

NameFLOW-Paradise

Quarterly Service Report January - March 1996

TABLE OF CONTENTS

Introduction

Operations

Operations/helpdesk

1. Outages
2. Issues
3. Statistics
4. NP 93 Pilot Test Results - Phase One
5. Notes NP Customer meeting - 22-1-96

Information

- Information servers
- Reports
- Papers
- Publicity material

Liaison

- European Directory Forum
- EuroSInet
- EEMA
- IETF

Appendices

- APPENDIX 1* - Helpdesk summary
- APPENDIX 2* - World root DSA and LDAP summary statistics
- APPENDIX 3* - Public DUA summary statistics
- APPENDIX 4* - WWW/FTP/Gopher/mail summary statistics
- APPENDIX 5* - IETF ASID WG meeting minutes
- APPENDIX 6* - IETF IDS WG meeting minutes
- APPENDIX 7* - IETF FIND WG meeting minutes
- APPENDIX 8* - Long Bud status report
- APPENDIX 9* - WLU service
- APPENDIX 10* - EEMA meeting minutes

Enclosure - Microsoft, Novell, and NetScape on LDAP (paper version only)

Introduction

This Quarterly Report reflects the NameFLOW activities and operations for the months January, February, and March 1996. The report is intended for people interested in the NameFLOW service and in particular those working for the national networks responsible for the National Directory Services. The report deals respectively with the operational aspects, the information aspects and liaison activities.

The Quarterly reports will be available in paper format to DANTE's customers. An electronic copy will be made publicly available via the web*, without customer sensitive information where appropriate.

For questions about this report or the NameFLOW service, please contact:

Vincent Berkhout
DANTE
Lockton House
Clarendon Road
Cambridge
CB2 2BH
UK

Tel: +44 1223 302 992

Fax: +44 1223 303 005

E-mail: V.Berkhout@dante.org.uk

* URL: <http://www.dante.net/nameflow.html>

Operations

Introduction

This quarterly report summarises activities and operations of the NameFLOW- Paradise Directory service, and associated information services, for the three months January, February, and March 1996.

1. Operations/Helpdesk

The central NameFLOW-Paradise services were subject to a substantial reorganisation during the quarter: see Issues from the previous two quarterly reports. The public-access DUA was withdrawn, together with its supporting DSA, Ocellated Turkey. The world root DSA Giant Tortoise moved host to another machine, now on a different IP subnet, as did the Internet Gopher and FTP servers. The existing servers and DSA were left running in parallel for a week or so to allow time for the new addresses to propagate through the DNS and the Directory. The mail info-server was withdrawn, and the mailing lists were moved to another host, fixing the long-standing DNS MX RR problem.

FLDSA managers were informed of the changed DSA address, since they need to manually update out-of-band references to Giant Tortoise, such as the quiputailor "parent" parameter. All FLDSAs were checked to ensure that they had received a root EDB update prior to the original Giant Tortoise being closed down. This happened mostly automatically, but some managers were contacted to remind them about this, in cases where their DSA was either uncontactable or appeared not to be replicating. A few FLDSAs that appear to have been out of service for a long time are likely still not to have the new address for Giant Tortoise.

The top-level organisation entry o=North Atlantic Treaty Organisation was renamed to o=NATO, since the shorter name is both easier to work with, and more well known, than the full form. After much discussion, the FLDSA for

NATO was renamed from cn=Manfred Woerner to cn=NATO.dsa. The change to the internal NATO DIT, mentioned in Issues in the previous report, was reversed, so that subordinate entries are organizationalUnits again.

At the request of the managers for c=IE and EUnet Ireland, the FLDSA cn=Corncrake was removed. Corncrake had been the masterDSA for l=Europe@o=EUnet; this is now mastered by a DSA operated by EUnet Germany.

2. Outages

Significant outages of service totalled approximately 53 hours in January (including 2 hours scheduled "at risk"); 10 hours in February; and 2 hours in March. An X.25 problem, affecting EuropaNET X.25 and public X.25 access to the public-access DUA and to the DSA Ocellated Turkey, carried over from the previous quarter until January 9th.

Details of outages are available in the monthly reports.

3. Issues

With the removal from service of the Sun 4/330 machine, there are now no DSA probes running at ULCC, since the probe software was licensed to that hardware. If central probes are still required - they are considered useful - then this situation needs to be addressed, perhaps in consultation with UKERNA.

4. Statistics

Summaries of the service statistics for the quarter are attached in the Appendices. Full statistics and world-root DSA hourly operations figures are available on the NameFLOW-Paradise info-server, under:

```
gopher://gopher.nameflow.dante.net/11/statistics/  
ftp://ftp.nameflow.dante.net/statistics/
```

Internet access to the public DUA was withdrawn at the end of January, and dial-up and X.29 access ceased during February. The "DUA usage" figures in appendix 3 for February therefore mostly reflect attempted rather than actual use. The figures for March show only attempted use.

While the Giant Tortoise DSA was being moved, there was a change-over period from February 21st to March 1st, during which there were two instances of the DSA running on separate hosts. The DSA statistics in appendix 2 are the sum of the figures from both DSAs. The drop in the number of operations (searches etc) is due to the withdrawal of the public DUA, which used Giant Tortoise as a backup to Ocellated Turkey.

The huge increase in the number of LDAP connections happened because the LDAP daemon was upgraded to version 3.2 from the University of Michigan, and is now being used to support DANTE's WWW/X.500 gateway. The previous version of the daemon could not interwork with the gateway, and so was not much used.

The drop-off in FTP use is due to a change made at GARR in Italy, which mirrors part of the FTP directory daily. Originally the mirroring was performed simply by retrieving every file. Since early February, a proper mirroring tool has been used, which retrieves only new or changed files.

Statistics for the mail info-server are not shown for March, since the server was withdrawn at the start of that month. Requests to the mail server are now directed to the helpdesk, and will be logged as helpdesk queries.

5. NameFLOW-Paradise X.500(93) Test Results - Phase One

VB(96)015

These are the test results of the X.500(93) pilot test from 12 to 16 February 1996. A full description of the test plan can be found at (<http://www.dante.net/np/93pilot.html>). The actual tests performed were based on the EuroSInet

X.500(88) Interoperability Tests with modifications for our environment. A draft list with detailed problems has been distributed. Most problems were sent to the mailing list (np-93@dante.nameflow.net) and discussed at the Schiphol meeting.

The first part of this document gives a general description of the findings. The second part gives a summary of problems reported. In an attempt to make this report as vendor independent as possible, the names of the products will not be mentioned. For further information one is advised to consult vendors or participants.

DAP and DSP (Directory Access Protocol and Directory System Protocol)

There were no major problems with the DAP and DSP tests. A few minor problems occurred but most of them related to ill-configured Access Control Information or defects in the standard already reported. The DAP extensions were not thoroughly tested, but the first impression is that this works. The modification of some extensions was not possible.

Although outside the scope of this test phase, TU-Chemnitz-Zwickau have tested interworking between Quipu(=88) and the X.500(93) DSA in both directions. It was reported that DSP worked without any problems.

