Maintenance Module "KPI-Dashboard"

Installation and configuration

c.a.p.e. IT® GmbH

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Imprint

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1 General advices

1.1 Document information

1.1.1   Objectives

This document contains all the information to install and configure the c.a.p.e. IT Maintenance Module "KPI-Dashboard" for KIX Professional.

1.2 Changes

1.2.1   Change history

Version	Date	Changed chapters	Short description	Changed by
0.1.0	24.01.14	all	document creation	Rene Boehm
1.0.0	07.07.14	all	- changes for version 2 - added explanation of default dashboard and KPI data	Rene Boehm
1.0.1	14.07.14	3.5	added new attributes	Rene Boehm
1.0.2	24.07.14	2.2	Added mod_perl exception	Rene Boehm
1.1.0	20.11.14	3.1.15, 3.2	Added some new features	Rene Boehm
1.1.1	29.01.15	2.1, 3.1, 3.2	Updated some screenshots, added some infos, fixed some typos	Rene Boehm
1.2.0	23.03.15	3.1, 3.7	Added extensions and plugins	Rene Boehm
1.3.0	25.03.15	all	Updates for OTRS 4.0	Rene Boehm
1.3.1	26.06.15	3.2.1	Changed description of „KPI data calculation"	Rene Boehm
1.3.2	24.07.15	3.2.1 / 3.6	Additional comments for „live" calculation	Rene Boehm
1.3.3	01.09.15	2.2	Changed apache-config	Rene Boehm
1.4.0	14.09.15	3.8 / 3.1.19 / 3.1.20	Online Dashboard added	Dorothea Doerffel
1.4.0	18.09.15	3.2 / 3.4	Start/Stop Data Preparation and Show Stats	Rene Boehm
1.4.0	24.11.15	2.2 / 3.2.1	Added apache config extension forInline Dashboard / Added new screenshot and change description	Rene Boehm
1.4.0	08.12.15	3.2.1	Added info about toggling of online dashboard	Rene Boehm
1.4.0	10.12.15	all	Changed some parts and extended Online Dash board	Rene Boehm
1.4.0	11.12.15	2.2	Added note to apache config	Rene Boehm
1.5.0	14.12.15	all	Updates for OTRS 5.0	Rene Boehm
1.5.0	19.01.16	3.7	Added parameter „Data"	Rene Boehm
1.5.1	23.11.16	3.1 / 3.4.2	Removed old content	Rene Boehm
17.0.0	05.02.17	all	Updated for KIX Professional 17.0.0	Rene Boehm

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1.2.4 Authorized staff

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Doerffel, Dorothea	c.a.p.e. IT® GmbH	Developer	rw

1.3 List of abbreviations

CLI   Command Line Interface

KPI   Key Performance Indicator

GUI   Graphical User Interface

DB   Database

2 Installation

2.1 Requirements

To install and use the Maintenance Module "KPI-Dashboard" your installation environment needs to fulfill the following requirements:

- a KIX Professional 17.0.x installation
- Microsoft Excel 2010 or 2013 with PowerPivot Plugin

If you want to use the direct database connection from the machine running Excel and PowerPivot to the KIX Professional DB you have to fulfill the following requirement:

- an ODBC driver and configured datasource for the KIX Professional DB

Please note:
Using an ODBC connection to the KPI DB view is not recommended since this is the least flexible way to use the "KPI-Dashboard" extension. It may be only necessary when you have to deal with an extensive amount of data.

2.2 Package Installation

Just install the Maintenance Module „KPI-Dashboard" via your operating systems package management. The package name is „kixpro-kpidashboard". Please make sure you have fulfilled the necessary requirements (see 2.1).

Important:
If you are using KIX with mod_perl, you have to make sure that the script /opt/kix/bin/cgi-bin/KPIDashboard.pl will not be executed by mod_perl. To configure this, please add the following lines (marked in red) to the relevant part in the Apache config for KIX (please adjust the script alias „kix" according to your actual KIX installation):

```
<IfModule mod_perl.c>

    # Setup environment and preload modules
    Perlrequire /opt/kix/scripts/apache2-perl-startup.pl

    # Reload Perl modules when changed on disk
    PerlModule Apache2::Reload
    PerlInitHandler Apache2::Reload

    # general mod_perl2 options
    <Location /kix>
#        ErrorDocument 403 /kix/customer.pl
        ErrorDocument 403 /kix/index.pl
        SetHandler  perl-script
        PerlResponseHandler ModPerl::Registry
        Options +ExecCGI
        PerlOptions +ParseHeaders
        PerlOptions +SetupEnv

        <IfModule mod_version.c>
            <IfVersion < 2.4>
                Order allow,deny
                Allow from all
            </IfVersion>
            <IfVersion >= 2.4>
                Require all granted
            </IfVersion>
```

```
            </IfModule>
        <IfModule !mod_version.c>
            Order allow,deny
            Allow from all
        </IfModule>
    </Location>

    # mod_perl2 options for GenericInterface
    <Location /kix/nph-genericinterface.pl>
        PerlOptions -ParseHeaders
    </Location>

    # deactivate mod_perl for KPIDashboard.pl
    <Location /kix/KPIDashboard.pl>
        SetHandler  perl-script
    </Location>

</IfModule>
```

<u>Please note:</u>
In some older apache versions and linux distributions you have to replace „perl-script"
with „cgi-script", if you experience errors when loading the data stream.

3 Configuration

3.1 SysConfig Options

After you have installed the package, you can adjust the basic parameters for the KPI database if necessary.

To configure the extension just open the SysConfig in the admin area. Select the SysConfig group „KPI-Dashboard". After the page reload select the subgroup „Core".

An default configuration is already included in the package. You can change it to your needs.

The following section lists all the adjustable sysconfig options.

Be advised:
After you have changed one of these options and if you are using prepared KPI data (see section 3.4), you have to execute the KIX console command

        Maint::KPIDashboard::Rebuild

to rebuild the entire KPI database.

3.1.1   KPI Scope - analyzed years

SysConfig Option: KPIDashboard###ShownYears

This option defines the number of years that should be analyzed for the KPI reporting. The default value of 3 years means that the current year and the last two years will be analyzed and prepared in the KPI database.

Please note:
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.2   State Type Restriction

SysConfig Option: KPIDashboard###StateTypes

With this option you can restrict the tickets that should be analyzed for the KPI database.

