



We change the shape of the world

# **NovaTec Performance Management**

Handbook

Version 1.20 from April 26<sup>th</sup>, 2012

This document is subject to changes



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## 1 Introduction

Performance Management is used for the analysis of CDR's. Lists and charts are triggered which can be analysed by various criteria.

## 2 Changes to previous versions

Revision – Changes to the graphic user interface.

## 3 Installation

The installation of the software is effected with help of a setup program and mostly self-explanatory. Please follow the instructions and directions of the Readme file.

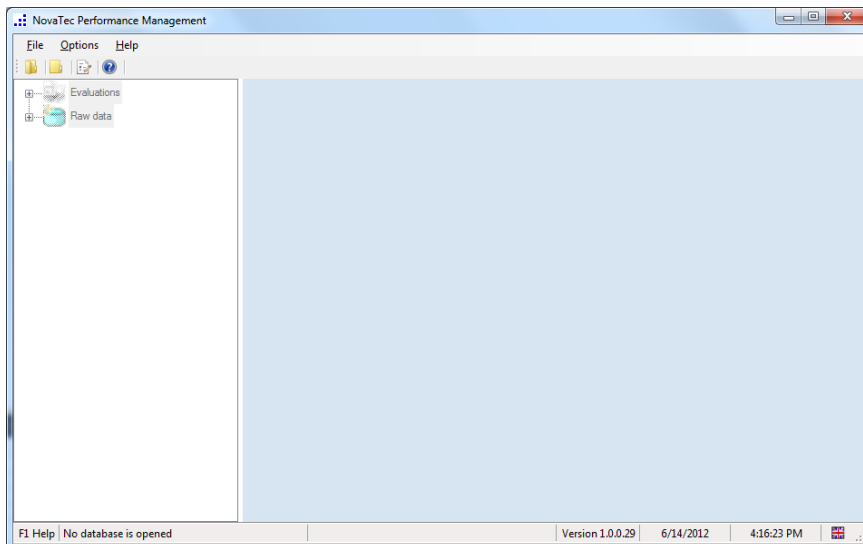
## 4 System platforms

The software is suitable for the following system platforms:

- Windows 7, Service Pack 1
- Windows Server 2008, Service Pack 2

## 5 Starting the application

The application is started via the start menu.



The application can only be used after a database has been opened successfully. The window will always open at the same position and size which was used before the latest closing of the application.

In the upper part the menus are set within the toolbar. The left part of the window contains further controls in form of a tree; in the right part window the corresponding contents are shown.



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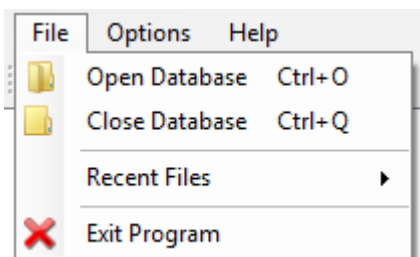
## 6 User interface - operation

The following chapter describes the user interface and the operation of the solution.

### 6.1 Controls

#### 6.1.1 Menu items

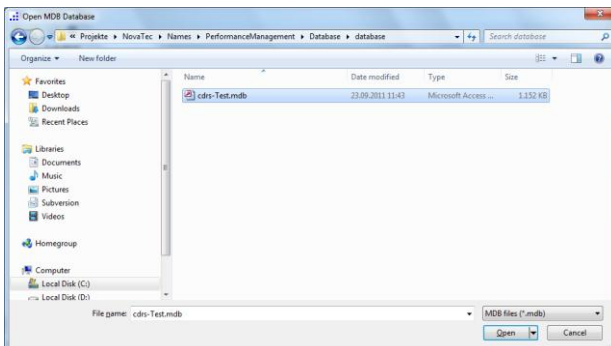
##### 6.1.1.1 File



#### **Open database**

This Menu item opens a dialogue for the choice of a database. Only one database at a time can be opened.

Example:



#### **Close database**

The current database is closed, the right side of the window contains no information and the tree (left hand side) for the choice of the functions is inactive.

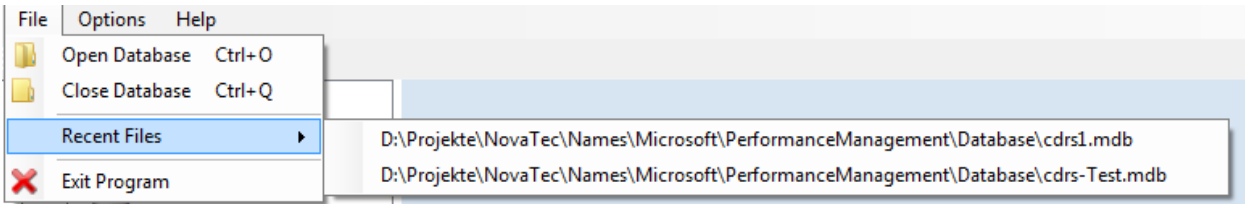
#### **Recent databases**

This menu item is only active if a file (database) has been opened, closed and reopened before.



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Example:

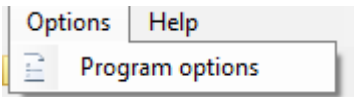


The choice of a menu entry and the corresponding database.

## Close

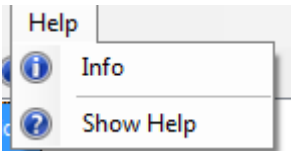
The program is closed.

### 6.1.1.2 Settings



This menu item opens a user dialogue for the program settings.

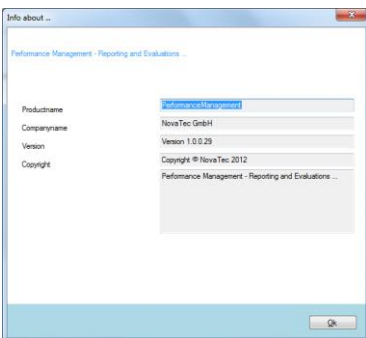
### 6.1.1.3 Help



## Info

Shows information about the application.

Example:



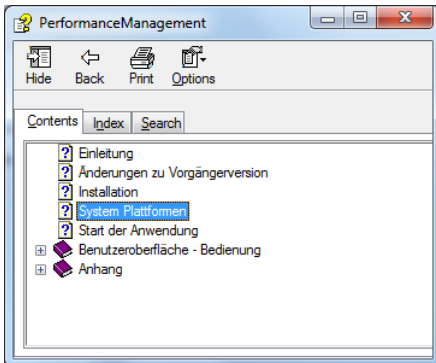
## Show help

The help dialogue is opened.



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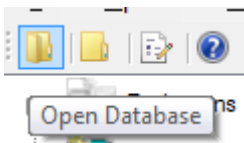
Example:



### 6.1.2 Toolbar

The toolbar makes the use of the application easier. Functions of the toolbar can also be found under the menu items.

All toolbar buttons are equipped with tool-tips.

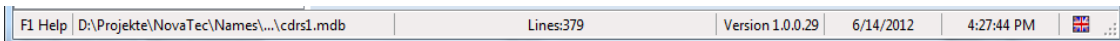


These functions can be found in the toolbar:

- Open database
- Close database
- Settings
- Info

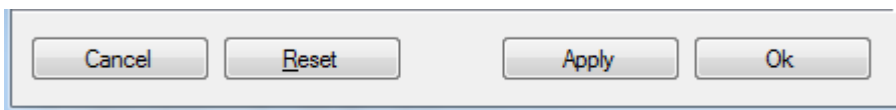
### 6.1.3 Status bar

In the status bar information like the current date, time, version and active database is stated.



## 6.2 Settings

The dialogue for the settings is either opened via the menu item or via the toolbar.





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**Cancel:**

Dialogue is cancelled.

**Reset:**

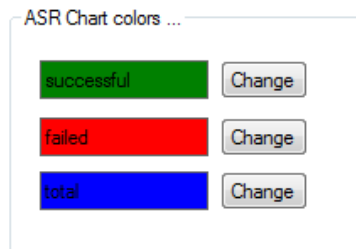
The settings are reset to factory settings. The factory settings are:

Language: German

Number of disabled ciphers: 3

Logo is not shown on reports.

ASR-Chart colours:



The list of files last opened is deleted.

**Adopt:**

The settings are adopted and saved. The dialogue is not closed.

**Ok:**

It is tested whether any settings have been changed. The according information will follow. If applicable the settings are adopted and saved. The dialogue is ended.

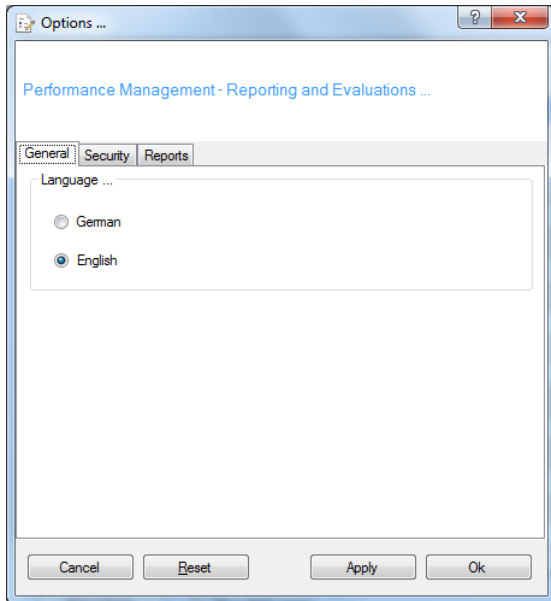
The dialogue includes three tabs at the time being.





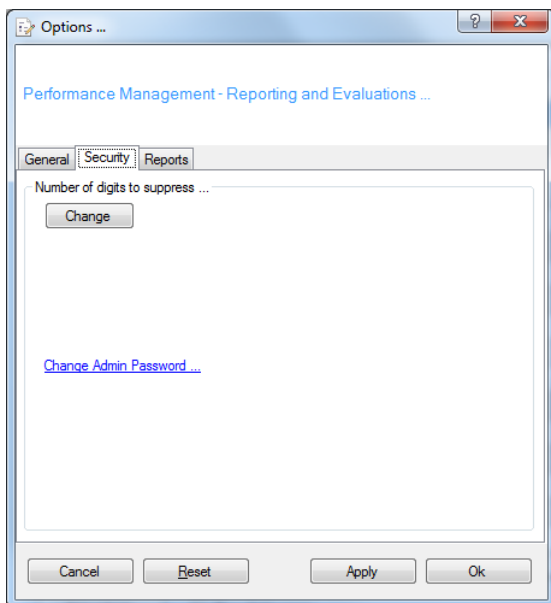
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### 6.2.1 Global



The language, either German or English, is chosen in this dialogue. The change will become effective after the program has been restarted. If the language settings are altered an according information will be given when closing the dialogue.

### 6.2.2 Security





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## Suppressing an amount of ciphers

In some fields (.e.g. call numbers) you can or have to suppress the last few ciphers e.g. for data privacy protection reasons. This setting is only possible for users which know the admin password. It is necessary to enter the password before you can perform the changes. Please use button **Change** to start process.

A screenshot of a dialog box titled "Number of digits to suppress ...". It contains a "Change" button at the top left. Below it, there is a label "Admin password:" followed by an empty text input field and an "Ok" button to its right.

Enter password in the shown box and confirm with **Ok**.

