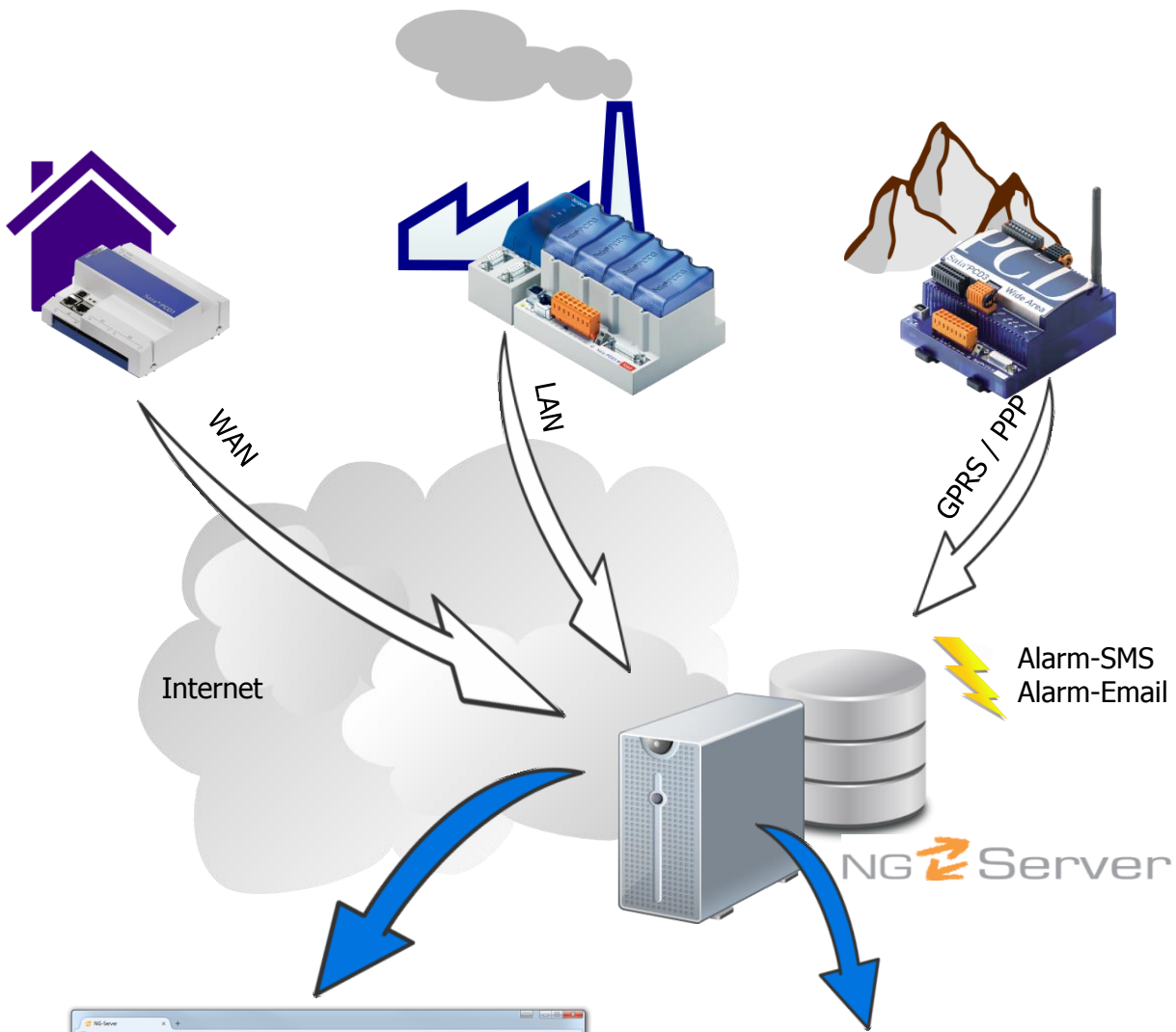


NG Server

Centralized data acquisition with Saia PCD® systems



Time Stamp	Delta Energy	Power	Current L1	Current L2	Current L3
2015-02-20 20:00:00	4.800	191.5	425	424	0
2015-02-20 19:45:00	4.700	202.1	458	460	0
2015-02-20 19:30:00	4.800	184.7	421	419	0
2015-02-20 19:15:00	4.800	185.2	414	436	0
2015-02-20 19:00:00	4.900	191.9	440	447	0
2015-02-20 18:45:00	4.800	187.3	433	422	0
2015-02-20 18:30:00	4.800	194.4	432	433	0
2015-02-20 18:15:00	4.800	206.4	445	440	0
2015-02-20 18:00:00	4.800	198.3	454	468	0
2015-02-20 17:45:00	4.700	204.7	467	413	0
2015-02-20 17:30:00	4.900	191.8	430	428	0
2015-02-20 17:15:00	4.800	198.4	467	451	0
2015-02-20 17:00:00	4.800	192.4	453	453	0
2015-02-20 16:45:00	4.800	204.8	450	448	0
2015-02-20 16:30:00	5.000	199.5	422	423	0
2015-02-20 16:15:00	5.000	209	471	472	0
2015-02-20 16:00:00	5.200	207.2	458	447	0
2015-02-20 15:45:00	5.100	228	527	518	0
2015-02-20 15:30:00	5.100	212.3	516	513	0

Introduction

NG-Server is a standard package designed to collect data from remote sites. Data can be transmitted using Ethernet (LAN/WAN) networks or GPRS/PPP. The communication is initiated from the PCD toward the server (Push mode). All data are saved in a centralized MySQL database. A Web-interface offers a selective access to the values with tabular and graphical representations. Each user has its own access right and can select its language (English, French, German).

