INTERNATIONAL STANDARD

ISO/IEC 17203

First edition
2011-12-01

Information technology — Open Virtualization Format (OVF) specification

Technologies de l'information — Spécification du format de virtualisation ouvert (OVF)

Reference number
ISO/IEC 17203:2011(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 17203 was prepared by ANSI INCITS (as INCITS 469:2010) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by the national bodies of ISO and IEC.

American National Standard

for Information Technology – Open Virtualization Format (OVF) Specification

INCITS 469-2010

Developed by

incits SM

Where IT all begins

Approved American National Standard

ANSI

INCITS 469-2010

American National Standard
for Information Technology –

Open Virtualization Format (OVF) Specification

Secretariat

Information Technology Industry Council

Approved July 20, 2010

American National Standards Institute, Inc.

American National Standard

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made towards their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

CAUTION: The developers of this standard have requested that holders of patents that may be required for the implementation of the standard disclose such patents to the publisher. However, neither the developers nor the publisher have undertaken a patent search in order to identify which, if any, patents may apply to this standard. As of the date of publication of this standard and following calls for the identification of patents that may be required for the implementation of the standard, no such claims have been made. No further patent search is conducted by the developer or publisher in respect to any standard it processes. No representation is made or implied that licenses are not required to avoid infringement in the use of this standard.

Published by

American National Standards Institute, Inc.
25 West 43rd Street, New York, NY 10036

Printed in the United States of America

CONTENTS

Tables

Foreword (This foreword is not part of American National Standard INCITS 469-2010.)

The *Open Virtualization Format (OVF) Specification* describes an open, secure, portable, efficient and extensible format for the packaging and distribution of software to be run in virtual machines. The key properties of the format are as follows:

- **Optimized for distribution:** OVF supports content verification and integrity checking based on industry-standard public key infrastructure, and it provides a basic scheme for management of software licensing.
- **Optimized for a simple, automated user experience:** OVF supports validation of the entire package and each virtual machine or metadata component of the OVF during the installation phases of the virtual machine (VM) lifecycle management process. It also packages with the package relevant user-readable descriptive information that a virtualization platform can use to streamline the installation experience.
- **Supports both single VM and multiple-VM configurations:** OVF supports both standard single VM packages and packages containing complex, multi-tier services consisting of multiple interdependent VMs.
- **Portable VM packaging:** OVF is virtualization platform neutral, while also enabling platform-specific enhancements to be captured. It supports the full range of virtual hard disk formats used for hypervisors today, and it is extensible, which allow it to accommodate formats that may arise in the future. Virtual machine properties are captured concisely and accurately.
- **Vendor and platform independent:** OVF does not rely on the use of a specific host platform, virtualization platform, or guest operating system.
- **Extensible:** OVF is immediately useful - and extensible. It is designed to be extended as the industry moves forward with virtual appliance technology. It also supports and permits the encoding of vendor-specific metadata to support specific vertical markets.
- **Localizable:** OVF supports user-visible descriptions in multiple locales, and it supports localization of the interactive processes during installation of an appliance. This capability allows a single packaged appliance to serve multiple market opportunities.
- **Open standard:** OVF has arisen from the collaboration of key vendors in the industry, and it is developed in an accepted industry forum as a future standard for portable virtual machines.

It is not an explicit goal for OVF to be an efficient execution format. A hypervisor is allowed but not required to run software in virtual machines directly out of the Open Virtualization Format.

This standard contains four annexes. Annex C is normative and is considered part of this standard. Annexes A, B, and D are informative and are not considered part of this standard.

Requests for interpretation, suggestions for improvement or addenda, or defect reports are welcome. They should be sent to InterNational Committee for Information Technology Standards (INCITS), ITI, 1101 K Street, NW, Suite 610, Washington, DC 20005.

This standard was processed and approved for submittal to ANSI by INCITS. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, INCITS had the following members:

Don Wright, Chair
Jennifer Garner, Secretary

Organization Represented	*Name of Representative*
Adobe Systems, Inc.	Scott Foshee
	Steve Zilles (Alt.)
AIM Global, Inc.	Dan Mullen
	Charles Biss (Alt.)
Apple Computer, Inc.	Kwok Lau
	Helene Workman (Alt.)
	David Singer (Alt.)
Distributed Managment Task Force	John Crandall
	Jeff Hilland (Alt.)
Electronic Industries Alliance	Edward Mikoski, Jr.
	Henry Cuschieri (Alt.)
EMC Corporation	Gary Robinson
Farance, Inc.	Frank Farance
	Timothy Schoechle (Alt.)
Google	Zaheda Bhorat
GS1 US	Ray Delnicki
	Frank Sharkey (Alt.)
	James Chronowski (Alt.)
	Mary Wilson (Alt.)
Hewlett-Packard Company	Karen Higginbottom
	Paul Jeran (Alt.)
IBM Corporation	Gerald Lane
	Robert Weir (Alt.)
IEEE	Bill Ash
	Terry DeCourcelle (Alt.)
	Jodie Haasz (Alt.)
	Bob Labelle (Alt.)
Intel	Philip Wennblom
	Grace Wei (Alt.)
	Stephen Balogh (Alt.)
Lexmark International	Don Wright
	Dwight Lewis (Alt.)
	Paul Menard (Alt.)
Microsoft Corporation	Jim Hughes
	Dave Welsh (Alt.)
	Mark Ryland (Alt.)
	John Calhoun (Alt.)
National Institute of Standards & Technology	Michael Hogan
	Elaine Barker (Alt.)
	Dan Benigni (Alt.)
	Fernando Podio (Alt.)
	Teresa Schwarzhoff (Alt.)
	Wo Chang (Alt.)
Oracle Corporation	Donald R. Deutsch
	Jim Melton (Alt.)]
	Michael Kavanaugh (Alt.)
	Toshihiro Suzuki (Alt.)
	Jeff Mischkinsky (Alt.)
	Tony DiCenzo (Alt.)
	Eduardo Gutentag (Alt.)
Purdue University	Stephen Elliott
Storage Networking Industry Association (SNIA)	Gary Phillips
	Arnold Jones (Alt.)
	Dave Thiel (Alt.)

Organization Represented	*Name of Representative*
US Department of Defense	Jerry Smith Dennis Devera (Alt.) Dave Brown (Alt.) Leonard Levine (Alt.)
US Department of Homeland Security	Peter Shebell Gregg Piermarini (Alt.)

The Open Virtualization Format Specification (DSP0243) was prepared by the System Virtualization, Partitioning, and Clustering Working Group of the DMTF.

This specification has been developed as a result of joint work with many individuals and teams, including:

Lawrence J. Lamers, VMware (Chair)

Steffen Grarup, VMware (Co-Editor)

René W. Schmidt, VMware (Co-Editor)

Simon Crosby, Citrix Systems, Inc.

Ron Doyle, IBM

Mike Gering, IBM

Michael Gionfriddo, Sun Microsystems

Steve Hand, Symantec

Mark Hapner, Sun Microsystems

Daniel Hiltgen, VMware

Michael Johanssen, IBM

John Leung, Intel Corporation

Fumio Machida, NEC Corporation

Andreas Maier, IBM

Ewan Mellor, Citrix Systems, Inc.

John Parchem, Microsoft

Shishir Pardikar, Citrix Systems, Inc.

Stephen J. Schmidt, IBM

Andrew Warfield, Citrix Systems, Inc.

Mark D. Weitzel, IBM

John Wilson, Dell

American National Standard
for Information Technology –

Open Virtualization Format (OVF) Specification

1 Scope

The *Open Virtualization Format (OVF) Specification* describes an open, secure, portable, efficient and extensible format for the packaging and distribution of software to be run in virtual machines.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI/IEEE Standard 1003.1-2008, *IEEE Standard for Information Technology- Portable Operating System Interface (POSIX) Base Specifications, Issue 7*, Institute of Electrical and Electronics Engineers, December 2008, http://standards.ieee.org/index.html

DMTF CIM Schema 2.22,
http://www.dmtf.org/standards/cim

DMTF DSP0004, *Common Information Model (CIM) Infrastructure Specification 2.5*,
http://www.dmtf.org/standards/published_documents/DSP0004_2.5.pdf

DMTF DSP0230, *WS-CIM Mapping Specification 1.0*,
http://www.dmtf.org/standards/published_documents/DSP0230_1.0.pdf

DMTF DSP1041, *Resource Allocation Profile (RAP) 1.1*,
http://www.dmtf.org/standards/published_documents/DSP1041_1.1.pdf

DMTF DSP1043, *Allocation Capabilities Profile (ACP) 1.0*,
http://www.dmtf.org/standards/published_documents/DSP1043_1.0.pdf

IETF RFC1738, T. Berners-Lee, *Uniform Resource Locators (URL)*, December 1994,
http://www.ietf.org/rfc/rfc1738.txt

IETF RFC1952, P. Deutsch, *GZIP file format specification version 4.3*, May 1996,
http://www.ietf.org/rfc/rfc1952.txt

IETF RFC5234, *Augmented BNF for Syntax Specifications: ABNF*,
http://www.ietf.org/rfc/rfc5234.txt

IETF RFC2616, R. Fielding et al, *Hypertext Transfer Protocol – HTTP/1.1*, June 1999,
http://www.ietf.org/rfc/rfc2616.txt

IETF RFC3986, *Uniform Resource Identifiers (URI): Generic Syntax*,
http://www.ietf.org/rfc/rfc3986.txt