By default only tickets with closed states - history data - will be analyzed. If necessary you can add other state types here.

Please note:
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.3   Archive Flag Restriction

SysConfig Option: KPIDashboard###ArchiveFlags

With this option you can define restrict the tickets that should be analyzed for the KPI database, if you are using ticket archiving.

By default all tickets, archived or not, will be analyzed.

<u>Please note:</u>
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.4   Ignored Queues

SysConfig Option: `KPIDashboard###IgnoredQueues`

With this option you can define which queues should be ignored when analyzing tickets for the KPI database.

This option is a array configuration, each entry can contain a regex to match the name of the queue of the analyzed tickets.

<u>Please note:</u>
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.5   Ignored Ticket Types

SysConfig Option: `KPIDashboard###IgnoredTicketTypes`

With this option you can define which ticket types should be ignored when analyzing tickets for the KPI database.

This option is a array configuration, each entry can contain a regex to match the name of the ticket type of the analyzed tickets.

<u>Please note:</u>
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.6   Ignored Services

SysConfig Option: `KPIDashboard###IgnoredServices`

With this option you can define which services should be ignored when analyzing tickets for the KPI database.

This option is a array configuration, each entry can contain a regex to match the name of the services of the analyzed tickets.

<u>Please note:</u>
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.7   Ignored SLAs

SysConfig Option: `KPIDashboard###IgnoredSLAs`

With this option you can define which SLAs should be ignored when analyzing tickets for the KPI database.

This option is a array configuration, each entry can contain a regex to match the name of the SLA of the analyzed tickets.

<u>Please note:</u>
This option only applies to KPI dashboards that are not based on search templates (see section 3.2).

3.1.8   The Default Dashboard File

SysConfig Option: `KPIDashboard###TemplateXML`
SysConfig Option: `KPIDashboard###TemplateODBC`

These options configure the location where the system can find the file for the dashboard templates. When adjusting these options it is not necessary to rebuild the KPI database.

<u>Attention:</u>
Please do not change these options as long as you know what you are doing!

3.1.9   Escalation Base

SysConfig Option: `KPIDashboard###EscalationBase`

This option defines what the KPI analysis should use as the base for calculating escalation data (i.e. solution times, out-of-SLA, …).
You can choose between tree different values here, depending on the configuration of your system and your ticket process:

Option	Description
All	All tickets will be analyzed. If the ticket has an SLA set, the escalation times will be calculated based on the SLA settings, otherwise the queue settings will be used.
Only Queues	Only Tickets without SLAs will be analyzed, all other will be ignored. The escalation times will be calculated based on the queue settings.
Only SLA	Only Tickets with SLAs will be analyzed, all other will be ignored. The escalation times will be calculated based on the SLA settings.

3.1.10   Escalation Time Base

SysConfig Option: `KPIDashboard###EscalationTimeBase`

This option defines which escalation time should be used to calculate the KPI attribute „OutOfSLA". By default the solution time will be used for the calculation.
You can choose between tree different values here:

Option	Description
All	OutOfSLA will be set if one of the ticket escalation times got violated.
Only First Response Time	OutOfSLA will only be set if the first response time got violated.
Only Solution Time	OutOfSLA will only be set if the solution time got violated.

3.1.11   Data Stream - Data Preparation Directory

SysConfig Option: `KPIDashboard###DataStreamPreparedDataDir`

This option defines the directory in the local filesystem, where the prepared data streams should be stored.

3.1.12 Data Stream - Dynamic Fields

SysConfig Option: `KPIDashboard###DataStreamIncludeDynamicFields`

With this option you can choose, whether Dynamic Fields should be available for selection of Data Stream Attributes in the dashboard administration (see section 3.2). By default this is set to „yes".

3.1.13 List of available Ticket Attributes

SysConfig Option: `KPIDashboard###TicketAttributes`

This config option contains all available attributes of the ticket data hash (including extended ticket attributes). All the configured entries will be listed in the attribute selection in the dashboard administration (see section 3.2).
The key of the configuration is the ticket hash attribute and the value represents the name of the element in the data stream.

Important:
An element must start with a letter and must not contain any white spaces or special characters!

3.1.14 List of available KPI Attributes

SysConfig Option: `KPIDashboard###KPIDataAttributes`

This config option contains all available KPI attributes (see 3.5) of the calculated KPI data hash. All the configured entries will be listed in the attribute selection in the dashboard administration (see section 3.2).
The key of the configuration is the KPI data hash attribute and the value represents the name of the element in the data stream.

This configuration can be extended by KPIDashboard plugins using the SysConfig key „KPIDashboard::KPIDataAttributesExtension###…".

Important:
An element must start with a letter and must not contain any white spaces or special characters!

3.1.15 List of default selected attributes

SysConfig Option: `KPIDashboard###DefaultSelectedAttributes`

This config option contains all the attributes that should be selected by default when creating a new dashboard.
The key of the configuration is the hash attribute as configured in the options described in 3.1.13 and 3.1.14 and the value is either 1 (selected) or 0 (not selected).

This configuration can be extended by KPIDashboard plugins using the SysConfig key „KPIDashboard::DefaultSelectedAttributesExtension###…".

3.1.16 Database View

SysConfig Option: KPIDashboard###DBView

This config option defines the name of the DB view to be used for dashboard without search template assignments (see section 3.2).

3.1.17 List of available DB View Attributes

SysConfig Option: KPIDashboard###DBViewAttributes

This config option contains all available attributes of the calculated KPI data in the KPI DB View. All the configured entries will be listed in the attribute selection in the dashboard administration (see section 3.2).
The key of the configuration is the column name in the DB view and the value represents the name of the element in the data stream.

Important:
An element must start with a letter and must not contain any white spaces or special characters!

Please note:
This option will be ignored by KPI dashboards that are based on search templates (see section 3.2).

3.1.18 Icons for OutOfSLA percentage

SysConfig Option: KPIDashboard###ServiceOutOfSLAPercentage

This config option defines the icons used to be displayed in the overview table in the OnlineDashboard for single percentages.

3.1.19 List of available OnlineDashboard Elements

SysConfig Option: KPIDashboardBackend###<ElementDisplayOrder>-<ElementName>

This config option contains all available elements to be displayed in the OnlineDashboard.

