How does my device report odometer values?

> **QUESTION:**
> What causes mileage discrepancies between what odometer value I see on my vehicle dashboard and what odometer value is shown for the vehicle in the GPS system?

There can be several sources of odometer readings in your vehicles:

GPS Odometer

The default source for odometer readings is a device-oriented mileage based only on GPS-based distance data collected from the device. Each GPS tracking device tracks a cumulative distance from when the device was initially activated. This value is not an actual odometer because the device does not communicate with the vehicle's Engine Control Module (ECM). In order to correlate this value with the actual odometer of the vehicle, we get the initial odometer of the vehicle at the time of installation, and we add the device's cumulative distance to that.

Over time, the total odometer we report, based on distance values collected from the device, may differ from the actual odometer of the vehicle. This variance happens because the device-oriented mileage has some limitations. Because it's using latitude and longitude coordinates to track its location and measuring straight-line-distance between recorded points (at 4x per second), there is a slight variation from the actual distance traveled (usually less than 1%). You can compensate for this difference by submitting odometer waypoints (Pro/En) | odometer waypoints (Standard) to accurately gauge this variation and recalibrate the unit from time to time.

(Pro/En)

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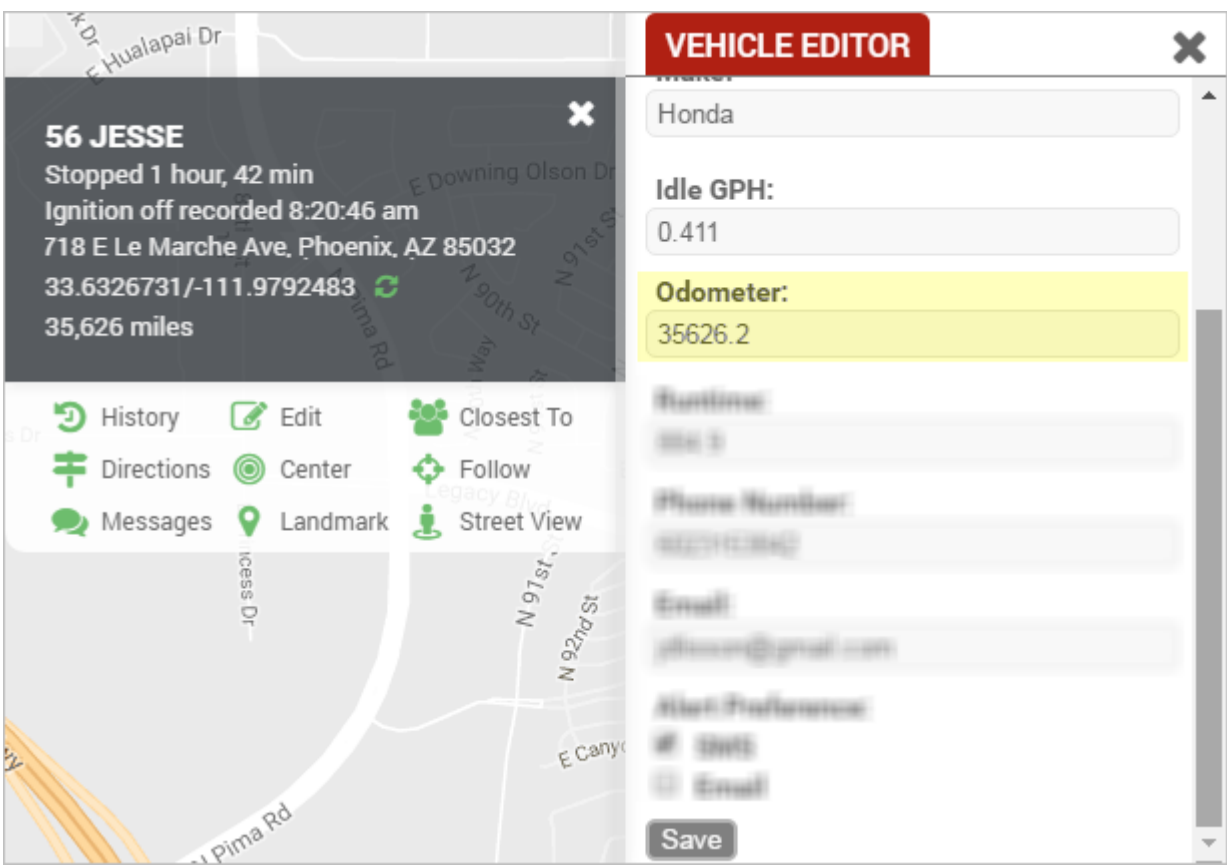
(Standard)

Each time we get an odometer waypoint from you, we can apply a correction factor since the last waypoint and use it to improve the consistency of the odometer values. The more odometer waypoints we can get for each vehicle using GPS Odometer, the more accurate your historical odometer data will be. Also, we'll be able to make a closer approximation of the odometer variation on new data received. To make this process more convenient, your drivers can add waypoints, even if they don't have a login, which helps improve the data.
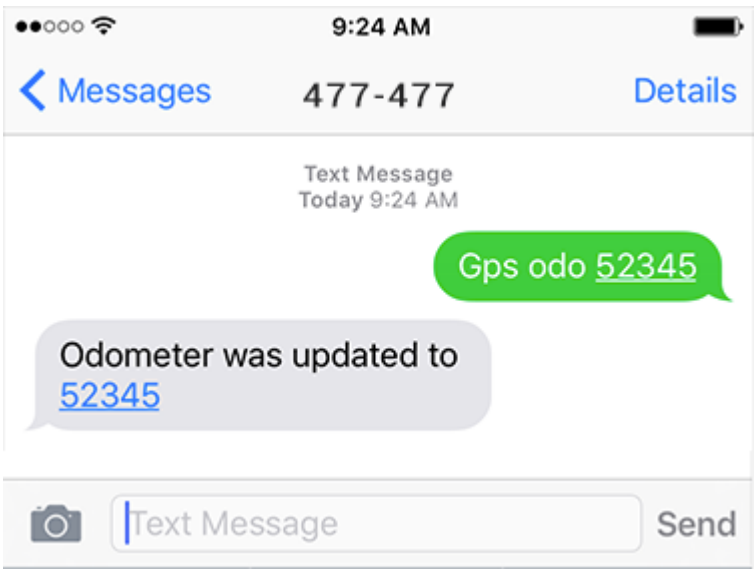
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Diagnostic Odometer

Some GPS devices also send ECM (*diagnostic)* odometer information to our servers. Availability of valid diagnostic odometer data varies markedly by year/make/model. Nuvo Solutions periodically reviews this data to look for improved ways to provide more accurate odometer readings. Hardware manufacturers have been making significant improvements in diagnostic data capture in the last few years, and we try to be nimble enough to use that data in the most effective way possible.

While we make every effort to ensure your vehicle odometer values are accurate, there is always the chance of mileage discrepancies between what you see on your vehicle dashboard and what is displayed in the Nuvo Solutions portal. You can help us by providing occasional waypoints for vehicles utilizing GPS Odometer and by editing the initial waypoint for diagnostic vehicles using the "Trip Odometer" algorithm (contact your Account Manager). Please note that there may be a spike in the odometer reading when switching a vehicle from GPS-interpolated odometer to diagnostic odometer. We stay up-to-date with the evolving technology and give you access to it as soon as it becomes available.

More reference materials:

- Can't update a waypoint? Check out Adjusting Odometer Waypoints.