

OEE Audit Release Note

Version 2.0

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What's New in 2.0

- Dashboard Multi-Level Filtering
- OEE Gains & Losses – Group by date and Hierarchy
- OEE YTD Trending – how do we compare to last year
- Availability Loss – Graphical Comparison by Device
- Availability Loss – State Comparison - % display
- Pivot Grid - Enhancements
 - Set Font Size
 - Save Layout / Restore Layout
 - Show and Hide Fields
 - Define New Fields for your own calculations
- Shift & Job Data –
 - Customized User defined fields
 - Simple charting
 - Undefined Shift Data – find your missing data
- Customize column names for User Strings & Numbers
- New report – All Production Shift Summary – 1-page At-A-Glance



OEE Audit Dashboard – Additional Filtering

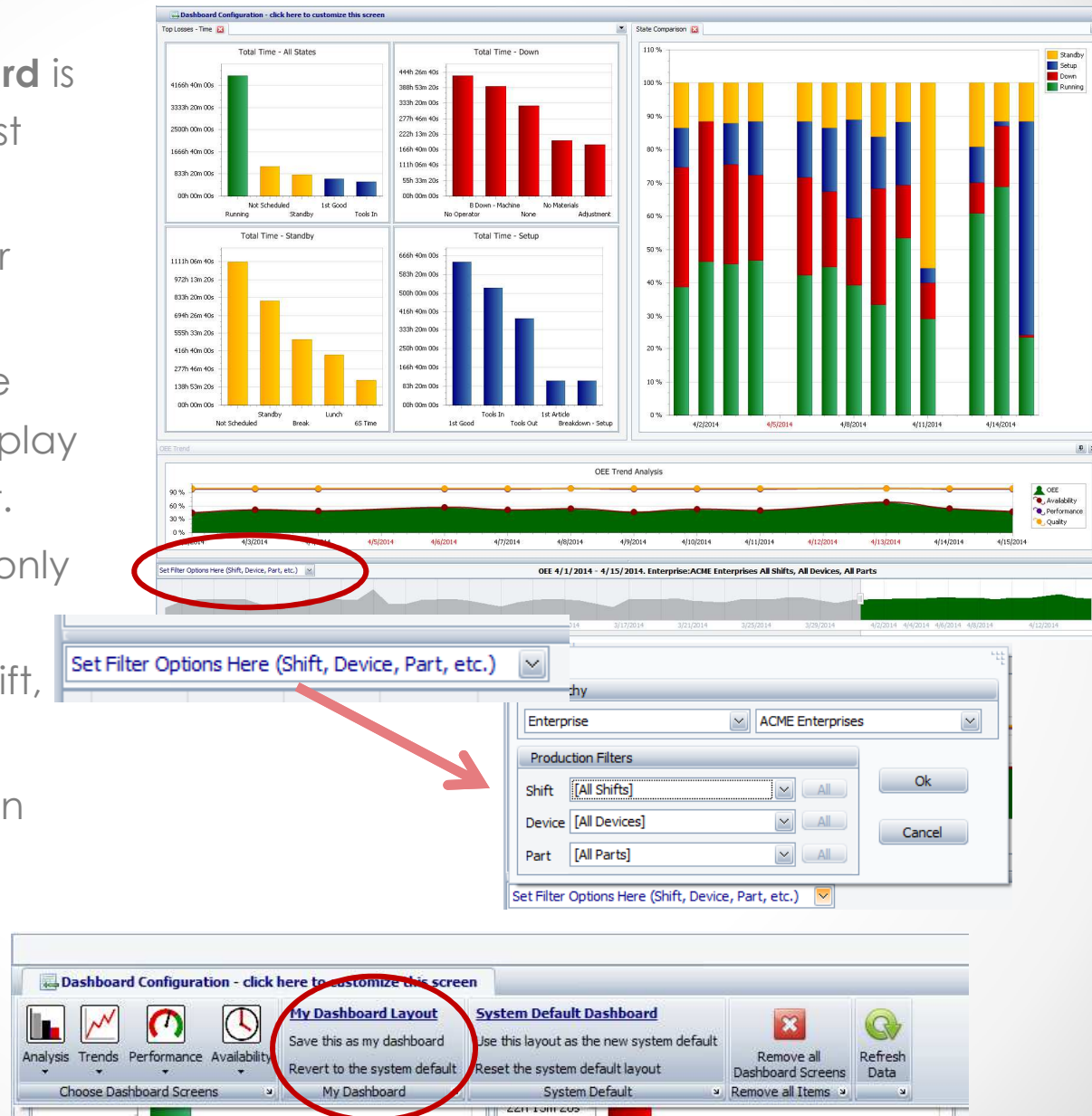
The **OEE Audit Dashboard** is presented when you first open OEE Audit.

The default display is for the last two weeks.

You can now customize **YOUR** dashboard to display only the data you want.

For example, you may only want to see the data associated with your shift, your specific lines.

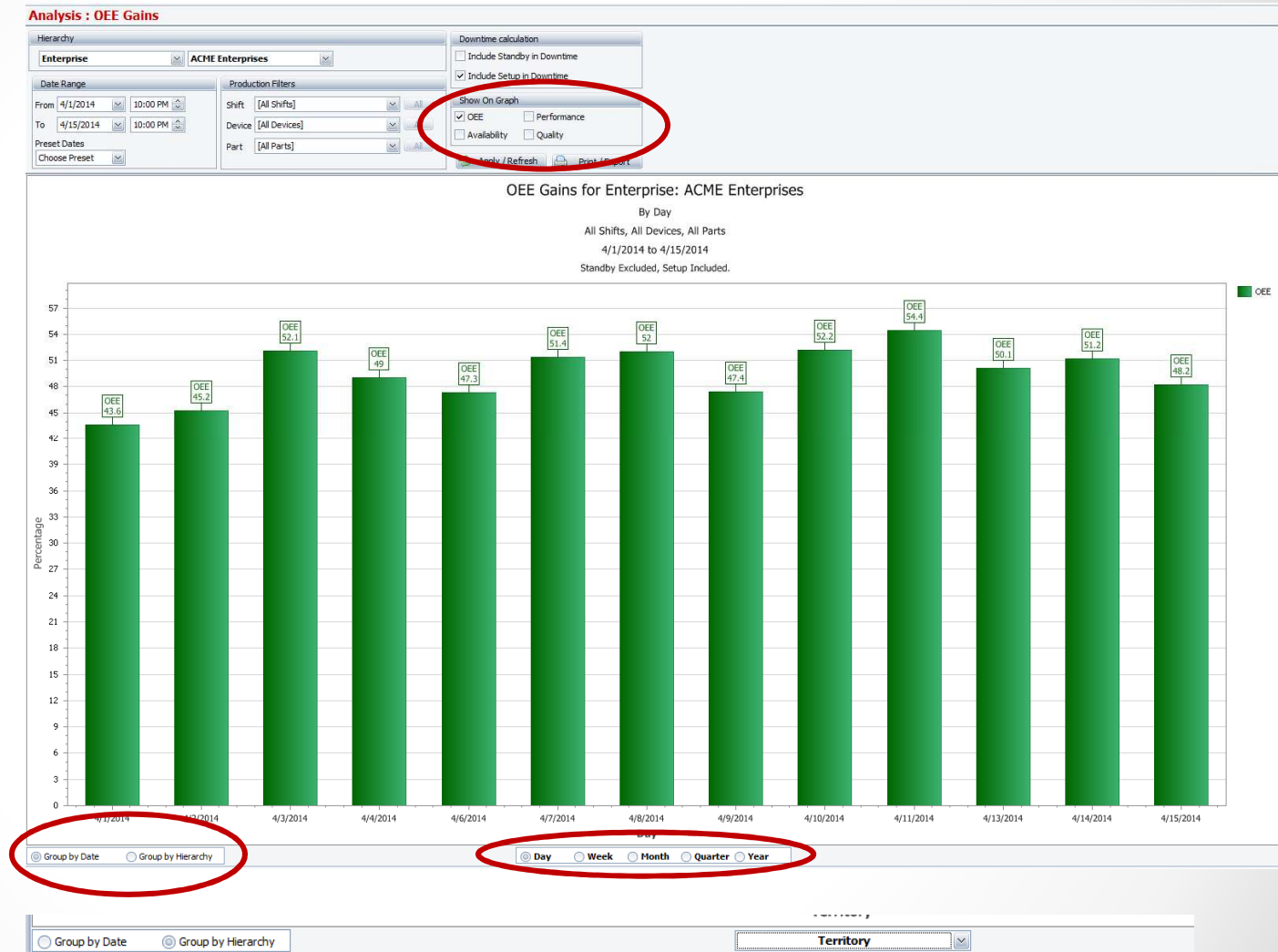
You make your selection and then save as '**My Dashboard Layout**'.



OEE Gains & Losses - Group by Date or Hierarchy

The charts for **OEE Gains** and **OEE Losses** now let you display OEE, A, P & Q or all 4 elements by Date.

Depending upon the date range selected, you can display by Day, Week, Month, Quarter or Year.



