User's Manual for Asix

www.asix.com.pl

AsReport -

Asix System Reporting Functionality Based on the Microsoft Reporting Services

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1. Introduction	3
1.1 Software Requirements	4
2 Procedure for Configuring Reporting Environment AsRaport to Work with MS Reporting Services	6
2.1 AsixConnect Database Creation	6
2.2 Launch of Data Sharing Services for AsRaport Environment Reports	9
2.3 Declaration of Report Server of MS Reporting Services	10
2.4 AsixConnect Database Configuration	14
3 AsixConnect SQL Queries Built in AsRaport	21
3.1 Authorisation of Access to AsixConnect Database for AsRaport program:	28
3.2 Data Retrieval – AsixConnect Stored Procedures	29
3.2.1 Date/Time/Period OPC Format	29
3.2.2 Retrieval of Archived Data	30
3.2.3. Retrieval of Raw Data	31
3.2.4 Retrieval of Data from Variable Definition Database	32
3.2.5 Retrieval of Historical Alarms (SQL Archive)	32
4 Designing Reports in Report Builder	35
4.1 Create a New Report	36
4.2 Declare Data Source/Layout/Format (Wizard)	36
4.3 View the Report	47
4.4 Add/Edit Data Set	47
4.5 Embedded vs. Shared Sources of Data	50
4.6 Save the Report	52
5 Designing Reports in Report Designer	54
6 Access to Reports Stored on Report Server	65
7 Viewing Reports Directly from Asix Applications	67
8 Appendage 1: Setting up the Alarm Definition/Event Database	71
8.1 Alarm Definition Database - Configuration	71
8.1.1 Generation of Alarm Definition Database from a Spreadsheet (Classic Asix)	72
8.1.2 Collective Alarm and Alarm Group Definition Database Generated from Many Applicatio (Classic Asix)	ns 73
8.1.3 Alarm Definitions Base Generated from Text Files	74

	8.1.4 Alarm Definition Database Generated based on SQL Alarms (Classic and Evo Asix)	′5
8.	.2 Alarm Event Database - Configuration	'6
	8.2.1 Starting Recording Alarm Events together with Conversion of Binary Files to SQL Database (Classic Asix)	؛ 7
	8.2.2 Starting On-line Registration of Alarm Events (Classic Asix)	31
	8.2.3 Configuration of Recording Alarm Events in SQL Database (EVO Asix)	34

1. Introduction

The 6th version of Asix system has been enriched in the reporting system based on Microsoft Reporting Services. The AsRaport reporting system is supported both by the classic Assix version and the Asix.Evo version.

Microsoft[®] SQL Server[™] Reporting Services is a comprehensive server platform designed to meet a broad range of enterprise-wide reporting-related needs. The Reporting Services (in fact a component of the SQL Server 2008 database) enable report creation from various data sources; report environment management (planning the moment of report generation/subscribing/access control), as well as delivering reports to the users in the format and the way most convenient for them. The delivery methods include e-mail subscription and embedding the reports in business applications and/or Web portals.

In order to be able to cooperate with the Reporting Services reporting platform, the Asix has been extended by the following components:

- AsRaport data server built in AsixEvo.exe (in Asix.Evo) / Askom.Data.Host program (in classic Asix)
- AsRaport query editor
- AsixConnect database (run on a Microsoft SQL server)
- independent alarm archiver to store alarms in Microsoft SQL database.

The **AsixConnect database** is a key element. Its stored procedures share process data from Asix applications to the reporting environment. The **AsRaport** query editor plays a vital role in the report designing phase as the tool used to work out necessary SQL queries. Data from Asix applications retrieved by the queries are used by the **Report Builder** or the **Report Designer** client applications of the Reporting Services environment to generate final reports. The AsRaport program is a visual editor so that SQL queries may be constructed even by users not familiar with syntax of the Structured Query Language.

Report Builder is a tool that enables the workers without programming skills to construct report definitions for individual report generation ad hoc (on demand) by end users. The Reporting Services environment is similar to the Microsoft Office package and may be intuitively operated especially by persons acquainted with the Office Excel or Access program.

Report Designer is a very flexible and productive reporting environment for programmers and advanced report designers. It is a component of SQL Server Business Intelligence Development Studio of Business Intelligence programming environment based on the well known Microsoft Visual Studio programming interface. Simple reports may be quickly and easily developed with the help of the Report Wizard, more sophisticated ones may be worked out in visual development environment of the Report Designer platform.



Fig. Architecture of the Interface Between the Asix System and the Reporting Services Environment.

Users who develop reports that are going to retrieve some data from Asix system applications simultaneously works in AsRaport interface and Report Builder/Designer interface.

The AsRaport and AsRaport server/Askom.Data.Host.exe programs must be first configured and the AsixConnect database must be created to get the Asix system ready for cooperation with the Reporting Services environment.

Design works on each new report form starts from defining syntax of SQL queries posted to database of stored procedures in order to retrieve source data, on which the reports are to be based; the AsRaport query editor is used to that end. Next, report layout must be specified in the Report Builder/Designer program - it demands a layout template with pre-defined data sections (tables, arrays, charts) to be selected, selected data elements to be placed in the project view, and suitable filtering criteria to retrieve source data for the reports to be defined. Report Builder/Designer may also be used to add new computational fields to the report form, almost arbitrarily format appearance of the report, and to view/print/Web-publish the report. A completed report form is stored on the Reporting Services central report server. The server shares the stored report forms throughout the entire enterprise using various methods, including making them available to Internet browsers.

More information on generation of reports in SQL Server Reporting Services may be found on the Microsoft Webpage.

1.1 Software Requirements

To make the Asix system compatible with the Reporting Services environment by Microsoft, you need to install SQL Server first; the minimum required version is 2008 R2 (the latest version is recommended).

The Reporting Services require at least the SQL Express with Advanced Services version. It is recommended to operate Windows 10/Windows Server 2016 with SQL Server 2016.

2 Procedure for Configuring Reporting Environment AsRaport to Work with MS Reporting Services

When starting to design reports with the use of the Reporting Services, first install the MS SQL Server reporting environment, 2008 R2 being the minimum version required (the latest version is recommended) on the computer on which the reports will be designed. The Reporting Services require at least the SQL Express with Advanced Services version.

The next stage is to configure the AsRaport reporting environment so as to make it compatible with MS Reporting Services and with the Asix application process data. This stage requires carrying out operations described in later subchapters of this documentation.

2.1 AsixConnect Database Creation

AsixConnect database with use of the AsRaport server (or Askom.Data.Host program in a classic version of Asix) retrieve process data from Asix applications and make them available to the reports.

AsixConnect creation is the first step of the procedure to get the Asix system ready for reporting based on Microsoft Reporting Services. Database of AsixConnect can be created in two ways: using Asix Evo or using the classic Architect (dedicated to classic versions of Asix applications).

ATTENTION: AsixConnect database is indispensable if Asix application process data are to be used by the reporting system.

To create AsixConnect database with the use of Asix Evo:

- 1. Run the AsixEvo.exe program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

AsixEvo.exe > Stations Settings > AsReport > Configure AsixConnect Database

3. Select MS SQL server name for the AsixConnect database and click the *Create Database* button. The operation is always done for the current user of Windows.

Database location								
Server name:	I		-					
Database name:	atabase name: AsixConnect							
Database server authorization								
Authorization mode:	ndows user	•						
User:								
Password:								
AsixConnect settings								
Address or name of data server:		127.0.0.1						
Port number of data server:		6001	\$					
The first shift begin time:		06:00	÷					
Shift length:		8	•					
Create databas	e							
Configure databa	ase		Close					

Fig. "AsixConnect database configuration" window.



- 1. Run the Architect program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

Architect > Application menu> Configure Reporting System AsRaport...

3. On the *AsixConnect Database/Location* tab choose the name of MS SQL server and the name of AsixConnect database. You can also define the name of the SQL user authorised to create the database.

The AsixConnect database can be created both on a local and a remote server.

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normation	AsixConnect database	Data service	Reports browser	AsRaport program	
ocation	Options				
AsixCo	nnect database				
Micr	osoft SQL server name	DP4-\	W10EN-MMO\SQL	EXPRESS ~	
Data	base name	AsixC	onnect		
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Creatin	g a database and entering	goptions			
Co	mmand will create databa	se AsixConne	ct on specified Mic	rosoft SQL Server 2008 R2 or	
sve	ver. The database will be tem application. AsixCon	containing sto nect database	is required by AsR:	nich provide data from asix aport reporting system.	
Cre	ate a database if you hav	e not created i	t while installing A	SIX.	
Au	thorization below is also u	used when writ	ting database entir		
			ting database optic	ons.	
			ung database optic	ins.	
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۲	Log in as the current Wind	dows user	ung database optic	ns.	
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	Log in as the current Wind Log in as the specified Mi Name	dows user crosoft SQL Se	rver user:	Create database	
	Log in as the current Wind Log in as the specified Mi Name	dows user crosoft SQL Se	erver user:	<u>C</u> reate database	
	Log in as the current Wind Log in as the specified Mi Name	dows user crosoft SQL Se	rver user:	<u>C</u> reate database	
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	Log in as the current Wind Log in as the specified Mi Name	dows user crosoft SQL Se	erver user:	<u>C</u> reate database	

Fig.: 'Configurator of the AsRaport Reporting System' Window – AsixConnect Database/Location.

4. Click the button *Create Database*.

2.2 Launch of Data Sharing Services for AsRaport Environment Reports



- 1. Run the AsixEvo.exe program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

AsixEvo.exe > Stations Settings > AsReport

3. In the "AsReport Data Server Settings" enable the option Run Service for AsReport Reports.



1. Run the Architect program and open in that program the Asix application configuration file.

2. Run:

Architect > Start Parameters > Programs > Askom.Data.Host > Start Askom.Data.Host command.

2.3 Declaration of Report Server of MS Reporting Services

Declaration of Report Server of MS Reporting Services is used to open reports created in MS Reporting Services environment, directly from the Asix system application. These reports can then be viewed using the appropriate Asix system browsers (both in the classic and Evo versions).

To declare report server of MS Reporting Services for Asix Evo applications:

- 1. Run the AsixEvo.exe program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

AsixEvo.exe > Stations Settings > AsReport > AsReport Viewer Settings

- 3. Enable the option *Run AsReport Reports*.
- 4. Declare **Repporting Server Address** and select the to-be-used user authentication method.

Two options are available:

- 1. Windows Integrated Authorization.
- 2. Standard Windows Authorization with User and Password.

