

## **SSA-306710: Denial-of-Service Vulnerability in SIMATIC S7-300 CPU**

Publication Date: 2019-01-08  
Last Update: 2019-01-08  
Current Version: V1.0  
CVSS v3.0 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.

### **AFFECTED PRODUCTS AND SOLUTION**

| <b>Affected Product and Versions</b>           | <b>Remediation</b>   |
|--|--|
| SIMATIC S7-300 CPUs:<br>All versions < V3.X.16 | Update to V3.X.16<br><a href="https://support.industry.siemens.com/cs/ww/en/ps/13752/dl">https://support.industry.siemens.com/cs/ww/en/ps/13752/dl</a> |

### **WORKAROUNDS AND MITIGATIONS**

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

- Siemens recommends operating the devices 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.

### **VULNERABILITY CLASSIFICATION**

The vulnerability classification has been performed by using the CVSS scoring system in version 3.0 (CVSS v3.0) (<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.

#### Vulnerability CVE-2018-16561

The affected CPUs improperly validate S7 communication packets which could cause a Denial-of-Service condition of the CPU. The CPU will remain in DEFECT mode until manual restart.

Successful exploitation requires an attacker to be able to send a specially crafted S7 communication packet to a communication interface of the CPU. This includes Ethernet, PROFIBUS, and Multi Point Interfaces (MPI). No user interaction or privileges are required to exploit the security vulnerability. The vulnerability could allow causing a Denial-of-Service condition of the core functionality of the CPU, compromising the availability of the system.

At the time of advisory publication no public exploitation of this security vulnerability was known. Siemens confirms the security vulnerability and provides mitigations to resolve the security issue.

|                      |  |
|----------------------|--|
| CVSS v3.0 Base Score | 7.5  |
| CVSS Vector          | CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H/E:P/RL:O/RC:C |

### **ACKNOWLEDGMENTS**

Siemens thanks the following parties for their efforts:

- China Industrial Control Systems Cyber Emergency Response Team (CIC) for coordinated disclosure

### **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 (2019-01-08): Publication Date

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