
**Information technology — Open Systems
Interconnection — The Directory: Protocol
Implementation Conformance Statement
(PICS) proforma for the Directory
Information Shadowing Protocol**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — L'annuaire: Proformes de déclaration de conformité de mise en
œuvre du protocole (PICS) pour le protocole d'ombrage d'information de
l'annuaire*



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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 13248-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 33, *Distributed application services*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.586.

ISO/IEC 13248 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — The Directory*:

- *Part 1: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Access Protocol*
- *Part 2: Protocol Implementation Conformance Statement (PICS) proforma for the Directory System Protocol*
- *Part 3: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Operational Binding Management Protocol*
- *Part 4: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Information Shadowing Protocol*

Annex A forms an integral part of this part of ISO/IEC 13248.

Introduction

This Recommendation | International Standard has been produced to facilitate the interconnection of information processing systems to provide directory services. The set of all such systems, together with the directory information which they hold, can be viewed as an integrated whole, called 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.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given OSI protocol. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

This Recommendation | International Standard provides the Protocol Implementation Conformance Statement (PICS) proforma for the Directory Information Shadowing Protocol (DISP) specified in ITU-T Rec. X.500-Series (1993) | ISO/IEC 9594:1995. All references to the Directory Specifications, made throughout this Recommendation | International Standard, are to the second edition of those specifications (ITU-T Rec. X.500-Series (1993) | ISO/IEC 9594:1995).

Annex A specifies the PICS proforma for the Directory Information Shadowing Protocol as defined in ITU-T Rec. X.500-Series | ISO/IEC 9594.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

**INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
THE DIRECTORY: PROTOCOL IMPLEMENTATION CONFORMANCE
STATEMENT (PICS) PROFORMA FOR THE DIRECTORY
INFORMATION SHADOWING PROTOCOL**

1 Scope

This Recommendation | International Standard provides the PICS proforma for the Directory Information Shadowing Protocol (DISP) specified in ITU-T Rec. X.500-Series (1993) | ISO/IEC 9594:1995. This PICS proforma is in compliance with the relevant requirements, and in accordance with the relevant guidance for PICS proforma, given in ITU-T Rec. X.296 | ISO/IEC 9646-7.

The supplier of a DISP implementation that is claimed to conform to ITU-T Rec. X.500-Series | ISO/IEC 9594 is required to complete a copy of the PICS proforma provided in Annex A and is required to provide the information necessary to identify both the supplier and the implementation.

The scope of this Recommendation | International Standard is the specification of the conformance statements for a Directory System Agent (DSA).

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 ITU-T Recommendations | International Standards

- ITU-T Recommendation X.500 (1993) | ISO/IEC 9594-1:1995, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services.*
- ITU-T Recommendation X.501 (1993) | ISO/IEC 9594-2:1995, *Information technology – Open Systems Interconnection – The Directory: Models.*
- ITU-T Recommendation X.509 (1993) | ISO/IEC 9594-8:1995, *Information technology – Open Systems Interconnection – The Directory: Authentication framework.*
- ITU-T Recommendation X.511 (1993) | ISO/IEC 9594-3:1995, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition.*
- ITU-T Recommendation X.518 (1993) | ISO/IEC 9594-4:1995, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation.*
- ITU-T Recommendation X.519 (1993) | ISO/IEC 9594-5:1995, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications.*
- ITU-T Recommendation X.520 (1993) | ISO/IEC 9594-6:1995, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types.*
- ITU-T Recommendation X.521 (1993) | ISO/IEC 9594-7:1995, *Information technology – Open Systems Interconnection – The Directory: Selected object classes.*
- ITU-T Recommendation X.525 (1993) | ISO/IEC 9594-9:1995, *Information technology – Open Systems Interconnection – The Directory: Replication.*

2.2 Paired Recommendation | International Standards equivalent in technical content

- ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.

ISO/IEC 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts*.

- ITU-T Recommendation X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements*.

ISO/IEC 9646-7:1995, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation Conformance Statements*.

3 Definitions

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

3.1 Directory definitions

This Recommendation | International Standard uses terms defined in the ITU-T Rec. X.500-Series | ISO/IEC 9594, specifically ITU-T X.525 (1993) | ISO/IEC 9594-9:1995.

3.2 Conformance definitions

The following terms are defined in ITU-T Rec. X.290 | ISO/IEC 9646-1:

- Protocol Implementation Conformance Statement (PICS);
- PICS proforma;
- conformance;
- mandatory requirement;
- optional requirement;
- conditional requirement.

3.3 Basic directory conformance definitions

The following terms are defined in this Recommendation | International Standard:

3.3.1 centralized DSA: A DSA that is not capable of holding knowledge information about other DSAs. Such a DSA is not capable of returning referrals.

3.3.2 cooperating DSA: A DSA that is capable of holding knowledge references. Such a DSA is capable of returning referrals, and may also be a chaining DSA.

3.3.3 chaining DSA: A cooperating DSA that is capable of invoking chained operations, functioning as a DSP invoker. A chaining DSA is also a cooperating DSA.

3.3.4 security level: Security levels shall be declared for peer entity authentication, originator authentication and results authentication, respectively:

- For originator authentication, there are five security levels which are "none", "simple without password", "simple with unprotected password", "simple with protected password" and "strong".
- For peer entity authentication, there are three security levels which are "none", "simple with distinguished name" and "strong".
- For results authentication, there are two security levels which are "none" and "strong".

4 Abbreviations

For the purposes of this Protocol Implementation Conformance Statement, the following abbreviations apply:

ACI	Access Control Information
CCITT	International Telegraph & Telephone Consultative Committee
DAP	Directory Access Protocol
DIB	Directory Information Base
DISP	Directory Information Shadowing Protocol
DIT	Directory Information Tree
DOP	Directory Operational Binding Management Protocol
DSA	Directory System Agent
DSE	DSA Specific Entry
DSP	Directory System Protocol
DUA	Directory User Agent
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ITU	International Telecommunication Union
ITU-T	International Telecommunication Union Telecommunication Standardization Sector
IUT	Implementation Under Test
NSSR	Non-Specific Subordinate Reference
NSAP	Network Service Access Point
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
RDN	Relative Distinguished Name
ROSE	Remote Operations Service Element
RTSE	Reliable Transfer Service Element
SDSE	Shadowed DSA Specific Entry

5 Conventions

This Recommendation | International Standard refers exclusively to the second edition of the Directory Specifications listed in clause 2.

6 Conformance

A conforming PICS proforma shall be technically equivalent to ITU-T Rec. X.500-Series | ISO/IEC 9594 and shall preserve the numbering and ordering of the items in ITU-T Rec. X.500-Series | ISO/IEC 9594.

A PICS which conforms to this Recommendation | International Standard shall:

- describe an implementation which conforms to ITU-T Rec. X.500-Series | ISO/IEC 9594;
- be a conforming PICS proforma, which has been completed in accordance with the instructions for completion given in A.2;
- include information necessary to uniquely identify both the supplier and the implementation.