Insert the full **address of the report site on the report server (Report Server Web Service URL)**, which can be found eg. using **Reporting Services Configuration Manager**. Exemplary address: http://192.168.1.100/ReportServer

Many addresses separated by semicolons are allowed. The browser connects to the first server with which manages to establish communication.

Asix.Evo - C:\AsixApp\EVO_Factory	: CONTROL_ROOM	- 🗆 X
📔 🕱 🚽 Import From File	Import From Standard Images Remove Rename Edit Images usage verification 👻 🛛 Add Panel Clone Panel Remove Panel Running	Create suitable diagram
File View Tools Full screen n	unde Run annication Help	
285- 285- o 100- 0- 0		
A. A		
Application Explorer # ×	Start Station settings [CONTROL_ROOM]* ×	Properties 4 X
Global Settings	Startup options AsReport Data Server Settings: AsReport Viewer Settings:	· · · · · · · · · · · · · · · · · · ·
Stations settings	✓ Run AsReport reports	
Security	Variable sources Z Run service for AsReport reports Reporting server address:	Elements
	Settings ?	
Archives	Data server port number: 6001 C Windows Integrated Authorization	
Alarms system	Data sources Samples count threshold for good quality [%]: 80 -	
Windows	AsReport Samples count threshold for bad quality [%]: 0 User:	
Diagrams	Password:	
> 🚞 Templates	Asix Mobile	
GIS markers	Configure AsixConnect database	144 4 b bb]
GIS templates	3/10/10/12/2001	1010
GIS datasources	Security	
Menu		
Action Sets		
Global properties		
Images		
Sounds		
Message sets		
31 Scheduler		
I imetables		
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Variable Preview [Set1] Messages		
alastad station CONTROL ROOM		16 A

Fig.: 'AsReport Viewer Settings' Window.



1. Run the Architect program and open in that program the Asix application configuration file.

2. Run the AsRaport set-up program:

Architect > Application menu> Configure Reporting System AsRaport... > Reports Browser tab

3. Declare **Report Server Web Service URL** (which can be found e.g. by means of the Reporting Services Configuration Manager program), name of the directory in the report server and select the to-be-used user authentication method.

2 Procedure for Configuring Reporting Environment AsReport to Work with MS Reporting Services

Three options used to select method to authenticate users include:

1. Log-in as the current Windows user – use operating system user credentials

2. Log-in as the Windows user 'AskomInternal' – created by default when installing the Asix package

3. Log-in as the specified Windows user

4. Click OK.

ingulator o	f the Askaport reporting	system			
ormation	AsixConnect database	Data service	Reports browser	AsRaport program	
Option	s used by reports browse	r in Asix Classi	c applications		
Microsof	t Reporting Services				
Addres	s of the reports service o	n reports serve	er http://loc	alhost:80/reportserver_SQLEXF	RESS
Name	of the directory in the rep	ports server	Raporty D	EMO	
OLog	g in as the current Windo	ws user			
	g in as the Windows user	AskomInterna	il.		
OLog	g in as the specified Wind	lws user:			
	Password				

Fig.: AsRaport reporting system configurator window – Reports browser.

2.4 AsixConnect Database Configuration

Kertain State AsixConnect database with the use of Asix Evo:

1. Run the AsixEvo.exe program and open in that program the Asix application configuration file.

2. Run the AsRaport set-up program:

AsixEvo.exe > Stations Settings > AsReport > Configure AsixConnect Database

3. Select MS SQL server name for the AsixConnect database and define the database server authorisation.

4. In the *AsixConnect Settings* group it is possible to:

- define a different location of the data server (by default, the data server and the AsixConnect database are located on the same computer);

- configure a shift system:

The First Shift Begin Time - start time of the first shift;

Shift Length - period of time declared in hours.

sixconnect database settin	93		
Database location			
Server name:	I		•
Database name:	Connect	*	
Database server authorizati	on		
Authorization mode:	Curre	ent Windows user	-
User:			
Password:			
AsixConnect settings			
Address or name of data serv	er:	127.0.0.1	
Port number of data server:		6001	\$
The first shift begin time:		06:00	÷
Shift length:		8	•
Create dat	abase		
Configure da	atabase		Close

Fig. "AsixConnect database configuration" window.

5. Select the Configure database button.

To configure AsixConnect database with the use of classic Architect:

1. Run the Architect program and open in that program the Asix application configuration file.

2. Run the AsRaport set-up program:

Architekt > Application menu > Configure Reporting System AsRaport...

3. On AsixConnect Database / Options tab there is the possibility to:

- define a different location of the Askom.Data.Host data server (by default, the Askom.Data.Host data server and the AsixConnect database are located on the same computer);

- declare *Treatement of the Points with Uncertain Quality* as points with a good quality or with a bad quality;

- declare *Configuration of a Shift System*:

The Beginning of the First Shift – start time of the first shift;

The length of the Shift - period of time declared in hours.

a constitution of	AsixConnect database	Data contina	Danasta kusura	AsPanart numerous	
ormation	AsixConnect database	Data service	Reports browser	Askaport program	
ocation 0	ptions				
Location	of data service				
ID add	ress or computer name		127.0.0.1		
ir add			127.0.0.1		
IP Port	t number		6001	▲	
By abo	default, data service and ove you can specify a dif	l database Asix ferent locatior	Connect are on th of data service.	e same computer. Using	the options
Treatem	ent of the points with un	certain quality			
⊖ Trea	at as points with a good	quality			
Trea	at as points with a bad q	uality			
Configu	ration of a shift system				
The be	eginning of the first shift	06:0	0]	
			•]	
The le	ngth of the shift	8	~		
			1A/m	to options to th	a databasa
			vvr	ite options to th	e database

Fig.: AsRaport reporting system configurator window – AsixConnect database/Options.

4. These settings will be saved in the AsixConnect database by means of the *Write Options to the Database* button.

To declare quality thresholds for Asix Evo applications:

- 1. Run the AsixEvo.exe program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

AsixEvo.exe > Stations Settings > AsReport > AsReport Data Server Settings

3. Declare sample count treshold for good and bad quality:

Samples Count Threshold for Good Quality [%]- the aggregate has a good quality if a number of good samples in the interval is equal to or exceeds a predefined threshold of good quality.

Samples Count Threshold for Bad Quality [%] - the aggregate has a bad quality if a number of bad samples in the interval is equal to or exceeds a predefined threshold of bad quality.

Asix.Evo - C:\AsixApp\EVO Factory	: CONTROL ROOM	м		– 🗆 X
Import From File	Import From Stand	dard Images Remove Rename Edit Images usage verification	Add Panel Clone Panel Remove Panel Running * Create	suitable diagram
<u>File View T</u> ools Full screen m	node Run applica	ation Help		*
₩- ₩- 0 @- @- @	• • • • •	▶ # ★ 圖 □ □ □ 9 - 1 ☆- * ≙- ≙ €-	₩• 単• ₩• ₩• ₩• № 20%	OI? -
Application Explorer 4 X	Start Stat	tion settings [CONTROL_ROOM]* ×		Properties 4 X
Global Settings		AsReport Data Server Settings:	AsReport Viewer Settings:	-
🛃 Stations settings	Startup options		Run AsReport reports	
e Security	Variable sources	Run service for AsReport reports	Reporting server address:	Elem
Variable definitions	California		?	
Channels	Securigs	Data server port number: 6001 🗘	Windows Integrated Authorization	
Alarma sustam	Data sources	Samples count threshold for good quality [%]: 80 🜲	Standard Windows authorization	
Windows	AcRoport	Samples count threshold for had quality [9/]	User:	
Diagrams	Askeport	Samples count an eshold for bad quality [/s].	Pageword	
Templates	Asix Mobile		(define of	
GIS markers	Synchronization	Configure AsixConnect database		144 4 1
GIS templates	Synch on 2d001			Crowner
GIS datasources	Security			Groups
> 🦾 Menu				
Action Sets				
Global properties				
> images				
Message sets				
31. Scheduler				
Timetables				
🦪 Reports				
🔗 Power guard				
Scripts				
Multilanguage applications				
Diagnostics				
Stations Application E Tools				
Variable Preview [Set1]][1
Variable Name Time Stamp	Value	Value Editor OPC Statur		
	0 of 0 + ++ +++ +-	- C		
Variable Preview [Set1] Messages				
Selected station: CONTROL_ROOM				

Fig. 'AsReport Data Server Settings' - Options of Quality Tresholds of Archival Data.

To declare quality thresholds for Classic Asix applications:

- 1. Run the Architect program and open in that program the Asix application configuration file.
- 2. Run the AsRaport set-up program:

Architect > Application menu > Configure Reporting System AsRaport... > Data Service tab

2 Procedure for Configuring Reporting Environment AsReport to Work with MS Reporting Services

3. Declare threshold for good and bad quality:

Good Quality Threshold - the aggregate has a good quality if a number of good samples in the interval is equal to or exceeds a predefined threshold of good quality.

Bad Quality Threshold - the aggregate has a bad quality if a number of bad samples in the interval is equal to or exceeds a predefined threshold of bad quality.

4. Click *OK*.

nfigurator o	f the AsRaport reporting	system			
formation	AsixConnect database	Data service	Reports browser	AsRaport program	
Option	s used by data service As	kom.Data.Host	t		
Access pa	arameters for Variable De	finitions Base a	and Alarms System	1	
Compu	uter name in current app	lication:			
SO1_St	ation		\sim		
From t	he configuration of the o	current applicat	tion following para	ameters are read:	
- locati Datal	ion of the variable definitions of the variable definition	tions base ons base -> For	rmat		
- netwo Fields	ork name of the Asix syst s and Computers -> Alar	tem alarm serve ms System -> 7	er Alarms -> Networ	k name	
Historica	l data - good and bad qu	uality threshold	s		
Good	quality threshold [%]		80		
Bad qu	ality threshold [%]		0		
An ago to the greate	greagate has good qualit given threshold. An agg r than or equal to the giv	y if a number o reagate has bao ven threshold.	of the good sampl I quality if a numb	es in the interval is greater than or eq per of bad samples in the interval is	jual
IP port re	servation for data service	e Askom.Data.H	Host		
If the d be rese perforr progra	efault IP port 6001 has b rved by clicking the butt ned on a computer whic m. To be able to do so yr	een changed, t ton 'Reserve IP th is running As ou must have a	he new port has to port'. This should skom.Data.Host dministrator	be Reserve IP port	
				<u>O</u> K <u>C</u> a	ancel

Fig. 'Configurator of the AsReport Reporting System' Window – Data Service.