Trends – OEE Year To Date Comparison

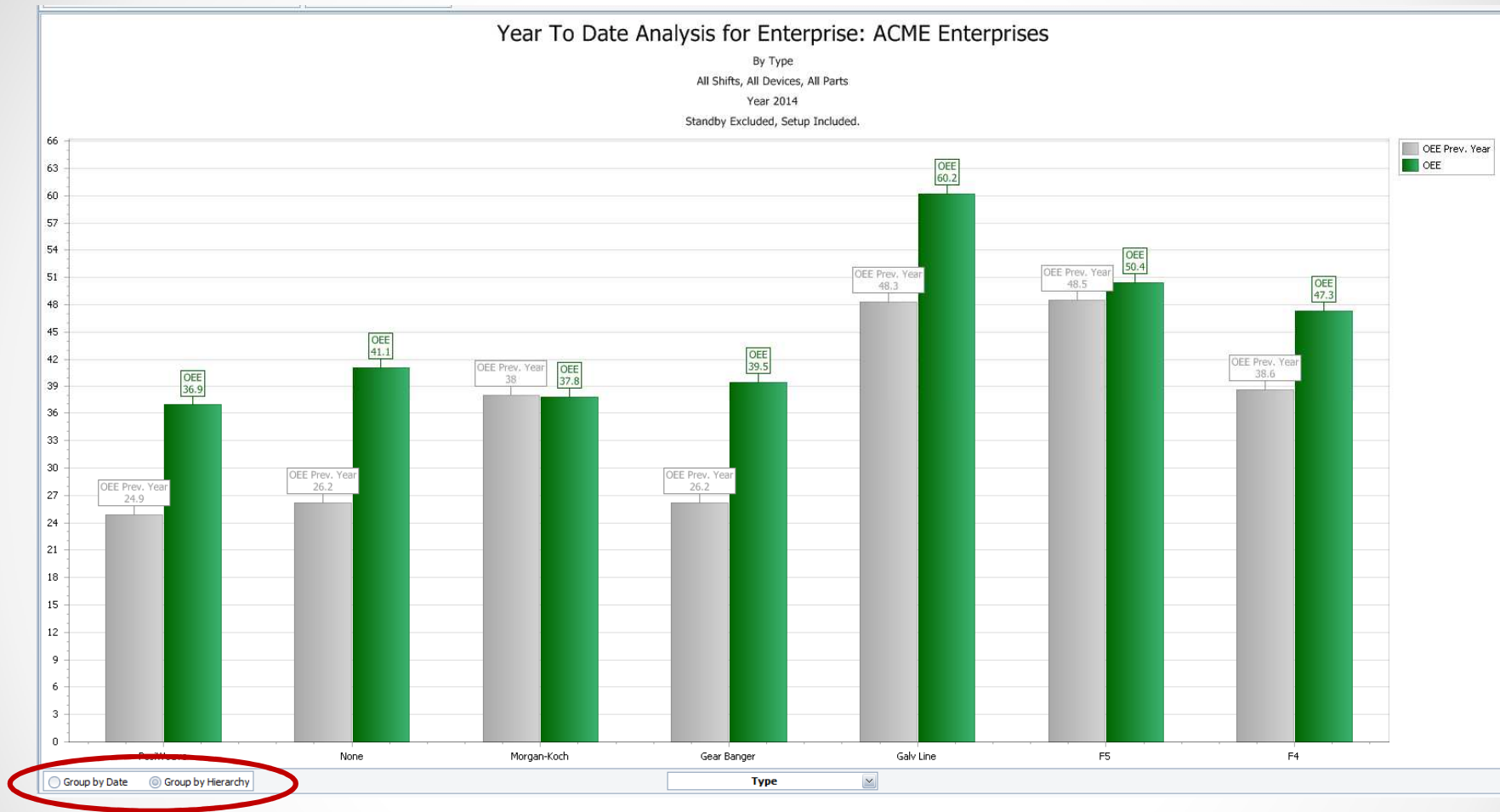
The year defaults to the current year and will provide the comparison to the previous year.



You can view YTD comparison on OEE, Availability, Performance or Quality.

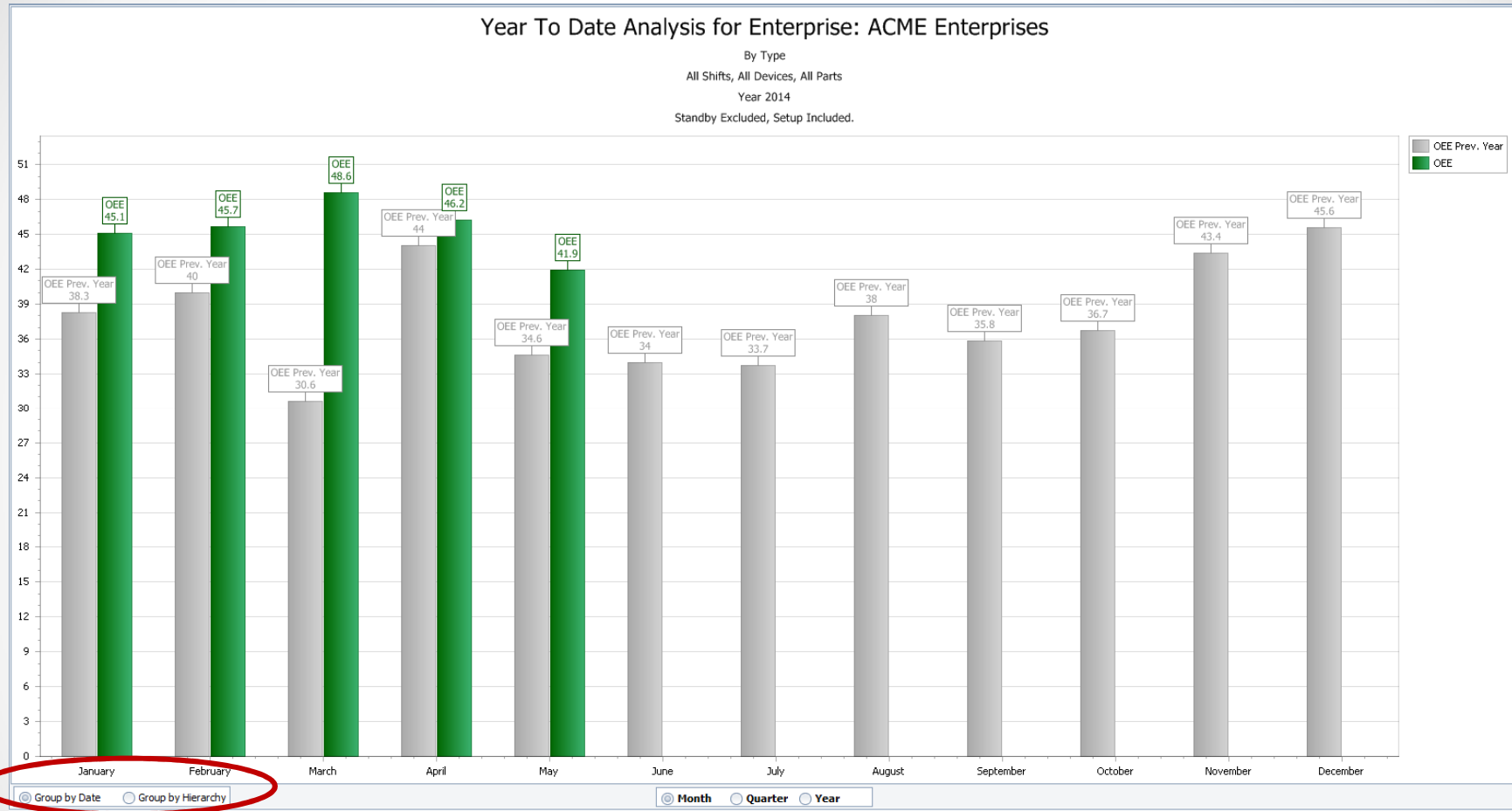


Trends – OEE Year To Date Comparison



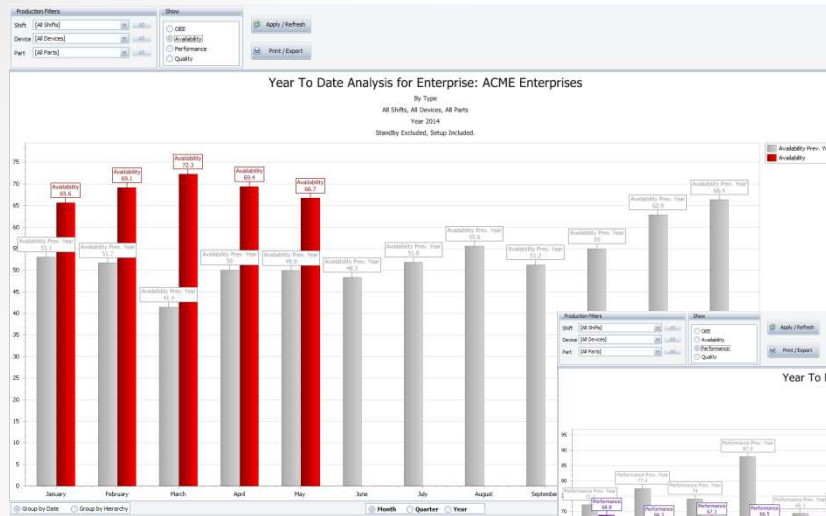
You can view YTD comparisons by Hierarchy – Enterprise, Plant, Lines, Shifts or Parts.

