

EVOLUTION

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The Year 2011 in Review

The VA has made significant progress over the past calendar year toward the goal of completing the IPv6 transition. Throughout the year, VA has become the recognized leader among Federal agencies enacting their IPv6 transition. One major recognition of that effort was the selection by the Office of Management and Budget (OMB) of Steven Pirzchalski, of VA, as the point person to answer questions other agencies have regarding IPv6 transition.

In addition to the recognition by OMB, VA hosted the first two Interagency IPv6 conferences; the first in the spring of 2011 and the second in the fall of 2011. Each conference was well attended, allowing representatives from other Federal government agencies to connect and share their own transition experiences.

VA also made significant strides internally. Many efforts increased in structure, intensity, and sense of urgency through the course of the year. The efforts grew, including participants from other areas of VA as the project grew from technical planning to actual implementation activities.

The major metric for success in meeting the first OMB mandate is the National Institute of

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The New Year

In this issue of Evolution, we looking back on the IPV6 Transition efforts for 2011. There has been significant progress so far in meeting the deadlines of the OMB mandates. The IPv6 Program Office is looking forward to even more significant progress in 2012.

What is IPv6

IPv6 is the next generation Internet protocol developed by the Internet community to replace the current IPv4 protocol. IPv6 provides an almost unlimited amount of address space and has been developed to meet the requirements and performance of today's businesses, governments, and consumers. While IPv4 and IPv6 can operate on the same network, they are not directly interoperable.

Domain	Agency	DNS	Mail	Web	DNSSEC
gov.defense.	Department of Defense	[13] 0/0/0 [0]	[A] 0/0/0 [I]	[2] 0/0/0 [0]	U/-/-
gov.dhs.	Department of Homeland Security	[4] 0/0/0 [I]	[1] 0/0/0 [0]	[1] 0/0/0 [0]	S/V/C
gov.doc.	Department of Commerce	[6] 2/2/2 [M]	[2] 0/0/0 [0]	[1] 0/0/0 [I]	S/V/C
gov.doe.	Department of Energy	[3] 1/1/1 [M]	[1] 0/0/0 [0]	[1] 0/0/0 [0]	S/V/C
gov.doi.	Department of the Interior	[6] 4/4/4 [0]	[2] 0/0/0 [0]	[3] 0/0/0 [0]	S/V/C
gov.dol.	Department of Labor	[3] 0/0/0 [I]	[4] 0/0/0 [I]	[1] 0/0/0 [0]	S/V/C
gov.dot.	Department of Transportation	[3] 2/0/2 [I]	[3] 0/0/0 [I]	[2] 2/2/2 [0]	S/V/C
gov.ed.	Department of Education	[4] 0/0/0 [I]	[4] 0/0/0 [0]	[1] 1/0/0 [0]	S/V/C
gov.epa.	Environmental Protection Agency	[4] 0/0/0 [I]	[3] 0/0/0 [0]	[1] 0/0/0 [0]	S/V/C
gov.gsa.	General Services Administration	[6] 0/0/0 [I]	[4] 0/0/0 [0]	[1] 0/0/0 [0]	S/V/C
gov.hhs.	Department of Health And Human Services	[2] 0/0/0 [0]	[1] 0/0/0 [0]	[2] 0/0/0 [0]	S/V/C
gov.hud.	Department of Housing And Urban Development	[2] 0/0/0 [I]	[3] 0/0/0 [I]	[1] 0/0/0 [0]	S/V/C
gov.nara.	National Archives and Records Administration	[12] 2/0/0 [0]	[4] 0/0/0 [I]	[1] 0/0/0 [0]	U/-/-
gov.nasa.	National Aeronautics and Space Administration	[3] 0/0/0 [I]	[6] 0/0/0 [0]	[2] 0/0/0 [0]	S/V/C
gov.nrc.	Nuclear Regulatory Commission	[6] 2/2/2 [M]	[2] 0/0/0 [I]	[2] 0/0/0 [0]	S/V/C
gov.nsf.	National Science Foundation	[4] 0/0/0 [I]	[2] 0/0/0 [I]	[1] 0/0/0 [I]	S/V/C
gov.opm.	Office of Personnel Management	[4] 0/0/0 [I]	[4] 0/0/0 [I]	[1] 0/0/0 [0]	S/V/C
gov.sac.	National Science Foundation	[4] 0/0/0 [0]	[A] 0/0/0 [I]	[1] 0/0/0 [I]	S/V/C
gov.sba.	Small Business Administration	[2] 0/0/0 [I]	[4] 0/0/0 [0]	[1] 0/0/0 [I]	S/V/C
gov.ssa.	Social Security Administration	[4] 0/0/0 [I]	[4] 0/0/0 [I]	[2] 0/0/0 [0]	S/V/C
gov.state.	Department of State	[4] 0/0/0 [0]	[3] 0/0/0 [I]	[2] 0/0/0 [0]	S/V/C
gov.treas.	Department of the Treasury	[2] 0/0/0 [I]	[A] 0/0/0 [I]	[2] 2/2/2 [0]	U/-/-
gov.usaid.	U.S. Agency for International Development	[4] 0/0/0 [M]	[2] 0/0/0 [0]	[1] 0/0/0 [I]	S/V/C
gov.usda.	Department of Agriculture	[2] 0/0/0 [I]	[1] 0/0/0 [0]	[2] 2/2/2 [0]	U/-/-
gov.usdoj.	Department of Justice	[4] 0/0/0 [I]	[1] 0/0/0 [I]	[1] 0/0/0 [I]	S/V/C
gov.va.	Department of Veterans Affairs	[4] 4/4/3 [I]	[A] 0/0/0 [I]	[1] 1/1/1 [I]	S/V/C
mil.af.	United States Air Force	[7] 0/0/0 [0]	[A] 0/0/0 [I]	[2] 0/0/0 [0]	S/V/C
mil.army.	United States Army	[3] 0/0/0 [I]	[A] 0/0/0 [I]	[1] 0/0/0 [0]	U/-/-
mil.navy.	United States Navy	[4] 0/0/0 [I]	[3] 0/0/0 [0]	[2] 0/0/0 [0]	U/-/-

