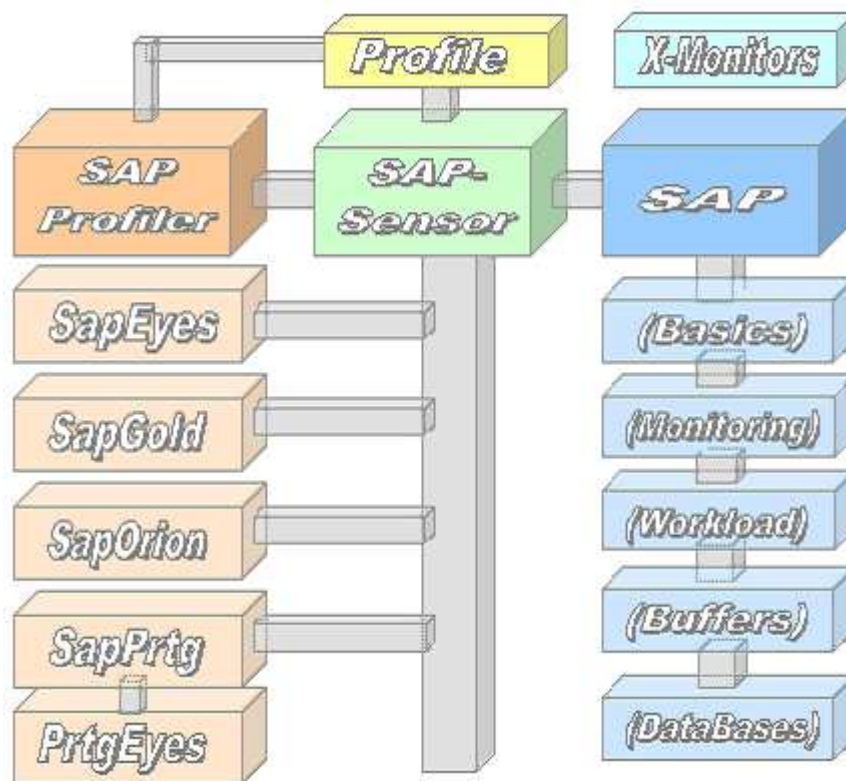


SAP-Sensors for X-Monitors

(SapPrtg - SapOrion - SapGold - SapEyes)



White Paper

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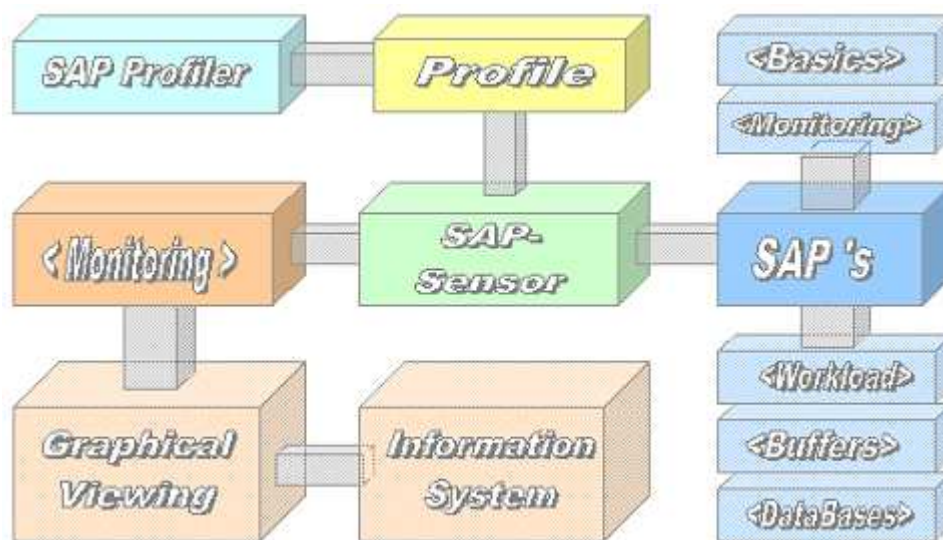
1. Overview

With the help of the SAP-Sensors you are able to get a lot of informations from SAP an direct them to the Network Monitor here PRTG from PAESSLER. Therefor no intervention to the SAP-System is required. You can contact lokal as remote SAP-Systems. The method to communicate with SAP is to use RFC (Remote Function Call). You only need the rights in conjunction with the user-name, password and client.

There is a set of extented sensors for SAP available. With this sensors you are able to read out many values from SAP and transfer them to the monitoring for analysing and monitoring.

The Working

For accessing a SAP-System a profile with the informations about the accessing-data like username, password and client is needed. This profile is generated via the tool „**SAP Profiler.Exe**“ which is part of the installation. The profile is stored into the Directory of Monitoring. With the Profiler you can directly contact the SAP and view the informations.

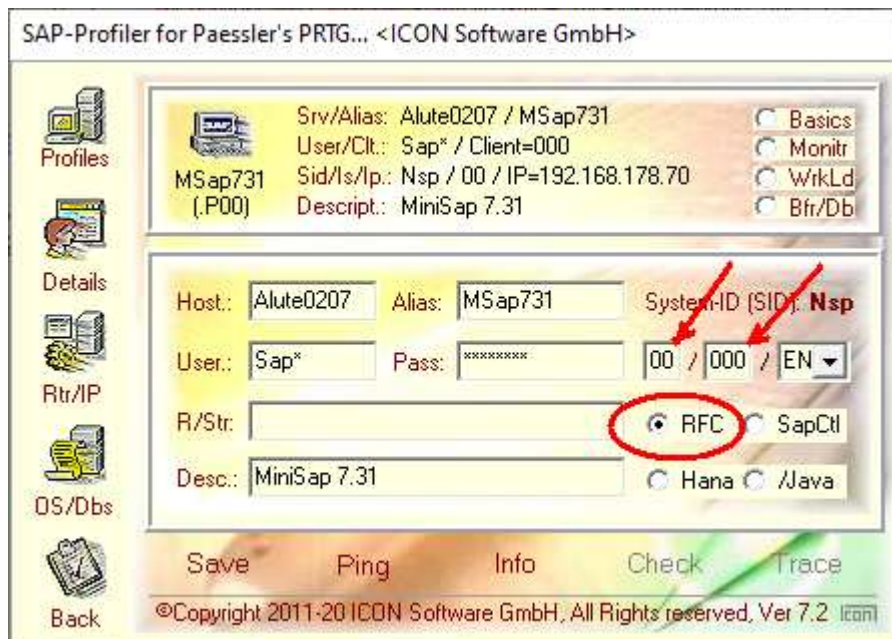


First, the sensor reads out the profile and opens a connection to SAP via RFC (Remote Function Call). With the knowledge of username, password and client it takes a login to SAP. Then the required function is processed within SAP and the resulting is transferred back to the sensor. The sensor formats it and divides it to an information-line and channels. This data are transferred then to the monitoring system.

