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# SCAP 1.4 Component Specification Version Updates

*An Annex to NIST SP 800-126r4*

Initial Public Draft

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Stephen Quinn

NIST | NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

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U.S. Department of Commerce
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**Additional Information**
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**All comments are subject to release under the Freedom of Information Act (FOIA).**

1    **Abstract**

2    The Security Content Automation Protocol (SCAP) is a multi-purpose framework of component
3    specifications that support automated configuration, vulnerability, patch checking, security
4    measurement, and technical control compliance activities. The SCAP version 1.4 specification is
5    defined by the combination of NIST SP 800-126r4, a set of schemas, and this document. This
6    document allows the use of particular minor version updates to SCAP 1.4 component
7    specifications and particular Open Vulnerability and Assessment Language (OVAL) schema
8    versions to provide additional functionality for SCAP 1.4 without causing any loss of existing
9    functionality.

10    **Keywords**

11    Open Vulnerability and Assessment Language (OVAL); security automation; security
12    configuration; Security Content Automation Protocol (SCAP).

13    **Reports on Computer Systems Technology**

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15    Technology (NIST) promotes the U.S. economy and public welfare by providing technical
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37       applicants desiring to utilize the license for the purpose of complying with the guidance
38       or requirements in this ITL draft publication either:

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43   Such assurance shall indicate that the patent holder (or third party authorized to make
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46   are binding on the transferee, and that the transferee will similarly include appropriate
47   provisions in the event of future transfers with the goal of binding each successor-in-interest.

48   The assurance shall also indicate that it is intended to be binding on successors-in-interest
49   regardless of whether such provisions are included in the relevant transfer documents.

50   Such statements should be addressed to: scap@nist.gov

51

52    **Table of Contents**

70

71    **1. Introduction**

72    *Specification versioning* is the process of denoting a revision to a specification by changing its
73    version number. For example, the Security Content Automation Protocol (SCAP) specification
74    documents are occasionally updated, and these updates trigger an increase in the SCAP version
75    number (e.g., 1.2, 1.3, 1.4). This specification versioning is challenging because there is no
76    standard convention or terminology for it; each specification imparts different meanings into its
77    version numbers. For example, moving from version 3.4 to version 3.5 might break backward
78    compatibility for one specification, add new functionality for another specification, and simply
79    correct an error in a third specification.

80    This document defines two key terms for SCAP 1.4 component specification versioning: major
81    and minor version updates. A *major version update* is a revision of a specification that breaks
82    backward compatibility with the previous revision of the specification in numerous significant
83    ways. A *minor version update* is a revision of a specification that may add or enhance
84    functionality, fix bugs, and make other changes from the previous revision, but the changes
85    have minimal impact, if any, on backward compatibility.

86    **1.1. Purpose and Scope**

87    The purpose of this document is to extend the contents of NIST Special Publication (SP) 800-
88    126r4 (Revision 4) so that SCAP 1.4 is defined by the combination of the two documents and
89    the set of schemas. Readers should be familiar with SP 800-126r4 before reading this
90    document.

91    This document can only be used to make minor version updates of component specifications
92    that are already included in SCAP 1.4 by SP 800-126r4. Major version updates to SCAP 1.4
93    component specifications and new component specifications that are not included in SP 800-
94    126r4 can only be added to a future version of SCAP as documented in a future revision of SP
95    800-126.

96    Each SCAP 1.4 extension specified in this document takes one of two forms. First, it may allow
97    the use of particular minor version updates to SCAP 1.4 component specifications or particular
98    Open Vulnerability and Assessment Language (OVAL) versions included in SCAP 1.4. Second, it
99    may specify one or more requirements for using these updates or OVAL schemas in an SCAP
100    1.4-conformant manner.

101    This document specifies exactly which component specification minor version updates and
102    OVAL platform schema versions may be used as part of SCAP 1.4 for several reasons, including:

103    • To support the interoperability of SCAP 1.4 tools and content

104    • To provide a basis for testing tools to ensure that they comply with SCAP 1.4

105    • To reduce the burden on SCAP 1.4 tool and content developers by clearly defining all
106    SCAP 1.4 extensions in a single place

107   While organizations are free to use SCAP 1.4 with any schema or specification that they choose
108   in any manner they choose, such usage is not considered to be SCAP 1.4-conformant unless
109   defined as such in this document or in SP 800-126r4.

