



Document type	Deployment manual	Informations class	Restricted	Page	1 (13)
Document name	<i>KTC.AdminApp.Analyser.SharedMeters.docx</i>			Revision	0.1
Created by	Taras Romaniuk	Edited by		Change date	2017-02-27
Document path	http://fs-main:8080/tfs/KTC%20Collection/_git/KTCServer#path=%2FBackend%2FDocuments				

Shared Meters

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Version history

Rev	Date	Name	Comment
0.1	2017-02-27	Taras Romaniuk	Original version created

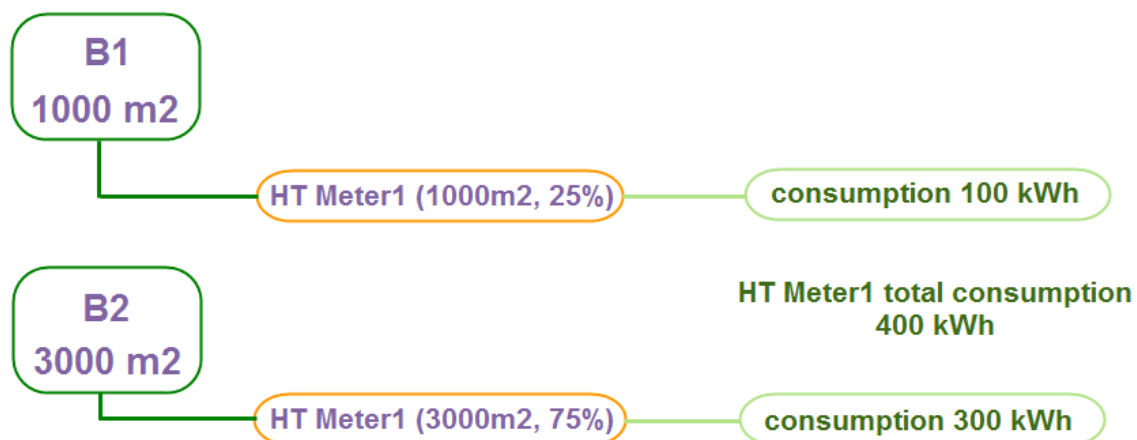
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1 Introduction

A shared meter is an ordinary meter, which connected to two or more buildings in topology. Such configuration allows controlling overall consumption of resources counted by one meter but distributed to several buildings.

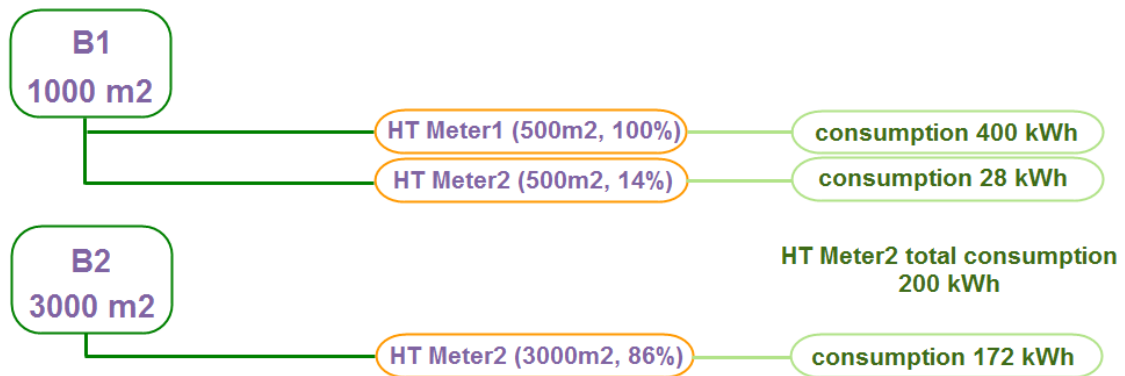
2 User manual

In the case meter connected to several building it becomes shared meter and it occupies all buildings area in scope of one utility owned by meter. Consumption value of shared meter distributed directly proportional between buildings according to part of building area grabbed by meter. When calculating parts of area under each building, system takes into account area settings for start/end dates and other meters with same utility connected to target building. In that case, area of each particular building divided between two or more meters by same utility, but if only one meter connected to building, it occupies whole area. After area calculated for shared meter, we are able to distribute meter consumption value between buildings. The basic principle is direct proportion between total area occupied by shared meter and total consumption on it. Below you can see an example of simple case when shared meter connected to two buildings, in this case total meter area 4000 m² and total consumption 400 kWh. Consumption value distributed between building in parts 75% and 25%, according to area parts:



