RIPE NCC Regional Meeting

Iran

IPv6 Transition Report

ISLAMIC REPUBLIC OF IRAN
MINISTRY OF ICT
INFORMATION TECHNOLOGY ORGANIZATION

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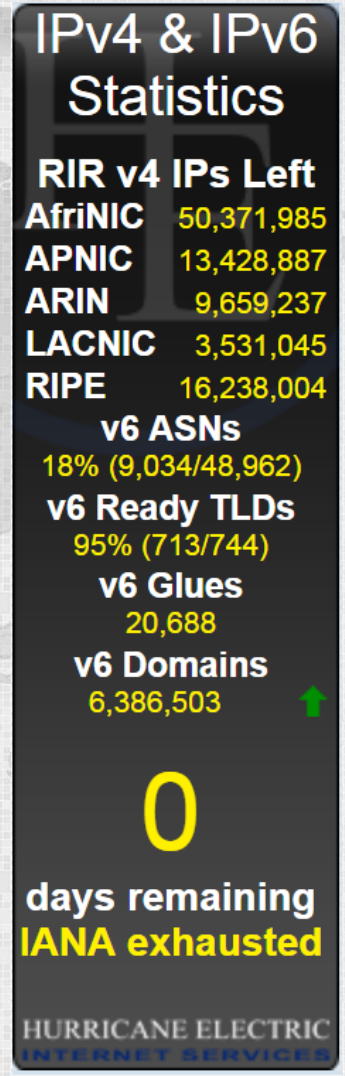
Introduction

Why IPv6?

- Increasing Internet users and demand for IP address.
- IPv4 address blocks finished unallocated in IANA (0%)
- Huge number of IP addresses, Quality of Service, Mobility, Flow labeling, Auto configuration and …



Comparative Studying of International Experiences and Roadmaps

Governments	IPv6 Roadmap	First Phase	Second phase
United States	• IPv6 Strategy started Year 2009 • Refreshed -- Year 2012	• Public web sites – 9.2012 • Result: 35% - May 2013	• Complete transition to IPv6 (dual stack) by December 2017
Australia	• IPv6 Strategy – Year 2008 • Stage 1: Preparation (2008-2009) • Stage 2: Transition (2010 - 2011) • Stage 3: Implementation (2012-2013)	• Tasks: • Review Procurement Policy. • Stocktake of Equipment. • Stocktake of Applications.	• Government Transition to IPv6: Stage 2: Transition: Jan 2010 – Dec 2011 • Implementation: Jan 2012 – Dec 2012
Canada	• IPv6 adoption strategy – Year 2012	• Enabling Phase – Sep 2013 • Deployment Phase - 2015	• Completion Phase – 201X?
India	• IPv6 Policy -- Year 2010 • Updated -- Year 2013	• Public web sites – 1.1.2015	• Complete transition to IPv6 (dual stack) by December 2017
China	• CNGI -- Year 2006 • NDRC -- Year 2012	• 8M IPv6 users by 2013	• 25M IPv6 users by 2014-5
Japan	• U-Japan -- Year 2001	• ISP readiness	• IPv6 service

Proposed programs of transition over the country according to governance docum

Phase	Actions	Date of implementation
Preparation	•Preparing the list of actions & their schedules •Implementing the pilot plans & starting the supplying of services & applying IPV6	Ongoing
Initial deployment	•Implementing IPv6 in a native form in national information network •Equipping the network of great operators with IPV6	Ongoing
Extensive use of IPV6	•The simultaneous use of both protocols (Dual-Stack)	From 2015
Dominance of IPV6	•Gradual elimination of IPV4 & replacement of IPV6	2021

Preparation Phase(general Activities)

- Preparation of important communication operators
- Implementing IPv6 between 3 universities, ITRC and ITO network (2003) to evaluate requirements.
- Network Equipment's evaluation (Hardware, IOS, …)
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- Updating devices and Software to support IPv6
- Review and evaluate different operator's networks

Preparation phase (National Activities)

- Sympathy with universities and getting proposal of universities
- Investigating, gathering information and and analyzing the organization's requirements
- Analyzing The Operator’s and ISP’s Networks
- Providing Strategy road map
- Implementing IPv6 in laboratories Live Network (LAN, WAN, Native IPv6, Services and …)
- Transition to IPv6 Protocol Project

