

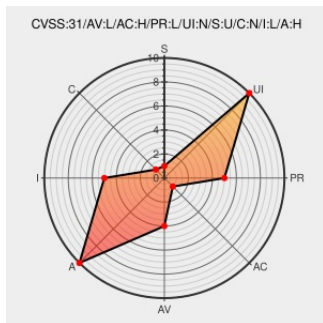


CVE-2021-29609

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CVE-2021-29609 - advisory for GHSA-cjc7-49v2-jp64

[Source: Mitre](#)[Source: NIST](#)[CVE.ORG](#)[Print: PDF](#) 

Certain versions of [Tensorflow](#) from [Google](#) contain the following vulnerability:

TensorFlow is an end-to-end open source platform for machine learning. Incomplete validation in `SparseAdd` results in allowing attackers to exploit undefined behavior (dereferencing null pointers) as well as write outside of bounds of heap allocated data. The

implementation(<https://github.com/tensorflow/tensorflow/blob/656e7673b14acd7835dc778867f>) has a large set of validation for the two sparse tensor inputs (6 tensors in total), but does not validate that the tensors are not empty or that the second dimension of `\*\_indices` matches the size of corresponding `\*\_shape`. This allows attackers to send tensor triples that represent invalid sparse tensors to abuse code assumptions that are not protected by validation. The fix will be included in TensorFlow 2.5.0. We will also cherrypick this commit on TensorFlow 2.4.2, TensorFlow 2.3.3, TensorFlow 2.2.3 and TensorFlow 2.1.4, as these are also affected and still in supported range.

CVE-2021-29609 has been assigned by security-advisories@github.com to track the vulnerability - currently rated as **HIGH** severity.

Affected Vendor/Software: tensorflow - tensorflow version < 2.1.4

Affected Vendor/Software: tensorflow - tensorflow version >= 2.2.0, < 2.2.3

Affected Vendor/Software: tensorflow - tensorflow version >= 2.3.0, < 2.3.3

Affected Vendor/Software: tensorflow - tensorflow version >= 2.4.0, < 2.4.2

CVSS3 Score: **7.8 - HIGH**

Attack Vector	Attack Complexity	Privileges Required	User Interaction
LOCAL	LOW	LOW	NONE
Scope	Confidentiality Impact	Integrity Impact	Availability Impact

UNCHANGED

HIGH

HIGH

HIGH

CVSS2 Score: 4.6 - MEDIUM

Access Vector	Access Complexity	Authentication
LOCAL	LOW	NONE
Confidentiality Impact	Integrity Impact	Availability Impact
PARTIAL	PARTIAL	PARTIAL

CVE References

Description	Tags	Link
Validate that a and b are proper sparse tensors · tensorflow/tensorflow@41727ff · GitHub	github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/41727ff06111117bdf86b37db198217fd7a143cc
Incomplete validation in `SparseAdd` · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	 CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-cjc7-49v2-jp64
Fix `tf.raw_ops.SparseAdd` invalid memory access failure. · tensorflow/tensorflow@6fd02f4 · GitHub	github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/6fd02f44810754ae7481838b6a67c5df7f909ca3

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Related QID Numbers

982417 Python (pip) Security Update for tensorflow-gpu (GHSA-cjc7-49v2-jp64)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
cpe:2.3:a:google:tensorflow:*****:						

No vendor comments have been submitted for this CVE

Social Mentions

Source	Title	Posted (UTC)
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