3 AsixConnect SQL Queries Built in AsReport

The AsRaport query editor is run by the AsRaport.exe executable put by default by the Asix package installer into the package C:\Program Files\Askom\Asix main folder.

The *Tools* and *View* tabs at the top part of the main window of the editor display collections of tools. The remaining part of the window is consumed by *Query1*, *Query2*,... tabs used to define various queries to the database of process value archive and to the database of variable definitions.

	1					AsRaport - C	:\AsixApp\Fa	bryka\BAZA\Ba	a_zmienr	ych.mdb				×
9	Tools	View												
Capp	Open Asix.Ev lication direct	o Open Asix tory application	k New query	Run	Paste	Select Re Column/Ro	sert emove Cr rep	reate Publish ort file report Report	() Help	Jak zacząć	-M			
Arc	hival data 1													x
	Period													
		Begi	nning		End or	length		The length of	the inter	val	Shift system options	<u> </u>		
		DAY			DAY+1D)	EL	1H			Start time of the first shift	06:00 ‡		
	The value to	be input	aramStart		Dara	mEnd		ParamInter	əl		Shift length	8 🔻		
	by the user		aramotart		E Para	annerna					Nearest production day			
	Column lis	t												
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Ľ,	endune		start			anic	value							
	Query res	ult												

Fig: AsRaport – main window.

The Tools tab includes:

Open Asix.Evo application directory – open the Asix.Evo application configuration file (XML file). *Open Asix application file* – the command oopens the XML configuration file of the Asix application, the classic version. *New query* – *Archival data* – add a tab for a new query to the database of process value archive. *New query* – *Raw data* – adds a new tab allowing you to build SQL queries to raw data.

New query – *variable definitions database* – add a tab for a new query to the database of variable definitions.

New query – *Alarms* – adds a new tab allowing you to build SQL queries to the alarm archive.

Run – display results of the so-far defined query.

Copy – copy query defined in the AsRaport window to the Windows Clipboard (to paste it later at the report development stage to the Report Builder/Designer query definition window).

Paste – paste a query from the Windows Clipboard to the AsRaport window.

Select – select process variable.

Insert – insert a new row to list of columns (in case of a query to the database of process value archive) or a new row to list of attributes/variables (in case of a query to the database of variable definitions).

Remove – remove the highlighted row from list of columns.

Tools of the *View* tab are used to select styles and colors used in the AsRaport window to control its appearance.

Each Query tab opened by the *New query – archival data* command displays the following elements:

Specifications of the *Period* to be covered by the query:

Beginning – beginning of the period

End or length – end or length of the period from within which the process variable data will be sourced

The length of the interval – interval between subsequently retrieved process variable values (the entire query period is divided into constant-length time intervals).

Shift system options: Start time of the first shift, Shift length, Nearest production day.

Column list – list of fields (report columns) to be presented in the report. Click in the new row in the *Name* column, then click the button to drop down selection list of all pre-defined field names:

starttime - interval start time

endtime – interval end time

shiftnumber – operator shift number. Three shifts have been pre-defined: 6 am–2 pm (the 1st shift); 2 pm–10 pm (the 2nd shift); and 10 pm–6 am (the 3rd shift).

shiftdate – date when the given shift commenced.

starttimeutc - interval start time in the UTC time

endtimeutc - interval end time in the UTC time

For each query field an Agregat (average0, average, delta, end, max, min, range, start, Total, quality_bad, quality_good, qyality_uncertain, quality_good_duration, quality_uncertain_duration, quality_bad_duration, sum_up, sum_down, previous_known, last, root_mean_square, standard_deviation, total_last_known, average_last_known) and an Alias may be defined. The aggregate is calculated for each interval using all archived data belonging to that interval.

Query result – result of a query posted to the database of process value archive.

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Fig. Declaration of Query Field for Inquiries to Archival Data.

Each *Query* opened by the *New query – Raw data* command displays the following elements:

Specifications of the *Period* to be covered by the query:

Beginning – beginning of the period

End or length – end or length of the period from within which the process variable data will be sourced

Shift system options: Start time of the first shift, Shift length, Nearest production day.

Column list – list of fields (report columns) to be presented in the report. Click in the new row in the *Name* column, then click the button to drop down selection list of all pre-defined field names:

time – sample time

shiftnumber – operator shift number. Three shifts have been pre-defined: 6 am–2 pm (the 1^{st} shift); 2 pm–10 pm (the 2^{nd} shift); and 10 pm–6 am (the 3^{rd} shift).

shiftdate – date when the given shift commenced.

timeutc

For each query field an Alias may be defined.

Query result – result of a query posted to the variable database.

		AsRanort - C:\AsixAnn\Fa	cton/Base/Variable base md	h	-	П	>
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Open Asix.Evo Open Asix pplication directory application file	New query Run 🖹 Cop	Select 🙀 Remove	Create Publish Help report file report	Jak zacząć			
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Period							
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Column list		and the second sec					
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time shiftumber shiftdate timeutc							
Query result							

Fig. Declaration of Query Field for Inquiries to Raw Data.

Each *Query* opened by the *New query - variable definitions database* command displays the following elements:

Layout of the result table – attribute names are names of columns and row contains the values of selected attributes of one variable or variable names are names of columns and row contains the values of one attribute of selected variables.

Attribute list – list of attributes of variables to be presented in the report.

Variable list – list of names of variables to be presented in the report.

Query result – results of the query posted to the database of variable definitions.

		AsRaport - C:\AsixApp\F	actory\Base\Variable_ba	ise.mdb	- 0
Tools View					
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pen Asix.Evo Open Asix ication directory application fil	e v Run Co	py Select 🎇 Remove	Create Publish report file report	Help Jak zacząć	
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nival data 1 Raw data 2 Va	ariable definitions database 3				
avout of the result tal	le				
Autor of the result the	-6	- 6 I			
Attribute names are names	or columns, row contains the values	or selected attributes of one va	riadie		
Variable names are names of	of columns, row contains the values of	of one attribute of selected varia	ables		
Attribute list			Variable list		
Name	Alias		Name		
Name			A000		
Description					
how would					
zuery result					

Fig. Declaration of Query Field for Inquiries to Variable Definition Database.

Each Query opened by the New query - Alarms command displays the following elements:

Data kind – defines the kind of data to be displayed: active periods for historic alarms or the total duration of the active periods of the historic alarms.

Alarms domain – it defines the alarm domain which unequivocally identifies a set of alarms, that is, the alarm archive, alarm definitions and detection strategies. This is an equivalent to the alarm resource name in the older classic Asix applications.

Alarm text language

Begin of period – beginning of the period from which the data will be sourced.

End of period – end of the period from which the data will be sourced.

Alarm identifier pattern - you can use wildcard characters of the SQL language, that is, '%' and '_'. Generally, this pattern should be consistent with the SQL language LIKE phrase syntax.

Alarm text pattern - you can use wildcard characters of the SQL language, that is, '%' and '_'. Generally, this pattern should be consistent with the SQL language LIKE phrase syntax.

	AsRaport - C:\AsixApp\	<pre>\Factory\Base\Variable_base.mdb</pre>	- 0
Tools View			
Vpen Asix.Evo Open Asix Viction directory application file	Run Copy Select Remove	Create Publish Help Jak zacząć	
Application	Query Column/Row	Report Help 5	
hival data 1 Raw data 2 Variable definition	s database 3 Alarms 4		
Parameters			
Data kind	Alarms domain	Alarm text language	
Alarmy historyczne	▼ AL5 ACID ▼		
Begin of period	End of period	Alarm identifier pattern	
DAY	DAY+1D		
Value entered by the user	Value entered by the user	Alarm text pattern	
ParamStart	ParamEnd		
Query result			

Fig. Declaration of Query Field for Inquiries to Alarm Archive.

3.1 Authorisation of Access to AsixConnect Database for AsRaport program:

The AsReport program access to the AsixConnect database must be authorised for the data to be read:

(The MS SQL server access method can only be configured through the Architect program.)

To configure access to the AsixConnect database for the AsRaport program:

1. Run the AsixEvo.exe program and open Asix application configuration file in it. Go to *Stations settings > Data sources > Connect via Asix Data Server >* data server file edition button by means of the Architekt button. For the classic Asix version: Run the Architekt program and open the Asix application configuration file in it.

2. Run the AsRaport reporting system configurator:

Architect > Application menu > Configure Reporting System AsRaport...

3. In the *AsRaport program* tab, specify the logging in method and confirm your choice with the *OK* button:

There are three ways available to verify the AsixConnect database users:

1. *Log in as current Windows user* – logging in of the current user of the Windows operating system

2. Log in as a user of Microsoft SQL Server named '_asix_internal' – created by default when installing the Asix package (such user can be created on conditon that the MS SQL server has been pre-installed before starting the installation of the Asix package)

3. Log in as the specified user of Microsoft SQL Server.

3.2 Data Retrieval – AsixConnect Stored Procedures

The AsRaport query visual editor may assist users who are not familiar with syntax of the SQL language. However, some users may prefer to construct the queries – including queries to alarm archives – on their own. Time-related parameters of the query (periodStart, periodEnd, resampleInterval, periodLen) may be specified in local time, or in the OPC time format (see the 3.2.1 Date/Time/Period OPC Format section below). Retrieval of archived process data, data from variable definition database, alarms from the SQL archive, and alarms from file archives is discussed in subsequent sections below.

3.2.1 Date/Time/Period OPC Format

The OPC time format

The syntax: keyword +/- offset number +/- offset number ...

'keyword': NOW, MINUTE, HOUR, DAY, WEEK, MONTH, YEAR 'offset': S, M, H, D, W, MO, Y

Examples: DAY-1D, YEAR+1MO

The OPC duration format

The syntax: +/- offset number +/- offset number ... It doesn't contain 'keyword' 'offset': S, M, H, D, W, MO, Y

Examples: 5M, 1H, 12H, 1MO, 1D+12h

3.2.2 Retrieval of Archived Data

ReadProcessed periodStart, periodEnd, resampleInterval, column1, column2, column3, ...

Time period specification: *periodStart, periodEnd*: date, for example: '2009-1-1 0:0:0' *resampleInterval*: number of seconds Note: the date and the time period available in the OPC format.

column1, column2, ... - names of variables from the variable definition database; the function may return not more than 18 columns.

ReadProcessedL periodStart, periodEnd, resampleInterval, columnList

Time period specification:

periodStart, periodEnd: date, for example: '2009-1-1 0:0:0'

resampleInterval: number of seconds

Note: the date and the time period available in the OPC format.

columnList - is a text string containing all column names separated with comas.

