FAQs: Wie Docker Bench die Sicherheit Ihrer Container-Architektur verbessert

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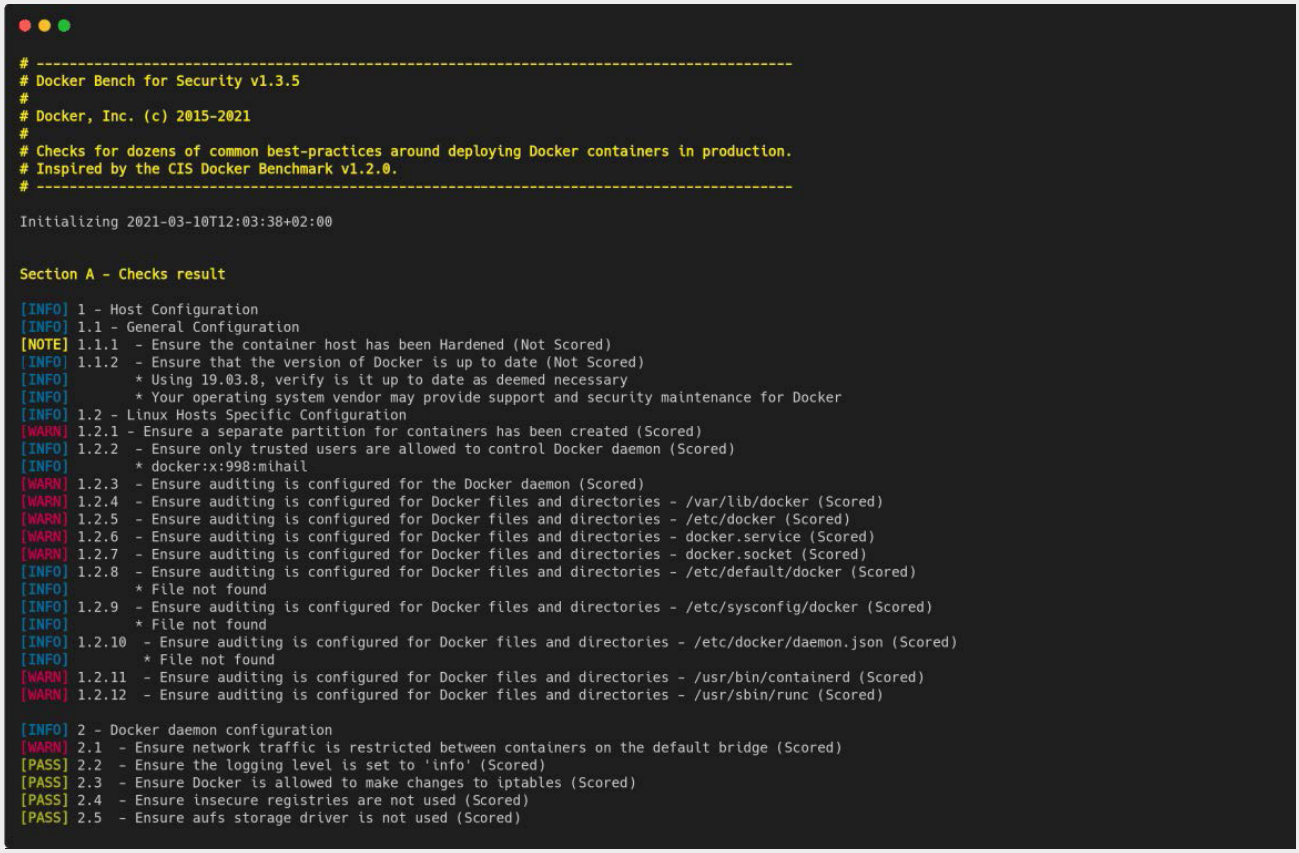
1. Wie funktioniert Docker Bench for Security?



2. **Wie kann ich Docker Bench für ein bestimmtes Docker-Image ausführen?** So sieht die Ausgabe aus:

macpro$ ./docker-bench-security.sh -i hello-world
--
Docker Bench for Security v1.3.6
#
Docker, Inc. (c) 2015–2022
#
Checks for dozens of common best-practices around deploying Docker containers in production.
Based on the CIS Docker Benchmark 1.3.1.
--[WARN] Some tests might require root to runInitializing 2022–01–17T15:08:21:z
Section A - Check results[INFO] 1 - Host Configuration
[INFO] 1.1 - Linux Hosts Specific Configuration
[WARN] 1.1.1 - Ensure a separate partition for containers has been created (Automated)
[INFO] 1.1.2 - Ensure only trusted users are allowed to control Docker daemon (Automated)
[INFO] * Users:
[WARN] 1.1.3 - Ensure auditing is configured for the Docker daemon (Automated)
[WARN] 1.1.4 - Ensure auditing is configured for Docker files and directories -/run/containerd (Automated)
[INFO] 1.1.5 - Ensure auditing is configured for Docker files and directories - /var/lib/docker (Automated)
[INFO] * Directory not found
[INFO] 1.1.6 - Ensure auditing is configured for Docker files and directories - /etc/docker (Automated)
[INFO] * Directory not found
[INFO] 1.1.7 - Ensure auditing is configured for Docker files and directories - docker.service (Automated)
[INFO] * File not found
[INFO] 1.1.8 - Ensure auditing is configured for Docker files and directories - containerd.sock (Automated)

```
[INFO]      * File not found
[INFO] 1.1.9 - Ensure auditing is configured for Docker files and directories - docker.socket (Automated)
[INFO]      * File not found
[INFO] 1.1.10 - Ensure auditing is configured for Docker files and directories - /etc/default/docker (Automated)
[INFO]      * File not found
[INFO] 1.1.11 - Ensure auditing is configured for Dockerfiles and directories - /etc/docker/daemon.json (Automated)
[INFO]      * File not found
[INFO] 1.1.12 - 1.1.12 Ensure auditing is configured for Dockerfiles and directories - /etc/containerd/config.toml (Automated)
[INFO]      * File not found
[INFO] 1.1.13 - Ensure auditing is configured for Docker files and directories - /etc/sysconfig/docker (Automated)
[INFO]      * File not found
[INFO] 1.1.14 - Ensure auditing is configured for Docker files and directories - /usr/bin/containerd (Automated)
[INFO]      * File not found
[INFO] 1.1.15 - Ensure auditing is configured for Docker files and directories - /usr/bin/containerd-shim (Automated)
[INFO]      * File not found
[INFO] 1.1.16 - Ensure auditing is configured for Docker files and directories - /usr/bin/containerd-shim-runc-v1 (Automated)
[INFO]      * File not found
[INFO] 1.1.17 - Ensure auditing is configured for Docker files and directories - /usr/bin/containerd-shim-runc-v2 (Automated)
[INFO]      * File not found
[INFO] 1.1.18 - Ensure auditing is configured for Docker files and directories - /usr/bin/runc (Automated)
[INFO]      * File not found
[INFO] 1.2 - General Configuration
[NOTE] 1.2.1 - Ensure the container host has been Hardened (Manual)
date: illegal time format
usage: date [-jnRu] [-d dst] [-r seconds] [-t west] [-v[+|-]val[ymwdHMS]] ...
        [-f fmt date | [[[mm]dd]HH]MM[[cc]yy][.ss]] [+format]
./functions/helper_lib.sh: line 36: [: : integer expression expected
./functions/helper_lib.sh: line 37: [: : integer expression expected
[PASS] 1.2.2 - Ensure that the version of Docker is up to date (Manual)
[INFO]      * Using 20.10.12 which is current
[INFO]      * Check with your operating system vendor for support and security maintenance for Docker[INFO] 2 - Docker daemon configuration
[NOTE] 2.1 - Run the Docker daemon as a non-root user, if possible (Manual)
[WARN] 2.2 - Ensure network traffic is restricted between containers on the default bridge (Scored)
[PASS] 2.3 - Ensure the logging level is set to 'info' (Scored)
[PASS] 2.4 - Ensure Docker is allowed to make changes to iptables (Scored)
[PASS] 2.5 - Ensure insecure registries are not used (Scored)
[PASS] 2.6 - Ensure aufs storage driver is not used (Scored)
[INFO] 2.7 - Ensure TLS authentication for Docker daemon is configured (Scored)
[INFO]      * Docker daemon not listening on TCP
[INFO] 2.8 - Ensure the default ulimit is configured appropriately (Manual)
[INFO]      * Default ulimit doesn't appear to be set
[WARN] 2.9 - Enable user namespace support (Scored)
[PASS] 2.10 - Ensure the default cgroup usage has been confirmed (Scored)
[PASS] 2.11 - Ensure base device size is not changed until needed (Scored)
[WARN] 2.12 - Ensure that authorization for Docker client commands is enabled (Scored)
[WARN] 2.13 - Ensure centralized and remote logging is configured (Scored)
[WARN] 2.14 - Ensure containers are restricted from acquiring new privileges (Scored)
[WARN] 2.15 - Ensure live restore is enabled (Scored)
[WARN] 2.16 - Ensure Userland Proxy is Disabled (Scored)
[PASS] 2.17 - Ensure that a daemon-wide custom seccomp profile is applied if appropriate (Manual)
[INFO] Ensure that experimental features are not implemented in production (Scored) (Deprecated)[INFO] 3 - Docker daemon configuration files
[INFO] 3.1 - Ensure that the docker.service file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.2 - Ensure that docker.service file permissions are appropriately set (Automated)
[INFO]      * File not found
[INFO] 3.3 - Ensure that docker.socket file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.4 - Ensure that docker.socket file permissions are set to 644 or more restrictive (Automated)
[INFO]      * File not found
[INFO] 3.5 - Ensure that the /etc/docker directory ownership is set to root:root (Automated)
