Réseaux IP Européens

Network Coordination Centre

QUARTERLY REPORT

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RARE

The RARE association provides the framework for NCC operations.

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Introduction

RIPE (Réseaux IP Européens) is a collaborative organisation open to all European Internet service providers. The objective of RIPE is to enable the necessary administrative and technical coordination to allow the operation of a pan-European IP network. Much of this work is achieved through voluntary effort. RIPE does not operate a network of its own.

The RIPE Network Coordination Centre (RIPE NCC) is a European organisation with a charter to support RIPE. It is specifically focused on undertaking those activities which cannot be effectively performed by volunteers from the participating organisations.

The work of the RIPE NCC is divided into two areas: Core Activities and Development Projects. The former are defined in the RIPE NCC activity plan (document ripe-110.txt) and are funded by European Internet Service Providers. The development projects are defined within RIPE and funded separately by interested organisations. Currently all development projects are run under the auspices of the RARE Technical Programme.

This is the eighth quarterly report produced by the RIPE NCC and covers the core activities during the period January to March 1994. Brief reports on the status of the Joint Projects are also included with pointers to the relevant reports. Once again there has been a conscious effort to avoid duplication of information by including references to previous reports.

Apologies

Due to critical staff shortages at the RIPE NCC, this quarterly report has been published significantly behind schedule. Please accept our sincere apologies for this delay.

Management Summary

Staff Shortage

Since the start of NCC operations two years ago the size of the European Internet has quadrupled by number of hosts. Other indicators for NCC workload have increased by an order of magnitude. At the same time staff resources for the core services have remained essentially constant.

During the reporting period the staff shortage has lead to backlogs of registry requests, causing the typical response time to increase beyond the one working day target. The additional staff resources forseen in the 1994 budget need to be hired quickly to relieve this situation.

It is expected that by autumn one additional technical staff will be needed to keep service levels where they should be. This was not anticipated in the current 1994 budget and will have to be financed from unbudgeted income. This income should be available as the number of service providers increases faster than expected.

Should additional staff resources not become available, NCC core activities will have to be curtailed.

Activities

Despite this critical problem the NCC continues to function well, with the most important activities being performed satisfactorily. However documentation and enhancement efforts are currently progressing very slowly or in some cases not at all.

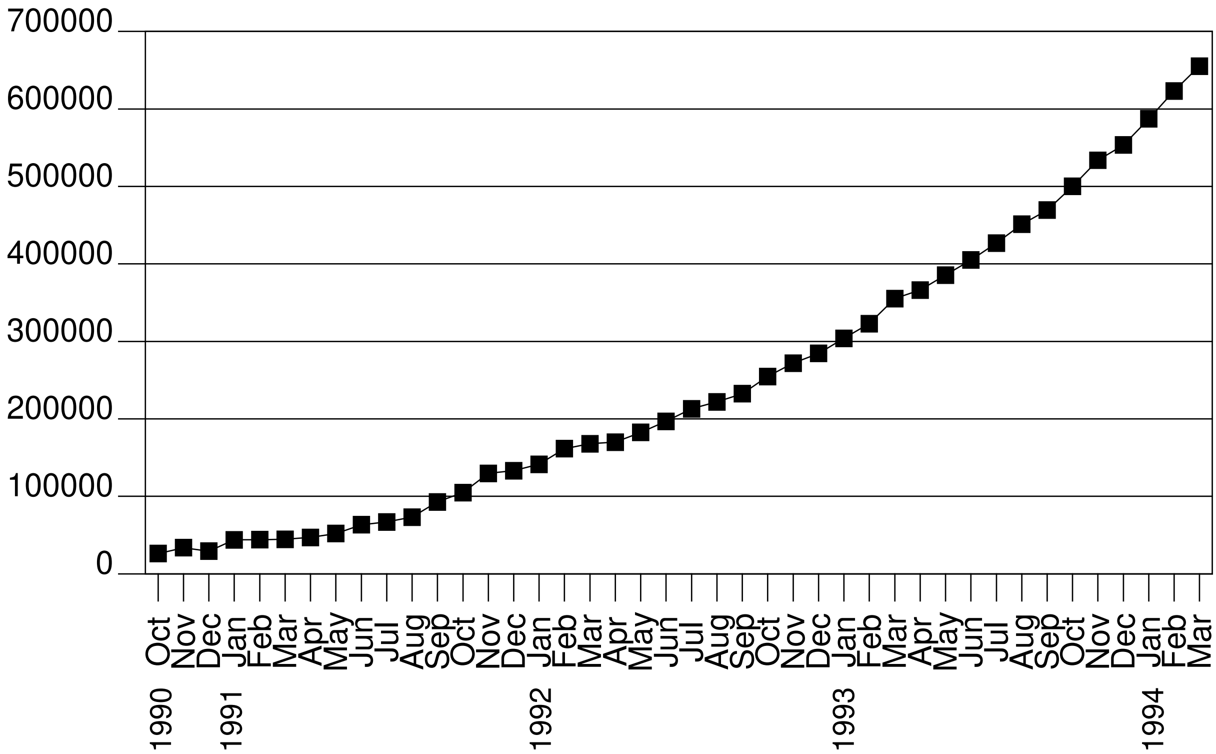
RIPE NCC Core Services

DNS Coordination

DNS Hostcount

The March 1994 hostcount shows a total of 655,164 hosts in Europe. During the reporting period 101,807 were added, which represents an increase of 18.4%.

RIPE DNS Hostcount History 1990-1994



Nothing has changed to the hostcount procedure as previously reported.

Hostcount History

Below is a table showing the totals of the RIPE DNS hostcount from October 1990 up till March 1994. All DNS output, not just the A records, are saved and are available in the RIPE document store, two files for each country: the standard output, and the error messages. Please check the README file for more details: `ftp://ftp.ripe.net/ripe/hostcount/README.`

1990	Oct	26141
	Nov	33665
	Dec	29226
1991	Jan	43799
	Feb	44000
	Mar	44506
	Apr	46948
	May	52000
	Jun	63267
	Jul	67000
	Aug	73069
	Sep	92834
	Oct	104828
	Nov	129652
	Dec	133000
1992	Jan	141308
	Feb	161431
	Mar	167931
	Apr	170000
	May	182528
	Jun	196758
	Jul	213017
	Aug	221951
	Sep	232522
	Oct	254585
	Nov	271795
	Dec	284374
1993	Jan	303828
	Feb	322902
	Mar	355140
	Apr	366164
	May	385522
	Jun	404930
	Jul	426827
	Aug	451116
	Sep	469356
	Oct	500018
	Nov	533701
	Dec	553357
1994	Jan	587135
	Feb	623158
	Mar	655164

Internet Registry

The Hostcount increase for this quarter represents 18.4% growth of the European Internet. In the two years, since the RIPE NCC started to act as a Regional Registry, the the European Internet has quadrupled in size. The NCC has set up a sizeable system of local registries during this time.

Local IR's

At the end of the reporting period, there were a total of 93 delegated Local Registries. This is an increase of 10 local registries since the last quarterly report. Twenty nine (24 in the previous quarter) are of the "Last Resort" type who provide a registry service to organisations not yet served by a service provider or do not wish to connect to the Internet. New "Last Resort" registries exist for the Ukraine, Greece, Cyprus, Slovenia, and there has been a transfer of the DE-NIC to the University of Karlsruhe. The DE-NIC is now funded by a consortium of German service providers. Three "Provider" type registries have been added: one in Belgium, one in the UK and one in Cyprus.

New List of European Local Registries

There is now an updated version of the list of European Local Registries. It is also planned to keep an ftp "registries" directory where individual files for each local registry will be available by ftp.

The new list contains references to "Enterprise Local Registries". This new classification of registry is intended to describe large enterprises that wish to coordinate the address space usage of their enterprise internally. Anyone from within the enterprise concerned who makes an application for address space should direct the request to the Enterprise Local Registry. As with the handling of all IP requests, the RIPE NCC will, where appropriate, forward applications to the relevant registry. Any enterprise wishing to make such an arrangement is invited to contact the RIPE NCC for more details.

The new list of local registries is available from RIPE document store via:

```
ftp://ftp.ripe.net/ripe/docs/ripe-111.txt
```

Once again, thanks to all those running local registries for their time and effort. It is greatly appreciated by all the RIPE NCC staff.

NCC Workload and Performance

Following from the figures above, the resulting workload for this area of the Core Services of the RIPE NCC has been steadily increasing since the beginning of RIPE NCC Regional Registry operations. While much of the work is performed by local registries the NCC needs to coordinate and support them. Requests for larger amount of address space have to be reviewed and processed by the NCC in order to ensure fair and consistent application of the allocation criteria.

All registry transactions are handled by a designated staff member called the "hostmaster". NCC core staff perform this duty on the basis of a bi-weekly roster. The number of messages received by the NCC "hostmaster" role mailbox is a good measure of the workload incurred by the registry. During the reporting period we received 1342, which is an average of more than 20 per working day. This is more than four times the number of messages received one year ago.

Consequently internal procedures at the RIPE NCC for handling the “hostmaster” role were reorganised. Part of this reorganisation involved prioritising the incoming mail. As before, every message will be answered as quickly as possible, but requests from local registries are now answered with the highest priority. Also a number of additional tools has been deployed to streamline the administrative processes: FAX traffic is now fully integrated into the E-mail system, all E-mail messages are retrieveable via full-text search and a standard text tool helps answering recurring queries.