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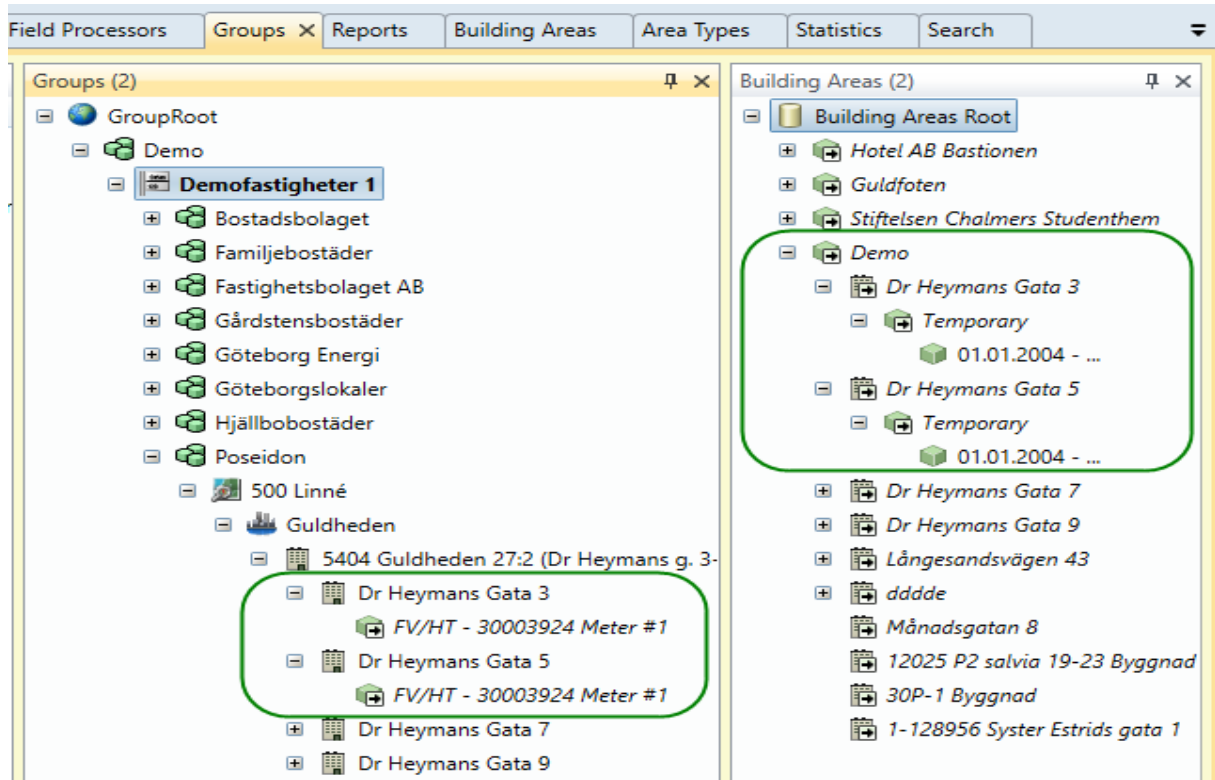
Next schema describe a case that is more complicated comparing to previous, where shared meter connected to building, which already has meter by the same utility. In such situation Meter2 connected to building one occupies only half of its area cause under that building already connected Meter1 by the same utility. According to that, Meter2 total area equals 3500m², let's assume it has total consumption 200 kWh. In that, specific case consumption value distributed between building in parts 86% and 14%, according to area parts:



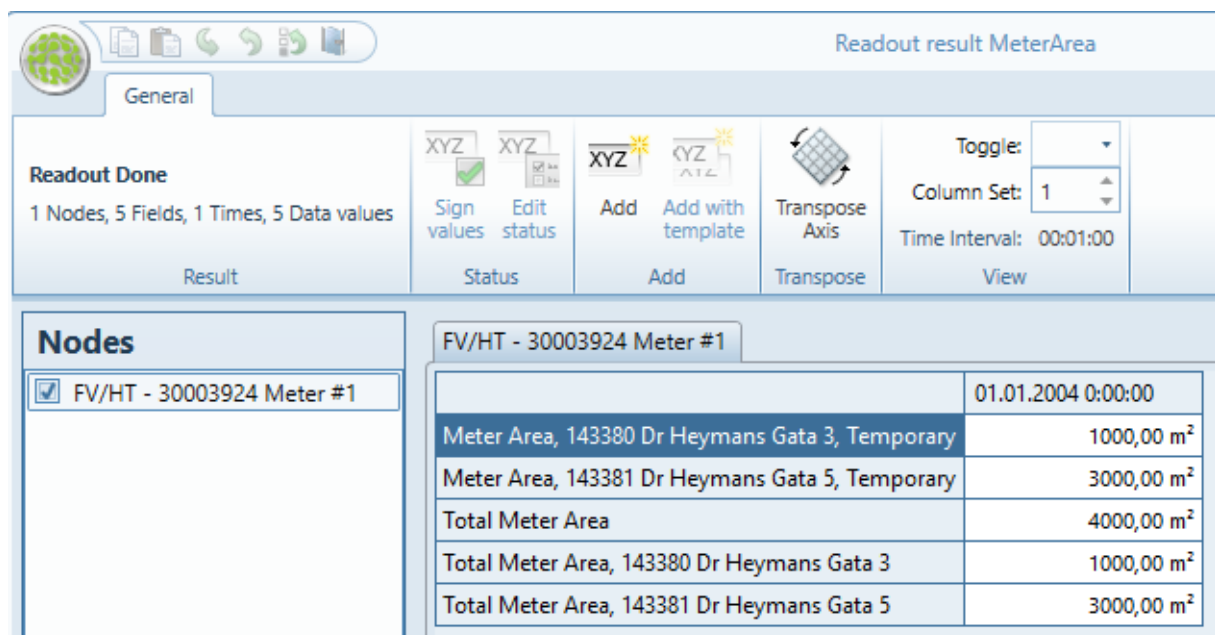
2.1 Pre-setup

Before starting considering shared meter configuration, we need to perform some setup preparations. First it is required that both buildings have building area (used for total area) defined with start/end dates and necessary area values. You can do it in Building Area data source. For particular building must be valid building area for that day when meter supposed to be connected to it, otherwise an error will be appearing each time connecting meter. Next thing you ought to do is checking meter parameters, such as start/stop dates, utility and production type it belongs. Now everything is ready to connect meter to several buildings.

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As soon as you connected meter to buildings #1 an area automatically calculated for this meter under that building. After same meter connected to buildings #2 an area re-calculated for both buildings, where meter connected. In order to recalculate meter areas manually use **Analysér Meter Area Calculator** field processor.





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2.2 Input Data

Create txt file (MonthConsumption.txt) with data below and change meter location id 'Meter #1' to one that exists in system topology. Then use field import to transfer data.

Meter #1	HT	2017-01-01 00:00	2017-03-01 00:00
		1100 kWh	1
Meter #1	HT	2017-02-01 00:00	2017-04-01 00:00
		1200 kWh	1
Meter #1	HT	2017-03-01 00:00	2017-05-01 00:00
		1300 kWh	1
Meter #1	HT	2017-04-01 00:00	2017-06-01 00:00
		1400 kWh	1
Meter #1	HT	2017-05-01 00:00	2017-07-01 00:00
		1500 kWh	1
Meter #1	HT	2017-06-01 00:00	2017-08-01 00:00
		1600 kWh	1
Meter #1	HT	2017-07-01 00:00	2017-09-01 00:00
		1400 kWh	1
Meter #1	HT	2017-08-01 00:00	2017-10-01 00:00
		1500 kWh	1
Meter #1	HT	2017-09-01 00:00	2017-10-01 00:00
		1300 kWh	1
Meter #1	HT	2017-10-01 00:00	2017-11-01 00:00
		1400 kWh	1
Meter #1	HT	2017-11-01 00:00	2017-12-01 00:00
		1300 kWh	1

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2.3 Check Consumption calculation

Open Clayster Management tool and create new or use existing field sink for consumption data with name **ProcessedData_Month**. Import already prepared file MonthConsumption.txt using **Consumption File Import**. A readout from test meter should return consumption fields for utility and production type.