Within the Monitoring-System the delivered informations are collected and prepared for analysis. They could be shown graphically and used for generating a mail or SMS to notify an administrator.

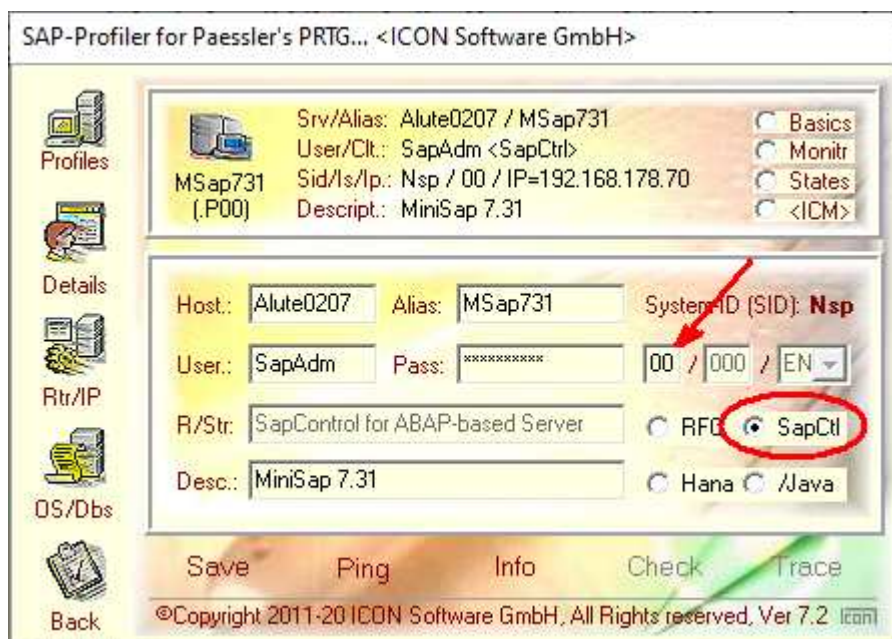
The Accessmethod „SapRfc“

The SAP system is addressed using the RFC (Remote Function Call) method. This is a protocol based on CPI-C. In addition to the instance, e.g. '00' also the tenant, about '000' is required for access. The login is done via SAP and requires appropriate authorizations in order to be able to read the values.



The Accessmethod „SapCntrl“

The SAP system is addressed with the SAP tool "SapControl" and for Abap- and Java-based SAP systems. The number of the instance is required. The login is done via the participating operating system, such as Windows or J2EE.



The Accessmethod „SapHana“

The SAP HANA system is addressed with the SAP tool "SapControl". In addition to the access data, only the instance number, such as "00", is required. The login is done via the participating operating system, here J2EE.

SAP-Profiler for Paessler's PRTG... <ICON Software GmbH>

Profiles: Profiles, Details, Rtr/IP, OS/Dbs, Back

Srv/Alias: 192.168.178.77 / SapHana
User/Clt.: hxeadm <SapHana>
Sid/Is/Ip.: Hxe / 90 / IP=192.168.178.77
Descript.: SAP HANA

Basics, Disk(s), Memry, System

Host: 192.168.178.77 Alias: SapHana System ID (SID): Hxe
User: hxeadm Pass: ***** 90 / 000 / DE
R/Str: SapCntrl for Hana-based Server RFC SapCtl
Desc.: SAP HANA Hana ODBC

Save Ping Info Check Trace

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The Accessmethod „SapOdbc“

The SAP HANA system is addressed with the Odbc tool "SapOdbc". In addition to the access data to the database, the corresponding instance number is also required. The login is done via the ODBC data source, which is to be generated separately.

SAP-Profiler for Paessler's PRTG... <ICON Software GmbH>

Profiles: Profiles, Details, Rtr/IP, OS/Dbs, Back

Srv/Alias: 192.168.178.77 / SapHana
User/Clt.: SYSTEM <SapOdbc>
Sid/Is/Ip.: Hxe / 90 / IP=192.168.178.77
Descript.: SAP HANA

Basics, Disk(s), Memry, System

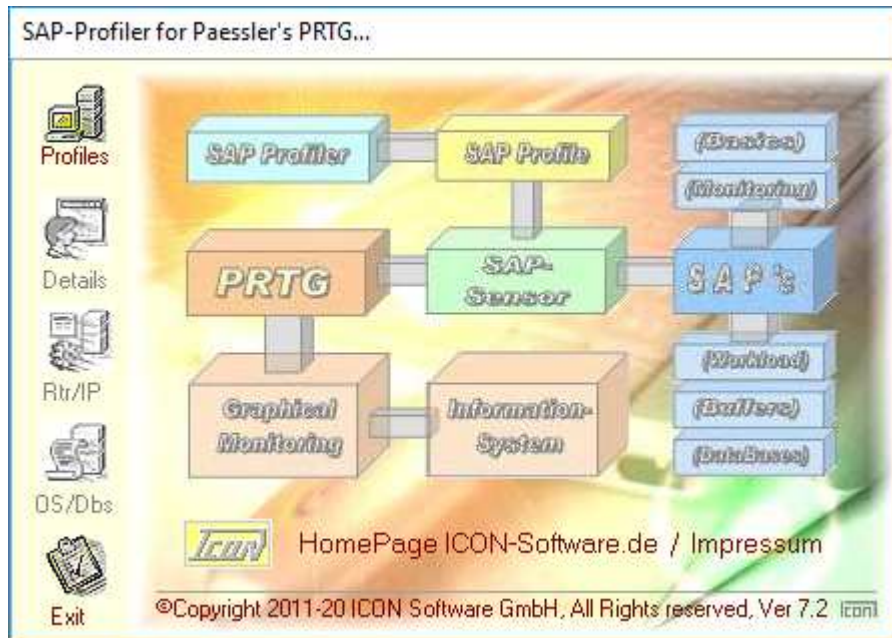
Host: 192.168.178.77 Alias: SapHana System ID (SID): Hxe
User: SYSTEM Pass: ***** 90 / 000 / DE
R/Str: ODBC-Access for SapHana Server RFC SapCtl
Desc.: SAP HANA Hana ODBC

