



SAE – Automation, s.r.o. Nová Dubnica
Solid And Effective partner at development
of your products and industry automation

SAEAUT SNMP Agent



List of SAEAUT SNMP White Papers related to SAEAUT SNMP Agent
from SAE – Automation, s.r.o.

The purpose of the article is to introduce and give useful recommendations how to use the SAEAUT SNMP Agent and how to send the Trap messages from that agent.

Introduction

In typical **SNMP usage**, there are a number of systems to be **managed**, and one or more systems managing them. A software component called an **agent** (see below) runs on each managed system and reports **information** via **SNMP** to the **managing systems**. Data contained in the **agent database** depends on the specific function of the devices. Description of these data is made via standard called **MIB** (Management Information Bases).

The company SAE–Automation, s.r.o. has brought on the market very powerful management system called **SAEAUT SNMP OPC Server** and popularity of this management system is each day increasing.

Good message is that in these days SAE–Automation, s.r.o. introduces a new product which facilitates to **simulate SNMP device** called **SAEAUT SNMP Agent**.

How can customers and users of SAEAUT SNMP OPC Server utilize this agent?

Please imagine the following scenario: *You are an integrator of software solutions and you have already installed SNMP management system, but for some reasons you do not have any real devices.* (For example: (a) you have not bought devices yet, (b) the system will be installed directly in your customer factory and you have no device available, (c) you need to generate traps messages, (d) etc.)

One of the most useful features of **SAEAUT SNMP Agent** is generating the **Trap** messages. **Traps** are like **events**. This is a way the SNMP agent sends the information to SNMP manager. In other words, events can be fired to SNMP manager from SNMP agent.

Finally, this document should perform as a user guide which will introduce the basic SNMP terms (manager, agent, MIB, Trap, etc.) and show you step-by-step, how to use **SAEAUT SNMP Agent** and how to send a **Trap** to a management system.

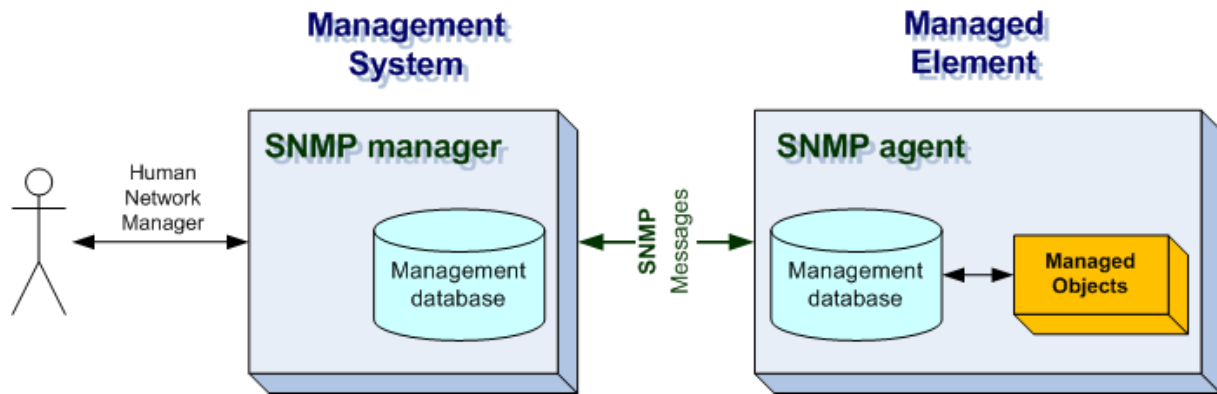


Figure 1: Simple block schema of usage manager and agent application.

Traps

The **SAEAUT SNMP Agent** generates trap messages that are then sent to an SNMP management trap destination. Trap destinations are identified by a computer name, IP address, or IPX address of the "host of hosts" on the network to which you want the trap messages sent.

The **SAEAUT SNMP Agent** every 3 seconds generates a new trap. The trap message includes a new value of the following three items:

- TrapCounter (.1.3.6.1.4.1.33.0.0.3),
- IntRandom (.1.3.6.1.4.1.33.0.0.5),
- Gauge32Random (.1.3.6.1.4.1.33.0.0.7).

To ensure that the **SAEAUT SNMP Agent** will send traps to right destination, please do the following:

1. Click on the Windows **Start** ⇒ **Control Panel** ⇒ **Administrative tools** ⇒ **Services**.
2. Scroll through the right frame to locate **SNMP Service**.
3. Right-click on **SNMP Service** and choose **Properties**.
4. Choose the **Traps** tab.
5. Add a new **Community name** if needed; **Public** is the default.
6. Add to the **Trap destination** a **host** or **hosts**.

