AFRINIC Fees Review Committee Report to the Board

9 May 2018 (updated 23 May 2018)

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1. Introduction

In January 2017, the AFRINIC Board created a Fees Review Committee with the following members:

- Mr Duncan Greaves (TENET, Academia)

- Mr Adesiyan Omololu (MainOne, Medium LIR)

- Mr Mohamed Hamdy (TEDATA, Extra Large LIR)

- Mr Viv Padayatchy (Council of Elders)

- Mr Krishna Seeburn (Board)

- Mr Alan Barrett (CEO)

- Mr Patrisse Deesse (Finance Director)

In September 2017, the AFRINIC Board appointed Mr Subramanian Moonesamy to the Fees Review Committee as Mr Krishna Seeburn was no longer a member of the Board.

The mandate of the Fees Review Committee was to:

- Consider all current fees and discounts;

- Consider all current and proposed resource allocation policies;

- Consider AFRINIC's long term financial sustainability;

- Recommend new fees for all categories of members, and all types of resources;

- Recommend discount structures to go with the new fees;

- Recommend guidelines for management of payments, penalties for late payment, discounts for early payment, and related issues.

This is the Fees Review Committee's report to the Board, presented on 9 May 2018, with minor updates on 23 May 2018.

2. Broad considerations and recommendations

In this section, we give broad recommendations, and discuss the reasons for them. In a subsequent section, we will give specific proposals based on these broad considerations.

2.1. Overall revenue

Most of AFRINIC's revenue is derived from membership fees ($3.95M in 2016, $4.31M in 2017), with a smaller amount from once-off allocation or assignment fees ($0.48M in 2016, $0.58M in 2017). Members who have both IPv4 and IPv6 number resources pay fees

calculated entirely from their IPv4 holdings, effectively receiving IPv6 resources free of charge.

The Fees Review Committee recommends that the new fee structure should provide a revenue increase of 3% to 5% compared to the existing fee structure. The fee schedule presented later in this document is expected to provide an increase of about 4% for annual fees, according to a simulation based on the number resource holdings of all AFRINIC members as of early 2017, and repeated as of early 2018.

2.2. Size categories and calculations

Under AFRINIC's existing fee structure, members are divided into size categories (Extra Small, Small, Medium, Large, Extra Large, etc.), based on the amount of their address space holdings. For example, any amount of IPv4 address space from /16 (inclusive) to /14 (exclusive) is classified as "Medium". Fees are based on size categories, in a step-wise fashion, so that all Medium sized LIR members pay the same fees, even though one may have almost four times as much address space as another.

Most RIRs historically used a similar system of size categories, differing in the thresholds for moving from one category to another, and in the fees for each category. More recently, APNIC has changed to calculating fees using a formula based on the exact size of each member's address space holdings, and the RIPE NCC has changed to a flat rate that's independent of member size.

The following diagram shows the annual membership fees for LIRs based only on IPv4 address space holdings, for all five RIRs. We see that three of the RIRs (including AFRINIC) have stepped fee structures, RIPE NCC has a flat fee structure, and APNIC has a formula-based fee that appears as a straight line on the logarithmic scale in the graph below.

IPv4 fees for LIRs (all RIRs)
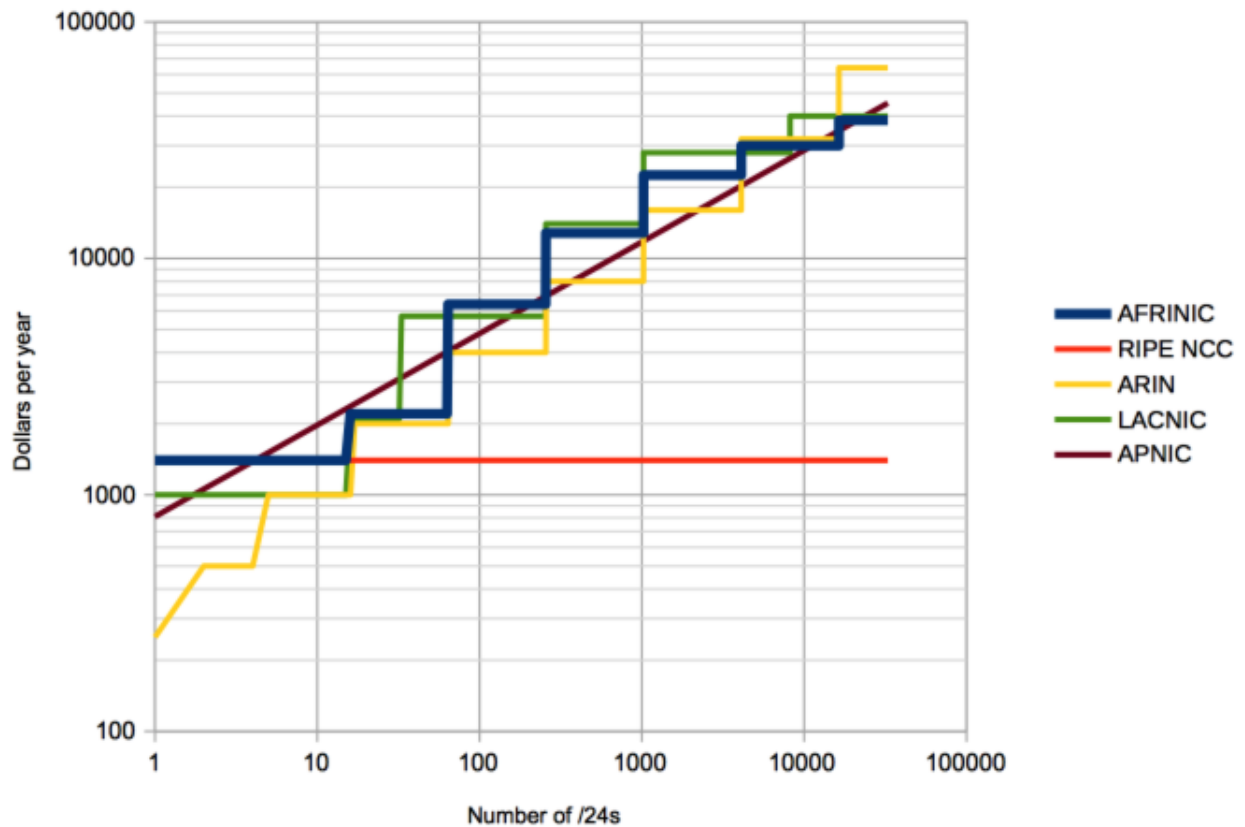
Annual fees per member generally increase as member size increases, and annual fees per IPv4 address per year generally decrease as member size increases, but the fees per address show spikes in all cases where the fees are based on size categories.

