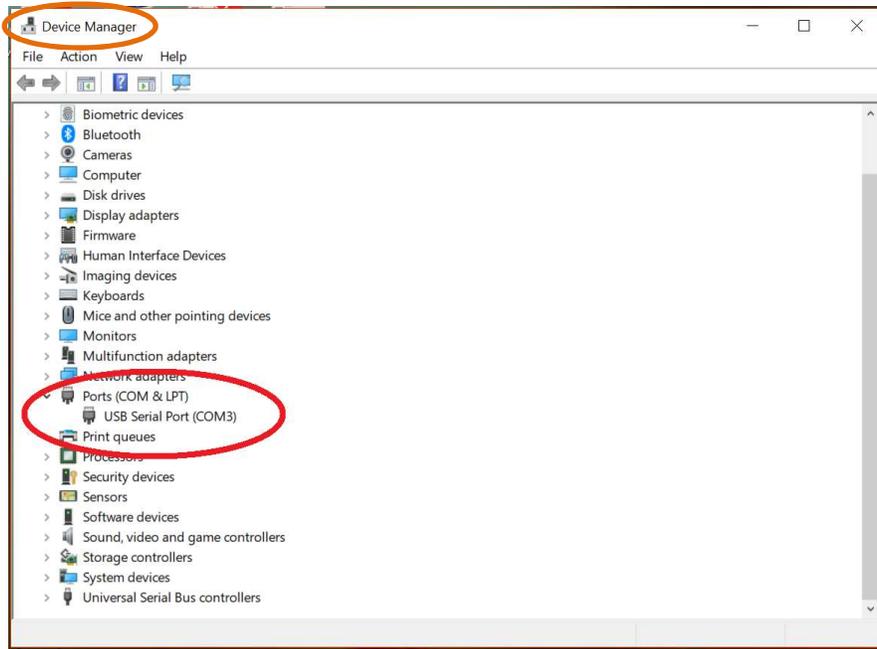
1. You will need both a hardware and a software tool to accomplish this. The hardware tool needed is a USB-to-DB-9 (Serial) Male connector, or an RJ-45-to-DB-9 (Serial) Male connector: the USB or RJ-45 side will be plugged into your computer and the DB-9 (Serial) into the BoxIQ controller. These can be purchased from a typical electronics store, or online (e.g. [https://www.bestbuy.com/site/insignia-1-3-usb-to-rs-232-db9-pda-serial-adapter-cable-black/5883029.p?skuld=5883029&ref=212&loc=1&extStoreId=1437&&ref=212&loc=1&ds\\_rl=1266837&gclid=Cj0KCQiAnNXiBRCoARIsAJe\\_1cow1EEyKn8nASZn5qKOVQRfbSwuzX8-FDmv-FZ1BR8qSCVVTtH\\_gAYaAsyKEALw\\_wcB&gclsrc=aw.ds](https://www.bestbuy.com/site/insignia-1-3-usb-to-rs-232-db9-pda-serial-adapter-cable-black/5883029.p?skuld=5883029&ref=212&loc=1&extStoreId=1437&&ref=212&loc=1&ds_rl=1266837&gclid=Cj0KCQiAnNXiBRCoARIsAJe_1cow1EEyKn8nASZn5qKOVQRfbSwuzX8-FDmv-FZ1BR8qSCVVTtH_gAYaAsyKEALw_wcB&gclsrc=aw.ds)). For the free software tool, go to [www.putty.org](http://www.putty.org) to download (we will show how to do this in the next section) and install Putty on the computer you will use to program the BoxIQ IP addresses.

a. Before making use of Putty, you will need to identify and set the Putty Serial Connection settings

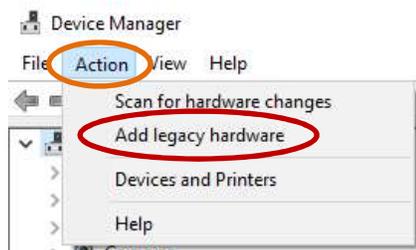
- i. Find the “Device Manager” tool on your computer. For example, click on your Windows  button, then the Home button and then type in “device manager” in the search bar and click Enter. Click on the resultant “Device Manager” icon