A screenshot of the same dialog box. The "Admin password:" field now contains six asterisks. The "Ok" button is highlighted in blue. Below the password field, there is a label "No. of digits:" followed by a text input field containing the number "2".

After entering the correct password the cipher number can be changed.

## Changing the admin password

If you click onto this link the following dialogue for changes to the admin password will open:

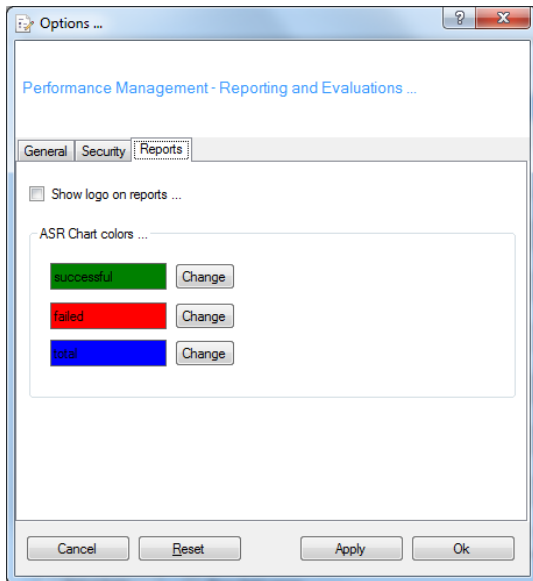
A screenshot of a dialog box titled "Change Admin Password". It has three text input fields: "Old Password:" with six asterisks, "New Password:" with six asterisks, and "Repeat new Password:" with six asterisks. At the bottom, there are "Cancel" and "Ok" buttons.

Please enter the old password first, then the new password twice and confirm with Ok.



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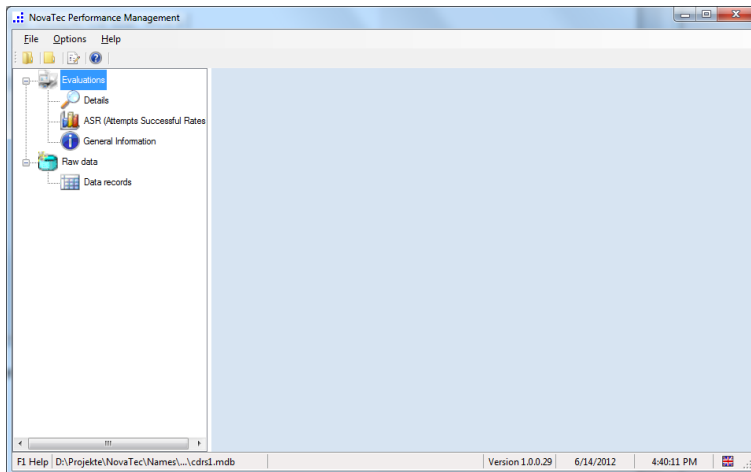
### 6.2.3 Reports



Here you can choose whether or not the logo is to be shown on the reports. Furthermore the colours for the ASR chart can be adjusted.

### 6.3 Analysis

After a data base has been opened the analysis can be run.



The controls are now active and can be operated with the mouse. In the right hand window the according content shows up.

There are the two main nodes

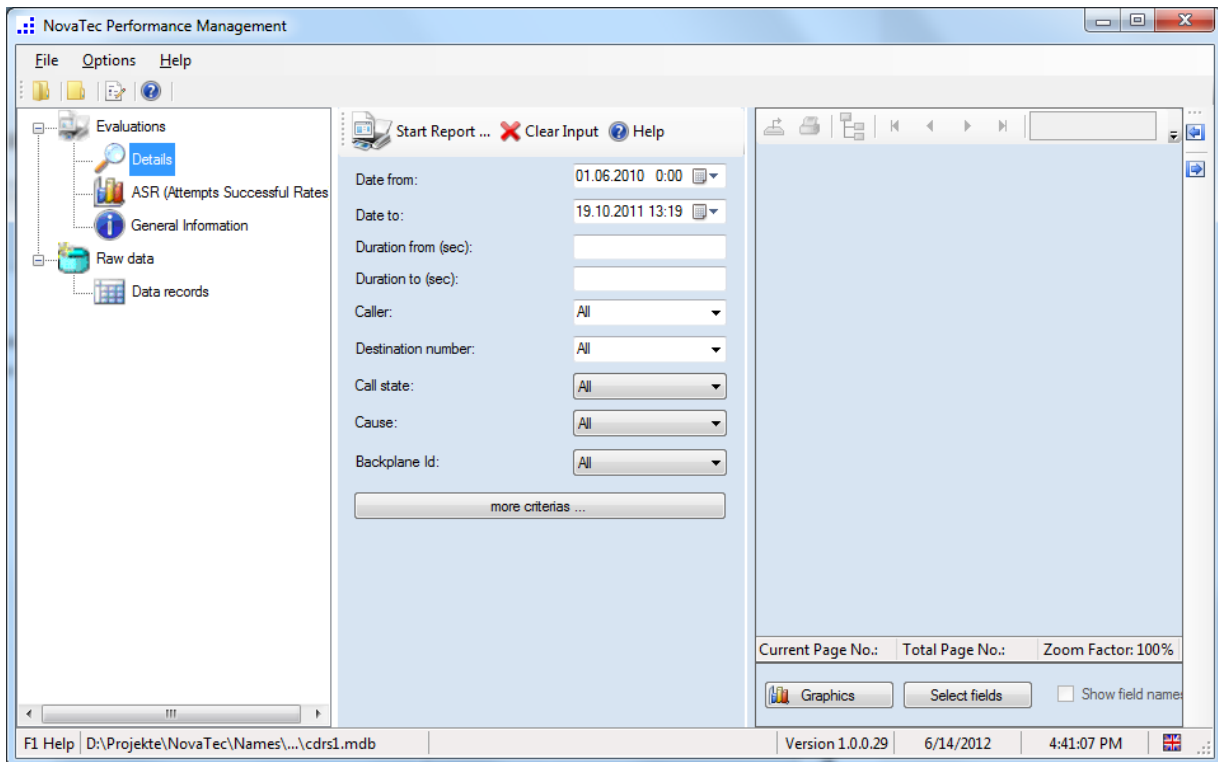
- Analysis
- Raw data



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### 6.3.1 Details

Under details the analysis can be run by any criteria (data base fields).



The right hand window is separated in two areas: the left part shows the criteria for the analysis; the right part shows the reports.



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### 6.3.1.1 Entering the criteria for the analysis

Basically it is possible to select all fields of the data base as criteria for the analysis.

The probably most important fields are shown by default.

The screenshot shows a web-based form for entering analysis criteria. At the top, there are three buttons: 'Start Report ...' (with a printer icon), 'Clear Input' (with a red 'X' icon), and 'Help' (with a question mark icon). Below these are several input fields:

- Date from: 01.06.2010 0:00
- Date to: 19.10.2011 13:19
- Duration from (sec):
- Duration to (sec):
- Caller: All
- Destination number: All
- Call state: All
- Cause: All
- Backplane Id: All

At the bottom of the form is a button labeled 'more criterias ...'.

Some fields are given as lists so that the desired value only has to be picked.

Example target number:

This screenshot shows a close-up of the 'Caller' dropdown menu. The menu is open, displaying a list of options:

- All
- 0002514819840
- 321
- 3352
- 3361
- 3362
- 3451
- 3452
- 3453
- 3454
- 3455
- 3456
- 3457
- 3458
- 9061902117
- 9062902153
- 9062902157
- All

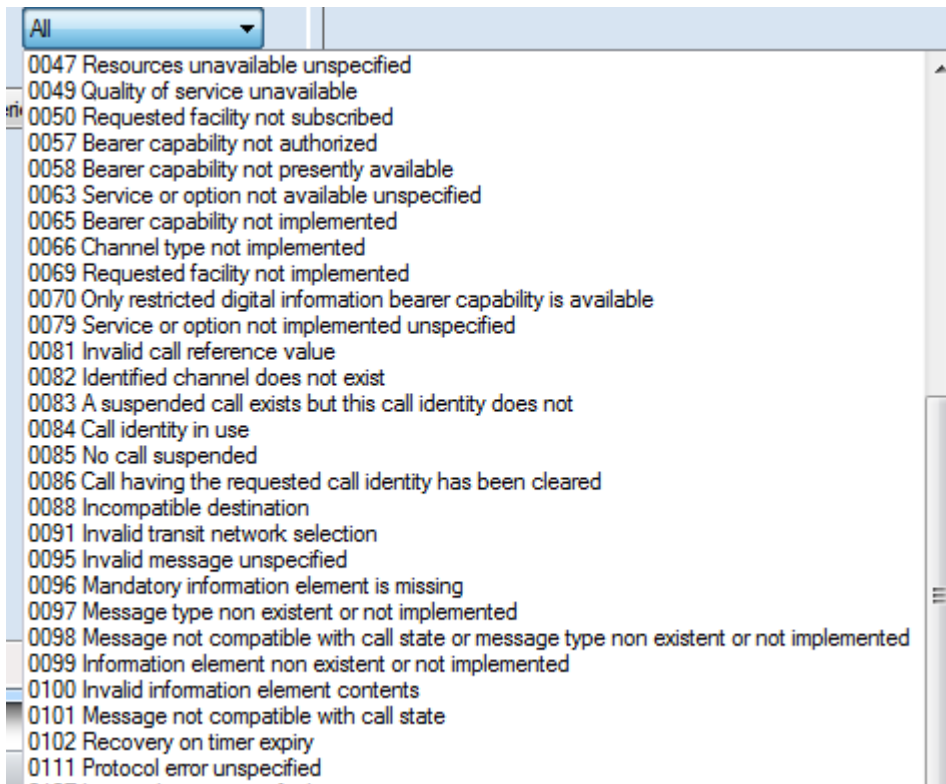
The 'All' option at the bottom of the list is highlighted in blue. A 'more criterias' button is visible at the bottom left of the form area.

You can also choose the error number from a list in clear text format.



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Example:

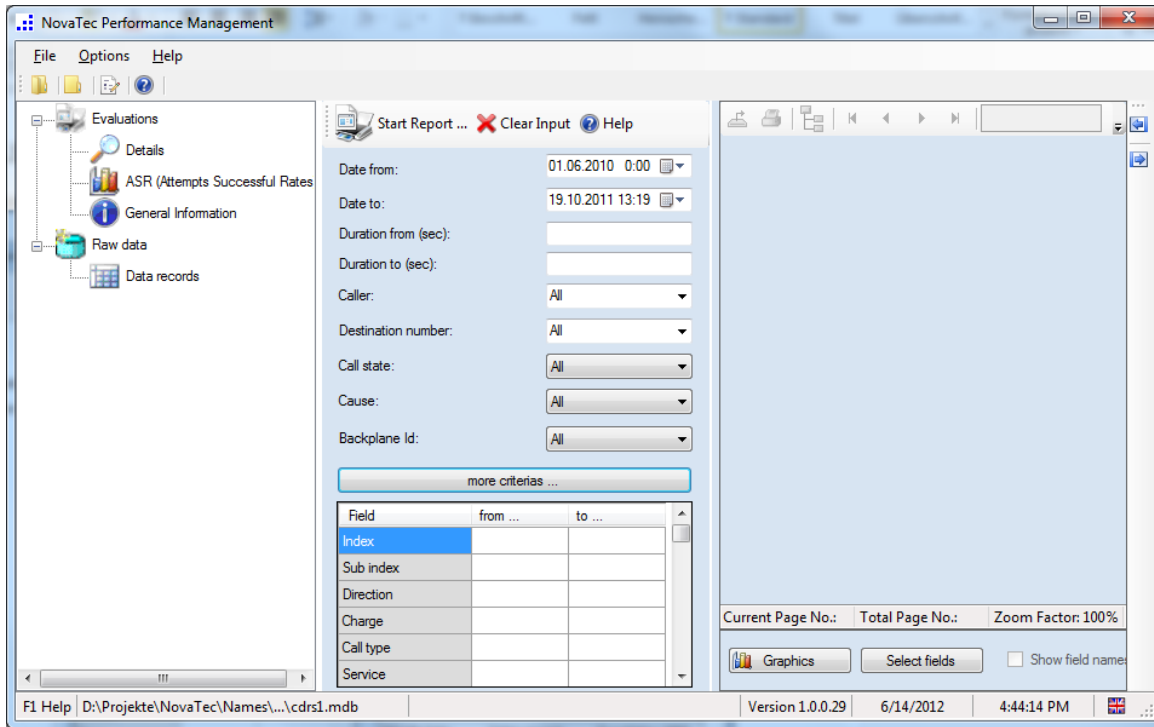




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### 6.3.1.1.1 Further criteria

If the button „further criteria“ is operated the other data base fields are also shown.



