

NameFLOW-Paradise

Quarterly Service Report July - September 1995

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Introduction

This Quarterly Report reflects the NameFLOW activities and operations during the months July, August and September 1995. The report is intended for NameFLOW-Paradise customers, national directory managers and people generally interested in the NameFLOW-Paradise service.

The structure of this report is similar to the official specification of the service: the report deals respectively with the operational aspects, the information aspects and a short report on liaisons.

The Quarterly reports will be made available in paper format to NameFLOW-Paradise customers. An electronic copy will be made publicly available via the web.

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Operations

Introduction

This is an overview of operational activities as carried out by ULCC on behalf of DANTE during the months July, August and September 1995.

1. Operations/helpdesk

As part of the pilot to transition the NameFLOW-Paradise Directory Service to use software compliant to X.500(93) standards, NEXOR have supplied version 0.9 of Messageware Directory Server, together with a time-limited demonstration licence. This will be used to provide DISP replication of the "root context knowledge". Preliminary installation and configuration were completed during the quarter, and some tests performed.

The process of offloading work from the central DSAs Giant Tortoise and Ocellated Turkey continued, in small measure. Problems with communication to various top-level DSAs were resolved in cooperation with the managers of the DSAs concerned. However, some such problems have yet to be addressed.

A problem encountered several times during this quarter and the previous quarter prompted the creation of a "cross-machine" monitor. The problem results in the "cron" process dying, as a result of which the per-machine DSA monitor fails to run. Now, each machine periodically polls the other, and alerts support staff if either the DSA or cron process is missing.

At DANTE's request, the statistics area on the info-server was reorganised, and statistics for DANTE's web server were included. The WUFTP server from Washington University was upgraded to version 2.4.

Help desk staff contributed the Operations section section of the NameFLOW-Paradise Annual Report and participated in the two-day NP meeting at ULCC.

2. Outages

Significant outages of service elements totalled approximately 114 hours in July (including 2 hours scheduled "at risk"), 60 hours in August, and 26 hours in September (including 5 hours due to an IP router crash). Details are available in the monthly reports.

3. Issues

A reorganisation is in progress of IP subnetworks/Ethernet segments at ULCC, in accordance with UKERNA security measures. This will require either that the IP addresses of the two NameFLOW-Paradise machines change, or that the operation of the services is altered.

In consultation with DANTE, it was decided that the required reorganisation of equipment would be most easily addressed by moving both NameFLOW-Paradise computers to a different IP subnet. This will require changing the IP addresses of the machines, which will have to be done both in the Internet DNS, and in the Directory for the DSAs. This change will also have to be announced to FLDSA managers, as each FLDSA quiputailor will have the "parent" parameter set to Giant Tortoise. The change should not affect DSAs that are not FLDSAs, since even if they have "parent" set to Giant Tortoise, they would be unable to connect to it anyway after the reconfiguration in May which limited access to authorised users.

There is a long-standing problem with the EDB for c=IN which prevents the DSA Ocellated Turkey from replicating this EDB: the DSA crashes during the slaving operation. When it first occurred, this problem was put to one side for lack of time and facilities to properly investigate the situation. As a result of tracing a similar problem, the cause was found to be null components (empty strings) in postalAddress attributes, which contravene X.520. Ocellated Turkey will continue not to replicate c=IN until the invalid attributes have been corrected.

4. Statistics

Summaries of the service statistics for the quarter are attached in the Appendices 1-4. 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/>

Information

Information Servers

As part of the information service of NameFLOW-Paradise DANTE operates several servers. There are 'historical' PARADISE information servers, such as ftp, gopher and e-mail operated by ULCC. The ftp server is well used and usage seems to increase slightly. In addition to existing servers an experimental web server is now fully operational as part of the DANTE World Wide Web service. The server is becoming more popular each month as can be seen from the statistics in Appendix 4.

NP meeting

On 21 and 22 September a NameFLOW-Paradise meeting was organised by DANTE and hosted by ULCC. Draft minutes of the meeting are available on the NP www server. A few highlights are briefly mentioned below.

