

Customization Manual

Copyright © 2008-2010, Better Days Enterprises, LLC. 722 Alta Vista Rapid City, SD 57701

> Revision: May 2, 2011 Version: 1.85

Table of Contents

Introduction	5
Navigator	5
Preferences	6
Security	6
Departments	6
Allocations Define Departments	6
Define Departments	6
Allocations	7
User Defined Allocations	8
Data Extraction	9
Data Sources/Extractor Definitions	9
QuickBooks®	9
Excel Worksheets	10
Database	10
Data Package	10
Extracted Data	10
Viewing Data	11
Editing Data	13
Purge Extracted Data	13
Analytical and Calculation Engine (ACE)	14
ACE Definitions	14
Parameters	14
Creating Parameters	15
Calculation Options	15
Parameter Formulas	16
Parameters	19
Math Functions	21
Other Functions	21
Aggregate Functions	21
Forecasting Functions	22
Formulas on Formulas	22
Testing Parameters	22
Editing Parameters	23
Parameters with Errors	24
Deleting Parameters	24
Special Parameters	25
Key Parameters	25
ROA Parameters	25
Indicators	27
Key Indicators	27
Creating Indicators	27
Indicator Name	28
Indicator Formula	28
Parameters	28

Math Functions	29
Other Functions	29
Aggregate Functions	29
Forecasting Functions	31
Ranges	31
Range Colors	31
Range Icons	33
Range Advice/Tips	33
Desired Range	34
Benchmark	34
Formatting	35
Categories	35
Formulas on Formulas	
Calculate and Testing	
Editing Indicators	36
Where Used	37
Deleting Indicators	
Conving Indicators	38
Seasonal Trends	38
Calculating Seasonal Trends	30
Default Vear Weighting	30
Custom Vear Weighting	20
Custom real weighting	39
Calculating	39
Manually Editing Saganal Tranda	20
Manually Editing Seasonal Trends	39
Manually Editing Seasonal Trends	39 44
Manually Editing Seasonal Trends Visualization Definitions Gauges	39 44 44
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types	39 44 44 44
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges	39 44 44 44 44
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail.	39 44 44 44 44 51
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail Where Used	39 44 44 44 44 51 51
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail Where Used Viewing Gauges	39 44 44 44 51 51 52
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail. Where Used Viewing Gauges Editing Gauges	39 44 44 44 51 51 52 52
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail Where Used Viewing Gauges Editing Gauges Deleting Gauges	39 44 44 44 51 51 52 52 53
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail Where Used Viewing Gauges Editing Gauges Deleting Gauges Data Views	39 44 44 44 51 51 52 52 53 54
Manually Editing Seasonal Trends Visualization Definitions Gauges. Gauge Types Creating Gauges Print Gauge Detail. Where Used Viewing Gauges Editing Gauges Deleting Gauges Data Views. Dashboards/Scorecards	39 44 44 44 51 51 52 52 53 54 60
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail Where Used Viewing Gauges Editing Gauges Deleting Gauges Data Views Dashboards/Scorecards Reports Manager	39 44 44 44 51 51 52 52 53 54 60 61
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail. Where Used Viewing Gauges Editing Gauges Deleting Gauges Data Views Dashboards/Scorecards Reports Manager Object Relationships	39 44 44 44 51 51 52 53 54 60 61 62
Manually Editing Seasonal Trends Visualization Definitions Gauges Gauge Types Creating Gauges Print Gauge Detail. Where Used Viewing Gauges Editing Gauges Deleting Gauges Data Views Data Views Dashboards/Scorecards Reports Manager Object Relationships Exporting	39 44 44 44 51 51 52 52 53 54 60 61 62 68
Manually Editing Seasonal Trends	39 44 44 44 51 51 52 52 53 54 60 61 62 68 72
Manually Editing Seasonal Trends	39 44 44 44 51 51 52 53 54 60 61 62 72 73
Manually Editing Seasonal Trends	39 44 44 44 51 52 52 53 54 60 61 62 68 72 73 73
Manually Editing Seasonal Trends	39 44 44 44 51 52 52 53 54 60 61 62 72 73 75
Manually Editing Seasonal Trends	39 44 44 44 51 51 52 53 54 60 61 62 72 73 73 75 77
Manually Editing Seasonal Trends	39 44 44 44 51 51 52 52 53 54 60 61 62 68 72 73 73 75 77 77
Manually Editing Seasonal Trends	39 44 44 44 51 52 52 53 54 60 61 62 68 72 73 73 77 77 77

prev Function	
prevY Function	79
Change Function	79
Forecasting Functions	79
Forecast Function	79
Trend Function	83
Mavg Function	83
Math Functions	
abs Function	84
exp Function	84
int Function	84
log Function	84
round Function	84
sgn Function	
sar Function	
1	

Copyright © 2008-2010, CleverQ Patent Pending

Designed for use with QuickBooks®

QuickBooks® is a trade mark and service mark of Intuit Inc., registered in the United States and other countries.

Microsoft Excel® and Microsoft Access® are trademarks and service marks of Microsoft., registered in the United States and other countries.

CleverQ® is a trade mark and service mark of CleverQ and Better Days Enterprises, LLC.

Introduction

This document is to be used for the power user who will work with the data, setup parameters and indicators, and configure gauges. It is required that the user have already read the Introduction and Setup Manual as well as the General User Manual.

Navigator

All of the actions that can be performed from the pull-down menus can also be accessed through a very user friendly interface called the "Navigator". This form is available by selecting the pull-down menu "Setup – Navigator". You will then get the following form.



The Navigator not only provides buttons that can be used to open various forms, but it also contains a diagram that illustrates the flow of data from the "data/reports" on the left to the "Visualization Processor" and "Report Manager" on the right.

The icons represents different functions and hovering over them will give you a clue as to what they will do. Clicking on an icon will perform that function or open up a form.

The following sections will describe each of the blocks in the Navigator diagram.

Preferences

The Preferences block can be clicked directly to open up the Preferences form. The discussion of setting up the preferences was covered in the "Introduction and Setup" Manual.

Security

Clicking on the Security block will open the Security Manger. The discussion of Security is covered in its own separate manual.

Departments

Clicking on the Department block will open the "Setup Departments" menu. Based on how the departments are setup on the Preferences form, you will need to setup the departments a certain way.

On the Preferences form you can define departments by Allocations, or not define department at all.

Allocations Define Departments

If you choose Allocations, then follow these steps.

Setup Departments

- 1. Create your departments using the "Define Departments" button
- 2. Either define allocations using the predefined department allocations using the "Allocations" button, and optionally define allocations using user defined allocations using the "User Defined Allocations" button.



Print Report

Pressing the "Define Departments" button on the "Setup Departments" menu will display the "Define Departments" form. Here you can add or delete departments.



Done

Define Departments

Allocations

User Defined Allocations



Security

Q	Define Departments	×
	Department Name	
►	Body Shop	Ι
	F&I	
	Parts	
	Sales	
	Service	
*		
		-
	Add new departments on the bottom of the list. To rename a department, you must first delete it and then add it in with the new name. To delete a department, select the department above and press the "Delete" key on your keyboard.	
	Deleting a department will delete all existing data for that department as well as all setup information. Any gauges assigned to that department will be reset to no department.	•

Allocations

Pressing the "Allocations" button on the "Setup Departments" menu will display the "Department Allocations" form. Here you enter values from company financial reports that represent the contributions from various departments.

🛛 Department Al	locations												×
Department	Gross Sales \$	Gross Sales %	Gross Profit \$	Gross Profit %	Employee Expense \$	Employee Expense %	Building Sq Ft	Building Sg Ft %	Land Sq Ft	Land Sg Ft %	Avg of Land/ Building	Avg % Alloc	-
Body Shop	\$200,000	1.7%	\$100,000	4.0%	\$50,000	7.4%	1,900	12.9%	10,000	3.6%	8.2%	5.3%	5
F&I	\$300,000	2.5%	\$30,000	1.2%	\$60,000	8.8%	250	1.7%	1	0.0%	0.8%	3.4%	5
Parts	\$700,000	5.9%	\$250,000	10.1%	\$70,000	10.3%	600	4.1%	1	0.0%	2.0%	7.1%	2
Sales	\$10,000,000	84.7%	\$1,800,000	72.6%	\$350,000	51.5%	6,000	40.7%	150,000	53.6%	47.1%	64.0%	2
Service	\$600,000	5.1%	\$300,000	12.1%	\$150,000	22.1%	6,000	40.7%	120,000	42.9%	41.8%	20.3%	2
	\$11,800,000	100.0%	\$2,480,000	100.0%	\$680,000	100.0%	14,750	100.0%	280,002	100.0%	100.0%	100.0%	
	,,		4-7/20100				,				1 -	1	-
										Cancel	Sa	ve	-
Record: I4 🔳	1 🕨 📕	▶ * of 5	5										

The blue numbers on the form are calculated and are available as parameters for calculation of indicators. If gauges are setup for departments, then the "Avg % Alloc" factor is used to calculate the value for the gauge.

🛛 Parameter I	letail				
Select Existing I	Parameter:	Parameter Source	Dept Allocation		•
Gross Profit %!Pa	ts				•
Parameter Name:	Gross Profit %!Parts			Note:	
	A parameter can be based on a specific item on a report/d a formula based on other parameters.	lata source, or			
Report Name:	Dept Allocation	•			
Row Name:	Gross Profit %	-			
Column Type:	Body Shop	-			
×					
	- OR -				
Formula:					
Ж					
Tested					
Add New Param	eter Delete Parameter Where Used	Calculate			Close

The Column Type dropdown will show you a list of departments.

User Defined Allocations

Pressing the "User Defined Allocations" button on the "Setup Departments" menu will display the "Department Allocations – User Defined" form. Here you enter values from company financial reports that represent the contributions from various departments. The percentages are available to be used as a source of data for parameter definition.

🕫 Parameter D	letail				
Select Existing P	Parameter:	Parameter Source	Dept Allocation		•
Gross Profit %!Par	ts				•
Parameter Name:	Gross Profit %!Parts			Note:	
	A parameter can be based on a specific item on a report/d a formula based on other parameters.	lata source, or	_		
Report Name:	Dept User Allocation	•			
Row Name:	I	•			
Column Type:	User Alloc 1 User Alloc 2				
I IN	User Alloc 3				
	User Alloc 4				
Formula:	User Alloc 6				
	User Alloc / User Alloc 8				
	User Alloc 9				
×					
Tested					
Add New Parame	eter Delete Parameter Where Used	Calculate			Close

Data Extraction

The Extractor Definitions block has a dropdown box listing the various data source types available. Choose a data source type and that definition will open. If a type has previously been selected you only need to click on the icon just above the drop down list.

Data Sources/Extractor Definitions

QuickBooks®

A preliminary discussion of getting data from QuickBooks® was covered in the Introduction and Setup manual. You can pull data from many different QuickBooks® reports. Some of the reports include:

- A/P Aging Summary
- A/R Aging Summary
- Balance Sheet
- Inventory Valuation Summary



- Inventory Stock Status by Item
- Payroll Summary
- Open Sales Orders by Item
- Open Sales Orders by Rep
- Open Sales Orders by Item and Rep
- Profit & Loss
- Profit & Loss Budget Overview
- Sales by Item Summary
- Sales by Rep Summary
- Sales by Item by Rep Summary
- Sales by Customer Summary
- Time by Name

Refer to the "Extractors Manual for details of how to setup and load data from QuickBooks®.

Excel Worksheets

Refer to the "Extractors Manual for details of how to setup and load data from Microsoft Excel. After the data is loaded, the format of the data is similar to QuickBooks® but the report names are based on what the user has determined.

There is also a second interface that can be used with Excel. This is called the Data Package eXcel Extractor (DPXE) and using the Data Package interface rather than the Excel interface.

Database

Refer to the "Extractors Manual for details of how to setup and load data from Microsoft Access or any ODBC data source. After the data is loaded, the format of the data is similar to QuickBooks® but the report names are based on what the user has determined.

Data Package

Refer to the "Data Package Creator" Manual for details of how to use the Data Package Creator to enter data and load it into the CleverQ software. This is also the interface to use with the Data Package eXcel Extractor (DPXE).

Extracted Data

The extracted data is stored in part of the Data Cache called "Extracted Data". You can perform three functions from the Navigator on this extracted data:

- 1. View
- 2. Manual Edit
- 3. Purge



Viewing Data

The data loading process populates an internal table referred to herein as either "Data" or the "Data Table". This internal storage has the same format no matter what the source of the data is. To view the data, you press the "view" icon within the "Extracted Data" block on the Navigator. You can also use the pull-down menu and choose "View – View Data Table". This action will give you the following form....

The form will open with the Report Name filter dropdown open. Uncheck "Show All" and then select the report you want to see.

🔜 View Extracted Data								_ 🗆 ×
Report Name 🖾 Data Type Company Job		Class Customer	Name Vendor N	ame Employee I	Name Item	Account		^
Show All))					
A/P Aging Summary		Column Type =	J					
A/P Aging Summary Filter				-	E 6/30/2008	-		
A/R Aging Summary		New Construction	Overhead	Remodeling			% of Tot Asset	Amou
🖌 🗹 A/R Aging Summary Filter								
Balance Sheet								
Dept Allocation			0					
Dept User Allocation		U	U	U				
🖌 Formula Parameter	0							
Inventory Stock Status by Item					71227.23			
Inventory Stock Status by Item Filter								
Inventory Valuation Summary								
Inventory Valuation Summary Filter								
Open Sales Orders by Item								
Open Sales Orders by Item By Rep	0				144031.44	335552.90	3 1532.4	
🔽 Open Sales Orders by Item Filter		0	0	0				
Open Sales Orders by Rep								
Open Sales Orders by Rep Filter	0							
Payroll Summary								
Payroll Summary by Employee								
Profit & Loss								
Profit & Loss Filter								
Sales by Customer Summary		0	0	0				
Sales by Customer Summary Filter								
Sales by Item by Rep Summary								
Sales By Item By Rep Summary Filter								
Sales by Item Summary								
Sales By Item Summary Filter		0	0	0				~
🛛 🗹 Sales by Rep Summary								>
Sales By Rep Summary Filter					Denvir (E	and pro-	1	Deer
Seasonal Trend FP					Preview/Ex	φοπ Print		Done
Seasonal Trend PL								
OK Cancel .:								

The form can be resized to you can see more data if you want. The data is shown in a pivot table and there are many options for looking at this data.

