

United States
Department of Veterans Affairs
Internet Protocol version 6 (IPv6)
Progress Report



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IPv6 Transition Office
Telecommunications Operations Management Service (TOMS)
Office of Information and Technology

1 Executive Summary

The Veterans Affairs Office of the Chief Information Officer (CIO) made significant progress during 2006 preparing for the transition to IPv6. Activities have focused on several areas including transition planning, addressing, testing, security, and training. The IPv6 Steering Committee and Working Groups continued to meet on a regular basis.

There were several major accomplishments in 2006 as described in the following pages, the most notable being the recent IPv6 Working Group Conference sponsored by VA's IPv6 Transition Office. The 2½ day conference focused on all working group issues, including transition, addressing, testing, security and training. The conference, with personnel attending from all VA regions, featured guest speakers from government and industry, working group workshops, large group discussions, and group presentations. The conference demonstrated the importance of working as a team as we move towards the cutover date of June 2008. In conjunction with this conference, VA previewed a five minute general awareness video developed by members of the VA Employee Education System.

One of the key aspects of the IPv6 transition is the support of VA CIO, Bob Howard. Mr. Howard opened the IPv6 Conference and expressed his support of the project, highlighting the importance of working together. Mr. Howard has taken an active interest in agency progress and is fully briefed on a regular basis of the progress of this project.

2 Overview of Accomplishments

The following pages comprise an overview of major 2006 VA accomplishments. These accomplishments are described in detail in *Section 3, Detailed Project Accomplishments*.

- The *IPv6 Impact Analysis of Fiscal and Operational Impacts and Risks*, evaluating risks to implementing IPv6, was delivered to OMB in June 2006.
- The *IPv6 Transition Plan, Version 1.0*, was completed and delivered to OMB in June 2006 as a component of VA's Enterprise Architecture OMB submission.
- The *IPv6 Communication Plan* was submitted to VA Enterprise Architecture in November, 2006, providing a concise description of the inter-agency and extra-agency communication process.
- *IPv6 Addressing Plan*, which originated from meetings of the IPv6 Registry Working Group, has been completed and is currently under review and resulted from VA receiving a block of addresses from the American Registry for Internet Numbers (ARIN).
- The *IPv6 Test Plan*, which is being reviewed by IPv6 transition team members and OI&T management, is a working document and will be updated as the project moves closer to the implementation date of March 2008.
- The *Training RFP* requesting development of full-service training of IPv6 components was submitted in October 2006.

3 Detailed Project Accomplishments

During the past year the VA IPv6 Transition Office made significant progress in analyzing, planning and implementing many activities related to the transition to IPv6. The major accomplishments of the Transition Office are documented below:

IPv6 Inventory

The VA completed a second inventory of devices comprising the network backbone. This inventory included both routers and security devices. The inventory was submitted to the OMB in June, 2006.

IPv6 Impact Analysis of Fiscal and Operational Impacts and Risks

The VA completed the analysis of fiscal and operational impacts and risks for IPv6 and submitted an Impact Analysis to the OMB in June 2006. The conclusions documented in the risk analysis were based on interviews with experts within the VA, discussions with industry experts, and a review of current literature; information produced by the VA transition teams; and, results of the inventory of the components of the VA backbone infrastructure.

Quarterly Milestone Reports

The IPv6 Transition Office met the goal of delivering status reports to Veterans Affairs Enterprise Architecture (EA) each quarter during 2006, based on the milestones described in the Transition Plan and previously reported to Enterprise Architecture.

IPv6 Goals

The IPv6 Transition Office delivered a plan mapping IPv6 features to four strategic VA goals:

1. Veteran centric services
2. Collaboration with other agencies
3. Ensuring information security
4. Emergency management

Specifically, the following IPv6 features contribute to the execution of these goals: increased number of IP addresses, quality of service, addition of flow label, simplified mobility, increased network efficiency, and security enhancements.

Communication Plan

The IPv6 Communication Plan was prepared and delivered to OMB in December 2006. The plan identifies project stakeholders and the methods used to communicate between and among the stakeholders including conference calls, meetings, and formal documents. The stakeholders for this project cross agency boundaries and span the entire United States.

General Awareness Video

A five minute general awareness video was developed by members of the VA Employee Education System. The video is a high level introduction to IPv6 and provides a background for the project that is suitable for both technical and non-technical audiences.

IPv6 Industry Briefing

A one-day industry briefing, sponsored by the VA IPv6 Transition Office, was held in October 2006. The briefing provided basic IPv6 information to members of the IPv6 working groups. In addition, the audience received insight into how the individual vendors are proceeding with their IPv6 development.