URL

At the meeting one interesting decision was taken: to add Uniform Resource Locators (URLs) to the country entries of the Directory. A proposition was prepared and sent to all National Directory managers. Incorporating suggested changes, the URLs were successfully added to the First (Country) Level of the Directory. At the meeting most national Directory Managers said they were prepared to add the URL for the organisational level within their country domain.

PGP

The security aspects of electronic messaging are becoming more important, whereby PGP is gaining popularity. Roland Hedberg (SE) took the initiative to write an Internet draft proposing to store PGP information into the Directory. During the meeting it became clear that to make PGP work on a larger scale a security policy using the Directory should be defined.

Whois++

The presentation on Whois++ made it clear it has several strong features, most notably the indexing concept which does not (yet) exist for X.500. For X.500 a first analysis of the index problems and indications for solutions are proposed by Paul Barker in his paper on Indexed DSAs, which is now a DANTE IN PRINT (#13) document. Using this paper as starting point the development on indexing will continue and a second paper is planned. The intention is to design a solution which will support both Whois++ and X.500 or provide a basis for a Common Index Protocol.

1993 Migration

The first experiences with the 1993 migration showed that "Management of the X.500 Root Naming Context" does not provide a satisfactory solution and needs further enhancements. One of the problems e.g. is that during replication of the root context (comparable to the root EDB) the First Level entry managed by a particular DSA would be overwritten.

Reports

At the directory managers meeting at ULCC the first official NameFLOW- Paradise Annual Report (1994/1995) was presented to the customers. The report was well received and there is sufficient interest to take on the production of another one for next year.

In addition to the Annual Report the Quarterly Reports are now being produced and distributed to the NaemFLOW-Paradise customers. The quarterly reports are intended for the national network participating in the service and will be used as input for the Annual Report.

Products

Information on new interesting directory products will be incorporated in the quarterly reports.

PC-Pages is a directory user interface for MS-Windows which was developed by the University of Brunel to meet the increasing demand for a DUI for Windows. A description of PC-Pages, kindly provided by Damanjit S Mahl, can be found in Appendix 5.

Liaison

EEMA

The EEMA Directory Committee met in Paris on the 12 September 1996. Jean Piquemal introduced the European Directory Forum, representing several official bodies in Europe (EDF is a subgroup of European Numbering Forum). The program was well accepted but will need some fine tuning, as there seemed to be some overlap with existing committees. In the early days, the Directory committee had proposed a similar name to EDF and this was rejected. In the light of these events the EEMA urges the EDF to reconsider its name and find an appropriate name reflecting the scope of their activities. (A proposition was The European Directory Regulations Advisory Board, EDRAB)

The first draft of the document 'top Level Naming for Europe' was ready and distributed before the meeting. As an initial draft it did not conform to the expectations of the review group and a proposal to change was forwarded.

It was decided that similar to last years' EEMA Annual Conference an X.500 Interworking Demo will be arranged for the coming Brussels meeting (June 11-14, 1996).

IETF

At the last IETF meeting in Stockholm (Sweden) two Directory related working groups met: Access Searching and Indexing of Directories (ASID) Working Group and the Integrated Directory Services (IDS) Working Group. In both groups there is a strong influence from Whois++ noticeable, as an alternative to X.500. A short summary on ASID and IDS is given below. The first draft minutes of both meetings are included in appendix 6, the ASID minutes by Tim Howes and the IDS minutes by Linda Millington.

ASID

There is an interest in secure LDAP. This adds minimal security to LDAP and is done during the BIND operation meaning that all other operations after the BIND are trusted. The first the Whois++ RFCs (Whois++ query language and architecture) are forwarded as proposed standard. The third RFC on Whois++

indexing is not forwarded as a few issues are still outstanding. The Common Index Protocol (CIP) is again forwarded and is, according the group, Whois++ biased. CIP is very important for future development of Whois++ and X.500 and it was proposed to form a separate Working Group for this.