🔛 View Extracte	d Data																	_ 🗆 ×
Report Name	Data Type	Com	pany	Job	Class Cus	tomer N	Vame Vendor N	ame Employee	Name	Item	Account							^
Data Value		_	Column D		Column Tun													
			Columnityp							- a /a / Inaaa	- + /20 /2000	C 5/04/0000	- c /aa /aa a					
Row Number 🔺	Row Name	-	··· 6/30/2	008	· //31/2008		0 8/31/2008	9/30/2008	- 10/31	1/2008	- 11/30/2008	- 12/31/2008	- 1/31/2009	- 2/28/2009	··· 3/31/2009	- 4/30/2009	E 5/31/2009	··· 6/30/2009
- 4	10100 · Cher	hina		50251.82	653	48.96	57450 59	68688 73		71157.08	59807.6	55115.44	70365.80	55191.61	65713.29	58673 32	64684 78	576
0.5	10400 · Peth	V C.		1000	0.00	1000	1000	1000		1000	100	1000	1000	1000	1000	1000	1000	570
. 6	10300 · Savir	nas		31200		1200	31293.42	31293.42		31293.42	31322.7	2 31322.72	31322.72	31408.64	31408.64	31408.64	31481.03	314
	Total Checkin	ng/		82451.82	975	48.96	89744.01	100982.15		103450.50	92130.4	1 87438.16	102688.52	87600.25	98121.93	91081.96	97165.81	901
- 9	11000 · Acco	un	1	00914.22	866	38.73	113409.93	112892.97		129392.97	152602.9	7 163635.07	200210.07	232440.07	236615.93	243255.50	242244.55	2739 _
- 10	Total Accoun	ts	1	00914.22	866	38.73	113409.93	112892.97		129392.97	152602.9	7 163635.07	200210.07	232440.07	236615.93	243255.50	242244.55	2739
12	12800 · Empl	oy		1540		1540	1540	1540		1540	154	1540	1540	1540	1540	1540	1540	
- 13	12100 · Inve	nt		24418.10	248	34.50	24834.50	24174.80		24174.80	24174.8	24174.80	24174.80	24174.80	23522.32	23354.08	23354.08	233
14	13100 · Pre-	pai		6750		5400	4050	2700		1350	1167	2 10024.34	8376.68	6729.02	5081.36	3433.70	9886.04	82
· 15	13400 · Reta	in		3593.44	35	93.44	3593.44	3593.44		3593.44	3593.4	4 3593.44	3593.44	3593.44	3593.44	3593.44	3593.44	35
16	12000 · Unde	ep													16252.08	18252.08	18252.08	184
· 17	Total Other O	Dur		36301.54	353	57.94	34017.94	32008.24		30658.24	40980.2	4 39332.58	37684.92	36037.26	49989.20	50173.30	56625.64	551
- 18	Total Current	t A	2	19667.58	2196	05.63	237171.88	245883.36	1 3	263501.71	285713.6	2 290405.81	340583.51	356077.58	384727.06	384510.76	396036.00	4192
i 20	17000 · Accu	im	-1	06112.57	-1061	12.57	-106112.57	-106112.57	-	106112.57	-106112.5	7 -106112.57	-106112.57	-106112.57	-106112.57	-106112.57	-150548.48	-1505
21	15200 · Build	ing		650000	6	0000	650000	650000		650000	65000	650000	650000	650000	650000	650000	650000	6
· 22	15300 · Cons	str		30600		0600	30600	30600		30600	3060	30600	30600	30600	30600	30600	30600	
- 23	15000 · Furn	itu		45652		15652	45652	45652		45652	4565	2 45652	45652	45652	45652	45652	45652	-
- 24	16900 · Land			180000	1	0000	180000	180000		180000	18000	180000	180000	180000	180000	180000	180000	1
- 28	15100 · Vehic	de	1	57873.82	1578	73.82	157873.82	157873.82		157873.82	157873.8	2 157873.82	157873.82	157873.82	157873.82	157873.82	157873.82	1578
- 29	Total 15100	· V	1	57873.82	1578	73.82	157873.82	157873.82		157873.82	157873.8	2 157873.82	157873.82	157873.82	157873.82	157873.82	157873.82	1578
··· 30	Total Fixed A	ssets	9	58013.25	9580	13.25	958013.25	958013.25	-	958013.25	958013.2	5 958013.25	958013.25	958013.25	958013.25	958013.25	913577.34	9135
- 32	18700 · Secu	rit		3440		3440	3440	3440		3440	344	3440	3440	3440	3440	3440	3440	
· 33	Total Other A	lss		3440		3440	3440	3440		3440	344	3440	3440	3440	3440	3440	3440	
- 34	TOTAL ASSET	TS	11	81120.83	11810	58.88	1198625.13	1207336.61	1	224954.96	1247166.8	7 1251859.06	1302036.76	1317530.83	1346180.31	1345964.01	1313053.34	13362
i 39	20000 · Acco	un		7485		5435	5714	5000		5000	905	11733.75	10979.87	9744	9050	9050	13100	116
- 40	Total Account	ts		7485		5435	5714	5000		5000	905	11733.75	10979.87	9744	9050	9050	13100	116
- 42	20600 · CalO	el		4050.98	-40	50.98	-4050.98	-4050.98		-4050.98	-4050.9	3 -4050.98	-1710.98	-6390.98	-6390.98	-6390.98	-5860.98	-50
- 43	20500 · Quid	kB				1600	-1600	-200		-3000	-300	-3000	-3000	-3000	1050	-7050	-7050	
- 44	Total Credit C	Cards		4050.98	-24	50.98	-5650.98	-4250.98		-7050.98	-7050.9	3 -7050.98	-4710.98	-9390.98	-5340.98	-13440.98	-12910.98	-113
i 50	24100 · Emp.	. н																~
																		2
															Pres	view/Export	Print	Done

You can filter, sort, rearrange, expand and collapse, group, print, and export the data. Refer to the section later in this document titled "Viewing Extracted Data Using the PivotGrid".

The following figure shows you a typical QuickBooks® report and how the elements of the report get loaded into the data table.



Having a good understanding of the structure of the data after it is loaded from the various data sources is the key to creating the parameters that will be made available. Normally you would not use this form to view the data, but it is very valuable when you are creating parameters and indicators so you can check your formulas.

Editing Data

On the Navigator screen, you will find an icon in the Extracted Data block called Manual Edit. Clicking on this icon will display the following form.



With this form you can enter new data manually, edit existing data, and maintain templates for entering data. This is the identical form that is part of the Data Package Creator used to enter data manually separate from the Dashboard software. Refer to the manual "CleverQTM - Data Package Creator" available from the Windows Start – All Programs – CleverQTM menu.

Purge Extracted Data

At some time, you may want to clear all the extracted data out especially if you have been testing and developing your visualizations. The Purge icon in the Extracted Data block on the Navigator can be used for that.

Analytical and Calculation Engine (ACE)

The Analytical and Calculation Engine within the CleverQ Software takes definitions of parameters, indicators, and seasonal trends, along with the extracted data and computes the values necessary to display on gauges, dashboards, scorecards, and reports.

ACE Definitions

Parameters

Parameters as used in this software are the mechanism for getting the data so it can be referenced in an indicator formula. It puts a label or name on an element that exists in the data table. Parameters are based on either:

- 1 Report Name and Row Name
- 2 Report Name and Row Name and Column Type
- 3 Report Name and Column Type

Parameters Parameters ACE Definitions ACE Definitions ACE Lefinitions Analytical & Calculation Engine (ACE)

Some reports do not have a Column Type such as the Balance Sheet, Profit and Loss Statement, and Sales by Rep Summary. For the other reports, you need to specify the Column Type as part of the parameter.

Parameters do not get associated with a department, date, or period. This is handled at a higher level when a gauge is defined.

Clicking on the "Parameters" icon in the ACE Definitions block will bring up the following form:

🔍 Parameter Det	ail					
Select Existing Par	ameter:		Parameter S	ource All		•
						<u> </u>
Parameter Name:					Note:	Tested
	To overwrite au	ito-naming, change the nam	e after selecting the r	eport, row, and column.		
	A parameter can source, or a form	be mapped to a specific item ula based on other paramete) on a report/data ers.	☐ Key Parameter ☐ Null to zero ☐ No Filters		
Map Parameter					1	
Report Name:				-		
Row Name:				•		
Column Type:				•		
×						
- Calculate Parame	ter	- OR -				
Formula:						
×				<u> </u>		
Note for Formula period in a date i calculated once v	as: When a paramete range and stored to with the specified da	er formula is calculated norm be used by other parameter te range, preceed the formu	ally, the results are ca rs or indicators. To or ula with "Ratio:"	lculated for each time nly have a formula		
Add New Paramete	r Copy	Delete Parameter	Where Used	Calculate		Close

The form is blank initially and you either need to select an existing parameter from the drop down list on the top of the form, or press the "Add New Parameter" button. The previous figure shows the form after pressing the "Add New Parameter" button.

Creating Parameters

To create a new parameter, press the "Add New Parameter" button on the "Parameter Detail" form. You must enter a name for the parameter and then either a reference to a Report Name – Row Name – Column Type or a formula created from other parameters.

The Parameter Name must have some meaning since it will be referenced in other places in the software. If you initially leave the Name field blank and select a Report Name, Row Name, and Column Type, the name field will automatically fill in using the abbreviation for the Report Name, Row Name, and if selected the Column Type separated with an "!". You can use this name or type over it and rename it.

If you want to create a parameter from other parameters rather than from a report source, then leave the Report Name, Row Name, and Column Type blank and enter your formula.

Calculation Options

Two options exist on this form which will also affect how the parameter is calculated. The first is "Null to Zero". When a parameter is calculated and no value exists usually because the underlying extracted data is not available, the parameter value is a null or no value. This is different than saying the calculation returns a zero value which could be a real result. When a parameter is null, any other parameters or indicators that depend on the null parameter will also be null, and any gauges will show a warning usually saying there is insufficient data to display the gauge. If you check off "Null to Zero", the null result is returned as a zero and the dependent objects will calculate and display without any warnings.

The second option is "No Filters". There may be filters defined for various elements in the system and sometimes you might want to calculate a percentage where the numerator is a filtered value, but the denominator isn't. If you create an parameter with no filters, then that parameter could be used as the denominator.

Parameter Formulas

The parameter formula can be as simple or as complex as you want. Formulas are based on other parameters and are referenced by the parameter name enclosed in brackets "[]". Formulas can also contain functions. Functions include simple math functions, other functions, aggregate functions, special functions, and forecasting functions.

There are some things you need to consider when creating a parameter formula and the best way to explain it will be with an example. Consider the following Excel worksheet containing some data in the green cells. There are two rows of data labeled Row A and Row B. There is one year of monthly data also. Cell N4 contains the sum of all 12 months of Row A data. Cell N5 contains the sum of all 12 months of Row B data.

	A	B	C	D	F	F	G	Ц	1	1	L.	1	м	N	0	
		U	0	U	L		9			J	n.	L	191	IN	0	-
1																
2																
3		1/31/08	2/29/08	3/31/08	4/30/08	5/31/08	6/30/08	7/31/08	8/31/08	9/30/08	10/31/08	11/30/08	12/31/08	Yearly	Totals	
4	Row A	1	2	3	4	5	6	- 7	8	9	10	11	12	78	SumA	
5	Row B	5	6	5	6	5	6	5	6	5	6	5	6	66	SumB	
6																
7	A+B	6	8	8	10	10	12	12	14	14	16	16	18	144		
8	A/B	0.20	0.33	0.60	0.67	1.00	1.00	1.40	1.33	1.80	1.67	2.20	2.00	***		
9																
10																
11	*** Two o	options for	yearly tot	al of A/B												
12		1	SumA/Su	mB = 78/8	66 =		1.18									
13		2	∑ (A/B t	for Jan) + i	(A/B for Fe	eb) + =	14.20									
14																

Row 7 contains a calculation for the individual monthly sum of A and B with the total of the sums in cell N7.

Row 8 contains a calculation for A/B for each month. This is where it gets interesting. Cell N8 wants to be the total of the calculation A/B, but do we total each individual month or do the calculation of the Sum of A divided by the Sum of B? In some cases you may want to do it one way and in other cases, you may want to do it the other way. Here is how you handle this in CleverQ....

Assuming the green cells have been loaded into CleverQ with a Report Name = "Example-Data". We first create a parameter A as follows:

Q Parameter D		
Select Existing	Parameter: Parame	ter Source Example-Data
A		
Parameter Name:	A	Q Formula Calculator
	To overwrite auto-naming, change the name after selecting A parameter can be based on a specific item on a report/data sourc a formula based on other parameters.	78 Date Range: Last Year
Report Name:	Example-Data	Dept:
Row Name:	Row A	Data Type: Monthly
Column Type:		Formula:
×		A
Formula:	- OR -	
Tested		Done!
Add New Param	eter Delete Parameter Where Used Calc	Jlate

Note when we hit the calculate button and select Last Year (2008), the total comes up that matches cell N4 in the worksheet. Creating a parameter B is similar. You can also create a parameter to match the cell N7 as shown in the next figure.

🔍 Parameter I			
Select Existing	Parameter:	Parameter Source [Formula]	•
SumAB			-
Parameter		🍳 Formula Calculator 🛛 🔀	
Name:	SumAB To overwrite auto-naming, change the name after	n 144	
	A parameter can be based on a specific item on a report a formula based on other parameters.	T Date Range: Last Year	
Report Name:		Data Type: Monthly	
Row Name:		Formula:	
Column Type:		SumAB	
×			
Formula:	- OR - [A]+[B]		
×		Done	
Tested			
Add New Param	eter Delete Parameter Where Used	Calculate	Close

To accomplish Option 1, where we take the Sum of A and divide it by the Sum of B (Cell G12 in the example worksheet) you would create a parameter as follows:

🝳 Parameter I				
Select Existing	Parameter:	Parameter Source	[Formula]	•
Option1				•
Parameter Name:	Option1 To overwrite auto-naming, change the name after s	🔍 Formula Ca	lculator 1.18181818181818	
	A parameter can be based on a specific item on a report/da a formula based on other parameters.	Date Range: [Dept: [Last Year 💽 💽	
Report Name: Row Name:		Data Type: [Formula:	Monthly	
Formula:	- OR -	Option1		
Tested			Done	J
Add New Param	eter Delete Parameter Where Used	Calculate		Close

By preceding the formula [A]/[B] with the word "Ratio" followed by a colon, the CleverQ calculation engine does not use the individual monthly values to calculate but instead using the Sum of A and the Sum of B.

To accomplish Option 2, where we take the summation of each monthly value, we create our parameter as follows:

🔍 Parameter I			
Select Existing	Parameter:	Parameter Source [Formula]	•
Option2			
Parameter Name: Report Name: Row Name: Column Type: X Formula:	Option2 To overwrite auto-naming, change the A parameter can be based on a specific item of a formula based on other parameters. - OR - [A]/[B]	Formula Calculator 14.2000000327826 Date Range: Last Year Dept: Data Type: Monthly Formula: Option2 Done	
Add New Param	eter Delete Parameter When	e Used Calculate	Close

This is similar to Option 1 without the word "Ratio:" in front of the parameter formula.

To summarize, Option 1 with the word "Ratio:" as part of the formula is calculated once when the parameter is referenced, while Option 2 is calculated for each time period in a date range. Each calculation is stored temporarily and then referenced for each time period a parameter is referenced. Option 2 actually creates new data to be stored to be used by other parameters.

