

# [MS-TAIL]: Telephony API Internet Locator Service Data Structure

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## Revision Summary

Date	Revision History	Revision Class	Comments
07/20/2007	0.1	Major	MCPPE Milestone 5 Initial Availability
09/28/2007	1.0	Major	Updated and revised the technical content.
10/23/2007	1.0.1	Editorial	Revised and edited the technical content.
11/30/2007	1.0.2	Editorial	Revised and edited the technical content.
01/25/2008	1.0.3	Editorial	Revised and edited the technical content.

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# 1 Introduction

The Telephony API Internet Locator Service Data Structure is a Microsoft proprietary interface that uses **Lightweight Directory Access Protocol (LDAP)** requests to retrieve information stored in the **Internet Locator Service (ILS)** dynamic instance, such as people or conferences. It is used for communication between a client using the **Telephony Application Programming Interface (TAPI)** and an ILS server.

## 1.1 Glossary

The following terms are defined in [\[MS-GLOS\]](#):

**Component Object Model (COM)**  
**Globally Unique Identifier (GUID)**  
**Lightweight Directory Access Protocol (LDAP)**

The following terms are specific to this document:

**Internet Locator Service (ILS):** A service used for locating user IP addresses in **Voice over IP**.

**Telephony Application Programming Interface (TAPI):** A **Component Object Model (COM)** interface used for the development of communications applications.

**Voice over IP:** An IP telephony term for a set of facilities used to manage the delivery of voice information over the Internet.

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as described in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 1.2 References

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

[RFC1781] Kille, S., "Using the OSI Directory to Achieve User Friendly Naming", RFC 1781, March 1995, <http://www.ietf.org/rfc/rfc1781.txt?number=1781>

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt>

[RFC2251] Wahl, M., Howes, T., and Kille, S., "Lightweight Directory Access Protocol (v3)", RFC 2251, December 1997, <http://www.ietf.org/rfc/rfc2251.txt>

[RFC2252] Wahl, M., Coulbeck, A., Howes, T., and Kille, S., "Lightweight Directory Access Protocol (v3): Attribute Syntax Definitions", RFC 2252, December 1997, <http://www.ietf.org/rfc/rfc2252.txt>

[RFC2256] Wahl, M., "A Summary of the X.500(96) User Schema for use with LDAPv3", RFC 2256, December 1997, <http://www.ietf.org/rfc/rfc2256.txt>

[RFC2327] Handley, M. and Jacobson, V., "SDP: Session Description Protocol", RFC 2327, April 1998, <http://www.ietf.org/rfc/rfc2327.txt>

[RFC2589] Yaacovi, Y., Wahl, M., and Genovese, T., "Lightweight Directory Access Protocol (v3): Extensions for Dynamic Directory Services", RFC 2589, May 1999, <http://www.ietf.org/rfc/rfc2589.txt>

### 1.2.2 Informative References

[LDAP] Microsoft Corporation, "About Lightweight Directory Access Protocol", <http://msdn2.microsoft.com/en-us/library/aa366075.aspx>

If you have any trouble finding [LDAP], please check [here](#).

[MSCommInternetSys10] Butler, P., Cales, R., Petersen, J., and Banick, S., "Microsoft Commercial Internet System: The Internet Locator Service Chapter 10", April 1997, <http://docs.rinet.ru/MCIS/ch10.htm>

[MSDN-InternetLocSrvAPI] Microsoft Corporation, "Internet Locator Service API", <http://msdn2.microsoft.com/en-us/library/ms707540.aspx>

[MSDN-MSTelephonyOvw] Microsoft Corporation, "Microsoft Telephony Overview", <http://msdn2.microsoft.com/en-us/library/ms733433.aspx>

[MSDN-WSALookupServiceBegin] Microsoft Corporation, "Winsock Function", <http://msdn2.microsoft.com/en-us/library/ms741633.aspx>

### 1.3 Structure Overview (Synopsis)

The Telephony API Internet Locator Service Data Structure uses Lightweight Directory Access Protocol (LDAP) requests to retrieve information stored in the Internet Locator Service (ILS) dynamic instance, such as people or conferences. It is used for communication between a client using the Telephony Application Programming Interface (TAPI) and an ILS server. [<1>](#)

TAPI is a **Component Object Model (COM)** interface used for the development of communications applications. When communicating with an ILS server, only the client-side functions in the TAPI interface are used.

