

Micron Authentica + VaultCore Securing the Internet of Things (IoT)



» ABOUT MICRON

Micron Technology is a world leader in innovating memory and storage solutions that accelerate the transformation of information into intelligence, inspiring the world to learn, communicate and advance faster than ever. We deliver the world's broadest portfolio of technologies at the core of today's most significant disruptive breakthroughs such as artificial intelligence and autonomous vehicles.

» ABOUT FORNETIX

Fornetix's VaultCore is helping organizations across the globe unleash the full potential of encryption by conquering the key management challenge and working to secure some of the world's most vital secrets by automating the key lifecycle from enterprise to edge with groundbreaking precision, speed, and accuracy.

FOR MORE INFORMATION:

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Cyber security is one of the biggest challenges impeding the growth of Internet of Things (IoT) deployments and associated business models across many market verticals like industrial, smart cities, medical, automotive, and connected homes. With IoT devices, integrity matters – integrity of the device, integrity of the firmware, and integrity of instructions.

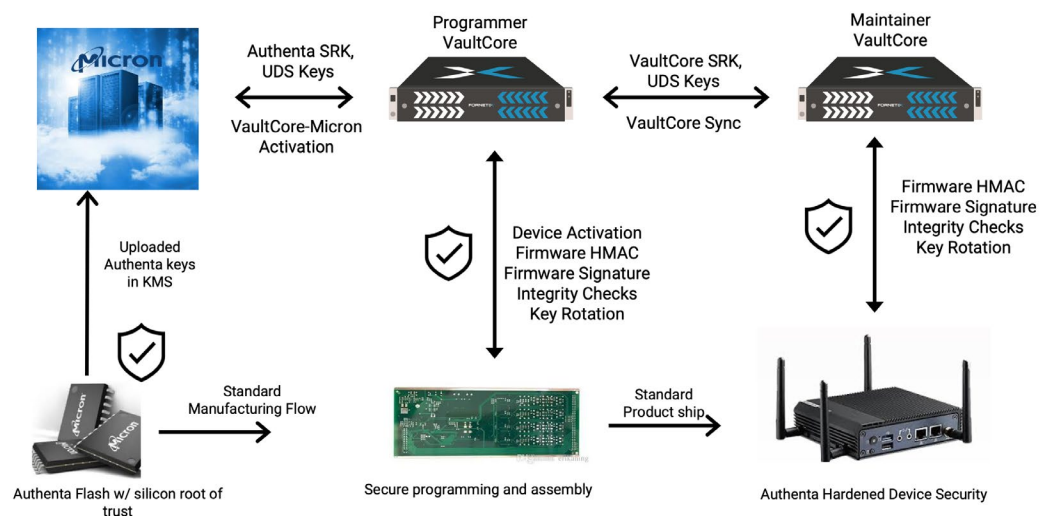
In the past it was time-consuming, complicated, and procedural to accomplish integrity for IoT devices - relying on expensive infrastructure and system operations. With modern complex supply chains, it was almost impossible to ensure integrity throughout a solution. Without systemic integrity, the security of hardware and firmware in our devices, our automobiles, and ultimately in our homes come into question.

» MICRON AUTHENTICA

Micron is leveraging its position as a leader in the manufacturing of flash memory, and a leader in the embedded markets, to create a whole new paradigm to address these security challenges. Micron developed the Authentica™ Security-as-a-Service platform as a cost effective, widely scalable and business appropriate way to employ security across a diverse set of systems with fragmented supply-chains and ecosystems.

With Authentica, trust starts in hardware – Micron flash memory – this moves basic security capabilities to the “left” making the hardware the security foundation by adding attestation, compartmentalization, as well as device and firmware integrity at the silicon level. The Authentica platform provides a simple activation and ownership change service for a wide range of IoT security services and device management services.

In a complicated world, Authentica needs a strong key management architecture that orchestrates use of Authentica keys in IoT device lifecycle from the data center through the cloud and to the edge.



» FORNETIX VAULTCORE

Delivered as a physical or virtual appliance, VaultCore is a key management system enabling a unified approach to data security through deploying and enforcing encryption across the entire organization. Acting as an extension of the Micron's Authentica KMS, VaultCore allows users to orchestrate use of Authentica keys in their programming and maintenance activities in a secure, consistent, and standards-based manner; whether it's on-premise in storage, virtualized, or cloud.





» A PARADIGM SHIFT IN SECURE IOT

Micron and Fometix working together to deliver Authentica services give programmers, maintainers and ultimately customers assurance that integrity is designed into your solution, reducing risk and ensuring a secure product that fulfills the business objectives of your customers. VaultCore provides the capability to provision, update, and interact with OT devices for factory floor systems, field units, and ongoing operations and maintenance.

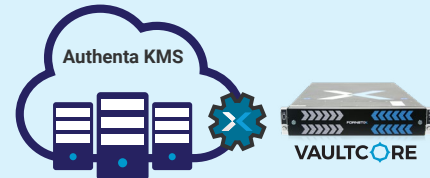
Manufacturing and Software load can be split between organizations. To support Authentica Activations and Validations, VaultCore is deployed so that it can interact with both initial activation and validation of Authentica keys and provide a cryptographic trust anchor for the initial manufacturing of the OT/Embedded device.