Excerpt from: <http://usgv6-deployment.antd.nist.gov/cgi-bin/generate-gov.dept>

The Year 2011 in Review

The IPv6 Transition at VA

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Standards and Technology (NIST) IPv6 monitoring website. The website provides a visual graphic of the progress Federal agencies are making towards meeting the 2012 OMB mandate requiring public facing services to become IPv6 capable by the end of the fiscal year. As seen in the picture above, VA has met the mandate by the end of the calendar year 2011 for three of the four requirements: DNSSEC, DNS, and Web services. A solution for e-mail services is being tested and it is anticipated that e-mail services will meet the requirement during the first quarter of the 2012 calendar year. This will mean that VA will meet the OMB 2012 Mandate for public facing services well before the end of the 2012 Fiscal Year (September 30, 2012).

With the prospect of meeting the OMB mandate for 2012 early, the VA IPv6 Program Office will not just rest on its laurels. Other significant work has already been done forming the foundation for meeting the next OMB Mandate for 2014; having the internal services IPv6 capable. The VA IPv6 Program Office has developed much of the initial assessments, methodologies, and other documentation that will provide guidance for efforts throughout the remainder of 2012 and beyond for meeting this next mandate. The scope will expand and the number of internal departments involved in the process will increase. The VA IPv6 Program Office is anticipating making even more significant progress in this effort during the 2012 calendar year.



Sprinting to the First Rally Point

The effort to meet the first OMB mandate has been a cooperative effort between several components of VA. The effort is significant and a precursor of the challenges that VA will be meeting over the next calendar year. For the transition of the public-facing services, VA had to approve, test, enable, and verify the following services:

1. DNSSEC—This is the incorporation of DNS Security Extensions. DNSSEC adds digital signatures to normal DNS queries, substantially reducing the risk of falling victim to man-in-the-middle attacks.
2. Gateway Routers—The four VA Internet Gateways needed to be able to correctly communicate the IPv6 protocol.
3. DNS Servers—It was imperative that the VA DNS servers properly answered queries over the IPv6 protocol.
4. Web Services—The VA web servers needed to have their IPv6 addresses registered properly so that there would be a response to requests over the IPv6 protocol.
5. E-Mail Services—E-mail services proved to be more challenging. The vendor for the equipment VA uses for processing e-mail to and from VA did not have their system IPv6 capable yet. VA is continuing to work closely with the vendor to test their solution and ensure it meets VA's strict operational guidelines prior to deployment.

