INTERNATIONAL STANDARD

ISO/IEC 9594-7

Third edition
1998-12-15

Information technology — Open Systems Interconnection — The Directory: Selected object classes

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — L'Annuaire: Classes d'objets sélectionnés

© ISO/IEC 1998

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 9594-7:1998
https://standards.iteh.ai/catalog/standards/sist/319ef8e2-e923-40ac-8a89-
99cecff554bd/iso-iec-9594-7-1998

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 9594-7:1998
https://standards.iteh.ai/catalog/standards/sist/319ef8e2-e923-40ac-8a89-
99cecff554bd/iso-iec-9594-7-1998

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 9594 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 9594-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.521.

This third edition cancels and replaces the second edition (ISO/IEC 9594-7:1995), of which it constitutes a minor revision.

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*

⎯ *Part 9: Replication*

⎯ *Part 10: Use of systems management for administration of the Directory*

Annex A forms a normative part of this part of ISO/IEC 9594. Annexes B and C are for information only.

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 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.

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 defines a number of attribute sets and object classes which may be found useful across a range of applications of the Directory.

This third edition technically revises and enhances, but does not replace, the second edition of this Recommendation | International Standard. Implementations may still claim conformance to the second edition. However, at some point, the second edition will not be supported (i.e. reported defects will no longer be resolved). It is recommended that implementations conform to this third edition as soon as possible.

This third edition specifies version 1 and version 2 of the Directory protocols.

The first and second editions also specified version 1. Most of the services and protocols specified in this edition are designed to function under version 1. When version 1 has been negotiated, differences between the services and between the protocols defined in the three editions are accommodated using the rules of extensibility defined in this edition of ITU-T Rec. X.519 | ISO/IEC 9594-5. 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.

Implementors should note that a defect resolution process exists and that corrections may be applied to this part of this International Standard in the form of technical corrigenda. The identical corrections will be applied to this Recommendation in the form of Corrigenda and/or an Implementor's Guide. A list of approved technical corrigenda for this part of this International Standard can be obtained from the subcommittee secretariat. Published technical corrigenda are available from your national standards organization. The ITU-T Corrigenda and Implementor's Guides may be obtained from the ITU Web site.

Annex A, which is an integral part of this Recommendation | International Standard, provides an ASN.1 module containing all of the type and value definitions which appear in this Recommendation | International Standard.

Annex B, which is not an integral part of this Recommendation | International Standard, provides some common naming and structure rules which may or may not be used by administrative authorities.

Annex C, 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: SELECTED OBJECT CLASSES

SECTION 1 – GENERAL

1   Scope

This Recommendation | International Standard defines a number of object classes and name forms which may be found useful across a range of applications of the Directory. The definition of an object class involves listing a number of attribute types which are relevant to objects of that class. The definition of a name form involves naming the object class to which it applies and listing the attributes to be used in forming names for objects of that class. These definitions are used by the administrative authority which is responsible for the management of the directory information.

Any administrative authority can define its own object classes or subclasses and name forms for any purpose.

   NOTE 1 – Those definitions may or may not use the notation specified in ITU-T Rec. X.501 | ISO/IEC 9594-2.

   NOTE 2 – It is recommended that an object class defined in this Recommendation | International Standard, or a subclass derived from one, or a name form defined in this Recommendation | International Standard, be used in preference to the generation of a new one, whenever the semantics is appropriate for the application.

Administrative authorities may support some or all the selected object classes and name forms, and may also add additional ones.

All administrative authorities shall support the object classes which the directory uses for its own purpose (the top, alias and DSA object classes).

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.500 (1997) | ISO/IEC 9594-1:1998, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services*.

   – ITU-T Recommendation X.501 (1997) | ISO/IEC 9594-2:1998, *Information technology – Open Systems Interconnection – The Directory: Models*.

   – ITU-T Recommendation X.509 (1997) | ISO/IEC 9594-8:1998, *Information technology – Open Systems Interconnection – The Directory: Authentication framework.*

   – ITU-T Recommendation X.511 (1997) | ISO/IEC 9594-3:1998, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition.*

   – ITU-T Recommendation X.518 (1997) | ISO/IEC 9594-4:1998, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation.*

– ITU-T Recommendation X.519 (1997) | ISO/IEC 9594-5:1998, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications.*

– ITU-T Recommendation X.520 (1997) | ISO/IEC 9594-6:1998, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types.*

– ITU-T Recommendation X.525 (1997) | ISO/IEC 9594-9:1998, *Information technology – Open Systems Interconnection – The Directory: Replication.*

– ITU-T Recommendation X.530 (1997) | ISO/IEC 9594-10:1998, *Information technology – Open Systems Interconnection – The Directory: Use of Systems management for Administration of the Directory.*

– ITU-T Recommendation X.680 (1997) | ISO/IEC 8824-1:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation.*

– ITU-T Recommendation X.681 (1997) | ISO/IEC 8824-2:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Information object specification.*

– ITU-T Recommendation X.682 (1997) | ISO/IEC 8824-3:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification.*

– ITU-T Recommendation X.683 (1997) | ISO/IEC 8824-4:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Parametrization of ASN.1 specifications.*

3 Definitions

For the purposes of this Recommendation | International Standard, the following definitions apply.

