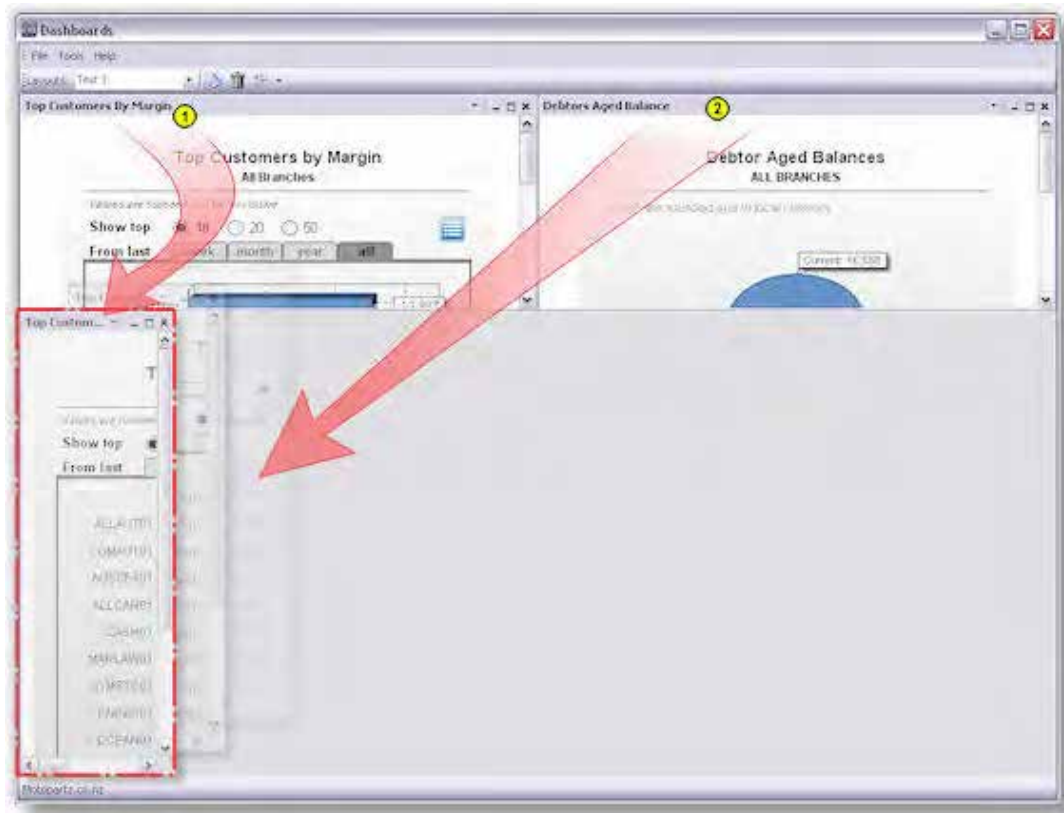


Two Dashboard Views Side-by-Side

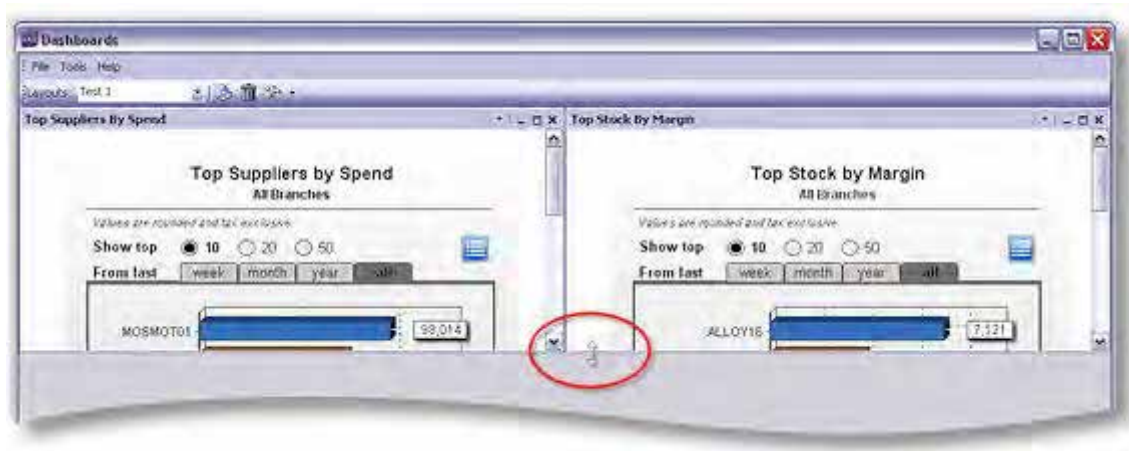
In this case, You should try to drag one to the left or right side of the screen (this will dock to either 3 or 4 in the image above), then drag the second one to the centre dock (which will be grey space beside the previous one you moved, if nothing else is docked there).



Then move the borders between the two views to suit your requirements:

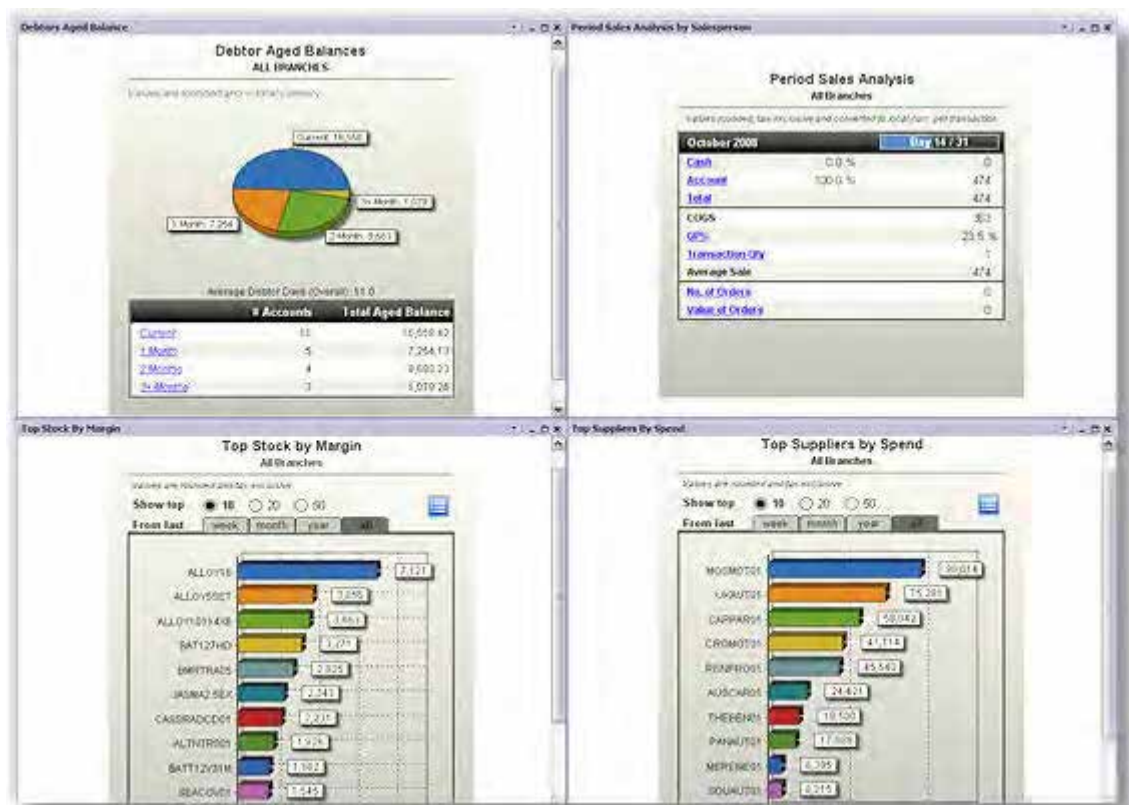


Note: If you end up docking these to the top (or bottom) instead of the side, you'll end up with something like the picture below (which is the default anyway). You can move the slider down manually so they fill the whole Dashboard, but the entire Dashboard window will not resize very well, and you may have problems adding views later if you decide to. If you need to move the slider to fill the space, you've probably docked it in the wrong place.



One Dashboard View in Each Corner

While this can be done several ways, two options are: have two side-by-side in the top dock, one left (or right) and one centre; or just have two docked left (or right) and two centre (because left/right/centre docks stack on top of each other) as shown below. How you have it docked may affect how the sliders between the views work.



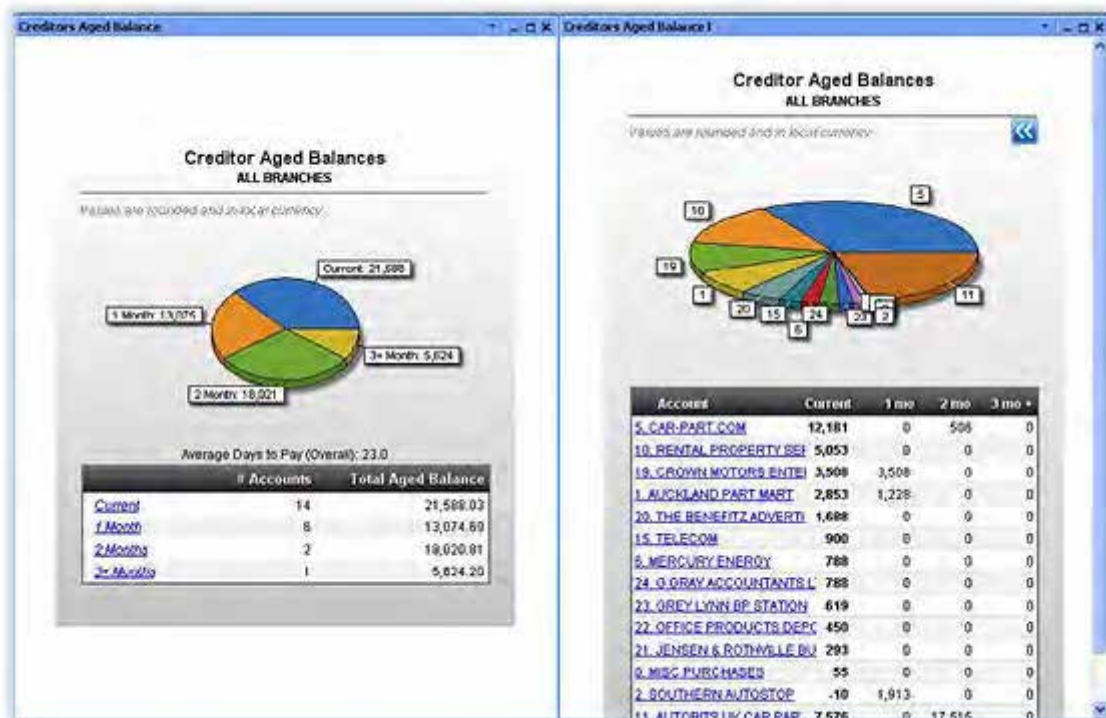
Standard EXO Dashboard Views

Dashboard List

MYOB EXO Business comes with a range of Dashboard views, listed below.

Dashboard Name	File Name
Creditors Aged Balances (see page 118)	DashCRAgedBals.CLR
Debtors Aged Balances (see page 118)	DashDRAgedBals.CLR
Due/Overdue CR Accounts (see page 119)	DashDueOverdueCRAccs.CLR
Due/Overdue Creditor Accounts by Currency (see page 120)	DashDueOverdueCRAccsByCurr.CLR
Due/Overdue DR Accounts (see page 120)	DashDueOverdueDRAccs.CLR
Due/Overdue Debtor Accounts by Currency (see page 120)	DashDueOverdueDRAccsByCurr.CLR
Daily Sales Analysis by Branch (see page 121)	DashSalesAnalysisDailyByBranch.CLR
Daily Sales Analysis by Salesperson (see page 121)	DashSalesAnalysisDailyBySalesperson.CLR
Period Sales Analysis by Branch (see page 122)	DashSalesAnalysisPeriodByBranch.CLR
Period Sales Analysis by Primary Stock Group (see page 122)	DashSalesAnalysisPeriodByPriStkGrp.CLR
Period Sales Analysis by Secondary Stock Group (see page 122)	DashSalesAnalysisPeriodBySecStkGrp.CLR
Period Sales Analysis by Salesperson (see page 122)	DashSalesAnalysisPeriodBySalesperson.CLR
Top Customers by Margin (see page 123)	DashTopCustByMargin.CLR
Top Customers by Revenue (see page 124)	DashTopCustByRevenue.CLR
Top Stock by Margin (see page 124)	DashTopStockByMargin.CLR
Top Supplier by Spend (see page 125)	DashTopStockByMargin.CLR

Creditors Aged Balances

DashCRAgedBals.CLR**Description**

This Dashboard view was designed to show similar details to the old Management Reports Creditors Aged Balances graph, but with more detail. The initial view (left view above) shows the total outstanding amounts, divided into Current, 1 Month, 2 Month and 3 Month buckets.

Features

Figures are shown both graphically and in a table view. You can either click on one of the blue links or on a pie segment to drill into the details for that bucket (right view above). The details will list the accounts sorted in descending order by amount (note that amounts owing in other buckets are also shown for those accounts). You may then click on one of the account names or a pie segment to open the MYOB EXO Business Creditor Account screen for the selected account.

In addition, once a day the "Average Days to Pay" value is calculated when this report is run by averaging the number of days it takes for invoices to be paid across all Creditors.

Debtors Aged Balances

DashDRAGEDBals.CLR

Identical to the Creditors Aged Balances (see page 118) but for Debtor accounts.

Due/Overdue CR Accounts

DashDueOverdueCRAccs.CLR

The screenshot displays the 'Due/Overdue CR Accounts' dashboard. The left pane shows a list of creditor accounts with columns for Account, Due date, Invoice #, and Payable Amt. The right pane shows a detailed view of a selected account, including account contact information, payment type, terms, and a table of payment history.

