



Although operators in plants have generally very good knowledge of processes running on their automated control systems, only few of them are acquainted with the communication infrastructure that ensures transmission of data between the systems and the technological process. The right choice for them is often the integration of their network infrastructure management and monitoring into standard SCADA (Supervisory Control and Data Acquisition) system. Early diagnostics of problems on communication channels is the best prevention of serious consequences for the entire technological process.

The common way for managing industrial and network devices is to run SNMP manager on a workstation while SNMP agents run on devices themselves. In order to be able to integrate the network management into various HMI and SCADA systems with implemented OPC clients, it is very useful to incorporate SNMP manager into OPC server application.

SAE-Automation therefore provides elegant solution for managing computer networks - **SAEUT SNMP OPC Server**, which is equipped with devices with implemented SNMP agent functionality.

SAEUT SNMP OPC Server features:

- Implemented protocols **SNMPv1** and **SNMPv2c**
- Implemented specifications **OPC DA 1.0, 2.05 and 3.0, OPC AE 1.0, OPC XML DA**
- Ability to define tags by using the object identification from **MIB file**
- Module **MIB Browser** for mass adding of tags directly from the connected MIB equipment
- Ability to manipulate the acquired data by using **JScripts** which can be configured directly in the SNMP OPC server
- Module **IP Scanner** for scanning of whole computer network in a given IP range, in order to find connected SNMP devices
- **Logging** of server events
- Allows **management** of devices with running SNMP Agent by using one of the above mentioned SNMP protocols
- Allows the server to **receive notification** from SNMP Agents by using the traps as special types of messages
- Allows to obtain information about **manageable** and **unmanageable** network devices

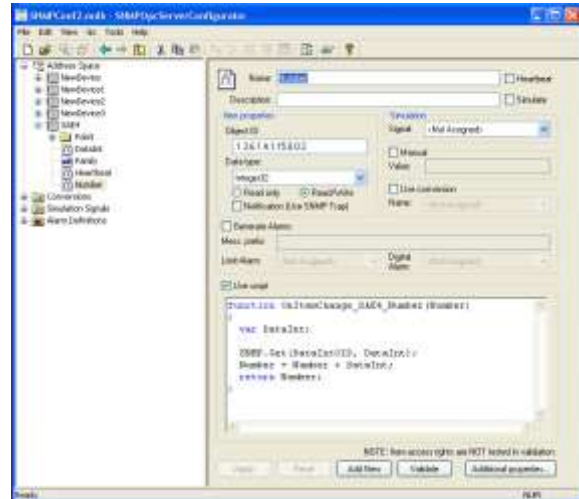


Figure 1: SAEUT SNMP OPC Server configurator

Usage of SAEUT SNMP OPC Server

SAEUT SNMP OPC server allows operators to obtain the status information from network devices. Such information can be effectively used for system monitoring and network diagnostic.

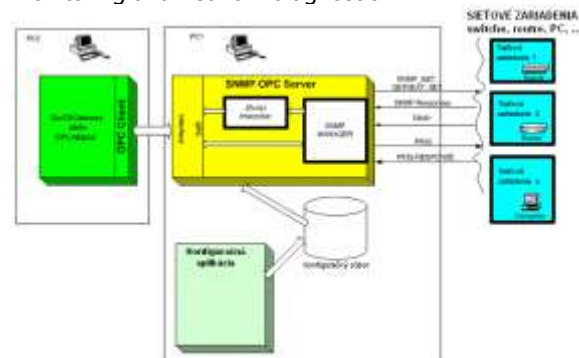


Figure 2: Application platform with SAEUT SNMP OPC server

SAEUT SNMP OPC server includes implemented newest OPC DA 3.0 and OPC XML DA specifications which allow users to communicate with the server using web services.

However, not all networks are manageable through SNMP. For such cases, SAEUT provides the possibility to configure OPC tags, implemented as a sort of "heartbeat". This allows us to get the basic information from devices that are unmanageable.

The manageable devices are able to provide managing application with the trap messages. These are sent without a request (e.g. in case of some significant value is changed), reducing the traffic between SNMP agent and SNMP manager. Traps are fully supported in SAEUT SNMP OPC server.