Readout result ProcessedData_Month

General

Readout Done
1 Nodes, 3 Fields, 11 Times, 33 Data values

Sign values | Edit status | Add | Add with template | Transpose Axis | Toggle: | Column Set: 1 | Time Interval: 00:01:00

Result | Status | Add | Transpose | View

Nodes

FV/HT - 30003924 Meter #1

	Consumption, Month, FV ProdType	Consumption, Month, FV ProdType/HT Util	Consumption, Month, HT Util
01.01.2017 0:00:00	1100 kWh	1100 kWh	1100 kWh
01.02.2017 0:00:00	1200 kWh	1200 kWh	1200 kWh
01.03.2017 0:00:00	1300 kWh	1300 kWh	1300 kWh
01.04.2017 0:00:00	1400 kWh	1400 kWh	1400 kWh
01.05.2017 0:00:00	1500 kWh	1500 kWh	1500 kWh
01.06.2017 0:00:00	1600 kWh	1600 kWh	1600 kWh
01.07.2017 0:00:00	1400 kWh	1400 kWh	1400 kWh
01.08.2017 0:00:00	1500 kWh	1500 kWh	1500 kWh
01.09.2017 0:00:00	1300 kWh	1300 kWh	1300 kWh
01.10.2017 0:00:00	1400 kWh	1400 kWh	1400 kWh
01.11.2017 0:00:00	1300 kWh	1300 kWh	1300 kWh

Create a new **Analysers Consumption Summary Calculator** field processor, set there period type **'HistoricalValuesMonth'** and save changes.

In jobs data source add new Field Sink Read Job **"Consumption Month Summary"**, on tab Content choose read from **ProcessedData_Month**, in tab Filter set proper Summary Node, then on tab Processors select Summary Consumption field processor, after that on tab Sinks add a field sink for receiving processed fields **ProcessedData_Month**, where calculated consumption values should be stored.

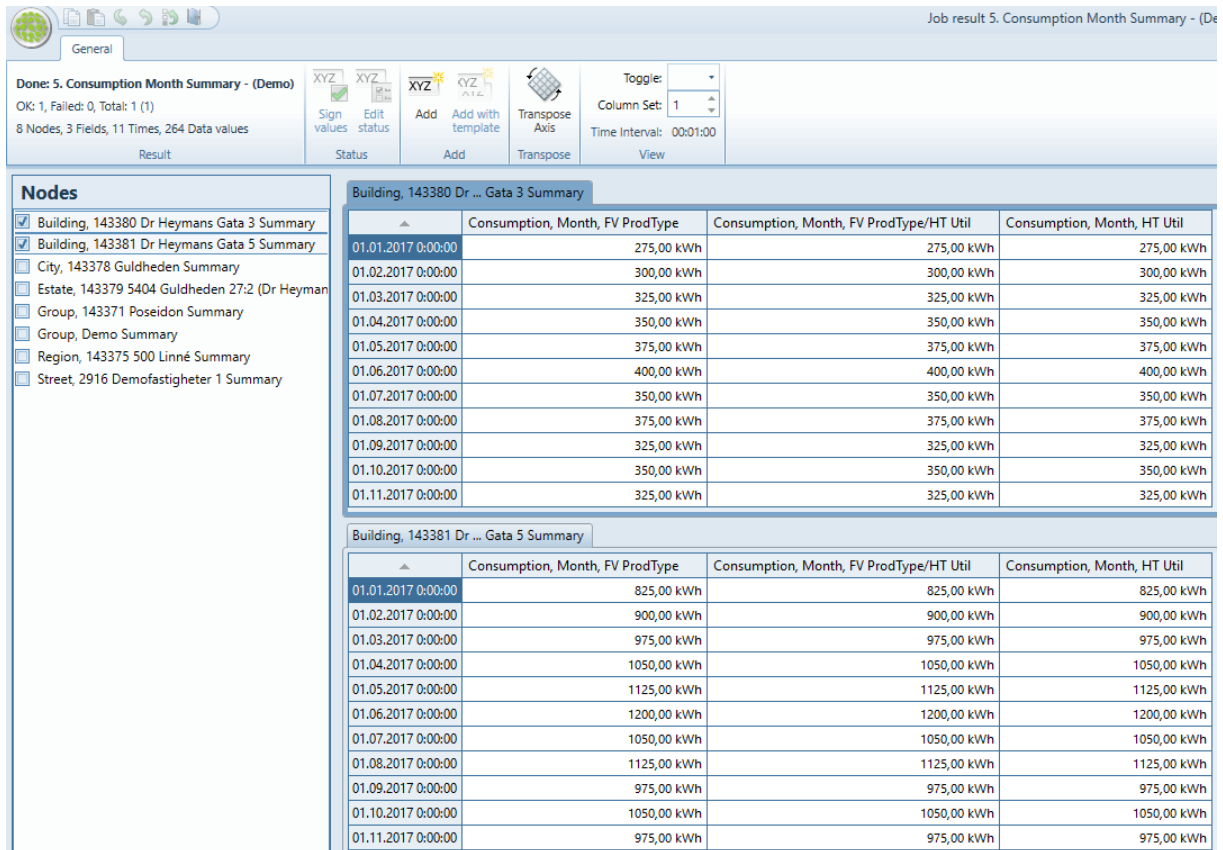
Jobs x Data Field Imports | Data Field Processors | Groups | Reports | Building Areas | Area Types | Statistics | Search

