**SSA-270778: Denial-of-Service Vulnerability in SIMATIC PCS 7, SIMATIC WinCC and SIMATIC NET PC Software**

Publication Date: 2020-02-11  
Last Update: 2022-04-12  
Current Version: V1.7  
CVSS v3.1 Base Score: 7.5

**SUMMARY**

A Denial-of-Service vulnerability was found in SIMATIC PCS 7, SIMATIC WinCC and SIMATIC NET PC software when encrypted communication is enabled. The vulnerability could allow an attacker with network access to cause a Denial-of-Service condition under certain circumstances (versions prior to SIMATIC WinCC V7.3 or SIMATIC PCS 7 V8.1 are not affected as encrypted communication is not an option).

Siemens has released updates for several affected products and recommends to update to the latest versions. Siemens recommends specific countermeasures for products where updates are not, or not yet available.

Note: The vulnerability is part of a shared component, used by various Siemens products (SIMATIC Communication Services - SCS). The installation of a fix version of any product also removes the vulnerability for other products on the same system, even if those products were not updated.

**AFFECTED PRODUCTS AND SOLUTION**

<table>
<thead>
<tr>
<th>Affected Product and Versions</th>
<th>Remediation</th>
</tr>
</thead>
</table>
| **OpenPCS 7 V8.1:**  
  All versions | Currently no fix is planned  
  See recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **OpenPCS 7 V8.2:**  
  All versions | See remediation for SIMATIC PCS 7 V8.2  
  See further recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **OpenPCS 7 V9.0:**  
  All versions < V9.0 Upd3 | See remediation for SIMATIC PCS 7 V9.0  
  See further recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **SIMATIC BATCH V8.1:**  
  All versions | Currently no fix is planned  
  See recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **SIMATIC BATCH V8.2:**  
  All versions | See remediation for SIMATIC PCS 7 V8.2  
  See further recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **SIMATIC BATCH V9.0:**  
  All versions < V9.0 SP1 Upd5 | See remediation for SIMATIC PCS 7 V9.0  
  See further recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
| **SIMATIC NET PC Software V14:**  
  All versions < V14 SP1 Update 14 | Update to V14 SP1 Update 14 or later version [https://support.industry.siemens.com/cs/ww/en/view/109807351/](https://support.industry.siemens.com/cs/ww/en/view/109807351/)  
  See further recommendations from section [Workarounds and Mitigations](https://support.industry.siemens.com/cs/ww/en/view/109807351/) |
<table>
<thead>
<tr>
<th>Product</th>
<th>Versions</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIMATIC NET PC Software V15:</td>
<td>All versions</td>
<td>Currently no fix is planned. See recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC NET PC Software V16:</td>
<td>All versions &lt; V16 Update 1</td>
<td>Update to V16 Update 1 or later version. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC PCS 7 V8.1:</td>
<td>All versions</td>
<td>Currently no fix is planned. See recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC PCS 7 V8.2:</td>
<td>All versions</td>
<td>Update to V8.2 SP1; then update WinCC to V7.4 SP1. Update 14 or later version on the same system. To obtain SIMATIC PCS 7 V8.2 SP1 contact your local support. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC PCS 7 V9.0:</td>
<td>All versions &lt; V9.0 SP3</td>
<td>Update to V9.0 SP3 or later version. To obtain SIMATIC PCS 7 V9.0 SP3 contact your local support. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC Route Control V8.1:</td>
<td>All versions</td>
<td>Currently no fix is planned. See recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC Route Control V8.2:</td>
<td>All versions</td>
<td>See remediation for SIMATIC PCS 7 V8.2. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC Route Control V9.0:</td>
<td>All versions &lt; V9.0 Upd4</td>
<td>See remediation for SIMATIC PCS 7 V9.0. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC WinCC (TIA Portal) V13:</td>
<td>All versions &lt; V13 SP2</td>
<td>Update to V13 SP2 or later version. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC WinCC (TIA Portal) V14:</td>
<td>All versions &lt; V14 SP1 Update 10</td>
<td>Update to V14 SP1. Update 10 or later version. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
<tr>
<td>SIMATIC WinCC (TIA Portal) V15.1:</td>
<td>All versions &lt; V15.1 Update 5</td>
<td>Update to V15.1 Update 5 or later version. See further recommendations from section Workarounds and Mitigations.</td>
</tr>
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</table>
**SIMATIC WinCC (TIA Portal) V16:**
All versions < V16 Update 1
Update to V16 Update 1 or later version
See further recommendations from section Workarounds and Mitigations

**SIMATIC WinCC V7.3:**
All versions
Currently no fix is planned
See recommendations from section Workarounds and Mitigations

**SIMATIC WinCC V7.4:**
All versions < V7.4 SP1 Update 14
Update to V7.4 SP1 Update 14 or later version
See further recommendations from section Workarounds and Mitigations

**SIMATIC WinCC V7.5:**
All versions < V7.5 SP1 Update 1
Update to V7.5 SP1 Update 1 or later version
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:
- Use VPN for protecting network communication between cells

Product specific remediations or mitigations can be found in the section Affected Products and Solution. Please follow the General Security Recommendations.

### 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

SIMATIC NET PC software is a software product that is sold separately and implements the communications product from SIMATIC NET.

SIMATIC PCS 7 is a distributed control system (DCS) integrating SIMATIC WinCC, SIMATIC Batch, SIMATIC Route Control, OpenPCS7 and other components.

SIMATIC WinCC (TIA Portal) is an engineering software to configure and program SIMATIC Panels, SIMATIC Industrial PCs, and Standard PCs running WinCC Runtime Advanced or SCADA System WinCC Runtime Professional visualization software.

SIMATIC WinCC is a supervisory control and data acquisition (SCADA) system.
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-2019-19282

Through specially crafted messages, when encrypted communication is enabled, an attacker with network access could use the vulnerability to compromise the availability of the system by causing a Denial-of-Service condition. Successful exploitation requires no system privileges and no user interaction.

- CVSS v3.1 Base Score: 7.5
- CWE: CWE-131: Incorrect Calculation of Buffer Size

ACKNOWLEDGMENTS

Siemens thanks the following parties for their efforts:

- Nicholas Miles from Tenable for coordinated disclosure

ADDITIONAL INFORMATION

The vulnerability is part of a shared component, used by various Siemens products (SIMATIC Communication Services - SCS). The installation of a fix version of any product also removes the vulnerability for other products on the same system, even if those products were not updated.

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 (2020-02-11): Publication Date
V1.1 (2020-03-10): Added solution for SIMATIC NET PC Software
V1.2 (2020-04-14): Added solution for SIMATIC WinCC (TIA Portal) V16
V1.3 (2020-05-12): Added solution for SIMATIC WinCC V7.4
V1.4 (2020-07-14): Added solution for SIMATIC PCS 7 V9.0
V1.5 (2020-09-08): Added solution for SIMATIC WinCC (TIA Portal) V15.1
V1.6 (2021-01-12): Added solution for SIMATIC WinCC (TIA Portal) V14
V1.7 (2022-04-12): Added solution for SIMATIC PCS 7 V8.2 and related components; added solution for SIMATIC NET PC Software V14 and clarified affected versions; added a note regarding shared components
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