AZOTEL S04-03 v100 (2013-06)

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S04 - SIMPLer Operatons SIMPLer Flexible Reporting Guide



info@azotel.com

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1 Introduction

The purpose of this guide is to explain the procedure involved in generating reports from the SIMPLer databases using an external reporting package. In this guide, we will use the commercial reporting package – Crystal Reports – to illustrate how easily all manner of reports can be generated.

We recommend that you use this document in conjunction with Azotel document 10025 SIMPLer Database Structure, which documents SIMPLer's database structure.

While we only describe the procedure involved with generating external reports using Crystal Reports, the idea is the same if you want to use an alternative reporting package. For example, Jasper Reports is a free open source alternative that can be downloaded from <u>http://jasperforge.org</u>.

For addition assistance with Crystal Reports, please refer to the manual that was provided with the package. For assistance in regard to the SIMPLer database structure, please contact Azotel and we will be happy to help.

2 Initial Set Up

2.1 Install Crystal Reports

Install Crystal Reports and accept all default options.

2.2 Install PostgreSQL ODBC Driver (psqlODBC)

In order for Crystal Reports to pull data from the SIMPLer server, a special ODBC driver must be installed. The driver can be found at the following location:

psqlodbc 08 03 0200.zip	2008-05-04 16:50:54	4.1 MB
psqlodbc 08 03 0300.zip	2008-09-26 14:40:21	4.1 MB
psqlodbc 08 03 0400.zip	2008-11-07 15:19:01	4.1 MB
psqlodbc 08 04 0100.zip	2009-07-21 13:51:21	4.2 MB
psqlodbc 08 04 0200.zip	2009-12-26 15:44:31	4.2 MB
psqlodbc 09 00 0100.zip	2010-10-07 16:26:10	3.8 MB
	2010/10/10 10 10:00-04	1.7.40
psqlodbc 09 00 0101.zip	2010-10-16 15:28:54	3.8 MB

http://www.postgresql.org/ftp/odbc/versions/msi/

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Download the most recent version, choose a mirror to download from, unzip and execute the 'psqlodbc.msi' installer package.

Once installed, open up a command prompt and execute the following command:



A new window will appear displaying the data sources that are currently defined on the system. The psqlODBC driver can now be used to create a new data source for the SIMPLer server.

S ODBC Da	ta Source Ad	ministrato	r				×
User DSN	System DSN	File DSN	Drivers	Tracing	Connection	Pooling	About
<u>U</u> ser Data	Sources:						
Name		Driver				A	<u>d</u> d
dBASE F	iles s	Microsoft Ad Microsoft Ed	ccess dB/ ccel Drive	ASE Drive r (* xls, * xl	r (*.dbf, *.ndx sx, *xlsm, *x	<u>R</u> e	move
MS Acce	ss Database	Microsoft Ad	ccess Driv	ver (*.mdb,	,*.accdb)	Con	figure
•					•		
	An ODBC Use the indicated and can only I	er data sourd data provide be used on	ce stores er. A Use the currer	informatior er data sou nt machine	n about how to Irce is only vis	o conne ible to y	ct to bu,
	(OK		ancel	Apply		Help

Click the "Add..." button.

Create New Data Source		×
	Select a driver for which you want to set up a dat Name Microsoft Text Driver (*.txt; *.csv) Microsoft Text-Treiber (*.txt; *.csv) Microsoft Visual FoxPro Driver Microsoft Visual FoxPro-Treiber Postgre SQL ANSI Postgre SQL Unicode SQL Server	a source.
	< Back Finish	Cancel

Scroll down the list to find the "PostgreSQL Unicode" driver, highlight it, and click "Finish". A new dialog box will pop up allowing the user to define the data-source. The details need here can be obtained by your Azotel contact.

PostgreSQL Uni	code ODBC Driver (p	osqlODBC) Setup		×
Data Source	SIMPLer Zone 1	Description	SIMPLer Zone 1	
Database	zone1_wib	SSL Mode	disable	-
Server	84.203.220.160	Port	5432	
User Name		Password		
Options Datasource	Global		Save (Test Cancel

The Server IP should be 10.8.0.1 as access to the DB is only allowed over the secure VPN tunnel. Once the details have been entered, click the "Test" button to check the connection with SIMPLer.