Typical applications

- ✓ Energy Distribution / Consumption
- ✓ Cooling / Heating Systems
- ✓ Building Maintenance
- ✓ Hevac Applications
- ✓ Power Plant Monitoring
- ✓ Water Distribution / Pumping stations
- ✓ Environmental Values (Temperature, Humidity)
- ✓ Production Data Acquisition

Concept

The package is based on Saia PCD® systems. A dedicated FBox library is handling the temporary data storage on the Saia PCD®. The data packages are regularly sent to the server over the network connection. NG-Server is a modular solution and includes several components for data reception, the database management, a Web-server and alarm transmission via SMS or Email. Auxiliary modules are available for instance, for execution of background tasks and data export and archiving.

Main advantages

- ✓ Fully buffered data handling and transmission with external site autonomy
- ✓ No need for inbound access to the external sites (no VPN required, no Router configuration)
- ✓ Access to all data of all sites over the Internet without online connection
- ✓ Simple and efficient site commissioning with a minimum of server configuration
- ✓ Included diagnostics, functional supervision, life check and error reporting

Technologies used

Saia PCD®: GPRS Modem, Ethernet, TCP/IP, DHCP, DNS, etc...
 Windows PC: VB.NET, MySQL, Apache Web-Server, PHP, HTML5...

Internet demo at www.ngserver.ch (user: saia, password: 3280)