KEY TENETS FOR IoT SECURITY

-  Secure device onboarding and registrations to the Cloud
-  Trusted authority for establishing root-of-trust

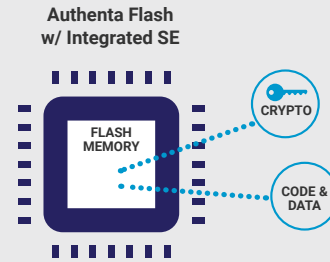
IN THE CLOUD

MICRON AUTHENTICA SOLUTIONS



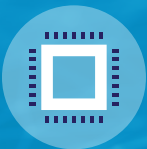
-  Verified and protected firmware
-  Secure key storage
-  Unique credentials for each device

IN THE SILICON



» MAKE YOUR IoT PRODUCT VISION A REALITY – SECURELY

Together, the combination of Authentica and VaultCore enable you to manage capabilities today and evolve them tomorrow:



Take advantage of Authentica moving basic security functionality “left” into silicon while simultaneously getting the value of standards-based lifecycle key management systems orchestration capabilities.



Reduce time to market for secure embedded systems while increasing their capabilities today and tomorrow. Bring new capabilities online faster.



Maximize profit by using the physical possession of silicon to license capabilities — Orchestrated in cloud, providing flexible software downloads and data sharing.



Leverage the VaultCore platform to support other key management needs including communications security, data at rest encryption, and other data processing applications.



Protect your brand with world-class security and establish yourself as a leader in your space.

» AUTOMOTIVE EXAMPLE

There is a myriad of challenges in bringing your connected car strategy to the world. How can you advance your brand with cutting edge features, but do it securely enough to protect your brand? How do your delivery capabilities quickly today, yet support new capabilities and services in the future? How can you maintain the security of your product throughout its lifecycle – from the factory floor, to the dealer, to the service bay, to the resale lot? How do you do all this at the scale your global fleet demands?

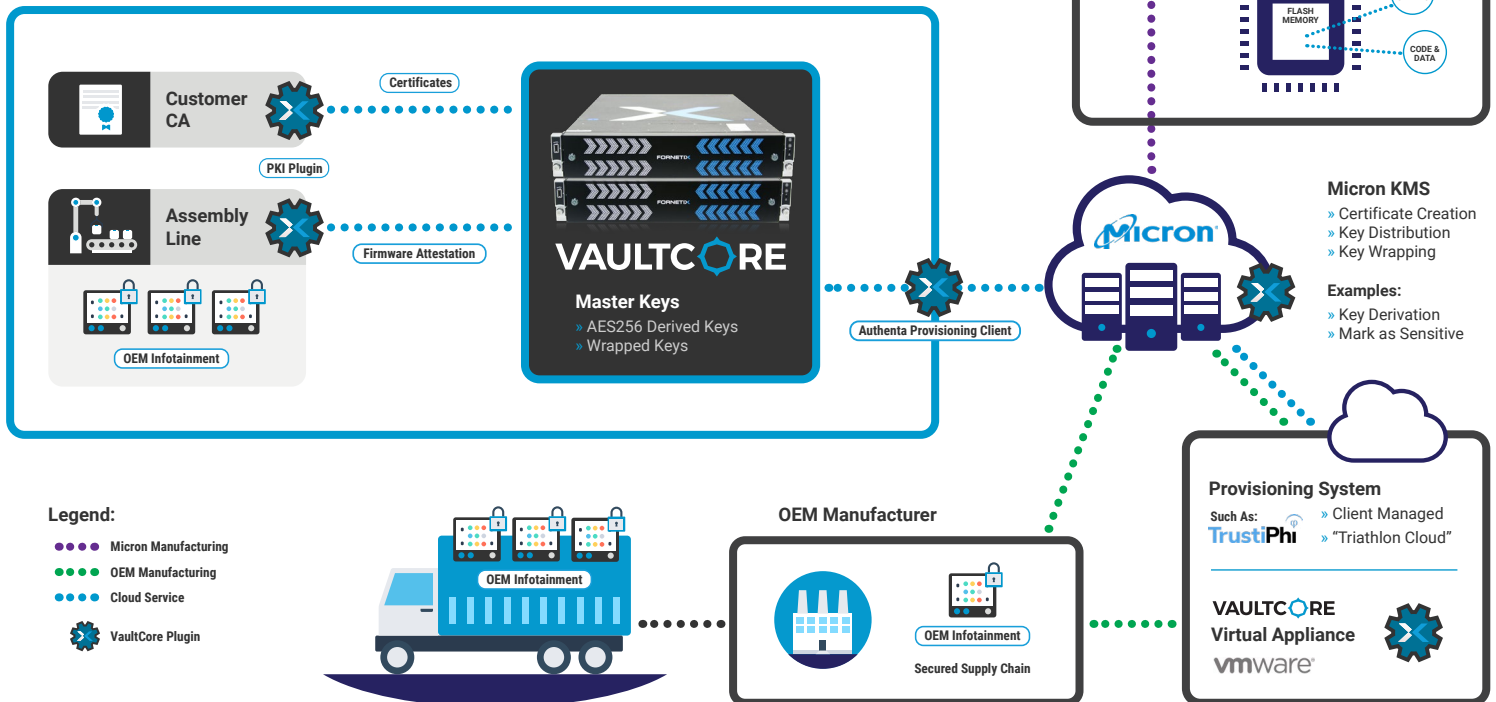
The combination of Micron Authentica and Foretix VaultCore enables you to take advantage of security platform capabilities built-in to Authentica silicon, ensuring you shorter times to market delivering secure capabilities today and new services, including those that help you monetize fleet data, tomorrow.