[INFO]      * Directory not found
[INFO] 3.6 - Ensure that /etc/docker directory permissions are set to 755 or more restrictively (Automated)
[INFO]      * Directory not found
[INFO] 3.7 - Ensure that registry certificate file ownership is set to root:root (Automated)
[INFO]      * Directory not found
[INFO] 3.8 - Ensure that registry certificate file permissions are set to 444 or more restrictively (Automated)
[INFO]      * Directory not found
[INFO] 3.9 - Ensure that TLS CA certificate file ownership is set to root:root (Automated)
[INFO]      * No TLS CA certificate found
```

```
[INFO] 3.10 - Ensure that TLS CA certificate file permissions are set to 444 or more restrictively (Automated)
[INFO]      * No TLS CA certificate found
[INFO] 3.11 - Ensure that Docker server certificate file ownership is set to root:root (Automated)
[INFO]      * No TLS Server certificate found
[INFO] 3.12 - Ensure that the Docker server certificate file permissions are set to 444 or more restrictively (Automated)
[INFO]      * No TLS Server certificate found
[INFO] 3.13 - Ensure that the Docker server certificate key file ownership is set to root:root (Automated)
[INFO]      * No TLS Key found
[INFO] 3.14 - Ensure that the Docker server certificate key file permissions are set to 400 (Automated)
[INFO]      * No TLS Key found
stat: illegal option -- c
usage: stat [-FlLnqrsx] [-f format] [-t timefmt] [file ...]
[WARN] 3.15 - Ensure that the Docker socket file ownership is set to root:docker (Automated)
[WARN]      * Wrong ownership for /var/run/docker.sock
stat: illegal option -- c
usage: stat [-FlLnqrsx] [-f format] [-t timefmt] [file ...]
./tests/3_docker_daemon_configuration_files.sh: line 429: [: : integer expression expected
[WARN] 3.16 - Ensure that the Docker socket file permissions are set to 660 or more restrictively (Automated)
[WARN]      * Wrong permissions for /var/run/docker.sock
[INFO] 3.17 - Ensure that the daemon.json file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.18 - Ensure that daemon.json file permissions are set to 644 or more restrictive (Automated)
[INFO]      * File not found
[INFO] 3.19 - Ensure that the /etc/default/docker file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.20 - Ensure that the /etc/sysconfig/docker file permissions are set to 644 or more restrictively (Automated)
[INFO]      * File not found
[INFO] 3.21 - Ensure that the /etc/sysconfig/docker file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.22 - Ensure that the /etc/default/docker file permissions are set to 644 or more restrictively (Automated)
[INFO]      * File not found
[INFO] 3.23 - Ensure that the Containerd socket file ownership is set to root:root (Automated)
[INFO]      * File not found
[INFO] 3.24 - Ensure that the Containerd socket file permissions are set to 660 or more restrictively (Automated)
[INFO]      * File not found[INFO] 4 - Container Images and Build File
[INFO] 4.1 - Ensure that a user for the container has been created (Automated)
[INFO]     * No containers running
[NOTE] 4.2 - Ensure that containers use only trusted base images (Manual)
[NOTE] 4.3 - Ensure that unnecessary packages are not installed in the container (Manual)
[NOTE] 4.4 - Ensure images are scanned and rebuilt to include security patches (Manual)
[WARN] 4.5 - Ensure Content trust for Docker is Enabled (Automated)
[WARN] 4.6 - Ensure that HEALTHCHECK instructions have been added to container images (Automated)
[WARN]     * No Healthcheck found: [hello-world:latest]
[PASS] 4.7 - Ensure update instructions are not used alone in the Dockerfile (Manual)
[NOTE] 4.8 - Ensure setuid and setgid permissions are removed (Manual)
[PASS] 4.9 - Ensure that COPY is used instead of ADD in Dockerfiles (Manual)
[NOTE] 4.10 - Ensure secrets are not stored in Dockerfiles (Manual)
[NOTE] 4.11 - Ensure only verified packages are installed (Manual)[INFO] 5 - Container Runtime
[INFO]  * No containers running, skipping Section 5[INFO] 6 - Docker Security Operations
[INFO] 6.1 - Ensure that image sprawl is avoided (Manual)
[INFO]     * There are currently: 19 images
[INFO]     * Only 0 out of 19 are in use
[INFO] 6.2 - Ensure that container sprawl is avoided (Manual)
[INFO]     * There are currently a total of 35 containers, with 18 of them currently running[INFO] 7 - Docker Swarm Configuration
[PASS] 7.1 - Ensure swarm mode is not Enabled, if not needed (Automated)
[PASS] 7.2 - Ensure that the minimum number of manager nodes have been created in a swarm (Automated) (Swarm mode not enabled)
[PASS] 7.3 - Ensure that swarm services are bound to a specific host interface (Automated) (Swarm mode not enabled)
[PASS] 7.4 - Ensure that all Docker swarm overlay networks are encrypted (Automated)
[PASS] 7.5 - Ensure that Docker's secret management commands are used for managing secrets in a swarm cluster (Manual) (Swarm mode not enabled)
[PASS] 7.6 - Ensure that swarm manager is run in auto-lock mode (Automated) (Swarm mode not enabled)
[PASS] 7.7 - Ensure that the swarm manager auto-lock key is rotated periodically (Manual) (Swarm mode not enabled)
[PASS] 7.8 - Ensure that node certificates are rotated as appropriate (Manual) (Swarm mode not enabled)
[PASS] 7.9 - Ensure that CA certificates are rotated as appropriate (Manual) (Swarm mode not enabled)
[PASS] 7.10 - Ensure that management plane traffic is separated from data plane traffic (Manual) (Swarm mode not enabled)
Section C - Score[INFO] Checks: 85
[INFO] Score: -3
```