Save Ping Info Check Trace

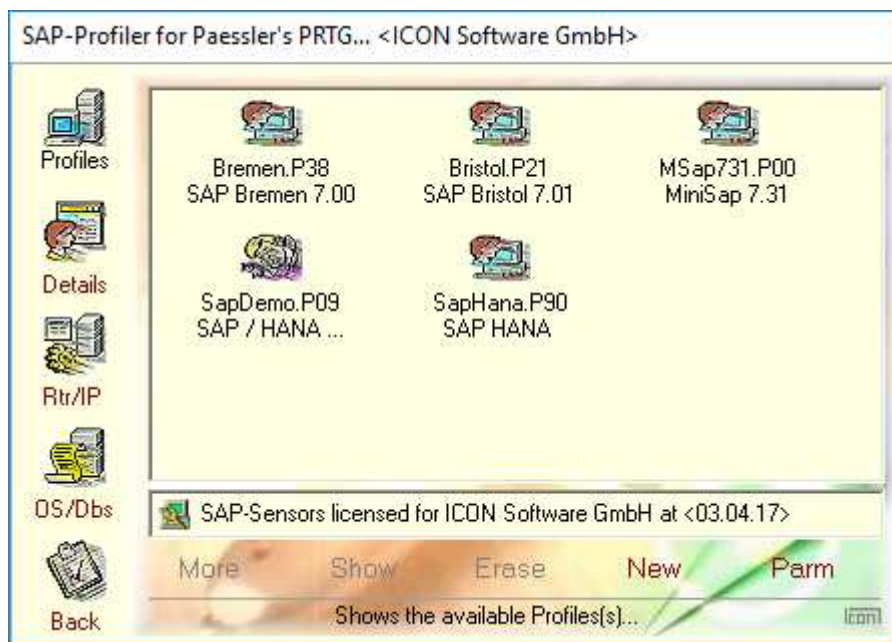
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2. The SAP-Profiler

For the usage of sensors there is the definition of a profile required. You could create a profile via the “**SAP Profiler.Exe**” and put in the necessary informations for connecting to SAP. Additionally you are able to view the resulting before you define it within the monitoring.



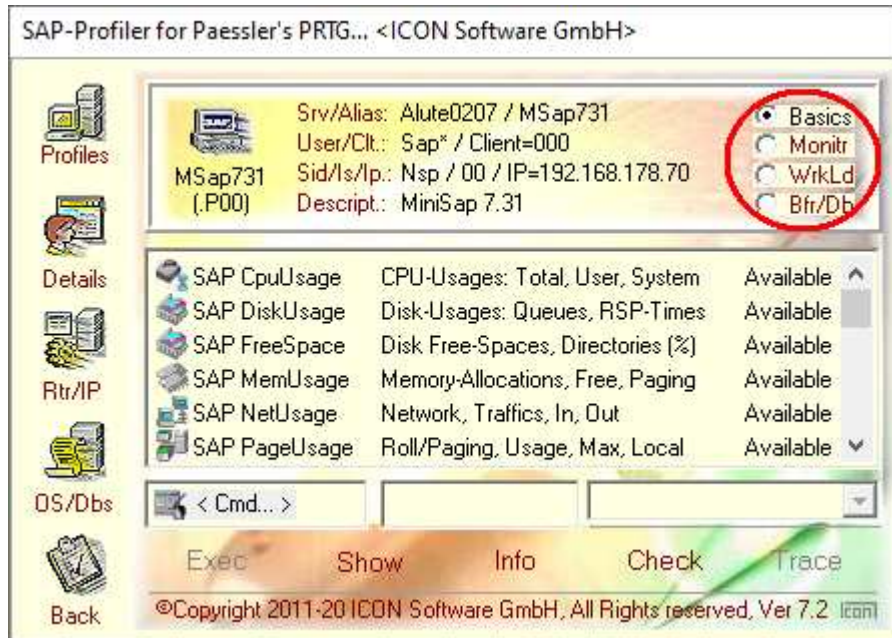
The opening of the SAP-Profilers contains the reference to the homepage as well as the imprint. By clicking the symbol of "profile" one reaches in the overview.



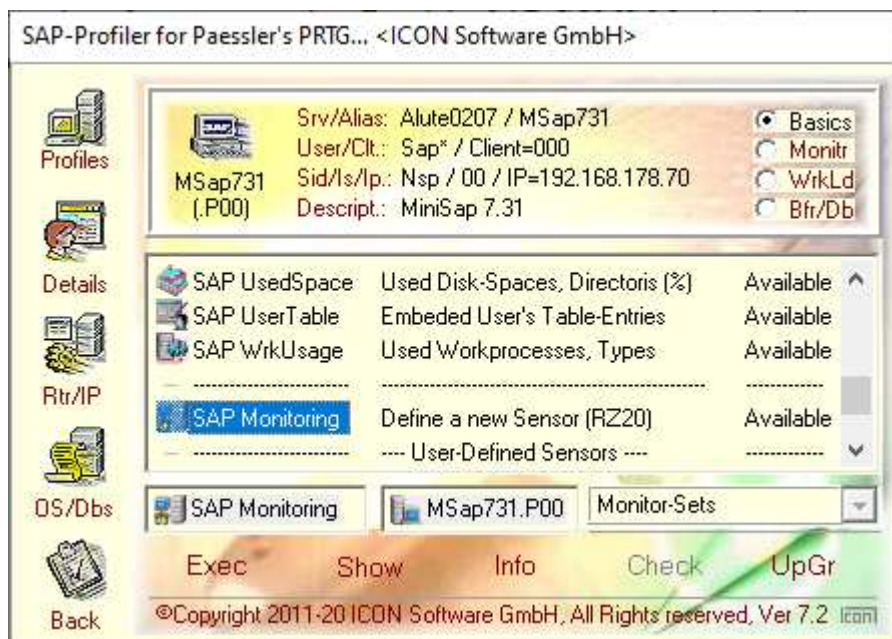
Here the possibility exists to branch out to an already available profile or to put on a new profile by means of "New". By means of the symbolic strip on the left side other representation possibilities are available.