Trends – OEE Year To Date Comparison



You can view YTD comparisons by Date – Month, Quarter or Year

Trends – OEE Year To Date Comparison



YTD comparisons for **Availability**

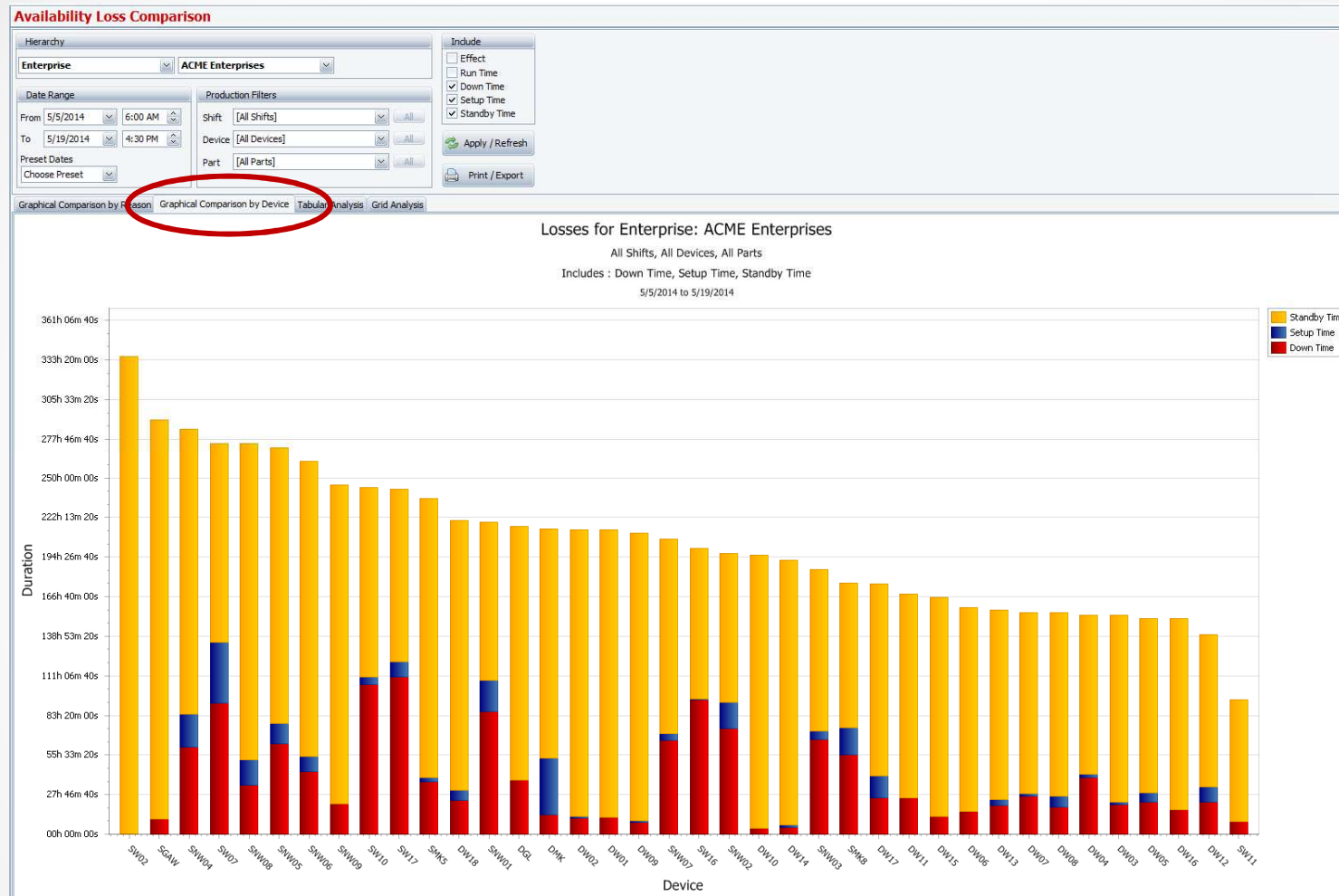


YTD comparisons for **Performance**



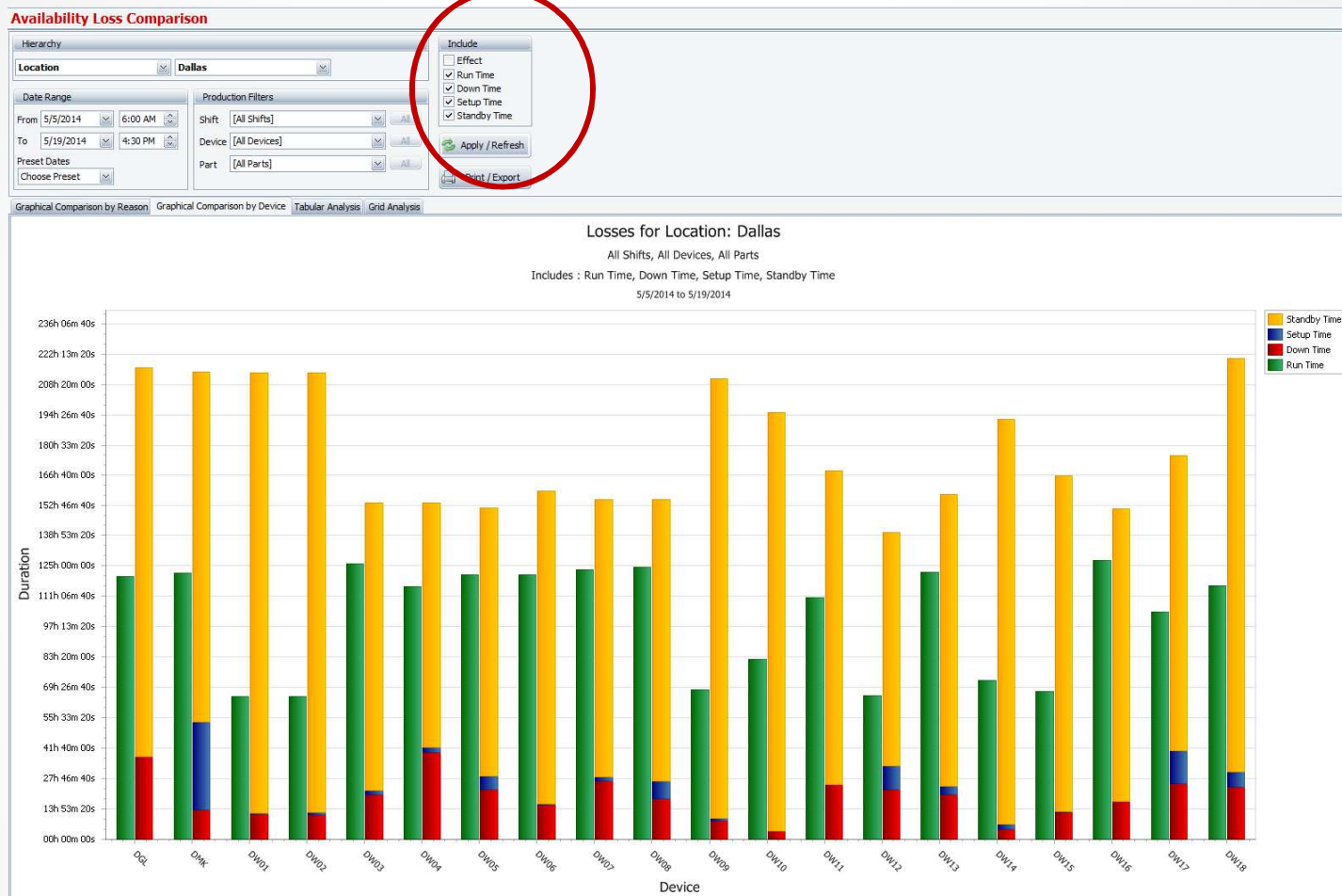
YTD comparisons for **Quality**

Availability Loss – Graphical Comparison by Device



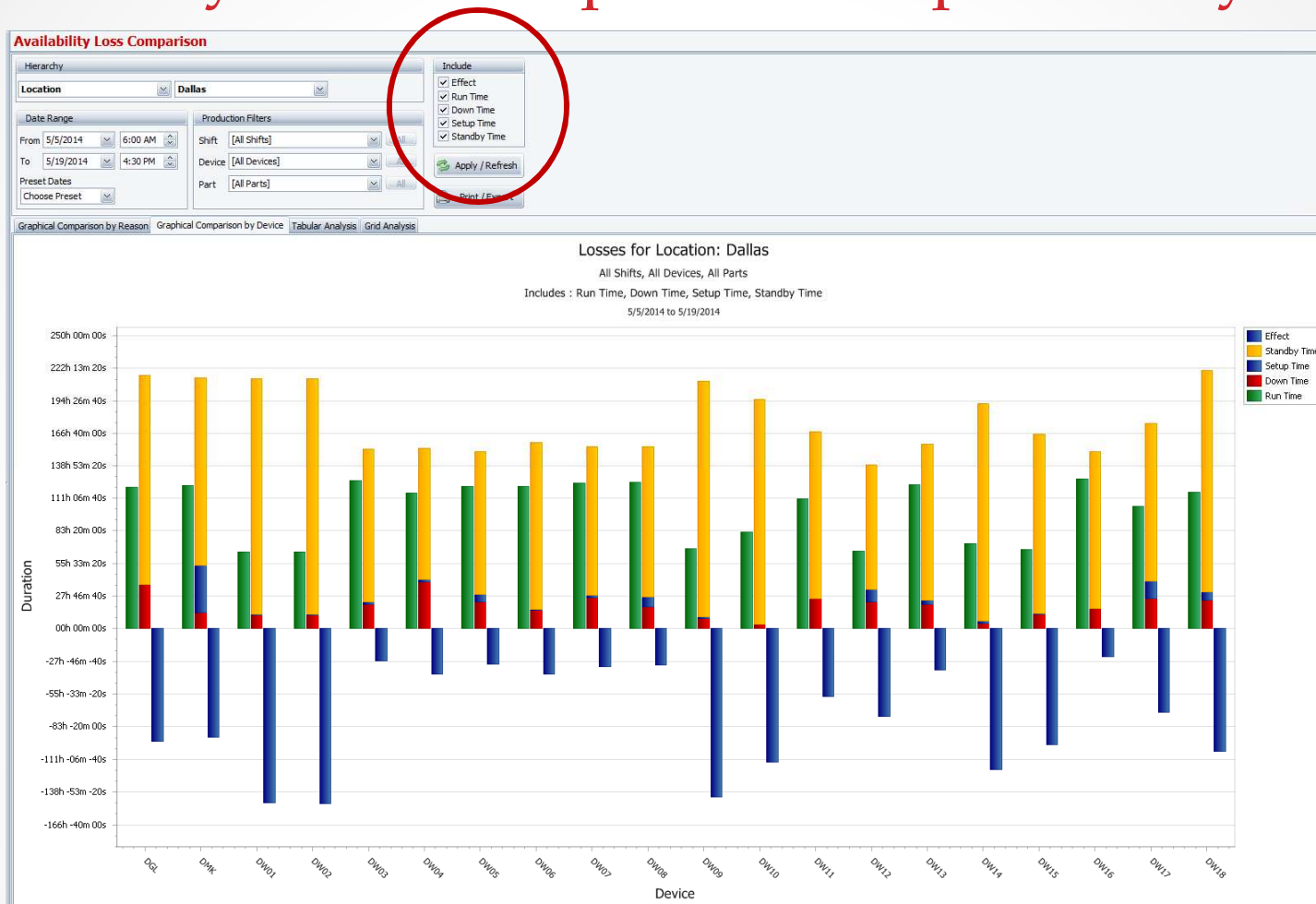
This chart provides a graphical representation of production events for the given date range and hierarchy selected.