Care must be taken when using aggregate functions with parameter formulas. For example, if you used the formula "[A,Last]/[B,Last]", you would get the same value as if you used [A]/[B]. But if you preceded the formula with "Ratio:" like this

🔍 Parameter 🛙			
Select Existing I	Parameter:	Parameter Source [Formula]	•
			•
Parameter Name:	Example3	Q Formula Calculator	
	To overwrite auto-naming, change th	2	
	A parameter can be based on a specific item a formula based on other parameters.		
		Date Range: Last Year	
Report Name:			
Row Name:			
Column Type:		Formula:	
Formula:	Ratio: [A.Last]/[B.Last]		
		(Done)	
Add New Param	eter Delete Parameter When	e Used Calculate	Close

You would get the result as shown in cell M8 in the worksheet which is the calculation for the last month in the date range.

Obviously, it makes sense to test your parameter formulas out and make sure you use the correct option.

Parameters

If you know the parameter you want to include, you can just type it in. You can also paste a parameter into a formula by selecting a parameter from a list that is opened when you press the "…" button. On the form that opens, you first select a Parameter Source, and then select the parameter. A Parameter Source is either a formula or the report name the parameter is based on.



To paste a parameter from the list you can do one of two things after you highlight the parameter:

1 - Press the "Copy Parameter to Clipboard" and then when you go back to the indicator detail form and paste it into the formula where you want it.

2 - Press the "Paste Parameter at End of Last Selection" and the parameter will go at the end of the formula on the indicator detail form.

If you need a parameter you have not create yet, you can create a parameter based on a report on the fly by pressing the "Add New Parameter" button on the Select Parameter form. In this case you the Parameter Select form will change it contents and you can then select a parameter source, row name, and optional column type. Then press either the "Copy Parameter to Clipboard" or "Paste Parameter at End of Last Selection" buttons and the new parameter will be available. It will automatically be created so it can be used again. It will automatically be named with an abbreviation for the parameter source, followed by a !, then the row name. If a column type is included, another ! is added and the column type is added. See the following figure for an example. If a user chooses to create a parameter on the fly and a parameter already exists for the selection, a new parameter will not be created and the existing parameter name will be used.

Select Parameter	×
Parameter Source	1
Sales by Item Summary	Add Nov Barranter
Row Name	Add New Parameter
Total 200-Used Marine	
Column Type	
Amount	
	Conu Devenator
	to Clipboard
	to capboard
	Paste Parameter
	at End of Last
	Cancel
	Cancor

becomes the parameter [SbIS!Total 200-Used Marine!Amount]

Math Functions

You can use the standard math functions:

- + addition
- subtraction
- * multiplication
- / division
- ^ raise to a power

Other Functions

There are a number of functions you can use in the formulas. These are covered in Appendix A.

Aggregate Functions

For parameters, you have the added feature of including what is called "Aggregate Functions". These allow you to specify additional ways of using the parameters. The Aggregate functions include: Sum, Avg, Min, Max, Stdev, Var, First, Last, and Count.

The function "Sum" is assumed as the default unless you specify something else. The aggregate function is placed within the parameter's brackets following the parameter name and a comma. For example... [Total Current Assets, Avg] This would calculate to average of the "Total Current Assets" parameter over the time period specified by the gauge when the indicator is calculated. So if the data range was last year, it would calculate the average monthly value of the parameter over the 12 month period last year. If you did not include the ",Avg", then the value calculated would instead be the sum over the 12 month period last year.

Aggregate Functions				
Sum	Total over time period			
Avg	Average over time period			
Min	Minimum value over time period			
Max	Maximum value over time period			
Stdev	Standard Deviation over time period			
Var	Variance over time period			
First	Value in first period			
Last	Value in last period			
Count	Number of values within time period			

NOTE: You can only use aggregate functions on parameters that are based on report data and not formulas.

Forecasting Functions

Forecasting Functions					
Forecast	Predicts a value based on history and				
	seasonal trends or linear regression				
Trend	Return the seasonal trend fraction				
Mavg	Calculates the moving average				

The details of these functions can be found in Appendix A

NOTE: You can only use forecasting functions on parameters that are based on report data and not formulas.

Formulas on Formulas

Since you can create a parameter that has a formula and that formula can contain other parameters that in turn can have formulas, the precedence of calculating these formulas are critical. Be sure to test out your parameters and parameter formulas before you deploy your solution.

Testing Parameters

After you have named your parameter and either selected a report or created a formula, you can check to see if the parameter works. Use the "Calculate" button. This will

bring up the "Formula Calculator" form where you can select a data range, dept, filters, and period and then see what the result is. You can change the date range, department, filters or period and the result will recalculate. The software will remember your last settings for the next time you use the formula calculator.

🔍 Parameter D	Detail						X	
Select Existing F	Parameter:		Parameter S	iource All			<u>.</u>	
Net Income								
Parameter Name:	Net Income <i>To overwrite :</i> A parameter car source, or a fon	<i>auto-naming, change the nam</i> n be mapped to a specific item mula based on other parametr	e after selecting the on a report/data ers.	report, row, and column. Key Parameter Null to zero No Filters	Note: Total re expens are not Loss, a net ear	Tests evenue in an accounting period less all es during the same period. If income taxes deduted, it is called operating profit (or s the case may be). Also called earnings, nings, or net profit.	ed	
Map Parameter	r							
Report Name:	Profit & Loss			-		🍳 Formula Calculator		
Row Name:	Net Income			<u> </u>			13,123.48	
Column Type:				-		Date Pange	l ast Month	
<u> </u>		00				Data Type	Monthly	
Calculate Parar	neter —	- UR -				butu type		
Formula:						Company		
						Account		
						Item		
<u> </u>						Employee Name		•
Note for Form period in a da	nulas: When a parame ite range and stored t	ter formula is calculated norm to be used by other parameter	ally, the results are c 's or indicators. To o	alculated for each time nly have a formula		Vendor Name		•
calculated on	ce with the specified o	late range, preceed the form	la with "Ratio:"			Customer Name		•
Add New Param	eter Copy	Delete Parameter	Where Used	Calculate	_			Ŧ
								Ψ
						Formula:		
						Net Income		
							Dor	18

Finally, if everything looks good, you can keep track of the parameters you have verified by checking off the "Tested" checkbox on the Parameter Detail form.

By closing the form, selecting an existing parameter from the top of the form, or pressing the "Add New Parameter" button, the existing parameter will be saved.

Editing Parameters

To edit a parameter you either use the pull-down menu and choose "Setup – Parameters" or click on the "Setup" icon in the Parameters block on the Navigator. You then select the existing parameter from the pull down list on the top of the form. The following figure shows you that this pull down list includes a number of items to help you choose the parameter including the report name (Source), row name, column type, and formula (Other).

Parameter Detail					
Select Existing Paramete	r:	ALL	•		
Total Assets Turnover					•
Name	Source	Row Name		Column Type	Other 🔼
Net Profit Margin Net Working Capitol Operating Profit EBIT	D	(2000 - 01h - 1	- I I		[Net Income]/[Total Income] [Total Current Assets]-[Total ([Net Ordinary Income]+[Expe
P&A Margin Quick Assets Service Hours Collected	Profit & Loss	69900 . Other I	nterest		([Income Parts & Accessories] [Total Current Assets]-[Total] [Service Income]/[Service Lab
Service Income Service Labor Rate	Profit & Loss	Total 47000 · Se	ervice Department		98
Total 13100 · RV Inventory	Balance Sheet Balance Sheet	Total 13100 · R TOTAL ASSETS	V Inventory		
Total Assets Turnover					[Total Income]/[Total Assets.a
Total Checking/Savings Total Current Assets Total Current Liabilities Total Equity Total Fixed Assets Total Income	Balance Sheet Balance Sheet Balance Sheet Balance Sheet Balance Sheet Profit & Loss	Total Checking/ Total Current A Total Current Li Total Equity Total Fixed Asso Total Income	Savings ssets abilities ets		
Total Inventories	Balance Sheet	Total 13000 · In	nventory		
Total Inventory!Amount	Sales by Item Summary	Total Inventory		Amount	
Total Inventory!Asset Value	Inventory Valuation Summary	Total Inventory		Asset Value	
Total Inventory!COG5	Sales by Item Summary	Total Inventory		COGS	
Total Inventory!On Hand	Inventory Valuation Summary	Total Inventory		On Hand	
Add New Parameter	Delete Parameter	Where Used	Calculate		Close

You can limit the list of parameters in the drop down list by selecting a parameter source first on the top of the form.

After choosing the parameter, it will be displayed on the form. You can edit any aspect of it. If you rename it and it is used by other parameters or indicators, you will be warned, and prompted to change the name in those formulas. You can see where a parameter is used by pressing the "Where Used" button on the bottom of the form.

To undo your edits, press the Esc key.

By closing the form, selecting another existing parameter from the top of the form, or pressing the "Add New Parameter" button, the changes to the edited parameter will be saved.

Parameters with Errors

In the Parameter Source dropdown list is a choice "ERRORS". If any errors exist with a parameter definition, you will see the parameter name and the source of the error on the Select Existing Parameter drop down list.

Deleting Parameters

To delete a parameter you either use the pull-down menu and choose "Setup – Parameters" or click on the "Setup" icon in the Parameters block on the Navigator. You then select the existing parameter from the pull down list on the top of the form. Pressing the "Delete Parameter" button will delete the parameter. You will be prompted to delete the parameter and if it is used by some other object, you will be prompted to be sure you want to delete all related objects. This can include other parameters that use this parameter in its formula, any indicators, and any gauges that depend on the parameter.

Special Parameters

Key Parameters

A key parameter is defined as a parameter that is used in a key indicator formula. You can manually set a parameter as a key parameter by checking off the Key Parameter Checkbox on the Parameter Detail form.

🔍 Parameter I	Detail					
Select Existing I	Parameter:		Parameter S	ource All		•
Net Income						•
Parameter Name:	Net Income				Note:	Tested
	<i>To overwr.</i> A parameter source, or a	<i>ite auto-naming, change the nam</i> can be mapped to a specific item formula based on other paramete	e after selecting the ru on a report/data ers.	Key Parameter Noll to zero No Filters	Total revenue in an accounting period let expenses during the same period. If inco are not deducted, it is called operating p Loss, as the case may be). Also called ex net earnings, or net profit.	s all ime taxes for the taxes for taxes are taxes to taxes the taxes t
Map Parameter	r				1	
Report Name:	Profit & Loss			•		
Row Name:	Net Income			•		
Column Type:				-		
×						
Calculate Para	neter —	- OR -				
Formula:						
×						
Note for Forn period in a da calculated on	nulas: When a para ite range and store ce with the specifie	ameter formula is calculated norm ed to be used by other parameter ed date range, preceed the formu	ally, the results are ca 's or indicators. To or Ja with "Ratio:"	lculated for each time hly have a formula		
Add New Param	eter Copy	Delete Parameter	Where Used	Calculate		Close

This flag can also automatically be checked from the Relationships form which will be covered in a later section of this manual.

When security is on, editing of the Key Parameters are limited to those users in the "Key Ratio Editor".

NOTE: It is highly recommended that you do not change Key Ratios or Key Parameters since these have been defined as industry standards and if you use the Subscription Service, you will be able to compare your data with industry benchmarks and get advice specific to these indicators.

ROA Parameters

When creating a parameter based on the report "Sales by Item Summary" and you choose the column type "ROA", you will be prompted to automatically create a set of parameters for the selected row name.

Select Existing Parameter: Parameter Source Al Net: Parameter Note: Note:	
Net Income Parameter Note: Parameter SbISHardwareIROA Note: To overwrite auto-naming, change the name after selecting the report, row, and column. Key Parameter A parameter can be mapped to a specific item on a report/data source, or a formula based on other parameters. Note:	 ☐ Tested
Parameter Name: SDISHardwareIROA Note: To overwrite auto-naming, change the name after selecting the report, row, and column. Key Parameter A parameter can be mapped to a specific item on a report/data source, or a formula based on other parameters. Note:	T Tested
A parameter can be mapped to a specific item on a report/data NUI to zero source, or a formula based on other parameters. NUI to zero	
Report Name: Gales by Item Summary Row Name: Hardware	
Column Type ROA	
Calculate Parameter	
Formula: Confirm automatics parameter creation Do you want to automatically create parameters	s and the formulas for Amount, COGS, Asset Value, Margin, Turnover, ROA, and Days Inventory, If they don't exis
Note for Formulas: When a parameter formula is calculate period in a date range and stored to be used by other parameters or indicators. To only have a formula calculated once with the specified date range, preceded the formula with 'Ratio:'	Yes No
Add New Parameter Copy Delete Parameter Where Used Calculate	Close

If you select "Yes", the parameters for Amount, COGS, Asset Value, Margin, Turnover, ROA, and Days Inventory will be created if they do not already exist. If the data sources for these parameters are not available, you will also be prompted whether you want to create the parameters or not. Doing so will produce errors if you do not load the necessary data. In addition to the "Sales by Item Summary" report, you need the "Inventory Valuation Summary" report.

The parameters that get created will be listed in the message box.



The parameters "Amount" and "COGS" come directly from the report "Sales by Item Summary". The parameter "Asset Value" comes directly from the report "Inventory Valuation Summary". The remaining parameters are formulas based on these three parameters:

```
Margin = ([Amount]-[COGS])/[Amount]
Turnover = [COGS]/[Asset Value,Avg]/Numdays()*365
ROA = [Turnover]*[Margin]
Days Inventory = [Asset Value,Last]*numdays()/[Amount]
```

These four formulas are preceded by "Ratio:" (refer to the previous discussion regarding parameter formulas, indicators, and whole numbers).

Indicators

An indicator is fundamentally created for the purpose of displaying a value on a gauge. Indicators are typically what are known as "financial ratios" or "financial indicators". These ratios are used to evaluate the financial condition of a company and departments within a company. Indicators fall into categories and some typical categories include: profitablity, liquidity, debt, activity, market, etc. A very common indicator or ratio is the current ratio which is calculated by dividing the current assets by the current liabilities. These values come from a Balance Sheet.

Using this software and this example of Current Ratio, the software will take the values from the QuickBooks® Balance Sheet that gets extracted into the data table, assign parameters to the data and then create a indicator based on these parameters. The indicator can then be used to drive a gauge that show's up on a dashboard.



Key Indicators

A key indicator is defined as an industry standard indicator and it is recommended that you do not change these indicators. When security is on, editing of the Key Indicators are limited to those users in the "Key Ratio Editor".

NOTE: It is highly recommended that you do not change Key Indicators or Key Parameters since these have been defined as industry standards and if you use the Subscription Service, you will be able to compare your data with industry benchmarks and get advice specific to these indicators.

Creating Indicators

To create an indicator, you will either press the "Indicators" icon on the ACE Definitions block on the Navigator form, or choose from the pull-down menu "Setup – Indicators". The Indicator Detail form will appear and will be blank. To add a new indicator, you press the "Add New Indicator" button. To choose an existing indicator, use the pull down list on the top of the form labeled "Select Existing Indicator".

The following figure shows this form with the existing indicator "Current Ratio" selected.

