



SNMP Quick Start



APPLICATION NOTE

September 2013

Description: Guide to using SNMP with GENESIS64

OS Requirement: Windows 8 x64 (Professional or Enterprise Edition) / Windows 7 x64 (Professional or Enterprise Edition) / Windows Server 2012 x64 / Windows Server 2008 R2 x64 / Windows Vista x64 SP2 (Business, Ultimate, or Enterprise Edition) / Windows Server 2008 x64

General Requirement: GENESIS64 V10.8 installed, Windows setup to support SNMP Service

Introduction

SNMP stands for Simple Network Management Protocol and is a simple protocol that allows devices to expose useful information. The information could be the CPU fan speed of a computer or the routing table of the router.

An SNMP network consists of a Network Management System (NMS), Managed Devices, and Agents. NMS is software that collects data from the devices, organizes it, and shows it to the end user. The ICONICS SNMP connector functions as a manager in an SNMP scenario. An NMS would monitor or control managed devices that provide SNMP information through the agents.

The Agent is software running on a device (Router, Printer or PC) and it simply answers to the messages from the NMS. These messages can either be Read (NMS wants to retrieve data) OR Write (Manager wants to set data). The agent can also send a Trap to the NMS. A Trap is a notification similar to an alarm (for example: "the CPU Temperature is too high!").

Each variable that SNMP can read/write is identified in the form of OID. OID (Object Identifier) identifies the information in sequence of numbers. For example, 1.3.6.1.2.1.1.1 is an OID that describes the description (sysdescr) of the device. All the OIDs for a device are called MIB (Management Information Base), which represents all the data that the device can expose through SNMP. This information for a device is provided by the manufacturer in the form of a MIB text file. This MIB file act as a dictionary for the device. The MIB files can be used by the NMS to translate numerical OID strings into human-readable text. For example, 1.3.6.1.2.1.1.1 can be translated as "iso.org.dod.internet.mgmt.mib-2.system.sysdescr", which describes the location for sysdescr (the description of the system) that is inside the folder "system" which is inside "mib-2" etc.

Setting up Windows to Support SNMP Connectivity

You will need to configure Windows to support SNMP. You can find more details on how to setup windows by following the application note entitled *SNMP – Setting up Windows to Support SNMP Connectivity*.

Creating a New SNMP Configuration

1. Start Workbench from Start → Programs → ICONICS → Workbench.
2. In the Applications ribbon, click on SNMP.

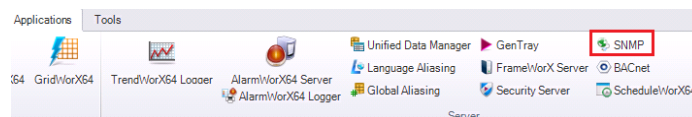


Figure 1 - SNMP Provider

3. Right-click on "localhost" and select "New Database" to create a new SNMP configuration. Follow the database wizard to create a new database.
4. Right-click on your new database and select "Make Active" to make it the active configuration.
5. Any available MIB file for your device must be added and parsed by SNMP configurator to make SNMP data comprehensible. Expand your database in the Project Explorer then double-click on **MIB**.

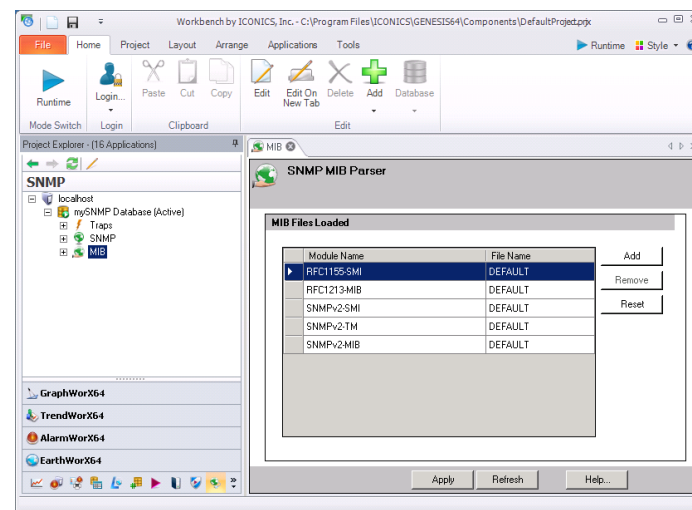


Figure 2 - MIB Items

6. Click on **Add** to add MIB files to the configuration.



SNMP Quick Start



APPLICATION NOTE

September 2013

NOTE: There are some MIB files available in the C:\Windows\SysWOW64 or C:\Windows\winsxs folder. (Note: You may need to copy them onto your desktop.)