If the connection has been successful, click "Save". The new data-source should be listed now, similar to below.

ODBC Data Source A	dministrator
User DSN System DSN	File DSN Drivers Tracing Connection Pooling About
User Data Sources:	
Name	Driver Add
dBASE Files Excel Files MS Access Database SIMPLer Zone 1	Microsoft Access dBASE Driver (*.dbf, *.ndx Microsoft Excel Driver (*.xls, *.xlsm, *.x Microsoft Access Driver (*.mdb, *.accdb) PostgreSQL Unicode
•	4
An ODBC Us the indicated and can only	ser data source stores information about how to connect to data provider. A User data source is only visible to you, y be used on the current machine.
	OK Cancel Apply Help

Finally, click "OK".

2.3 Configure Crystal Reports

Open Crystal Reports. The user will be presented with the "Start Page".



To configure a connection to the SIMPLer server, click on "File" and choose "Log On or Off Server" from the dropdown menu.

<u>F</u> ile	<u>V</u> iew <u>H</u> elp
	New 🕨
È	Open Ctrl+O
	Close
	Op <u>t</u> ions
	Log On or Off Server
	E <u>x</u> it

Data Explorer	X
Create New Connection	Log On
⊡ Legacy Exchange ⊡ Mailbox Admin	Add to Favorites
	Delete Favorite
Data Explorer Browse through the folders to find your servers. To	
log on to a server, click on its plus icon or press Log On. When you are finished, press Close.	Options
	Help
	Close

Click on the + sign beside "Create New Connection" and then click on the + beside "ODBC (RDO)".

Data Source Selection Choose a data source fr button	rom the list or open a file dsn from the browse
Select Data Source:	۲
Data Source Name:	dBASE Files Excel Files MS Access Database SIMPLer Zone 1 Visio Database Samples Xtreme Sample Database 11
Find File DSN:	0
File DSN:	
Enter Connection String:	\odot
Connection String:	
Enter Connection String: Connection String:	

Choose the Data Source that was created in section 2.2, and click "Next >".

ODBC (RDO)	×
Connection Information Provide necessary inf	orn formation to log on to the chosen data source
Server:	SIMPLer Zone 1
User ID:	
Password:	
< Back Net	at > Finish Cancel Help

Enter the database login credentials as provided by your Azotel Contact, and click "Finish".

💾 Data Explorer	X
Access/Excel (DAO)	Log On
🖅 🧰 Database Files	
🖅 🧰 Exchange 5.5 Message Tracking Log 📩	Log Off
🗄 💼 Exchange Message Tracking Log 💡	
🗈 🧰 Legacy Exchange	
🖅 🧰 Mailbox Admin	Add to Favorites
DDBC (RDO)	
🍾 Make New Connection	Delete Favorite
B SIMPLer Zone 1	
🖅 🛄 Olap 🔻	
۰ III • • • • • • • • • • • • • • • • •	
Data Explorer Browse through the folders to find your servers. To log on to a server, click on its plus icon or press Log On. When you are finished, press Close.	Options
	nap
	Close

The new data source will appear in the Data Explorer window and is now available to Crystal Reports.

3 Creating a Report

The following section provides a walk through of how to create a simple report in Crystal Reports. The report we will generate will show how much revenue has been obtained per product.

3.1 Gathering the Data

From anywhere in Crystal Reports, click on "File", go to "New" and then choose "Standard Report". This will open up the Standard Report Wizard.



Data Choose the data you want to report on.		
wailable Data Sources:	Selected Tables:	
Current Connections Current Connections Current Connections Current Command Current Co		Cancel

Choose the appropriate data source such as "SIMPLer Zone 1" in the screenshot above either under "Current Connections" or "ODBC (RDO)".Clicking on the + sign beside the entry will bring up the list of tables in this database. However, we are going to create our report by inputting SQL directly in to Crystal Reports. To do this, double click on the "Add Command" item underneath "SIMPLer Zone 1".

💾 Add Command To Report	
Enter SQL query in the box below.	Parameter List
SELECT product, sum(amount_nett) FROM invoice_position GROUP BY product	Create Modify Remove
	-
	OK Cancel

Enter in the SQL query as it appears in the screenshot above i.e. SELECT product, sum(amount_nett) FROM invoice_position GROUP BY product. This query will retrieve the sum of the amounts of each invoice item grouped by the product it refers to. Click OK to confirm.