The following diagram shows how the annual fee per IPv4 address changes for AFRINIC LIR members. Each spike on the following diagram corresponds to a step on the previous diagram, and each descending line segment on the following diagram corresponds to a flat section on the previous diagram.

AFRINIC IPv4 fees for LIRs

Annual fees per IP address
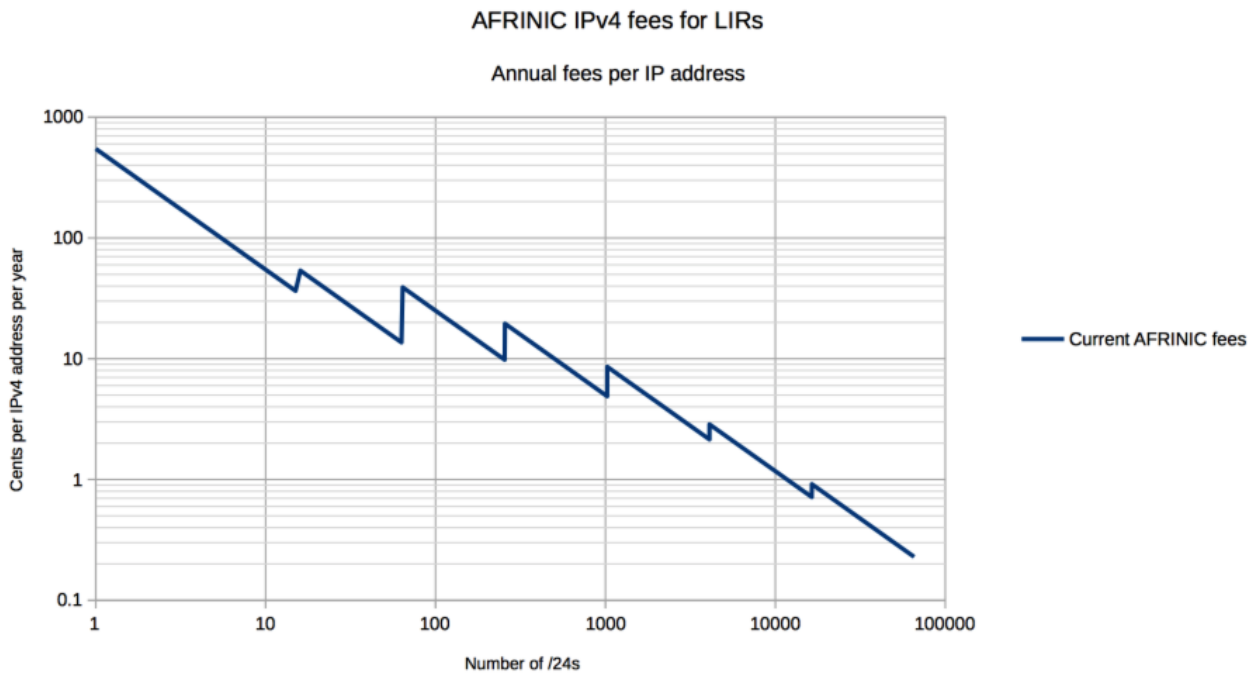
We propose that, in future, annual fees should be calculated from the exact amount of each member's IPv4, IPv6, and ASN holdings. This will ensure that small changes in a member's number resource holdings result in small changes to their fees, unlike the existing situation where a small change in number resource holdings may cause a move to a new category with a large change in fees.