IDS

There was some overlap between the two Working Groups (same presentation on Whois++). Vincent gave a short presentation on the progress of NameFLOW-Paradise as a liaison report. The On-Line catalogue of X.500 (URL: <http://www.internic.net/projects/x500catalog/catalogtop.html>) implementations is currently available via the web. During the "Schema registration" discussion there was consensus on the value of defining a common schema, however a minimal common schema could not be defined. The paper of David Chadwick concerning the "Management of the Root Context" was circulated and Vincent explained the background. There was a sense that this was too specific for this Working Group and it was proposed to start a new Working Group for introducing a 1993 based X.500 Directory infrastructure. Two documents were proposed to be forwarded as informal RFC: "Introduction of Directory Services in the US" and the SURFnet booklet "Introduction to Directory Services". The White Pages Documents (WHIP) were perceived as too complex and it was decided to split the document up, part 1: User Requirements and part 2: Schema Requirements.

APPENDICES

APPENDIX 1 - Helpdesk summary for Jul/Aug/Sep 1995

Country

Full Name	ISO Code	Number of queries			Quarter
		July	August	September	
(Argentina)	AR*	1	-	2	3
Australia	AU	2	-	-	2
Belgium	BE	-	-	1	1
Canada	CA	1	-	-	1
(China)	CN*	1	-	2	3
Czech Republic	CZ	1	-	-	1
Germany	DE	1	-	1	2
(Algeria)	DZ*	-	-	2	2
(Egypt)	EG*	1	-	-	1
United Kingdom	GB	7	5	6	18
India	IN	1	-	3	4
Italy	IT	-	1	1	2
Korea	KR	1	-	-	1
(Mexico)	MX*	1	-	-	1
(Malaysia)	MY*	1	-	-	1
Netherlands	NL	2	-	-	2
Norway	NO	1	-	-	1
(Pakistan)	PK*	2	-	-	2
Singapore	SG	1	-	-	1

United States	US	10	7	14	31
(South Africa)	ZA*	1	-	1	2
Total Requests		36	13	33	8

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

APPENDIX 2 - World Root DSA and LDAP summary statistics for Jul/Aug/Sep 1995

Summary of calls to DSA Giant Tortoise
From 5:43:58 on 30 June to 5:31:31 on 30 September

No. of binds	July	August	September	Quarter
Local	3308	3902	3843	11053
Remote	10474	10991	13232	34697
Total	13782	14893	17075	45750

No. of operations	July	August	September	Quarter
Local	487	599	709	1795
Remote	110910	131615	190589	433114
Total	111397	132214	191298	434909

System usage (calls received)	July	August	September	Quarter
Binds by Directory technicians	9526	10935	12590	33051
Reads of DSA entries	259	228	236	723
Other ops on DSA entries	26	8	15	49
Getedb operations (inc slices)	54224	55330	57503	167057
Spot shadows	66	64	21	151
Total	64101	66565	70365	201031

LDAP usage

LDAP usage from Jul 2 1995 to Sep 19 1995

	July	August	September	Quarter
Connections	26	30	10	66
Total connect time (seconds)	1622	36344	11769	49735

(49735 seconds is 13 hrs 48 mins 55 secs)

Summary of calls to DSA Ocellated Turkey

From 0:06:48 on 30 June to 0:04:47 on 30 September

No. of binds	July	August	September	Quarter
Local	10221	11025	18716	39962
Remote	13032	12233	10474	35739
Total	23253	23258	29190	75701

No. of operations	July	August	September	Quarter
Local	386937	413017	518828	1318782
Remote	49858	50093	37573	137524
Total	436795	463110	556401	1456306

System usage (calls received)	July	August	September	Quarter
Binds by Directory technicians	16463	17535	24499	58497
Reads of DSA entries	5443	5095	4319	14857
Other ops on DSA entries	57	27	26	110
Getedb operations (inc slices)	585	627	590	1802
Spot shadows	2489	2386	1842	6717

Total	25037	25670	31276	81983
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APPENDIX 3 - Public DUA summary statistics for Jul/Aug/Sep 1995

DUA usage

Network	July	August	September	Quarter
Internet	11515	13991	24438	49944
UK academic X.25 (JANET)	63	73	68	204
EuropaNET/X.25	39	25	37	101
Public X.25	24	42	13	79
ULCC dialup	16	12	30	58
Total	11657	14143	24586	50386