Jobs

- JobRoot
 - AlarmKPI
 - AlarmsConsumptions
 - Analysers Calculation Jobs
 - Demo - Analysers Calculations
 - 1. Consumption Hour -> Day (Demo)
 - 2. Consumption Day -> Month (Demo)
 - 3. Consumption Month Climate Correction (Demo)
 - 4. Consumption Month Estimation (Demo)
 - 5. Consumption Month Summary - (Demo)
 - To Read: ProcessedData_Month
 - ProcessedData_Month
 - Demo Summary Nodes
 - SummaryConsumptions

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Execute job with show result option and check if consumption calculated correctly according to input data. In that particular case, consumption distributed between buildings in proportion 25% and 75%



Job result 5. Consumption Month Summary - (De

Done: 5. Consumption Month Summary - (Demo)
 OK: 1, Failed: 0, Total: 1 (1)
 8 Nodes, 3 Fields, 11 Times, 264 Data values

Result Status Add Transpose View

Nodes

- Building, 143380 Dr Heymans Gata 3 Summary
- Building, 143381 Dr Heymans Gata 5 Summary
- City, 143378 Guldheden Summary
- Estate, 143379 5404 Guldheden 27:2 (Dr Heyman
- Group, 143371 Poseidon Summary
- Group, Demo Summary
- Region, 143375 500 Linné Summary
- Street, 2916 Demofastigheter 1 Summary

Building, 143380 Dr ... Gata 3 Summary

	Consumption, Month, FV ProdType	Consumption, Month, FV ProdType/HT Util	Consumption, Month, HT Util
01.01.2017 0:00:00	275,00 kWh	275,00 kWh	275,00 kWh
01.02.2017 0:00:00	300,00 kWh	300,00 kWh	300,00 kWh
01.03.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh
01.04.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.05.2017 0:00:00	375,00 kWh	375,00 kWh	375,00 kWh
01.06.2017 0:00:00	400,00 kWh	400,00 kWh	400,00 kWh
01.07.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.08.2017 0:00:00	375,00 kWh	375,00 kWh	375,00 kWh
01.09.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh
01.10.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.11.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh

Building, 143381 Dr ... Gata 5 Summary

	Consumption, Month, FV ProdType	Consumption, Month, FV ProdType/HT Util	Consumption, Month, HT Util
01.01.2017 0:00:00	825,00 kWh	825,00 kWh	825,00 kWh
01.02.2017 0:00:00	900,00 kWh	900,00 kWh	900,00 kWh
01.03.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh
01.04.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.05.2017 0:00:00	1125,00 kWh	1125,00 kWh	1125,00 kWh
01.06.2017 0:00:00	1200,00 kWh	1200,00 kWh	1200,00 kWh
01.07.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.08.2017 0:00:00	1125,00 kWh	1125,00 kWh	1125,00 kWh
01.09.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh
01.10.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.11.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh

3 Prerequisites

In order to install **KTC.AdminApp.Analyser** package to Clayster Server they both must have the same version. Unless rebuild **KTC.AdminApp.Analyser** package with proper version.