Interactive Access SapRfc

Pre-built sensors from the "Basic Overview", "Monitoring", "Workload" and "Databases" areas are already available for the direct application for the "SAP" area with the access method "RFC":



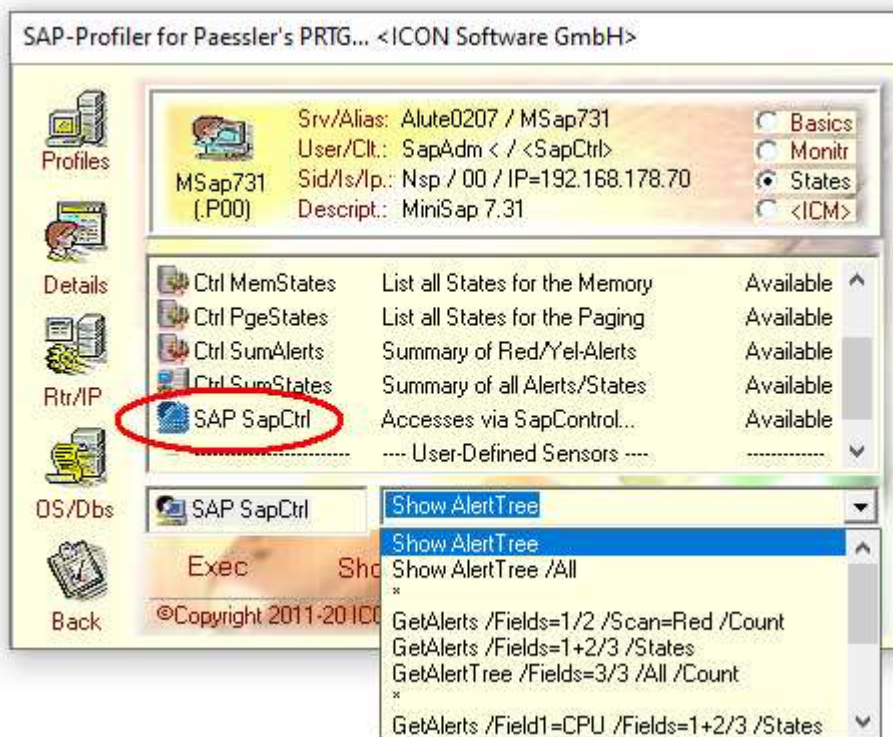
In addition to the sensors already available, it is possible to select additional sensors from the "SAP CCMS Monitoring" area via the "SAP Monitoring" sensor and to create them as a user-defined sensor.



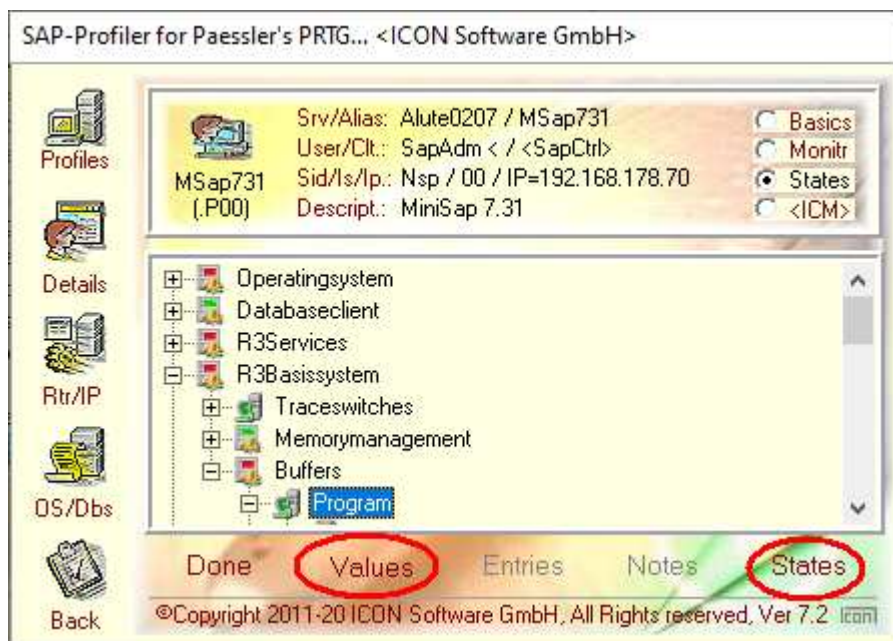
Custom sensors can be integrated geanu like the already available sensors in the monitoring, e.g. PRTG.

Interactive Access SapCntrl

Here is an example of how to show the alerts (AlertTree) for ABAP and J2EE-based SAP systems using the SapControl access method:



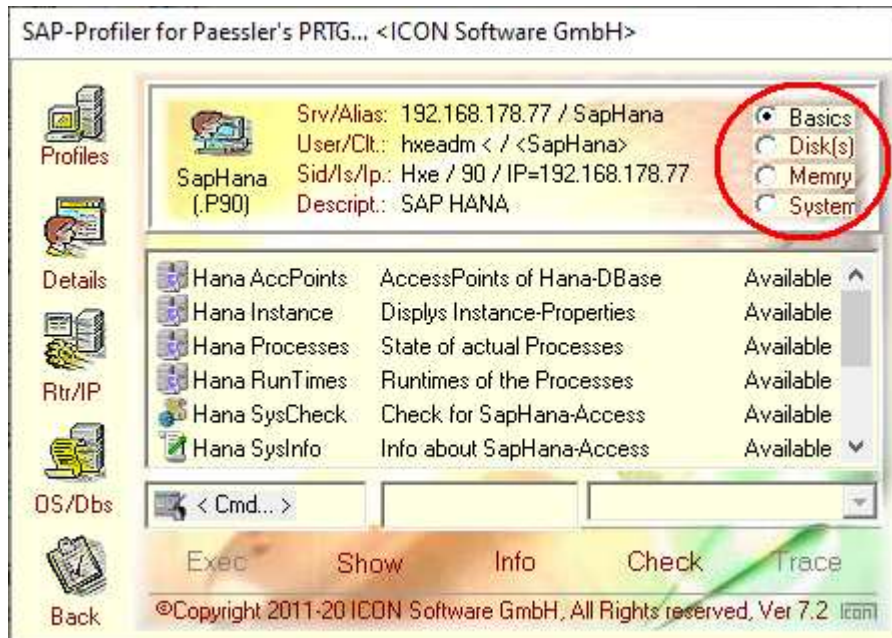
After the new installation, only the sensor "SAP SapControl" is proposed. In the visual display of the Alert Tree, the individual areas can be split interactively. Depending on the data structure, different functions are offered



