

AT&T IP Address Allocation/Assignment Policy

IP Address Assignment Policy for the AT&T Common Backbone (CBB)

AT&T will follow the Internet's best current practices for IP address assignment which are specified in RFC2050. You can access RFC2050 at <http://www.rfc-editor.org/rfc.html>. It is critical to understand that AT&T must follow these guidelines and the procedures of the address assignment authority (i.e., ARIN or other Internet Registry) to obtain IP network address space.

The following terms have special meanings and are used as follows:

- Assigning IP network numbers refers to AT&T's reservation of network blocks for use by individual customers. AT&T requires these customers to use the assigned IP network numbers internally (i.e., these customers are not to delegate their assigned network numbers to other companies or entities).
- Allocating IP network numbers refers to AT&T's reservation of network blocks for use by a Downstream Provider (DSP). These DSPs in turn assign the IP network numbers to their end users.
- An IP address is a 32 bit number that is associated with interface endpoints within a network or network segment.
- An IP network number is, generally, a block or group of individual, contiguous IP addresses. An IP network number is assigned to a network or a network segment. (12.0.0.0/8 is an example of a network number.)

IP Network Number Allocation/Assignment Policy

1. AT&T will only assign or allocate registered address blocks to AT&T customers with signed contracts.
2. Registered IP address blocks received from AT&T are not portable. Customers give up their right to use AT&T allocated/assigned IP address blocks at the termination of their connectivity contract with AT&T. AT&T will allow a period of thirty days before reusing the IP address blocks. For example if the customer moves to another service provider, the customer should return the AT&T IP address blocks and renumber into the new provider's address space.
 - This policy also applies in case of a customer that terminates its connection to AT&T and connects to a DSP of AT&T, even if the DSP is a subsidiary of AT&T. The customer should be made aware of the possibility for renumbering its endpoints.
 - This policy also applies in case of a customer that terminates its AT&T Dedicated IP Service and has other non-Dedicated IP Services such as Frame Relay Service, voice, ATM, SINA (Static Integrated Network Access).
 - If AT&T terminates the contract for violation of AT&T's acceptable use policy, the customer gives up the AT&T-allocated/assigned IP address blocks immediately upon termination of the service. The acceptable use policy can be found at: <http://www.ipservices.att.com/policy.html>

3. The AT&T CBB will support the RFC2050 guidelines for address block assignment/allocation to insure efficient implementation and use of IP address resources. This means that AT&T will assign based on CIDR bit boundaries.
 - These "CIDR-supported" bit boundaries are in units of /28 (equivalent of 16 IP addresses), /27 (equivalent of 32 IP addresses), /26 (equivalent of 64 IP addresses), /25 (equivalent of 128 IP addresses), /24, /23, /22, /21, /20 or /19 (i.e., in units of the equivalent of 1, 2, 4, 8, 16 or 32 IP Class C network numbers).
4. The IP address blocks allocated/assigned by AT&T to a customer must be visible to the AT&T network (i.e., all customer subnets must be reachable from the AT&T network). AT&T will not allocate/assign IP address blocks to customer networks that are not visible to the AT&T network.
 - Customer hosts and networks that are to remain private with no intention to connect to the Internet either now or in the future should consider utilizing the IP network numbers reserved for non-connected networks described in RFC 1918. However note that private IP network numbers are not directly routable across the Internet.
5. Customers must use the IP address blocks allocated/assigned by AT&T at the locations for which they were assigned. After an address block is allocated/assigned to a customer location, it cannot be used by the customer at any other location without AT&T approval.
 - The customer must contact AT&T regarding the changed network requirements. Customers who depart from the network plans shared with AT&T may be required to renumber some of their resources, especially if they require additional IP address blocks from AT&T.
 - For example a customer with two disjoint enterprise networks in New York and San Francisco is assigned an address block to use at the New York site and a separate address block to use at the San Francisco site. The customer cannot use the New York assigned IP address block at the San Francisco site, or vice versa.
6. IP address blocks allocated/assigned by AT&T to customers are considered valid as long as the criteria for allocation/assignment continues to be true. Customers who depart from the network plans shared with AT&T may be required to renumber some of their resources, especially if they require additional IP address blocks from AT&T.
7. No transfer of IP address blocks from one customer to another is permitted without AT&T approval. The customer trying to obtain the IP address blocks must meet the same criteria as if they were requesting IP address blocks directly from AT&T.
8. AT&T customers who are downstream providers (DSPs) are obligated to submit information regarding their address re-assignment to ARIN or other appropriate Internet Registry in a prompt and efficient manner. Assignment information is to be forwarded to ARIN within 7 days of the assignment so that the WHOIS database may be maintained efficiently. No additional IP address blocks will be allocated by AT&T to a downstream provider until the information of approximately 80% of address re-assignment made by that service provider is submitted to the ARIN or other Internet Registry.

