Adding a Custom Metric

Link: https://help.nuvo.solutions/docs/about-metrics/adding-a-custom-metric/ Last Updated: August 3rd, 2016

The Manage Custom Metrics page allows you to add custom metrics and active scoring tools, backfill metric data, and make metrics available for reports and dashlets. Keep in mind, metrics are based on **DAILY summarization** data for each vehicle.

Note. You can only see vehicle data for the groups/hierarchies that you are allowed to see; however, you can see all metrics that other users have created.

Add a Metric and Scoring Tool (optional)

A metric provides a raw value for a defined measurement. A scoring tool allows you to produce a score based on that value.

Metric Types

You can create a vehicle custom metric for any of the following items:

- Vehicle Scorecard*
- Sum Scorecard**
- Hours Vehicle Stopped
- Hours Vehicle Idled
- Runtime Hours
- Distance Vehicle Traveled
- Count Vehicle Stops
- Count Vehicle Idle Stops
- Count Vehicle Landmark Visits
- Count Driver Assignments
- Count Speeding Events
- Count Alerts Triggered
- Maximum Speed
- Average Delta for Posted Violations
- Average Speed for Speed Violations
- Count Acceleration Events
- Count Deceleration Events
- Count Drivers
- Average Idle Hours

Note. *Vehicle Scorecard is a special type of metric (a metric made up of other metrics). It's best to use the Metrics Scorecard Configuration to experiment with weights and scores and generate the metric from there as opposed to this page. One reason you might use this Manage Custom Metrics tool to create a vehicle scorecard metric is if you wanted to add something *other than* Idling, Speeding, Acceleration, or Deceleration to the scorecard.

Note. **A special type of metric (a metric made of other "Count" metrics). It is intended as an alternative scorecard for weighted averages. It applies only to the following metric types: Count Vehicle Stops, Count Vehicle Idle Stops, Count Vehicle Landmark Visits, Count Driver Assignments, Count Speeding Events, Count Alerts Triggered, Count Acceleration Events, Count Deceleration

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Events, and Count Drivers.

Scoring Tool Options

A scoring tool allows you to produce a score based on a metric. In other words, it *translates* a raw metric value into a score. You are not required to choose a scoring tool for a metric if you don't intend to use it for scoring purposes. You can create a scoring tool based on any of the following options:

- **Calculation** – Apply a ratio or calculation to the metric (e.g., speeding events per 100 miles or per run time hours).
- **Bucket** – Apply a bucket system to the metric. For example, if you're creating a metric for the number of stops in a day, you might create three groups (buckets) based on stop counts (over/under) that are assigned point values (e.g., ≥10 stops = 3 points, 5-9 stops = 2 points, 0-4 stops = 1 point). A bucket system is the least granular type of scoring tool because it doesn't automatically calculate values in between buckets; it simply lumps a group of values together and assigns them a single point value.
- **Custom Scale** – Apply points for a 0-100 scale. For example, if the metric is based on the number of speeding events, you might assign a point value of 100 to 0 speeding events and 60 points to 4 speeding events (failure threshold). When the metric runs, the scoring tool automatically calculates how many points each event is worth to obtain a score.

Scoring Tool Types

The scoring tools that you can apply to a metric will be one of four types:

- Time
- Distance
- Event
- Speed

EXAMPLE
The corporate fleet manager at Company XYZ wants to keep tabs on the average number of idle time each region accumulates weekly (excluding when PTO was engaged). Additionally, he wants each of his regional managers to see total idle time per vehicle daily.

To add a metric:

1. From the portal, hover over the **More** menu, click **Manage Metrics**, and click **Manage Metrics**.

The Manage Custom Metrics page opens in a new browser tab.

1. Click the plus (+) next to the metric you want to create. In the Company XYZ example, we chose **Hours Vehicle Idled**.

A new grid to the right appears, which allows you to set the thresholds specific to the metric you chose.

