

A super-powered application: delivering an automated solution to improve the bottom line

Superchips offers a complete line of hand-held tuners and other performance products for most late-model domestic cars, trucks and SUVs.

Who's the client?

Founded in England in 1983, Superchips, Inc. was one of the first companies specializing in the "tuning" of computer-controlled vehicles for more power.

What did they need help with?

Superchips has created the microtuner, a product designed to release the performance potential of a customer's vehicle. In only a few short minutes, the microtuner connects to the diagnostic connector inside the vehicle and then saves the stock tuning files inside the car, identifies the vehicle specific file for the vehicle and uploads the correct Superchips performance file. Superchips tunes the vehicle across the entire power band, giving customers improved power, torque, fuel efficiency and drivability enhancements

Significant costs were necessary to keep the tuners frequent updates available in a timely manner. As a result of their antiquated system, Superchips was forced to incur major shipping and handling overhead in order to provide customers with updates to their tuners.

The microtuners are a critical part of the Superchips product line as they provide customers with the internal tool they need to push their car to its top performance. The previous process for updating and managing tuners was arduous, costly and slow. The Company was struggling with how to better distribute the regular updates for its core product, to find a way to improve the distribution of the tuner updates and also create a platform for future product enhancements.

Why Spiderhost?

With its needs being underserved by its own internal capabilities, Superchips turned to an array of technology providers to create a customized solution to address this problem.

Superchips struggled to find the right provider that could make the auto-enabling of these tuners reliable and cost-efficient. Technology has evolved to such a point that the options seemed many, but they were unsuccessful finding a technology driven company that could explain and deliver on an efficient and realistic option. A number of companies offered options that leveraged the right technology and fit Superchips' needs from a functionality standpoint, but the costs were prohibitive. The biggest challenge was finding a new and easy way to deliver the updates to customers and, at the same time, finding a way of eliminating their existing process of using postal mail and delivery services to get updates to customers. Spiderhost was able to identify, explain and deliver a solution that simplified the way that Superchips delivered updates to their customers and was ultimately affordable.

The Solution

The ultimate goal of the Spiderhost solution was to develop a system that allows the secure transmission of Superchips' proprietary information over the Internet to a tuner connected to a customer's computer. Spiderhost identified three main components that required development to implement the system, the website, the client software and the tuner firmware.

The first component was the creation of a customer friendly web site capable of updating a customer's tuner. The main duties of the web site are to identify and log in legitimate customers, push PC software onto customer PCs when required, run confidential key exchange and encryption algorithms, securely upload data used to identify and diagnose tuners and securely download data to update tuners. The website infrastructure is built to handle multiple users, each running separate encryption sessions at the same time. Spiderhost has also created a reciprocal information exchange with the tuner, allowing Superchips to diagnosis the returned information and close the loop on tuner tracking. Superchips provides the data files to download and also provide the confidential key exchange and encryption algorithms in a form that can be called by the web site server software.

Since encryption of the data takes place at the time of transmission, all data and encryption algorithms reside on a secure server that can securely communicate with the web server.

The second component is customized, customer friendly PC software capable of communicating with the web site and the tuner. The main duties of the PC software are to connect to the web site, log in users, read data from the tuner, transfer data to and from the web site and write data to the tuner. The PC software enables the data transmission from the server to tuner and does not need to perform any encryption related functions.

Finally, the third component is the tuner firmware. The tuner's main duties with respect to Internet updates are to respond to requests from the PC software to read from and write to the tuner and perform the key exchange and encryption algorithms. This firmware is proprietary to Superchips. The combination of these three elements allows Superchips to make the regular upload of updates to their customer's tuners, without using postal mail, delivery services or other cost-prohibitive solutions. The cost to create these elements was mitigated by the use of internal Superchips resources, thus making the overall cost and functionality of resulting solution a perfect fit.