You can enter the according input for the analysis here.

### 6.3.1.1.2 Rules

Only one from- and one to- value can be entered. If the analysis box is a text (string-) field a text has to be specified

#### **Text fields:**

You can only enter one from-value. The to-value box is grey in this case. In the analysis all values are taken into account that match with the content similar as if you were working with [term]\*".

Only in numeric boxes from- and to-values can be given.

#### **Only from-value is entered:**

It is searched for all fields which are bigger or of the same value.

#### **From- and to-value entered:**

All field bigger or of the same value as the from-value **AND** smaller or of the same value as the to-value are searched for.

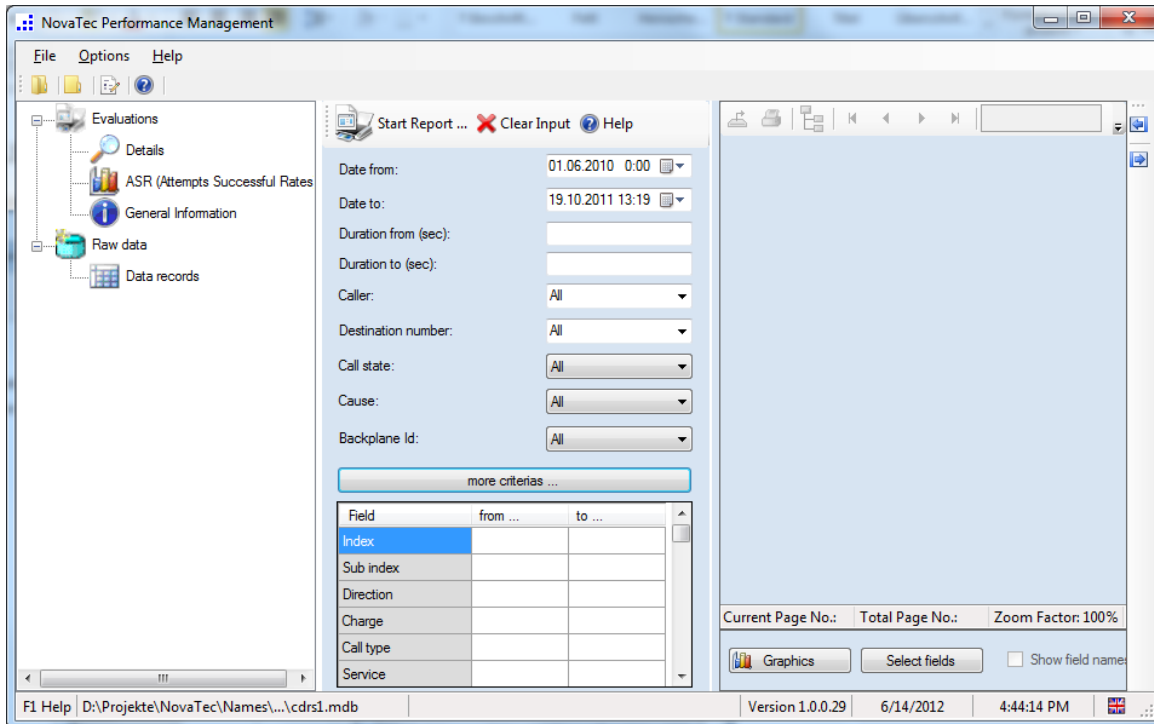


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If you are looking for a specific value the from- and to-value are to be given equally.

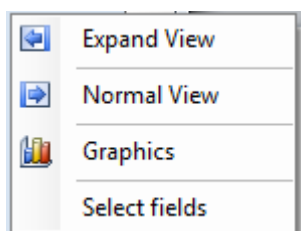
### 6.3.1.2 Start Report

If the button „Start Report“ in the toolbar is operated the report is created. In the right part of the window the data is shown. The data is grouped by **Backplane ID**.



#### 6.3.1.2.1 Expanding the view

The view can be expanded via the context menu or the toolbar buttons on the far side of the right window.

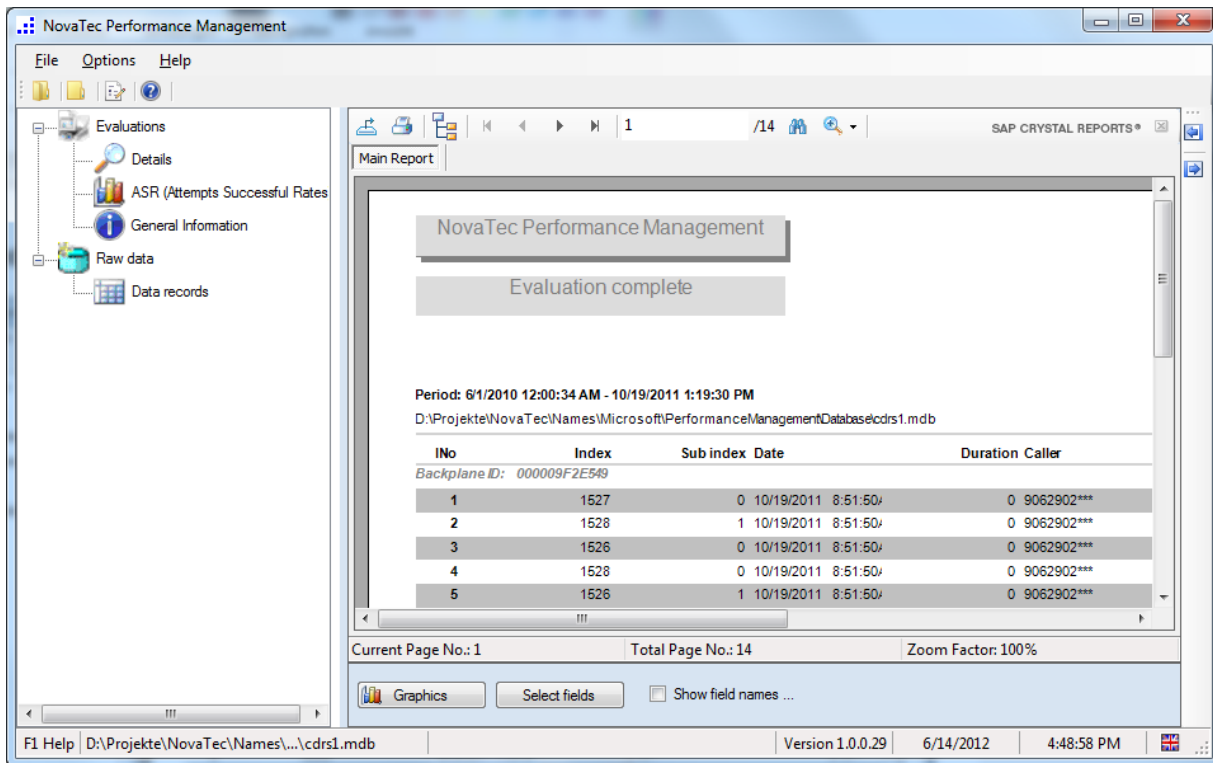






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After expanding the view the window will look as follows:



To return the window to its original size please use the context menu or the button (arrow on the far right).

### 6.3.1.2.2 Show field names

In the lower part a check box „Show field name“ shows up. If this is checked the report will be run anew and the column names are stated as the names given in the data base.

Example:

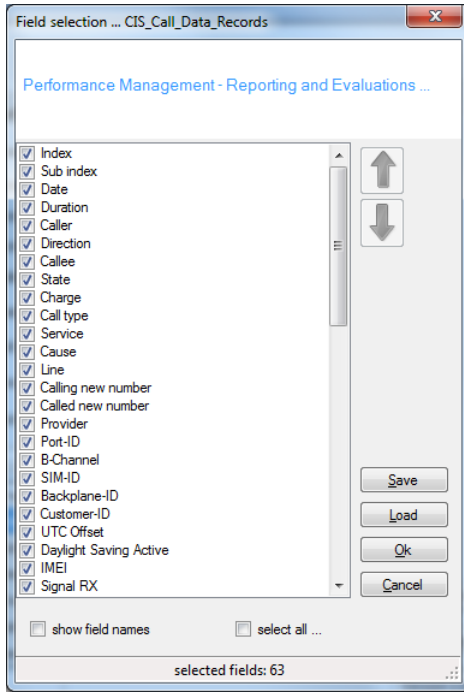
INo	L_Nr	L_Index	D_Date	L_Duration	T_Calpn
Backplane ID: 000009F2E549					
1	1527	0	10/19/2011 8:51:50	0	9062902***



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### 6.3.1.2.3 Select fields

After pressing the button **Field selection** the following dialogue shows up:



With help of this function you can set up which fields are shown in the report in which order.

Furthermore the settings can be saved for later reuse or an existing profile can be loaded.

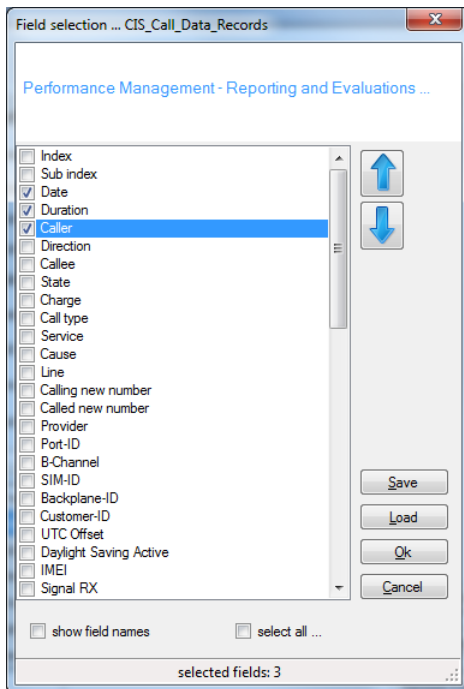
#### **Select fields:**

Only the fields selected here are used in the analysis.