1. Set the metric properties. (See below.)

The following properties are available for all metrics:

- **Label:** The custom name of the metric. Be as specific as possible so that you can tell your metrics apart from each other.

Depending on the metric you create, additional properties vary:

- **Landmark:** The landmark in which (or outside of which) the metric applies. Options include Inside (metric will only count instances inside the selected landmark or landmark group), Outside (metric will only count instances outside the selected landmark), or N/A (the metric will count all instances regardless of vehicle location).
- **Hours:** Choose a time range according to your time zone (user preferences) for which the metric applies.
- **Conditions:** Choose an input condition that applies to the metric (e.g., Door open/closed, PTO on/off, Power internal/external, etc.).
- **Stop Threshold:** Apply a threshold in minutes for a vehicle to be stopped.
- **Idle Threshold:** Apply a threshold in minutes for a vehicle to be idle.
- **Speed Threshold:** Threshold in MPH (not related to posted limit). Based on Avg speed .
- **Over Posted Limit:** Threshold in MPH over the posted limit. Posted speed violations are calculated using the Inst speed value.
- **Alerts:** The alert(s) that apply to this metric.
- **Violation (speed events):** Threshold in MPH over the posted limit. Posted speed violations are calculated using the Inst speed value.
- **Violation (accel/decel events):** Threshold in Gs. DOT defines harsh (not dangerous) braking as .45 g incidents (your average NYC cab driver).

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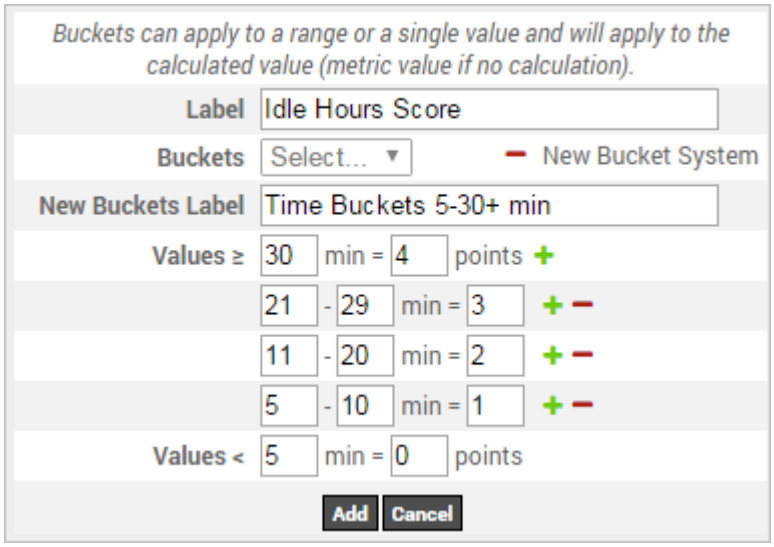
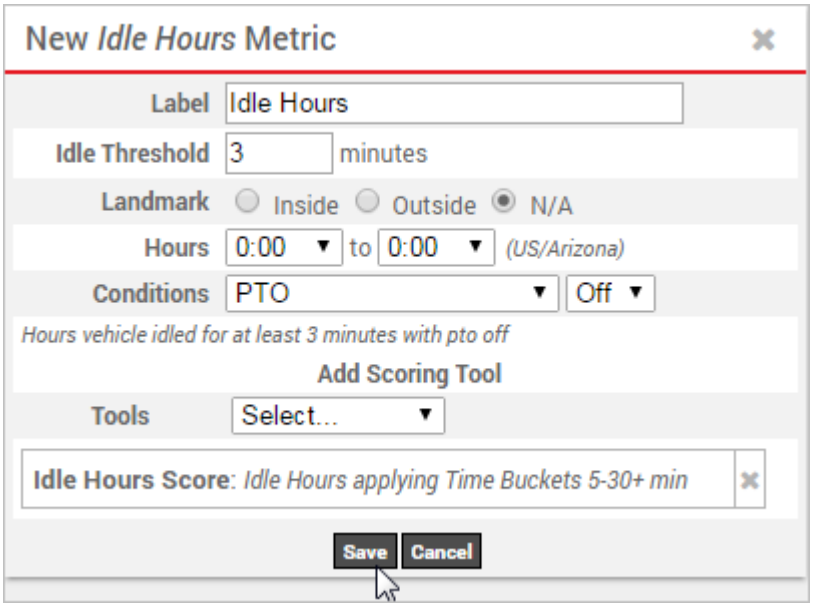
The following properties are available for all metrics:

- **Tools:** See above for examples of each scoring tool type (Calculation, Bucket, Custom Scale). In the Company XYZ example, we don't *need* to use a score, but it *might* be useful to have one if we want to extend our scenario. Let's imagine we now have a daily goal of less than 2 idle minutes per vehicle. The higher the score, the further the deviation from the goal. We created six groups (buckets) based on number of minutes (over/under) that are assigned point values (e.g., ≥30 min = 4 points, 21-29 min = 3 points, 11-20 min = 2 points, 5-10 min = 1 point, <5 min = 0 points).

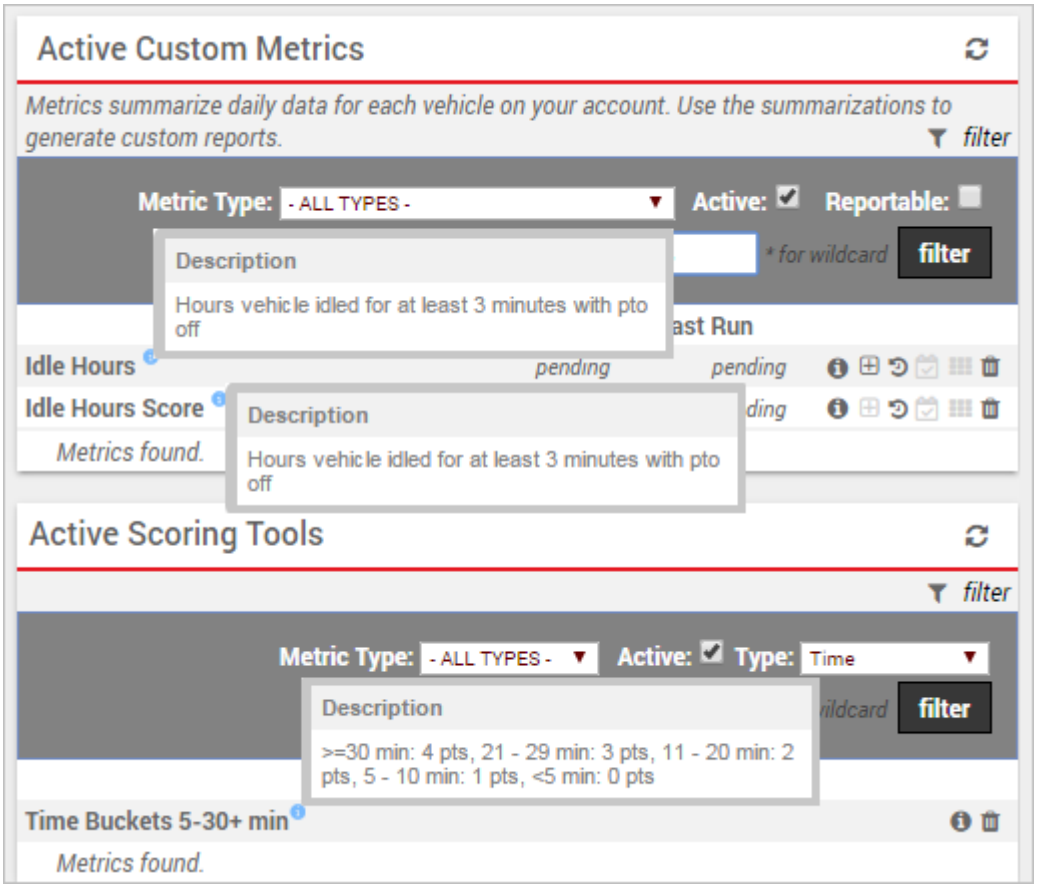


2. Click **Save**.



The new metric for the hours (or count, average, or speed depending on the metric) will be listed in

the Active Custom Metrics grid. Additionally, if you added a scoring tool to the metric, a second metric for the score will be available, and the scoring tool will be listed in the Active Scoring Tools grid.

