Install an SNMP Agent and Configure Telegraf SNMP Input

Description

SNMP stands for Simple Network Management Protocol.

We can configure Telegraf to read SNMP, save it into InfluxDB and view it in Grafana.

Common devices that support SNMP are routers, switches, printers, servers, workstations and other devices found on IP networks.

Not every network device supports SNMP, or has it enabled, and there is a good chance you don't have an SNMP enabled device available that you can use in this lecture.

So, I will show you how to install SNMP on an Ubuntu 18 server.

I will use our Grafana server.

```
sudo apt install snmp snmpd snmp-mibs-downloader
```

Edit the *snmpd.conf* to set it's SNMP community. I set my community to *mycommunity*

```
sudo nano /etc/snmp/snmpd.conf
```

```
...
rocommunity mycommunity default -V systemonly
rocommunity6 mycommunity default -V systemonly
...
```

Restart

```
sudo service snmpd restart
```

Do a test query

```
snmpwalk -v 2c -c mycommunity 127.0.0.1 .
```

The response should show results with OID numbers.

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Now to enable MIB descriptions instead of OIDs.

Edit the *snmp.conf* file

```
sudo nano /etc/snmp/snmp.conf
```

comment out the line *mibs* as below, using a #

```
#mibs
```

Save, and retry a query.

```
snmpwalk -v 2c -c mycommunity 127.0.0.1 .
```

It should show the MIBs descriptions in the results.

Now to configure Telegraf to read SNMP

```
sudo nano /etc/telegraf/telegraf.conf
```

Add this script below to the Inputs Plugins section

```
[[inputs.snmp]]
  agents = [ "127.0.0.1:161" ]
  version = 2
  community = "mycommunity"

  [[inputs.snmp.field]]
    name = "hostname"
    oid = "RFC1213-MIB::sysName.0"
    is_tag = true

  [[inputs.snmp.field]]
    name = "uptime"
    oid = "DISMAN-EXPRESSION-MIB::sysUpTimeInstance"

  # IF-MIB::ifTable contains counters on input and output traffic as well as
errors and discards.
  [[inputs.snmp.table]]
    name = "interface"
    inherit_tags = [ "hostname" ]
    oid = "IF-MIB::ifTable"

    # Interface tag - used to identify interface in metrics database
```

```
    [[inputs.snmp.table.field]]
      name = "ifDescr"
      oid = "IF-MIB::ifDescr"
      is_tag = true

  # IF-MIB::ifXTable contains newer High Capacity (HC) counters that do not
overflow as fast for a few of the ifTable counters
  [[inputs.snmp.table]]
    name = "interface"
    inherit_tags = [ "hostname" ]
    oid = "IF-MIB::ifXTable"

    # Interface tag - used to identify interface in metrics database
    [[inputs.snmp.table.field]]
      name = "ifDescr"
      oid = "IF-MIB::ifDescr"
      is_tag = true

  # EtherLike-MIB::dot3StatsTable contains detailed ethernet-level information
about what kind of errors have been logged on an interface (such as FCS error,
frame too long, etc)
  [[inputs.snmp.table]]
    name = "interface"
    inherit_tags = [ "hostname" ]
    oid = "EtherLike-MIB::dot3StatsTable"

    # Interface tag - used to identify interface in metrics database
    [[inputs.snmp.table.field]]
      name = "ifDescr"
      oid = "IF-MIB::ifDescr"
      is_tag = true
```

Save and restart Telegraf

```
sudo systemctl restart telegraf
```

⚠ **NOTE** : By default SNMPD restricts how much information it returns. So currently we won't get any **IF-MIB::** data from a SNMP query.

Go back into *snmpd.conf* and edit the *view* section to return more data.

```
sudo nano /etc/snmp/snmpd.conf
```

Change lines

```
...
view    systemonly  included   .1.3.6.1.2.1.1
view    systemonly  included   .1.3.6.1.2.1.25.1
...
```

to

```
...
view    systemonly  included   .1.3.6.1.2.1
#view   systemonly  included   .1.3.6.1.2.1.25.1
...
```

This will now return all data with the OID prefixes .1.3.6.1.2.1 which also includes interface information.