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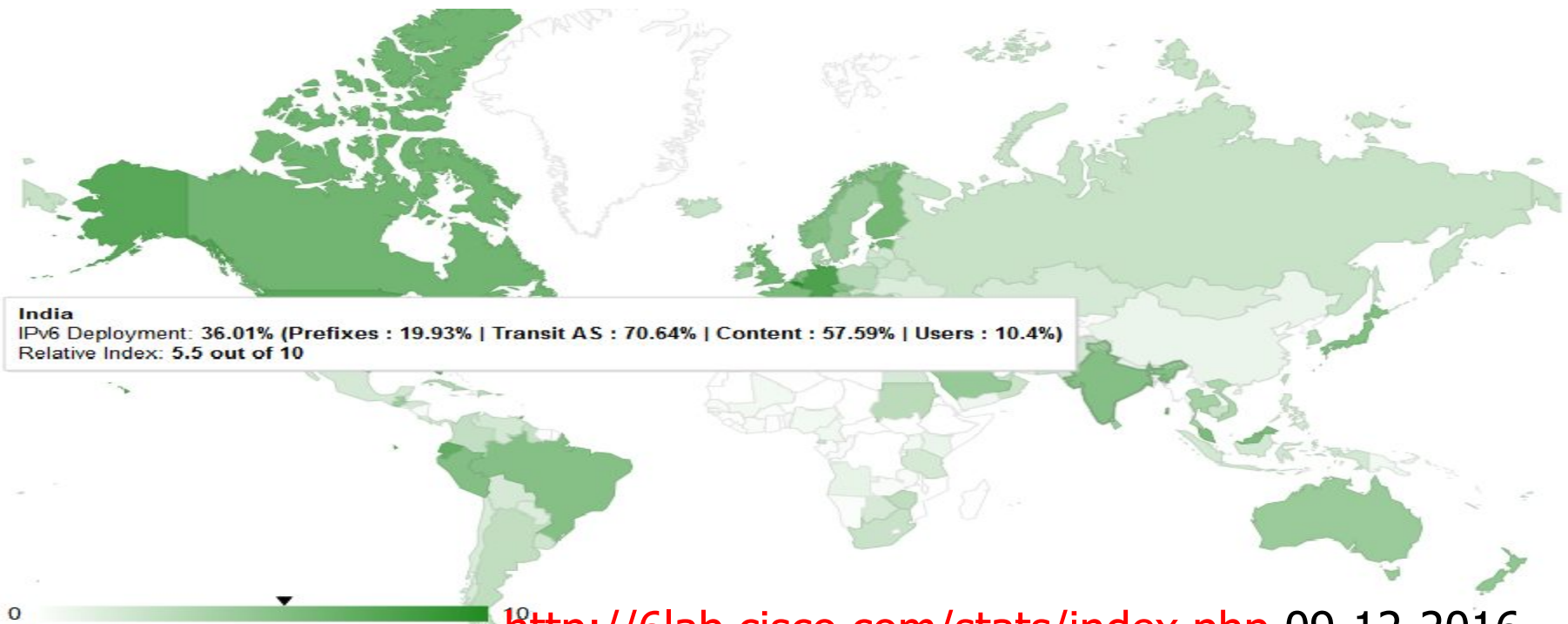
India IPv6 development Status

**2016 Taiwan Internet Forum
13-12-2016**

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IPv6 Deployment Status in India as per Cisco





IPv6 in India

- Department of Telecommunications, of Government of India is running a program for adoption of IPv6 in the Government network.
- TEC (Telecommunication Engineering Center) is writing specification for IPv6 certification.
- Sify Technologies Limited, a private Internet service provider, rolled out IPv6 since in 2005.
- IRINN is delegating the IPv6 Resource too.
- ERNET India is doing the training for Government staff.



IPv6 in Internet Exchange Points

- NIXI has taken up a number of steps to encourage IPv6 activities in the country.
- Setting up parallel IPv6 Exchange Routers (test bed) in Mumbai and Delhi Exchange points.
- Setting up Dual stack in Exchange Routers at all locations.
- Making NIXI website(www.nixi.in) IPv6 compatible and IPv6 forum certified .



IPv6 Awareness Programme

Hosted 10 Hands-on training on IPv6 configuration, in association with APNIC.

Sponsored free of cost training program to 115 engineers across the country for IPV6 online training which include virtual labs for hands on training in association with NIIT.

Awareness seminar on IPv6 road ahead with APNIC held in Delhi & Mumbai.

Conducted number of workshops on IPv6 security, Internet resource management(IRM) and Internet Routing Registry(IRR) training at different locations in India.



IN Registry IPv6 Readiness - DNS

- Registry DNS infrastructure hosted on dual stack.
- Registry can Accept and Respond to DNS queries on dual-stack infrastructure.
- Registry zone-file has been accepting the AAAA records.
- Registry has been supporting Registrants with their domains hosted on dual-stack connectivity.



IN Registry – IPv6 Readiness

- Registry System is capable of accepting connectivity on dual stack.
- Registrars can submit their IPv6 subnets for whitelisting, in order to connect to registry.
- WHOIS service is also available on dual stack connectivity.