We propose separate calculations for each category of number resources (IPv4, IPv6, and ASNs), and charging only the largest fee from the three calculations. In other words, we propose:

Annual fee = MAX(IPv4 fee, IPv6 fee, ASN fee)

For example, if the annual fee calculated from the amount of IPv4 address space is $2100, and the fee calculated from the amount of IPv6 address space is $2000, and the fee calculated from the number of ASNs is $1400, then the member's annual fee will be $2100 (being the largest result from the three separate calculations).

2.3. Associate members

There are very few associate members, and they are not entitled to vote. Annual fees for Associate Members are currently $300 for individuals, and $1000 to $5000 for organisations depending on size. We recommend that the new fees for Associate Members who are individuals should be similar to or less than fees for the smallest end user Resource Members ($200), and fees for Associate Members who are organisations should be similar to or less than fees for the smallest LIR Resource Members ($1400).

2.4. LIRs and End Users

LIRs are subjected to more stringent requirements than end users, including the need to register sub-allocations or assignments, and LIRs also pay higher fees than end users. Under the existing fee schedule which has been in place since 2008, end user fees for small amounts of IPv4 address space are about 1/7 as much as the LIR fees for the same amount of address space, while the ratio widens to 1/15 for larger amounts of address space. We believe that end users with large amounts of address space could easily afford higher fees, so we recommend that the ratio between fees paid by end users and fees paid by LIRs of a similar size could remain more or less constant, at about 1/7 or 1/5, for all sizes of members.

2.5. IPv4 and IPv6 fees

The available pool of IPv4 address space is rapidly being depleted. All RIRs, including AFRINIC, have either run out of available IPv4 address space, or have implemented policies to limit the supply of IPv4 address space. Because of this, AFRINIC's current practice of allocating IPv6 addresses free of charge is not sustainable.

We note that the median IPv4 address space holdings for an LIR (as of the beginning of 2017) is equivalent to 12 /24s (which is between a /20 and a /21), while the median IPv6 address space holdings for an LIR is a /32. We recommend that the fees for an LIR member with an IPv6 /32 should be similar to the fees for an LIR member with an IPv4 /20 or /21 (the median size), or similar to the fees for an IPv4 /24 (the smallest size).

We note that, each step in the existing fee structure corresponds to the amount of IPv4 space increasing by a multiple of 4, and the corresponding fee increase usually corresponds to a bit less than doubling. However, the progression $1400 – $2200 – $6400 as LIR member size increases from /22 – /20 – /18 is an anomaly, with the step from $1400 to $2200 being smaller than usual, and the step from $2200 to $6400 being larger than usual.

We note that the AFRINIC's largest IPv4 members currently have between a /10 and /9 of IPv4 space, while the largest IPv6 members currently have a /20 of IPv6 space. We recommend that the fees for that much IPv6 space, and the fees for that much IPv4 space, should be similar. We believe that such large LIRs can afford to pay fees that are higher than the existing $38400 for Extra Large IPv4 LIRs, so an increase in fees for such large members may be considered, and we recommend that the fee for a member holding a /10 of IPv4 space or a /20 of IPv6 space should be approximately $50000 per year.

In view of IPv4 exhaustion, we expect an increase in the numbers and the proportion of AFRINIC members with a /22 or less IPv4 address space. We caution that fees for members with such small IPv4 holdings must not be set too low, or future revenue will be impaired. We recommend retaining the existing minimum fee of $1400 per year for the smallest LIR members.

In summary, we recommend calculating fees using a formula similar in structure to the formula used by APNIC, so that there is a smooth relationship between annual fees and resource consumption, and so that each doubling in size results in a fee increment that is significantly smaller than doubling. We recommend that the formula's parameters should be chosen to give approximately the desired results for the smallest, median, and largest IPv4 LIR members ($1400 for the smallest, $2200 to $3200 for the median, and $50000 for the largest). We further recommend that end user fees should be approximately 1/5 to 1/7 of LIR fees for the same size organisation. However, we note that the desire for the new fees to be revenue-neutral may not be compatible with the desire to fit a formula through the three specified points, so some compromises may have to be made.

For IPv4, the proposed formula would be:

$$\text{IPv4 fee} = \text{BASE}^{\log2(\text{number of IPv4 addresses}) - 8} * \text{SCALE, with a minimum of MIN}$$

where the three parameters BASE, SCALE, and MIN are determined separately for LIRs and for end users.

For IPv6, the proposed formula would be:

$$\text{IPv6 fee} = \text{BASE}^{\log2(\text{number of IPv6 /48s}) - 14} * \text{SCALE, with a minimum of MIN}$$

where the three parameters would again be determined separately for LIRs and for end users.

We recommend setting the minimum annual fee for the smallest LIRs to $1400, with $200 for the smallest end users. This is the MIN parameter in the formula.

The BASE parameter in the formula directly specifies how much the fees increase when member size doubles. If we wished for fees to double when size was multiplied by 4, then we could set BASE=1.41 (the square root of 2). AFRINIC's existing fee structure usually has fees increasing by less then double as size is multiplied by 4, so we recommend that the BASE parameter should be smaller than 1.41.