Procedura ReadProcessed - columns with variable values

- Variable name: 'A000'
- As before + alias: 'A000 as [Flue gases temp.]'
- Aggregate and variable name: 'avg(A000)'
- As before + alias: 'avg(A000) as [Averaged flue gases temp.]'
- Quality and name of the variable: 'quality(A000)'
- Quality, aggregate and name of the variable: 'quality(avg(A000))'

Procedura ReadProcessed - time columns:

- stamp time of interval start 'starttime'
- stamp time of interval end 'endtime'
- date of shift start 'shiftdate'
- number of shift 'shiftnumber'

- Timestamp for the interval start time in the UTC time 'starttimeutc'
- Timestamp for the interval end time in the UTC time 'endtimeutc'

3.2.3. Retrieval of Raw Data

ReadRaw periodStart, periodEnd, column1, column2, column3, ...

Time period specification:

periodStart, periodEnd: date, for example: '2009-1-1 0:0:0'

Note: the date and the time period available in the OPC format.

column1, column2, ... - names of variables from the variable definition database; the function may return not more than 18 columns.

ReadRawL periodStart, periodEnd, columnList

Time period specification:

periodStart, periodEnd: date, for example: '2009-1-1 0:0:0'

Note: the date and the time period available in the OPC format.

columnList - is a text string containing all column names separated with comas.

Procedura ReadRaw - columns with variable values

- Variable name: 'A000'
- As before + alias: 'A000 as [Flue gases temp.]'
- Quality and name of the variable: 'quality(A000)'

Procedura ReadRaw - time columns

- Stamp time 'time'
- date of shift start 'shiftdate'
- number of shift 'shiftnumber'
- Timestamp in the UTC time 'timeutc'

3.2.4 Retrieval of Data from Variable Definition Database

Retrieve data from the database of variable definitions:

ReadAttributes variableNames, column1, column2, column3, ...

variableNames: the list of variable names, for example:'A000, A004, A008'

column1, column2, ...: attributes from the variable definition database (for the current list of attributes, see: Architekt.chm/pdf, Attachment 1)

Retrieve and transpose data from the database of variable definitions

ReadAttributesTranspose attributeNames, column1, column2, column3, ...

attributeNames: the list of variable attributes, for example: 'Name, Description, Unit'

column1, column2, ...: attributes from the variable definition database (for the current list of attributes, see: Architekt.chm/pdf, Attachment 1)

3.2.5 Retrieval of Historical Alarms (SQL Archive)

Retrieve historical alarms from the SQL archive:

ReadProcessedHistoricalAlarms resourceName, periodStart, periodEnd, alarmIdPattern, alarmTextPattern, alarmTextLang

Only alarms that were <u>initiated</u> within the specified period will be retrieved.

Alarm start/end/confirmation date, ID, text and duration will be retrieved.

resourceName: nazwa domeny alarmów aplikacji Asix Evo

periodStart, periodEnd: time period in a local format or in the OPC format

alarmIdPattern: a text for filtering the range of the returned alarms by the alarm identifier. It can be:

- Alarm identifier only alarms with a specified identifier are returned
- List of alarm identifiers only alarms with an identifier included in the list are returned; the list should be enclosed in the quotation marks
- Identifier pattern only alarms with an identifier matching the pattern are returned; you can use the SQL language wildcard characters, that is, '%' and '_'. Generally, this pattern should be consistent with the SQL language LIKE phrase syntax

1,2,3,

1-3

alarmTextPattern: a text for filtering the range of the returned alarms by the alarm text. It can be:

- Alarm text only alarms with a specified alarm text are returned
- Text pattern only alarms with an alarm text matching the pattern are returned; you can use the SQL language wildcard characters, that is, '%' and '_'. Generally, this pattern should be consistent with the SQL language LIKE phrase syntax

<text>

alarmTextLang: alarm text language identifier (Polish language - 'pl')

Reading of historical alarms – active periods

ReadProcessedHistoricalAlarms_ActivePeriods resourceName, periodStart, periodEnd, alarmIdPattern, alarmTextPattern, alarmTextLang

Alarms which <u>were active</u> during the specified period of time are returned. Each alarm start and end date which is beyond the specified period is narrowed to the specified time period.

Reading of historical alarms - total length of active periods

ReadProcessedHistoricalAlarms_ActivePeriodTotal resourceName, periodStart, periodEnd, alarmId, alarmTextPattern, alarmTextLang

The length of the period during which the alarm <u>was active</u> during the specified period of time is returned.
4 Designing Reports in Report Builder

Basic steps of the procedure that must be performed to develop a report utilizing some values of process variables/variable definitions retrieved from Asix system applications are described below using an example of the "Factory" demo application delivered with the Asix package.

Reporting Services from the SQL Server 2008 Service Pack 1 version Express have been used and Report Builder version 3.0 PL. For detailed instructions see documentation of the Report Builder program.

Main window of the Report Builder program in version 2 is shown in the figure below.

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Fig. Report Builder - main window.

Form used to define new reports contains by default report contents, page footnote, and the following elements:

- text box with the "click to add title" prompt
- link to the table/matrix wizard and link to the chart wizard
- the embedded [&ExecutionTime] field in the footnote (to add report execution date/time to each page of the report at page bottom).

4.1 Create a New Report

Click the *Start* button and select the *Programy/Microsoft SQL Server 2008 Report Builder/Report Builder 2.0* option to create a new report. The displayed Report Builder window will show new report in the project view.

4.2 Declare Data Source/Layout/Format (Wizard)

The first step is to select source of the to-be-reported data and to indicate the format, in which the reported data are to be arranged. Data presented in examples below are arranged <u>in tables</u>.

Table may be added to the report using the table wizard. The wizard helps to define links to data sources, to create query specifying which data are to be reported, to organize data in some groups, and to add summary rows (in which data contained within the group in question are aggregated).

1. Click the *Design* button to switch to the project view.



Fig. Design button to switch to the project view.



2. Click the *Table or Matrix* icon within the *Click to add title* area.

Fig. 'Click to add title' area.

The 'Choose a connection to a data source' window appears.

able or Matrix	×
Choose a connection to a data source	
Choose a published data source, or create a connection for use only in this report.	
	_
Browse New	
Help <u>Alack</u> <u>N</u> ext > Canc	el

Fig. 'Choose a connection to a data source' window.

List of data sources appears, if some folder with shared source data has been defined on the report server. Otherwise such folder (data source) must be defined.

3. Click the *New...* button to add a data source from the report level.

4. Select the '**Microsoft SQL Server**' connection type, then click the *Build* button to define connection properties.

Choose a connection to a data source Choose a published data source, or create a connection for use only in this report. Data Source Connections: Tata Source Connections: Credentials Change name, type, and connection options. Credentials Name: Data Source: Select connection type: Microsoft SQL Server Connection tring: Citick here to type or pasts a connection of this Server name: Use single transaction w Hete Hete Hete Hete Connection a database name: Server name: Connection a database name: Server name: Connection to database name: Server name: Connection a database name: Server name: Connection a database name: Server name: Connection a database name: Server name: Connection a database name: Connectio	New Table or Matrix			×						
Choose a published data source, or create a connection for use only in this report. Data Source Connections:	Choose a connection to a data source									
Data Source Properties Image: Change name, type, and connection options. Credentials Name: DataSourceI Select connection type: Microsoft SQL Server Connection string: Click here to type or paste a connection string: Existing Click here to type or paste a connection string: Existing Use single transaction with the server Image: Server name: Use single transaction Use source: Help Connect to a database name: Connect to a database name: Server my password	Choose a published data source, or create a connection for use only in this report.									
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Help Name: DataSourceI Select connection type: Microsoft SQL Server Connection string: Click here to type or paste a connection string. Data source: Microsoft SQL Server (SqlClent) Data source: Microsoft SQL Server (SqlClent) Change Server name: We single transaction with the server Use single transaction with the server Use Sub Server Authentication User name: Password: Save my password Connect to a database Select or enter a database name:	Credentials	change hame, type, and								
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Help Help Data source: Microsoft SQL Server (SqlClient) Change Server name: Image:		Click here to type or paste a	Connection Properties	Build						
Microsoft SQL Server (SqlClient) Use single transaction w Server name: Log on to the server Use Windows Authentication Use SQL Server Authentication User name: Password: Save my password Connect to a database Select or enter a database name:			Data source:	fx						
Berver name: Use single transaction with the server Log on to the server Use Windows Authentication Use SQL Server Authentication User name: Password: Password: Save my password Connect to a database Select or enter a database name:			Microsoft SQL Server (SqlClient) Change							
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Help User name: Help Connect to a database © Select or enter a database name:			Use Windows Authentication Use SQL Server Authentication							
Help Password: Cancel Help Connect to a database Cancel			Username:							
Help Save my password Cancel			Password:							
Help Connect to a database Select or enter a database name:	Help		Save my password							
© Select or enter a database name:	Help		Connect to a database	Cancel						
			Select or enter a database name:							
C Attach a database file:			O Attach a database file:							
Browse			Browse							
Logical hame:			Logical name:							
			,							
Advanced			Advanced							
Test Connection OK. Cancel			Test Connection OK Cancel							

Fig. 'Connection properties' window.

5. Enter path to the AsixConnect database.

6. Click **OK** to close the 'Connection Properties' window, another **OK** to close the 'Data Source Properties' window, and **Next** to proceed with the wizard.

ATTENTION: The above procedure may be used to define data sources from the report level. However, in order to be able to freely modify reports stored on a report server, the data source should be declared on that server, too. Such sources are automatically displayed on the *'Choose a connection to a data source'* wizard screen. This may be done (for example) using the Report Manager tool, which may be invoked as follows:



Menu Start > Microsoft SQL Server 2008 > Configuration Tools > Reporting Services Configuration Manager > Report Manager URL > URLs

Fig. Report Manager - report data source declaration.

Once data source is declared, declare a query to retrieve the to-be-reported data. Proceed with the table wizard:

7. Once path to the AsixConnect database is declared, the table wizard will display the **'Design a query'** *window*.

8. *Provided that the query has already been created in the AsRaport* editor, copy it from the editor to the Windows Clipboard, navigate to the '*Design a query*' screen of the Report Builder wizard, select the *Edit As Text* option and paste the Clipboard contents. Click the

button I to display query results.

esign a query			
uild a query to speci	ify the data you war	nt from the data sou	irce.
🔂 Edit As Text 🛛	Jimport	Commar	nd type: Text
exec ReadPro	cessed 'DAY',	'DAY+1D', '1	H', 'starttime as [Czas początku]', 'endtime as [Czas
końca]', 'A0	80'		
Czas początku	Czas końca	A080	1
Czas początku 2010-06-25 00:	Czas końca 2010-06-25 01:	A080	
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Fig. Report Bulider – table wizard – 'Design a query' window.