Despite these measures typical response times for registry transactions have increased beyond one working day for the first time since the NCC started registry operations. We are building noticable backlogs during peak periods now.

RFC on Address Allocation for Private Internets

RFC1597.txt has recently been approved. This RFC describes the use of private address space for those parts of enterprise networks that do not have to communicate outside the enterprise at the network layer. It is hoped that the publication of this RFC will encourage a wider audience to use private address space when planning their future networks. This RFC is available from

`ftp://ftp.ripe.net/rfc/rfc1597.txt`

Updated Delegated IR Leaflet

The green folder "Delegated Internet Registry" has recently been significantly updated. If you would like some copies, please send mail to <ncc@ripe.net> stating how many copies you would like to receive. It will shortly be available in PostScript format in the document store.

RIPE Network Management Database

Database updates

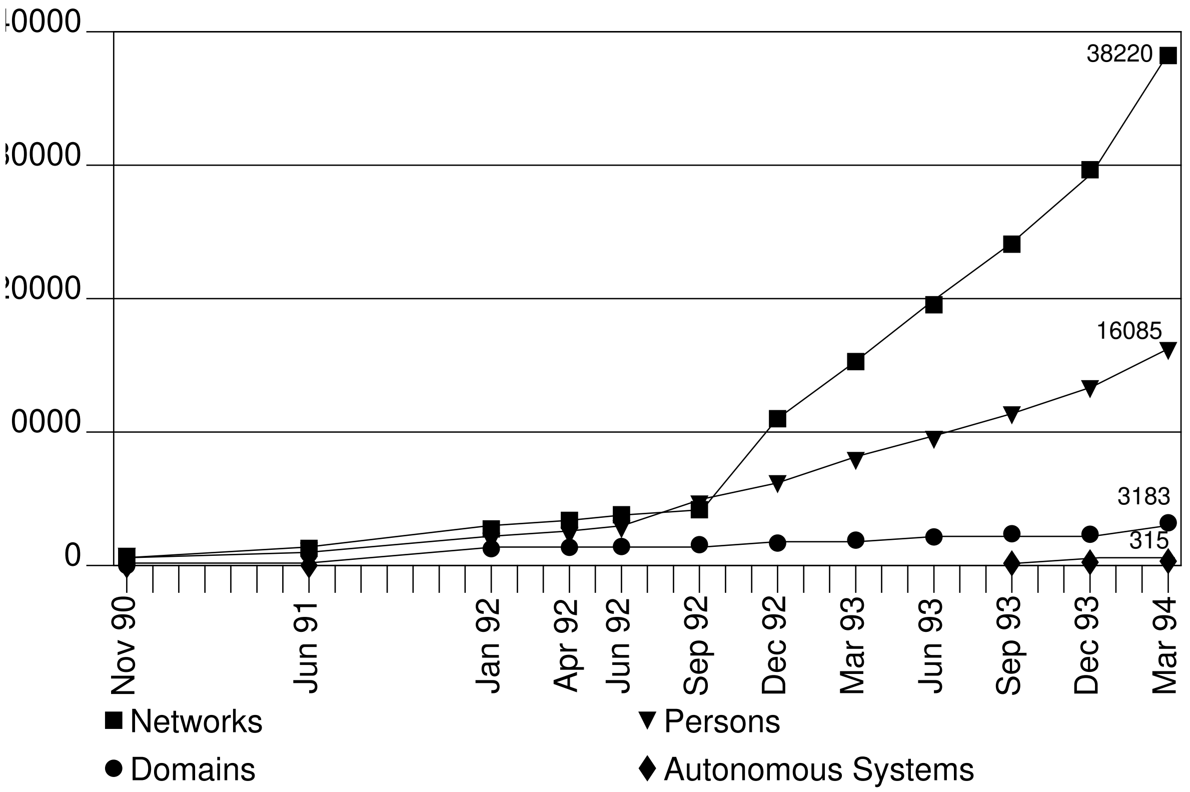
During the reporting period the NCC processed a total of 4838 update transactions with 47796 objects. The update procedure is running smoothly.

Database Objects Processed	Q2 1993	Q3 1993	Q4 1993	Q1 1994
TOTAL	28110	58189	42767	47796

Database Statistics

Again the number of networks in the database has increased significantly due to the large number of newly assigned class C network numbers.

RIPE Database Objects



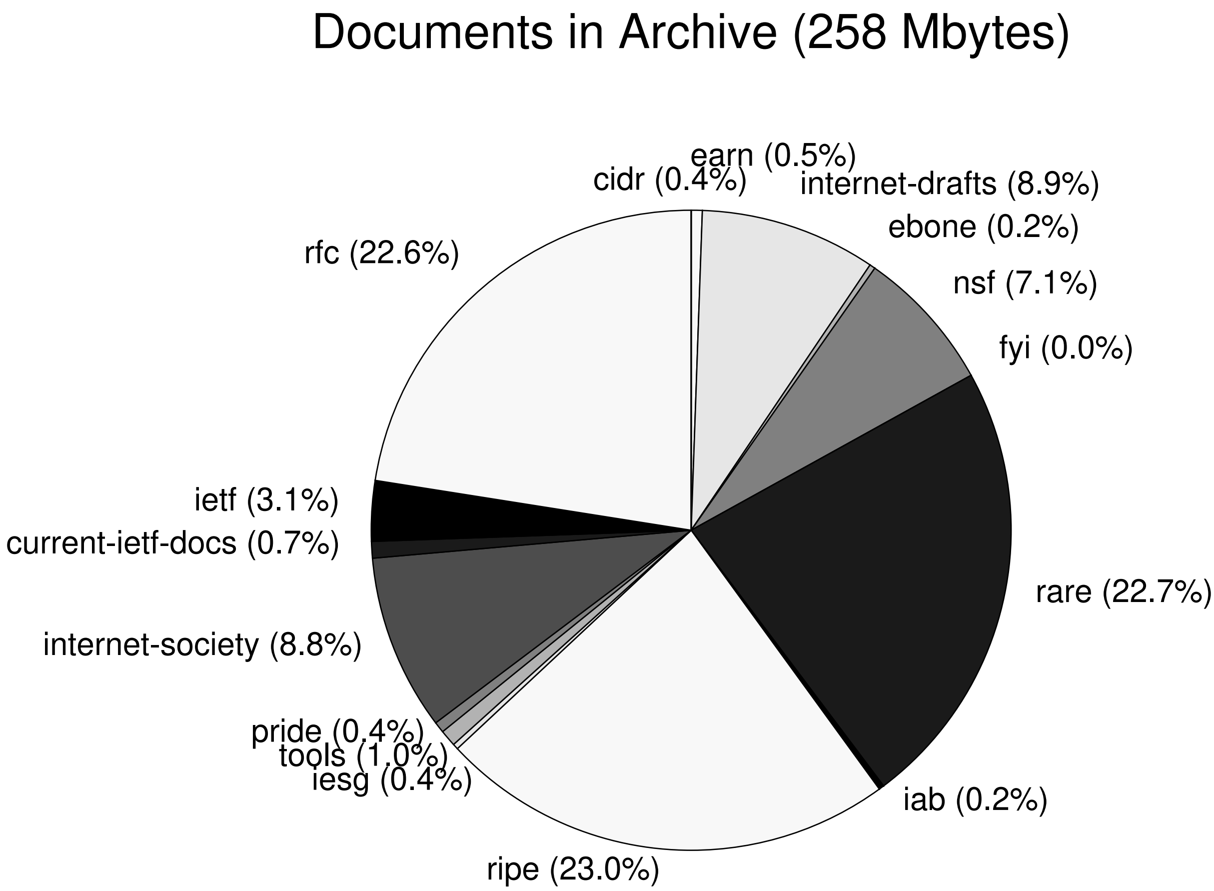
Month	Nets	Persons	Domains	Autonomous Systems
Nov 90	643	670	0	
Jun 91	1270	1053	845	
Jan 92	2728	1792	1254	
Apr 92	3365	2242	1360	
Jun 92	3797	2736	1422	
Sep 92	4172	4594	1549	
Dec 92	11080	6116	1680	
Mar 93	15281	7846	1894	
Jun 93	19523	9423	2134	85
Sep 93	24077	11267	2382	153
Dec 93	29646	13238	2339	224
Mar 94	38220	16085	3183	315

The table above shows the number of objects in the database for the last quarter broken down by networks, persons, domains and autonomous systems.

Document Store

Document Store Statistics

In total the document store contains approximately 6618 documents. By volume, it accounts for over 258 Megabytes.



Below is a table overview of the RIPE Document Store.

Area	Files	Kbytes
earn	16	1204
ebone	45	562
iesg	87	1119
ietf	1021	8088
internet-drafts	636	22863
internet-society	1019	22590
nsf	157	18321
rare	1275	58378
rfc	998	58272
ripe	1164	59111
tools	30	2452

Area	Files	Kbytes
current-ietf-docs	56	1877
fyi	27	121
iab	16	428
pride	26	941
cidr	30	964
Total	6618	258213

A few minor adjustments were made to the ftp directories so that they are now more streamlined. The following directories were moved from:

- ripe/docs/ripe-docs to ripe/docs
- ripe/docs/ripe-agenda to ripe/agenda
- ripe/docs/ripe-minutes to ripe/minutes
- ripe/docs/ripe-drafts to ripe/drafts

The ripe-current directory was removed. The file:

- ripe/docs/ripe-docs/iso3166-codes was moved to was moved to the top level.