The following table shows the parameters that could be used in the formula for IPv4-related fees for LIR members, and their effects on fees for members of different sizes. For each "BASE" value in the table, a simulation was used to find the corresponding "SCALE" value that would result in an overall revenue-neutral position (total revenue from IPv4 LIRs under the proposed new fee structure remains the same as the total revenue from IPv4 LIRs under the existing fee structure), based on a simulation using 2017 membership numbers.

Annual LIR fees versus amount of IPv4 address space resulting in an overall revenue-neutral position			/24	/22	/20	/18	/16	/14	/12	/10
Amount of IPv4 address space			/24	/22	/20	/18	/16	/14	/12	/10
Existing fees (2008 to 2017)			1400	1400	2200	6400	12800	22500	30000	38000
Possible flat rate fees			4300	4300	4300	4300	4300	4300	4300	4300
Fees calculated from formula	BASE	SCALE								
	1.2	1665	1665	2398	3453	4972	4972	10309	14845	21377
	1.3	973	1400	1644	2779	4969	7937	13414	22669	38311
	1.32	869	1400	1514	2638	4597	8010	13959	24317	42370
	1.33	820	1400	1450	2566	4539	8028	14201	25121	44436
	1.34	774	1400	1400	2496	4481	8046	14447	25942	46581
	1.35	727	1400	1400	2415	4401	8021	14617	26640	48552
	1.36	682	1400	1400	2333	4315	7982	14763	27306	50504
	1.38	600	1400	1400	2176	4144	7892	15029	28622	54509
	1.4	528	1400	1400	2028	3976	7792	15273	29934	58671

As can be seen in the table above, the choice of which pair of (BASE, SCALE) values to use is a tradeoff between higher or lower fees for small members, versus higher or lower fees for large members. We recommend that, for IPv4 LIR fees, an acceptable tradeoff is found somewhere between (BASE=1.32, SCALE=869) and (BASE=1.36, SCALE=682), and those rows are highlighted in green in the above table.

The following diagram shows AFRINIC's current fees for LIR members with IPv4 address space, and a few possible new fee structures based on some of the revenue-neutral formulas that were shown in the above table:

AFRINIC IPv4 fees for LIRs (possible future)
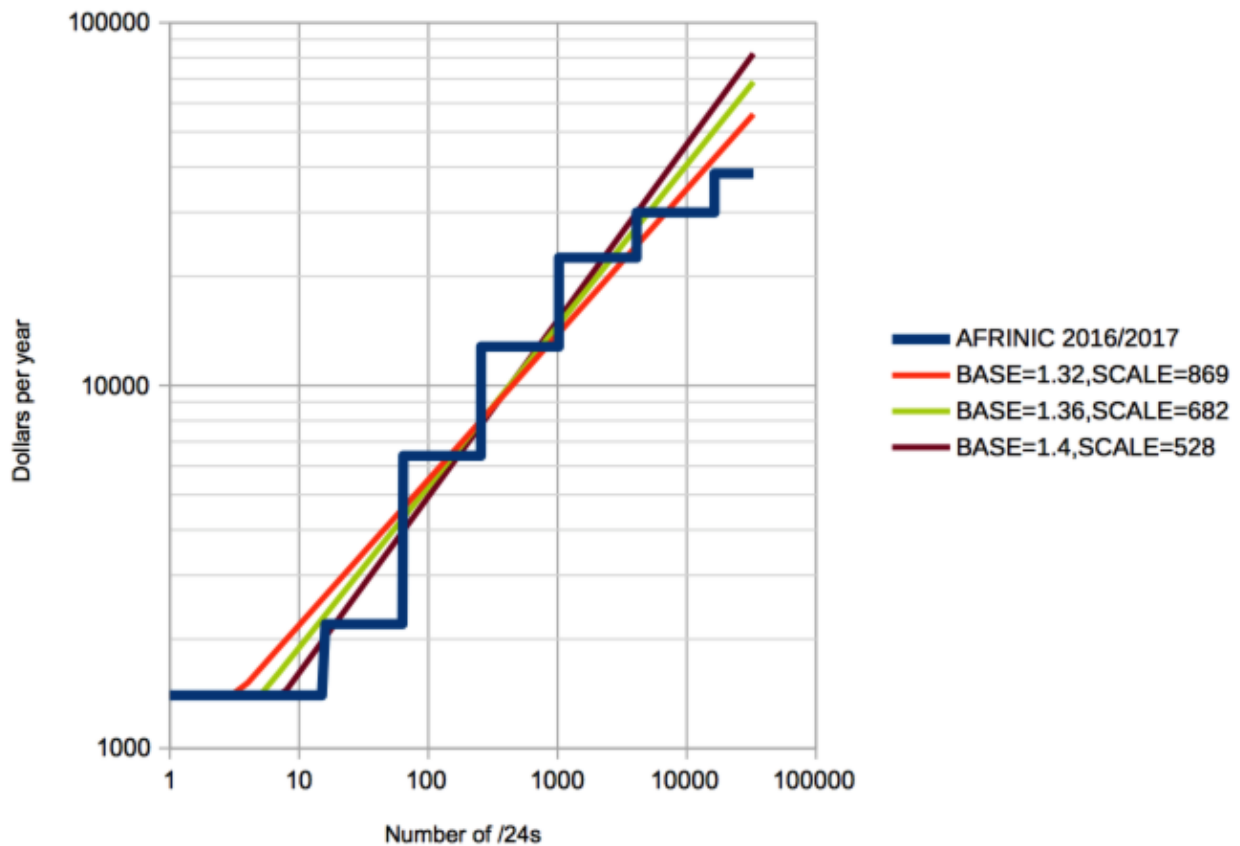
After suitable parameters for IPv4 LIR fees have been chosen, we recommend that IPv6 LIR fees should be set to follow the IPv4 LIR fees in some reasonable way. We earlier recommended that the fees for an LIR member with an IPv6 /32 should be similar to the fees for an LIR member with an IPv4 /20 or /21 (the median size), or similar to the fees for an IPv4 /24 (the smallest size). Suitable values for the IPv6 (BASE, SCALE) parameters can be calculated for both these scenarios, to match any desired values of IPv4 (BASE, SCALE) parameters.