DISP (Directory Information Shadowing Protocol)

The DISP tests showed quite a few shortcomings. The initial limitation is that the EWOS uses 6 different subsets for DISP, each specifying different functionality (EWOS EG DIR/ETSI TE.6 ADY 53). At the EuroSInet Workshop it became clear that the lowest common denominator of subsets implemented is: Subset A: "naming context only" (= everything) and/or, Subset B: "complete subtrees" (= everything starting from this node). The currently used one-level shadow copy (EWOS subset C; "chopped subtrees" for example all organisation entries in a country) could not be used between the different vendors. Unexpected was the increase in memory usage from 10 to over 45 Mbytes for an update of 3300 person entries. Besides the increase of memory the DSA "blocked" during replication, other users (processes) were not able to bind to the DSA. The configuration of DISP agreements can also be improved, as it varies between a mix of dollars/text/ashes and editing ASN.1 strings. The conclusion of the DISP tests is that it is too early to deploy DISP between different implementations in an operational environment. The use of the one-level replication (EWOS Subset C) is needed in our specific environment.

Root Context

The "Managing the Root Context" paper written by David Chadwick and others on behalf of DANTE was put through the test and several complications were discovered. The Root Context proposal is only implemented by NEXOR, so interworking testing between different implementations was not possible. The replication as proposed in the paper between two MDS implementations was successful and could be considered as a proof of concept.

The replication of the information worked, but using it in the "shadow DSA" seems to break the standard. It was beyond the scope of the tests performed as the basics of the standard prohibit the implementation as described in the Chadwick proposal. Problems with the current proposal are name resolving, illegal context prefixes and dseType combinations. As a result the proposal must be revised to describe all the implications in full detail, or alternative solutions need to be found. The current standard depends on the Directory model where interaction will be done via bi-lateral agreement between Directory Management Domains and not on a "multi-lateral" basis as is the case in the current Quipu model.

Access Control Information (ACI)

The Access Control mechanism introduced in the X.500(93) standard is not as straightforward as in the Quipu model. Understanding the basics of the new Access Control mechanisms was perceived by the testing organisations as "problematic". Access Control needs simplification or proper explanation. Manuals and other documentation will need improvement to make this easier to understand. The used one-to-one mapping from current Quipu Access Control to X.500(93) could be optimised.

LDAP support

The used LDAP implementation was based on software of an early prototype of the University of Michigan, not conforming to the proposed Internet Standard. Large part of Directory usage is via LDAP and must be supported in coming releases. It was suggested that this should be an integral part of DSAs instead of a gateway function.

DSA management

Management of the DSA is restricted compared to Quipu DSA management. The tools are improving and the graphical interface was appreciated. A shortcoming is that not all functionality is yet available. There is the stability question for the conversion tool which needs improvement to be used in a production service. The logging file format needs improvement for one of the products.

Product Stability

Most DSAs ran stable with an exceptional crash. The early version(s) of the tested software are unstable, but the stability seems to improve as newer versions come along. In the problem report questionnaire people were asked to mark the tested product, and most participants think that the products are almost there, but not entirely. The software would presumably work fine in a single vendor environment, but for full operational deployment it is yet too early. The major concern was stability of the product. It was decided to await the coming EuroSInet interworking test workshop in Copenhagen. If necessary, when improvements have been implemented, a follow up test (Phase Two) can be started. It is only fair to say that the vendors participating in this test have improved their software as a result of the problems encountered (in time for the Copenhagen meeting).

Using Source or Binaries

The organisations using source code had slightly more trouble installing the software than people using binaries. The installation of SunPro C-compiler fixed this, the problem seems to be the Gnu C-compiler (gcc). In all, the disadvantages of having to compile source or having to redistribute binaries seem to outweigh each other. It is up to organisations what they locally prefer and what their local requirements are.

User Testing versus Vendor Testing

The tests performed by this user community are done using a live Wide Area Network environment. This makes DISP updates of 23 Megabyte for 3300 entries over the network very tedious, and such problems do not occur in a local test setting. It is clear that this user testing is different from vendor testing at the EuroSInet workshops and participants want to repeat this type of user testing in the Autumn of 1996 (with more products). It is agreed that the participants can continue testing independently and the necessary information, such as knowledge references, will be made available via (<ftp://ftp.nameflow.dante.net/root/>).

Problem Overview

Problem:

Authenticated binds to other DSA

Description:

Authenticated binds give the error "service unavailable" when DAP or DSP is used to access other DSA.

Solution:

Intermediate solution provided during the test, the bug must be fixed in final release.

Problem:

Binds refused when using presentation addresses "X500" TSEL/xxxxx

Description:

The DSA does not accept binds when using presentation addresses with "X500" TSEL.

No communication between DSAs possible. No DAP binds are possible.

Solution:

Don't use "X500" TSEL for presentation addresses. Bug reported.

Problem:

(EuroSInet tests 3.1.1.17 and 3.1.1.18)

Quoting T.61 characters

Description:

Problems in the tcldish DUA, using the correct quoting was not so obvious. The used interfaces do not display the T.61 characters as supposed.

Solution:

Double quoting, e.g. sn=M\\c8uller worked.

Problem:

Shadow agreement configuration

Description:

The configuration of shadowing agreements is limited

Solution:

Modifying e.g. lastReplicatedTimestamp must be done by editing the ASN.1 encoding.

A more user-friendly interface would be much appreciated.

Problem:

DISP Agreement

Description:

Due to local tests shadowing agreement information was left and caused problems for next update.

Solution:

Using a new (unused) binding ID in agreement.

Problem:

Memory usage of the DSA is increasing during replication

Description:

A DSA increased the usage of memory during the replication from 10 MB to over 45 MB

Solution:

No solution yet provided.

(Note by VB: The problem is that the used ASN.1 encoder/decoder is memory based, meaning that the complete DISP PDU must be stored in memory.)

Problem:

DISP replication

Description:

A DISP agreement was set up between two vendors. After receipt of the coordinateShadowResult PDU the replication worked fine on network level but a ROS error occurred.

Solution:

This ROS error is a bug and is reported.

Problem:

Unable to bind to DSA during DISP replication.

Description:

During the replication of c=CH (3300 entries) the DSA was blocked for 60 minutes and no DAP request were accepted. The outage was about 60 minutes. DSP and DISP during this time were not tested.

Solution:

None. At first unresolved, might be fixed in new release.

Problem:

Usage of replicated information

Description:

Replication of data from one FLDSA via the root DSA to a (third) FLDSA succeeded.

The DSA is capable of reading the information, however not to perform the list operation. The error log shows "Chaining prohibited or other DSA unavailable".

The DSA has problem with the dseType = shadow admpoint entry subr cp for the test entry. The usage of valid DSEs were properly chained to the FLDSA for list operation.

Solution:

It is questionable whether the operations expected in this test are 'legal' according to the X.500 standard.

Problem:

Very long entryACI.

Description:

The conversion tools work very well, however they generate very long entryACI attributes! This is probably caused by the fact that Quipu Access control is more efficient than the new X.500(93) access control.

Solution:

Access Control in X.500(93) might need a different implementation as the Quipu and 93 model differ.

Problem:

Quipu "iatr" not (fully) supported.

Description:

Quipu attribute "iatr" not recognised by conversion tool. The support for this attribute in the software is questionable.

Solution:

It is not supported by the conversion tool as the DSA's does not correctly handle iatr information. The solution proposed was to remove this function from the coming release and to supported it in the one thereafter.

Problem:

Management tools need improvement

Description:

The management tools for the DSA need more attention. The DSA was considered a "black box" with limited possibilities to tune and configure. Another example is that ACI information cannot be modified using the tools.

Solution:

Problem forwarded.