Data		
Choose the data you want to report on.		-1
Available Data Sources:	Selected Tables:	
Database Files	SIMPLer Zone 1	
Exchange 5.5 Message Tracking Log	i Command	
Exchange Message Tracking Log	>	
Legacy Exchange		
Mailbox Admin		
Make New Connection	<	
	<<	
attachments		
- Duckets		
🖭 ccmap		
🖭 coregateway		
🖭 cpe		
🖭 creditcard		
🖭 credits		
🖭 custom_fields		
4 III +		

The custom command has appeared now in the "Selected Tables" area. Click "Next >" to continue.

Next, we need to select the database columns that will be displayed on the report. Since we only SELECTed two columns from the database, we only have two to choose from. We want to display both the product's description and the total revenue from it so copy both fields to the right hand side by clicking the ">>" button.

Standard Report Creation Wizard		x
Fields Choose the information to display on the report.		
Available Fields:	Fields to Display:	+ +
product sum	Command.product Command.sum	
	< <<	
Browse Data Find Field		
< Back	Next > Finish Cancel	Help

We don't need to give any more details to generate this report so click "Finish".

We will now be presented with a preview of the report.

01/11/2010		
product Home Broadband 10Mb	<u>sum</u> 57 84	
Standard Router	28.92	
Activation Fee	82.64	
Home Broadband 5Mb	82.62	

It doesn't look very impressive just now but we can start making it look more professional very easily. Crystal Reports comes with some templates to help improve the appearance of its reports. To use a template, go to the "Report" menu and click "Template Expert..".

<u>R</u> ep	port <u>W</u> indow <u>H</u> elp	
8	Select Expert	Template Expert
	Selection Formulas	
<u>×1</u>	Formula <u>W</u> orkshop	Apply a new template
	Alerts	Available Templates Preview
	Report <u>B</u> ursting Indexes	No Template
圐	Section Expert	Confidential Underlay
E	Group Expert	Corporate (Blue)
*	Group Sor <u>t</u> Expert	Corporate (Green)
\$ 2	Record Sort Expert	Double-Sided Page Headers/Footers
	XML Expert	Form (Maroon)
s.	Template Expert	Gray Scale
æ	OLAP Design Wizard	High Contrast
	Hierarchical Grouping Options	Browse
	Show Current Parameter <u>V</u> alues	
	Check Dependencies	Undo the current template
S	Refresh Report Data F5	○ Re-apply the last template
	Set <u>P</u> rint Date and Time Performa <u>n</u> ce Information	OK Cancel Help

Choose a template from the list and click OK.

Design Preview	×	i 😍 🛛 H 🔺 🚺	of 1
····· Report 10		I I I I I I I I I I I I I I I I I I I	1.1
	PHa · · · · · · · · · · · · · · · · · · ·	BUSINESS OBJECTS' Report Description:	
	D	product Home Broadband 1 sum 57.84 product Standard Router sum 28.92	
	D	product Activation Fee sum 82.64 product Home Broadband 5 sum 82.62	

The next thing we can do is fix up the labels. Click on the "Design" tab to make changes to the layout of the report. By changing the fonts, and moving the label to the "Page Header b" section, we can improve the look and end up with something similar to the screenshot below.

Report Header	•	
Page Header a		Report Title BUSINESS OBJECTS'
		Product Revenue Report Comments
Page Header b	:	·
	Ξ	Product Description Total Revenue
Details	:	product sum
Report Footer	<u>. 1</u>	

Switching back to "Preview" mode gives us the following.

			BUSINESS OBJECTS
Product Revenue			
		Total Devenue	
	Product Description	Total Revenue	
	Product Description Home Broadband 10M	57.84	
	<u>Product Description</u> Home Broadband 10M Standard Router	10tal Revenue 57.84 28.92	
	Product Description Home Broadband 10M Standard Router Activation Fee	57.84 28.92 82.64	

3.2 Adding Graphics

In Crystal Reports it is very easy to add graphs and chart to your report. This next section will describe how to present a pie-chart of the data we have gathered.

