Workshop 165: Understanding IPv6 Deployment and Transition
Thursday, 29 September, 9:00 - 10:30, Conference Room 4

Background

This workshop focused on the importance of capacity building for the emerging IPv6 Internet, particularly in the developing world. A panel of representatives from government, industry, and the technical community discussed the challenges to building awareness and expertise across stakeholder groups, and discussed strategies that have proven successful to date.

Panelists

Adiel Akplogan, AFRINIC *[Moderator]*
Suleman Bakhsh, Telecommunications Regulatory Authority (TRA) of the United Arab Emirates
Maarten Botterman, GNKS Consulting
Constanze Bürger, German Federal Ministry of the Interior
John Gitau, Safaricom
Marco Hogewoning, RIPE NCC
Kurt Erik Lindqvist, Netnod (and MENOG IPv6 Roadshow trainer)
Salanieta Tamanikaiwaimaro, Telecom Fiji Limited
Sezen Yeşil, Information and Communication Technologies Authority of Turkey

Please note, due to technical problems on-site, Ms Yeşil was unable to take part in the workshop. Her presentation is linked at the end of this document.

Summary prepared by Chris Buckridge, RIPE NCC

Summary of Discussion

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The workshop began with a report from Maarten Botterman on the recently completed Global IPv6 Deployment Monitoring Survey. Based on the feedback of more than 1600 network operators and other stakeholders, the survey included a number of hopeful indicators. More than 90% of respondents to the survey have deployed IPv6 or are actively planning for it, while many of the concerns that respondents had about deploying IPv6 have declined in comparison to the responses obtained 12 months ago. Workshop participant Kuo Wei Wu also noted a study looking at the number of IPv6-enabled websites, which has shown growth of nearly 500% in IPv6-enabled websites since January of this year.

Marco Hogewoning of the RIPE NCC presented data on the deployment and allocation of IPv6 over time, noting the significant effects generated by capacity

building events such as IPv6 training courses, Network Operators Group (NOG) meetings, or World IPv6 Day. This effect is particularly evident in developing regions. The short time between the events and their effect also indicates that in many cases it is not a matter of operators needing to invest in new equipment. Education is allowing many operators to deploy IPv6 using existing equipment and infrastructure.

Kurtis Lindqvist noted that in many countries there is still no real driver for IPv6 right now, and this is reflected in the fact that IPv6 deployment rate is lowest in the countries with the highest IPv4 saturation levels. From his experience in training though, he noted that people are often quite disappointed to find that IPv6 is not so different or difficult. There remain technical issues, however, and he cited government procurement as a particularly effective strategy for encouraging IPv6 deployment.

John Gitau, of Safaricom, discussed his company's business case, which regards IPv6 support as necessary to ensuring business continuity, and emphasized the importance of planning effectively and over time. He also explained that in the case of Safaricom, IPv6 adoption is being driven from the ground up (technical up through management), and that encouraging the industry-wide deployment of IPv6 is also a priority for the company.

Constanze Bürger described the German government's development of a public administration IPv6 network, and related projects, including a research and development project based on the RIPE document setting out government specifications for IPv6. She noted the importance of education for global network operators and emphasized that Germany is eager to share their experience with others.

Salanieta Tamanikaiwaimaro noted the need to address the fears surrounding IPv6 technical issues. She encouraged the use of the multi-stakeholder model in educating and encouraging cooperation between different parts of government, and argued that more energy be directed toward public policy-making in relation to this issue. She noted the importance of informational material (for example the Customer Premises Equipment (CPE) Matrix on RIPE Labs), and reiterated that it is important for governments to learn from each others' experiences, while understanding that different regions have different issues, different budget priorities, geographic and technological and political constraints.

Suleman Bakhsh discussed the work that has been done on IPv6 adoption in the United Arab Emirates (UAE), beginning with the first IPv6 Summit in 2001. He noted the importance of developing a larger, cohesive plan rather than many small plans, and of customized education, including specific events targeting government and enterprise, not just the technical community. He stressed the need for all stakeholders to get involved in discussions about IPv6 and educate themselves and their staff.

Workshop participants noted that the large IPv4 pool still available to African operators will allow African networks time to adjust and move to IPv6. This may potentially be a disadvantage though, leaving operators at risk of falling behind other parts of the global industry. Adiel Akplogan, CEO of AFRINIC, also noted that AFRINIC will reach IPv4 exhaustion sooner than many people think, with IPv4 allocation rates having doubled over the past year, new mobile networks going up and connectivity costs coming down.

In terms of engaging government, several participants noted that overly intrusive bureaucracy remains a problem, with red tape preventing effective network and human capacity building in various cases. Several speakers also spoke of the need to encourage government to be at the forefront in terms of IPv6 deployment, with many larger institutions actually be in a better position to lead than smaller operators. This encouragement requires addressing the issue in both technical and political terms. Education of the leadership/management level staff is vital, as is an understanding of government processes (government works quite slowly) and a compelling argument (such as the opportunity to spur national industry through innovation).

John Curran, CEO of ARIN, noted that providing content over both IPv4 and IPv6 is an important step toward full IPv6 deployment, as well a useful way to build technical experience with IPv6.

Finally, several speakers reiterated the importance of regional education and human networking, including targeted training events, cooperation and coordination in updating university curricula, and national or regional task forces.

Links
The following presentations are available at:
http://www.nro.net/news/internet-governance-forum-2011-in-nairobi-kenya

- Human Capacity Building For IPv6, Maarten Botterman
- The Challenge of IPv6 Transitioning, Marco Hogewoning
- IPv6 in Germany – IGF 2011, Constanze Bürger
- IPv6 Transition in Turkey, Sezen Yeşil