The foundation work is almost complete, setting the stage to meet the next rally point in 2014.



Looking Forward to 2012

While VA has made significant strides in meeting the 2012 OMB mandate for public-facing services, even more work and effort is needed to meet the 2014 OMB Mandate for internal services. Considerable efforts are already underway to work towards achieving this deadline.

The VA IPv6 Program Office is using a “top-down” approach for realizing this deadline, understanding that individual services cannot successfully transition until the network infrastructure can support it. To date, the VA gateways and other services can support IPv6 communication to and from the VA, however, the internal network is still being transitioned. Components in this area include the network backbone, internal routers and other communication devices, servers, and workstations.

While the list seems to be short, the effort is quite challenging. There is a minimum requirement for each vendor to ensure their device, service, or software is IPv6 capable. Each of these devices and software components needs to be tested and verified before being inserted into the VA network.

During 2012, the IPv6 Program Office will be continuing assessments and outreach efforts to identify components, services, and software that need to be evaluated, and possibly upgraded, to be IPv6 capable. Additionally, the Program Office will work with VA components to leverage resources and pilot program efforts to help shorten evaluation and development times in order to meet the OMB 2014 mandate.

The IPv6 Program Office is also planning several outreach efforts to other Federal agencies including the development of two additional InterAgency Meetings for 2012, as well as, attending various forums throughout the year. By continuing to leverage VA’s leader-

ship in this area, the VA IPv6 Program Office will lend assistance to other agencies in their transitions to IPv6.

During 2012, the VA IPv6 Program Office will be increasing efforts to meet the next milestone; the 2014 OMB Mandate. This endeavor will require the completion of the current network and platform assessments, the enablement of key network services, and the implementation of various pilot projects already in progress. In order to maintain VA’s role as a leader in the overall IPv6 Transition, after successfully meeting the 2012 mandate early, the rate of progress needs to increase. All areas of VA where information systems and networks are a core component of the services that are provided to the veteran need to be addressed.

The VA IPv6 Program Office will also increase outreach efforts within VA. In addition to this newsletter, the VA Program Office will work to increase awareness of IPv6 and its implication on technology used throughout VA. The success of the transition depends on everyone using the technology.

IPv6 Pilots

The calendar is unforgiving. The OMB mandate for 2014 and the VA mandate for total IPv6 transition by the end of FY 2015 seem to be far away, but with the efforts that are required to meet those deadlines, they are really right around the corner. One way to work to meet the deadlines is the implementation of and participation with Pilot Projects.

Pilot Projects can take any number of forms and vary in level of complexity. Right now, the IPv6 Program Office is monitoring and advising on several pilot projects. These projects are:

1. SMTP,
2. Monitor, therapy and nurse call,
3. iCare/Health Buddy,
4. Remote Sleep Disorder Monitoring,
5. Remote Care,
6. IPv6 Video/Phone,
7. World IPv6 Day.

The World IPv6 day was a success for VA and is currently the only Pilot Project completed. The others are in various stages of progress.

If you would like further information on the projects or want to participate, please contact the IPv6 Program Office.

The IPv6 Q&A Corner

Q: How can I get my project approved as an IPv6 Pilot?

The VA IPv6 Program Office strongly encourages any interested group to participate in any IPv6 Pilot Project effort. There are several projects underway. Additionally, there is always room for more. In order to participate, ensure that the pilot project has an IPv6 consideration; meaning the project may be an existing service that needs to be transitioned from IPv4 to IPv6, or a new service or technology where IPv6 would prove to be a benefit to the mission of VA. Once the IPv6 consideration is settled, contact the IPv6 Program Office. The IPv6 Program Office can serve in an advisory capacity to ensure correct contacts are made to facilitate the pilot project.



VA IPv6 Steering Committee

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Chairman & VA IPv6 Transition Lead

Wes Crum

IPv6 Transition & Pilots

Juan Adames

IPv6 Security

John DelTognoArmanasco

IPv6 Addressing

Rick Shew

IPv6 Training

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Upcoming IPv6 Related Events

V6 World Congress 2012

February 7-10, 2012 Paris, France

2012 North American IPv6 Summit

April 9-11, 2012 Denver, CO

VA Interagency IPv6 Meeting

April, 2012 TBD

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Get more information on VA's IPv6 efforts at:

<http://vawww.netops.oit.va.gov/IPv6.asp>