SNMP – Quick Start

APPLICATIONS NOTE

April 2010

Description: Guide to using SNMP with GENESIS32
OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7
General Requirement: GENESIS32 V9.2 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 notes *SNMP Connector - Setting up Windows to support SNMP Connectivity* and *SNMP Connector - Setting up Windows to support SNMP Connectivity for Windows Vista.*

Creating a New SNMP Configuration

1. ICONICS SNMP Configurator is used to configure SNMP connector from ICONICS. Start the ICONICS SNMP Connection Configurator by going to Start → Programs → ICONICS Tools → SNMP Configurator
2. Click on 🗋 to create a new SNMP configuration. Select the appropriate type of database (MS Access, SQL Server) to store configuration information. Make database active and finish the database wizard.
3. Any available MIB file for your device must be added and parsed by SNMP configurator to make SNMP data comprehensible. Click on **MIB Items** in the left window pane.

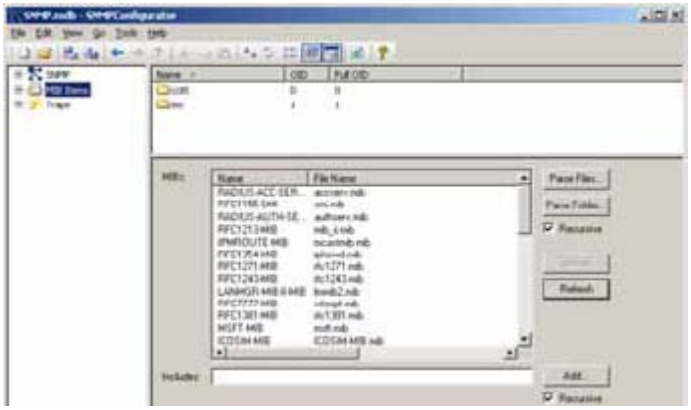

Figure 1 - MIB Items

NOTE: Press F11 if you don't see the dialog on the right-hand pane.

4. Click on **Parse Folder** to parse a whole folder or **Parse Files** to parse specific files.

NOTE: There are some MIB files available in the C:\Windows\System32 folder

5. Click on **SNMP** and first add a new network segment.

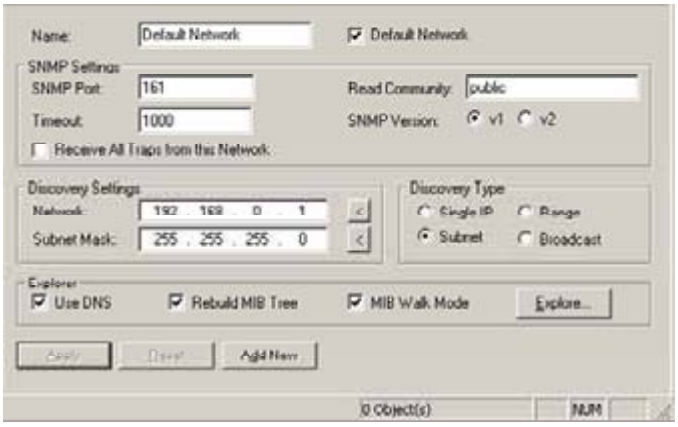

Figure 2 - SNMP

6. 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.
7. Click on **Explore…** to start exploring your network for SNMP enabled devices. The ICONICS Unified Data Browser will browse the network for SNMP enabled devices and display them.
8. Once it is done exploring, select the device that you want to receive SNMP information from.
9. 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"*

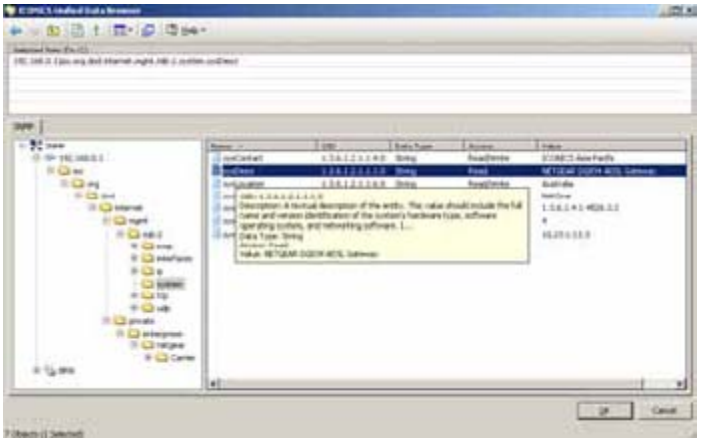

Figure 3 - Browse for SNMP tags

10. Double click on it to add it to the configuration. The selected tag is now added to the configuration.

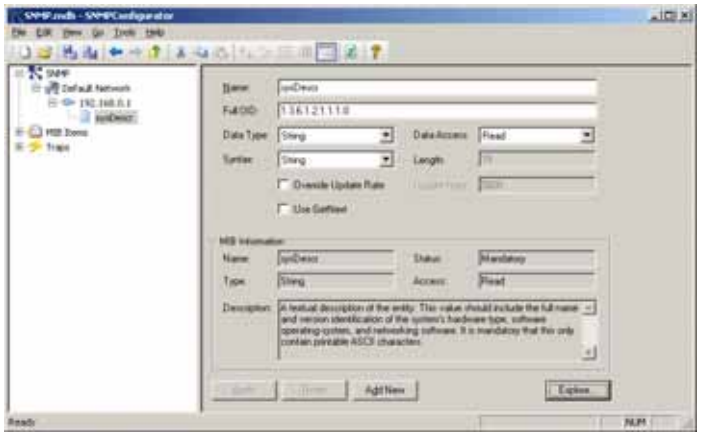

Figure 4 - SNMP tag added to configuration

11. Edit properties like Name and Device Type to what you desire to see when browsing for these tags.
12. Make this configuration active once you are done adding the tags by going to **File → Make Active**
13. Now you can browse for SNMP tags from any ICONICS product through the Unified Data Browser under the SNMP tab

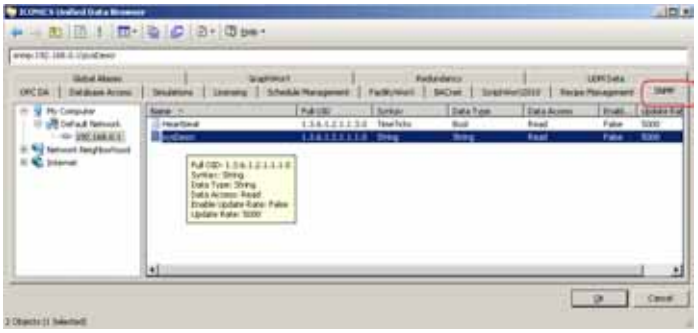

Figure 5 - Browsing for SNMP tags from Unified Data Browser

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