

VA IPv6 Addressing Schema Models

The VA IPv6 Addressing Working Group is finalizing the IPv6 address schema and is asking for feedback from the Regional Chief Technology Officers on Addressing Management - how the IPv6 address space should be managed and distributed across the VA.

Please review the information below and provide your comments to the IPv6 Working Group (VAIPv6RegistryWG@va.gov) no later than **COB 10/19/2007**. The Working Group will review feedback and submit their final recommendation to the IPv6 Steering Committee for approval.

There are two management models under consideration. The Addressing Working Group is advocating the Centralized Management model. The table that follows outlines the pros and cons of each model.

A. Centralized management

A central agency addressing authority will distribute address ranges to facilities based on a national router aggregation model. The agency addressing authority will develop and manage a national subnet/VLAN model for distribution across VA.

B. Distributed management

Based on the existing IPv4 distribution model, IPv6 ranges will be distributed by the IPv6 Addressing team to local addressing authorities which will then distribute subsections of their address range to facilities connecting to the VA WAN backbone through the gateways they manage. Autonomous Systems owners and other entities managing gateways to the VA WAN backbone will be considered local authorities.

	Centralized Management	Distributed Management
Pros	<ul style="list-style-type: none"> • Ensures a VA-wide consistent address structure • Provides centralized address structure and management decisions via a core staff group. Makes it easier to implement a consistent address structure VA-wide with less review • Enables fine tuning of VA security systems to block inappropriate traffic across the VA WAN. NSOC would know what kind of traffic was coming across the WAN backbone and how it should behave • Enables VA to develop a standard QOS structure for VA-wide implementation 	<ul style="list-style-type: none"> • Ensures a base level of consistent address structure across the VA • Provides a structured format for local addressing authorities to use to effectively distribute their address range without a significant amount of local staff IPv6 expertise • Puts responsibility for handing out addresses, (local address authority-LAA) closer to the customers. Allows the LAA to define an SLA appropriate to the customer environment and distribute address ranges for specific local needs
Cons	<ul style="list-style-type: none"> • Requires development of a <i>Service Level Agreement (SLA)</i> between the national address management team and VA entities it supports 	<ul style="list-style-type: none"> • <i>Removes ability to fine tune VA security systems</i> to block inappropriate traffic. NSOC would not know what kind of traffic is coming across the WAN backbone. (E.g. Is that a medical device trying to scan a range of IP addresses or a network management device?) • Makes it <i>difficult</i> to implement a <i>standards-based Quality of Service (QOS) VA-wide</i>. Relies on each local address authority to implement local QOS service and to transfer QOS information to WAN Backbone devices

Questions regarding this document should be submitted to the IPv6 Addressing Working Group co-chairs, Mr. Steve Pirzchalski and Mr. John DeTognoArmanasco.