ILS is a Dynamic Directory Service (DDS) that associates people and conferences with the IP addresses of their computers. ILS maintains the correct IP address for a person or conference even when their IP address changes. To do so, ILS provides an LDAP v3 interface and supports dynamic objects, as specified in [\[RFC2251\].<2>](#)

For an example of a TAPI ILS scenario, see section [3.2](#).

#### 1.3.1 ILS Variations from the LDAP V3 Protocol

The ILS server is a dynamic directory service that provides an LDAP v3 interface and supports dynamic objects, as specified in [\[RFC2589\]](#). ILS communication varies only slightly from the published LDAP v3 standards.

ILS communication differs from LDAP v3 in the following ways.

- Because ILS entries are dynamic, ILS does not support modify distinguished name (ModifyDN) requests. To move entries from one part of the directory to another, delete the entries and add them to the desired location.
- The ILS LDAP server does not support server-side sorting.
- The ILS LDAP server does not support TAPI session control operations.
- The ILS LDAP server does not support friendly distinguished names (DNs), as specified in [\[RFC1781\]](#).

### 1.3.2 NetMeeting Extensions to the Standard LDAP Protocol

While connecting to an ILS server, NetMeeting does not follow the standard LDAP protocol. The following list describes the NetMeeting extensions to the standard LDAP protocol:

- Unique structure of Distinguished Names (DNs). NetMeeting puts the most significant elements in the DN first, instead of last, using: C=US, O=Microsoft, CN=xxx@abc.com, OBJECTCLASS=rtperson instead of standard formatting, which is: CN=xxx@abc.com, O=Microsoft, C=US.
- Does not include the required "objectclass" attribute. Instead, it adds an "OBJECTCLASS" element to the end of the DN, as shown in the previous bulleted item.
- Does not insert parents into the LDAP server. This is a clear divergence from the LDAP standard, which requires parents to exist before children can be created—that is, to insert DN: CN=xxx@abc.com, O=Microsoft, C=US, these DN's must already exist: O=Microsoft, C=US.
- Does not understand attribute aliases and is therefore unable to recognize that "sn" and "surname" refer to the same attribute.
- Requires that attributes in a search request be returned in exactly the same order they were requested.
- Specifies "base" scope in search requests, when it really should use "sub", because it is searching for a list of entries, not just one.
- Uses the "%" character as a wildcard in search requests, instead of the "\*" character specified by the standard.
- In name attributes "surname", "givenname", encodes accented European characters as 8-bit ISO 8859-1, instead of multicharacter UTF-8 sequences as required by LDAP ([\[RFC2252\]](#) and [\[RFC2256\]](#)).
- Uses a nonstandard means of refreshing dynamic entries.
- The Microsoft server maintains an "sttl" attribute, which is a "time to live" for the entry in minutes. A search request for attribute "sttl" resets the timer. If the timer goes to zero, the entry is supposed to disappear from the database. NetMeeting 2 supplies an "sttl" attribute, but NetMeeting 3 does not actually create the "sttl" attribute at all. Also, the client does not provide the whole DN that requires an update; it only supplies the "cn" component.

### 1.4 Relationship to Protocols and Other Structures

None.

## **1.5 Applicability Statement**

This data structure is applicable to TAPI clients who would like to retrieve information about objects, like people and conferences, from the ILS server, and make use of these objects for establishing conference calls.

## **1.6 Versioning and Localization**

There are no versioning or localization issues relevant to this protocol.

## **1.7 Vendor-Extensible Fields**

There are no vendor-extensible fields in this protocol.

## 2 Structures

The following sections specify structures for the Telephony API Internet Locator Service Data Structure.