- ii. The Device Manager application opens. Click on “Ports” to find the communication port number that you will plug either your USB(or Ethernet)-to-Serial adapter into. In this case, it is “COM3”

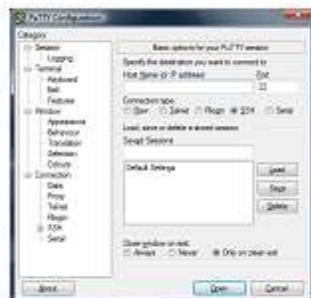


If the “Ports” selection does not appear, you will need to click on “Action and “Add legacy hardware” to follow the Microsoft prompts to add communication ports. Then Ports will appear.



We are finished with Device Manager, so, after noting the communication port, it can be closed.

- iii. Using any browser on your PC, go to [www.PuTTY.org](http://www.PuTTY.org) and click “here” for the download screen.



## Download PuTTY

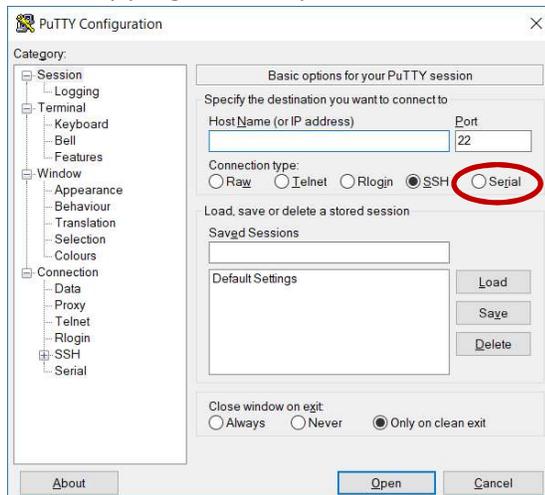
PuTTY is an SSH and telnet client source code and is developed and

You can download PuTTY [here](#).

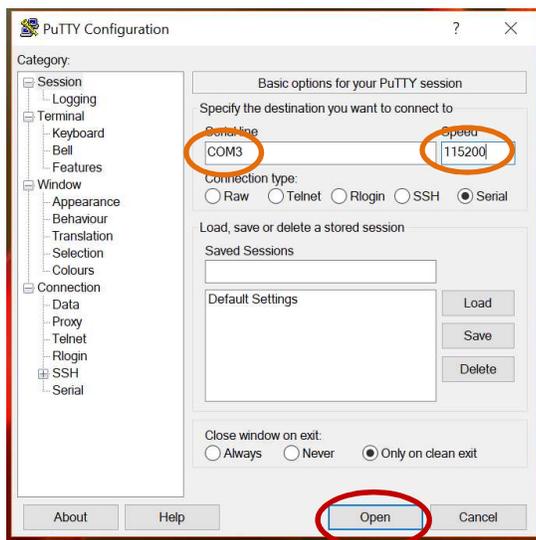
- iv. For example, for a 64-bit Windows computer, click on the following link and then the following icon that appears after the program had been downloaded:



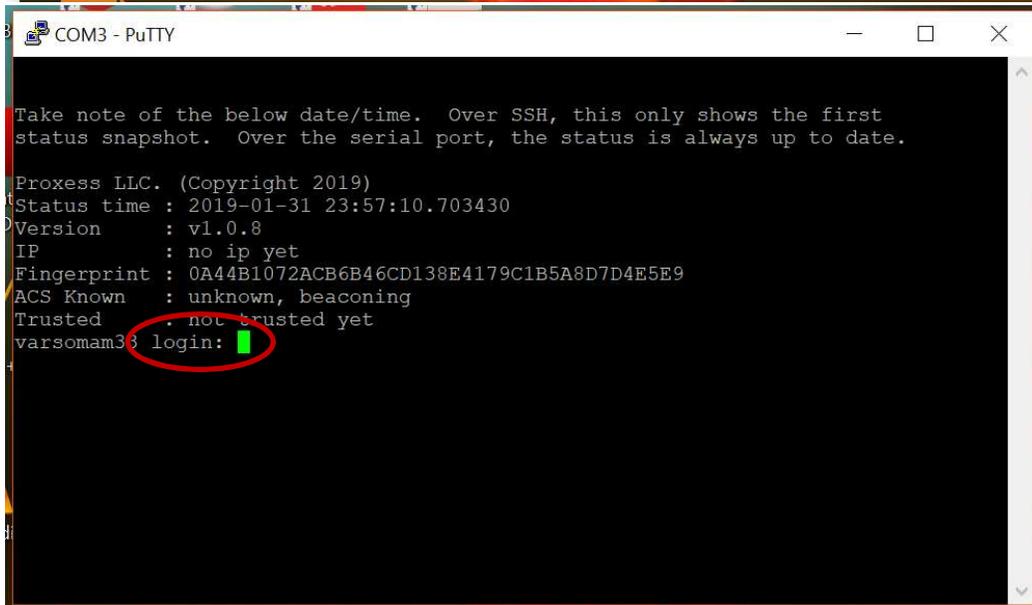
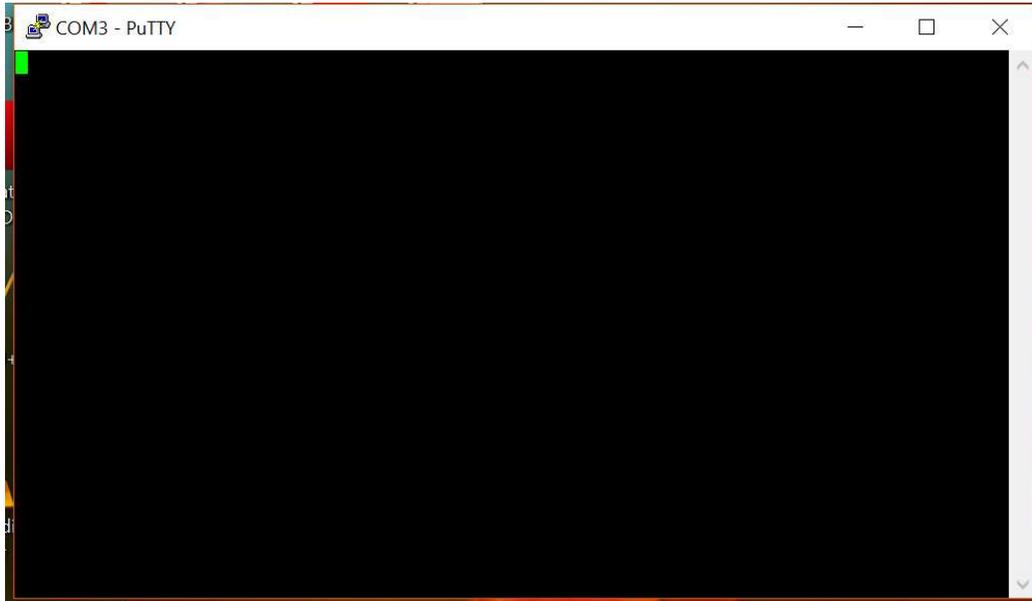
- v. The Putty program will open. Click “Serial”.



- vi. Enter the port name you found in the previous steps. In this case, it's COM3 and set the “Speed” (Baud Rate) to “115200”. Then click “Open”