3.1 OSI Reference Model definitions

The following terms are defined in ITU-T Rec. X.200 | ISO/IEC 7498-1:

a) *application-entity*;

b) *application-process*.

3.2 Directory Model definitions

The following terms are defined in ITU-T Rec. X.501 | ISO/IEC 9594-2:

a) *attribute*;

b) *attribute type*;

c) *Directory Information Tree (DIT)*;

d) *Directory System Agent (DSA)*;

e) *attribute set*;

f) *entry*;

g) *name*;

h) *object class*;

i) *subclass*;

j) *name form*;

k) *structure rule*.

4 Conventions

With minor exceptions, this Directory Specification has been prepared according to the "Presentation of ITU-T | ISO/IEC common text" guidelines in the Guide for ITU-T and ISO/IEC JTC 1 Cooperation.

The term "Directory Specification" (as in "this Directory Specification") shall be taken to mean this Recommendation | International Standard. The term "Directory Specifications" shall be taken to mean the X.500-series Recommendations | parts of ISO/IEC 9594.

This Directory Specification uses the term "1988 edition systems" to refer to systems conforming to the first (1988) edition of the Directory Specifications, i.e. the 1988 edition of the series of CCITT X.500 Recommendations and the ISO/IEC 9594:1990 edition. This Directory Specification uses the term "1993 edition systems" to refer to systems conforming to the second (1993) edition of the Directory Specifications, i.e. the 1993 edition of the series of ITU-T X.500 Recommendations and the ISO/IEC 9594:1995 edition. Systems conforming to this third edition of the Directory Specifications are referred to as "1997 edition systems".

This Directory Specification presents ASN.1 notation in the bold Helvetica typeface. When ASN.1 types and values are referenced in normal text, they are differentiated from normal text by presenting them in the bold Helvetica typeface. The names of procedures, typically referenced when specifying the semantics of processing, are differentiated from normal text by displaying them in bold Times. Access control permissions are presented in italicized Times.

Object classes and name forms are defined in this Directory Specification as values of the **OBJECT-CLASS** and **NAME-FORM** information object classes defined in ITU-T Rec. X.501 | ISO/IEC 9594-2.

SECTION 2 – SELECTED OBJECT CLASSES

5   Definition of useful attribute sets

5.1   Telecommunication attribute set

This set of attributes is used to define those which are commonly used for business communications.

```
TelecommunicationAttributeSet  ATTRIBUTE ::= {
      facsimileTelephoneNumber |
      internationalISDNNumber |
      telephoneNumber |
      teletexTerminalIdentifier |
      telexNumber |
      preferredDeliveryMethod |
      destinationIndicator |
      registeredAddress |
      x121Address }
```

5.2   Postal attribute set

This set of attributes is used to define those which are directly associated with postal delivery.

```
PostalAttributeSet  ATTRIBUTE ::= {
      physicalDeliveryOfficeName |
      postalAddress |
      postalCode |
      postOfficeBox |
      streetAddress }
```

5.3   Locale attribute set

This set of attributes is used to define those which are commonly used for search purposes to indicate the locale of an object.

```
LocaleAttributeSet  ATTRIBUTE ::= {
      localityName |
      stateOrProvinceName |
      streetAddress }
```

5.4 Organizational attribute set

This set of attributes is used to define the attributes that an organization or organizational unit may typically possess.

```
OrganizationalAttributeSet ATTRIBUTE ::= {
        description |
        LocaleAttributeSet |
        PostalAttributeSet |
        TelecommunicationAttributeSet |
        businessCategory |
        seeAlso |
        searchGuide |
        userPassword }
```

6 Definition of selected object classes

6.1 Country

A *Country* object class is used to define country entries in the DIT.

```
country OBJECT-CLASS ::= {
        SUBCLASS OF    { top }
        MUST CONTAIN   { countryName }
        MAY CONTAIN    { description | searchGuide }
        ID             id-oc-country }
```

6.2 Locality

The *Locality* object class is used to define locality in the DIT.

```
locality OBJECT-CLASS ::= {
        SUBCLASS OF    { top }
        MAY CONTAIN    { description |
                         searchGuide |
                         LocaleAttributeSet |
                         seeAlso }
        ID             id-oc-locality }
```

At least one of Locality Name or State or Province Name must be present.