3. **Wie aktiviere ich das Auditing für Docker-Dateien?** Ergänzen Sie folgende Zeilen am Ende der Datei:

```
-w /etc/default/docker -p wa
-w /etc/docker -p wa
-w /etc/docker/daemon.json -p wa
-w /lib/systemd/system/docker.service -p wa
-w /lib/systemd/system/docker.socket -p wa
-w /usr/bin/docker -p wa
-w /usr/bin/docker-containerd -p wa
-w /usr/bin/docker-runc -p wa
-w /var/lib/docker -p wa
```

4. **Wie führe ich einen Schwachstellen-Scan für lokale Docker-Images durch?** Beispiel für die Ausgabe eines Schwachstellen-Scans:

```
macpro$ docker scan --accept-license --version
Version:    v0.16.0
Git commit: e135637
Provider:   Snyk (1.809.0)macpro$ docker scan postgres:12
\ Analyzing container dependencies for postgres:12Testing postgres:12...✗ Low severity vulnerability found in tar
  Description: CVE-2005-2541
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-TAR-523480
  Introduced through: meta-common-packages@meta
  From: meta-common-packages@meta > tar@1.34+dfsg-1✗ Low severity vulnerability found in systemd/libsystemd0
  Description: Authentication Bypass
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-SYSTEMD-1291054
  Introduced through: postgresql-12@12.9-1.pgdg110+1, util-linux/bsdutils@1:2.36.1-8, util-linux/mount@2.36.1-8
  From: postgresql-12@12.9-1.pgdg110+1 > systemd/libsystemd0@247.3-6
  From: util-linux/bsdutils@1:2.36.1-8 > systemd/libsystemd0@247.3-6
  From: util-linux/mount@2.36.1-8 > util-linux@2.36.1-8 > systemd/libsystemd0@247.3-6
  and 4 more...✗ Low severity vulnerability found in systemd/libsystemd0
  Description: CVE-2021-3997
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-SYSTEMD-2332025
  Introduced through: postgresql-12@12.9-1.pgdg110+1, util-linux/bsdutils@1:2.36.1-8, util-linux/mount@2.36.1-8
  From: postgresql-12@12.9-1.pgdg110+1 > systemd/libsystemd0@247.3-6
  From: util-linux/bsdutils@1:2.36.1-8 > systemd/libsystemd0@247.3-6
  From: util-linux/mount@2.36.1-8 > util-linux@2.36.1-8 > systemd/libsystemd0@247.3-6
  and 4 more...✗ Low severity vulnerability found in systemd/libsystemd0
  Description: Link Following
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-SYSTEMD-524969
  Introduced through: postgresql-12@12.9-1.pgdg110+1, util-linux/bsdutils@1:2.36.1-8, util-linux/mount@2.36.1-8
  From: postgresql-12@12.9-1.pgdg110+1 > systemd/libsystemd0@247.3-6
  From: util-linux/bsdutils@1:2.36.1-8 > systemd/libsystemd0@247.3-6
  From: util-linux/mount@2.36.1-8 > util-linux@2.36.1-8 > systemd/libsystemd0@247.3-6
  and 4 more.✗ Low severity vulnerability found in sqlite3/libsqlite3-0
  Description: Out-of-bounds Read
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-SQLITE3-1569419
  Introduced through: gnupg2/gnupg@2.2.27-2
  From: gnupg2/gnupg@2.2.27-2 > gnupg2/gpg@2.2.27-2 > sqlite3/libsqlite3-0@3.34.1-3✗ Low severity vulnerability found in shadow/passwd
  Description: Access Restriction Bypass
  Info: https://snyk.io/vuln/SNYK-DEBIAN11-SHADOW-526940
  Introduced through: gnupg2/dirmngr@2.2.27-2, shadow/login@1:4.8.1-1, util-linux/mount@2.36.1-8
  From: gnupg2/dirmngr@2.2.27-2 > adduser@3.118 > shadow/passwd@1:4.8.1-1
  From: shadow/login@1:4.8.1-1
```

From: util-linux/mount@2.36.1–8 > util-linux@2.36.1–8 > shadow/login@1:4.8.1–1✗ Low severity vulnerability found in shadow/passwd
Description: Time-of-check Time-of-use (TOCTOU)
Info: https://snyk.io/vuln/SNYK-DEBIAN11-SHADOW-528840
Introduced through: gnupg2/dirmngr@2.2.27–2, shadow/login@1:4.8.1–1, util-linux/mount@2.36.1–8
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1
From: shadow/login@1:4.8.1–1
From: util-linux/mount@2.36.1–8 > util-linux@2.36.1–8 > shadow/login@1:4.8.1–1✗ Low severity vulnerability found in shadow/passwd
Description: Incorrect Permission Assignment for Critical Resource
Info: https://snyk.io/vuln/SNYK-DEBIAN11-SHADOW-539870
Introduced through: gnupg2/dirmngr@2.2.27–2, shadow/login@1:4.8.1–1, util-linux/mount@2.36.1–8
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1
From: shadow/login@1:4.8.1–1
From: util-linux/mount@2.36.1–8 > util-linux@2.36.1–8 > shadow/login@1:4.8.1–1✗ Low severity vulnerability found in perl/perl-base
Description: Link Following
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PERL-532614
Introduced through: meta-common-packages@meta, perl/libperl5.32@5.32.1–4+deb11u2, perl@5.32.1–4+deb11u2, perl/perl-modules-5.32@5.32.1–4+deb11u2
From: meta-common-packages@meta > perl/perl-base@5.32.1–4+deb11u2
From: perl/libperl5.32@5.32.1–4+deb11u2
From: perl@5.32.1–4+deb11u2 > perl/libperl5.32@5.32.1–4+deb11u2
and 4 more.✗ Low severity vulnerability found in pcre3/libpcre3
Description: Out-of-Bounds
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PCRE3–523392
Introduced through: pcre3/libpcre3@2:8.39–13, grep@3.6–1
From: pcre3/libpcre3@2:8.39–13
From: grep@3.6–1 > pcre3/libpcre3@2:8.39–13✗ Low severity vulnerability found in pcre3/libpcre3
Description: Out-of-Bounds
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PCRE3–525075
Introduced through: pcre3/libpcre3@2:8.39–13, grep@3.6–1
From: pcre3/libpcre3@2:8.39–13
From: grep@3.6–1 > pcre3/libpcre3@2:8.39–13✗ Low severity vulnerability found in pcre3/libpcre3
Description: Uncontrolled Recursion
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PCRE3–529298
Introduced through: pcre3/libpcre3@2:8.39–13, grep@3.6–1
From: pcre3/libpcre3@2:8.39–13
From: grep@3.6–1 > pcre3/libpcre3@2:8.39–13✗ Low severity vulnerability found in pcre3/libpcre3
Description: Out-of-Bounds
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PCRE3–529490
Introduced through: pcre3/libpcre3@2:8.39–13, grep@3.6–1
From: pcre3/libpcre3@2:8.39–13
From: grep@3.6–1 > pcre3/libpcre3@2:8.39–13✗ Low severity vulnerability found in pcre3/libpcre3
Description: Out-of-bounds Read
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PCRE3–572353
Introduced through: pcre3/libpcre3@2:8.39–13, grep@3.6–1
From: pcre3/libpcre3@2:8.39–13
From: grep@3.6–1 > pcre3/libpcre3@2:8.39–13✗ Low severity vulnerability found in openssl/libssl1.1
Description: Cryptographic Issues
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENSSL-518334
Introduced through: postgresql-12@12.9–1.pgdg110+1, gnupg2/dirmngr@2.2.27–2
From: postgresql-12@12.9–1.pgdg110+1 > openssl/libssl1.1@1.1.1k-1+deb11u1
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openssl/libssl1.1@1.1.1k-1+deb11u1
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-common@232.pgdg110+1 > ssl-cert@1.1.0+nmu1 > openssl@1.1.1k-1+deb11u1 > openssl/libssl1.1@1.1.1k-1+deb11u1
and 2 more.✗ Low severity vulnerability found in openssl/libssl1.1
Description: Cryptographic Issues
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENSSL-525332
Introduced through: postgresql-12@12.9–1.pgdg110+1, gnupg2/dirmngr@2.2.27–2
From: postgresql-12@12.9–1.pgdg110+1 > openssl/libssl1.1@1.1.1k-1+deb11u1
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openssl/libssl1.1@1.1.1k-1+deb11u1
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-common@232.pgdg110+1 > ssl-cert@1.1.0+nmu1 > openssl@1.1.1k-1+deb11u1 > openssl/libssl1.1@1.1.1k-1+deb11u1