### 2.1 TAPI ILS Packets

The Telephony API Internet Locator Service Data Structure uses the following packets.

Packets	Description
<a href="#">Conference attributes</a>	Contains information about an ILS conference.
<a href="#">Person attributes</a>	Contains information about an ILS user.

#### 2.1.1 Conference Attributes

The Conference Attributes packet contains information about an ILS conference. All fields in this packet are of variable length.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
advertisingScope (variable)																															
...																															
conferenceBlob (variable)																															
...																															
generalDescription (variable)																															
...																															
isEncrypted (variable)																															
...																															
uid (variable)																															
...																															
originator (variable)																															
...																															

protocolId (variable)
...
startTime (variable)
...
stopTime (variable)
...
subtype (variable)
...
URL (variable)
...
applicationID (variable)
...
mimetype (variable)
...
GUID (variable)
...
protocolIDForNetMeetingCompatibility (variable)
...
ProtocolMimeType (variable)
...
port (variable)



...
ILSA39321630 (variable)
...
ILSA26214430 (variable)
...
ILSA32964638 (variable)
...
ILSA32833566 (variable)
...

**advertisingScope (variable):** This field is not used. It was designed to specify how widely the conference announcement should be distributed.

**conferenceBlob (variable):** A string containing a Session Description Protocol (SDP) Binary Large Object (BLOB), as specified in [\[RFC2327\]](#).

**generalDescription (variable):** A string containing a comment for the conference.

**isEncrypted (variable):** **True** if the conference is encrypted; otherwise, **False**.

**uid (variable):** A string containing the unique identifier of the conference.

**originator (variable):** A string containing the name of the user that created this conference.

**protocolId (variable):** A string containing the protocol that the **conferenceBlob** field uses to describe the conference. In TAPI ILS, only SDP is used.

**startTime (variable):** A string containing the universal time when the conference will be available to users.

**stopTime (variable):** A string containing the universal time when the conference will become unavailable for users (they will be unable to join this conference).

**subtype (variable):** This field is not used. It was designed to identify different types of conferences.

**URL (variable):** A string containing the conference name.

**applicationID (variable):** A string containing the application name, set to "ms-netmeeting". This field is present for NetMeeting compatibility.

- mimetype (variable):** A string containing the data type of the call, set to "text/iuls". This field is present for NetMeeting compatibility.
- GUID (variable):** A string containing the globally unique identifier (GUID), set to "008aff194794cf118796444553540000". This field is present for NetMeeting compatibility.
- protocolIDForNetMeetingCompatibility (variable):** A string containing the protocol of the conference, set to "H323". This field is present for NetMeeting compatibility.
- ProtocolMimeType (variable):** A string containing the data type of the protocol, set to "text/h323". This field is present for NetMeeting compatibility.
- port (variable):** A string containing the port used by the protocol, set to "1720". This field is present for NetMeeting compatibility.
- ILSA39321630 (variable):** A string containing the extended attribute 600, which indicates the category, set to "4". This field is present for NetMeeting compatibility.
- ILSA26214430 (variable):** A string containing the extended attribute 400, which indicates whether a call is active, set to "0". This field is present for NetMeeting compatibility.
- ILSA32964638 (variable):** A string containing the extended attribute 503, which indicates the capability to send video, set to "1". This field is present for NetMeeting compatibility.
- ILSA32833566 (variable):** A string containing the extended attribute 501, which indicates the capability to send audio, set to "1". This field is present for NetMeeting compatibility.

These values are queried individually from an ILS server, through LDAP requests from ILS clients such as Phone Dialer and NetMeeting.