4 Deployment

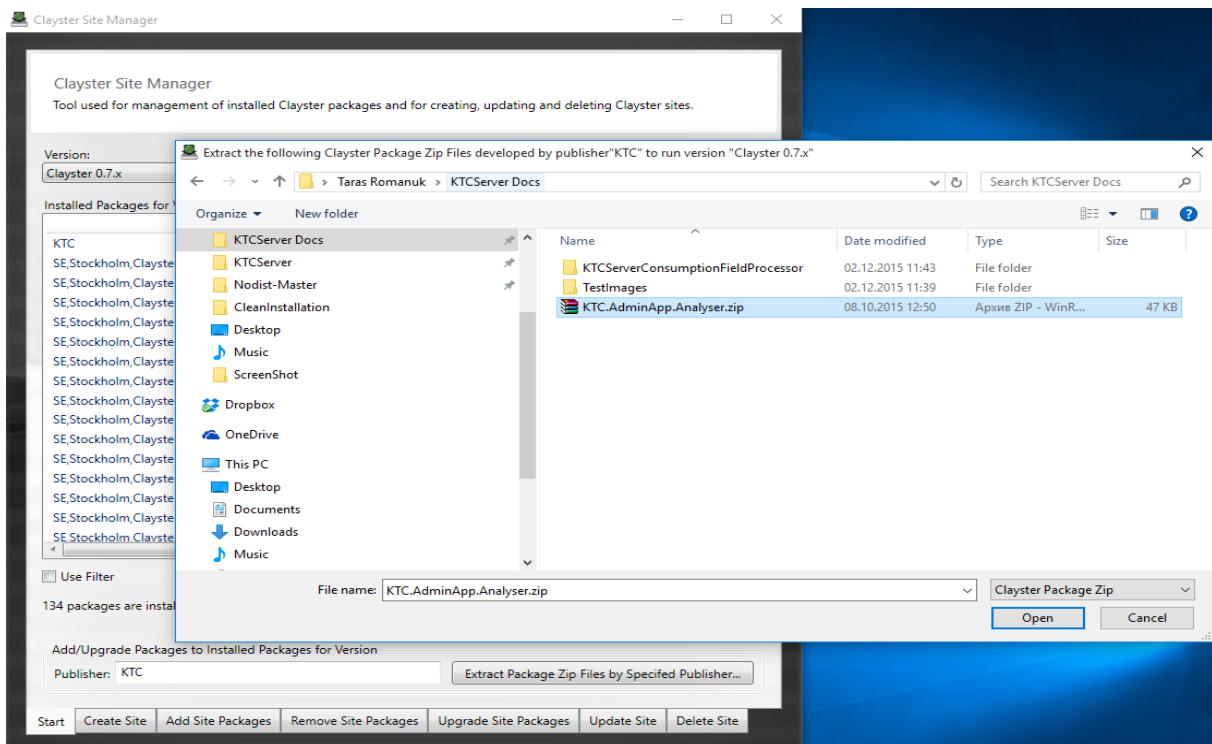
4.1 How to find things

Until post-build event isn't configured to generate package automatically then in order to get the latest version of **KTC.AdminApp.Analyser** package it is required to start build manually **KTC.AdminApp.Analyser.csproj**. Package should be created at project sources location **...KTCServer\Backend\Packages\Debug\KTC.AdminApp.Analyser.zip**

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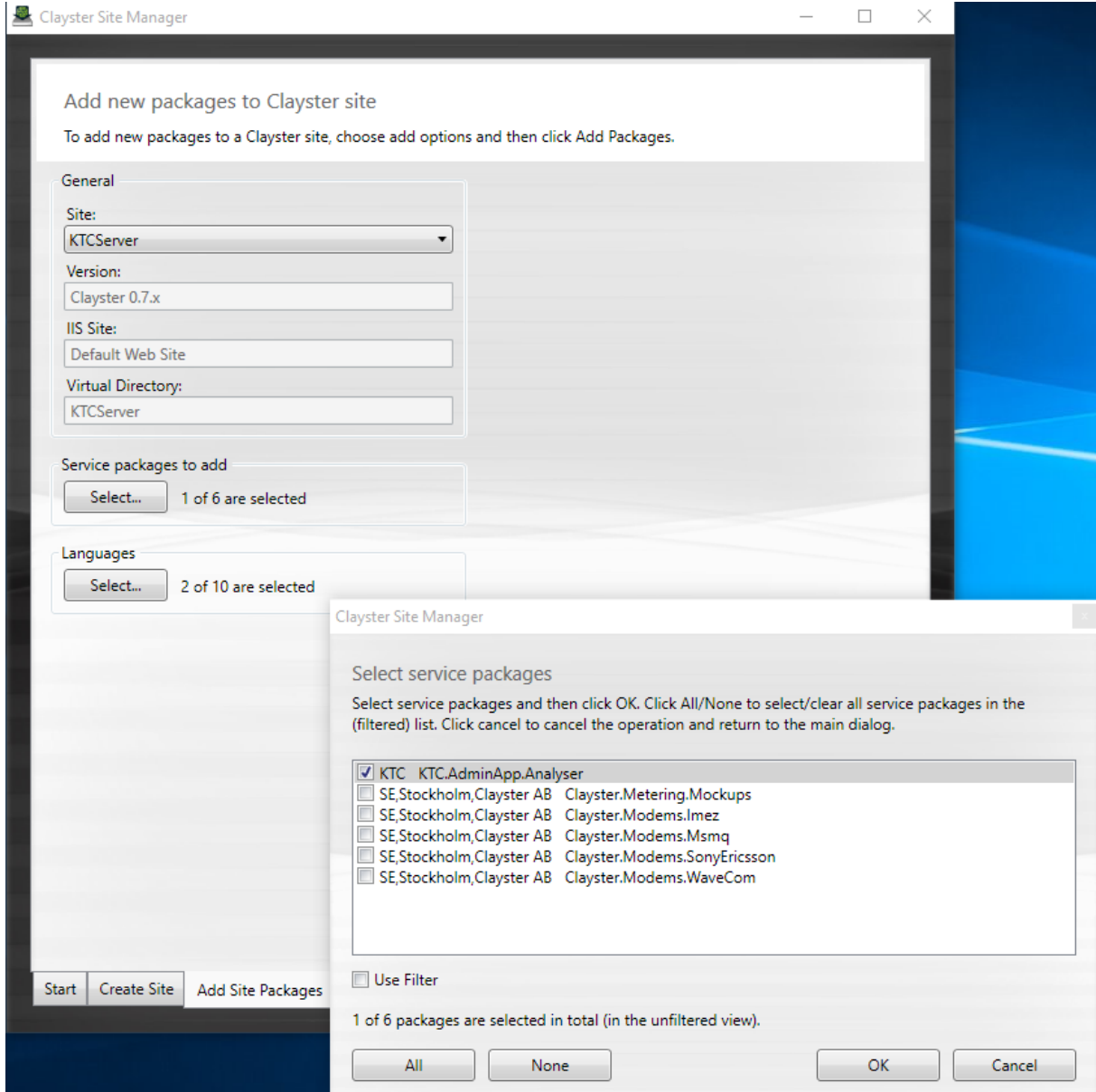
To get the source code for this module please open a link: http://tfs-main:8080/tfs/KTC%20Collection/_git/KTCServer#path=%2FBackend%2FKTC.AdminApp.Analyser%2FFieldProcessor%2FConsumptionFieldProcessor.cs&version=GBmaster&a=contents