Problem:

Root context management, overwriting entry

Description:

During the root context test, the replication of the country entry upwards to the root DSA was successful. Replication downwards (back) to the country master entry is overwritten by the shadowed entry from the root.

Solution:

New software installed during test implementing the Root Context management proposal.

6. Schiphol Meeting, Vincent's notes, VB(96)10

What: NameFLOW-Paradise Customers Meeting

Where: Schiphol Airport

Date: 22 January 1996

Time: 10h00 - 17h00

Attendees: 10 persons

1. Welcome

Apologies from Rodney Tillotson, Colin Robbins, Birko Bergt & Enrico Mowitz, Tomasz Wolniewicz. Roland Hedberg and Thomas Lenggenhager have to leave before the end of the meeting.

2. Agenda and additional items.

Not all people arrived on time so we started with point 15 on the agenda: the quarterly reports. It seems that the quarterly reports do not reach the right people. The quarterly reports are sent to the contact addresses mentioned in the contracts, and these are not per definition the right people. VB will look into the possibility of sending multiple copies to the organisations.

3a. Test Results

The current 93 DSAs will be left in place as long as the licenses are valid. ULCC will be asked to keep a file on the NameFLOW FTP server with available DSAs. The dual approach for migration running two DSAs (Quipu and 93) next to each other is not necessary.

No-one was in favour of using the current versions/releases in their operational environment. Both IC and MDS products need further development and testing. DSA stability was mentioned as one of the areas for improvement. The IC product was experienced as a "black box" with limited configuration possibilities. Other problems are: database conversion, complexity of ACI, inherited attributes, DISP blocking during replication, DISP configuration via ASN.1 hacking and manuals. One problem not expected was the memory consumption; the IC-DSA required 9-10 Mbytes of memory and during DISP updates the memory requirements go up to 46/48 Mbytes! An other observation is that 3300 entries resulted in a 22 Mbytes DISP initialisation. The LDAP daemon shipped with MDS is still based on the non-standard "version 3.0" UMich sources. As a more general conclusion it was not expected that X.500(93) software will not become available for real usage within this year.

3b. Root Context

Ronan gave a presentation on Root Context problems and all participated in the discussion that followed. It is clear for most what the actual problems are and also the difficulty to solve it. The question is to break the standard or not, or as little as possible. Any which way special software will be needed to fix the problems and the solution must be accepted by multiple vendors. The effort of NeXor supporting the Root Context document was greatly appreciated and other vendors should be encouraged to participate.

4. Is the life cycle of X.500 similar to X.400.

At this moment there is no real alternative to X.500. The "free" e-mail service was easy to use and the demand was bigger. Compared to X.400 on a ten year scale X.500 is now in its second year. The demand for a Directory Service is smaller than most expected and will take much longer. Further development in the R&D community will largely depend on free or low cost software. Others products should be made available at zero cost. Action(VB)- software availability conditions for SNI, DEC, UNISYS, Control Data and Data Craft?

5. Incorporate X.400 tables into X.500

This topic is only relevant to SWITCH and UKERNA and was taken off line.

6. SLA necessary?

As long as the Root Context is not solved SLA are not relevant. The current Quipu system will be maintained and SLA would be nice in a 93 environment. The First Level probing could be reinstalled if the operational and development costs are minimal. NRNs will continue with national probing.

7. Is there a need for a co-ordinated Directory Service

Yes, on an international and national level.

8. Ph introduction

Roland gave an introduction to Ph, designed by the University of Illinois, but until now there was no RFC or other standard. Ph is not a distributed database. The protocol and database format is fairly simple and character oriented. A nomenclature project was initiated to "harmonise" the 900 different field used (local OIDs).

9. Winner of Directories?

Flavour	Number of servers
Ph	300 to 325
Whois++	80
SLAPD's	? unknown, new
X.500 DSAs	500 (max.)
Other?	??

Paul put idea forward to interconnect the above flavours, featuring a Directory of Directories. The success of Ph is largely because of the large number of Eudora users. Whois++ installation is easy and can be done in two hours. A problem with Whois++ is all other packages needed for installation. Roland' s Whois++ server suffered a heavy performance drop when more than 3000 entries were entered, taking about 15 seconds per entry. Hans told that the information collapsing using centroids was much better than anticipated. The question was whether collapsing outweighs the number of referrals. SURFnet is planning a second Whois++ test this year and Marko offered to participate (machines and so). The suggestion was made to test the three systems next to each other; Ph/Whois++/SLAPD.

10. Future Development

The NP-93 pilot will be on a lower profile because of the Root Context problems. Thomas wants to have another test in/after the summer and "try again", but wants a solution for the Root Context. The index paper of David was unclear and should state more clearly what happens. The mechanisms were not clear, nor impact on DSAs or DUAs and at this stage it is hard to determine feasibility. VB to talk to David to clarify certain areas. LDAP support should be incorporated in mail clients. Our community can not force the incorporation of directory interfaces, this should be a market pull. An alternative is to get an overview of client products supporting directories, in particular LDAP. SLAPD seems a good opportunity, but the quality of the product and support is unknown. On the condition that SLAPD' s can be interconnected to the rest of X.500 infrastructure this can be the way to go forward. The users (Universities) are looking for simpler system than the Quipu DSAs and preferably free ware. Action(VB) Produce an overview of products for next Annual Report?

11. Commercialising X.500

To make X.500 take off in the market place it must be commercialised. The issue is how we deal with customers who have an excessive benefit from the service. The services currently delivered are based on a closed community sharing the costs. In the event of customers reselling these services on a commercial basis the situation has to be reassessed. In the event of two separate national organisations the preferred connection is via dual membership but on a fair basis. This topic was introduced to raise awareness and a short term solution is not expected.

12. European Commission other opportunities.

See the 1995 4th quarterly report on EDF. There is a glimpse of deploying X.500 for a larger community beside the academic environment. It is too early to be more precise on this topic, but the EC is searching for a non Telephone Operator to provide a Trans European Directory. A reminder, no direct action needed.

13. Liaisons

We will have a DANTE stand at the EEMA meeting. The proposition to give user and National Manager tutorials was rejected. The technical tutorials were seen as too limited (only IC and NEXOR) and would be interesting if other vendors (DEC and ICL) would participate. The seminars should be a "technical comparison".

14. NP Membership

We now allow non-NRNs as participating members (ULB precedent) and also non- Europeans if they request membership.

15. Additional/changed mailing list addressees for quarterly reports?

16. Meta Directories

Paul raised the point of constructing a Meta Directory. There are so many Directories out there why not interconnect them? The solution would have to support protocols or gateways. One other alternative could be the use of SOLO, a single access protocol and let the system do the rest. The Meta Directory seems a good approach, but this is similar to work done in the FIND working group at the IETF. It was decided to wait for the outcome of the Common Indexing Protocol.

17h00 Closing and no other business.

Information

Information servers

As part of the information service of NameFLOW-Paradise DANTE operates several servers. There are the 'historical' PARADISE information servers, such as ftp, gopher and e-mail operated by ULCC. In addition a web server is now fully operational as part of the DANTE World Wide Web service. Usage statistics for each server are included in Appendix 4.

