         Feature Discovery in Lightweight Directory Access Protocol (LDAP)

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Abstract

   The Lightweight Directory Access Protocol (LDAP) is an extensible
   protocol with numerous elective features. This document introduces a
   general mechanism for discovery of elective features and extensions
   which cannot be discovered using existing mechanisms.

1. Background and Intended Use

   The Lightweight Directory Access Protocol (LDAP) [RFC3377] is an
   extensible protocol with numerous elective features. LDAP provides
   mechanisms for a client to discover supported protocol versions,
   controls, extended operations, Simple Authentication and Security
   Layer (SASL) mechanisms, and subschema information. However, these
   mechanisms are not designed to support general feature discovery.

   This document describes a simple, general-purpose mechanism which
   clients may use to discover the set of elective features supported by
   a server. For example, this mechanism could be used by a client to
   discover whether or not the server supports requests for all
   operational attributes, e.g., "+" [RFC3673]. As another example,
   this mechanism could be used to discover absolute true, e.g., "(&)"
   and false, e.g., "(|)", search filters [T-F] support.

   This document extends the LDAP Protocol Mechanism registry [RFC3383]
   to support registration of values of the supportedFeatures attribute.
   This registry is managed by the Internet Assigned Numbers Authority
   (IANA).

Schema definitions are provided using LDAP description formats
[RFC2252]. Definitions provided here are formatted (line wrapped)
for readability.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
"SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
document are to be interpreted as described in BCP 14 [RFC2119].

2. Discovery of supported features

Each elective feature whose support may be discovered SHALL be
identified by an Object Identifier (OID). A server advertises its
support for a given feature by providing the OID associated with the
feature as a value of the 'supportedFeatures' attribute held in the
root DSE. A client may examine the values of this attribute to
determine if a particular feature is supported by the server. A
client MUST ignore values it doesn't recognize as they refer to
elective features it doesn't implement.

Features associated with Standard Track protocol mechanisms MUST be
registered. Features associated with other protocol mechanisms
SHOULD be registered. Procedures for registering protocol mechanisms
are described in BCP 64 [RFC3383]. The word "Feature" should be
placed in the usage field of the submitted LDAP Protocol Mechanism
template.

The 'supportedFeatures' attribute type is described as follows:

    (1.3.6.1.4.1.4203.1.3.5
      NAME 'supportedFeatures'
      DESC 'features supported by the server'
      EQUALITY objectIdentifierMatch
      SYNTAX 1.3.6.1.4.1.1466.115.121.1.38
      USAGE dSAOperation)

Servers MUST be capable of recognizing this attribute type by the
name 'supportedFeatures'. Servers MAY recognize the attribute type
by other names.

3. Security Considerations

As rogue clients can discover features of a server by other means
(such as by trial and error), this feature discovery mechanism is not
believed to introduce any new security risk to LDAP.

4. IANA Considerations

4.1. Registration of Features as Protocol Mechanisms

   Future specifications detailing LDAP features are to register each
   feature as a LDAP Protocol Mechanism per guidance given in BCP 64
   [RFC3383]. A usage of "Feature" in a Protocol Mechanism registration
   template indicates that the value to be registered is associated with
   an LDAP feature.

4.2. Registration of the supportedFeatures descriptor

   The IANA has registered the LDAP 'supportedFeatures' descriptor. The
   following registration template is suggested:

      Subject: Request for LDAP Descriptor Registration
      Descriptor (short name): supportedFeatures
      Object Identifier: 1.3.6.1.4.1.4203.1.3.5
      Person & email address to contact for further information:
          Kurt Zeilenga <kurt@OpenLDAP.org>
      Usage: Attribute Type
      Specification: RFC 3674
      Author/Change Controller: IESG

   This OID was assigned [ASSIGN] by OpenLDAP Foundation under its IANA
   assigned private enterprise allocation [PRIVATE] for use in this
   specification.

5. Acknowledgment

   This document is based upon input from the IETF LDAPEXT working
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7. References

7.1. Normative References

   [RFC2119]   Bradner, S., "Key words for use in RFCs to Indicate
                   Requirement Levels", BCP 14, RFC 2119, March 1997.

   [RFC2252]   Wahl, M., Coulbeck, A., Howes, T. and S. Kille,
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   [RFC3377]   Hodges, J. and R. Morgan, "Lightweight Directory Access
                   Protocol (v3): Technical Specification", RFC 3377,
                   September 2002.

   [RFC3383]   Zeilenga, K., "Internet Assigned Numbers Authority
                   (IANA) Considerations for Lightweight Directory Access
                   Protocol (LDAP)", BCP 64, RFC 3383, September 2002.

7.2. Informative References

   [RFC3673]   Zeilenga, K., "Lightweight Directory Access Protocol
                   version 3 (LDAPv3): All Operational Attributes", RFC
                   3673, December 2003.

   [T-F]   Zeilenga, K., "LDAP True/False Filters", Work in
                   Progress.

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                   http://www.openldap.org/foundation/oid-delegate.txt.

   [PRIVATE]   IANA, "Private Enterprise Numbers",
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