

OpenSCAP	3
1. (SCAP) OpenSCAP	3
1.1. SCAP 가?	3
1.2. OpenSCAP :	3
1.3.	4
2. SCAP	4
2.1. SCAP	4
2.2. SCAP	5
3. OpenSCAP :	6
3.1. OpenSCAP :	6
3.2. oscap:	6
3.3. SCAP Workbench:	6
3.4.	7
4. 가 : OpenSCAP 가	7
4.1.	7
4.2. SCAP 가 (SSG)	8
4.3.	9
4.4. (Tailoring)	9
5. OpenSCAP	10
5.1. CIS(Center for Internet Security)	10
5.2. DISA STIGs(Security Technical Implementation Guides)	10
5.3. (: FISMA, HIPAA, PCI-DSS, NIST SP 800-53)	11
6. OpenSCAP	11
7.	12
SCAP	12
(Coverage Gaps)	12
8. OpenSCAP :	13
8.1. OpenSCAP Nessus	13
8.2. OpenSCAP Qualys VMDR	13
8.3. : OpenSCAP, Nessus, Qualys VMDR	14
9.	15
9.1. OpenSCAP: , , API	15
9.2. OpenSCAP	15
10.	15
10.1. OpenSCAP 가	15
10.2. OpenSCAP	16
	16

OpenSCAP

Google Gemini

.

: 2025-06-09

1. (SCAP) OpenSCAP

(IT) 가 , , 가, (SCAP) OpenSCAP .

1.1. SCAP 가?

SCAP(Security Content Automation Protocol) ,
가 가 .¹ SCAP
(NIST) 800-53(SP 800-53)
¹ (FISMA)
¹ SCAP
NIST가 (NVD) .¹ SCAP ,
 ,
 ,
¹ SCAP
가 ,
¹ .
SCAP NIST , 가 , NIST FISMA
¹ NIST SCAP
 , FISMA
 .
SCAP
가 , SCAP “ ”
“ ”¹
 ,
 .

1.2. OpenSCAP :

OpenSCAP(OSCAP) SCAP .³ SCAP
 , SCAP
¹ OpenSCAP SCAP 가 (SSG) (oscap)
³ OpenSCAP SCAP
 ,
SCAP . OpenSCAP
가
 . 가

1.3.

가 SCAP (plumbing) PCI
DSS, NIST, FedRAMP, FISMA IT 가
OpenSCAP 가

2. SCAP

SCAP SCAP

2.1. SCAP

- SCAP
- XCCDF (Extensible Configuration Checklist Description Format): XML SCAP 가 (SSG) XCCDF
 - OVAL (Open Vulnerability and Assessment Language): OVAL (: 가 ,)
 - CVE (Common Vulnerabilities and Exposures):
 - CPE (Common Platform Enumeration):
 - CVSS (Common Vulnerability Scoring System): remediation
 - CCE (Common Configuration Enumeration):

- ARF (Asset Reporting Format):
 - . oscap ARF
- TMSAD (Trust Model for Security Automation Data):
- AID (Asset Identification):
- CCSS (Common Configuration Scoring System):

SCAP
SCAP(OpenSCAP) 가
(XCCDF, OVAL) (CPE),
(CVE), 가(CVSS) “ (suite)”¹ SCAP
SCAP 가 “ 1” SCAP 가

2.2. SCAP

SCAP
SCAP , SCAP

	(Full Name)		SCAP
XCCDF	Extensible Configuration Checklist Description Format ()	, XML “ ”	가
OVAL	Open Vulnerability and Assessment Language (가)	(: , 가) XML ()	XCCDF “ ”
CVE	Common Vulnerabilities and Exposures ()		가
CPE	Common Platform Enumeration ()	IT (, OS,)	
CVSS	Common Vulnerability Scoring System (가)	가	remediation
CCE	Common Configuration Enumeration ()	()	
ARF	Asset Reporting Format ()	가	가 가

SCAP

SCAP
가
SCAP
OpenSCAP

3. OpenSCAP :

OpenSCAP SCAP
OpenSCAP 가 ,
(oscap) (SCAP Workbench)

