

Integer and Buffer Overflow Issues – TI-NDK



TI-PSIRT-2020-100076

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Summary

Below are integer overflow issues in the TI-NDK versions 2.x and 3.x that could potentially lead to issues like denial of service or remote code execution.

CVEID	Description	CVSS score (v3.1)	CVSS vector	TI-NDK
CVE-2021-22671	Integer overflow in 'DNSGetHostByName' when trying to resolve long domain names	9.8	AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H	+
	Integer overflow in 'DNSResolve' when trying to resolve long domain names	9.8	AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H	+

Affected products and versions

- TI-NDK 3_80_00_19 and older versions

The following SDK releases are affected as they integrate the above mentioned NDK versions.

- SimpleLink™ MSP432E4 SDK 4.20.00.12 and older versions
- Processor SDK for TDAx ADAS SoCs (VISION, RADAR) 03_08_00 and older versions
- DRA7xx Processor SDK (rtos-automotive) - 04.03.00.05 and older versions
- RTOS SDK for AM65x, J721E and J72100 Jacinto™ Processors - 07.03.00.07 and older versions
- Processor SDK RTOS version - 07.03.00.07 and any older SDK releases for all C66x, C674x, C64x, ARM9, Cortex-A8, Cortex-A9, Cortex-A15 family of devices. Some of these are highlighted below:
 - AM57x, AM437x, AM335x
 - OMAPL13x, C674x, C64x, Keystone 1, Keystone 2 and Davinci family of devices

Potentially impacted features

- DNS initialization

Suggested mitigations

- The TI-NDK is in long term maintenance, and as such there is no plan to update or provide patches to it at this time.
- SimpleLink MSP432E4 SDK does not have a planned SDK update to implement mitigations due to the mature nature of its software.
- Processor SDKs for AM65x, J721E and J7200 families will be updated in mid-2021 (08.00) and replace TI-NDK with lwIP.
- Other Processor SDKs do not plan to implement mitigations due to the mature nature of the software.

If you have any questions, contact psirt@ti.com.

Note: Customers are solely responsible for the security of their products and are encouraged to assess the possible risk of any potential security vulnerability.

Acknowledgment

We would like to thank Omri Ben Bassat and David Atch of Microsoft for working with CISA to report these vulnerabilities to the TI Product Security Incident Response Team (PSIRT).

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