Apologies for any (temporary) inconvenience caused.

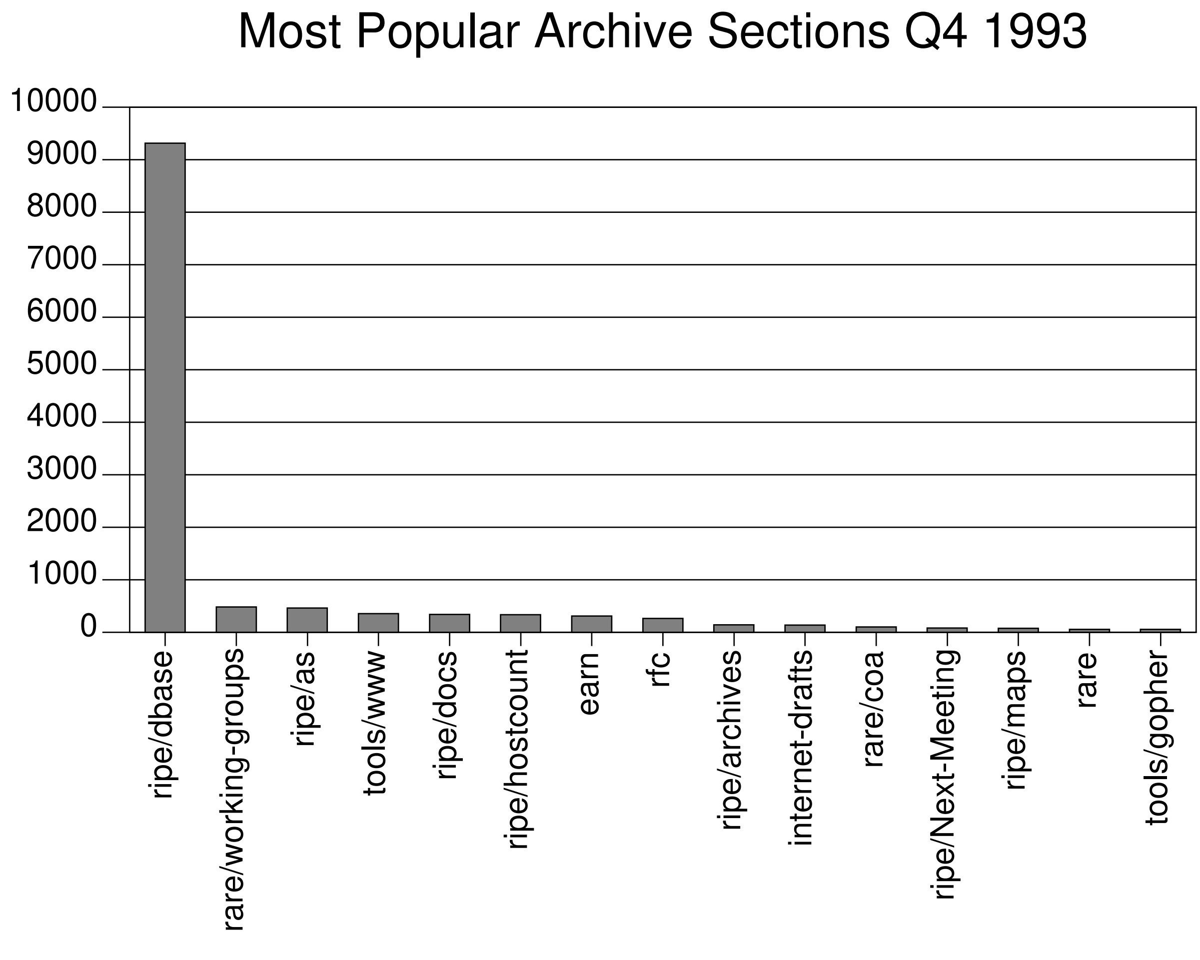
RIPE documents

The following new documents, or updates to older documents were added to the document store during the reporting period:

- ripe-107
  European Internet Network Number Application Form (revision)
- ripe-108
  Support of Guarded fields within the RIPE Database
- ripe-109
  European Autonomous System Number Application Form & Supporting Notes - March 94 revision
- ripe-110
  RIPE NCC Activity Plan
- ripe-111
  List of Local Registries

FTP Usage Statistics

The most popular archive sections of the RIPE document store are tabulated below. This displays the top 15 most popular sections which were accessed using ftp.The most popular section is the RIPE database, with over 9000 Megabytes transferred.



The total of 9 Gbytes of transferred data from the RIPE Database section of the document store actually represents an average of 10 Kbits/sec continuous traffic, 24 hours a day, 7 days a week over this last quarter. Below is the table overview of the 15 most popular archive sections.

Much of this traffic can be explained by mirror sites, who copy this part of the archive daily, and the RIPE database section changes every day.

Archive Section	Files Sent	KBytes Sent	% of Files Sent	% of Bytes Sent
ripe/dbase	9814	10818759	4.13	68.95
ripe/as	172217	786425	72.41	5.01
rfc	11598	756514	4.88	4.82
ripe/hostcount	4486	711530	1.89	4.53
ripe/docs	8951	438530	3.76	2.79
rare/working-groups	4215	417564	1.77	2.66
internet-drafts	4183	281569	1.76	1.79
ripe/Next-Meeting	697	270386	0.29	1.72
rare/coa	1014	198451	0.43	1.26
ripe/archives	4806	156916	2.02	1.00
ripe/maps	1820	132803	0.77	0.85
earn	325	90372	0.14	0.58
rare/pub	636	62484	0.27	0.40
rare/technical-programme	907	45159	0.38	0.29
rare/rtc	588	36923	0.25	0.24

The number of Megabytes transferred using ftp per top level domain is shown below:

Domain Name	Files Sent	Bytes Sent	% of Files Sent	% of Bytes Sent
at	1088	571657604	0.46	3.64
au	143	4060843	0.06	0.03
be	355	30354724	0.15	0.19
bg	1	26024	0.00	0.00
br	9	1339578	0.00	0.01
ca	122	6598700	0.05	0.04
ch	2833	772318066	1.19	4.92
cl	2	241133	0.00	0.00
cs	760	66926304	0.32	0.43
cy	37	1741096	0.02	0.01
cz	27866	727947153	11.72	4.64
de	4295	895751621	1.81	5.71
dk	6128	218625893	2.58	1.39
ec	1	310718	0.00	0.00
ee	1	26632	0.00	0.00
es	1527	240814906	0.64	1.53
fi	26028	1122486140	10.94	7.15
fr	898	93011634	0.38	0.59
gr	23	4984201	0.01	0.03
hk	47	10626350	0.02	0.07
hr	12	217508	0.01	0.00
hu	454	88405462	0.19	0.56
ie	374	39794288	0.16	0.25
il	2971	363826371	1.25	2.32
in	14	357957	0.01	0.00
is	8	963406	0.00	0.01

Domain Name	Files Sent	Bytes Sent	% of Files Sent	% of Bytes Sent
it	2602	1095028736	1.09	6.98
jp	10740	724459712	4.52	4.62
kr	260	6444878	0.11	0.04
kw	7	283446	0.00	0.00
lu	8	312828	0.00	0.00
lv	5	173228	0.00	0.00
nl	1656	120747533	0.70	0.77
no	1329	91853835	0.56	0.59
nz	1	235942	0.00	0.00
pl	233	17244217	0.10	0.11
pt	2392	340214630	1.01	2.17
ro	111	3604308	0.05	0.02
se	41436	1569300431	17.42	10.00
sg	10	120866	0.00	0.00
si	237	12624480	0.10	0.08
sk	54	3085013	0.02	0.02
su	187	16309502	0.08	0.10
th	36	6886035	0.02	0.04
tn	1	3370	0.00	0.00
tr	34	1639875	0.01	0.01
tw	159	13555029	0.07	0.09
ua	30	583843	0.01	0.00
uk	2193	109328092	0.92	0.70
us	5	276734	0.00	0.00
za	39	4242853	0.02	0.03
com	706	41646030	0.30	0.27
edu	595	281199897	0.25	1.79
gov	123	12173703	0.05	0.08
int	2	1172075	0.00	0.01
mil	125	22666900	0.05	0.14
net	94599	5715662969	39.78	36.43
org	38	5003579	0.02	0.03
UNKNOWN	1881	209993647	0.79	1.34

