CIRCL
Computer Incident
Response Center
Luxembourg

GCVE.eu

Beyond CVEs: Mastering the Landscape with Vulnerability-Lookup

from CVE to CVD

🏠 https://www.vulnerability-lookup.org

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January 17, 2026

CIRCL https://www.circl.lu ☯

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Origin of the project

Who is behind Vulnerability-Lookup?

Vulnerability-Lookup[1] is an Open Source project led by **CIRCL**.

It is co-funded by **CIRCL** and the **European Union**[2].

Used by many organisations including CSIRTs and ENISA (EUVD).

A reference implementation to **GCVE** standards.

vulnerability
-lookup

[1] https://www.vulnerability-lookup.org

[2] https://github.com/ngsoti

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Origin

- `cve-search`[3] is an open-source tool initially developed in late 2012, focusing on maintaining a **local** CVE database.
- `cve-search` is widely used as an **internal** tool.
- The design and scalability of cve-search are limited. Our operational public instance at https://cve.circl.lu has reached a hard limit of 20,000 queries per second.
- Vulnerability sources have **diversified**, and the **NVD CVE is no longer the sole source** of vulnerability information.

[3] `https://github.com/cve-search/cve-search`

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Initial Challenges

- **Volume of data:** Handling a substantial dataset and heavy network traffic, currently over 1,360,500 security advisories and more than 90,000 sightings[4].
- **Flexibility:** Balancing ongoing development with legacy issues while designing a future-proof architecture. It's complex and yes, sometimes chaotic[5].
- **Robustness:** Validating data even when external entities don't comply with their own JSON schemas. It's not always pretty.
- **Fast lookup:** Rapidly correlating identifiers across **diverse sources**, including unpublished advisories.

[4] The first sighting on Exploit-DB dates back 26 years.

[5] We enjoy challenges, especially when they lead to practical solutions.

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Ongoing Challenges and Development

- **CPE fragmentation:**[6] Tackling the fragmentation of CPEs (e.g., `cpe:/a:oracle:java` vs. `cpe:/a:sun:java`) by introducing *Organizations* as unified containers.
- **CVD process:** Building an open-source tool that fully supports the Coordinated Vulnerability Disclosure (CVD) process.[7]
- **Vulnerability numbering:** Enabling a new distributed approach through the Global CVE Allocation System.[8]
- **Scoring vulnerabilities:** Aggregating a large volume of observations from diverse advisory types to improve vulnerability scoring.

[6] Well, another mess to clean up!

[7] Aligned with NIS 2 and the Cyber Resilience Act.

[8] https://gcve.eu

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Current Sources in Vulnerability-Lookup

- **CISA Known Exploited Vulnerability** (HTTP)
- **NIST NVD CVE** (API 2.0)
- **CVEProject - cvelist** (Git submodule)
- **Fraunhofer FKIE** (Git submodule)
- **Cloud Security Alliance - GSD** (Git submodule)
- **GitHub Advisory DB** (Git submodule)
- **PySec Advisory DB** (Git submodule)
- **CSAF 2.0** (HTTP CSAF)

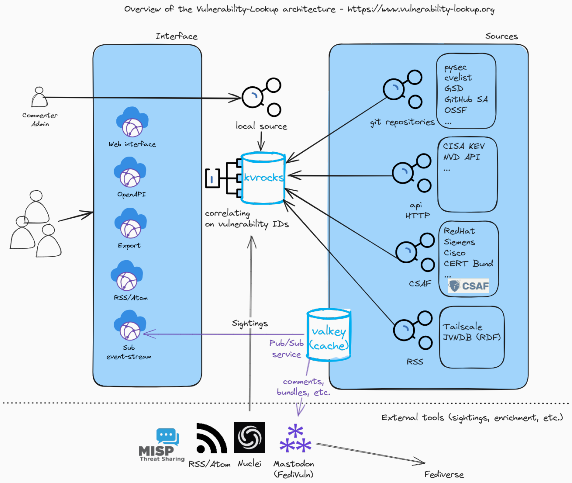
  CERT-Bund, Cisco, Siemens, Red Hat, Microsoft, NCSC-NL, CISA, etc.
- **VARIoT** (API)
- **Japan - JVN DB** (HTTP)
- **Tailscale** (RSS)
- **GCVE.eu all GNA sources**
- **CWE, CAPEC, MITRE EMB3D or KEV**
- **Growing...**

Open Data Initiative: Regular JSON dumps published[9].

[9] https://vulnerability.circl.lu/dumps/

Design and Implementation

Vulnerability-Lookup High-Level Architecture



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Extended API

```
$ curl -s https://vulnerability.circl.lu/api/vulnerability/last/csaf_redhat/10 | jq .[2].document.title
"Red Hat Security Advisory: Red Hat Ceph Storage 6.1 security and bug fix update"

$ curl -s https://vulnerability.circl.lu/api/vulnerability/last/csaf_redhat/10 | jq .[2].vulnerabilities[0].cve
"CVE-2021-4231"
```

- **Documented API** (OpenAPI): https://vulnerability.circl.lu/api
- Pagination and filtering by source
- CPE search by vendor and product name
- **Many endpoints available via RSS and Atom**[10]