### 2.1.2 Person Attributes

The person attributes packet contains information about an ILS user. Several fields in this packet are included or omitted to be compatible with Site Server 3.0 for Microsoft NetMeeting clients, or TAPI 3.0 clients.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Cn (variable)																															
...																															
telephoneNumber (variable)																															
...																															
ipAddress (variable)																															
...																															

surname (variable)
...
location (variable)
...
flags (variable)
...
c (variable)
...
comment (variable)
...
security (variable)
...
smodop (variable)
...
mimetype (variable)
...
appguid (variable)
...
protmimetype (variable)
...
port (variable)

...
ILSA39321630 (variable)
...
ILSA26214430 (variable)
...
ILSA32964638 (variable)
...
ILSA32833566 (variable)
...
givenName (variable)
...
rfc833Mailbox (variable)
...
appId (variable)
...
protId (variable)
...

**Cn (variable):** A string containing the identity of the user.

NetMeeting clients populate this field with the e-mail address that the user supplied during setup or later.

TAPI clients populate this field with the common (display) name of the user.

**telephoneNumber (variable):** A string containing the telephone number of the user.

NetMeeting clients do not populate this field.

TAPI 3.0 clients populate this field with the telephone number of the user.

**ipAddress (variable):** A string containing a calculated value for the IP address of the user.

NetMeeting clients populate this field with a string representing the IP address of the machine. For instance, if the IP address is 10.70.41.96, then the string contains 613317642. The value is calculated as  $10 + 256(70 + 256(41 + 256 * 96))$ .

TAPI clients do not populate this field.

**surname (variable):** A string containing the last name of the user.

NetMeeting clients populate this field with the name that the user supplied during setup or later.

TAPI clients populate this field with "" (no surname); they do not use the value.

**location (variable):** A string containing the location of the conference originator.

NetMeeting clients populate this field with the name that the user supplied during setup or later.

By default, TAPI clients populate this field with "N/A" (no location); they do not use the value.

**flags (variable):** A string containing the conference visibility.

NetMeeting clients populate this field with a string form of a **DWORD** set to 1 (visible) or 0 (hidden).

By default, TAPI clients populate this field with a value of 1 (visible); they do not use the value.

**c (variable):** This field was designed to store the country/region of the user. It is no longer used and is retained to be compatible with Site Server 3.0.

NetMeeting clients populate this field with "-" (a dash).

By default, TAPI clients populate this field with "US" (United States); they do not use the value.

**comment (variable):** A string containing general comments about the conference.

NetMeeting clients populate this field with the name that the user supplied during setup or later.

By default, TAPI clients populate this field with "Generated by TAPI3"; they do not use the value.

**security (variable):** A string containing the securityTokenID value of the user.

NetMeeting clients populate this field with a string form of a **DWORD**.

By default, TAPI clients populate this field with "1508109"; they do not use the value.

**smodop (variable):** A string containing the ISBU's special modify-operation code in ModifyRequest.

NetMeeting clients populate this field with the operation commands in ModifyRequest. The value is either 0x0000 (Add), 0x0001 (DELETE), or 0x0002 (REPLACE).

By default, TAPI clients populate this field with 0x0000 (ADD); they do not use the value.

Several types of modification operations can be performed on the LDAP server: adding an application, deleting an application, modifying user information, and modifying application information. The type of modification is specified by using the appropriate **smodop** field.

Value	Meaning
ADDAPP 0	Adds an application to the LDAP server.
DELETEAPP 1	Deletes the application entry on the LDAP server.
MODIFYUSER 2	Modifies the user entry on the LDAP server.
MODIFYAPP 3	Modifies the application entry on the LDAP server.

**mimetype (variable):** A string containing the data type sent in the call.

Both NetMeeting and TAPI clients populate this field with "text/iuls". TAPI clients do not use the value.

**appguid (variable):** A string containing the global identifier.

Both NetMeeting and TAPI clients populate this field with "008aff194794cf118796444553540000". TAPI clients do not use the value.

**protmimetype (variable):** A string containing the data type of the protocol.

NetMeeting clients populate this field with the ports of the protocols it uses, such as "text/t120" or "text/h323".

By default, TAPI clients populate this field with "H323"; they do not use the value.

**port (variable):** A string containing the port used by the protocol.

NetMeeting clients populate this field with the ports of the protocols it uses, such as "1503" (DATA) or "1720" (A/V).

