SSA-472454: Command Injection Vulnerability in CPCI85 Firmware of SICAM A8000 Devices

Publication Date: 2023-04-11
Last Update: 2023-04-11
Current Version: V1.0
CVSS v3.1 Base Score: 9.8

SUMMARY

The CPCI85 firmware of SICAM A8000 CP-8031 and CP-8050 is affected by unauthenticated command injection vulnerability. This could allow an attacker to perfom remote code execution.

Siemens has released updates for the affected products and recommends to update to the latest versions.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
CP-8031 MASTER MODULE (6MF2803-1AA00): All versions < CPCI85 V05	Update to CPCI85 V05 or later version https://support.industry.siemens.com/cs/ww/en/view/109804985/ See recommendations from section Workarounds and Mitigations
CP-8050 MASTER MODULE (6MF2805-0AA00): All versions < CPCI85 V05	Update to CPCI85 V05 or later version https://support.industry.siemens.com/cs/ww/en/view/109804985/ See 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:

- Limit access to the web server on port 80/TCP and 443/TCP with an external firewall.

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

GENERAL SECURITY RECOMMENDATIONS

Operators of critical power systems (e.g. TSOs or DSOs) worldwide are usually required by regulations to build resilience into the power grids by applying multi-level redundant secondary protection schemes. It is therefore recommended that the operators check whether appropriate resilient protection measures are in place. The risk of cyber incidents impacting the grid's reliability can thus be minimized by virtue of the grid design. Siemens strongly recommends applying the provided security updates using the corresponding tooling and documented procedures made available with the product. If supported by the product, an automated means to apply the security updates across multiple product instances may be used. Siemens strongly recommends prior validation of any security update before being applied, and supervision by trained staff of the update process in the target environment. As a general security measure Siemens strongly recommends to protect network access with appropriate mechanisms (e.g. firewalls, segmentation, VPN). It is advised to configure the environment according to our operational guidelines in order to run the devices in a protected IT environment.

Recommended security guidelines can be found at: https://www.siemens.com/gridsecurity

PRODUCT DESCRIPTION

The SICAM A8000 RTUs (Remote Terminal Units) series is a modular device range for telecontrol and automation applications in all areas of energy supply.

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-2023-28489

Affected devices are vulnerable to command injection via the web server port 443/tcp, if the parameter "Remote Operation" is enabled. The parameter is disabled by default. The vulnerability could allow an unauthenticated remote attacker to perform arbitrary code execution on the device.

CVSS v3.1 Base Score	9.8
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-77: Improper Neutralization of Special Elements used in a Command ('Command Injection')

ACKNOWLEDGMENTS

Siemens thanks the following party for its efforts:

- Steffen Robertz, Gerhard Hechenberger, Stefan Viehböck, Christian Hager, and Gorazd Jank from SEC Consult Vulnerability Lab for reporting the vulnerability on behalf of Netz Niederösterreich GmbH, EVN Gruppe

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 (2023-04-11):   Publication Date

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