[10] https://www.vulnerability-lookup.org/documentation/feeds.html

Empowering the Community

Crowd-Sourced Threat Intelligence

- **Bundles:** Group similar vulnerabilities and aggregate sightings for easier tracking.
- **Comments:** Additional context such as PoCs, remediations, related insights.
- **Tags:** Use the MISP Vulnerability Taxonomy to annotate comments[11]. Example:

```
vulnerability:information=remediation
```

- **Sightings:** Report real-world observations of vulnerabilities, including metadata like timestamps and sources.

```
{
  "uuid": "f9ec8b2c-2ceb-4c05-b052-264b51c6a3ee", "vulnerability_lookup_origin": "1a89b78e-f703-45f3-bb86-59eb712668bd",
  "author": "9f56dd64-161d-43a6-b9c3-555944290a09", "creation_timestamp": "2025-04-17T19:14:32.000000Z",
  "vulnerability": "CVE-2025-32433",
  "type": "exploited",
  "source": "https://gist.github.com/numanturle/b7333fb02a4ee3618995babc9b62c507"
}
```

[11] https://www.misp-project.org/taxonomies.html#_vulnerability_3

Types of Sightings

Type	Description	Negative/Opposite
`seen`	The vulnerability was mentioned, discussed, or observed by the user.	-
`confirmed`	The vulnerability has been verified by an analyst.	X
`exploited`	The vulnerability was actively exploited and observed by the user reporting the sighting.	X
`patched`	The vulnerability was successfully mitigated or patched by the user reporting the sighting.	X

Table 1: Types of vulnerability sightings

Automated Sightings: Tools and Sources

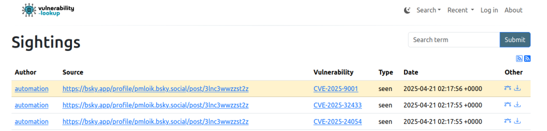
Automatically gathering crowd-sourced intelligence without requiring direct user contributions to our platform.

- **Social Platforms:** Fediverse, Bluesky
- **Threat Intelligence Tools:** MISP, Nuclei
- **Content Feeds:** RSS/Atom, curated web pages, GitHub Gist
- **Specialized Projects:** ShadowSight, ExploitDBSighting
- **Community Contributions:** Passive signals and indirect data enrichment

Scoring Vulnerabilities

Sightings Detection Rate and Types of Sightings

- A high rate of sightings (type *seen*) often correlates with high or critical severity vulnerabilities[12].
- Early sightings of type *exploited* (e.g., proof-of-concept code) or *confirmed* (e.g., detection templates for tools like Nuclei) can signal emerging threats.
- Sightings can sometimes be detected **before any official advisory is published**.



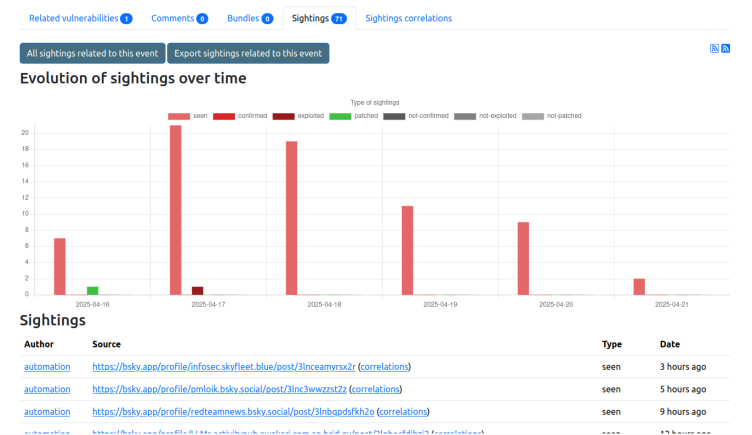
Sightings

Author	Source	Vulnerability	Type	Date	Other
automation	https://bsky.app/profile/pmloik.bsky.social/post/3lnc3wwzzst2z	CVE-2025-9001	seen	2025-04-21 02:17:56 +0000	
automation	https://bsky.app/profile/pmloik.bsky.social/post/3lnc3wwzzst2z	CVE-2025-32433	seen	2025-04-21 02:17:55 +0000	
automation	https://bsky.app/profile/pmloik.bsky.social/post/3lnc3wwzzst2z	CVE-2025-24054	seen	2025-04-21 02:17:55 +0000	

- Continuous exploitation patterns are frequently observed through sources like The Shadowserver Foundation or MISP.

[12] Don't underestimate the hype surrounding some vulnerabilities.

Early PoC (erlang / otp)



Related vulnerabilities 1
Comments 0
Bundles 0
Sightings 71
Sightings correlations
All sightings related to this event
Export sightings related to this event

Evolution of sightings over time

Sightings

Author	Source	Type	Date
automation	https://bsky.app/profile/infosec.skyfleet.blue/post/3lnceamyrsx2r (correlations)	seen	3 hours ago
automation	https://bsky.app/profile/pmloik.bsky.social/post/3lnc3wwzzst2z (correlations)	seen	5 hours ago
automation	https://bsky.app/profile/redteamnews.bsky.social/post/3lnbqpdsfkh2o (correlations)	seen	9 hours ago
automation	https://bsky.app/profile/LLMs.activitypub.awakari.com.ap.brid.gy/post/3lnbocfdihzi2 (correlations)	seen	12 hours ago