Option	Description
Block	ContentLarge or ContentSmall
CacheTTLLocal	Cache time in minutes for the plugin
Default	Decides if the plugin is enabled per default or if the user needs to enable it manually
Description	Description of this element
Group	Restricts access to the plugin
Module	Module to display this element
Title	Title shown in the dashboard
Type	e.g. Used javascript function to prepare the chart data

3.2 Administration of KPI Dashboards

The configuration of KPI dashboards has to be done in the „KPI-Dashboard" module in the menu „Reporting". To create new dashboards or delete existing ones a user has to have RW permissions for the group „KPI-Dashboard".

After opening the „KPI-Dashboard" module a list of existing KPI dashbords will be displayed. The list will show an eye symbol if the dashboard is configured to use prepared data and if prepared data files are available for this dashboard. You can click on the eye symbol to view the data information. If prepared data should be used and no data file exists, a red attention icon will be shown instead. In this case please read chapter 3.4.

If no KPI dashboard is configured yet, the list will be empty.

If some data preparation processes are currently running in the background, you will see a progress bar, with a red stop icon. To stop the whole preparation for this dashboard, just click on the stop icon. It will take a couple of seconds to stop the processes.
Additionally on the left side of the progress bar, an eye symbol will be show. When clicking on this symbol a popup will display statistics for each of the background tasks involved in the preparation.

Please note:
If an error occurs when creating or editing KPI dashboards, it will be displayed in the notification area of KIX, below the navigation bar.

3.2.1   Creating KPI Dashbords
You can create a new KPI dashboard configuration by clicking on the button „Add Dashboard" in the sidebar „Actions" on the left hand side.

After clicking the „Add Dashboard" button, a new mask will be displayed.

The mask contains the following options:

Option	Description
Dashboard URL	This is the URL of the dashboard used to configure the XML data feed connection on PowerPivot. You can just copy&paste this URL into the PowerPivot connection configuartion.
Name	A KPI dashboard needs a name.
Description	Optionally enter some description to let the users of this KPI dashboard know what it is all about.
enable online dashboard	Here you can select if the online version for this dashboard should be available. **Please note:** If you want to enable the online dashboard, you have to make sure, that your online configuration is comatible with the dataset of this dashboard.
Search template	This option allows you to select one of your own ticket search profiles to be used to search the relevant tickets for this KPI dashboard. If no search template will be assigned, the KPI database view will be used (see section 3.1.16).
KPI data calculation	This defines whether to do a live calculation of the KPI data or to use pre-calculated data from the KPI database view (see section 3.1.16). **Please note:** Changing this option will change the available attributes within the attribute list as well. Selecting „use pre-calculated data from DBView" will remove the calculated attributes (see 3.1.14) and will add all the attributes from the KPI database view (see 3.1.17). The default dashboard is based on a „Live" calculation.
Use prepared data	With this option you can define whether the prepared data should be used (this requires that some automated job will periodically prepare the necessary data). If „no" is set for this option the data will be created on-the-fly, which usually takes a lot more time to finish but the data is up-to-date (depending on the option „KPI data calculation"). See section 3.4 for more details.
#Processes	This defines how many parallel processes should be used to calculate the KPI data for this dashboard. The higher the number the more system load will be created on your KIX server. If your result set (number of tickets to analyze) is small, you should always use only 1 process. If you have a large result set, you can increase the value to reduce the calculation time. **Attention:** The higher the number of processes, the higher the system load on the KIX server. You have to be aware of the number of CPUs of your KIX server. **This option will always create the selected number of parallel processes, regardless of the actual physical CPU configuration of your KIX server! If you set the number of processes equal to or higher than the number of CPUs in your KIX server, you will definitely kill the performance of the machine as long as the KPI data calculation lasts!**
Selected Attributes	Depending on the selection done for the options „Search template" and „KPI data calculation" and depending on the configured available attributes in the SysConfig (see section 3.1) you can select the attributes to be contained in the data. **Please note:** When creating a new KPI dashboard, the system will already pre-select some attributes. These attributes are defined in the SysConfig (see section 3.1.15). You can always switch back to the default selection by clicking the button „Select Defaults".
Permission	To allow users to access a KPI dashboard you have to select one or more groups here. A user with RW permission in one of these groups will be able to view, use and edit the KPI dashboard configuration. A user without RO permission in one of these groups will only be able to view and use the KPI dashboard. Users without any permission will never see this KPI dashboard in the list. **Please note:** If you don't selected any group here, only the KPI dashboard administrator will have access to this Dashboard. You can use this feature to prepare and test a new dashboard.
File	Upload the XLS file that contains your specific PowerPivot dashboard here. In this PowerPivot

Option	Description
	XLS file the data connection has to be already configured according to your type of access to the KIX Professional KPI data (XML Data Feed or ODBC connection). To create a specific XLS file, you can do it from-the-scratch if you want to or you can use the default KPI dashboard and adust it to your needs. The default KPI dashboard can be downloaded with the buttons „Download Default Dashboard ..." (see section 3.6).

3.2.2 Editing KPI Dashboards

To change an existing KPI dashboard configuration you have to use the link „edit" in the KPI dashboard list. This will open the same mask described in section 3.2.1.

<u>Please note:</u>
If the current user is no KPI dashboard administrator (RW permission in group „KPI-Dashboard") and has no RW permission in one of the groups selected for a KPI dashboard, the user will not have the „edit" link available.

3.2.3 Deleting KPI Dashboards

The option to delete existing KPI dashboard will only be available for the KPI dashboard administrator (RW permission in group „KPI-Dashboard"). All other users are not allowed to delete KPI dashboards.

3.2.4 Configuring the KPI data source in PowerPivot

In PowerPivot you have to configure a data source to display the KPI data. You can either use a XML Data Feed or you can use an ODBC connection directly to the KIX database.

3.2.4.1 XML Data Feed

This is the preferred data source to use. It's the most flexible one since there is no need to configure a DB connection, open firewall ports or extend database tables and view to transfer more data attributes.

To connect PowerPivot to an XML Data Feed of a specific KPI dashboard, you have to create a „Other Data Feeds" data source. How to create a data source in general will be described in your Excel or PowerPivot manual.