In order to install **KTC.AdminApp.Analyser** package open Site Manager tool, enter 'KTC' in 'Publisher' field and click button 'Extract Package Zip Files by Specified Publisher', then select package and press 'Open'. Confirm your choice and check if package was successfully installed.



On the next step a package have to be added to the site. In order to do this open tab 'Add Site Packages' and click 'Select' button to choose a package. Confirm selected package and after window closed click button 'Add Packages'.

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Clayster Site Manager

Add new packages to Clayster site

To add new packages to a Clayster site, choose add options and then click Add Packages.

General

Site:

Version:

IIS Site:

Virtual Directory:

Service packages to add

1 of 6 are selected

Languages

2 of 10 are selected

Clayster Site Manager

Select service packages

Select service packages and then click OK. Click All/None to select/clear all service packages in the (filtered) list. Click cancel to cancel the operation and return to the main dialog.

- KTC KTC.AdminApp.Analyser
- SE,Stockholm,Clayster AB Clayster.Metering.Mockups
- SE,Stockholm,Clayster AB Clayster.Modems.Imez
- SE,Stockholm,Clayster AB Clayster.Modems.Msmq
- SE,Stockholm,Clayster AB Clayster.Modems.SonyEricsson
- SE,Stockholm,Clayster AB Clayster.Modems.WaveCom

Use Filter

1 of 6 packages are selected in total (in the unfiltered view).

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4.2 How to connect them

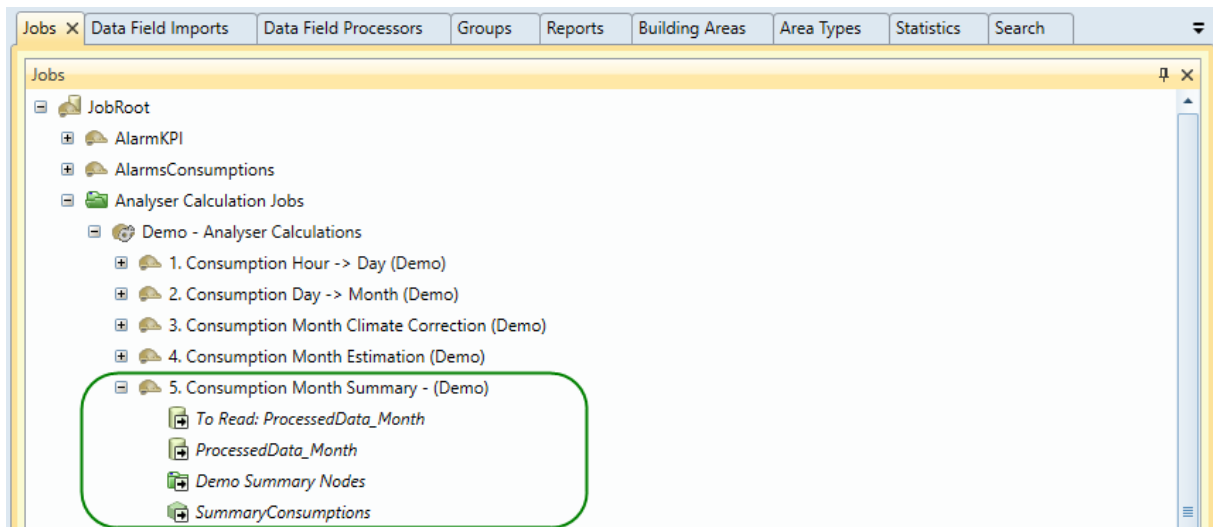
Open Clayster Management tool and create Field Processor of type ‘**Analyser Consumption Summary Calculator**’