https://vulnerability.circl.lu/vuln/CVE-2025-32433#sightings

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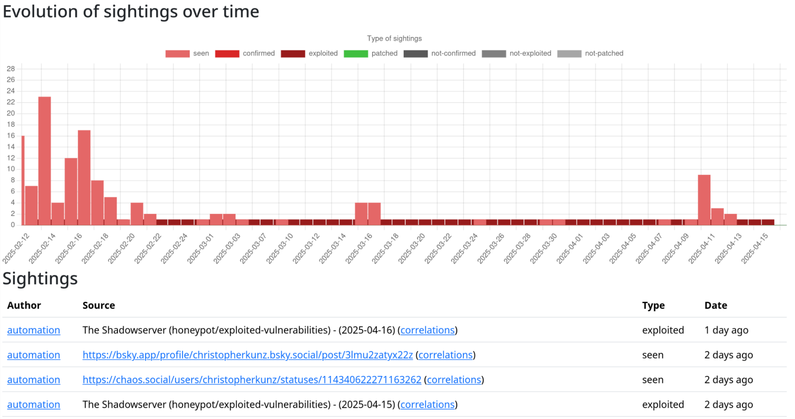
Continuous Exploitations (Palo Alto Networks / Cloud NGFW)



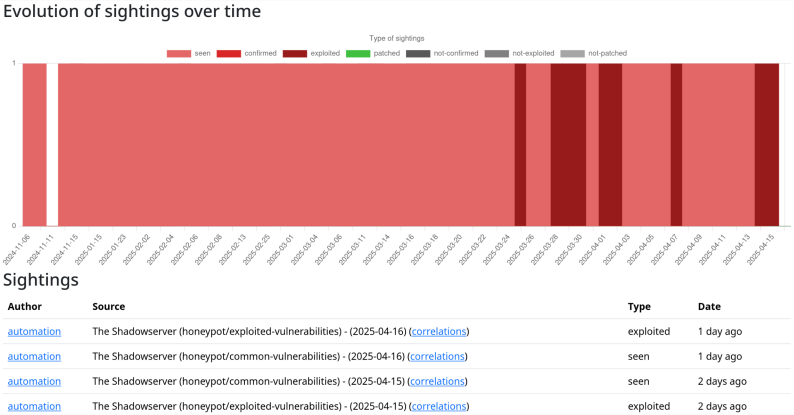
Evolution of sightings over time

Sightings

Author	Source	Type	Date
automation	The Shadowserver (honeypot/exploited-vulnerabilities) - (2025-04-16) (correlations)	exploited	1 day ago
automation	https://bsky.app/profile/christopherkunz.bsky.social/post/3lmu2zatyx22z (correlations)	seen	2 days ago
automation	https://chaos.social/users/christopherkunz/statuses/114340622271163262 (correlations)	seen	2 days ago
automation	The Shadowserver (honeypot/exploited-vulnerabilities) - (2025-04-15) (correlations)	exploited	2 days ago

https://vulnerability.circl.lu/vuln/CVE-2025-0108#sightings

Continuous Exploitations (D-Link / DNS-320)



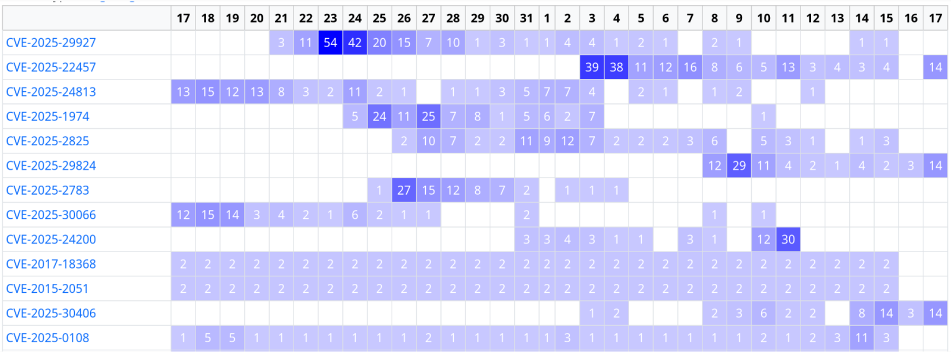
Evolution of sightings over time

Sightings

Author	Source	Type	Date
automation	The Shadowserver (honeypot/exploited-vulnerabilities) - (2025-04-16) (correlations)	exploited	1 day ago
automation	The Shadowserver (honeypot/common-vulnerabilities) - (2025-04-16) (correlations)	seen	1 day ago
automation	The Shadowserver (honeypot/common-vulnerabilities) - (2025-04-15) (correlations)	seen	2 days ago
automation	The Shadowserver (honeypot/exploited-vulnerabilities) - (2025-04-15) (correlations)	exploited	2 days ago

https://vulnerability.circl.lu/vuln/CVE-2024-10914#sightings

Last Month’s Most Sighted Vulnerabilities



	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CVE-2025-29927					3	11	54	42	20	15	7	10	1	3	1	1	4	4	1	2	1		2	1					1	1		
CVE-2025-22457																		39	38	11	12	16	8	6	5	13	3	4	3	4		14
CVE-2025-24813	13	15	12	13	8	3	2	11	2	1		1	1	3	5	7	7	4		2	1		1	2			1					
CVE-2025-1974								5	24	11	25	7	8	1	5	6	2	7							1							
CVE-2025-2825										2	10	7	2	2	11	9	12	7	2	2	2	3	6		5	3	1		1	3		
CVE-2025-29824																							12	29	11	4	2	1	4	2	3	14
CVE-2025-2783									1	27	15	12	8	7	2		1	1	1													
CVE-2025-30066	12	15	14	3	4	2	1	6	2	1	1				2								1		1							
CVE-2025-24200															3	3	4	3	1	1		3	1		12	30						
CVE-2017-18368	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
CVE-2015-2051	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
CVE-2025-30406																		1	2				2	3	6	2	2		8	14	3	14
CVE-2025-0108	1	5	5	1	1	1	1	1	1	1	2	1	1	1	1	1	3	1	1	1	1	1	1	1	2	1	2	3	11	3		

