NameFLOW Update: March 2001

This update reflects the current status of national directory (LDAP and X.500) servers. The servers are considered a key part of directory services. Although LDAPv3 referral and X.500 reference features are not scalable at a national level, the servers still can reflect the amount of organisations participating in a national service. No other sources of similar information were known to the author at the time of creating the update.

The information in the update can be useful for estimating the scale of other (pilot) directory services such as TIO generation and exchange. Besides, it gives national directory managers knowledge of each other's servers.

The information has been collected from various sources such as mailing lists and references/referrals from working servers. Any corrections from the managers of national directory services are appreciated.

The update also describes the current set up of the NameFLOW directory servers according to the situation with the national servers.

National directory servers

There are currently three types of national servers: X.500'93, Quipu and LDAPv3. X.500 servers usually have LDAPv2/v3 gateways.

Belgium

X.500 '93 server
    cn=monkey, c=BE # TELEX+00728722+RFC-1006+03+193.190.198.19
    +17003
LDAPv3 server (gateway to the X.500 server)
    ldap://ldap.belnet.be:389/c=BE
Subentries
    Unknown
Notes
    The server is unavailable since 19 March 2001

Finland

X.500 server
    None
LDAPv3 server (standalone)
    ldap://ldap.funet.fi:389/c=FI

Subentries

      `dmdName=FunetDir` -> 10 organisations -> hundreds of organisational units

Germany

X.500 '93 server

      `cn=Puma, c=DE # '0101'H/TELEX+00728722+RFC-1006+03`
      `+134.2.217.133+17023`

LDAPv2 server (standalone)

      ldap://is.directory.dfn.de:4444/c=DE

LDAPv2 server (gateway to the X.500 server)

      ldap://ldap.directory.dfn.de:1122/c=DE

Subentries

      >100 organisations; various localities

Notes

      DFN is moving to LDAPv3. A production LDAPv3 service is expected to be established soon

Greece

X.500 server

      None

LDAPv3 server (standalone)

      ldap://ds.grnet.gr:389/c=GR

Subentries

      13 organisations; all but one are LDAPv3 referrals

Notes

      5 organisational servers not available

Netherlands

X.500 server

      Hidden - LDAP access only

LDAPv2 server (gateway to the X.500 server)

      ldap://dsa.megaplex.nl:389/c=NL

LDAPv3 server (standalone)

      ldap://ldap.surfnet.nl:389/c=NL

Subentries

      Approx. 300 organisations

Notes

      Both LDAP servers respond with the same organisational entries. The X.500 server contains the organisations (or X.500 references) and uses chaining; the server is unavailable time to time.

      The standalone LDAPv3 server contains copies of the organisational entries from the X.500 server along with LDAP references to the X.500 server (in the same entries). When using one

level search in `c=NL`, the server returns the entry copies. When using base search on an organisational entry, the server generates LDAPv3 referrals or LDAPv2 pseudo-referrals to the X.500 server. **Note:** the continuation references returned in a one level search have invalid URL format, according to [RFC2255](): `ldap://dsa.megaplex.nl:389??base`

Norway

X.500 server
> None

LDAPv3 server (standalone)
> [ldap://ldap.uninett.no:389/dc=no]()

Subentries
> 6 organisations; 5 referrals

Notes
> An organisation in Norway has its LDAP server containing organisational entries on the top level (naming context). A referral stored in the national server for this organisation (dn: `dc=hil,dc=no`) is `ldap://domino2.hil.no/?`. This is fine for continuation references in subtree and one level search, but base search returning a referral is broken, because missing DN in URL means "same DN as in the reference entry". According to both the current standard [RFC2255]() and [a new internet draft](), there is no way to fix the problem. The only solution for any LDAP server which wants its entries to be referenced via LDAPv3 referrals is not to use root naming context

Poland

X.500 Quipu server
> `cn=Ocelot # '0101'H/TELEX+00728722+RFC-1006+03+158.75.1.11 +17003`

LDAP server
> None

Subentries
> Approx. 70 organisations

Notes
> The information on the server is out of date

Slovenia

X.500 Quipu server
> `cn=Proteus # '0101'H/TELEX+00728722+RFC-1006+03+193.2.1.66 +17003`

LDAPv2 server (gateway to the X.500 server)
> [ldap://ldap.arnes.si:389/c=SI]()

Subentries
> Several dozens organisations

Notes
>The data is out of date; the server always says *Sizelimit exceeded* after about 50 entries

Spain

X.500 Quipu server
>`cn=Iguana # '0101'H/TELEX+00728722+RFC-1006+03+130.206.1.3`
>`+17003`

LDAPv2 server (gateway to the X.500 server)
>ldap://ldap.rediris.es:389/c=ES

Subentries
>28 organisations

Sweden

X.500 server
>None

LDAPv3 server (standalone)
>ldap://kybele.umdc.umu.se:389/c=SE and ldap://kybele.umdc.umu.se:389/dc=se

Subentries
>12 organisations (o) under `c=SE`; 58 organisations (dc) under `dc=se`

Notes
>Entry `dc=se` itself does not exist, so only one level search is possible there. Although this is not forbidden by the standard (I think), a lot of client software choke on it.