See next page for an example:



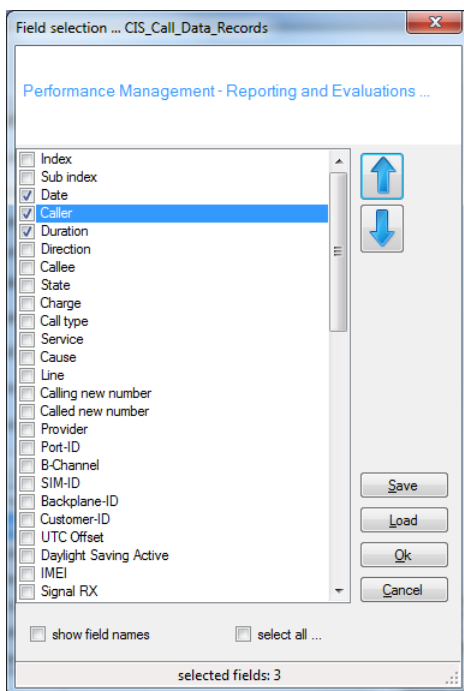
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### Changing the order:

The order can be changed by marking the field to be moved and pressing the button with the according arrow. Arrow upwards moves the field further to the left and arrow down moves it further to the right.

Example for the use of arrow upwards:





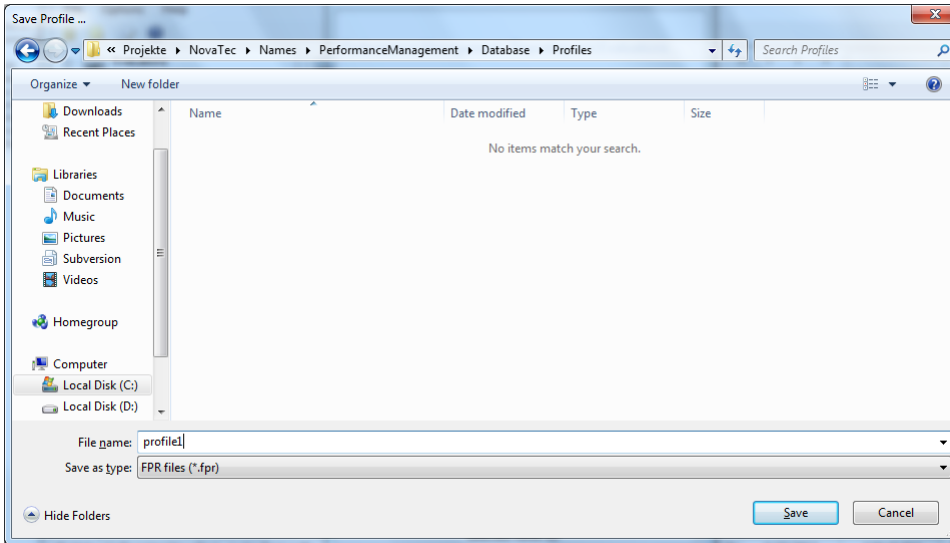
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After selecting the button **Ok** the settings are adopted and an analysis can be started.

#### 6.3.1.2.4 Saving the profile

The settings can be saved for later use. Press button **Save** to achieve this.

The following user dialogue is opened to save the file:



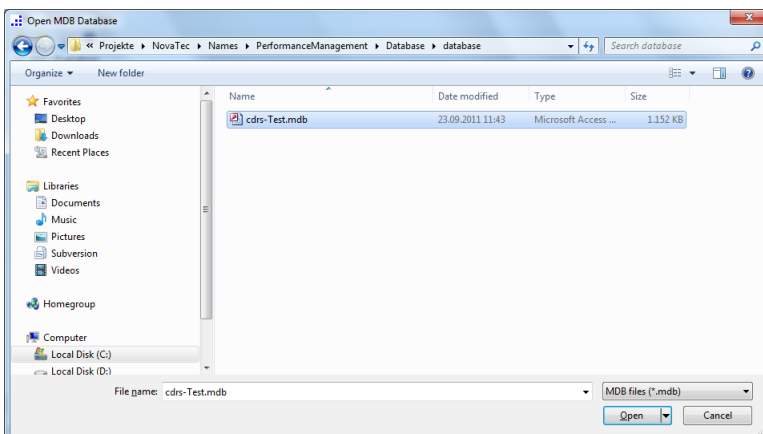
The file has the extension **.fpr**. The data is saved in XML format.

#### 6.3.1.2.5 Loading a profile

The settings can be loaded from a file. Press button **Load** to achieve this.

A user dialogue is opened to load the file.

Example:



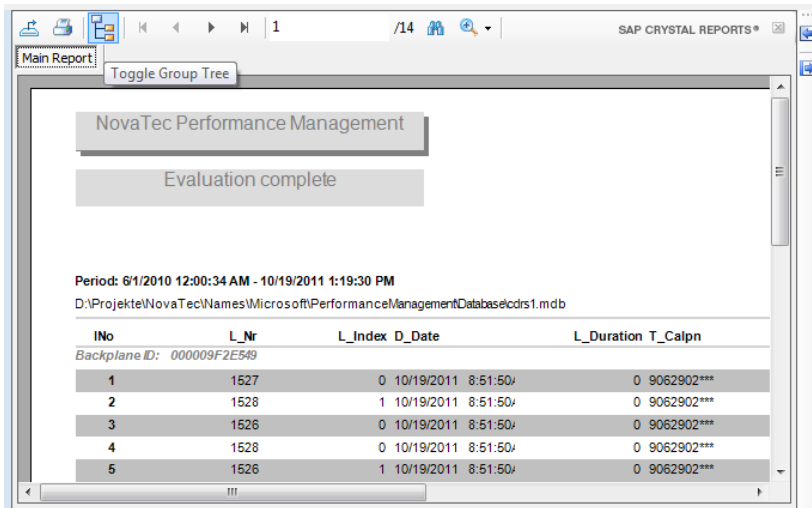


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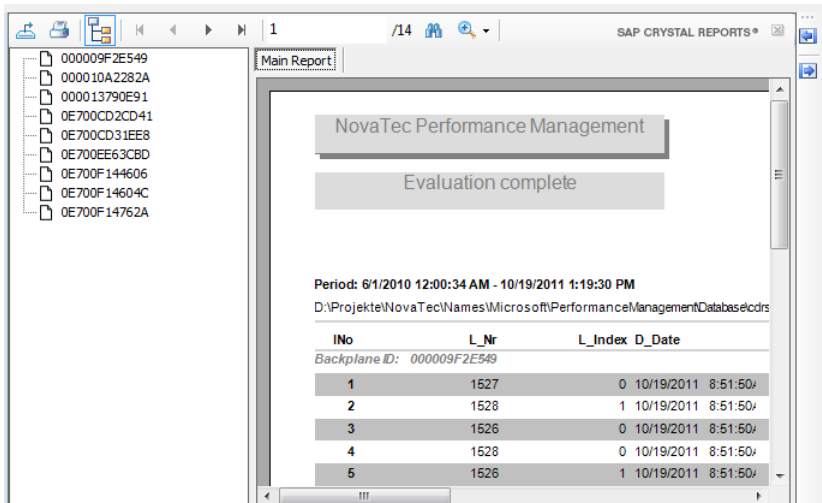
### 6.3.1.2.6 Groupings

The reports are grouped by the corresponding backplane IDs. It is possible to show the different groups separately.

First press the button show/hide group structure.



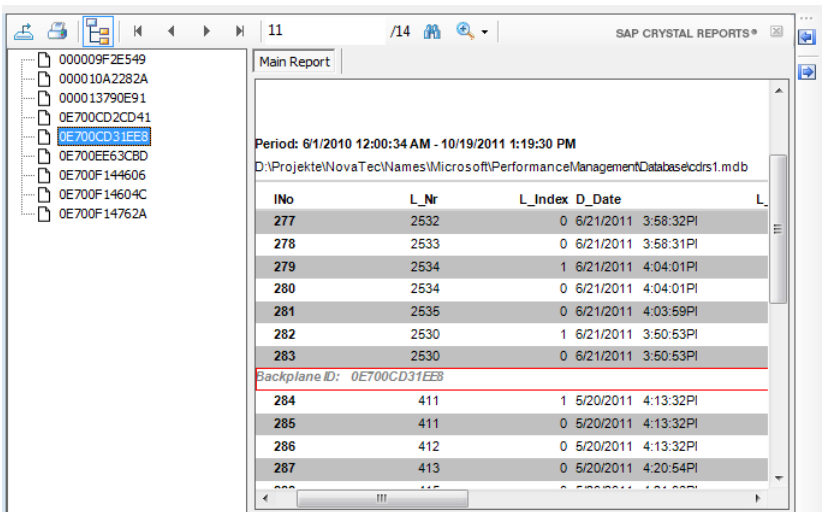
The existing groups are shown (backplane ID's).



By clicking onto one group you are directly shown the data of this group which is also highlighted.



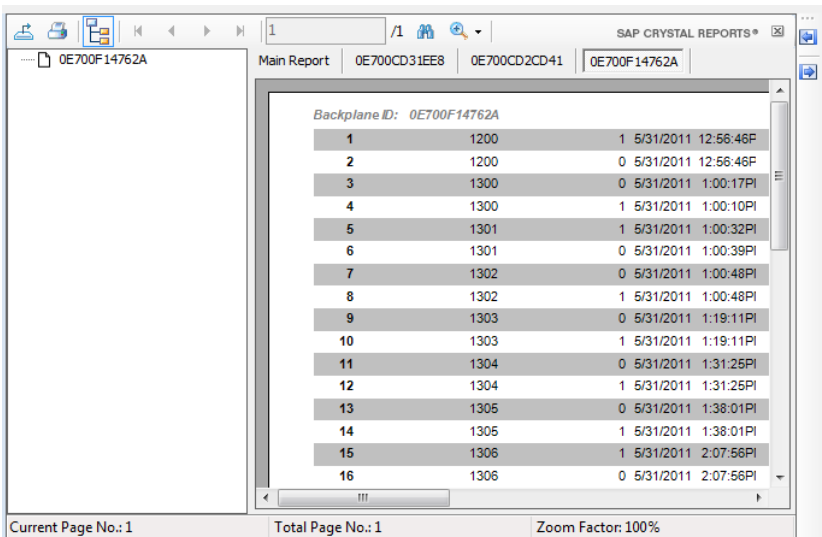
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If the highlighted line is double-clicked a new tab is created in which the grouped data is shown.

By choosing the corresponding tab the different views can be shown.

