



Advanced Reporting and Charting

Our new Advanced Reporting and Charting (ARC) tool already enhances MSSO, MSIP Material Manager (MSIP-MM), and MSEPc. Soon ARC will be standard in MSIP, MSSP, MSHaulage, MSDA, and MSTorque. Here's why ARC is such a superior reporting and charting tool. Exciting new features include:

- Pivot reports - display complex datasets in compact and summarized reports.
- Detailed reports - complete tabulated data with logical layout and customization options for complex datasets.
- Charts - switch between data in 2D and 3D, or combine several series in a single chart.
- Pre-defined templates - hit the ground running.
- Custom templates –create templates and reuse them later.
- Customization options for charts - full control over the appearance and the behavior. Save the options and reuse them in all products with ARC functionality.
- Report export in multiple formats - PDF, HTML, MHT, XLS, CSV, TXT, RTF, and image.
- Chart export to different image formats - BMP, EMF, GIF, JPEG, PNG, TIFF, and WMF.
- Report designer—customizable designing for advanced users.
- Printing - adjust the page setup, background color, or specify a watermark.

PIVOT REPORTS

ARC offers both static and dynamic pivot reports. The pivot reports quickly display table data as fully customizable, slice-and-dice reports. Field values automatically appear in a tree structure with expandable parents while displaying totals for each row and column. Export data to numerous formats and print the contents just like traditional WYSIWYG reports. Figure 1 shows a sample static report from MSIP Material Manager.

Destination		Period	Period2	Period3	Period4	Period5	Period6	Period7	Grand Total
Stockpile3	Tonnes	0	90,000	1,755,750	0	0	0	0	1,845,750
	Volume	0	36,000	702,300	0	0	0	0	738,300
	ECCU	0.00	1.66	2.28	0.00	0.00	0.00	0.00	2.25
	Truck Hours	0	0	0	0	0	0	0	0
	Shovel Hours	0	0	0	0	0	0	0	0
Stockpile2	Tonnes	0	2,445,000	5,080,500	2,940,000	0	0	0	10,465,500
	Volume	0	978,000	2,032,200	1,176,000	0	0	0	4,186,200
	ECCU	0.00	1.15	1.00	0.78	0.00	0.00	0.00	0.97
	Truck Hours	0	0	0	0	0	0	0	0
	Shovel Hours	0	0	0	0	0	0	0	0
Mill2	Tonnes	0	0	0	0	0	450,750	0	450,750
	Volume	0	0	0	0	0	180,300	0	180,300
	ECCU	0.00	0.00	0.00	0.00	0.00	2.28	0.00	2.28
	Truck Hours	0	0	0	0	0	0	0	0
	Shovel Hours	0	0	0	0	0	0	0	0
Surge1	Tonnes	0	0	0	0	0	0	0	0
	Volume	0	0	0	0	0	0	0	0
	ECCU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Truck Hours	0	0	0	0	0	0	0	0
	Shovel Hours	0	0	0	0	0	0	0	0

