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IPv6 task force units will be in place soon

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Preparing for change

- ▶ **Internet Protocol (IP) addresses are the means by which machines uniquely identify themselves on the Internet**
- ▶ **Currently, almost all use the IP version 4 (IPv4) address system. IPv4 has more than 4 billion (2^{32}) possible address combinations**
- ▶ **IPv6 offers 2^{128} addresses, an extremely large address space**



A counter that keeps track of the days left before the world runs out of IPv4 addresses (figures captured some time on Saturday; site: http://www.inetcore.com/project/ipv4ec/index_en.html)

Source: Asia Pacific Network Information Centre

Road map requires Internet Service Providers to get ready by December 2011

All the committees and working groups forming part of the IPv6 Task Force that will oversee the country's transition to a 'new' global web-address protocol are expected to be in place by this month-end.

Deadlines have been set for different stakeholders to prepare themselves for the major change, and a road map spelling out the details of the migration from Internet Protocol

version 4 (IPv4) to Internet Protocol version 6 (IPv6) was officially released in July.

Version 4 of the protocol, which has so far been dominantly used on the Internet, is made up of a set of numbers that help to identify web addresses, besides facilitating communication from one point to the other. As the Internet grew phenomenally, the sets of numbers that could be used as digital addresses started getting exhausted, making it imperative that a new and expanded system with the potential for a tremendously larger number of unique addresses be deployed to keep it going. The world will run out of IPv4 addresses in a matter of months, experts say.

It is, however, not as if the IPv4 system would be shut down to make way for the new one. Both systems will co-exist; the future will however belong to the IPv6 system which has slowly been gaining global acceptance in recent years. Meanwhile, various techniques will be used to facilitate communication between the two. Isolated IPv6 networks will also have to communicate with each other using the IPv4 networks till they gain ground.

The National IPv6 Deployment Road Map detailed the creation of the Task Force which was to have several committees and working groups to pave the way for this transition, a major technical challenge for infrastructure and service providers in the country besides the government itself. It will be very difficult, "if not impossible," to acquire new IPv4 addresses after mid-2012.

The Task Force was to be made up of officials from the Departments of Telecommunications and Information Technology, organisations such as the National Internet Exchange of India, the Education and Research Network and the National Informatics Centre, as well as various other Central and State government departments and agencies, and representatives of telecom and Internet service providers, educational institutions, industry associations, equipment vendors and content providers, software vendors and cable TV industry representatives, apart from the IPv6 Forum.

Though the extent of progress achieved by the big Internet Service Providers (ISPs) to get themselves ready for the transition seemed to vary, R.M. Agarwal, Deputy Director-General, Telecommunication Engineering Centre, expressed confidence in their being able to meet the December, 2011 deadline.

He told *The Hindu* that preparatory to the change, the ISPs were also 'taking care' of issues like acquiring enough IPv6 address blocks, resources that are apportioned internationally to networks in different regions of the world.

While some of the big ISPs were already in a position to offer IPv6 connectivity, the small and medium ISPs were not prepared for transition "because they are dependent on their upstream larger service providers in the chain," the report had said. They would follow suit once the large service providers migrated to IPv6. All important Central government Ministries appointed nodal officers to get set for the transition, Mr. Agarwal said. All Central and State government Ministries and Departments, including its public sector units, are expected to switch over to IPv6 by March 2012.

The road map had suggested that a national centre of excellence, 'Indian IPv6 Centre for Innovation,' be created to take over the activities of the Task Force in the long run. A separate 'Transition Pipe,' which will channel traffic from one IPv6 network to another, has been suggested, especially by the ISPs. "The working group concerned will take up this issue with all stakeholders," Mr. Agarwal said.