

SSA-588101: Multiple File Parsing Vulnerabilities in Parasolid

Publication Date: 2022-12-13
Last Update: 2022-12-13
Current Version: V1.0
CVSS v3.1 Base Score: 7.8

SUMMARY

Parasolid is affected by out of bounds read/write vulnerabilities that could be triggered when the application reads files in X_B format. If a user is tricked to open a malicious file with the affected applications, an attacker could leverage the vulnerability to perform remote code execution in the context of the current process.

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
Parasolid V33.1: All versions < V33.1.264	Update to V33.1.264 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Parasolid V34.0: All versions < V34.0.252	Update to V34.0.252 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Parasolid V34.1: All versions < V34.1.242	Update to V34.1.242 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Parasolid V35.0: All versions < V35.0.170	Update to V35.0.170 or later version https://support.sw.siemens.com/ 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 X_B files in Parasolid

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

Parasolid is a 3D geometric modeling tool that supports various techniques, including solid modeling, direct editing, and free-form surface/sheet modeling.

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-2022-46345

The affected applications contain an out of bounds write past the end of an allocated structure while parsing specially crafted X_B files. This could allow an attacker to execute code in the context of the current process. (ZDI-CAN-19070)

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

Vulnerability CVE-2022-46346

The affected applications contain an out of bounds write past the end of an allocated structure while parsing specially crafted X_B files. This could allow an attacker to execute code in the context of the current process. (ZDI-CAN-19071)

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

Vulnerability CVE-2022-46347

The affected applications contain an out of bounds write past the end of an allocated structure while parsing specially crafted X_B files. This could allow an attacker to execute code in the context of the current process. (ZDI-CAN-19079)

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

Vulnerability CVE-2022-46348

The affected applications contain an out of bounds write past the end of an allocated structure while parsing specially crafted X_B files. This could allow an attacker to execute code in the context of the current process. (ZDI-CAN-19383)

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

Vulnerability CVE-2022-46349

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted X_B files. This could allow an attacker to execute code in the context of the current process. (ZDI-CAN-19384)

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-125: Out-of-bounds Read

ACKNOWLEDGMENTS

Siemens thanks the following party for its efforts:

- Trend Micro Zero Day Initiative 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 (2022-12-13): Publication Date

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