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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Directory services
architecture for audiovisual and multimedia services

Directory services architecture for SIP

Recommendation ITU-T H.350.4



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Recommendation ITU-T H.350.4

Directory services architecture for SIP

Summary

Recommendation ITU-T H.350.4 describes a lightweight directory access protocol (LDAP) directory services architecture for multimedia conferencing using a session initiation protocol (SIP). In particular, it defines an LDAP schema to represent SIP user agents (UAs) on the network and associate those endpoints with users.

This Recommendation is intended to supplement the CommObject directory architecture as discussed in Recommendation ITU-T H.350, and not intended to be used as a stand-alone architecture. The implementation of this LDAP schema, together with the use of the ITU-T H.350 CommObject architecture, facilitates the integration of SIP user agents and conferencing devices into the existing enterprise directories; thus allowing the user to perform white page lookups and access clickable dialling supported by SIP devices. The primary reasons for implementing this schema are identical to those listed in Recommendation ITU-T H.350 (the CommObject class definition) as they apply specifically to the use of SIP UAs.

This revised version of Recommendation ITU-T H.350.4 introduces several enhancements and clarifications to the previous version, primarily the addition of ITU-T X.500 directories support.

This Recommendation includes an electronic attachment containing a schema configuration file for SIPIdentity.

History

Edition	Recommendation	Approval	Study Group
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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Electronic attachment: Schema configuration file for SIPIdentity

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Recommendation ITU-T H.350.4

Directory services architecture for SIP

1 Scope

This Recommendation¹ describes a lightweight directory access protocol (LDAP) directory services architecture for multimedia conferencing using a session initiation protocol (SIP). In particular, it defines an LDAP schema to represent SIP user agents (UAs) on the network and associate those endpoints with users.

This Recommendation is intended to supplement the CommObject directory architecture as discussed in [ITU-T H.350], and is not intended to be used as a stand-alone architecture. The implementation of this LDAP schema, together with the use of the ITU-T H.350 CommObject architecture, facilitates the integration of SIP user agents and conferencing devices into the existing enterprise directories; thus allowing the user to perform white page lookups and access clickable dialling supported by SIP devices. The primary reasons for implementing this schema include those listed in [ITU-T H.350] (the CommObject class definition) as they apply specifically to the use of SIP UAs, and to facilitate vendors making SIP services more readily available to their users.

The scope of this Recommendation includes recommendations for the architecture to integrate endpoint information for endpoints using SIP into the existing enterprise directories and white pages.

The scope of this Recommendation does not include normative methods for the use of the LDAP directory itself or the data it contains. The purpose of the schema is not to represent all possible data elements in the SIP protocol, but rather to represent the minimal set required to accomplish the design goals enumerated in [ITU-T H.350].

Note that SIP provides well-defined methods for discovering registrar addresses and locating users on the network. Some of the attributes defined here are intended for more trivial or manual implementations and may not be needed for all applications. For example, SIPIdentityRegistrarAddress and SIPIdentityAddress may not be needed for many applications, but are included here for completeness. Thus, SIPIdentitySIPURI is the primary attribute of interest that will be served out, especially for white page directory applications.

1.1 Extending the schema

The SIPIdentity classes may be extended as necessary for specific implementations. See the base [ITU-T H.350] for a discussion on schema extension.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

¹ This Recommendation includes an electronic attachment containing a text file with a schema configuration for SIPIdentity.

- [ITU-T H.350] Recommendation ITU-T H.350 (2011), *Directory services architecture for multimedia conferencing*.
- [ITU-T X.500] Recommendation ITU-T X.500 (2008) | ISO/IEC 9594-1:2008, *Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services*.
- [ITU-T X.501] Recommendation ITU-T X.501 (2008) | ISO/IEC 9594-2:2008, *Information technology – Open Systems Interconnection – The Directory: Models*.
- [ITU-T X.509] Recommendation ITU-T X.509 (2008) | ISO/IEC 9594-8:2008, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks*.
- [ITU-T X.511] Recommendation ITU-T X.511 (2008) | ISO/IEC 9594-3:2008, *Information technology – Open Systems Interconnection – The Directory: Abstract service definition*.
- [ITU-T X.518] Recommendation ITU-T X.518 (2008) | ISO/IEC 9594-4:2008, *Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation*.
- [ITU-T X.519] Recommendation ITU-T X.519 (2008) | ISO/IEC 9594-5:2008, *Information technology – Open Systems Interconnection – The Directory: Protocol specifications*.
- [ITU-T X.520] Recommendation ITU-T X.520 (2008) | ISO/IEC 9594-6:2008, *Information technology – Open Systems Interconnection – The Directory: Selected attribute types*.
- [ITU-T X.525] Recommendation ITU-T X.525 (2008) | ISO/IEC 9594-9:2008, *Information technology – Open Systems Interconnection – The Directory: Replication*.
- [IETF RFC 2069] IETF RFC 2069 (1997), *An Extension to HTTP: Digest Access Authentication*.
- [IETF RFC 2617] IETF RFC 2617 (1999), *HTTP Authentication: Basic and Digest Access Authentication*.
- [IETF RFC 3261] IETF RFC 3261 (2002), *SIP: Session Initiation Protocol*.
- [IETF RFC 4510] IETF RFC 4510 (2006), *Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map*.
- [IETF RFC 4511] IETF RFC 4511 (2006), *Lightweight Directory Access Protocol (LDAP): The Protocol*.

3 Definitions

This Recommendation defines the following terms:

- 3.1 client:** A SIP client is a network device that initiates SIP requests and receives SIP responses on a network.
- 3.2 commObject:** An LDAP object class defined in [ITU-T H.350] that represents generic multimedia conferencing endpoints.
- 3.3 endpoint:** A logical device that provides video and/or voice media encoding/decoding, and signalling functions. Examples include:
 - 1) a group teleconferencing appliance that is located in a conference room;
 - 2) an IP telephone;