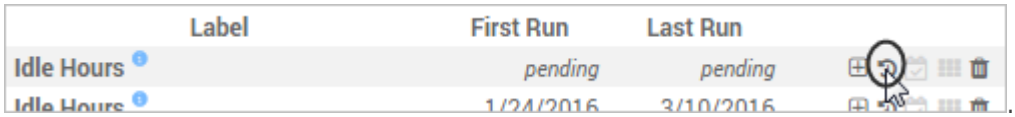


Note. Except for renaming a metric (click the metric name from the grid), you cannot edit metric details after the metric has been created. You can either add a scoring tool to an existing metric, or you can create a new metric from scratch. Preventing you from editing the metric details helps preserve historical data consistency (i.e., avoids comparing different data sets that measure different things).

Tip! Click the **i** icon in the Active Custom Metrics or Active Scoring Tools grids to see which metrics rely on the selected metric or the selected scoring tool (if any). This information is helpful if you want to clean up your list of unused metrics and/or scoring tools.

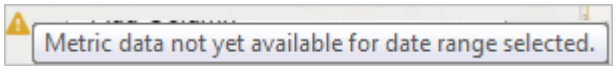
Backfill Metric Data

Metrics rely on **daily summarization data**. When you create a new metric, data will automatically populate for every day going forward. You don't need to manually backfill. However, if you want to populate historical data for a metric, you can optionally backfill data to a particular day.



Backfilling data might apply if you want to use the metric on a report for a particular date range. If you apply a

metric to a report, you may receive a notification to backfill the metric if you select a date range that extends prior to the metric's creation or earliest backfill.



Add Metrics to Reports and Dashlets

By default metrics (other than Scorecard metrics) are not available to use on reports and dashlets. Once you make a metric available to reports and dashlets, you may be able to apply additional configuration, such as whether the report and/or dashlet should provide a Sum, Avg, Min, or Max value. The Utilization Rollup dashlet also allows you to show summarization data and gradient colors (optional) for a Daily, Weekly, or Monthly options.

To add a metric to a report and dashlet:

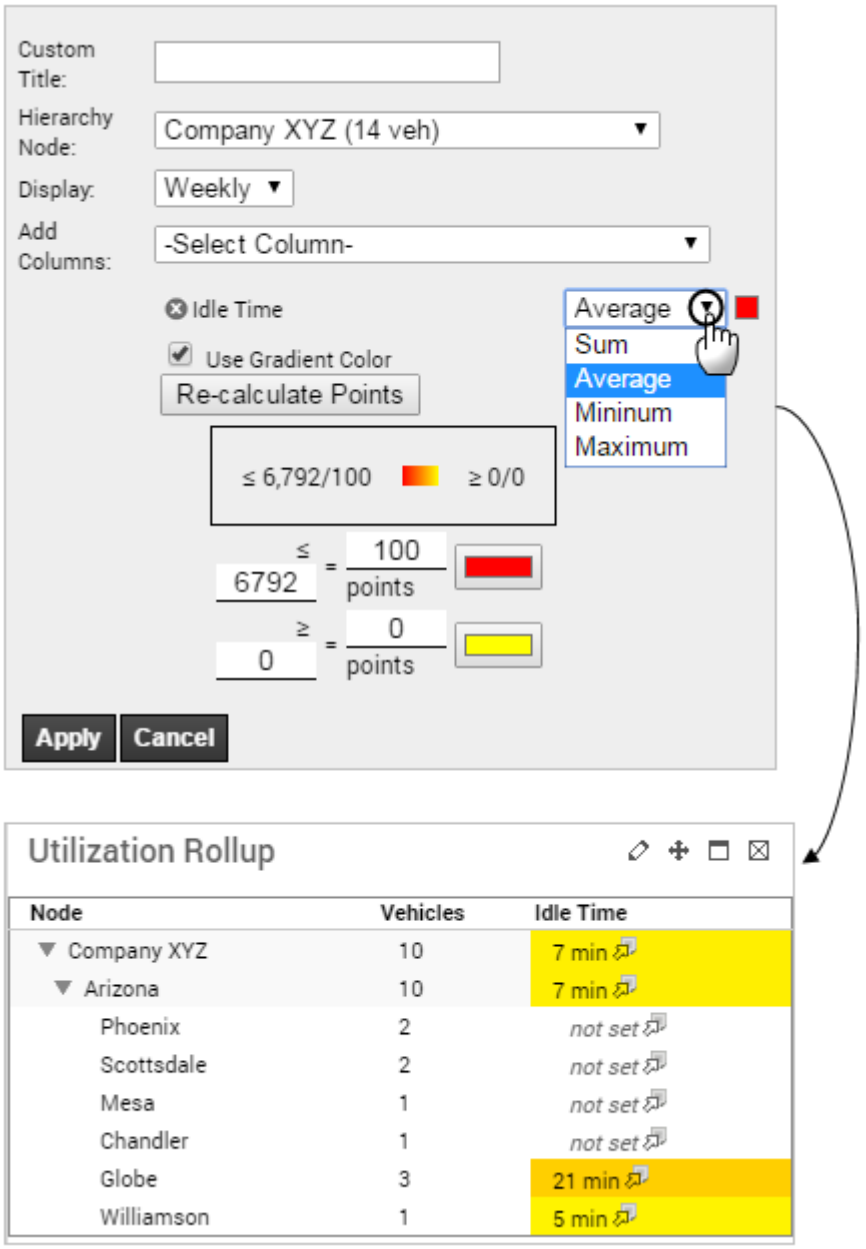
1. Locate the metric from the Active Custom Metrics grid, and click the **Make Available to Dashlets and Reports** icon.

1. Return to the dashboard, and refresh the window (F5).

1. Adjust the dashlet or report settings. (Let's look at the dashlets and reports that the fleet manager in Company XYZ's scenario might be interested in.)

Utilization Rollup Dashlet

Click the Edit icon (✎), and add the new metric as a column on the dashlet. Specify whether to display the metric using Sum, Average, Minimum, or Maximum. (We chose Average and set the Display to Weekly.)



Note. The Display option in this dashlet's setting does not apply to Custom Metrics. (This dashlet also supports Trip Summary, Vehicle Attributes, and Landmark Attributes, which do support the Display options.) In this case, if we chose "Weekly" for our metric column, data will include *up to* seven days of data (if available) for the calculation we chose (i.e., Sum, Average, Minimum, or Maximum).

Utilization Rollup Dashlet | Safety Scorecard

A Safety Scorecard provides a numeric scoring (1 – 100 scale) in relation to chosen metrics. This Utilization Rollup Dashlet example includes the score for the Safety Scorecard in the last column.