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

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

Domain	July	August	September	Quarter
edu	5038	7249	15878	28165
unresolved	1300	1343	2497	5140
com	994	1149	934	3077
uk	999	871	1186	3056
net	609	623	686	1918
ca	418	43	875	1729
us	319	39	379	1007
org	211	61	278	750
gov	230	243	189*	662
mil	75*	276	215	566
Total	10193	12760	23117	46070

APPENDIX 4 - WWW/FTP/Gopher/mail summary statistics for

Jul/Aug/Sep 1995

Web server (operated by DANTE)

	July	August	September	Quarter
Number of requests	766	1304	1456	3526
Kbytes transmitted	4423	9660	26116	40021
Average number of requests/day	24.9	42.5	55.1	38.4
Average Kbytes/day	137	315	987	435

FTP server

TOTALS FOR SUMMARY PERIOD Sat Jul 1 1995 TO Sat Sep 30 1995

	July	August	September	Quarter
Files Transmitted	1097	1249	1219	3565
Kbytes Transmitted	99341	101111	127483	327936
Average number of files/day	35	40	41	39
Average Kbytes/day	3204	3261	4249	3564

Gopher server

Gopher usage from Sat Jul 1 1995 to Sat Sep 30 1995

	July	August	September	Quarter
Total connections	45	40	43	128
Total files retrieved	72	76	74	222

Mail server

Mail-server usage from Jul 14 1995 to Sep 30 1995

	July	August	September	Quarter
Copies of help sent	2	1	3 6	
Total files retrieved	0	4	0 4	
Total requests	2	5	3 10	

APPENDIX 5

PC-Pages - Directory User Interface for MS-Windows

PC-Pages is a general purpose directory user interface that emphasizes the search and browse features required by the common directory user. The main objective being to provide a user friendly and presentable interface to the directory.

The overall application has a modular design. As a result the interface or directory query engine can be integrated directly into other mail applications, as well as operating in standalone mode.

Directory update is supported though the supplied functionality is not intended to support large scale data addition or maintenance.

The latest version of PC-Pages supports LDAP though an earlier version of the interface has the ability to run full DAP over RFC-1006 or CONS.

The main features are:

- Form based searching.
- User Friendly Name (UFN) searching.
- Configurable attribute display.
- "Hypertext" links for see also and secretary attributes. Support for URI and URL attributes will be supported soon.
- Progress reporting.
- Interruptable searches.
- Graphical tree browser.
- Inline JPEG image display.
- Add, modify and delete functionality.
- Dynamic bind and unbind.
- Integrates with mail user interfaces.

Caveats and general limitations.

Does not support display or modification of all known attribute syntaxes. In particular: ACLs cannot be displayed but they can be modified by selecting a predefined template.

Hardware platforms

PC-Pages for DAP requires an IBM PC compatible with 286 or higher, 2mb+ memory. The LDAP version requires a 386 or higher.

PC-Pages is written to be portable. Versions for Unix, Apple Mac and other platforms have been built by commercial licencees.

Software platforms

Windows 3.0 or 3.1 running in Standard or Enhanced mode. Though compiled as a 16 bit application the interface has been demonstrated to work under Windows 95.

The DAP version needs WhiteStack 1.1, from the Edinburgh University Computing Service. The LDAP versions require a TCP/IP stack with the Winsock interface.

Availability

Free to UK Academic Community, and to some other communities subject to certain restrictions. Available for commercial licensing. Commercial derivatives exist. Please contact us for licensing information.

Evaluation Copies

Evaluation copies are available on request.