3.1. OpenSCAP :

OpenSCAP⁵
SCAP Workbench, Red Hat Satellite SCAPTimony, OpenSCAP⁵
Daemon OpenSCAP Base C API⁵
SCAP¹¹ 가
, API , OpenSCAP SCAP C API¹¹ OpenSCAP
가 , 가
API 가
SCAP SCAP

3.2. oscap:

oscap OpenSCAP⁵
XCCDF OVAL 가⁵
SCAP 1.2 SCAP 1.1 1.0⁵
DISA STIG, NIST USGCB, PCI-DSS Red Hat 가⁵
oscap xccdf eval 가⁹, oscap info⁹
oscap xccdf generate report ARF/XML HTML¹²
oscap (verbose)
(CLI)
GUI
OpenSCAP
, CLI
oscap⁵
(: cron , Ansible, CI/CD) , OpenSCAP

3.3. SCAP Workbench:

SCAP Workbench OpenSCAP⁹

XCCDF SDS(Source Data Stream) 가
13 , HTML, ARF XCCDF
9 SCAP 가 (SSG) SCAP Workbench Workbench
9 (tailoring) 13 SCAP Workbench
가 . oscap CLI SCAP Workbench GUI5
OpenSCAP CLI
가
OpenSCAP 가

3.4.

OpenSCAP Red Hat Satellite SCAPTimony OpenSCAP Daemon
5 OpenShift Compliance Operator oscap xccdf eval
OpenShift 가 10 SCAPinoculars OpenSCAP ARF
Prometheus 10 OpenSCAP Jenkins
Ansible 7, OSCAP (XCCDF) EM CLI Enterprise
Manager 가 16 OpenSCAP
Compliance Operator, Jenkins, Ansible7 OpenSCAP OpenShift
DevOps DevSecOps
OpenSCAP
DevSecOps

4. 가 : OpenSCAP 가

OpenSCAP , 가

4.1.

OpenSCAP . SCAP 가 (SSG) .

- Fedora: dnf install openscap-scanner5 oscap . SCAP Workbench yum install scap-workbench9 , openscap-scanner 가 . 12
- RHEL 6/7, CentOS 6/7: yum install openscap-scanner5 yum install scap-workbench9 .
- RHEL 8+/CentOS 8+: Fedora dnf , 12
- Debian/Ubuntu: oscap libopenscap8 apt-get install libopenscap85 . Ubuntu SCAP Workbench SSG

가 DISA FSO, NSA, Red Hat

14

가

가

SSG

가

4.3.

4.3.1.

가

, SSG

⁹

⁹ 가

```
<datastream_file.xml> oscap info <datastream_file.xml>
( : oscap info /usr/share/xml/scap/ssg/content/ssg-rhel6-ds.xml).9 SCAP
Workbench9 ( : RHEL 8 )
( : CIS Benchmark Level 1)
```

4.3.2. 가 **oscap**

```
oscap 가 : oscap xccdf eval --profile <profile_id>
--results <results_file.xml> --report <report_file.html>
<datastream_file.xml>.9 DISA STIG oscap xccdf eval --profile
selected_profile --results result_file --cpe cpe_dictionary disa_stig_content
.5 가9, oscap OVAL
가 : oscap oval eval....19 OpenSCAP ,
```

4.3.3. (HTML, ARF, XCCDF)

```
. --results-arf arf.xml
(ARF)9, --report report.html HTML
.9 XCCDF9 HTML
9, SCAPinoculars ARF HTML
10 가 (ARF,
XCCDF) 가 (HTML)
OpenSCAP .
```

4.4. (Tailoring)

(Tailoring)

SCAP Workbench¹³, (fork)

ID /¹⁵

“ ” “ ”¹⁵

가 SCAP

¹⁵ OpenSCAP XCCDF 1.1 ,

openscap13

(: SSG)14,
(15)
15,
15
가 ,

5. OpenSCAP

OpenSCAP
가 CIS(Center for Internet Security) DISA STIG(Security
Technical Implementation Guides)
가