India IPv4 addresses Status (November 2016)

Country	code	Addresses(million)	per capita
United State	US	1613.55	5.8
China	CN	338.13	0.26
Japan	JP	203.58	1.61
United Kingdom	GB	121.98	2.05
Germany	DE	119.21	1.45
South Korea	KR	112.43	2.4
Brazil	BR	82.88	0.49
France	FR	80.21	1.35
Canada	CA	70.13	2.25
Italy	IT	53.95	0.94
Australia	AU	48.55	2.57
Netherlands	NL	46.96	2.96
Russian Federation	RU	45.12	0.31
India	IN	40.76	0.04

<http://www.bgpexpert.com/addressespercountry.php>



Government Initiatives





NTP-2012 : Implementation of IPv6

Preamble:

NTP-2012 recognizes futuristic roles of Internet Protocol version 6 (IPv6) and its applications in different sectors of Indian economy.

Objective:

Achieve substantial ***transition to new Internet Protocol (IPv6) in the country in a*** phased and time bound manner by 2020 and encourage an ecosystem for provision of a significantly large bouquet of services on IP platform.



Policy Decisions in July 2010 Roadmap v-I

- All Major Service Providers will offer IPv6 services by 12/2011.
- All Government, shall start using IPv6 services by 03/2012.
- Formation of the India IPv6 Task Force:
 - Three tier Structure of Task Force—
 - *Oversight Committee.*
 - *Steering Committee.*
 - *Working Groups.*

National IPv6 Deployment Roadmap II (Timelines)

SERVICE PROVIDERS	CONTENT PROVIDERS	EQUIPMENT MANUFACTURER	GOVERNMENT ORGANIZATIONS
<ul style="list-style-type: none"> • Enterprise Customers - 01-01-2014 • Retail Customers (Wire line)- 30-06-2014. • Retail Customers (Wireless)- • LTE customer 30-06-2013 • GSM/ CDMA 30-06-2014 	<ul style="list-style-type: none"> • New contents & applications 30-06-2014 4 • Existing 01-01-2015. • Financial ecosystem 30-06-2013. • The new registrations on '.in' domain 01-01- 2014. • The entire '.in' domain June 2014 	<ul style="list-style-type: none"> • All mobile phone handsets/ data card dongles/ tablets and similar devices 30-06-2014. • All wire line broadband CPEs 01-01-2014 	<ul style="list-style-type: none"> • Transition plan for transition to IPv6 by December 2017 to be prepared by December 2013 • The public interface for delivery of citizen centric services 01-01-2015. • The Government procurement to be either TEC certified or IPv6 Ready Logo certified. • The IPv6 to be included in the curriculum of technical courses being offered by various institutes / colleges



Revised IPv6 Transition Timelines

Dated 25-05-2016

SERVICE PROVIDERS	CONTENT PROVIDERS	EQUIPMENT MANUFACTURER	Cloud Computing /Data Centre's	GOVERNMENT ORGANIZATIONS
<ul style="list-style-type: none"> • Enterprise Customers • No change in the timeline • Retail Customers (Wire line)- • 01-01-2017 • Retail Customers (Wireless)- • LTE, GSM/CDMA customer 01-01-2017 	<ul style="list-style-type: none"> • New contents & applications 01-01-2017 • Financial ecosystem 01-01-2017. • The entire '.in' domain <i>should endeavour to adopt IPv6 (dual stack) by</i> 01-01-2017 	<ul style="list-style-type: none"> • No change in the timeline. 	<ul style="list-style-type: none"> • All public cloud computing service /data centers providers should Endeavour to adopt IPv6 (dual stack) latest by 01-01-2017 	<ul style="list-style-type: none"> • No change in the timeline.

Standardization & Testing Facilities

**MOU with IPv6 Forum
Setting up IPv6 Test Bed in TEC
NGN Lab & IPv6 Test bed for IPv6 Conformance testing of
Telecom Equipment
Ready Logo Certification**





Glimpse of IPv6 Deployment in India

SERVICE PROVIDERS

- 15 Service Providers ready to handle IPv6 traffic and Enterprise IPv6 services
- 9 ready to offer Broadband services on IPv6.

CONTENT PROVIDERS

- 6 out of Top 10 Websites are on IPv6.

GOVERNMENT

- All Government Organizations, including its PSUs, have been sensitised and geared up for IPv6 transition.

ENTERPRISE

- Banking Sector is going to be ready soon
- More than 20 enterprises across India have enabled IPv6 in their network.

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Status of Nodal Officers & Activity Sheet

States/UTs

Nodal Officers (**Received**)
States/UTs
35/35

IPv6 Implementation Activity Sheets (**Received**)
35/35

CENTRAL GOVERNMENT (Ministries/Departments)

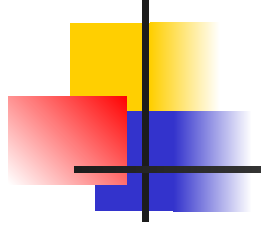
Nodal Officer Nominations(Received) IPv6 Implementation Activity Sheet (Received)
Ministries/Departments
92/92 91/92



End User Equipment Readiness Status

Total 1074 Million telephone connections

- **SONY** :All devices are IPv6 ready.
- **SAMSUNG**: All smart phones are IPv6 ready
- **KARBONN**: All devices are IPv6 ready.
- **LG** : All Android handsets are IPv6 ready.
- **BLACKBERRY** :10 OS handsets support IPv6 as part of dual stack.
- **NOKIA**: A vast majority of devices are IPv6 ready.
- **HTC** : All new devices are IPv6 Ready
- **INTEX**: A majority of devices are IPv6 ready.



Thank You