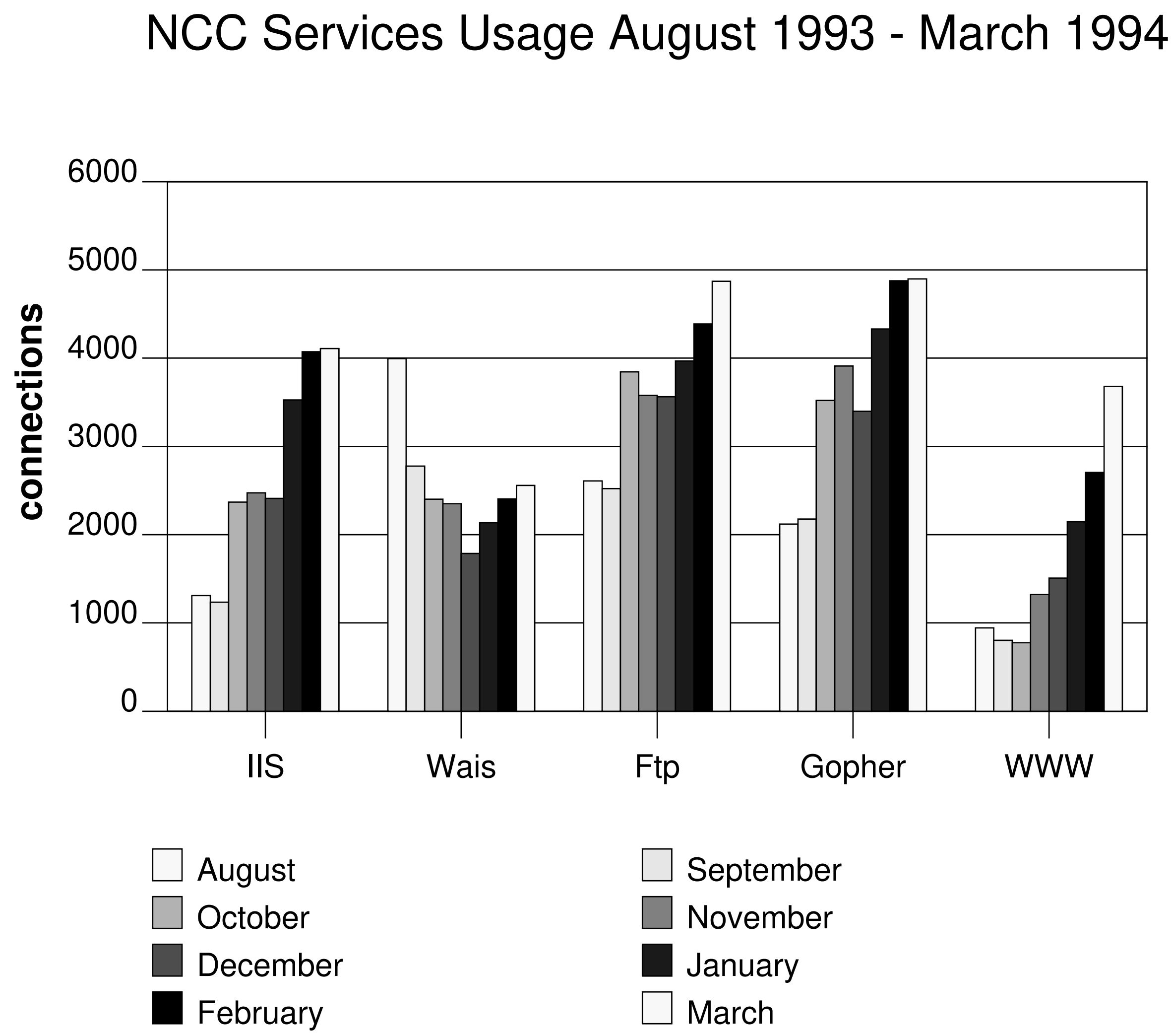
Again these statistics are confirmation that the RIPE document store is a very focused resource being used by the right community.

Interactive Information Server

The NCC Interactive Information Server is still a popular method of access to the RIPE document store catering for users with minimal hardware and/or software support to access information stored by the NCC. Full details on access methods are given in the RIPE NCC information leaflet “Interactive Information Server” and in the first edition of the NCC Quarterly Report. A graph showing the TOP 25 accesses can be found in Appendix E.

General Service Usage Statistics

Statistics for the use of the various NCC information services were collected for the first quarter of 1994. The table below shows the total number of connections made for each service from August 1993 (IIS, Wais, Ftp and Gopher) contacted either directly from a user client or from the NCC Interactive Information Service. The breakdown is given as total number of connections per month:



The WHOIS statistics have been omitted from this table due to their distorting effect on the whole graph. They are however included in the table overleaf which reports the actual figures.

A breakdown per service since the start of these services in March 1993 is shown below in two tables:

Service	1993 Mar	Apr	May	Jun	Jul	Aug	Sep
Whois	28961	32660	35215	30721	31655	31150	45410
IIS	2040	1785	2326	2313	1978	1311	1236
Wais	4375	3764	3564	3994	4162	3996	2776
FTP	2067	1735	2038	1891	2693	2610	2521
Gopher	2394	2345	2439	2559	2563	2120	2178

Service	Oct	Nov	Dec	1994 Jan	Feb	Mar
Whois	48687	69383	59353	60765	96109	123328
IIS	2370	2475	2412	3527	4072	4108
Wais	2402	2351	1788	2134	2406	2557
FTP	3845	3578	3562	3968	4389	4871
Gopher	3522	3911	3397	4332	4877	4897

The number of connections to the various servers at the NCC broken down by the source of the request is shown in the table below.

Domain	Whois	IIS	Wais	Ftp	Total	Domain
IIS	18730	0	3819	0	22549	IIS
LOCAL	16801	49	155	753	17758	LOCAL
NCC-X25	0	2	0	0	2	NCC-X25
PSPDN	0	7	0	0	7	PSPDN
UNKNOWN	4384	905	196	821	6306	UNKNOWN
at	1518	136	21	253	1928	at
au	34	14	34	77	159	au
be	958	88	25	93	1164	be
bg	17	0	0	1	18	bg
br	56	11	0	9	76	br
ca	390	84	36	102	612	ca
ch	74585	119	12	460	75176	ch
cl	2	1	0	3	6	cl
com	522	217	450	678	1867	com
cs	9	12	0	7	28	cs
cy	0	4	0	10	14	cy
cz	1498	182	8	263	1951	cz
de	17379	511	61	1649	19600	de
dk	893	52	2	211	1158	dk
ec	1	2	0	1	4	ec
edu	12393	540	495	768	14196	edu
ee	164	31	1	8	204	ee
eg	24	5	0	0	29	eg
es	478	44	10	141	673	es
fi	25981	94	311	251	26637	fi
fr	11099	229	471	647	12446	fr
gov	448	39	54	123	664	gov
gr	353	30	0	30	413	gr
hk	5	0	2	103	110	hk

Domain	Whois	IIS	Wais	Ftp	Total	Domain
hr	9	311	1	13	334	hr
hu	399	114	0	101	614	hu
ie	3050	75	3	302	3430	ie
il	15	21	0	273	309	il
in	0	0	0	4	4	in
int	31	7	0	2	40	int
is	156	6	5	7	174	is
it	2530	214	175	445	3364	it
jp	63	10	22	129	224	jp
kr	0	2	0	66	68	kr
kw	0	2	0	5	7	kw
lu	426	29	47	23	525	lu
lv	7	5	0	9	21	lv
mil	48	24	8	54	134	mil
mx	4	4	1	3	12	mx
net	11914	207	60	1348	13529	net
nl	5652	458	96	555	6761	nl
no	3893	54	5	232	4184	no
nz	8	0	0	3	11	nz
org	1857	46	71	35	2009	org
pl	345	69	0	61	475	pl
pt	1203	75	8	291	1577	pt
ro	1	23	0	49	73	ro
se	1586	56	141	932	2715	se
sg	7	1	0	4	12	sg
si	529	36	0	51	616	si
sk	203	56	0	49	308	sk
su	359	53	30	65	507	su
th	0	6	0	25	31	th
tn	0	1	0	1	2	tn
tr	220	59	0	25	304	tr
tw	35	6	0	56	97	tw
ua	101	8	0	21	130	ua
uk	2750	2984	223	514	6471	uk
us	53704	7	3	8	53722	us
za	373	6	35	5	419	za
Total	280200	8443	7097	13228	308968	Total

Staff

On January 3rd Marten Terpstra left the NCC core staff to join Tony Bates on the PRIDE project. Physically Marten remains at the same desk.

At the same time Geert Jan de Groot has joned the NCC core staff as a network engineer. Geert Jan joined us from Philips Consumer Electronics division where he has supported various development projects by providing an excellent computing and communications infrastructure.

It was outlined in the previous quarterly report that the NCC was working towards making arrangements to allow people from local registries and the European Internet community in general to work at the RIPE NCC for periods of between 3-6 months. The object of the traineeship is to gain some experience in the operation of a regional registry and to also work on a small but focused project. Following this the NCC is pleased to welcome Geza Turchanyi who will be working at the RIPE NCC for 6 months from mid January 1994 until mid July. Anyone else who is interested in joining the NCC on a similar basis is invited to contact Daniel Karrenberg <dfk@ripe.net> for an informal discussion.

Publications

Over the reporting period the following was published:

❍ RFC1597.txt - Address Allocation for Private Internets
Y. Rekhter, B. Moskowitz, D. Karrenberg and G. de Groot.

Further details are given about this publication earlier in the Quarterly Report in the section on Internet Registry.

Presentations

Over the reporting period the following external presentations were delivered by the RIPE NCC:

❍ Regional Techs Meeting, San Diego, USA - “Routing Registry” given by Daniel Karrenberg

❍ EARN, Paris France - Tutorial on “RIPE and the Internet Registry System” given by Daniel Karrenberg

❍ IETF, Seattle, USA - Various presentations including “Address Allocation for Private Internets” Marten Terpstra and Tony Bates

Again the RIPE NCC encourages organisations who feel they would benefit from a presentation by the RIPE NCC to contact them.