Firstly, to use the "Product Description" field in our chart, we need to make it usable. Crystal Reports doesn't allow columns of type "memo" to be used in some cases. To get around this restriction, we can create a formula field that will return the column that we need. To do this, right click on "Formula Fields" in the "Field Explorer" window, and click "New..". Enter a name for this – we can just call it "product". The "Formula Workshop" window will appear.

Save and close Save Save and close Save Save and close Save <	📱 Formula Workshop - Formula Edito	or - product	x
*** ** <t< td=""><td>📓 Save and close 🛛 Save</td><td>□ - 1 📳 🖀 ≯ ? 🔄 🏷 × 🐃 👰 🗳 🗳</td><td></td></t<>	📓 Save and close 🛛 Save	□ - 1 📳 🖀 ≯ ? 🔄 🏷 × 🐃 👰 🗳 🗳	
Report Custom Functions Repository Custom Functions Command product Selection Fomulas Formatting Fomulas Command .product } Command .product } Command .product }] 💖 🗠 🗠 🐺 👪 👍 🕅	🖌 🎘 🖄 🔚 🚰 🚰 Crystal Syntax 🔹 Exceptions For Nulls 🔹 🖊	
{Command.product}	Report Custom Functions Formula Fields Selection Formulas Formatting Formulas	Image: Simpler Zone 1 (ODBC (f	
		{Command.product}	*

Double click on "Command.product" which can be found under "Report Fields". This will tell Crystal Reports to return this value for this field. Click "Save and close". Now we can create our chart. Click on the "Insert" menu and select "Chart..".

Ins	ert Form <u>a</u> t	<u>D</u> atabase	
ab	Te <u>x</u> t Object		
Σ	Summary		
	<u>F</u> ield Heading	1	
(8	<u>G</u> roup		
1	OLAP Grid		
	Cross-Tab		
€ €	Sub <u>r</u> eport		
\$	<u>L</u> ine		
2	Box		
22	Picture		
<u>الله</u>	C <u>h</u> art		
2	М <u>а</u> р		
	OLE Object		
	<u>T</u> emplate Fie	ld Object	

Crystal Reports will then allow the user, using an orange box, to choose the position of the chart. Place the chart in a suitable location such as underneath the data. The "Chart Expert" window will now appear.

Chart Expert	X
Type Data Axes	Options Color Highlight Text
Layout	Data Available fields: For each record
Advanced Group	Report Fields Command.sum SIMPLer Zone 1 (ODBC (RDC Command Show value(s): Command.sum Command.sum
OLAP	III Don't summarize Browse Set Summary Operation
·	OK Cancel Help

From here we can tell Crystal Reports using the rule: for each record of **product**, show the value of **sum**. Next we can choose which type of chart we want to display.

hart Expert					×
Type Data Options Color Highlig	pht Text				
Choose your chart type:	Pie chart	Multiple pie chart	Proportional multiple pie chart		
M Stock I Numeric Axis a Gauge I Gantt ▼ Funnel I Histogram	Pie chart. Illustrate	s the contribution of co	omponent values to	a total.	
	Use depth effec	: ۲	ОК	`ancel	Help

For the purposes of this example, we will choose a pie chart, with depth effect. Click OK to finalise the chart settings. Our report now appears like this:



Of course, the chart is much more customisable that just this. We could, add a more descriptive title, change the colours of the pie slices, add a border etc.

4 More Advanced Reporting

4.1 Revenue per Site Example

As a more complicated example, we will create a report that will:

- List each site defined in SIMPLer
- Display how many customers each site has
- Display how much revenue is generated from each site

Having examined the database schema, we can see that four tables are needed to generate this information: site, customers, subscription, and products.

We will approach this problem is three stages. First we will create a query to get a list of the sites and the number of customers associated with that site:

SELECT

siteid,

COUNT (c.*) AS number of customers

FROM

```
site s,
```

```
customers c
```

```
WHERE s.siteid = c.siteid
```

GROUP BY s.siteid;

Query 4.1 – Site IDs vs. Number of Customers

Next, we will create a query to get a list of the sites and the revenue generated by that site:

SELECT

```
siteid,
SUM (p.productprice) AS revenue
```

FROM

```
site s,
customers c,
subscription su,
products p
```

WHERE

```
s.siteid = c.siteid AND
c.customerid = su.customerid AND
su.productid = p.productid
```

```
GROUP BY s.siteid;
```

