

IoT Security Development Platform for **STM32U5** MCUs



IoT Device and App Security with Industry-First Ransomware Defense

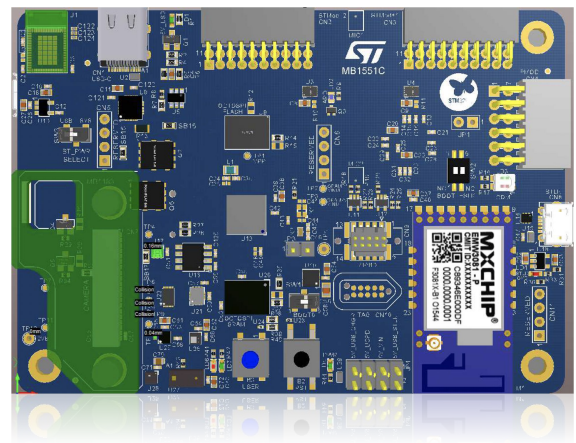


The NXM IoT security development platform includes an STM32U5 Discovery Kit with an Ethernet and a sensor daughter card, plus comprehensive Software Developer Kits (SDKs) with easy-to-use APIs

OVERVIEW

The NXM IoT security platform provides a unique solution that eliminates the complexity of implementing best-in-class security features, dramatically reducing the development time for IoT devices and their companion mobile / web apps. NXM Autonomous Security™ software provides Zero-Touch / Zero-Trust device protection against ransomware, unauthorized access and other common forms of cyberattacks.

The platform includes hardware boards, software SDKs and reference implementation using STM32U5 with FreeRTOS connected to AWS IoT Core. Mobile App SDKs are also included for both iOS and Android. A Platform Development Kit (PDK) framework and APIs are included to adapt to different RTOS, IoT clouds, network stacks, IDEs and firmware build pipelines.



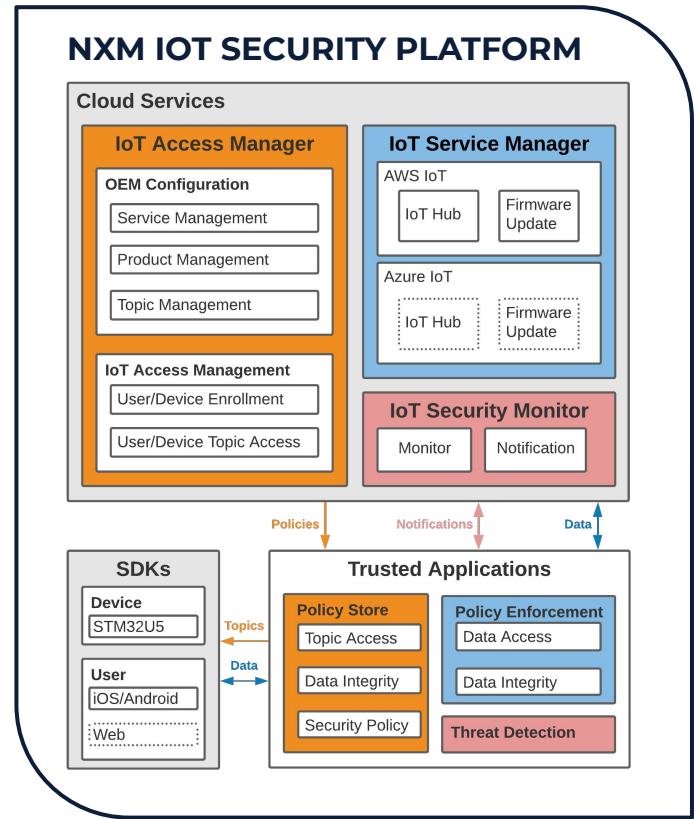
SMART HOMES AND CITIES

- Electricity, Gas, Heat, Water Metering
- Point of Sale Terminals
- Goods Tracking/Monitoring
- Large and Small Home Appliances

SMART INDUSTRY

- Position and Motion Monitoring
- Process and Environment Monitoring
- Factory Automation
- Programmable Logic Controller (PLC)
- Industry OT or SCADA system, M2M
- Telemetry and RTU

NXM IOT SECURITY PLATFORM



KEY VALUE PROPOSITION

The NXM Autonomous Security Platform provides complete, end-to-end, product lifecycle security protection.

