

Connect, Provision, Update – ARM adds a simple formula for enterprise IoT success

Highlights

The ARM® mbed™ IoT Device Platform has been expanded to include the ARM mbed Cloud - a new standards- and cloud-based SaaS solution for secure IoT device management services. Through mbed Cloud, OEMs can:

- Simplify connecting, securing, provisioning and updating of devices across complex networks with optimizations built-in for energy-efficiency.
- Achieve faster scaling, productivity and time to market by enabling developers to use with any device, on any cloud.
- Enhance device-side capabilities with mbed OS 5 which is supported by a global community of 200,000 developers and more than 1 million device builds per month.

Device management a key issue for enterprises

IoT is a greater priority for businesses than ever and the pressure is on for enterprises to get results. Across the industry, companies report that their device management capabilities will be a key issue.

Announcing ARM mbed Cloud: Any device, any cloud

To simplify how OEMs can scale IoT, whether it's a new deployment, a retrofit, or a mix thereof, the ARM mbed IoT Device Platform has been expanded to include mbed Cloud. mbed Cloud enables OEMs to flexibly and securely manage a vast range of IoT client devices. This includes the ability to update devices in field, resulting in more efficient operations and productivity for IT and DevOps teams.

mbed Cloud is a device cloud that allows any enterprise data cloud to:

- Connect any devices together irrespective of a particular IP connectivity technology
- Identify and trust devices across different stages of their lifecycle
- Orchestrate how different trusted parties and devices can access sensor data
- Manage devices and update across mesh or star networks with firmware in a fail-safe and energy-efficient manner.

The first release of mbed Cloud (release 1.0) is already in use by industrial lead partners to scale their IoT projects across multiple vertical industry segments. General availability of mbed Cloud is scheduled for first quarter of 2017.

Product overview

mbed Cloud offers services focused on device-side management (not data analytics) for IoT. Components and features of mbed Cloud include:	
mbed Cloud Connect	Customers can use their IT infrastructure to connect and recognize their devices in a network, configure device virtualization, add or decommission it securely to any cloud. A standards-based approach using Open Mobile Alliance's LWM2M model and CoAP, mbed Cloud is optimized to support the fast growth of highly constrained IoT devices. Its unique caching mechanism leverages the full potential of the energy-efficient ARM architecture for devices at-rest in the deployment.
mbed Cloud Provision	Allows the injection of trusted assets into devices and enables the setup of provisioning policies across different cloud applications across the devices' lifetime of operation. For new IoT devices, provisioning tools for the production line allow to bolster end-to-end security right from the first device bring up and in-field operations.
mbed Cloud Update	Enables firmware and software updates across all devices in a network.
mbed Cloud Client	Software elements that allow mbed Cloud to manage devices. The combination of mbed Cloud and mbed Cloud Client enables devices that are compatible with multiple data clouds (such as AWS, Azure, IBM BlueMix/Watson, etc.) In addition, mbed Cloud Client is available for multiple RTOS/OSes.

More from mbed

mbed OS:

- mbed OS is the platform OS for rapid development of secure, connected ARM Cortex®-M based IoT devices. It combines an RTOS Kernel, common peripheral drivers, essential security elements and a comprehensive suite of connectivity stacks including Ethernet, BLE, WiFi, LoRa and Thread.
- The latest release, mbed OS 5.2, adds support for integrated WiFi SoCs and modules, hardware entropy sources for greater security, and the ARM Cordio® BLE radio portfolio. This is available now on mbed.com.

mbed Ecosystem:

- 14 new partners, including Advantech, Arrow, Avnet, Comtech Telecommunication Corp., Elan Microelectronics Corp., Future Electronics, Lierda, Myotest, Omnisense, Realtek, Rohm, Softbank Technologies, Toshiba, and WPG have joined the mbed Partnership Program in the past year. Partners continue to invest significant resources with over 600 projects active in the partnership.
- The partnership's collaboration is gaining further traction with mbed OS receiving over 1 million device builds per month and supporting a community of over 200,000 developers globally.

Meet the mbed Partnership at ARM TechCon 2016:

- 21 partners including Avnet, Accenture, Bosch, Comtech Telecommunication Corp., Device Pilot, Elan Microelectronics Corp., HP Enterprise, IBM Watson IoT, Micrium, micro:bit Education Foundation, MultiTech, Nuvoton, NXP, On Semi, Silicon Labs, Spindance, Spirent, Toshiba, Tridonic, u-blox, Zebra Technologies will be showcasing mbed Technologies and commercially available products at ARM TechCon 2016 at mbed Zone (Booth 612, Hall B) and further at the ARM, STMicroelectronics and NXP booths.

Supporting quotes

Advantech

To enable a diverse range of IoT applications, Advantech is collaborating with ARM mbed to provide complete IoT solutions. Through its IoT sensor node platform [M2.COM](#) with ARM mbed OS built in, and the [WISE-PaaS IoT software platform service](#) combined with mbed Cloud services, Advantech enables customers to implement the IoT effectively. This collaboration not only demonstrates that the combination of the IoT and cloud services has reached a new milestone, but also creates a synergistic effect for both parties," said Advantech Embedded-IoT Group Vice President Miller Chang.

Toshiba

"Toshiba chose mbed Cloud for the key secure feature on Toshiba IoT solutions" said Takashi Amano, Technology Executive, Industrial ICT Solutions Company, Toshiba Corporation. "mbed Cloud will simplify device deployment and management taking advantage of device security at Toshiba industrial IoT solutions."

Zebra Technologies Ltd

"The long-standing relationship between ARM and Zebra Technologies has delivered industry standard-based solutions from the edge node to the cloud along with full software support, security and a strong set of developer experiences for the mbed-enabled Zatar Internet of Things (IoT) cloud service," said Tom Bianculli, Chief Technology Officer, Zebra Technologies. "We look forward to utilizing the mbed Cloud to bolster enterprises' ability to speed the migration from M2M and other proprietary devices to the IoT as well as enable us to deliver enterprise-class solutions."