

The control and monitoring of technological processes is more and more based on **network technologies using IP protocol**. It is possible to use this protocol not only in Ethernet networks but also in wireless networks (**WiFi – Wireless Fidelity**) and while communicating with devices with serial interface (using **PPTP – Point to Point Tunneling Protocol**), via phone lines, **GSM** and **GPRS**. Most devices using this protocol have implemented complete „IP protocol stack“ including the application protocol **SNMP (Simple Network Management Protocol)**. This protocol is used already for a long time for the purpose of control and monitoring of network devices within corporate IT systems and gradually, with fast growing industrial Ethernet, it starts to assert also within network infrastructure of technological process control. There are more and more devices of various producers that use **SNMP protocol even for transfer of process data such as temperature, pressure, ...**

The overview of **communication infrastructure connecting individual technological units together** as well as superior corporate information system can be obtained based on the information provided by our **SAEAUT SNMP OPC server**.

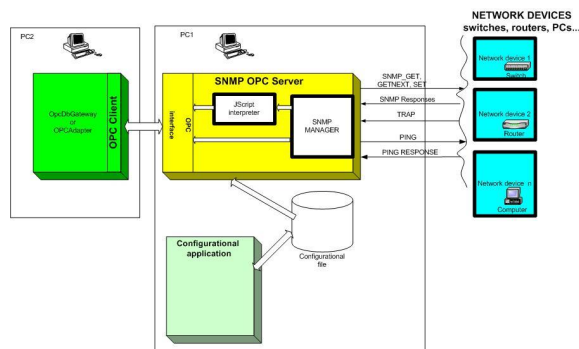


Image 1.: Application platform with SAEAUT SNMP OPC Serverom

With its usage it is possible to determine what communication problems are caused by malfunctions in software applications of particular technological units. Suppliers of technological software applications will not be able to make excuses that their application is working properly and does not cause flooding of communication channels, if the administrator is able to prove from current and historical trends that it is not truth. From acquired data it will be possible to determine when it is necessary to strengthen or modernize the communication infrastructure. A very

useful can be to **integrate the control and monitoring of network infrastructure into an existing system** of supervisory process control – (SCADA – Supervisory Control And Data Acquisition). SNMP OPC Server represents the connection of two technologies – SNMP and OPC. OPC (nowadays interpreted as **Open Process Control**) is not only a communication, but also a functional standard that ensures the interoperability between devices and software of various producers. SNMP OPC server allows variables, acquired or configured via SNMP protocol, to be converted into a format demanded by software application that includes an OPC client. There are lot of such applications. It is contained not only in every known SCADA application, but also in some dynamic process simulation applications. As a part of the shipment of our server, you can find examples of OPC clients with their source code in C++, MS VB and MS VB.NET. The idea of connection of SNMP and OPC technologies is not new. **Our SAEAUT SNMP OPC server has several advantages over solutions of other vendors.** First of all, it implements not **only the newest OPC standards such as OPC DA 3.0 and OPC AE 1.1**, but also **OPC XML DA** that allows to communicate with it through web services and this way to use it within **service oriented architectures (SOA)**. You can try this with using **XML DA client shipped by us together with its source code** or with the help of a web browser (such as MS Internet Explorer)

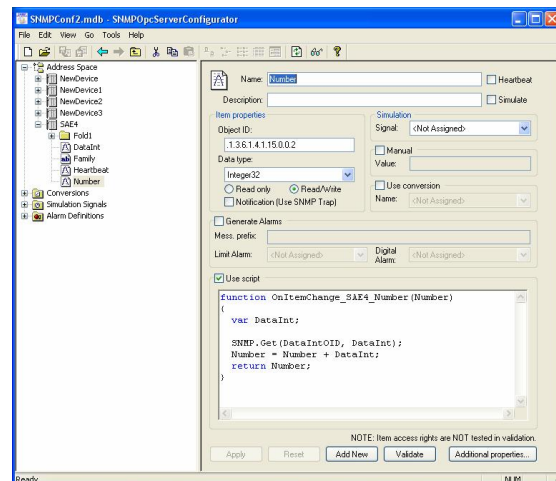


Image 2.: SAEAUT SNMP OPC Server configurator with in-built JScript editor

The shipment of SAEAUT SNMP OPC Server consists of two basic applications – a *configurator*, its

main purpose is to configure data to be transferred and the „runtime“ application, that ensures the transfer of preconfigured data. **In contrast to other products of other vendors, besides data transfer it is possible to process the data with our product** with the help of various filter and control algorithms and this way to reduce the amount of data transferred to the client application or eliminate time delays during the transfer from OPC server to OPC client application. This functionality is ensured by the configurator's **MS Jscript** editor and by interpreting of these scripts in the „runtime“ application.