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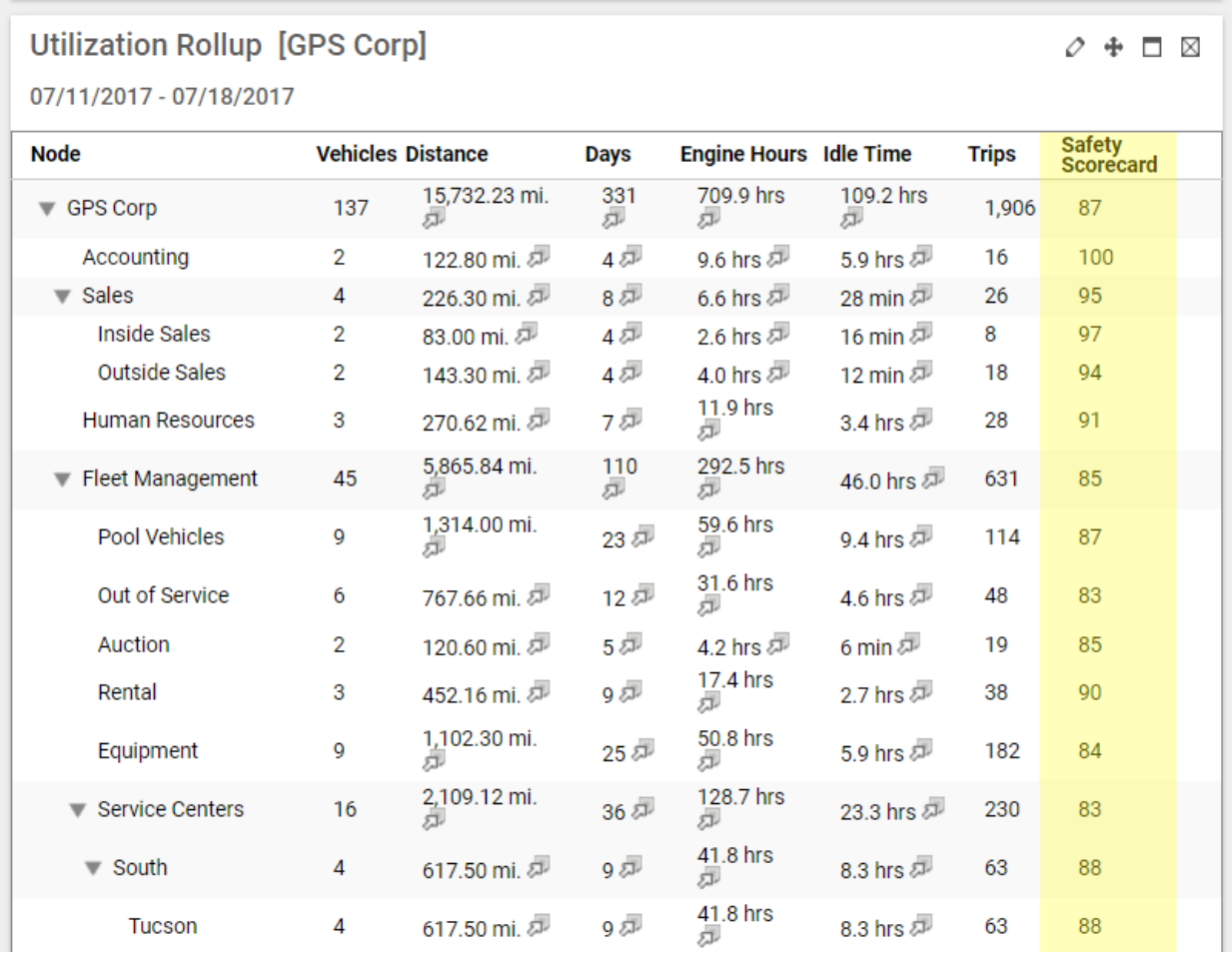

Utilization Rollup [GPS Corp]