Example:

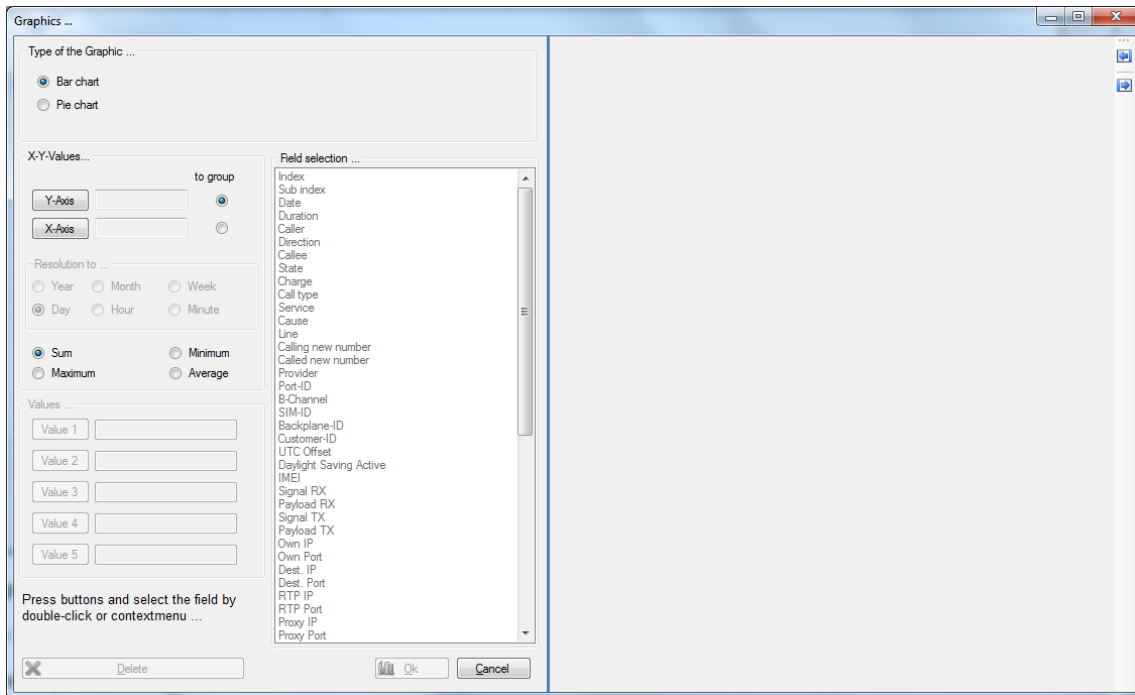




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### 6.3.1.3 Graphics

If the graphics button is operated a dialogue for the setting of graphic options opens up.



First the type of graphic has to be chosen.

For line diagrams two fields have to be given – one for the x-axis one for the y-axis.

For pie or bar charts you can enter up to 5 fields from the data base which are to be shown in the graphic.

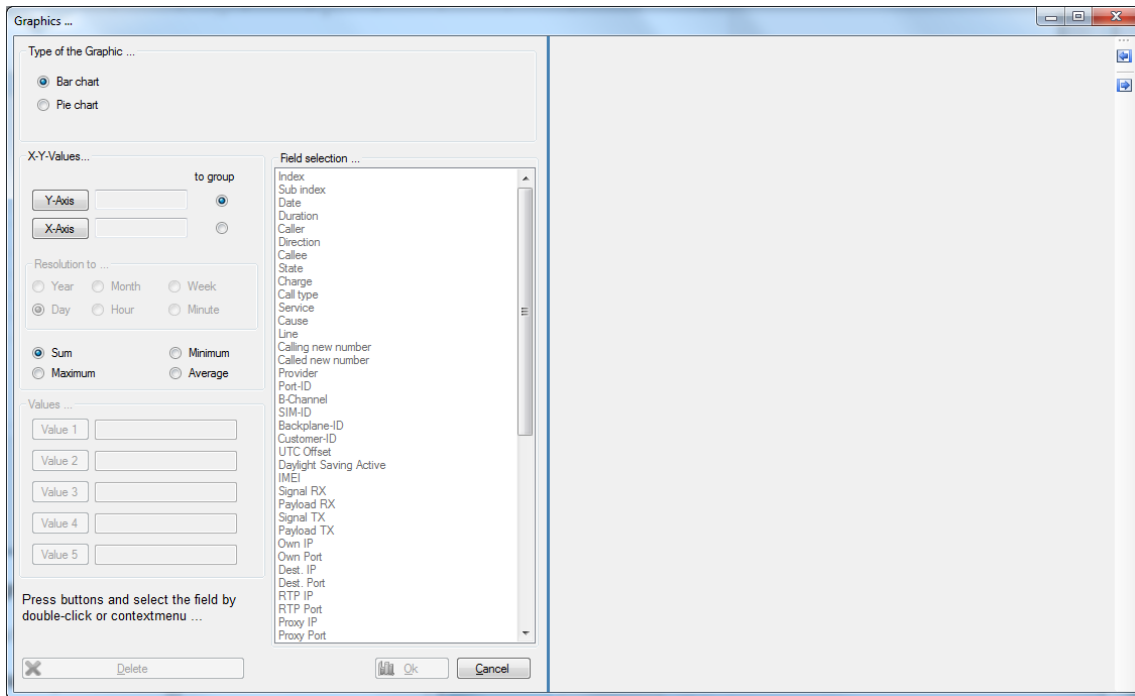
Assigning fields:

- Operate the button **Value 1** or **X-axis** and **Y-axis** with line diagrams.
- Mark a field from the list.
- Double-click field or adopt field via the context menu.
- Repeat this procedure for other fields (e.g. Value 2 to Value 5) if applicable.
- Please see the following pages for the further procedure.

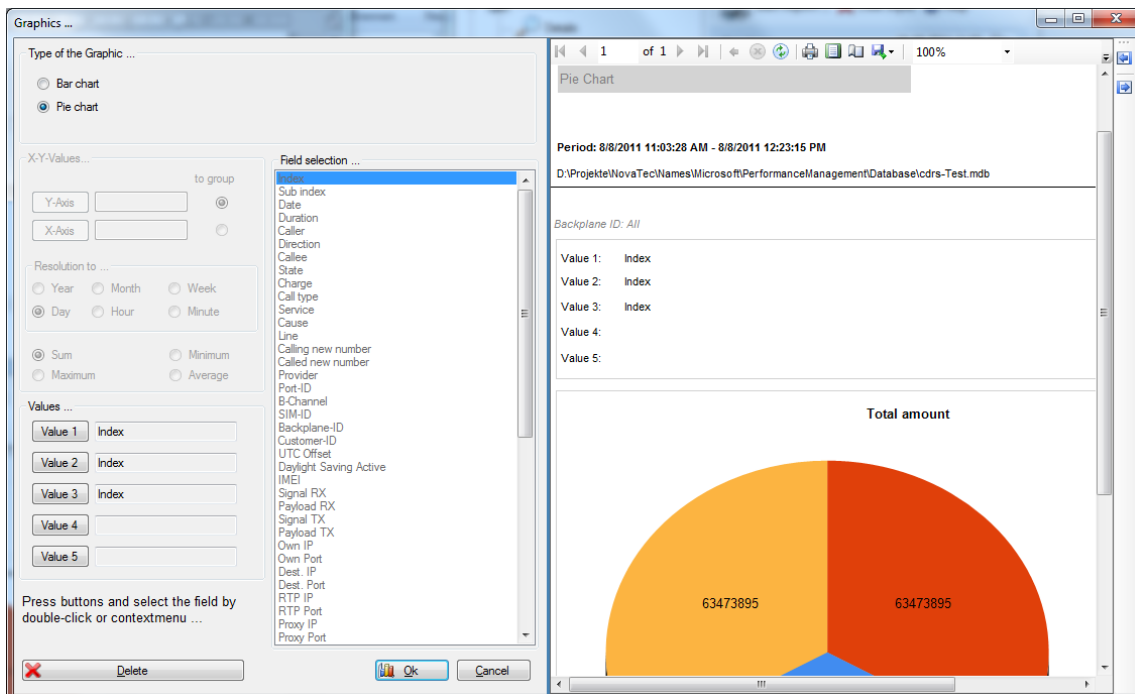


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### Example of a pie chart:



Operate button **OK** subsequently.



The graphic is shown.





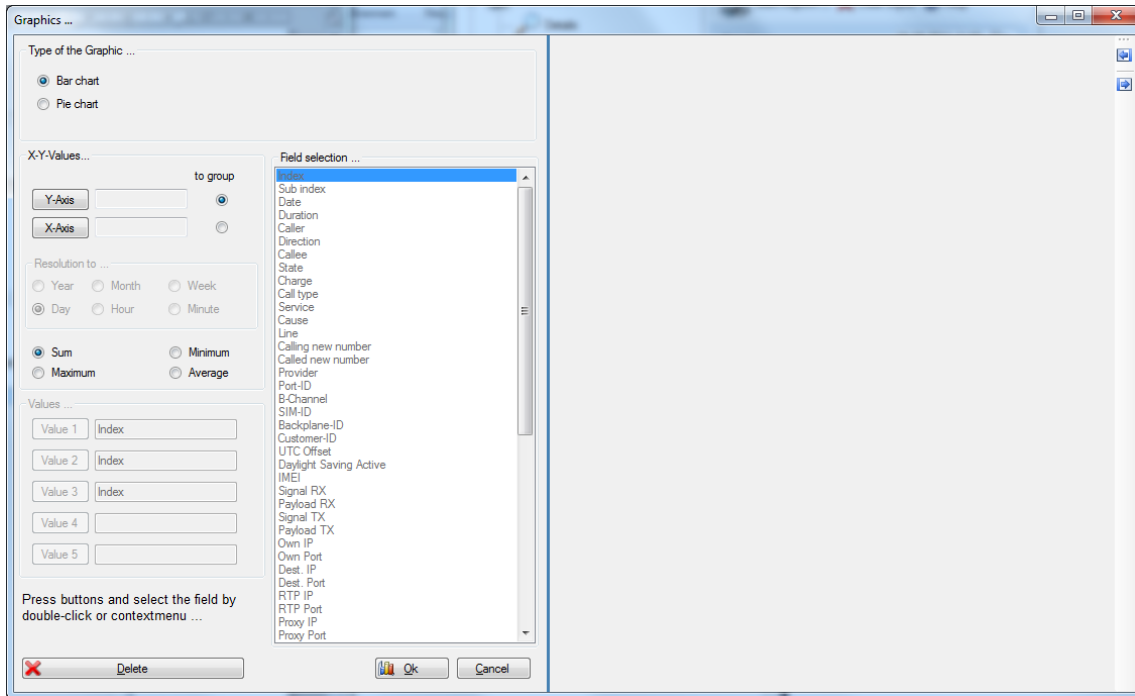
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The view can be expanded or normalized via the context menu or the button on the far right side of the window.

By pressing the button **Delete** the values are deleted.

### Example of a bar diagram:

With bar diagrams always 2 values are given - one of these is assigned as group field.



If a bar diagram is chosen the user has the following options to select from:

- Sum
- Minimum
- Maximum
- Average

Assigning fields:

Press button **Y-axis** or **X-axis**. Then select the designated field and assign with doubleclick or via the context menu. X-axis and Y-axis require only one value each. If more or less than one value is given a error prompt will show up.



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In the graphical analysis for bars it is always grouped by one field. By which field the grouping is made can be specified by the user through a corresponding mark behind the fields y-axis or x-axis. If the grouping is changed by an appropriate mark the names behind the corresponding buttons of the axes will change.

Example:

X-Y-Values... to group

Y-Axis	Direction	<input checked="" type="radio"/>
X-Axis	Duration	<input type="radio"/>

X-Y-Values... to group

X-Axis	Direction	<input type="radio"/>
Y-Axis	Duration	<input checked="" type="radio"/>

### Grouping of date fields:

If a date field is selected and marked for grouping you can give specifications for the resolution. The specifications can only be made if date field are dealt with.

The following resolutions are possible:

- Year
- Month
- Week
- Day
- Hour
- Minute

The adjustments for the resolution of the date fields can only be made if the field is marked and labeled for grouping otherwise the button is shown grayed out.

### Note:

Depending on the amount of data the analysis can take a few minutes or even longer.