Availability Loss – Graphical Comparison by Device



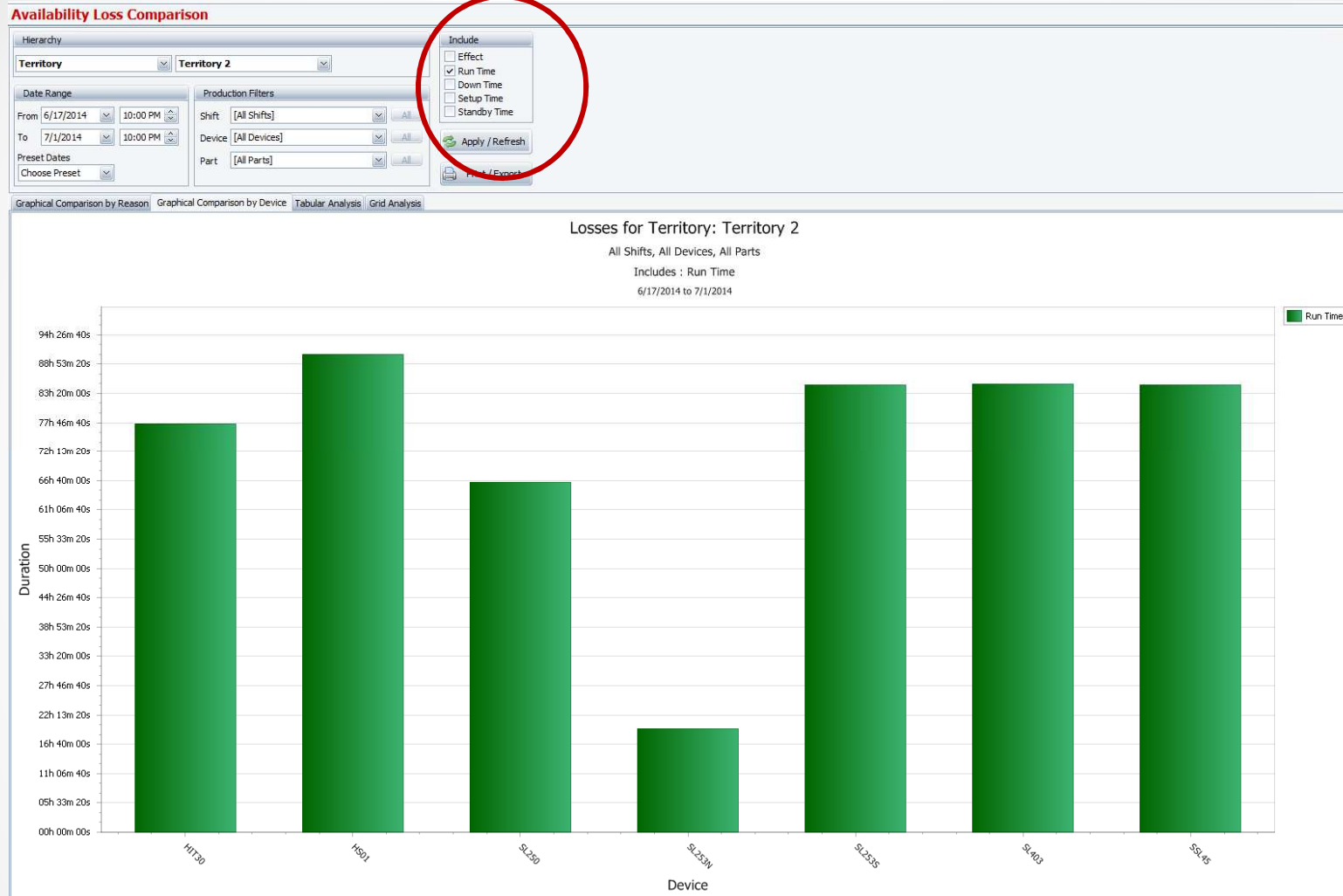
Including Run Time to this chart provides visual comparison of your production events to run time.

Availability Loss – Graphical Comparison by Device



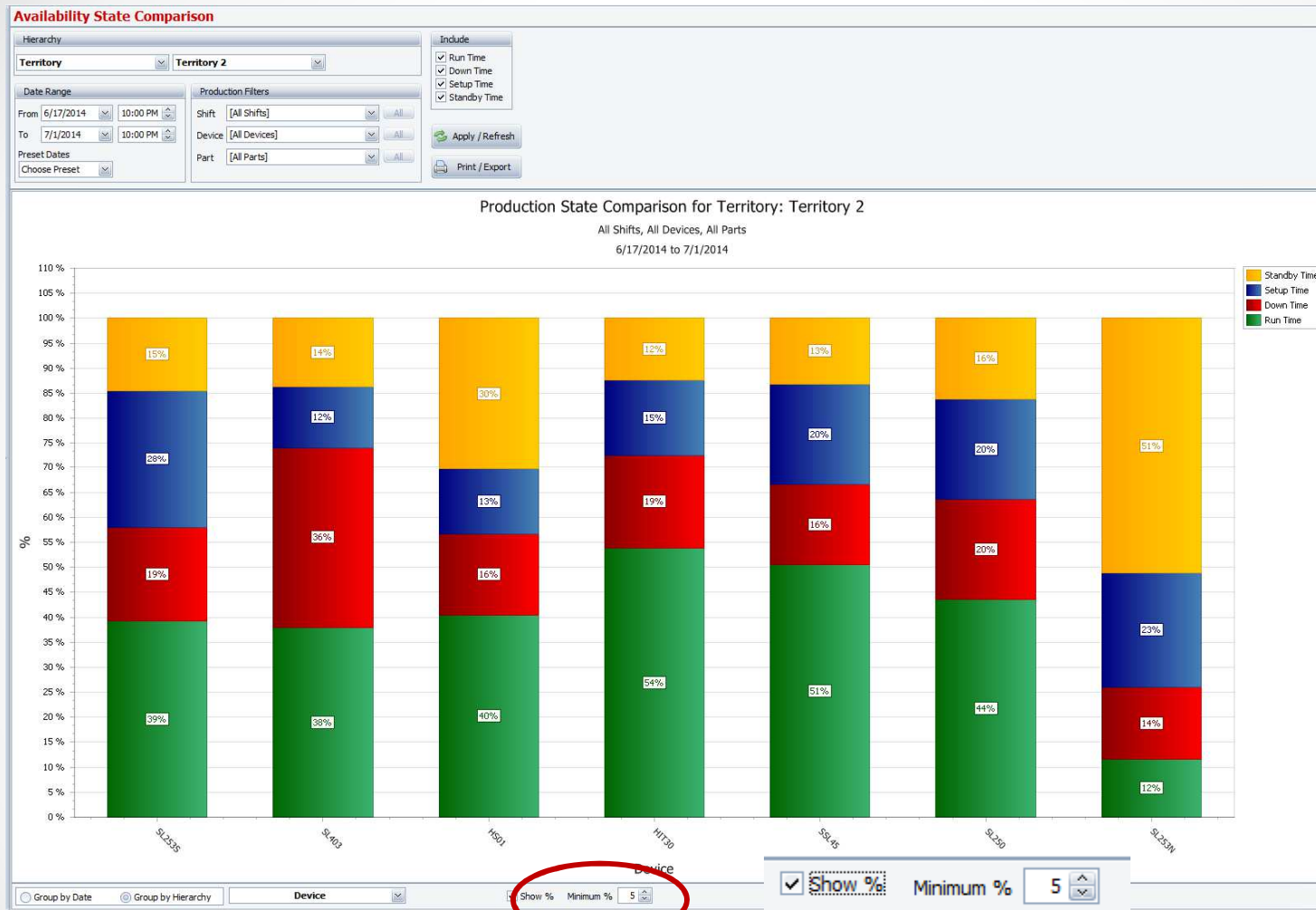
The **Net Effect** of the machine's uptime (essentially runtime minus downtime). Items below the x-axis (all of them in this case) have been down more than up over the date range. Similarly, if they were above the axis then the machine was up more than it was down. So you will notice that if you placed the blue "effect bar" on top on the green "run time bar", it will be the same height as the loss stacked bar.

Availability Loss – Graphical Comparison by Device



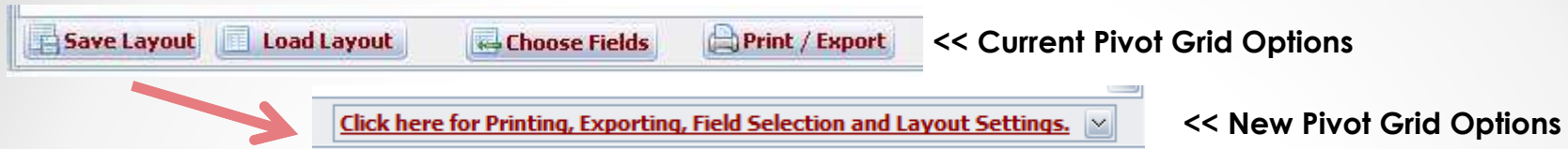
Or you can compare just Run Time for all shifts, devices or parts

Availability Loss – State Comparison % Display



You can now display the actual percentage associated with each production state for enhanced visuals. The Minimum % indicates how much room you want to have displayed for the smaller portions of the graph.

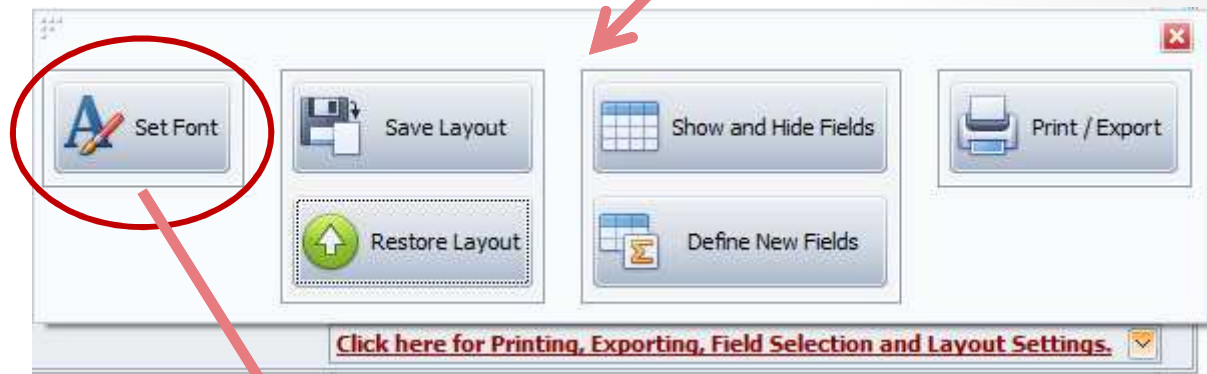
Pivot Grid - Set Font Size



All of the Pivot Grid displays now include additional features.

Set Font allows you to change the font size of the data displayed on the screen.

You can save the adjusted font size when you save the report layout.