9. Click Next.

10. Arrange the fields grouping them into rows, columns or rows/columns and click *Next*.

w Table or Matrix		2
Arrange fields Arrange fields to group data in ro	vs, columns, or both, and choose values to display. D	ata expands across the page in column groups and
down the page in row groups. Us Available fields Czas_początku Czas_końca A080	e functions such as Sum, Avg, and Count on the field	is in the Values box. Column groups
	Row groups	Σ Values
Help		< <u>B</u> ack <u>N</u> ext > Cancel

Fig. Report Bulider – table wizard – 'Arrange fields'.

11. Select a layout for the table and click *Next*.

lew Table or Matrix		×
Choose the layout		
If you choose to show subtotals and gran with indented groups in the same colum	nd totals, you can place them above or below the group. Stepped reports show hierarchical structure n.	
Options:	Preview	
Show subtotals and grand totals	Start Time End Time	
Blocked, subtotal below		
Stepped, subtotal above		
M Expand/collapse groups		
l		
Help	< <u>B</u> ack <u>N</u> ext > Cancel	

Fig. Report Bulider – table wizard – 'Choose the layout' window.

12. Select a style for the table and click *Finish*.

New Table or Matrix		X
Choose a style		
Styles feature different fonts and color scheme	es, but do not affect the basic layout. You can customize the style after you finish the wizard.	
Styles:	Preview	
Corporate Forest Generic Mahogany Ocean Slate	Start Time End Time [Start_Time] [End_Time]	
Help	< <u>B</u> ack <u>F</u> inish >> Cancel	

Fig. Report Bulider – table wizard – 'Choose a style' window.



Fig. Report in 'Design' view.

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	RurR																	0
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01	:00:00	02:00:00																
2010-02	10-12 :00:00	2010-10-12 03:00:00																
2010- 03	10-12	2010-10-12 04:00:00																
2010- 04	10-12 :00:00	2010-10-12 05:00:00																
2010-05	10-12 :00:00	2010-10-12 06:00:00																
2010- 06	10-12 :00:00	2010-10-12 07:00:00																
2010- 07	10-12 :00:00	2010-10-12 08:00:00																
2010- 08	10-12 :00:00	2010-10-12 09:00:00																
2010- 09	10-12 :00:00	2010-10-12 10:00:00																
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2010- 11	10-12 :00:00	2010-10-12 12:00:00																
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2010- 13	10-12 :00:00	2010-10-12 14:00:00																
b No curr	rent report	server											🕅 🔂	100%	Θ-		-•	

Fig. Report in 'Run' view.

4.3 View the Report

Use the *Run* command on the Report Builder *Home* tab to view the report.

0 92	19)			Untitled - 1	dicrosoft S	QL Server	Report Builder			_ n x
RurA										
Design Zoom	First Previous	of 1 Next	Last X Stop	Print Page Setup	Print	Export	Document Map	-25		
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	-									
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2010-06-25 07:00:00	2010-06-25 08:00:00									
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Current report s	server http://bpi-note	book:8080/Reports	ierver_SQLEXPRESS					2 3 100%	0	0 🕘 🔐

Fig. Report in 'Run' view.

4.4 Add/Edit Data Set

Data sets may be edited from the '*Report Data'* window pane (the part of Report Builder main window).

ATTENTION: Data source must be specified.

💑 To create a data set:

1. Right-click data source name displayed in the *'Report Data*' window pane, then click the *Add Dataset*... command button to open the *'Dataset Properties*' dialog window.

If there is no data source item in the '*Report Data*' window pane select *New* menu and *Data Source...* command.



Fig. 'New' menu in the 'Report Data' window.

2. Accept the default name for the edited data set or enter another name into the *Name* field.

3. Select name of one of the existing and shared data sources displayed in the *Data source* field, or click the *New...* button to create a new embedded data source.

4. Depending on the data source type select the appropriate *Query type* option:

- select the *Text* option for queries written in the data source query language
- select the *Table* option to retrieve all fields of a relational database table

select the *Stored Procedure* option to run stored procedure specified by its name.
5. Enter name of the query/stored procedure/table to the *Query* field. Alternatively you may click the *Query Designer...* button to open a graphical/text query editor, or the *Import*... button to import the query from some existing report.

6. Enter maximum number of seconds the report server is to wait for a replay from the database into the *Time out* field. Default value 0 means that there will be no limit at all.
7. Click *OK*.

The data set and its collection of fields is displayed in the '*Report Data*' window pane in the data source node of the Report Builder main window.

AsReport



Fig. The data set and its collection of fields in the 'Report Data' window pane.



Right-click the data source name displayed in the '*Report Data*' window pane, then right-click the data set name and click the *Dataset Properties* button to open dataset properties window in the query properties view.

Dataset Properties		×
Query	Choose a data source and create a query.	
Parameters		
Fields	Name:	
Options	DataSet1	
Filters	Data source:	
The state of the s	ReportsDataSource New	
	Ouerv type:	
	Text C Table C Stored Procedure	
	Query:	
	exec ReadProcessed 'DAY', 'DAY+1D', '1H', 'starttime as [Czas początku]', 🔺 🗾	
	Query Designer Import Refresh Fields Time out (in seconds):	
Help	OK Cance	9

Fig. 'Dataset Properties' window.

Select another category in the left window pane to switch to another dataset property.

4.5 Embedded vs. Shared Sources of Data

Report Builder 2.0 can link a report to a data source shared on a report server or embed a data source into a report; in the latter case the data will be used exclusively by the report.

To be able to link a report to a data source shared on a report server one has to have access to the server and to know data source location within the server. To embed data source one has to specify connection and to know what privileges to specify so that the data needed within the report might be retrieved.

Once a shared data source is selected on a report server, the server becomes the current report server.

To create a link to a shared data source (shared connection):

 Click the *New...* menu bar option in the '*Report Data*' (left) window pane of the Report Builder main window, then click the *Data Source...* option to open the '*Data Source Properties*' dialog window.

2. Accept the default name for the edited data source or enter another name into the *Name* field.

3. Set the *Use a shared connection or report model* option to display list of shared data sources and report models used in the report. If the list is empty, click the *Browse…* button and navigate to the report server folder, in which the shared data sources reside.

4. Highlight the shared data source and click **OK**.

Data source name will appear in the '*Report Data*' window pane.



 Click the *New...* menu bar option in the '*Report Data*' (left) window pane of the Report Builder main window, then click the *Data Source...* option to open the '*Data Source Properties*' dialog window.

2. Accept the default name for the edited data source or enter another name into the *Name* field.

3. Make sure the Use a connection embedded In my report option is selected.

4. Drop down the *Select connection type* list and select data source type e.g. 'Microsoft SQL Server' or 'OLE DB'.

5. Using one of the following methods specify the connection string:

- enter the string directly into the *Connection string* text box
- click the *fx* formula button to display the '*Expression*' dialog window, enter expression into the *Set expression for*: box, click *OK*.
- 6. Click the *Build...* button to open the '*Connection Properties*' dialog window with properties of the above specified connection.

- 7. Depending on the selected data source type fill up appropriate fields of the 'Connection Properties' dialog window (data source type/name, credentials used to connect etc.). Click the Test Connection button to make sure that the data source is available and that the supplied credentials are correct.
- 8. Click the *Advanced* butoon the 'Connection Properties' window will appear.
- 9. Specify credentials to be used to connect to the data source. Data owner is responsible for selecting acceptable credentials. Sometimes the owner decides to share data source on a report server and sets (in the server properties) up credentials available for other users. Ask data owner for the credentials.
- 10. Click **OK**.

Data source name will be displayed in the 'Report Data' window pane.

4.6 Save the Report



1. Click the icon in the top left corner of the Report Builder main window and select the *Save As* command.

2. Specify URL address of the target server report or a local computer target folder. The report will be saved in a *.RDL file.

3. Click the *Save* button.

AsReport

Save As Report		×
Look in:	http://bpi-notebook:8080/ReportServer_SQLEXPRESS	2
Recent Sites and Servers Desktop My Documents My Computer	 Data Sources Raport_testowy100 Raport DEMO Report Project3 test 	
	Name: Untitled.rdl Sav	e
	Items of type: Reports (*.rdl)	el //

Fig. 'Save As Report' window.

5 Designing Reports in Report Designer

Only basic steps of the procedure to define simple reports utilizing process data sources from Asix system applications have been described in this section. The "Factory" demo application delivered with the Asix package has been used as a sample application. Services from the SQL Server 2008 Service Pack 1 version Express have been used. For detailed instructions see documentation of the Report Designer program.



Fig. The main Report Designer window.

1. Run Start > Programs > Microsoft SQL Server 2008 > SQL Server Business Intelligence Development Studio

- 2. Select the *Create: Project...* option in the 'Recent Projects' window pane.
- 3. Enter basic report parameters: its name and location. Click OK.

New Project					Ľ	? ×	
Project types:		Templates:	.NET Fra	mework 3.5	-	8-8- 8-8- 8-8-	
∰usiness Intellig	ypes	Visual Studio installed templat Analysis Services Project Integration Services Connections Report Server Project Wizard Report Server Project My Templates	es Import Analysis P Integration Serv Report Model Pr	Services 2008 Dat vices Project oject			
Create a new Repor	t Server project usin	g Report Wizard.					
<u>N</u> ame:	Report Project4						
Location:	D:\Documents and Settings\BPi\Moje dokumenty\Visual Studio 2008\projects						
Solution Na <u>m</u> e:	Report Project4		Create <u>d</u> irectory for solu	tion			
				ОК	Cancel		

Fig. 'New Project' window.

🗟 Report Wizard	
	Welcome to the Report Wizard
	The Report Wizard helps you create a report. With this wizard, you can: - Select a data source from which to retrieve data - Design a query to execute against the data source - Choose the type of report you want to create - Specify the basic layout of the report - Specify the formatting for the report Click Next to continue.
	Don't show this page again
Help	<back next=""> Enish >> Cancel</back>

4. Report Wizard welcome screen appears. Click Next.

Fig. Report Wizard - greeting window.