INITIAL PROGRAMMING

1. Initial Programming, Finger Printing - provides supply chain security and authenticity of the product which is critical in global supply chains
2. Joint solution allows for quick integration of Authentica services into an existing programming infrastructure to facilitate rapid introduction
3. VaultCore Sync Services provide a means to export and package Authentica Keys

Primary Factory / Manufacturer



KEY DISTRIBUTION, SUSTAINMENT, AND ONGOING SUPPORT

- VaultCore provides services for key rotation, key synchronization, firmware signing for software updates, and remote attestation for Authentica Keys
- VaultCore's platform integrates into supply chain and maintenance operations allowing for transparent utilization of Authentica services
- Auditing and transaction logging provide means to trace utilization of Authentica keys

» SMART METERING EXAMPLE

Utility meters are an important part of modern life that are often overlooked. Every modern home or workplace has them to keep track of water, gas, and electricity usage. We typically assume this data is being used for billing, but measuring consumption also allows the companies providing resources to plan and adjust output. Given how valuable this data is to consumers, utility companies, and regulators, traditional analog utility meters are being replaced with “smart meters” with advanced controls and network connections.

With the ability to sync, protect, and utilize Micron Authenta keys, VaultCore provides Micron Authenta customers with a cryptographic integration services tier to support device provisioning, firmware updates, and remote attestation. In short, VaultCore’s ability to support cryptographic services from the data center through the cloud to the edge is complimentary to Authenta’s drive to protect the integrity of IoT infrastructure and devices.



INITIAL PROGRAMMING

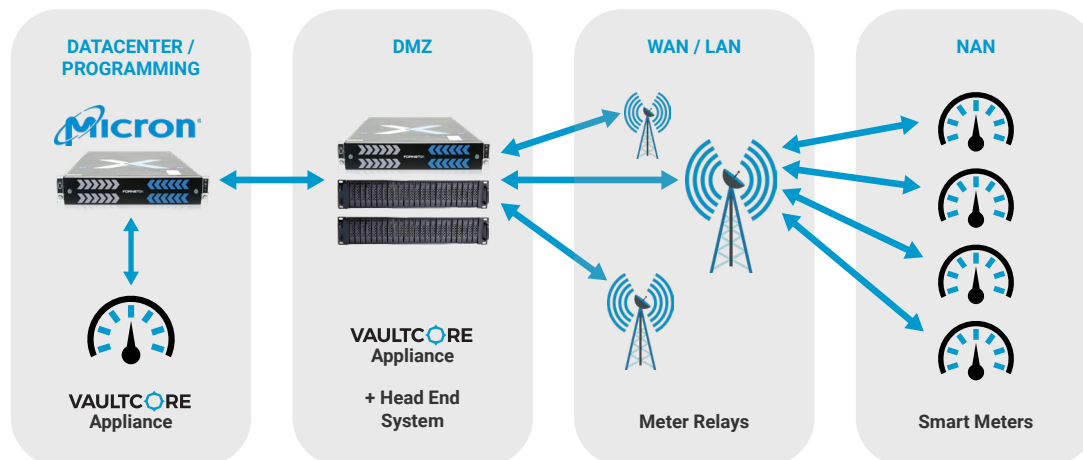
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3. VaultCore Sync Services provide a means to export and package Authenta Keys
4. VaultCore provides key lifecycle management for communications security keys programed into the smart meter (for operational test \ initial deployment)

THE PROBLEM

Due to the enormous scale of metering networks, utility companies are unable to find key managers powerful enough for their encryption needs for both programming devices and device operations.

REQUIREMENTS

Frequent rotation of encryption keys for millions of smart meters in dispersed locations.



KEY DISTRIBUTION, SUSTAINMENT, AND ONGOING SUPPORT

- VaultCore provides services for key rotation, key synchronization, firmware signing for software updates, and remote attestation for Authenta Keys
- VaultCore integrates with Head End units to support key lifecycle management for Smart Meter communications security
- VaultCore cryptographic APIs can be employed for message traffic encrypt/decrypt
- VaultCore’s platform integrates into supply chain and maintenance operations allowing for transparent utilization of Authenta services
- Auditing and transaction logging provide means to trace utilization of Authenta keys