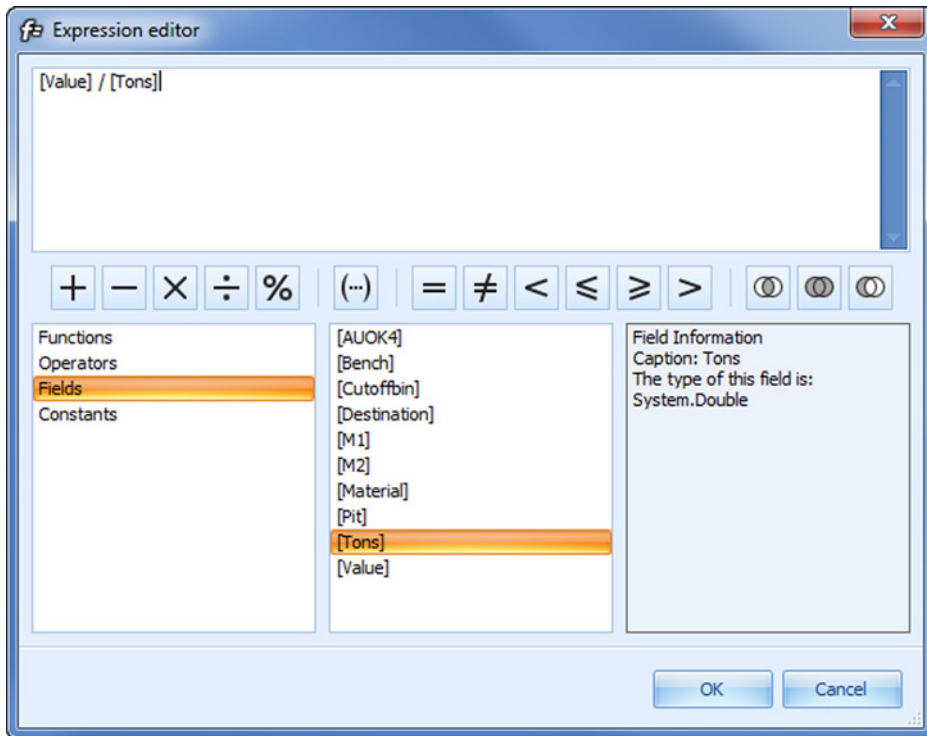
← Figure 1

Figure 1 Pivot table from MSIP-MM

Dynamic pivot reports offer full control over their visual layout so data can be examined from multiple perspectives. Drag and drop any field into the Data, Column, Row, or Filter header areas in the report.

Field values are automatically arranged into a tree structure and the child groups can be expanded and collapsed to generate raw or summarized reports. Single click sorting and visual filtering options allow reports to be manipulated on the fly.

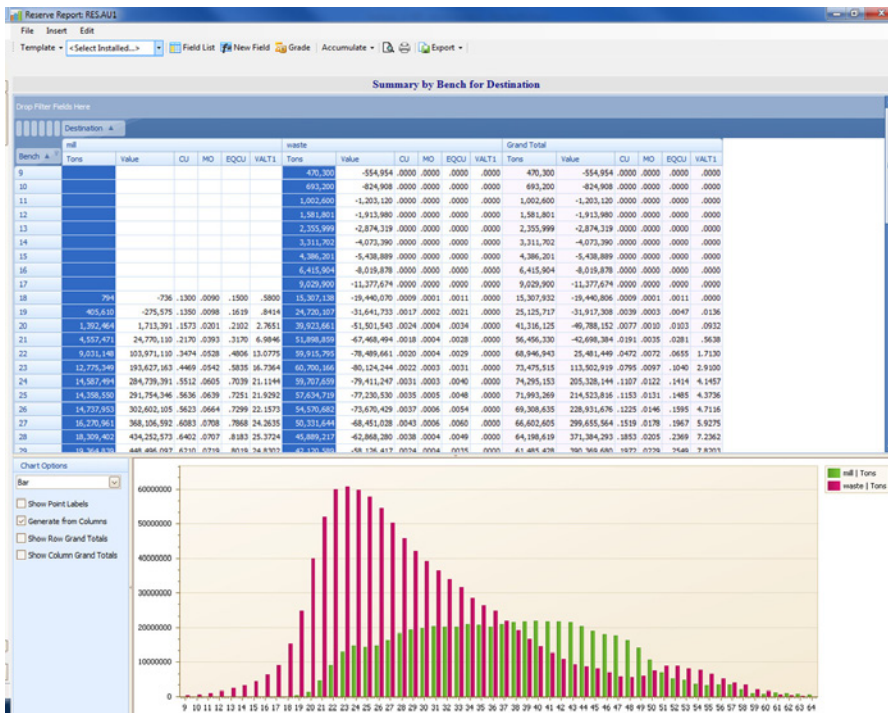
Unbound report columns permit sorting, grouping, filtering, and summary calculations. Values in these unbound columns can be calculated from values in bound columns. For example, add a "Value/Ton" field using the **Expression Editor** as shown in Figure 2.



← Figure 2

Figure 2 Expression Editor for computing field values.

Visualize pivot report data in 2D or 3D via interactive charts generated from columns or rows. 3D views can be rotated and zoomed. Figures 3 and 4 demonstrate charts from MSEPC and MSSO pivot reports.



