Security advisory TN1537-ST-PSIRT: Impact of Azure RTOS version 6.2.1 security advisories on STM32 embedded software

Overview

This security advisory pertains to the impact of Azure RTOS version 6.2.1 security advisories on STM32 embedded software.

Affected products

Product[1]	Version	Type	Note
STM32CubeU5	v1.4.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
STM32CubeH5	v1.1.1 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
STM32CubeWBA	v1.2.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
STM32CubeC0	v1.1.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
STM32CubeU0	v1.0.0 *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
STM32CubeMP13	v1.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-H7	v3.2.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-F7	v1.1.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-F4	v1.1.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-G4	v2.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-G0	v1.1.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-

Product[1]	Version	Type	Note
X-Cube-AZRTOS-L4	v2.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-L5	v2.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-WB	v2.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-Cube-AZRTOS-WL	v2.0.0 and earlier *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-
X-CUBE-AZRT-H7RS	v1.0.0 *Note: Because the issue might not be fixed in subsequent release, refer to the release notes[2] of the affected product to check if the issue has been fixed.*	embedded software	-

1. *Some other STM32Cube expansion packages (X-CUBE or I-CUBE) could depend on the affected products and are not mentioned in this document.*
2. *Release notes are available in each downloaded package (on www.st.com product pages, on STMicroelectronics Github product pages, via STM32CubeMX).*

To know if an STM32 Cube firmware package or if an STM32 X-Cube firmware package is impacted, you can check the version of the Middleware Azure RTOS supported:

Software component	File to read	Version with vulnerabilities	Version fixing the vulnerabilities
Middlewares/ST/threadx	ST_readme.txt	Azure RTOS ThreadX 6.2.1 and earlier	Azure RTOS ThreadX 6.4.0 and later
Middlewares/ST/netxDuo	ST_readme.txt	Azure RTOS NetXDuo 6.2.1 and earlier	Azure RTOS NetXDuo 6.4.0 and later
Middlewares/ST/usbx	ST_readme.txt	Azure RTOS USBX 6.2.01 and earlier	Azure RTOS USBX 6.4.0 and later

Regarding the standalone components offered through GitHub which might be used with the **affected products**, the following fixes are now available:

- NetXDuo: https://github.com/STMicroelectronics/stm32_mw_netxduo
- USBX: https://github.com/STMicroelectronics/stm32_mw_usbx
- ThreadX: https://github.com/STMicroelectronics/stm32_mw_threadx

The user will need to reconfigure the affected package with the fixed component.

Description

Vulnerability description can be found at the following links:

- NetXDuo vulnerabilities:
  - CVE-2024-2452
  - CVE-2023-48692
  - CVE-2023-48691
  - CVE-2023-48316
  - CVE-2023-48315

- USBX vulnerabilities:
  - CVE-2023-48698
  - CVE-2023-48697
  - CVE-2023-48696
  - CVE-2023-48695
  - CVE-2023-48694
- ThreadX vulnerabilities:
  - CVE-2023-48693
  - CVE-2024-2214
  - CVE-2024-2212

Impact

Refer to the links given in Description section.

Remediation

Refer to Affected products section to identify fixed product.

Contact information

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Revision history

Table 1. **Document revision history**

Date	Version	Changes
08-Jul-2024	1	Initial version.

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