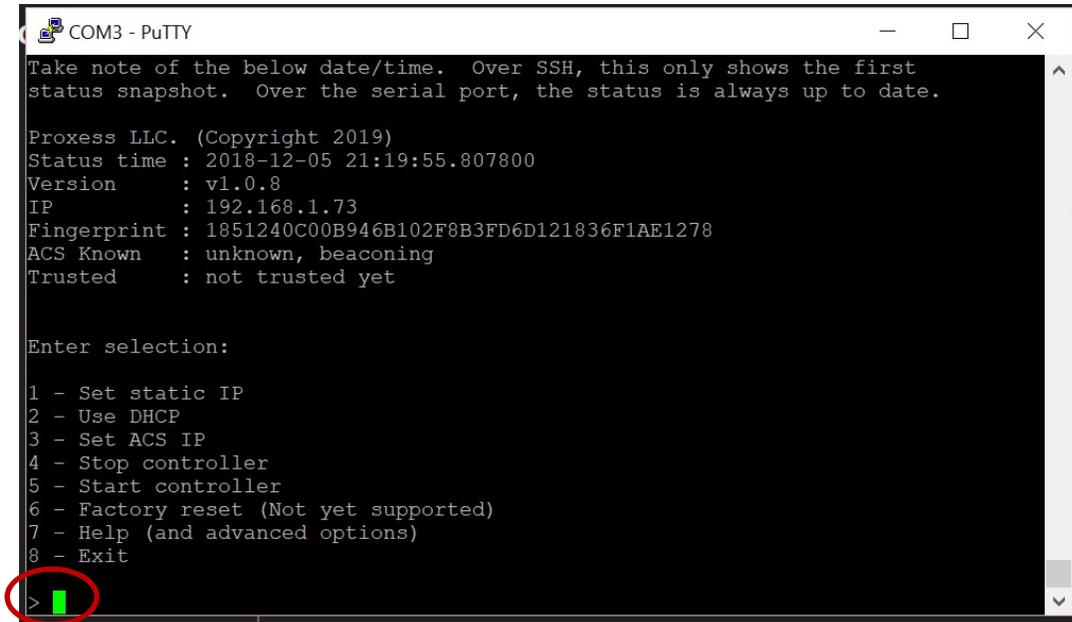


2. A black screen will appear during the opening process and the PuTTY programming tool will then open. The top of the window confirms your computer's comm port and the body of the screen shows the version of the BoxIQ, any IP address it may have, its unique identifying Fingerprint, any ACS (access control system) it may be connected with and if it has been linked and trusted with an ACS. At the "Login" prompt, hit enter.



3. The Login screen will open. Use the following Login credentials:
  - a. ID: "root"
  - b. Password: "ProxessControllers" (case sensitive, please don't forget the 's' at the end of 'Controllers')Note: If the login credentials do not work, it is likely that the controller has already been encrypted with an ACS software. If this is the case, a hardware reset on the controller will need to be performed, which will reset the default login credentials and will require the controller to be configured with the software, on a "flat" network, as earlier described.

4. A correct login will open the controller setting screen. During the typical “flat” network automatic-configuration process, an IP address will be automatically assigned to the controller. In this case, we are preparing for the remote connection between the software and a controller and will manually set the IP address. At the prompt type “1” and hit your Enter button.



```
COM3 - PuTTY
Take note of the below date/time. Over SSH, this only shows the first
status snapshot. Over the serial port, the status is always up to date.

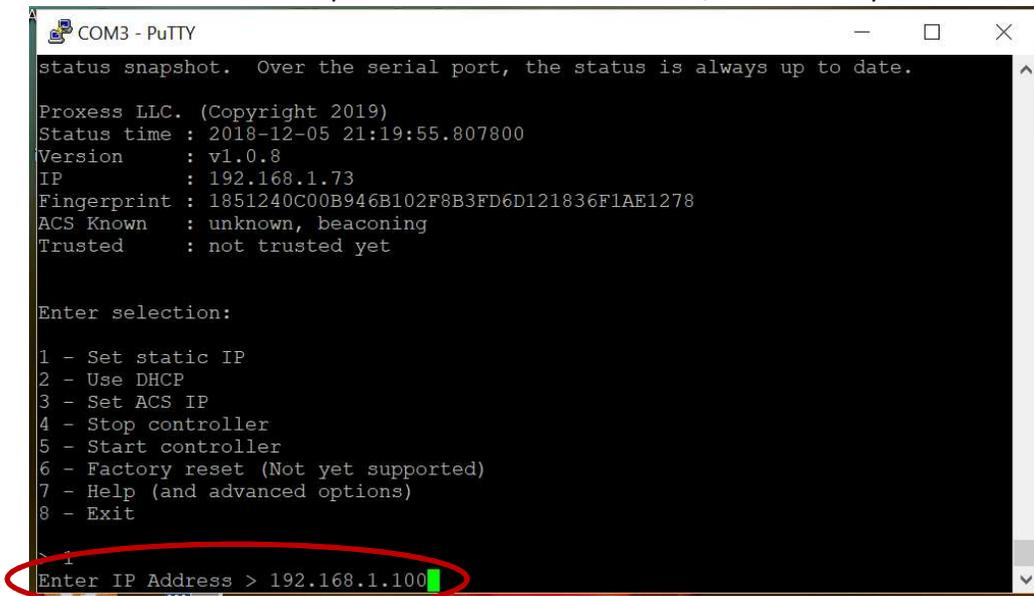
Proxess LLC. (Copyright 2019)
Status time : 2018-12-05 21:19:55.807800
Version      : v1.0.8
IP           : 192.168.1.73
Fingerprint  : 1851240C00B946B102F8B3FD6D121836F1AE1278
ACS Known    : unknown, beaconing
Trusted      : not trusted yet

Enter selection:

1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

>
```