The number of many controlled and monitored devices in a network can be very high and the amount of transferred variables huge. To create a configuration including such great amount of data could be very difficult without two utilities that are included in the configurator. It is „**IP Scanner**“, that scans monitored devices into a configuration database, and „**MIB Browser**“ that allows to find out which variables are available on a given device and then, or even in a single step, to store them into the OPC server's configuration database.

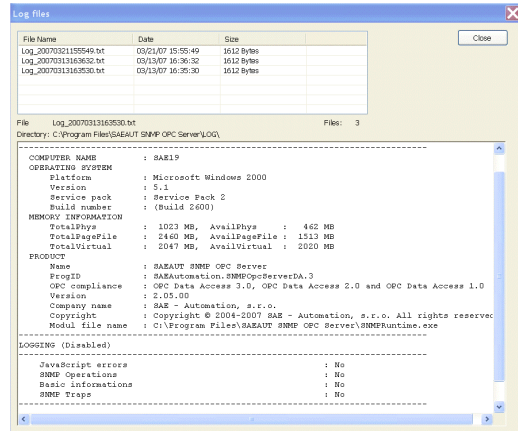


Image 5: Browsing log files

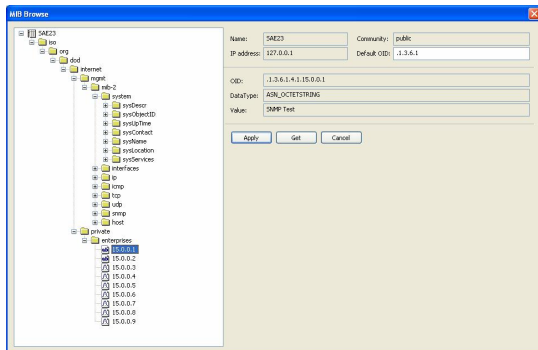


Image 3.: MIB Browser of SAEAUT SNMP OPC Server

SAEAUT SNMP OPC Server allows to **monitor also devices without an active SNMP agent** and in a OPC variable to transfer the time delay to a ICMF ping from the server to such device.

A very useful can be the function to log and display the activities of OPC server into **log files**.

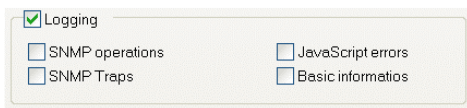


Image 44.: Selecting „logged“ events

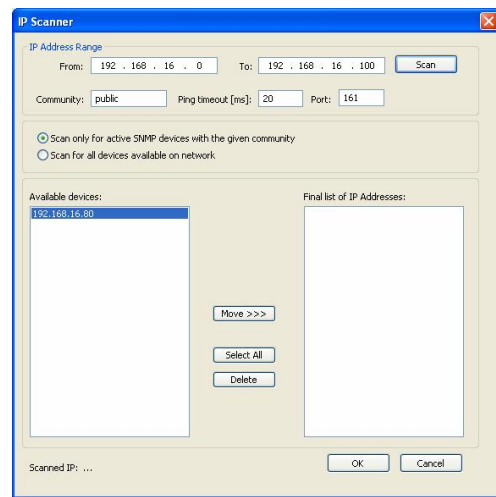


Image 6: IP scanner

By using our trio of products **SAEAUT SNMP OPC server, OpcDbGateway** and **OPC Adapter** you can **create a very complex system** of control, monitoring, data storage in process databases, alarms, reports, visualisation, logging and data transfer between intranet domains and over Internet.

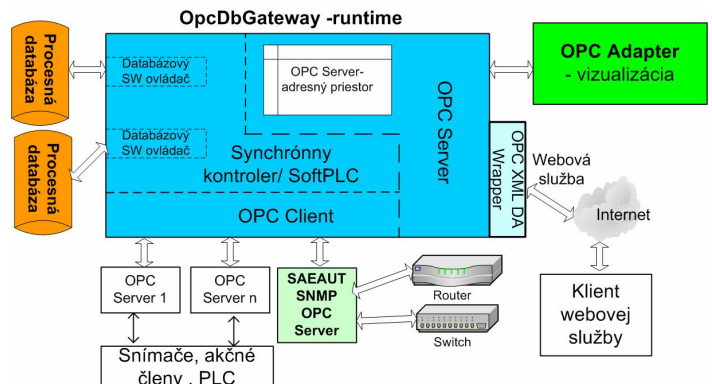


Image 7: Complex solution of monitoring with our products.