5. On the 'Select the Data Source' screen specify data source: name of the SQL server serving the AsixConnect database and the AsixConnect database - use Edit... button to open 'Connection Properties' window. Click Next.

Report Wizard Select the Data Source Select a data source from which to obtain data for this report a source. Shared data source New data source Name: DataSource1 Type: Wisconft COL Secure	or create a new data	
Connection string: Connection string: Make this a shared data source Help < Back Next >	Edit Credentials	onnection Properties ? × Data source:
		Password: Save my password Connect to a database Select or enter a database name: Attach a database file: Logical name: Advanced Test Connection OK Cancel

Fig. Report wizard - 'Connection Properties' window.

6. The 'Design the Query' screen appears. Provided that the query has already been created in the AsRaport editor, copy it from the editor to the Windows Clipboard, navigate to the 'Design the query' screen, and paste the Clipboard contents into the Query string: field.

Report Wizard	
Design the Query Specify a query to execute to get the data for the report.	
Use a query builder to design your query.	
Q <u>u</u> ery Builder	
Query string:	
'A036', 'A004'	
<u>H</u> elp < <u>B</u> ack <u>N</u> ext > ⊟nish >> C	ancel

Fig. Report wizard - 'Design the Query'.

7. Select report type: 'Tabular' or 'Matrix'. Click *Next*.

Coloct the Deport Type						
Select the type of report that you want to create.						
_						1
• <u>T</u> abular	xxxx					
C Matrix	****	****	****	****	****	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	XXXXXX	XXXXX	XXXXX	*****	XXXXX	
	20000		22222	xxxxx	XXXXX	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	
	*****	*****	*****	*****	*****	

Fig. Report wizard – 'Select the Report Type' window.

8. Design a layout of the data within the report (a table was selected in this example). Click *Next*.

🗟 Report Wizard		
Design the Tab Choose how to gr	e oup the data in the table.	
<u>Available fields:</u>	Displayed	fields:
A036 A004	<u>Rage></u>	
	<u>G</u> roup>	* XXXX XXXX XXXX XXXX XXXX XXXX XXX XXXX XXX XXX XXX XXX XXX XXXX XXX XXXX XXX XXXXX XXX XXXXX XXXXX
	Details> Start_Time	
<u>H</u> elp	< Remove	ext >Einish >> Cancel

Fig. Report wizard – 'Design the Table'.

9. Select table style. Click *Next*.

Slate Forest	XXXX	xx			
Bold	XX XX	XXXX	XXXX	хххх	XXXX
Ocean	XXXX	XXXX	XXXX	XXXX	XXXX
Coporio	XXXX	XXXX	XXXX	хххх	XXXX
Generic	XXXXX	XXXX	XXXX	XXXX	XXXX
	XXXXX	XXXX	XXXX	хххх	XXXX
	XXXX	XXXX	XXXX	XXXX	XXXX
	XXXXX	XXXX	XXXX	XXXX	XXXX
	XXXX	XXXX	XXXX	XXXX	XXXX
	XXXX	XXXX	XXXX	хххх	XXXX
	XXXX	XXXX	XXXX	XXXX	XXXX
	XXXX	XXXX	XXXX	хххх	XXXX
	XXXX	XXXX	XXXX	XXXX	XXXX
	XXXXX	XXXX	XXXX	XXXX	XXXX
	XXXX	XXXX	XXXX	XXXX	XXXX
	XXXX	XXXX	XXXX	хххх	XXXX
	XX XX	XXXX	XXXX	XXXX	XXXX

Fig. Report wizard – 'Choose the Table Style'.

10. Specify report server and its folder, to which the reports will be transferred (deployed). Click *Next*.

🧟 Report Wizard	
Choose the Deployment Location Choose a location to which to deploy the report.	
Report server:	
For a report server running in native mode, the path to the report server where the deployed, for example http://servername/reportserver. For a report server runnin Sharepoint integrated mode, the URL of the Sharepoint site to which the project is example http://servername.	e project is g in deployed, for
Report Project5	
For a report server running in native mode, the path to the report folder, for examp For a report server running in Sharepoint integrated mode, the URL of the Sharepoint reports, for example http://servername/Shared Documents/Report Folder.	ple /Reports. int library for
Help < Back Next > Finish >>	1

Fig. Report wizard - 'Choose the Deployment Location' window.

11. Specify report name. Click *Finish*. The report will be displayed in the project view.

.

Report Wizard	<u>_ D ×</u>
Completing the Wizard Provide a name and click Finish to create the new report.	
Report name:	
Test Report	
Report summary:	
Data source: DataSource1	
Connection string: Data Source=BPI-NOTEBOOK\SQLEXPRESS;Initial Catalog=AsixConr	nect
Report type: Table	
Layout type: Stepped	
Style: Slate	
Details: Start_Time, End_Time	
Query: exec ReadProcessed 'DAY', 'DAY+1D', '1H', 'starttime as [Start Time]', 'endtime as [End Time]', 'A036', 'A004'	
Preview report	
<u>H</u> elp < <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

Fig. Report wizard – 'Completing the Wizard' window.

Report Project5 - Microsoft Visua	l Studio	
<u>Eile Edit View Project Build D</u>	<u>2</u> ebug <u>T</u> ools <u>W</u> indow <u>H</u> elp	
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: 100%	······································	二前四章 ●************************************
Report Data 🚽 🕂 🗙	Test Report.rdl [Design] Start Page	× Solution Explorer → ╄ ×
New - Edit 🗙 🕁 🕸	Design 🔯 Preview	
Built-in Fields		Report Project5
		E Preports
DataSource1	Test Pepert	I Test Report.rd
Start_Time		
End_Time	Start Time End Time	
A036		
	4	Properties - 4 X
	Row Groups	 Test Report.rdl
	= (table1_Details_Group)	
Output	ر ب ۴.	File Name Test Report.rdl
Show output from:	• 🔋 🖉 🖳 🛒 🖬	Full Path D: Documents and Setting:
		File Name
		specifies the name of the file.
Frror List		
Creating project 'Report Project5' proje	ect creation successful.	1

Fig. Final report in design view.

12. Click the *Preview* button to view the report.



Fig. Final report in preview.

13. Select the *Deploy <report_name>* option of the *Build* menu to store the report on the report server.

6 Access to Reports Stored on Report Server

Reports shared on a report server may be viewed in any Internet browser. To view a report, specify URL address of the server. In case of the MS SQL Server 2008 Reporting Services environment the address for report server is:

http://<computer_name>/ReportServer_<SQL_server_instance_name>

bpi notebook/ReportServer_SQLDOPRESS - / - Windows Internet	Explorer	_10 ×
🔄 💽 💌 👔 http://bpi-notebook.3080,ReportServer_SQLEX#RESS	2 8 4 × 0000	۹.
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😭 Ulubione 🛛 🤪 😰 Strona główna - Witryna ze 🚺 Bezpietna usłu	pocztowa 👩 Pobierz więcej dodatk • 🔏 Sugerowane witryny •	
bpi-notebook,ReportServer_SQLEUPRESS - /	💁 • 🔯 - 🗂 🖮 • Stone • Bezpieczeństwo • Nac	2qd2ia • 🔞 • 🤒
28 stycznia 2010 13:07 31 stycznia 2010 14:33 28 stycznia 2010 13:07	(dir> <u>Data Sources</u> (dir> <u>Raport testowy100</u> (dir> <u>Report Project3</u>	_
Microsoft SQL Server Reporting Services Version 10.0.253	0	
	🛛 🔽 🙆 🚱 Internet	1, 100% .

Fig. Access to reports stored on report server via Internet browser.

Report Viewe	r - Windows Internet	Explorer			and the second	د اتا به
G	Http://bp-netebook.0	000/NaportServer_50	LORD Page Report	liener auge Ph2Rabort_Jestore 200%2Ra	peri epi 🛃 👫 🗱 📴 Perg	18:
BR Bride II	(dak Uldione Uwa	etoia Pomoç	E Conver	· · Select		
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Report Viewer					🧟 • 🔂 · 🖄 📾 • Store • Bese	eczeñetivo - Neczedze - 😥 - 1
14 4 1	di > N [00%	Find 11	est - Select a format - Espirit	a	
Raport przy	ygotowany dla	celów testov	vych			
Czas początku	Czas końca	A050	A046			
1/31/2010 12:00:00 AM	1/31/2010 1:00:00 AM	1				
1/31/2010 1:00:00 AM	1/31/2010 2:00:00 AM					
1/31/2010 2:00:00 AM	1/31/2010 3:00:00 AM					
1/31/2010 3:00:00 AM	1/31/2010 4:00:00 AM					
1/31/2010 4:00:00 AM	1/31/2010 5:00:00 AM					
1/31/2010 5:00:00 AM	1/31/2010 6:00:00 AM					
1/31/2010 6:00:00 AM	1/31/2010 7:00:00 AM					
1/31/2010 7:00:00 AM	1/31/2010 8:00:00 AM					
1/31/2010 8:00:00 AM	1/31/2010 9:00:00 AM					
1/31/2010 9:00:00 AM	1/31/2010 10:00:00 AM					
1/31/2010 10:00:00 AM	L/31/2010 11:00:00 AM					
1/31/2010 11:00:00 AM	1/31/2010 12:00:00 FM					
1/31/2010	1/31/2010	124	426			

Fig. Final report in Internet browser.

Reports accessed via Internet browsers may be printed and/or exported to PDF, Excel and/or Word formats.

7 Viewing Reports Directly from Asix Applications

🕌 Asix – classic version

Reports created within the MS SQL Reporting Services environment may be directly viewed from the Asix system application level using the **AsRapView** report viewer. The viewer may be started by the ASRAPORT.

Parameter defined with the use of action editor:

Report name	- name of the report created with the use of Reporting Services (the report definition stored in *.RDL file must be published on the report server of Reporting Services).
Optional configuration file	- the parameter enables the declaration of XML configuration file located on other report server or in other directory than the ones declared in the configuration file of the current Asix system application.
	By default, information on report server and directory are retrieved from the configuration file of the current Asix system application. The configuration file enables declaration of 1 server and 1 directory on that server. Server and directory are declared using the configurator of the reporting system AsReport, available in Architect:
	Architect > Application > Configure Reporting system AsReport > Reports Browser tab
	To display a report from another source (server, catalogue) , you need to create a new configuration file for the Asix application with a different server or directory declared. Use this file to configure the required parameters set up by means of the AsRaport system configurator and 3 different parameters:
	 location of the variable definitions database (Architect > Databases Variable Definitions Database > Format) network name of the set of alarms (Architect > Fields and Computers > Alarms System > Alarms > Network Name) name of the MS SQL server and the name of the alarm archive database (Architect > Fields and Computers > Alarms System > Archive > Microsoft SQL Server) Other configuration parameters are not important. Then declare this configuration file in the Optional configuration file field of the AsRaport action.