and 2 more. ✗ Low severity vulnerability found in openldap/libldap-2.4–2
Description: Improper Initialization
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENLDAP-521320
Introduced through: gnupg2/dirmngr@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3 ✗ Low severity vulnerability found in openldap/libldap-2.4–2
Description: Out-of-Bounds
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENLDAP-531344
Introduced through: gnupg2/dirmngr@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3 ✗ Low severity vulnerability found in openldap/libldap-2.4–2
Description: Cryptographic Issues
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENLDAP-531747
Introduced through: gnupg2/dirmngr@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3 ✗ Low severity vulnerability found in openldap/libldap-2.4–2
Description: Improper Certificate Validation
Info: https://snyk.io/vuln/SNYK-DEBIAN11-OPENLDAP-584937
Introduced through: gnupg2/dirmngr@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-14/libpq5@14.1–1.pgdg110+1 > openldap/libldap-2.4–2@2.4.57+dfsg-3 ✗ Low severity vulnerability found in ncurses/libtinfo6
Description: Out-of-bounds Write
Info: https://snyk.io/vuln/SNYK-DEBIAN11-NCURSES-1655741
Introduced through: bash/bash@5.1–2+b3, ncurses/ncurses-bin@6.2+20201114–2, postgresql-12@12.9–1.pgdg110+1, util-linux/mount@2.36.1–8, gnupg2/dirmngr@2.2.27–2, gnupg2/gnupg@2.2.27–2, ncurses/ncurses-base@6.2+20201114–2
From: bash/bash@5.1–2+b3 > ncurses/libtinfo6@6.2+20201114–2
From: ncurses/ncurses-bin@6.2+20201114–2 > ncurses/libtinfo6@6.2+20201114–2
From: postgresql-12@12.9–1.pgdg110+1 > llvm-toolchain-11/libllvm11@1:11.0.1–2 > ncurses/libtinfo6@6.2+20201114–2
and 8 more. ✗ Low severity vulnerability found in libxslt/libxslt1.1
Description: Use of Insufficiently Random Values
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBXSLT-514942
Introduced through: postgresql-12@12.9–1.pgdg110+1
From: postgresql-12@12.9–1.pgdg110+1 > libxslt/libxslt1.1@1.1.34–4 ✗ Low severity vulnerability found in libsepol/libsepol1
Description: Use After Free
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBSEPOL-1315627
Introduced through: gnupg2/dirmngr@2.2.27–2
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1 > libsemanage/libsemanage1@3.1–1+b2 > libsepol/libsepol1@3.1–1 ✗ Low severity vulnerability found in libsepol/libsepol1
Description: Out-of-bounds Read
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBSEPOL-1315629
Introduced through: gnupg2/dirmngr@2.2.27–2
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1 > libsemanage/libsemanage1@3.1–1+b2 > libsepol/libsepol1@3.1–1 ✗ Low severity vulnerability found in libsepol/libsepol1
Description: Use After Free
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBSEPOL-1315635
Introduced through: gnupg2/dirmngr@2.2.27–2
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1 > libsemanage/libsemanage1@3.1–1+b2 > libsepol/libsepol1@3.1–1 ✗ Low severity vulnerability found in libsepol/libsepol1
Description: Use After Free
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBSEPOL-1315641
Introduced through: gnupg2/dirmngr@2.2.27–2
From: gnupg2/dirmngr@2.2.27–2 > adduser@3.118 > shadow/passwd@1:4.8.1–1 > libsemanage/libsemanage1@3.1–1+b2 > libsepol/libsepol1@3.1–1 ✗ Low severity vulnerability found in gnutls28/libgnutls30
Description: Improper Input Validation
Info: https://snyk.io/vuln/SNYK-DEBIAN11-GNUTLS28–515971