The following table shows the result of calculating IPv6 (BASE, SCALE) parameters to match a few of the possible IPv4 parameters as described above. Due to rounding of the parameters, the values that are supposed to match are sometimes not exactly equal.

Choosing parameters for IPv6 formula to match fees from IPv4 formula.

The IPv6 formula is chosen so that:
(1) the largest IPv6 fee (/20) is the same as the largest IPv4 fee (/10), AND
(2) either (a) the median IPv6 fee (/32) is the same as the median IPv4 fee,
or (b) the smallest likely IPv6 fee (/32) is the same as the smallest likely IPv4 fee (/24).

	IPv4 LIR				IPv6 LIR	
	Smallest member, having IPv4 /24	Median member, having 12 IPv4 / 24s (between /20 and /21)	One of the largest members, having an IPv4 / 10 (16384 / 24s)		Small or Median member, having an IPv6 / 32 (65536 / 48s)	One of the largest members, having an IPv6 / 20 (268435456 /48s)
Existing fees (2016/2017) for comparison	$1400	$1400 (/21) $2200 (/20)	$38400		$6400	$22500

IPv4 Formula		IPv4 LIR fees calculated from formula			IPv6 Formula		IPv6 LIR fees calculated from formula	
BASE	SCALE				BASE	SCALE		
1.32	869	1400	2351	42370	1.328	794	1400	42130
					1.272	1452	2349	42149
1.33	820	1400	2279	44436	1.334	786	1400	44423
					1.281	1389	2279	44503
1.34	774	1400	2210	46581	1.340	779	1400	46882
					1.289	1330	2210	46494
1.35	727	1400	2132	48552	1.344	775	1400	48629
					1.297	1266	2130	48261
1.36	682	1400	2054	50504	1.348	770	1400	50367
					1.306	1204	2054	50563

After appropriate (BASE, SCALE) parameters are chosen for LIRs, for both IPv4 and IPv6, we recommend that the BASE parameters for end users should be made the same as the BASE parameters for LIRs, and the SCALE parameters should be chosen to be close to 1/5 to 1/7 of the SCALE parameters for LIRs.

2.6. ASN fees

Under the existing fee structure, the ASN-only members pay fees of only $50 per year. This is much less than the fee for any other membership category, and provides the same voting rights as for any other membership category.

We note that some multinational organisations concentrate all their IP address space in a single AFRINIC member (presumably to take advantage of the reduction in fees per IP address as member size increases), but place each ASN in a different AFRINIC member. We caution that fees for ASN-only members must not be too low, or future revenue may be impaired as more multinational organisations choose to hold their ASN resources through ASN-only members.

We recommend that the fees for a single ASN should be similar to the fees for the smallest amount of IPv4 or IPv6 space ($200 for end users who hold some IPv4 or IPv6 resources in addition to an ASN, or $1400 for LIRs). ASN-only members should have fees calculated as if they were LIRs, not end users.

We also recommend that fees for ASNs should increase as the number of ASNs increases, with the fee for 4 ASNs being double the fee for 1 ASN. This can be done using the same kind of formula as recommended earlier:

$$\text{ASN fee} = \text{BASE}^{\log 2(\text{number of ASNs})} * \text{SCALE, with a minimum of MIN}$$

with the parameter BASE=1.41 chosen so that fees double as the number of ASNs is multiplied by 4.

2.7. Legacy address space holders

It is desirable to encourage legacy resource holders to become AFRINIC members. For legacy resource holders who have no non-legacy resources but who wish to become AFRINIC resource members, we recommend the same fees as the smallest end users ($200 per year). For legacy resource holders who also have non-legacy resources, we recommend that their fees should be calculated only from the amount of non-legacy resources (effectively zero-rating the legacy resources).