Pivot Grid - Set Font Size

Availability Loss Comparison

Hierarchy: Location: Dallas

Date Range: From 5/5/2014 6:00 AM To 5/19/2014 4:30 PM

Production Filters: Shift [All Shifts] Device [All Devices] Part [All Parts]

Include: Effect Run Time Down Time Setup Time Standby Time

Buttons: Apply / Refresh, Print / Export

Graphical Comparison by Reason | Graphical Comparison by Device | Tabular Analysis | **Grid Analysis**

Drop Filter Fields Here

Loss Reason	State	Duration Total
Autonomous Maintenance	Down	00h 28m 52s
Break Time	Down	00h 00m 36s
Breakdown	Down	00h 07m 45s
Clean Up	Standby	04h 04m 32s
Coiler	Down	00h 00m 11s
Die Change	Setup	25h 04m 49s
Jam	Down	00h 03m 26s
Jam/Mis-Weave	Down	80h 07m 35s
Kettle Maintenance	Down	22h 10m 29s
Lunch	Standby	104h 15m 59s
Maintenance	Down	22h 01m 56s
Meeting	Standby	00h 00m 48s
No Operator	Down	00h 46m 58s
None	Down	192h 59m 06s
Not Scheduled	Standby	2968h 16m 44s
Rework	Down	03h 09m 44s
Running	Running	2039h 26m 03s
Setup	Setup	51h 42m 45s
SETUP Wire Break	Setup	14h 55m 20s
Start Up	Setup	11h 46m 48s
Tangle	Down	00h 07m 37s
Wire Break	Down	00h 50m 03s
Wire Change	Down	59h 55m 40s
Grand Total		5602h 23m 46s



Availability Loss Comparison

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Start Up	Setup	11h 46m 48s
Tangle	Down	00h 07m 37s
Wire Break	Down	00h 50m 03s
Wire Change	Down	59h 55m 40s
Grand Total		5602h 23m 46s

Save Layout

Setting Name: Loss Report

Visible to: Just Me All Users

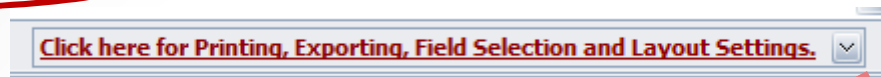
Save font settings

Buttons: Ok, Cancel

Pivot Grid – Save Layout / Restore Layout



<< Current Pivot Grid Options

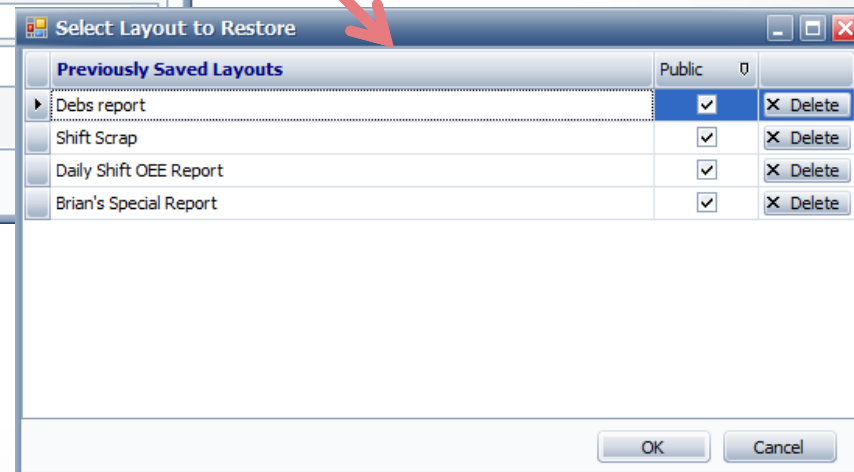
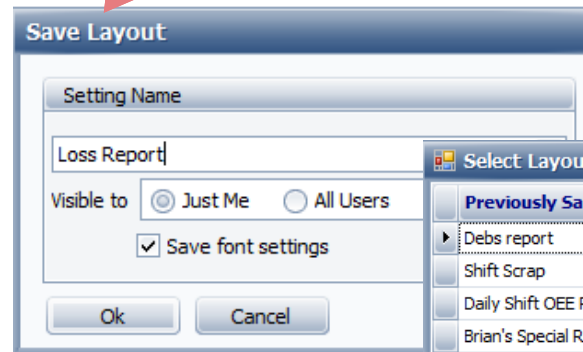
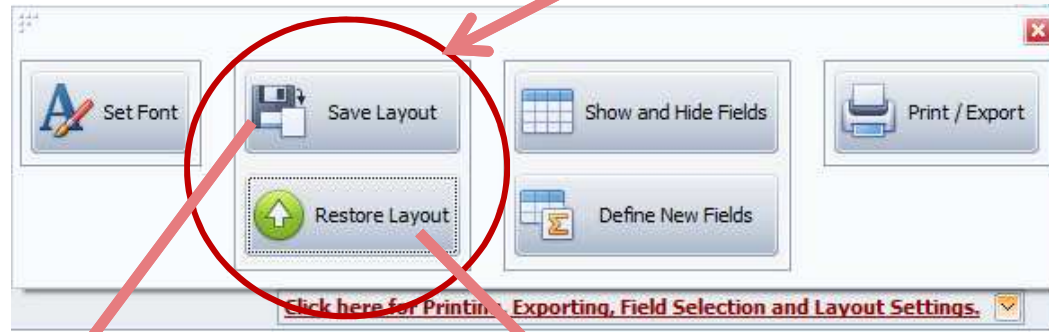


<< New Pivot Grid Options

All of the Pivot Grid displays now include additional features.

Save Layout allows you to save the layout of an ad hoc report you created.

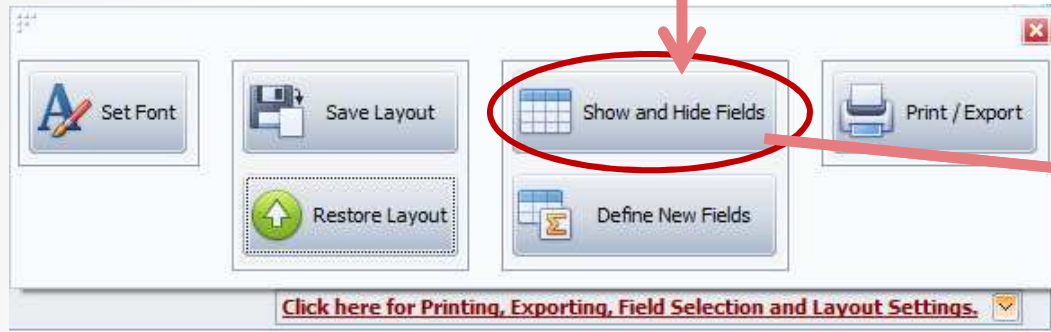
Restore Layout allows you to restore or load a saved layout.



Pivot Grid – Show and Hide Fields



[Click here for Printing, Exporting, Field Selection and Layout Settings.](#) << New Pivot Grid Options



All of the Pivot Grid displays now include additional features.

Show and Hide Fields allows you to pick and chose which data elements you want displayed in the Pivot Grid. There could be different data elements based on the selected Pivot Grid.

Select multiple values to chart information

Drop Filter Fields Here

Availability OEE Performance Quality

Drop Column Fields Here

	Availability	OEE	Performa...
Part 0 Device 0 Shift 0			
Grand Total	0.0	0.0	

PivotGrid Field List

Drag Items to the PivotGrid

- Avg. Cycle Time
- Avg. Rate Total
- Down Time
- Efficiency
- Goal Count
- Good Count
- Ideal Cycle Time
- Reject Count
- Run Time
- Setup Time
- Slow Cycles Count
- Slow Cycles Time
- Small Stops Count
- Small Stops Time
- Standard Cycles Count
- Standard Cycles Time
- Standby Time
- Takt Time
- Target Count
- Total Count
- Total Time
- User No. 1
- User No. 2
- User No. 3
- User No. 4
- User No. 5
- User No. 6
- User No. 7
- User No. 8
- User String 1
- User String 2
- User String 3
- User String 4

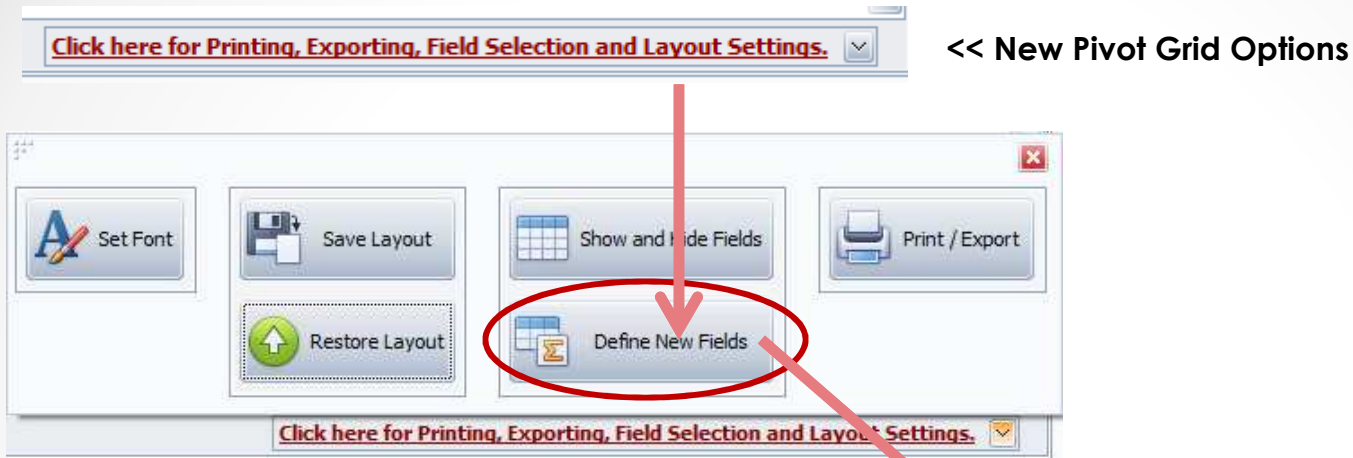
Drag fields between areas below:

Filter Area	Column Area

Row Area	Data Area
Part	Availability
Device	OEE
Shift	Performance

Defer Layout Update Update

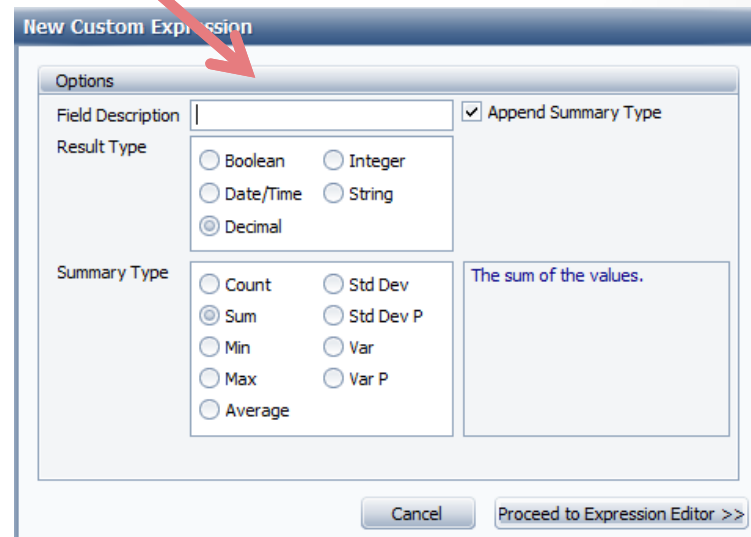
Pivot Grid – Define New Fields



All of the Pivot Grid displays now include additional features.