For the new data source you have to use the following URL:

```
http://<FQDN KIX server>/kix/KPIDashboard.pl?DashboardToken=<Token>
```

The <Token> to be used can be found in the list of KPI dashboards in the KPI dashboard administration (see section 3.2). For each new KPI dashboard a random token will be created. This token will be used to identify the specific KPI dashboard in the URL and adds a level of security.

If you are using HTTPS connections for your KIX server you have to change the URL to https accordingly.

<u>Example:</u>

```
http://kix.example.com/kix/KPIDashboard.pl?DashboardToken=sni9j07dYi4lupOrYZNY
```

3.2.4.2 ODBC

The ODBC connection can be used if - for whatever reason - XML Data Feeds cannot be used. It allows you to transfer data directly from the KIX database to PowerPivot. This might have some performance pros but definitely has the disadvantage that opening firewall ports to acces the DBMS is usually required. How to create and configure an ODBC data source if described in your Excel or PowerPivot manual.

3.3 Usage of KPI Dashboards

To use an existing KPI dashboard a user has to have at least RW permission in one of the groups assigned to the dashboard. If so, the KPI dashboard will be listet in „KPI-Dashboard" module in the menu „Reporting".

To open the KPI dashboard just click on its name in the list. The XLS file of the chosen KPI dashboard will be opened in your local Excel and PowerPivot will refresh the data using the configured data connection (XML Data Feed or ODBC connection).

After the refresh the updated KPI dashboard will be displayed. The refresh time depends on the configuration of the KPI dashboard in KIX Professional (see 3.2.1)

3.4 Preparation of Data Streams

If you have configured dashboards with the option „Use prepared data" (see section 3.2.1) you have to make sure the necessary data streams for these dashboards will be prepared in the background. There are three different ways to achieve this. To use the dashboard in PowerPivot an XML data feed is necessary and to use the online dashboard, a JSON data stream is needed. Both can be prepared.

<u>Attention:</u>
The higher the number of processes that should be used to calculate the dashboard data, the higher would be the system load on the KIX server.
Please be careful when doing data preparations during business hours because it might have a huge performance impact on the KIX server as long as the KPI data preparation lasts!

3.4.1   Starting the preparation in the GUI

If you have edit permission for a dashboard and the dashboard is configured to used prepared data, you will see a green „play" icon in the corresponding column of the list. You can start a data preparation in the background by clicking this icon.

After the data preparation processes have been started, you will see a progress bar, with a red stop icon. To stop the whole preparation for this dashboard, just click on the stop icon. It will take a couple of seconds to stop the processes.
Additionally on the left side of the progress bar, an eye symbol will be show. When clicking on this symbol a popup will display statistics for each of the background tasks involved in the preparation.

3.4.2   Using the prepare script

To do this you can use the KIX console command `Maint::KPIDashboard::Prepare`.

When called without any parameter this command will prepare the XML data feeds and JSON data stream for each dashboard that needs preparation. It will use the number of parallel processes that has been assigned to the dashboard (see section 3.2.1).

Optionally you can specify a parameter „`--type`" with the values „XML" or „JSON" to specify which data format you would like to prepare.

3.4.3   Setting up cronjobs

If you would like to prepare the data periodically, you can define a cronjob for that. The cronjob template is already installed in the `var/cron` directory.

3.5 The KPI data explained

The following section explains the default KPI data hash (see 3.1.14). It can be extended with custom calculation modules if necessary. The explanation doesn't contain the ticket hash attributes (see 3.1.13) since these are basic KIX attributes and not part of the KPI Dashboard extension.

| KPI Attribute	Description
CalendarWeek	The calendar week the SR was created in.
FirstResponseTimeTotal	This is the total timespan in minutes between the creation of the ticket until the first response.
FirstResponseTimeBusiness	This is the value of FirstResponseTimeTotal without all the non-relevant time (i.e. The time your service organisation is waiting for a response from the customer)
FirstTimeResolution	This will be set to 1 if the ticket was resolved in the first contact. This means that it was created in a closed status or there is only one outgoing message/article (email, phone call, external note)
FirstTimeResolutionText	This is the human readable content, i.e. „yes" or „ja"
Month	This is the prepared month used for filtering the KPI Dashboard in PowerPivot.
OutOfSLA	This will be set to 1 if the ticket got escalated in its lifecycle. It depends on the configuration of the KPI-Dashboard extension (see 3.1.10)
OutOfSLAFirstResponseTimeBusiness	If OutOfSLA is 1, this contains the minutes the FirstResponseTimeBusiness exceeds the FirstResponse escalation time. It also depends on the configuration of the KPI-Dashboard extension (see 3.1.10)
OutOfSLASolutionTimeBusiness	If OutOfSLA is 1, this contains the minutes the SolutionTimeBusiness exceeds the FirstResponse escalation time. It also depends on the configuration of the KPI-Dashboard extension (see 3.1.10)
Queue_Level1..x	The queue of the SR will be split by „::" and each part will be returned as a separate column.
QueueMoves	This shows how often the ticket was moved between different queues.
Service_Level1..x	The service of the SR will be split by „::" and each part will be returned as a separate column.
SolutionTimeTotal	This is the total timespan in minutes between the creation of the ticket and its close time.
SolutionTimeBusiness	This is the value of SolutionTimeTotal without all the non-relevant time (i.e. The time your service organisation is waiting for a response from the customer)
TicketPriorityTranslated	This is the translated ticket priority used for filtering the KPI Dashboard in PowerPivot.
TicketStateTranslated	This is the translated ticket state used for filtering the KPI Dashboard in PowerPivot.
Year	The calendar year the SR was created in.

