

SSA-163251: Multiple Vulnerabilities in SINEC NMS

Publication Date: 2021-10-12
Last Update: 2021-10-12
Current Version: V1.0
CVSS v3.1 Base Score: 8.8

SUMMARY

The latest update for SINEC NMS fixes multiple vulnerabilities. The most severe could allow an authenticated remote attacker to execute arbitrary code on the system, with system privileges, under certain conditions.

Siemens has released an update for SINEC NMS and recommends to update to the latest version.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
SINEC NMS: All versions < V1.0 SP2 Update 1	Update to V1.0 SP2 Update 1 or later version https://support.industry.siemens.com/cs/ww/en/view/109802731/

WORKAROUNDS AND MITIGATIONS

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

- Restrict access to the affected systems, especially to port 443/tcp, to trusted IP addresses only

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

SINEC NMS is a new generation of the Network Management System (NMS) for the Digital Enterprise. This system can be used to centrally monitor, manage, and configure networks.

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-2021-33722

The affected system has a Path Traversal vulnerability when exporting a firmware container. With this a privileged authenticated attacker could create arbitrary files on an affected system.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-22: Improper Limitation of a Pathname to a Restricted Directory ('Path Traversal')

Vulnerability CVE-2021-33723

An authenticated attacker could change the user profile of any user without proper authorization. With this, the attacker could change the password of any user in the affected system.

CVSS v3.1 Base Score	8.8
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-285: Improper Authorization

Vulnerability CVE-2021-33724

The affected system contains an Arbitrary File Deletion vulnerability that possibly allows to delete an arbitrary file or directory under a user controlled path.

CVSS v3.1 Base Score	6.5
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:N/I:N/A:H/E:P/RL:O/RC:C
CWE	CWE-22: Improper Limitation of a Pathname to a Restricted Directory ('Path Traversal')

Vulnerability CVE-2021-33725

The affected system allows to delete arbitrary files or directories under a user controlled path and does not correctly check if the relative path is still within the intended target directory.

CVSS v3.1 Base Score	4.9
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:N/I:N/A:H/E:P/RL:O/RC:C
CWE	CWE-22: Improper Limitation of a Pathname to a Restricted Directory ('Path Traversal')

Vulnerability CVE-2021-33726

The affected system allows to download arbitrary files under a user controlled path and does not correctly check if the relative path is still within the intended target directory.

CVSS v3.1 Base Score	6.5
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:H/I:N/A:N/E:P/RL:O/RC:C
CWE	CWE-22: Improper Limitation of a Pathname to a Restricted Directory ('Path Traversal')

Vulnerability CVE-2021-33727

An authenticated attacker could download the user profile of any user. With this, the attacker could leak confidential information of any user in the affected system.

CVSS v3.1 Base Score	6.5
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:H/I:N/A:N/E:P/RL:O/RC:C
CWE	CWE-200: Exposure of Sensitive Information to an Unauthorized Actor

Vulnerability CVE-2021-33728

The affected system allows to upload JSON objects that are deserialized to JAVA objects. Due to insecure deserialization of user-supplied content by the affected software, a privileged attacker could exploit this vulnerability by sending a crafted serialized Java object.

An exploit could allow the attacker to execute arbitrary code on the device with root privileges.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-502: Deserialization of Untrusted Data

Vulnerability CVE-2021-33729

An authenticated attacker that is able to import firmware containers to an affected system could execute arbitrary commands in the local database.

CVSS v3.1 Base Score	8.8
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33730

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33731

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33732

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33733

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33734

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33735

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

Vulnerability CVE-2021-33736

A privileged authenticated attacker could execute arbitrary commands in the local database by sending crafted requests to the webserver of the affected application.

CVSS v3.1 Base Score	7.2
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-89: Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

ACKNOWLEDGMENTS

Siemens thanks the following parties for their efforts:

- Noam Moshe from Clarity 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 (2021-10-12): Publication Date

TERMS OF USE

Siemens Security Advisories are subject to the terms and conditions contained in Siemens' underlying license terms or other applicable agreements previously agreed to with Siemens (hereinafter "License Terms"). To the extent applicable to information, software or documentation made available in or through a Siemens Security Advisory, the Terms of Use of Siemens' Global Website (https://www.siemens.com/terms_of_use, hereinafter "Terms of Use"), in particular Sections 8-10 of the Terms of Use, shall apply additionally. In case of conflicts, the License Terms shall prevail over the Terms of Use.