07/11/2017 - 07/18/2017

Node	Vehicles	Distance	Days	Engine Hours	Idle Time	Trips	Safety Scorecard
GPS Corp	137	15,732.23 mi.	331	709.9 hrs	109.2 hrs	1,906	87
Accounting	2	122.80 mi.	4	9.6 hrs	5.9 hrs	16	100
Sales	4	226.30 mi.	8	6.6 hrs	28 min	26	95
Inside Sales	2	83.00 mi.	4	2.6 hrs	16 min	8	97
Outside Sales	2	143.30 mi.	4	4.0 hrs	12 min	18	94
Human Resources	3	270.62 mi.	7	11.9 hrs	3.4 hrs	28	91
Fleet Management	45	5,865.84 mi.	110	292.5 hrs	46.0 hrs	631	85
Pool Vehicles	9	1,314.00 mi.	23	59.6 hrs	9.4 hrs	114	87
Out of Service	6	767.66 mi.	12	31.6 hrs	4.6 hrs	48	83
Auction	2	120.60 mi.	5	4.2 hrs	6 min	19	85
Rental	3	452.16 mi.	9	17.4 hrs	2.7 hrs	38	90
Equipment	9	1,102.30 mi.	25	50.8 hrs	5.9 hrs	182	84
Service Centers	16	2,109.12 mi.	36	128.7 hrs	23.3 hrs	230	83
South	4	617.50 mi.	9	41.8 hrs	8.3 hrs	63	88
Tucson	4	617.50 mi.	9	41.8 hrs	8.3 hrs	63	88

Vehicle Selector Dashlet

Click the Edit icon (), and add the new metric as an attribute on the dashlet. (In the Company XYZ example, Regional Managers can use this to keep tabs on their vehicles' daily idle hours.)

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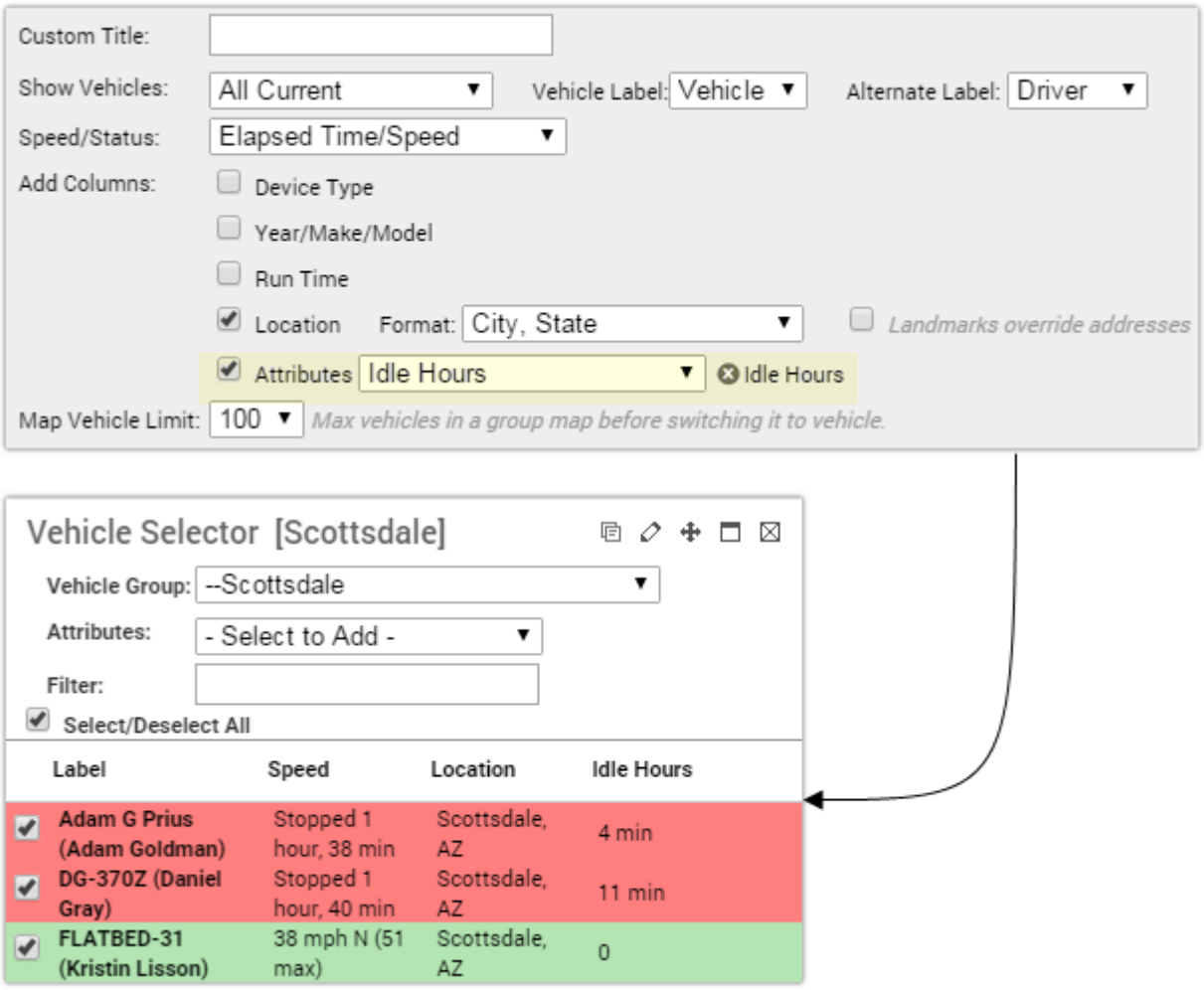

