

**Implementation of
ISO/IEC 9594-2:1990**

Information Technology — Open Systems Interconnection — The Directory —

Part 2: Models

UDC 681.3:621.39

Committees responsible for this British Standard

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- Association for Payment Clearing Services
- British Computer Society
- British Gas plc
- British Railways Board
- British Telecommunications plc
- Computing Services Association
- Department of Trade and Industry (Alvey — Advanced Network Systems Architecture)
- Department of Trade and Industry (Information Technology Division)
- Department of Trade and Industry (National Physical Laboratory)
- EEA (the Association of Electronics, Telecommunications and Business Equipment Industries)
- HM Treasury (Central Computer and Telecommunications Agency)
- Institute of Chartered Secretaries and Administrators
- Institution of Electrical Engineers
- Inter-universities Computing Committee
- Joint Network Team
- Ministry of Defence
- National Health Services
- United Kingdom Atomic Energy Authority
- University of London Computer Centre

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National foreword

This British Standard reproduces verbatim ISO/IEC 9594-2:1990, including Technical Corrigendum 1 and Technical Corrigendum 2 and implements it as the UK national standard.

This British Standard is published under the direction of the Information Systems Technology Standards Policy Committee whose Technical Committee has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO/IEC title page, pages ii to iv, pages 1 to 26 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

INTERNATIONAL STANDARD

ISO/IEC
9594-2

First edition
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Information technology — Open Systems Interconnection — The Directory —

Part 2: Models

*Technologies de l'information — Interconnexion de systèmes ouverts — L'annuaire —
Partie 2: Modèles*



Reference number
ISO/IEC 9594-2 : 1990 (E)

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Descriptors: Data processing, information interchange, network interconnection, open systems interconnection, directories, models.

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. 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.

International Standard ISO/IEC 9594-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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: Authentication framework.*

Annex B and Annex C form an integral part of this part of ISO/IEC 9594. Annex A, Annex D, Annex E and Annex F are for information only.

Introduction

0.1 This part of ISO/IEC 9594, together with the other parts, 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 which 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.

0.2 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.

0.3 This part of ISO/IEC 9594 provides a number of different models for the Directory as a framework for the other parts of ISO/IEC 9594. The models are the overall (functional) model; the organizational model; the security model; and the information model. The latter describes the manner in which the Directory organizes the information it holds. It describes, for example, how information about objects is grouped to form directory entries for those objects and how that information provides names for objects.

0.4 Annex A summarizes the mathematical terminology associated with tree structures.

0.5 Annex B summarizes the usage of ASN.1 object identifiers in ISO/IEC 9594.

0.6 Annex C provides the ASN.1 module which contains all of the definitions associated with the information framework.

0.7 Annex D lists alphabetically the terms defined in this document.

0.8 Annex E describes some criteria that can be considered in designing names.

0.9 Annex F describes guidelines for access control.

0.10 Annex G describes the derivation of a subclass.

Section 1. GENERAL

1 Scope

1.1 The models defined in this part of ISO/IEC 9594 provide a conceptual and terminological framework for the other parts of ISO/IEC 9594 which define various aspects of the Directory.

1.2 The functional and organizational models define ways in which the Directory can be distributed, both functionally and administratively.

1.3 The security model defines the framework within which security features, such as access control, are provided in the Directory.

1.4 The information model describes the logical structure of the DIB. From this viewpoint, the fact that the Directory is distributed, rather than centralized, is not visible. The other parts of ISO/IEC 9594 make use of the concepts of the information framework. Specifically:

- a) the service provided by the Directory is described (in ISO/IEC 9594-3) in terms of the concepts of the information framework: this allows the service provided to be somewhat independent of the physical distribution of the DIB;
- b) the distributed operation of the Directory is specified (in ISO/IEC 9594-4) so as to provide that service, and therefore maintain that logical information structure, given that the DIB is in fact highly distributed.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 9594. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 9594 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7498:1984, *Information Processing Systems — Open Systems Interconnection — Basic Reference Model*.

ISO/IEC 8824:1990, *Information Technology — Open Systems Interconnection — Specification of Abstract Syntax Notation One (ASN.1)*.

ISO/IEC 9594-1:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 1: Overview of Concepts, Models and Services*.

ISO/IEC 9594-3:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 3: Abstract Service Definition*.

