The module of subsystem "Data acquisition" <System>

Module:	System
Name:	Data acquisition of OS
Type:	DAQ
Source:	daq_System.so
Version:	1.7.0
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Translated:	Maxim Lysenko
Description:	Provides data acquisition from the OS. Supported data sources of OS Linux: HDDTemp, LMSensors, Uptime, Memory, CPU etc.
License:	GPL

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Introduction

The module is a sort of gateway between the system OpenSCADA and OS (operating system). The module receives data from various data sources of the OS and allows to manage components of the OS (in the future).

The module provides the ability to automatically search for the supported and active data sources with the establishment of parameters for access to them as well as the implementation of the function of the horizontal reservation, namely, working in conjunction with the remote station of the same level.

1. The controller of data

To add a data source of operating system there is created and configured the controller in the system OpenSCADA. Example of the configuration tab of the controller of the given type depicted in Fig. 1.
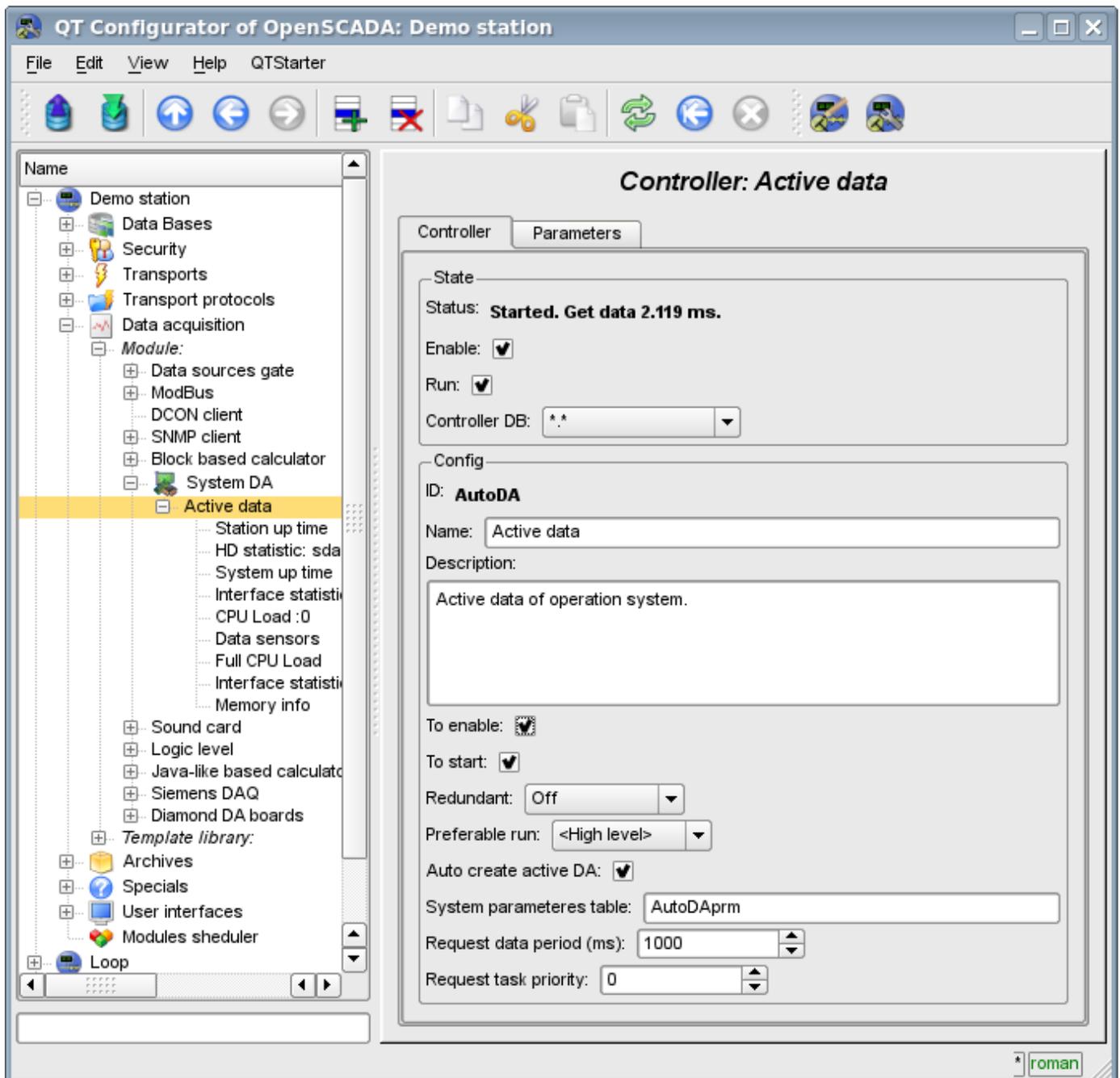

Fig.1. Tab of configuration of the controller.

From this tab you can set:
- The state of the controller, as follows: Status, "Enabled","Running" and the name of the database containing the configuration.
- Id, name and description of the controller.
- The state in which the parameter is to be transfered at boot time: "Enabled", "Running".
- Horizontal reservation mode and preference of the performance of the controller.
- Feature "Automatic search of active data sources and the creation of parameters for them".
- Name of table to store the configuration of the controller parameters.
- The period and the priority tasks of the interrogation of data sources.