Due/Overdue CR Accounts - AUCKLAND

Due within 16 days / Overdue

Account	Due date	Invoice #	Payable Amt.
0. AUSDE CAR PARTS	13.08.2008	400044	0,046.01
11. AUTORTS UN CAR PARTS	11.08.2008	6464654	18,062.66
5. CAR PART COM	11.08.2008	32132133	662.78
0. MOCO PURCHASES	09.07.2008	11111	56.24
15. CROWN MOTORS ENTERPRISES	11.07.2008	6564654	4,561.50
1. AUCKLAND PART MART	01.08.2008	100225	977.28
1. AUCKLAND PART MART	01.08.2008	123466	1,102.27
1. AUCKLAND PART MART	01.08.2008	14654	787.05
10. RENTAL PROPERTY SERVICES	01.08.2008	346546	5,062.50
9. MERCURY ENERGY	01.08.2008	79654654	787.50
21. JENSEN & ROTHVILLE BUILDING	01.08.2008	967967	292.50
20. THE BENEFITZ ADVERTISING AND	01.08.2008	58466	1,687.50
22. GREY LYNAP STATION	01.08.2008	646466	618.75
22. OFFICE PRODUCTS DEPOT	01.08.2008	876565	450.00
24. O GRAY ACCOUNTANTS LTD	01.08.2008	24000	787.50
Total:			41,842.82

Due/Overdue CR Accounts - AUCKLAND

Due within 16 days / Overdue

Account	Due date	Invoice #	Payable Amt.
0. AUSDE CAR PARTS	13.08.2008	400044	0,046.01
11. AUTORTS UN CAR PARTS	11.08.2008	6464654	18,062.66

Account Phone: 4415-1260 7440
Account Fax: 4415-1260 7440
Show Account

Primary Contact
Contact Phone
Contact Email

Payment Type: CREDIT
Terms: 1/10 Net 30

Current	1 Month	2 Months	3+ Months	Balance
-2,508.00	0.00	5,780.05	0.00	3,280.05

Alert
Notes
(last 200 characters)

Account	Due date	Invoice #	Payable Amt.
5. CAR PART COM	11.08.2008	32132133	662.78
0. MOCO PURCHASES	09.07.2008	11111	56.24
15. CROWN MOTORS ENTERPRISES	11.07.2008	6564654	4,561.50
1. AUCKLAND PART MART	01.08.2008	100225	977.28
1. AUCKLAND PART MART	01.08.2008	123466	1,102.27
1. AUCKLAND PART MART	01.08.2008	14654	787.05
10. RENTAL PROPERTY SERVICES	01.08.2008	346546	5,062.50
9. MERCURY ENERGY	01.08.2008	79654654	787.50
21. JENSEN & ROTHVILLE BUILDING	01.08.2008	967967	292.50
20. THE BENEFITZ ADVERTISING AND	01.08.2008	58466	1,687.50

Description

This Dashboard view was designed to list Creditor invoices that are either overdue (date is shown in red), or due within a certain number of days (configurable by parameter).

Features

Overdue invoices are highlighted in red. Total due in the selected period is shown at the bottom.

Accounts can be drilled into to open a detail section (see right view above) which lists account contact details, payment type, terms, aged balances, account alerts (including stop credit) and the last 200 characters entered in the account notes.

Click **Show Account** to open the MYOB EXO Business Creditor Account screen on the selected Creditor, or click again on the Creditor name to hide these details.

Due/Overdue Creditor Accounts by Currency

DashDueOverdueCRAccsByCurr.CLR

Due / Overdue CR Accounts by Currency
AUCKLAND

Due within 15 days / Over due

Account	Due date	Invoice #	Payable Amt.
NZD - NEW ZEALAND			
6. MISC PURCHASES	01-07-2008	11111	56.24
1. AUCKLAND PART MART	01-09-2008	109225	977.28
1. AUCKLAND PART MART	01-08-2008	123488	1,102.27
1. AUCKLAND PART MART	01-08-2008	14854	787.05
10. AUCKLAND PROPERTY SERVICES	01-08-2008	348548	5,092.50
6. MISC PURCHASES	01-08-2008	79854854	787.50
21. JENNIFER & RUTHVILLE BUILDING	01-08-2008	987897	292.50
20. BENEFITZ ADVERTISING AND CO	01-08-2008	58488	1,587.50
23. GUY GREY LYNN	01-08-2008	8484888	618.75
22. OFFICE PRODUCTS DEPOT	01-08-2008	878885	450.00
24. S. ORAY ACCOUNTANTS LTD	01-08-2008	24000	787.50
2. SOUTHERN AUTOTOP	01-08-2008	1324833	958.25
2. SOUTHERN AUTOTOP	01-08-2008	1548331	958.25
3. PANNURE AUTO TRADE SUPPLIER	01-08-2008	300321	104.29
3. PANNURE AUTO TRADE SUPPLIER	01-08-2008	300184	194.29
4. TWP AUTOMOTIVE	01-08-2008	401100	2,216.04
4. TWP AUTOMOTIVE	01-08-2008	103218	2,278.64
1. AUCKLAND PART MART	01-08-2008		814.14
1. AUCKLAND PART MART	01-08-2008	31348	814.14
Total:			28,291.71
AUD - AUSTRALIA			
6. MISC PURCHASES	11-07-2008	48844	8,048.01
Total:			8,048.01
USD - UNITED STATES			
USD Currency Converted			
5. AMERICAN AUTOMOTIVE	11-08-2008	32132133	602.78
Account Phone:	1303-447-5387		
Account Fax:	1303-447-3388		
Total: 602.78			
GBP - UNITED KINGDOM			
GBP Currency Converted			
11. AUTOTOP UK CAR PARTS	11-08-2008	6484854	18,062.66
Total:			18,062.66
SGD - SINGAPORE			
SGD Currency Converted			
12. CROWN MOTOR ENTERPRISES	11-07-2008	6584854	4,561.50
Total:			4,561.50
Grand Total:			49,624.66

Description

Same as Due/Overdue CR Accounts (see page 119) but separates the invoices into each currency total (converted to local currency).

Due/Overdue DR Accounts

DashDueOverdueDRAccs.CLR

Description

Identical to DashDueOverdueCRAccs.CLR (see page 119) above but for Debtor accounts.

Due/Overdue Debtor Accounts by Currency

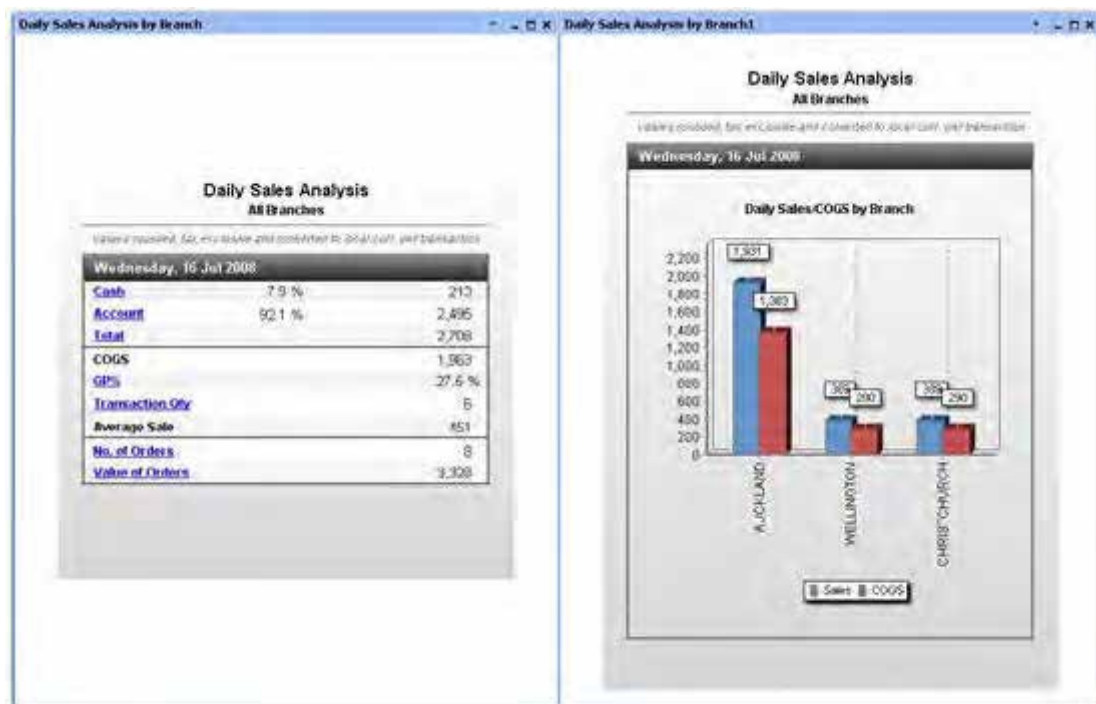
DashDueOverdueDRAccsByCurr.CLR

Description

Same as DashDueOverdueCRAccsByCurr.CLR (see page 120) but for Debtor accounts.

Daily Sales Analysis by Branch

DashSalesAnalysisDailyByBranch.CLR



Description

This Dashboard view (similar to other sales analysis views), initially shows sales totals for all branches, but allows drilling in to compare totals for each branch.

Features

Drilling from the "Cash" or "Account" links takes you to a chart showing the relative cash/account sales for each branch. Drilling into "Total" shows total sales for each branch, along with the corresponding Cost of Goods Sold (COGS). "GP%" drills to a chart of Gross Profit by branch. "Transaction Qty", "No. of Orders" and "Value of Orders" drills to each respective chart grouped by branch. Notice that an Order and a Transaction are different. An order is a customer order that was placed, a transaction is a sale that was processed. All figures are for the current date (shown at the top).

Daily Sales Analysis by Salesperson

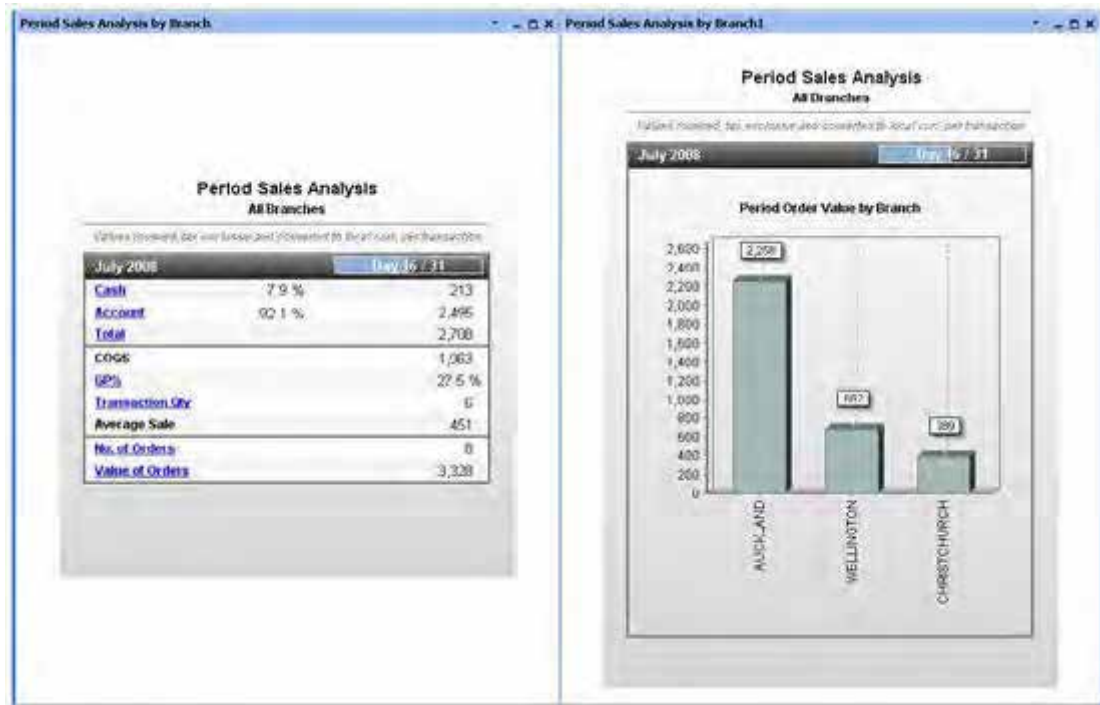
DashSalesAnalysisDailyBySalesperson.CLR

Description

Same as Daily Sales Analysis by Branch (see page 121) but drilling into figures will show totals per salesperson, and a filter parameter can be applied to show only salespeople from a given branch.

Period Sales Analysis by Branch

DashSalesAnalysisPeriodByBranch.CLR



Description

Same as Daily Sales Analysis by Branch (see page 121), but instead of only showing a day's worth of transactions it shows the entire period's transactions and orders to date. Also notice the period progress bar at the top. All other features are the same.

Period Sales Analysis by Primary Stock Group

DashSalesAnalysisPeriodByPriStkGrp.CLR

Description

Same as Period Sales Analysis by Branch (see page 122) but shows drilled graphs by Primary Stock Group instead of branch.

Period Sales Analysis by Secondary Stock Group

DashSalesAnalysisPeriodBySecStkGrp.CLR

Description

Same as Period Sales Analysis by Primary Stock Group (see page 122) but shows drilled graphs by Secondary Stock Group instead of branch.

Period Sales Analysis by Salesperson

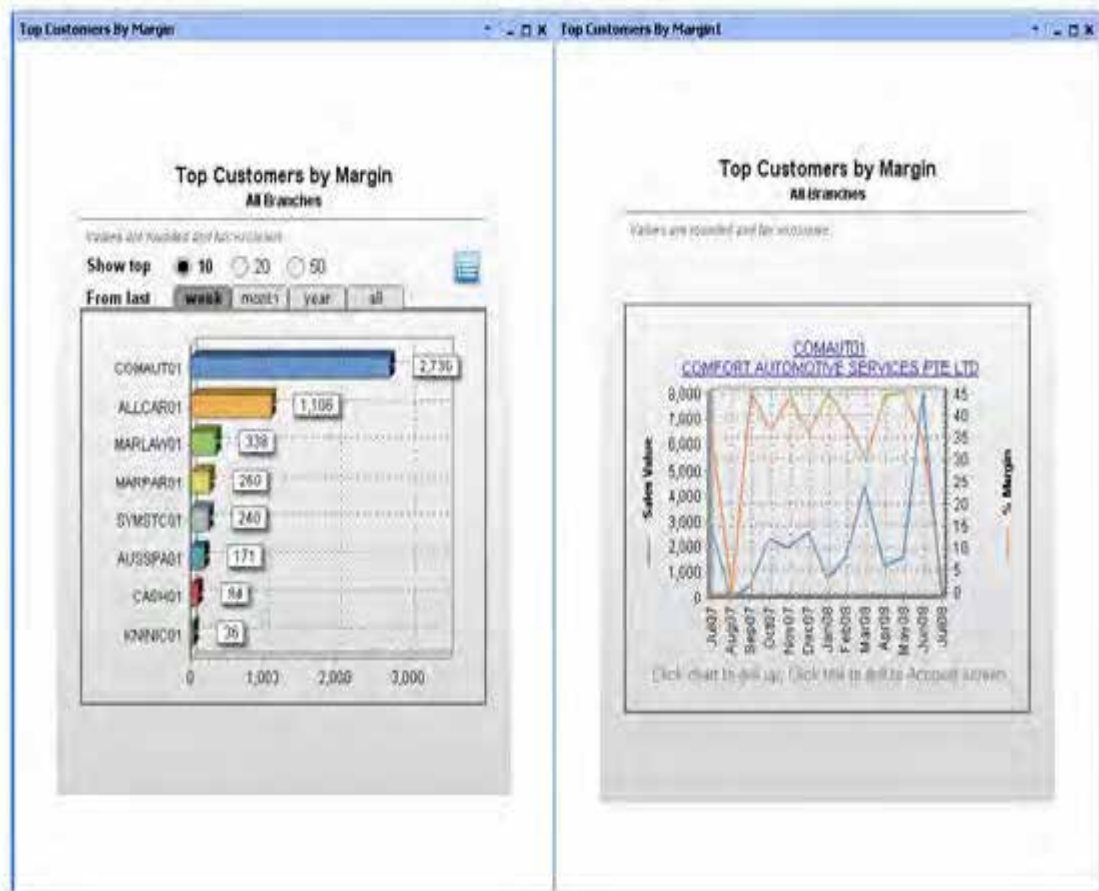
DashSalesAnalysisPeriodBySalesperson.CLR

Description

Same as Daily Sales Analysis by Branch (see page 121) but shows drilled graphs by Salesperson instead of branch.