9. AT&T's policy is to make assignments and allotments to customers from AT&T's network address space with the assumption that the customer has equipment that supports Variable Length Subnet Masking (VLSM) and classless routing technologies.
10. If a customer does not have equipment that supports Variable Length Subnet Masking (VLSM) and classless routing technologies, the customer will receive an address block from AT&T's registered address space. However, the customer must provide detailed justification. AT&T considers this to be an exception condition, which can be granted to a given customer only once. To receive future allocations/assignments that customer is expected to upgrade their equipment to support classless addressing and classless routing.
11. AT&T does not assure the routing of address blocks that are not from AT&T's address space. Customers should be aware that the Internet does not support routing of all network numbers.
12. Customers with service from another ISP and using network prefixes assigned by that other ISP shall notify AT&T when its contract with the other provider is terminated.
13. For DSP customers, AT&T requires the DSP customer to guarantee, via its service contract, that network prefix passed from the DSP are directly owned by the DSP or owned by its end customers. AT&T requires that the DSP customer must notify AT&T when its contract with any of its end users is terminated.
14. A customer that is requesting a block of less than or equal to a /20 block of addresses (i.e., 16 Class C equivalent address blocks or greater) will be encouraged to apply directly to ARIN or appropriate Internet Registry.
15. A customer that qualifies for less than or equal to a /19 block of addresses (i.e., 32 or greater IP Class C network numbers) will require prior approval by ARIN or other Internet Registry. This policy is consistent with RFC2050. AT&T will assist the customer in completing the required ARIN or other Internet Registry template. The customer will be responsible for forwarding the request to the appropriate Internet Registry. The customer may be requested to provide additional supporting information to the Internet Registry such as:
 - Network engineering plans, including subnets and host counts, and hosts per subnet with projected utilization rates and associated confidence levels of those projections for one or two years in the future.
 - Deployment schedule for the network, including major milestones for each subnet.
 - Network topology diagrams.
 - For customers with multiple, separate sites (i.e., without alternate network connectivity among the sites), the above requirement applies per site.
16. For each customer requesting address space, AT&T will maintain a record of the customer's IP address requirements (i.e., number of hosts and number of subnets). For each new customer requesting a /24 or smaller address block (i.e., one Class C equivalent or greater), the customer must submit a completed IP Address Application Form.

17. AT&T requires that all network prefixes provided by customers be valid. The prefix validation requirements are basically that the network prefix be owned by customer through assignment from the Internet Registry (IR) or via assignment from an alternate current ISP. The requirements are summarized below.

Type of Customer	Prefix Validation Requirements
Non-DSP and single homed to AT&T Only	The network prefix is assigned to the customer by the IR and is registered in the whois database. (Also, a pre-CIDR address block assigned by a provider is considered valid.)
DSP and single-homed to AT&T only	The network prefix is assigned by the IR to the DSP or to the DSP end-customer and all network prefixes are registered in whois.
Non-DSP and multi-homed to the Internet	The network prefix is assigned to customer by the IR or by an alternate ISP and all prefixes are registered in whois.
DSP and multi-homed to the Internet	The network prefix is assigned by the IR to the DSP, or owned by end-customer of the DSP and all prefixes registered in whois.

The non-DSP customer assignments will be verified initially during service installation and during other times during the service period. DSPs are contractually required to guarantee the ownership of the network prefixes allocated to them or to their end-customers.

Criteria For Network Number Allocation/Assignment To Customers

The key criteria used to allocate/assign an address block to a customer are based on RFC2050 guidelines.

- The expected utilization rates on each customer subnet are:
 - 25% immediate host utilization rate at the time of the IP address assignment request, and
 - 50% host utilization rate within 1 year.

The expected utilization rate is the number of hosts connected to a subnet divided by the total number of hosts possible on the subnet. For instance in a customer subnet with /25 prefix length, the maximum number of hosts that can be connected to that subnet is 126. The customer should have at least 31 hosts connected to the subnet at the IP request time and plans to connect 63 hosts to the subnet within a year. The customer must exhibit a high confidence level in its 1-year utilization rate and may be asked to supply documentation to justify the level of confidence. Exceptions to this criterion will not be made based on insufficient equipment without additional detailed justification.

- Customer implementation of variable length subnet mask (VLSM) internally to maximize the effective utilization of address space. IP address block allocation/assignment will be made under the assumption that VLSM is or will be implemented.

3. In order to allocate/assign an additional address block to the customer, the customer should demonstrate the efficient use of the previously allocated/assigned IP address block(s). This should be demonstrated by at least 50% host utilization rate on each customer subnet. The customer may be asked to supply documentation containing sufficient corroborating evidence that the provided network descriptions and utilization rates are accurate.