5. Enter the IP address that you want the controller to have, and then hit your Enter button.



```
COM3 - PuTTY
status snapshot. Over the serial port, the status is always up to date.

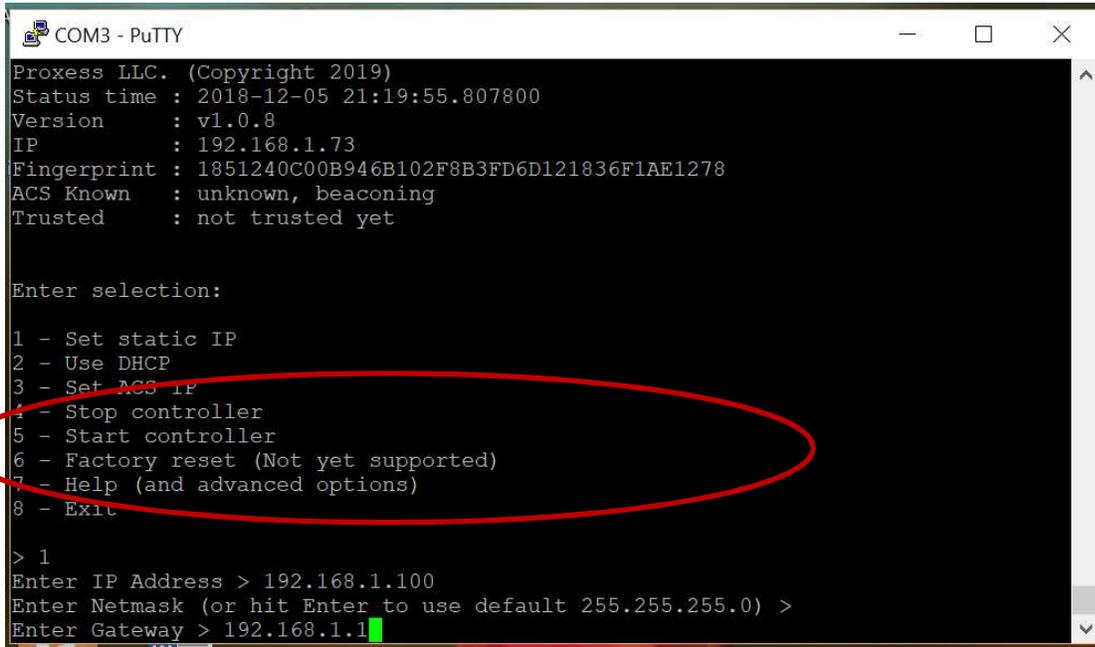
Proxess LLC. (Copyright 2019)
Status time : 2018-12-05 21:19:55.807800
Version      : v1.0.8
IP           : 192.168.1.73
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Enter selection:

1 - Set static IP
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7 - Help (and advanced options)
8 - Exit

> 1
Enter IP Address > 192.168.1.100
```

6. The next screen asks if you want to enter the default Subnet Mask (Netmask) of 255.255.255.1 or enter a custom address. Unless IT instructs otherwise, press Enter for the default. Now type in the gateway address. **Note: It is mandatory that a valid IP address be entered here. If there is no known IP address, choose any IP address that will not interfere with other devices on your network. In other words, do not duplicate IP addresses on this network.** Click Enter.