RIPE Support Activities

RIPE Meetings

The 17th RIPE meeting was held in Amsterdam from 24 - 26th January 1994. Once again this was a successful meeting with approximately 85 attendees present. The following presentations were added to the presentations directory:

- ripe-m17-dfk-NCC-REPORT.ps.
- ripe-m17-marten-DB.ps.Z
- ripe-m17-tony-LIMERICK.ps.Z
- ripe-m17-tony-PRIDE.ps.Z
- ripe-m17-tony-RS.ps.Z
- ripe-m17-woeber-CEENET.ps.Z
- rep-ripe-17.ps.Z

The draft minutes from this, the 17th RIPE meeting can be found in the minutes directory:

`ftp://ftp.ripe.net/ripe/minutes/ripe-m-17.{txt,ps}`

The agenda from this meeting can be found in the agenda directory:

`ftp://ftp.ripe.net/ripe/agenda/ripe-a-17.{txt,ps}`

Joint Projects

PRIDE

The PRIDE project now has reached its full complement of staff and continued to work on tools, documentation and population of the registry. A new tool to display all possible external routing paths between two points in the Internet has been released for α-test. For more details see the PRIDE progress reports:

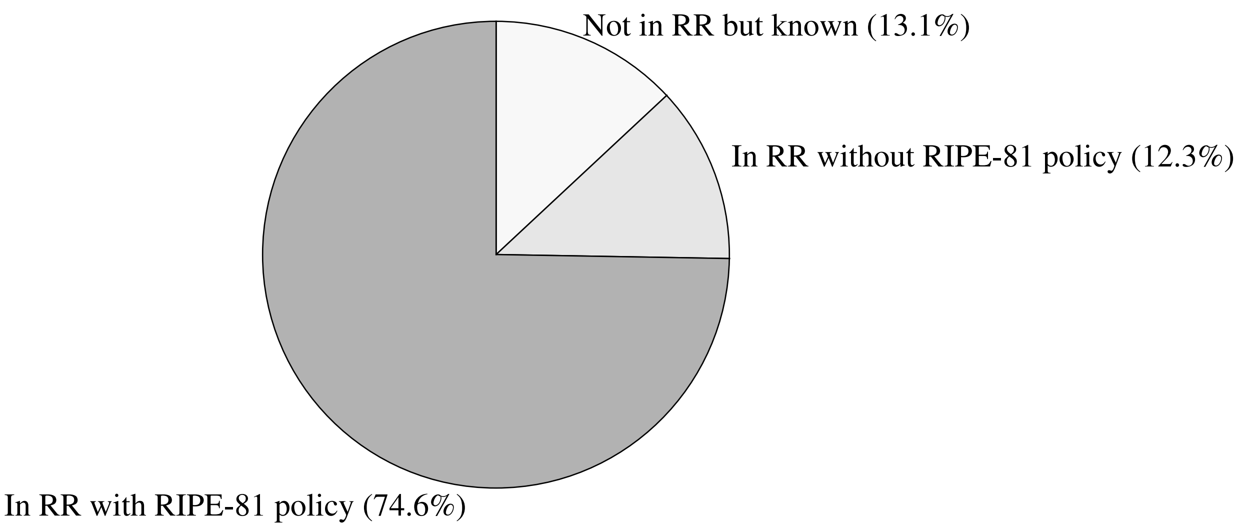
```
ftp://ftp.ripe.net/pride/reports/pride-rep{3,4}.{ps,txt}
```

Routing Registry

The RIPE routing registry continues to be well populated

:

Breakdown of known European AS (Total: 131)



A liaison has been established with routing registry efforts sponsored by the US National Science Foundation with the aim to establish compatible registries.

Acknowledgements

The RIPE NCC wishes to thank the RARE Secretariat for their excellent support throughout this quarter.

We wish also to thank the local registries for their excellent work, especially with regard to the allocation of IP numbers.

Appendix A

Meetings Attended

The following meetings were attended by NCC staff during this quarter.

Date	Name & Location	Attendee(s)
3 Mar	RTC, Amsterdam, NL	Daniel Karrenberg
8 Mar	EARN, Paris, France	Daniel Karrenberg
27 Mar	IEPG, Seattle, USA	Marten Terpstra Tony Bates
28 Mar - 1 Apr	IETF, Seattle, USA	Marten Terpstra Tony Bates

Appendix B

Class B Network Number Allocations to Date

The table below summarises all assignments of class B network numbers made through the RIPE NCC to date. Eight class B's were assigned this quarter. The "Via" column indicates through which registry the NCC received the request and solicited the necessary justification.

Network Number	Via
129.178	free
130.193	free
138.117	free
155.73	free
141.92	RIPE NCC
141.93	RIPE NCC
141.94	JANET
141.95	JANET
141.96	RIPE NCC
141.97	JANET
141.98	SWITCH
145.224	JANET
145.225	DE-NIC
145.226	RIPE NCC
145.227	JANET
145.228	DE-NIC
145.229	JANET
145.230	DE-NIC
145.231	INRIA
145.232	SWITCH
145.233	JANET
145.234	CH-NIC
145.235	SE-NIC
145.236	HU-NIC
145.237	PL-NIC
145.238	InterNIC
145.239	PIPEX
145.240	ICNET
145.241	EUnet-AT
145.242	RIPE NCC
145.243	DE-NIC
145.244	RIPE NCC
145.245	EUnet-CH
145.246	RIPE NCC
145.247	DATANET
145.248	RIPE NCC

Network Number	Via
145.249	RU-NIC
145.250	SWITCH
145.251	SE-NIC
145.252	CH-NIC
145.253-145.254	DE-NIC
155.73.0.0	RIPE NCC
160.44-160.52	DE-NIC
160.53	SWITCH
160.54-160.58	DE-NIC
160.59	SWITCH
160.60	DE-NIC
160.61-160.62	CH NIC
160.63	SWITCH
160.219	EUnet/CH
160.220	RIPE NCC
163.156-163.157	RIPE NCC
163.158	CH-NIC
163.159-163.160	RIPE NCC
163.161	SWITCH
163.162	GARR
163.163-163.165	RIPE NCC
163.166	ICNET
163.167	JANET
163.168-163.175	RIPE NCC
164.1	RIPE NCC
164.2	RIPE NCC
164.3	EUnet/AT
164.4	SE-NIC
164.5	RIPE NCC
164.6	PIPEX
164.7	RIPE NCC
164.8	ARNES
164.9	SE-NIC
164.10	SE-NIC
164.11	JANET
164.12	RIPE NCC
164.13	Telecom Finland
164.14	RIPE NCC
164.15	RIPE NCC
164.16-164.34	DE-NIC
164.35	RIPE NCC
164.36	RIPE NCC

Network Number	Via
164.37	SE-NIC
164.38	PIPEX
164.39	HP
164.40	RIPE NCC
164.61	DE
164.128	DATRAC
164.129	RIPE NCC
164.130	RIPE NCC
164.131	RIPE NCC
164.132	GARR
164.133	DE-NIC
164.134	UK-NIC
164.135	SE-NIC
164.136	PIPEX
164.137	PIPEX
164.138	RIPE NCC
164.139	RIPE NCC
164.140	Unisource
164.141	Telecom Finland
164.142	IUnet
164.143	PIPEX
171.16	FR-NIC
171.17	DE-NIC
171.18	FR-NIC
171.19	HU-NIC
171.20	RIPE NCC
171.21	NLnet
171.22-171.31	free

Appendix C

Class C Block Allocations to Date

The table below summarises the delegation status of the class C network number blocks allocated through the NCC and the number of networks allocated from these blocks. The “p/n” column indicates whether the block in question is delegated to the local registry of a service provider or is used to allocate numbers to organisations without a service provider.

It should be noted that blocks are reserved based on usage estimates given by the local registries for a period of about 24 months. Should the assignment rate differ from the estimated one, reserved blocks can and will be used for other purposes if necessary. In cases where it appears that a block has been assigned to a registry and the registry does not know, please contact the NCC before allocating from these blocks. Also in other cases of confusion, please contact the RIPE NCC.