Reports

Quarterly and individual monthly reports are available on-line from DANTE's WWW server:

1st Quarter 1996 <http://www.dante.net/np/report/qr/96Q1.html>

March 1996 <http://www.dante.net/np/report/mr/mr9603.html>

February 1996 <http://www.dante.net/np/report/mr/mr9602.html>

January 1996 <http://www.dante.net/np/report/mr/mr9601.html>

4th Quarter 1995: <http://www.dante.net/np/report/qr/95Q4.html>

3rd Quarter 1995 <http://www.dante.net/np/report/qr/95Q3.html>

Papers

During the fourth quarter of 1995 one paper has been produced relating to NP developments issues:

IndeX.500

David Chadwick

<http://www.dante.net/pubs/dip/19/19.html>

Publicity

A new NameFLOW-Paradise/Directories leaflet was produced which provides information about the NP service as well as other relevant developments in the directory area.

Liaison

European Directory Forum

The first meeting this year was of the European Numbering Forum, where several pan-European organisations are trying to set up a European Directory Forum. The meeting took place in January 1996 in Stockholm; a detailed travel report was included in the 4th Quarterly report of 1995.

EuroSInet Interworking Test Writing Workshop

On 24-25 January 1996, Ronan Flood (ULCC), Dany Damanjit (Brunel University), Tomasz Wolniewicz (Nicholas Copernicus University, Torun, Poland) and Vincent Berkhout participated in an Eurosinet workshop as NameFLOW-Paradise representatives. The purpose of the workshop was to define new test suites for X.500(93) based on the test suites of their X.500(88) tests. There were two groups, one for DISP tests and one for ACI tests (including extended DAP). The defined tests were used for the NameFLOW-Paradise X.500(93) (or NP-93 pilot) tests.

EEMA Directory Committee

The Directory Committee of the EEMA met at the Regional Conference in Munich. The Directory Committee has one very important project involving Top Level Naming in Europe. A full report can be found in appendix 10.

IETF - (Internet Engineering Task Force) Los Angeles

At the IETF there are three directory working groups of interest: ASID, IDS and FIND.

ASID - Access and Searching of Internet Directories.

The group works on two protocols, Whois++ and LDAP. The LDAP development is now moving to the development of LDAPv3, which support X.500(93) features. In the discussions on the mailing list it is suggested to replace the "L" for Lightweight with an "I" for Internet. LDAPv3 supports several extensions to LDAPv2, the version currently in use. Another development is the introduction of the Versit business card, an electronic business card using MIME

formats.

IDS - Integration of Directory Services.

This is where the NameFLOW-Paradise proposal for a Root Context is being discussed. One development that is interesting is a BCP (Best Common Practice) on directory services by Harald Alvestrand and Peter Jurg, which provides bullet pointed recommendations/guidelines when setting up a directory service.

FIND - Indexing of Internet Directories (?)

A first draft is available, but as a personal opinion the indexing mechanism proposed is very closely related to Whois+ and not to X.500 at all. The group seems to work on the basic protocols (or access mechanisms) that have been supported, or alternatively to introduce a new Common Indexing Protocol (cip). In a poll whether there is sufficient interest from the FIND group for continuation the show of hands indicated that the group will continue its work. The minutes of the three working groups are enclosed in appendices 5, 6 and 7.

DANTE Directory Consulting

In the past few months several people and organisations have contacted DANTE to ask its views on directories and the future. Consultancy is seen as part of the liaison function and is provided on a 'time-availability' basis. In practice people are usually invited to visit the DANTE office.

APPENDIX 1 - Helpdesk summary for Jan/Feb/March 1996

Country Full Name	ISO Code	Number of queries			Quarter
		January	February	March	
Argentina	AR	-	1	-	1
Belgium	BE	1	-	1	2
Canada	CA	-	1	-	1
Switzerland	CH	-	1	-	1
(China)	CN*	1	-	2	3
Germany	DE	-	-	1	1
Spain	DZ*	1	-	-	1
Finland	FI	-	-	1	1
United Kingdom	GB	6	5	2	13
Ireland	IE	-	3	-	3
India	IN	-	2	2	4
(Iran)	IR*	-	-	1	1
Netherlands	NL	2	2	-	4
Russia	RU*	4	2	-	6
Sweden	SE	-	-	1	1
(Thailand)	TH*	-	1	-	1
United States	US	4	9	8	21
Total Requests		19	27	19	65

(A * by the country code shows that this country has no Directory entry)

APPENDIX 2 - World Root DSA and LDAP summary statistics for

Jan/Feb/March
1996

Summary of calls to DSA Giant Tortoise

From 5:36:11 on 31 December to 0:04:55 on 31 March

No. of binds	January	February	March	Quarter
Local	3802	3442	262	7506
Remote	10727	8949	6611	26287
Total	14529	12391	6873	33793

No. of operations	January	February	March	Quarter
Local	582	580	141	1303
Remote	114752	50853	50447	216052
Total	115334	51433	50588	217355

System usage (calls received)	January	February	March	Quarter
Binds by Directory technicians	10318	8423	2479	21220
Reads of DSA entries	161	220	111	492
Other ops on DSA entries	18	21	8	47
Getedb operations (inc slices)	61278	48915	49502	159695
Spot shadows	35	100	7	142
Total	71810	59679	52107	181596

LDAP usage

LDAP usage from Jan 1 1995 to March 31 1995

	January	February	March	Quarter
Connections	242	1299	3175	4716
Total connect time (seconds)	141306	70845	61864	274015

(274015 seconds is 76 hrs 6 mins 55 secs)

Summary of calls to DSA Ocellated Turkey

From 0:10:05 on 31 December to 10:15:00 on 12 February

No. of binds	January	February	March	Quarter
Local	8444	193	-	8637
Remote	11059	4289	-	15348
Total	19503	4482	-	23985

No. of operations	January	February	March	Quarter
Local	280466	18358	-	298824
Remote	31751	11841	-	43592
Total	312217	30199	-	342416

System usage (calls received)	January	February	March	Quarter
Binds by Directory technicians	13503	5251	-	16054
Reads of DSA entries	3481	1461	-	4942
Other ops on DSA entries	15	6	-	21
Getedb operations (inc slices)	639	121	-	760
Spot shadows	2127	782	-	2909
Total	19765	4921	-	24686

The back-up DSA Occlated Turkey with all DUAs was withdrawn in February.

APPENDIX 3 - Public DUA summary statistics for Jan/Feb/Mar 1996

DUA usage (logins to Directory Enquiry service at nameflow.dante.net)

Note: DUA access was withdrawn during February, so that most of the figures for February, and all of the figures for March, reflect attempted rather than actual use. ULCC dialup access was redirected to a UKERNA service, so no value is shown for March.