5.1. CIS(Center for Internet Security)

CIS
. OpenSCAP CIS PCI DSS, NIST, FedRAMP,
FISMA 6 Red Hat RHEL(Red Hat Enterprise
Linux) CIS scap-security-guide
18
oscap SSG
18 가, oscap
remediation() CIS
1 Level 2) 18 OpenSCAP Ubuntu CIS
17, CIS (Level
--remediate
17
OpenSCAP remediation 18, remediation
. , SSG RHEL 8 CIS remediation CIS 100%
98% 18 SSG
remediation 가 100%
remediation 가 ,

5.2. DISA STIGs(Security Technical Implementation Guides)

DISA STIG (DoD)
5 SCAP 가 (SSG) STIG 20 OpenSCAP DISA STIG 가
14 SSG DoD STIG Red Hat RHEL 6 DISA STIG SSG
14
STIG oscap xccdf eval --profile <STIG_profile>...

⁵, STIG OpenSCAP/SSG /usr/share/xml/scap/ssg/content
²⁰ STIG remediation Ansible DISA 가
(Supplemental Automation Content) ²⁰ .
SSG, Red Hat, DISA FS0 NSA STIG ¹⁴ .
가 DoD , DoD STIG .
가 가 (SSG) STIG

5.3. (: **FISMA, HIPAA, PCI-DSS, NIST SP 800-53**)

OpenSCAP CIS STIG . SCAP
NIST SP 800-53 ¹, FISMA ¹
PCI-DSS 가 (⁵, SSG가 PCI DSS ¹⁴), Oracle
Linux SSG HIPAA “ ” ¹⁶.SCAP
NIST ¹ .
OpenSCAP FISMA, HIPAA, PCI-DSS, NIST SP 800-53 ¹
SCAP 가 가 (OVAL)
SSG가 .
OpenSCAP 가 SSG 가 .

6. OpenSCAP

- OpenSCAP .
- 6.1. : OpenSCAP , ⁷
가 가 ¹ 가 .
 - 6.2. : SCAP ¹
 , SCAP “ ” ⁶, SCAP 가 ⁶
가 .
 - 6.3. (): OpenSCAP ⁴ SCAP Nessus
⁶, OpenSCAP(SCC + OVAL) ²²
²¹ .
OpenSCAP .
 - 6.4. : ⁷, remediation ⁸
⁷ 가 OpenSCAP 가 .
 - 6.5. : ⁷ CLI oscap . OpenSCAP .
 - 6.6. : Jenkins, Ansible ⁷ .

가
가
18
8 SCAP 가
SSG
SSG

8. OpenSCAP :

OpenSCAP 가
Nessus
Qualys
VMDR OpenSCAP

8.1. OpenSCAP Nessus

OpenSCAP Nessus 가 , , 가

- / : Nessus (Nessus Attack Scripting Language)
remediation²¹ OpenSCAP SCAP
SCAP DoD , Nessus SCAP
(: RHEL 8 SCAP).²¹ Tenable(Nessus) Nessus SCAP
²¹
- : OpenSCAP 96%
Nessus 72%²⁵ 가
SCAP²¹
- Remediation: OpenSCAP remediation (: CIS Ansible)¹⁸
Nessus remediation²¹
- UI: OpenSCAP , Nessus GUI²¹
Nessus OpenSCAP(SCC + OVAL)²¹
- : SCAP(OpenSCAP) DoD²¹ Nessus²⁶

8.2. OpenSCAP Qualys VMDR

OpenSCAP Qualys VMDR 가 , ,

- / : OpenSCAP SCAP²² Qualys
VMDR IT, OT, IoT
(VMDR)²² Qualys , ,
가²²
- : (, , OS)²² , Qualys
- : OpenSCAP SCAP /
²² Qualys IT, OT, IoT 가

- 가 : OpenSCAP . Qualys VMDR (가)²²
- : OpenSCAP (가) . Qualys (²⁷ , OpenSCAP , Qualys).

8.3. : OpenSCAP, Nessus, Qualys VMDR

OpenSCAP, Nessus, Qualys VMDR .

