

SNMP exercises, part 1
PacNOG5, Papeete, PF

1. Getting packages (should already be installed)

```
> apt-get install snmp
> apt-get install snmpd
> apt-get install mbrowse
```

2. GET and WALK

To control that your SNMP installation works:

- The backbone router and net routers

```
> snmpstatus -c pacn0g2k9 -v2c 192.168.1.221
> snmpstatus -c pacn0g2k9 -v2c 192.168.1.222
```

- The NOC server

```
> snmpstatus -c pacn0g2k9 -v2c 192.168.1.224
```

- The network switches:

```
> snmpstatus -c pacn0g2k9 -v2c 192.168.1.223
> snmpstatus -c pacn0g2k9 -v2c 192.168.2.125
> snmpstatus -c pacn0g2k9 -v2c 192.168.2.253
```

- Try to snmpwalk different parts of these equipments' MIBs:

```
> snmpwalk -c pacn0g2k9 -v2c 192.168.1.Y 1.3.6.1.4.1.9.9.13.1.3 | more
> ...
```

a) Do all the devices answer ?

b) Do you notice anything important about the OID on the output ?

3. Configuration of snmpd

- Edit the following file:

```
> vi /etc/snmp/snmpd.conf
```

Comment the line (ADD '#' in front):

```
com2sec paranoid default public
```

... so that it becomes:

```
#com2sec paranoid default public
```

And UNcomment the line (REMOVE the '#' in front) and change community:

```
#com2sec readonly default public
```

... so that it becomes:

```
com2sec readonly default pacn0g2k9
```

Edit the file `/etc/default/snmpd`, and find the line:

```
SNMPDOPTS='-Lsd -Lf /dev/null -u snmp -I -smux -p /var/run/snmpd.pid 127.0.0.1'
```

Remove `127.0.0.1` at the end, so you have:

```
SNMPDOPTS='-Lsd -Lf /dev/null -u snmp -I -smux -p /var/run/snmpd.pid'
```

- Restart `snmpd`

```
> /etc/init.d/snmpd stop
> /etc/init.d/snmpd start
```

4. Check that `snmpd` is working:

```
> snmpstatus -c pacn0g2k9 -v2c localhost
```

- What do you observe ?

5. Check now that you can run `snmpstatus` against your neighbor's server:

- Find out what your neighbor's IP is, ask them to run:

```
> ifconfig
```

(your IP is `192.168.2.X` where `X` is the IP of the PC of your neighbor, for example: `2.101`, `2.102`, `2.201`, `2.203`, ...)

- Check `snmp` against their machine:

```
> snmpstatus -c public -v2c 192.168.2.10x
```

or

```
> snmpstatus -c public -v2c 192.168.2.20x
```

6. `SNMPwalk` - the rest of MIB-II

- Try and run `snmpwalk` on the routers, switches, and other hosts in the network:

```
> snmpwalk -c pacn0g2k9 -v2c 192.168.1.221 (and .222, .223, .224)
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X
```

Note the kind of information you can obtain.

```
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X ifDescr
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X ifTable
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X ifDescr
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X ifOperStatus
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X ifAdminStatus
> snmpwalk -c pacn0g2k9 -v2c 192.168.2.X if
```

7. Adding MIBs

Remember when you ran:

```
> snmpwalk -c pacn0g2k9 -v2c 192.168.1.221 1.3.6.1.4.1.9.9.13.1.3 | more
```

If you noticed, the `SNMP` client (`snmpwalk`) couldn't interpret all the `OIDs` coming back from the Agent:

```
SNMPv2-SMI::enterprises.9.9.13.1.3.1.2.1 = STRING: "chassis"
SNMPv2-SMI::enterprises.9.9.13.1.3.1.6.1 = INTEGER: 1
```

or

```
SNMPv2-SMI::enterprises.9.9.13.1.3.1.2.1 = STRING: "Temp at inlet"  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.2.2 = STRING: "Temp at outlet"  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.3.1 = Gauge32: 21  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.3.2 = Gauge32: 30  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.4.1 = INTEGER: 60  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.4.2 = INTEGER: 72  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.6.1 = INTEGER: 1  
SNMPv2-SMI::enterprises.9.9.13.1.3.1.6.2 = INTEGER: 1
```

What is '9.9.13.1.3.1.3' ?

To be able to interpret this information, we need to download extra mibs...

- Download the following files to your machine:

```
ftp://ftp.cisco.com/pub/mibs/v2/CISCO-SMI.my  
ftp://ftp.cisco.com/pub/mibs/v2/CISCO-ENVMON-MIB.my
```

```
> cd /usr/share/snmp/mibs  
> wget ftp://ftp.cisco.com/pub/mibs/v2/CISCO-SMI.my  
> wget ftp://ftp.cisco.com/pub/mibs/v2/CISCO-ENVMON-MIB.my
```

- Create the file /usr/share/snmp/snmp.conf, and put into it:

```
mibdirs /usr/share/snmp/mibs
```

```
mibs ALL
```

This tells the snmp* commands that they should load ALL mibs in the mibdir /usr/share/snmp/mibs

Save the file, quit.

Now, try again:

```
> snmpwalk -c pacn0g2k9 -v2c 192.168.1.221 1.3.6.1.4.1.9.9.13.1.3 | more
```

What do you notice ?