SNMP Monitoring Quick Start Guide

This topic provides a quick introduction to setting up your SNMP Network Devices in Uptime Infrastructure Monitor as well as how to resolve common setup issues.

Adding your network devices to Uptime Infrastructure Monitor

The first step in setting up an SNMP device for monitoring within Uptime Infrastructure Monitor is to add the device to Uptime Infrastructure Monitor as an element. This is done from the My Infrastructure tab in the Uptime Infrastructure Monitor tool bar via the Add System / Network Device link in the tree panel on the left side of the screen. After clicking the link, the Add system dialogue will ask you for a display name and description for the device, which can be any text.

The next choice is the option to select from the Type of System / Device, which will depend on the device type and the SNMP version it supports. The main choices for SNMP devices are:

- **Net-SNMP V2 or Net-SNMP V3:** these are typically used for servers that support the Net-SNMP protocol for gathering metrics related to CPU, Memory, Disk load, etc. as well as any additional metrics provided by OID.
- **Network Device:** this option is used for network devices such as switches, routers, SANs, firewalls, etc. that only provide metrics for OIDs appropriate to their functionality (e.g. port availability, network utilization, etc.).

For more details about SNMP and Uptime Infrastructure Monitor's SNMP support, please refer to SNMP-based Systems in the Uptime Infrastructure Monitor Administrator's Guide.

After selecting the appropriate device type for the element, provide the hostname or IP address and the SNMP connection details for the device / system. If the majority of the devices / systems share the same connection settings (ie. community string, port, etc.), it is recommended to enter these settings in the Global Element Settings page of the Uptime Infrastructure Monitor UI (Config -> Global Element Settings -> SNMP Global Credentials), so that the Use Global SNMP Connection Configuration check box can be selected; otherwise, you will need to provide the connection details for each device / system.

The main options here are:

- **SNMP Version:**
  - V2 - an un-authenticated, un-encrypted version of SNMP.
  - V3 - a newer version of SNMP that provides for authentication and encryption of the transmitted data.
- **SNMP Port:** Default option is port 161 but may be set differently as required.
- **Read Community:** Default option is *public* but very likely need to be changed. The read community acts as a very basic password for controlling access to the SNMP data.
- **SNMP V3 only:** These options are only used if the device supports the newer encrypted version 3 of SNMP.
  - Username.
  - Authentication Password.
  - Authentication Method.
  - Privacy Password.
  - Privacy Type.

If uncertain of which SNMP values to select for the device / system, the following areas may be helpful to check:

- Check in the network device's admin panel / interface. Most devices should allow you to change these values somewhere under their network options.
- Check the user guide / manual for the device as it should provide the default options.
- If the device is a server running the net-snmp daemon, check the snmpd.conf file under either /etc or /usr/local/etc/snmp/ for the current values.
- Check with your organization's network administrators.

After setting all the SNMP configuration values and hostname, click on the save button to have Uptime Infrastructure Monitor attempt to communicate with the device / system over SNMP and create the element. Some common issues that may arise at this stage are:

- Request seems to time-out when setting up the device.
  - Check that the port and read community are correct.
- Error: *Can't load required RFC1213 MIB data*.
  - This error means that the device doesn't support the RFC1213 MIB, which is required for net-snmp support. Try setting it up as a network device instead.

Setting up a Service Monitor for the device's OIDs

Because the device / system is an element in Uptime Infrastructure Monitor, a service monitor can be created to poll the results of specific OIDs (Object Identifier). An OID is a numerical identifier for one specific statistic or metric that is available from the device. These OIDs combine with a MIB (Management Information Base), which defines and describes the possible values for this metric.

The SNMP poller service monitor can be created from the *Services* tab in the Uptime Infrastructure Monitor tool bar. From there, select *Add Service Monitor* from the tree panel on the left and choose the *SNMP Poller* option from the *Network Service Monitors* section.

As described above, a Name and Description can be entered and the next choice will be which host or service group to associate the service monitor with. For now, check *single system* and select the element / host that was just created above for for the SNMP device.

Next, under the *SNMP Poller Settings* section, click the *Add OID* button to launch the Uptime Infrastructure Monitor MIB Browser, which is used to either select the OID manually by it's numerical value (e.g. .1.3.6.1.4.1) or by selecting the value from the OID tree. If this is the first time launching the MIB browser, it may take a couple minutes for Uptime Infrastructure Monitor to load the pre-bundled MIBs into memory.

Once the MIBs are loaded into memory, the applicable OIDs for the device can be selected by drilling down into the tree. Uptime Infrastructure Monitor includes a pre-bundled selection of MIBs from the most common vendors, which can be found by drilling down to this location in the tree:

iso -> org -> dod -> internet -> private -> enterprises (which translates to an OID of .1.3.6.1.4.1)

From within that location, the vendor of the device should be present and the appropriate OID for the device can be selected. For an OID to be valid, the right hand box needs to be populated with the following details: OID, Syntax, Description.

If there are no OIDs present for the vendor or the particular device, additional MIBs can be obtained from the vendor directly and loaded into Uptime Infrastructure Monitor. This step is done on the monitoring station by placing the files in the <uptime_dir>/mibs/ directory, and restarting the *up.time Data Collector* (or *uptime_core* on Linux / Unix platforms) service to refresh the MIB cache. See Adding MIBs to Uptime Infrastructure Monitor for further details.

After selecting the OID to poll for the device / system, the appropriate data type needs to be selected under *Collection Info* and possibly choose an additional option of how to process the returned value. The description / syntax information should provide some hints on what is an appropriate choice for this particular OID. Once this step is complete, click next to provide some additional details about how to handle the result.

Finally, click *Add* to add the OID to the service monitor and return to the *Add Service* screen and proceed with the usual choices about how Uptime Infrastructure Monitor will react to the results of the service monitor (e.g. Warning / Critical Thresholds, Timing / Alert Settings, Alert / Action Profiles). Once all the settings are completed, click *Finish* to complete the service monitor.

At this point, SNMP poller can be tested by clicking on the *Test Service Monitor* button. If all is well, the monitor should be able to successfully poll the OID on the device and return the result. If it does not work, review the error and re-check the service monitor settings.