



CVE-2021-29589

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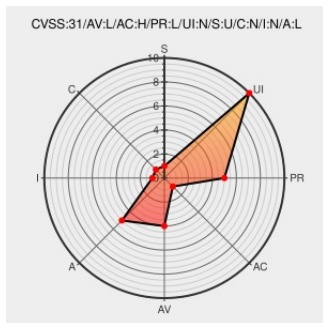
CVE-2021-29589 - advisory for GHSA-3w67-q784-6w7c

Source: Mitre

Source: NIST

CVE.ORG

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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. The reference implementation of the `GatherNd` TFLite operator is vulnerable to a division by zero

[error\(https://github.com/tensorflow/tensorflow/blob/0d45ea1ca641b21b73bcf9c00e0179cda284](https://github.com/tensorflow/tensorflow/blob/0d45ea1ca641b21b73bcf9c00e0179cda284)
An attacker can craft a model such that `params` input would be an empty tensor. In turn, `params\_shape.Dims(.)` would be zero, in at least one dimension. The fix will be included in TensorFlow 2.5.0. We will also cherry-pick 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-2021-29589 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
Division by zero in TFLite's implementation of `GatherNd` · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	 CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-3w67-q784-6w7c
Handle one more division by 0 in TFLite. · tensorflow/tensorflow@8e45822 · GitHub	github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/8e45822aa0b9f5df4b4c64f221e64dc930a70a9d

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Related QID Numbers

982464 Python (pip) Security Update for tensorflow (GHSA-3w67-q784-6w7c)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	All	All	All	All

```
cpe:2.3:a:google:tensorflow:*:*:*:*:*:*:
```

cpe:2.3:a:google:tensorflow:*:*:*:*:*:*:

```
cpe:2.3:a:google:tensorflow:*:*:*:*:*:*.*
```

```
cpe:2.3:a:google:tensorflow:*:*:*:*:*:*:
```

```
cpe:2.3:a:google:tensorflow:*:*:*:*:*:*:
```

No vendor comments have been submitted for this CVE

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