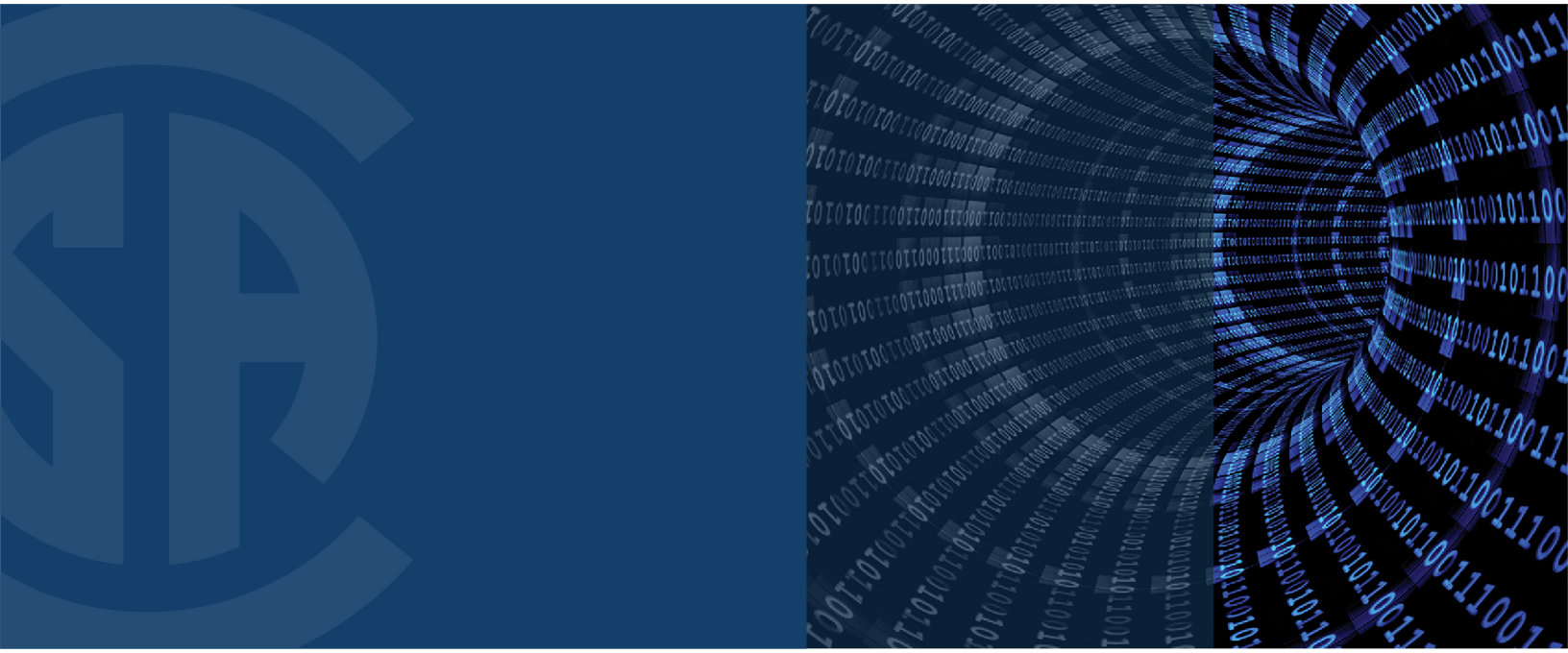
CSA ISO/IEC 9594-5:21
(ISO/IEC 9594-5:2020, IDT)
National Standard of Canada

CSA ISO/IEC 9594-5:21
Information technology — Open systems interconnection — Part 5: The Directory: Protocol specifications
(ISO/IEC 9594-5:2020, IDT)



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National Standard of Canada

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CSA Preface

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For brevity, this Standard will be referred to as "CSA ISO/IEC 9594-5" throughout.

At the time of publication, ISO/IEC 9594-5:2020 is available from ISO and IEC in English only. CSA Group will publish the French version when it becomes available from ISO and IEC.