2.8. Allocation or assignment fees

The amount of work required for AFRINIC to evaluate a resource request depends very much on the size of the request. We recommend that the once-off allocation or assignment fees should take this into account. We recommend low allocation or assignment fees for IPv4 requests up to /22, for IPv6 requests up to /32, and for ASN requests up to one ASN, with increases beyond those levels at least as fast as the size-based increases in annual membership fees.

2.9. Temporary allocations or assignments

There may be policies that explicitly deal with short-term allocations or assignment, for reasons such as conference or experiments. In the case of temporary allocations or assignments under such a policy, for a time period of 30 days or less, we recommend that there should be no annual fees, and that the once-off allocation or assignment fees should be affordable for non-profit events. In the case of temporary allocations or assignments for longer than 30 days but shorter than a year, we recommend that the annual fees should be pro-rated.

2.10. Transfer fees

We recognise that the types of transfers allowed by policy might change over time. We recommend that fees should be defined for all anticipated types of transfers, regardless of whether or not they are currently allowed by policy.

We recommend that transfer fees should be made up of an allocation or assignment fee, plus a transfer service fee. The allocation or assignment fee is compensation for the effort undertaken by AFRINIC to confirm compliance with policies, and the transfer service fee is compensation for the additional effort of performing the transfer.

We note that inter-RIR transfers are not currently permitted by policy, but we believe that the fee structure should cater for anticipated future changes in policy. We recommend that inter-RIR transfers should attract a higher fee than AFRINIC-to-AFRINIC transfers due to the additional effort required for AFRINIC to give effect to an inter-RIR transfer.

2.11. Mergers, acquisitions, and name changes

Where transfers are due to mergers, acquisitions, or name changes, and where there is no requirement for AFRINIC to evaluate the recipient organisation's compliance with policy, then there is no need for AFRINIC to charge a fee that is related to the size of the transfer. Accordingly, we recommend a small flat rate service fee, per affected block of number resources, independent of the size of the blocks involved.

When there is a requirement for AFRINIC to evaluate continuing compliance with policy, then this flat rate service fee should not apply, and the regular transfer fee should apply.

2.12. Discounts

AFRINIC currently offers a 5% discount for early settlement, where annual membership fees are paid in full before the due date. We recommend that this should be retained, but clarified that the relevant date is the membership renewal date (e.g. 1 January), not the invoice due date (e.g. 31 January).

IPv6-only members currently receive discounts for the first three years of membership. We recommend that this should be stopped.

According to the existing fee schedule, academic and research institutions receive a 50% discount, provided that the resources will be used for non-profit academic or research activities. In addition, according to Board resolution 200705.37, the CEO may approve a 50% discount to universities that are accredited by the Association of African Universities (AAU). We recommend a 50% discount for non-profit educational and research organisations, and a 25% discount for for-profit organisations, provided that the resources will be used for academic or research activities.

Critical infrastructure providers receive a 100% discount. We recommend that the 100% discount should be retained for small providers, but reduced for large providers.

Non-profit or charitable organisations in general receive no discount. We recommend that this should be revised to give a discount to non-profit organisations who have a small budget.

We recommend that the Board should have the discretion to approve discounts up to 100%, and the CEO should have the discretion to approve discounts up to 50%.

3. Proposed new fees

In this section, we propose new fees for all categories of members and all types of resources.

3.1. Annual membership fees for Associate Members

Associate members who are individuals: USD 200 per year

Associate members who are organisations: USD 1400 per year.

3.2. Annual membership fees for Resource Members

Resource members will be charged an annual membership fee based on the amount of number resources held by the organisation at the time the annual invoice is issued. For each of the three types of number resources (IPv4, IPv6, and ASNs), a fee will be calculated according to the formulas below, with all formula results being rounded to the nearest dollar. The Resource Member will be liable for whichever of those three fees is the largest.

Annual fee = MAX(IPv4 fee, IPv6 fee, ASN fee)

A member who joins during the year will pay a pro-rated annual membership fee for the first partial year, if any (pro-rated by month or part thereof). Subsequent annual fees will be calculated based on the number resource holdings at the time that the invoice is raised. Changes in number resource holdings during a year will not result in pro-rated changes to the annual membership fees for the current year, but will result in revised fees for the next year.

3.2.1. IPv4 annual membership fees

IPv4 annual membership fees will be calculated according to this formula:

IPv4 fee = BASE$^{log2(number\ of\ IPv4\ addresses)\ -\ 8}$ * SCALE, with a minimum of MIN

For LIRs: BASE=1.36, SCALE=$710, MIN=$1400

For end users: BASE=1.36, SCALE=$125, MIN=$200

Examples:

Total amount of IPv4 space	Annual fee for LIR	Annual fee for end user
/24	$1400	$200
/23 (2 * /24)	$1400	$200
/22 (4 * /24)	$1400	$231
/21 (8 * /24)	$1786	$314
/20 (16 * /24)	$2429	$428
/18 (64 * /24)	$4493	$791
/16 (256 * /24)	$8309	$1463
/14 (1024 * /24)	$15369	$2706
/12 (4096 * /24)	$28427	$5005
/10 (16384 * /24)	$52578	$9257