Block	P/N	Assigned	Country	Registry
192.162	N	6	EU	Various assignments
192.164	P	238	AT	EUnet/AT
192.165	P	211	EU	NORDUnet
192.166	N	211	DE	DE-NIC
192.167	P	239	IT	GARR NIS
192.168	N	256	EU	RIPE NCC - RFC1597
193.0	N	153	EU	Various purposes
193.1	P	138	IE	HEAnet
193.2	P	62	SI	ARNES
193.3	P	207	DK	DK non-provider
193.4	N	129	IS	Iceland
193.5	P	233	CH	SWITCH
193.6	N	197	HU	Hungary general
193.7	N	224	DE	German Chambers of Commerce
193.8	N	150	CH	CH non-provider
193.9	N	236	EU	Pan European Organisations
193.10	P	47	SE	SUNET
193.11	P	resvd	SE	SUNET
193.12	P	188	SE	SWIPNET
193.13	P	32	SE	SWIPNET
193.14-15	P	resvd	SE	SWIPNET
193.16	N	181	DE	DE non-provider
193.17	N	146	DE	DE non-provider
193.18	N	255	DE	DE non-provider
193.19	N	31	DE	DE non-provider

Block	P/N	Assigned	Country	Registry
193.20	N	256	DE	DE non-provider
193.21	N	256	DE	DE non-provider
193.22	N	188	DE	DE non-provider
193.23	N	204	DE	DE non-provider
193.24	N	164	DE	DE non-provider
193.25	N	163	DE	DE non-provider
193.26	N	200	DE	DE non-provider
193.27	N	132	DE	DE non-provider
193.28	N	167	DE	DE non-provider
193.29	N	219	DE	DE non-provider
193.30	N	202	DE	DE non-provider
193.31	N	252	DE	DE non-provider
193.32	N	253	UK	UK non-provider
193.33	N	0	UK	UK
193.34	N	32	UK	UK
193.35	N	254	UK	UK non-provider
193.36	N	253	UK	UK non-provider
193.37	N	256	UK	UK non-provider
193.38	N	256	UK	UK non-provider
193.39	N	238	UK	UK non-provider
193.40	N	73	EE	Estonia general
193.41	N	resvd	EE	Estonia general
193.42	N	139	IT	IT non-provider
193.43	N	0	IT	IT non-provider
193.44	P	71	SE	TIPnet
193.45	P	resvd	SE	TIPnet
193.46	N	248	AT	AT non-provider
193.47	N	177	CH	CH non-provider
193.48	P	250	FR	RENATER
193.49	P	188	FR	RENATER
193.50	P	205	FR	RENATER
193.51	P	169	FR	RENATER
193.52	P	183	FR	RENATER
193.53	N	205	BE	BE non-provider
193.54	P	162	FR	RENATER
193.55	P	200	FR	RENATER
193.56	N	217	FR	FR non-provider
193.57	N	167	FR	FR non-provider
193.58	N	104	BE	BE non-provider
193.59	N	164	PL	PL general
193.60	P	210	UK	JANET
193.61	P	240	UK	JANET
193.62	P	251	UK	JANET
193.63	P	215	UK	JANET
193.64	P	132	FI	EUnet/FI
193.65	P	63	FI	EUnet/FI

Block	P/N	Assigned	Country	Registry
193.66	P	20	FI	EUnet/FI
193.67	P	52	NL	EUnet/NL
193.68	P	28	BG	EUnet/BG
193.69	P	59	NO	EUnet/NO
193.70	P	162	IT	EUnet/IT
193.71	P	121	NO	EUnet/NO
193.72	P	131	CH	EUnet/CH
193.73	P	137	CH	EUnet/CH
193.74	P	94	BE	EUnet/BE
193.75	P	resvd	BE	EUnet/BE
193.76	P	resvd	HR	EUnet/HR
193.77	P	43	SI	EUnet/SI
193.78	P	138	NL	EUnet/NL
193.79	P	114	NL	EUnet/NL
193.80	P	234	AT	EUnet/AT
193.81-83	P	resvd	AT	EUnet/AT
193.84	P	257	CS	EUnet/CS
193.85	P	191	CZ	EUnet/CZ
193.86	P	resvd	??	EUnet/CZ or EUnet/SK
193.87	P	138	SK	EUnet/SK and SANET
193.88	P	163	DK	EUnet/DK
193.89	P	70	DK	EUnet/DK
193.90	P	9	NO	EUnet/NO
193.91	P	1	PL	EUnet/PL
193.92	P	54	GR	EUnet/GR
193.93	P	19	LU	EUnet/LU
193.94	P	8	TN	EUnet/TN
193.95	P	3	TN	EUnet/TN
193.96	P	157	DE	EUnet/DE
193.97	P	205	DE	EUnet/DE
193.98	P	170	DE	EUnet/DE
193.99	P	121	DE	EUnet/DE
193.100	P	177	DE	EUnet/DE
193.101	P	133	DE	EUnet/DE
193.102-103	P	resvd	DE	EUnet/DE
193.104	P	136	FR	EUnet/FR
193.105	P	122	FR	EUnet/FR
193.106	P	101	FR	EUnet/FR
193.107	P	136	FR	EUnet/FR
193.108-111	P	resvd	FR	EUnet/FRq
193.112	P	171	GB	EUnet/GB
193.113	P	254	GB	EUnet/GB
193.114	P	206	GB	EUnet/GB
193.115	P	240	GB	EUnet/GB
193.116	P	188	GB	EUnet/GB
193.117	P	212	GB	EUnet/GB

Block	P/N	Assigned	Country	Registry
193.118	P	54	GB	EUnet/GB
193.119	P	resvd	GB	EUnet/GB
193.120	P	115	IE	EUnet/IE
193.121-123	P	resvd	IE	EUnet/IE
193.124	P	240	RU	EUnet/RU+xSU
193.125	P	160	RU	EUnet/RU+xSU
193.126	P	96	PT	EUnet/PT
193.127	P	16	ES	EUnet/ES
193.128	P	228	GB	PIPEX
193.129	P	194	GB	PIPEX
193.130	P	141	GB	PIPEX
193.131-133	P	resvd	GB	PIPEX
193.134	P	191	CH	SWITCH
193.135	P	resvd	CH	SWITCH
193.136	P	145	PT	RCCN
193.137	P	resvd	PT	RCCN
193.138	N	8	SI	SI general
193.139	P	254	FR	La Francaise des Jeux
193.140	N	126	TR	TR general
193.141	P	238	DE	XLINK
193.142	N	105	FI	FI non-provider
193.143	N	39	FI	FI non-provider
193.144	P	236	ES	RedIRIS
193.145	P	107	ES	RedIRIS
193.146-147	P	resvd	ES	RedIRIS
193.148	N	212	ES	ES non-provider
193.149-153	N	resvd	ES	ES non-provider
193.154	P	1	EU	GEC Marconi Group
193.155	P	resvd	EU	GEC Marconi Group
193.156	P	104	NO	UNINETT
193.157	P	87	NO	UNINETT
193.158-159	P	resvd	NO	UNINETT
193.160	N	152	NO	NO non-provider
193.161	N	145	NO	NO non-provider
193.162	N	91	DK	DK non-provider
193.163	N	resvd	DK	DK non-provider
193.164	N	3	PL	PL non-provider
193.165	N	resvd	PL	PL non-provider
193.166	P	56	FI	FUNET
193.167	P	resvd	FI	FUNET
193.168	N	52	LU	LU non-provider
193.169	P	0	GB	AT&T Istel
193.170	P	122	AT	ACOnet
193.171	P	resvd	AT	ACOnet
193.172	P	141	EU	EMPB/EuropaNET
193.173	P	resvd	EU	EMPB/EuropaNET

Block	P/N	Assigned	Country	Registry
193.174	P	237	DE	DFN
193.175	P	113	DE	DFN
193.176	N	251	NL	NL non-provider
193.177	N	157	NL	NL non-provider
193.178	N	95	IE	IE non-provider
193.179	N	resvd	IE	IE non-provider
193.180	N	239	SE	SE non-provider
193.181	N	244	SE	SE non-provider
193.182	N	255	SE	SE non-provider
193.183	N	255	SE	SE non-provider
193.184	P	243	FI	Helsinki Telephone Company
193.185	P	42	FI	Helsinki Telephone Company
193.186	N	253	AT	AT non-provider
193.187	N	254	AT	AT non-provider
193.188	N	51	??	Middle East
193.189	N	64	NG	Nigeria general
193.190	P	108	BE	BELNET
193.191	P	resvd	BE	BELNET
193.192	N	11	PT	PT non-provider
193.193	N	resvd	PT	PT non-provider
193.194	N	4	MA	MA general
193.195	P	194	GB	DEMON
193.196	P	270	DE	BelWue
193.197	P	7	DE	BelWue
193.198	N	43	HR	HR non-provider
193.199	N	68	FI	National Board of Education
193.200	N	2	BG	BG non-provider
193.201	N	resvd	BG	BG non-provider
193.202	N	208	EU	Pan European
193.203	N	4	YU	YU-SPL
193.204	P	227	IT	GARR
193.205	P	8	IT	GARR
193.206-207	P	resvd	IT	GARR
193.208	P	243	FI	DATANET
193.209	P	153	FI	DATANET
193.210	P	263	FI	DATANET
193.211	P	resvd	FI	DATANET
193.212	P	83	NO	TELEPOST
193.213-215	P	resvd	NO	TELEPOST
193.216	P	30	NO	DAXnet
193.217	P	resvd	NO	DAXnet
193.218	N	12	GR	GR non-provider
193.219	N	27	LT	LT non-provider
193.220	N	resvd	LT	LT non-provider
193.221	N	231	EU	Pan European
193.222	N	172	CH	CH non-provider

Block	P/N	Assigned	Country	Registry
193.223	N	191	CH	CH non-provider
193.224	N	85	HU	HU general
193.225	N	resvd	HU	HU general
193.226	N	34	RO	RO general
193.227	N	35	EG	EG general
193.228	P	0	GB	CNS
193.229-231	P	resvd	GB	CNS
193.232	N	134	RU	RU+xSU non-provider
193.233	N	31	RU	RU+xSU non-provider
193.234	N	254	SE	SE non-provider
193.235	N	221	SE	SE non-provider
193.236	N	55	PT	PT non-provider
193.237-239	N	resvd	PT	PT non-provider
193.240	P	0	GB	RACAL
193.241	N	resvd	SE	SE Defense
193.242	N	207	EU	Pan European
193.243	P	161	GB	ENERGIS
193.244	P	256	EU	Kredietbank
193.245	P	256	EU	Kredietbank
193.246-247	P	resvd	EU	Kredietbank
193.248	P	255	FR	France Telecom Internal
193.249	P	255	FR	France Telecom Internal
193.250	P	255	FR	France Telecom Internal
193.251	P	255	FR	France Telecom Internal
193.252	P	255	FR	France Telecom Internal
193.253	P	255	FR	France Telecom Internal
193.254	N	3	AL	AL general