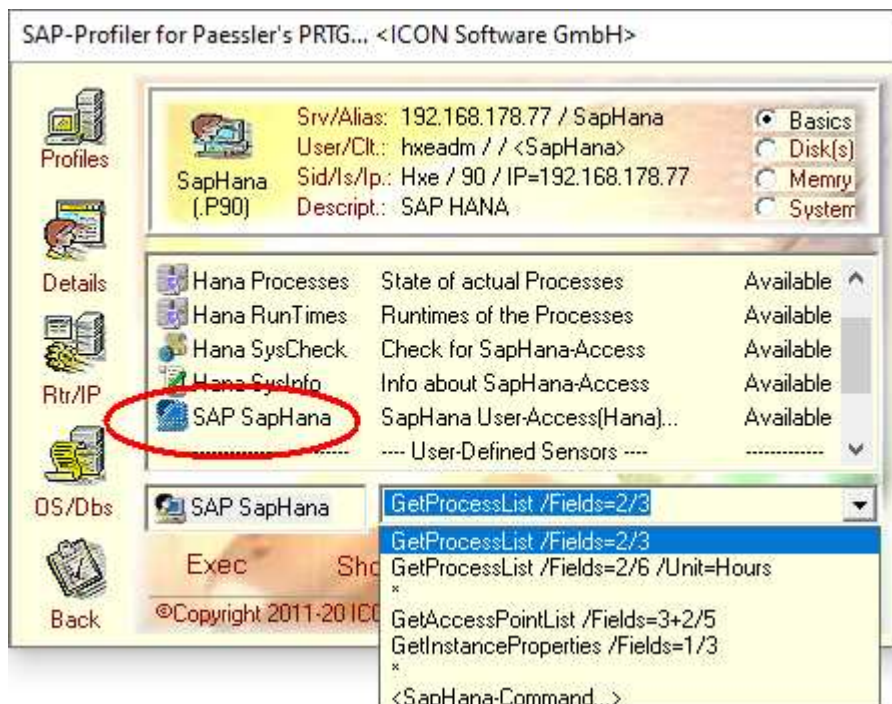
In this example, you can assign the associated values for the program entry or the status for the child entries to a new sensor.

Interactive Access SapHana

Pre-built sensors from the "Basic Overview", "Plate Design", "Memory Assignment" and "System Information" are available for the "SAP HANA" area with the "SapControl" access method:



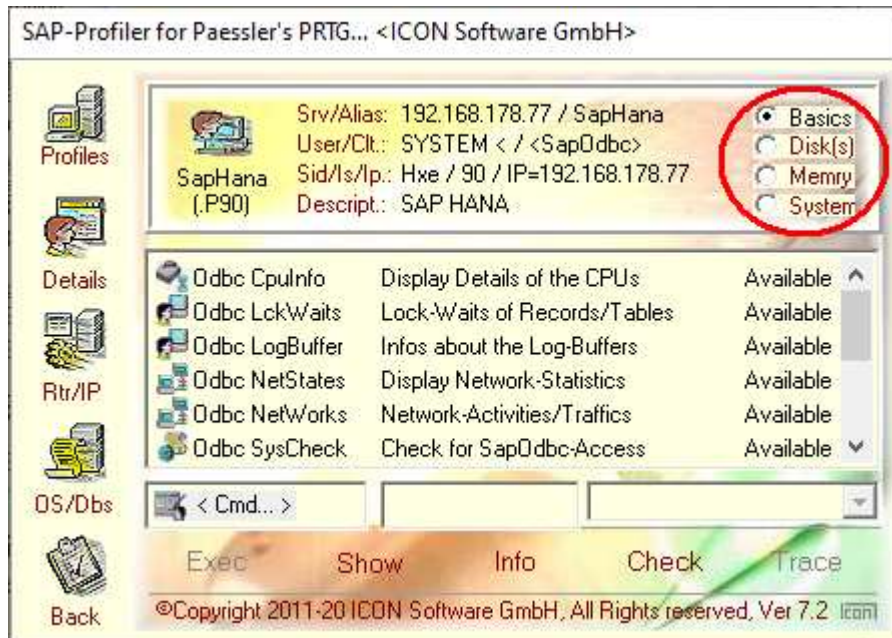
In addition to the sensors already available, it is possible to create additional sensors (user sensors) interactively via the sensor "SAP SapHana".



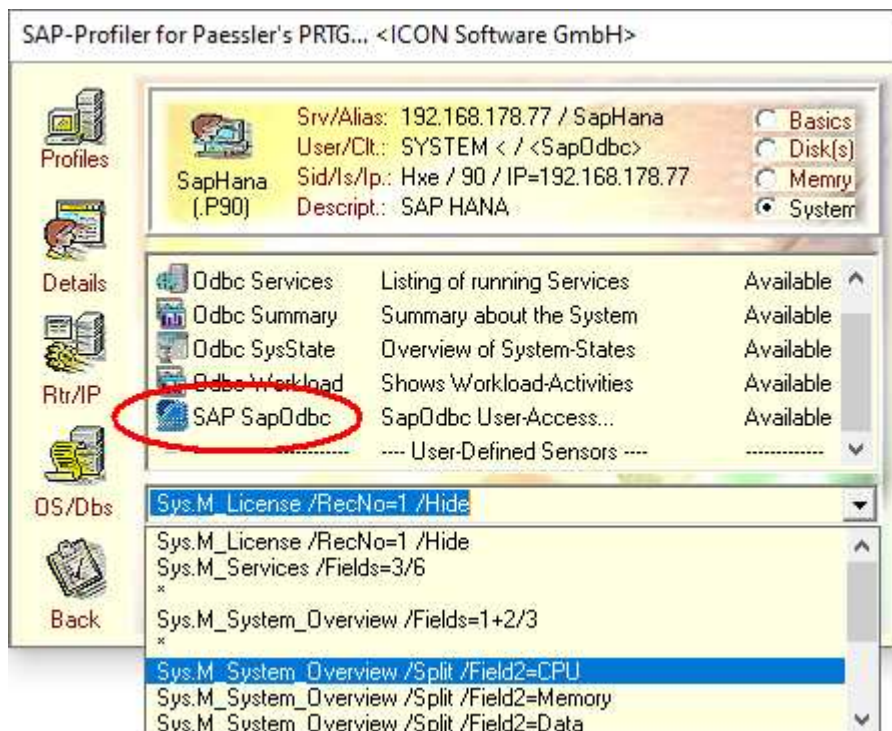
According to its definition, this can be used in monitoring, e.g. PRTG.

Interactive Access SapOdbc

Pre-built sensors from the "Basic Overview", "Plate Design", "Memory Assignment" and "System Information" are available for the "SAP HANA" area with the "ODBC" access method:



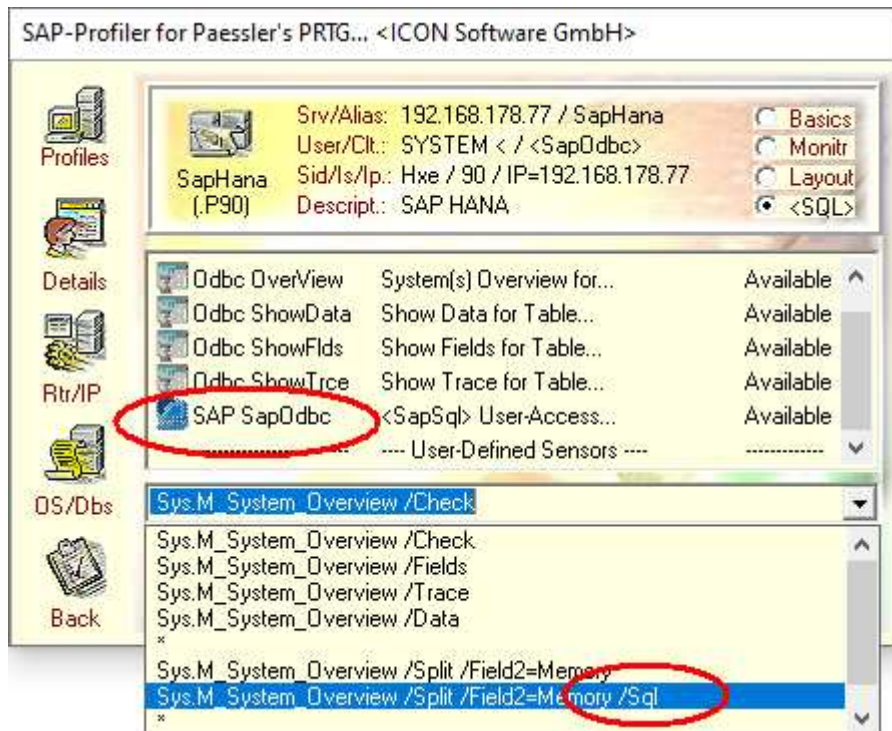
In addition to the sensors already available, it is possible to create additional sensors (user sensors) interactively via the sensor "SAP SapOdbc".



Any information from the SAP HANA tables can be retrieved and converted into a sensor. This can then be used in monitoring, e.g. PRTG.

Interactive Access <SapSql>

The "<SapSql>" area is also available for the "SAP HANA" area and the "ODBC" access method. Queries on the SAP HANA tables can be carried out using SQL statements:



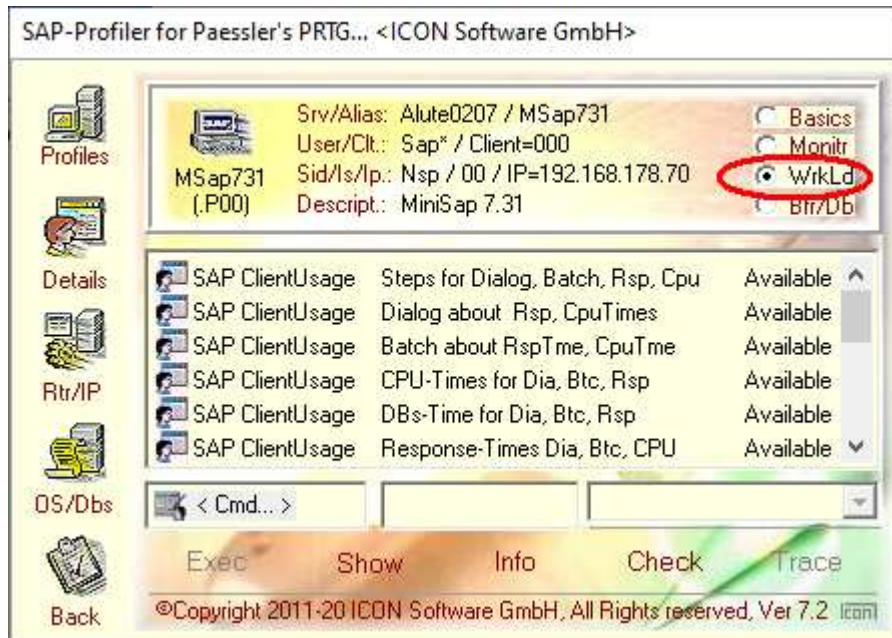
In this example, the parameter "/Fields2=Memory" was replaced by the SQL statement "Select * from Sys.M_System_Overview where Name='Memory'".



Using the "Exec" button, this can be carried out and a sensor can also be generated.

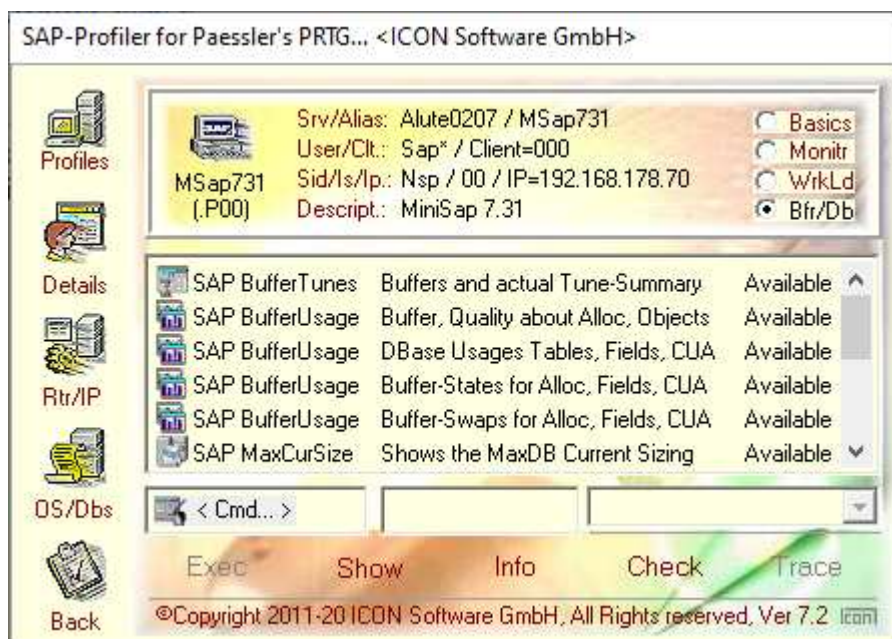
3. SAP Workload

The Remote Function Call (RFC) access method can also be used to read the workload data collected by SAP. For this purpose, several prepared sensors from practice are already included in the SAP profiler and can be applied directly:



4. SAP Buffer Usage

The Remote Function Call (RFC) access method can also be used to read out the buffer assignments managed by the SAP. For this purpose, too, several prepared sensors from practice are already included in the SAP profiler, which can be applied directly in the monitoring involved:



5. SAP Databases

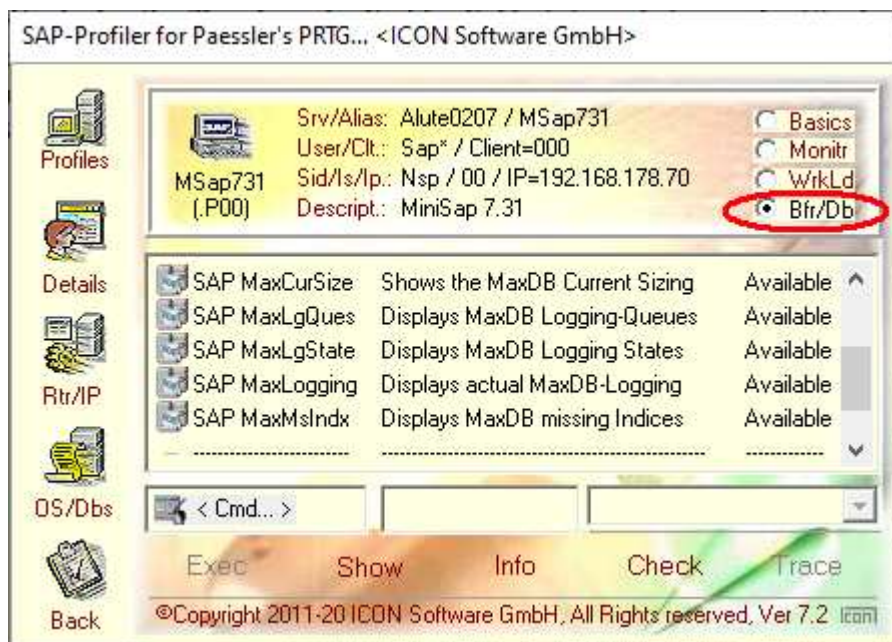
The "RFC" (Remote Function Call) access method can also be used to evaluate the databases involved by the SAP using the prepared sensors. The SAP HANA database has its own access path.

The following databases are directly supported by the RFC sensors:

- DB400
- MaxDb
- Oracle

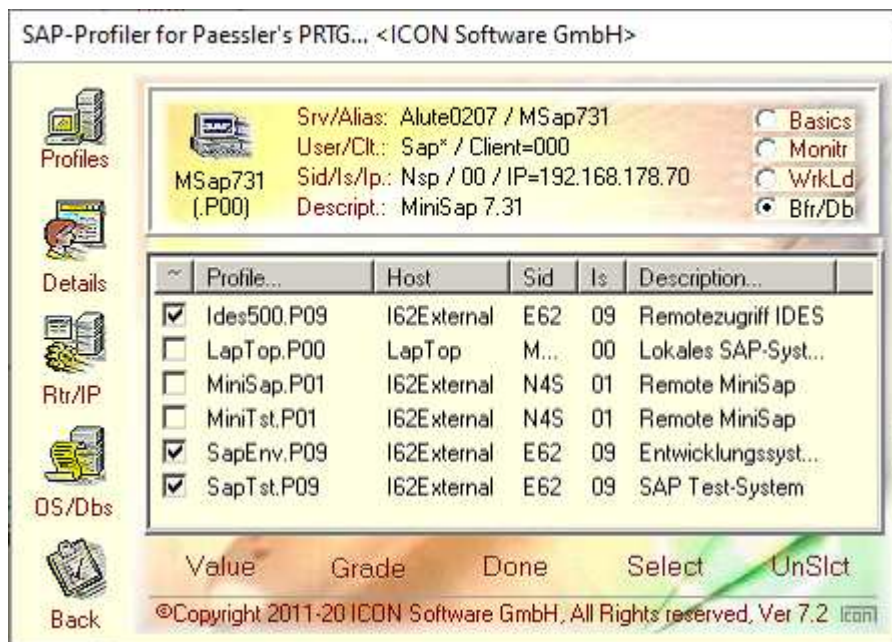
For further databases, reference should be made to "SAP CCMS Monitoring", i.e. transaction "RZ20". There you will find further entries which can be adapted to a sensor via the SAP profiler.

Here is an example of the MaxDB database:

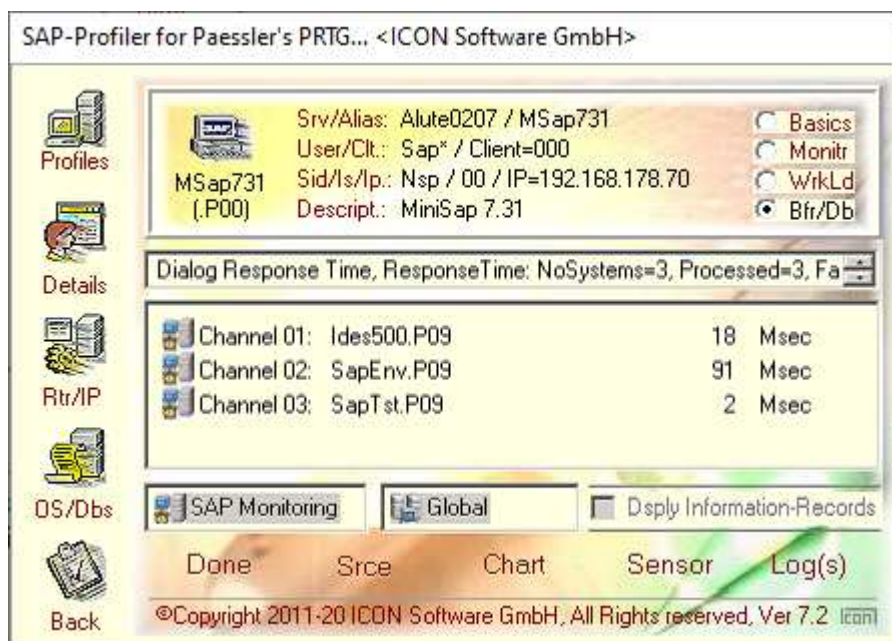


6. Local/Global Sensors

The sensor could be used to access a single or a group of SAP-Systems. At the single usage only on SAP is consulted. By using the global feature a group of SAP's will be sequentially consulted. The resulting is transferred to monitoring. For example, you could request the Response-Times of all SAP-Systems.

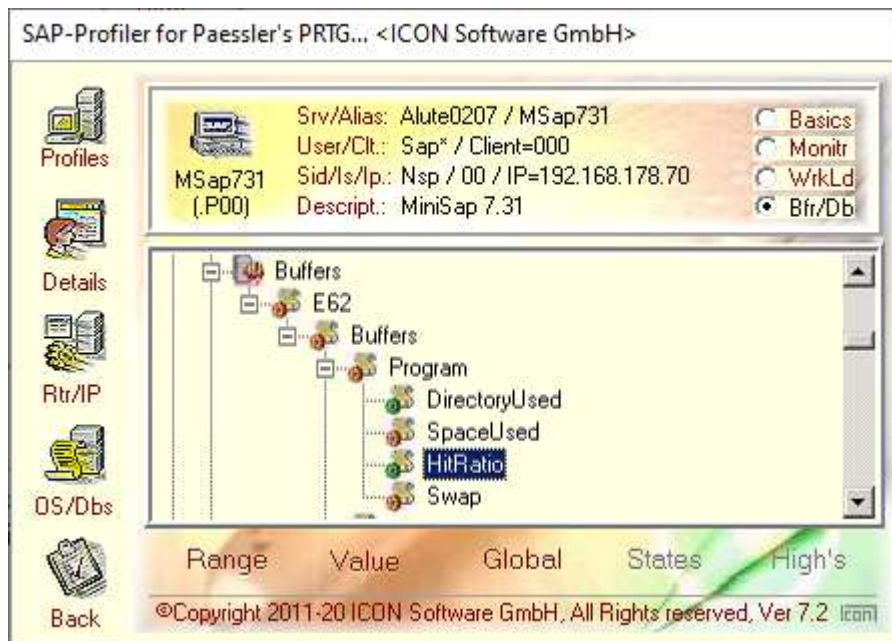


Within the monitoring you will see an overview of all collected responses at a glance.