110   The scope of this document is versioning for SCAP 1.4 component specifications only.

111   **1.2. Document Structure**

112   The rest of this document consists of the following sections and appendices:

113   • Section 2 presents all minor version updates in SCAP 1.4 component specifications that
114       have been approved for inclusion in SCAP 1.4 along with any corresponding
115       requirements to be added to SCAP 1.4. This section also lists the criteria used to
116       evaluate a minor version update for potential inclusion in SCAP 1.4.

117   • Section 3 describes the management processes for the document.

118   • Appendix A lists the acronyms and abbreviations used in the document.

119   • Appendix B provides a glossary of selected terms in this document.

120   • Appendix C lists key changes made in this revision.

121 **2. Minor Version Updates in SCAP 1.4-Component Specifications**

122 This section defines the criteria used to evaluate minor version updates in SCAP 1.4 component
123 specifications for potential inclusion in SCAP 1.4 and lists all such updates that have been
124 approved for inclusion in SCAP 1.4 along with any additional corresponding requirements. It
125 also provides the current XML schema (XSD) and Schematron schema locations that correspond
126 to all SCAP 1.4 component specifications.

127 **2.1. Criteria for Potential Inclusion**

128 The following defines the criteria that a minor version update to an SCAP 1.4 component
129 specification and associated requirements must meet before being considered for potential
130 inclusion in this document:

131     1.  One or more of the following must be true:

132         a.  The component specification is being revised strictly for bug fixes or errata
133             purposes. In other words, the update does not add new functionality or enhance
134             existing functionality.
135         b.  The new minor version of the component specification is already being used by
136             tools and/or content.
137         c.  The platform schema revision or component specification revision provides
138             significant benefits, such as a solution for an important use case that previously
139             had no solution.

140     2.  The minor version update and associated requirements must not conflict with any
141        existing SCAP 1.4 requirements, including minimizing any negative impact on backward
142        compatibility.

143 **2.2. Approved Minor Version Updates and SCAP 1.4 Requirements**

144 The following SCAP 1.4 component specification minor version updates have been approved for
145 inclusion in SCAP 1.4:

146     •  OVAL 5.12.x[1]

147 For all other component specifications, the versions listed in SP 800-126r4 are the approved
148 versions. As of this writing, no requirements need to be added to SCAP 1.4 to support the
149 approved component specification minor version updates.

150 **2.3. XML Schema and Schematron Schema Locations**

151 Table 1 lists the XML schema (XSD) locations (and Schematron schema locations, when
152 applicable) for the SCAP component specifications.

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[1] For more information on the changes from OVAL 5.11.2 to OVAL 5.12.2, see the changelogs at https://github.com/OVAL-Community/OVAL/releases/tag/v5.12, https://github.com/OVAL-Community/OVAL/releases/tag/v5.12.1, and https://github.com/OVAL-Community/OVAL/releases/tag/v5.12.2.