Top Customers by Margin

DashTopCustByMargin.CLR



Description

This Dashboard view (a "top" view) shows the top customers by the total amount of margin on products they purchased. This gives an idea of the most profitable customers, which may not be the same as the customers who buy the most or buy the most often.

Features

All "top" views allow you to show the top 10, 20 or 50 records fitting the criteria. You can then view the statistics for the last week, month, year or overall. All views also allow you to view as a list or a chart (blue icon at the top right of the left view above).

Click on a bar on the chart or an item in the list to "drill" to the history of the customer over the previous 13 periods, showing both sales value and percent margin. 13 periods allows you to compare the current figures with the same period last year (if you are based on 12 periods per financial year). This view shows the distribution of the sales over the periods.

Note: The Week/Month/Year/All filters have no effect on this chart, and are therefore hidden.

Click on the chart to go back or click on the title (customer name) to open the MYOB EXO Business Debtor Account window on the selected account.

Top Customers by Revenue

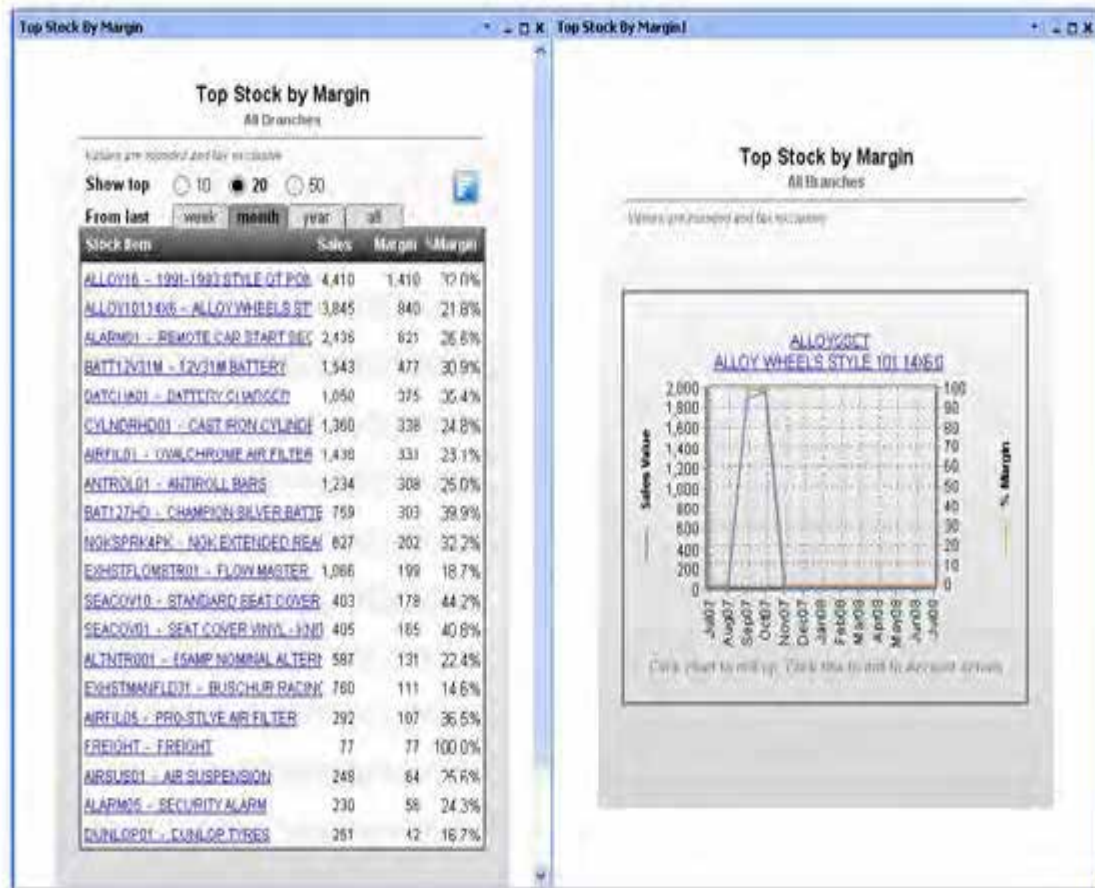
DashTopCustByRevenue.CLR

Description

Same as Top Customers by Margin (see page 123) but chart shows sales figures instead of margin.

Top Stock by Margin

DashTopStockByMargin.CLR

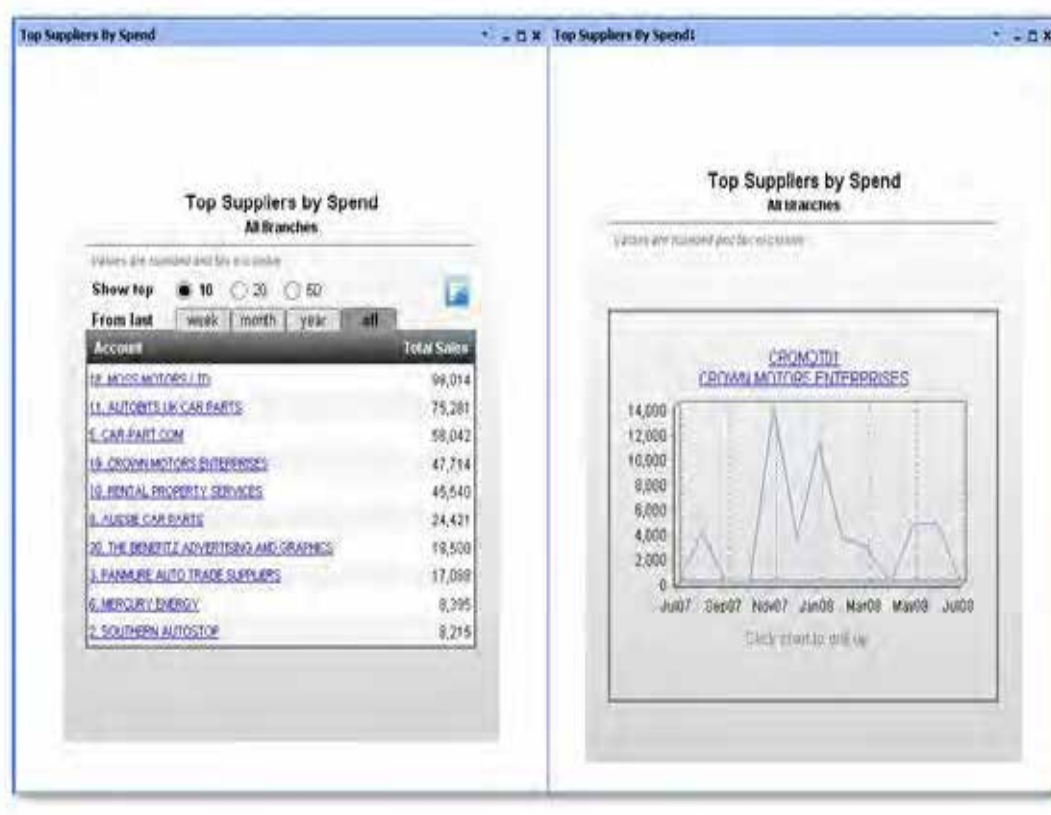


Description

Same as Top Customers by Revenue (see page 124) above but shows the details for stock items.

Top Supplier by Spend

DashTopSuppliersBySpend.CLR



Description

Same as Top Customers by Margin (see page 123) but for suppliers, based on the total purchases made through each supplier in the given period. Only the total purchase amount is shown.

Job Costing Dashboards

Dashboard List

A range of Dashboard views specific to the MYOB EXO Business Job Costing module are available.

Dashboard Name	File Name
Jobs Nearing Completion (see page 126)	DashTopJobsNearingCompletion.CLR
Due/Overdue Jobs (see page 127)	DashDueOverdueJobs.CLR
Job Alerts (see page 128)	DashJobAlerts.CLR
Job Status (see page 129)	DashJobStatus.CLR
Top X Jobs by Margin (see page 130)	DashTopJobsByMargin.CLR
Top X Jobs by Revenue (see page 131)	DashTopJobsByRevenue.CLR
Serviceable Units Due for Service (see page 132)	DashServiceableUnitsDue.CLR

Jobs Nearing Completion

DashTopJobsNearingCompletion.CLR

Jobs Nearing Completion
Jobs due within : 100 days

Show top ☒ 10 ☐ 20 ☐ 50

Job	Status	Due Date
MORE SERVICING	IN PROGRESS	19/11/2008

Description

This report will show a list of the top 10, 20 or 50 jobs ordered by Due Date with the most recent first. Clicking on the job will open the EXO Job Costing detail screen on the selected record.

Features

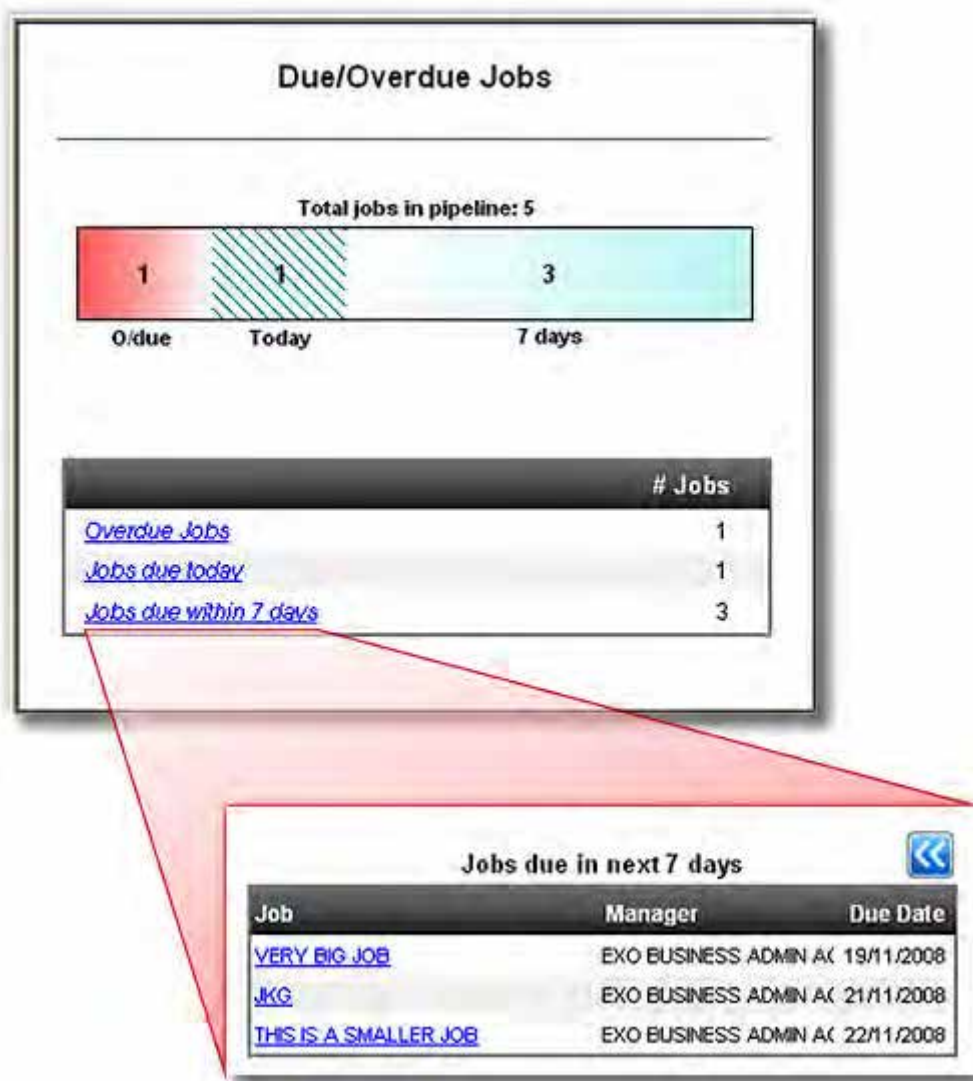
The report has two parameters:

- Show top (to select the default "top" count, 10, 20, or 50)
- Jobs due within how many days.

The data is filtered to show only those jobs with a Due Date that falls between today's date and (today's date + days parameter) inclusive.

Due/Overdue Jobs

DashDueOverdueJobs.CLR

**Description**

This Dashboard shows a "pipeline" view of jobs where the jobs fall into one of three categories: overdue, due today, or due within a specified number of days. The number of jobs is shown in the graphical representation as well as a list view. Either the pipeline or the list items can be clicked on to drill down and see the jobs in that category. Clicking again on the drilled list item takes the user to the EXO Business Job Costing detail screen.

Features










Provides one parameter: "Show jobs due within how many days". This parameter allows the effective length of the pipeline to be changed.

Note: Overdue jobs and jobs with a due date today will always be shown in the pipeline.

The pipeline will be shown at the top of the screen in the main view as well as the drill-down view.

Job Alerts

DashJobAlerts.CLR

Job Alerts					
Job	Title / Account				
		Quote Expired	Quote Exceeded	Over Budget	Overdue
<u>1</u>	VERY BIG JOB 5. D & C PANELBEATERS				
<u>SMALLER</u>	THIS IS A SMALLER JOB 0. CASH SALES				
<u>5</u>	DESIGN NEW CAR 0. CASH SALES				
<u>6</u>	MORE SERVICING 0. CASH SALES				
<u>7</u>	JKG 0. CASH SALES				
<u>ABC</u>	DEF 0. CASH SALES				
<u>9</u>	QWERTY 0. CASH SALES				

Description

This Dashboard is a simple indicator view of job alerts. It lists all incomplete and unarchived jobs that have one of four system alerts against them: Quote Expired, Quote Price Exceeded, Over Budget, and Overdue. From this view you can drill directly to the EXO Business Job Costing detail or to the Debtor Account detail screens for each job.

Features

There are no parameters for this report, all active jobs with alerts will be shown. Clear indicators show jobs that need attention at a glance.

Job Status

DashJobStatus.CLR

Job Status			
Date range: Within a 2 week window			
Job Range: 1 - 8			
Status	#Jobs		
CANCELLED	0		
FINISHED	0		
IN PROGRESS	3		
INVOICE READY	0		
NEW JOB	2		
QUOTE	1		

Status	#Jobs		
CANCELLED	0		
FINISHED	0		
IN PROGRESS	JobCountLbl		
	Job	Title / Account	Due Date
1		VERY BIG JOB	17/11/2008
		5. D & C PANELBEATERS	
4		REPAIR	20/11/2008
		0. CASH SALES	
SMALLER		THIS IS A SMALLER JOB	23/11/2008
		0. CASH SALES	
INVOICE READY	JobCountLbl		
NEW JOB	JobCountLbl		
QUOTE	JobCountLbl		

Description

This report lists all the job statuses that have been set up for Job Costing with a count of the number of jobs that are assigned to that category within the date and job ranges that are specified. Clicking on the status will drill down to the list of jobs that make up that status, and clicking on the job code or account will open the EXO Business Job Costing or Debtor details screens respectively.

Features

There are four parameters: From Job, To Job, Job Status and a due date range. From/To Job allows you to specify a range of job numbers to monitor. Job Status allows you to specify which job statuses are shown in the list. The due date range has the following options:

- Today - only shows jobs that are due today (any time).
- This week - shows all jobs due any time in the current week (Sun-Sat).

