

SSA-161331: Scene File Parsing Vulnerability in Simcenter STAR-CCM+ Viewer before V2021.3.1

Publication Date: 2021-12-14
Last Update: 2021-12-14
Current Version: V1.0
CVSS v3.1 Base Score: 7.8

SUMMARY

Siemens Simcenter STAR-CCM+ Viewer is affected by a vulnerability that could be triggered when the application reads scene (.sce) files. If a user is tricked to open a malicious file with the affected application, this could lead to a crash, and potentially also to arbitrary code execution or data extraction on the target host system.

Siemens has released an update for Simcenter STAR-CCM+ Viewer and recommends to update to the latest version to fix the vulnerability. Siemens recommends to avoid opening of untrusted files from unknown sources.

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
Simcenter STAR-CCM+ Viewer: All versions < 2021.3.1	Update to 2021.3.1 or later version https://community.sw.siemens.com/s/article/Simcenter-STAR-CCM-Viewer-Download 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:

- Do not open untrusted scene files from unknown sources

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

Simcenter STAR-CCM+ is a multiphysics computational fluid dynamics (CFD) software for the simulation of products operating under real-world conditions.

Simcenter STAR-CCM+ Viewer is a light-weight, license-free standalone scene and plot viewer for Simcenter STAR-CCM+.

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-2021-42024

The starview+.exe application lacks proper validation of user-supplied data when parsing scene files. This could result in an out of bounds write past the end of an allocated structure.

An attacker could leverage this vulnerability to execute code in the context of the current process.

CVSS v3.1 Base Score	7.8
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:H/I:H/A:H/E:P/RL:O/RC:C
CWE	CWE-787: Out-of-bounds Write

ACKNOWLEDGMENTS

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- Jin Huang from ADLab of Venustech for reporting the vulnerability

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 (2021-12-14): Publication Date

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