Block	P/N	Assigned	Country	Registry
194.0	N	resvd	??	NCC Private Use
194.1	N	0	LV	LV General
194.2	P	72	FR	Oleane
194.3	P	resvd	FR	Oleane
194.4	N	211	FR	FR non-provider
194.5	N	resvd	FR	FR non-provider
194.6	P	resvd	UK	Mercury Communications
194.7	P	10	BE	INnet
194.8	N	8	LV	managed by NCC temp
194.9	P	0	UK	Fastnet Communications
194.10	P	24	EU	IBM IP network
194.11	N	193	CH	CH Non-provider block
194.12	N	192	EU	Pan European
194.13	N	201	NL	NL non-provider
194.14	N	242	SE	SE non provider
194.15	N	244	DE	DE non provider

Block	P/N	Assigned	Country	Registry
194.16	P	0	EU	UniSource Business Networks
194.17	P	0	EU	UniSource Business Networks
194.18	P	0	EU	UniSource Business Networks
194.19	P	0	EU	UniSource Business Networks
194.20	P	0	EU	UniSource Business Networks
194.21	P	0	EU	UniSource Business Networks
194.22	P	1	EU	UniSource Business Networks
194.23	P	0	EU	UniSource Business Networks
194.24-31	P	resvd	EU	UniSource Business Networks
194.32	N	241	UK	UK non-provider
194.33	N	196	UK	UK non-provider
194.34	N	256	UK	UK non-provider
194.35	N	50	UK	UK non-provider
194.36	P	7	UK	UK HEP community
194.37	N	239	AT	AT non provider
194.38	N	64	SE	SE non provider

Appendix D

Note on Statistics

The arrangement of categories including country codes in some statistical tables and figures have been standardised to make the data more easily comparable between different tables and editions of these reports. As a consequence some categories appear with no data and/or seemingly nonsensical combinations.

Domain Table

The domain table ususally found in Appendix D has been removed to avoid unneccessary duplication of information. A complete list of the ountry codes can be found in the ISO-3166 list which is available as:

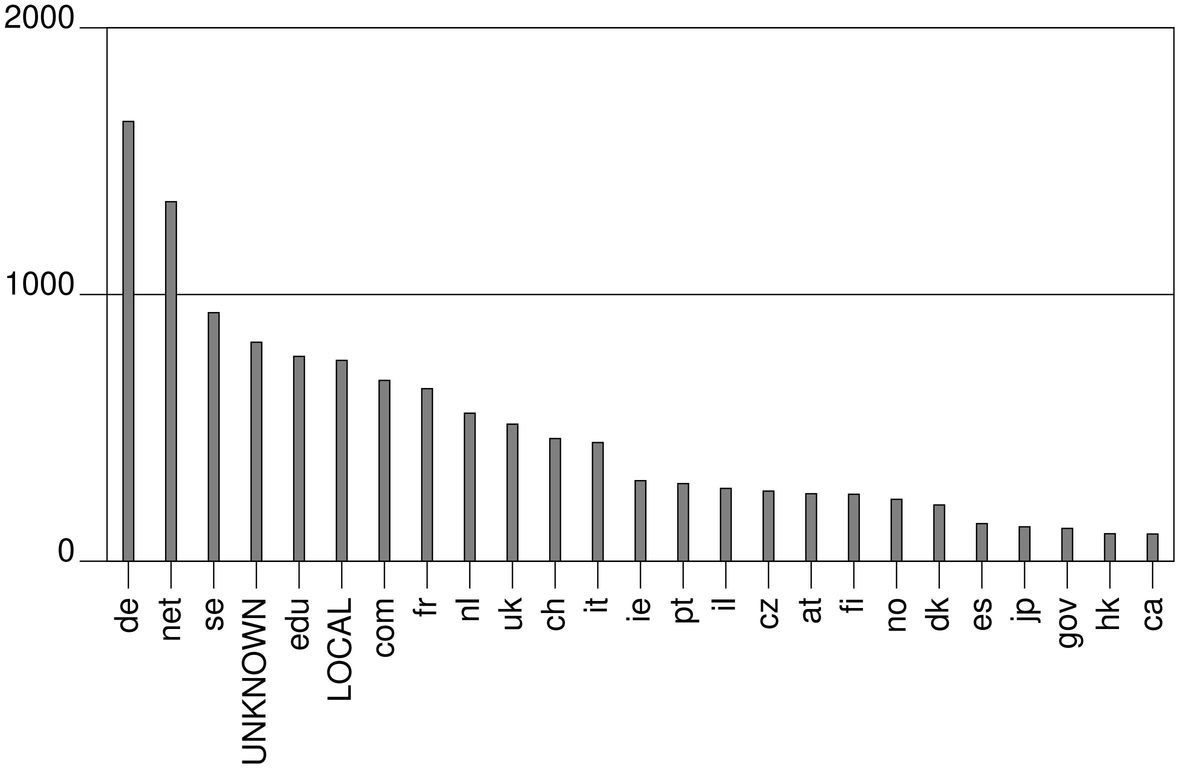
```
ftp:://ftp.ripe.net/ripe/iso3166-codes
```

The other domains are explained as shown in the table below

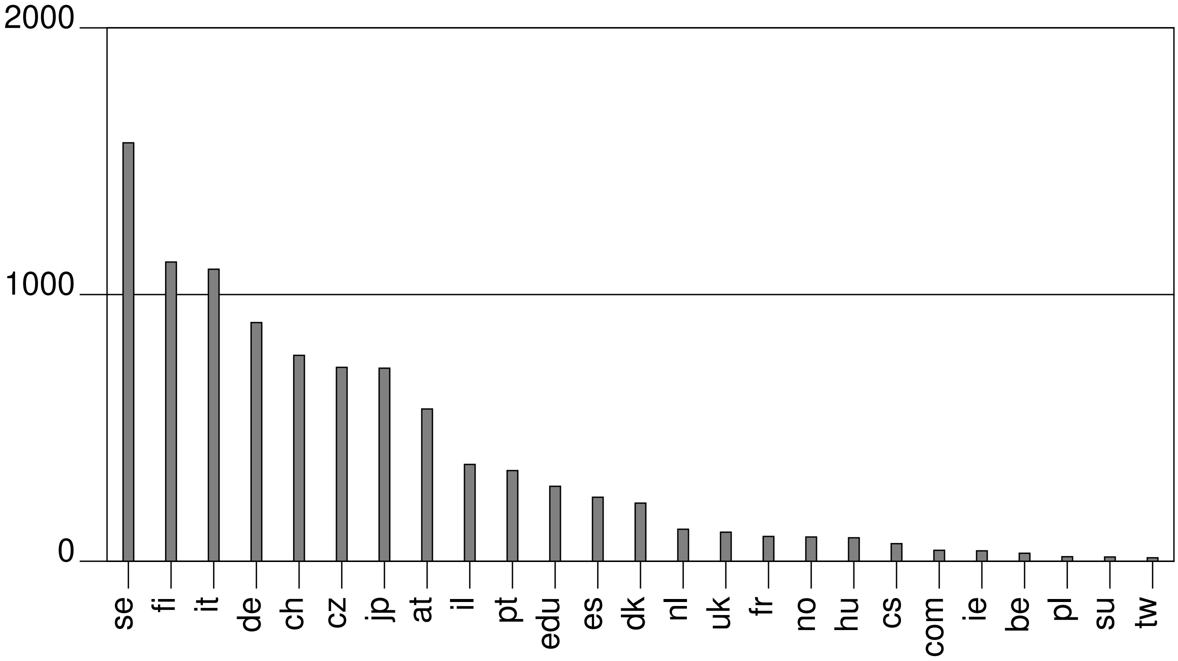
Domain	Specifying
IXI	EuropaNet (formerly IXI)
IIS	the Interactive Information Server
LOCAL	the NCC itself using IP
NCC-X25	the NCC itself using X.25
PSPDN	the Public Data Network
UNKNOWN	no mapping between IP address and domain name could be found
com	commercial organisations (mainly in the US)
edu	educational organisations (mainly in the US)
gov	US government organisations
mil	US military organisations
net	network providers and related organisa-tions
org	organisations (mainly in the US)