Introduced through: gnupg2/dirmngr@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > gnutls28/libgnutls30@3.7.1–5
From: gnupg2/dirmngr@2.2.27–2 > openldap/libldap-2.4–2@2.4.57+dfsg-3 > gnutls28/libgnutls30@3.7.1–5
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-common/postgresql-client-common@232.pgdg110+1 > pgdg-keyring@2018.2 > apt@2.2.4 > gnutls28/libgnutls30@3.7.1–5✗ Low severity vulnerability found in apt/libapt-pkg6.0
Description: Improper Verification of Cryptographic Signature
Info: https://snyk.io/vuln/SNYK-DEBIAN11-APT-522585
Introduced through: postgresql-12@12.9–1.pgdg110+1
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-common/postgresql-client-common@232.pgdg110+1 > pgdg-keyring@2018.2 > apt@2.2.4 > apt/libapt-pkg6.0@2.2.4
From: postgresql-12@12.9–1.pgdg110+1 > postgresql-12/postgresql-client-12@12.9–1.pgdg110+1 > postgresql-common/postgresql-client-common@232.pgdg110+1 > pgdg-keyring@2018.2 > apt@2.2.4✗ High severity vulnerability found in perl/perl-base
Description: Improper Verification of Cryptographic Signature
Info: https://snyk.io/vuln/SNYK-DEBIAN11-PERL-1925976
Introduced through: meta-common-packages@meta, perl/libperl5.32@5.32.1–4+deb11u2, perl@5.32.1–4+deb11u2, perl/perl-modules-5.32@5.32.1–4+deb11u2
From: meta-common-packages@meta > perl/perl-base@5.32.1–4+deb11u2
From: perl/libperl5.32@5.32.1–4+deb11u2
From: perl@5.32.1–4+deb11u2 > perl/libperl5.32@5.32.1–4+deb11u2
and 4 more.✗ High severity vulnerability found in libgcrypt20
Description: Information Exposure
Info: https://snyk.io/vuln/SNYK-DEBIAN11-LIBGCRYPT20–1297892
Introduced through: gnupg2/dirmngr@2.2.27–2, gnupg2/gnupg@2.2.27–2, postgresql-12@12.9–1.pgdg110+1
From: gnupg2/dirmngr@2.2.27–2 > libgcrypt20@1.8.7–6
From: gnupg2/dirmngr@2.2.27–2 > gnupg2/gpgconf@2.2.27–2 > libgcrypt20@1.8.7–6
From: gnupg2/gnupg@2.2.27–2 > gnupg2/gnupg-utils@2.2.27–2 > libgcrypt20@1.8.7–6
and 9 more.✗ Critical severity vulnerability found in glibc/libc-bin
Description: Use After Free
Info: https://snyk.io/vuln/SNYK-DEBIAN11-GLIBC-1296898
Introduced through: glibc/locales@2.31–13+deb11u2, postgresql-12@12.9–1.pgdg110+1, meta-common-packages@meta
From: glibc/locales@2.31–13+deb11u2 > glibc/libc-bin@2.31–13+deb11u2
From: glibc/locales@2.31–13+deb11u2 > glibc/libc-l10n@2.31–13+deb11u2
From: glibc/locales@2.31–13+deb11u2
and 2 more.
Package manager: deb
Project name: docker-image|postgres
Docker image: postgres:12
Platform: linux/amd64
Base image: postgres:12.9-bullseyeTested 147 dependencies for known vulnerabilities, found 48 vulnerabilities.According to our scan, you are currently using the most secure version of the selected base imageFor more free scans that keep your images secure, sign up to Snyk at https://dockr.ly/3ePqVcp

5. Wie installiere ich den Schwachstellen-Scanner Grype?
Wir empfehlen:

curl -sSfL https://raw.githubusercontent.com/anchore/grype/main/install.sh | sh -s -- -b /usr/local/bin
...or, you can specify a release version and destination directory for the installation:curl -sSfL https://raw.githubusercontent.com/anchore/grype/main/install.sh | sh -s -- -b <DESTINATION_DIR> <RELEASE_VERSION>

6. Wie installiere ich den Schwachstellen-Scanner Grype?
Homebrew:

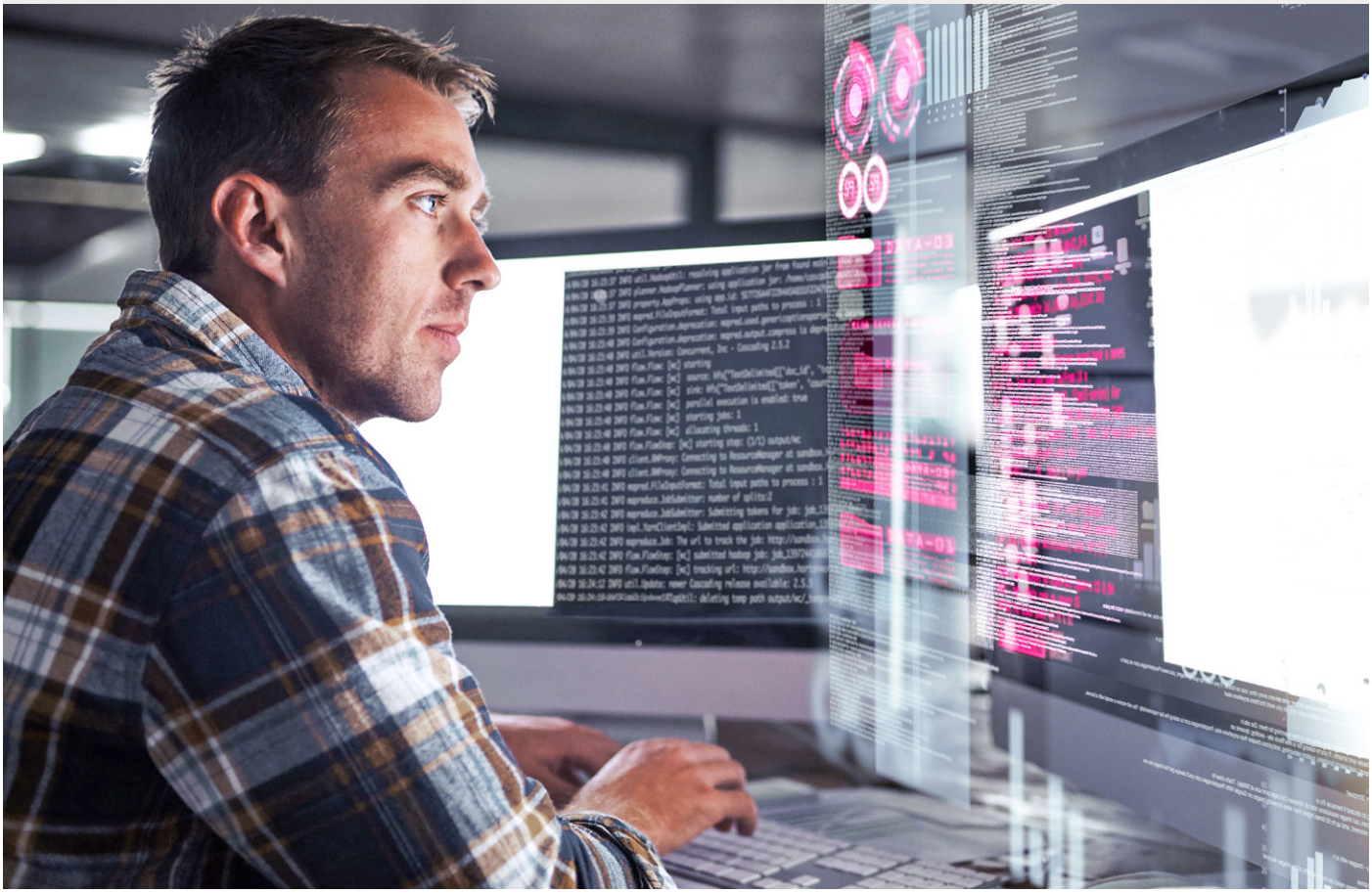
```
brew tap anchore/grype
brew install grype
```