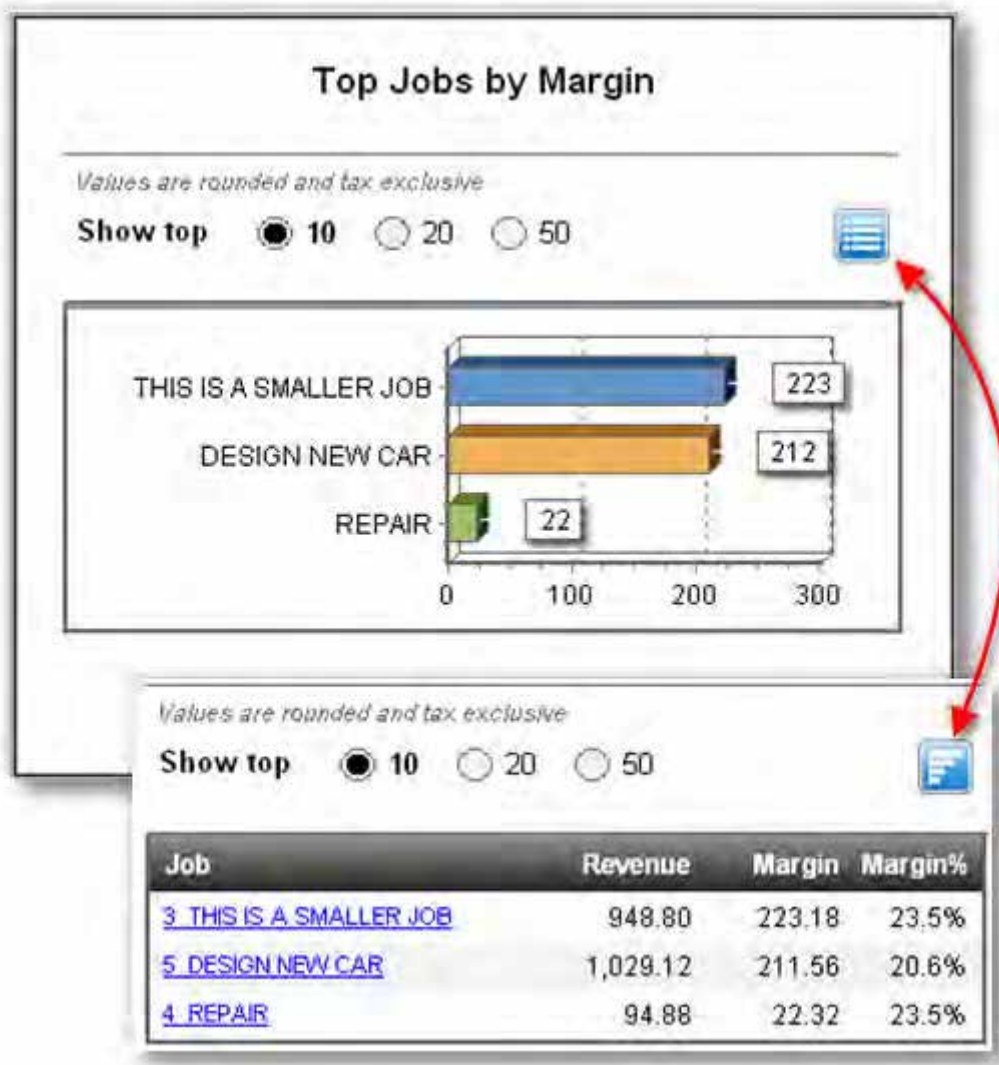
MYOB EXO Clarity

- Within a 2 week window - shows all jobs that fall in a sliding 2-week window. This is defined as the 7 full days leading up to and including today, followed by the next 7 full days. For example, if today is the 20th the due date range will be from the 14th through to the 27th inclusive (14 days).
- This month - shows all jobs due any time in the current month.

Within a 2 month window - shows all jobs that fall in a sliding 2-month window. This is defined as one month prior to tomorrow's date through to one month after today's date inclusive. For example, if today is 16 December the due date range will be from the 17 November through to 16 January of the following year inclusive (the two full months being 17/11 - 16/12 and 17/12 - 16/01).

Top X Jobs by Margin

DashTopJobsByMargin.CLR



Description

This Dashboard lists the top 10, 20 or 50 jobs by the margin of the invoiced portion of the job, either in a chart view or a list vie.

Features

There is only a single parameter for this report, which determines whether the user sees 10, 20 or 50 items by default. The chart is sorted by margin which is calculated in descending order based on the invoiced amounts against each job. For this reason it will only show jobs that have something invoiced against them. The only other filtering that is applied is to remove any jobs with a status that has the "Archived" flag set. This view is not intended to necessarily provide a view of current jobs, just any jobs that are not archived.

Top X Jobs by Revenue

DashTopJobsByRevenue.CLR



Description

This report is identical to the Top Jobs by Margin (see page 130) Dashboard report, except that it shows the jobs sorted in descending order by overall (invoiced) revenue.

Features

The same features apply to this report as the Top Jobs by Margin (see page 130) Dashboard report.

Serviceable Units Due for Service

DashServiceableUnitsDue.CLR

Serviceable Units Due for Service

Due today or overdue

SU# / Code	Account / Description	Service Due Date
1 MYCODE	ALL CAR PARTS THIS IS A SERVICEABLE UNIT - BLAH	07/11/2008
1 MYCODE	ALL CAR PARTS THIS IS A SERVICEABLE UNIT - BLAH	12/11/2008
2 5	HOWE PANELBEATERS	14/11/2008
2 5	HOWE PANELBEATERS	15/11/2008
4 132311		

Stock Item CASSRADCD01 [Show S.U.](#)
 AM/FM/CD FULL LOGIC CASSETTE PL

Serial 00000065698 **Last Contact**

Class Cars

Make / Model Toyota Corolla

SU Contact

Contact Phone

Contact Email

DR Account ALL CAR PARTS

Account Phone 09-476 1430 [Show DR Account](#)

Account Fax 09-476 1431

Alert

Notes ...set for them to be sent out and invoiced at the begining of each month.
 (last 200 chars) The standing order will begin in July. If they feel they don't require they will ring prior to the end of the last month.

Description

This Dashboard lists all of the servicing that is overdue, due today or due within a certain specified period. Overdue servicing is indicated by a red due date. By clicking on the line you can drill down to see details on the serviceable unit, the SU Contact and the associated company (Debtor, Creditor or Non Account) as well as the last 200 characters of notes against the account. By clicking **Show S.U.** you can be taken directly to the Serviceable Units detail screen for more information. You can also click on the Show Account link (different for Debtors, Creditors and Non Accounts) to be taken to the account details screen.

Features

There are two parameters for this report:

- Include services due within how many days - allows you to specify how far into the future you want to see scheduled serviceable units. SU's will always show when due today or overdue.
- Exclude overdue servicing - allows you to exclude overdue service jobs.

Dashboard Design

What Constitutes a Good Dashboard View?

It is important that when designing a Dashboard you consider usability as your primary concern. By following a few simple design concepts, you can make Dashboards that are effective, functional and have a great look. Creating Dashboard designs is becoming an art – and already many books are dedicated to it.

It seems that everyone wants a Dashboard of some kind on their product – new applications come out every day sporting a new look Dashboard, from your search engine home page to your antivirus program.

Just having a Dashboard won't make you more productive for using it. However, it should:

- provide you more relevant information than before
- in a more easily accessible place
- in a clear uncluttered way that allows you to act on it.

Consider the points below in your Dashboard design.

Be Clear about What you are Showing

Make sure that you know exactly what it is you are trying to display, and consider the best (cleanest, clearest, most effective) way that this might be captured. Descriptive titles are also helpful, it should be immediately apparent to anyone viewing the dashboard for the first time as to the exact purpose of it.

Be sure that you know what the figures truly represent (this, of course goes for all report writing):

- If they are sales figures, are they tax inclusive or exclusive?
- Local or foreign currencies?
- If the report is supposed to show staff sales performance, does it take into account the number of hours worked?

None of the answers to these questions are necessarily wrong, but make sure that the answers to these kinds of questions are clear both to you and to the dashboard users.

Note: Don't try to show too much information in one place, but be aware that a dashboard can still show a rich collection of useful data clearly, if it is well designed. Keep the display clear and to the point. Make sure that units are shown where necessary.

Be Clear about the Target Audience

You must also consider who the likely audience is going to be, ask yourself these questions to get a clearer picture:

- What will they expect to get out of it?
- Is it really going to make their job easier?
- Or is it just going to be more information to deal with?
- What will they use this information for?

Avoid Glitz at the Expense of Usability or Readability

Many dashboards actually try to look like real "dashboards" - dials and bezels, speedometers and thermometers, lights, colours and all manner of glitz.

Unfortunately, it's all distracting from the real message, and often these displays convey very little useful information at all.

Smart and Prudent use of Colour

Use colours carefully – colours should be used to **make information stand out**, and if everything is coloured then the important information gets lost. Good designers will also remind you that around 10% of men and 1% of women are red-green colour-blind, so red and green indicators (e.g. for good/bad performance) may not be such a good idea from a usability perspective.

Try to choose softer colours for your dashboard designs, and only use bold colours where something really needs to stick out. Black, white and greys are good base colours to begin with, and then one or two colours can be used for highlighting.

Logical Grouping of Information

Keep like information together. This goes for view design and placement on the Dashboard. Ensure that as a user reads down the page (usually from top left to bottom right, more or less), the information has a logical order and grouping.

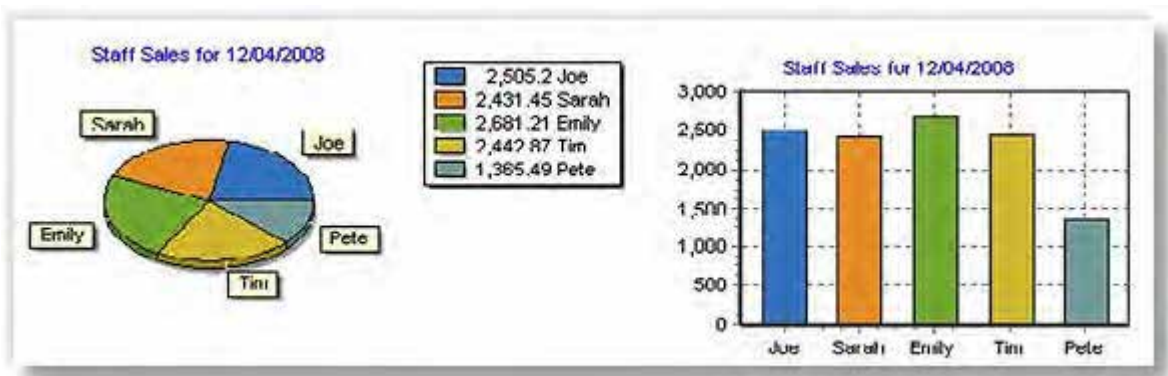
Focus on the Most Useful Data

The most useful data on a Dashboard is the current data. Don't emphasise historical data, or even future trends: they are only really needed for comparison. Keep the focus on current data, current trends, current items requiring attention, current performance.

Choose the Chart for the Job

While charts are useful for displaying information, it can be difficult to make sense of the data if you choose the wrong type of chart. Consider what people want to get out of the chart, and comparisons that might need to be made between elements of the chart.

For example, which chart below makes it easiest to determine relative sales performance of each staff member? Why?



Humans are not very good at comparing angles, but can easily determine length and height. For this reason, pie charts are somewhat limited in their effectiveness when compared with other types of charts for many purposes. What makes matters worse is that the above pie chart is tilted, distorting the angles.

Common Features

The standard MYOB EXO Business dashboard views outlined in the previous chapter share many things in common in order to create a unified look and feel across the dashboard, but you are not limited in what you can do with your views. Note that most of the features are implemented using tools that were already in Clarity and are not new to version 7. Complete details of their implementations are included in this document at this time, but hopefully enough clues are provided so that these and many other new features can be implemented by creative dashboard designers.



Here are the features common to some of these views:

Radio Buttons ①

These are used in the range selection for the "top" reports, to show for example, Top 10 Suppliers by Spend. While radio buttons are used extensively in Windows forms and web pages, Clarity does not have a radio button tool, so these were created with circles, text and click events. When an option is selected, the circle fill colours are changed, the selected option's text is shown in bold, the relevant filter options are changed, and the report is refreshed.



Tabs ②

These give the appearance of a tabbed sheet where clicking a tab brings that sheet to the front. This feature is created simply using rounded rectangles with some text placed on top. The rectangles have an OnDrawCommandClick event handler which changes the colour of the rectangles, sets the new filter value and refreshes the report. The colours are designed to merge into the gradient panel below when selected (see below):



Text/Chart button ③

This allows the user to change between different views of the same data. Some people prefer to look at visual charts, others like to see data in a list view. All this button does is toggle a global variable which stores the current state, then hides what shouldn't display and shows what should.



Progress meter

This could probably have been implemented with a TeeChart, but it seemed overkill for just showing the progress through the current period. This feature was implemented as a few rectangles and a text label. The length of the bar is determined as a percentage of the total length of the meter, based on the length of the period and the current day of that period.



Charts

The chart component (called a TeeChart) is fully functional in EXO Business version 7. It is a powerful charting engine that allows you to customise charts almost endlessly. Many dashboard views use more than one chart, and most of them use more than one "series" of data in each chart, showing and hiding the series as required.

Note: You will notice that the dashboard views all have a background shading effect, going from a light grey at the top to a medium-light grey at the bottom. This is built into the dashboard not into the report itself, and cannot at this stage be turned off or changed in colour.

TeeChart

Reports > Clarity Report Designer

TeeChart is simply the name of the 3rd Party component that is used in MYOB EXO Business to give extensive charting capabilities. A TeeChart is added to your report in the same way as any other object, by selecting the icon in the toolbar.

Note: There are two buttons you can use with slightly different properties, just as there are for many other tool types.

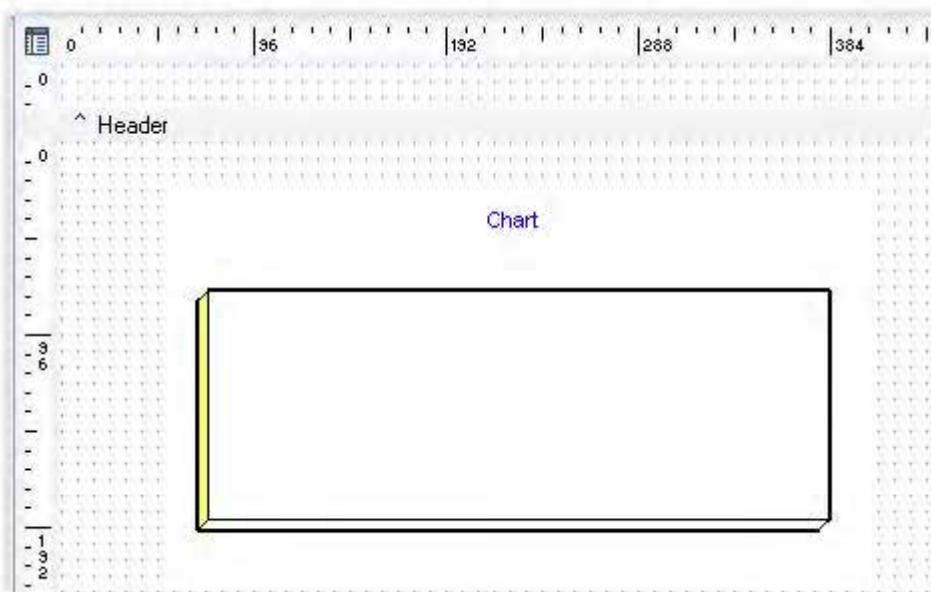


The first TeeChart button is the regular Chart tool. The second button is the DBChart tool, or the data-bound chart tool. The DBChart tool is identical to the Chart tool in functionality and features except that it can take fields in a data pipeline as a source for the data on the chart.