ISO/IEC 9594-4:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 4: Procedures for Distributed Operation*.

ISO/IEC 9594-5:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 5: Protocol Specifications*.

ISO/IEC 9594-6:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 6: Selected Attribute Types*.

ISO/IEC 9594-7:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 7: Selected Object Classes*.

ISO/IEC 9594-8:1990, *Information Technology — Open Systems Interconnection — The Directory — Part 8: Authentication Framework*.

3 Definitions

Definitions of terms are included at the beginning of individual clauses, as appropriate. An index of these terms is provided in Annex D for easy reference.

4 Abbreviations

ADDMD	Administration Directory Management Domain
AVA	attribute value assertion
DIB	Directory Information Base
DIT	Directory Information Tree
DMD	Directory Management Domain
DSA	Directory System Agent
DUA	Directory User Agent
PRDMD	Private Directory Management Domain
RDN	Relative Distinguished Name

Section 2. DIRECTORY MODEL

5 Directory Model

5.1 Definitions

5.1.1

access point

the point at which an abstract service is obtained

5.1.2**administration directory management domain (ADDMD)**

a DMD which is managed by an Administration

NOTE The term Administration denotes a public telecommunications administration or other organization offering public telecommunications services;

5.1.3**administrative authority**

an entity which has administrative control over all entries stored within a single Directory System Agent

5.1.4**the directory**

a repository of information about objects, and which provides directory services to its users which allow access to the information

5.1.5**directory management domain (DMD)**

a collection of one or more DSAs and zero or more DUAs which is managed by a single organization

5.1.6**directory system agent (DSA)**

an OSI application process which is part of the Directory

5.1.7**(directory) user**

the end user of the Directory, i.e., the entity or person which accesses the Directory

5.1.8**directory user agent (DUA)**

an OSI application process which represents a user in accessing the Directory

NOTE DUAs may also provide a range of local facilities to assist users compose queries and interpret the responses.

5.1.9**private directory management domain (PRDMD)**

a DMD which is managed by an organization other than an Administration*

5.2 The Directory and its Users

5.2.1 A directory user (e.g., a person or an application-process) obtains directory services by accessing the *Directory*. More precisely, it is a *Directory User Agent (DUA)*, which actually accesses the Directory and interacts with it to obtain the service on behalf of a particular user. The Directory provides one or more *access points* at which such accesses can take place. These concepts are illustrated in Figure 1.

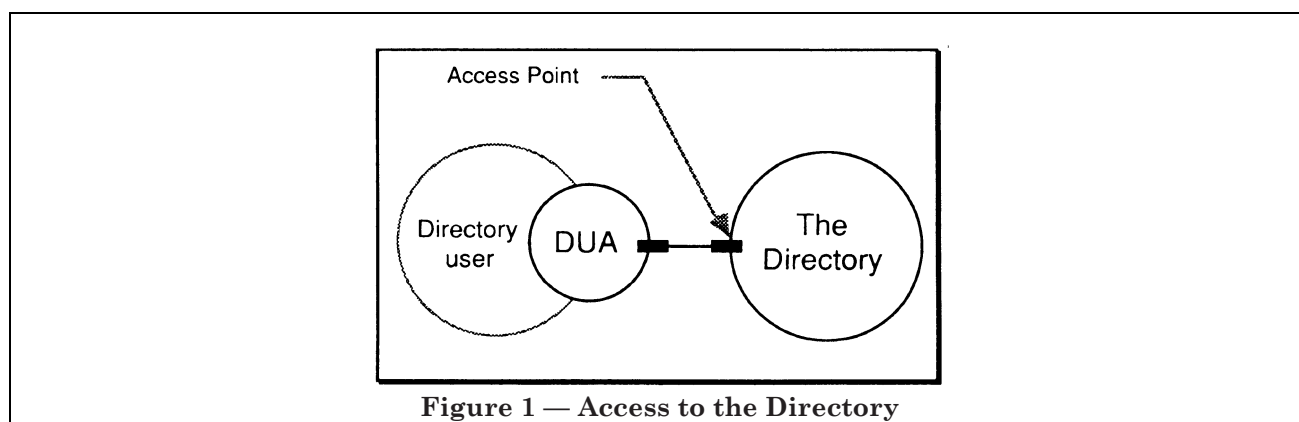


Figure 1 — Access to the Directory