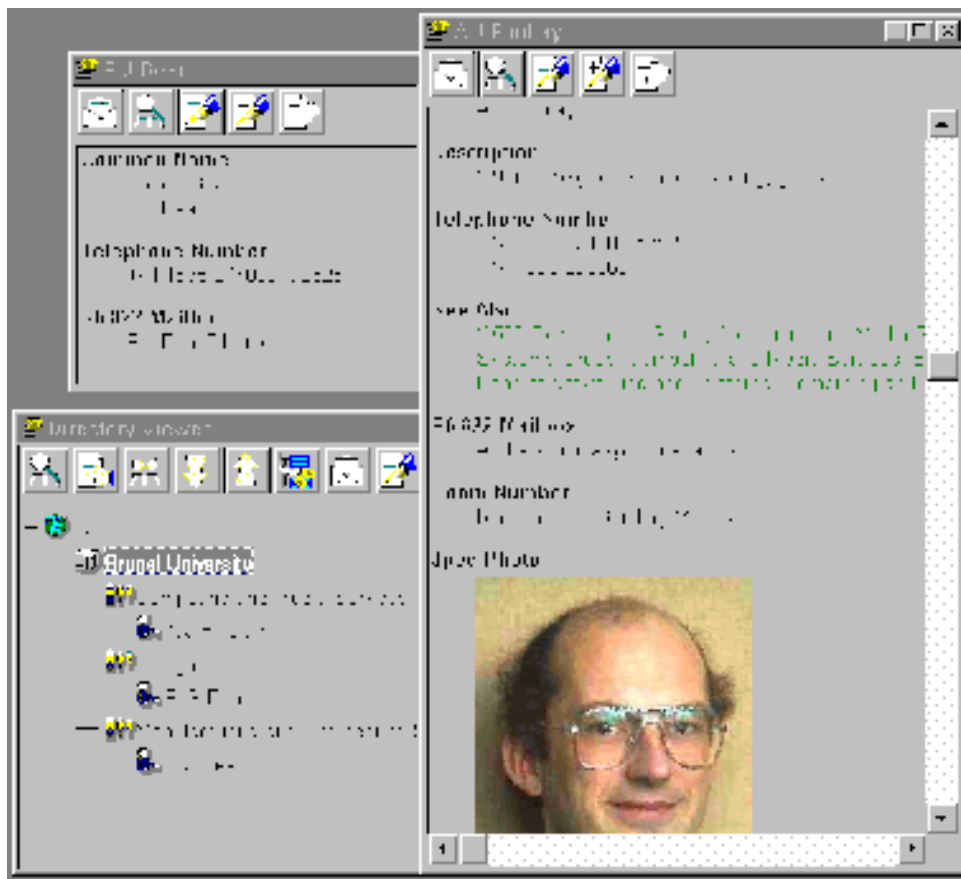
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APPENDIX 6

(Draft) minutes of IETF ASID and IDS

Access Searching and Indexing of Directories
Meeting Minutes

When: Tuesday, July 18, 1530-1730

Where: Stockholm, Sweden

- Agenda review/changes

The agenda was reviewed and accepted without changes.

- Review/discuss revised charter

The proposed charter previously sent to the list was reviewed and accepted without changes.

ACTION: Tim to submit charter to the ADs for approval

[Editorial note: Subsequent to this decision, the responsible AD expressed a desire to form a new separate working group to do the common indexing protocol work, which is included in the ASID charter currently. If this happens, the ASID charter will need revising again.]

- LDAPv2

Bob Cooney of the US Navy presented their design and implementation of MDAP, the Minimal Directory Access Protocol. MDAP is full DAP run directly over TCP, without the OSI stack. This allows digital signature information to be carried end-to-end from LDAP client to X.500 server to ensure operation integrity. MDAP messages are packaged within newly defined LDAP messages, to provide some compatibility with existing LDAP implementations. SLDAP is the Navy's implementation of MDAP, and is based on the freely available U-M LDAP distribution.

John Myers presented his proposal for adding strong authentication to LDAPv2, based on the IMAP authentication work. A new Bind2Request LDAPMessage is defined to hold an IMAP4 authentication mechanism as defined by RFC 1731. Two new operations, a Bind2Response and a Bind2Continuation are also defined, allowing different authentication mechanisms to be negotiated as well as protection mechanisms (i.e., integrity or privacy), to be used subsequently on the session. There was some discussion of this approach and how it might or might not map onto X.500 strong authentication.

Tim Howes gave a brief report of the approach taken by the Zoomit company to implement a 93-like paged results feature in LDAP. There was general agreement that this feature should be supported in a more standard way in LDAPv2.