Query 4.2 – Site IDs vs. Revenue

Finally, we can combine the two queries as follows:

```
SELECT (
      SELECT sitename FROM site WHERE siteid = a.siteid) AS sitename,
      a.number of customers,
      b.revenue
FROM (
      SELECT
            siteid,
            COUNT (c.*) AS number of customers
      FROM site s, customers c
      WHERE s.siteid = c.siteid
      GROUP BY s.siteid
) a, (
      SELECT
            siteid,
            SUM (p.productprice) AS revenue
      FROM
            site s,
            customers c,
            subscription su,
            products p
      WHERE
            s.siteid = c.siteid AND
            c.customerid = su.customerid AND
            su.productid = p.productid
      GROUP BY s.siteid
) b
WHERE a.siteid = b.siteid;
                   Query 4.3 – Site Names vs. Number of Customers & Revenue
```

Create a new report using the "Standard Report Wizard", select the correct data source, and add a new command using the combined SQL query (4.3) above.

Modify Command	X
Enter SQL query in the box below.	Parameter List
SELECT (SELECT sitename FROM site WHERE siteid = a.siteid) AS sitename, a.number_of_customers, b.revenue FROM (SELECT s.siteid, COUNT (c.*) AS number_of_customers FROM customers c, site s WHERE s.siteid = c.siteid GROUP BY s.siteid) a, (SELECT s.siteid, SUM (p.productprice) AS revenue FROM site s, customers c, subscription su, products p WHERE s.siteid = c.siteid AND c.customerid = su.customerid AND su.productid = p.productid GROUP BY s.siteid) b WHERE a.siteid = b.siteid;	Create Modify Remove
	OK Cancel

Add all available fields to the report, i.e. sitename, number_of_customers and revenue. No other set up for this report is need so just click "Finish".

09/11/2010			
<u>sitename</u> Caesar's Point	number of customers 2.00	revenue 57.84	
Bull Mountain Apple Hill	1.00 3.00	41.31 82.62	

Note that we are again presented with a very basic report. The first two things that stand out are that the "number_of_customers" column is displayed as a decimal and the "revenue" column has no currency sign to signify that it is a monetary value. We can fix this by clicking on the "Design" tab, right clicking on the "number_of_customers" or "revenue" entry in the "Details" section, and choosing "Format Field".

Design Preview		: 🕲 🛛) H
		····1····2····3····4··· + 5····8····7····8····9· + 10····11····12····13+ ···14····15····18····17····18····19··	·20
Report Header	•		
Page Header	+ 1 (1 - 1	Print Date	
Details	Ð	sitename pumber of customers revenue	
Report Footer	•	Field: Command.number_of_customers	
Page Footer	1	👂 Forma <u>t</u> Field	
		🥑 Format <u>P</u> ainter	
		Highlighting Expert	
		🔯 Browse Field Data	
		Select Expert	
		Insert	
		Move +	
		Size and Position	
		K Cut	
		Be Copy	
		🔁 Paste	
		Delete	

In the case of the "number_of_customers" field, choose the "(1,123)" style. For the "revenue", simply tick the "Display Currency Symbol" checkbox. Crystal Reports will automatically use the system default currency, but this can be overridden by clicking on the "Customize.." button.

Common Border Font Number Hyper Style System Default Number Format -1123 -1,123 -1,123 -1,123,00 -1,123,000 -1,123,0000 -1,123,0000 -1,123,0000 -1,123,0000 -1,123,0000 (1,123) (1,123) -1,123,0000	link Currency symbol (system default):
Style System Default Number Format -1123 -1,123 -1123.00 -1,123.000 -1,123.0000 -1,123.0000 (1,123) (1,123)	Currency symbol (system default): Display Currency Symbol Fixed
System Default Number Format -1123 -1,123 -1,123,00 -1,123,000 -1,123,0000 (1,123,0000 (1,123)	Currency symbol (system default):
-1,123 -1123.00 -1,123.000 -1,123.0000 -1,123.0000 (1123) (1,123)	Display Currency Symbol
-1,123.00 -1123.0000 -1,123.0000 (1123) (1.123)	Display Currency Symbol Fixed
-1,123.0000 (1123) (1,123)	O Fixed
(1.73)	Floating
(1123.00)	
(1123.000) (1.123.0000)	
Custom Style	
Customize	
Sample:	
	€-55,555.56
	DK Cancel Help

Return to the "Preview" mode to ensure that the changes were successful. Next, we will use a template as a quick way to add some colour and some headings to the report. In this walkthrough we will use the "Corporate (Green)" template.

