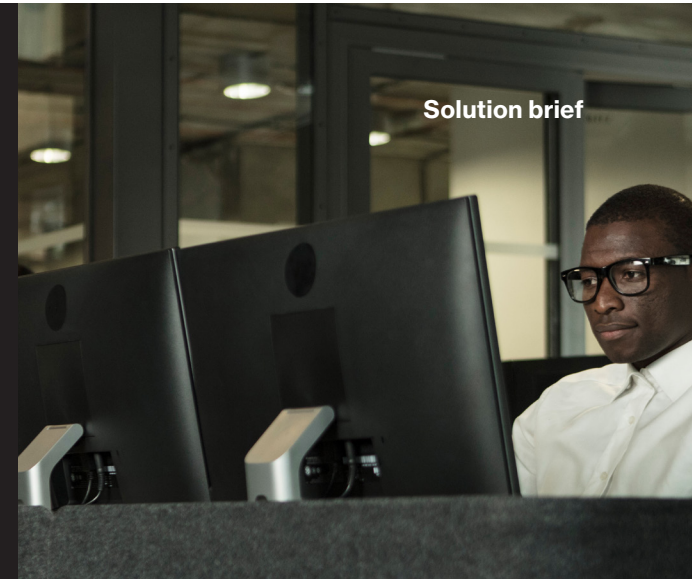


# Advance your IoT operations with microservices.

ThingSpace Services



As you work to keep your Internet of Things (IoT) solutions running their best, implementing low-cost and productive services can help you get the most from your deployments. Modular microservices have emerged as the ideal way for IoT developers and managers to boost the efficiency, scale and versatility of their IoT ecosystems. Verizon ThingSpace, the all-in-one IoT development and management platform, offers a growing suite of microservices through ThingSpace Services.

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## Run efficiently and successfully on your IoT journey.

Many organizations use multiple vendors and toolsets to deploy and manage their IoT solutions. One partner or vendor may specialize in devices and connectivity, another in software, another in analytics, and so on. Naturally, coordinating these complementary but different systems can get complicated. Your team may be dealing with operational inefficiencies as they collaborate to integrate and manage an entire IoT solution.

Our ThingSpace platform can help simplify your IoT workspace and processes, as you go from prototype testing to scaled deployment to ongoing management. ThingSpace offers you one IoT solution provider and management console for hosting, development, deployment, analytics and services.

ThingSpace Services can help you improve the effectiveness of your IoT solution. We currently offer Software Management Services and Device Location Services. Our suite of services will continue to grow and diversify as we add easy-to-use, modular microservices designed to help you achieve your goals.

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## Manage IoT device updates quickly and easily.

IoT solutions can range in size and scope with up to thousands of connected devices spread across a building, plant or large geographic area. High-touch truck rolls and technician dispatches to troubleshoot or upgrade these devices can be time-intensive and costly. ThingSpace Software Management Services can help you monitor, configure and update your IoT devices using firmware-over-the-air (FOTA) technology.

Unlike many content delivery networks, ThingSpace hosts your device software updates. This will help you prevent downtime and maintain the compliance of your eligible 4G Open Mobile Alliance Device Management (4G OMA-DM) devices. Through ThingSpace application programming interfaces (APIs), you can:

- Host firmware versions.
- Schedule firmware upgrades and run campaigns.

- Manage device licenses and subscriptions.
- Report firmware history and campaign status.

ThingSpace Software Management Services can help you:

- Improve product performance.
- Increase coverage and operational speed.
- Better compete in the market.
- Manage firmware for many modules in one place.

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## Keep track of your IoT devices wherever they work.

Location data is a key element to a comprehensive IoT solution. However, knowing the precise location of your devices or machines isn't necessary for many IoT applications. For example, in IoT applications where assets are fixed or have limited movement, asset location is used more to validate the asset position than to track its movement. In many cases, a coarse or rough estimate of where your devices are located within about 1,000 meters of accuracy will meet the needs of your application or use case.

Using ThingSpace Device Location Services to collect coarse location data can also be less expensive, use

less energy and eliminate the need for incremental chipsets or sensors. This is what Device Location Services can provide by helping you keep track of your IoT devices virtually anywhere they're operating on our network.

You get actionable data, while preserving device power, lowering deployment and data collection costs, and simplifying maintenance. You'll not only be able to identify and locate all of your 3G and 4G devices on the network but provide more context to the device data you collect and use for reports, maps and websites.

Our Device Location Services can help you:

- Locate IoT devices anywhere on the Verizon network.
- Generate location reports to review and share.
- Manage consent and privacy requirements.
- Report and log the last known location of devices.

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**Save with low-cost, location-based, tiered pricing. Deliver innovative and flexible services with your IoT solutions.**

ThingSpace Services provides representational state transfer (REST) APIs to help you take full advantage of our Device Location Services and Software Management Services. Our ThingSpace Services APIs are easy to use and integrate into your IoT solutions.

**ThingSpace and our 4G LTE network work together for you.**

Power your IoT development and innovative solutions with ThingSpace and our award-winning 4G LTE network. We offer the combined capabilities of America's largest and most reliable 4G LTE network and our comprehensive IoT platform. You'll have the best connectivity working with the right tools and services to help you get the most out of your IoT solutions. Plus, with our LTE Category 1 (LTE Cat-1) technology, you get the coverage and performance you need to run your IoT applications simply, securely and reliably.

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**Learn more.**

Contact your Verizon Wireless business specialist to discover how ThingSpace Services can streamline the way you manage your IoT deployments. Visit [verizonwireless.com/vzw/businesssolutions/contactus.jsp](http://verizonwireless.com/vzw/businesssolutions/contactus.jsp)

**Verizon is undefeated.**

**#1** in overall reliability, speed, data, call and text according to RootMetrics' national rankings<sup>1</sup>

<sup>1</sup> Rankings based on the RootMetrics® U.S. National RootScore® Report: 2H 2017. Tested with best commercially available smartphones on four national mobile networks across all available network types. Results may vary. The RootMetrics award is not an endorsement of Verizon. Visit [www.rootmetrics.com](http://www.rootmetrics.com) for more details. Network details & coverage maps at [vzw.com](http://vzw.com). © 2018 Verizon. SB540318