← Figure 3

Figure 3 MSEPC pivot report

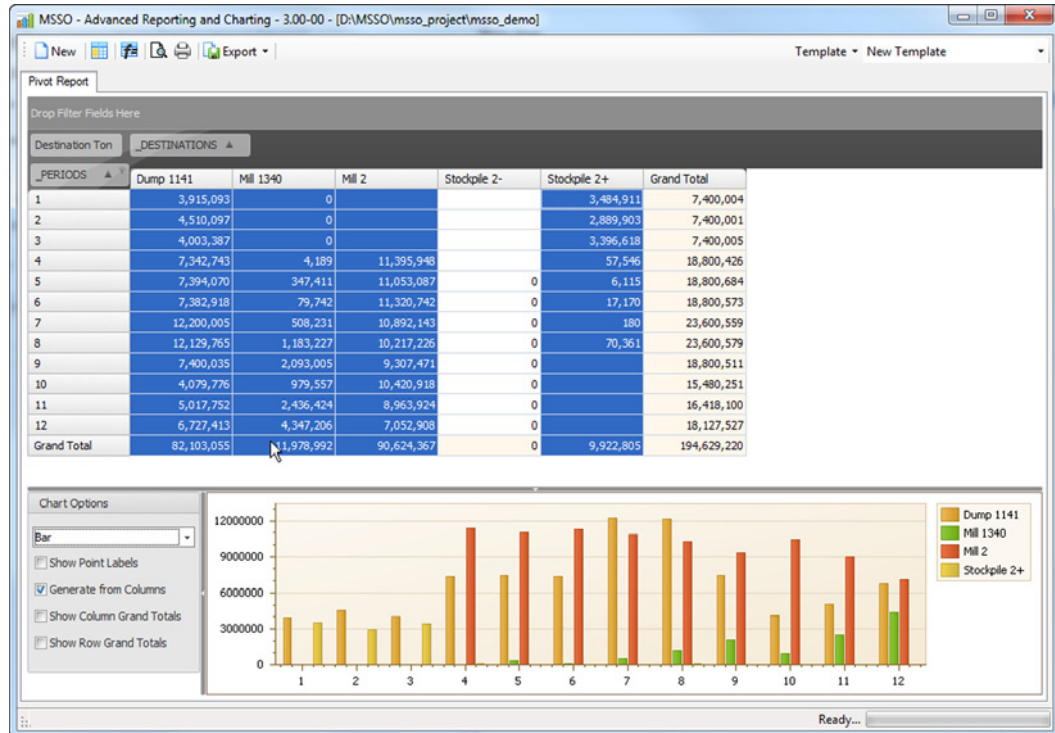


Figure 4 MISO pivot report

Figure 4 ↑

DETAILED REPORTS

Complete tabular reporting is available in the Detailed Reports option. Pick columns from the available field list with an auto-complete feature for efficient searching.

Group columns into bands for a more logical layout. Multi-column sorting, data filtering, and summary computations are available, as well as total summaries and group summaries. These summaries are computed at runtime by using the appropriate View Footer menu item, as shown in Figure 5.

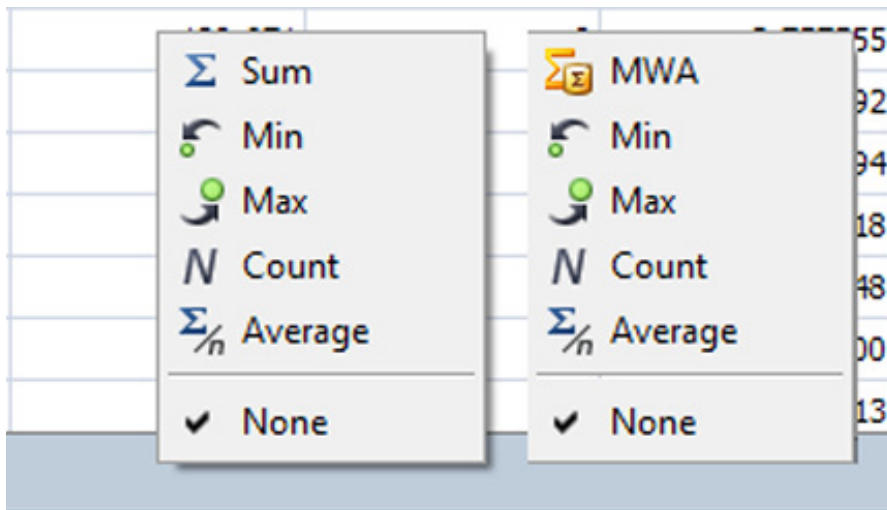


Figure 5 Options for computing summaries in the View Footer menu.

← Figure 5

The column color, font, precision, report title, and logo can all be customized. Drag and drop the columns to reorder, hide, or move them to the group panel as needed.

