



It's Time to End the IoT Device Management Nightmare



A Guide to Ayla
Device Management



Unlike BYOD (Bring Your Own Device), IoT devices are company-owned and managed assets. Since they tend to be highly abundant (thousands to millions), diverse (function, brand, version), and mission-critical (heart pump, HVAC controls, security systems), the requirement to keep them operating at peak efficiency is mission-critical.

It's Time to End the IoT Device Management Nightmare

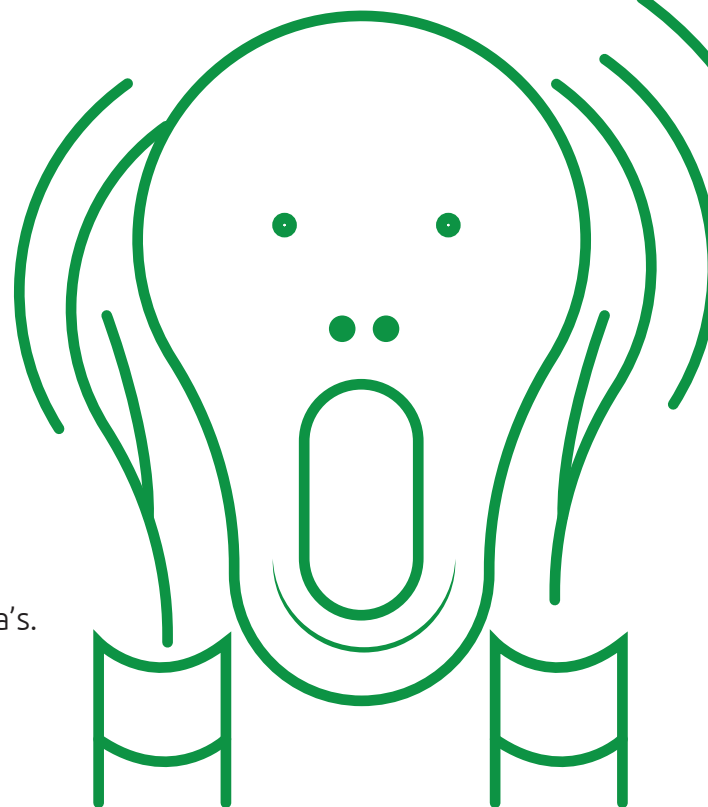


In pre-IoT days the device efficacy was in the hands of each respective department (such as IT, environment, security, and device engineering), but now that devices are IP network-enabled, their care and feeding has grown into an IoT-specific operation, which means there are more things that can go wrong with added global consequences.

If you are an OEM providing IoT-enabled products, your solution should enable your

customers to provide first-rate IoT management services and sleep peacefully every night. If you own the IoT management operation at your company, your life basically revolves around getting new devices provisioned and securely on-net, keeping them working, removing them when they expire, resolving trouble tickets, and wanting to sleep peacefully at night. However, we've learned many nightmares will occur in this idyllic dreamworld.

That's why it's so important that you start your IoT management with a solution that's been engineered from the ground up to ensure your IoT operates at peak efficiency and you sleep at night. Because the last thing you want is to encounter a litany of 'IoT nightmares' that you could avoid with a complete, pure-play device management system such as Ayla's.



Your IoT operations are the wrong place to learn about what your IoT device management platform doesn't do and suffer from nightmares, such as:

- 1 You pick the Big Brand IoT platform because you can trust them (no one ever gets fired for picking Big Brand), but it sounds too simple and you know something's not quite right.
- 2 You learn you must develop, certify, and support firmware agents because the Big Brand solution only supports a finite number of relevant chipsets. So, you must request engineering resources or budget.
- 3 You learn that Big Brand has NO dashboards for monitoring and management functions, so you've got to figure out the workflows and build them yourself with their SDK. You hope you can find a device management workflow and UI specialist.
- 4 You attempt to upload a vital security patch for a few thousand devices only to discover they are wireless and your IoT solution doesn't support over-the-air (OTA) patches, so they need to be uploaded manually. End users are irritated.
- 5 7,300 devices have frozen after uploading an OEM's software patch and you can't remotely restart or restore them at scale, so it must be done manually. Now your company management is annoyed.
- 6 Your product management is hammering you to provide usable device data, but since every device type is different you don't have a single means to collect, structure, and export the data to the AEP (Application Enablement Platform) or other cloud-based analysis systems. They whine. Continuously.
- 7 You don't like nightmares, so you opt for heavy development, testing, swearing, and continued support for each missing operational feature. Now, you are on the hook for feature delivery and quality for a technology that is not native or core to your company. This affects your sleep.
- 8 You decide to outsource development and support, only to discover your vendor doesn't provide resources or trained, certified partners to help you. You get mildly panicky.
- 9 Since IoT is a product or service offering and not a core technology, you find your solution is feature- and function-poor and consistently playing catch-up with competitors. Meetings with sales become brutal.
- 10 You lose track of the unique device identifiers for 10,000 devices while they are in manufacturing and discover multiple devices without DSNs (Device Serial Number) and others with the same serial numbers. You assign an engineer to audit every manufactured device instead of having them develop the management dashboards.
- 11 You create an internal 'cottage' engineering industry to build and support features missing from your Big-Brand solution that's burning-up budget and resources that could be helping improve your core products or services. Your CEO is asking what the hell is going on.

