SSA-100232: Denial-of-Service vulnerability in SCALANCE X Switches

Publication Date:	2019-08-13
Last Update:	2022-02-08
Current Version:	V1.4
CVSS v3.1 Base Score:	8.6

SUMMARY

A vulnerability in several SCALANCE X devices could allow an unauthenticated attacker with network access to an affected device to perform a denial-of-service.

Siemens has released an update for SCALANCE X-200IRT and recommends to update to the latest version. Siemens recommends specific countermeasures for products where updates are not, or not yet available.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
SCALANCE X204RNA (HSR) (6GK5204-0BA00-2MB2): All versions	Currently no remediation is planned See recommendations from section Workarounds and Mitigations
SCALANCE X204RNA (PRP) (6GK5204-0BA00-2KB2): All versions	Currently no remediation is planned See recommendations from section Workarounds and Mitigations
SCALANCE X204RNA EEC (HSR) (6GK5204-0BS00-2NA3): All versions	Currently no remediation is planned See recommendations from section Workarounds and Mitigations
SCALANCE X204RNA EEC (PRP) (6GK5204-0BS00-3LA3): All versions	Currently no remediation is planned See recommendations from section Workarounds and Mitigations
SCALANCE X204RNA EEC (PRP/HSR) (6GK5204-0BS00-3PA3): All versions	Currently no remediation is planned See recommendations from section Workarounds and Mitigations
SCALANCE X-200 switch family (incl. SIPLUS NET variants): All versions < V5.2.5	Update to V5.2.5 or later version https://support.industry.siemens.com/cs/ww/en/view/109801131/ See further recommendations from section Workarounds and Mitigations
SCALANCE X-200IRT switch family (incl. SIPLUS NET variants): All versions < V5.5.0	Update to V5.5.0 or later version https://support.industry.siemens.com/cs/ww/en/view/109792534/ See further recommendations from section Workarounds and Mitigations

WORKAROUNDS AND MITIGATIONS

Siemens has identified the following specific workarounds and mitigations that customers can apply to reduce the risk:

- Restrict network access to port 23/tcp of the device
- Disable telnet service on affected devices and use SSH instead

GENERAL SECURITY RECOMMENDATIONS

As a general security measure, Siemens strongly recommends to protect network access to devices with appropriate mechanisms. In order to operate the devices in a protected IT environment, Siemens recommends to configure the environment according to Siemens' operational guidelines for Industrial Security (Download: https://www.siemens.com/cert/operational-guidelines-industrial-security), and to follow the recommendations in the product manuals.

Additional information on Industrial Security by Siemens can be found at: https://www.siemens.com/industrialsecurity

PRODUCT DESCRIPTION

SCALANCE X switches are used to connect industrial components like Programmable Logic Controllers (PLCs) or Human Machine Interfaces (HMIs).

SIPLUS extreme products are designed for reliable operation under extreme conditions and are based on SIMATIC, LOGO!, SITOP, SINAMICS, SIMOTION, SCALANCE or other devices. SIPLUS devices use the same firmware as the product they are based on.

VULNERABILITY CLASSIFICATION

The vulnerability classification has been performed by using the CVSS scoring system in version 3.1 (CVSS v3.1) (https://www.first.org/cvss/). The CVSS environmental score is specific to the customer's environment and will impact the overall CVSS score. The environmental score should therefore be individually defined by the customer to accomplish final scoring.

An additional classification has been performed using the CWE classification, a community-developed list of common software security weaknesses. This serves as a common language and as a baseline for weakness identification, mitigation, and prevention efforts. A detailed list of CWE classes can be found at: https://cwe.mitre.org/.

Vulnerability CVE-2019-10942

The device contains a vulnerability that could allow an attacker to trigger a denial-of-service condition by sending large message packages repeatedly to the telnet service.

The security vulnerability could be exploited by an attacker with network access to the affected systems. Successful exploitation requires no system privileges and no user interaction. An attacker could use the vulnerability to compromise availability of the device.

CVSS v3.1 Base Score	8.6
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:C/C:N/I:N/A:H/E:P/RL:T/RC:C
CWE	CWE-400: Uncontrolled Resource Consumption

ACKNOWLEDGMENTS

Siemens thanks the following parties for their efforts:

- Artem Zinenko from Kaspersky for pointing out that SIPLUS should also be mentioned
- Younes Dragoni and Alessandro Di Pinto from Nozomi Networks for reporting the vulnerability

ADDITIONAL INFORMATION

For further inquiries on security vulnerabilities in Siemens products and solutions, please contact the Siemens ProductCERT:

https://www.siemens.com/cert/advisories

HISTORY DATA

V1.0 (2019-08-13):	Publication Date
V1.1 (2020-02-10):	SIPLUS devices now explicitly mentioned in the list of affected products
V1.2 (2021-02-09):	Added update information for SCALANCE X-200IRT switch family
V1.3 (2021-09-14):	Added solution for SCALANCE X-200 switch family
V1.4 (2022-02-08):	Specifically added that SCALANCE X204RNA devices do not have any fix planned

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