

RIPE NCC Charging Scheme 2004 (New Articles of Association of 2003)

For 2004 the charging scheme has been revised to align it with membership developments and to improve the current algorithm for defining billing categories.

In the current charging scheme, the categories are determined solely on IPv4 allocations over time. In the Charging Scheme 2004, billing categories are based on IPv4, IPv6 and AS Number allocations over time giving a more fair reflection of the resources used from the RIPE NCC by each member.

The main changes in the Charging Scheme 2004 include the following:

- The Enterprise and Supernational categories have been removed
- 2 new billing categories have been added (Extra Small and Extra Large)
- Takeover fee for current members who take over other closed members or who take over allocations from other members
- Revised algorithm to determine the minimum category size for members
- More transparent determination of borders between categories

The membership fees for 2004 are fixed annual charges and are based on the billing category of a member. For the 2004 membership fees, and for a comparison with the membership fees since 2000, see the following table:

Annual fees	2000	2001	2002	2003	2004
Extra Small	-	-	-	-	2,000
Small	2,400	2,100	1,800	2,750	2,500
Medium	3,350	2,950	2,500	3,750	3,500
Large	4,400	3,900	3,400	5,250	5,000
Extra Large	-	-	-	-	6,750
Start-up fee	2,100	2,100	2,100	2,500	2,500
Takeover fee	-	-	-	-	1,250

Note: For all tables for the years 2000, 2001, 2002 and 2003 the figures for Small members include Enterprise members. Supernational members are not mentioned above because their fees are established on an individual basis based on the fee for Large members.

Membership development

Following the analysis of the growth so far in 2003, an increase in net membership is expected of approximately 6% over the year 2003. Taking into account expected member closures and a decline in the growth for 2004 of new members, a net growth of 4% is expected in 2004.

The membership figures for 2000, 2001, 2002 and the projections for the remainder of 2003 and the year 2004 are as follows:

Number of LIRs	2000	2001	2002	Projection 2003	Budget 2004
Extra Small	-	-	-	-	725
Small	1,978	2,536	2,503	2,727	1,993
Medium	459	441	614	612	725
Large	130	145	152	152	145
Extra Large	-	-	-	-	36
Total membership	2,567	3,122	3,269	3,491	3,624
Net Growth %	51%	22%	5%	6%	4%

Billing score algorithm

To determine the billing category for a member, a score is calculated on the basis of the resources allocated to the member over time. The scoring system is based on number resource allocations/assignments taking into account both IPv4 and IPv6 allocations as well as AS Number assignments. For the purpose of this scoring algorithm, an allocation of IPv4 /20 is deemed to be equivalent to one IPv6 /32 allocation or to an assignment of one AS Number. For an example of how scoring units are determined based on resource usage see the table below.

Prefix IPv4	Prefix IPv6	ASN	Scoring unit
IPv4 / 21	≙ IPv6 / 33		0.5
IPv4 / 20	≙ IPv6 / 32	1 ASN	1
IPv4 / 19	≙ IPv6 / 31	2 ASN	2
IPv4 / 18	≙ IPv6 / 30	4 ASN	4

Note: To establish scoring units based on larger or smaller resource usage, the same principles apply.

Using this matching system, the following algorithm is run to determine the total score per member:

$$S(\text{reg}) = \sum_{i=1}^N a_i * t_i$$

a_i = Scoring unit

t_i = Time function of allocation/assignment i (year of allocation – 1992)

N = Number of allocations/assignments

The total score per member is the sum of all allocation scores for that member with a time factor applied to give more weight to recent allocations. Thus, the relative weight of a given allocation decreases over time.

Starting from the lowest score, all members are ranked in order depending on their score. Members with the same scores get identical rankings. The billing categories are defined using the following cumulative boundaries:

- 20% of the members will make up the Extra Small billing category
- 75% of the members will make up the Extra Small and Small billing categories
- 95% of the members will make up the Medium billing category and all smaller billing categories
- 99% of the members will make up the Large billing category and all smaller billing categories
- The remaining members will make up the Extra Large billing category

Note: These boundaries cannot be fixed precisely as it may occur that a set of members with the same score fall across the boundary between billing categories. When this happens the boundary will be moved to the nearest point below, which means that the actual percentage will deviate slightly and the next billing category will start from that level.

Maximum percentage of total members per billing category

Billing Category	2000	2001	2002	July 2003	Cumulative % 2004
Extra Small	-	-	-	-	20 %
Small	77 %	81 %	77 %	78 %	75 %
Medium	18 %	14 %	19 %	18 %	95 %
Large	5 %	5 %	4 %	4 %	99 %
Extra large	-	-	-	-	100 %

The billing scores for members will be determined on 30 September 2003. The billing category and score range will be published and every individual member will be notified of their billing score and billing category by e-mail.

Change Matrix - expected changes of members between the billing categories

From:	To:	Extra Small	Small	Medium	Large	Extra Large
Small		26 %	66 %	8 %	0 %	0 %
Medium		0 %	23 %	72 %	5 %	0 %
Large		0 %	0 %	17 %	61 %	22 %
Enterprise		38 %	54 %	6 %	2 %	0 %