	OpenSCAP	Nessus (Tenable)	Qualys VMDR
	SCAP 가 (OVAL) ,	,	(VMDR), ,
	SCAP (XCCDF, OVAL, CPE, CVE)	, NASL , Tenable	,
	()	(Nessus Pro, Tenable.io)	()
SCAP		가 ; SCAP	/ 가 , SCAP 가
	(SSG STIG, CIS) (oscap)	GUI, ,	, (IT/OT/IoT)
	HTML, ARF, XCCDF; / ,	가 ,	,
Remediation	remediation 가 (: SSG Ansible)	remediation	,
	/ ,	가, ,	, ,
	CLI (oscap), GUI (SCAP Workbench)	GUI (Nessus Pro, Tenable.io)	
	SCAP 가 , ,	가, ,	VMDR 가 , MSSP, ,

OpenSCAP SCAP STIG CIS 가 . Nessus Qualys . OpenSCAP 가 . , SCAP , OpenSCAP SCAP , Nessus Qualys SCAP

가²¹
OpenSCAP SCAP
가 SCAP
OpenSCAP , “ ” SCAP
.

9.
OpenSCAP , OpenSCAP

9.1. **OpenSCAP:** , **API**
OpenSCAP , OpenSCAP
¹² OpenSCAP cmake make ,
Fedora, RHEL, Ubuntu/Debian
¹²
OSCAP_SCHEMA_PATH) (oscap -v), (LD_LIBRARY_PATH, ¹¹
OpenSCAP Base C API
lcov, genhtml 가 ¹²

9.2. **OpenSCAP**
OpenSCAP , GitHub ¹⁸ GitHub
¹⁸
¹²
¹², API ¹¹, ¹⁸
OpenSCAP 가
가 , OpenSCAP

10.
OpenSCAP ,
가 OpenSCAP , , ,

10.1. **OpenSCAP** 가
OpenSCAP 가 , ,

가 . SCAP ,

:

- : 가
- : CVE, CPE, XCCDF, OVAL
- :
- : 가 ,

OpenSCAP ,

10.2. OpenSCAP

DevSecOps, , OpenSCAP

OpenShift Compliance Operator¹⁰

OpenSCAP IT

OpenSCAP , SCAP

가

“ (Shift Left)” “ (Security as Code)”

, OpenSCAP (XCCDF)

OpenSCAP ¹ OpenSCAP

가

OpenSCAP SCAP 가 (SSG) 가 가

, , IoT

. OpenSCAP ¹⁴

() , OpenSCAP

SCAP

, OpenSCAP

- Security Content Automation Protocol - Wikipedia, 6 9, 2025 , https://en.wikipedia.org/wiki/Security_Content_Automation_Protocol
- en.wikipedia.org, 6 9, 2025 , [https://en.wikipedia.org/wiki/Security_Content_Automation_Protocol#:~:text=Security%20Content%20Automation%20Protocol%20\(SCAP\)%20checklists%20standardize%20and%20enable%20automation,800%2D53\)%20controls%20framework.](https://en.wikipedia.org/wiki/Security_Content_Automation_Protocol#:~:text=Security%20Content%20Automation%20Protocol%20(SCAP)%20checklists%20standardize%20and%20enable%20automation,800%2D53)%20controls%20framework.)
- About SCAP - Oracle Help Center, 6 9, 2025 ,