Switzerland

X.500 Quipu server
>`cn=Chinchilla # '0101'H/TELEX+00728722+RFC-1006+03+130.59.10.30`
>`+17003`

LDAPv2 server (gateway to the X.500 server)
>ldap://ldap.switch.ch:389/c=CH

Subentries
>11 organisations

United Kingdom

X.500 '93 server
>`cn=Master DSA, cn=Root # TELEX+00728722+RFC-1006+03`
>`+193.63.211.2+17003`

LDAPv3 server (integrated gateway to the X.500 server)
>ldap://ldap.nameflow.net:1389/c=GB

Subentries
>3 organisations (but see DANTE below)

Notes
> The `c=GB` naming context is mastered by the NameFLOW server.
> The X.500 server is configured in chaining mode.
> DANTE has a new LDAPv3 server and a new DN: `dc=dante, dc=org, dc=uk`

NameFLOW directory

DANTE is migrating to the LDAP architecture, while continuing to support X.500 during year 2001. The NameFLOW X.500 server will be decommissioned at the end of the year.

Servers

At the moment DANTE is maintaining the following servers:

X.500 '93 server
> `cn=Master DSA, cn=Root # TELEX+00728722+RFC-1006+03`
> `+193.63.211.2+17003`
> M-Vault from MessagingDirect Ltd.

LDAPv3 server (integrated gateway to the X.500 server)
> ldap://ldap.nameflow.net:1389/

LDAPv3 server (standalone) of NameFLOW
> ldap://ldap.nameflow.net:389/
> OpenLDAP from OpenLDAP Project

LDAPv3 server (standalone) of DANTE
> ldap://alpha.dante.org.uk:389/
> Directory Server from iPlanet

Subentries
> 12 national directories and a few organisational ones

Notes
> The `c=GB` naming context is also mastered by the NameFLOW X.500 server
> The X.500 server is configured in chaining mode and is able to connect other directory servers via X.500 DSAP and LDAPv2. LDAPv3 chaining is not supported

Basic strategy

The aims of NameFLOW in connecting national directory servers are as follows:

- to provide both X.500'93 and LDAPv3 interfaces; however, the former is to be decommissioned at the end of year 2001;
- to provide a starting (root) point for browsing the directory by storing references to national servers of both types (X.500 and LDAP).

Note that efficient search facilities are not included in the described service. DANTE is participating

in other projects dedicated to provision of efficient search at international level.

In order to achieve the above listed results, the NameFLOW servers use the following techniques, depending on the type of a national server:

National server type	NameFLOW X.500 server	NameFLOW LDAP server	Notes
LDAPv3 standalone server or gateway	Copy of the national level entry and DSE subordinate references to appropriate organisational LDAP servers; *(pseudo-shadowing is made using libNameFLOW software library)*	LDAPv3 referral to the national server	Pseudo-shadowing increases efficiency of browsing
X.500 server ('93 or Quipu) with or without LDAPv2 gateway/server	DSE cross reference to the X.500 server for the national level entry	LDAPv3 referral to the NameFLOW X.500 server's corresponding entry	Before the X.500 server is decommissioned, the referrals to it will be replaced with the referrals to national LDAPv2 gateways/servers, if any

For national servers with LDAPv3 interfaces (either standalone ones or gateways to X.500 servers), the NameFLOW LDAPv3 server holds direct LDAPv3 references to such servers, providing a pure LDAPv3 referral infrastructure. The X.500 server replicates country level naming context from such national servers to its own database. This way requests for organisational entries are chained to organisational LDAPv2/v3 servers directly from the NameFLOW server, passing by the national LDAPv3 servers. This is done because the NameFLOW X.500 server does not support LDAPv3 chaining, only LDAPv2, and thus cannot handle LDAPv3 referrals from the national servers.

In other cases the NameFLOW X.500 server holds knowledge references to the national directory servers (either X.500 or LDAPv2) for national entries and the LDAPv3 server contains LDAP references to the NameFLOW X.500 server. Here the X.500 server acts as a gateway between LDAPv3 and LDAPv2/X.500.

Conclusion

The described update is intended mainly for the managers of national directory services. It reflects the current state of national directory servers. New information will be added as soon as it is available.

5 April 2001