Tim also gave a brief report of the stand-alone LDAP work going on at U- M (LDAP without X.500). The work currently avoids orphaning stand-alone LDAP servers by using the existing LDAPResult error message field to return a "referral" to knowledgeable clients. The clients can then chase the referral to an X.500-aware LDAP server, another stand-alone server, etc. The group agreed that the referral capability was useful and should be incorporated in LDAPv2 in a more standard way.

There was a short discussion of how to handle multiple character set and language issues in LDAPv2, though no conclusion was reached. Proposals should be sent to the list.

At Danvers, various people promised to help produce an LDAPv2 draft by this meeting. But for various reasons, the work was not done, a fact the chair could not complain about too loudly, since he was one of the main culprits. The group agreed to redouble their efforts and produce a draft by Dallas.

ACTION: LDAPv2 volunteers to get cracking and produce a draft by Dallas.

- WHOIS++

Patrik Falstrom led a discussion of the WHOIS++ portion of the agenda, first describing the recently-released Bunyip implementation of WHOIS++, called DIGGER. The two WHOIS++ RFCs (query language and architecture) have been progressed to proposed standard. The remaining WHOIS++ RFC on the centroid indexing mesh is being held back pending the resolution of some issues raised by the AD and others.

The issues raised included: 1) The document does not address scaling issues well enough. Experiments are ongoing, and the group proposed to produce a document by the Dallas meeting documenting the results of these experiments; 2) The meaning of "word" is not clear. The group proposed that a word be defined using the reserved WHOIS++ tokens. 3) The character set issue was not addressed adequately. The group

proposed to limit character sets to unicode and ISO-8859-1, with every implementation required to support both.

The proposed MODE command was also discussed. The MODE command allows a WHOIS++ session to temporarily escape to another protocol. The group expressed some misgivings about the need for this command, though some situations in which it would be useful were raised.

The current WHOIS++ server handle syntax was proposed to be replaced by an object identifier (OID). OIDs already have a distributed registration procedure. The group agreed this was a good idea.

ACTION: Patrik to produce a draft by Dallas detailing results of the ongoing WHOIS++ pilot's scalability.

- CIP

The WHOIS++ discussion led into the common indexing protocol discussion, where several issues were raised. First, the group felt that the current CIP draft still has some WHOIS++ dependencies that should be removed. These include the QUERY part of the centroid selection, which allows a WHOIS++ query, and the (handle,host,port) tuple used to identify the server from which a centroid came. It was suggested, and the group agreed, that this tuple should be replaced by a URL, pointing to the server.

On the subject of CIP use in non-WHOIS++ protocols, the group felt that a separate draft should be produced for each protocol specifying how it should use CIP.

There was some discussion of scaling issues with CIP, and the consensus of the group was that the only way to resolve the issues is to pilot the service and gain some experience with it as it grows. A draft should be produced detailing the results of these experiments.

ACTION: Chris Weider to revise the CIP draft by Dallas

- X.500

Roland Hedberg presented his draft for storing PGP information in the X.500/LDAP directory. There was general agreement that this was a good thing to do, and the group agreed, based on discussion on the list, that the syntax for the pGPKey should be IA5String, which would allow ASCII- armored PGP Keys to be stored in the directory exactly as they are produced by the PGP software.

ACTION: Roland to revise his draft and experiment with the new format.

Ed Reed of Novell was not able to attend the meeting and raise the X.500 issues he wanted addressed. But the group did have a brief discussion on the problem of storing 93 schema information in the tree. Ed had found the administrative area restriction too confining. The group suggested creating sub-administrative areas that could, in turn, have their own sub-schema definition. Without Ed there, it was not clear if this addressed his needs.

ACTION: Ed to post his questions to the list again if he wants more discussion.

- Any Other Business

There was no other business, and we ran a little over, so the meeting was adjourned. The next meeting of ASID will be at the December IETF in Dallas, Texas, USA.

IDS WG

Draft Minutes

Wednesday 19th July 09:00-11:30 Stockholm

There were no changes or additions to the Agenda.