Note. This dashlet shows daily values only (for the previous day).

Fleet Hierarchy Rollup

Add the new metric(s) as an attribute on the report. Specify whether to display the metric using Sum, Average, Minimum, or Maximum. (In the Company XYZ example, we chose Average for the Hours and Sum for the Score. The fleet manager might use this monthly score to isolate regions who need more coaching i.e., 4s or 5s.)

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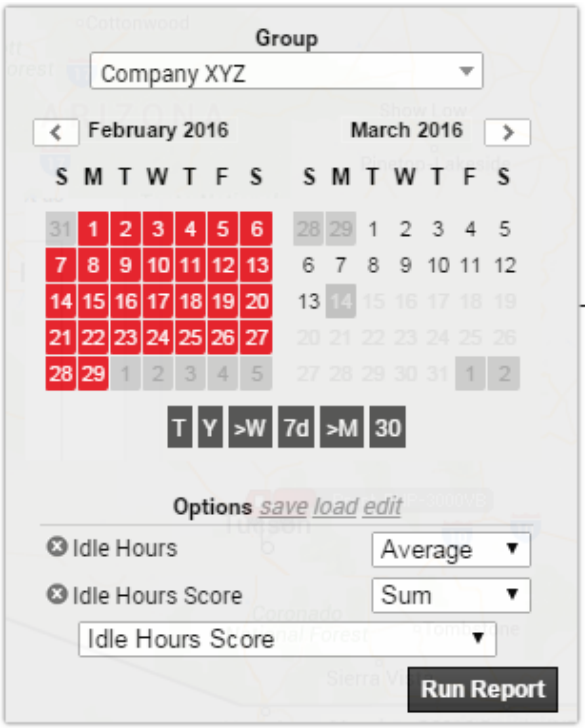

Fleet Hierarchy Rollup Overview »

Total Distance	103.9 mi.	**Report Time Period**	Mar 5 12:00 AM to Mar 10 11:59 PM (MST)
Total Engine Hours	3.34 hrs	**Report Created**	March 11, 2016 3:06:36 PM
Total Idle Time	30 min		

** Data is accurate up to midnight Mar 10, 2016.*
** Idle times based on a 5 minute minimum threshold.*

Fleet Hierarchy Rollup Report »

Vehicle Group: Company XYZ

Hierarchy Node	Vehicle Count	Idle Hours	Idle Hours Score
Company XYZ	12	8 min	1
Arizona	12	8 min	1
Phoenix	3	7 min	1
Scottsdale	3	1 min	0
Mesa	1	15 min	2
Chandler	1	30 min	4
Globe	3	7 min	1
Williamson	1	5 min	1

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Tip! If you plan to use this data to compare trends over time, export the report to Excel. The next time you run the report for another date range, you can export the data again and compare it to the first export.

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