Go back in to "Design" mode and play around with the section sizes until they are appropriate. You will notice that there are no column headings now, but we can easily add them by right clicking on the column entry and choosing Insert > Field Heading.

This will place a heading in the Page Header section, but we must also copy it to the Report Header section. Finally if we change the font size and colour of the headings, we can create something like this:

		BUSINESS OBJECTS
Printed Date: 10/11/2010	Last modified: 09/11/2010	
Report Description:		
Site	# Customers	Revenue
Site Caesar's Point	# Customers	Revenue €57.84
Site Caesar's Point Bull Mountain	# Customers 2	Revenue €57.84 €41.31

An obvious extra useful column here would be how much revenue is generated per customer for each site. We can easily add this to out report. Right click on the "Formula Fields" item in the "Field Explorer" and click "New..".

Field Explorer 🛛 📮 🗙	
Image: Second system Image: Second system Image: Second system Image: Second system	Formula Name Name: Revenue per Customer OK Cancel
	🗎 Formula Workshop - Formula Editor - Revenue per Customer
	🛃 Save and close 📱 Save □ 👻 陰 📾 ≯ ?] 🇞 × 🦿 🐵 # #
	🛛 🎋 🗠 🖾 🦓 🌾 🌾 🌾 🌾 🧏 🕎 📲 🏝 Crystal Syntax 🔹 Exceptions For Nulls 🔹 🖊
	Report Custom Functions Report Custom Functions Report Reds Formula Fields Selection Formulas Selection Formulas Simple Formulas Simple Formulas Selection Formulas Simple Formulas
	{Command.revenue} / {Command.number_of_customers}
E Field Explorer Report Explorer	

Choose a name for the formula like 'Revenue per Customer'. The Formula Workshop windows will appear next. Enter the formula you wish to use – in this case it will be:

{Command.revenue} / {Command.number of customers}

You can use the sub windows to enter this formula automatically. To do this, double click on "Command.revenue", then double click on "Divide (x / y)", and finally double click on "Command.number_of_customers". Click "Save and close" to finalise your changes.

"Revenue per Customer" now appears under Formula Fields. When in Design Mode, we can drag this field in to our report. If we do this, add a heading similar to the other headings, and add a currency symbol as before, we will get something like this:

Design Preview		: 🕉 🖄 M
	····1···2····3····4··· 🕁 ···6····7···8····9· 🕁 10····11····12····13	15 - 16 - 17 - 18 - 18 - 19 - 1⊖20 -
Report Header a	Report Title	BUSINESS OBJECTS
	Printed Date: {Print Date} Last modified: {Modification Date}	
Report Header b	Report Description: Report Comments	;
Report Header c		
	Site # Customers Revenue	Revenue per Customer
Page Header	Report Title Printed Date: {Print Date} Last modified: {Modification Date}	
	N sitename number of customers revenue	Revenue per Customer
Details	sitenamejnumber_of_custome	Revenue per Customer
Report Footer	· ////////////////////////////////////	<u>/////////////////////////////////////</u>
Page Footer		Page N of M

Which is "Preview" mode looks like this:

			PUCINIECE ODIECT
			DUSINESS OBJECT:
Printed Date: 10/11/2010	Last modified: 10/11/2010		
Report Description:			
			Povenue no
Site	# Customers	Revenue	Revenue per Customer
Site Caesar's Point	# Customers	Revenue €57.84	Revenue pe Custome €28.92
Site Caesar's Point Bull Mountain	# Customers 2	Revenue €57.84 €41.31	Revenue per Customer €28.92 €41.3*

Now, in order to visualise the data, we will add a couple of graphs. First we need to add a formula field for "Site" just like we did for the previous report. Once that is done, we can create the graph. Click on the "Insert" menu, followed by "Chart..". Select an appropriate place on the report to put the chart.

hart Expert	×
Type Data Axe	s Options Color Highlight Text
Layout Advanced Group	Data Available fields: Command number_of_customer Command revenue X1 Site Site Site SimpLer Zone 1 (ODBC (RDC) SimpLer Zone 1 (ODBC (RDC) Show value(s): Command revenue Command Command
OLAP	

For the first graph we will create a bar chart of revenue per site. Use the chart expert as shown above to create this graph. Click OK, and repeat the steps to insert a graph. We will also create a graph of number of customers per site.

