Lightweight Directory Access Protocol:
MIME-based Transport Mapping
<draft-ietf-asid-ldapv3-mime-00.txt>

1. Status of this Memo

This document is an Internet-Draft. Internet-Drafts are working
documents of the Internet Engineering Task Force (IETF), its areas,
and its working groups. Note that other groups may also distribute
working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months
and may be updated, replaced, or obsoleted by other documents at any
time. It is inappropriate to use Internet-Drafts as reference
material or to cite them other than as "work in progress."

To learn the current status of any Internet-Draft, please check the
"1id-abstracts.txt" listing contained in the Internet-Drafts Shadow
Directories on ds.internic.net (US East Coast), nic.nordu.net
(Europe), ftp.isi.edu (US West Coast), or munnari.oz.au (Pacific
Rim).

2. Abstract

The Lightweight Directory Access Protocol (LDAP) [1] is a mechanism for
clients to access a Directory service. Protocol mappings have been
defined for TCP, UDP and OSI Connection-Oriented Transport. This
document defines how LDAP may be represented using MIME Content Types,
so that it can be carried in SMTP or other protocols such as HTTP.

3. Specification

The application/ber-stream defined in [2] is used to encode LDAP for
transport in MIME.

The protocol is identified by an OBJECT IDENTIFIER based on TCP port
389 (assigned in RFC 1777). The content of the application/ber-stream
is the base64 representation of a BER encoding of a series of one or
more ASN.1 data values, each of type
Lightweight-Directory-Access-Protocol.LDAPMessage.
The subset of BER described in section 5 of [1] must be used when
encoding, and the values must be concatenated according to the LDAP
specification.

Quoted printable content transfer encoding must not be generated.

4. **Request/Response Mechanisms**

   The client will produce a single content containing a series of
   LDAPMessages.

   The acceptable choices in the request content for LDAPMessage are
   bindRequest, searchRequest, modifyRequest, addRequest, delRequest,
   modDNRequest, compareRequest, newDelRequest, extendedReq and
   unbindRequest. Message Ids must be unique across all requests in a
   content, and no requests must follow an unbindRequest. A Content-ID
   must be generated and associated with this content.

   The server will parse this content and process each request
   individually and in order. If a bindRequest fails the server should
   process no following requests. In addition, the server should stop
   processing following an unbindRequest. For all other operations the
   server should continue to process even if a request fails.

   The server will respond to this content with another
   application/ber-stream content, containing a series of LDAPMessages.
   The references field of the Content-Type contains the Content-Id of
   the request.

   The acceptable choices in the response content for LDAPMessage are
   bindRespBasic, bindRespExtd, searchResEntry, searchResDone,
   searchResRef, modifyResponse, addResponse, delResponse, modDNResponse,
   compareResponse and extendedResp. There will typically be one response
   per request, except that there may be more than one response to the
   searchRequest, and there is no response to an unbindRequest.

4.1. **Mapping to SMTP**

   The client will produce an electronic mail message containing a single
   content, the application/ber-stream of the request, and mail it to an
   automated responder of the server.

   The server will reply to the requestor with an electronic mail message
   containing a single content, the application/ber-stream of the
   response, and mail it to the requesting address.

4.2. **Mapping to HTTP**

   The client will post a request to the server in the HTTP [3] protocol.
   The POST includes an Entity-Body of the application/ber-stream content
   of the request. As the response will be returned over the same TCP
   connection a Content-ID need not be generated.

   The server will reply to this request with status 200 and include

another content, the application/ber-stream of the response. The
references field should be absent if Content-ID was not in the request.

5. Security Considerations

Security considerations are not currently discussed in this memo.

6. Bibliography

[1] M. Wahl, W. Yeong, T. Howes, S. Kille, "Lightweight Directory
    Access Protocol (Version 3)", INTERNET-DRAFT,
    <draft-ietf-asid-ldapv3-protocol-00.txt>.

[2] M.Wahl, "A MIME Content-Type for ASN.1 PDUs", INTERNET-DRAFT,
    <draft-ietf-asid-mime-ber-00.txt>.

[3] T. Berners-Lee, R. Fielding, H. Frystyk, "Hypertext Transport
    Protocol -- HTTP/1.0", INTERNET-DRAFT,
    <draft-ietf-http-v10-spec-03.txt>.

7. Author's Address

Mark Wahl
ISODE Consortium Inc.
3925 West Braker Lane #333
Austin TX 78759
USA

M.Wahl@isode.com
+1 (512) 305-0280