🔍 Indicator Da	atail					
Indicator C	ategory Liquidity Ar	nalysis		•		
Select Existing I	ndicator Current Ra	tio				•
Indicator Name [Current Ratio					🔽 Key Indicator
Indicator Formula	[Total Current Assets,l	ast]/[Total Current Li	abilities,last]		Formulas are based on pa be enclosed in []. Function Avg_Min_Max_Stdev_Var,F the parameter name (e.g. function Sum is assumed if	rameters. Parameters must irst,Last,Count can follow [Total Assets,Avg]. The i no function is specified)
	Color Scheme or click	on bars to select colo	ors	ita 🗶 🚽 Doci	imple1 - Mult -	Patent Pending
Maximum (High (Low (Minimum)	10 10.0 2 2.0 1.1 1.1		Advice for Though ev considered superiority Generally, obligations Though ev considered assetts is a	different ranges (Pla ery industry has its r desirable in most se of current assets ov the higher the curren and a firm's ability to ery industry has its r desirable in most se ts current obligation: a critical factor in the	range of acceptable current-ratios, a ctors. The Stronger Ratio reflects a ver current liabilities. Int ratio, the greater the "cushion" b o pay them range of acceptable current-ratios, a ctors. This Ratio is a rough indication s However, the composition and q analysis of a firm's Liquidity.	etween current
Desired Range	0.0	<u>~</u>				
Benchmark						Categories
Note: Tested	Indicator of a firm's abil range of acceptable cu is a more suitable meas	ity to meet short-ter rent-ratios, a ratio o re where salability o	m financial obligatio of 2:1 is considered of inventory is quest	ns, it is the ratio of c desirable in most sec iopable. Formula: Q	current assets to current liabilities. The formula to current liabilities in current liabilities \div Current liabilities	hough every industry has its urrent assets, acid test ratio
Add New Indicato	or Delete Indicator	Where Used	Calculate	Copy Indicator		Close

There is a lot of information on this form about the indicator. The absolute minimum that must be entered is the Indicator Name and the Indicator Formula. Everything else is optional.

Indicator Name

The name of the indicator should be something that makes sense and would typically be something that is familiar.

Indicator Formula

The indicator formula can be as simple or as complex as you want. Formulas are based on parameters and are referenced by the parameter name enclosed in brackets "[]".

Parameters

If you know the parameter you want to include, you can just type it in. You can also paste a parameter into a formula by selecting a parameter from a list that is opened when you press the "…" button. On the form that opens, you first select a Parameter Source, and then select the parameter. A Parameter Source is either a formula or the report name the parameter is based on.

To paste a parameter from the list you can do one of two things after you highlight the parameter:

1 – Press the "Copy Parameter to Clipboard" and then when you go back to the indicator detail form and paste it into the formula where you want it.

2 - Press the "Paste Parameter at End of Last Selection" and the parameter will go at the end of the formula on the indicator detail form.

If you need a parameter you have not create yet, you can create a parameter based on a report on the fly by pressing the "Add New Parameter" button on the Select Parameter form. In this case you the Parameter Select form will change it contents and you can then select a parameter source, row name, and optional column type. Then press either the "Copy Parameter to Clipboard" or "Paste Parameter at End of Last Selection" buttons and the new parameter will be available. It will automatically be created so it can be used again. It will automatically be named with an abbreviation for the parameter source, followed by a !, then the row name. If a column type is included, another ! is added and the column type is added. If a user chooses to create a parameter on the fly and a parameter already exists for the selection, a new parameter will not be created and the existing parameter name will be used.

Math Functions

You can use the standard math functions:

- + addition
- subtraction
- * multiplication
- / division
- ^ raise to a power

Other Functions

There are a number of functions you can use in the formulas. These are covered in Appendix A.

Aggregate Functions

For indicators, you have the added feature of including what is called "Aggregate Functions". These allow you to specify additional ways of using the parameters. The Aggregate functions include: Sum, Avg, Min, Max, Stdev, Var, First, Last, and Count. The function "Sum" is assumed as the default unless you specify something else. The aggregate function is placed within the parameter's brackets following the parameter name and a comma. For example... [Total Current Assets, Avg] This would calculate to average of the "Total Current Assets" parameter over the time period specified by the gauge when the indicator is calculated. So if the data range was last year, it would calculate the average monthly value of the parameter over the 12 month period last year. If you did not include the ",Avg", then the value calculated would instead be the sum over the 12 month period last year.

Indicator Aggregate Functions		
Sum	Total over time period	

Avg	Average over time period
Min	Minimum value over time period
Max	Maximum value over time period
Stdev	Standard Deviation over time period
Var	Variance over time period
First	Value in first period
Last	Value in last period
Count	Number of values within time period

NOTE: You can only use aggregate functions on parameters that are based on report data and not formulas.

Forecasting Functions

Forecasting Functions			
Forecast	Predicts a value based on history and		
	seasonal trends or linear regression		
Trend	Return the seasonal trend fraction		
Mavg	Calculates the moving average		

The details of these functions can be found in Appendix A

NOTE: You can only use forecasting functions on indicators that are based on parameters that are based on report data and not formulas.

Ranges

Many of the gauges are setup to display different colors and tips depending where the value falls within a set of ranges. Three ranges are available and for each range there is a lower and upper threshold. In the example in the next figure, the lowest range is red and has the range from 0 to 1.1. The middle range is yellow and has the range from 1.1 to 2. The highest range is green and has the range of 2 to 10. Many gauges will display the works "Out of Range" if a value falls outside these three ranges. When a value falls within a range that has advice or a tip, that tip will be made available to the user.

The range values can be parameters or formulas as well. Use the "…" button adjacent to the range value to choose a parameter. All the functions that can be used as well. The functions are evaluated on the gauge and are sensitive to the date range and department selected as well.

Range Colors



There are two ways to choose colors. You can actually click on the color itself and you will then get a color chooser dialog.

Color ?X		
Basic Colors:		
Custom Colors:		
Define Custom Colors >>		
OK Cancel		

And if that is not enough colors, you can define custom colors and get even more to choose from.

Color	? 🛛
Basic Colors:	
Custom Colors:	
	Hue: 30 Red: 0 Sat: 240 Green: 255
OK Cancel	Add to Custom Colors

The other way to choose a color is to use the Color Scheme drop down list just located below the bottom range advice. With one selection, all three ranges are colored.



Range Icons

Each of the three ranges can have an icon. These are usually one of the following:



You can assign these to each range and they will show up in various reports within the program. You can actually have any icon that can be found in the WingDings font collection. Use the Windows Character Map accessory to copy the icon and then paste it onto the control on this form. A typical use for the icons is to assign a frown to a range which is not desirable. Then, with the report manager, you can filter based on this icon.

🔍 Quick Decimere Decimere Decimere Frequent Annuager 💦 💽 🔛					
SELECT REPORT	Name: Fallo Report (Copy)				
Calegory «All»	Description	Security Groups	Batch Report Groups		
Cutch Cronge <&(1)>	A simple alphabetal list of ratios				
C System C Company C All					
Concept Laff ((Copys))					
Battie Category Report (Copy)					
Butte Report (Copy)					
Fatios Out of Desired Fange (Copy) Fatios Out of Fange (Copy)	Category: Pates	Add Tamova	Add Tamova		
Score/Card/(Capy)	Filten				
	Date Range: This Rocal Year From	25 70	H K		
	Dept.	- 🛒			
	R Honthly Data C Dally Data C Auto				
	Ratio Category:				
	Ranne Iron:				
Copy Collete Database Database					
Brainer Brat Saw as Searcher Event to Event to EVEL Form					
	Trenew Price Sale as a	share share even i	administration in the second		

Range Advice/Tips

For each of the three ranges, you can enter text appropriate for the when a value falls within that range. Normally the text is simply displayed as you enter it. But, these tips

or advice can be formatted in HTML to give them more formatting options as well as the ability to include one or more links to other reference material.

To teach you the basics of HTML is beyond the scope of this manual, so it is recommended that you either get a book on the subject or visit anyone of the numerous sources of information on the web.

Since including a link to another website may be a common task, particularly if you want to direct the user to more information, the format to use is shown here:

yyyyyy

In place of the xxxxxx's enter the actual URL address like

http://www.yourdomain.com

In place of the yyyyyy's enter the text you want to display when the tip is displayed. This text will be underlined and will be what the user sees on the screen rather than the actual link. If you want to display the actual link, make yyyyyy the same as xxxxx.

There are some buttons on the right side of the tips that can make editing the tips easier. In all cases, select the tip or advise to edit.



Desired Range

You can enter a desired minimum and maximum value for a desired range. The values can also be a formula.

Benchmark

You can enter a benchmark value for the indicator. This will display on most of the gauges. You can enter a value or a formula. If you use the aggregate function average in conjunction with the same parameters used for the indicator formula, you would be able to see on a gauge how the indicator value compares with the average of all the data.

Formatting

There are times when you want to format the result of an indicator and have it displayed on a gauge a certain way. Three options exist for formatting: Units, # Decimals, and Mult.

The Units can be set for #, %, or \$. The # Decimals is set to an integer from 0 to 6. The Mult can be set to H, K, or M. (H = hundreds, K = thousands, and M = millions). Without formatting you might see a value on a gauge that looks like 54,234,000.50. With a format of \$, 0, and M, the result would look like \$54M which is a lot easier to read.

Categories

To make it easier to be organized with the indicators, you can assign each indicator to one or more categories. Use the "Categories" button to open the "Set Categories for Indicator" dialog box.

Q Set Categories for Indicator	×
Current Ratio	
Liquidity Analysis	M [
*	K
ОК	
Record: I I I I I Filtered)	

There is no limit to the number of categories you can set for an indicator. You can use the pull down list to choose an existing category or just type in a new category. To remove a category from an indicator, press the delete button to the right of the category.

Formulas on Formulas

Since you can create an indicator that depends on one or more parameters, and those parameters could have a formula and that formula can contain other parameters that in

turn can have formulas, the precedence of calculating these formulas are critical. Be sure to test out your indicators, parameters and parameter formulas before you deploy your solution.

Calculate and Testing

After you have named your indicator and created a formula, you can check to see if the indicator works. Use the "Calculate" button. This will bring up the "Formula Calculator" form where you can select a data range, dept, and period and then see what the result is. You can change the date range, department, or period and the result will recalculate. The software will remember you last settings for the next time you use the formula calculator.



Finally, if everything looks good, you can keep track of the indicators you have verified by checking off the "Tested" checkbox on the bottom of the Indicator Detail form. There is a place to add notes for the indicator to assist in explaining the indicator.

By closing the form, selecting an existing indicator from the top of the form, or pressing the "Add New Indicator" button, the existing indicator will be saved.

Editing Indicators

To edit an indicator you either use the pull-down menu and choose "Setup – Indicators" or click on the "Setup" icon in the Indicators block on the Navigator. You then select the existing indicator from the pull down list on the top of the form. You can also choose a
category first, before you select an existing indicator. The following figure shows you that this pull down list organizes the list by category and then indicator sorted alphabetically in that way. If an indicator belongs to more than one category, it will show up for each category. If may show up more than once, but it is the same indicator. If you start typing the indicator name the list will start based on what you type. Press the F4 key to open up the list if you have not clicked on the down arrow of the control.

🍳 Indicator Detail					×
Indicator Category	<all></all>		-		
Select Existing Indicator					•
	Indicator Name		Category	Key Indicator	
	Expense \$ Fixed		Company Expense Analysis		
	Expense \$ FloorPlan		Company Expense Analysis		
	Expense \$ Semi-Fixed		Company Expense Analysis		
	Expense Ratio - Adverti	sing	Company Expense Analysis	Yes	
	Expense Ratio - Employ	88	Company Expense Analysis	Yes	
	Expense Ratio - Fixed		Company Expense Analysis	Yes	
	Expense Ratio - Invento	ory Interest	Company Expense Analysis	Yes	
	Expense Ratio - Semi-Fi	(ed	Company Expense Analysis	Yes	
	Net Ord Inc of GP		Company Expense Analysis	Yes	
	Net Ordinary Income \$	(= 1) =	Company Expense Analysis		
	Net Ordinary Income %	of Lotal Income	Company Expense Analysis		
	Total Expense Annualiz	ea Trena Transma	Company Expense Analysis		
	- Sol Tatal Issues	Income	Company Expense Analysis		
	=F&I Total Income		F&I Analysis		
	EST Ext Core Cont Marg		F&I Analysis		
	F&I Ext Service Cont In		For Analysis EST Applysis		
	EST Gross Margin	Lome	For Analysis EST Applycic		
	E&I Gross Profit		EQT Analysis		
	E&I Not ¢		E8.1 Analysis		
	E8.1 Drofit % of BV Sale	-	E&I Analysis	Voc	
	F&I Profit per Retail Ini	, t Sold	F&I Analysis	165	
	F&I Reserves Income	. 5014	F&I Analysis		
	F&I Wages of F&I Incor	ne	F&I Analysis	Yes	
Add New Indicator Dele	te Indicator Where Use	d Calculate	Copy Indicator	Close	

After choosing the indicator, it will be displayed on the form. You can edit any aspect of it. If you rename it and it is used by a gauge, it will be changed automatically in that gauge definition. By closing the form, selecting another existing indicator from the top of the form, or pressing the "Add New Indicator" button, the changes to the edited indicator will be saved.

To undo your edits, press the Esc key.

Where Used

You can see where an indicator is used by pressing the "Where Used" button on the bottom of the form.

Deleting Indicators

To delete an indicator, select the indicator first by using the drop down list on the top of the form. Then if the indicator is not used by a gauge, you can delete it by pressing the "Delete Indicator" button. If it is used, by a gauge, you will need to remove it from the

gauge first. Use the "Where Used" button to find out what gauges the indicator is used on.

Copying Indicators

First using the Indicator Detail form, select the indicator you want to copy. Then on the bottom of the Indicator Detail form is a button labeled "Copy Indicator". Press this button and the current indicator will be copied completely and the new name will be the original indicator name followed by "(Copy)". You can then edit this indicator and change the name.

Seasonal Trends

On the Navigator screen, you will find an icon labeled "Seasonal Trends" in the ACE Definitions block. Clicking on this icon will display the following form.



Q	Calculate Seasonal Trends		
Sel	Data Source		<u> </u>
Ø	Balance Sheet	Yearly Weights: 3	yr(s) loaded
	Inventory Valuation Summary	Yearly Weights: 3	yr(s) loaded
Г	Payroll Summary	Yearly Weights: 1	yr(s) loaded
₽	Profit & Loss	Yearly Weights: 3	yr(s) loaded
	Sales by Item Summary	Yearly Weights: 3	yr(s) loaded
Γ	Sales by Rep Summary	Yearly Weights: 3	yr(s) loaded
Cle	ar Selections Note: Two prior fiscal years of Default Defau	It Calculate Manual Edit	
	Select All Monthly data is usually required to calculate seasonal trends. Year -1 Weight 1 Year -2 W	eight Seasonal Trends Purge	ок 🚽

With this form you can calculate and store the seasonal trends for any of the data sources listed. This will include some QuickBooks® reports as well as all the Excel, Database, and External (Data Package) data sources you have specified.

