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INFORMATION TECHNOLOGY – CLOUD DATA MANAGEMENT INTERFACE (CDMI™)

Foreword

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Introduction

This CDMI™ international standard is intended for application developers who are implementing or using cloud storage. It documents how to access cloud storage and to manage the data stored there.

This document is organized as follows:

1 - Scope	Defines the scope of this document
2 - References	Lists the normative references for this document
3 - Terms	Provides terminology used in this document
4 - Conventions	Describes the conventions used in presenting the interfaces and the typographical conventions used in this document
5 - Overview of Cloud Storage	Provides a brief overview of cloud storage and details the philosophy behind this International Standard as a model for the operations
6 - Common Operations	Gives an example of the resources that may be accessed and the representations used to modify them
7 - Interface Standard	Provides a description of HTTP status codes, Cloud Data Management Interface (CDMI) object types, object references, and object manipulations
8 - Data Object Resource Operations	Provides the normative standard of data object resource operations
9 - Container Object Resource Operations	Provides the normative standard of container object resource operations
10 - Domain Object Resource Operations	Provides the normative standard of domain object resource operations
11 - Queue Object Resource Operations	Provides the normative standard of queue object resource operations
12 - Capability Object Resource Operations	Provides the normative standard of capability object resource operations
13 - Exported Protocols	Discusses how virtual machines in the cloud computing environment may use the exported protocols from CDMI containers
14 - Snapshots	Discusses how snapshots are accessed under CDMI containers
15 - Serialization/Deserialization	Discusses serialization and deserialization, including import and export of serialized data under CDMI
16 - Metadata	Provides the normative standard of the metadata used in the interface
17 - Retention and Hold Management	Describes the optional retention management disciplines to be implemented into the system management functions
18 - Scope Specification	Describes the structure of the scope specification for JSON objects
19 - Results Specification	Provides a standardized mechanism to define subsets of CDMI object contents
20 - Logging	Describes CDMI functional logging for object functions, security events, data management events, and queues

21 - Notification Queues	Describes how CDMI clients may efficiently discover what changes have occurred to the system
22 - Query Queues	Describes how CDMI clients may efficiently discover what content matches a given set of metadata query criteria or full-content search criteria
Annex A - (normative) Transport Security	Provides normative text for securing the HTTP communications protocol for transferring CDMI messages
Annex B - (informative) Bibliography	Provides informative references that may contain additional useful information

1 Scope

This CDMI™ international standard specifies the interface to access cloud storage and to manage the data stored therein. This international standard applies to developers who are implementing or using cloud storage.

2 Normative References

The following documents, in whole or in part, are normatively referenced in this 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.

The provisions of the referenced specifications other than ISO/IEC, IEC, ISO and ITU documents, as identified in this clause, are valid within the context of this international standard. The reference to such a specification within this international standard does not give it any further status within ISO/IEC. In particular, it does not give the referenced specifications the status of an international standard.

ISO 3166, *Codes for the representation of names of countries and their subdivisions (Parts 1, 2 and 3)*

ISO 4217:2008, *Codes for the representation of currencies and funds*

ISO 8601:2004, *Data elements and interchange formats – Information interchange – Representation of dates and times*

ISO/IEC 9594-8:2008, *Information technology -- Open Systems Interconnection -- The Directory: Public-key and attribute certificate frameworks*

ISO/IEC 14776-414, *SCSI Architecture Model - 4 (SAM-4)*

IEEE Std 1003.1, 2004*, POSIX ERE, The Open Group, Base Specifications Issue 6* - http://www.unix.org/version3/ieee_std.html

RFC 2045, *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies* - http://www.ietf.org/rfc/rfc2045.txt

RFC 2119, *Key Words for Use in RFCs to Indicate Requirement Levels* - http://tools.ietf.org/html/rfc2119

RFC 2246, *The TLS Protocol Version 1.0* - http://www.ietf.org/rfc/rfc2246.txt

RFC 2578, *Structure of Management Information Version 2 (SMIv2)* - http://www.ietf.org/rfc/rfc2578.txt

RFC 2616, *Hypertext Transfer Protocol -- HTTP/1.1* - http://www.ietf.org/rfc/rfc2616.txt

RFC 2617, *HTTP Authentication: Basic and Digest Access Authentication* - http://www.ietf.org/rfc/rfc2617.txt

RFC 3280, *Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile* - http://www.ietf.org/rfc/rfc3280.txt

RFC 3530, *Network File System (NFS) Version 4 Protocol* - http://www.ietf.org/rfc/rfc3530.txt

RFC 3720, *Internet Small Computer Systems Interface (iSCSI)* - http://www.ietf.org/rfc/rfc3720.txt

RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax* - http://www.ietf.org/rfc/rfc3986.txt

RFC 4346, *The Transport Layer Security (TLS) Protocol Version 1.1* - http://www.ietf.org/rfc/rfc4346.txt

RFC 4627, *The Application/JSON Media Type for JavaScript Object Notation (JSON)* - http://www.ietf.org/rfc/rfc4627.txt

RFC 4648, *The Base16, Base32, and Base64 Data Encodings,* http://www.ietf.org/rfc/rfc4648.txt

RFC 4918, *HTTP Extensions for Web Distributed Authoring and Versioning (WebDAV)* - http://www.ietf.org/rfc/rfc4918.txt

RFC 5246, *The Transport Layer Security (TLS) Protocol Version 1.2* - http://www.ietf.org/rfc/rfc5246.txt

RFC 6208, *Cloud Data Management Interface (CDMI) Media Types* - http://www.ietf.org/rfc/rfc6208.txt