Training Support

Using information gathered by surveying representative technical staff, members of the Training group designed a training approach for the VA. This included definition of courses to be offered to both technical and management staff. A Statement of Work was prepared outlining the requirements an IPv6 training vendor would need to meet. Several training vendors responded to the final RFP and their proposals have been evaluated by members of the transition team. The selection committee has recommended a preferred training vendor.

IPv6 Addresses

The VA was one of the first agencies to apply for and be allocated an IPv6 address block by the American Registry for Internet Numbers (ARIN) for allocation within the enterprise. The VA was assigned the following IPv6 address range:

Beginning: 2610:00D8:0000:0000:0000:0000:0000:0000

Ending: 2610:00D8:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF.

By acquiring the address block early in the transition process, VA has moved forward with alacrity in documenting the IPv6 Address Plan.

Addressing Plan

An addressing workshop was planned and conducted at VA facilities in Cleveland, Ohio in November. This workshop brought together members of the IPv6 Registry Working Group who designed the addressing plan to be employed during the IPv6 transition.

Transition Plan

The Transition Plan describing the VA's strategy for implementing IPv6 was delivered on schedule to VA Enterprise Architecture in December 2006. The plan is a working document and covers the following topics: governance, deployment, policy, acquisition, addressing, security, and procurement, assurance and testing, and training, among others.

VA IPv6 Working Group Conference

A 2½ day conference was held which focused solely on VA's efforts in managing their IPv6 transition. The conference featured industry-wide guest speakers, working group workshops, large group discussions and group presentations. The conference also was the springboard for the newly-formed Security Working Group.

Working Group Meetings

Much of the work conducted during 2006 involved planning activities. The VA has several working groups which contributed to the planning activities. These groups met regularly during 2006.

4 Working Groups

The IPv6 working groups described in the following pages convened regularly to address progress, resolve issues, and to conduct future planning.

4.1 Steering Committee

The IPv6 Steering Committee manages progress of the working groups for the entire agency and provides a final approval for official documentation. The five working groups mentioned in this section produce the specific deliverables required in the mandatory transition strategy provided by OMB. Guidance is provided by the committee to all other subgroups within the IPv6 transition.

4.2 Enterprise Strategy Working Group

The Enterprise Strategy Subgroup is responsible for developing the large picture related to the deployment of IPv6 for the VA. The group is preparing a strategic plan that is integrated with the VA's Enterprise Architecture. The document addresses funding and direction of the agency and provides a roadmap for IPv6 compliance for the VA. This document will be presented to the CIO.

4.3 Transition Working Group

The Transition Working Group continues to document deliverables and provide milestones and supporting documentation. Security and certification continue to be in the forefront. Other activities include development of a risk assessment and addressing potential transitional issues with VA TMP efforts, VA 2003/2008 strategic plan, VA reorganization, funding, MyHealthVet redesign, the Telecom modernization plan, and continual efforts in the development of Electronic Medical Records (EMR).

4.4 Registry Working Group

The Registry Working Group has requested and received a block of /32 addresses from ARIN. In addition, the subgroup recently convened in Cleveland to discuss the new address block and made significant progress towards defining an address plan to be used by VA.

4.5 Training Working Group

The Training Working Group conducted a survey with a selected population of the VA to determine the necessary levels of training (i.e., who needs to be trained, what classes/topics are needed, when training will take place) that will be required for the transitional period. The group put out an RFP and has evaluated the proposals from several training vendors for conducting IPv6 training to VA personnel. The selection committee has recently selected a training vendor.

4.6 Security Working Group

The Security Working Group was recently formed from the existing Transition Working Group. The role of the Security group is to define the scope for the security needs of the IPv6 project. The group works closely with the Transition group to determine the scope of the test that will occur on the VA backbone. Other priorities that the group will research are a risk assessment and the security plan.

5 2007 Objectives

With the accomplishments of 2006, the IPv6 Transition Office is proceeding on target to accomplish the objectives in 2007. Among others, these objectives include:

Training

The VA is proceeding with training of selected technical and non-technical personnel. As a component of the training, participants are required to pass an evaluation in order to be certified in IPv6 methodology.

Network Testing

The test plan will be completed and testing will be underway to demonstrate the VA's ability to meet the requirements of the OMB mandate.

Fall Working Group Conference

Capitalizing on the success of the first IPv6 Working Group Conference, a second conference is being scheduled for fall 2007. This conference will promote intra-agency communication and planning for the transition to IPv6 during early 2008.

Working Group Meetings

The working groups, including the newly-formed Security Working Group will continue to meet on a regular basis.