

Planning Your IPv6 Network

How to navigate the process of requesting IPv6 address space from ARIN and transitioning from IPv4

How do IPv4 and IPv6 compare?

IPv4	vs.	IPv6
/32 (single IPv4 address)	Counting Unit	/64 (subnet with a near infinite number of IPv6 addresses)
/24 (contains 256 IPv4 Addresses)	Smallest Routable Block	/48 (contains 65,536 /64 subnets)
/24	Typical Initial Block Size	/32 (contains 65,536 /48 blocks to assign to customers/sites)

Transitioning from IPv4 to IPv6

Start the Process Today:

Fill out the form in ARIN Online. One of our analysts will guide you through the process and answer any questions you have. Pay any required fees, sign a Registration Services Agreement (RSA), and get your IPv6 block! After receiving your IPv6 block, request an IPv4 /24 for transition support. Permitted uses include dual-stacking nameservers and IPv6/IPv4 translation pools. If your pools are oversubscribed, you may request an additional /24 as frequently as every six months until the pool is large enough.



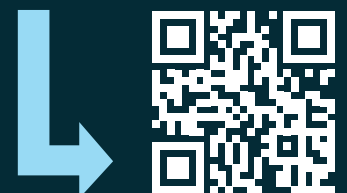
Resources for IPv6 Adoption

There are many resources available through ARIN to guide you through the process, including:

- ➔ Recorded webinars
- ➔ Events
- ➔ Business case blog series
- ➔ How-to videos
- ➔ Case studies

Ready to get started?

Scan the QR code or visit arin.net/ipv6 today.





Note:

ARIN has 16,384 IPv4 /24s reserved to help IPv6 networks talk to IPv4 networks, and 90% of these are still available.

Number Resource Policy Manual (NRPM) 4.10

Am I an ISP or an end user?

When requesting IPv6 space from ARIN, you'll need to choose to request as an Internet Service Provider (ISP) or as an end user.



ISP

If you assign blocks to users of your services (hotels, education, government), you're an ISP.



End User

If you do not assign addresses to users/customers and do not provide connectivity to any users/customers, you're an end user.

If in doubt, request as an ISP.

End User Block Size



The end user block size is based on number of sites in your network — 'site' being any location at which you operate (i.e. datacenters, offices, warehouses, etc., but not people working from home).

Number of Sites	Block Size
1	/48
2-12	/44
13-192	/40
193-3,072	/36
3,073-49,152	/32

ISP Block Size

Know Your Three Numbers

Overall Block Size

1

Identify a block that can hold enough for every serving site without exceeding 75% usage.

Block Size per Serving Site

2

Identify a block that can hold that many /48s without exceeding 75% usage.

Block Size to Assign to Users

3

/48 is the industry standard.

ISP Block Size: Per Site

Use the table below to determine the block size for your largest site (based on customer count):

/48 to Each Customer	Per-Site Block Size
1 to 12 customer at largest site	/44
13 to 192 customers at largest site	/40
193 to 3,072 customers at largest site	/36
3,073 to 49,152 customers at largest site	/32
49,153 to 786,432 customers at largest site	/28

ISP Block Size: Overall

Using the per-site block size from above and the number of sites in your network, determine the overall block size you need based on the tables below.

/44 to Each Site	Total # Sites	Overall Block Size
	1 to 192 sites	/36
	193 to 3,072 sites	/32
	3,073 to 49,152 sites	/28
	49,153 to 786,432 sites	/24

/40 to Each Site	Total # Sites	Overall Block Size
	1 to 192 sites	/32
	193 to 3,072 sites	/28
	3,073 to 49,152 sites	/24

/36 to Each Site	Total # Sites	Overall Block Size
	1 to 12 sites	/32
	13 to 192 sites	/28
	193-3,072 sites	/24

/32 to Each Site	Total # Sites	Overall Block Size
	1 to 192 sites	/28
	193 to 3,072 sites	/24

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