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**The vital role of the NRO and RIRs in IP address management**
The Number Resource Organization (NRO) and Regional Internet Registries (RIRs) have provided successful stewardship of IP address distribution for over 15 years. The RIR system ensures that Internet number resources are fairly distributed according to the needs of all stakeholders at both a regional and global level, and according to policies that ensure the stable and efficient operation of the network. Each RIR performs a range of critical functions including: reliable and stable allocation of Internet number resources; responsible registration and maintenance of Internet resource allocations; and, provision of open, publicly accessible databases where this data can be accessed.

The RIRs also work to address the needs of developing economies. Each of the five RIRs has developing economies within their region and work with stakeholders within those economies to address their unique needs. RIR education, training and support services are often targeted specifically at these economies, in recognition of our mutual global interest in equitable Internet development.

**IPv4 exhaustion**
Today's multi-stakeholder approach to IP address management is the best way to address the IPv4 exhaustion challenge. Using an open and participatory model, the five RIR communities have been working together globally and regionally to find strategies to best manage the distribution of the remaining unallocated free pool.

The RIR communities have a long history of successfully working together to solve global addressing problems. On occasion, there are Internet number resource issues that have global impact. In these cases, each RIR community discusses the policy proposal within its own policy development process, while also liaising with other RIR communities to adapt and refine the proposed policy to meet all stakeholders' needs. As an example, all five RIRs have recently adopted the "Global policy for the allocation of the remaining IPv4 address space", which guarantees each RIR one of the last five blocks of IPv4 address space, when that time comes.

Regionally, each RIR community has been discussing and adopting various IPv4 "end-of-life" policies that best meet their individual needs. Adopted policies and proposed policies currently under discussion look at liberalizing transfers of IPv4 addresses between address holders, tying the eligibility of receiving IPv4 addresses to plans to deploy IPv6, and reserving some of the remaining IPv4 addresses for future new entrants to the Internet.

**Transition to IPv6**
The Internet is now witnessing a measurable transition to IPv6. The rate of new entrants into the IPv6 routing system has increased 300% in the past two years. IPv6 traffic is often being carried without the user's knowledge. IPv6 functionality is now provided in the latest desktop operating systems and many client applications seamlessly receive IPv6 functionality through automatic software updates.

"For those still to deploy, there is still time for a planned and cost-efficient transition to IPv6", said Paul Wilson, Chair of the NRO. "The fact that we have not seen this so far is actually a conscious decision by the industry rather than a failure on anyone's part. However the time for active planning is now."

The NRO considers the transition to IPv6 to be a great opportunity for new networks and networks in developing economies. New networks and developing economies do not have a legacy of complex IPv4 infrastructure that needs to be updated to support IPv6.

"Just as many developing economies have leapfrogged the extensive wired telephone network with wireless, new networks and developing economies can bypass IPv4-only networks," said Adiel Akplogan, AfriNIC CEO. "Instead, they can incorporate IPv6 from the start, avoiding much of the transition cost. It is essential, however, that equipment vendors provide IPv6 upgrades and functionality at minimal extra cost".

There is no single solution to IPv6 transition. The NRO understands that existing IPv4-based network operators face complex decisions in the face of IPv4 depletion and the transition to IPv6, and that no single solution will meet the needs of everyone. In this environment, the NRO insists that the multi-stakeholder communities that comprise the RIRs are best placed to address the array of challenges and solutions ahead of us.

Today's regional IP address management policies enable easy access to IPv6 addresses, and ensure that access to IPv6 addresses is not a barrier. While most IPv6 address allocations must be made to Internet Service Providers, RIR policies enable end user networks, including enterprises and content providers, to also obtain independent IPv6 address space.

To assist educate and support decision makers and network operators during the IPv6 transition, the RIRs actively provide up-to-date training, information, commentary, and analysis to stakeholders as diverse as the OECD, regional governmental agencies, enterprise CEOs, and network operators.

**Each stakeholder has a role to play in IPv6 transition**
The NRO recognizes that the transition to IPv6 will need the involvement of all stakeholders:

- The business sector should start to support IPv6 by hosting content on IPv6-enabled websites, ensuring accessibility to IPv6 users.
- Software and hardware vendors need to implement IPv6 support in their products urgently, to ensure they are available at production standard when needed.
- Governments may need to learn more about IPv6 transition issues in order to support IPv6 deployment efforts in their countries. IPv6 requirements in government procurement policies are critical at this time.
- Finally, civil society, including organizations and end users, should at least request IPv6 services from their ISPs and vendors, to build demand and ensure competitive availability of IPv6 services in coming years.

The NRO and the RIRs are committed to assisting all stakeholders to participate fully during the transition to IPv6. The RIRs will continue to work with and support all stakeholders by providing timely information, education and training, as needed, during this important time.

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