Your options are:

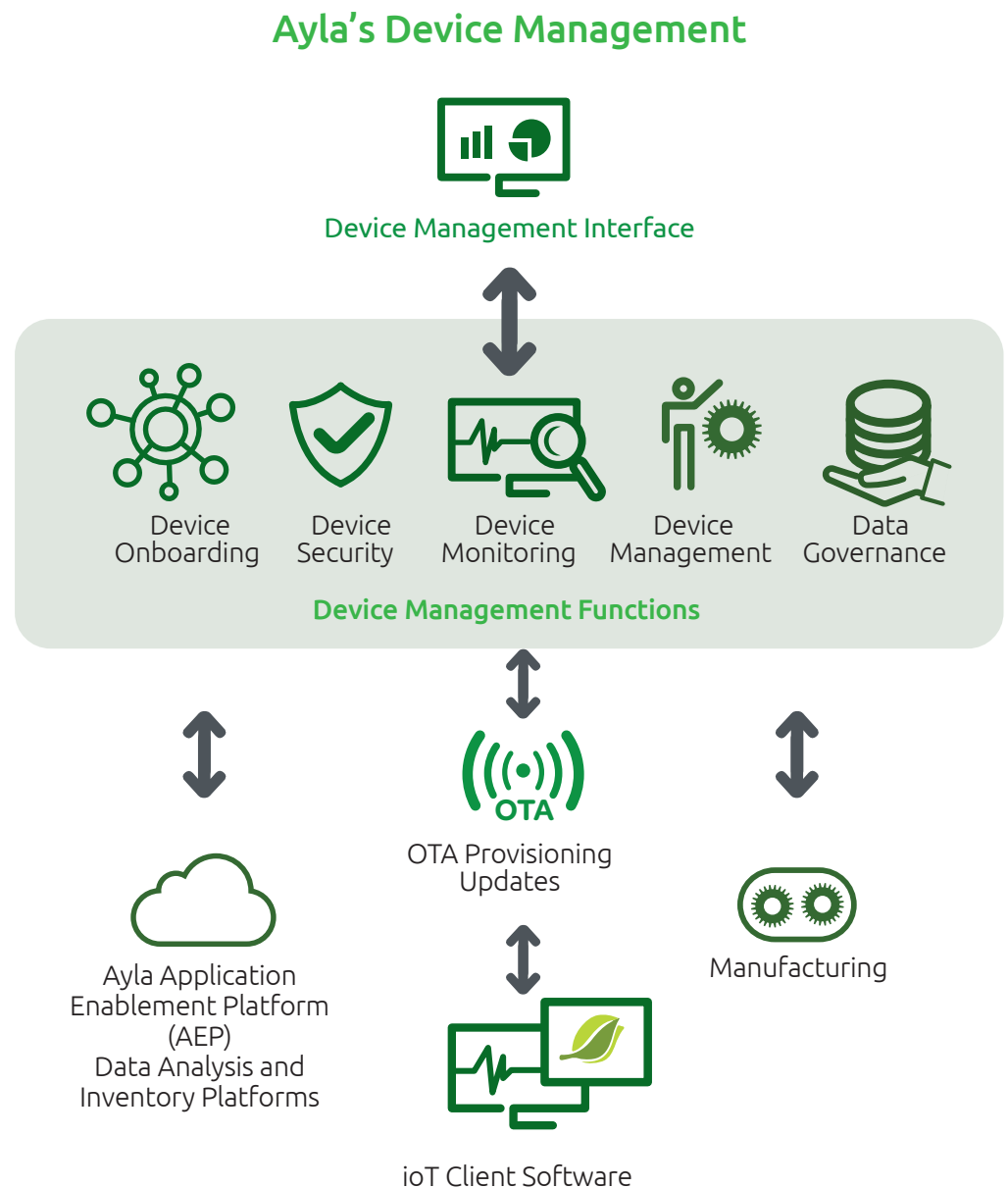
- a) learn to like nightmares,
- b) invest in heavy development and double your time-to-market and costs,
- c) or pick a true, complete, and highly-vetted IoT solution.