3.2.2. IPv6 annual membership fees

IPv6 annual membership fees will be calculated according to this formula:

IPv6 fee = BASE$^{log2(number\ of\ IPv6\ /48s)\ -\ 14}$ * SCALE, with a minimum of MIN

For LIRs: BASE=1.348, SCALE=$800, MIN=$1400

For end users: BASE=1.348, SCALE=$140, MIN=$200

Examples:

Total amount of IPv6 space	Annual fee for LIR	Annual fee for end user
/48	$1400	$200
/40 (256 * /48)	$1400	$200
/32 (65536 * /48)	$1454	$254
/31 (131072 * /48)	$1960	$343
/28 (1048576 * /48)	$4800	$840
/24 (16777216 * /48)	$15849	$2773
/20 (268435456 * /48)	$52330	$9158

3.2.3. ASN annual membership fees

ASN annual membership fees will be calculated according to this formula:

$$\text{ASN fee} = \text{BASE}^{\log2(\text{number of ASNs})} * \text{SCALE, with a minimum of MIN}$$

For LIRs: BASE=1.41, SCALE=$1400, MIN=$1400

For end users: BASE=1.41, SCALE=$200, MIN=$200

Examples:

Total number of ASNs	Annual fee for LIR (or for ASN-only)	Annual fee for end user
1	$1400	$200
2	$1974	$282
3	$2413	$345
4	$2783	$398
8	$3925	$561
16	$5534	$791

3.3. Allocation or assignment fees

Fees will be charged for each allocation or assignment event, and will be payable at the time of the allocation or assignment. The fee will be calculated from the size of the allocation or assignment.

If resources of multiple types are allocated or assigned in a single transaction (for example, if a new member receives IPv4 addresses, IPv6 addresses, and an ASN, all at the same time), then fees shall be calculated for each resource type, and the member shall be liable for the largest of those fees, plus 50% of the second largest of those fees, with no charge for the third resource type.

$$\text{Allocation or assignment fee} = \text{MAX(IPv4 fee, IPv6 fee, ASN fee)}$$
$$+ 0.5 * (\text{Second highest of(IPv4 fee, IPv6 fee, ASN fee)})$$

3.3.1. IPv4 allocation or assignment fee

IPv4 allocation or assignment fees will be calculated according to this formula:

$$\text{IPv4 fee} = \text{BASE}^{\log2(\text{number of IPv4 addresses}) - 8} * \text{SCALE, with a minimum of MIN}$$

For LIRs: BASE=1.33, SCALE=$600, MIN=$1000

For end users: BASE=1.33, SCALE=$150, MIN=$150

Examples:

IPv4 space allocated or assigned in a single event	Allocation or assignment fee for LIR	Allocation or assignment fee for end user
/24	$1000	$150
/23 (2 * /24)	$1000	$200
/22 (4 * /24)	$1061	$265
/21 (8 * /24)	$1412	$353
/20 (16 * /24)	$1877	$469
/18 (64 * /24)	$3321	$830
/16 (256 * /24)	$5874	$1469
/14 (1024 * /24)	$10391	$2598
/12 (4096 * /24)	$18381	$4595
/10 (16384 * /24)	$32514	$8129

3.3.2. IPv6 allocation or assignment fee

IPv6 allocation or assignment fees will be calculated according to this formula:

$$\text{IPv6 fee} = \text{BASE}^{\log2(\text{number of IPv6 /48s}) - 14} * \text{SCALE, with a minimum of MIN}$$

For LIRs: BASE=1.28, SCALE=$800, MIN=$1000

For end users: BASE=1.28, SCALE=$150, MIN=$150

Examples:

IPv6 space allocated or assigned in a single event	Allocation or assignment fee for LIR	Allocation or assignment fee for end user
/48	$1000	$150
/40 (256 * /48)	$1000	$150
/32 (65536 * /48)	$1311	$246
/31 (131072 * /48)	$1678	$315
/28 (1048576 * /48)	$3518	$660
/24 (16777216 * /48)	$9445	$1771
/20 (268435456 * /48)	$25353	$4754

3.3.3. ASN allocation or assignment fee

ASN allocation or assignment fees will be calculated according to this formula:

$$\text{ASN fee} = \text{BASE}^{\log2(\text{number of ASNs})} * \text{SCALE, with a minimum of MIN}$$

For LIRs: BASE=1.41, SCALE=$800, MIN=$1000

For end users: BASE=1.41, SCALE=$200, MIN=$200

Examples:

Number of ASNs allocated or assigned in a single event	Allocation or assignment fee for LIR (or for ASN-only)	Allocation or assignment fee for end user
1	$1000	$200
2	$1128	$282
3	$1379	$345
4	$1590	$398
8	$2243	$561
16	$3162	$791

3.4. Temporary allocations or assignments

Where temporary allocations or assignments are made (in terms of a policy that explicitly deals with temporary allocations or assignments), and where the resources will be in use for 30 days or less, no fees will be charged for the temporary allocation or assignment. However, the recipient must be an AFRINIC member, and will be liable for fees based on any other resources held by the member, or (if there are no other resources held by the member) a fee equal to that paid by the smallest resource members.

