
**Information technology — Open Systems
Interconnection — The Directory:
Overview of concepts, models and
services**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — L'annuaire: Aperçu général des concepts, modèles et services*

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Foreword	

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.

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This sixth edition cancels and replaces the fifth edition (ISO/IEC 9594-1:2005), which has been technically revised.

ISO/IEC 9594 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — The Directory*:

- *Part 1: Overview of concepts, models and services*
- *Part 2: Models*
- *Part 3: Abstract service definition*
- *Part 4: Procedures for distributed operation*
- *Part 5: Protocol specifications*
- *Part 6: Selected attribute types*
- *Part 7: Selected object classes*
- *Part 8: Public-key and attribute certificate frameworks*
- *Part 9: Replication*
- *Part 10: Use of systems management for administration of the Directory*

Introduction

This Recommendation | International Standard together with other Recommendations | International Standards, has been produced to facilitate the interconnection of information processing systems to provide directory services. A set of such systems, together with the directory information that they hold, can be viewed as an integrated whole, called the *Directory*. The information held by the Directory, collectively known as the Directory Information Base (DIB), is typically used to facilitate communication between, with or about objects such as application entities, people, terminals and distribution lists.

The Directory plays a significant role in Open Systems Interconnection, whose aim is to allow, with a minimum of technical agreement outside of the interconnection standards themselves, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different ages.

This Recommendation | International Standard introduces and models the concepts of the Directory and of the DIB and overviews the services and capabilities which they provide. Other Recommendations | International Standards make use of these models in defining the abstract service provided by the Directory, and in specifying the protocols through which this service can be obtained or propagated.

This Recommendation | International Standard provides the foundation frameworks upon which industry profiles can be defined by other standards groups and industry forums. Many of the features defined as optional in these frameworks, may be mandated for use in certain environments through profiles. This sixth edition technically revises and enhances, but does not replace, the fifth edition of this Recommendation | International Standard. Implementations may still claim conformance to the fifth edition. However, at some point, the fifth edition will not be supported (i.e., reported defects will no longer be resolved). It is recommended that implementations conform to this sixth edition as soon as possible.

This sixth edition specifies versions 1 and 2 of the Directory protocols.

The first and second editions specified only version 1. Most of the services and protocols specified in this edition are designed to function under version 1. However some enhanced services and protocols, e.g., signed errors, will not function unless all Directory entities involved in the operation have negotiated version 2. Whichever version has been negotiated, differences between the services and between the protocols defined in the six editions, except for those specifically assigned to version 2, are accommodated using the rules of extensibility defined in ITU-T Rec. X.519 | ISO/IEC 9594-5.

Annex A, which is an integral part of this Recommendation | International Standard, describes the types of use to which the Directory can be applied.

Annex B, which is not an integral part of this Recommendation | International Standard, lists the amendments and defect reports that have been incorporated to form this edition of this Recommendation | International Standard.

**INTERNATIONAL STANDARD
ITU-T RECOMMENDATION****Information technology – Open Systems Interconnection – The Directory:
Overview of concepts, models and services****1 Scope**

The Directory provides the directory capabilities required by OSI applications, OSI management processes, other OSI layer entities, and telecommunications services. Among the capabilities which it provides are those of "user-friendly naming", whereby objects can be referred to by names which are suitable for citing by human users (though not all objects need have user-friendly names); and "name-to-address mapping" which allows the binding between objects and their locations to be dynamic. The latter capability allows OSI networks, for example, to be "self-configuring" in the sense that addition, removal and the changes of object location do not affect OSI network operation.

The Directory is not intended to be a general-purpose database system, although it may be built on such systems. It is assumed, for instance, that, as is typical with communications directories, there is a considerably higher frequency of "queries" than of updates. The rate of updates is expected to be governed by the dynamics of people and organizations, rather than, for example, the dynamics of networks. There is also no need for instantaneous global commitment of updates; transient conditions, where both old and new versions of the same information are available, are quite acceptable.

It is a characteristic of the Directory that, except as a consequence of differing access rights or unpropagated updates, the results of directory queries will not be dependent on the identity or location of the inquirer. This characteristic renders the Directory unsuitable for some telecommunications applications, for example some types of routing. For cases where the results are dependent on the identity of the inquirer, access to directory information and updates of the Directory may be denied.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*.
- ITU-T Recommendation X.501 (2008) | ISO/IEC 9594-2:2008, *Information technology – Open Systems Interconnection – The Directory: Models*.
- ITU-T Recommendation X.509 (2008) | ISO/IEC 9594-8:2008, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks*.
- ITU-T Recommendation X.511 (2008) | ISO/IEC 9594-3:2008, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition*.
- ITU-T Recommendation X.518 (2008) | ISO/IEC 9594-4:2008, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation*.
- ITU-T Recommendation X.519 (2008) | ISO/IEC 9594-5:2008, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications*.
- ITU-T Recommendation X.520 (2008) | ISO/IEC 9594-6:2008, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types*.

- ITU-T Recommendation X.521 (2008) | ISO/IEC 9594-7:2008, *Information technology – Open Systems Interconnection – The Directory: Selected object classes.*
- ITU-T Recommendation X.525 (2008) | ISO/IEC 9594-9:2008, *Information technology – Open Systems Interconnection – The Directory: Replication.*
- ITU-T Recommendation X.530 (2008) | ISO/IEC 9594-10:2008, *Information technology – Open Systems Interconnection – The Directory: Use of systems management for administration of the Directory.*

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