Zero-Touch: Password-free authentication & access control. Fully automated security monitoring and response.

Zero-Trust: Secures Data at Rest, Data in Transit and Data in Use. Secure boot and optional remote attestation.

FOTA Integration: Firmware release pipeline that can easily and securely integrate with OEM FOTA systems.

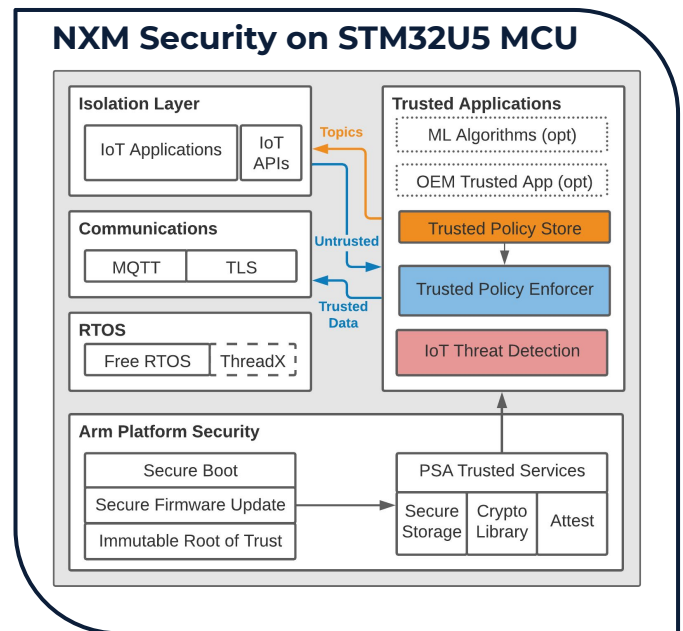
Easy-to-use: STM32U5 Device SDK and iOS/Android App SDKs. Future SDK planned for Web apps.

Cloud-Agnostic: Compatible with AWS IoT Core. Extensible to other clouds via PDK.

Small memory footprint: Tools and libraries to compile secure and non-secure device images.

ST Tool support: Integrated with STM32Cube IDE, Debugger and Programmer. Extensible to other IDEs.

Full Demos: Demo applications and source code included.



NXM Platform Development Kit

IDE Platform Component

- Built-in: STM32Cube IDE¹
- Support additional IDEs

Cloud Platform Component

- Built-in: AWS IoT Core¹
- Support additional Clouds

RTOS Platform Component

- Built-in: Free RTOS¹
- Port to additional RTOS

Network Mgr. Component

- Built-in: Ethernet¹
- Add Wi-Fi or Bluetooth

Firmware Build Pipeline

- CMake-driven pipeline
- OEM Trusted Apps² (opt)
- 3rd-Party ML Apps (opt)
- TrustStar Attestation² (opt)
- Secure image build²
- Non-secure image build
- Firmware sign and release³

¹ Reference integration provided, can plugin others using component framework & APIs. ² Arm PSA-Compatible. ³ Built-in support for AWS S3 upload.

COMPONENT	DESCRIPTION	FEATURES
STM32U5 Discovery Kit	Development board provides complete demonstration and development platform for STM32U585 Microcontroller	<ul style="list-style-type: none"> • Ultra-low-power STM32U585 microcontroller based on Arm Cortex[®]-M33 core with Arm TrustZone[®], 2 Mbytes of internal Flash memory and 786 Kbytes of SRAM, 64M external NOR OCTO SPI NV flash supporting OTFDEC, crypto accelerator (hashing, symmetric/asymmetric ciphers). • 2x User Programmable LEDs • 1x User Programmable Button • 1x Reset Button • 2x STMOD+ connector • ARDUINO[®] Uno V3 expansion connectors • On-board ST-LINK/V3E debugger/programmer • Flexible power-supply: STLINK-V3E, USB VBUS or external sources • Support for STM32Cube IDE • Note: Refer to B-U585I-IOT02A Discovery Kit for additional info
Wi-Fi Module	Integrated driver support for STM32U5	<ul style="list-style-type: none"> • 802.11 b/g/n compliant • Reference integration with STM32U5
Ethernet Module	Integrated driver support for STM32U5	<ul style="list-style-type: none"> • 1x Ethernet PHY • Reference integration with STM32U5

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