Network	January	February	March	Quarter
Internet	10814	8764	7655	27233
UK academic X.25				

(JANET)	113	133	26	272
EuropaNET X.25	3*	0	3	6
Public X.25	11*	16	3	30
ULCC dialup	17	1	-	18
Total	10958	8914	7687	27559

(* figures affected by the X.25 problem mentioned in Outages)

Top ten Telnet DUA logins by domain, selected and ordered by quarterly total

Domain	January	February	March	Quarter
edu	5379	4854	4152	14430
uk	1277	848	558	2683
unresolved	1017	953	885	2855
com	665	486	461	1612
ca	386	206	195	787
net	498	321	339	1158
us	241	185	249	675
org	142	73	107	322
nl	129	81	89	299
de	124	87	40*	251
Total	9876	8094	7075	25045

(* indicates that the domain was not in the top ten for that month)

APPENDIX 4 - Web/FTP/Gopher/mail summary statistics for Jan/Feb/March 1996

Web server

TOTALS FOR SUMMARY PERIOD 1 Jan 1996 - 31 March 1996

	January	February	March	Quarter
Unique hosts	505	592	567	1533
Number of HTML requests	1538	1652	1716	4906
Number of non-HTML requests	178	201	255	634
Number of malformed requests	54	68	43	165
Total number of all requests/errors	1770	1921	2014	5705
Total number of Kbytes requested	27342	27559	35276	90179
Average requests/day	57.3	68.8	65.2	62.7

Kbytes/day	884	986	1142	991
------------	-----	-----	------	-----

FTP server

TOTALS FOR SUMMARY PERIOD Mon Jan 1 1996 TO Sat Mar 30 1996

	January	February	March	Quarter
Files Transmitted	1221	362	115	1698
Kbytes Transmitted	128756	53402	21426	203585
Average Files Daily	39	16	4	20
Average Kbytes Daily	4153	2427	824	2468

Gopher server

Gopher usage from Mon Jan 1 1996 to Sun Mar 31 1996

	January	February	March	Quarter
Total connections	23	24	32	79
Total files retrieved	27	14	18	59

Mail server

Mail-server usage from Jan 2 1996 to Feb 26 1996

Note: the mail server was withdrawn at the end of February, so no values are shown for March.

	January	February	March	Quarter
Copies of help sent	9	5	-	14
Total files retrieved	25	4	-	9
Total requests	14	9	-	23

APPENDIX 5

From: Tim Howes
Subject: DRAFT minutes from la
Date: Thu, 28 Mar 1996 12:11:08 -0500

Access and Searching of Internet Directories WG Meeting
Meeting Minutes
Wednesday, March 6, 1530-1730

- Agenda review/changes

The proposed agenda was accepted with minor reordering of some items.

- Brief status of standards track documents

- WHOIS++ protocol

Patrik Falstrom reported that the WHOIS++ documents have been approved as proposed standards. Some updates will have to be folded in to the next version of the documents before it goes up for draft status.

ACTION: Patrik to produce new WHOIS++ drafts by Montreal

- LDAP protocol

Tim reported on two outstanding issues since the last meeting. First, comments made on the existing drafts have been addressed in new versions. Second, the call for implementations of the kerberos BIND credentials failed to turn up any but the U-M implementation. The group decided that this feature should be removed from the current drafts, but the tags used should be reserved so that existing implementations could continue operating by bilateral agreement without fear of breaking.

An additional issue was raised regarding the issue of certificate retrieval over LDAP and the fact that the LDAP string certificate format is not guaranteed verifiable in all cases. The group decided to stay with the current language warning of this limitation and leave it to the next version of LDAP to address this problem.

ACTION: Tim to remove kerberos credentials from the drafts and resubmit them for last call before standard status on the ASID list.

- LDAP URL format

Harald reported that this document will go out for last call soon to proposed standard.

ACTION: Harald to submit the draft for last call

- LDAP string filter format

Harald reported that this document will go out for last call soon to proposed standard.

ACTION: Harald to submit the draft for last call

- String presentation address

This document is the responsibility of another group and will be part of the RFC 1006 update.

- labeledURI objectclass/attribute

Harald reported that this document would go out for last call soon to proposed standard, but that he could not find it in his mailbox. Mark agreed to send him another copy of it.

ACTION: Mark Smith to send Harald the labeledURI draft.

ACTION: Harald to submit the draft for last call.

- PGP objectclass/attribute (Roland Hedberg)

Roland reported that a new version of this draft was sent out recently. Comments should be sent to the ASID list.

- WHOIS++ URL format

Patrik reported on a WHOIS++ URL format draft written by Martin Hamilton. Comments should go to the ASID list. One change needed is to the protocol ID. It was suggested that "whoispp" would be a good name.

- application/directory MIME type drafts

- application/directory framework

Tim reported on the changes to this draft since the last meeting. These included:

- inclusion of per-value parameters
- ability to group attributes
- ability to include references to values
- alignment with versit business card text format

Versit is a vendor consortium developing computer telephony integration standards. Several other modifications were proposed by John Myers and other members of the group, including:

- move MIME header parameters except profile and charset to be attributes within the content.

ACTION: Tim and Mark to produce a new version of the draft with these changes.

- person profile
- centroid profile

Both of these documents need to be revised in light of the changes in the framework document.

ACTION: Tim and Mark to produce new drafts once the framework draft has stabilized.

- versit/pdi vcard profile

Frank Dawson produced a document defining a profile for the versit vcard format. The document will be made available in I-D form shortly.

ACTION: Frank and Tim to produce an I-D from Frank's document

- LDAP profiles

Tim briefly explained his idea for defining profiles that represent LDAP directory operations. Since he did not manage to get a draft out in time for the meeting, discussion was deferred.

- LDAPv3

Mark Wahl presented his proposal for the next version of LDAP. The proposal is compatible with the current LDAP and CLDAP protocols and adds extensions in the following areas.

- Bilaterally defined operations are allowed
- Additional bind credentials (strong, protected simple)
- Referrals
- Service controls and search enhancements from X.500 '93
- More syntaxes are supported
- Negotiation of features

John Myers commented that RFC 1731 should be considered for authentication. It provides privacy and authentication on each operation, as well, which the current proposal does not.

The subject of read and list access controls came up, i.e., how to handle them when read and list are replaced by search. Mark suggested that this situation be handled by a section outlining how to front-end an X.500 '93 DSA with LDAP.

Harald asked if there were any IPv6 issues with this or previous versions of LDAP. There are not, though some related issues are being tackled by ITOT.

Further discussion was agreed to be continued on the list.

- application/ber-stream MIME type drafts

Mark Wahl presented his proposal for defining an application/ber-stream MIME type for carrying a BER-based protocol stream over MIME. Such protocols include LDAP and SNMP.

The group agreed that the work should be done in ASID, since the first application is there. It should be on the experimental track. There was some discussion about the approach. The feeling of the group was that the content-type should not be so generic. Instead, it should name the protocol, rather than the current approach of naming the protocol in a header parameter.

- SOLO reactivation

Ascan Woermann reported on some work he and Jean-Michel Ombrouck have been doing with SOLO. They have used SOLO to provide a corporate directory for large clients. SOLO's query model supports in a single query what would take several queries via DAP or LDAP. This cuts down on network round-trips and leads to better performance.

Several changes to the SOLO protocol have been made in the course of providing this service. Ascan and Jean-Michel want to know if there is interest in the community and whether they should update the current (expired) SOLO draft to reflect these new changes.

Further discussion on this subject was postponed to the list.

- Charter

A brief review of the charter produced general agreement on the content. Discussion of the milestones and assignment of dates to milestones was postponed to the list.

- Any Other Business

The meeting concluded, slightly late, with an agreement to meet again in Montreal.

APPENDIX 6

From: Sri Sataluri
Date: Fri, 29 Mar 1996 15:10:48 -0500
Subject: Final Minutes of LA Mtg.

Los Angeles, Wednesday March 6th 1996

1. Liaison Reports

It is preferred that liaison reports be circulated to the mailing list prior to the meetings so that they are accessible and there is a record of them.

* Nameflow/Paradise

The top-level service has now only one machine (DSA); the DUA has been removed. After an X.500 93 test (see below) the customer meeting decided that 93 there will be no deployment of 93 in 1996. The customer meeting did express a strong commitment to other technologies than X.500.

* Longbud

Longbud has now over 3500 entries, 200 of which are for X.400 routing. 10 countries are involved of which GB, DE and US are the largest users.