7. Wie installiere ich den Schwachstellen-Scanner Grype?
Beispiel für die Ausgabe eines Schwachstellen-Scans:

```
macpro$ grype k8s.gcr.io/kube-scheduler:v1.22.5 --scope all-layers
✓ Vulnerability DB        [no update available]
✓ Loaded image
✓ Parsed image
✓ Cataloged packages      [3 packages]
✓ Scanned image           [0 vulnerabilities]No vulnerabilities found
macpro$ grype postgres:12 --scope all-layers
✓ Vulnerability DB        [no update available]
✓ Loaded image
✓ Parsed image
✓ Cataloged packages      [718 packages]
✓ Scanned image           [550 vulnerabilities]NAME                    INSTALLED       FIXED-IN    VULNERABILITY       SEVERITY
apt                       2.2.4                   CVE-2011-3374       Negligible
coreutils                 8.32-4+b1       (won't fix)  CVE-2016-2781       Low
coreutils                 8.32-4+b1               CVE-2017-18018      Negligible
github.com/opencontainers/runc  v1.0.1        1.0.3       GHSA-v95c-p5hm-xq8f  Medium
libapt-pkg6.0             2.2.4                   CVE-2011-3374       Negligible
libc-bin                  2.31-13+deb11u2         CVE-2021-43396      Negligible
libc-bin                  2.31-13+deb11u2         CVE-2021-3998       Unknown
libc-bin                  2.31-13+deb11u2         CVE-2021-3999       Unknown
libc-bin                  2.31-13+deb11u2  (won't fix)  CVE-2022-23218      Unknown
libc-bin                  2.31-13+deb11u2  (won't fix)  CVE-2022-23219      Unknown
libc-bin                  2.31-13+deb11u2         CVE-2010-4756       Negligible
libc-bin                  2.31-13+deb11u2         CVE-2018-20796      Negligible
libc-bin                  2.31-13+deb11u2         CVE-2019-1010022    Negligible
libc-bin                  2.31-13+deb11u2         CVE-2019-1010023    Negligible
libc-bin                  2.31-13+deb11u2         CVE-2019-1010024    Negligible
libc-bin                  2.31-13+deb11u2         CVE-2019-1010025    Negligible
libc-bin                  2.31-13+deb11u2         CVE-2019-9192       Negligible
libc-bin                  2.31-13+deb11u2  (won't fix)  CVE-2021-33574      Critical
libc-l10n                 2.31-13+deb11u2         CVE-2021-43396      Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2021-3998       Unknown
libc-l10n                 2.31-13+deb11u2         CVE-2021-3999       Unknown
libc-l10n                 2.31-13+deb11u2  (won't fix)  CVE-2022-23218      Unknown
libc-l10n                 2.31-13+deb11u2  (won't fix)  CVE-2022-23219      Unknown
libc-l10n                 2.31-13+deb11u2         CVE-2010-4756       Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2018-20796      Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2019-1010022    Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2019-1010023    Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2019-1010024    Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2019-1010025    Negligible
libc-l10n                 2.31-13+deb11u2         CVE-2019-9192       Negligible
libc-l10n                 2.31-13+deb11u2  (won't fix)  CVE-2021-33574      Critical
libc6                     2.31-13+deb11u2         CVE-2021-43396      Negligible
libc6                     2.31-13+deb11u2         CVE-2021-3998       Unknown
libc6                     2.31-13+deb11u2         CVE-2021-3999       Unknown
```

```
libc6                2.31–13+deb11u2  (won't fix)  CVE-2022–23218     Unknown
libc6                2.31–13+deb11u2  (won't fix)  CVE-2022–23219     Unknown
libc6                2.31–13+deb11u2               CVE-2010–4756      Negligible
libc6                2.31–13+deb11u2               CVE-2018–20796     Negligible
libc6                2.31–13+deb11u2               CVE-2019–1010022   Negligible
libc6                2.31–13+deb11u2               CVE-2019–1010023   Negligible
libc6                2.31–13+deb11u2               CVE-2019–1010024   Negligible
libc6                2.31–13+deb11u2               CVE-2019–1010025   Negligible
libc6                2.31–13+deb11u2               CVE-2019–9192      Negligible
libc6                2.31–13+deb11u2  (won't fix)  CVE-2021–33574     Critical
libgcrypt20          1.8.7–6          (won't fix)  CVE-2021–33560     High
libgcrypt20          1.8.7–6                       CVE-2018–6829      Negligible
libgnutls30          3.7.1–5                       CVE-2011–3389      Medium
libgssapi-krb5–2     1.18.3–6+deb11u1              CVE-2004–0971      Negligible
libgssapi-krb5–2     1.18.3–6+deb11u1              CVE-2018–5709      Negligible
libk5crypto3         1.18.3–6+deb11u1              CVE-2004–0971      Negligible
libk5crypto3         1.18.3–6+deb11u1              CVE-2018–5709      Negligible
libkrb5–3            1.18.3–6+deb11u1              CVE-2004–0971      Negligible
libkrb5–3            1.18.3–6+deb11u1              CVE-2018–5709      Negligible
libkrb5support0      1.18.3–6+deb11u1              CVE-2004–0971      Negligible
libkrb5support0      1.18.3–6+deb11u1              CVE-2018–5709      Negligible
libldap-2.4–2        2.4.57+dfsg-3                 CVE-2015–3276      Negligible
libldap-2.4–2        2.4.57+dfsg-3                 CVE-2017–14159     Negligible
libldap-2.4–2        2.4.57+dfsg-3                 CVE-2017–17740     Negligible
libldap-2.4–2        2.4.57+dfsg-3                 CVE-2020–15719     Negligible
libncursesw6         6.2+20201114–2                CVE-2021–39537     Negligible
libpcre3             2:8.39–13                     CVE-2017–11164     Negligible
libpcre3             2:8.39–13                     CVE-2017–16231     Negligible
libpcre3             2:8.39–13                     CVE-2017–7245      Negligible
libpcre3             2:8.39–13                     CVE-2017–7246      Negligible
libpcre3             2:8.39–13                     CVE-2019–20838     Negligible
libperl5.32          5.32.1–4+deb11u2              CVE-2011–4116      Negligible
libperl5.32          5.32.1–4+deb11u2  (won't fix)  CVE-2020–16156     High
libsepol1            3.1–1             (won't fix)  CVE-2021–36084     Low
libsepol1            3.1–1             (won't fix)  CVE-2021–36085     Low
libsepol1            3.1–1             (won't fix)  CVE-2021–36086     Low
libsepol1            3.1–1             (won't fix)  CVE-2021–36087     Low
libsqlite3–0         3.34.1–3                       CVE-2021–36690     Negligible
libssl1.1            1.1.1k-1+deb11u1              CVE-2007–6755      Negligible
libssl1.1            1.1.1k-1+deb11u1              CVE-2010–0928      Negligible
libsystemd0          247.3–6                       CVE-2013–4392      Negligible
libsystemd0          247.3–6                       CVE-2020–13529     Negligible
libsystemd0          247.3–6           (won't fix)  CVE-2021–3997      Unknown
libtinfo6            6.2+20201114–2                CVE-2021–39537     Negligible
libudev1             247.3–6                       CVE-2013–4392      Negligible
libudev1             247.3–6                       CVE-2020–13529     Negligible
libudev1             247.3–6           (won't fix)  CVE-2021–3997      Unknown
libxslt1.1           1.1.34–4                      CVE-2015–9019      Negligible
locales              2.31–13+deb11u2               CVE-2021–43396     Negligible
locales              2.31–13+deb11u2               CVE-2021–3998      Unknown
locales              2.31–13+deb11u2               CVE-2021–3999      Unknown
locales              2.31–13+deb11u2  (won't fix)  CVE-2022–23218     Unknown
locales              2.31–13+deb11u2  (won't fix)  CVE-2022–23219     Unknown
locales              2.31–13+deb11u2               CVE-2010–4756      Negligible
locales              2.31–13+deb11u2               CVE-2018–20796     Negligible
locales              2.31–13+deb11u2               CVE-2019–1010022   Negligible
locales              2.31–13+deb11u2               CVE-2019–1010023   Negligible
locales              2.31–13+deb11u2               CVE-2019–1010024   Negligible
locales              2.31–13+deb11u2               CVE-2019–1010025   Negligible
locales              2.31–13+deb11u2               CVE-2019–9192      Negligible
locales              2.31–13+deb11u2  (won't fix)  CVE-2021–33574     Critical
login                1:4.8.1–1                     CVE-2007–5686      Negligible
```