Analysis using graphs



Value tables for details

Reference	Order	Name	Comment1	Comment2	Unit
2000-00-000000	1000	12V1	12V	12V	V
2000-00-000000	1001	12V2	12V	12V	V
2000-00-000000	1002	12V3	12V	12V	V
2000-00-000000	1003	12V4	12V	12V	V
2000-00-000000	1004	12V5	12V	12V	V
2000-00-000000	1005	12V6	12V	12V	V
2000-00-000000	1006	12V7	12V	12V	V
2000-00-000000	1007	12V8	12V	12V	V
2000-00-000000	1008	12V9	12V	12V	V
2000-00-000000	1009	12V10	12V	12V	V
2000-00-000000	1010	12V11	12V	12V	V
2000-00-000000	1011	12V12	12V	12V	V
2000-00-000000	1012	12V13	12V	12V	V
2000-00-000000	1013	12V14	12V	12V	V
2000-00-000000	1014	12V15	12V	12V	V
2000-00-000000	1015	12V16	12V	12V	V
2000-00-000000	1016	12V17	12V	12V	V
2000-00-000000	1017	12V18	12V	12V	V
2000-00-000000	1018	12V19	12V	12V	V
2000-00-000000	1019	12V20	12V	12V	V
2000-00-000000	1020	12V21	12V	12V	V
2000-00-000000	1021	12V22	12V	12V	V
2000-00-000000	1022	12V23	12V	12V	V
2000-00-000000	1023	12V24	12V	12V	V
2000-00-000000	1024	12V25	12V	12V	V
2000-00-000000	1025	12V26	12V	12V	V
2000-00-000000	1026	12V27	12V	12V	V
2000-00-000000	1027	12V28	12V	12V	V
2000-00-000000	1028	12V29	12V	12V	V
2000-00-000000	1029	12V30	12V	12V	V
2000-00-000000	1030	12V31	12V	12V	V
2000-00-000000	1031	12V32	12V	12V	V
2000-00-000000	1032	12V33	12V	12V	V
2000-00-000000	1033	12V34	12V	12V	V
2000-00-000000	1034	12V35	12V	12V	V
2000-00-000000	1035	12V36	12V	12V	V
2000-00-000000	1036	12V37	12V	12V	V
2000-00-000000	1037	12V38	12V	12V	V
2000-00-000000	1038	12V39	12V	12V	V
2000-00-000000	1039	12V40	12V	12V	V
2000-00-000000	1040	12V41	12V	12V	V
2000-00-000000	1041	12V42	12V	12V	V
2000-00-000000	1042	12V43	12V	12V	V
2000-00-000000	1043	12V44	12V	12V	V
2000-00-000000	1044	12V45	12V	12V	V
2000-00-000000	1045	12V46	12V	12V	V
2000-00-000000	1046	12V47	12V	12V	V
2000-00-000000	1047	12V48	12V	12V	V
2000-00-000000	1048	12V49	12V	12V	V
2000-00-000000	1049	12V50	12V	12V	V
2000-00-000000	1050	12V51	12V	12V	V
2000-00-000000	1051	12V52	12V	12V	V
2000-00-000000	1052	12V53	12V	12V	V
2000-00-000000	1053	12V54	12V	12V	V
2000-00-000000	1054	12V55	12V	12V	V
2000-00-000000	1055	12V56	12V	12V	V
2000-00-000000	1056	12V57	12V	12V	V
2000-00-000000	1057	12V58	12V	12V	V
2000-00-000000	1058	12V59	12V	12V	V
2000-00-000000	1059	12V60	12V	12V	V
2000-00-000000	1060	12V61	12V	12V	V
2000-00-000000	1061	12V62	12V	12V	V
2000-00-000000	1062	12V63	12V	12V	V
2000-00-000000	1063	12V64	12V	12V	V
2000-00-000000	1064	12V65	12V	12V	V
2000-00-000000	1065	12V66	12V	12V	V
2000-00-000000	1066	12V67	12V	12V	V
2000-00-000000	1067	12V68	12V	12V	V
2000-00-000000	1068	12V69	12V	12V	V
2000-00-000000	1069	12V70	12V	12V	V
2000-00-000000	1070	12V71	12V	12V	V
2000-00-000000	1071	12V72	12V	12V	V
2000-00-000000	1072	12V73	12V	12V	V
2000-00-000000	1073	12V74	12V	12V	V
2000-00-000000	1074	12V75	12V	12V	V
2000-00-000000	1075	12V76	12V	12V	V
2000-00-000000	1076	12V77	12V	12V	V
2000-00-000000	1077	12V78	12V	12V	V
2000-00-000000	1078	12V79	12V	12V	V
2000-00-000000	1079	12V80	12V	12V	V
2000-00-000000	1080	12V81	12V	12V	V
2000-00-000000	1081	12V82	12V	12V	V
2000-00-000000	1082	12V83	12V	12V	V
2000-00-000000	1083	12V84	12V	12V	V
2000-00-000000	1084	12V85	12V	12V	V
2000-00-000000	1085	12V86	12V	12V	V
2000-00-000000	1086	12V87	12V	12V	V
2000-00-000000	1087	12V88	12V	12V	V
2000-00-000000	1088	12V89	12V	12V	V
2000-00-000000	1089	12V90	12V	12V	V
2000-00-000000	1090	12V91	12V	12V	V
2000-00-000000	1091	12V92	12V	12V	V
2000-00-000000	1092	12V93	12V	12V	V
2000-00-000000	1093	12V94	12V	12V	V
2000-00-000000	1094	12V95	12V	12V	V
2000-00-000000	1095	12V96	12V	12V	V
2000-00-000000	1096	12V97	12V	12V	V
2000-00-000000	1097	12V98	12V	12V	V
2000-00-000000	1098	12V99	12V	12V	V
2000-00-000000	1099	12V100	12V	12V	V