153

**Table 1. SCAP XML schema and Schematron schema locations**

| Prefix | XML Schema Location | Schematron Schema Location (if applicable)[2] |
|---|---|---|
| AI | https://csrc.nist.gov/schema/asset-identification/1.1/asset-identification_1.1.0.xsd | |
| ARF | https://csrc.nist.gov/schema/asset-reporting-format/1.1/asset-reporting-format_1.1.0.xsd | Embedded in the schema |
| CPE Applicability Language | https://csrc.nist.gov/schema/cpe/2.3/cpe-language_2.3.xsd | |
| CPE Dictionary | https://csrc.nist.gov/schema/cpe/2.3/cpe-dictionary_2.3.xsd | |
| CPE Dictionary Extension | https://csrc.nist.gov/schema/cpe/2.3/cpe-dictionary-extension_2.3.xsd | |
| CPE Naming | https://csrc.nist.gov/schema/cpe/2.3/cpe-naming_2.3.xsd | |
| OCIL | https://csrc.nist.gov/schema/ocil/2.0/ocil-2.0.xsd | Embedded in the schema |
| OVAL 5.12.2 Schemas | http://github.com/OVAL-Community/OVAL/tree/5.11.2_release/oval-schemas | Embedded in the schema |
| SCAP constructs | https://csrc.nist.gov/schema/scap/1.4/scap-constructs_1.4.xsd | https://scap.nist.gov/revision/1.3/scap-schematron-rules.zip |
| SCAP source data stream | https://csrc.nist.gov/schema/scap/1.4/scap-source-data-stream_1.4.xsd | |
| TMSAD | https://csrc.nist.gov/schema/tmsad/1.0/tmsad_1.0.xsd | https://csrc.nist.gov/schema/tmsad/1.0/tmsad_1.0.sch |
| XCCDF | https://csrc.nist.gov/schema/xccdf/1.2/xccdf_1.2.xsd (XSD 1.0, where xsd:import statements use absolute URLs), https://csrc.nist.gov/schema/xccdf/1.2/xccdf_1.2.zip (complete schema bundle, where xsd:import statements use relative URLs) | https://csrc.nist.gov/schema/xccdf/1.2/xccdf_1.2.sch |

154

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[2] A complete bundle of Schematron schemas for SCAP 1.3 can be found on the SCAP website at https://scap.nist.gov/revision/1.3/#schematron.

155     **3. Document Management**


156     **3.1. Composition**

157     As stated in Sec. 1, the SCAP 1.4 specification comprises (a) SP 800-126r4 (i.e., the core
158     specification), (b) this annex (i.e., the extensions document), and (c) the normative component
159     schemas referenced by these documents.


160     **3.2. Rationale**

161     Maintaining this extensions document separate from the core specification enables extensions
162     to be published or revised without republishing SP 800-126r4 and provides a single,
163     consolidated catalogue of extensions for tool developers and content authors.


164     **3.3. Update Cadence**

165     The SCAP community's adoption of extensions will be driven by community needs, feedback,
166     major platform changes, and related trends. The extensions document MAY be updated more
167     frequently than SP 800-126r4, but the overall update cadence for both documents is expected
168     to be infrequent.


169     **3.4. Conformance and Assessment**

170     NIST no longer operates the SCAP Validation Program. The National Voluntary Laboratory
171     Accreditation Program (NVLAP) has terminated SCAP testing accreditation effective
172     September 2, 2025. Accordingly, this specification does not anticipate revisions to NIST
173     Interagency Report (IR) 7511 for SCAP 1.4. Organizations that develop independent
174     conformance or interoperability assessments that are derived from this specification SHOULD
175     cite the specific versions of SP 800-126r4, this extensions document, and the referenced
176     component schemas from which their test requirements are derived.

177

178     **Appendix A. List of Symbols, Abbreviations, and Acronyms**

179     Selected acronyms and abbreviations used in this document are defined below.

180     **DTR**
181     Derived Test Requirements

182     **FOIA**
183     Freedom of Information Act

184     **IETF**
185     Internet Engineering Task Force

186     **IR**
187     Interagency Report

188     **ITL**
189     Information Technology Laboratory

190     **NIST**
191     National Institute of Standards and Technology

192     **OVAL**
193     Open Vulnerability and Assessment Language

194     **SCAP**
195     Security Content Automation Protocol

196     **SP**
197     Special Publication

198

199     **Appendix B. Glossary**

200     Selected terms used in this document are defined below. See the glossary in SP 800-126r4 for
201     additional definitions.

202     **major version update**
203     A revision of a specification that breaks backward compatibility with the previous revision of the specification in
204     numerous significant ways.

205     **minor version update**
206     A revision of a specification that may add or enhance functionality, fix bugs, and make other changes from the
207     previous revision, but the changes have minimal impact, if any, on backward compatibility.

208     **specification versioning**
209     The process of denoting a revision to a specification by changing its version number.

210

211   **Appendix C. Change Log**

212   **<u>Revision 4 Release 1 – TBD</u>**

213   • Updated all references of SCAP 1.3 to SCAP 1.4
214   • Updated OVAL version to 5.12.2
215   • Removed OVAL 'core' and 'platform' schema version information
216   • Removed SWID requirements

217