- **CVE-2025-22457:** Ivanti / Connect Secure — Severity: 10.0 (Critical)
- **CVE-2025-29927:** Vercel / Next.js — Severity: 9.1 (Critical)

Other Examples

Vulnerability	Product	Sighting count	EPSS	Severity
CVE-2025-29927	next.js	167	89.24% (0.99521)	9.1
CVE-2025-24813	Apache Tomcat	128	93.55% (0.99827)	9.2
CVE-2024-4577	PHP	190	94.38% (0.99961)	9.8
CVE-2025-0282	Connect Secure	243	90.87% (0.99618)	9.0
CVE-2024-55591	FortiOS	126	92.79% (0.99756)	9.8
CVE-2024-10914	D-Link DNS-320	81	93.73% (0.9985)	9.2
CVE-2020-21650	Myucms	57	2.48% (0.83998)	9.1

Table 2: Top vulnerabilities from our April 2025 report, based on sightings and scoring data.

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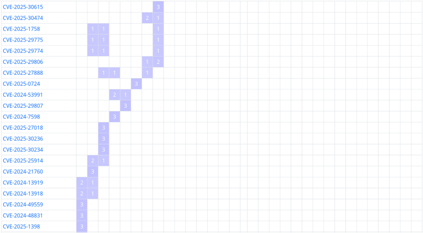
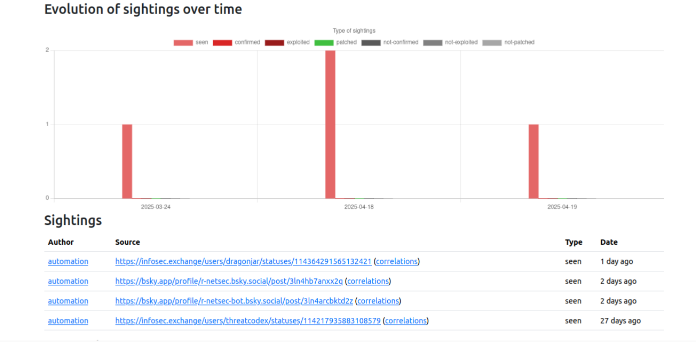
Least Sighted Vulnerabilities in the Last Month



- **Low-sighting outliers offer valuable intel**, even if absent from EPSS or predictive models.
- Particularly relevant in low-noise sources (e.g., MISP, private Telegram channels).
- Often rated low/medium by CVSS and have low EPSS scores.
- Trend highlights EPSS's dependence on public threat intel feeds.

Tracking the Exploitability of Vulnerabilities Prior to Public Disclosure

- **Google / Android:** https://vulnerability.circl.lu/vuln/CVE-2024-43093#sightings
- **Speedify VPN (macOS):** https://vulnerability.circl.lu/vuln/CVE-2025-25364#sightings
- **SourceCodester:** https://vulnerability.circl.lu/vuln/CVE-2025-3821#sightings
    - Low visibility, no EPSS score, few sightings



Evolution of sightings over time

Sightings

Author	Source	Type	Date
automation	https://infosec.exchange/users/dragonjar/statuses/114364291565132421 (correlations)	seen	1 day ago
automation	https://bsky.app/profile/r-netsec.bsky.social/post/3ln4hb7anxx2q (correlations)	seen	2 days ago
automation	https://bsky.app/profile/r-netsec-bot.bsky.social/post/3ln4arcbktd2z (correlations)	seen	2 days ago
automation	https://infosec.exchange/users/threatcodex/statuses/114217935883108579 (correlations)	seen	27 days ago

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Notifications and Monitoring

- **Built-in notification system** to keep track of what matters to you.
- Easily add **vendor** and **product monitoring** (e.g., your stack, customers, or managed assets).
- Get notified when new items match your monitoring rules:
  - new vulnerabilities / advisories,
  - updates (CVSS, descriptions, references, affected products),
  - newly observed exploitation-related signals (via sighting API).
- Notifications can be delivered via:
  - **Email notifications** with a CSV attached (push),
  - **UI notifications** (in web).

From Monitoring to Action

1. **Create notification** select vendor/product.
2. **Choose frequency:** how fast (hourly, daily, weekly) to deliver via email or via the UI.
3. **Triage faster:** jump directly from the notification to the matching entries in Vulnerability-Lookup.
4. **Operationalize:** use notifications to feed your internal processes (ticketing, threat intel notes, asset impact review).

Goal: reduce "time-to-patch" and make continuous monitoring effortless for defenders and CSIRTs.

Toward Practical AI Applications

From Data to Datasets

Contents

1. Origin of the project
2. Design and Implementation
3. Empowering the Community
4. Scoring Vulnerabilities

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Why We Share Datasets

- **Open Data Initiative**: CIRCL's commitment to making data openly available.
- Consistent open approach applied across all our projects.
- Regularly updated JSON dumps [13] and "AI" datasets [14].
- Public, unauthenticated API access for Vulnerability-Lookup.