It is also possible to declare report parameters.

The syntax of action declared manually:

ASREPORT <**report_name**>[<optional_configuration_file><report_parameters>]

Parameter *report_name*

Meaning - name of the report created with the use of Reporting Services (the report definition stored in *.RDL file must be published on the report server of Reporting Services).

Parameter optional_configuration_file

Meaning	 the parameter enables the declaration of XML configuration file located on other report server or in other directory than the ones declared in the configuration file of the current asix system application.
	By default, information on report server and directory are retrieved from the configuration file of the current Asix system application. The configuration file enables declaration of 1 server and 1 directory on that server. Server and directory are declared using the configurator of the reporting system AsReport, available in Architect:
	Architect > Application > Configure Reporting system AsReport > Reports Browser tab
	To display a report from another source (server, catalogue) , you need to create a new configuration file for the Asix application with a different server or directory declared. Use this file to configure the required parameters set up by means of the AsRaport system configurator and 3 different parameters:
	 location of the variable definitions database (Architect > Databases Variable Definitions Database > Format) network name of the set of alarms (Architect > Fields and Computers > Alarms System > Alarms > Network Name) name of the MS SQL server and the name of the alarm archive database (Architect > Fields and Computers > Alarms System > Archive > Microsoft SQL Server)

Other configuration parameters are not important. Then declare this configuration file in the *Optional configuration file* field of the AsRaport action.

Parameter report_parameters

Meaning - additional report parameters.

The location of the reports displayed in the AsRapView browser is declared in the AsRapViewReportServerConfig.xml configuration file. The location refers to the place on the MS SQL Reporting Services reports server.



You can browse the reports created in the MS SQL Reporting Services directly in the Asix.Evo application by means of the report browser launched by means of the AsreportDisplay operator's action.

Intended Use

The action is used to open the window for browsing reports created in the Reporting Services technology with the use of the Asix package AsRaport module. The window allows you to generate and review selected reports. The generation parameters are pre-defined in an action or be defined interactively.

To use this action, set up the reporting services server access parameters. These parameters are provided in the Workstation settings operating panel in the Data sources of the AsixEvo.exe program.

Apart from the parameters provided in the action content, the accessibility of some of of the browser window function is also determined by the privileges (role) of the currently logged-in user.

Syntax

AsreportDisplay (*nazwa_raportu*, *parametry*, *pokazuj_parametry*, *współrzędna_X*, *współrzędna_Y*, *katalog_raportów*)

Parameters

nazwa_raportu

The parameter is used to enter the name of the report which is to be displayed in the browser window. The name must agree with the name of the report published on the

server and it can contain a relative path to the report directory. The parameter can be empty – the user will be able to select the report interactively.

Parameters

The parameter is used to define the value of the report generation parameters. The set of possible parameters is determined by the report definition. The parameter takes the form of a text composed of pairs *@nazwa_parametry=wartość_parametru* separated by the space character, e.g. *"@month=12 @section=A"*.

pokazuj_raporty

The *true/false* logic type parameter which determines whether the report parameter editing panel is to be displayed.

współrzędna_X

The parameter defines the X coordinate of the report browser (of the left top corner).

współrzędna_Y

The parameter defines the Y coordinate of the report browser (of the left top corner).

katalog_raportów

Name of the subdirectory (or the subdirectory relative path) on the report server, the content (names of reports and subdirectories) of which should be placed in the report selection field of the browser window. The value * means that all reports should be shown and the empty value means that the report selection field will not be shown.
8 Appendage 1: Setting up the Alarm Definition/Event Database

8.1 Alarm Definition Database - Configuration

NOTICE:

It is required to retrieve alarm definitions from Variable Definition Database in MS SQL or MDB format for the purpose of the program AsAlarm, AsTrend as well as AsRaport. In practice, the alarm definition database should be configured and alarm definitions should be joined to an existing Variable Definition Database. **It applies both to** Evo and classic **Asix application**.

The next chapters discuss the methods used to prepare the alarm definition database to work with the program AsAlarm / AsTrend / the AsRaport environment: for the classic version and for the Evo version of the Asix system.



By default, <u>alarm definitions</u> can be found in the text file alarm.def (or

<application_XML_file_name> .adf). It is possible to use a different file name by defining parameter File Name (configuration of an application XML file with the use of Architect: Architect > Fields and Computers > Alarms System mode > Alarms tab / Alarms Base on the assumption that the operating mode of alarm definition database is based on text files of alarm definitions: Architect > Databases > Alarm Definitions Base > Type tab > Work Mode of Alarm Definitions Database Generator: Alarm Definitions Base Is Generated from Text Files with Alarm Definitions). Descriptions of alarms can also be included in several definition files. Internally alarms are identified by a number. You can define 65535 different alarms. There is no need for sequential numbering alarms. For example, numbering of one alarm group begins with the number 1000 and the second (of different origin) with the number 30000. Note that renumbering alarms in the operating system makes it necessary to delete archival files.

Definition of alarm groups can be found in the text file group.def (or

<application_XML_file_name>.gdf). You can use the file (files) with a different name by defining the
parameter File Name (configuration of an application XML file with the use of Architect: Architect >
Fields and Computers > Alarms System mode > Alarms tab / Alarms Base - Groups on the
assumption that the operating mode of alarm definition database is based on text files of alarm
definitions: Architect > Databases > Alarm Definitions Base > Type tab > Work Mode of Alarm
Definitions Database Generator: Alarm Definitions Base Is Generated from Text Files with Alarm
Definitions).

See more:

'Asix - Functionality and Operating Rules' (Asix.pdf/chm, chapter '12. Alarm System';

'Architekt - Interactive Application Configuration Environment. Handling of VarDef - Variable Definition Database' (Architect.pdf/chm), chapter '3.9. Configuration of Alarm System'.



See more:

Asix.Evo', Asix.Evo – Alarm System (PDF/CHM).

8.1.1 Generation of Alarm Definition Database from a Spreadsheet (Classic Asix)

To add alarm definitions and alarm group definitions to variable definition database:

1. Prepare the alarm definitions in an Excel spreadsheet

NOTE: Adding alarm definitions with variable definition database requires you to create an Excel spreadsheet with the definitions of alarms and the second sheet with alarm groups defined.

2. Set the appropriate mode of alarm definition database:

Architect > Databases > Alarm Definitions Base > Type tab > Alarm Definitions Base Is Generated from Spreadsheets Containing Alarm Definitions option

3. Add Excel sheets with the alarm and alarm groups definitions to sources of alarm definition database:

Architect > Databases > Alarm Definitions Base > Data Sources > option: Add Data Source: Excel...

4. Determine whether the alarm definitions database is to be attached to an existing variable definition database

Architect > Databases > Alarm Definitions Base > Data Sources > option: Add Alarm Definitions Base to Variable Definition Base

5. Generate alarm definition database (this operation adds alarm and alarm group definitions to an existing variable definition database):

Architect > Databases > Alarm Definitions Base > Data Sources > option: Operations: Generate.

NOTE: Each update **of** variable definition database (the re-generation) requires re-generation of alarm and alarm group definitions to the variable definition database using the following command:

Architect > Databases > Alarm Definitions Base > Data Sources > option: Operations: Generate.

8.1.2 Collective Alarm and Alarm Group Definition Database Generated from Many Applications (Classic Asix)

Generator of collective alarm and alarm group definitions will create a collective alarm definition database based on sources defined in the specified applications. Created database is added to the variable definition database of currently parameterized application.

To generate a collective alarm definition database from many applications:

1. Set the appropriate mode of alarm definition database operation:

Architect > Databases > Alarm Definitions Base > Type tab > Collective Alarm Definitions Base is Generated from an Alarm Definitions Database of Other Applications option

2. Add data sources:

Architekt > Databases > Alarm Definitions Base > Data Sources tab > option: Add Data Source: INI files or XML files

3. Generate alarm definition database (this operation adds alarm and alarm group definitions from many applications to an existing variable definition database of parameterized application):

Architect > Databases > Alarm Definitions Base > Data Sources > option: **Operations**: **Generate**.

8.1.3 Alarm Definitions Base Generated from Text Files

For classic applications, alarm definitions are stored in .adf (or alarm.def) files usually, and alarm group definitions in .gdf (or group.def) text files.

To add alarm definitions and alarm group definitions from text files to variable definition database:

1. Prepare alarm definitions in text files.

Information on how to create such files can be found in the manual: *Asix.PDF/CHM, 12. Alarm System*.

2. Set the appropriate mode of alarm definition database:

Architect > Databases > Alarm Definitions Base > Type tab > Alarm Definitions Base Is Generated from Text Files with Alarm /Definitions

3. Declare text file name:

Architect > Fields and Computers > Alarms System > Alarms > Alarms Base / Alarms Base - Groups tab

4. Choose *Field/Computer* for which text files were declared in 3 step. It will automatically load files of alarm and alarm group definitions to the generator window:

Architect > Databases > Alarm Definitions Base > Data Sources tab > option: Field/Computer

5. Generate alarm definition database (this operation adds alarm and alarm group definitions to an existing variable definition database of parameterized application):

Architect > Databases > Alarm Definitions Base > Data Sources > option: Operations: Generate.

8.1.4 Alarm Definition Database Generated based on SQL Alarms (Classic and Evo Asix)

Generating the alarm definition database based on SQL alarms of EVO applications refers to the case when information on alarm events are stored not only in archival alarm logs but also additionally in alarm archive of SQL type. In the same way is in the case of classic applications - where archiving in MS SQL database may be carried out in parallel with archives stored in disc files. Generator (in Architect) of SQL alarm definition database generates alarm definition database added to variable definition database of Asix application - all this on the basis of event archive in SQL database.

To add SQL alarm definition to variable definition database:

1. Determine the source of alarm definitions: (it could be the Asix application directory in EVO version, XML files in classic Asix, INI files of older versions of classic Asix applications as well as a current application):

Architect > Databases > SQL Alarm Definitions Base > Data Sources > option: Add Data Source

2. Generate alarm definition database (this operation adds alarm and alarm group definitions to an existing variable definition database of parameterized application):

Architect > Databases > SQL Alarm Definitions Base > Data Sources > option: *Operations: Generate*.

