

IS YOUR VEHICLE'S SOFTWARE OUT OF DATE?

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IF YOUR VEHICLE WAS MADE AFTER THE YEAR 2000, CHANCES ARE THE ANSWER IS YES.

Here is an interesting fact (well, interesting to me); the modern car has around 100 million lines of code - when Apollo 11 went to the moon it had about 145K lines. In essence, your car is a large rolling computer platform with nearly everything influenced by a computer in some way. The average modern-day car has from 30 to 50 computers (with high-end cars closer to 100) and an equal number of sensors to provide the data all those computers require to operate.

Nearly all functions of your car have inputs from these computers and microchips, from incredibly complex code monitoring engine and transmission performance, to the mundane such as turning on and off the headlights. So just as your home computer, I-Phone or Apple watch requires software updates from time to time to fix issues discovered by the developer, your car's software requires updates to keep everything running as it should. The problem is, your laptop repeatedly tells you not to power down so it can load the latest software update, your car however, cannot do the same.

Although some very recent cars are able to receive an updated patch from the manufacturer over-the-air or by USB, most vehicles only receive software updates or re-writes when they go to the dealer for an issue. The majority of independent repair shops do not have the factory scan tools, tablets and licenses required from all the different manufacturers to perform updates, so they cannot perform the download even if they are aware one is available. We have the scan tools and licenses but are often frustrated by the lack of information in the manufacturer bulletins on what a patch will improve or fix. Chrysler does a good job relaying updated functionality, GM is the worst.

What types of things can an update or re-flash (which wipes out existing software and replaces it completely) correct or improve? Nearly everything - from actual issues a driver is experiencing to improving the functionality of a component. The manufacturer cannot predict operational issues years down the road, and it isn't until owners begin to complain of a problem that the developers know a fix is required. With computers controlling everything from the dashboard functionality to shock absorber settings, it is incredible what can be fixed with a software download.

One situation that comes to mind is a customer's car which had a horrible air conditioner belt squeal on cold starts. It would seem logical the problem had to lie with the belt, the air conditioner compressor, or the belt tensioner as those are the only three components involved, right? Wrong.

Our technician hooked up the scan tool and was directed to download a software update and the problem was solved. So how did software fix a belt squeal? It turns out the air conditioner compressor was so low on the engine that the oil in the freon was collecting in the compressor and on cold start-up the compressor could not pump the oil out fast enough so the belt would have to slip until the oil was out.

The new software told the engine not to start until the starter had turned the compressor a few revolutions and the oil was out. Then when the engine fired the resistance was not too great and the belt would not slip. Without the scan tool, many shops would have replaced components only to find the issue could not be solved without a software update.

Transmission issues are also often fixed by updates because the software controls how hard the transmission shifts, when it shifts, and even vibrations as it hesitates between shifts. Another common problem we saw during 2020 when folks were not driving their cars as much was dead batteries. Your software controls when and how all those computers in your car go into sleep mode. And it appears many versions were not working properly and were staying on long enough to drain the battery.

In the past, we have also installed updates that help reduce oil consumption, prevent overheating, improve the heater so the cabin warms up faster, improve gas mileage, radio reception and Blue Tooth functionality, the list goes on and on.

As your vehicle ages, a software update will change the acceptable parameters from things like your O2 sensors, which means that Check Engine Light will not illuminate because the manufacturer knows an 8-year-old engine will naturally have more unburned fuel.

Bottom line - if your vehicle has not had an update recently, there is a good chance one is available.

