

EVOLUTION

The Department of Veterans Affairs IPv6 Newsletter
ISSUE 03 August 2011



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World Moving to IPv6

As the world makes progress towards moving from IPv4 to IPv6, many governments around the globe are championing the effort. In July of this year, Malaysia's Deputy Information Communication and Culture Minister Datuk Joseph Salang announced plans for the entire Malaysian government to be fully transformed from IPv4 to IPv6 by the end of the 2012 calendar year.

If the 2012 target is met, Minister Salang feels that the Malaysian government will be the first and only government in the world to have fully accomplished the IPv4 to IPv6 transition. Salang has said that several Malaysian government agencies have already accomplished the IPv4 to IPv6 transition with several more poised to adopt it in the near future.

Delivering the opening remarks at the July 19th, 2011 Regional IPv6 conference held in Kuala Lumpur, Salang said, "The IPv6 is more secure and has a much wider capacity and nearly inexhaustible compared to IPv4".

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IPv6 in Automobiles

Automobile makers are equipping cars with more dashboard features with every new model. Problems of city traffic congestion and the need to keep drivers informed about what lies ahead continues to be major factors in the design of those features.

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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.

World Moving to IPv6

Malaysian government to be fully transformed from IPv4 to IPv6 by the end of the 2012 calendar year

Minister Salang went on to convey his hope that the country's key industry players would fully adopt the new protocol by next year to help facilitate communications with their clients in view of the diminished IPv4 address space.

Salang warned that if the industry was slow to respond, they faced the possibility of not being able to communicate with those who have already made the transition and that would result in lost cost and opportunity for those vendors.

Also during the conference, Dr. Sureswaran Ramadas Chair of the IPv6 Asia Pacific Task Force commended Malaysia saying that the country has been one of the pioneers in the push to adopt IPv6 nationally. Ramadas also commented on the training for IPv6 that has been held in Malaysia through the University Sains Malaysia in cooperation with the National Advanced IPv6 Centre. The university was playing a key role in training IPv6 engineers throughout the world. Ramadas, who is also the Centre's director, said approximately 3000 engineers have been trained at the center to date, with nearly 1000 of them coming from Malaysia.

The United States has made great progress since the President's Office of Management and Budget (OMB) announcement late last year. The OMB mandated a 2012 initiative requiring all

federal agencies to upgrade their public-facing web services, including web, email, DNS and ISP services, to native IPv6 by September 30, 2012. This is the second time the OMB has established major milestones for federal agencies related to the deployment of IPv6. Back in 2005, OMB established, and agencies later met, a deadline of June 2008 to demonstrate IPv6 connectivity over their backbone networks.

IPv6 is the biggest upgrade in the 40-year history of the Internet. Forward-looking governments, carriers and enterprises are deploying IPv6 because the Internet has run out of IP addresses using the current standard, known as IPv4. Enterprises that do not become early adopters of the protocol face a real threat of being isolated from the Internet community. The US Federal Government has recognized this threat and is moving forward with aggressive plans to transition to a fully native IPv6 network by 2015.

The recent IPv6 World Day participation proved that the plan is progressing. The Veteran's Administration was a key player in the World Day exercise and performed very well. The Veteran's Administration continues to show great progress in meeting its goals toward transitioning to IPv6, and is considered, along with the entire US Government to be one of the world's early adopters of the new protocol.



VA IPv6 Training Coming

VA is continuing its effort to aggressively transition to IPv6 in order to meet the Federal established milestones.

To help with the endeavor, the VA IPv6 Program Office is revitalizing its IPv6 training program. It is necessary for VA's technical and non-technical personnel to be trained in IPv6 in order for the transition to be successful.

This training can range from general awareness training to hands-on technical training for engineering, operations and security teams. VA organizations and personnel are encouraged to proactively call the IPv6 Program Office to enroll in classes.

In addition, the VA IPv6 Program Office is holding an IPv6 Awareness Training event in January 2012 which is open for all VA personnel to attend. Seating is limited, so please enroll early with the VA IPv6 Program Office.

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IPv6 as 'Standard' Automobile On-board Equipment

The continuing challenge for automakers and highway officials is to provide connectivity to motorists and do it safely when on the move.

The Department of Transportation (DOT) has had many 'Connected Vehicle' initiatives over the last several years as part of its Intelligent Transportation System, including the Vehicle Infrastructure Initiative (VII) and IntelliDrive.

DOT's latest initiative, known as Safety Pilot, is a real-world implementation of the V2V (vehicle to vehicle) and V2I (vehicle to infrastructure) safety technologies, applications, and systems.

In preparation for a broader city-wide rollout in 2012, the DOT will operate six Safety Pilot applications in test locations starting in August as part of its renewed ITS initiative (renewed until 2014).

So, why is this good news for IPv6 deployment?

The DOT's V2V program relies heavily on Dedicated Short-Range Communication technologies (or DSRC) to connect to Road-side Equipment (RSE). Each vehicle is embedded with a GPS Re-

ceiver, on-board equipment (OBE) and a Vehicle Controller.

One of the leading manufacturers of DSRC equipment, Kapsch, is embedding IPv6 in their eWave on-board equipment product. The modules used in the technology (like Kapsch eWave) have IPv6 protocol embedded in their models. DSRC Technology operates in the 5.9 GHz range and offers speeds of up to 27 Mbps.

With over 600 million cars in the world, multiple IP addresses are needed for every vehicle, traffic signal, road sign, and sensor.

IPv6 in the Enterprise

While the Federal government is making progress in the transition to IPv6, the commercial industry is not being left behind. A new IPv6 survey from Network World shows that IPv6 has made the "Top Priority" list for many companies.

Not surprisingly, over 85% of respondents said they have started or completed an audit of their current hardware and software and 62% said that most or all its hardware and software already supports IPv6.

Almost 92% of those surveyed thought IPv6 was fundamentally important for the continued growth of the Internet and almost 75% wanted their companies to be leaders in IPv6 adoptions.

Over 70% responded that their website will support IPv6 within 24 months with a close 65% saying their internal networks will run IPv6 in the same time period. It is interesting to note that 13% of responded say their internal networks already use IPv6.

The IPv6 Q&A Corner

Q: What is the impact of IPv6 on the VA?

IPv6 will touch every device and application that utilizes the network to communicate. This not only includes laptops, servers and workstations, but will eventually include medical devices, desk and cellular phones, video systems and handheld devices.

The initial deployment of IPv6 will be invisible to the end user, but will ensure that VA will be able to continue to service its veteran users without interruption and stay abreast of the latest technologies. As IPv6 becomes more widely deployed, VA will be able to take advantage of a number of new capabilities to enhance security, lower costs, and provide greater levels of service.



VA IPv6 Steering Committee

Steve Pirzchalski

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IPv6 Security

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IPv6 Addressing

Rick Shew

IPv6 Training

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Upcoming IPv6 Related Events

Digital Government Institute: Government IPv6

A Roadmap to Meeting the OMB Directive and Successfully Implementing IPv6 in Your Agency
August 30-31, 2011 Washington, DC

Internet2 Fall Member Conference

October 3-8, 2011 Raleigh, NC

VA Interagency IPv6 Meeting

October 12, 2011 Washington, DC

DGI IPv6 Conference

October 13, 2011 Washington, DC

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Get more information on VA's IPv6 efforts at:

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