[13] https://vulnerability.circl.lu/dumps/

[14] https://huggingface.co/CIRCL/datasets

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The Messy Reality of Large Datasets

- Our experience with large datasets is not recent (Passive DNS[15], BGP ranking[16], MISP[17], AIL[18], Lookyloo[19], etc.). And we learned from our past mistakes.
- Adapt to real-world conditions — avoid creating yet another format or standard.
- Deal with missing data, malformed JSON, and conflicting information.
- Tolerate unreliable or unstable remote servers (e.g., some CSAF providers).

[15] https://www.circl.lu/services/passive-dns/
[16] https://github.com/D4-project/BGP-Ranking
[17] https://github.com/MISP
[18] https://github.com/ail-project
[19] https://github.com/Lookyloo

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Building AI Datasets

- Turn messy data into structured, actionable insights.
- Link related vulnerabilities via enrichment, correlation, and crawling.
- Support the process with **VulnTrain**[20].

[20] https://github.com/vulnerability-lookup/VulnTrain

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Current datasets

Dataset	Size (rows)	Generation Time	Features
vulnerability-scores[21]	641,547	10m45s	Descriptions (en), CVSS, CPE
vulnerability-CNVD[22]	122,546	1m31s	Descriptions (cn), CVSS
vulnerability-cwe-patch[23]	883	210m	Descriptions (en), CWE, patches (commit id + url + full diff)

[21] https://huggingface.co/datasets/CIRCL/vulnerability-scores

[22] https://huggingface.co/datasets/CIRCL/Vulnerability-CNVD

[23] https://huggingface.co/datasets/CIRCL/vulnerability-cwe-patch

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From Datasets to Models

Contents

1. Origin of the project
2. Design and Implementation
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Why We Are Building AI Models

- CIRCL AI approach[24]: we enhance existing solutions rather than replacing functional systems with NLP/ML/LLM solutions.
- AI-powered **enrichment** of vulnerability descriptions.
- Providing actionable insights to security experts when data is **missing or inaccurate** (e.g., severity, CWE, CPE information).
- We actively participate in collaborative research and development efforts, such as the EU-funded AIPITCH (AI-Powered Innovative Toolkit for Cybersecurity Hubs) project[25]

[24] https://circl.lu/pub/ai-strategy/

[25] https://www.science.nask.pl/en/research-areas/projects/12456

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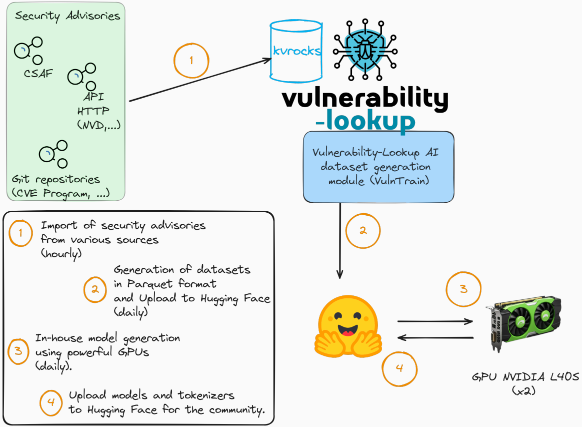
Model generation workflow



1. Import of security advisories from various sources (hourly)
2. Generation of datasets in Parquet format and Upload to Hugging Face (daily)
3. In-house model generation using powerful GPUs (daily).
4. Upload models and tokenizers to Hugging Face for the community.

- local training
- models are publicly shared
- regular update

Current Models

Model	Size	Epochs	Accuracy	Training Time
Severity classification[26]	125M params	5	0.8289	6.72h
Severity classification (CNVD)[27]	102M params	5	0.7817	65.989m
CWE guessing[28]	125M params	36-40	0.875	30m

[26] https://huggingface.co/CIRCL/vulnerability-severity-classification-roberta-base

[27] https://huggingface.co/CIRCL/vulnerability-severity-classification-chinese-macbert-base

[28] https://huggingface.co/CIRCL/cwe-parent-vulnerability-classification-roberta-base

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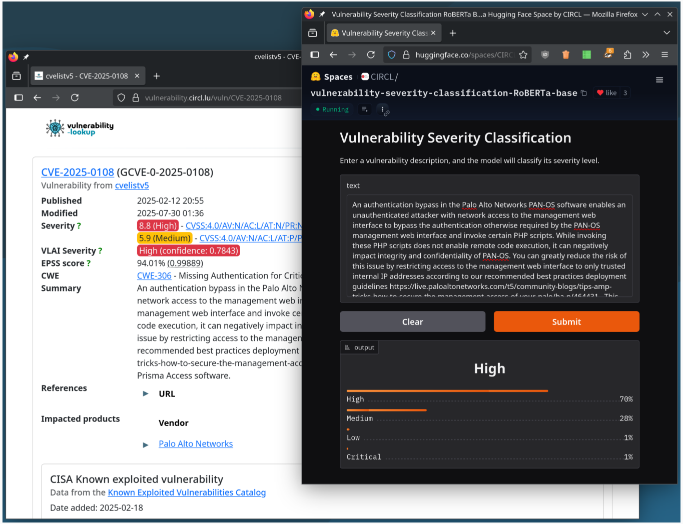
With different CVSS scores


cvelistv5 - CVE-
cvelistv5 - CVE-2025-0108
vulnerability.circl.lu/vuln/CVE-2025-0108
vulnerability
-lookup
Vulnerability Severity Classification RoBERTa B...a Hugging Face Space by CIRCL — Mozilla Firefox
Vulnerability Severity Class
huggingface.co/spaces/CIRC
Spaces
CIRCL/
vulnerability-severity-classification-RoBERTa-base
like 3
Running
text
Clear
Submit