8.2 Alarm Event Database - Configuration

NOTICE:

Archiving alarm events in SQL type database is required for the AsAlarm program and AsReport reporting environment.



The current status and alarm history of Asix system are stored in disk files. Alarm files are stored in subdirectory 'alarms' of the startup directory (if it is not declared a different location). All active alarms are stored in a file named 'alarms.act'. Alarm history is stored in a set of files with names derived from the pattern al??????.log. In each such *a* file the alarms of one day are stored. Date of that day *is* encoded in the place of ????? characters (day, month and year). Alarm history files can be stored with no fixed time. You can also limit the amount of stored days.

There is the possibility to convert binary files with alarm event logs of Asix system (al?????.log files) into the format of SQL database.

It is also possible the current recording of alarm event in SQL database. This requires adequate configuration of the XML file of an Asix system application while unlocking writing the data on alarm events generated on-line into an SQL database.

(see: - 8.2.1 Starting Recording Alarm Events together with Conversion of Binary Files to SQL
 Database (Classic Asix) - when there is the need for continuity in the registration of alarm events between the archives and the current registration

- 8.2.2 Starting On-line Registration of Alarm Events (Classic Asix) - when there is no alarm archive and registration starts from the surrent moment)



How to set up recording of alarm events in an SQL database for EVO application describes the chapter *8.2.3 Archiwum alarmów SQL*.

8.2.1 Starting Recording Alarm Events together with Conversion of Binary Files to SQL Database (Classic Asix)

Conversion of binary files of Asix alarm archive into an SQL database is implemented via AlarmLogConverter.exe which is normally attached to the Asix package.

😽 Alarm Log Converter			1 <u></u>		×
Asix application					
Configuration file:					
Variant:					~
Database settings					
Server name:	(local)				~
Database name:					~
		mous access to alarms o	latabase		
	Use Window	vs authentication only	10100000		
Database administration					
Authorization mode:	Windows author	orization			\sim
User:					
Password:					
Check database C	reate database	Drop database	Clear	database	в
Operation					
	Unlock	Start	(
Status:					
Shov	w warnings				
Operation progress:					

Fig. Main Window of AlarmLogConverter.

Options required to start recording alarm events and perform conversion:

Asix Application – it refers to the source of the alarm

Configuration File – it requires Asix application configuration file: XML for Asix 5-6 and classic 7 or INI file for older wersions

Variant – application variant dedicated for a special field / computer (a few computers operating under a given application at the factory)

Database Settings - parameters concerning locations and target database of alarms

Server Name - MS SQL Server name

Database Name - name of MS SQL database of event alarms

Allow Anonymous Access to Alarms Database / Only Windows Authentication Only - determine how to access alarm database

Database Administration - includes options and commands related to administration of databases

Authorization Mode - specify the way of authorization of SQL server database administrator

Check Database – used to check whether the database exists and verify its correctness

Create Database - used to create a new alarm database

Drop Database – used to remove a database

Clear Database - used to clear database in order to re-convert

Operations – commands directly related to conversion procedure

Unlock – unlock recording data on alarm events generated on-line into SQL database from the moment of switching on the option EXPORT_CHANNEL which activates creation of buffer files, with data about these events, by Asix. Unlock saves data stored in buffer files into SQL database.

Start – start conversion of al?????.log alarm files to the MS SQL Server database format

Cancel – interrupt the conversion (conversion is not completed at all)

Procedure of start-up of recording alarm events with conversion of binary files to SQL database format:

To convert al?????.log files to SQL database format and to start up the current registration of alarm events without loss of data on instances of alarms during conversion - proceed strictly according to the following steps:

1. Create an empty SQL database by using the converter AlarmLogConverter:

a. open AlarmLogConverter

b. declare an XML file of an application indicating the computer station from which alarm archival files will be retrieved

c. enter SQL server name and alarm target database name

d. specify the authentication mode for utility and administration functions

e. click *Create Database*

2. Declare the current registration of alarm events (until you unlock recording into MS SQL database, these events will be recorded in buffer files):

a. open the current Asix application configuration file using Architect

b. in Architect > *Fields and Computers* > *Alarms System* > *Archive/Microsoft SQL Server* tab declare options:

Name of Microsoft SQL Server - name of MS SQL Server server database of alarm events,

Database Name - name of database of alarm events.

c. Save all changes of the application configuration file

3. Restart the application. Since that moment events are saved in buffer files.

- 4. Conversion of al??????.log files to SQL database format:
 - a. go to AlarmLogConverter and click *Start*.
- 5. Unlock recording alarm events generated on-line to SQL database:

a. after the completion of the convertion click *Unlock* (in AlarmLogConverter); the operation rewrite alarm events from buffer files to SQL database - included only the events not covered by the conversion of al??????.log event files

8.2.2 Starting On-line Registration of Alarm Events (Classic Asix)

Starting alarm registration of Asix system to an SQL database is realised via AlarmLogConverter.exe which is included in the Asix package by default.

😽 Alarm Log Converter			<u></u>		×
Asix application					
Configuration file:					
Variant:					~
Database settings					
Server name:	(local)				~
Database name:					~
		moura access to alarma d			
		nous access to alarms o	didbase		
		addition to high			
Database administration					
Authorization mode:	Windows autho	rization			\sim
User:					
Password:					
Check database	Create database	Drop database	Clea	r database	•
Operation					
	Unlock	Start	(Cancel	
Status:					
	Show warnings				
Operation progress:					

Fig. Main Window of AlarmLogConverter.

Options required to start recording alarm events:

Asix Application – it refers to the source of the alarm

Configuration File – it requires Asix application configuration file: XML for Asix 5-6 and classic 7 or INI file for older wersions

Variant – application variant dedicated for a special field / computer (a few computers operating under a given application at the factory)

Database Settings - parameters concerning locations and target database of alarms

Server Name – MS SQL Server name

Database Name - name of MS SQL database of event alarms

Allow Anonymous Access to Alarms Database / Only Windows Authentication Only - determine how to access alarm database

Database Administration - includes options and commands related to administration of databases

Authorization Mode - specify the way of authorization of SQL server database administrator

Check Database – used to check whether the database exists and verify its correctness

Create Database - used to create a new alarm database

Drop Database - used to remove a database

Clear Database - used to clear database in order to re-convert

Operations – commands directly related to conversion procedure

Unlock – unlock recording data on alarm events generated on-line into SQL database from the moment of switching on the option EXPORT_CHANNEL which activates creation of buffer files, with data about these events, by Asix. Unlock saves data stored in buffer files into SQL database.

Start – start conversion of al?????.log alarm files to the MS SQL Server database format

Cancel – interrupt the conversion (conversion is not completed at all)

Procedure of start-up of recording alarm events to SQL database format (without conversion of binary files):

To start up the current registration of alarm events - proceed strictly according to the following steps:

1. Create an empty SQL database by using the converter AlarmLogConverter:

a. open AlarmLogConverter

b. declare an XML file of an application indicating the computer station from which alarm archival files will be retrieved

- c. enter SQL server name and alarm target database name
- d. specify the authentication mode for utility and administration functions
- e. click Create Database

2. Declare the current registration of alarm events (until you unlock recording into MS SQL database, these events will be recorded in buffer files):

a. open the current Asix application configuration file using Architect

b. in Architect > *Fields and Computers > Alarms System > Archive/Microsoft SQL Server* tab declare options:

Name of Microsoft SQL Server - name of MS SQL Server server database of alarm events,

Database Name - name of database of alarm events.

c. Save all changes of the application configuration file

3. Restart the application. Since that moment events are saved in buffer files.

4. Unlock recording alarm events generated on-line to SQL database:

a. after the completion of the convertion click *Unlock* (in AlarmLogConverter); the operation rewrite alarm events from buffer files to SQL database.

8.2.3 Configuration of Recording Alarm Events in SQL Database (EVO Asix)

The SQL type alarm archive for Asix.Evo is an additional solution for the standard historical alarm log. This archive is designed to analyze alarms with the use of AsAlarm as well as in AsReport reporting system. In order to improve reliability, you can create archives on multiple servers simultaneously. However, even when using a single server, Asix.Evo has mechanisms of data buffering, that allows for operation with temporary loss of connection with SQL server. The SQL archive should be parameterized in the same way on all stations of a controller type. It is because writing to the SQL database is performed at a given moment only by the station of an active controller.

Asix.Evo - C:\AsixApp\Aplikacia3 : BPI-ASUS	- 0	×			
File View Tools Full screen mode Pup application Holp					
Import From File Import From Standard Images	Remove Rename Edit Images usage verification	gram 💌			
\$\vee - \$\vee - \$\vee -	19 - 奈 - 学 畠 - 畠 聖 - 雨 - 洋 - 钟 - 钟 - 昭 - 八 - 國 學 品 100% 🗗 ② 王 광 -				
Application Explorer A × Start Alarm system configuration	n	×			
Global Settings Domain Enabled	Stations Strategies Alarms Settings History Alerter Sources				
Stations Settings + Asix5Domain					
Security	Historical alarms log SQL archiving				
Variable Definitions	Write historical loss file				
Channels	SQL Server Database Days limit				
Archives	Remove historical alarms older than [days]:				
Alarms System	30 -				
Vindows					
	Archive events of excluded alarms				
Manu					
Action Sets	Backup historical alarms log file by active controller				
Global Properties	Database manager				
Sounds	Database settings				
Message sets					
31, Scheduler	Server name:				
Timetables					
Script reports	Database name:				
🛞 Power guard	Allow anonymous access to alarms database				
Scripts	Use Windows authentication only				
Multilanguage Applications					
Diagnostics	Parts have a series of the start has				
	Database server authorization				
	Authorization mode: Windows authorization 👻				
Stations Applicat. Tools					
	User:				
Variable Preview [Set1]		ч×			
Variable Name Time Stamp Value	Password:				
	Check database Drop database				
	Create database Clear database				
	Update database schema Close				
🔛 🜌 🛃 💥 🗶 🛄 H4 44 4 Record 0 of 0 ト → → → + +					
Variable Preview [Set1] Messages					
Selected field: SERWERY					

Fig. AsixEvo.exe > 'Alarms System' > 'Alarm System Configuration' Tab > 'History' Tab > SQL Archiving > Database Manager.

Before starting archiving SQL Alarm Database must be created. It is done by the window above opening by the button *Database Manager*. The window allows also for performing other administrative tasks. The credentials from the group Database Server Authorization must ensure authorizations in the SQL server sufficient to perform operations of database creation and dropping.