- <https://docs.oracle.com/en/operating-systems/oracle-linux/8/oscap/oscap-WhatIsSCAP.html>
- docs.oracle.com, 6 9, 2025 ,
[https://docs.oracle.com/en/operating-systems/oracle-linux/8/oscap/oscap-WhatIsSCAP.html#:~:text=OpenSCAP%20\(OSCAP\)%20is%20an%20open,Linux%20to%20automate%20compliance%20testing.](https://docs.oracle.com/en/operating-systems/oracle-linux/8/oscap/oscap-WhatIsSCAP.html#:~:text=OpenSCAP%20(OSCAP)%20is%20an%20open,Linux%20to%20automate%20compliance%20testing.)
- OpenSCAP Base | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/tools/openscap-base/>
- Secure Configurations and the Power of SCAP, 6 9, 2025 ,
<https://www.cisecurity.org/insights/blog/secure-configurations-and-the-power-of-scap>
- OpenSCAP: An effective Security and Compliance Audit ... - mivocloud, 6 9, 2025 ,
<https://mivocloud.com/blog/OpenSCAP-An-effective-Security-and-Compliance-Audit-solution>
- Vulnerability Assessment | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/features/vulnerability-assessment/>
- Getting Started | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/getting-started/>
- How to visualize your OpenSCAP compliance reports - Red Hat Developer, 6 9, 2025 ,
<https://developers.redhat.com/articles/2024/02/08/how-visualize-your-openscap-compliance-reports>
- Documentation | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/resources/documentation/>
- openscap/docs/developer/developer.adoc at main - GitHub, 6 9, 2025 ,
<https://github.com/OpenSCAP/openscap/blob/main/docs/developer/developer.adoc>
- SCAP Workbench User Manual, 6 9, 2025 ,
<https://static.open-scap.org/scap-workbench-1.1/>
- SCAP Security Guide | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/security-policies/scap-security-guide/>
- Customizing SCAP Security Guide for your use-case | OpenSCAP portal, 6 9, 2025 ,
<https://www.open-scap.org/resources/documentation/customizing-scap-security-guide-for-your-use-case/>
- 24 SCAP Supported Standards - Oracle Help Center, 6 9, 2025 ,
<https://docs.oracle.com/en/enterprise-manager/cloud-control/enterprise-manager-cloud-control/13.5/emdbc/scap-supported-standards.html>
- Automating CIS Compliance With OpenScap on Ubuntu Server - Eric Morrish, 6 9, 2025 ,
<https://ericmorrish.com/blog/automating-cis-compliance-with-openscap-on-ubuntu-server/>
- Center for Internet Security (CIS) compliance in Red Hat Enterprise ..., 6 9, 2025 ,
<https://www.redhat.com/en/blog/center-internet-security-cis-compliance-red-hat-enterprise-linux-using-openscap>
- Module : OpenSCAP: Using the oscap Command-Line Interface - Learn Oracle, 6 9, 2025 ,
<https://learn.oracle.com/ols/module/openscap-using-the-oscap-command-line-interface/37001/37155>
- Efficiently automating DISA STIGS: a guide to automated STIG hardening with RKE2, 6 9, 2025 ,
<https://www.glasswall.com/blog/efficiently-automating-disa-stigs-a-guide-to-automated-stig-hardening-with-rke2>
- Vulnerability management and SCAP : r/cybersecurity - Reddit, 6 9, 2025 ,
https://www.reddit.com/r/cybersecurity/comments/1bm8pop/vulnerability_management_and_scap/
- Compare OpenSCAP vs. Qualys VMDR in 2025 - Slashdot, 6 9, 2025 ,
<https://slashdot.org/software/comparison/OpenSCAP-vs-Qualys-VM/>
- OpenSCAP vs. Qualys VMDR Comparison - SourceForge, 6 9, 2025 ,

<https://sourceforge.net/software/compare/OpenSCAP-vs-Qualys-VM/>

- OpenSCAP memory-consumption problems - Red Hat Customer Portal, 6 9, 2025 ,
<https://access.redhat.com/articles/6999111>
- Openscap gives better score than the nessus - Login, 6 9, 2025 ,
https://tenable.my.site.com/s/question/0D5WP00000WK0I0A5/openscap-gives-better-score-than-the-nessus?language=en_US
- 10 Vulnerability Scanning Tools to Know in 2025 - Pynt, 6 9, 2025 ,
<https://www.pynt.io/learning-hub/application-security/10-vulnerability-scanning-tools-to-know-in-2025>
- Compliance Scan vs Vulnerability Scan: Key Differences - Invicti, 6 9, 2025 ,
<https://www.invicti.com/blog/web-security/compliance-scan-vs-vulnerability-scan/>

From:

<https://atl.kr/dokuwiki/> - **AllThatLinux!**

Permanent link:

https://atl.kr/dokuwiki/doku.php/openscap_%EA%B0%9C%EC%9A%94?rev=1749441415

Last update: **2025/06/09 03:56**