3.6 The Default KPI Dashboard
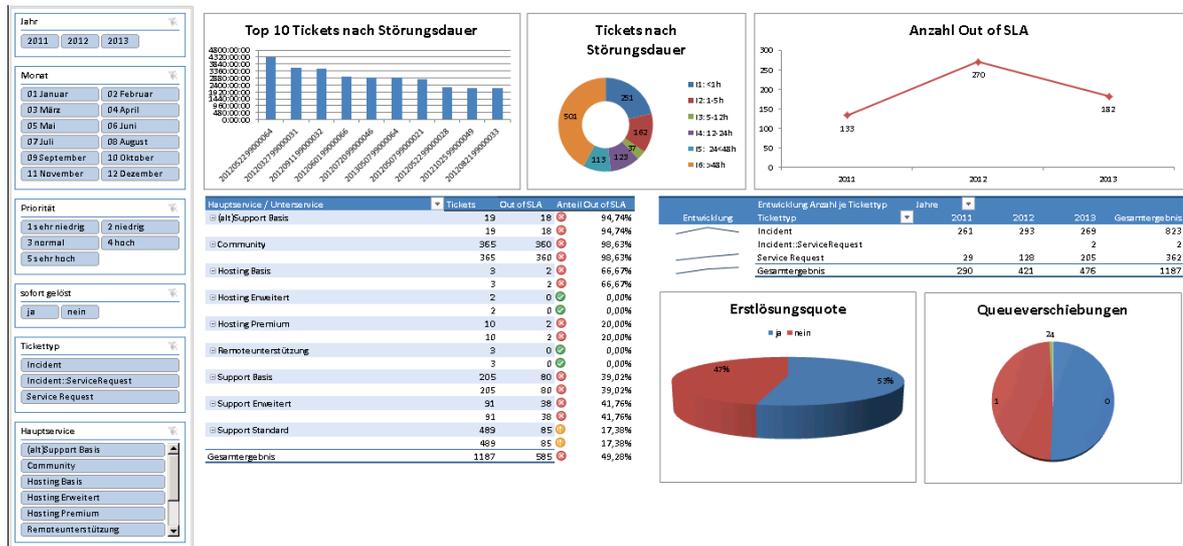
The default KPI dashboard can be used as a basis to create your own, specific KPI dashboards. It already contains the most common KPIs for service oriented organisations.

Important:

1. The default dashboard is based on the attribute selection of a „Live" calculation (see description of option „KPI data calculation" in section 3.2.1).

2. Since the default KPI dashboard template is the base for your own dashboards, it does not contain a data source connection specific for your KIX. You have to configure it manually.

The KPIs contained in the default KPI dashboard will be explained next.

3.6.1   The Filter Section
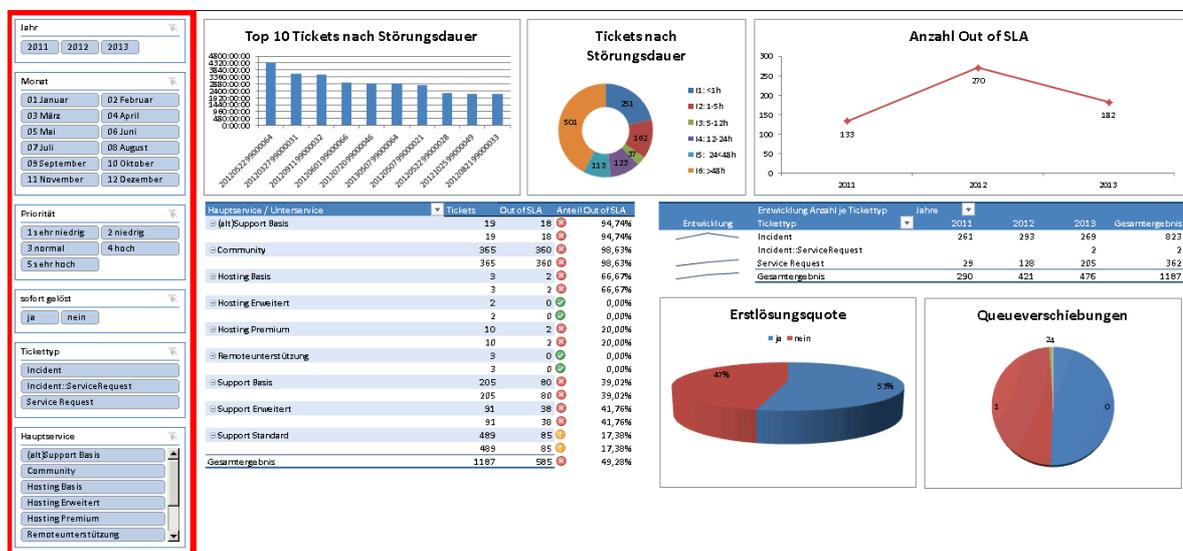
The filter section allows to filter the whole KPI dashboard according to the criteria that have been selected. All charts and lists will only display the relevant data.

3.6.2   The Top 10 Section
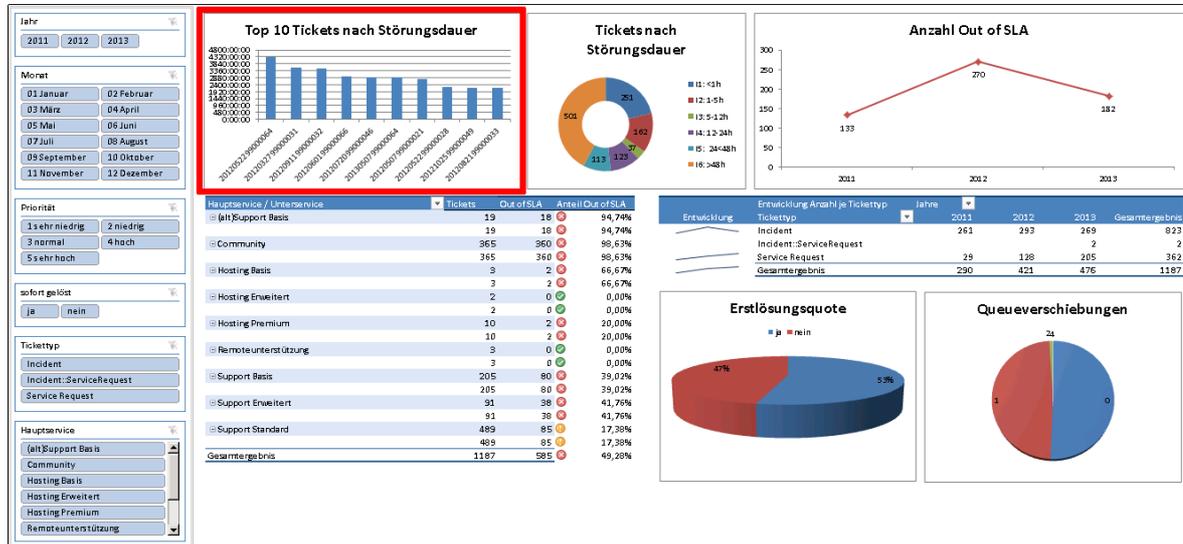
This section contains the Top 10 tickets according to their duration. The duration (left hand axis) will be displayed in minutes.

