

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
.

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
SCAP⁵ OpenSCAP Base C API
SCAP¹¹ 가
, API
, OpenSCAP SCAP
가 , 가
. API
SCAP 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 info⁵
oscap xccdf generate report ARF/XML HTML¹²
(CLI) oscap (verbose) oscap¹²
. GUI OpenSCAP
. oscap⁵, CLI, CI/CD
(: 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 FS0, NSA, Red Hat

14

가

SSG

가

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
Workbench 9 ( : 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 가 9, 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 XCCDF .9 HTML
9, SCAPinoculars ARF HTML
.10 가 (ARF,
XCCDF) 가 (HTML)
OpenSCAP .
```

4.4. (Tailoring)

```
. (Tailoring)
SCAP Workbench 13, (fork)
ID / 15
“ ” “ ” 15
가 SCAP
.15 OpenSCAP XCCDF 1.1 ,
```

openscap ¹³

(: 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()
1 Level 2)
CIS
Ansible ¹⁸ OpenSCAP Ubuntu CIS
¹⁷ CIS (Level
--remediate
¹⁷
OpenSCAP remediation ¹⁸, remediation
, SSG RHEL 8 CIS remediation CIS 100%
¹⁸ 98% 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
⁷ 가 ⁸ OpenSCAP 가 .
 - 6.5. : ⁷ CLI oscap .
 . OpenSCAP .
 - 6.6. : Jenkins, Ansible ⁷ .

OpenSCAP (6.1) ((, 6.3) 가 , (6.4). (6.2) (6.6) , , 가 , , 가

7.

OpenSCAP 가 가 , OpenSCAP

OpenSCAP 가 (: 2GB)
24 “Out of memory: Killed process (oscap)” “Memory allocation failed”
가 24 / , /
24

OSCAP_PROBE_MEMORY_USAGE_RATIO ,
OSCAP_PROBE_IGNORE_PATHS (: /home) , 24
remediation , , oscap 가

SCAP

가 .⁸ SCAP
(XCCDF, OVAL) , 가
(²⁴ “ 가 ” OpenSCAP
, SCAP , ,

(Coverage Gaps)

SSG RHEL 8 CIS remediation 98% ,
CIS “ ” 100% 18 가
SSG 100% 가
,
OpenSCAP 24

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
- 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) , OpenSCAP , Qualys (²⁷)

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 가 SCAP STIG CIS . Nessus Qualys

OpenSCAP 가 , SCAP , OpenSCAP SCAP 가 , Nessus Qualys SCAP .
가 .²¹

OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. SCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

9. OpenSCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

9.1. OpenSCAP: , API

OpenSCAP은 Fedora, RHEL, Ubuntu/Debian에서 사용할 수 있습니다. OpenSCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

9.2. OpenSCAP

OpenSCAP은 GitHub에서 사용할 수 있습니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

10. OpenSCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

10.1. OpenSCAP 가

OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다. OpenSCAP은 SCAP을 사용하여 시스템의 보안 상태를 평가하는 데 사용됩니다.

가 OpenSCAP

10.2. OpenSCAP

DevSecOps, OpenSCAP
OpenShift Compliance Operator 10
OpenSCAP IT OpenSCAP
SCAP , SCAP
“ (Shift Left)” “ (Security as Code)”
OpenSCAP (XCCDF)
OpenSCAP .1 OpenSCAP
SCAP 가 (SSG) 가 가 OpenSCAP , 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 Linux using openscap ..., 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=1749441054

Last update: **2025/06/09 03:50**