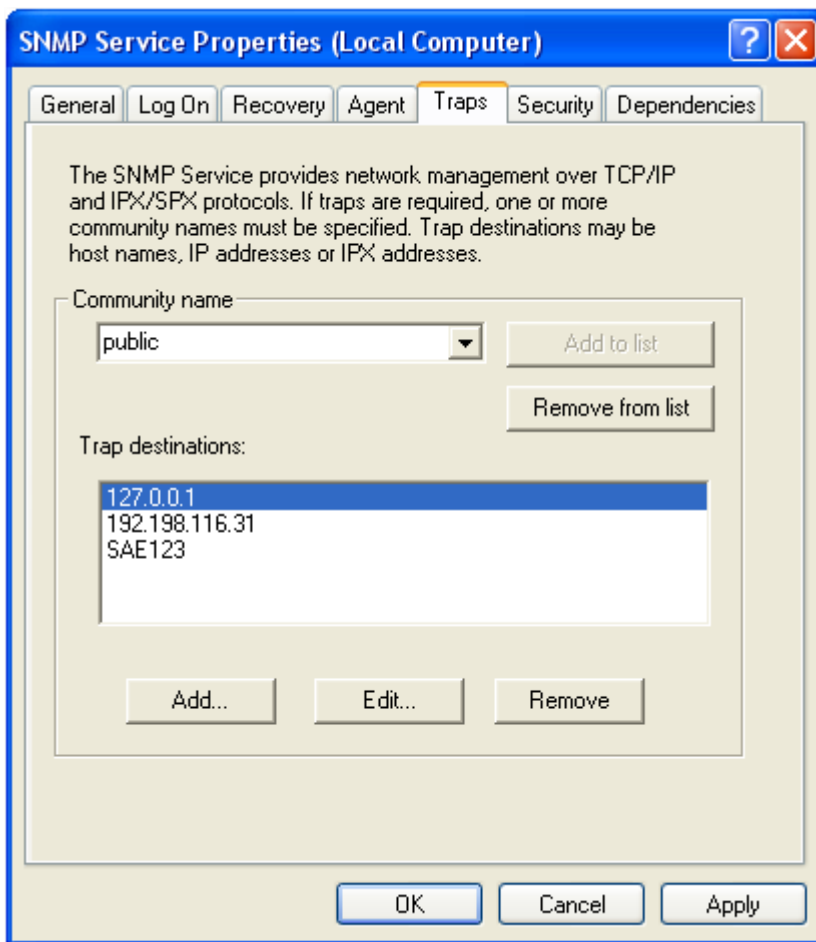


Figure 2: The SNMP Service Properties dialog – Traps tab.

7. Choose the **Security** tab.
8. Check the **Send authentication trap**.
9. Add any new **names** under **Accepted Community Names**.
10. Click on **OK** button.

