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INTERNATIONAL STANDARD



Information technology – Storage management –
Part 3: Common profiles



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INFORMATION TECHNOLOGY – STORAGE MANAGEMENT – Part 3: Common profiles

FOREWORD

- 1) 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.
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International Standard ISO/IEC 24775-3 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This International Standard, together with ISO/IEC 24775-1, ISO/IEC 24775-2 and ISO/IEC 24775-4 to ISO/IEC 24775-8, replaces ISO/IEC 24775, second edition, published in 2011, and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) reorganization into eight parts;
- b) maturity identification using stages; and
- c) new profiles.

The introduction contains a detailed list of the technical changes.

The list of all currently available parts of the ISO/IEC 24775 series, under the general title *Information technology – Storage management*, can be found on the IEC web site.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

Introduction

The Information Technology – Storage Management is published in several parts. *Information Technology – Storage Management, Part 3 Common Profiles* defines profiles that are used by profiles in other parts of this International Standard. In general, the common profiles do not fully define storage elements, but define non-storage management aspects that are common to storage domains. For example, the Access Points Profile defines a technique that the arrays, switches, or libraries may use to inform clients of non-CIM network interfaces that are available.

Some of the common profiles are based on DMTF profiles. For these profiles, the DMTF profile may be “specialized” to assure SNIA requirements are met.

Parts of this Standard

This International Standard is subdivided into the following parts:

- *Information technology – Storage management – Part 1: Overview*
- *Information technology – Storage management – Part 2: Common architecture*
- *Information technology – Storage management – Part 3: Common profiles*
- *Information technology – Storage management – Part 4: Block devices*
- *Information technology – Storage management – Part 5: Filesystems*
- *Information technology – Storage management – Part 6: Fabric*
- *Information technology – Storage management – Part 7: Host elements*
- *Information technology – Storage management – Part 8: Media libraries*

Changes since the Last Edition

This first multipart edition cancels and replaces the second edition published in 2011 and constitutes a technical revision. This edition includes the following significant changes with respect to the previous edition. The changes fall into three broad categories:

- **Improved organization.** The International Standard has been reorganized into eight parts to provide more information more easily. The parts are:
 - *Part 1 Overview:* The overview book provides a high level overview of the standard.
 - *Part 2 Common Architecture:* This part covers general information about the interface, such as security and protocols.
 - *Part 3 Common Profiles:* This part covers component profiles that extend profiles in other books, such as target ports and job control.
 - *Part 4 Block Devices:* This part covers storage profiles that support various forms of disk storage.
 - *Part 5 Filesystems:* This part covers profiles that support filesystems, such as NAS (Network Attached Storage).
 - *Part 6 Fabric:* This part covers profiles that deal with interconnection of host servers and storage devices, such as switches.
 - *Part 7 Host Elements:* This part covers profiles for storage software on host servers, such as disk partitioning and Host Hardware RAID controllers.
 - *Part 8 Media Libraries:* This part covers profiles that deal with removable media such as tape libraries.
- **Maturity identification.** As material is added to the standard it goes through various stages of maturity. The initial stage is *Experimental*, which is material that has not yet been implemented and is subject to change. The other stages indicate the degree of implementations. The stages are:
 - **Experimental:** Full design review, no commercial implementations.

- **Implemented:** Initial implementations available, may be removed at minor revision.
- **Stable:** Three or more vendors have implemented the identified material, backward compatibility assured, removed only at major revision.
- **Finalized:** Relies solely on Finalized content, deprecated only at major revision.
- **Deprecated:** Obsolete material, may be removed in future revisions.
For a more detailed explanation of each maturity level and its typographical indication, see Clause 4 Typographical Conventions.
- **Expanded scope.** The range of SAN components modeled by the profiles defined in the parts has been greatly expanded.
 - New profiles include:
 - *Part 3 Common Profiles:* Serial Attached SCSI (SAS) Target Port, Serial ATA (SATA) Target Ports, SB Target Port, SAS Initiator Ports, ATA Initiator Ports, FC-SB-x Initiator Ports, FCoE Initiator Ports, Power Supply, Fan, Sensors, Base Server, Media Access Device, Storage Enclosure, Software Inventory, Profile Registration, Proxy Server System Management, Operational Power.
 - *Part 4 Block Devices:* Block Storage Views, CKD Block Services, Erasure, Storage Server Asymmetry, Volume Composition, Storage Element Protection, Replication Services, Pools from Volumes, Group Masking and Mapping, Thin Provisioning.
 - *Part 5 Filesystems:* File Export, File Server Manipulation, File Storage, Filesystem, Filesystem Copy Services, Filesystem Performance, Filesystem Quotas, NAS Network Port, Host Filesystem, Filesystem Remote Copy Services.
 - *Part 6 Fabric:* Fibre Channel Security, Fabric Views, Virtual Fabrics, Switch Partitioning, SAS Expander, N Port Virtualizer, Inter Fabric Routing.
 - *Part 7 Host Elements:* Storage HBA, Host Hardware RAID Controller.
 - *Part 8 Media Libraries:* Partitioned Tape Library, Virtual Tape Library, Virtual Tape Library Copy and Library Views.
 - The following experimental profiles were removed from the International Standard:
 - *Part 3 Common Profiles:* Security, 3rd Party Authentication, Authorization, Credential Management, Identity Management, Security Role Based Access Control and Security Resource Ownership.
 - *Part 4 Block Devices:* Pool Management Policy.
 - The following profiles were deprecated:
 - *Part 3 Common Profiles:* Cascading (replaced by direct use of cascading classes).
 - *Part 4 Block Devices:* Volume Management (and not replaced).
 - *Part 6 Fabric:* Router (and not replaced).
 - *Part 7 Host Elements:* FC HBA (replaced by Storage HBA), SB Multipath Management (and not replaced).
 - *Part 8 Media Libraries:* InterLibraryPort Connection (and not replaced).
 - In addition, many of the existing profiles have been enhanced.