Unbound columns with calculated values can be added to the report for sorting, grouping, filtering, and summary calculations. The report can be exported in many formats, including PDF, HTML, XLS, CSV, TXT, RTF, and image. Numerous customization options are available directly in the print preview window.

CHARTS

ARC offers comprehensive 2D and 3D charting options. Easily switch between views and combine several series within a single chart using one of the many chart types:

- bar, stacked bar, full-stacked bar
- point
- line
- scatter line
- step line
- spline
- area, stacked area
- pie
- doughnut
- funnel

Display multiple charts in a single page using qualitative and numeric scales. Plot data from different files in the same chart, as shown in Figure 6.

Figure 6 ↓

Cum. Present Value & Cum.-Profit vs Period

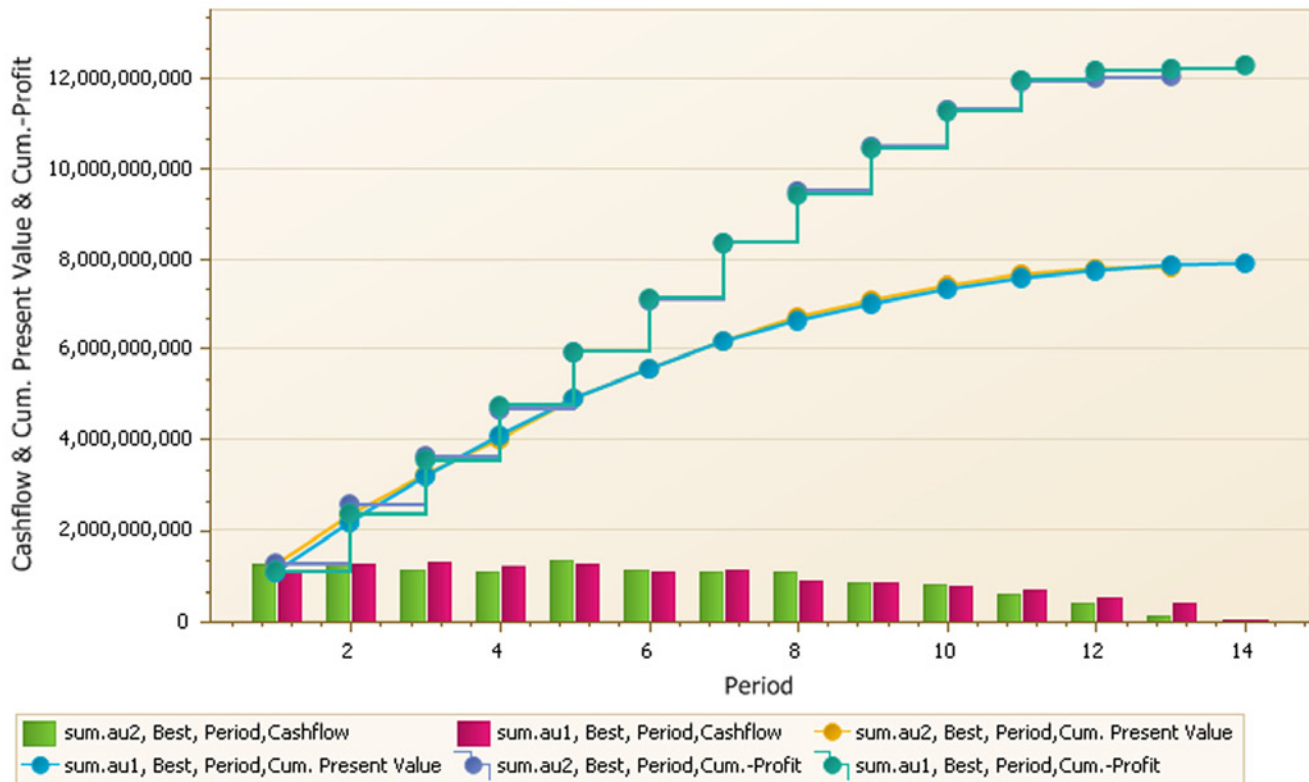


Figure 6 Chart showing several different sets of data.

Scale breaks remove useless space where point values have significantly different ranges (Figure 7). Scale breaks can be enabled automatically.