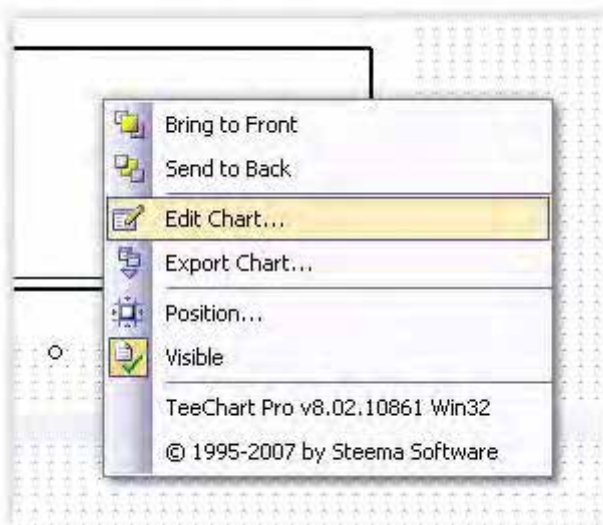
Both kinds of chart can show static data, either hard-coded when the report is designed (not very useful), or added by code at runtime, from any source (data pipeline, parameters, calculations or otherwise).

Creating a new chart

Select the Chart tool and add a chart to a new report canvas. When you create a chart, it won't have any data in it:

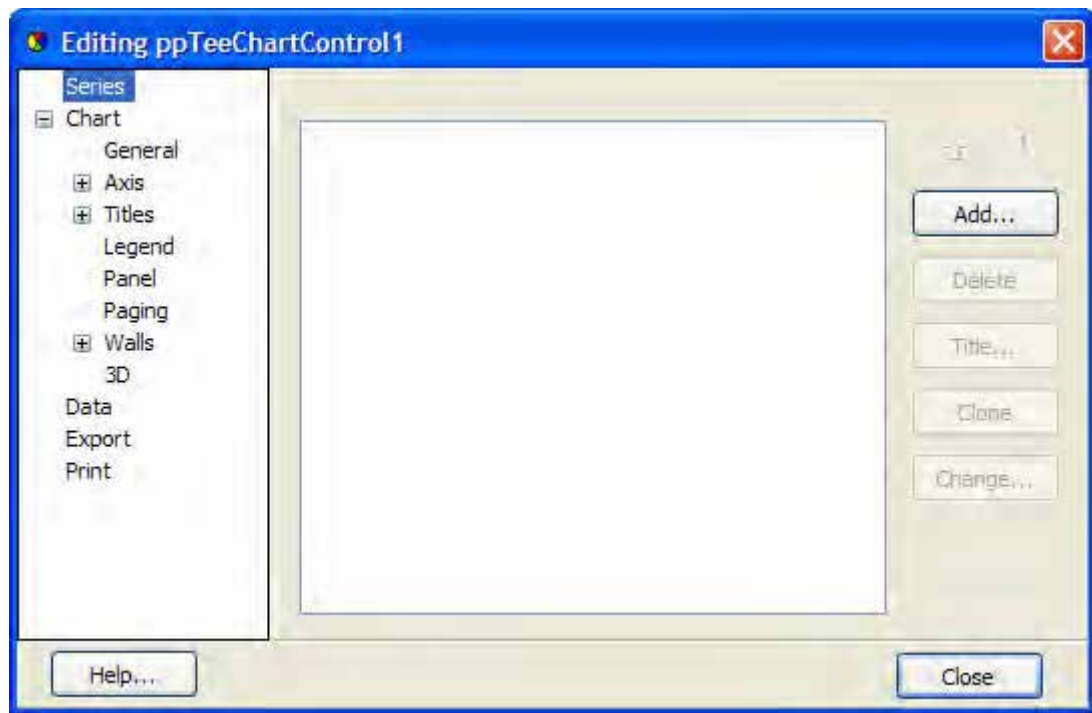


Right click on the chart and select "Edit Chart":

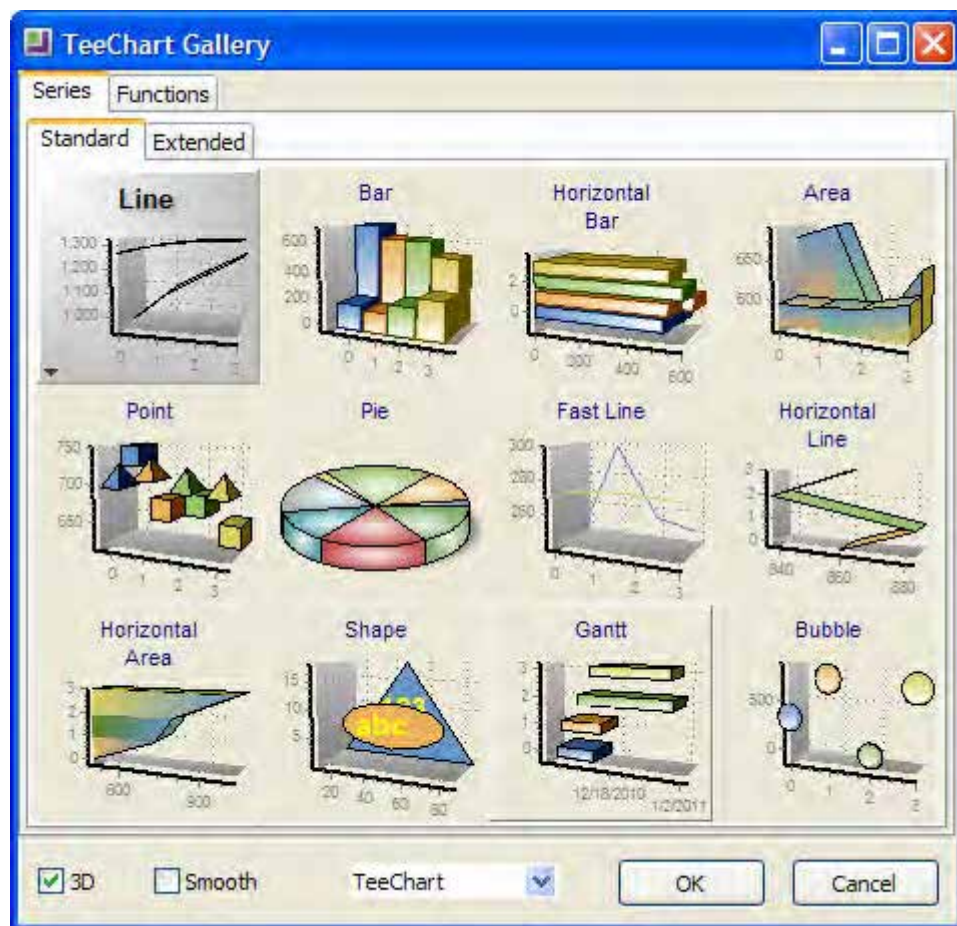


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At this stage, don't be too daunted by the number of options, we're just going to look at some of the Series options. Ensure that "Series" is selected on the left and click **Add** on the right:

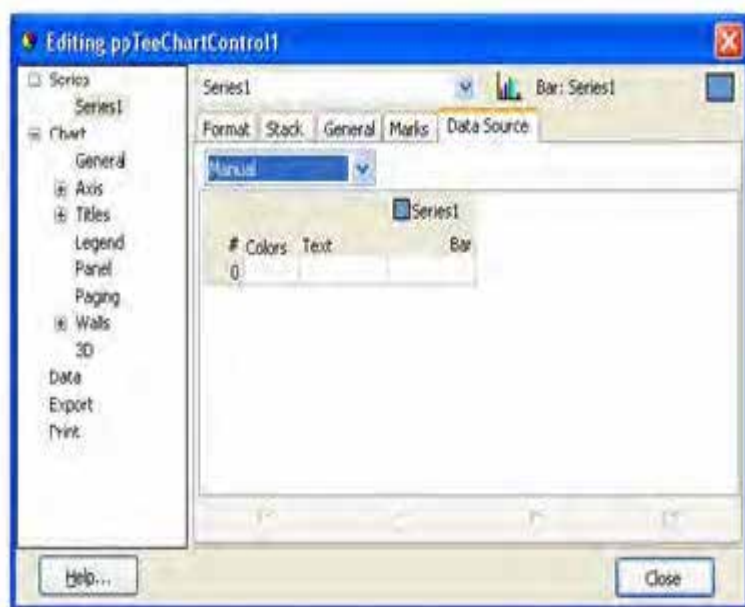


Select the chart type from the list and Click **OK**:



You've just added a data series to your chart. You can add as many series as you like. A series is similar to a data series in Microsoft Excel or other programs, and allows you to show data from different sources overlaid on top of each other. While each series can potentially be a different type of chart, this is rarely useful. One use, however, is to superimpose a line chart and a bar chart.

Now that you have added a series, you can add some data to it. Select the new series (it should be called "Series1" or similar) from under "Series" on the property tree on the left, then select the Data Source tab:



Under Data Source you have the option of several sources of data. These are as follows:

Manual

This allows you to enter your own data in the grid below. Simply click the cell and type the data you want, and press the Insert key on your keyboard to insert a new data row.

Random

For demonstration purposes, you can quickly add a number of randomly assigned data points. Select the Random option, choose the number of data points you want, then click the Apply button. You can either close the window to see the new chart or select "Manual" from the dropdown list again to see the list of values that were generated for you.

Series & Function

These are not currently used.

Data Pipeline (only available with a DBChart component)

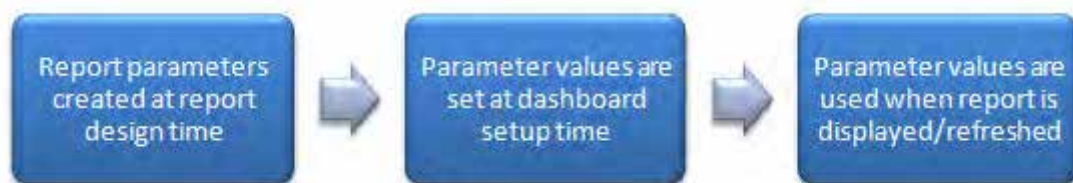
This allows you to specify which properties of the chart take their data from fields in a data pipeline. This will be explained later.

Once you have selected your series data, you're ready to view the new chart – simply close the window and your new chart will display (charts that are linked to a data pipeline will need to be previewed in Clarity before the data will show in the designer).

Dashboard Parameters

Dashboard parameters are very similar to other Clarity parameters, and are used in much the same way. Parameter definitions are stored in a CLS file and retrieved at runtime to produce the report. The parameter values are stored against a Dashboard view setup.

Basically, parameters in the Dashboard work like this:



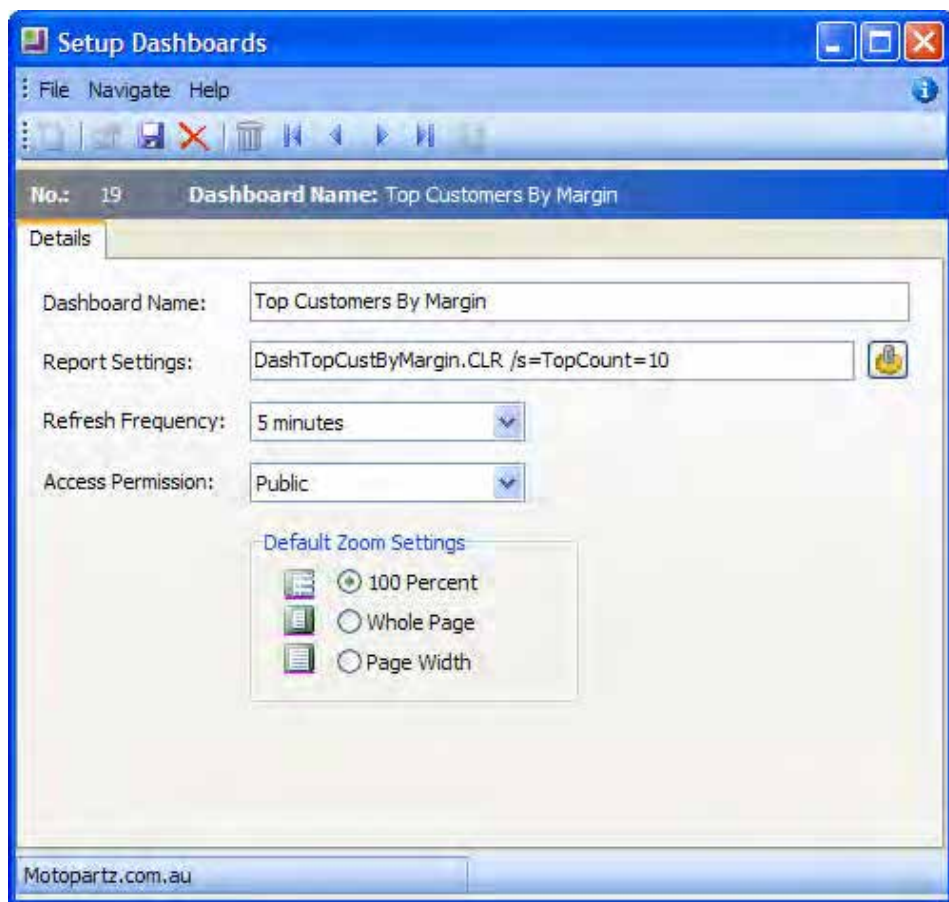
Note: Some errors are suppressed in the dashboard, and it could be irritating to have messages or parameter windows popping up each time the dashboard refreshes – so when designing your own dashboard reports, rather than giving an error if the correct parameters are not supplied it is smarter to use some sensible default values and continue running the report.

Adding New Parameters

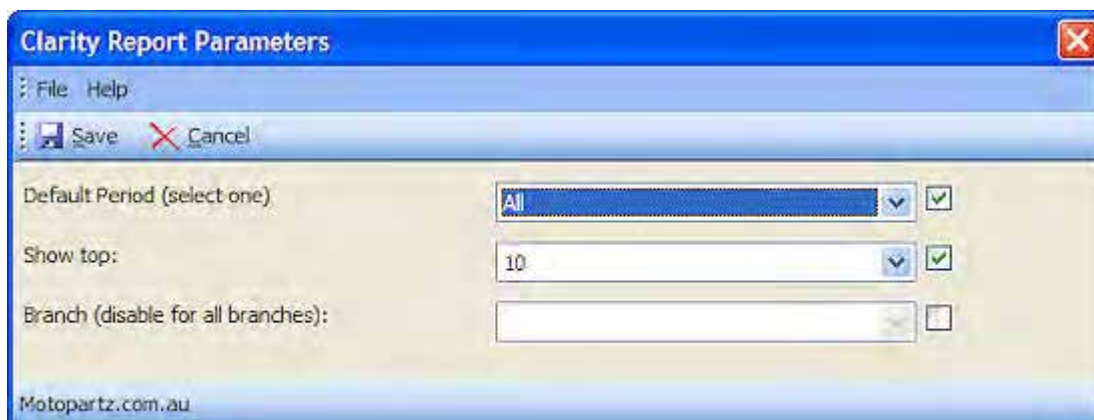
You add parameters to a dashboard report the same way you do any other type of report. Go to Clarity's **Tools > Runtime Parameters** menu (consult the Clarity documentation for further details on setting up parameters).