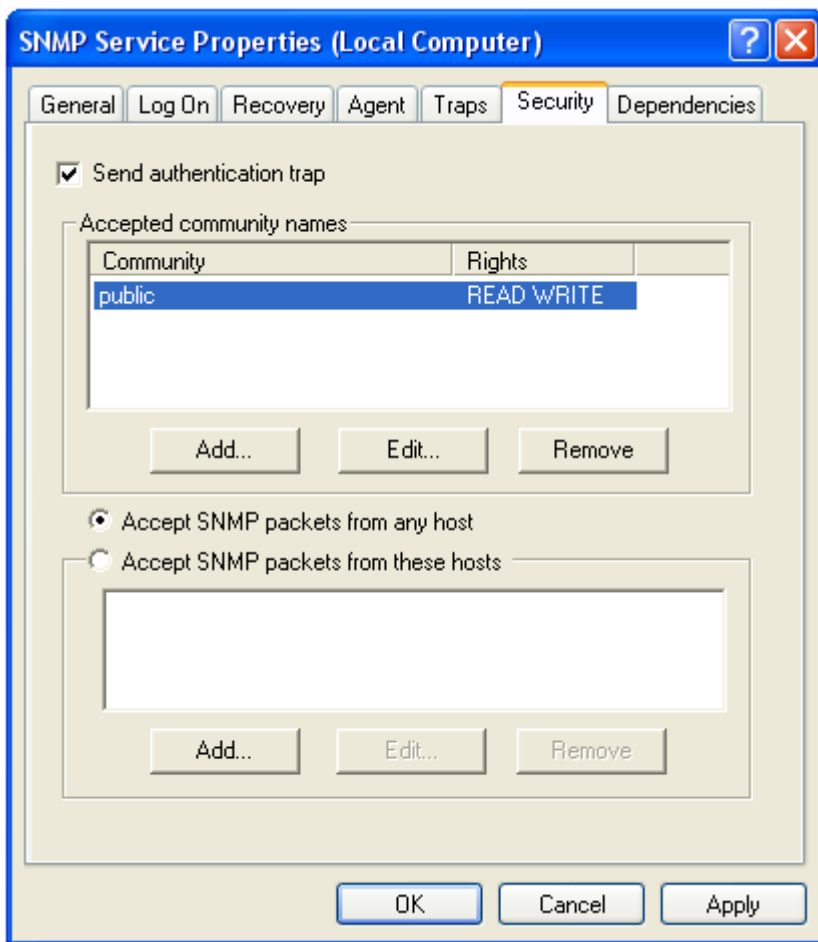


Figure 3: The SNMP Service Properties dialog – Security tab.

Note that: More about SNMP Service and SNMP Trap Service you can find in document Installation & Activation of the SNMP Service and SNMP Trap Service (please see White Paper downloads).

Management Information Bases (MIB)

A MIB describes the objects, or entries, that are to be included in the SNMP agent database. SNMP agents are sometimes referred to as MIBs. An SNMP manager can request and collect information from an agent's MIB. They use a hierarchical namespace containing object identifiers (OID). Each OID identifies a variable that can be read or set via SNMP. All OIDs defined in the SAEAUT SNMP Agent start with predefined prefix .1.3.6.1.4.1.33. Their descriptions you can find in the following tables below.

.1.3.6.1.4.1.33.0.0.1	
Name	ProductName
OID	.1.3.6.1.4.1.33.0.0.1
Syntax	Octet String
Access	Read-only
Description	The product name: SAEAUT SNMP Agent

.1.3.6.1.4.1.33.0.0.2	
Name	CompanyName
OID	.1.3.6.1.4.1.33.0.0.2
Syntax	Octet String
Access	Read-only
Description	The company name: SAE-Automation, s.r.o.

.1.3.6.1.4.1.33.0.0.3	
Name	TrapCounter
OID	.1.3.6.1.4.1.33.0.0.3
Syntax	Integer32
Access	Read-only
Description	The number of fired Traps from agent.
Trap	This item will every 3 seconds generate a new value. The value will be sent from agent to manager as TRAP.

.1.3.6.1.4.1.33.0.0.4	
Name	IntVar
OID	.1.3.6.1.4.1.33.0.0.4
Syntax	Integer32
Access	Read-write
Description	The item for testing of "Integer32" values.

.1.3.6.1.4.1.33.0.0.5	
Name	IntRandom
OID	.1.3.6.1.4.1.33.0.0.5
Syntax	Integer32
Access	Read-only
Description	The item values are randomly generated.
Trap	This item will every 3 seconds generate a new value. The value will be sent from agent to manager as TRAP.

.1.3.6.1.4.1.33.0.0.6	
Name	GetReqCounter
OID	.1.3.6.1.4.1.33.0.0.6
Syntax	Counter32
Access	Read-only
Description	The number of GET requests.

.1.3.6.1.4.1.33.0.0.7	
Name	Gauge32Random
OID	.1.3.6.1.4.1.33.0.0.7
Syntax	Gauge32
Access	Read-only
Description	The item values are randomly generated.
Trap	This item will every 3 seconds generate a new value. The value will be sent from agent to manager as TRAP.

.1.3.6.1.4.1.33.0.0.8	
Name	Time
OID	.1.3.6.1.4.1.33.0.0.8
Syntax	Timetick
Access	Read-only
Description	The number of milliseconds that have elapsed since the system was started.

.1.3.6.1.4.1.33.0.0.9	
Name	UIntVar
OID	.1.3.6.1.4.1.33.0.0.9
Syntax	Unsigned32
Access	Read-write
Description	The item for testing of "Unsigned32" values.

.1.3.6.1.4.1.33.0.0.10	
Name	StringVar
OID	.1.3.6.1.4.1.33.0.0.10
Syntax	Octet String
Access	Read-write
Description	The item for testing of "Octet string" values. E.g. "Hello world!"