This International Standard was prepared by the SNIA (Storage Networking Industry Association)¹. The standard is often referred to as **SMI-S** (*Storage Management Initiative Specification*).

1. Storage Networking Industry Association, 425 Market Street, Suite 1020, San Francisco, CA 94105, U.S.A., <http://www.snia.org>

INFORMATION TECHNOLOGY – STORAGE MANAGEMENT – Part 3: Common profiles

1 Scope

This part of ISO/IEC 24775 defines profiles that are supported by profiles defined in the other parts of the ISO/IEC 24775 series. The first few clauses provide background material that helps explain the purpose and profiles and recipes (a subset of a profile). Common port profiles are grouped together since they serve as transport-specific variations of a common model. The port profiles are followed by other common profiles. Clause 50 presents recipes that span multiple profiles.

2 Normative references

The following documents, in whole or in part, are normatively referenced in the document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, applies.

ISO/IEC 14776-413, *Information technology – Small computer system interface (SCSI) – Part 413: Architecture Model - 3 (SAM-3)*
(herein referred to as SAM)

ISO/IEC 14776-453, *Information technology – Small computer system interface (SCSI) – Part 453: Primary Commands - 3*
(herein referred to as SPC)

ISO/IEC 24775-2, *Information technology – Storage Management – Part 2: Common architecture*

DMTF DSP0207, *WBEM URI Mapping 1.0*
http://www.dmtf.org/standards/published_documents/DSP0207.pdf

DMTF DSP1004, *DMTF Base Server Profile 1.0.1*

DMTF DSP1004, *Base Server Profile 1.0.1*
http://www.dmtf.org/standards/published_documents/DSP1004_1.0.1.pdf

DMTF DSP1009:2006, *Sensors Profile 1.0.0*
http://www.dmtf.org/standards/published_documents/DSP1009.pdf

DMTF DSP1011:2006, *Physical Asset Profile 1.0.2*
http://www.dmtf.org/standards/published_documents/DSP1011_1.0.2.pdf

DMTF DSP1013:2006, *Fan Profile 1.0.1*
http://www.dmtf.org/standards/published_documents/DSP1013_1.0.1.pdf

DMTF DSP1015:2006, *Power Supply Profile 1.0.1*
http://www.dmtf.org/standards/published_documents/DSP1015_1.0.1.pdf

DMTF DSP1019:2009, *Device Tray Profile 1.0.0*
http://www.dmtf.org/standards/published_documents/DSP1019_1.0.0.pdf

DMTF DSP1022:2010, *CPU Profile 1.0.1*
http://www.dmtf.org/standards/published_documents/DSP1022_1.0.1.pdf

DMTF DSP1023:2009, *Software Update Profile 1.0.1*
http://www.dmtf.org/standards/published_documents/DSP1023_1.0.1.pdf

DMTF DSP1025:2009, *Software Update Profile 1.0.0*

http://www.dmtf.org/standards/published_documents/DSP1025_1.0.0.pdf

DMTF DSP1033:2007, *Profile Registration Profile 1.0.0*

http://www.dmtf.org/standards/published_documents/DSP1033_1.0.0.pdf

DMTF DSP1052, *Computer System Profile 1.0.0*

http://www.dmtf.org/standards/published_documents/DSP1052_1.0.0.pdf

DMTF DSP1102:2009, *Launch in Context Profile 1.0.0b*

http://www.dmtf.org/standards/published_documents/DSP1102_1.0.0b.pdf

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