Calculating Seasonal Trends

Default Year Weighting

You should have at least 2 prior fiscal years of monthly data for this seasonal trend function to work properly, but this is not necessary. The standard calculation uses a weight of 1 for the first year and second year. You can change the weight for each year independently. Enter a zero if you do not want to use a year. Another common choice is to have the last fiscal year have more influence than the prior year. In this case, choose a Year 1 Weight of "1" and a Year 2 Weight of "2". This will give the second year twice as much influence as the prior year. You can actually enter any number even though the dropdowns only give you a choice of 0, 1, or 2. If you want to have different weights for different data sources, calculate the seasonal trends independently.

Custom Year Weighting

If you want to use a different yearly weight than the default or want to use more than 2 years, you can enter the weights for each data source independently. This is done in the yellow box labeled "Yearly Weights". You enter the weights as numeric values for each year separated by commas. For example, if the current year is 2009 and you want to use the past 4 years of data to calculate the seasonal trends with more weights on the more recent years, you could enter "4, 3, 2, 1". That would give 2008 a weight of 4, 2007 a weight of 3, 2006 a weight of 2, and 2005 a weight of 1. Essentially 2008 would have 4 times the effect than 2005. You can enter from 1 to 5 years.

Calculating

Check off on the left side of the form the data you want to calculate the seasonal trends for, then press the "Calculate Seasonal Trends" button. For each selected data source, you will see a progress bar to show the status of the calculations. This could take quite some time. Since your prior fiscal years don't change very often (yearly), you only need to do this yearly or when you have added a new data source.

The results will be a new report that you can select in the parameters. The reports start with the words "Seasonal Trend" and are followed by the abbreviation for the data source. For example, "Seasonal Trend PL" for the Profit & Loss report. The data is stored as the current fiscal year on a monthly basis but will be accessed for any time period you specify. The data value is a decimal and if you add all 12 months you will get a total of "1". These values are used in the trend and forecast functions covered in other sections of this manual.

Manually Editing Seasonal Trends

You can view and manually edit the seasonal trends that you calculated by pressing the "Manual Edit" button. This will display the following form.

🝳 Seasonal Trend - Manual I	Edit							- D ×
Select Filter Report Name: Clear Row Name:			✓ Col	Dept:		Total < Total <	> 1 「 Show High > 0 ^{Variance}	Refresh
	Ψ.	Ŧ		Ψ.	Ψ.	*	Ψ.	Ψ.
Row Name	Column Type	1 2	3 4	Calend	lar Month		11 12	Total Diff
	1,120	1 2	3 4	5 0		9 10	11 12	
F3 Copy Current Avg Dis Copy to Zero Records	played Average							
F4 Copy Current Current	urrent Average	0.00 0.00	0.00 0.00	0.00 0.0	0 0.00 0.0	0 0.00 0.00	0.00 0.00	
Paste Avg to Displayed Cur Records for I	the selected Report,	, Dept, and Column	Type		Totals sh	ould either be 1.00 or 0	Cancel	Save
Record:	▶I ▶*							

You first must select the Report Name and optionally Department. It is not necessary to choose a row name or column type at this point, although you can if you want to work with a smaller list of values. You will also need to make any filter selections. After making your selections press the "Refresh" button. You will then see a list of values representing the seasonal trends.

🝳 Seasonal Trend - Manual E	Seasonal Trend - Manual Edit															
Select Filter Report Name:	easonal Trend PL					- Dept:				•	Total «	○1 □	Show High	י –		
Clear Row Name:					- Colu	JMD Type:					Total <	>0	Variance	Re	fresh	
					_											
Company						_							_			
			×			×		×		*			<u> </u>			
Dem North	Column						Calendar	Month								
Row Name	туре	1	2	3	4	5	6	7	8	9	10	11	12	Total	Diff	
▶ 40110 · Design Income		0.08	0.09	0.09	0.07	0.10	0.12	0.08	0.11	0.09	0.08	0.00	0.08	1.00	0.00	
40130 · Labor Income		0.08	0.06	0.07	0.07	0.08	0.11	0.05	0.08	0.10	0.13	0.06	0.10	1.00	0.00	
40149 · Less Discounts given		0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	
40140 · Materials Income		0.03	0.05	0.04	0.03	0.03	0.06	0.10	0.11	0.04	0.22	0.18	0.10	1.00	0.00	
Total 40100 : Construction Income		0.01	0.05	0.02	0.00	0.02	0.02	0.05	0.09	0.11	0.07	0.40	0.19	1.00	0.00	
40520 : Permit Reimbursement Inc		0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.14	0.13	0.00	1.00	0.00	
40530 ' Reimbursed Freight & Deli		0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.11	0.00	0.43	0.00	0.00	1.00	0.00	
Total 40500 · Reimbursement Inco		0.00	0.15	0.00	0.00	0.00	0.00	0.19	0.28	0.00	0.28	0.11	0.00	1.00	0.00	
Total Income		0.06	0.06	0.06	0.05	0.06	0.08	0.06	0.09	0.09	0.14	0.15	0.11	1.00	0.00	
50100 · Cost of Goods Sold		0.00	0.00	0.10	0.01	0.00	0.39	0.00	0.00	0.08	0.04	0.14	0.23	1.00	0.00	
54200 · Equipment Rental		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.84	1.00	0.00	
54520 · Freight & Delivery		0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.04	0.19	0.40	0.00	0.09	1.00	0.00	
54300 · Job Materials		0.08	0.05	0.03	0.03	0.03	0.06	0.05	0.13	0.09	0.25	0.10	0.09	1.00	0.00	
54599 · Less Discounts Taken		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.05	0.53	0.00	1.00	0.00	
54400 · Permits and Licenses		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.32	0.25	1.00	0.00	
54500 · Subcontractors		0.00	0.01	0.03	0.00	0.01	0.02	0.00	0.11	0.07	0.22	0.43	0.09	1.00	0.00	
Total 54000 · Job Expenses		0.05	0.03	0.03	0.02	0.03	0.04	0.03	0.12	0.08	0.24	0.22	0.10	1.00	0.00	1
Total COGS		0.05	0.03	0.03	0.02	0.02	0.07	0.03	0.11	0.08	0.22	0.22	0.11	1.00	0.00	4
Gross Profit		0.06	0.07	0.07	0.06	0.08	0.08	0.09	0.08	0.09	0.08	0.11	0.12	1.00	0.00	4
60110 · Fuel		0.09	0.09	0.11	0.08	0.10	0.08	0.09	0.10	0.11	0.03	0.07	0.05	1.00	0.00	1
60120 · Insurance		0.25	0.00	0.00	0.25	0.00	0.00	0.25	0.00	0.00	0.25	0.00	0.00	1.00	0.00	
60130 * Repairs and Maintenance		0.10	0.10	0.09	0.09	0.09	0.10	0.09	0.09	0.08	0.09	0.09	0.00	1.00	0.00	i
F3 Copy Current Avg Displ	ayed Average	0.06	0.05	0.08	0.05	0.04	0.08	0.06	0.09	0.07	0.11	0.10	0.15	0.95	1	
Cur	rent Average	0.06	0.05	0.08	0.05	0.04	0.09	0.07	0.09	0.08	0.12	0.11	0.16	1.00		
F4 Paste Copy Current Avg to Displayed Current Records for th	ent Average is the ne selected Report,	average , Dept, ar	of all non- nd Columr	-zero reco n Type	rds			т	otals shou	ld either b	e 1.00 or	0.00	Cancel	Sa	ave	•
Record: H 1	▶ ▶ * of 60															

Seasonal Trends are calculated for each row name and column type within a data source. Each calendar month has a value. The total of all 12 months should be equal to 1.00 or zero. If any data was available to calculate the seasonal trend, then the total should be 1.00. If no data was available, then the total should be zero.

At this point you can change the value for any cell on the form, but be sure you maintain the total to be 1.00. If you try to save when a total does not equal 1.00, you will be prompted to cancel or save anyway.

At any point, you can press the Cancel button and any changes made will be discarded.

A number of other options exist on this form to make it easy to maintain the seasonal trends. Some of these options include additional filters. After selecting a filter, press the "Refresh" button.

Filtering Options						
Total <> 1	List all records where the total does not equal					
	one					
Total <> 0	List all records where the total does not equal					
	zero					
Show High Variances	Enter a variance, and show all records where a					
	least one month has a value that exceeds the					
	average of all non-zero records by the variance					
	amount.					

The "Show High Variance" option is useful to find records where values are significantly different than the current averages. This allows you to focus any corrections you want to make on specific records that may be out of the ordinary. The current average is shown in green on the bottom of the form and is the average of all non-zero records for the selected Report, Dept, and Column type. After clicking on the checkbox, you will be prompted for a variance. Enter a number and then press the "Refresh" button. In the example below, a variance of "2" was entered. You can always see the variance value entered if you hover the mouse over the "Show High Variance" checkbox.

🕏 Seasonal Trend - Manual	Edit															×
Select Filter Report Name:	Seasonal Trend F	2			•	Dept:	<no depl<="" td=""><td>t></td><td></td><td>- 1</td><td>Total <</td><td>> 1 🔽</td><td>Show High</td><td>Ref</td><td>resh</td><td></td></no>	t>		- 1	Total <	> 1 🔽	Show High	Ref	resh	
Row Name:					- Colur	nn Type:				- 1	Total <	:>0	Variance			
·					_		Calendar	Month						Cl	ear	1
Row Name	Туре	1	2	3	4	5	6	7	8	9	10	11	12	Total	Diff	1
▶ 41320 · Fold Downs		0.00	0.15	0.16	0.09	0.04	5.00	0.19	0.09	0.00	0.00	0.00	0.00	5.73	-4.73	3
41700 · Consignments		0.00	0.00	3.70	0.00	0.00	0.00	-3.19	0.00	0.00	0.00	0.00	0.49	1.00	0.00	Ĵ
Total 70000 · Other Income		0.71	0.00	-0.01	0.00	0.06	0.00	0.00	1.28	0.69	0.10	0.09	-1.91	1.00	0.00]
Total Other Income		0.71	0.00	-0.01	0.00	0.06	0.00	0.00	1.28	0.69	0.10	0.09	-1.91	1.00	0.00	j
84000 · Cash Log/Short		-0.36	3.14	0.00	3.57	-1.70	-1.48	-0.51	-1.56	-0.06	-0.20	0.17	0.00	1.00	0.00	J
84000 · Cash Log/Short		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	-0.19	-1.67	1.00	0.00	1
92000 · Provision for Income Ta	X	0.26	2.42	0.00	0.00	0.00	-0.22	-1.58	-0.63	-0.20	-0.50	0,70	0.76	1.00	0.00	4
Total 90000 · Taxes		2,43	22.30	0.00	-5.45	0.00	-2.01	-14,72	-5.86	-1.85	-7.35	6.44	Z.05	1.00	0.00	1
Total Other Expense		2.77	25.00	0.00	-6.38	0.1	-2.18	-16.60	-6.59	-2.08	-8.30	7.27	7.97	1.00	0.00	기
5. 1 con commune 100	rolaved Average	0.72	5.00	0.43	-0.01	-0.16	-0.10	4 04	-1 33	-0.31	-1 49	1.62	1.20	10		_
Copy Copy Current Avg DI Copy to Zero Records	spiayed Average	0.72	5.89	0.43	-0.91	-0.16	-0.10	-4.04	-1.33	-0.31	-1.48	1.62	1.20	1.53		
E4 Copy Current	urrent Average	0.08	0.28	0.07	0.06	0.08	0.08	-0.02	0.08	0.05	0.03	0.12	0.11	1.02		
Paste Avg to Displayed For	rrent Average is ti the selected Rep	he average ort, Dept, a	of all non- nd Column	zero reco Type	irds			Т	otals should	l either b	e 1.00 or I	0.00	Cancel	Sav	ve	•
Record: I 1	▶ ▶ ▶ ▶ * of 9	9														

The circled entries above exceed the average for that month by more than the variance amount entered of "2".

There are some other useful functions on this form that make it easy to make corrections. The "F3 Copy" button can be used to copy the 12 values for the currently selected record to a clipboard. Then choose another record and press the "F4 Paste" button to paste the values on the clipboard to the selected record. You can also use the function keys "F3" and "F4" respectively to accomplish the same functionality.

The "Copy Current Avg to Zero Records" button will take the current average values displayed in green on the bottom of the form and fill in all zero records. This is useful to give the records which did not have any history when the seasonal trends were calculated and set the trend to the averages of all the non-zero records.

The "Copy Current Avg to Displayed Records" is another handy way to fix records. If you use the previous figure as an example where the records displayed all have a high

variance. By pressing this button, they can all be fixed in one step again using the current averages.

You can continue to make changes to other reports and other departments before saving with the "Save" button. The Save button will save all changes made since the form was first opened. Pressing the "Cancel" button will lose all changes made since the form was first opened.

NOTE: If a trend is referenced for a parameter where seasonal trends where not calculated, the trend value for that parameter will be computed on the fly.

Visualization Definitions

Gauges

The gauge is the visual element of the dashboard that displays the results of indicators or in some instances special reports or graphs.

Gauge Types

There are numerous gauge types which can be viewed by selecting from the main drop down menu "Setup – Gauges – View Gauge Types". The discussion of Gauge Types was covered in detail in the "General User Manual" and will not be repeated here.

Creating Gauges

To create a new gauge, you would select from the main drop down menu "Setup -Gauges – Setup Gauges" or



use the "Gauges" icon on the Visualization Definitions block on the Navigator. You will get a blank form. Press the "Add New Gauge" button. The form will fill in with the fields used to define a gauge as shown in the following figure.

🔍 Gauge Detail					
Select Existing Gaug	ge: [-	Advanc	ed Selection
Gauge Name:				Note:	(AutoNumber)
Gauge Type:			Select Gauge Type		
Initial Date Range:		🔄 🗖 Lock Date Range	Use drop down selection		
Data Type:		<u>·</u>	Type" button, Warning -		
Security Group:		<u>·</u>	reset all properties.		
Gauge Properties Ad	lditional Drilldowns				
For the purposes of gau	ge properties "Ratio" is used synony	mously with "Indicator".			
					Tested
Add New Gauge Dele	ete Gauge Where Used	Print View		Save	Save and Close

The required fields that must be filled in include the Gauge Name, Gauge Type, and any Gauge Properties.

The Gauge Name can be anything you want. Choosing a gauge type is done by using the drop down list or pressing the "Select Gauge Type" button. That will bring up a form that will allow you to choose interactively the type.



After selecting a gauge type, the list of properties will be set. When a property says "ratio", the word "ratio" is used synonymously with "Indicator". For the purposes of gauge properties, these two words mean the same thing. The properties vary depending on the gauge type. For example, some gauges only display one indicator/ratio, so the property list only shows one item. Other gauges show multiple indicators/ratios, so there will be a property for each indicator. If there is a label property as in the example below, you can actually leave that blank, and the indicator/ratio name will be used for the label.