login	1:4.8.1–1	CVE-2013–4235	Negligible
login	1:4.8.1–1	CVE-2019–19882	Negligible
ncurses-base	6.2+20201114–2	CVE-2021–39537	Negligible
ncurses-bin	6.2+20201114–2	CVE-2021–39537	Negligible
openssl	1.1.1k-1+deb11u1	CVE-2007–6755	Negligible
openssl	1.1.1k-1+deb11u1	CVE-2010–0928	Negligible
passwd	1:4.8.1–1	CVE-2007–5686	Negligible
passwd	1:4.8.1–1	CVE-2013–4235	Negligible
passwd	1:4.8.1–1	CVE-2019–19882	Negligible
perl	5.32.1–4+deb11u2	CVE-2011–4116	Negligible
perl	5.32.1–4+deb11u2 (won't fix)	CVE-2020–16156	High
perl-base	5.32.1–4+deb11u2	CVE-2011–4116	Negligible
perl-base	5.32.1–4+deb11u2 (won't fix)	CVE-2020–16156	High
perl-modules-5.32	5.32.1–4+deb11u2	CVE-2011–4116	Negligible
perl-modules-5.32	5.32.1–4+deb11u2 (won't fix)	CVE-2020–16156	High
tar	1.34+dfsg-1	CVE-2005–2541	Negligible



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