CVE-2025-0108 (GCVE-0-2025-0108)

Vulnerability from cvelistv5

Published 2025-02-12 20:55
Modified 2025-07-30 01:36
Severity ? 8.8 (High) - CVSS:4.0/AV:N/AC:L/AT:N/PR:N
5.9 (Medium) - CVSS:4.0/AV:N/AC:L/AT:P/P
VLAI Severity ? High (confidence: 0.7843)
EPSS score ? 94.01% (0.99889)
CWE CWE-306 - Missing Authentication for Critic
Summary An authentication bypass in the Palo Alto N
network access to the management web in
management web interface and invoke ce
code execution, it can negatively impact in
issue by restricting access to the managem
recommended best practices deployment
tricks-how-to-secure-the-management-acc
Prisma Access software.
References ▶ URL
Impacted products **Vendor**
▶ Palo Alto Networks

CISA Known exploited vulnerability

Data from the Known Exploited Vulnerabilities Catalog

Date added: 2025-02-18

Vulnerability Severity Classification

Enter a vulnerability description, and the model will classify its severity level.

text

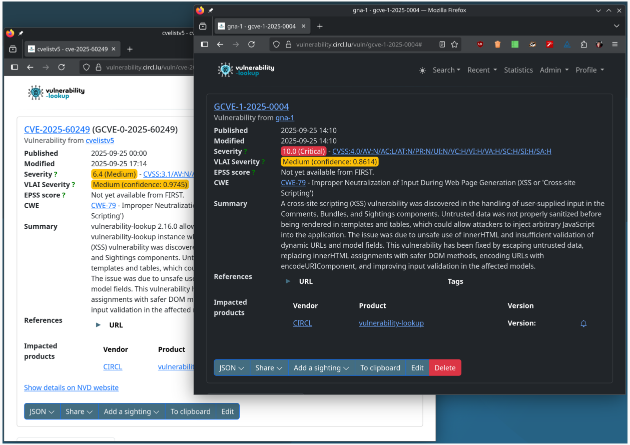
An authentication bypass in the Palo Alto Networks PAN-OS software enables an unauthenticated attacker with network access to the management web interface to bypass the authentication otherwise required by the PAN-OS management web interface and invoke certain PHP scripts. While invoking these PHP scripts does not enable remote code execution, it can negatively impact integrity and confidentiality of PAN-OS. You can greatly reduce the risk of this issue by restricting access to the management web interface to only trusted internal IP addresses according to our recommended best practices deployment guidelines https://live.paloaltonetworks.com/t5/community-blogs/tips-amp-tricks-how-to-secure-the-management-access-of-your-palo/ba-p/464431 . This

output

High

```
High ..................................... 70%
Medium ................................... 28%
Low ....................................... 1%
Critical .................................. 1%
```

Vulnerability in Vulnerability-Lookup — published 25 September 2025


cvelistv5 - cv
cvelistv5 - cve-2025-60249
vulnerability.circl.lu/vuln/cve-2
vulnerability -lookup
gna-1 - gcve-1-2025-0004 — Mozilla Firefox
gna-1 - gcve-1-2025-0004
vulnerability.circl.lu/vuln/gcve-1-2025-0004#
Search
Recent
Statistics
Admin
Profile
JSON
Share
Add a sighting
To clipboard
Edit
Delete

CVE-2025-60249 (GCVE-0-2025-60249)
Vulnerability from cvelistv5

Published 2025-09-25 00:00
Modified 2025-09-25 17:14
Severity ? 6.4 (Medium) - CVSS:3.1/AV:N/
VLAI Severity ? Medium (confidence: 0.9745)
EPSS score ? Not yet available from FIRST.
CWE CWE-79 - Improper Neutralizati
Scripting')
Summary vulnerability-lookup 2.16.0 allov
vulnerability-lookup instance wl
(XSS) vulnerability was discovere
and Sightings components. Unt
templates and tables, which cou
The issue was due to unsafe use
model fields. This vulnerability h
assignments with safer DOM m
input validation in the affected
References ▶ URL
Impacted products Vendor Product
CIRCL vulnerabilit

Show details on NVD website

GCVE-1-2025-0004
Vulnerability from gna-1

Published 2025-09-25 14:10
Modified 2025-09-25 14:10
Severity ? 10.0 (Critical) - CVSS:4.0/AV:N/AC:L/AT:N/PR:N/UI:N/VC:H/VI:H/VA:H/SC:H/SI:H/SA:H
VLAI Severity ? Medium (confidence: 0.8614)
EPSS score ? Not yet available from FIRST.
CWE CWE-79 - Improper Neutralization of Input During Web Page Generation (XSS or 'Cross-site Scripting')
Summary A cross-site scripting (XSS) vulnerability was discovered in the handling of user-supplied input in the Comments, Bundles, and Sightings components. Untrusted data was not properly sanitized before being rendered in templates and tables, which could allow attackers to inject arbitrary JavaScript into the application. The issue was due to unsafe use of innerHTML and insufficient validation of dynamic URLs and model fields. This vulnerability has been fixed by escaping untrusted data, replacing innerHTML assignments with safer DOM methods, encoding URLs with encodeURIComponent, and improving input validation in the affected models.
References ▶ URL Tags