🝳 Gauge Detail						
Select Existing Gau	ige: Total Income Pie				▼ Advan	ced Selection
Gauge Name:	Total Income Pie				Note:	84
Gauge Type:	Pie Chart		•	Select Gauge Type	1	
Initial Date Range:	Last 12 months	-	🗌 Lock Date Range	Use drop dow		
Data Type:	Monthly	•		or press "Sele Press Type" button	this to go to	
Security Group:		•		changing gaue the	e indicator	
Gauge Properties	dditional Drilldowns			reset air proper		
Ratio 1	= Not C	rdipary Income ¢	-104			
Ratio 2	- Net C = COGS	tuinary income ș tTotal	- 0	-		
Batio 3	= Exn\$E	mnlovee	- Q			
Ratio 4	= Exp\$F	ixed & Variable	- 0			
Ratio 5	=		- P			
Ratio 6	=		- P			
Ratio 7	=		- Q			
Ratio 8	=		- Q			
Ratio 9	=		- Q			
Ratio 10	=		- Q			
Label 1	= Net C	rd Income	- Q			
Label 2	= Total	COGS	- 2			
Label 3	= Emp B	Хр	- 2			
Label 4	= Fixed	& Var Exp	- 2			
Label 5	=		- Q			
Label 6	=		- Q			
Label 7	=		- Q	-		
For the purposes of gau	uge properties "Ratio" is used s	ynonymously with "In	dicator".			
		,				🗖 Tested
Add New Gauge Del	lete Gauge Where Used	Print	View		Save	Save and Close

If the property is a ratio/indicator, you can use the drop down list to the right of the property name to select a ratio/indicator. For labels and some other properties, the pull down list will be blank. If the property is a ratio/indicator, there is a small button with a magnifying glass all the way to the right. Press this button to bring up the Indicator Detail form to see the information associated with the indicator. You can actually edit the indicator from here as well.

If the property is "Contents", as is the case with the "Data Query" gauge, you can use an existing data view or create a new data view to be used for that gauge. If you have not selected an existing data view, pressing the D button will open the form to allow you to add a new data view.

🝳 Gauge Detail					
Select Existing Gauge: A/R To	p Receivables			Advan	ed Selection
Gauge Name: A/R Top Re Gauge Type: Data Quen Initial Date Range: All Data Type: Current Security Group: Gauge Properties Additional Drill	eceivables y downs	▼ □ Lock Date Range ▼	Press this butt add a new data or edit the exis or er rype changing or ge type will reset al properties.	ton to a view sting	64
For the purposes of gauge properties	- I = Data_View Top A/P Vendors Top A/R Customers Top Salespeople Top Salespeople by ! 	Month	Source A/P Aging Summar A/R Aging Summar Sales by Rep Sumn Sales by Rep Sumn	y y nary nary	Type System System System System
Add New Gauge Delete Gauge	Where Used Print	View		Save	Save and Close

Refer to the section Data Views for information about creating or editing the User Data Views. System Data Views cannot be edited.

If the property is "Data Drilldown", as is the case with the most single indicator, nonchart gauges, you can optionally use a Data View drilldown rather than the default line chart drilldown. The advantage to this option is you could drilldown not only to the underlining data behind a gauge, but you could open up an external program and view a data record which was used as part of the data source. You can use an existing data view or create a new data view for the data drilldown. If you have not selected an existing data view, pressing the D button will open the form to allow you to add a new data view.

🔍 Gauge Detail					
Select Existing Gau	ge:			Advance	ed Selection
Gauge Name:				Note:	402
Gauge Type:	Circular Meter Deluxe		 Select Gauge Type 	1	
Initial Date Range:		🗾 🗌 Lock Date Range	Use drop down selection		
Data Type:		*	or press "Select Gauge Type" button, Warning -		
Security Group:		•	changing gauge type will reset all properties.		
Gauge Properties Ac	dditional Drilldowns				
Ratio	=	+)	P •		
Data Drilldown	-	ر ب	₽D		
			-		
For the purposes of gau	ige properties "Ratio" is used sy	nonymously with "Indicator".			
					Tested
Add New Gauge Dele	ete Gauge Where Used	Print View		Save	Save and Close

Refer to the section Data Views for information about creating or editing the User Data Views. System Data Views cannot be edited.

The Initial Date Range should be set but is optional. If you do not set this date range and the dashboard the gauge is used on does not have a data range, then all the data will be used to calculate the result. The Initial Date Range is used when the dashboard does not have a date range. But, you can lock the data range by checking off "Lock Date Range". In this case, the gauge will always have this data range, independent of what data range the dashboard is set to.

Gauges will pull data either from Monthly, Daily, Annual, Quarterly, Weekly, or Current Data. After you select an Initial Date Range, the appropriate data type will be chosen. You can override this if you want. You can also select "Auto". In this case the program will adjust the data type based on the selected range automatically. For auto mode, the selection of monthly or daily is done based on the same lookup list that automatically sets Monthly and Daily. If a custom date range is selected, then the preference for how many days of QuickBooks® Daily Data is loaded determines if daily or monthly data is used.

Based on the data type, the date used in retrieving a value is as shown in the following table:

Data Types and Dates Used					
Annually	Last day of last month of fiscal year				

Quarterly	Last day of last month of fiscal quarter
Monthly	Last day of month
Weekly	Saturday
Daily	
Current or Latest	Last date data loaded

You can also add notes about this gauge for reference in the field on the right side of the form.

In addition to the standard drilldowns provided which include standard, previous period, ranges, and details, you can add your own custom drilldowns using the "Additional Drilldowns" tab.

🝳 Gauge Detail	
Select Existing Gauge: Current Ratio	Advanced Selection
Gauge Name: Current Ratio Gauge Type: Circular Meter Initial Date Range: Last Month Data Type: Monthly Security Group: Admin Gauge Properties Additional Drilldowns Report Gauge - Gross Profit Pie File C:\Documents and Settings\Larry\My Documents\2010.pdf File Webpage Www.cleverq.com	Note: 18
	Tested
Add New Gauge Delete Gauge Where Used Print View	Save Save and Close

There is no limit to the number of additional drilldowns and you can drilldown to a dashboard, gauge, report, file, or webpage. This provides tremendous capabilities to have a master dashboard, with each gauge summarizing something, and then being able to drilldown to another dashboard. This process could be nested without limitations.

Saving your new gauge is either done by pressing the "Close" button or choosing an existing gauge from the top drop down list.

Print Gauge Detail

There is a printable report available for each gauge. To get this report, you must select an existing gauge from the pull down menu on the Gauge Detail form. Then press the "Print" button on the bottom of the form. This will give you a report similar to the following. It includes a graphical view of the gauge, all the information about the gauge and also all the information about the indicator(s) used by the gauge. The text is blue represents calculated values based on the default settings for the gauge.



Where Used

You can determine where a gauge is used, by pressing the "Where Used" button on the bottom of the Gauge Detail form. A popup message box will be displayed listing the dashboards where the gauge is used. "Dashboard 0" entries are for saved dashboards not currently set to be displayed.

Viewing Gauges

Of course, gauges are designed to be viewed on a dashboard. But on the Gauge Detail form, you can view the gauge by pressing the "View" button. Be sure to set an initial date range first although if you don't, all dates will be assumed. The gauge will then be displayed just as it will appear on a dashboard. You can even use the right-mouse click to access a working gauge sub-menu.

Editing Gauges

To edit a gauge you either use the pull-down menu and choose "Setup – Gauges – Setup Gauges" or click on the "Setup" icon in the Gauges block on the Navigator. You then select the existing gauge from the pull down list on the top of the form or use the "Advanced Selection" button.

Q Gauge Detail			
Select Existing Gauge	21	Adv	anced Selection
Gauge Name: Gauge Type: Initial Date Range: Data Type: Security Group:	Select Gauge Type Select Gauge Type Use drop down selection or press "select Gauge Type" button. Warning - changing gauge type will reset all properties.	Note:	(AutoNumber)
Gauge Properties Add	itional Drilldowns		

The pull down lists all gauges in alphabetical order. The Advanced Selection button will display a new form that will give you many options for finding an existing gauge.

Q Advanced Gauge Selection	
All (Clear Filters) For a specific Dashboard:	
For a specific Department:	·
For a specific Security Group:	
For a specific Gauge Type:	·
Contains a specific Indicator:	<u> </u>
Contains an indicator in the specific Indicator Category:	<u> </u>
A/P Days Outstanding A/P to Sales Ratio A/P Top Payables A/R Aging A/R Days Receivable A/R Top Receivables A/R Turnover Acid Test Ratio Advertising Expense Ratio Comp Expense/Payroll Comp Mgmt & Admin/GP Comp Serv Adm/Serv Inc Comp Serv Payroll of Serv Income Comp Adverting Comp Return on Assets Current Ratio	
Dupont analysis Company ROE Expense Ratio Advertising Double click on gauge to see the gauge details and leave t specific gauge and press the SELECT button to see the ga	his form open. Select a uge details and close this form.

You can edit any aspect of the gauge and if you rename it, the change will automatically be applied to any dashboards using that gauge.

Saving your edited data is either done by pressing the "Close" button or choosing another gauge from the top drop down list.

Deleting Gauges

To delete a gauge you either use the pull-down menu and choose "Setup – Gauges – Setup Gauges" or click on the "Setup" icon in the Gauges block on the Navigator. You then select the existing gauge from the pull down list on the top of the form you want to delete. Then press the "Delete Gauge" button. If the gauge is used on a dashboard you will not be able to delete it. You must remove if from all dashboards before you can delete it. Use the "Where Used" button to locate the dashboards that reference the gauge.

Data Views

Data Views is a mechanism to primarily display textual data either on a gauge or as part of a drilldown from a gauge. The "Data Query" gauge has a property called "Contents" that will allow you to define and set a data view. The single indicator non-chart gauges have a property called "Data Drilldown" that provides an optional drilldown from the standard line chart to view data. In either case, you add or edit a data view by pressing the Detail form.

🝳 Gauge Detail					
Select Existing Gauge: A/R Top Receivables				Advanc	ed Selection
Gauge Name: A/R Top Receivables Gauge Type: Data Query Initial Date Range: All Data Type: Current Security Group: Gauge Properties Additional Drilldowns	× • •] [Lock Date Range	Press this b add a new d or edit the e one or pr Type changing or de type w reset all croperties.	utton to ata view xisting	64
Top = [] T T T T	ata_View op A/P Vendors op A/R Customers op Salespeople op Salespeople hv Mc	unth	Source A/P Aging Summ A/R Aging Summ Sales by Rep Sur Sales by Rep Sur	hary hary himary himary	Type System System System System
For the purposes of gauge properties "Ratio" is us	ed synonymously with "	Indicator",			T Tested
Add New Gauge Delete Gauge Where Use	d Print	View		Save	Save and Close

A blank Data View form is shown in the next figure.

🔍 Data View S	ietup				×				
Select Existing	j Data View:				<u> </u>				
Data View Name:					Row Names (for reference)				
Report Name:				•					
	Column 1 (Text)	Column 2 (Date)	Column 3 (Value)						
Headings:									
Format:				•					
Column Source:	Row Names	ColumnDate is used if a beading is specified	DataValue is used if a beading is specified						
	C Column Types	neading is specified.	neading is specified.						
Sorting:			1	•					
Filters:		•							
RowName:	•				Column Types (for reference)				
ColumnType:	•								
Filtering of the Department, ColumnDate (Date Range), and DataType (Period) are done with the gauge specification.									
Show Al	Show All Fields (This option is not used for gauges and is an option for Data Drilldown)								
Add New	Delete Prev	iew Data			Save and Close				

Data Views are based on pulling data from the report data which is where all data is stored after it gets loaded from the data sources. The report data is structured with the following fields that are accessible with data views:

ReportName RowName ColumnDate ColumnType DataValue DataType

The fields ColumnDate, and DataType are not part of a data view definition since they are filtered by the gauge itself.

You must supply a Data View Name to be used when you attach it to a gauge property.

You must also define which Report Name you will be using for the data. After you select a report, the available row names and column types will be listed on the right of the setup form. These are for reference only.

Normally a Data View will contain from 1 to 3 columns. The columns are defined on the setup form with the first column being text and either coming from the row names or the column types. You would normally enter a heading for column 1 based on the specific data. The second column is optional and is used to display the date. You must enter a heading for this to appear. The third column is numeric value and to display this column you must enter a heading. You can optionally enter a format from the dropdown list of enter your own using the symbols below.

Symbol

Description

Symbol	Description
. (period)	Decimal separator. Separators are set by double-clicking Regional Settings in Windows Control Panel.
, (comma)	Thousand separator.
0	Digit placeholder. Display a digit or 0.
#	Digit placeholder. Display a digit or nothing.
\$	Display the literal character "\$".
%	Percentage. The value is multiplied by 100 and a percent sign is appended.
E– or e–	Scientific notation with a minus sign (–) next to negative exponents and nothing next to positive exponents. This symbol must be used with other symbols, as in 0.00E–00 or 0.00E00.
E+ or e+	Scientific notation with a minus sign next to negative exponents and a plus sign (+) next to positive exponents. This symbol must be used with other symbols, as in 0.00E+00.

The data can be sorted by one of the columns either in ascending or descending order.

Filters can be applied to the DataValue, RowName, and ColumnType fields.

The filter operator can be selected from the appropriate dropdown list, and for data values you might want to filter for positive, negative, zero, or nonzero values or some other criteria. Leaving the filter operator and filter box blank will cause no filtering to occur.

Filtering for RowName or ColumnType includes selecting a filter operator and one or more appropriate entries. Each entry must be enclosed by single quotes and if you use the operator "In List", each entry in the list must be enclosed by single quotes and then each entry separated by commas. To make it easy, double clicking on either the reference list for row names or column types will copy that entry into the appropriate filter box.

🔍 Data View S	🝳 Data View Setup 🛛 🔀								
Select Existing	g Data View:				-				
Data View Name: Report Name: Headings: Format: Column Source:	test Profit & Loss Column 1 (Text) Item © Row Names C Column Types	Column 2 (Date) Date ColumnDate is used if a heading is specified.	Column 3 (Value) Value \$#,### DataValue is used if a heading is specified.	•	Row Names (for reference) Total 69500 · Utilities Total 69700 · Other Fixed Total 70000 · Other Income Total 72000 · Interest Income Total 92000 · Interest Income Total 90000 · Other Expenses Total 90000 · Other Taxes Total 9000 · Other Taxes Total COGS Total COGS				
Sorting:				-	Total Income Total Other Expense Total Other Income				
Filters: Iteration RowName: In List I Total COGS', 'Total Expense', 'Total Income' ColumnType: Itering of the Department, ColumnDate (Date Range), and DataType (Period) are done with the gauge specification. Image: Show All Fields (This option is not used for gauges and is an option for Data Drilldown)									
Add New	Delete Prev	iew Data			Save and Close				

And finally there is one last option that would provide the ability to show all fields for the data drilldown.

You can preview the data using the "Preview Data" button on the bottom of the form which will cause the result of the data view to show up on a new form in a list format.