Define New Fields allows you to create your own data elements and incorporate them into your reports.

Once you define a new field, it becomes available in the Show and Hide Fields - PivotGrid Field List.



Pivot Grid – Define New Fields

New Custom Expression

Options

Field Description: LossCost (Sum) Append Summary Type

Result Type

Boolean Integer
 Date/Time String
 Decimal

Summary Type

Count Std Dev
 Sum Std Dev P
 Min Var
 Max Var P
 Average

The sum of the values.

Cancel Proceed to Expression Editor >>

Field Description - Enter a name for your new field.

Append Summary Type check box provides additional feedback as to the type of field you have created.

test (Count) LossCost (Sum)

Proceed to Expression Editor.

To create an expression, use predefined functions and operators or type-in the expression manually.

Expression Editor supports numerous standard functions, allowing you to easily perform different string, date-time, logical and math operations over data.

f Expression editor

[[Duration]*150]/(60*60)

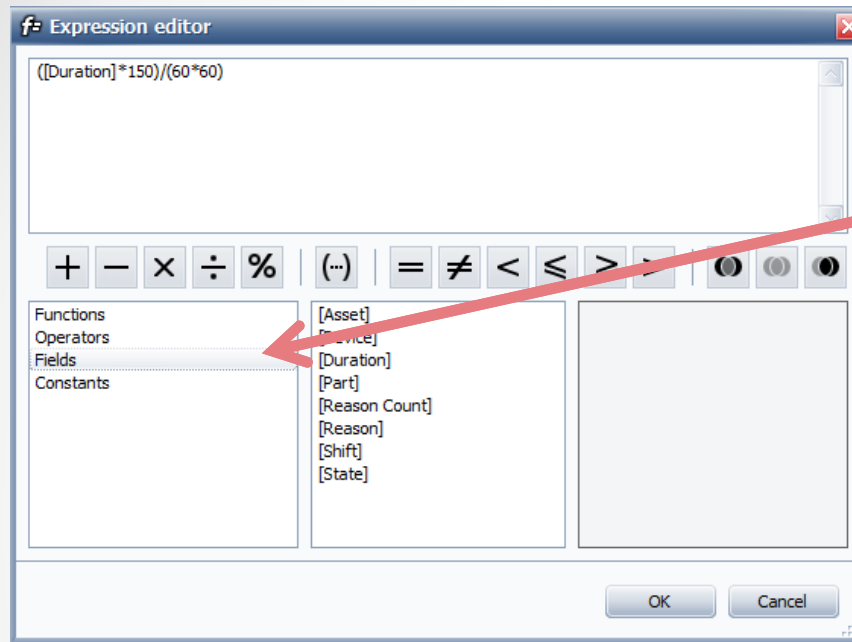
+ - × ÷ % (...)= ≠ < ≤ ≥ > ☐ ☐ ☐

Functions
Operators
Fields
Constants

[Asset]
[Device]
[Duration]
[Part]
[Reason Count]
[Reason]
[Shift]
[State]

OK Cancel

Pivot Grid – Define New Fields



You can define the functions for your New Field similar to how you use MS Excel or any other spreadsheet application.

An expression is a string that, when parsed and processed, evaluates some value. Expressions consist of column/field names, constants, operators and functions.

The **Fields** option provides you with the data elements associated with the Pivot Grid you are using.

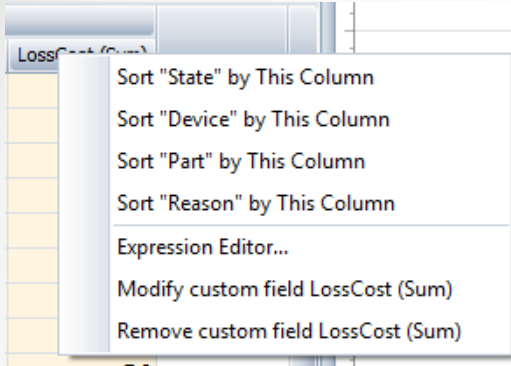
In this example we are going to display a calculation of the cost of down time per part.

Part	Reason	Duration	LossCost (Sum)
1860SS6	Adjustment	01h 10m 53s	174.0
	B Down - Machine	04h 21m 33s	653.0
	Change Inserts	00h 17m 03s	42.0
	Change Tooling	00h 21m 36s	54.0
	No Materials	00h 00m 02s	0.0
	None	00h 48m 16s	116.0
	Part Check	00h 03m 55s	9.0
	Programming	03h 35m 12s	537.0
	TPM	00h 34m 11s	85.0
	1860SS6 Total		11h 12m 41s
1998	Adjustment	00h 16m 29s	39.0

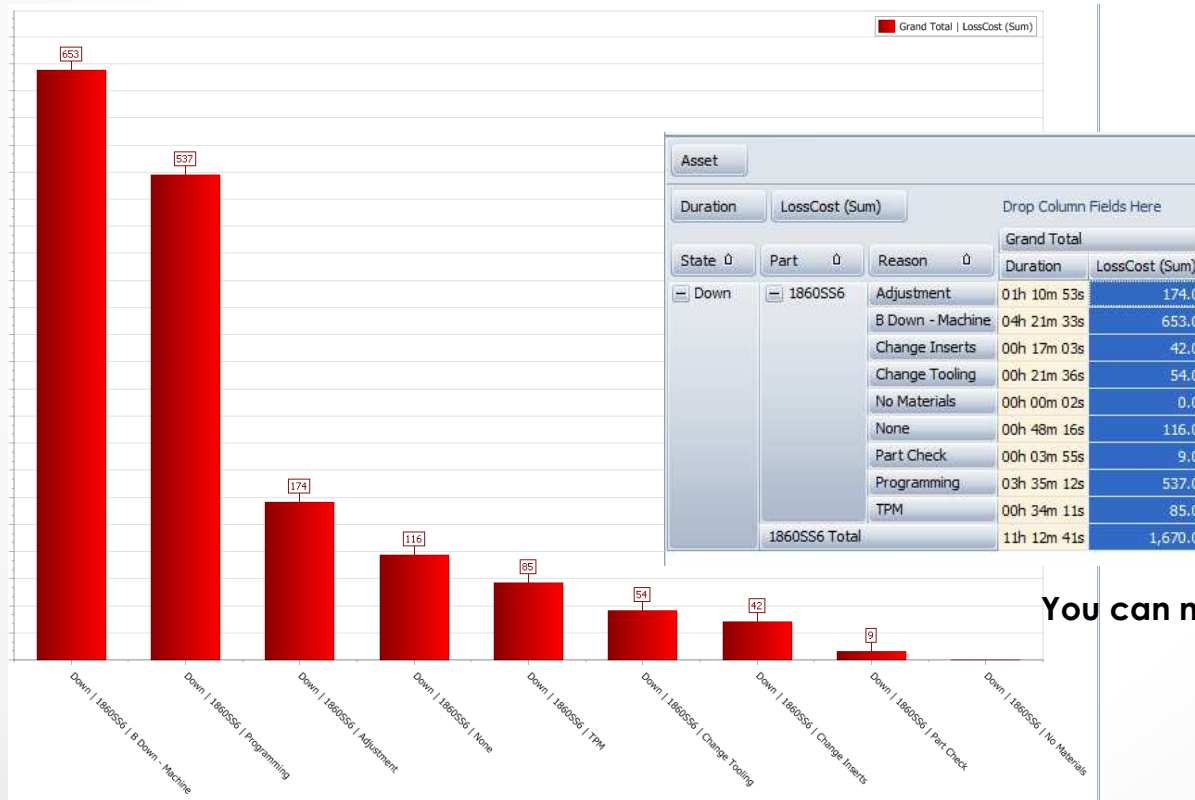
In the **Availability – Loss Events PivotGrid**, we add a new field called **LossCost**. We create a calculation using the Duration field and multiply it by the hourly rate that we have determined it costs us to be down.

Because Duration is stored in seconds, we need to divide the results by 3600 to get it into hours.

Pivot Grid – Define New Fields

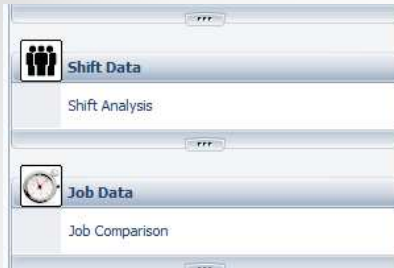


You can right-click on any New Field that you defined to be able to change the Expression, Modify the field name or delete the custom field.



You can now graphically represent the New Field.

Enhanced Charting – Shift Data & Job Data



You now have the ability to graphically represent any data in the ad-hoc reporting functions of OEE Audit!

This capability works the same for **Shift Data – Shift Analysis** and **Job Data – Job Comparison** functions.

A screenshot of the 'Shift Analysis' web application interface. At the top, there are filters for Hierarchy (Enterprise, ACME Enterprises), Date Range (4/1/2014 to 4/2/2014), and Production Filters (Shift: [All Shifts], Device: [All Devices]). There are also checkboxes for 'Downtime calculation' (Include Standby in Downtime, Include Setup in Downtime) and buttons for 'Apply / Refresh' and 'Print / Export'. Below the filters, there are tabs for 'Tabular Analysis' and 'Grid Analysis'. The main area is split into two sections: a 'PivotGrid layout' on the left and a 'Chart layout' on the right. The PivotGrid shows a table with columns for Part, Device, Shift, Availability, OEE, and Performance. The Chart layout is currently empty. A red box highlights the 'Grand Total | Availability' header in the chart area. At the bottom, there is a link: 'Click here for Printing, Exporting, Field Selection and Layout Settings.'