* Whois++

There is a new version of the Bunyip software and there is a development for the use of different charsets (unicode). There are 15 sites that use whois++ for a White Pages service. In total there are 75 registered servers, that besides WP are used for searching of domain names and documents.

2. X.500 catalog

A draft has been published that is fairly up-to-date. There are 5 more remaining implementors that have to respond. They are given a month, then the document will be finalized by Chris Apple and Ken Rossen. Last call is in April.

3. whois++ catalog

The call for implementations has lead to two responses only (Bunyip & ICL). ICL has an email client with Whois++ integrated. Hence there is no immediate need for a catalog. Patrik Faltstrom will however track the progress of implementations and will maintain an on-line catalog.

4. CCSO Nameserver Documents

No comments on the draft. It was suggested that it should be sent to a mailing list of CCSO people (Roland Hedberg, Paul Pomas, Steve Dorner). There will be another document on preferred practices for Ph directory service (Roland Hedberg, Joann Ordille, and John Noerenberg) -- a draft is planned for Montreal.

5. Managing the X.500 root naming context

In February some participants of Nameflow/Paradise tested X.500 93 software in the NP environment. Since the standard lacks the concept of a root context (only bilateral agreements between first level country DSAs are allowed) the draft by David Chadwick was used to establish a model with a top level DSA. However, the proposed model in this draft turned out to have some unexpected consequences. Once a shadow agreement is in place there are two

things that happen:

(1) a "spot shadow upwards" to the root DSA,
(2) a "broadcast shadow downwards" from the root DSA, where the shadow DSA only uses the good bits of the information. This downwards replication is where the problem lies. Another problem is that "list" doesn't work in 93 at the root or country level because it causes the top level or first level DSA to call all of its subordinates. There was a suggestion by Andrew Palka (Digital) to repair some things. Vincent Berkhout will repost Andrews' idea to the list. All listeners (and especially vendors) are invited to respond to Andrew's idea.

6. Default names RFC

The meeting agreed that the current draft is very useful, but didn't agree upon whether it should become a BCP or standard RFC. It was decided that Russ Wright and Martin Hamilton will have a new version ready within a few weeks which will be sent to the user services group for feedback. After that a decision will be taken.

7. BCP on directory services

Several comments were made to expand Harald Alvestrand's first draft. (keywords: free use, context, data collection, local/global scope, universal view). Harald and Peter Jurg (as co-editor) will produce a next expanded version in the upcoming weeks.

8. application/directory

Tim Howes introduced his application/directory MIME type, that is being discussed in the IETF ASID working group. Tim explained that he used Tony Genovese's schema draft as input for his work on application/directory. IBM, Apple, ATT & Siemens harmonize electronic business card information (Vcard, a Versit initiative: <http://www.versit.com>). The Vcard profile is a superset of a person profile in Tim's application/directory. The relation between the two will be further worked out in ASID. There is a document about Versit which will be announced on the IDS and ASID lists by Roland Alden.

10. WP schema

It was discussed whether the profile definitions for application/directory could be used as a general schema definition. However, in order for the common indexing protocol to make sense out of the different protocols that it should link together, it was decided that a protocol/format independent schema is needed (reference schema). Tony Genovese will update his old schema document to serve as such and submit it to the list by 1st April 1996.

11. IWP requirements

There seemed to be no consensus on what a document with respect to user/service requirements should look like. The item will therefore be skipped.

12. Charter

The charter will be updated by Sri and Linda. The BCP and default names document will be added and user requirements removed.

APPENDIX 7

From: paf@bunyip.com (Patrik Faltstrom)
Subject: Minutes from the FIND meeting in Los Angeles

Minutes of the FIND Working Group
35th IETF, Los Angeles
March 6, 1996

Co-Chairs: Patrik Faltstrom, Roland Hedberg
Mailing list: find@bunyip.com
Subscribe: find-request@bunyip.com
In body of message "subscribe"
Reported by: Sally Hambridge, Intel Corporation

Patrik introduced Roland as the new co-chair. There was no discussion on the minutes of the meeting at the 34th IETF in Dallas. Charter revision was postponed to the end of the meeting, but Patrik went through the milestones:

- We have a current draft: draft-ietf-find-cip-00.txt
- The indexing protocol has been published from WHOIS++ work: RFC 1913.
- The group missed on having the 3 papers for Client Interface, Server Interface, and Server Engine.

The current paper (cip-00) has a few changes since March 95 - there is a little more on tokenization. What we need is a minimal set of requirements with the "cool features" to be added later.

There was discussion on whether all servers in the mesh had to speak all protocols to be able to direct a client to all sorts of data. The CIP allows a client to use native code to go to a server to respond in the same protocol about the location of a service. The client can then go to that service. In order that all servers do not have to speak all protocols, there will have to be gateway servers. Clients may also have to advertise what protocols they are able to accept. (This may be an optimization.) There are problems with URL referrals in replication and caching. We will need to devise a scheme which either limits indexing to originals or has the ability to de-dup the data. We discussed whether the mesh model was the correct one, and the decision that it was - for scalability.

We discussed the Data Changed Template:
DATA-CHANGED

```
Version-Number: 2.0
Modification-Date: 199603041625
DSI: 1.3.6.1.4.1.1375.1
Host-Name: pollee-hostname
Host-Port: 63
Best-Time-Next-Poll: 199603050100
Window-Size: 3600
Authentication-Type: Password
Authentication-Data: xxxxxxxxx
```

```
# END
```

If we consider Server A to be the server with the data and Server B to be the polling server, the Data-Changed Template is what A sends to B when it has data to be updated.

Main revisions here include the DSI - or Data Set Identifier. This is present in case the server with the data has several index sets it owns. The DSI is the Enterprise Number registered with IANA. The polling window gives the best time for the start of an update in GMT, and the window size is the time in seconds of that polling window. Note that although Server A gives the best time for polling, Server B still makes the decision of when it polls. We were strongly informed that passwords would not be sent in the clear, and we had to work on the authentication mechanism. We had a long discussion on the problems involved with Server A sending multiple DATA-CHANGED notices between polling, and decided that the draft has to strongly recommend against Real-Time updates. (That is, in not sending a change notice for each change made in the data.)

There was a long discussion about assigning Reference Numbers to DATA-CHANGED Notices as a way to reference individual changes. Although a lot of the group thought there would be advantages to referencing specific changes, the added complexity of this was decided to be unwieldy. (Was it mandatory or optional, did Server B have to return it if Server A sent it, did this kind of incremental update really matter.) The group decided that if a reference number was needed that the Modification-Date could be used.

Version of the DATA-CHANGED TEMPLATE agreed on:

```
# DATA-CHANGED
Version-Number: 2.0
Modification-Date: 199603041625
DSI: 1.3.6.1.4.1.1375.1
Host-Name: pollee-hostname
Host-Port: 63
Best-Time-Next-Poll: 199603050100
Window-Size: 3600
```

```
# END
```

We then discussed the Poll Template. This template is sent from Server B to Server A at the beginning of the polling session:

```
# POLL
Version-Number: 2.0
Charset: UNICODE-1-1-UTF-8
Type-Of-Poll: CENTROID
```

```
Tokenization-Type: Tokens
DSI: 1.3.6.4.1.1375.1
DSI-Description: Bunyip
Host-Name: polling hostname
Host-Port: 63
Authentication-Type: Password
Authentication-Data: xxxxxxxxx
```

```
# END
```

This template gives the type of Poll and the Attribute-Value pairs associated with that poll. Note that the DSI and DSI description are both present. We still need to do appropriate authentication work, so the Authentication-Type and Authentication-Data Attribute-Values pairs were removed. Since the Host-Name and Host-Port were part of the authentication method, they were also removed. Some method needs to be added back in! We discussed the implication of a Timestamp. If there was no timestamp, it would mean that Server A needed to send Server B the entire index (for disaster recovery, for example). A Timestamp would mean to send everything after that time.

