

Epik IP Allocation Policy

Overview

Epik efficiently allocates IP addresses to customers based primarily on ARIN and RIPE guidelines, and also RFC2050 . In cooperation with its customers, Epik will make the most efficient use of allocated network space so that it can continue to route traffic and obtain new network address space on an as-needed basis.

IP

redesign

Epik encourages and supports customers who require global address space for their networks, however, it will examine all requests for address space with care to validate the use of the numbers that are allocated. In certain limited situations, Epik may request a customer to redesign its network before routing new address space to the customer, if the existing range of addresses is sufficient for customer requirements. Epik reserves the right to deny new address space in the event a customer unreasonably refuses a valid network re-design request.

IP

Epik must answer to ARIN/RIPE for their allocations and demonstrate efficient utilization. As a result, customers are required to provide the same information to Epik that Epik provides to ARIN. Customers demonstrate efficient usage of IP addresses by filling out an IP Questionnaire to document their needs. This document shows, in detail, their plan for using IP addresses over the next three to six months.

ARIN/RIPE and IPS

ARIN is the American Registry for Internet Numbers and RIPE is the Reseaux IP Europeens. They are tasked with stewardship of allocations of IP addresses to ISPs in the North American region and European region as well as the Middle East, Central Asia, and northern Africa.

Every

existing IP

ISP has to demonstrate to either ARIN or RIPE that they have efficiently utilized their addresses in order to get additional addresses. Efficient utilization is shown by collecting information from each customer on how they are implementing their network. This is where Epik's IP Questionnaire (IPQ) comes into play.

ARIN's rules read, in part:

Allocations are based on need, not solely on a predicted customer base.

requirement,

on

80% of

space

and

Allocations are based on an ISP's utilization history, projected three-month and other information ARIN deems necessary. Therefore, initial allocations may be relatively small. Likewise, justification for subsequent address blocks will be based on utilization verification supplied to ARIN in the form of reassignment information. The most important factor in evaluating requests for additional address space is the current utilization of address space by the requesting ISP as well as its downstream customers. ISPs must have efficiently utilized all previous allocations, and at least 80% of their most recent allocation in order to receive additional space. This includes all space reassigned to their customers. Therefore, it is important that ISPs require their downstream customers to follow the efficient utilization practices described in this and other ARIN guidelines.

Please refer to their website for further information.

RIPE has very similar policies to those of ARIN. Concerning allocation to your downstream customers, RIPE states:

used

not

but

It is recommended that LIRs [ISPs, in effect] make use of a slow-start mechanism when making a sub-allocation for a downstream network operator. There are two main advantages to this: the LIR can ensure that the address space it sub-allocates is used efficiently; also the LIR can determine the ability of the downstream organisation to operate within the policies set by the RIPE community. The current rate of consumption of the remaining unassigned IPv4 address space does not permit the assignment of addresses for administrative ease. Examples of this include, but are not limited to, ease of billing administration and network management.

Customer Equipment Guidelines

Retail/End-User [FastE or GigE]

- Customers classed as "Retail" are End-Users. A typical example would be a law firm with offices in an Epik building.
- Lines sold as "Retail" are only to be used for internet access for company employees and for company business. Web hosting your own corporate sites is OK, web hosting those of someone else is not.
- Retail customers may use a Switch (or other Layer-2 Device) to connect to Epik if they require a /25 (128 IPs) or less.
- If more than a /25 is required, a Router (or other Layer-3 Device) is required.
- Reselling IP services on a Retail line is grounds for Cancellation.

General Conditions for Allocations

- Routers or other Layer-3 Devices will connect to Epik via a /30. If a second router/firewall is needed for hardware level redundancy on the customer end for a FastE or GigE line, a /29 will be permitted, with the allocated block size routed to the second IP address in the /29. No other block sizes are permitted on the interface for resellers.
- Customers must use at least 50% of their initial allocation immediately (defined as sameday, with a one week window for unexpected equipment issues or unusual circumstances). A utilization rate of less than 50% indicates the customers' immediate needs are for a smaller block. For example, if a /26 (62 useable IPs) is assigned, Epik should be able to ping (or otherwise verify usage) 31 of them one week after assigning them.
- Customers must use 80% of the block within three months. If the 80% mark is not reached, Epik reserves the right to withdraw the block and reassign a more appropriate size.
- Customers must use 80% of the last-assigned block and 100% of all previous blocks before Epik will issue additional IPs. The existing blocks of IPs must respond to ping (or be otherwise documentable), and existing hosts must have forward and reverse DNS. Optimally, customers will receive a block adequate for their documented needs for the next 90 days, use it completely, and come back for more, once a quarter.
- Customer blocks are sub-delegated to customers via RWHOIS. Epik's RWHOIS server is rwhois.Epikip.net. Epik does not use SWIP, except in certain limited cases for legacy blocks transferred via an acquisition. All new allocations are in RWHOIS.
- ARIN now permits allocation of a /24 when BGP multi-homing is required. Only one /24 is allowed to be assigned from any one ISP and it can them be announced to all ISPs to give you full redundancy. If your other ISP has not assigned a /24 to you for BGP, you may obtain one from Epik. See ARIN Policy 2001-2

