

Security Bulletin

NVIDIA CUDA Toolkit vulnerabilities

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|--------------------|---|---|
| Author(s) | : | Eviden PSIRT |
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| Status | : | Neutralization |
| TLP Classification | : | CLEAR |
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List of changes

| Version | Date | Description |
|---------|------------|---|
| 0.1 | 2025/03/20 | Initial Eviden Version |
| 0.2 | 2025/09/04 | Added CVE-2025-23247, TLP changed for CLEAR |

Executive summary

NVIDIA CUDA toolkit for Linux and Windows contains a vulnerability in the cuobjdump binary, where a user could cause a crash by passing a malformed ELF file to cuobjdump. A successful exploit of this vulnerability might lead to a partial denial of service.

Vulnerability Info

| CVE No. | CVSS Score | Type of Vulnerability |
|--------------------------------|------------|-----------------------|
| CVE-2024-53870 | 3.3 | Denial of service |
| CVE-2024-53871 | 3.3 | Denial of service |
| CVE-2024-53872 | 3.3 | Denial of service |
| CVE-2024-53873 | 3.3 | Denial of service |
| CVE-2024-53874 | 3.3 | Denial of service |
| CVE-2024-53875 | 3.3 | Denial of service |
| CVE-2024-53876 | 3.3 | Denial of service |
| CVE-2024-53877 | 3.3 | Denial of service |
| CVE-2024-53878 | 2.8 | Denial of service |
| CVE-2024-53879 | 2.8 | Denial of service |
| CVE-2025-23247 | 4.4 | Code execution |

Eviden is investigating the exact nature of these vulnerabilities to provide validated remediation.

Affected components

| Components | Fixed version | Status | Comments |
|---------------------|---------------|--------|----------|
| NVIDIA Cuda toolkit | 12.9 | Fixed | |

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TBD (to be defined) indicates that a new version fixing the vulnerabilities is under study.

Unpatched means that the vulnerability is presumably present, but there is no plan to provide a fix. This can be investigated on demand.

List of HPC Management products

| Products | Fixed version | Status | Comments |
|----------|---------------|--------|----------|
| OpenMPI4 | 418.2 | Fixed | |
| OpenMPI5 | 508.1 | Fixed | |

Recommendations

Eviden recommends applying its Technical States upgrade on its servers as soon as they are made available.

Available Vendor Patches

No validated patch is available at the time. Eviden is working with its suppliers to distribute updates as soon as possible.

Available Workarounds

No workaround is available.

Available Mitigations

No mitigation identified.

Available Exploits/PoC

Eviden is not aware of any exploitation of the reported vulnerabilities.

References

1. https://nvidia.custhelp.com/app/answers/detail/a_id/5594

Glossary of terms

| Term | Description |
|----------------|--|
| Mitigation | Refers to a setting, common configuration, or general best-practice, existing in a default state that could reduce the severity of exploitation of a vulnerability |
| Neutralization | The neutralization phase is the decision-making process during which the risk posed by an incident is evaluated. |
| PoC | Proof of Concept |
| Remediation | The remediation phase ends with the delivering of a qualified solution/update fixing the vulnerability without regression. |
| TI | Threat Intelligence |
| TLP | Traffic Light Protocol (TLP) FIRST Standards Definitions and Usage Guidance — Version 2.0. https://www.first.org/tlp/ |
| Workaround | Refers to a setting or configuration change that does not correct the underlying vulnerability but would help block known attack vectors before you apply the update |

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- Privately disclosed Remediation security bulletins are numbered 1.x
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