🔍 test						
ltem	Date	Value	ColumnType	DataType	DeptName	
Total COGS	3/23/2009	\$1,243		2		
Total COGS	3/25/2009	\$398		2		
Total COGS	3/26/2009	\$372		2		
Total COGS	3/27/2009	\$72,089		2		
Total COGS	3/28/2009	\$98		2		
Total COGS	3/31/2009	\$579,051		1		
Total COGS	3/31/2009	\$642		2		
Total Expense	1/31/2006	\$148,435		1		
Total Expense	2/28/2006	\$228,544		1		
Total Expense	3/31/2006	\$203,498		1		-
Total Expense	4/30/2006	\$227,558		1		
Total Expense	5/31/2006	\$207,919		1		
Total Expense	6/30/2006	\$245,722		1		
Total Expense	7/31/2006	\$234,632		1		
Total Expense	8/31/2006	\$294,462		1		
Total Expense	9/30/2006	\$165,139		1		
Total Expense	10/31/2006	\$229,736		1		
Total Expense	11/30/2006	\$181,546		1		
Total Expense	12/31/2006	\$203,326		1		
Total Expense	1/31/2007	\$195,019		1		
Total Expense	2/28/2007	\$314,723		1		
Total Expense	3/31/2007	\$163,893		1		
Total Expense	4/30/2007	\$171,933		1		
Total Expense	5/31/2007	\$187,505		1		
Total Expense	6/30/2007	\$222,835		1		
Record: I	1	▶ ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►	58			
Reset Table to Defaul	t Preview	Pri	int Exp	ort Data	View Details	Show as Pivot Table Close

By selecting a single record, and pressing the "View Details" button, you can drilldown into another program to see that specific data. This requires a custom program to be

written and installed to make that interface link work. If that has not been setup you will get a popup message like that shown in the following figure.

C	test							
Γ	ltem	Date	Value	ColumnType	DataType	DeptName		·
	Total COGS	1/31/2006	\$218,556		1			
	Total COGS	2/28/2006	\$784,575		1			
	Total COGS	3/31/2006	\$498,000		1			
	Total COGS	4/30/2006	\$661,282		1			
	Total COGS	5/31/2006	\$599,442		1			
	Total COGS	6/30/2006	\$1,487,823		1			
	Total COGS	7/31/2006	\$1,244,520		1			
	Total COGS	8/31/2006	\$1,566,741		1			
	Total COGS	9/30/2006	\$846,915		1			
	Total COGS	10/31/2006	\$332,161		1			
	Total COGS	11/30/2006	\$182,111		1			
	Total COGS	12/31/2006	\$151,038		1		/	
	Total COGS	1/31/2007	\$260,964		1			
	Total COGS	2/28/2007	\$473,262		1	-		
	Total COGS	3/31/2007	\$350,610		1			
	Total COGS	4/30/2007	\$733,951		1			
	Total COGS	5/31/2007	\$530,854	Warning				
	Total COGS	6/30/2007	\$967,086	manning				
	Total COGS	7/31/2007	\$1,656,392		The system in	torface to open	[test_Teta] COCS] is not implemented upt	
	Total COGS	8/31/2007	\$1,415,036		The custom in	terrace to open	r (test - rotal cous) is not implemented yet.	
	Total COGS	9/30/2007	\$739,585					
	Total COGS	10/31/2007	\$968,289				ОК	
	Total COGS	11/30/2007	\$284,242					
	Total COGS	12/31/2007	\$238,991		1			
	Total COGS	1/31/2008	\$264,109		1			
R	ecord: II I	14	▶ ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►	68				
-	Reset Table to Default	Preview	Pri	nt Exp	ort Data	View Details	Show as Pivot Table	Close

You have the option of changing the view from a list view to a pivot table. In this case you will need to drop the fields into the row, column, detail, or filter drop areas.

Q test												
DataType 🔻												
1	Years - Months											
	⊞ Jan	⊞ Feb	⊞ Mar	⊞ Apr	⊞ May	⊞ Jun	⊞ Jul	⊞ Aug	⊞ Sep	⊞ Oct	⊞ Nov E	
ltem 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	Value 🔻	
Total COGS 📑	\$260,964	\$473,262	\$350,610	\$733,951	\$530,854	\$967,086	\$1,656,392	\$1,415,036	\$739,585	\$968,289	\$284,242	
Total Expense ±	\$195,019	\$314,723	\$163,893	\$171,933	\$187,505	\$222,835	\$239,393	\$318,838	\$155,818	\$226,739	\$261,649	
Total Income	\$446,115	\$644,836	\$426,782	\$960,243	\$684,570	\$1,323,671	\$2,090,685	\$1,808,855	\$924,558	\$1,280,936	\$446,634	
Grand Total 📑												
	<											
Reset Table to De	fault Prev	riew	Print	Export Data	View Details	Show	as List				Close	

You can also Preview, Print or Export the data to Excel.

Dashboards/Scorecards

Refer to the General User Manual for a detail discussion of Dashboards.



Reports Manager

The discussion of the Report Manager is covered in the General User Manual and Report Manager User Manual.



Object Relationships

Having gone through this document and getting familiar with dashboards, gauges, indicators, and parameters, you may want at some point to see the relationships between all these objects. The main menu option Setup-Object Relationships/Export will give you a very informative view of the objects in your QBD data file.



You can also click on the box on the navigator to select this option.



After selecting this option, you will see the following form.

🔍 Relationshi	ps	_ 🗆 🗙
医输 —	D:\CleverQ\Data\KISS\RVDashboardData.qbd	
Dashboards		
Gauges		
Indicator Categories		
Indicators		
Key Indicators		
Parameter Sources		
Parameters		
Top Bottom Down Up		
Refresh		
Expand All		
Collapse All		
Select All		
Highlight item a	bove first, then View Set Key Parameters	
Show Other Q	BD File Check items on this form then Export	

This form is blank when it is opened but you can make quite a few different selections to see a tree or outline view of the object from different perspectives.

The buttons on the left with colored labels represent objects and is used to build the tree. The tree is actually upside down, and these buttons determine the root of the tree. For example, if you press the "Dashboards" button, **wait several seconds to several minutes** for the tree to be built, then press the "Expand All" button you will see something similar to the following...



On top of the tree, you will see the file you are connected to. Just underneath, the structure of the tree is shown. For dashboards the structure is....

Dashboards {UserID} (Active #) – Gauges – Indicators – Parameters (in ...) The main section of the form has the tree and the branches on the tree are colored in a similar fashion to the buttons on the left to match what the object is. In this case, the tree shows all the dashboards in the file for all users. It indicates which dashboard is for which user, and which ones are active. Under each dashboard, the gauges are shown. For each gauge the indicators are listed. And each indicator has a list of parameters. For parameters referenced at the indicator level, the parameter name is followed by where in the indicator the parameter is used (i.e. Indicator Formula, Max, Min, etc). If parameters have formulas that are based on other parameters, those are shown too. In fact, the nesting of parameters and their formulas are not limited and the tree will show the relationships to all levels.

A unique feature of the tree is when you select a branch that is a gauge, indicator, or parameter, you can then press the "View" button and the detail form for that object will be displayed. You can even edit the object at this point. If you make any changes that could affect the tree, press the "Refresh" button to rebuild the tree.

Objects at the root level are listed alphabetically. So if you are interested in a particular indicator, press the "Indicators" button, and you will get an alphabetical list of indicators. Expand any of the indicators to see the parameters that are used by that indicator.



If you choose Key Indicators, only indicators marked as a key indicator will be displayed. This also provides a way to see those parameters that are used by Key Indicators. A special button is enabled in this mode labeled "Set Key Parameters". Pressing this button will flag all selected parameters as Key Parameters. Refer to the earlier sections on Key Indicators and Key Parameters for more information about them.

Now let's say you want to turn the tree around and instead of seeing the parameters that are used by the indicator, you want to see the gauges and dashboards that use the indicator. Press the "Bottom Up" button and click on "Indicators".



In this view, you see the indicators in red and if you expand an indicator, the gauges that use that indicator are shown as well as the dashboards that use those gauges.

Exporting

Exporting of parameters, indicators, and gauges to another QBD file is available from the same form that displays the object relationships discussed in the previous section. Some additional buttons are available to facilitate the export process.

Note: The export process will only work in the "Top Down" mode.

You have the option to show the other QBD file and its objects prior to exporting if you want to. If you do, press the "Show Other QBD File" button. If not, simply display the objects in this file any way you want to. For example, if you want to export all objects associated with a dashboard, view the relationships for dashboards and then check off the dashboard you want to export. Checking off a parent object, will automatically check off all children or objects beneath it. You can then manual uncheck any objects you don't want to export.



If you want to see the objects in another file at the same time, press the "Show Other QBD File" button. Select the file you want. Then a second window will appear just like the first, but without some of the buttons.



After you have checked off the objects you want to export. Press the "Export" button. Even though you may have checked off dashboards, they will not be exported. Only gauges, indicators, and parameters are exported. If an object by the same name already exists, you will be prompted to overwrite it. You may see this message as soon as you export if the same object is checked more than once on the tree. This is because you have already exported it.

When a message appears similar to this one....



Press Yes to overwrite it, No to not export it, or Cancel to cancel the rest of the export process.

If you say Yes, you will also be prompted to overwrite all parameters....

Confirm Overwrite All Parameters							
Do you want to overwrite ALL parameters?							
Yes	No						
Yes	No						

Select Yes to not be prompted anymore. Press No to be asked for each parameter.

You will see similar prompts for indicators and gauges.

At the end of the export, you will get a message that the export is complete.

Importing

The process of importing objects is simpler. To import you select the "Import Object" selection on the Setup menu.



You can also click on the Import box on the Navigator to start the Import process.



You will then be prompted for a QBD file to import from. Select the file and all gauges, indicators, and parameters will be imported. If an object with the same name exists, the object will be imported and a number will be appended to it. After the import, you will see a message saying the import is complete and it will list the number of each type of object imported.


Testing and Debugging

As part of the process of creating dashboards and scorecards and defining parameters, indicators, and gauges, you must spend time testing what you have done. In fact, this process is no different than designing software, except instead of working with a computer programming language, you are instead working with higher level objects.

Issues can be the result of definition, formula, or data errors. To assist in debugging errors or just performing validation, some features of the CleverQ software make this process a bit easier. Aside from the obvious functionality in the software where you can view results on a gauge, dashboard, scorecard, the Calculate button found on the parameter and indicator forms can be useful. There are also two other areas/functions that can be used for error checking: the Cache and Debug mode.

Data Cache

The Data Cache consists of three parts:

- Extracted Data
- Formulas
- Calculated Data



The Extracted Data part has been previously covered in an earlier section.

The Formulas part of the Data Cache is a repository of all the formulas used for the visualizations. Since so many calculations can occur, and to maintain good performance, the results of the calculations are stored so they are quickly available when needed. Whenever a calculation is required by the VP, the Cache is checked first to see if the

CleverQ[®] Customization User Manual

result has already been calculated. If it has, then the stored result is used. If not, then the ACE will make the calculation and the result stored in the cache and also sent to the VP. So formulas required can be determined on the fly when a gauge is to be displayed, or you can actually scan all dashboards and gauges, and determine the formulas needed along with conditions for the formula. The conditions include: Date Range, Department, Filters, and Data Type. To scan and save the formulas ahead of time, press the "Populate" icon on the Formulas block on the Navigator. Occasionally you will want to clear all the formulas especially if you have made changes to the ACE Definitions and Visualization Definitions. To clear the formulas, press the "Clear" icon in the Formulas block on the Navigator.

To view the formulas, as well as any results if they have been pre-calculated, press the "View" icon on the "Calculated Data" block on the Navigator. The cache can also be viewed by going to the menu item Help – About, and then choosing "System Information". Pressing this button will display the cache contents which include Formula, Date Range, Filters, Data Type, Value, Time Stamp, and Execution Time (seconds).

Q	View Cache						
	Formula	DateRange	Filters	DataType	Value	TimeStamp	ExecutionTime
	[Total Income,Forecast,T,12]	12/31/2009		1	136972.071543446	6/28/2010 8:34:44 AM	0.28125
	[Total Income,Forecast,T,12]	11/30/2009		1	173346.657112928	6/28/2010 8:34:43 AM	0.359375
	[Total Income,Forecast,T,12]	10/31/2009		1	65926.5005905523	6/28/2010 8:34:43 AM	0.578125
	[Total Income,Forecast,T,12]	9/30/2009		1	75827.0304487792	6/28/2010 8:34:42 AM	0.28125
	[Total Income,Forecast,T,12]	8/31/2009		1	56854.7972027973	6/28/2010 8:34:42 AM	0.328125
	[Total Income,Forecast,T,12]	7/31/2009		1	29291.9935986646	6/28/2010 8:34:42 AM	0.28125
	[Total Income,Forecast,T,12]	6/30/2009		1	31374.2242730576	6/28/2010 8:34:41 AM	0.3125
	[Total Income,Forecast,T,12]	5/31/2009		1	14512.3003158236	6/28/2010 8:34:41 AM	0.515625
	[Total Income]	8/31/2010		1	0.00000001	6/28/2010 8:34:40 AM	0.046875
	[Total Income]	7/31/2010		1	0.00000001	6/28/2010 8:34:40 AM	0.0625
	[Total Income]	6/30/2010		1	0.00000001	6/28/2010 8:34:40 AM	0.046875
	[Total Income]	5/31/2010		1	51241.16	6/28/2010 8:34:40 AM	0.03125
	[Total Income]	4/30/2010		1	67975.5	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	3/31/2010		1	62235.25	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	2/28/2010		1	39014.04	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	1/31/2010		1	42517.1	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	12/31/2009		1	29192.9	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	11/30/2009		1	35334.45	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	10/31/2009		1	26183.66	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	9/30/2009		1	20515.24	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	8/31/2009		1	25541.25	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	7/31/2009		1	25158.75	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	6/30/2009		1	24947.84	6/28/2010 8:34:40 AM	0.015625
	[Total Income]	5/31/2009		1	5588	6/28/2010 8:34:40 AM	0.015625
	[Gross Profit]	Last 12 months		1	269129.76	6/28/2010 8:34:39 AM	0.015625
	[Gross Profit]*.25	Last 12 months		1	67282.44	6/28/2010 8:34:39 AM	0.03125
	[Gross Profit]*.15	Last 12 months		1	40369.464	6/28/2010 8:34:39 AM	0.03125
	0	Last 12 months		1	0	6/28/2010 8:34:39 AM	0
	[Total Expense Fixed & Variable]	Last 12 months		1	25602.8	6/28/2010 8:34:39 AM	5.625
	[Total Expense Personal]	Last 12 months		1	130804.28	6/28/2010 8:34:33 AM	5.109375
	[Total COGS]	Last 12 months		1	180727.38	6/28/2010 8:34:28 AM	0.015625
	[Net Ordinary Income]	Last 12 months		1	112722.68	6/28/2010 8:34:27 AM	0.15625
	Profit & Loss Total Income 6/30/2008 5/31/2010 L b				-187937.77084613		
	Profit & Loss Total Income 6/30/2009 5/31/2010 T m				344.562402700167		
	Profit & Loss Total Income 6/30/2009 5/31/2010 T r2				0.08880824308732		
	Profit & Loss Total Income 6/30/2009 5/31/2010 T b				-1167724.2725359		
	Profit & Loss Total Income 6/30/2008 5/31/2010 L r2				0.58530618804324		-
Re	Record: 14 4 8 ▶ 1 ▷ ₩ ▷ ₩ 0 109						

You can force a calculation of all the formulas not already calculated in the Data Cache by pressing the "Recalc" icon in the "Calculated Data" block on the Navigator. This action can take a long time depending on the number of formula entries, so the user can set a time limit on the calculations.

