

SSA-818183: Denial-of-Service Vulnerability in SIMATIC S7-300 CPU Family

Publication Date: 2016-06-08
Last Update: 2020-02-10
Current Version: V1.1
CVSS v3.1 Base Score: 7.5

SUMMARY

Siemens has released a firmware update for the SIMATIC S7-300 CPU family which fixes a vulnerability that could allow remote attackers to perform a Denial-of-Service attack under certain conditions.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
SIMATIC S7-300 CPU family with Profinet support (incl. related ET200 CPUs and SIPLUS variants): All versions < V3.2.12	Update to firmware version V3.2.12 https://support.industry.siemens.com/cs/products?dtp=Download&mfn=ps&pnid=13752&lc=en-WW
SIMATIC S7-300 CPU family without Profinet support (incl. related ET200 CPUs and SIPLUS variants): All versions < V3.3.12	Update to firmware version V3.3.12 https://support.industry.siemens.com/cs/products?dtp=Download&mfn=ps&pnid=13752&lc=en-WW

WORKAROUNDS AND MITIGATIONS

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

- Apply protection-level 3 (Read/Write protection).
- Operate the device only within trusted networks.

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

Products of the Siemens SIMATIC S7-300 CPU family have been designed for discrete and continuous control in industrial environments such as manufacturing, food and beverages, and chemical industries

worldwide.

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-2016-3949

Specially crafted packets sent to port 102/tcp (ISO-TSAP) or via Profibus could cause the affected device to go into defect mode. A cold restart is required to recover the system.

CVSS v3.1 Base Score	7.5
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H/E:P/RL:O/RC:C
CWE	CWE-20: Improper Input Validation

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- Mate J. Csorba from DNV GL, Marine Cybernetics Services for coordinated disclosure
- Amund Sole from Norwegian University of Science and Technology for coordinated disclosure
- Artem Zinenko from Kaspersky for pointing out that SIPLUS should also be mentioned

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 (2016-06-08):	Publication Date
V1.1 (2020-02-10):	SIPLUS devices now explicitly mentioned in the list of affected products. Updated firmware download links.

TERMS OF USE

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