

An upsurge in automotive digital services

“Seeing a business streamline the application development process, from creation to deployment, is key to enterprise-level digital transformation and a trend that we hope to see more and more, especially as other organizations follow the example of trailblazers like the BMW Group.”¹

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The connected car spurs new digital services

The promise of connected cars has sparked the imaginations of many leading automobile manufacturers, and a supporting ecosystem is growing around this vision. Red Hat® technologies are enabling many of the capabilities. As cars are transformed into mobile communication centers—rather than simply being a mode of transportation—software services that inform, guide, and entertain drivers and passengers are being designed and deployed. As this trend accelerates, the industry is witnessing a surge of innovative services centered around driver convenience, safety, and instant availability of relevant information.

The boom in automotive digital services is not without challenges. Massive volumes of driving and vehicle data need to be collected, aggregated, and analyzed. Autonomous driving requires the coordination of input from multiple sensors and sources, requiring a strong, supporting [Internet of Things \(IoT\)](#) infrastructure. The integrity of digital services depends on delivering applications securely to vehicles and protecting against intrusions or compromised code. Red Hat is involved in all these areas, providing technologies and solutions to address the challenges.

The promise of the connected car

Automobile manufacturers—including Volkswagen, Porsche Informatik, and others—are moving beyond basic infotainment in vehicles to a new realm, giving customers the option to download apps that enable new services. Expect to see real-time vehicle troubleshooting and fixes through personalized services such as software downloads; machine-to-machine communication for accident avoidance and safer vehicle operation; intelligent guides to advise drivers of requested services, routes, parking availability, and medical facilities; and safe driver coaching based on telematics data.

Red Hat developed hardware and software solutions and reference architectures in support of these kinds of initiatives. [Red Hat Cloud Suite](#)—which includes Red Hat OpenStack® Platform, Red Hat Virtualization, Red Hat CloudForms®, Red Hat Satellite, and Red Hat Ceph® Storage, as well as our container orchestration platform, Red Hat OpenShift®—helps organizations use compute resources more effectively and dynamically reconfigure storage and compute components to adjust to varying demands.

A platform for security-focused, stable development

The avalanche of apps and services being developed for connected cars requires an application development and deployment platform to meet the growing demand. One such platform, built using a [Red Hat Enterprise Linux®](#) foundation and [Red Hat OpenShift Container Platform](#), combines industry-leading container technologies—including Kubernetes, Project Atomic, OKD, and Linux Containers—with advanced application delivery and container management capabilities. The platform architecture supports access to traditional applications running in parallel with microservices. This framework lets automakers take advantage of existing IT investments while gaining a streamlined method for rapidly designing, developing, and deploying new apps and services to customers and subscribers.

¹ *“Red Hat OpenShift Container Platform Takes Digital Innovation into the Fast Lane with Major European Automaker.” Business Wire, 3 May 2017.*

Best practices for container technology

Several proven Red Hat components are combined in this platform for interoperability, agility, and security. The container application platform framework provided by Red Hat OpenShift lets developers quickly build, launch, and host innovative applications in the public cloud, with automated provisioning and management. To mitigate security risks, workloads are isolated and protected against root execution. Red Hat OpenShift provides exceptional cluster management for [containers](#) and can work across mixed infrastructures that include local servers, public clouds, and multiple regions.

Open Container Initiative promotes interoperability

Container images and runtimes, based on the respective [Open Container Initiative \(OCI\)](#) specifications (de facto industry standards), promote interoperability and make it easier to use other prepackaged components that simplify integration and enhance capabilities.

Autonomous vehicles: The ultimate connected cars

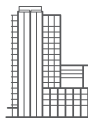
The ultimate manifestation of the connected car is a vehicle that navigates roadways autonomously, relying on a host of technologies for safe and reliable vehicle operation. Camera and sensor data captured during vehicle operation must be filtered, normalized, routed, and aggregated, all areas in which Red Hat enterprise solutions and storage assets can be engaged.

Red Hat provides open source cloud computing, middleware components, software-defined storage to accommodate massive data volumes, and automation solutions that can connect the diverse IoT components with analytics engines and derive intelligence from raw data.

Future endeavors

As connected car technology advances, Red Hat is at the forefront of this sector, with research and projects closely aligned with the requirements of the automobile manufacturing industry and the ecosystem that surrounds it. This collaborative work focuses on making driving safer, enhancing the driving experience, and improving manufacturing processes and vehicle quality.

About Red Hat



Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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