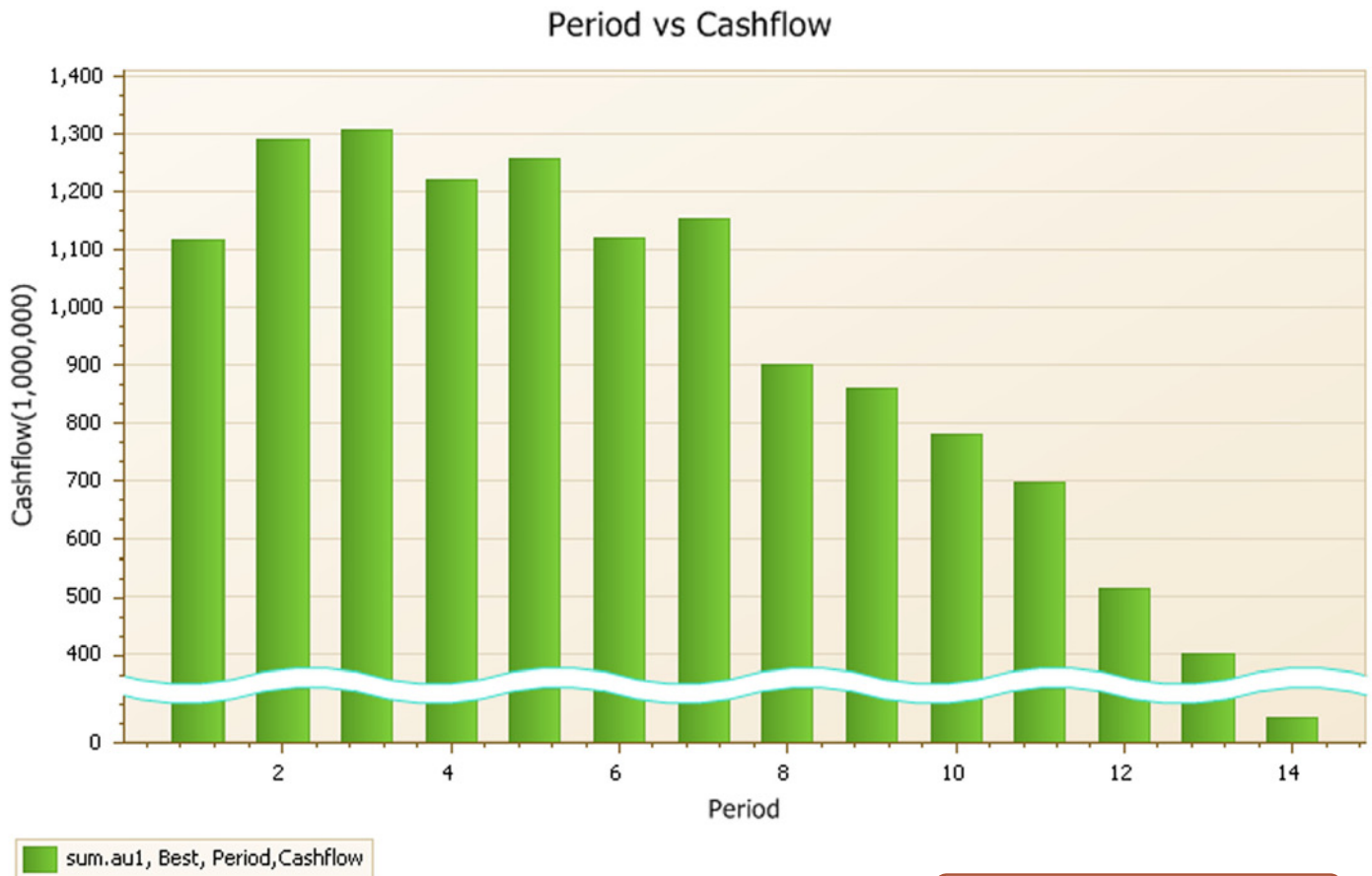


Figure 7 ↑

Charts can be exported in many ways:

- An image file - BMP, JPG, PNG, GIF, TIFF, WMF, EMF
- A PDF file.
- An image embedded in an HTML page.
- An image embedded in a Microsoft Excel spreadsheet.

CUSTOMIZATION OPTIONS

Several customization options are provided, such as showing/hiding the series labels, rotating 3D charts, and changing colors and axis label positions.

Built-in palettes apply a consistent style to bars, diagram backgrounds, axes, legends, etc. Save all the chart settings and reuse them in any product with ARC functionality.