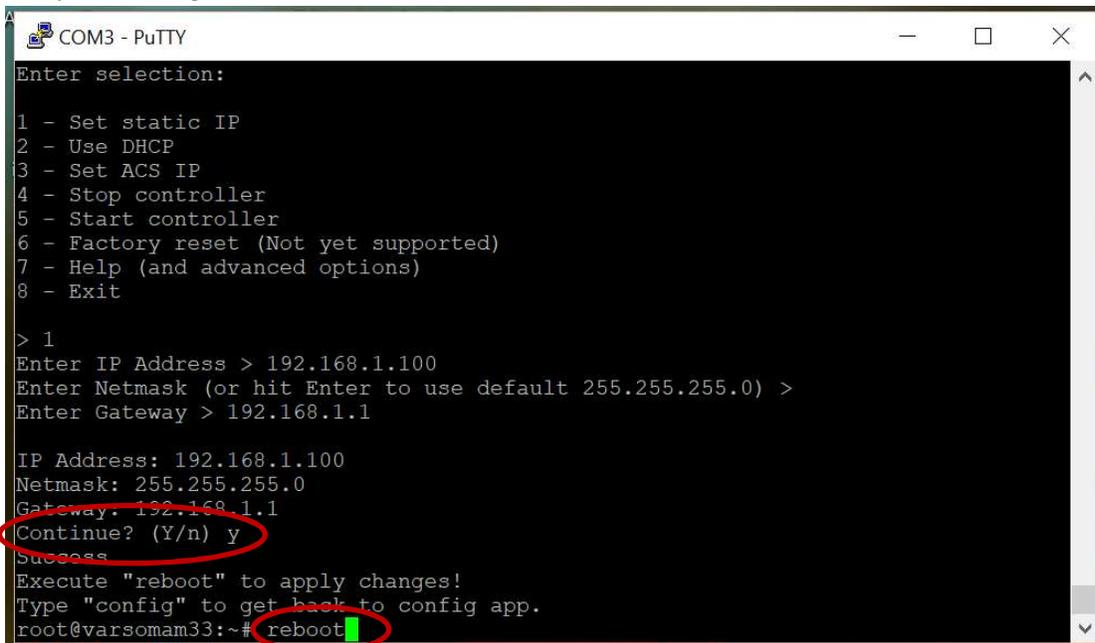
```
COM3 - PuTTY
Proxess LLC. (Copyright 2019)
Status time : 2018-12-05 21:19:55.807800
Version      : v1.0.8
IP           : 192.168.1.73
Fingerprint  : 1851240C00B946B102F8B3FD6D121836F1AE1278
ACS Known    : unknown, beaconing
Trusted      : not trusted yet

Enter selection:

1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

> 1
Enter IP Address > 192.168.1.100
Enter Netmask (or hit Enter to use default 255.255.255.0) >
Enter Gateway > 192.168.1.1
```

7. When asked if you are sure you want to change the IP address type “Y” and then enter. There will be a message that the controller will need to be rebooted to complete this action, type “reboot” and click Enter. This will complete having the custom static IP address set for the controller.