Configuration tool

The configuration tool (also called configurator) is GUI part of SAEAUT SNMP Server which allows user to configure the server easily and effectively. It provides features for configuring devices, their variables, as well as the configuration of JScripts, alarms and simulation signals.

Monitoring client

The monitoring client is a part of the configurator. It is able to monitor network devices and to provide the information about parameters selectable by a user. These kinds of information are displayed in well-arranged tables which contain not only the value itself, but also other useful information such as timestamps and the quality of connection.

J-Scripts

SAEAUT SNMP OPC Server provides the possibility to further process the data obtained from SNMP agents using J-Scripts. The server offers simple built-in editor where the scripts can be modified and executed. This allows user to preprocess data on the server side, before they are provided to clients.

MIB Browser

SNMP variables received through SNMP protocol actually represent objects in MIB database. The MIB database comprises of attributes (MIB objects) which can be used for the configuring, management and analysis of SNMP manageable devices. Each MIB object is identified by its ID. The main task of MIB browser is to request applicable IDs of MIB objects.

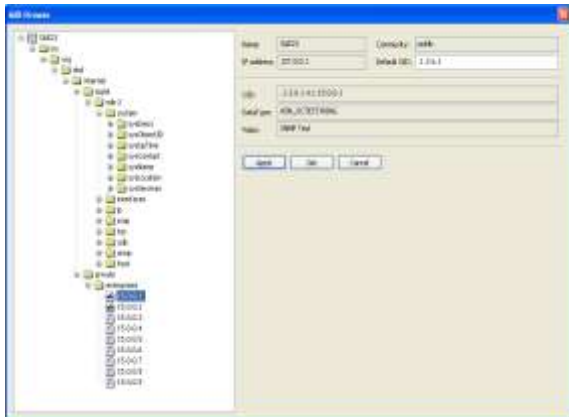


Figure 3: SAEAUT SNMP OPC Server – MIB Browser

IP Scanner

This module provides the feature of scanning computer network in a given IP range in order to find connected SNMP devices. After completing this process, all search results (IPs with SNMP devices) are available in the device panel so that the user can later select valid SNMP address from this list.

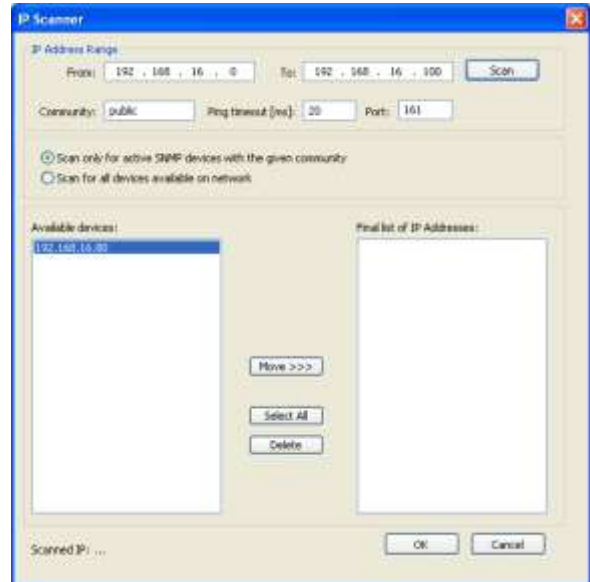


Figure 4: SAEAUT SNMP OPC Server – IP Scanner module

Alarm handling

The built-in alarm system allows user to configure how critical values will be displayed by the server, using predefined alarm messages.

Event logging

The purpose of event logging is to record the occurrence of significant events in SAEAUT SNMP OPC Server. The events are stored in a log file so that it's possible to check and analyze them later on.

Components of SAEAUT SNMP OPC Server:

- Configuration tool
- Runtime application with user interface
- OPC XML DA wrapper
- OPC DA 3.0 Test client (including the source codes in VB.NET and VB 6.0)
- Test client that communicates to SNMP OPC server through web services (including the source codes in C#)
- Electronic manual (Slovak and English version)

By using our products SAEAUT SNMP OPC Server, OpcDbGateway and OPC Adapter, you can create really complex and stable system for control, monitoring, data acquisition and storing to process databases, alarm management, report printing, logging, intranet and internet data communications, and much more.