- Expand **SNMP** and double-click on Default Network.

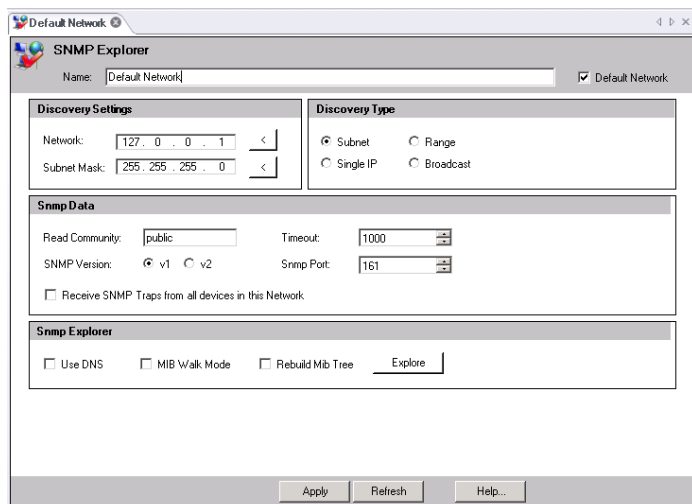


Figure 3 - Default Network

- Depending on your network infrastructure, you can explore the network for SNMP devices by entering a **Single IP**, a **Subnet**, an **IP Range** or **Broadcast**.
- Under SNMP Explorer, Click on **Explore...** to start exploring your network for SNMP enabled devices. The SNMP Explorer will browse the network for SNMP enabled devices and display them.

NOTE: Make sure you have the correct network IP under Discovery Settings.

NOTE: Exploring may take a long time if you have a large network with a lot of SNMP enabled devices.

- Once it is done exploring, select the device that you want to receive SNMP information from.

- Browse the device until you see the tag that contains the information you want. For example, the system description for a printer is stored in "iso.org.dod.internet.mgmt.mib-2.system.sysDescr"

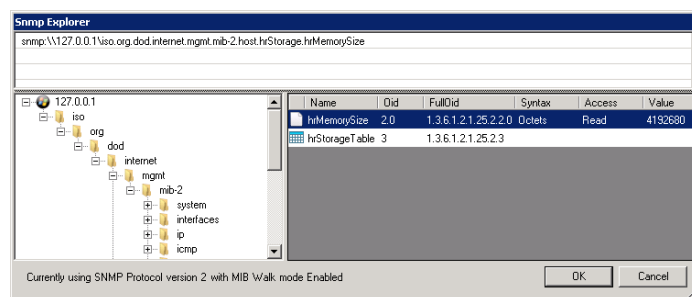


Figure 4 - Browse for SNMP tags

- Double-click on it to add it to the configuration. The selected tag is now added to the configuration. Refresh tree if prompted.
- Double-click on your item in the tree to edit properties like Name and Data Type. The name here is how you will see the item when browsing for SNMP tags in the Unified Data Browser.
- Now you can browse for SNMP tags from any ICONICS product through the Unified Data Browser under the SNMP shortcut.

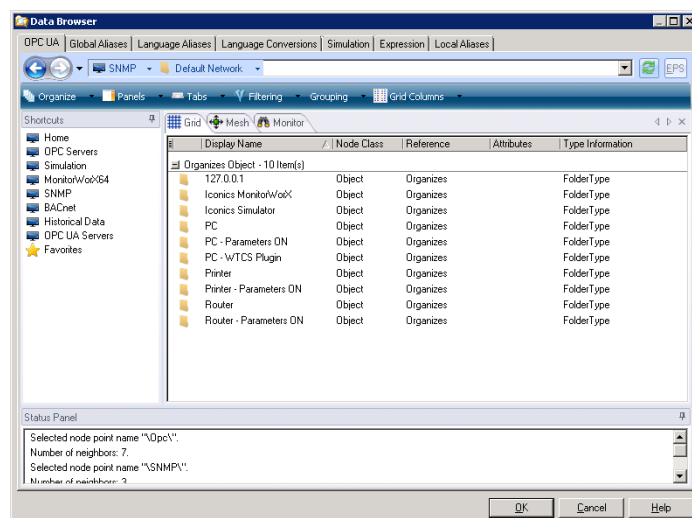


Figure 5 - Browsing for SNMP tags from Unified Data Browser

- You can also check the online availability of a device by selecting the Heartbeat tag for all configured SNMP Devices. This tag is available for each device in the Unified Data Browser.