

# 1. Switch Configuration

## Physical Configuration

Prior to the Pronto S1witch configuration, it is necessary to connect the switch to another equipment using a **serial cable**.

## Installing and configuring Minicom

After connecting the switch to another equipment (where the operator **must** have access), it's necessary to install the Minicom software.

Depending on the Linux distribution the command to install it might be:

```
apt-get install minicom
```

or

```
yum install minicom
```

After installing, it's necessary to configure the minicom:

```
minicom -s
```

Choose the option: **File transfer protocols**

And use the following configuration:

```
A - Serial Device      : /dev/ttyS0
B - Lockfile Location  : /var/lock
C - Callin Program     :
D - Callout Program    :
E - Bps/Par/Bits       : 115200 8N1
F - Hardware Flow Control : Yes
G - Software Flow Control : No
```

Change which setting?

After configuring it, choose the following option: **Save setup as dfl**



It's advisable to be aware of what kind of serial cable it's being used, since this may impact the minicom configuration.

## Switch configuration - Control Plane Configuration

After configuring the minicom, the next step it's to configure the switch.

Access it using the following command:

```
minicom
```

If the minicom was configured correctly, it will show a login screen. For the first access, use the following login and password:

- Login: root
- Password: pica8



After the first login, it's **necessary** to change the default password of the root user.

After, the login, execute the following command:

```
picos_boot
```

The script will show 3 options, as shown below:

```
Please configure the default system start-up options:
(Press other key if no change)
 [1] PicOS L2/L3
 [2] PicOS Open vSwitch/OpenFlow * default
 [3] No start-up options
Enter your choice (1,2,3):
```

Choose option: **2**

The next question will ask to configure the static IP that the switch is going to use:

```
PicOS Open vSwitch/OpenFlow is selected.

Note: Defaultly, the OVS server is runned with static local management IP and
port 6633.
The default way of vswitch connecting to server is PTCP.

Please set a static IP and netmask for the switch (e.g. 128.0.0.10/24) :
```

Fill it with the following pattern: **10.XXX.0.13/16**

Where it's written **XXX** must be replaced by your island ID.



For further information about the configuration of the control plane network, check this link: [2. FIBRENet's Control Plane - Network Configuration for Islands](#)

After that, it's necessary to configure the gateway:

```
Please set a static IP and netmask for the switch (e.g. 128.0.0.10/24) : 10.136.0.13/16
Please set the gateway IP (e.g 172.168.1.2):
```

Use this pattern: **10.XXX.0.30**

Replace **XXX** by your island ID.

The setup should be similar to this one:

```
root@PicOS-OVS#picos_boot
Please configure the default system start-up options:
(Press other key if no change)
 [1] PicOS L2/L3
 [2] PicOS Open vSwitch/OpenFlow * default
 [3] No start-up options
Enter your choice (1,2,3):2

PicOS Open vSwitch/OpenFlow is selected.

Note: Defaultly, the OVS server is runned with static local management IP and port 6633.
The default way of vswitch connecting to server is PTCP.

Please set a static IP and netmask for the switch (e.g. 128.0.0.10/24) : 10.136.0.13/16

Please set the gateway IP (e.g 172.168.1.2):10.136.0.30

root@PicOS-OVS#
```

After this, **reboot** the switch.

```
reboot
```

## Switch Configuration - OpenFlow Configuration

Also it's necessary to configure the Open vSwitch embedded in the Pronto Switch.


1 - The first step is to create a new bridge:

```
ovs-vsctl add-br br0 -- set bridge br0 datapath_type=pica8 protocols=OpenFlow10
```

2 - The next step is to add to the bridge the ports that will be used:

```
ovs-vsctl add-port br0 ge-1/1/1 vlan_mode=trunk -- set Interface ge-1/1/1 type=pica8
ovs-vsctl add-port br0 ge-1/1/2 vlan_mode=trunk -- set Interface ge-1/1/2 type=pica8
ovs-vsctl add-port br0 ge-1/1/3 vlan_mode=trunk -- set Interface ge-1/1/3 type=pica8
```

 It's possible to add as many ports as the operator wants in the firmware version 2.1.5.

 If it's necessary to know the version being used, execute this command: **version**

3 - Verify if the ports were correctly added:

```
ovs-ofctl show br0
```

The command should show an output similar to this one:

```
root@PicOS-OVS#ovs-ofctl show br0
OFFT_FEATURES_REPLY (xid=0x2): dpid:678c089e0162d735
n_tables:254, n_buffers:256
capabilities: FLOW_STATS TABLE_STATS PORT_STATS STP ARP_MATCH_IP
actions: OUTPUT SET_VLAN_VID SET_VLAN_PCP SET_DL_SRC SET_DL_DST ENQUEUE
1(ge-1/1/1): addr:08:9e:01:62:d7:35
  config: 0
  state: LINK_DOWN
  current: 10MB-HD COPPER AUTO_NEG
  advertised: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  supported: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  speed: 10 Mbps now, 1000 Mbps max
2(ge-1/1/2): addr:08:9e:01:62:d7:35
  config: 0
  state: LINK_UP
  current: 1GB-FD COPPER AUTO_NEG
  advertised: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  supported: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  peer: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER
  speed: 1000 Mbps now, 1000 Mbps max
3(ge-1/1/3): addr:08:9e:01:62:d7:35
  config: 0
  state: LINK_DOWN
  current: 10MB-HD COPPER AUTO_NEG
  advertised: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  supported: 10MB-HD 10MB-FD 100MB-HD 100MB-FD 1GB-FD COPPER AUTO_NEG
  speed: 10 Mbps now, 1000 Mbps max
LOCAL(br0): addr:08:9e:01:62:d7:35
  config: 0
  state: LINK_UP
  current: 10MB-FD COPPER
  supported: 10MB-FD COPPER
  speed: 10 Mbps now, 10 Mbps max
OFFT_GET_CONFIG_REPLY (xid=0x4): frags=normal miss_send_len=0
root@PicOS-OVS#
```

#### 4 - TODO

```
ovs-vsctl set-controller br0 tcp:10.X.0.101:6633
```