Impacted products

Vendor	Product	Version
CIRCL	vulnerability-lookup	Version:

Patched in Cambridge at Vuln4Cast 2025 in the afternoon.

https://github.com/vulnerability-lookup/vulnerability-lookup/commit/afa12347f1461d9481eba75ac19897e80a9c7434

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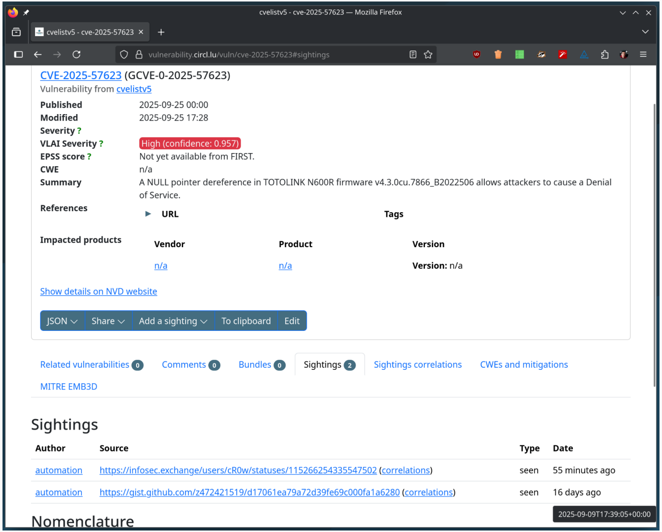
Few information (reserved 17 September 2025 - sightings since 9 September)



cvelistv5 - cve-2025-57623 — Mozilla Firefox
cvelistv5 - cve-2025-57623
vulnerability.circl.lu/vuln/cve-2025-57623#sightings

CVE-2025-57623 (GCVE-0-2025-57623)

Vulnerability from cvelistv5

Published	2025-09-25 00:00
Modified	2025-09-25 17:28
Severity ?	
VLAI Severity ?	High (confidence: 0.957)
EPSS score ?	Not yet available from FIRST.
CWE	n/a
Summary	A NULL pointer dereference in TOTOLINK N600R firmware v4.3.0cu.7866_B2022506 allows attackers to cause a Denial of Service.
References	▶ **URL** **Tags**

Impacted products

Vendor	Product	Version
n/a	n/a	**Version:** n/a

Show details on NVD website

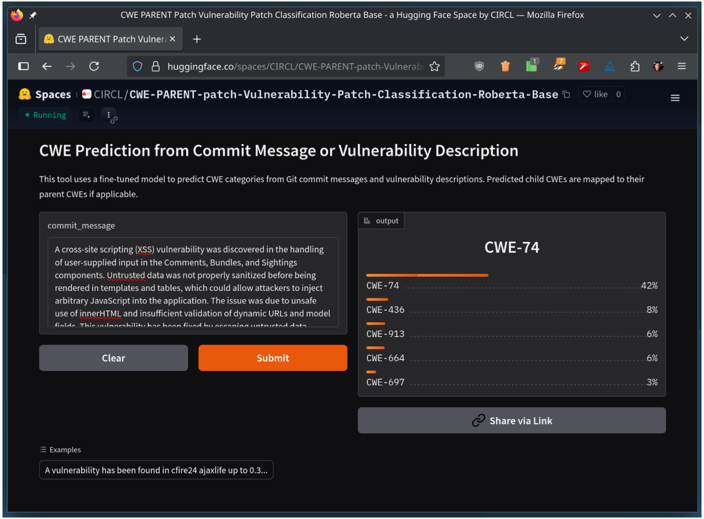
Sightings

Author	Source	Type	Date
automation	https://infosec.exchange/users/cR0w/statuses/115266254335547502 (correlations)	seen	55 minutes ago
automation	https://gist.github.com/z472421519/d17061ea79a72d39fe69c000fa1a6280 (correlations)	seen	16 days ago

2025-09-09T17:39:05+00:00

Nomenclature

CWE Guessing (GCVE-1-2025-0004 - CWE 79)



CWE PARENT Patch Vulnerability Patch Classification Roberta Base - a Hugging Face Space by CIRCL — Mozilla Firefox
CWE PARENT Patch Vulner
huggingface.co/spaces/CIRCL/CWE-PARENT-patch-Vulnerab
Spaces
CIRCL/CWE-PARENT-patch-Vulnerability-Patch-Classification-Roberta-Base
like
0
Running

CWE Prediction from Commit Message or Vulnerability Description

This tool uses a fine-tuned model to predict CWE categories from Git commit messages and vulnerability descriptions. Predicted child CWEs are mapped to their parent CWEs if applicable.