1. Liaison reports/pilot projects

In order to free up some time in the meetings liaison reports and pilot project reports will be circulated on the mailing list. The following reports were circulated:

AARNet
Nomenclator
Long Bud
NameFLOW-Paradise Report

Vincent Berkhout gave an overview of the current status of the Nameflow/Paradise service. He reported a steady growth of about 40% in the number of entries in the DIT. The installed base is currently mainly unsupported Quipu which needs to be upgraded to 1993 and the issues of where to go next are currently being studied. The main aim is for the service to grow and with this goal in mind service level agreements will be put in place where possible, the service will be opened up for commercial companies to participate and it will be made easier for small organisations to participate. Another important aspect of the future of the service will be an improvement in quality.

Availability of first level DSAs is improving and there are currently over 700 DSAs throughout the world participating with over 4,500 organisations which are mainly based in Europe. An analysis of DE logins has shown that more than two thirds of the requests are from the US.

2. On-line Directory Catalogues

Patrik has put the WHOIS++ catalogue up on the Web and this has been operational for three weeks now. The catalogue contains one server so far. The WHOIS++ pilot currently consists of over 40 servers worldwide with over 40,000 white pages entries and 5,000 URCs. One server is being registered per day. The Digger home page contains information on what is happening in the WHOIS++ area (reference?). More statistics will be available for the Dallas meeting and WHOIS++ will be added to the pilot projects list. Patrik will provide the URL to add a product to the list. Chris Apple is currently putting the X.500 catalogue on-line. He currently has ten additional implementations to add and is starting to look at X.500 1993 implementations. (reference)?

3. Schema Registry

The discussion began by ascertaining that there was a need for maintaining an X.500 schema for the Internet, once this was decided the problem of the decision making process was tackled. The talk centred around the issues of getting it right and getting sued and the conclusion was that there should be a two step process of putting items in to the registry then if there are no RFCs within a certain timescale, drop them. The importance of a common schema across directory services was acknowledged but it was felt that the focus should be kept on solving the problems of the X.500 registry before becoming too ambitious. Sri and Linda will do the fine-tuning and language changes on the schema registry document then send it to the ADs again.

Volunteers are needed to publish a successor to RFC 1274.

4. X.500 Root Context

David Chadwick circulated a paper on the X.500 Root context to the list. In his absence Vincent Berkhout gave the background to the paper. The ultimate aim is to replace the root DSA and move to a 1993 service which necessitates the functionality to connect first level DSAs. The discussion centred around the activities needed to run an X.500 1993 pilot/service and it was felt that a number of documents would be required. In the light of this the AD saw the need for a new WG to tackle this area. At this point the importance of a rolling directory group which spins off working groups when necessary was emphasised. The ADs will look at this and get back to the group.

5. Building a Directory Service in the US

The conclusion of the group was that this document was extremely beneficial and should be published as soon as possible. Any comments or discussion points should be sent to the mailing list with the aim of publishing an I-D at the beginning of August which will then be progressed to an Informational RFC. It was also suggested that the SURFNet booklet should also be published as an RFC.

6. Simple Internet White Pages Document Review

The White Pages Documents have been brought in to this group for review and progression. The WHIP document had become very complicated and a lengthy discussion ensued on how to progress with it. A number of items surfaced as being essential to a future white pages service, it needs to be kept simple and achievable and a common schema is extremely important. The decision was to use the WHIP document as a basis and break it into user requirements and schema requirements.

User Requirements

April Marine will take the lead for pushing this I-D forward and her co- authors will be Allan Cargille, Tony Genovese and a representative from SURFNet - Peter Jurg? The WG needs to participate in this activity and the aim is to have an I-D by the end of August.

Schema Requirements

Tony Genovese will produce a draft by the end of August.

7. Charter Review

The Charter will be circulated and reviewed in detail on the list. The X.500 Catalogue date should be December 1995. The AD suggested that pilots should have goals and end dates. The WHOIS++ Pilot and X.500 1993 Pilots will be added to the pilot reporting procedure.

References

All NameFLOW-Paradise reports (as well as other relevant documents) are available from:

<http://www.dante.net/np/report.html>

and

<http://www.dante.net/np/ds.html>