3.6.3   The Duration Percentage Overview
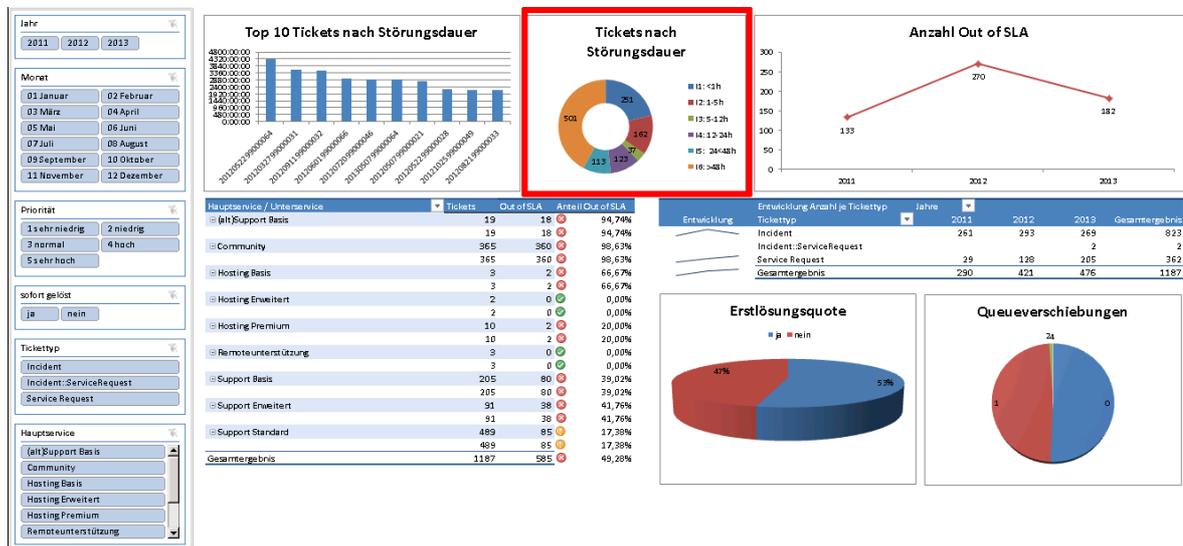
This chart displays the percental distibution of ticket counts according to their duration. Six intervals will be displayed:

I1 - tickets with a duration less than 1 hour
I2 - tickets with a duration between 1 and 5 hours
I3 - tickets with a duration between 5 and 12 hours
I4 - tickets with a duration between 12 and 24 hours
I5 - tickets with a duration between 24 and 48 hours
I6 - tickets with a duration longer than 48 hours

3.6.4 The Out-Of-SLA Chart
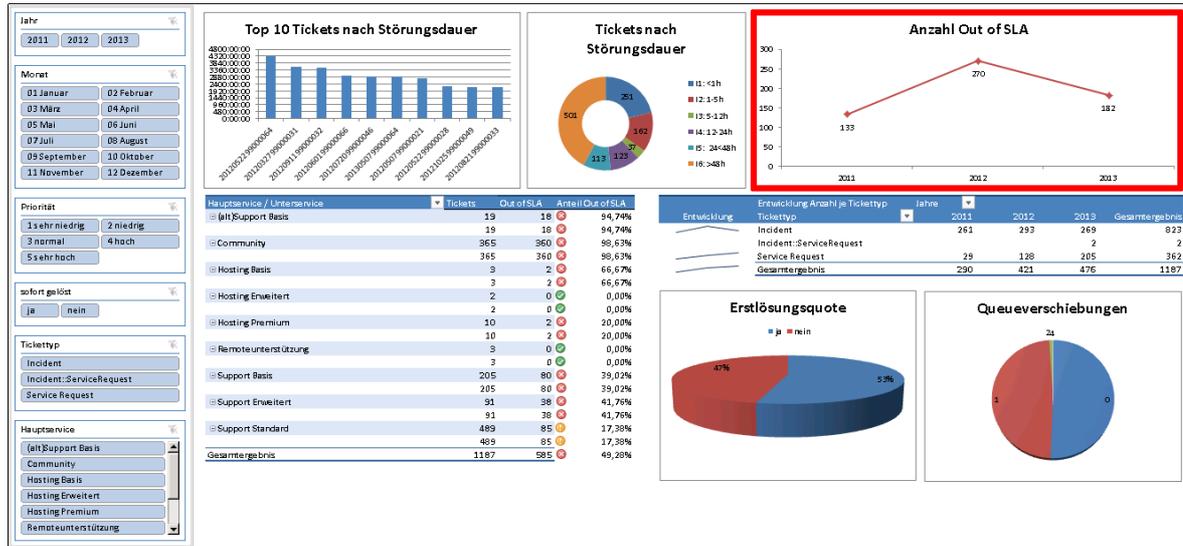
This chart shows the number of tickets that are „Out-Of-SLA". „Out-Of-SLA" mean that the ticket escalated and whether the first response time or the solution time or both have been violated.