Initial phase (continue)

- Evaluating and testing existing Network layers (core – edge and access layers)
- -Routing protocol testing(OSPFv3, BGPv6, RIPng, EIGRP)
- IPv4 MPLS based networks (6PE, ATM and dual stack)
- DNS transition(DNS64,…)
- Addressing Plan (IPv6 sub-netting, How to get IPv6 range from RIPE-NCC and …)
- Security
- Multicast
- Providing more than 3000 pages documents that show step by step implementing IPv6

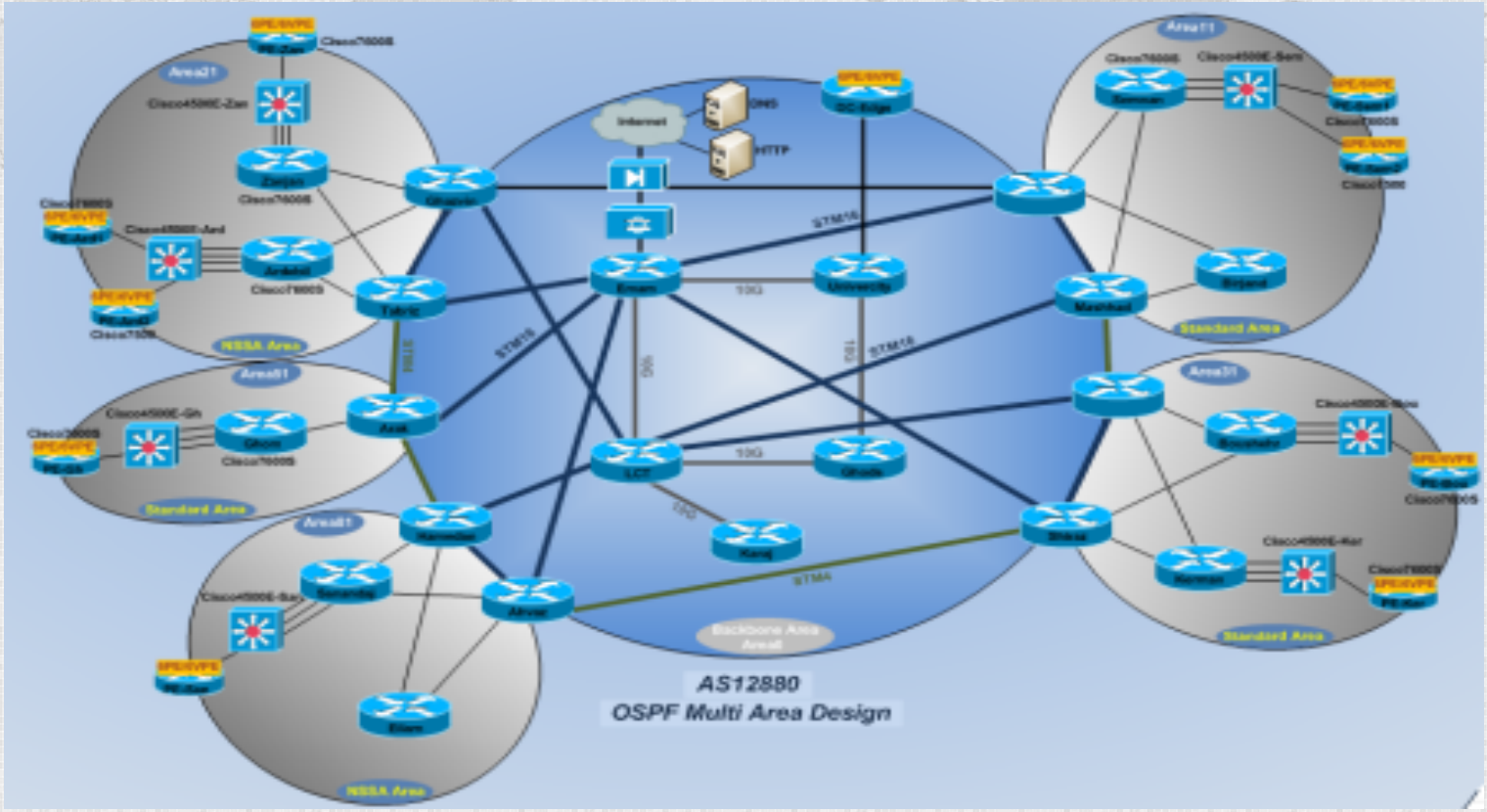
Initial phase (continue)

