SSA-794653: Multiple File Parsing Vulnerabilities in Teamcenter Visualization and JT2Go

Publication Date: 2024-01-09
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Current Version: V1.0
CVSS v3.1 Base Score: 7.8

SUMMARY

Siemens Teamcenter Visualization and JT2Go are affected by multiple file parsing vulnerabilities that could be triggered when the application reads malicious CGM files. If a user is tricked to open a malicious CGM file with the affected products, this could lead the application to crash or potentially lead to arbitrary code execution.

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

AFFECTED PRODUCTS AND SOLUTION

Affected Product and Versions	Remediation
JT2Go: All versions < V14.3.0.6	Update to V14.3.0.6 or later version https://www.plm.automation.siemens.com/global/en/products/plm-components/jt2go.html See further recommendations from section Workarounds and Mitigations
Teamcenter Visualization V13.3: All versions < V13.3.0.13	Update to V13.3.0.13 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Teamcenter Visualization V14.1: All versions < V14.1.0.12	Update to V14.1.0.12 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Teamcenter Visualization V14.2: All versions < V14.2.0.9	Update to V14.2.0.9 or later version https://support.sw.siemens.com/ See further recommendations from section Workarounds and Mitigations
Teamcenter Visualization V14.3: All versions < V14.3.0.6	Update to V14.3.0.6 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 CGM files in JT2Go and Teamcenter Visualization

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

JT2Go is a 3D JT viewing tool to allow users to view JT, PDF, Solid Edge, PLM XML with available JT, VFZ, CGM, and TIF data.

Teamcenter Visualization software enables enterprises to enhance their product lifecycle management (PLM) environment with a comprehensive family of visualization solutions. The software enables enterprise users to access documents, 2D drawings and 3D models in a single environment.

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-2023-51439

The affected applications contain an out of bounds read past the end of an allocated structure while parsing specially crafted CGM files. This could allow an attacker 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-125: Out-of-bounds Read

Vulnerability CVE-2023-51744

The affected applications contain a null pointer dereference vulnerability while parsing specially crafted CGM files. An attacker could leverage this vulnerability to crash the application causing denial of service condition.

CVSS v3.1 Base Score	3.3
CVSS Vector	CVSS:3.1/AV:L/AC:L/PR:N/UI:R/S:U/C:N/I:N/A:L/E:P/RL:O/RC:C
CWE	CWE-476: NULL Pointer Dereference

Vulnerability CVE-2023-51745

The affected applications contain a stack overflow vulnerability while parsing specially crafted CGM files. This could allow an attacker 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-121: Stack-based Buffer Overflow

Vulnerability CVE-2023-51746

The affected applications contain a stack overflow vulnerability while parsing specially crafted CGM files. This could allow an attacker 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-121: Stack-based Buffer Overflow

ACKNOWLEDGMENTS

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- Michael Heinzl for coordinated disclosure of CVE-2023-51439
- Nafiez from Logix Advisor for reporting the vulnerability CVE-2023-51744
- MoyunSec for reporting the vulnerabilities CVE-2023-51744, CVE-2023-51745 and CVE-2023-51746

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 (2024-01-09):   Publication Date

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