

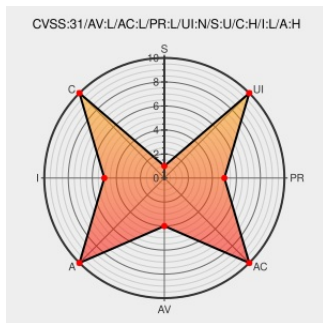


CVE-2021-37641

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CVE-2021-37641 - advisory for GHSA-9c8h-vvrj-w2p8

[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. In affected versions if the arguments to ``tf.raw_ops.RaggedGather`` don't determine a valid ragged tensor code can trigger a read from outside of bounds of heap allocated buffers. The [implementation]

(<https://github.com/tensorflow/tensorflow/blob/8d72537c6abf5a44103b57b9c2e22c14f5f49698/>) directly reads the first dimension of a tensor shape before checking that said tensor has rank of at least 1 (i.e., it is not a scalar). Furthermore, the implementation does not check that the list given by ``params_nested_splits`` is not an empty list of tensors. We have patched the issue in GitHub commit [a2b743f6017d7b97af1fe49087ae15f0ac634373](#). The fix will be included in TensorFlow 2.6.0. We will also cherrypick this commit on TensorFlow 2.5.1, TensorFlow 2.4.3, and TensorFlow 2.3.4, as these are also affected and still in supported range.

CVE-2021-37641 has been assigned by [security-advisories@github.com](#) to track the vulnerability - currently rated as **HIGH** severity.

Affected Vendor/Software: **tensorflow** - **tensorflow** version `>= 2.5.0, < 2.5.1`

Affected Vendor/Software: **tensorflow** - **tensorflow** version `>= 2.4.0, < 2.4.3`

Affected Vendor/Software: **tensorflow** - **tensorflow** version `< 2.3.4`

CVSS3 Score: **7.1 - HIGH**

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

CVSS2 Score: 3.6 - LOW

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

CVE References

Description	Tags	Link
Fix heap OOB in `tf.raw_ops.RaggedGather` · tensorflow/tensorflow@a2b743f · GitHub	github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/a2b743f6017d7b97af1fe49087ae15f0ac634373
Heap OOB in `RaggedGather` · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	 CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-9c8h-vvrj-w2p8

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Related QID Numbers

981510 Python (pip) Security Update for tensorflow-gpu (GHSA-9c8h-vvrj-w2p8)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	2.5.0	All	All	All
Application	Google	Tensorflow	2.6.0	rc0	All	All
Application	Google	Tensorflow	2.6.0	rc1	All	All
Application	Google	Tensorflow	2.6.0	rc2	All	All

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

```
cpe:2.3:a:google:tensorflow:2.5.0:*:*:*:*:*:*
```

```
cpe:2.3:a:google:tensorflow:2.6.0:rc0:*:*:*:*:*:
```

```
cpe:2.3:a:google:tensorflow:2.6.0:rc1:::*:*:*:*:
```

```
cpe:2.3:a:google:tensorflow:2.6.0:rc2:*:*:*:*:*:
```

No vendor comments have been submitted for this CVE

Social Mentions		
Source	Title	Posted (UTC)
🐦 @CVEreport	CVE-2021-37641 : TensorFlow is an end-to-end open source platform for machine learning. In affected versions if the... twitter.com/i/web/status/1...	2021-08-12 20:36:19
🐦 @LinInfoSec	Tensorflow - CVE-2021-37641: github.com/tensorflow/ten...	2021-08-12 22:40:40

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