Alarm overview

Alarm ID	Severity	Event ID	Alarm Name	Status	Alarm
1	High	1000	12V1	OK	12V1
2	High	1001	12V2	OK	12V2
3	High	1002	12V3	OK	12V3
4	High	1003	12V4	OK	12V4
5	High	1004	12V5	OK	12V5
6	High	1005	12V6	OK	12V6
7	High	1006	12V7	OK	12V7
8	High	1007	12V8	OK	12V8
9	High	1008	12V9	OK	12V9
10	High	1009	12V10	OK	12V10
11	High	1010	12V11	OK	12V11
12	High	1011	12V12	OK	12V12
13	High	1012	12V13	OK	12V13
14	High	1013	12V14	OK	12V14
15	High	1014	12V15	OK	12V15
16	High	1015	12V16	OK	12V16
17	High	1016	12V17	OK	12V17
18	High	1017	12V18	OK	12V18
19	High	1018	12V19	OK	12V19
20	High	1019	12V20	OK	12V20
21	High	1020	12V21	OK	12V21
22	High	1021	12V22	OK	12V22
23	High	1022	12V23	OK	12V23
24	High	1023	12V24	OK	12V24
25	High	1024	12V25	OK	12V25
26	High	1025	12V26	OK	12V26
27	High	1026	12V27	OK	12V27
28	High	1027	12V28	OK	12V28
29	High	1028	12V29	OK	12V29
30	High	1029	12V30	OK	12V30
31	High	1030	12V31	OK	12V31
32	High	1031	12V32	OK	12V32
33	High	1032	12V33	OK	12V33
34	High	1033	12V34	OK	12V34
35	High	1034	12V35	OK	12V35
36	High	1035	12V36	OK	12V36
37	High	1036	12V37	OK	12V37
38	High	1037	12V38	OK	12V38
39	High	1038	12V39	OK	12V39
40	High	1039	12V40	OK	12V40
41	High	1040	12V41	OK	12V41
42	High	1041	12V42	OK	12V42
43	High	1042	12V43	OK	12V43
44	High	1043	12V44	OK	12V44
45	High	1044	12V45	OK	12V45
46	High	1045	12V46	OK	12V46
47	High	1046	12V47	OK	12V47
48	High	1047	12V48	OK	12V48
49	High	1048	12V49	OK	12V49
50	High	1049	12V50	OK	12V50
51	High	1050	12V51	OK	12V51
52	High	1051	12V52	OK	12V52
53	High	1052	12V53	OK	12V53
54	High	1053	12V54	OK	12V54
55	High	1054	12V55	OK	12V55
56	High	1055	12V56	OK	12V56
57	High	1056	12V57	OK	12V57
58	High	1057	12V58	OK	12V58
59	High	1058	12V59	OK	12V59
60	High	1059	12V60	OK	12V60
61	High	1060	12V61	OK	12V61
62	High	1061	12V62	OK	12V62
63	High	1062	12V63	OK	12V63
64	High	1063	12V64	OK	12

