TBSA/IPv6/TSTP-TEC-2008

Government of India

Ministry of Communications & IT

Department of Telecommunications

Telecommunication Engineering Centre

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Sub: Checklist for Migration from IPV4 to IPv6 in India

Sir,

The Government of India has recognized the importance of early transition from IPv4 to IPv6 in India and therefore given high priority for migration to meet the future growth in the Telecommunications and Internet space. TEC, which is the technical wing of the Department of Telecommunications, is coordinating the work of facilitating the smooth migration from IPV4 to IPV6 in India in consultation with different stakeholders. During the IPv6 workshops conducted by TEC, it has emerged that organizations need a checklist to list out the steps needed for migration. Accordingly, a general checklist is given below, which can be referred.

2.   Preliminary Checklist for IPV6 compliance in organizations

a) Deployment of IPV6 in the networks will be done in phases using technology solutions for interoperability of IPV4 and IPV6 networks. Currently there are 3 technology solutions devised by IETF (Internet Engineering Task Force), which will make this migration possible. These are –

1. **Dual Stack (Dual IP)**

2. **Tunneling Techniques**

3. **Translation Techniques**

b) The first thing that organizations would need to do is a proper auditing of the computers and networking equipments used in the organization to see if they are able to support the above methods.

c) Similarly the operating systems and application software used in the organization should also be checked for IPV6 capabilities. The IPV6 support Capabilities of various Operating Systems are given below **-**

Vendor	Operating System	Reference

Apple	Mac OS 10.2 and later	http://developer.apple.com/macosx/
BSD	Free BSD 4.0 and later Open BSD 2.7 and Later Net BSD 1.5 and Later BSD/OS 4.2 and Later	http://www.kame.net
HP	HP-UX 11i and Later Tru64 UNIX V5.1 and Later Open VMS V5.1 and Later	https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1306AA http://h30097.www3.hp.com/unix/v51b.html http://h71000.www7.hp.com/doc/732final/6645/6645pro_index.html
IBM	AIX 4.3 and Later OS/390 V2R6 eNCS z/OS Rel 1.4 and Later	http://www-306.ibm.com/software/os/zseries/ipv6/
Linux	Rel 6.2 and later Mandrake 8.0 and Later SuSE 7.1 and later Debian 2.2 and later	http://www.bieringer.de/linux/IPV6/status/IPv6+Linux-status-distributions.html
Windows	Windows2000 - IPv6 technology preview on Windows 2000,but did not provide support. Window XP - Got a supported IPv6 stack but with a limited subset of supported applications such as Internet Explorer 6.0, Window Media Player 9.0 and 10.0,and Conference XP 3.2,but no IPv6 support for popular applications Window vista - IPV6 implementation is available. Parity between IPv4 andIPv6 at the application level.	Reference – http://www.microsoft.com/ipv6
Novell	**Netware 6.1 and Later**	
SUN	Solaris 8 and Later	http://www.sun.com/software/solaris
Symbian	Symbian 7.0 and Later	http://www.symbian.com

d) Once the IPv6 compliant and non-compliant equipments and software are identified, a transition plan shall be made for procurement of IPV6 compliant hardware and software for replacing the non-compliant hardware and software over a period of time.

e) The nodal officers will take up the creation of IPv6 transition teams. They will also prepare a transition plan specific to their organization in consultation with their service provider.

f) Service providers giving the internet and leased line connections will be asked to provide IPV6 connectivity to the organization.

g) Meanwhile all new equipment purchases should be ensured that they are IPV6 compliant and able to support IPv6 without upgrades.

h) Set up a pilot IPV6 network in the organization, which will be used for training of staff and testing purpose also.

i) Application migration can start by designing the organization website to support IPV6 so that customers can browse the website using both IPv4 and IPv6 protocol.

It is hoped that this will help in planning and implementing IPV6 in the organization in a smooth manner.

Yours sincerely

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To

All Nodal Officers