

National IP Address Plan – Allocation of Country Wide IP Address Blocks

Prop-100

R.M.Agarwal

Deputy Director General(NT)
Department of Telecommunications
Email: ddgnt-dot@nic.in,
Mob: +91-9868133440

B.K.Nath

Director(IC)
Telecommunication Engineering Centre
Department of Telecommunications
Email: ddgnt-dot@nic.in,
Mob: +91-9868133440

31/08/2011, APNIC-32 Meeting, Busan (South Korea)

Introduction

- National IPv6 Policy was released in July 2010
- Demand by different organizations & stakeholders for address planning
- Formation of a National IPv6 Address Planning Committee for consensus building
- Committee was of the opinion that APNIC should be asked for large IPv6 address block for further distribution to different organizations and stakeholders in the country
- On the advise of APNIC Secretariat, that this being a policy matter likely to affect all communities in the APNIC region, proposal was submitted to Sig-policy forum
- Proposal was framed to include all economies in APNIC region

Current Problems

Existing APNIC policy framework was developed in IPv4 era because of which the following issues are seen in allocation of IPv6 addresses –

- Contiguous IPv6 address block allocation is not ensured by APNIC to different organizations within an economy when they go back to APNIC for further allocation (reapplying after more than one year)
- No provision of reservation of IPv6 address space for organizations (both present and future) in economies who are not in a position (or not aware) to ask for addresses at present. (If this does not happen then we will have skewed address distribution)

Position in Other RIR Regions

- No other RIRs presently have a program to assess the needs of individual economies in their region and reserve appropriately-sized address blocks.
- However, economies in other RIRs may have similar needs and a similar program of assessment may be appropriate.

Proposal Prop-100 Details

- IPv4 era and IPv6 era are very different because of shortage of addresses in IPv4 and abundance of addresses in IPv6
- Existing needs based allocation policy relevant for IPv4 but not necessarily relevant for IPv6
- IPv6 addresses in abundance and their planning and distribution at nascent stage

Focus of our proposal

- To ensure that all economies (and the different present and future organizations in those economies) will get a suitable share of the IPv6 address space, whether they need it now or at a later date
- Reservation of suitable sized address blocks by APNIC for different economies to be used by different organizations (both present and future) in those economies.

Proposal Prop-100 Details (contd..)

Implementation Mechanism by APNIC

- There could be many factors, which could be taken into consideration for assessing the IPv6 address needs of different economies. These factors would help to make an aggregate estimate of the present and future IPv6 address requirements of all organizations and stakeholders in each economy.

Implementation process has broadly following stages -

- **Analysis and Projection of Requirements**
 - By APNIC
 - Representative body of an economy
 - Any other mechanism deemed fit by APNIC
- **Reservation of IPv6 address blocks**
 - Reservation of suitable sized address blocks by APNIC for different economies
 - APNIC may also keep some suitably sized blocks unreserved, for any sudden unforeseen requirements in future.
- **Allocation of reserved IPv6 Address Blocks**
 - Allocation of addresses from reserved blocks may be done directly by APNIC or through an NIR (wherever existing)

Proposal Prop-100 Details (contd..)

Empirical study of IPv6 address requirements for India

- Current Population = 1.2 billion (2011)
 - IP address requirement for each individual in Unique Identification Development Authority of India (UIDAI) project
- Projected Population = 1.5 billion (2030) (@1.41% per year)
- Telecom & Internet Coverage in 2030 (80% of the population) = **1.2 billion**
- Promotion of new sensor based applications
 - Smartbuildings
 - Smartgrids
 - Tele-Education
 - Tele-Medicine
 - Intelligent Transport
 - Sensor Based weather applications
 - Internet of Things (widespread machine to machine communication) etc.
- Number of organizations in India currently 27 million and expected 50 million in next 20 years

[From feedback from service providers / other organizations & figures as shown above, it is estimated that India will initially need at least a /16 address block for meeting out the needs of different organizations and stakeholders in the country]

Advantages of Proposal

- **Advantages:**

- Role of APNIC will be expanded to include planning and assessment of the aggregated requirements of the larger Internet for all economies in the APNIC region. This will give a boost to IPv6 deployment in APNIC region.
- APNIC will be in a better position to project suitable requirements to IANA to meet out reservation of IPv6 blocks for all organizations and stakeholders in different economies of APNIC region
- The economies and their organizations will have a fair idea of future allocations and they can plan accordingly with long term perspective for IPv6 deployment.

Disadvantages of Proposal

- **Disadvantages:**
 - May be short term workload/financial implications for APNIC for analysis and projection studies, training and awareness etc.
 - These however, should not be a constraint because otherwise also APNIC has to work for IPv6 awareness and its deployment in all economies in APNIC region

Implementation Schedule

- There are certain operational issues in different economies like assessment and projection studies for various organizations (present and future), suitable size of address block to be reserved for them, Suitable size of unreserved blocks to meet out unforeseen situations etc.

- Such issues still need deliberations and also time for collection of facts and figures from various stakeholders in different economies of APNIC region. Other RIRs may also have to be consulted in this process.

- Expected time to implement is about 12 months
 - 3 months – Finalizing the methodology by APNIC
 - 6-9 months – Assessment, evaluation & projections for IPv6 addresses for different economies

Summary of Prop-100

- Prop-100 suggests a shift from immediate needs based IPv6 policy framework to forward looking long-term planning based policy framework in APNIC region
- Reservation of suitably sized IPv6 address blocks for all economies in the APNIC region for further allocation to organizations (existing and future) and other stakeholders from these economies
- APNIC to carry out assessment studies to estimate the need for IPv6 addresses to be used by organizations and other stakeholders (present and future) in all economies

Questions / Discussions

THANKS