3.6.5 The Main Overview
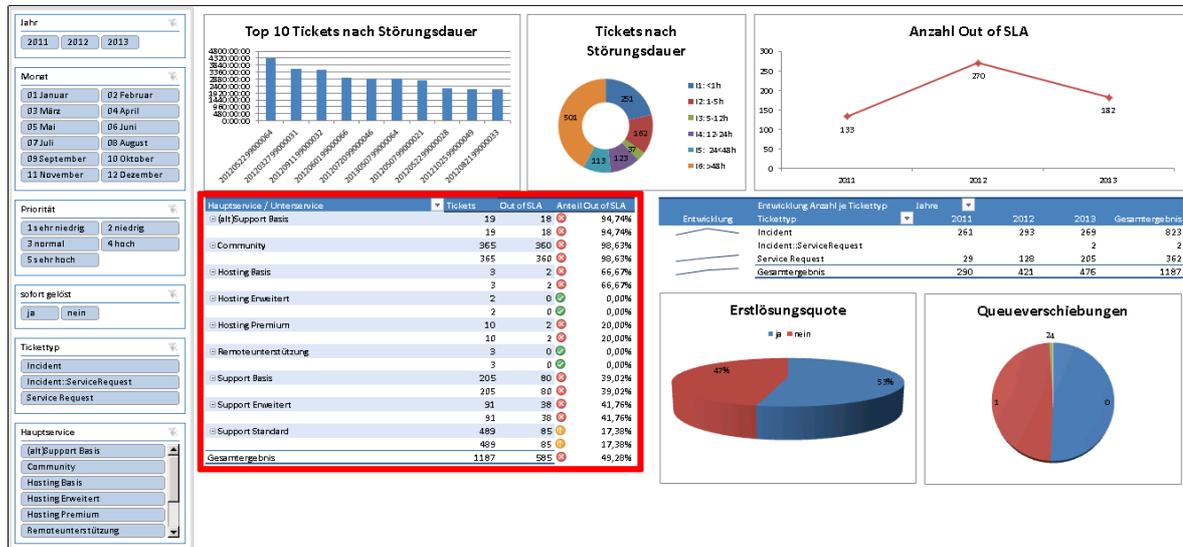
This overview lists the number of tickets assigned to specific main and sub services, the number of tickets that are „Out-Of-SLA" and the percentage of „Out-Of-SLA" tickets in respect to the total number of tickets for this main or sub service.

3.6.6   The Ticket Type Overview
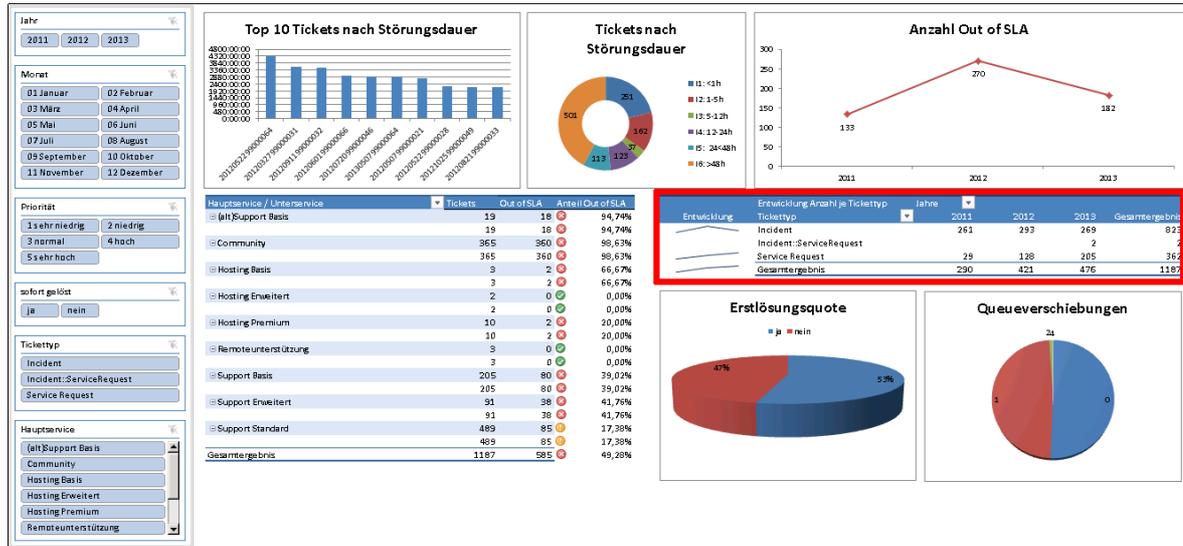
This overview lists the number of tickets for each ticket type and displays a smal chart for historic comparation.

3.6.7   The First Solution Rate Chart
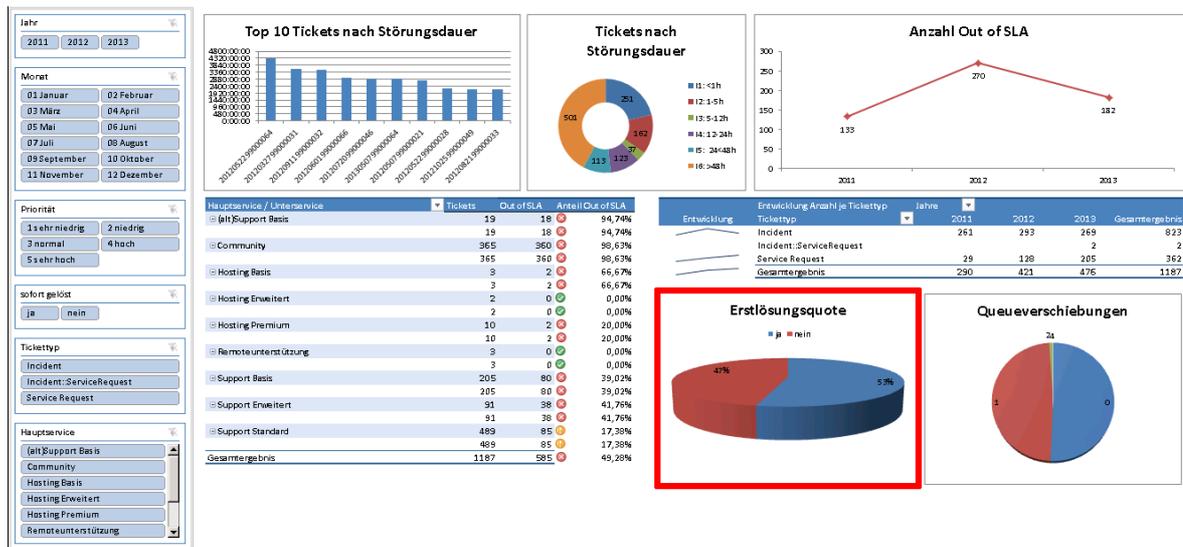
This chart displays the percentage of tickets that have been solved with the first „contact". First Solution means that the ticket has already been created in a closed status (i.E. it has been solved on the phone and has just been created for documentation) or only one outgoing communication (phone call, outgoing note or email) has taken place before the ticket was closed.

The higher the first solution rate the better your service in general.