Final version:

```
# POLL
Version-Number: 2.0
Charset: UNICODE-1-1-UTF-8
Type-Of-Poll: CENTROID
Tokenization-Type: Tokens
DSI: 1.3.6.4.1.1375.1
DSI-Description: Bunyip
# END
```

We moved to the Centroid-Changes Template. This is what Server A sends to Server B as the update.

```
# CENTROID-CHANGES
Version-Number: 2.0
Charset: UNICODE-1-1-UTF-8
Type: CENTROID
Tokenization-Type: Tokens
DSI: 1.3.6.1.4.1.1375.1
DSI-Description: Bunyip
URI: WHOIS://hostname/....
URI: LDAP://hostname/....
Authentication-Type: Password
Authentication-Data: xxxxxxxxx
```

```
# BEGIN TEMPLATE
```

```
Template: USER
```

```
# BEGIN FIELD
```

```
Field: NAME
```

```
Data: Patrik
```

```
- FaI/ltstroI/m
```

```
- David
```

```
- Holmes
```

```
# END FIELD
```

```
# END TEMPLATE
# END CENTROID-CHANGES
```

The new information here includes the DSI information which, even if clients don't understand it, it should be present. URIs now give the information about the location of the data in the DIT. We decided the Timestamp of the Centroid needed to be added and that index changes to the timestamp should be delta. Once again, the Authentication Attribute-Value pairs were deleted with the caveat of some other authentication mechanism to be added. There was a question about how the indexing server knows whether the data is to be added or deleted. We need experience with implementation to tell tradeoffs in index size, number of false drops, update frequency, etc. Deferred to the list was discussion of each client knowing how to talk to each server - for lack of Real Time Cogent Ability.

Version which still needs work:

```
# CENTROID-CHANGES
Version-Number: 2.0
Charset: UNICODE-1-1-UTF-8
Type: CENTROID
Tokenization-Type: Tokens
Timestamp-of-Centroid: 199603030100
DSI: 1.3.6.1.4.1.1375.1
DSI-Description: Bunyip
URI: WHOIS://hostname/....
URI: LDAP://hostname/....
# BEGIN TEMPLATE
Template: USER
# BEGIN FIELD
Field: NAME
Data: Patrik
- FaI/ltstroI/m
- David
- Holmes
***** Add/Delete???? *****
# END FIELD
# END TEMPLATE
# END CENTROID-CHANGES
```

Questions from the mailing list:

Are referrals returned as URIs? Yes

How are attribute names decided? When the Server is creating a centroid it maps attribute names as well.

What Charset? Unicode-1-1-UTF-8.

Chris Weider said there had been an IAB workshop on Charset and that he was presenting a preliminary report on that workshop in the Open IAB meeting.

Patrik asked if there was interest in continuing work on the Common Indexing Protocol within the IETF. The group decided there was interest.

APPENDIX 8

From: Kevin Jordan
Subject: Long Bud status report
Date: Tue, 02 Apr 96 08:46:21 -0600

Some significant progress has been made recently in the Long Bud project. Franziska Staedtler of FH Nuernberg and Falko Fock of University of Giessen have collaborated to populate the Open Community Routing Tree with X.400 routing information for all PRMD's registered in the German ADMD's DBP and D400. Where necessary, they have established some MTA's at their sites as relays between the open Internet and the PRMD's within these ADMD's. This is significant because it means that most, if not all, commercial and academic sites connected to ADMD's within Germany may be reached via the Internet using X.400 and the Internet's X.500 based Open Community Routing Tree.

Here is a summary of the current state of the Open Community Routing Tree:

The Open Community Routing Tree currently (on April 2, 1996) contains 3821 publicly readable entries. An Internet X.500 entry is counted as an Open Community Routing Tree entry if its object classes include any of the structural object classes defined in RFC1801 and related MHS-DS RFC's. The distribution of these entries across countries is:

c=AU: 3 entries
c=CH: 4 entries
c=DE: 335 entries
c=GB: 3400 entries
c=JP: 1 entries
c=NO: 1 entries
c=PL: 3 entries
c=PT: 1 entries
c=SI: 3 entries
c=US: 31 entries

The following MTA's are defined within the Internet X.500 directory. These MTA's support X.400 routes to the countries, ADMD's, PRMD's, and organizations defined in the Open Tree:

cn=MTAJLUG1, pRMDName=uni-giessen, aDMDName=d400, c=DE
305 entries containing mTAInfo attributes reference this MTA

cn=MTAfhcn.2, pRMDName=fh-nuernberg, aDMDName=d400, c=DE
298 entries containing mTAInfo attributes reference this MTA

cn=Hull-Mta1, o=University of Hull, c=GB

131 entries containing mTAInfo attributes reference this MTA
cn=MTAJLUG2, pRMDName=uni-giessen, aDMDName=d400, c=de
19 entries containing mTAInfo attributes reference this MTA
cn=relay.xnren.us, pRMDName=XNREN, aDMDName= , c=US
11 entries containing mTAInfo attributes reference this MTA
cn=MTALRZCD1, pRMDName=lrz-muenchen, aDMDName=d400, c=de
10 entries containing mTAInfo attributes reference this MTA
cn=d400relay, pRMDName=dfnrelay, aDMDName=d400, c=de
6 entries containing mTAInfo attributes reference this MTA
cn=esnet.wep.west, pRMDName=ESnet, aDMDName= , c=US
5 entries containing mTAInfo attributes reference this MTA
cn=tu-berlin-pref, pRMDName=tu-berlin, aDMDName=d400, c=DE
4 entries containing mTAInfo attributes reference this MTA
cn=MTA-cdshub, pRMDName=CDC, aDMDName=ATTMail, c=US
2 entries containing mTAInfo attributes reference this MTA
cn=MTA-cdsmail, pRMDName=CDC, aDMDName=ATTMail, c=US
2 entries containing mTAInfo attributes reference this MTA
cn=MTA-wally, pRMDName=CDC, aDMDName=ATTMail, c=US
2 entries containing mTAInfo attributes reference this MTA
cn=MTA-rubrz1, pRMDName=ruhr-uni-bochum, aDMDName=d400, c=DE
1 entry containing an mTAInfo attribute references this MTA
cn=shu-mta2, cn=redwood, o=Sheffield Hallam University, c=GB
1 entry containing an mTAInfo attribute references this MTA
cn=Hull-Mta2, o=University of Hull, c=GB
1 entry containing an mTAInfo attribute references this MTA
cn=Max, pRMDName=uni-erlangen, aDMDName=d400, c=de
1 entry containing an mTAInfo attribute references this MTA
cn=Moritz, pRMDName=uni-erlangen, aDMDName=d400, c=de
1 entry containing an mTAInfo attribute references this MTA

APPENDIX 9

Subject: WLU 2.11 Web/X500 Gateway
Date: Wed, 20 Mar 1996 18:10:24 +0000 (GMT)

Hi folks,

Release 2.11 of WLU, an X500 to WWW gateway server, is now available. The distribution is available in source and binary forms.