2. Parameters

Module *System* provides only one type of parameters – "All parameters". Additional configuration fields of the parameters of the module (Fig. 2) are:
  · part of the system;
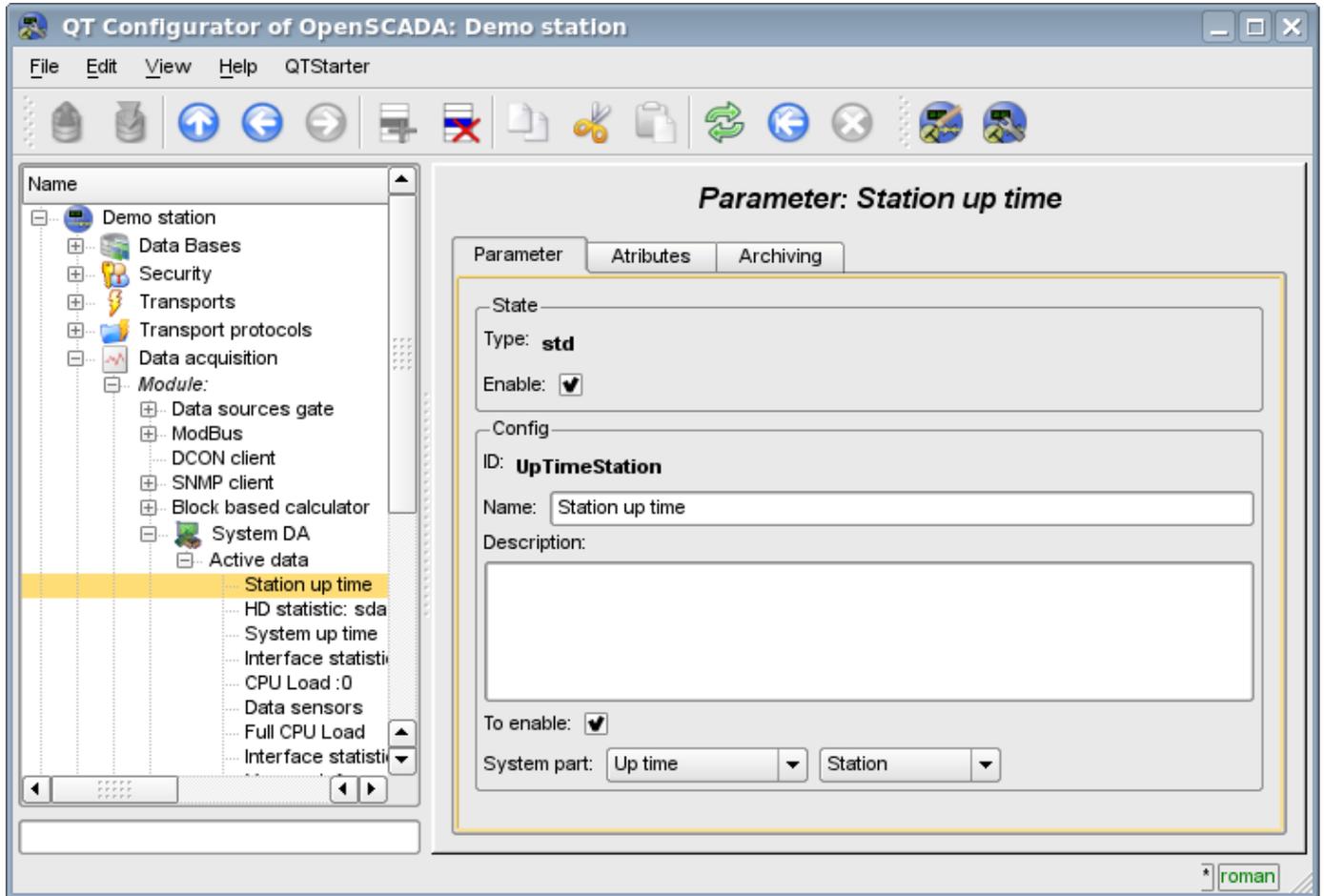 · optional (depending on the data source).

Fig.2. Tab of configuration of the parameter.

The table below there is a list of supported data sources of the operating system, the value of the additional configuration field and attributes of the parameters.

Data source	Value of the additional configuration field	Attributes of the parameter	Demands
Processor unit (CPU)	Name/number of the process. It can be a number of processor or to be «in general» for all processors <gen>.	· [real] load:Load (%) · [real] sys:System (%) · [real] user:User (%) · [real] idle:Idle (%)	

Data source	Value of the additional configuration field	Attributes of the parameter	Demands
Memory (MEM)	Not used	• [dec] free:Free (кБ); • [dec] total:Total (кБ); • [dec] use:Used (кБ); • [dec] buff:Buffers (кБ); • [dec] cache:Cache (кБ); • [dec] sw_free:Swap, free (кБ); • [dec] sw_total:Swap, total (кБ); • [dec] sw_use:Swap, used (кБ).	
Sensors (sensors)	Not used	Attributes are defined by sensors that are available on the motherboard. For each sensor the unique attribute is created.	The library libsensors or program mbmon is used. Higher priority in the use is given to the library libsensors, because mbmon has problems on multicore architectures.
HDD temperature (hddtemp)	HDD. Disks, available in the system.	• [string] disk:Name; • [string] ed:Unit of measurement; • [real] t:Temperature.	It must be installed configured and running as a service program hddtemp
Uptime (uptime)	Uptime: • System; • Station.	• [dec] full:Seconds full; • [dec] sec:Seconds; • [dec] min:Minutes; • [dec] hour:Houres; • [dec] day:Days.	
HDD Smart (hddsmart)	Disk. Disks, available in the system.	Attributes are defined by SMART-fields available for this disc. For each field the unique attribute is created.	It must be installed and available smartctl utility.
HDD statistics (hddstat)	Disk or partition. Disks or partitions, available in the system.	Attributes: • [dec] rd:Read (Кб); • [dec] wr:Written (Кб).	
Net statistics (netstat)	Network interface. Network interfaces, available in the system.	Attributes: • [dec] rcv:Recieved (Кб); • [dec] trns:Transfered (Кб).	