Setting Parameter Values

Once parameters are set up in the dashboard report, the parameter values can be set in the dashboard setup screen:



Click the Parameter button to open the parameter window:

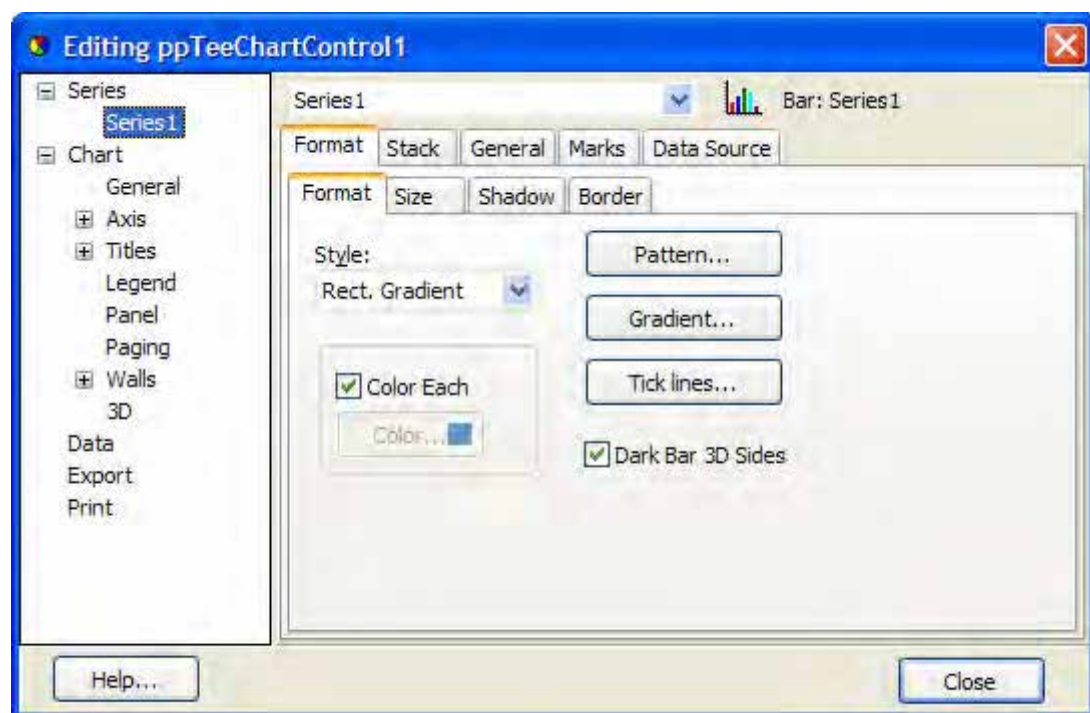


Notice that parameter defaults are shown if there are not already parameter values assigned to this dashboard; otherwise the previously selected parameter values are shown. Select the desired values and click **Save**. Notice how the parameters are added after the report (CLR) name in the **Report Settings** field, using the same format as regular command-line parameter values (see page 79).

Advanced Chart Properties

Chart Properties Overview

This section describes the main tree view nodes from the chart properties window with a brief explanation of each. Only a fraction of the available properties are documented here; if you're unsure about a particular property, create a new blank report with some random data and have a play with it until you understand it.



Note: The property pages that appear on the right hand side as you click items in the tree layout will dynamically re-organise depending on what you've selected. For example, if you select the "Chart" node, you'll see tabs for General, Axis, Titles, ... and so on, with all their respective property pages underneath each one. If you select "Axis", you'll only see the property pages under Axis, and so on.

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From here on the notation for locating a property will be as follows:

Node > Property page > ... > Property

"Node" may be "SeriesName", which means whatever series name you have chosen (in the case above the default is Series1).

Series

Under Series you will find a node for each of the series that you have added to the chart. Click on the node of the series you want to modify to display the property pages. These property pages are for properties that relate to the series itself, how and where the series is displayed, number formats for marks (labels) on the series, label formats and the data source.

Some commonly used properties:

SeriesName > Format > Size – Sets the size and offset of the bars.

SeriesName > Stack > Multiple Bar – Specifies how this series should stack when combined with other series in a multi-series chart

SeriesName > General > Formats – specifies the format of numbers when marks are used

SeriesName > General > H/V Axis – specifies which axis should have the ticks for this series

(e.g. two series with different measurements are assigned left and right axes)

SeriesName > Marks > Visible – Show or hide the values or labels that accompany each bar/pie segment/etc. of the chart.

General

General chart behaviour – here you can set options to allow scrolling or zooming on interactive charts (in preview mode or on the Dashboard) and set fonts for each of the text fields that makes up the chart.

Some commonly used properties:

General > Zoom > Allow – Sometimes the zooming feature can be confusing if the mouse is accidentally moved when trying to drill. Click “None” to turn this feature off.

General > Scroll > Allow Scroll – Sometimes the scrolling feature can be confusing if the mouse is accidentally moved when trying to drill. Click “None” to turn this feature off.

Axis

Each axis (there are 6 of them, two for each dimension in a 3D chart) has a set of properties to determine scales, min/max values, ticks, labels, position and so on. If you're looking for anything to do with one of the axes, it will be here.

Some commonly used properties:

Axis > (Axis name) > Scales > Inverted – Set this property to invert the axis and all property points along it.

Axis > (Axis name) > Scales > Minimum/Maximum/Increment > Automatic – Set these properties to change the automatic min/max and increment calculations. This will force the chart to use the values you select.

Axis > (Axis name) > Title > Style/Format – Set the axis label here along with the font and display properties.

Axis > (Axis name) > Labels – Set axis label properties here.

Axis > (Axis name) > Ticks – Set the various tick options here. You can change the size, colour and minor tick divisions.

Titles

Here you can set a title, subtitle, footer and sub-footer text, along with the associated display properties (borders, colours, shading, etc).

Some commonly used properties:

Titles > (Title type) > Style – change the title text for your chart here.

Legend

The legend is optional for all reports, and there are plenty of options

Some commonly used properties:

Legend > Style > Visible – Whether or not to show the legend. The chart will resize to fill the unused space if the legend is hidden.

Legend > Style > Text Style – Set the text that appears in the legend here from a number of potential options including left/right value and percent.

Panel

The panel refers to the chart background. This can be coloured or gradient colour. If the chart is set to “Transparent” (a Clarity property of the chart, not a chart property) then the Dashboard will attempt to make the chart transparent when it is displayed. This may not always work as expected.

Paging

This is intended for printing multi-page charts, but is not tested in the current version of Clarity.

Walls

A wall is a plane that makes up one of the sides of the 3D chart. In the default 3D chart, there are 3 walls visible: the X axis wall, the Y axis wall, and the back wall. If you add a right axis then another wall will be created for that axis. The walls help give 3D charts their depth, but 2D charts also use the back wall.

3D

Set the 3-dimensional viewing properties for 3D charts including zoom, rotation, elevation and perspective. Remember that in Dashboards, you may be better off going with 2D charts, as they are clearer and easier to read values from.

Data

Shows a grid of the data elements for all series (static chart only, not when bound to a data pipeline). These values can be updated from here or from the individual **Series > Data Source** tab.

Export

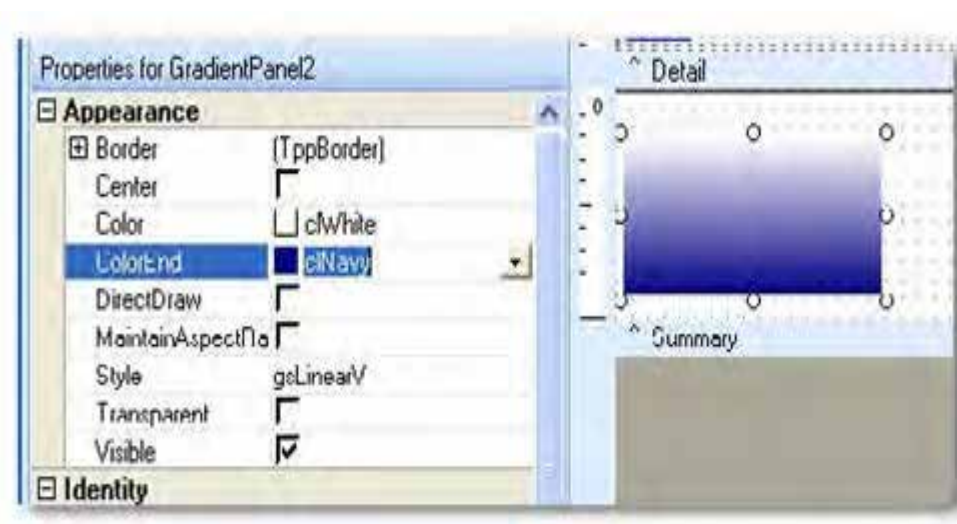
You can export charts directly from the chart properties pages, without having to preview them, so long as the chart is not bound to a data pipeline. Export formats include Bitmap, metafile, HTML table and Excel spreadsheet.

Print

You can also print the charts directly from the properties pages without previewing. This will only print the chart and is not related to the other printing or previewing functions of Clarity.

Gradient Panel

The gradient panel is a tool used for creating simple gradients (horizontal or vertical) in a rectangle. The properties are similar to a regular rectangle shape, but you cannot change the shape type, and there is a new property for “Color end”. The properties are listed below.



Border

This allows you to add a border around the shape on one or more sides. Click the “+” to see more options.

Center

This centres the gradient shape in the bounding area that you have selected. Note that this only really has an effect if “MaintainAspectRatio” is selected, then the shape will be limited to the largest square that can fit in the rectangular area, and this option will centre it in that area.

Color

This sets the start colour of the gradient.

Color End

This sets the end colour of the gradient

DirectDraw

This property is not used.

MaintainAspectRatio

This forces the visible shape into a square – the largest square that can fit in the rectangular area you've selected.

Style

This determines which way the gradient shows, horizontal or vertical. The values are: gsLinearV = Vertical, gsLinearH = Horizontal.

Transparent

Sets the transparent property of the gradient panel. This will make non-black colours appear transparent so that other objects can be seen underneath. The lighter the colour, the more transparent (white is fully transparent).

Note: Transparency may not work too well with shapes or text that is not either black or white – this should only be a problem. In addition, transparency will only work when viewed on screen. Printed gradient panels will not be transparent.

Visible

Sets whether the panel is visible on the preview or printed report.

Tee Chart Events**OnClick Event**

The OnClick event is useful if you just want to perform some action if a click is made anywhere on the chart component. This is particularly useful for line charts – you can add OnClickSeries events for a line chart, but it can be difficult for someone to move the mouse in the right place to actually click on the line. In this case, clicking anywhere on the chart may suffice (not if you want a particular data point though).

This event is used in the "top" dashboards, e.g. DashTopCustByMargin.CLR, where if you are drilled into an item clicking on the line chart of the history will "drill" back up to the original view. It doesn't matter where on the line chart you click, the same event is fired.

Here is the procedure definition for an OnClick event handler:

```
procedure TeeChart1OnClick(ppCustomTeeChart: TppCustomTeeChart); begin
end;
```

Notice that a parameter is passed to the event handler which references the chart that was clicked. At this stage there is not much you can do with that parameter, but more functionality may be added in the future.

OnClickSeries event

The OnClickSeries event is used whenever you want to perform a specific action when someone clicks on a data series element. Examples of data series elements are series lines in a line chart, bars in a bar chart, pie segments in a pie chart, and so on.

When an OnClickSeries event is fired, the event handler is passed a reference to the element which was clicked on. Here is the procedure definition for the event handler:

```
procedure TeeChart1OnClickSeries(SeriesIndex: Integer; ValueIndex: Integer; Button:
TMouseButton; X: Integer; Y: Integer); begin
end;
```

Here we are passed some more useful data:

The SeriesIndex value is the index of the series that was clicked (remember you can have multiple series in your chart). The first series is 0, the second is 1, and so on.

The ValueIndex value is the index of the value in the series that was clicked. While this may not mean much if you don't know what data is in your data source, there are some ways that this can be useful. In many of the standard dashboards, a description is stored in a list that is later referenced using this value.



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The Button value is a reference to which mouse button was clicked. It is outside the scope of this document. For the purposes of this explanation, all mouse clicks will fire the event (left, middle and right).

The X and Y values give the coordinates where the click was made. This will likely be of little value.

OnMouseMove event

The OnMouseMove event is used to trigger changes in the cursor. The cursor does NOT automatically

change from a regular mouse pointer:  to a link pointer: 

All the bar charts that use OnClickSeries events also use an OnMouseMove event to make the pointer change to a link pointer when one of the bars is hovered over. There are not many other uses for this event at this time. Here is the code snippet:

```
procedure DPTeeChart1OnMouseMove(X: Integer; Y: Integer);
var
  ClickedPart:TExoClickedPart;
begin
  ClickedPart:=DPTeeChart1.CalcClickedPart(X, Y);
  if ClickedPart.Part=cpSeries then
    DPTeeChart1.Cursor := -21
  else
    DPTeeChart1.Cursor := 0;
end;
```

Notice the use of the function DPTeeChart1.CalcClickedPart(X, Y) to return a value which indicates which part of the chart was “clicked” (a “mouse move” event is internally handled much like a click event – hundreds of little events fire every time you move your mouse). The cursor is then changed to -21 if it is part of the Series (i.e. a bar , pie slice, etc.). The value -21 represents the link pointer. The value 0 represents the regular arrow mouse pointer.

OnPrint event

The OnPrint event is much like the OnPrint events of any other report component. It will fire when the chart is being generated for viewing in the preview screen or printed to the printer. This event will not fire if the chart is printed from the chart's property pages, only if it is printed through the usual way in Clarity.

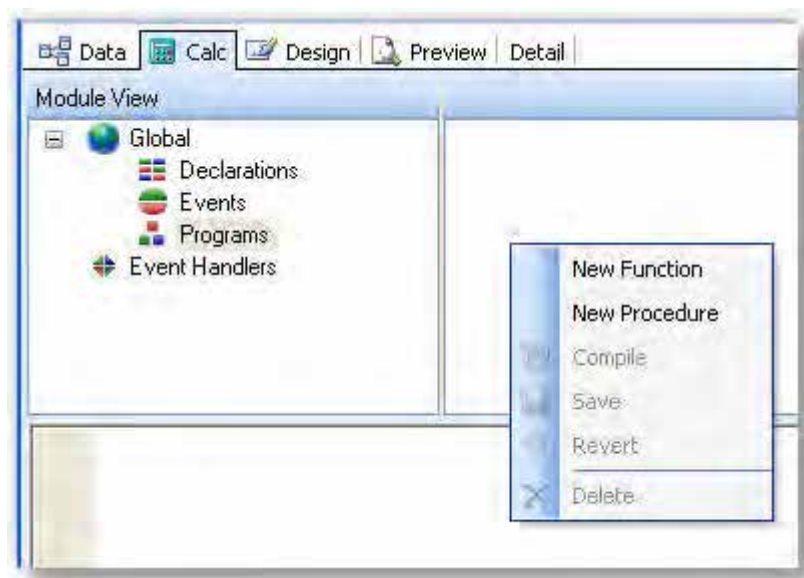
Dashboard Programming

New Concepts

Custom Programs

While you are probably familiar with modifying other code in various event handlers, you can actually write your own routines that can be called as many times as you like from as many places in your report as you like. This encourages code re-use, reduces repetitive coding in the same report, and makes it easier to fix bugs or test changes because you only need to change one place.