Ayla Ends the IoT Device Management Nightmare

Ayla's Device Management solution is a complete, seamless system that's developed to make it easy for the device management team to keep IoT devices operating at peak efficiency. It provides out-of-the-box features to onboard, keep huge numbers of unlike devices securely operating, monitor everything, and easily extract and share valuable device data with minimal human and engineering cost and effort.

Ayla is a device-agnostic IoT 'pure play' platform that's been carefully designed and developed to support or facilitate virtually every device management function, so you don't have to develop and support a non-core technology. Or suffer IoT nightmares. It operates in an end-to-end IoT Platform via seamless integration with Ayla's Edge Management and AEP (Application Enablement Platform) in addition to third-party data analysis and inventory platforms.

Our technology is trusted in hundreds of operations managing tens-of-millions of devices for enterprises where secure and resilient operations, including accurate data export, are mission critical.



Ayla's Device Management Solution

IoT doesn't need to be a major, or even a minor construction project. With Ayla's Device Management you get a complete set of features right out-of-the-box, so you can have an IoT solution in a fraction of the time it takes to build your own or develop on top of the Big Brand platforms. Ayla Device Management is comprised of five key components:

- 1 > Device Management Interface is a portal that's an easy-to-use system to monitor and manage all device functions.
- 2 > Device Management Functions are enabled by the Device Management Interface and includes onboarding, security, monitoring, management, and data governance.
- 3 > OTA Provisioning and Updates so you can manage a device whenever and wherever it is.
- 4 > IoT Client Software via Ayla Edge Management that directly controls each IoT device.
- 5 > Manufacturing makes it easy to automate precision device identity and provisioning.

Details on Ayla Device Management

Device Management Interface



The **Ayla Device Management Interface** is a complete portal that provides a centralized multi-tenant framework for operator control over connected devices with a prebuilt group of integrated deployment, configuration, monitoring, management, and administration dashboards, so you can control all device functions and workflows. With this system you get out-of-the-box management features enabling you to provision and get devices on-net, manage their security and operations, and have extensive control over the fidelity of your IoT operations at any scale - from thousands to millions of devices.

Device Management Functions



Device Onboarding makes it fast and easy to get devices into operation at scale. It enables highly efficient and rapid device deployments that includes automated wake-up, identity (including OEM associations), assigns device ownership, security safeguards, compiling and configuration with bidirectional and unidirectional communications, auditing, provisioning, and real-time status reporting so that you can make single or at-scale (bulk) device deployments without troubling the device end-users.



Device Security provides the most current security technologies to control access and protect data. Ayla Device Management authenticates devices; manages access, configuration, and OTA permissions using RBAC (rules-based access control); and helps protect data when it's on the device and while in transit so you'll have an assurance of security that's ISO 27001 and AICPA SOC compliant.



Device Monitoring provides complete, real-time visibility into your entire device operation. It is a native, in-built capability that starts from Ayla Edge agents to provide real-time data to the monitoring portal. You can conduct granular searches to obtain real-time health and status data for single, groups, and downstream devices from a single pane-of-glass. This function also allows you to discover, audit, and monitor device-specific criteria including serial number, model, OEM, current and historic locations, health, network status, logs, and alerts while maintaining a device audit trail that can be exported to inventory systems. This function includes over 30 customizable KPI reports for fleet activity status monitoring and reporting.



Device Management provides powerful management and service features to optimize the uptime, performance and security of your device operation. This solution allows you to organize and index hierarchical or dynamic device groups and perform any action over-the-air (OTA) for multiple devices in real-time or on a schedule. Management actions include device policy creation and provisioning, configuring, modifying, updating, messaging via SMS or email, and managing connectivity. Real-time service features include diagnostics, troubleshoot and test, rebooting to unstick frozen devices, and sunsetting (removing from service) for single, fleets, dynamic groups, and downstream devices.



Data Governance is a process that makes all device data immediately available and usable. This function ensures secure and reliable data extraction and retention in a consistent, formatted structure, and then securely streamed to AEP and other offline data analysis applications or cloud platforms. This function includes highly granular rules-based capabilities, including dynamic actions in response to data conditions, such as notifications, commands to other devices, and API calls to external cloud services.