The screenshot shows a 'Properties' dialog box for a field processor. The 'Node Type' dropdown is highlighted with a green circle and contains the text 'Analyser Consumption Summary Calculator'. Below this, the 'Parameter Templates' section is visible, containing an 'ID' field with the value 'SummaryConsumptions', a 'Required User Privilege' dropdown menu, and a 'Period Type' dropdown menu set to 'HistoricalValuesMonth'. At the bottom of the dialog are buttons for 'Revert', 'OK', 'Cancel', and 'Apply'.

It must be set period type ‘**HistoricalValuesMonth**’.

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In jobs data source create Field Sink Read Job “**Consumption Month Summary**”, on tab Content choose read from **ProcessedData_Month**, in tab Filter set proper Summary Node, then on tab Processors select Summary Consumption field processor, after that on tab Sinks add a field sink for receiving processed fields **ProcessedData_Month**, where calculated consumption values should be stored.



Execute job with show result option and check if day consumption calculated correctly according to input data.

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4.3 Settings

‘Analyser Consumption Summary Calculator’ field processor has the following parameters to be setup

The screenshot shows a 'Properties' dialog box with the following fields:

- Node Type:
- Parameter Templates:
- ID:
- Required User Privilege:
- Period Type:

Buttons at the bottom: Revert, OK, Cancel, Apply



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4.4 Available output

Calculated consumption displayed in the screenshot below

The screenshot shows a software interface with a toolbar and two data tables. The toolbar includes options like 'Sign values', 'Edit status', 'Add', 'Add with template', 'Transpose Axis', 'Transpose', 'Toggle', 'Column Set', and 'Time Interval'. The data tables show consumption in kWh for different months from 2017.

Building, 143380 Dr ... Gata 3 Summary			
	Consumption, Month, FV ProdType	Consumption, Month, FV ProdType/HT Util	Consumption, Month, HT Util
01.01.2017 0:00:00	275,00 kWh	275,00 kWh	275,00 kWh
01.02.2017 0:00:00	300,00 kWh	300,00 kWh	300,00 kWh
01.03.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh
01.04.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.05.2017 0:00:00	375,00 kWh	375,00 kWh	375,00 kWh
01.06.2017 0:00:00	400,00 kWh	400,00 kWh	400,00 kWh
01.07.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.08.2017 0:00:00	375,00 kWh	375,00 kWh	375,00 kWh
01.09.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh
01.10.2017 0:00:00	350,00 kWh	350,00 kWh	350,00 kWh
01.11.2017 0:00:00	325,00 kWh	325,00 kWh	325,00 kWh

Building, 143381 Dr ... Gata 5 Summary			
	Consumption, Month, FV ProdType	Consumption, Month, FV ProdType/HT Util	Consumption, Month, HT Util
01.01.2017 0:00:00	825,00 kWh	825,00 kWh	825,00 kWh
01.02.2017 0:00:00	900,00 kWh	900,00 kWh	900,00 kWh
01.03.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh
01.04.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.05.2017 0:00:00	1125,00 kWh	1125,00 kWh	1125,00 kWh
01.06.2017 0:00:00	1200,00 kWh	1200,00 kWh	1200,00 kWh
01.07.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.08.2017 0:00:00	1125,00 kWh	1125,00 kWh	1125,00 kWh
01.09.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh
01.10.2017 0:00:00	1050,00 kWh	1050,00 kWh	1050,00 kWh
01.11.2017 0:00:00	975,00 kWh	975,00 kWh	975,00 kWh