New functions or procedures can be created in the Calc tab of Clarity by going into the “Programs” tree view item, then right-clicking on the events list pane. You can choose either “New Function” or “New Procedure”:



A function allows you to return a value after some processing has occurred, while a procedure is just for processing and does not return a value. Both functions and procedures can be passed any number of parameters in the same way you'd pass parameters to any other Calc procedures. Once you've created the new function or procedure, you can begin adding code straight away.

Have a look at the function below which takes a single data parameter and returns a string saying how many days it is until Christmas:

```
function HowLongTillChristmas(var MyDate: Date): Variant;
var
    Christmas : date;
    dd : integer;
    mm : integer;
    yy : integer;
    numDays : integer;
begin
    DecodeDate(MyDate, yy, mm, dd);
    Christmas := EncodeDate(yy, 12, 25);
    numDays := Christmas - CurrentDate;
    if numDays > 0 then
        Result := 'Only ' + IntToStr(numDays) + ' days 'til Christmas!'
    else if numDays = 0 then
        Result := 'It's Christmas!!'
    else
        Result := 'Christmas has passed, wait until next year!';
end;
```

The Result variable is a special variable only available in functions which takes the result which is passed back to whatever called it. This function can then be called from anywhere in the report, as in this example:

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```
ShowMessage(HowLongTillChristmas(CurrentDate));
```

Since we know the call returns a string, we can put this straight into a ShowMessage procedure. See the list of custom programs (see page 151) to see how these are used in the standard dashboard reports.

Setting a data pipeline range (record count)

All the “top”-style dashboard reports allow you to filter on a number of records, or a range count. This is achieved by setting some properties on the data pipeline object before the data is queried or refreshed. It will not filter or limit a data set that has already been retrieved (unless you specifically force the data to be refreshed, which will re-query the database). In the OnBeforeOpenDataPipelines event (or other suitable place), you can put lines like the following:

```
Master.RangeBegin := rbFirstRecord;  
Master.RangeEnd := reCount;  
Master.RangeEndCount := nCount;
```

Where *Master* is the data pipeline name and *nCount* is a positive integer specifying the maximum number of records to be retrieved. *rbFirstRecord* is a special internal variable telling the database where to start, *reCount* is a similar variable telling it where to finish, and *nCount* is the actual record count. If you'd like to set it back to returning all records, set *Master.RangeEndCount := reCount*;

Setting the page size

In order for the Dashboard reports to be dynamic (i.e. So when you choose “Top 10” it only shows 10, and when you select “Top 50” it expands to show all 50), the page size itself needs to change. Without changing the page size dynamically, you'd need to have a fixed page that was as long as the longest that your Dashboard could possibly be, otherwise your data would flow onto second and subsequent pages, and since you can't change pages in the Dashboard view, the data would be hidden from the user. Since having very long pages is not an ideal solution, page resizing is currently used on all the standard Dashboard reports.

In order to set the page size, you need to change a Printer Settings property of the report. In our case, we can set the page width and margins at design-time, and all we need to worry about at runtime is the page height. Here is an example:

```
Report.PrinterSetup.PaperHeight := nNewPageHeight;
```

Unfortunately, dynamic page height often depends on the number of records you have retrieved from the database, so the page resizing needs to occur after the detail bands have all been calculated. Unfortunately again, resizing the page alters the entire flow of all the sections of the report (potentially) so it needs to happen before the final report has started generating. So we need to do this in a four-step process:

1. Expand the report to be arbitrarily high in the Page Setup (say, 4000 pixels).
2. Allow the report to run once through and we should get all the Detail records on one page (if they don't all fit, tough). If we don't try and get them all on one page, often the records on the second and subsequent pages won't be calculated at all (since they are generated only when you move to page 2).
3. Count the number of detail lines and calculate how long the page should be – don't forget to take into account the top & bottom margins, all visible sections, all group headers and footers (one of each for each group), and all detail lines (one for each record in the Master pipeline). This is complicated by the fact that there's no way to calculate the actual printed height of sections that have dynamically adjusted height – you can only get the value of the height that was set in the design canvas – Tricky! Try to avoid dynamic height sections (and stretching memo fields, etc.) for this reason.

4. Resize the page with the newly calculated height and refresh the report – see below. This will both redraw the report and re-query the database. There's no way to just redraw the report at this stage, but this feature may be added in the future.

Here's the final piece of code that is used in many Dashboard reports (not including all the tricky calculations are done to determine the page height):

```
Report.PrinterSetup.PaperHeight := nPageHeight
+ Report.PrinterSetup.MarginTop
+ Report.PrinterSetup.MarginBottom + 50;
```

You can find this in the “ResizePage” Custom Program of each report.

Refreshing the report

In order to refresh the data pipelines by re-querying the database, redraw the resized page and refresh any components that have not updated themselves when changes are made at runtime, you need to call the following routine:

```
RefreshPage(Report);
```

Note: This function should not be used carelessly – it does a complete refresh of the entire report including all data pipeline querying, as if you had closed the report and reopened it – in other words it is NOT fast. Too many of these in your report will slow down significantly.

Also be aware that even if you only have one instance of it, you should check to ensure it is not called multiple times, particularly if you have your report set to “Two-Pass”. To verify this, put a ShowMessage command immediately before it. If the message appears more than once then you need to check why. Try moving it elsewhere or set the report to “One-Pass”.

Having said that, there may be times when you need to call it twice in short succession, but this should be avoided if at all possible.

The TStringList (1-dimensional String Array)

This is the only type of “array”, as it is known to programmers, that is available for use in the Clarity Calc tab. It is a data type you can use anywhere in your code to hold a list of string values that can be referenced by index in the list. You add a new item to the list as follows:

```
var MyStringList : TStringList;
begin
  MyStringList.Add('This is the first item in my list');
  MyStringList.Add('This is the second item in my list');
  ...
```

You can then easily access any item in the list like this:

```
...
ShowMessage(MyStringList[0]); { This displays the first item }
ShowMessage(MyStringList[1]); { This displays the second item }
end;
```

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Notice the square brackets after `MyStringList` – you must use square brackets for this. If the entry you request from the string list does not exist you will get an error (e.g. if you were to have another line referencing `MyStringList[2]` you would get an error). `TStringLists` use what's called a “zero-based” index, because the first item is always zero.

For example in the Dashboard reports, open `DashTopCustbyMargin.CLR` where four `TStringLists` are used. These are global variables: they are defined in the Definitions section of the Calc tree view, empty records are created in the list (before they are needed) in the `GlobalOnCreate` event handler, then they are populated in the `DetailAfterGenerate` event handler as the data is retrieved. A description of each is below:

- **`gslAccNos`** – this is used to store the account numbers (`ACCNO` field) of each account that is shown in the list, so that when one of the bars on the chart is clicked the `ValueIndex` of the clicked bar (see page 145) corresponds to an entry in the list that holds the clicked account's `AccNo` which is then applied to the filter for the drill-down data pipeline, then the pipeline can be refreshed to show the data for that account.
- **`gslHeadAccNos`** – this is used for the special case where an account in the list has a `HEADACCNO` field set – i.e. it is a sub-account of another account. It will not be discussed here.
- **`gslAccNames`** – this is used to store the account name so that it can be used to set the chart heading of the “drill-down” chart showing the customer sales history. It is easier to store it with the other values than pick it up when the database is re-queried.
- **`gslAlphaCode`** – similar to the account name, this is used to store the alpha code of the account for use in the history chart heading.

Custom Colours

You can define any colour you like in Clarity. You may have used one of the colour palette dialogue boxes to come up with new colours, but you can also specify them in code if you know the Red/Green/Blue (RGB) values of the colour – red, green and blue being the primary colours of the spectrum of light. The `RGB` function takes three integer parameters, one for each colour, from 0-255 indicating the intensity of that colour. So `RGB(0,0,0)` is black (no light of any colour) and `RGB(255,255,255)` is white (full intensity of red, green and blue).

You can use a custom colour in the following way:

```
Label1.Font.Color := RGB(200, 0, 0); { a relatively bright red colour }  
Label2.Font.Color := RGB(100, 200, 100); { a pale green colour }  
Label3.Font.Color := RGB(0, 0, 80); { a deep blue colour }
```

Using DrawCommand Tags

Sometimes, you need to be able to store something against a detail line that is being generated, as it is being generated for future reference (perhaps string lists are not sufficient for some reason). One way of doing this is by storing a value (integer only) against the “Tag” property of a `DrawCommand` object.

Some background: When you create an event handler for the “Click” event of a label in the Detail band (for example), it's actually the `OnDrawCommandClick` event you're using – you might have noticed. What this does is it actually creates a special `DrawCommand` object for each instance of the label that is created, and this `DrawCommand` object is passed to both the `OnDrawCommandClick` event handler and the `OnDrawCommandCreate` event handler.

Don't worry too much about what this `DrawCommand` object is or what it does, but we're interested in the fact that we can tell what the user clicked on if we store a reference number in the `Tag` property of the `DrawCommand` when it was created.

For example, let's say we have a report that lists Debtors by their account name (among other things). If the DBText field is called AccName, we can store an ACCNO value in a DrawCommand tag for each Detail record by adding an OnDrawCommandCreate event handler like this:

```
procedure AccNameOnDrawCommandCreate(aDrawCommand: TObject);
var
    IDrawCommand: TppDrawCommand;
begin
    IDrawCommand := TppDrawCommand(aDrawCommand);
    IDrawCommand.Tag := Master['ACCNO'];
end;
```

Now by also adding some basic code to the Click event handler, we can open the MYOB EXO Business account screen for the clicked Debtor:

```
procedure AccNameOnDrawCommandClick(aDrawCommand: TObject);
var
    IDrawCommand: TppDrawCommand;
begin
    IDrawCommand := TppDrawCommand(aDrawCommand);
    ShowDebtor(IDrawCommand.Tag);
end;
```

That's all that's required! It is quite confusing, though, particularly having to convert the aDrawCommand TObject into a TppDrawCommand object before using it. Just use those code snippets above and don't worry too much about the details if you don't understand.

This same effect *cannot* be achieved by simply having an ACCNO field in the detail band and using this to open the debtors screen. If you try it you will find that it always selects the last debtor in the list. That is because once the detail lines are generated, you cannot reference their values again. You can, however reference the DrawCommand Objects because they are passed in as parameters to the Click event, as shown above.

Custom Program Examples

Here are some of the Custom Programs that were created and are re-used through several (or all) standard Dashboard reports as of this writing. They may also be useful for your Dashboard reports.

DrillDown(ValueIndex)

This procedure was designed to be called directly from the chart OnClickSeries event handler with the index of the clicked value. While different reports work slightly differently, the procedure basically re-filters a drill-down pipeline, sets some variables, then shows and hides various parts of the report to actually make the drilldown happen. Finally the page is resized, as the drilldown view is rarely the same height as the original view.

ResizePage

This procedure does all the calculations to work out how high a report page should be, sets the height, then refreshes the report. This procedure differs somewhat between a few of the reports, because each report has a different page layout that requires a different height calculation.

SetDateFilterParm(Period, Refresh)

This procedure (designed for “top”-style reports) takes two parameters: a string of the period (Week, Month, Year or All) and a parameter stating whether the report should refresh after setting the filter parameters or not.

This calculates the “From” date to apply as the TRANSDATE field filter based on the selected period and the current date. The clicked “tab” is marked as selected, then the AutoSearch criteria is then set and the report is optionally refreshed. The optional refresh flag is in place to avoid unnecessary report refreshes which slow down the report significantly.

SetRecordCount(Count, Refresh)

Similar to above, but it sets the record count, edits the radio buttons and optionally refreshes the report.

SwitchBack

This procedure performs the reverse of the Drilldown procedure, hiding what was shown and showing what was hidden. Re-filtering is not necessary. It also takes into account whether the original view was on the chart or table view and shows the appropriate components.

SetProgressBar(Region, Percent, Text)

This procedure sets the bar in the progress indicator to the desired length. You pass in a percentage (0-100) and it will calculate the length for you. If you pass an empty text string it will simply show the percentage as a string. Here's the progress bar in action in a sales analysis Dashboard report:



Inserting or Clearing Data

You can manually insert data by simply getting the series you are looking for with “SeriesByTitle”, then call the series' Add procedure with the label and value:

```
var Series:TChartseries;  
  
begin Series := DPTeeChart4.SeriesByTitle('Series1'); Series.Add('First item', 125.4);  
Series.Add('Second item', 131.8);  
end;
```

To remove all items, simply call the Clear procedure:

```
Series.Clear;
```

Have a look at some of the “Top”-style reports for more details. Check the subreport, looking at the DetailAfterGenerate event and the ReportOnStartFirstPass event.

Showing or Hiding a Series

You can set the series Visible property to show or hide it as required:

```
Series.Visible := false; { hides this series }
```

Using Parameter Fields in Dashboard Reports

Dashboard parameters are used in the report in exactly the same way as any other Clarity parameters. Have a look at the following code from the overdue accounts dashboard views and note the bold plParams references:

```

procedure ReportBeforeOpenDataPipelines;
var
  ppTemp: TppAutoSearchField;
  yy,mm,dd: integer;
  MyDate: Date;
  duewithin: string; branch: string;
begin
  branch := plParams['BranchDisplayValue1'];
  if branch = '' then branch := 'ALL BRANCHES';
  BranchParam.Text := branch;

  duewithin := plParams['DueWithinDaysValue'];
  if duewithin = '' then
  begin
    duewithin := '0'; { defaults to show only overdue invoices if no value specified }
    SubHdParams.Text := 'Due today or overdue';
  end else begin
    SubHdParams.Text := 'Due within ' + duewithin + ' days / Overdue';
  end;
  MyDate := CurrentDate + Strtoint(duewithin);
  DecodeDate(MyDate, yy,mm,dd);

  ppTemp := Report.CreateAutoSearchCriteria('CR_TRANS', 'DUEDATE',
    soLessThanOrEqualTo, inttostr(dd)+'/'+inttostr(mm)+'/'+inttostr(yy),
    True);
end;

```

Programming Exercises

Create a new report with a simple data source that returns Debtor account names and AGEDBAL0 fields, in descending order by AGEDBAL0. Apply a range filter on the report so that it only lists the first 5 debtors.

Exercise 1

1. Create three labels at the top of your report from (1), "5", "10", "20".
2. Add a click event handler for each of these
3. In the event handlers, add a call to a new procedure called MySetRange, and pass in the integer values of 5, 10 and 20 respectively.
4. Create the MySetRange procedure which updates the range value and refreshes the report.
5. Save your report then test it by previewing to make sure that the range is indeed updated as you click on the labels.

Exercise 2

1. Create a new Global TStringList variable
2. Add some code to the DetailAfterGenerate event handler to add the stockcode field to the string list
3. Change the click event on the chart series to look up the stock code in the list instead, and open the MYOB EXO Business Stock screen.
4. Try copying the progress bar from one of the Sales Analysis Dashboard reports onto your report with the two new procedures. Try to get it to work properly.

Glossary

A

Advanced Component Palette: A toolbar that contains advanced components.

Align: The act of setting components' positions so they line up with one another.

Align or Space Toolbar: A toolbar that allows you to align or space components so that they have a uniform appearance. Select View> Toolbars> Align or Space to launch this toolbar.

AutoSize: A speed menu option available for text components. When AutoSize is set to true, the component adjusts its width so that all of the text is displayed.

B

Band: A section of canvas that describes how part of the report will look. A band is labelled in the section divider immediately below it; thus, the first band is called the 'header', the second is called the 'detail', and the third is called the 'footer'.

Barcode: A component in the Standard component palette that renders barcodes. Use the Edit toolbar to set the data to be encoded. Right-click and access Configure to select bar code types.

Boolean value: Which only have two possible values, True or False (off/on, 0/1, they are all just representations of the same thing).

Bounding box: (1) A method of component selection by which you right-click your mouse and drag it so it encompasses the components to be selected. (2) The box that appears around the components to be selected as you drag your mouse.

Bring to Front: A speed menu option that allows you to move an object in front of other objects. Use this option to control the appearance of over-lapping objects.

C

Calcs page: A page in the Query Wizard that allows you to make a calculation based on the data in the database.

Calcs tab: An advanced tab in the Query Designer used solely by MYOB EXO Business developers from which you can create a calculation based on the data in the database.

Calculation: An option in the Query Wizard /Query Designer that allows you to derive new data from existing database fields.

Canvas: The area in the design workspace that contains the reports layouts. The canvas is divided into rectangular areas called bands.

Component: An element used to control how the report looks. Each component has a unique purpose. In order to place a component in the design workspace, click the icon on the component palette, and then click on the white space of the band in which you want the component to appear. When a component is selected, an edit or drop-down list may appear in the upper left hand corner of the design workspace. This area provides different options depending upon the selected component.

Configure: A speed menu option for the Crosstab component. It allows you to access the Crosstab Designer.

Crosstab: A component that presents summarized data in a grid format. Crosstabs are designed by right-clicking over the component and accessing the Configure option.

Crosstab Designer: The dialog displayed when the Configure option on the speed menu for the Crosstab component is selected. A Crosstab layout is created via this designer.

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Crosstab Wizard: A tool in the design workspace that generates a report based upon the choices you make in the wizard. Access this tool by selecting File> New, then clicking the Crosstab Wizard icon.

D

Data Component Palette: The palette from which you create data-aware components. Click on the icon and click on the canvas to create a data-aware component.

Data module: A behind-the-scenes container for dataviews. When you want to copy data from one report to another, export the data module from the first report and import the data module into the second.

Data pipeline: A special kind of component that manages the connection to the database and supplies data to a report. It also controls which rows of data are used to generate the report. It represents an MYOB EXO Business database table or SQL query and provides data in the form of fields and records. A Pipeline is opened automatically when you log into MYOB EXO Business.

Data tab: The tab that you access to select data.

Data traversal: The act of moving through the rows of a database table or data selection.

Data Tree: A toolbar used in the design workspace to access the data selected in the data workspace. Select View> Toolbars> Data Tree to launch this toolbar.

Data-aware components: Components to which you can assign data fields. In the Report Designer, these components are prefixed by DB, meaning 'database'.

Database table: A structure that facilitates the storage and retrieval of organized data.

Dataview: The visual representation of a query displayed on the data tab. It contains the data selected in the Query Wizard or Query Designer. Dataviews allow you to make changes to a query via the Query Designer, which can be accessed by clicking the icons in the dataview tool-bar.

DBComponents: Data-aware components that can retrieve data from a query. The DB prefix stands for database. Use the edit toolbar to choose data for a DBComponent.

Delphi programming language: A programming language that derived from Pascal, with an object-oriented programming extension.

Design tab: The tab in which you create your report layout.

Detail Band: A band that prints once for every row of data.

Display Format: A speed menu option available for textual components. This option allows you to display a value in a certain format (decimals with a dollar sign, for example). Right-click over a textual component to access the Display Format.

Dock: The act of dragging a toolbar to one side of the workspace and dropping it such that it 'sticks' to that side. A docked toolbar moves when you move or resize the Report Designer.

DR_ACCGROUPS: Stores the names of the account groups.

DR_ADDRESSES: Is for multiple delivery addresses, not normally needed in reporting.

DR_ALLOCATIONS: Stores information about allocating cash receipts and is used for multi-currency.

DR_CONT_HIST: Stores notes about the contacts.

DR_CONTACTS: Stores the information about individual contacts, if used.

DR_LINE_DISCOUNTS: Store information about the more complicated pricing structures and discounts.

DR_PRICES: Store information about the more complicated pricing structures and discounts.

Draw Toolbar: A toolbar used to fill a component with colour or to colour the border around a component.

E

Edit: A speed menu option for a Rich Text component that opens an application that allows you to open a file and format text.

Edit Toolbar: A toolbar that allows you to set the most important property of a component. This toolbar changes to select database fields for data-aware components, adjust lines for the line component, select shapes for the shape component, and type text for the label component.

Events: Events are granular steps in the generation of your report, and each time an event happens, an “event handler” is run if it exists. Event handlers are pieces of code that tell Clarity what to do when the event happens.

Expression: It is used when creating a calculation. It allows you to create other fields based on the data from existing fields.

F

Floating Point number: These are like integers, but they do allow numbers after the decimal point, e.g. an amount field. You may see floats being called “Extended” in Clarity.

Floating window: A toolbar detached from the edge of the Report Designer and released so that it ‘floats’ in front of the Report Designer.

Footer Band: A band that prints (usually the page number, date, time) at the bottom of each page of the report.

Format Toolbar: This toolbar gives you the ability to modify text-based components in a number of ways. You can change the font style and font size. You can bold, italicise, or underline the text. You can justify a word or sentence to the left of the margin, or you can centre or right-justify text. You can also change the colour of the text.

G

GL_ACCGROUPS: Holds the group names.

GL_CONTROL: Stores various control file settings

GL_SUBACCS: Stores master-file information about the sub accounts, if used

GLACCS: Holds the account master file information, with the nature of the account (balance sheet, dr/cr, taxstatus).

GLTRANS: Stores the transactions

Group: (1) A section of a report that contains a group header, detail, and group footer band. Groups are assigned to a database field. Select Report> Groups to access the groups dialog. (2) A behind-the-scenes component that allows a report to be organized into separate sections, based on the value of a field.

Group Footer Band: A band that contains the footer for a group. The components in a group footer band appear at the end of a group.

Group Header Band: A band that contains the header for a group. The components in a group header band appear at the beginning of a group.

Guides: The lines on the horizontal and vertical ruler that move as you move the cursor over the canvas.

H

Header Band: A band that prints at the top of each page of the report.

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Highlight: To select text for editing. You highlight text by holding down the mouse button and dragging the cursor over text or by holding down the Shift key and pressing an arrow key.

I

Image: A component on the Standard component palette that displays graphics (such as bitmaps, GIFs, and JPEGs).

Integer: Whole numbers with no decimal portion, e.g. an account number.

K

Keep group together: An option in the group's dialog that sets the group so that the bands of the group will print on the same page

L

Label: A component useful for titles and headings. Use the Edit toolbar to set the text for a label.

Label Template Wizard: A tool that allows you to create mailing label reports by selecting printer information and choosing a label type.

Line: A component in the Standard component palette that displays a line. Use the Edit toolbar to set the line orientation.

Lines: A speed menu option for a memo that allows you to access the Memo Editor, from which you can open text only files.

M

MailMerge: An option that appears when you right-click over a Rich Text component. It allows you to import field values into the Rich Text component.

MaintainAspectRatio: A speed menu option available for images. It scales an image so that the height and width are adjusted based on the original image size.

Memo: A special kind of component that allows you to load text into it. Right-click over the memo and select Lines in order to load text.

Memo Editor: A dialog accessed via the memo component (right-click over the component and select Lines) that allows you to load and save text files.

N

Nudge Toolbar: This toolbar allows you to move a component or a group of selected components one pixel at a time. See page 100 for a complete description of this toolbar.

O

Object: In the simplest sense, Objects are just abstract entities that represent "things". Your report is an object. A label on your report is an object. A picture on your report is an object. Lines, regions and anything else that makes up your report is also an object.

Orphan: (1) A component(s) that prints on a different page than the components within the same band or region. For example, if a DBText that's supposed to follow a DBMemo prints at the top of the next page rather than with the DBMemo, it is orphaned. (2) A group footer band that prints at the top of a page with no preceding detail bands.

Overflow: Occurs when a stretchable component prints on additional pages.

P

Pagination: A speed menu option for a Crosstab component that allows you to choose Across then Down or Down then Across printing for the Crosstab report.

ParentHeight: A speed menu option that allows you to set the size of an object so that it matches the height of a band. Right-click over a component to select ParentHeight.

ParentWidth: A speed menu option that allows you to set the size of an object so that it matches the width of a band. Right-click over a component to select ParentWidth.

PipeLine: A connection to the MYOB EXO Business database opened automatically whenever you log into MYOB EXO Business.

Position dialog: A speed menu option that allows you to change the size and position of an object. Right-click over a component to access the Position... dialog.

Preview: A tab workspace where you can preview the generated report to see how it will look when printed.

Properties: Settings for components such as font style, size, and colour.

PURCHORD_HDR: Is the header table with information on delivery address and other reference items.

PURCHORD_LINES: Contains the information about individual products ordered, quantity, price, supplied, invoiced, and any text entries.

Q

Query: A request for data using a language specific to databases called SQL. The Query Designer and Query Wizards create SQL queries as we choose the data we want for a report.

Query Designer: A tool that allows you to make changes in the data selection.

Query Wizard: A tool that allows you to select data for a report.

R

Region: A special kind of component that can contain other components.

Report Tree: A toolbar that displays all of the components in a report. It is particularly helpful in organizing components within bands.

Report Wizard: A tool that allows you to create a report by answering a few simple questions.

ReprintOnOverflow: A speed menu option that sets a component so that it will reprint. For example, a memo has an accompanying label. If the label is set to ReprintOnOverflow, it will reprint on each page of the memo's text. Right-click over a component to select ReprintOnOverflow.

Rich Text: A component that allows you to print formatted text.

Rich Text Editor: A dialog box accessible via the Rich Text component that allows you to replace text with database fields.

Rulers: The design workspace has two rulers: the horizontal ruler and the vertical ruler. As you move a component in the workspace, you'll see a guide that tells you the location of the component on the rulers.

S

SALESORD_HDR: Is the header table with information on delivery address, customer order number, and other reference items.

MYOB EXO Clarity

SALESORD_LINES: Contains the information about individual products ordered, quantity, price, supplied, invoiced, and any text entries.

Select: To click on an object. (See 'highlight' as a contrasting term).

Selection: A group of selected components.

Selection handles: When multiple components are selected, little grey boxes appear around the components. These selection handles indicate the objects that are selected.

Selection tool: A tool used to select one or more components within the layout. It can also be used to clear any selection (by clicking in the white space of a band).

Send to Back: A speed menu option frequently used with shapes that allows components to be moved to the background. If you want to use a shape as a background, use the Send to Back function.

Shift-click: A method of component selection where you hold down the Shift key and then click on components. You can also remove a component from a selection using this method.

ShiftRelativeTo: A speed menu option that allows you to associate components so that they print one after the other. This option is especially useful when you want one component (a memo, for example) to appear below another.

ShiftWithParent: A speed menu option that allows a static component to print after a stretchable component. Right-click over a component to select ShiftWithParent.

Size Toolbar: A toolbar that allows you to set all of the components in a selection to the same width or height.

Sizing: The act of altering the size of a component with the sizing handles or the Position menu.

Sizing handles: The little black boxes that appear when an object is selected. If you drag your cursor over one of the sizing handles, the cursor will change to a double-sided arrow. You can then resize the component by holding down the mouse.

Speed menu: The menu that appears when you right-click over a component. The menu options vary depending upon the component.

SQL Structured Query Language: The language that MYOB EXO Business uses to retrieve data from a database in an ordered form so that it can be used to create reports.

Standard Component Palette: A toolbar that includes the most frequently used components for building reports.

Standard Toolbar: A toolbar that contains standard functions, such as saving, opening, and printing reports.

Start new page: An option in the group's dialog that allows you to force a group onto a new page each time the group field changes value.

Static components: Components that print just as they appear in the layout.

Status bar: The bar at the bottom of the design tab that tracks the movement of selected components. It is useful for component placement and alignment in that it allows you to position components based on an exact measurement. It also displays the name of the selected component.

STOCK_GROUPS: Stores the names of the stock groups

STOCK_ITEMS: Stores the details of the stock items, price, availability, supplier details

STOCK_LOCATIONS: Stores details of the different warehouses, if required.

STOCK_SERIALNOS: Store serial number information if required.

STOCK_TRANS: Stores transactions, with quantities, costs, and references

STOCKTAKE_CTRL: Are used for stocktaking and are not normally referred to in reporting.

STOCKTAKE_TOTALS: Are used for stocktaking and are not normally referred to in reporting.

Stretch: A speed menu option that applies only to stretchable components. When set to true, the component will change size depending upon the amount of text it contains. Right-click over a component to select Stretch.

Stretchable components: Components that change size according to the amount of text they contain. A DBMemo is a stretchable component. Right-click over a component to set Stretch to true.

StretchWithParent: A speed menu option that allows the selected component to change height according to the change in height of the band in which it resides. Right-click over a component to select StretchWithParent.

Strings: These are just text. Even if you have a string with some numbers in it, you can't do any maths on the numbers without forcing the computer to interpret it as such. Look at some of the conversion functions to convert string values if you need to.

Style: A speed menu option for the Crosstab component that allows you to choose between Repeated Captions or Standard printing.

Subreport: A component that allows you to create a report within a report in order to show more levels of detail or to print several reports as one.

Summary Band: A band that prints once at the end of a report. The band is typically used to summarize data. Select Report> Summary to create this band. An invoice total would be in the summary band.

SuppressRepeatedValues: A speed menu option that prevents repeated values from printing.

System Variable: A component that allows you to display the page number, time, date, and other useful information.

T

Tabular: A setting in the Data Tree layout tab that configures the drag and drop behaviour to create labels across the top of the page and data flowing down the page. The opposite of vertical.

Title Band: A band that prints once at the beginning of the report. Select Report> Title to create this band.

Title bar: The area at the top of a window that contains the window title and can be used to drag the window to a new position.

Toolbars: Tools that allow you to modify a report layout. Select View> Toolbars to see a list of all toolbars.

V

Vertical: A setting in the Data Tree layout tab that configures the drag and drop behaviour to create labels down the page and data across the page. The opposite of tabular.

Visible: A speed menu option that determines the visibility of an object. Right-click over a component to select Visible. If the Visible option is set to false, the component will not appear in the report.

W

Workbench: The area on the design tab that surrounds the canvas and contains tools used to modify the report layout.

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