Appendix E

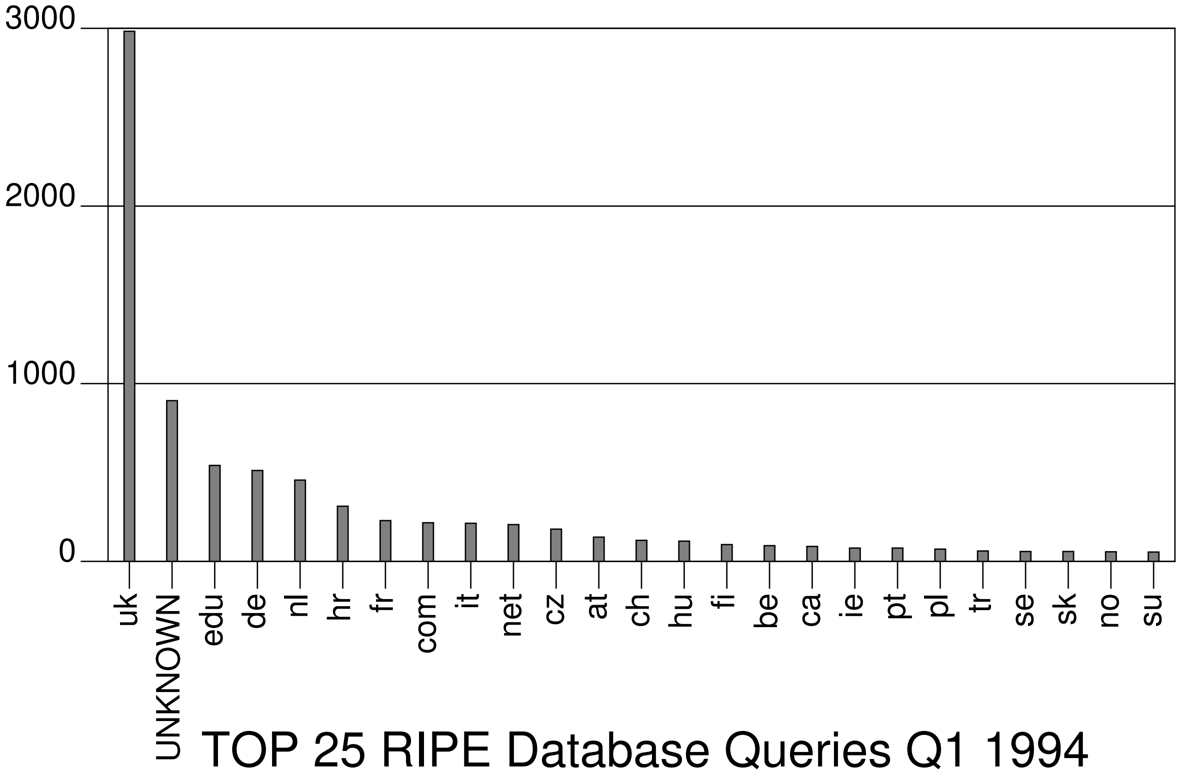
TOP 25 FTP Connections Q1 1994



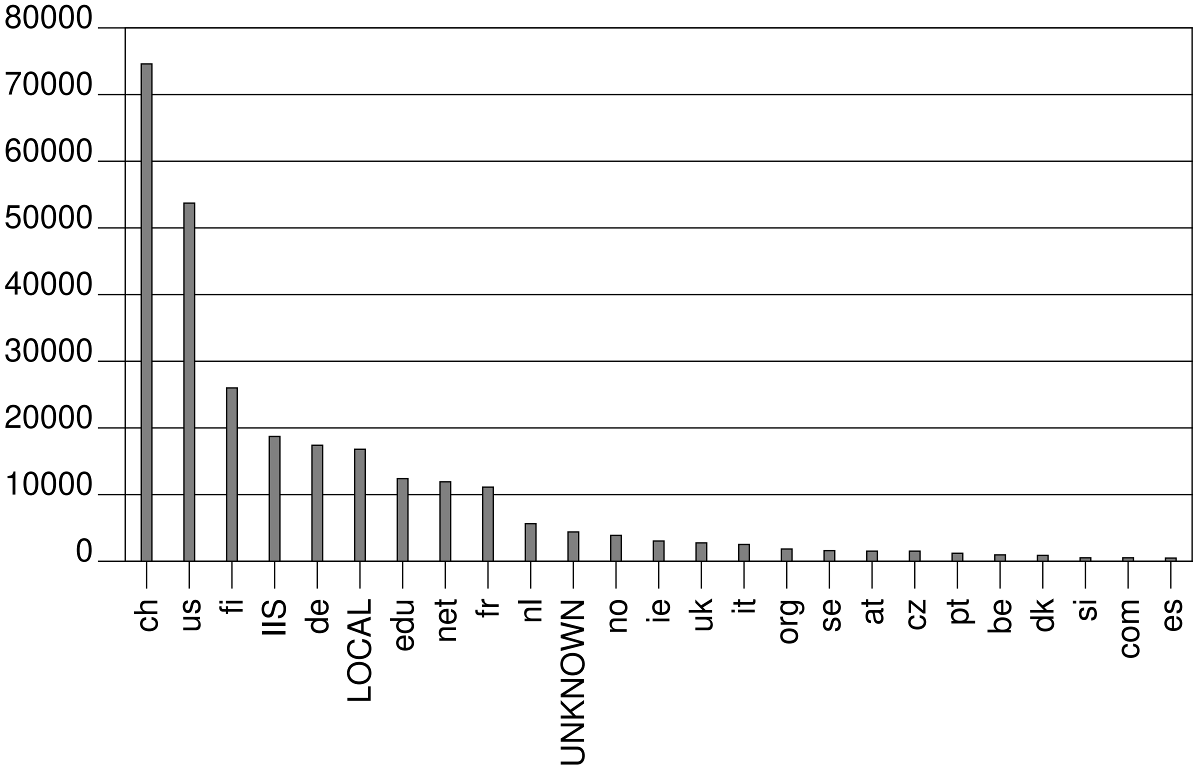
TOP 25 FTP Transfers Q1 1994 (Mbytes)



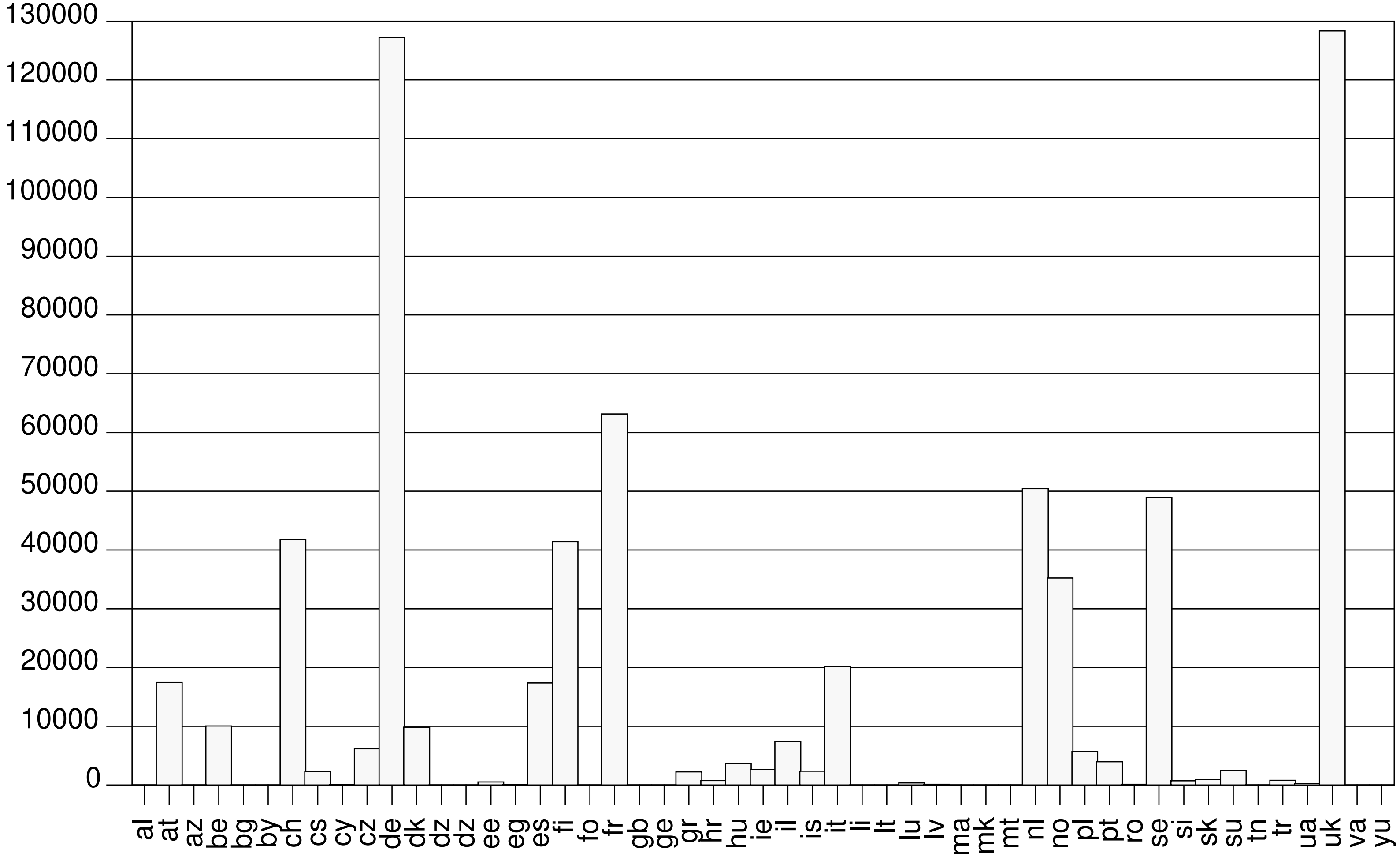
TOP 25 Interactive Information Server Usage Q1 1994



TOP 25 RIPE Database Queries Q1 1994



RIPE DNS Hostcount per Country, March 1994



Total: 655,164