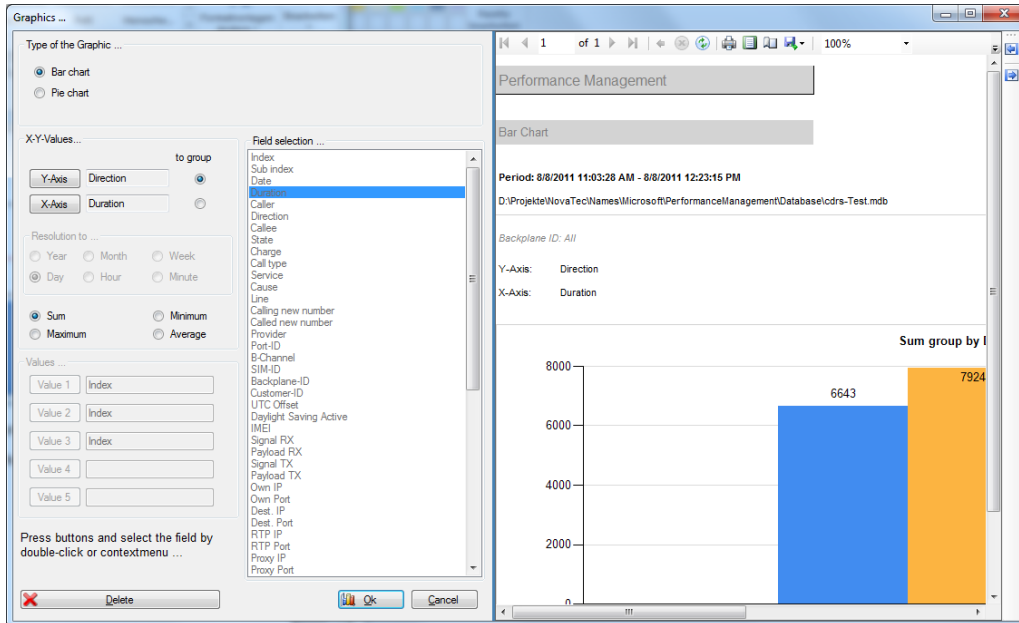


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### Example:

The following example generates an analysis with the fields direction and duration.

It is grouped by direction and the sum is calculated by duration.



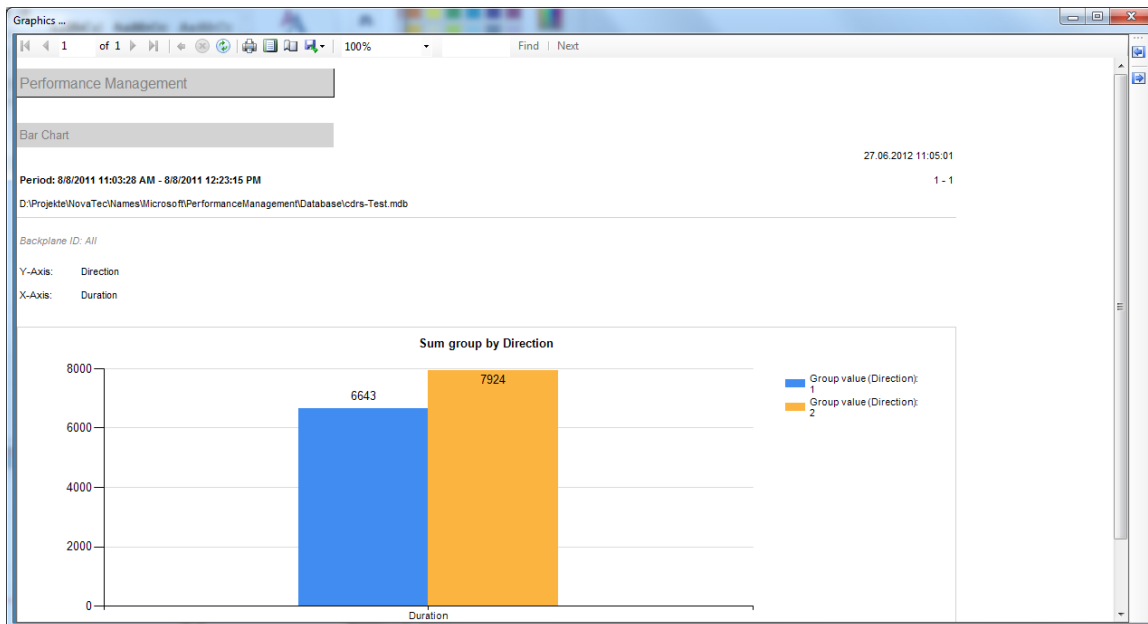
After the button „Ok“ has been pressed the creation of the analysis will be started.

The process can be stopped by pressing the button “Cancel” in the tool bar.



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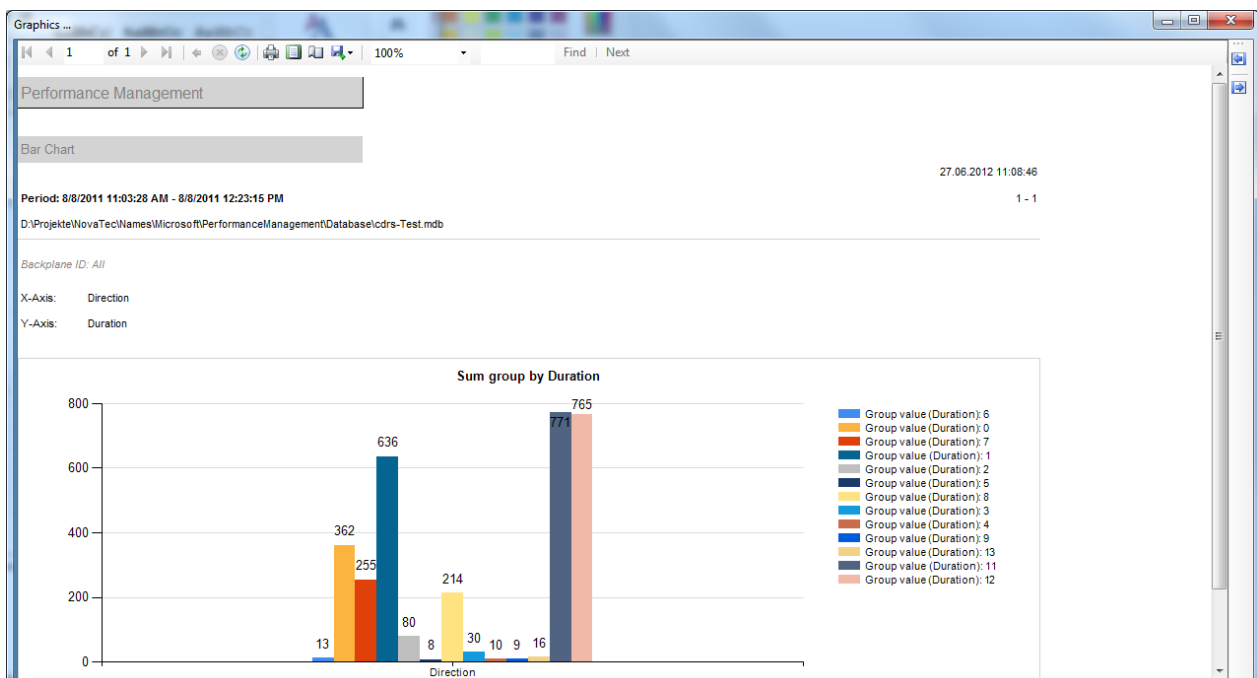
Output:



### Example 2:

The following example creates an analysis with the fields date and duration.

It is grouped by date and the resolution has been set by month. The sums have been calculated.

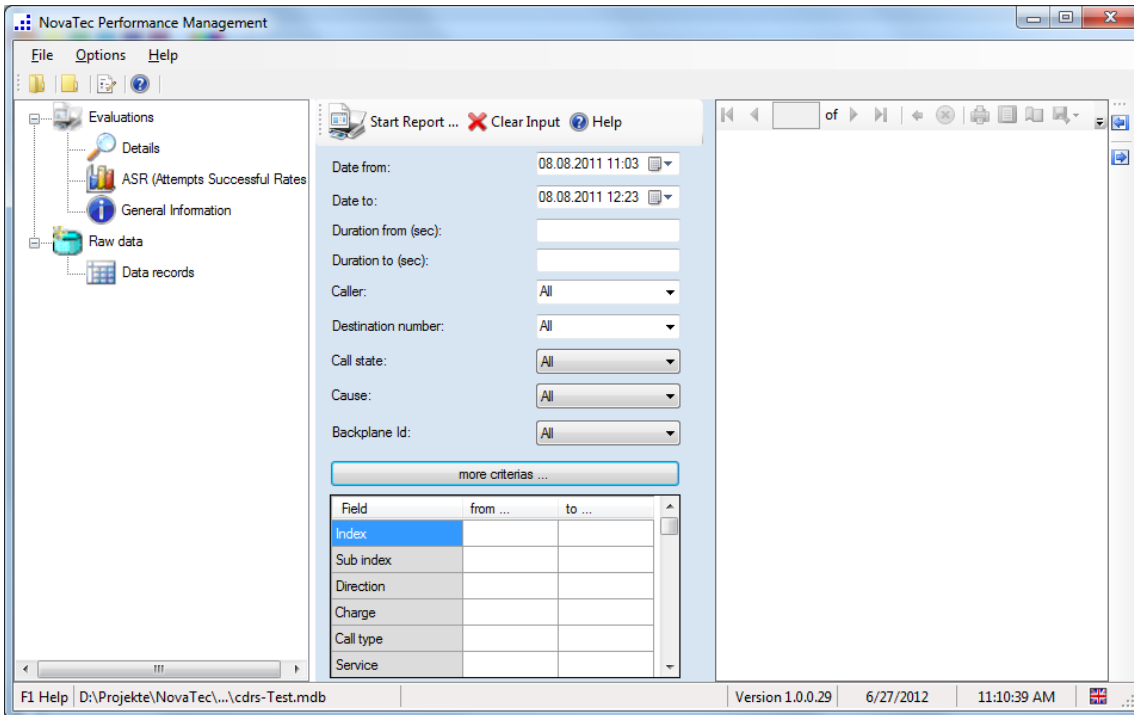




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### 6.3.2 ASR

ASR means *Attempts Successful Rate* and determines the ratio of successful and failed connections.

