

International Telecommunication Union

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TELECOMMUNICATION
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OF ITU

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SERIES X: DATA NETWORKS, OPEN SYSTEM
COMMUNICATIONS AND SECURITY

Cybersecurity information exchange – Vulnerability/state
exchange

**Common platform enumeration applicability
language**

Recommendation ITU-T X.1528.4



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Recommendation ITU-T X.1528.4

Common platform enumeration applicability language

Summary

Recommendation ITU-T X.1528.4 defines the specification for common platform enumeration (CPE) applicability language. The CPE applicability language specification is part of a stack of CPE specifications that support a variety of use cases relating to IT product description and naming. The CPE applicability language data model builds on top of other CPE specifications to provide the functionality required to allow CPE users to construct complex groupings of CPE names to describe IT platforms. These groupings are referred to as applicability statements because they are used to designate the platforms to which particular guidance, policies, etc. apply. This Recommendation defines the semantics of the CPE applicability language data model and the requirements that IT products and CPE applicability language documents must meet to claim compliance with this Recommendation.

This is achieved by listing the relevant clauses of the NIST Interagency Report 7698: Common Platform Enumeration Applicability Language Specification version 2.3 and showing whether they are normative or informative.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T X.1528.4	2012-09-07	17

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Introduction

Common platform enumeration (CPE) is a structured method of describing and identifying classes of applications, operating systems, and hardware devices present in an enterprise's computing assets. CPE can be used as a source of information for enforcing and verifying IT management policies relating to these assets, such as vulnerability, configuration, and remediation policies. IT management tools can collect information about installed products, identify products using their CPE names, and use this structured information to help make fully or partially automated decisions regarding the assets.

CPE consists of several modular specifications. Combinations of the specifications work together in layers to perform various functions. One of these specifications, CPE applicability language, defines a structured way to describe IT platforms by forming complex logical expressions out of individual CPE names and references to checks. For example, CPE applicability language could combine the CPE name for an operating system, the CPE name for an application running on that operating system, and a reference to a check for a particular value of a certain configuration setting (such as the wireless network card being enabled in the operating system). These logical expressions are called applicability statements, because they are used to designate to which platforms particular guidance, policies, etc. apply. Applicability statements can be used by tools to determine whether a target system is an instance of a particular platform.

The CPE names used by the CPE applicability language specification are bound forms of well-formed CPE names (WFNs), which are the abstract logical constructions for CPE names [CPE23-N:5.1]. The basic building block of the CPE applicability language specification is referred to as the logical test. This is a logical conjunction (AND) or disjunction (OR) of one or more CPE names and/or references to checks. Individual logical tests can also be negated (inverted). Nested logical tests allow the user to express a platform as any logical combination of individual CPE names and/or references to checks.

Note that previous NIST versions of CPE referred to the Applicability Language specification as simply the language specification.

Recommendation ITU-T X.1528.4

Common platform enumeration applicability language

1 Scope

This Recommendation defines the specification for CPE applicability language. The Recommendation also defines and explains the requirements that producers of CPE applicability language-supporting implementations, such as software and services, and CPE applicability language content must meet to claim compliance with this Recommendation.

As this Recommendation defines these specifications by listing the relevant clauses of the NIST Interagency Report 7698 Common Platform Enumeration: Applicability Language specification version 2.3 and showing whether they are normative or informative, all other versions are out of the scope of this Recommendation as are all CPE specifications other than CPE applicability language.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[NISTIR 7698] NIST Interagency Report 7698, *Common Platform Enumeration: Applicability Language Specification Version 2.3, August 2011.*

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

CPE	Common Platform Enumeration
NIST	National Institute of Standards and Technology
NISTIR	NIST Interagency Report
WFN	Well-formed CPE Name

5 Conventions

The following terms are considered equivalent:

- In ITU use of the word 'shall' and 'must' and their negatives are considered equivalent.
- In ITU use of the word 'shall' is equivalent to the NISTIR use of the word 'MUST'.
- In ITU use of the phrase 'shall not' is equivalent to the NISTIR use of the term 'MUST NOT'.

NOTE – In the NISTIR use of the words 'shall' and 'must' (in lower case) are used for informative text.

6 Applicability language specification

This clause defines the specification for common platform enumeration (CPE) applicability language. It provides direct references to NIST Interagency Report 7698 Common Platform Enumeration: Applicability Language Specification version 2.3 through alignment of the clauses with the section numbers such that clause 6.x aligns with [NISTIR 7698] section x with matching titles.

6.1 Introduction

[b-NISTIR 7698] section 1 is informative.

6.2 Definitions and abbreviations

[b-NISTIR 7698] section 2 is informative.

6.3 Relationship to existing specifications and standards

[b-NISTIR 7698] section 3 is informative.

6.4 Conformance

[b-NISTIR 7698] section 4 is informative.

6.5 Data model overview

[NISTIR 7698] section 5 is normative.

6.5.1 The <cpe:platform-specification> element

[NISTIR 7698] section 5.1 is normative.

6.5.2 The <cpe:platform> element

[NISTIR 7698] section 5.2 is normative.

6.5.3 The <cpe:logical-test> element

[NISTIR 7698] section 5.3 is normative.

6.5.4 The <cpe:check-fact-ref> element

[NISTIR 7698] section 5.4 is normative.

6.6 Content design requirements and recommendations

[NISTIR 7698] section 6 is normative.

6.6.1 CPE applicability language document contents

[NISTIR 7698] section 6.1 is normative.

6.6.2 The platform element

[NISTIR 7698] section 6.2 is normative.

6.6.3 The logical-test element

[NISTIR 7698] section 6.3 is normative.

6.6.4 The fact-ref element

[NISTIR 7698] section 6.4 is normative.

6.6.5 The check-fact-ref element

[NISTIR 7698] section 6.5 is normative.

6.7 Processing requirements and recommendations

[NISTIR 7698] section 7 is normative.

6.7.1 CPE bound name conversions

[NISTIR 7698] section 7.1 is normative.

6.7.2 Graceful error handling

[NISTIR 7698] section 7.2 is normative.

6.7.3 Evaluating elements

[NISTIR 7698] section 7.3 is normative.

6.7.3.1 Evaluating a logical-test element

[NISTIR 7698] section 7.3.1 is normative.

6.7.3.2 Evaluating a fact-ref element

[NISTIR 7698] section 7.3.2 is normative.

6.7.3.3 Evaluating a check-fact-ref element

[NISTIR 7698] section 7.3.3 is normative.

6.8 CPE applicability language pseudocode

[NISTIR 7698] section 8 is normative.

6.8.1 Core function

[NISTIR 7698] section 8.1 is normative.

6.8.2 Support functions

[NISTIR 7698] section 8.2 is normative.

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