Where temporary allocations or assignments will remain in use longer then 40 days, but less than one year, a service fee of USD 500 will be charged for each allocation or assignment.

Temporary allocations or assignments that are planned to remain in use, or that actually remain in use, for longer than one year will be treated like non-temporary allocations or assignments for the purposes of calculating fees or billing. If the plan was for less than one year, but in actuality the use is for longer than one year, then any difference in fees will be due immediately.

3.5. Transfer fees

3.5.1. Mergers, acquisitions, and name changes

Where transfers are due to mergers, acquisitions, or name changes, and where there is no requirement for AFRINIC to evaluate the recipient organisation's compliance with policy: a transfer service fee will be charged at the rate of USD 500 for LIRs, or USD 200 for end users, per block of IPv4 or IPv6 resources (aligned to a bit boundary), and for each ASN or block of contiguous ASNs (with no alignment requirement for blocks of ASNs).

Where transfers are due to mergers, acquisitions, or name changes, and where there is a requirement for AFRINIC to evaluate the recipient organisation's compliance with policy: The fees under "Other transfers" will apply.

3.5.2. Other transfers

We recognise that some of the types of transfers contemplated in this section are not currently allowed by policy (as of early 2018). Setting fees for types of transfers that are not currently allowed is not a mistake; it is intended that the fees will apply only after suitable policies are approved, if ever.

Each transfer will attract both an allocation or assignment fee, and a transfer service fee, as described in more detail below.

The allocation or assignment fee for transfers will be the same as the allocation or assignment fees for resources allocated or assigned directly by AFRINIC, and will be payable by the recipient of the transfer. However, where the recipient is outside the AFRINIC region and is or will become a member of a different RIR, then AFRINIC will not impose this fee; we expect the recipient RIR to impose their own fees, if any.

The transfer service fee for AFRINIC-to-AFRINIC transfers will be USD 1000 per affected address block. This will be payable by the recipient organisation, so that there will be no need for AFRINIC to invoice the source organisation.

The transfer service fee for inter-RIR transfers (where only one of the source or recipient is an AFRINIC member, and the other is based outside the AFRINIC region) will be USD 2000 per affected address block. This will be payable by whichever of the source or recipient is based in the AFRINIC region.

3.6. Discounts

Discounts may apply in certain cases. Discounts may not be combined with other discounts, except where specifically mentioned below.

3.6.1. Early settlement discount

An early-settlement discount of 5% of the annual membership fee will be allowed when the annual membership fee is settled in full before the membership renewal date. This discount may apply to already-discounted fees.

3.6.2. Academic and research discount

Non-profit educational or research organisations (of all levels, including pre-schools, primary and secondary schools, universities and colleges) will qualify for a 50% discount on all fees, provided the number resources are used only for education or research.

For-profit educational or research organisations will qualify for a 25% discount, provided the number resources are used only for education or research.

3.6.3. Critical infrastructure discount

Small amounts of number resources used directly in the provision of critical infrastructure will qualify for a 100% discount as shown below. For the purposes of this discount, a "small amount" is defined as a /22 (4 /24s) or less IPv4 space, a /40 (256 /48s) or less IPv6 space, and two ASNs, for each organisation operating any critical infrastructure.

For the purposes of this discount, critical infrastructure is as defined by any policy that specifically deals with critical infrastructure.

If an organisation uses more resources than would qualify as a small amount, then their fees will be calculated after subtracting the first "small amount" from their total resource holdings. For example, a critical infrastructure provider who holds 8 IPv4 /24s will be charged fees as if they held only 4 IPv4 /24s, because the first 4 /24s will qualify for this discount.

3.6.4. Non-profit discount

A non-profit or charitable organisation with an annual budget of USD 750,000 or less will qualify for a 50% discount. A non-profit or charitable organisation with an annual budget of more than USD 750,000 but not more than USD 1,500,000 will qualify for a 25% discount.

3.6.5. Discretionary discount

The CEO will have the discretion to approve discounts up to 50%. The Board will have the discretion to approve discounts up to 100%. These discounts may be combined with other discounts. Discounts that are approved at the CEO's or Board's discretion may also be revoked or reduced at the CEO's or Board's discretion.

4. Payment management recommendations

We recommend that invoices for annual membership fees should be issued 2 months before the due date (e.g. invoice on 1 November for fees that are due on 1 January).

We recommend retaining the existing 5% discount for early settlement (e.g. settlement on of before 31 December for fees that are due on 1 January).

We are in agreement with the Board's proposal (sent to the members-discuss mailing list on 1 June 2017) that fees paid up to 60 days late should not incur a penalty; that fees paid 60 to 89 days late should incur a 5% penalty; that fees paid 90 to 119 days late should incur a 10% penalty; and that fees paid 120 days late (or more) should incur a 15% penalty.

We also agree with the Board's suggestion that invoices for penalty fees should be timed in such a way that they do not fall due before 30 June, as this will allow members who have paid their annual fees to be in good standing at the time of the AGMM (which is

typically in May or June), even if they have not yet paid any penalties on the current year's fees.