By default, TAPI clients populate this field with "1720" (A/V); they do not use the value.

**ILSA39321630 (variable):** A string containing the extended attribute 600, which indicates the restriction category.

NetMeeting clients populate this field with the restriction value. The value is 1 if it is primarily used for personal, 2 if it is primarily used for business, and 3 if it allows adult content. The default value is 0.

By default, TAPI clients populate this field with the value of 4; they do not use the value.

**ILSA26214430 (variable):** A string containing the extended attribute 400, which indicates whether or not a call is active.

NetMeeting clients populate this field with the status of being in a call. The value is 1 if in a call or 0 if not in a call.

By default, TAPI clients populate this field with a value of 0; they do not use the value.

**ILSA32964638 (variable):** A string containing the extended attribute 503, which indicates the capability to send video.

NetMeeting clients populate this field with the capability of sending video. The value is 1 if it can send video, or 0 if it cannot send video.

By default, TAPI clients populate this field with a value of 1; they do not use the value.

**ILSA32833566 (variable):** A string containing the extended attribute 501, which indicates the capability to send audio.

NetMeeting clients populate this field with the capability of sending audio. The value is 1 if it can send audio or 0 if it cannot send audio.

By default, TAPI clients populate this field with a value of 1; they do not use the value.

**givenName (variable):** A string that contains the given name attribute for the user object that is being created.

NetMeeting clients populate this field with the name that the user supplied during setup or later.

TAPI clients are unaware of this field and do not populate it.

**rfc833Mailbox (variable):** A string that contains the e-mail address that the user supplied.

NetMeeting clients populate this field with the e-mail address that the user supplied during setup or later.

TAPI clients are unaware of this field and do not populate it.

**appId (variable):** A string that uniquely identifies the application.

NetMeeting clients populate this field with "ms-netmeeting".

TAPI clients are unaware of this field and do not populate it.

**protId (variable):** A string that identifies the protocol.

NetMeeting clients populate this field with the protocol, either DATA or A/V. The value is set to "T120" (DATA) or "H323" (A/V).

TAPI clients are unaware of this field and do not populate it.

The WCHAR values should be **NULL**-terminated (/0).

These values are queried individually from an ILS server through LDAP requests from ILS clients such as Phone Dialer and NetMeeting.

## 3 Structure Examples

### 3.1 Example for Conference Attributes for TAPI

Structure example for Conference attributes for TAPI:

Field name	Value
advertisingScope	<Any value, not used by TAPI>
ConferenceBlob	v=0.o=administrator 3390026148 1 IN IP4 BITS-CS.NTDEV.COM.s=tapi test.c=IN IP4 224.2.130.166/10/1.t=3390026140 3390027940.m=audio 23012 RTP/AVP 0.m=video 63076 RTP/AVP 34.c=IN IP4 224.0.0.0/15.
generalDescription	Conference Session Info
isEncrypted	0 or 1
uid	Any <b>GUID</b>
originator	Sanjay Patel
protocolId	SDP
startTime	5000
stopTime	5360
subtype	<Any value, not used by TAPI>
URL	http://www.contoso.com/
applicationID	ms-netmeeting
mimetype	text/iuls
GUID	008aff194794cf118796444553540000
protocolID	H323
ProtocolMimeType	text/h323
port	1720
ILSA39321630	4
ILSA26214430	0
ILSA32964638	1
ILSA32833566	1

Structure example for Person attributes for TAPI:



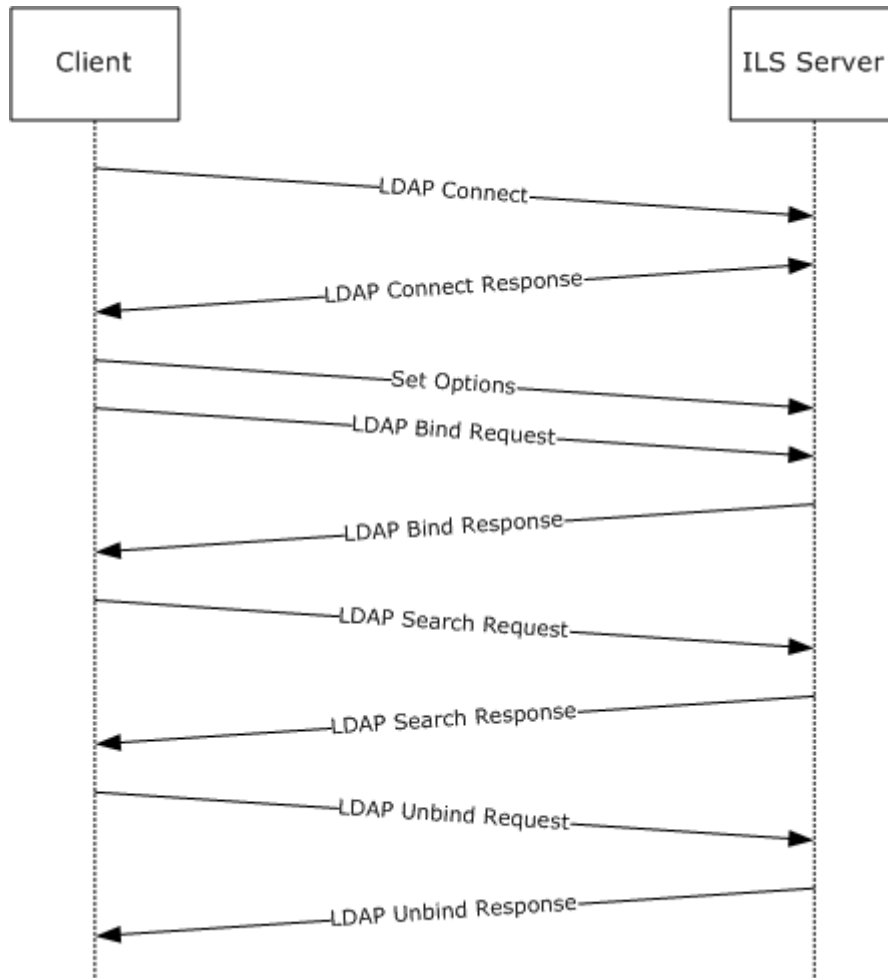
Field name	Value
Cn	Sanjay Patel
telephoneNumber	425 555 0100
ipAddress	<Unused by TAPI>
Surname	\0
Location	N/A
flags	1
c	US
comment	Generated by Tapi3
Security	1508109
smodop	0x0000
contentType	text/iuls
GUID	008aff194794cf118796444553540000
ProtocolMimeType	H323
Port	1720
ILSA39321630	4
ILSA26214430	0
ILSA32964638	1
ILSA32833566	1

### 3.2 Example Scenario for the TAPI ILS Protocol

The client will lookup LDAP to locate an ILS server and proceed as follows:

1. LDAP Connect: The client connects to the ILS server.
2. LDAP Connect Response: The client receives a Connect response.
3. Set Options: The client sets the attributes, base **DN**, and other LDAP controls if any, passed for the operations (Search).
4. LDAP Bind Request: The client sends a Bind request to the ILS server.
5. LDAP Bind Response: The client receives a Bind response.
6. LDAP Search Request: The client sends a Search request to the ILS server.
7. LDAP Search Response: The client receives a response and processes the search results internally for future use.
8. LDAP Unbind Request: The client sends an Unbind request to the ILS server.

9. LDAP Unbind Response: The client receives an Unbind response.



**Figure 1: Steps in an example TAPI ILS scenario**

Two of the TAPI components that are used for communication with ILS are Rendezvous and SdpBib. These components are usually referred to as rendezvous directory controls and conference BLOB controls. These components use LDAP requests to query information about TAPI objects, such as Person and Conference.

ILS uses the Windows Sockets WSALookupServiceBegin function (see [\[MSDN-WSALookupServiceBegin\]](#)) to locate ILS services. To find the ILS service, it calls WSALookupServiceBegin (see [\[MSDN-WSALookupServiceBegin\]](#)) with the GUID of the ILS service class, "C9F17940-79A7-11d1-B008-00C04FC31FEE".