WLU is a search interface based on the UFN approach to directory name resolution. A browsing capability is also present.

The source release has been tested with ISODE-8.0 with SunOS 4.1.3 and ICR2.2 with Solaris 2.4.

The binary release is a self contained package built for SunOS 4.1.x (though it also work under Solaris), containing ISODE-8.0 libraries.

The distribution is available via FTP, with the following details:

host: ftp.brunel.ac.uk
dir: x500

files (source): query-1.61-src.tar.Z wlu-2.11-src.tar.Z
files (binary): querybin-1.61.tar.Z wlubin-2.11.tar.Z

Both source and binary releases consist of two tar files, which should be unpacked in the same directory.

You can try out the Brunel WLU service with:

<http://http1.brunel.ac.uk:8080/x500.html>

Cheers, damy

APPENDIX 10

Minutes EEMA Directory Committee
27 February 1996, Munich, Germany
Chairman: David Goodman

List of attendees
-*- to be provided by EEMA --

Opening

Tour de table (introduction of attendees)

Additional agenda items:

- DANNET Directory update by Jens Ramsboel

Project Management

As from this meeting Vincent Berkhout will take over as project manager for the Directory Committee. As a first action he will take these minutes.

Opening Questions:

DG: Do people think there is increasing interest in X.500 in Europe?

Judging by the increased number of people around the table the answer must be yes. The other observation was that requests from customers/relations for a directory service as integral part of e-mail service is increasing (Both X.400 and Internet).

DG: What is the Internet community doing? (Whois++ and other)

The Internet community is still waiting for a 'winner' and progress is slow. Whois++ is not being deployed on a scale as large as one would expect.

VB: People are waiting for the new version of DIGGER: the BUNYIP implementation of a Whois++ server.

Project Ladder

No overview, project will be discussed later.

Liaisons

EWOS: European Workshop for Open Systems

Current profiles are considered 'stable'. EWOS is deciding when the documents should be publicised. Announcement from KR will be sent to the Directory mailing list when the documents are available from the EWOS web server.

-*- EWOS moving to more "infrastructure" tests/areas such as security???

EuroSInet:

Organised a test writing workshop in Cambridge (24-25 January 1996) to define interworking test for the 1993 edition of the X.500 standard. The previous X.500(88) test suite was used as a basis and extended with Directory Information Shadowing Protocol (DISP) and Access Control tests.

EDF: European Directory Forum

Second meeting took place in Stockholm (17 January 1996). They are still in an exploratory phase, defining the context, requirements, goals and son on. The second half of the meeting was used to define the terms of reference for the EDF. The initial strong requirement that the EDF would be an association for associations was 'relaxed' allowing smaller organisations

with an interest in European directories to participate. A date for a next meeting has not been set.

-*- (Note by VB: EDF is not expected to become operational/active before 1998)

NADF: North American Directory Forum

NL: The NADF is officially folded into the EMA. After a very good start (May 1992) producing the so-called 'Standing Documents' and a pilot phase further development did not pick up. In May 1993 the NADF was opened up for non-founding members.

EMA: Electronic Messaging Association

Is the voluntary (sister?) organisation in the United States. They are about to complete a directory synchronisation project.

-*- FAQ / white paper?? / User requirement Survey by Stanley Ferris. The EEMA and EMA DCs should work closer together: aligning projects starting in April 1996?

DANNET presentation by JR

-*- slides to be provided by JR/EEMA?

Q: How are the localities determined?

A: The division into localities is based on postal areas.

Q: How do you make this service commercially workable? A: The first set of entries added to the Directory are free. If more than ten entries are added a small fee will be charged.

A comparison was made with an US phone company which offers web access to all telephone subscribers. This is a residential persons directory based on the State and Town.

(VB: <http://www.switchboard.com/> ??? or www.coordinate.com)

BT (Bernard Tardieu from Global One): A similar white pages service is offered for minitel users in France (<http://www.epita.fr/>).

Projects

The Product Guide will be ready within three weeks. One remark was whether the product guide should state pure X.500 or 'flavoured' products. In addition to the product guide a list of directory service providers will be composed for the EEMA Briefing. JR volunteered to do this.

Guidelines For Corporate Directories

In mid December an almost final draft was produced and the authors are now working on four case studies.

TOPOL: Top Level Naming for Europe

The first two chapters have been submitted while chapters three and four are expected by 4 March 1996. A telephone conference will be held

afterwards for an evaluation (Action VB). People who want to participate (review group) should send a message to the EEMA secretariat or VB. A three hour slot will be reserved at the Brussels Annual Conference (June) to discuss the next phase of the TOPOL project.

X.500 Web server

Up and running, no further news.

Other Projects

Next phase TOPOL

Brussels DEMO

Analysis of Directory technologies

Market Forecast

-*- David, please put in the three references to forecasts you mentioned.

TOPOL

The first project/phase dealt with an analysis of current pilots and services: NameFLOW-Paradise/Eurescom/NADF. On the condition that the current document (project) is finished a TOPOL presentation should be given at the Brussels meeting. The second project will provide a set of recommendations (in particular for locality=Europe). The input for the second project must come from the committee members where the editors of the document will act as referees.

Q: Who should attend the TOPOL meeting in June and is there need for involvement from the European Commission?

A: In principle open to anyone who wants to participate, including the Commission.

Brussels Demonstration

First intent was to repeat last year's interworking demo in Amsterdam only with more participants. The demo has two aspects:

1. Interworking between different products
2. Demonstration of applications using X.500

The interworking between different products has two aspects: the actual interconnection and 'pushing' people around to get things organised in time. The interworking demo should also be open to vendors not participating in the EuroSInet workshop. SK: the objective of the EuroSInet test workshop (technical interworking) and the EEMA conference (marketing) are too different to combine. The Annual Conference should be a marketing effort/exercise and so different people will be sent each event. There should be a stronger focus on applications not DSAs. RJ proposed to have branding sessions: one for DSAs and one for the applications using X.500. The results of the "branding" should be promoted using posters or even funny hats. On 28 March a press release will be sent out and a band of four as last year should sit together and define the view of the DC. According to RJ this group of four are technicians, not marketeers.

-*- Unclear discussion followed ...

Actions:

SB: will take care of marketing

RJ: will organise the branding effort, both for the applications and DSAs

T1 connectivity proposed for external (DSA?) connectivity by both ISODE and Bolton James. Both said that the costs for this external line will be shared by vendors. The T1 will allow to connect to external/real service providers.

-*- T1 to be provided by EUnet???

-*- needs action by EEMA as they will provide network??

There is a need for a central DSA and DG suggested to use EEMA DSA as central DSA and organisations can be connected as in previous interworking demo. This part of discussion was not conclusive and the discussion was halted.

Next Meeting

Brussels, Wednesday 12 June 1996, 15h00 - 17h00. No time slot for TOPOL meeting was allocated. The final schedule for the Brussels meeting will be sent out on Friday 15 March 1996.

Actions for next meeting:

VB: * use project list/ladder

* distribute minutes for next meeting

* proposed DANTE could host mailing list for next phase TOPOL discussion.

Final Questions

Q-Vincent ??? from Global One: Is there any work being done to use X.500 for X.400-SMTP addressing/routing?

A: An introduction to project Long Bud is available as an informational IETF-RFC 1802: 'Internet Pilot Project for the deployment of X.500 Directory Information in support of X.400 routing'