- Checking Applications adaptability with IPv6
- Checking access layer services like (DSL services and …)
- Voice over IP(SIPv6, H323 and …)
- Training (IPv6 forum, RIPE-NCC, USM university of Malaysia, Translating and providing some books, two IPv6 seminar one in 2012 and second two weeks ago)
- Becoming IPv6 forum Member (2011)

Initial phase (continue)

Some scenarios

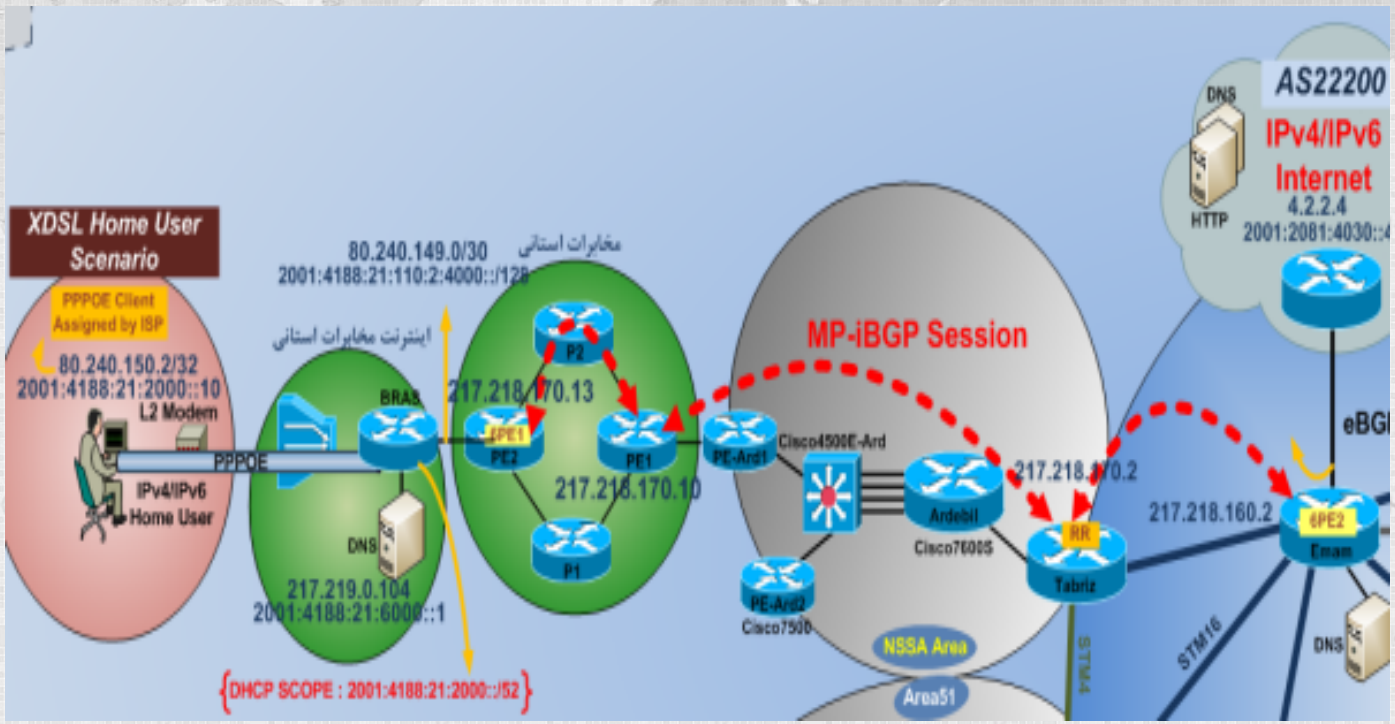
Implementing IPv6 in MPLS networks



Initial phase (continue)