3.6.8 The Queue Moves Chart
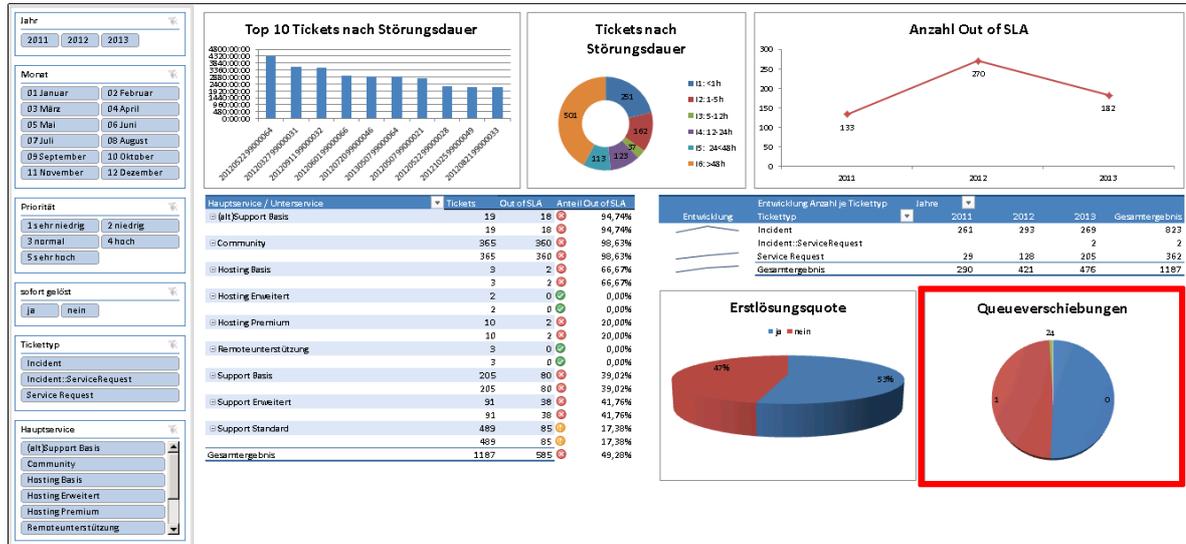
This chart displays the percentage distribution of the number tickets in relation to the number of queue moves during each tickets lifetime.

With this KPI you can determine whether there is some „hot potato" game going on in your service organisation. A high number of queue moves usually signifies a possible lack of responsibility or a disorganized service organisation.

3.7 Data plugins

The KPI-Dashboard core allows to extend and/or override the available KPI data by using so called KPI-Dashboard plugins. Such a plugin has to be registered as a Custom Module in the SysConfig (Key „KPIDashboard::CustomModule"). The plugin modules should be located under /opt/kix/Kernel/System/KPIDashboard/. A plugin module has to provide just two methods: „new" and „Run". The method „Run" gets two parameters: „TicketID" and „Data" and has to return a hash containing the KPI data attribute keys and values. The parameter „Data" contains the already calculated KPI data for this ticket.

The list of new attributes a plugin module provides can be made available via SysConfig extensions (see 3.1.14 and 3.1.15).

3.8 The Online KPI Dashboard

The Online Dashboard is a possibility to display the default charts without using PowerPivot. It works like the standard ticket dashboard. Each dashboard element is a single module which can be activated and deactivated in the SysConfig (Group „`Frontend::Agent::OnlineDashboard`"), and personally enabled and disabled by the user.

3.8.1 Open the Online Dashboard

The Online Dashboard will only be available, when configured in the dashboard itself (see section 3.2.1). When available, a small icon will be displayed in the column „ONLINE" in the dashboard list. To open the Online Dashboard click the icon. A new brower tab will open and the dashboard will be loaded. A small popup will inform the user about that. It will be displayed as long as the data loading is in progress.

If the dashboard uses prepared data (see section 3.4) the whole prepared JSON data stream will be loaded into the browser. If the dashboard is configured to use non-prepared data, the data calculation and preparation will start and the JSON data stream will be loaded afterwards.

Please note:
Since the whole JSON data stream has to be loaded into the internet browser, it may take a couple of minutes to finish the data loading. Additionally the memory usage of your internet browser will increase significantly!

3.8.2 The Online Dashboard Settings

The Online Dashboard is similiar to the Default Dashboard provided for PowerPivot. It consists of a couple of so-called „dashlets" which can be enabled or deactivated by the user in the a section named „Settings" on the upper left side of the screen:
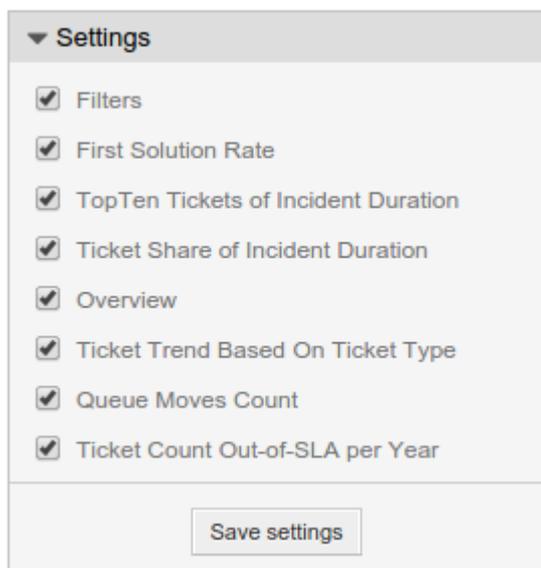
In this section, all the dashlets are listed, that are activated by the KIX administrator (see 3.8). A user can deactivate a dashlet by „unchecking" it. Also a user can close a dashlet by using the „x" button in the header line of the dashlet itself.

Each dashlet has a predefined position on the screen, but this position can individually be changed by the user itself, just by dragging the dashlet to a new position.

3.8.3   The Online Dashboard Filters

If active, the dashlet „Filters" will be displayed on the left side of the screen, below the „Settings" section. This dashlet allows the user to filter the data by some attribute values of interest.
The attributes that can be filtered will be defined in the dashlet registration of the „Filter" dashlet. The name of the attribute has to be identical to the name of data attribute in the JSON data stream (i.e. „Type" or „Month").

The values displayed in each filter are taken from the live JSON data and represent all possible values contained in the current data stream.

Each active filter will work in addition to the others („AND operation").

After loading the dashboard no filter criteria is selected and therefore no filter is active. To filter the data, just select the relevant values in the filters and click the button „Apply" below the filters. To change the filters just change the selected values and click the button again. To reset all filters, just click the button „Reset".