

## **SSA-987029: Denial-of-Service Vulnerability in SIMATIC S7-300 CPU Family**

Publication Date: 2015-03-05  
Last Update: 2020-02-10  
Current Version: V1.1  
CVSS v3.1 Base Score: 7.5

### **SUMMARY**

A vulnerability could allow attackers to perform a Denial-of-Service attack over the network without prior authentication against S7-300 CPUs under certain conditions.

Siemens recommends specific mitigations. Siemens will update this advisory when new information becomes available.

### **AFFECTED PRODUCTS AND SOLUTION**

<b>Affected Product and Versions</b>	<b>Remediation</b>
SIMATIC S7-300 CPU family (incl. related ET200 CPUs and SIPLUS variants): All versions	See recommendations from section <a href="#">Workarounds and Mitigations</a>

### **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)
- Apply cell protection concept (see <https://www.siemens.com/cert/operational-guidelines-industrial-security>)
- Use VPN for protecting network communication between cells
- Apply Defense-in-Depth (see <http://www.industry.siemens.com/topics/global/en/industrial-security/concept/Pages/defense-in-depth.aspx>)

### **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-2015-2177

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:U/RC:C
CWE	CWE-730: OWASP Top Ten 2004 Category A9 - Denial of Service

## **ACKNOWLEDGMENTS**

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- Johannes Klick, Christian Pfahl, Martin Gebert, and Lucas Jacob from Freie Universität Berlin's work team SCADACS 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 (2015-03-05):	Publication Date
V1.1 (2020-02-10):	SIPLUS devices now explicitly mentioned in the list of affected products

## **TERMS OF USE**

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