Chart Expert	· · · · · · · · · · · · · · · · · · ·	×
Type Data Axes	Options Color Highlight Text Data	
Advanced Group Cross-Tab	Available fields:	For each record @Site Order TopN Show value(s): Command.number_of_customers
OLAP	III Browse	Don't summarize Set Summary Operation
		OK Cancel Help

For the second graph, just replace "Command.revenue" with "Command.number_of_customers". Click OK. Back in preview mode, we can resize the graphs and place them side by side. We can also remove the legend as it is not really necessary in this case. To do this, right click on a graph, and choose the "Chart Options.." item. Go to the "Legend" tab and untick the Show Legend checkbox.



While in the Chart Options window, we can also fix up our titles. Go to the Titles tab, and add whatever titles are appropriate for your graph.

Chart Options	×
Appearance Titles Data Labels Legend Gridline	Axes Multi-Axes
Revenue Per Site	Revenue Per Site
General Point Bull Mourian Apple Hil Bites Azotel Technologies Limited	Subtitle: Footnote: Azotel Technologies Limited Group Title: Sites Data Title: Revenue (in euros)
	OK Cancel Help

Click OK to confirm your changes. One final thing we can do to this report is to give it a description. Go to the Design tab and double click on where it says Report Description. This will allow you to edit this text box. Fill in the description and click off the text box to save the changes.



4.2 Flexible Dates

Suppose we want to generate a report of all customers who have joined in the last month. The Crystal Report tool needed for this is the "Select Expert". Here are the steps involved to do this.

Open up the Standard Report Creation Wizard.

When choosing the data that you wish to report on, select only the "customers" table.

Choose the customer fields that you wish to display. In this example we will just choose "name" and "start_date".

Choose a template if required, and click Finish.

		BUSINESS OBJECTS
Stephen Cooper	03/11/2010	
Thom as Bale	03/11/2010	
Boris Wilson	03/11/2010	
Lisa Lynch	01/11/2010	
Peter Jones	01/11/2010	
Dean Murphy	01/11/2010	

To view a list of customers who only joined during a certain period, click on the "Report" menu and choose "Select Expert" from the drop down list.

Choose Field		×
Fields:		
🖃 🔒 Report Fields	*	ОК
customers.startdate	=	
Erre SIMPLer Zone 1 (ODBC (RDO))	-	Cancel
		Help
customerid		
sageid		Browse
address		
fay		
	-	
L		

Choose the "startdate" column and click OK.

Select Expert	×			
customers.startdate <new></new>				
is between	• New			
and	Delete			
09/11/2010	▼ Browse			
OK Cancel Help Show Formula >>>				

Choose the criteria for the "startdate" column. In the screenshot above we have chosen the customer's start date to be between the 2nd of November and the 9th of November. Click OK to confirm.

A dialog box will appear asking do we want to refresh the data from the database.

Change Ir	n Record Selection Formula		
?	Use saved data from: 16:08 ?		
	Use Saved Data	Refresh Data	

Clicking on the "Refresh Data" button we cause the query to be executed on the server again, while clicking "Use Saved Data" will not.

We can now see that the returned records have been filtered to just include those that meet our criteria.



Annex A: References

A.1 Document References

10025 SIMPLer Database Structure

A.2 Link References

http://www.azotel.com – Azotel Website

http://crystalreports.com/ - SAP Crystal Reports Website

http://jasperforge.org/ - Jasper Reports Website

http://www.crystalreportsbook.com/forum/ - Useful Forum for Crystal Reports

Annex B: Definitions & Abbreviations

B.1 Definitions

B.2 Abbreviations

SIMPLer Subscriber Information Management Platform from Azotel

Annex C: Change History

Change history							
Date	Author(s)	Subject/Comment	Old	New			
10/11/10	keithbro	Initial Version	n/a	001			
18/06/13	Paul	Changed doc's title, copyright and correct year, doc num on all pages	001	100			