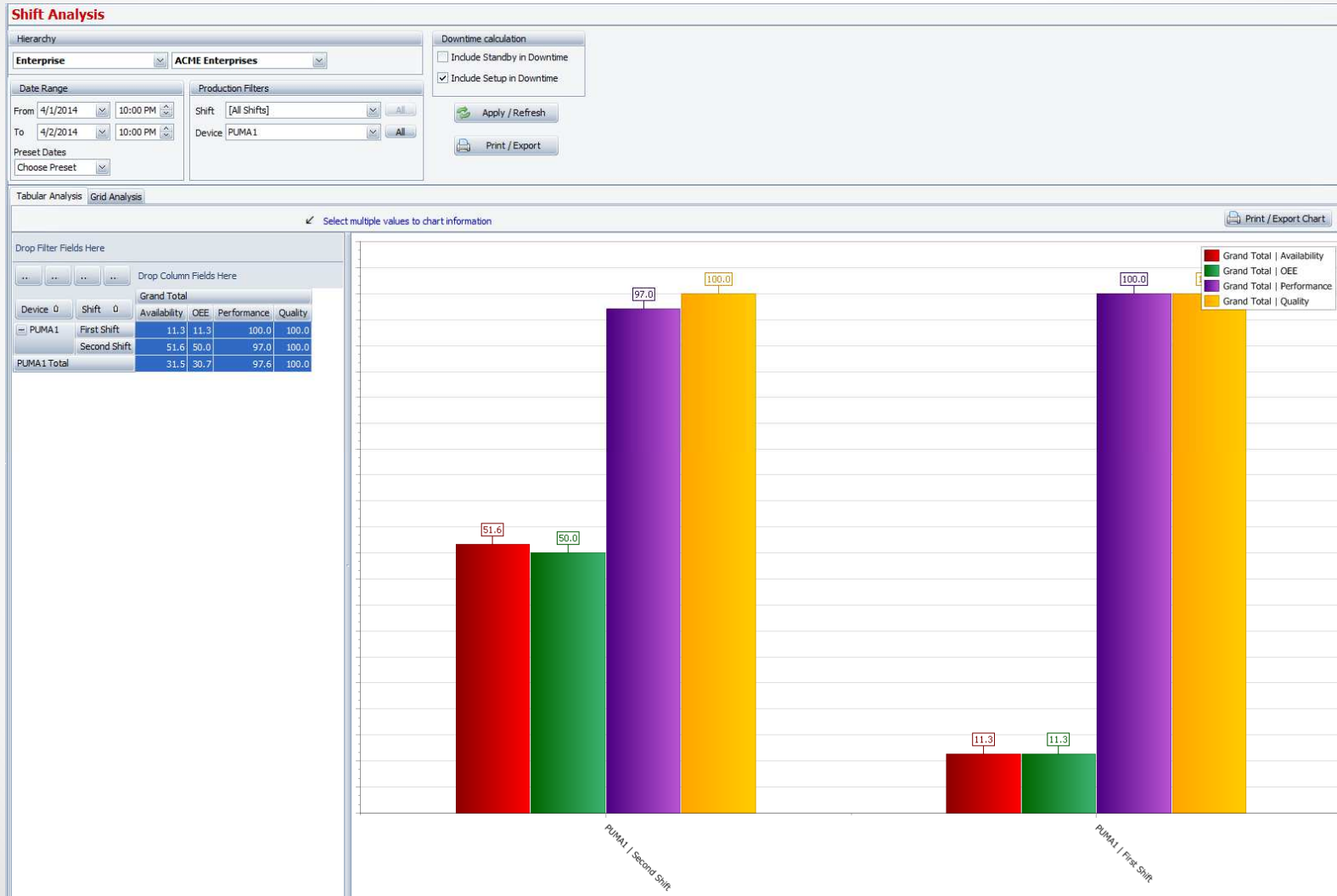
When you initially open the screen, it is divided into the PivotGrid and Chart sections.

Select your **Hierarchy**, **Date Range** and **Production Filters** and click the Apply/Refresh button to display your data.

You can then select additional data elements from the **Show and Hide Fields** list.

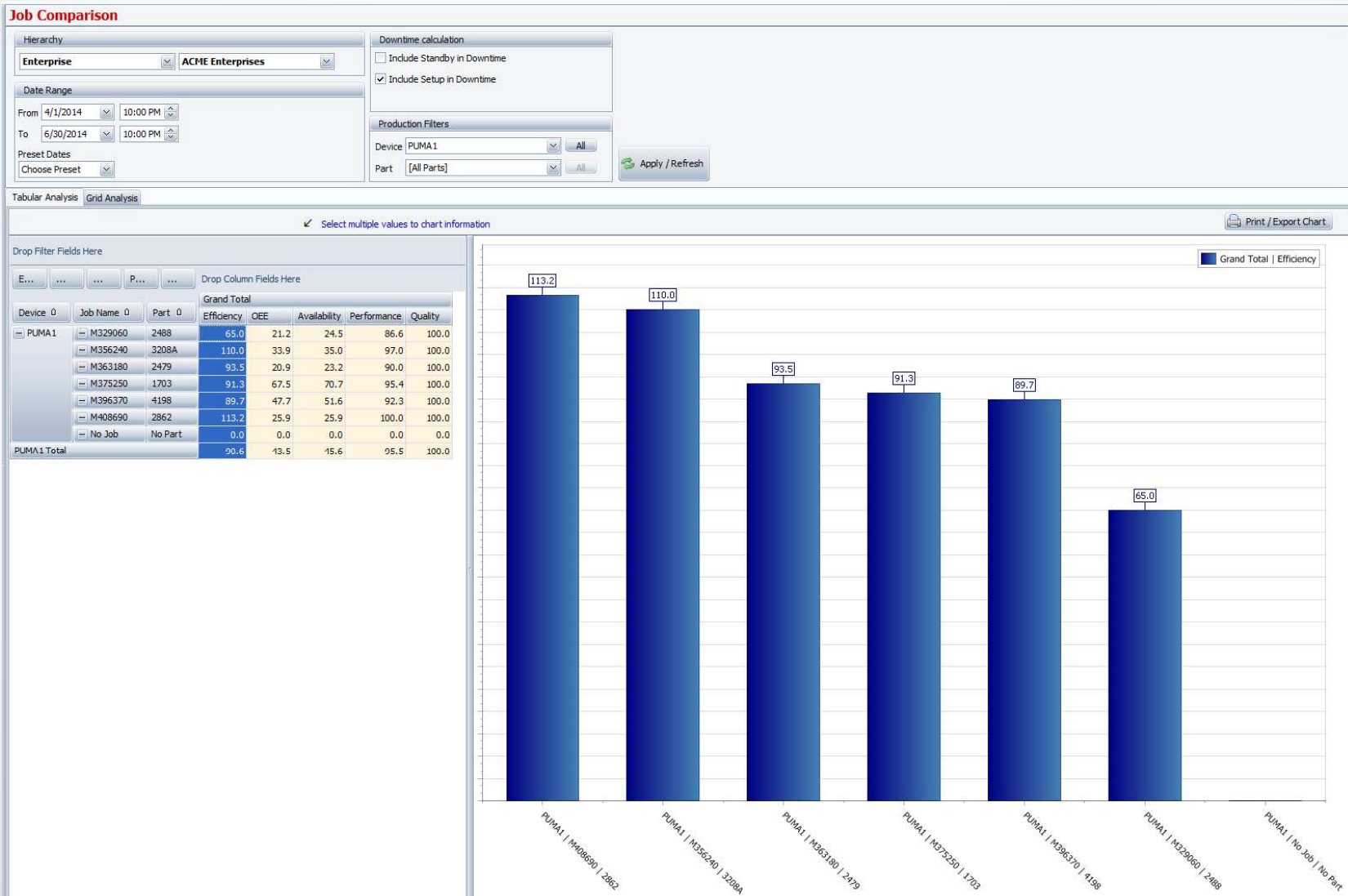
Enhanced Charting – Shift Data & Job Data

Highlight the data elements that you want to graph and the graph area is automatically populated.



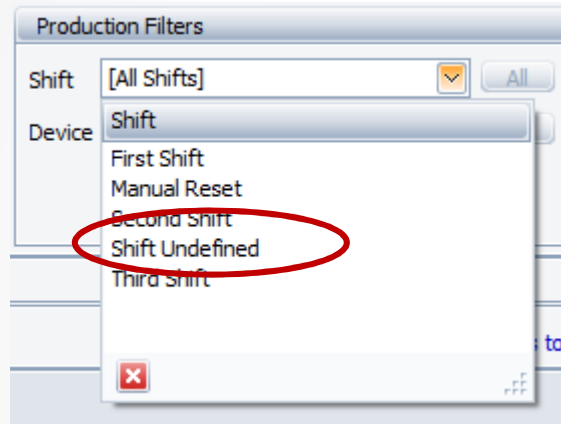
Enhanced Charting – Shift Data & Job Data

Highlight the data elements that you want to graph and the graph area is automatically populated.



Shift Data - Shift Undefined

There may be times where you run an off shift, such as a weekend, and you might not have given the shift a name in the Vorne XL unit. When that happens, OEE Audit was ignoring that data because it did not have a shift name. We have now changed it so that if there is a blank Shift name that comes from the Vorne XL unit, OEE Audit will display it as 'Shift Undefined'.

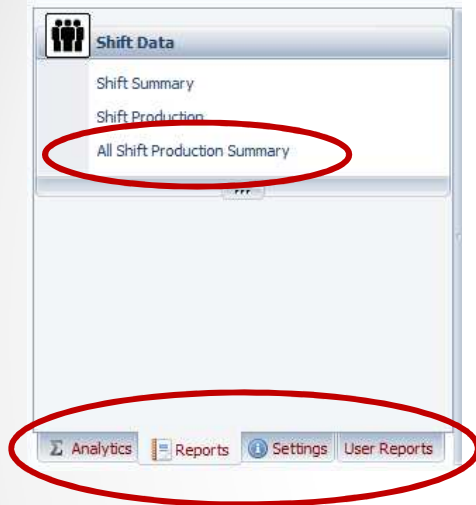


[-] Shift Undefined	[-] 6/18/2014 2:00:00 PM	6/19/2014 6:00:00 AM	0	0	00h 00m 00s	00h 00m 00s	01h 14m 28s	14h 45m 30s
	[-] 6/19/2014 2:00:00 PM	6/20/2014 6:00:00 AM	209	209	05h 43m 49s	01h 30m 46s	00h 00m 00s	08h 45m 24s
	[-] 6/23/2014 2:00:00 PM	6/24/2014 6:00:00 AM	96	96	02h 32m 18s	00h 24m 24s	04h 38m 17s	08h 24m 59s
	[-] 6/24/2014 2:00:00 PM	6/25/2014 6:00:00 AM	170	170	08h 15m 07s	03h 40m 12s	00h 00m 05s	04h 04m 32s
	[-] 6/25/2014 2:00:00 PM	6/26/2014 6:00:00 AM	155	155	07h 34m 50s	03h 10m 05s	00h 00m 02s	05h 15m 01s
	[-] 6/26/2014 2:00:00 PM	6/27/2014 6:00:00 AM	152	152	07h 23m 46s	00h 48m 38s	00h 00m 00s	07h 47m 33s
	[-] 6/28/2014 2:00:00 PM	6/30/2014 6:00:00 AM	1	1	00h 00m 32s	00h 00m 00s	05h 02m 51s	34h 56m 31s
	[-] 6/30/2014 2:00:00 PM	7/1/2014 6:00:00 AM	170	170	06h 09m 12s	01h 37m 04s	00h 00m 00s	08h 13m 43s
Shift Undefined Total			953	953	37h 39m 34s	11h 11m 09s	10h 55m 43s	92h 13m 13s

Reports – All Shift Production Summary

I like to call this report – **Line At-A-Glance**.