6.3 Organization

The *Organization* object class is used to define organization entries in the DIT.

```
organization OBJECT-CLASS ::= {
        SUBCLASS OF    { top }
        MUST CONTAIN   { organizationName }
        MAY CONTAIN    { OrganizationalAttributeSet }
        ID             id-oc-organization }
```

6.4 Organizational Unit

The *Organizational Unit* object class is used to define entries representing subdivisions of organizations.

```
organizationalUnit OBJECT-CLASS ::= {
        SUBCLASS OF    { top }
        MUST CONTAIN   { organizationalUnitName }
        MAY CONTAIN    { OrganizationalAttributeSet }
        ID             id-oc-organizationalUnit }
```

6.5   Person

The *Person* object class is used to define entries representing people generically.

```
person  OBJECT-CLASS ::= {
    SUBCLASS OF    { top }
    MUST CONTAIN   { commonName | surname }
    MAY CONTAIN    { description |
                     telephoneNumber |
                     userPassword |
                     seeAlso }
    ID             id-oc-person }
```

6.6   Organizational Person

The *Organizational Person* object class is used to define entries representing people employed by, or in some other important way associated with, an organization.

```
organizationalPerson  OBJECT-CLASS ::= {
    SUBCLASS OF    { person }
    MAY CONTAIN    { LocaleAttributeSet |
                     PostalAttributeSet |
                     TelecommunicationAttributeSet |
                     organizationalUnitName |
                     title }
                     ID    id-oc-organizationalPerson }
```

6.7   Organizational Role

The *Organizational Role* object class is used to define entries representing an organizational role, i.e. a position or role within an organization. An organizational role is normally considered to be filled by a particular organizational person. Over its lifetime, however, an organizational role may be filled by a number of different organizational people in succession. In general, an organizational role may be filled by a person or a non-human entity.

```
organizationalRole  OBJECT-CLASS ::= {
    SUBCLASS OF    { top }
    MUST CONTAIN   { commonName }
    MAY CONTAIN    { description |
                     LocaleAttributeSet |
                     organizationalUnitName |
                     PostalAttributeSet |
                     preferredDeliveryMethod |
                     roleOccupant |
                     seeAlso |
                     TelecommunicationAttributeSet }
    ID             id-oc-organizationalRole }
```

6.8   Group of Names

The *Group Of Names* object class is used to define entries representing an unordered set of names which represent individual objects or other groups of names. The membership of a group is static, i.e. it is explicitly modified by administrative action, rather than dynamically determined each time the group is referred to.

The membership of a group can be reduced to a set of individual object's names by replacing each group with its membership. This process could be carried out recursively until all constituent group names have been eliminated, and only the names of individual objects remain.

```
groupOfNames OBJECT-CLASS ::= {
    SUBCLASS OF    { top }
    MUST CONTAIN   { commonName | member }
    MAY CONTAIN    { description |
                     organizationName |
                     organizationalUnitName |
                     owner |
                     seeAlso |
                     businessCategory }
    ID             id-oc-groupOfNames }
```

6.9   Group of Unique Names

The *Group Of Unique Names* object class is used to define entries representing an unordered set of names whose integrity can be assured and which represent individual objects or other groups of names. The membership of a group is static, i.e. it is explicitly modified by administrative action, rather than dynamically determined each time the group is referred to.

```
groupOfUniqueNames  OBJECT-CLASS ::= {
     SUBCLASS OF    { top }
     MUST CONTAIN   { commonName | uniqueMember }
     MAY CONTAIN    { description |
                      organizationName |
                      organizationalUnitName |
                      owner |
                      seeAlso |
                      businessCategory }
     ID             id-oc-groupOfUniqueNames }
```

6.10   Residential Person

The *Residential Person* object class is used to define entries representing a person in the residential environment.

```
residentialPerson  OBJECT-CLASS ::= {
     SUBCLASS OF    { person }
     MUST CONTAIN   { localityName }
     MAY CONTAIN    { LocaleAttributeSet |
                      PostalAttributeSet |
                      preferredDeliveryMethod |
                      TelecommunicationAttributeSet |
                      businessCategory }
     ID             id-oc-residentialPerson }
```

6.11   Application Process

The *Application Process* object class is used to define entries representing application processes. An application process is an element within a real open-system which performs the information processing for a particular application (see ITU-T Rec. X.200 | ISO/IEC 7498-1).

```
applicationProcess  OBJECT-CLASS ::= {
     SUBCLASS OF    { top }
     MUST CONTAIN   { commonName }
     MAY CONTAIN    { description |
                      localityName |
                      organizationalUnitName |
                      seeAlso }
     ID             id-oc-applicationProcess }
```

6.12   Application Entity

The *Application Entity* object class is used to define entries representing application entities. An application entity consists of those aspects of an application-process pertinent to OSI.

```
applicationEntity  OBJECT-CLASS ::= {
     SUBCLASS OF    { top }
     MUST CONTAIN   { commonName | presentationAddress }
     MAY CONTAIN    { description |
                      localityName |
                      organizationName |
                      organizationalUnitName |
                      seeAlso |
                      supportedApplicationContext }
     ID             id-oc-applicationEntity }
```

   NOTE – If an application-entity is represented as a Directory object that is distinct from an application-process, the **commonName** attribute is used to carry the value of the Application Entity Qualifier.