

Draft Plan for a NameFLOW LDAP Pilot

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Overview

During the last 18 months NameFLOW customers have started to become increasingly unhappy with the existing NameFLOW infrastructure. This has been particularly exacerbated by the fact that the originally planned migration of the infrastructure to X.500(93) has not occurred. This is mainly due to failings in the available X.500(93) products (demonstrated by two NameFLOW interoperability test campaigns*) and their relatively high cost compared to the LDAP alternatives. In addition, it has been ascertained that the public-domain version of Quipu contains the Year 2000 date field problem and will be unsuitable for use beyond the year 2000 and probably effectively unusable by the beginning of 1999. This problem is unlikely to be fixed.

The bottom-line is that a workable replacement directory infrastructure that avoids the problems that X.500(93) has demonstrated is required as soon as possible.

This document has been produced as a basis for discussion on the NameFLOW 'Forum' mailing list (forum@nameflow.dante.net) and at a meeting that will be held for NameFLOW participants. The document has been developed by DANTE and a small core group of NameFLOW customers, it is hoped that it will not need to be drastically changed before a pilot can commence. The intention of DANTE to run an LDAP pilot has already been announced to NameFLOW customers.

It is DANTE's intention that the final project plan for the Pilot will be issued as an informational RFC.

Scope

The following defines the outline plans for an LDAP Pilot that will be used to test the feasibility of migrating the current X.500(88)/Quipu based NameFLOW Directory infrastructure to one based around the LDAP protocol. Specifically, an architecture that makes use of the LDAPv3 referral technology.

It is envisaged that the pilot will be concluded by the end of Q3 1998 with a view to full NameFLOW migration during Q4 1998/Q1 1999, providing the Pilot phase is successful and a substantial majority of customers agree to the process. The Pilot and any resulting service will be marketed purely under the name "NameFLOW", any existing references to the PARADISE project will be removed.

Goals for the New Infrastructure

The suggested goals for the new NameFLOW infrastructure are (roughly in order of importance):

1. Move to a Directory architecture/environment that is based on products that are current, open, cheap, easy-to-manage, interoperable and readily extensible.
2. Provide many more new sources of information due to the wide-spread acceptance of LDAP. New uses of the directory should be sought throughout the Pilot.
3. Provide directory index/centroid information for paying customers of the NameFLOW service.
4. Retain the market-lead that NameFLOW has with its world-wide directory infrastructure and carry the user base forward to the new architecture.
5. If the technology allows and customers require it, retain backwards compatibility with users who want to continue to use X.500(88). This may only be for a limited period due to the problems with the public-domain version of Quipu detailed at the start of the document.

Although not explicitly stated, the only solution that can possibly satisfy all the above goals is LDAPv3.

The suggested DIT structure for the Pilot should support both geographical (X.521 Annex B) and DC directory naming (RFC 2247). Where clashes occur the two parties concerned should be contacted and informed of the situation. It is for them to resolve the problem, NameFLOW may sometimes assist if required. In the mean time, the first entry in the directory remains until a mutual decision is reached. NameFLOW will not act as a Naming Authority.

There is an on-line list <<http://www.ripe.net/dns/tldadmin.html>> of naming authorities relevant to DC naming. There is no equivalent list for geographical naming (although DANTE plan to produce one), but for example, BAKOM/OFCOM <<http://www.admin.ch/bakom/>> (Switzerland) and DISC (UK) operate national naming authorities.

It is recommended that participants use the standard DC and geographical schemas to aid interoperability.

Service expectations

The very broad expectations users should have of the pilot service are:

- The ability to search within the NameFLOW infrastructure for organisations using indices and/or centroids. Other keys may be added later, common name for instance.
- NameFLOW will endeavour to have information on all available LDAP servers. The pilot will use the following priority order for making LDAP servers information available to participants:
 1. NameFLOW customers
 2. European academic and research institutions
 3. Other European organisations
 4. Organisations anywhere in the world

Indexing and Centroids

The intended architecture will allow participating national organisations to operate their own country level LDAP server and make available their own indices/centroids for organisations they hold information on. Where a country does not have a national service a Root-level LDAP server operated by/for DANTE will provide the service. Index/centroid information will only be available to paying customers once the service moves beyond the pilot stage.

LDAP crawlers will be needed to harvest the index information for inclusion in the directories.

What the NameFLOW Pilot Service Will Provide

1. An infra-structure for interconnecting LDAP servers world-wide.
2. Standard means for exchanging LDAP index/centroid information.
3. Discussion forum relating to LDAPv3 service provision and implementation.
4. Email support for customers.

LDAP Client Requirements

As a minimum any LDAP client used for the Pilot will have the following requirements (a more detailed set of requirements is under development):

1. Ability to fully support LDAPv3 referrals
2. Ability to handle the return of multiple referrals.
3. Ability to give users the option of following referrals directly or not.
4. Support flexible use of search algorithms. Exact requirements to be specified.

LDAP Country and Root Level Server Requirements

As a minimum any LDAP referral server used for the Pilot will have the following requirements:

1. Ability to fully support LDAPv3 referrals.
2. Ability to receive and transmit NameFLOW index/centroid information.
3. The Root level server will also need to be able to handle indices/centroids for multiple countries as well as being able to interface to country level servers.

Schedule of the Pilot

Once approval for the pilot has been obtained the following steps will be carried out after a full NameFLOW meeting:

1. Develop detailed Project plans.
2. Explicitly define the directory naming scheme and schemas to be used in the Pilot.
3. Define the minimum set of search algorithms to be used in the pilot.
4. Investigate possible new sources of LDAP information. For example, router use and calendaring .
5. Develop the mechanism for exchanging Index and/or Centroid information between participants. This will be a subset of the work performed for the DESIRE II project.
6. Develop or identify LDAP crawlers to be used in the Pilot.
7. Develop an 'LDAP Country-level referral server' to hold LDAP referral information for all LDAP servers in any one country. This server must fulfil all the NameFLOW LDAP pilot requirements (see above).
8. Develop an 'LDAP Root-level referral server' to act for countries that will not be running their own Country-level LDAP referral server. This server will also aid exchange of information between Country-level servers. This server must fulfil all the NameFLOW LDAP pilot requirements (see above).
9. Develop or identify an LDAPv3 user interface that fulfils all the NameFLOW LDAP pilot requirements (see above). It would appear that most/none of the currently available clients support enough of LDAPv3 to perform all the required pilot functionality. This work to be carried out as part of the DESIRE II project.
10. Define the criteria for how the pilot implementation will be run and any test suites that are to be used to confirm function.
11. Implement the required software within a small pilot group and test the infra-structure. It is estimated that this phase should not take more than one month.
12. Produce a report on the pilot and include recommendations on the future of NameFLOW
13. Produce plans for NameFLOW migration if appropriate. That is, if feasibility is proven and approval obtained.

Comments on the Document

Please send all comments on this document to the NameFLOW 'Forum' mailing list (forum@nameflow.dante.net) and consider attending the NameFLOW meeting at which this document will be discussed. Announcements will be made via the Forum mailing list. To subscribe to the mailing list send your request to

forum-request@nameflow.dante.net.

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* Further information about the NameFLOW X.500(93) interoperability test campaigns can be found at
<<http://www.dante.net/np/93pilot/>>