It should be noted that whenever data is extracted, or ACE definitions are changed, the formula results are purged in the Calculated Data. You can manually force a purge of the

calculated results by pressing the "Purge" icon in the "Calculated Data" block on the Navigator.

Viewing the cache may be useful for troubleshooting the calculations.

Debug Mode

Seeing even more detail than the Cache is available in the "Debug Mode". On the System Information screen, there is a checkbox labeled "Debug Mode". To start the debug mode, click on this checkbox. This causes the Cache and Error tables to be cleared. Now, do something that will require calculations like displaying a gauge or dashboard, etc. After that action is complete, come back to the "System Information" form and click on the label "Debug Mode" (leave the checkbox as is). You will now see a table containing the following: GaugeName, Parameter, Formula, DataRange, DataType, Value, ErrorDescription, and DeptName.

Several entries may exist for one formula, since in the debug mode, each parameter in the formula is displayed on a separate row so you can see how the calculation occurred for each element of the formula. The column formula contains two parts separated by a vertical line "|". The first part is the formula and the second part is are the values plugged into the formula. The result is shown in the Value column.

Q System Information		×				
Item	Value .					
Date/Time	9/4/2009 5:58:37 AM	ā I				
Access Directory	C:\Program Files\Microsoft Office\Office10\	-				
Access Version	10.0					
Workgroup File	C:\Documents and Settings\Larry\Application Data\Microsoft\Access\System.mdw					
Ini File	msacc30.ini					
Profile						
Run Time	No					
MDE	False					
Program File	D:\CleverQ\Development\CleverQPrgm 1-20.mde					
Application Code Data	C:\Program Files\Microsoft Office\Office10\QBDLib.dlm					
Security Enabled	False					
Current User						
VBA	C:\Program Files\Common Files\Microsoft Shared\VBA\VBA6\VBE6.DLL(4.0)					
Access	C:\Program Files\Microsoft Office\Office10\msacc.olb(9.0)					
stdole	::\WINDOWS\system32\stdole2.tlb(2.0)					
QBFC7Lib	::\Program Files\Common Files\Intuit\QuickBooks\qbfc7.dll(1.0)					
Office	C:\Program Files\Common Files\Microsoft Shared\Office10\MSO.DLL(2.2)					
ADODB	C:\Program Files\Common Files\system\ado\msado27.tlb(2.7)					
DAO	C:\Program Files\Common Files\Microsoft Shared\DAO\DAO360.DLL(5.0)					
Scripting	C:\WINDOWS\system32\scrrun.dll(1.0)	C:\WINDOWS\system32\scrrun.dll(1.0)				
MSComctlLib	C:\WINDOWS\system32\MSCOMCTL.OCX(2.0)					
SHDocVw	C:\WINDOWS\system32\ieframe.dll(1.1)					
SftTreeLib60	C:\Program Files\Microsoft Office\Office1%\SftTree_IX86_U_60.ocx(6.0)					
SftPrintPreviewLib10	C:\Program Files\Microsoft Office\Office10\StPrintPreview_IX86_U_10.ocx(1.0)					
CleverQLib	C:\Program Files\Microsoft Office\Office10\QBN ib.dlm(0.0)					
Application Title (Current)	CleverQ Standard Edition	<u>-</u>				
Copy above to Clipboar	Copy above to Clipboard Log Report View Cache (Mode) OK					

To stop the "Debug Mode", remove the check in the checkbox by clicking. "Debug Mode" will stay in effect until you close the program also. It is reset whenever the

program first starts up. There is additional overhead when using this mode so calculations will take a little longer.

Appendix A – Built In Functions

Functions are predefined formulas that use arguments to calculate simple or complex values.

Functions have a name followed by parenthesis. The arguments used in the functions are enclosed in parenthesis separated by commas if there is more than one. For example:

```
round(123.456,1)
```

Functions can also be nested. In this case the result of one function is used as an argument for another function.

```
round(abs(123.456),1)
```

Functions can be broken up into categories. These categories include the following:

- Special Functions
- Math Functions
- Logical Functions
- Financial Functions

There are other functions available but were chosen not be included here since they most likely would not apply to a business application like this.

Note: Information about some of these functions come from the Microsoft Developer Network (MSDN) and documentation for Visual Basic for Applications. You may want to refer to these sources for additional information and examples.

Special Functions

getdata Function

This function will return the value from the data table just like you specified a parameter but without manually creating the parameter.

```
GetData(ReportName,RowName,ColumnType)
```

```
For example: GetData("Profit & Loss","Gross Profit")
```

Required for this function are ReportName and RowName. You must enclose the items with double quotes.

The function can also include a function and operands just like you would specify with a parameter name.

GetData(ReportName, RowName, ColumnType, Funct, Operand1, Operand2)

```
For example:
GetData("Profit & Loss","Gross Profit","","Forecast","T","12")
```

Note there is a place holder for ColumnType with double quotes.

The function will actually create a new parameter based on this function if it previously did not exist. The notes section for the parameter will indicate that is was automatically created and when.

numdays Function

This function will return the number of days for the current indicator or parameter being calculated.

numdays()

prev Function

The "Prev" function will return the value for the previous period based on the data type and is used in conjunction with any of the aggregate functions. The word "Prev" can be place before or after the aggregate function and can have spaces or not. Some examples are shown below. The Aggregate functions include: Sum, Avg, Min, Max, Stdev, Var, First, Last, and Count. The function "Sum" is assumed as the default unless you specify something else.

Assume the formula, [Total Current Assets] is used for an indicator. This formula would calculate to sum of the "Total Current Assets" parameter over the time period specified. Assume we have the date range of "Last Month" and the current month is May. It would return the value for April.

Now add "prev" to the formula: [Total Current Assets, prev]. This formula would calculate to sum of the "Total Current Assets" parameter over the previous time period specified. Assume we have the date range of "Last Month" and the current month is May. It would return the value for the month previous to Last Month or in this case March.

Here is another example:

[Total Current Assets, Last] with a date range of Last Year, for annual data, and the current year is 2010, and the fiscal year begins in January. This would return the value for the last month of last year or December 2009. Add the word "prev" to the formula like this: [Total Current Assets, Last Prev] or [Total Current Assets, Prev Last], and the value returned is for December 2008. If the data type was monthly, the value returned would be November 2009.

If no previous value is available, the value returned is null or zero.

prevY Function

The "PrevY" function works similar to the "Prev" function except it ignores the data type and always goes to the previous year.

Change Function

If you create a formula, [Total Current Assets]- [Total Current Assets, prev], the result would be the difference between the current time period and the previous time period. You can specify this formula easier by using the "change" function. For this example, the new formula would simply be [Total Current Assets, change]. If no previous value is available, the current value is returned.

Forecasting Functions

The forecasting functions have a different format than the other functions and are similar to the aggregate function format. These functions are used within the [] brackets that define a parameter. The function is placed within the parameter's brackets following the parameter name and a comma. For example... [Total Current Assets,Forecast]. There may also be additional operators after the function name separated by commas.

Forecast Function

The forecast function is used to calculate or predict a value for a specific parameter using regression or curve fitting formulas. The function can be used in conjunction with the seasonal trend values previously calculated for the parameter. The function is based on one of four types of equations:

Forecast Function Regression Formulas				
Linear	y = mx + b			
Power Curve	$y = cx^d$			
Exponential Curve	$y = fe^{gx}$			
Logarithmic Curve	$y = h \ln(x) + j$			

Which of these methods is determined by the operand following the function name. The following examples shows you would use the function for the parameter "Gross Profit":

```
[Gross Profit,Forecast,L] for Linear
[Gross Profit,Forecast,P] for Power Curve
[Gross Profit,Forecast,E] for Exponential Curve
[Gross Profit,Forecast,LN] for Logarithmic Curve
```

If you enter a "B" as the operand, the Dashboard software will find the "Best fit" and will automatically decide which of the 4 formulas to use. This is done by doing the calculation for all four methods and then using the highest of the R-squared values for to determine the best fit. The mathematics of this function is beyond the scope of this user manual, but

you can learn more about this from various sources including Microsoft Excel Help. This function is identical to adding trendlines to a chart or using the Microsoft functions Trend, Forecast, Slope, Intercept, and RSQ.

[Gross Profit, Forecast, B] for Best Fit or [Gross Profit, Forecast] for Best Fit

If the "L", "P", "E", "LN", or "B" is omitted, the forecast function will default to "B". To also factor in the seasonal trend with the forecast, you would precede the "L", "P", "E", "LN", or "B" with the letter "T". For example...

[Gross Profit,Forecast,TL] for Seasonal Trend with Linear [Gross Profit,Forecast,TE] for Seasonal Trend with Exponential [Gross Profit,Forecast,TP] for Seasonal Trend with Power Curve [Gross Profit,Forecast,TLN] for Seasonal Trend with Logarithmic [Gross Profit,Forecast,TB] for Seasonal Trend with Best fit

Forecasts have to depend on history and you specify the number of months of history starting with the prior month from the current date by entering another operand with the forecast function. You can enter any number of months. For example....

[Gross Profit, Forecast, L, 6] will calculate a linear trend using the last 6 months of actual data

[Gross Profit, Forecast, TB, 12] will calculate a best fit seasonal trend forecast using the last 12 months of actual data.

If the number of months of history is left blank, then the value can be specified in one of the gauges that is commonly used to display forecasts. That gauge is the "Line Chart -2 Lines". A property called "# Months History for Forecasts" is available and you can enter a number here. This is only used if a underlying formula used in the gauge has a forecast function without the number of months of history specified.

🖉 Gauge Detail						
Select Existing Gau	ge:			-]	
Gauge Name:					Note:	
Gauge Type:	Line Chart - 2 Lines		•	Select Gauge Type		
Initial Date Range:		- 🗖 Lo	ock Date Range	Use drop down selection		
Data Type:		•		or press "Select Gauge Type" button, Warning -		
Dept:		•		changing gauge type will reset all properties		
Security Group:		•		reset an properties		
Gauge Properties:	Ratio 1 Ratio 2 Ratio 2 Legend # Months History for Forecasts # Periods to Display in Past # Periods to Display in Future	= = = = = =		- - - - - - - - - - - - - - - - - - -		
i iested	L		1	•		
Add New Gauge Del	ete Gauge Where Used	Print	View		Save	Save and Close

Here is an example....

• Gauge Detail	•				
Select Existing Gau	ge: Example Forecast Gauge				
Gauge Name:	Example Forecast Gauge				Note:
Gauge Type:	Line Chart - 2 Lines			Select Gauge Type	
Initial Date Range:	Last Fiscal Year	<u> </u>	se this gauge for	Use drop down selection or	
200 A.	Lock Date Range	•	Monthly Data	button, Warning -	
Dept:		<u> </u>	Daily Data	changing gauge type will reset all properties.	
Security Group:		- I C	Auto		
Gauge Properties:	Ratio 1 Ratio 2	= Total = Total	Income X Income Eorecast		
	Ratio 1 Legend	= 10(a)	Income i orecast	-2	
	Ratio 2 Legend	=	Ratio Deta	il 🔰	
	# Periods to Display in Past	= 12	Select Exis	ting Ratio Total Income Fore	ecast TB
	# Periods to Display in Future	= 12	Ratio Name	Total Income Forecast TB	
			Ratio Formula	[Total Income,Forecast,TB]	
Tested				2 200 000 NOS NO 2	
				Color Scheme or click on bars	to select colors
Add New Gauge Del	ete Gauge Where Used	Print			Advice for differen

The previous figure shows the special gauge with the property that allows the number of

CleverQ[™] Customization Manual

months to be used. It references a indicator using the forecast function, but leaving out the number of months of history following the TB operand. Note: Using the gauge property "Specifying the # Months History for Forecasts" is only available for this one gauge and will have slower performance than including the extra operand with the function. (The calculated values cache is cleared when this property is used). The next figure shows the standard drilldown for the gauge as defined in the previous figure. It uses the other special properties for the 2-line gauge which displays additional periods of data in the past and future.



One further option exists with the number of months of history. If neither the formula has the value, nor the gauge does not contain the value, then the system wide preference value is used as entered on the preferences form.

CleverQ[™] Customization Manual

Q CleverQ Preferenc	25	
Company Name: QuickBooks Company File:	<mark>Sample</mark> C:\Program Files\Dealership Software\Data\RCD Sales Co LTD 2009.qbw	Classes
First Month of Fiscal Yi Logo: D:\CleverQ\Dat	ear Jan 🔄 a\KISS\Clever Q Logo.jpg	Setup Departments
	 Check for updates when program starts Security Enabled Use Windows User ID Ignore Division by Zero errors Start Program with Navigator 	Auto Update Dashboard (Min) 0 + Months History for Forecasts 24 + Clear out all tested flags
Subscription ID: Support ID:		Done

And if that preference is not set, then all historical actual data is used.

Trend Function

The Trend function is used to return the seasonal trend amount for the selected parameter. It is only applicable for parameters based on data sources that have had a seasonal trend calculated. It is also only applicable for monthly calculations. When a date range of 1 year is used for the calculation, this function should return a value of 1. Any date range will work and the sum of all the monthly fractions will be returned for that data range.

Mavg Function

This function will calculate the moving average for an indicator or parameter. For example...

```
[Total Current Assets, mavg, 3]
```

The number following the mavg function and separated by a comma is the number of previous periods that the average value will be based on. This is in addition to the current time period. So in the previous example, the moving average will actually be calculated on the current and previous 3 periods or a total of 4 periods.

You can also enter a negative number for the number of periods which will then use future values rather than previous values.

The function is very sensitive to the time period being calculated. For example, if the parameter is being calculated for a month, then the moving average is based on the previous X months. If a parameter is calculated on a daily basis, then the moving average is based on the previous X days. Some inaccuracies may exist if the number of periods is small and the time period spans non-working days like weekends. But if the

calculated date range is a week, then the previous X weeks will be used. Date ranges can be anything. For example, you could be working with a 15 day period. Then the moving average will be based on 45 days if you enter 2. 2 + the current period is 3 periods and a period is 15 days, so 3 * 15 is 45 days.

Math Functions

abs Function

The absolute value function simply removes the sign from a number always returning a positive value.

abs(159.2) = 159.2 abs(-159.2) = 159.2

exp Function

The exponential function returns a value specifying e (the base of natural logarithms) raised to a power.

 $\exp(5) = 148.41$

int Function

This function returns the integer portion of a number.

int(123.456) = 123

log Function

This function returns the natural logarithm of a number.

log(2) = 0.69

You can calculate base-n logarithms for any number x by dividing the natural logarithm of x by the natural logarithm of n as follows:

log(x) / log(n)

round Function

This function returns a value rounded to the specified number of decimal places.

```
round(123.456,1)
```

sgn Function

This function returns a value indicating the sign of a number

sgn(-22) = -1

Argument	Returns
Greater than zero	1
Equal to zero	0
Less than zero	-1

sqr Function

This function returns the square root of a number.

sqr(4) = 2