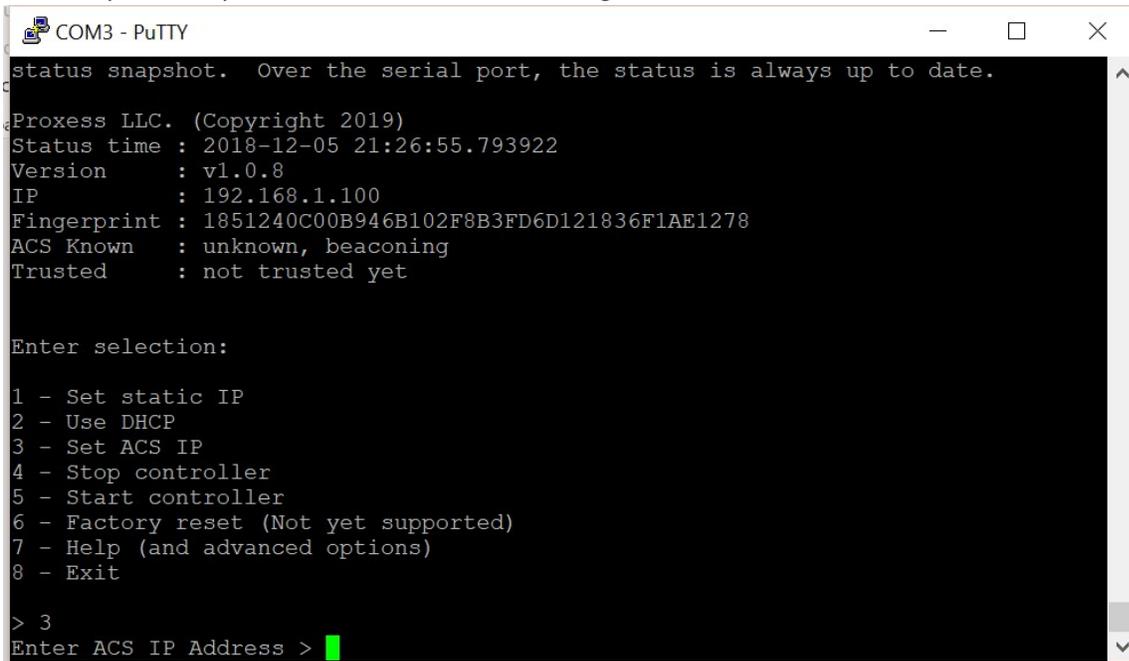
```
COM3 - PuTTY
Enter selection:

1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

> 1
Enter IP Address > 192.168.1.100
Enter Netmask (or hit Enter to use default 255.255.255.0) >
Enter Gateway > 192.168.1.1

IP Address: 192.168.1.100
Netmask: 255.255.255.0
Gateway: 192.168.1.1
Continue? (Y/n) y
Success
Execute "reboot" to apply changes!
Type "config" to get back to config app.
root@varsomam33:~# reboot
```

8. You will be taken back on the main screen, where the IP address that you entered is listed. If it is not, please reset the device and repeat the process until it is complete and you see the IP address. Press enter again and then Log back into the controller using the same “root” ID login, and password “ProxessControllers”.
- We will now need to set the ACS server computer to a static IP address, so that the controller knows how to find it, as they will likely reside on different network segments, or even across the Internet.

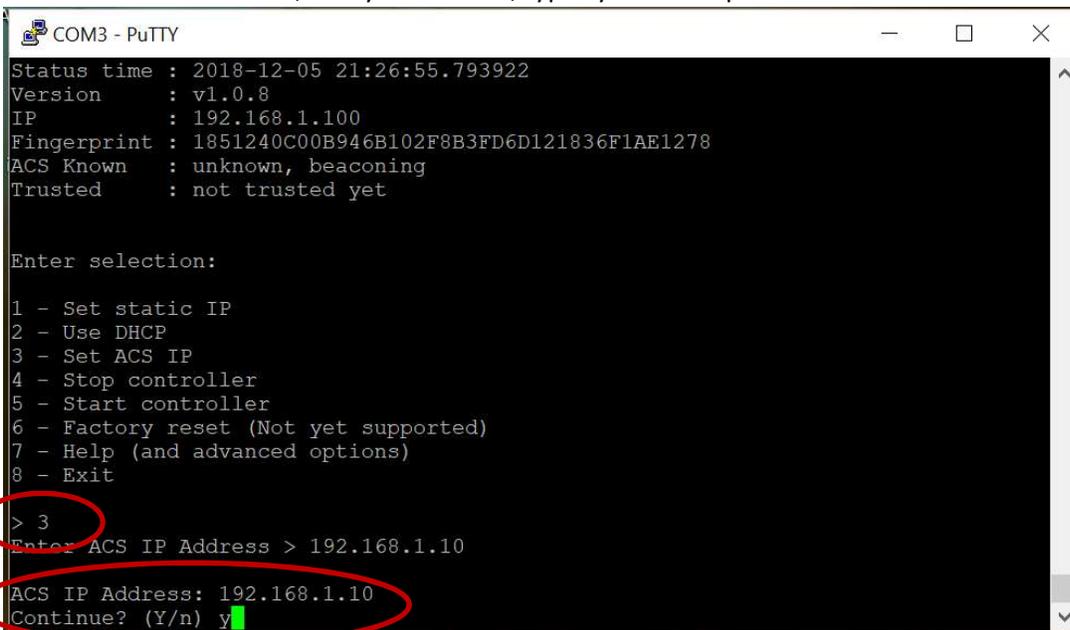


```
COM3 - PuTTY
status snapshot. Over the serial port, the status is always up to date.
Proxess LLC. (Copyright 2019)
Status time : 2018-12-05 21:26:55.793922
Version      : v1.0.8
IP           : 192.168.1.100
Fingerprint  : 1851240C00B946B102F8B3FD6D121836F1AE1278
ACS Known    : unknown, beaconing
Trusted      : not trusted yet

Enter selection:
1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

> 3
Enter ACS IP Address >
```

9. Type “3” and then press Enter. Now type the IP address of your ACS server computer and then press Enter. When asked to Continue, or if you are sure, type “y” and the press Enter.

