1.1. Registration

The ~~principle of registration guarantees the uniqueness of Internet number resources.~~ Provision~~ing~~ of ~~this~~ a public registry documenting Internet number resource allocation, reallocation, assignment, and reassignment is necessary:

- to ensure uniqueness of allocated resources,
- to provide ~~a contact in case of~~ operational and ~~/~~security contacts for resource holders, ~~problems,~~

- ~~•~~ to provide the transparency required to ensure that Internet number resources are efficiently utilized, and
- ~~•~~ ~~to assist in IP allocation studies.~~ to provide data for the research and reporting of allocation activity.

1.2. Conservation

~~The principle of conservation guarantees sustainability of the Internet through efficient utilization of unique number resources.~~

Due to the requirement for uniqueness, Internet number resources of each type are drawn from a common number space. Conservation of these common number spaces requires that Internet number resources be efficiently distributed to those organizations who have a technical need for them in support of operational networks. Requests for address space should be supported by appropriate documentation; stockpiling of unused addresses should be discouraged.

1.3. Routability and Scalability

~~The principle of routability guarantees that Internet number resources are managed in such a manner that they may be routed on the Internet in a scalable manner.~~

Wherever possible, address space should be distributed in a hierarchical manner, according to the topology of network infrastructure. This is necessary to permit the aggregation of routing information by LIRs, and to limit the expansion of Internet routing tables.

Where possible, address policies should seek to avoid fragmentation of address ranges.

While routing scalability is necessary to ensure proper operation of Internet routing, allocation or assignment of Internet number resources by ARIN in no way guarantees that those addresses will be routed by any particular network operator.

1.4. Stewardship

~~The principle of stewardship guarantees the application of these principles when managing Internet number resources.~~

The fundamental purpose of Internet number stewardship is to distribute unique number resources to entities building and operating networks thereby facilitating the growth and sustainability of the Internet for the benefit of all.

~~It should be noted that the above goals may sometimes be in conflict with each other and with the interests of individual end-users or network operators. Care must be taken to ensure balance with these conflicting goals given the resource availability, relative size of the resource, and number resource specific technical dynamics, for each type of number resource.~~

1.5 Fairness

All policies and practices relating to the use of public address space should apply fairly and equitably to all existing and potential members of the Internet community

1.6 Conflict of Goals

It should be noted that the above goals may sometimes be in conflict with each other and with the interests of individual end-users or network operators. Care must be taken to ensure balance with these conflicting goals given the resource availability, relative size of the resource, and number resource specific technical dynamics, for each type of number resource.

6.3. Goals of IPv6 Address Space Management

6.3.1. Goals

IPv6 address space, like other resources under ARIN's purview ~~is a public resource that~~ must be managed in a prudent manner ~~with regards to~~ in keeping with ~~-~~the long-term interests of the ~~i~~Internet. Responsible address space management involves balancing a set of ~~sometimes~~ potentially competing goals in Section 1~~.~~ ~~T~~the following principles and goals should be followed in managing IPv6 address Resources. ~~are the goals relevant to IPv6 address policy.~~

6.3.2. (Retired) ~~Uniqueness~~

~~Every assignment and/or allocation of address space must guarantee uniqueness worldwide. This is an absolute requirement for ensuring that every public host on the Internet can be uniquely identified.~~

6.3.3. (Retired) ~~Registration~~

~~Internet address space must be registered in a registry database accessible to appropriate members of the Internet community. This is necessary to ensure the uniqueness of each Internet address and to provide reference information for Internet troubleshooting at all levels, ranging from all RIRs and IRs to end users.~~

~~The goal of registration should be applied within the context of reasonable privacy considerations and applicable laws.~~

6.3.4. Aggregation

Wherever possible, address space should be distributed in a hierarchical manner, according to the topology of network infrastructure. This is necessary to permit the aggregation of routing information by ISPs, and to limit the expansion of Internet routing tables.

~~This goal is particularly important in IPv6 addressing, where the size of the total address pool creates significant implications for both internal and external routing.~~

IPv6 address policies should seek to avoid fragmentation of address ranges. ARIN will apply practices that maximize the potential for subsequent allocations to be made contiguous with past allocations currently held; however, there can be no guarantee of contiguous allocation.

When managing IPv6 address resources, the goal of Aggregation should be considered the most important.

~~Further, RIRs should apply practices that maximize the potential for subsequent allocations to be made contiguous with past allocations currently held. However, there can be no guarantee of contiguous allocation.~~

6.3.5. (retired)

~~6.3.5. Conservation~~

~~Although IPv6 provides an extremely large pool of address space, address policies should avoid unnecessarily wasteful practices. Requests for address space should be supported by appropriate documentation and stockpiling of unused addresses should be avoided.~~

6.3.6. (retired)

~~6.3.6. Fairness~~

~~All policies and practices relating to the use of public address space should apply fairly and equitably to all existing and potential members of the Internet community, regardless of their location, nationality, size or any other factor.~~

6.3.7. Minimized Overhead

It is desirable to minimize the overhead associated with obtaining address space. Overhead includes the need to ~~go back to RIRs for~~ request additional space too frequently and~~,~~ the overhead associated with managing address space that grows through a number of small successive incremental expansions rather than through fewer, but larger, expansions.

6.3.8. (Retired) ~~Conflict of Goals~~

~~The goals described above will often conflict with each other, or with the needs of individual IRs or end users. All IRs evaluating requests for allocations and assignments must make judgments, seeking to balance the needs of the applicant with the needs of the Internet community as a whole.~~

~~In IPv6 address policy, the goal of aggregation is considered to be the most important.~~