CVE-2021-29523

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CVE-2021-29523 - advisory for GHSA-2cpx-427x-q2c6

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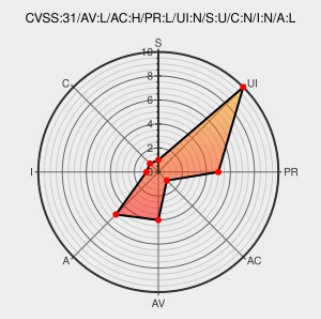

Certain versions of Tensorflow from Google contain the following vulnerability:

TensorFlow is an end-to-end open source platform for machine learning. An attacker can trigger a denial of service via a `CHECK`-fail in `tf.raw_ops.AddManySparseToTensorsMap`. This is because the implementation(https://github.com/tensorflow/tensorflow/blob/6f9896890c4c703ae0a08453940 takes the values specified in `sparse_shape` as dimensions for the output shape. The `TensorShape` constructor(https://github.com/tensorflow/tensorflow/blob/6f9896890c4c703ae0a0845394086e2 L188) uses a `CHECK` operation which triggers when `InitDims`(https://github.com/tensorflow/tensorflow/blob/6f9896890c4c703ae0a0845394086e2e L296) returns a non-OK status. This is a legacy implementation of the constructor and operations should use `BuildTensorShapeBase` or `AddDimWithStatus` to prevent `CHECK`-failures in the presence of overflows. 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-2021-29523 has been assigned by security-advisories@github.com to track the vulnerability - currently rated as MEDIUM 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: 5.5 - MEDIUM

Attack Vector	Attack Complexity	Privileges Required	User Interaction

LOCAL	LOW	LOW	NONE
Scope	**Confidentiality Impact**	**Integrity Impact**	**Availability Impact**
UNCHANGED	NONE	NONE	HIGH

CVSS2 Score: 2.1 - LOW

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

CVE References

Description	Tags	Link
Fix overflow CHECK issue with `tf.raw_ops.AddManySparseToTensorsMap`. · tensorflow/tensorflow@69c68ec · GitHub	github.com text/html	MISC github.com/tensorflow/tensorflow/commit/69c68ecbb24dff3fa0e46da0d16c821a2
`CHECK`-fail in `AddManySparseToTensorsMap` · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-2cpx-q2c6

Related QID Numbers

982523 Python (pip) Security Update for tensorflow-gpu (GHSA-2cpx-427x-q2c6)

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)
@CVEreport	CVE-2021-29523 : TensorFlow is an end-to-end open source platform for machine learning. An attacker can trigger a d… twitter.com/i/web/status/1…	2021-05-14 20:13:16
/r/netcve	CVE-2021-29523	2021-05-14 20:41:16

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