An ILS packet can be identified by the **organizationName** attribute of the packet. If the **organizationName** is either "Intranet" or an empty string, it is an ILS packet. The use of an empty string is unlikely.

The TAPI Person and Conference objects include several fields that describe the person or conference, along with general information to support NetMeeting. These fields are stored as name/value pairs and are queried individually through LDAP requests. ILS clients, such as

Windows 2000 Phone Dialer and NetMeeting, use this information for addressing and to display UI elements such as a person's name or general comments about a conference.

For more information about LDAP, see [\[LDAP\]](#) on Microsoft Developer Network (MSDN).

For more information about TAPI, see [\[MSDN-MSTelephonyOvw\]](#).

For more information about ILS, see [\[MSCommInternetSys10\]](#) and Internet Locator Service API (see [\[MSDN-InternetLocSrvAPI\]](#)).

### 3.3 Examples of LDAP Search Filters for TAPI ILS

#### 3.3.1 LDAP Search Filters Used by the TAPI Client

The search filters used by the TAPI client when searching for a conference or person are described below. [<3>](#)

To search for a conference matching NAME:

- uid=NAME
- (&((objectCategory=msTAPI-RtConference)(uid=NAME))

To search for a person matching NAME:

- cn=NAME
- (&((objectCategory=msTAPI-RtPerson)(cn=NAME))

#### 3.3.2 LDAP Search Filters Used by the NetMeeting Client

To search for a person by name:

- cn=NAME
- (&(objectClass=RTPerson)(cn=NAME))

To search for a person by name and set the "time to live" to 10 minutes:

- cn=NAME
- (&(objectClass=RTPerson)(cn=NAME)(sttl=10))

To search for a person by name and sappid:

- cn=NAME
- sappid=SAPPID
- (&(objectClass=RTPerson)(cn=NAME)(sappid=SAPPID))

To search for a person by name, sappid, and sprotid:

- cn=NAME
- sappid=SAPPID
- sprotid=SPROTID

- (&(objectClass=RTPerson)(cn=NAME)(sappid=SAPPID)(sprotid=SPROTID))

To search for a person by name and sprotid:

- cn=NAME
- sprotid=SPROTID
- (&(objectClass=RTPerson)(cn=NAME)(sprotid=SPROTID))

To search for a conference by name:

- cn=NAME
- (&(objectClass=Conference)(cn=NAME))

To search for a conference by name and set the "time to live" to 10 minutes:

- cn=NAME
- (&(objectClass=Conference)(cn=NAME)(sttl=10))

## 4 Security Considerations

There are no security considerations for the Telephony API Internet Locator Service Data Structure.

## 5 Appendix A: Windows Behavior

The information in this specification is applicable to the following versions of Windows:

- Windows Vista
- Windows Server 2003
- Windows XP
- Windows 2000
- Windows NT

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Windows behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that Windows does not follow the prescription.

[<1> Section 1.3:](#) The ILS service is included in Windows 2000. In later versions of Windows Server, the ILS features are supported by Active Directory (AD), which conforms to LDAP standards without exception.

[<2> Section 1.3:](#)

The TAPI ILS variant of the LDAP protocol that is supported by the ILS server is available only on particular versions of Windows.

- The Internet Locator Service (ILS) is supported only on Windows 2000 Server. On Windows Server 2003, dynamic object features were added to Active Directory to support TAPI clients on Windows XP and later versions of Windows.
- TAPI 3.0, which is included in Windows 2000, requires a Windows 2000 ILS server or Site Server 3.0.
- TAPI 3.1, which is included in Windows XP and later versions of Windows, can communicate with a Windows 2000 ILS server or a Windows Server 2003 application partition.

[<3> Section 3.3.1:](#) The TAPI client does not use the objectCategory filter when communicating with an ILS server.

The TAPI client uses the object Category filter only when communicating with an AD server.

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