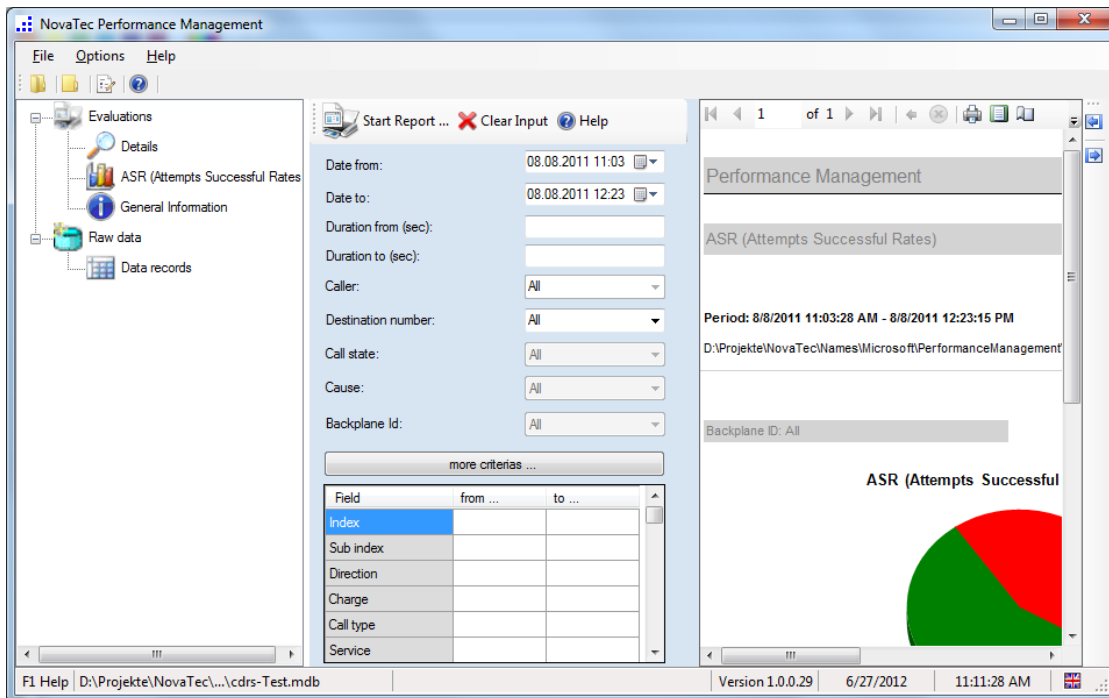


The window is set up like that of the details.

If required the relevant criteria can be entered. Subsequently the report can be started via the button **Start Report**.



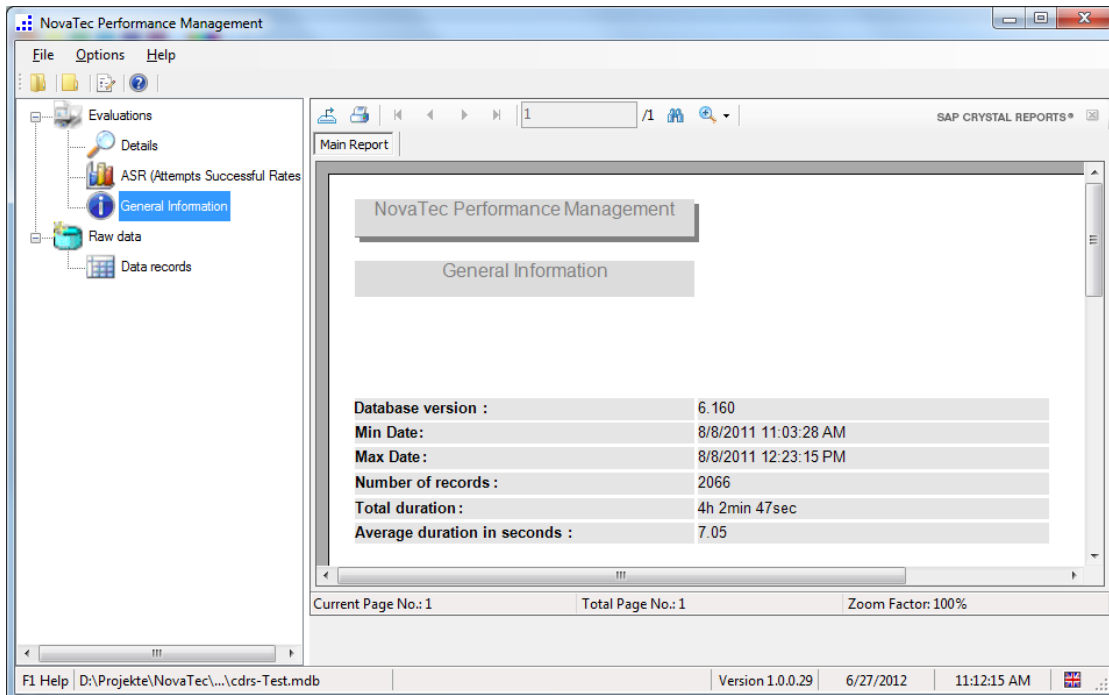
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The constructed graphic can be printed or exported.

### 6.3.3 General information

This function determines the information as given below.



The shown data can now be printed or exported.



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## 6.4 Raw data

### 6.4.1 Data sets

With this function the data sets are shown in raw version. No analysis can be run in this window.

The screenshot shows the NovaTec Performance Management application window. The left sidebar contains a tree view with the following items: Evaluations, Details, ASR (Attempts Successful Rates), General Information, Raw data (selected), and Data records. The main area displays a table with the following columns: Index, Sub index, Date, Duration, Caller, Direction, and Callee. The table contains 20 rows of data. The status bar at the bottom shows: F1 Help | D:\Projekte\NovaTec\...\cdrs-Test.mdb | Lines:2066 | Version 1.0.0.29 | 6/27/2012 | 11:12:49 AM

Index	Sub index	Date	Duration	Caller	Direction	Callee
30204	0	8/8/2011 11:03 ...	6	3***	1	***
30204	1	8/8/2011 11:03 ...	6	3***	2	***
30205	0	8/8/2011 11:04 ...	0	3***	1	***
30205	1	8/8/2011 11:04 ...	0	3***	2	***
30206	0	8/8/2011 11:04 ...	7	3***	1	03***
30206	1	8/8/2011 11:04 ...	7	3***	2	3***
30207	1	8/8/2011 11:04 ...	7	3***	2	3***
30207	0	8/8/2011 11:04 ...	7	3***	1	3***
30208	0	8/8/2011 11:04 ...	7	3***	1	03***
30208	1	8/8/2011 11:04 ...	7	3***	2	3***
30209	1	8/8/2011 11:04 ...	7	3***	2	3***
30209	0	8/8/2011 11:04 ...	7	3***	1	3***
30210	0	8/8/2011 11:05 ...	7	3***	1	03***
30210	1	8/8/2011 11:05 ...	7	3***	2	3***
30211	1	8/8/2011 11:04 ...	7	3***	2	3***
30211	0	8/8/2011 11:04 ...	7	3***	1	3***
30214	0	8/8/2011 11:05 ...	0	3***	1	***

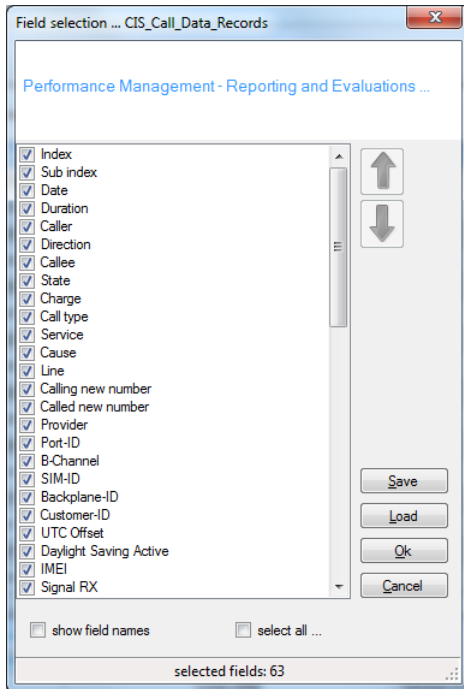
#### Shown field names:

The titles of the columns are the names of the data base fields.



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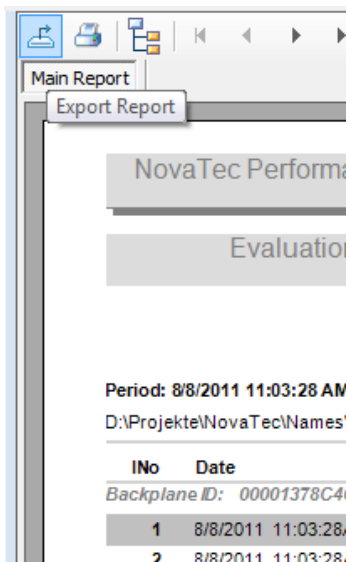
### Select fields:



Just as in the analysis you can select which fields are shown and in which order.

## 6.5 Export

After an analysis has been run the report can be exported.



You will find an icon (see above) for this purpose in the tool bar. This function is available after an analysis has been run.

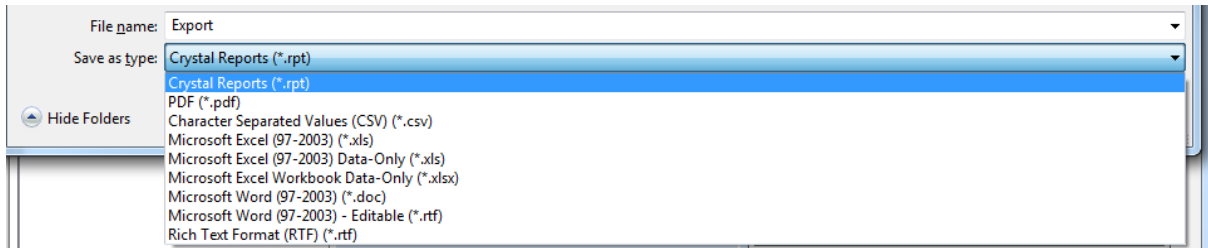




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After clicking onto the icon a dialogue opens up in which the storage location is chosen.

The following formats are supported:

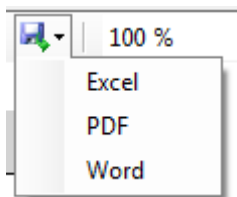


### 6.5.1 Export of graphics



Graphics can be exported with help of the button in the toolbar.

The following formats are supported:



## 6.6 Reports in general

Every report shows up as preview at first.

### 6.6.1 Printing and preview

The printing of reports is always done via the preview.

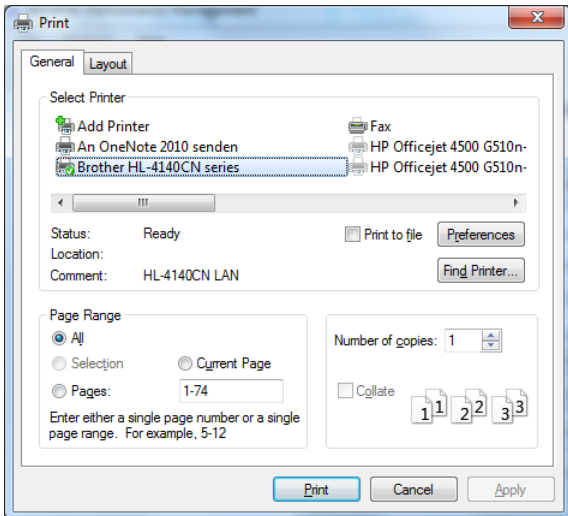
Example for analysis:



Operating the printer symbol leads to a print of the data on a printer.



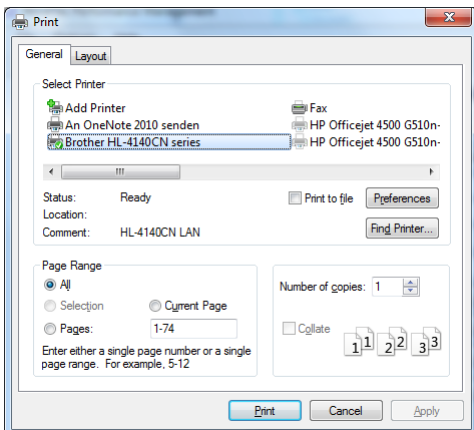
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Example for graphics/diagrams :



Operating the printer symbol leads to a print of the data on a printer.