This report shows you on 1-page how the line did as a whole and then how each shift did for the selected date range.



All Shift Production Reporting

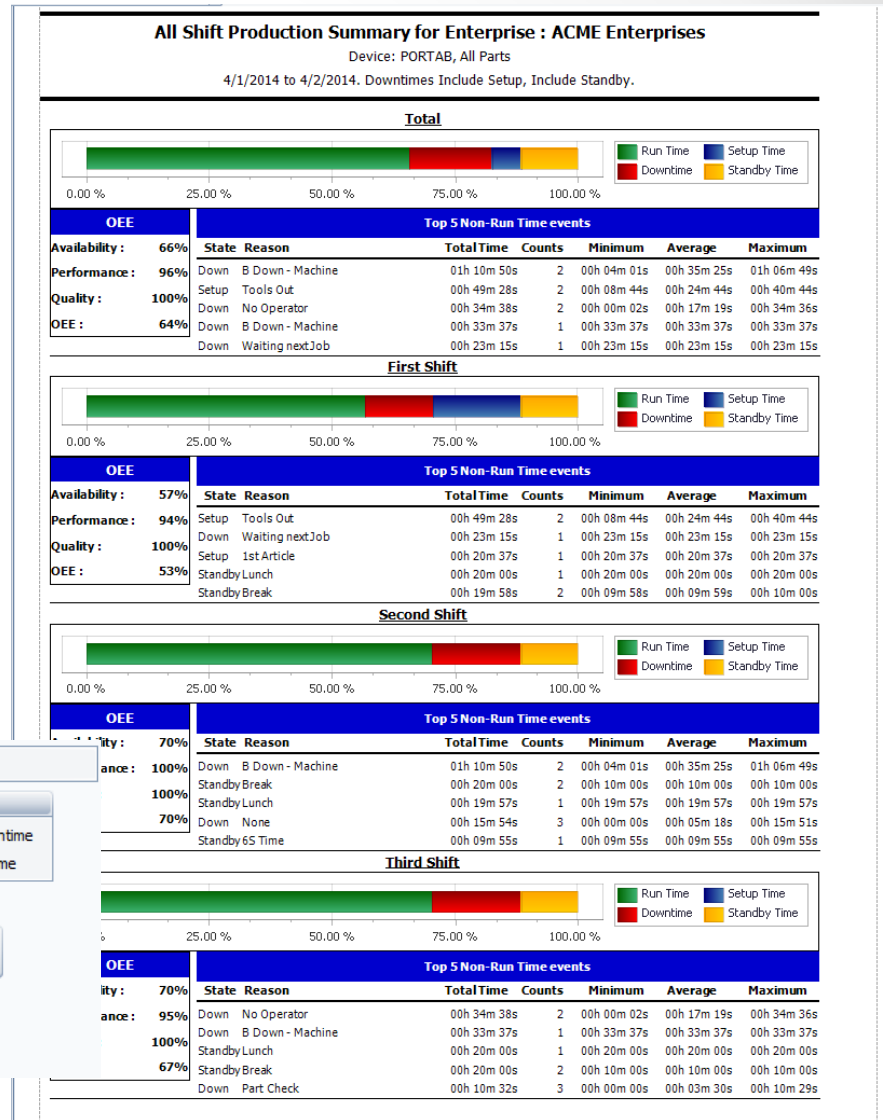
Hierarchy
 Enterprise | ACME Enterprises

Date Range
 From: 4/1/2014 10:00 PM
 To: 4/2/2014 10:00 PM
 Preset Dates: Choose Preset

Production Filters
 Device: PORTAB | All
 Part: [All Parts] | All

Downtime Calculation
 Include Standby in Downtime
 Include Setup in Downtime

[Print / Preview](#)



Default Settings – User Strings & User Numbers

The screenshot displays the 'System Defaults' configuration window. The 'Default Settings' tab is selected and circled in red. Below it, the 'Downtime calculation' section has two unchecked checkboxes: 'Include Standby in Downtime' and 'Include Setup in Downtime'. The 'Job User Fields' and 'Shift User Fields' sections show mappings for User Numbers (1-8) and User Strings (1-4) to roles like 'Lead Operator', 'Pallet Operator', and 'Mech. Operator'. To the right, the 'PivotGrid Field List' window is open, with 'Mech. Operator' circled in red. In the foreground, a data table is shown with columns for Job Name, Part, and various operator roles, along with OEE and Availability metrics.

Job Name	Part	Mech. Operator	Asst. Operator	Pallet Operator	Grand Total	OEE	Availability
15012966	401x405 STSP	+				65.4	74.3
		- Anderson, M	- Layden, J	Nunez, E		84.5	95.3
		- Stout, S	- Ramirez, R	Nunez, E		61.4	73.8
				Rodriguez, A		78.7	90.3
				Ramirez, R Total		76.4	88.0
				401x405 STSP Total		66.4	75.5

Shift Data or Job Data >>

If you have customized your Vorne XL device for specific **User Strings** or **User Numbers**, you can now change the labels in OEE Audit to match (for all devices only).

In the Vorne XL device – User Numbers 1-8 are associated with the Shift and User Numbers 11-18 are associated with the Job. User Strings 1-4 are associated with the Shift and User Strings 11-14 are associated with the Job. Restart OEE Audit after you have applied the changes.

OEE Audit v2.0

In order to support the new Vorne v1.3.x firmware, you must upgrade to the latest

XL Bolt-on Data Collector version 1.7.12

[http://www.sulzerconsulting.com/downloads/vorne/XL Bolt-On Data Collector.zip](http://www.sulzerconsulting.com/downloads/vorne/XL_Bolt-On_Data_Collector.zip)

Version 2.0 of OEE Audit supports all versions of Vorne XL device firmware.

Smart Installation

<https://oeeauditinstall.blob.core.windows.net/release/v1/setup.exe>

If you have questions or need assistance, please contact either

Debbie Olk (OEE Audit or custom reports)

Debbie.olk@debtechsystems.com

or

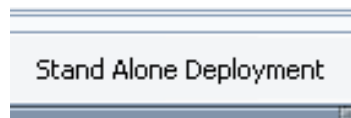
Jim Sulzer (XL Bolt-On Data Collector).

jim@sulzerconsulting.com

OEE Audit v2.0

OEE Audit version 2.0 is available for upgrade.

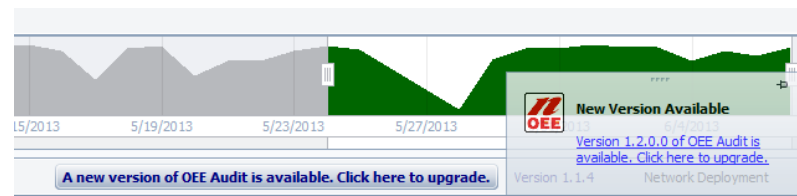
If you have an older version that was manually installed, please uninstall that version of OEE Audit before installing this version. This can be determined by looking at the bottom right of the OEE Audit software.



If you have utilized the Manual Installation method ~ you can download and install this version ~

Manual Download & Installation

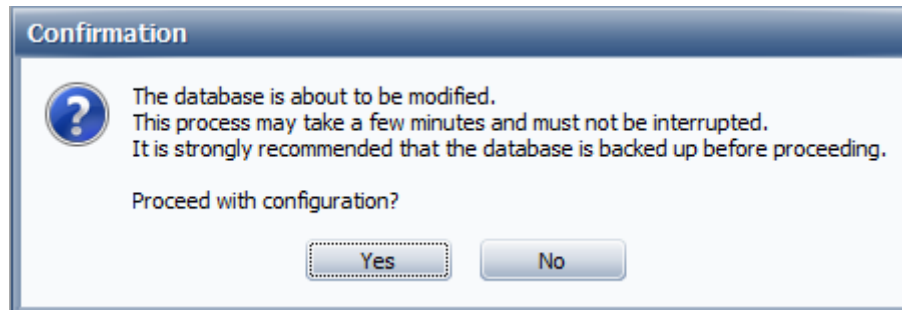
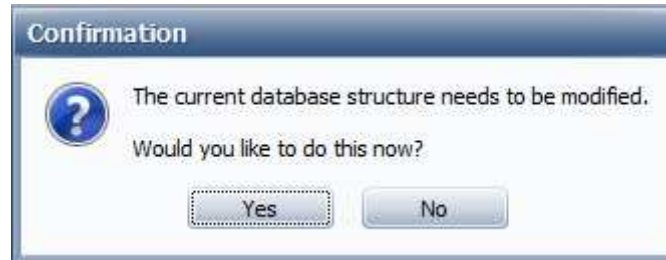
www.oeeaudit.com\OEEAuditSetup_02_00_00.zip



Smart Installation

<https://oeeauditinstall.blob.core.windows.net/release/v1/setup.exe>

OEE Audit will update the database to support the new enhancements.



This is done only once and by the first person that upgrades to the new release.

Contact Us

- As the Vorne Authorized Reporting Consultants, we provide customized reporting solutions, including working with data from your ERP/MRP systems.
- In addition to customized reporting, we provide support and customization for the [OEE Audit](#) reporting software (designed specifically for the data captured from the Vorne XL devices).
- We also provide sales, support and customization for OEE Alert. (www.OEEAlert.com)

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www.DebTechSystems.com