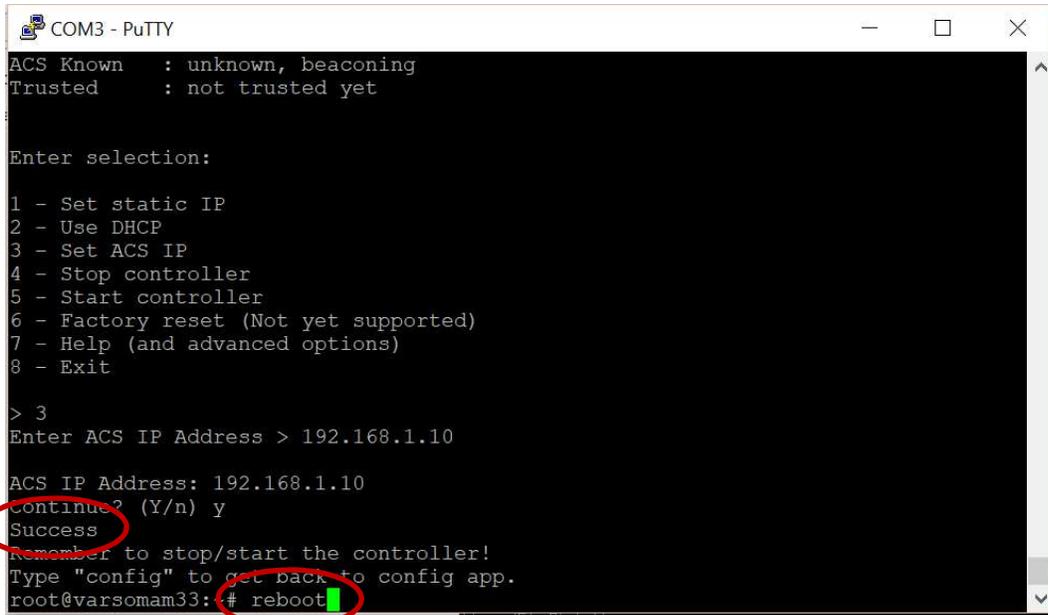


```
COM3 - PuTTY
Status time : 2018-12-05 21:26:55.793922
Version      : v1.0.8
IP           : 192.168.1.100
Fingerprint  : 1851240C00B946B102F8B3FD6D121836F1AE1278
ACS Known    : unknown, beaconing
Trusted      : not trusted yet

Enter selection:
1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

> 3
Enter ACS IP Address > 192.168.1.10
ACS IP Address: 192.168.1.10
Continue? (Y/n) y
```

10. Make sure that get a "Success" message, and then type "reboot" and then press enter.



```
COM3 - PuTTY
ACS Known   : unknown, beaconing
Trusted     : not trusted yet

Enter selection:

1 - Set static IP
2 - Use DHCP
3 - Set ACS IP
4 - Stop controller
5 - Start controller
6 - Factory reset (Not yet supported)
7 - Help (and advanced options)
8 - Exit

> 3
Enter ACS IP Address > 192.168.1.10

ACS IP Address: 192.168.1.10
Continue? (Y/n) y
Success
Remember to stop/start the controller!
Type "config" to get back to config app.
root@varsomam33: # reboot
```

11. Press enter again and at this point you should see that the IP address is entered. The ACS IP address will be shown as known, but its "Trusted" status will be listed as "not trusted yet".

12. You are done programming with Putty and the application may be closed and the serial connector removed from the controller. Return to the "Controllers" menu in the ProxessIQ software to bind with and encrypt the controller with the software. This process may be performed using any client software, as well as the server software, as long as the server software is online.

END