commit_message

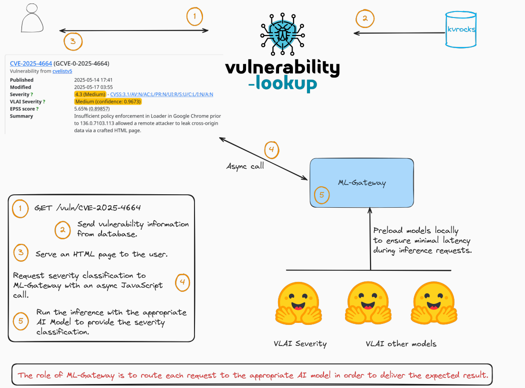
A cross-site scripting (XSS) vulnerability was discovered in the handling of user-supplied input in the Comments, Bundles, and Sightings components. Untrusted data was not properly sanitized before being rendered in templates and tables, which could allow attackers to inject arbitrary JavaScript into the application. The issue was due to unsafe use of innerHTML and insufficient validation of dynamic URLs and model fields. This vulnerability has been fixed by escaping untrusted data

CWE-74

```
CWE-74 ........................................ 42%
CWE-436 ........................................ 8%
CWE-913 ........................................ 6%
CWE-664 ........................................ 6%
CWE-697 ........................................ 3%
```

A vulnerability has been found in cfire24 ajaxlife up to 0.3...

Integration

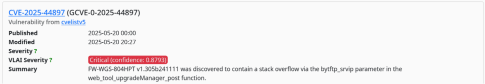


CVE-2025-4664 (GCVE-0-2025-4664)
Vulnerability from cvelistv5

Published	2025-05-14 17:41
Modified	2025-05-17 03:55
Severity ?	4.3 (Medium) - CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:N/A:N
VLAI Severity ?	Medium (confidence: 0.9673)
EPSS score ?	5.65% (0.89857)
Summary	Insufficient policy enforcement in Loader in Google Chrome prior to 136.0.7103.113 allowed a remote attacker to leak cross-origin data via a crafted HTML page.

1. GET /vuln/CVE-2025-4664
2. Send vulnerability information from database.
3. Serve an HTML page to the user.
4. Request severity classification to ML-Gateway with an async JavaScript call.
5. Run the inference with the appropriate AI Model to provide the severity classification.

The role of ML-Gateway is to route each request to the appropriate AI model in order to deliver the expected result.



CVE-2025-44897 (GCVE-0-2025-44897)
Vulnerability from cvelistv5

Published	2025-05-20 00:00
Modified	2025-05-20 20:27
Severity ?	
VLAI Severity ?	Critical (confidence: 0.8793)
Summary	FW-WGS-804HPT v1.305b241111 was discovered to contain a stack overflow via the bytftp_srvip parameter in the web_tool_upgradeManager_post function.

The case of missing severity information in the advisory.

- Optional integration
- No dependencies with Vulnerability-Lookup
- Models are pulled from Hugging Face and preloaded locally
- Documented API (OpenAPI) to trigger the inferences
- `https://github.com/vulnerability-lookup/ML-Gateway`

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Example

```
$ curl -X 'POST' \
  'https://vulnerability.circl.lu/api/vlai/severity-classification' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "description": "An authentication bypass in the API component of Ivanti Endpoint
    Manager Mobile 12.5.0.0 and prior allows attackers to access protected
    resources without proper credentials via the API."
}'
{"severity": "High", "confidence": 0.8225}
```

Lookup and AI are Cool, but Publishing is Even Cooler

GCVE.eu - Role

- The primary role of GCVE[29] is to provide **globally unique identifiers** to GCVE Numbering Authorities (GNAs).
- **GNAs operate autonomously**, with full control over how they assign and manage identifiers.
- **GCVE publishes Best Current Practices (BCPs)** on directory management, Coordinated Vulnerability Disclosure (CVD), and publication protocols.
- GCVE maintains and publishes the **official directory of all GNAs**, including their publication endpoints.

[29] https://gcve.eu/

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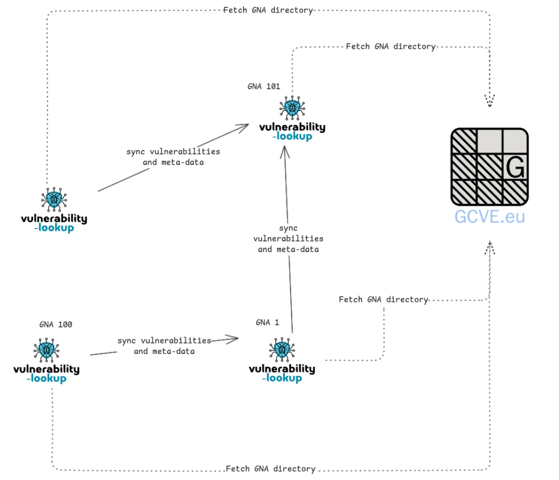
Decentralized Publication Standard



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Closing

Future Development

- Deeper analysis of the content and context of sightings, including **source reliability assessment**.
- Full-text search capabilities across all integrated sources.
- Integration of scoring models such as Vuln4Cast[30], with testing planned on our dataset to enhance reproducibility.
- **Improved notification capabilities** for newly observed vulnerabilities via webhooks.

> The project is evolving rapidly — feedback and feature suggestions are always welcome!

[30] `https://github.com/FIRSTdotorg/Vuln4Cast`

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References

https://www.vulnerability-lookup.org

CIRCL public instance https://vulnerability.circl.lu

Source code https://github.com/vulnerability-lookup/vulnerability-lookup

Dataset, AI Model Training, Models https://github.com/vulnerability-lookup/VulnTrain

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