Data display on Web pages

A standard Web interface is available for the display of the stored data. The values are organized by site and objects (e.g. building / energy counter). The sites can be grouped by categories or regions and offer an efficient access to the desired values.

Lien...	Nom du site	Emplacement	Statut	ALA...	NAK...	Catégorie	Avertissement
	Site 999 for testing by N.B.		Normal operating	12		Default	System 999 - System 999: serial number mismatch
	Chalet Ovronnaz	1911 Ovronnaz	Normal operating			Default	
	Daniel Blatter's Home	1423 Villars-Burquin	Normal operating			Default	
	S-Monitoring Demo	1580 Avenches, Ch. des Fauvettes 3	Normal operating			S-Energy Demo sites	
	Saia Messestand	Fribourg	Unknown	6		S-Energy Demo sites	Offline, nur während Messen aktiv
	Saia Factory 1	3280 Murten, Bahnhofstr. 18	Normal operating			Default	
	Saia Factory 2	3280 Murten, Freiburgstr. 33	Out of service			S-Energy Demo sites	Offline (not in Honeywell network)
	Saia Factory 1 Basement	3280 Murten, Bahnhofstr. 18	Normal operating			Default	
	NG-Monitoring 036381E8		Normal operating			Default	
	Saia Canteen	3280 Murten, Freiburgstr. 29	Out of service			Default	Offline (not in Honeywell network)
	Saia Werk II	3280 Murten	Out of service	1		Default	Offline (not in Honeywell network)
	NG-Server Host	0000 VTX Hosting Center	Unknown	1		Default	The NG-Server host

Additional information can be shown on the site overview, like an actual site status or an alarm summary for each site. A specific link can be added to each site. It offers for instance a quick link into Web pages in the PCD system.

Tabular and graphical trend Views

The data can be displayed in table form or on graphical trend views.

Each value can be displayed or hidden. The time range is selected freely or by mean of predefined options (one hour, one day, one week). When large quantities of data are requested, a grouping is automatically activated. For counting values (energies, volumes), periodical consumption values are computed (daily, weekly, monthly consumptions). The selected data can be downloaded in CSV file for further treatment. Graphical views are downloadable in picture format.

Sélection de la période

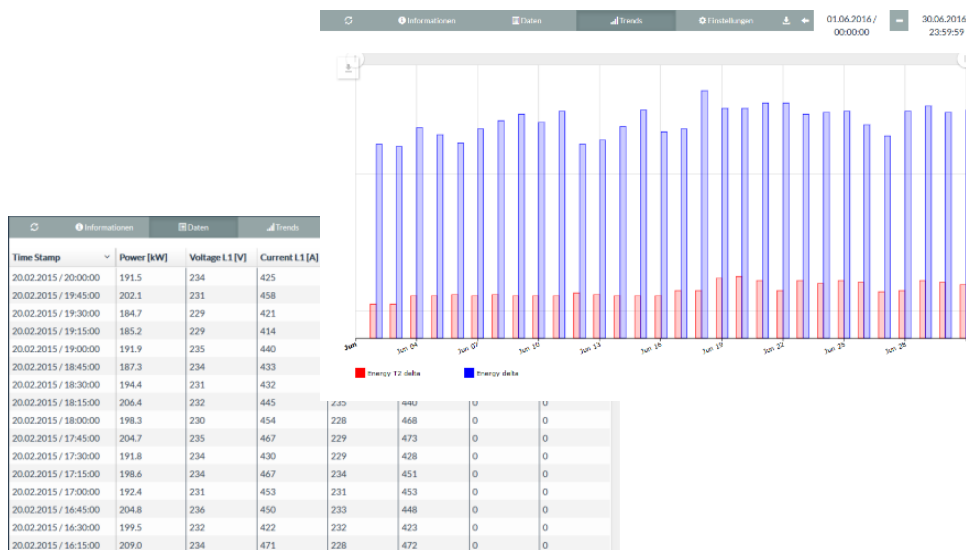
Heure
 Jour
 Semaine
 Mois
 Année
 Jour : :