## 6.6.2 Scrolling

By operating the arrow icons you scroll page wise forwards and backwards.



## 6.6.3 Searching

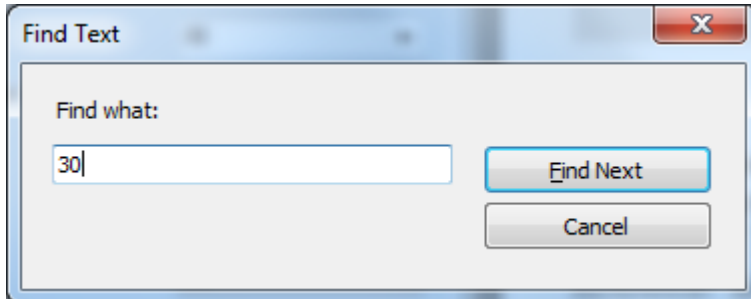
It is also possible to search in the shown data.





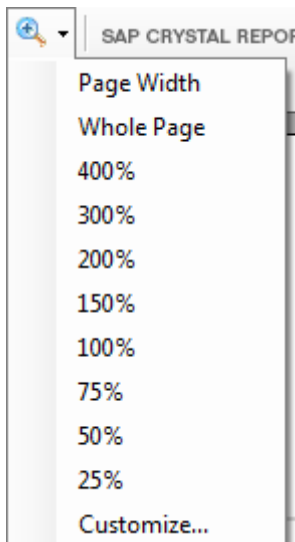
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When operating the field glasses symbol a dialogue to enter the search term will open. The search is operated in full text mode.



#### 6.6.4 Changing the size

The size can be changed via the drop down selection magnifier button.



Example 200% (see next page):



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The screenshot shows the NovaTec Performance Management application interface. On the left is a navigation tree with options like Evaluations, Details, ASR (Attempts Successful Rates), General Information, Raw data, and Data records. The main window displays a SAP Crystal Reports report for the period 8/8/2011 11:03:28 AM - 8/8/2011 12:23:15 PM. The report title is 'Main Report' and the data source is 'D:\Projekte\NovaTec\Names\Microsoft\PerformanceManagement\Database\cdrs-Test.mdb'. The report content includes a table with columns INo, Index, Sub index, Date, and Caller. Below the table, it shows 'Current Page No.: 1', 'Total Page No.: 74', and 'Zoom Factor: 200%'. The status bar at the bottom indicates 'F1 Help | D:\Projekte\NovaTec\Names\Microsoft\... \cdrs-Test.mdb | Version 1.0.0.29 | 6/27/2012 | 11:20:23 AM'.

INo	Index	Sub index	Date	Caller
<i>Backplane ID: 00001378C46B</i>				
1	30204	0	8/8/2011 11:03:28AM	3***
2	30204	1	8/8/2011 11:03:28AM	3***
3	30205	0	8/8/2011 11:04:02AM	3***
4	30205	1	8/8/2011 11:04:02AM	3***
5	30206	0	8/8/2011 11:04:40AM	3***
6	30206	1	8/8/2011 11:04:40AM	3***
7	30207	1	8/8/2011 11:04:40AM	3***

## 7 Annex

### 7.1 SAP Crystal Reports licensing

The application at hand is a client application and has been developed with Windows Visual Studio 2012.

License conditions and further information may be found via the following link:

<http://www.sdn.sap.com/irj/scn/index?rid=/library/uuid/70bd6328-4128-2d10-7882-d7b95418dbaa>

Furthermore the pdf behind this link is included in the software installation package. (CrystalReportsLicensing.pdf).



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Meaning of fields:

The following table describes the fields of the data base table.

Fieldname	Meaning
L_Nr	Number identifying the call leg. Each call can consist of more than one record in the table. Call legs regarding the same call attempt have the same number and the same date.
L_Index	Each record has an index which is unique for each record having the same number in "L_Nr".
D_Date	Date when the call was started.
L_Duration	Duration in seconds of the call. The duration shows how long the call was in its last state. This means if duration is 30 seconds and the call was alerting then it was alerting for 30 seconds. If the call was connected then the call was connected for 30 seconds.
T_Calpn	Party number (see L_Calltype).
L_Calltype	Shows the direction of the call:  A value of 1 means that the number in T_Cedpn called the number in T_Calpn. A value of 2 means that the number in T_Calpn called the number in T_Cedpn.
T_Cedpn	Party number (see L_Calltype).
L_Callstate	Represents the last state of the call before it was cleared:  1 – The call was in the dialing state 2 – The call was in the alerting state 3 – The call was in the connected state 4 – The call was in the hold state
L_AOC	Charge for that call if known.
L_VO	Interface type for this call leg. Possible values:  0 – Type unknown 1 – Subscriber Line 2 – Cross Connection Subscriber Line (Master) 3 – Trunk Line or Cross Connection Subscriber Line (Slave)



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L_Service	<p>Service of the call. The value represents the value of octet 4 of the High Layer Compatibility information element of the DSS1 protocol. The field has the value 0 if the service is unknown. Other values are:</p> <p>1 – Voice call</p> <p>4 – Fax Group 2/3</p> <p>33 – Fax Group 4 Class 1</p> <p>36 – Teletex (basic and mixed mode)</p> <p>40 – Teletex (basic and processable mode)</p> <p>49 – Teletex (basic mode)</p> <p>50 – Syntax based videotext</p> <p>51 – International videotext</p> <p>53 – Telex</p> <p>56 – Message Handling Systems (MHS)</p> <p>129 – OSI application</p>
L_Cause	Reason for the clearing of the call. It represents the cause value of the Cause information element of the DSS1 protocol. Possible values are listed in chapter “Fehlernummer (Cause)”.
L_LiBu	Internal number representing the used Trunk group for that record.
T_Calred	Only set if the call is redirected or forwarded; callnumber of the subscriber redirecting the call.
T_Cedred	Only set if the call is redirected or forwarded; callnumber of the partner the call is redirected to.
T_Provider	Number of the provider used for the call. Only set if the LCR module was used to route the call.
L_Port	Port-ID representing the physical interface for this record. You can see the Port-Ids of the channels of your system if you click on a LED of a channel in the Trace Info Client.
C_B_Channel	Number of the used B-Channel or 1 if it is a gsm interface.
C_SIM_ID	Sim Card ID (ICC-ID) if the record belongs to a gsm interface.
T_BackplaneID	The Backplane/System-ID of the target system from which this record has been read. Can be used to distinguish between target systems if CDRs from multiple target systems have been stored



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	in one database.
T_UUID	User-ID to which the CDRs are assigned.
S_UTC_Offset	Offset to the UTC-Time in minutes (Timezone).
B_DLS_Active	Flag Daylight saving time active?
T_IMEI	Only valid if the call leg belongs to a GSM port. Shows the IMEI of the GSM channel used to establish the call.
L_Signal_RX	Bytes received over IP for call (SIP) signalling.
L_Payload_RX	Bytes received over IP for the media stream (RTP).
L_Signal_TX	Bytes sent over IP for call (SIP) signalling.
L_Payload_TX	Bytes sent over IP for the media stream (RTP).
L_Own_IP	Own IP address
L_Own_Port	Own IP port
L_Destination_IP	Destination IP address
L_Destination_Port	Destination IP port
L_RTP_IP	RTP IP address
L_RTP_Port	RTP port
L_Proxy_IP	Proxy IP address
L_Proxy_Port	Proxy IP port
L_Proxy_Name	Proxy name
T_SIP_Caller	SIP URI of the caller
T_SIP_Partner	SIP URI of the callee
L_POD_Current	Actual Packet Output Delay at the end of the call leg.
L_POD_Max	Maximum Packet Output Delay measured for this call leg.
L_POD_Min	Minimum Packet Output Delay measured for this call leg.
L_Jitter_Current	Actual Jitter at the end of the call leg.
L_Jitter_Max	Maximum Jitter measured for this call leg.
L_Jitter_Min	Minimum Jitter measured for this call leg.
L_Bad_Packets_Discarded	Number of bad packets which have been discarded.



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L_Bad_Packets_Early	Number of early bad packets.
L_Bad_Packets_Late	Number of late bad packets.
L_Resyncs	Number if resyncs occurred during the call for this call leg.
L_T38_Flags	T.38 Flags
L_T38_Standards	T.38 Standards
L_T38_Lost_Packets	T.38, Number of lost packets
L_T38_Recovered_Packets	T.38, Number of recovered packets.
L_T38_Max_Lost_Pcks_Grp	T.38, Number of Max. Lost. Packets Grp.
L_T38_Stat_FTT_Count	
L_T38_Pages_Transfered	T.38, Number of transferred fax pages.
L_T38_Line_Breaks	T.38, Number of line breaks
L_T38_V21_FRM_Breaks	T.38, V.21 frame breaks
L_T38_ECM_FRM_Breaks	T.38, ECM breaks
L_T38_Major_Version	T.38, Major Version
L_T38_Minor_Version	T.38, Minor Version
L_Setup_Time_Alerting	Time between call setup and reception of an alerting indication measured in milliseconds.
L_Setup_Time_Connect	Time between call setup and reception of an connect indication measured in milliseconds.

## 7.2 Error numbers (Causes)

The following list specifies the error numbers (Causes):

- 1 = Unallocated (unassigned) number
- 2 = No route to specified transit network
- 3 = No route to destination
- 6 = Channel unacceptable
- 7 = Call awarded and being delivered in an established channel
- 16 = Normal call clearing
- 17 = User busy
- 18 = No user responding
- 19 = No answer from user (user alerted)
- 21 = Call rejected
- 22 = Number changed
- 26 = Non-selected user clearing
- 27 = Destination out of order





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- 28 = Invalid number format
- 29 = Facility rejected
- 30 = Response to STATUS ENQUIRY
- 31 = Normal, unspecified
- 34 = No circuit or channel available
- 38 = Network out of order
- 41 = Temporary failure
- 42 = Switching equipment congested
- 43 = Access information discarded
- 44 = Requested circuit or channel not available
- 47 = Resources unavailable, unspecified
- 49 = Quality of services unavailable
- 50 = Requested facility not subscribed
- 57 = Bearer capability not authorized
- 58 = Bearer capability momentary not available
- 63 = Service or option not available, unspecified
- 65 = Bearer capability not implemented
- 66 = Channel type not implemented
- 69 = Requested facility not implemented
- 70 = Only restricted digital information bearer capability is available
- 79 = Service or option not implemented, unspecified
- 81 = Invalid call reference value
- 82 = Identified channel does not exist
- 83 = A suspended call exists, but not for this call identity
- 84 = Call identity is in use
- 85 = No call suspended
- 86 = Call having the requested call identity has been cleared
- 88 = Incompatible destination
- 91 = Invalid transit network selection
- 95 = Invalid message, unspecified
- 96 = Mandatory information element is missing
- 97 = Message type non-existent or not implemented
- 98 = Message is not compatible with call state or message type is non-existent or not implemented
- 99 = Information element is non-existent or not implemented
- 100 = Invalid content in the information element
- 101 = Message not compatible with call state
- 102 = Timer run-off, call disconnected
- 111 = Protocol error, unspecified
- 127 = Inter working, unspecified



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