The International Standard was reviewed by the CSA TCIT under the jurisdiction of the CSA Strategic Steering Committee on Information and Communications Technology and deemed acceptable for use in Canada. From time to time, ISO/IEC may publish addenda, corrigenda, etc. The TCIT will review these documents for approval and publication. For a listing, refer to the *Current Standards Activities* page at **standardsactivities.csa.ca**. This Standard has been formally approved, without modification, by the Technical Committee and has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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a) *Standard designation (number);*
b) *relevant clause, table, and/or figure number;*
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d) *rationale for the change.*

INTERNATIONAL STANDARD

ISO/IEC 9594-5

Ninth edition
2020-11

Information technology — Open systems interconnection —

Part 5: The Directory: Protocol specifications

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by ITU-T as ITU-T X.519 (10/2019) and drafted in accordance with its editorial rules, in collaboration with Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This ninth edition cancels and replaces the eighth edition (ISO/IEC 9594-5:2017), which has been technically revised.

A list of all parts in the ISO/IEC 9594 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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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 specifies the application service elements and application contexts for two protocols – the Directory Access Protocol (DAP) and the Directory System Protocol (DSP). The DAP provides for access to the Directory to retrieve or modify Directory information. The DSP provides for the chaining of requests to retrieve or modify Directory information to other parts of the distributed Directory System where the information may be held.

In addition, this Recommendation | International Standard specifies the application service elements and application contexts for the Directory Information Shadowing Protocol (DISP) and the Directory Operational Binding Management Protocol (DOP). The DISP provides for the shadowing of information held in one DSA to another DSA. The DOP provides for the establishment, modification and termination of bindings between pairs of DSAs for the administration of relationships between the DSAs (such as for shadowing or hierarchical relationships).

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 ninth edition technically revises and enhances the eighth edition of this Recommendation | International Standard.

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

Rec. ITU-T X.511 (1993) | ISO/IEC 9594-3 (1995), Rec. ITU-T X.518 (1993) | ISO/IEC 9594-4 (1995) and Rec. ITU-T X.519 (1993) | ISO/IEC 9594-5 (1995) and their previous edition 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 nine editions, except for those specifically assigned to version 2, are accommodated using the rules of extensibility defined in this edition of Rec. ITU-T X.519 | ISO/IEC 9594-5.

Annex A, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the common specifications for the Directory protocols.

Annex B, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the OSI protocol specification.

Annex C, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the Directory OSI protocols.

Annex D, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the IDM protocol specification.

Annex E, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the Directory IDM protocols.

Annex F, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module which contains all the ASN.1 object identifiers assigned to identify operational binding types in this series of Recommendations | International Standards.

Annex G, 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: Protocol specifications

1 Scope

This Recommendation | International Standard specifies the Directory Access Protocol, the Directory System Protocol, the Directory Information Shadowing Protocol, and the Directory Operational Binding Management Protocol which fulfil the abstract services specified in Rec. ITU-T X.511 | ISO/IEC 9594-3, Rec. ITU-T X.518 | ISO/IEC 9594-4, Rec. ITU-T X.525 | ISO/IEC 9594-9, and Rec. ITU-T X.501 | ISO/IEC 9594-2.

2 References

2.1 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.

2.1.1 Identical Recommendations | International Standards

- Recommendation ITU-T X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The basic model*.
- Recommendation ITU-T X.213 (2001) | ISO/IEC 8348:2002, *Information technology – Open Systems Interconnection – Network service definition*.
- Recommendation ITU-T X.214 (1995) | ISO/IEC 8072:1996, *Information technology – Open Systems Interconnection – Transport service definition*.
- Recommendation ITU-T X.500 (2019) | ISO/IEC 9594-1:2020, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services*.
- Recommendation ITU-T X.501 (2019) | ISO/IEC 9594-2:2020, *Information technology – Open Systems Interconnection – The Directory: Models*.
- Recommendation ITU-T X.509 (2019) | ISO/IEC 9594-8:2020, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks*.
- Recommendation ITU-T X.511 (2019) | ISO/IEC 9594-3:2020, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition*.
- Recommendation ITU-T X.518 (2019) | ISO/IEC 9594-4:2020, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation*.
- Recommendation ITU-T X.520 (2019) | ISO/IEC 9594-6:2020, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types*.
- Recommendation ITU-T X.521 (2019) | ISO/IEC 9594-7:2020, *Information technology – Open Systems Interconnection – The Directory: Selected object classes*.
- Recommendation ITU-T X.525 (2019) | ISO/IEC 9594-9:2020, *Information technology – Open Systems Interconnection – The Directory: Replication*.
- Recommendation ITU-T X.680 (2015) | ISO/IEC 8824-1:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.
- Recommendation ITU-T X.681 (2015) | ISO/IEC 8824-2:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Information object specification*.
- Recommendation ITU-T X.682 (2015) | ISO/IEC 8824-3:2015, *Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification*.