Detailed Documentation Requirements

For IP Requests of a /21 (2048 IPs) or larger, please contact your Service rep (for your initial allocation) or Customer Service (for additional IPs). Requests of this size are handled on a case-by case basis, and will require extensive documentation, including network engineering plans. In many cases, customers requiring larger blocks of IPs have already met the at-times seemingly convoluted ARIN requirements necessary to get their own block. We can discuss your specific circumstances and offer guidance in this situation. Obtaining your own block allows you to never worry about renumbering all of your machines again, and frees you from being directly dependant on any single ISP for IPs.

Update! 05/17/04 ARIN Policy 2002-3 has finally passed. If you are a multi-homed customer and you have utilized a /22s worth of IP addresses, you can obtain a block directly from ARIN. Previously, you had to utilize a /21.

Network Needs

For IPs to be used for your network, Epik requires customers to list [IPQ question 9] subnets and the numbers of servers/hosts in them for immediate, 3-month, and 6-month requirements. You should also include aggregate blocks that you will be using for customers, but don't detail individual customers or hosts here - we don't expect you to know at any given time what every single customer has going on, provided you gave them an appropriately sized block following the

current practice of slow-start and 90-day models.

In most circumstances, Epik will allocate IPs based on 3-month requirements. Epik may also, at its sole discretion, use the 6-month projections to set aside the next contiguous block for the customer, if it believes there is a high probability of accuracy in the customer projections. Such reservation is not a guarantee that the customer will receive that specific block. If the customer utilizes IPs at the indicated rate, it should not be a problem, but a slower than predicted utilization will likely result in the block being allocated to another customer who can use it immediately.

NAT, Firewalls, and Private IPs

If a proxy firewall or other means that prevents Internet traffic from bidirectionally connecting to internal LAN hosts will be used, the machines behind the "filter" are considered hosts that do not require globally routable IP addresses and do not need to be included in the map. A good example of this would be customer internal PCs and printers - these do not require and for security reasons should not have globally routed IP addresses. In this instance, the customer should use an RFC-specified Private Network (see RFC-1918) for internal networking. Epik will assign an appropriately sized net block according to the customer's needs for publicly visible servers in the firewall DMZ (email, www, FTP, etc.).

If you need to use NAT (1:1 IP mapping of internal to external addresses) instead of PAT (1 external IP used by many internal ones), please explain why in IPQ Question 10. There are several applications that don't support PAT properly, if you have run into this simply explain the issue.

Downstream Customer IP Needs

For IPs to be used for your downstream customer networks, Epik requires its customers to list [IPQ question 11] subnets and the associated downstream customer names. This is analogous to the ARIN requirement of having customers show up in SWIP/RWHOIS, but we have elected to use a simpler requirement due to the typically smaller size of customers obtaining IPs.

No specific details are required as to customer host counts in the IPQ itself; it is assumed that you have enacted similar verification processes on and have policies in place to ensure correct block selection for your downstream customers. If not, future allocations will be affected. Before issuing space, Epik reserves the right to ask for documentation provided by your customer to justify assignment of a particular block to them. This is done to spot-check your own internal allocation policies and provide guidance when needed, as you work your way up to receiving your own allocation from ARIN/RIPE.

Web-hosting Services

If you will be doing IP-based web-hosting, ARIN requires you provide Epik with what they term your "technical justification" for doing so, as well as a list of domains and URLs [IPQ question 12]. Name-based web-hosting is the preferred way (whenever possible) as it utilizes significantly fewer addresses, but for a variety of reasons it is not always possible. If you can't use it, please simply explain why. URLs provided as documentation must resolve with both forward and reverse DNS.