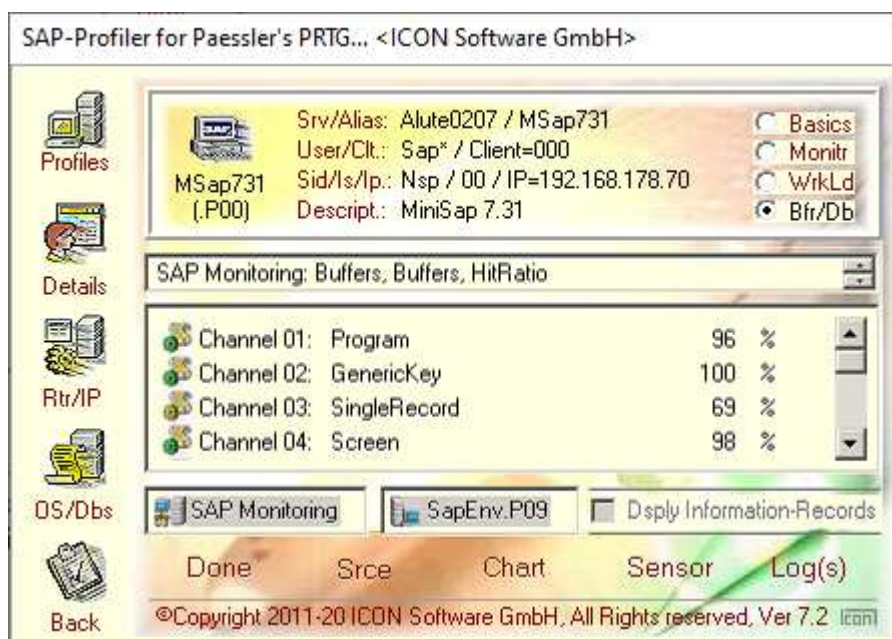


7. SAP CCMS Monitoring

Within the range of „SapMon“ you can request informations from SAP CCMS Monitoring, the transaction „RZ20“. There are data named by “Monitoring Sets”. This data are structured and contains a lot of informations. This informations you can call via the Profiler and transfer them to a sensor. This sensor could be used also within the monitoring.



The sensor "SAP Monitoring" reads the data directly from SAP and you are able to assign an Alias-Name. All offered values could be requested and transfered to the monitoring. By using the sensor within monitoring you are able to assign a reaction, for example sending a mail.



8. SAP User-Interface

As an extension to the sensors you are able to add user-data from SAP. Therefore you can create a usertable within SAP and fit it with your own data. The values of that table could be read and transferred to the monitoring. Therefore you need only a small table named "ZPRTG" (for PRTG) within the SAP-System.

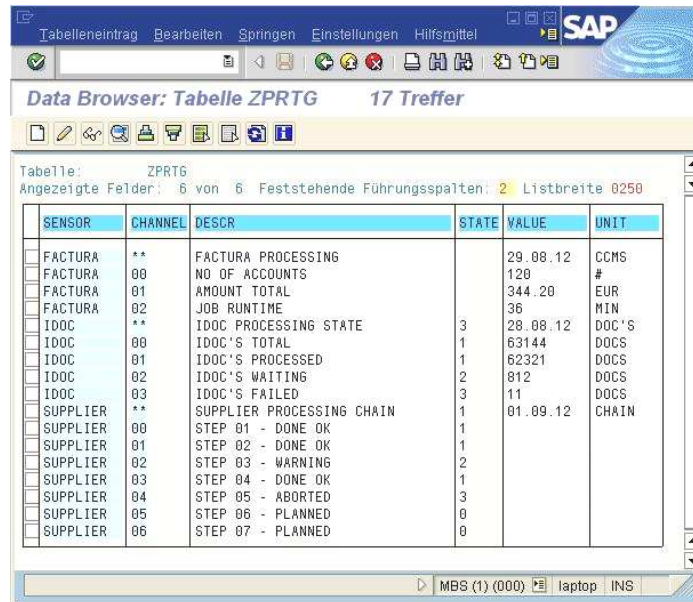


Table: ZPRTG
Angezeigte Felder: 6 von 6 Feststehende Führungsspalten: 2 Listbreite 0250

SENSOR	CHANNEL	DESCR	STATE	VALUE	UNIT
FACTURA	**	FACTURA PROCESSING		29.08.12	CCMS
FACTURA	00	NO OF ACCOUNTS		120	#
FACTURA	01	AMOUNT TOTAL		344.20	EUR
FACTURA	02	JOB RUNTIME		36	MIN
IDOC	**	IDOC PROCESSING STATE	3	28.08.12	DOC'S
IDOC	00	IDOC'S TOTAL	1	63144	DOCS
IDOC	01	IDOC'S PROCESSED	1	62321	DOCS
IDOC	02	IDOC'S WAITING	2	812	DOCS
IDOC	03	IDOC'S FAILED	3	11	DOCS
SUPPLIER	**	SUPPLIER PROCESSING CHAIN	1	01.09.12	CHAIN
SUPPLIER	00	STEP 01 - DONE OK	1		
SUPPLIER	01	STEP 02 - DONE OK	1		
SUPPLIER	02	STEP 03 - WARNING	2		
SUPPLIER	03	STEP 04 - DONE OK	1		
SUPPLIER	04	STEP 05 - ABORTED	3		
SUPPLIER	05	STEP 06 - PLANNED	0		
SUPPLIER	06	STEP 07 - PLANNED	0		

The contents of the User-Table could be organised as shown (Samples):

Sensor „Factura: A simple report for a done CCMS-Job. You could show the running dates and statistics. Only the data will be presented

Sensor „IDOC: A state for the IDOC's, the shown informations could be received via a small ABAP itself. You see the number of Idocs and there states

Sensor „Supplier: Presenting a processing chain. With a small ABAP you are able to store the state of each process. Only the state is shown

You can define an unlimited number of User-Sensors. The administration of them would be done by a small ABAP or a function. The selected table-entries are directly read and transferred to the monitoring. The assignments of reactions will be done directly by Monitoring-Administration.