.1.3.6.1.4.1.33.0.0.11	
Name	ObjectVar
OID	.1.3.6.1.4.1.33.0.0.11
Syntax	Object Identifier
Access	Read-write
Description	The item for testing of "Object Identifier" values. E.g. "1.3.6.1.4.1.33"

.1.3.6.1.4.1.33.0.0.12	
Name	IPAddressVar
OID	.1.3.6.1.4.1.33.0.0.12
Syntax	IP Adress
Access	Read-write
Description	The item for testing of "IP Address" values. E.g. "127.0.0.1"

.1.3.6.1.4.1.33.0.0.13	
Name	OpaqueVar
OID	.1.3.6.1.4.1.33.0.0.13
Syntax	Opaque
Access	Read-write
Description	The item for testing of "Opaque" values. E.g. "opaque"

.1.3.6.1.4.1.33.0.0.14	
Name	BitsVar
OID	.1.3.6.1.4.1.33.0.0.14
Syntax	Bits
Access	Read-write
Description	The item for testing of "Bits" values.

Prerequisites

For the better computer management Microsoft implemented the **SNMP Service** and **SNMP Trap Service** to its operating systems. The **SAEAUT SNMP Agent** uses both these services, therefore, both services must be installed and running on the same computer as that agent.

Note that: More about **SNMP Service** and **SNMP Trap Service** you can find in document **Installation & Activation of the SNMP Service and SNMP Trap Service** (please see directory **.. \SAEAUT SNMP Agent\Help** or White Paper downloads).

Relation with SAEAUT SNMP OPC Server

The SAEAUT SNMP Agent installation package includes a special configuration file SNMPConf.mdb. This configuration file is compatible with application SAEAUT SNMP OPC Server. You can find this file in the following directory:

..\SAEAUT SNMP OPC Server\Examples\Configurations\

Of course, you can add any MIB items to your existing configuration through MIB Browse functionality.

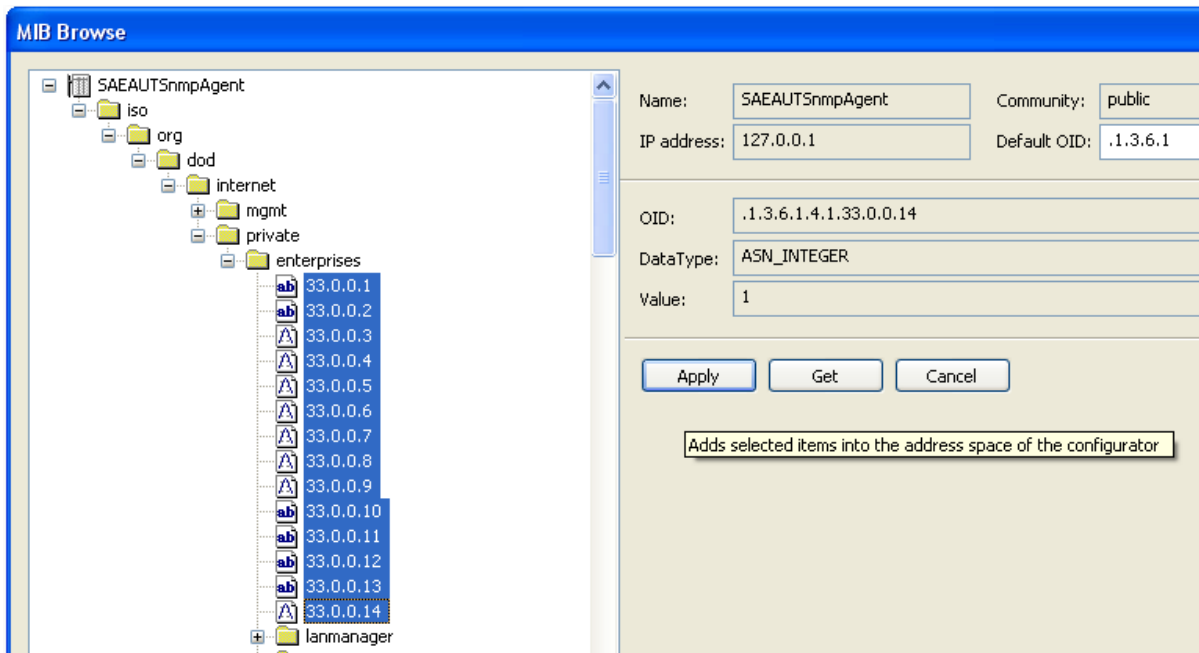


Figure 3: The adding MIB items to a existing configuration file.

