

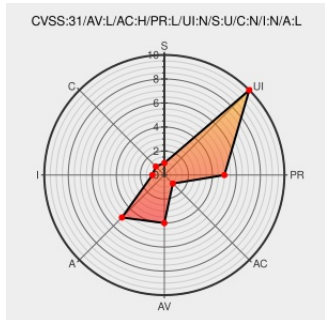


CVE-2021-29514

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CVE-2021-29514 - advisory for GHSA-8h46-5m9h-7553

[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. If the `splits` argument of `RaggedBincount` does not specify a valid

`SparseTensor` (https://www.tensorflow.org/api_docs/python/tf/sparse/SparseTensor), then an attacker can trigger a heap buffer overflow. This will cause a read from outside the bounds of the `splits` tensor buffer in the implementation of the `RaggedBincount` op (<https://github.com/tensorflow/tensorflow/blob/8b677d79167799f71c42fd3fa074476e029541c4/L446>). Before the `for` loop, `batch\_idx` is set to 0. The attacker sets `splits(0)` to be 7, hence the `while` loop does not execute and `batch\_idx` remains 0. This then results in writing to `out(-1, bin)`, which is before the heap allocated buffer for the output tensor. The fix will be included in TensorFlow 2.5.0. We will also cherry-pick this commit on TensorFlow 2.4.2 and TensorFlow 2.3.3, as these are also affected.

CVE-2021-29514 has been assigned by [security-advisories@github.com](#) to track the vulnerability - currently rated as **HIGH** severity.

Affected Vendor/Software: [tensorflow](#) - tensorflow version < 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
Heap out of bounds write in `RaggedBinCount` · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	 CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-8h46-5m9h-7553
Fix an invalid address vulnerability in `tf.raw_ops.RaggedBincount`. · tensorflow/tensorflow@eebb96c · GitHub	github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/eebb96c2830d48597d055d247c0e9aebaea94cd5

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Related QID Numbers

982532 Python (pip) Security Update for tensorflow-gpu (GHSA-8h46-5m9h-7553)

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
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:*.*.*.*.*.*.*.*
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

Social Mentions

Source	Title	Posted (UTC)
 @CVEreport	CVE-2021-29514 : TensorFlow is an end-to-end open source platform for machine learning. If the `splits` argument of... twitter.com/i/web/status/1...	2021-05-14 20:11:00
 /r/netcve	CVE-2021-29514	2021-05-14 20:41:13

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