Les plus récentes
 Depuis maintenant
 Dernière période
 Période courante
 Plage de temps

De: 05.02.2017 06:40:00

A: 06.02.2017 06:40:00

Delta: Minute 1 Heure Jour Semaine Mois



Multiview

For comparison of values from different systems, the **Multiview** function is used to combine them on a common table or graphic view. In this mode, the timestamps are automatically rearranged as to be common to all displayed values.

Snapshot

With the **Snapshot** feature, an overview of several values at a fix date is displayed. All values corresponding to user selectable options are collected on a same list. This data list can also be downloaded as CSV file for further treatment.

Region	Anlagen Kategorie	Anlagen ID	Objekt Name	Dat				
Fribourg	S-Energy Demo sites	41032801	Compressor 1	31.12.2014	23:59:59	55310.6	55310.6	
Fribourg	S-Energy Demo sites	41032801	Compressor 2	31.12.2014	23:59:59	5899481.6	5899481.6	
Fribourg	S-Energy Demo sites	41032801	Compressor 4	31.12.2014	23:59:59	2147022.2	2147022.2	
Fribourg	S-Energy Demo sites	41032801	Compressor 5	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	VK-41 Distrib. Cabl...	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Transformer 1	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Transformer 2	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Transformer 3	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Compressor 3	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Compressor 6	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Transformer Sala 2B	31.12.2014	23:59:59			
Fribourg	S-Energy Demo sites	41032801	Transformer Sala 2C	31.12.2014	23:59:59			

Customer specific reports and documents

For particular cases where the standard views and CSV files are not optimal and when automatic reports must be generated, specific background tasks can be setup. The generated documents can be accessed using the built-in File Explorer.

Supervision of systems and values

The NG-Server systems can also check if each system does regularly transmit its data. An alarm is automatically generated in case of failure. Furthermore it is also possible to supervise the quality of some values and to generate alarms in case of anomalies (e.g. missing or frozen values).

Alarms and alarm history

Alarms are also grouped and can be filtered by region, site or categories. Each alarm can be acknowledged and deleted from the list. For analysis of alarm situations, a detailed history of all events is available.

Zeitstempel	Gruppe/Index	Priorität	Kategorie	Log	Alarm text
07.09.2016 / 15:59:19	65535/0	3	31	Ack	Sala Messstand
01.09.2016 / 15:25:02	65535/0	3	31	Trans	Sala Messstand
01.09.2016 / 15:24:46	65535/0	3	31	Dete	Sala Messstand
01.09.2016 / 15:22:38	65535/0	3	31	Trans	Sala Messstand
01.09.2016 / 15:22:22	65535/0	3	31	Dete	Sala Messstand
01.09.2016 / 15:13:13	65535/0	3	31	Dete	Sala Messstand
01.09.2016 / 13:44:02	65535/0	3	31	Trans	Sala Messstand
01.09.2016 / 13:43:52	65535/0	3	31	Dete	Sala Messstand
31.08.2016 / 20:38:38	65535/0	3	31	Removal	Sala Factory 1
31.08.2016 / 20:38:33	65535/0	3	31	Acknowledgment	Sala Factory 1

Optional modules can be setup for automatic transmission of alarms per SMS or Email. Destinations are defined by mean of regions and categories while priorities define the transmission period (Day / Night / Weekends / Holidays).