OTA Provisioning and Updating



OTA (over-the-air) is a critical feature for IoT as it enables real-time and scheduled management and services for up-to 1 million devices at a time. The Ayla OTA capability facilitates all remote management functions, including monitoring, updates, bulk reboots to restore devices in a lock-state catastrophe, and storage and management of host MCU and Ayla firmware images. This function includes fine-grained reporting on status of OTA firmware runs that provides operations teams with a clear understanding of the outcome of current and historic OTA runs.

Extensive Software Agent Support



Ayla's Edge Management agent software provides consistent command, communications and data structure for any device in your portfolio, so you don't have to engineer, test, certify, and support an army of device agents. Ayla Edge consists of multiple pre-built IoT agent technologies to help enable you to connect virtually any electronic device to the cloud. These agents are developed and certified to work in the communications ICs or chipsets of major manufacturers, including Qualcomm, Broadcom, Marvell, Cypress, and Realtek. Ayla Edge clients are tested and integrate with virtually every relevant chipset and even supports protocols, such as Modbus, OPC-US, and CAN enabled devices, as well as legacy and low-power devices, making Ayla ideal for more complex deployments.

Manufacturing



Ayla provides an automated means to remove identity confusion from the manufacturing process. With Ayla you can accurately identify and provision large numbers of devices in the manufacturing process, so every device receives a unique device serial number (DSN). When Ayla clients are embedded into chipsets or OEM devices, the Ayla Platform generates DSNs for each device associated with an OEM's device so you won't end-up with devices that have no serial number or the same serial numbers. The Ayla Device Management system keeps records of the devices to use in audits as well as device onboarding workflows, so operations can create device or fleet provisioning policies in the Ayla Device Management dashboard that are automatically actuated when the devices awaken.

Ayla Development Options

Most companies who are moving to IoT are in various stages of their IoT lifecycle, so we offer flexible development options that fully supports companies who build their own and companies that require complete development and support.

Professional Development Services

We make it easy for any company to get quickly started with an ecosystem of experienced and professional development resources, including Ayla Professional Services and a network of certified partners that provide services including strategy, design, development, troubleshooting, implementation, continuous improvement, service and support to help you reduce time-to-market and improve the quality of your IoT solutions.

Developer Documentation and Tools

We're committed to helping non-IoT developers create best-in-class solutions that reduces time and complexity and is supported by best-in-class API and SDK documentation and user guides, training, API browser tools and hands-on testing of API calls by solution developers for rapid feedback and prototyping.

Getting Started

It's easy to get started to quickly and easily offer best-in-class IoT services and solutions. Here's how:

- Schedule a ROI workshop with your Ayla team to identify areas of value that are available from connected device data in your market.
- If you don't have an Ayla sales team contact us right away at aylanetworks.com.
- See a hands-on demo of the end-to-end Ayla platform including our Edge Management tools.

Here's Why Companies are Turning to Ayla IoT Device Management

Fastest time-to-revenue – complete, proven IoT device management that you'll have working in quarters, not years.

Maximized Up-Time – constant visibility and control over every device whether hard-wired or wireless with management features to keep devices operating at peak efficiency.

Optimized Administrators' Experience – the device management interface provides prebuilt dashboards and natural workflows so supporting devices at scale is precise, intuitive, and easy.

Reduced Costs of Development – while development is minimal we provide direct and partner development and support services, so you avoid the time and hassle of creating and maintaining an IoT engineering operation.

Increase User and Customer Satisfaction – we've carefully engineered our solution to make all IoT onboarding and operational challenges transparent to end-users or functional operations managers, so their devices work when they need them.

Resilient Operations At-Scale – you'll keep thousands to millions of unlike devices operating at peak efficiency to improve your operational effectiveness and reduce your IoT operational costs.

Data Insights – consistent, secure structured data extraction and export to wherever it's needed so you'll continue to gain insights to improve products and services for customers and users.

Engineering and Services – Ayla and its certified partners know how to get your IoT solution quickly up and running in less time and cost than building your own or fixing a Big Brand IoT solution, so you'll reduce time-to-market and improve your IoT solutions quality.



Ayla Networks provides the industry's first Agile IoT Platform, leading development, support, and ongoing enhancements of connected products for the Internet of Things.

Ayla's software fabric runs across devices, cloud, and apps to create secure connectivity, data analytics, and feature-rich customer experiences. Offered as a cloud platform-as-a-service (PaaS), Ayla's flexibility and modularity enables rapid changes to practically any type of device, cloud, and app environment.