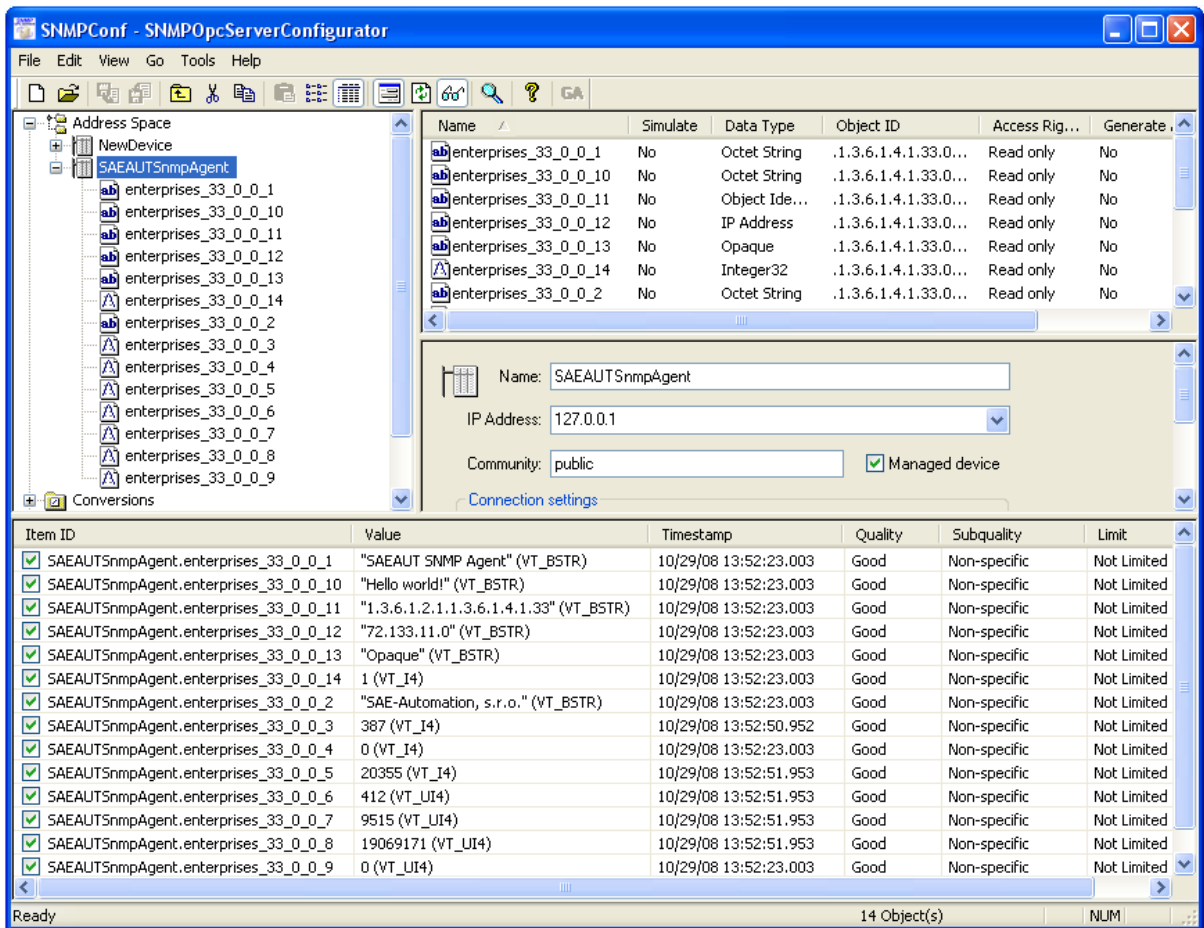


Figure 4: The SAEAUT SNMP OPC Server communicates with SAEAUT SNMP Agent.

Note that: You can start the SAEAUT SNMP OPC Server Configurator and then open the mentioned configuration file. More about SAEAUT SNMP OPC Server you can find in document SAEAUT SNMP OPC Server documentation (please see White Paper downloads).

Disclaimer

The information contained in these pages is based on our testing and practices experience. SAE – Automation, s.r.o. and the authors of this document assume no responsibility for direct, indirect, or consequential liability for its accuracy or suitability for a user's particular application. The reader is responsible for proper application to their particular situation.