Some scenarios

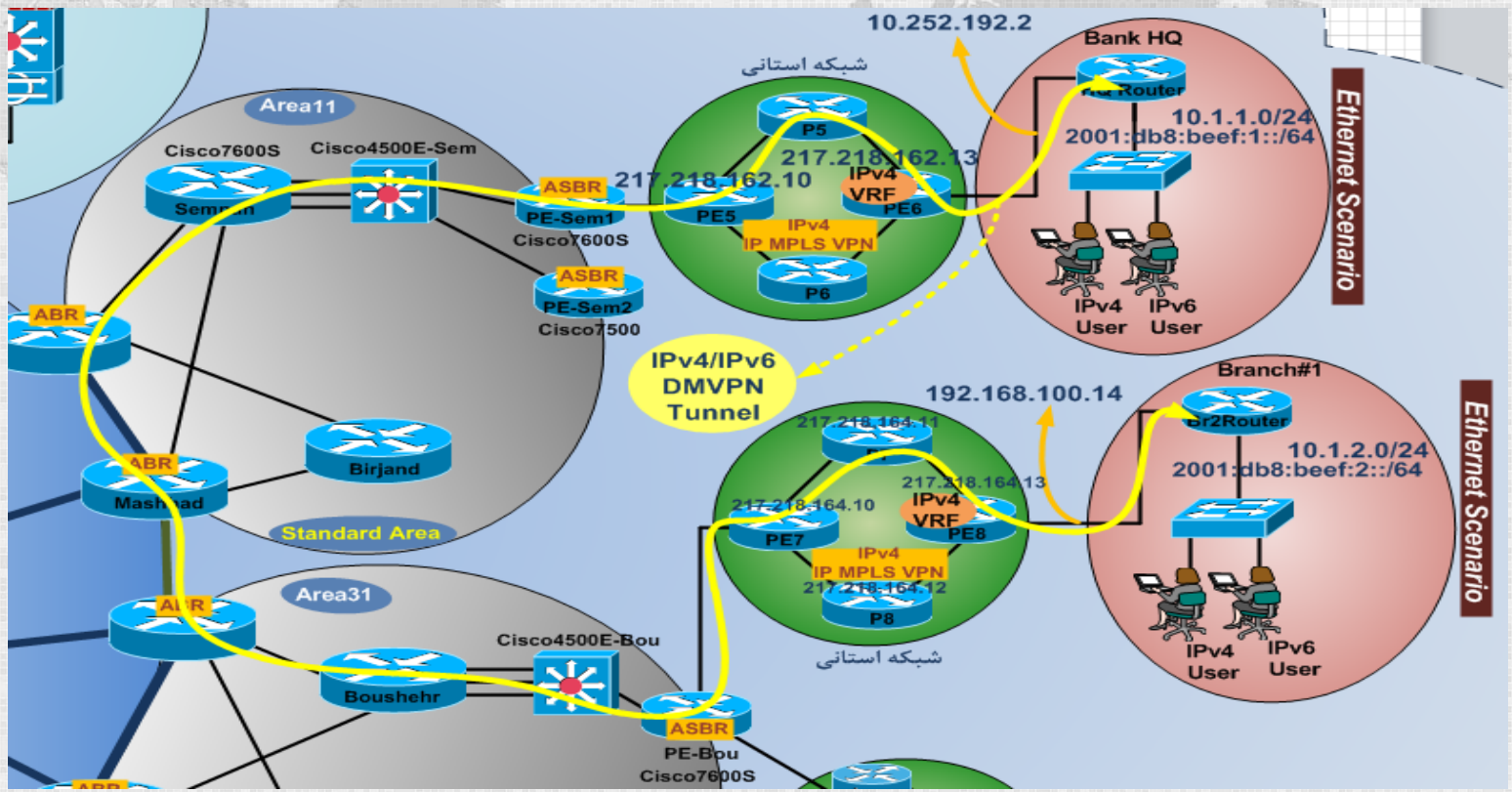
Implementing IPv6 in DSL networks



Initial phase (continue)

Some scenarios

Implementing IPv6 in Ethernet networks



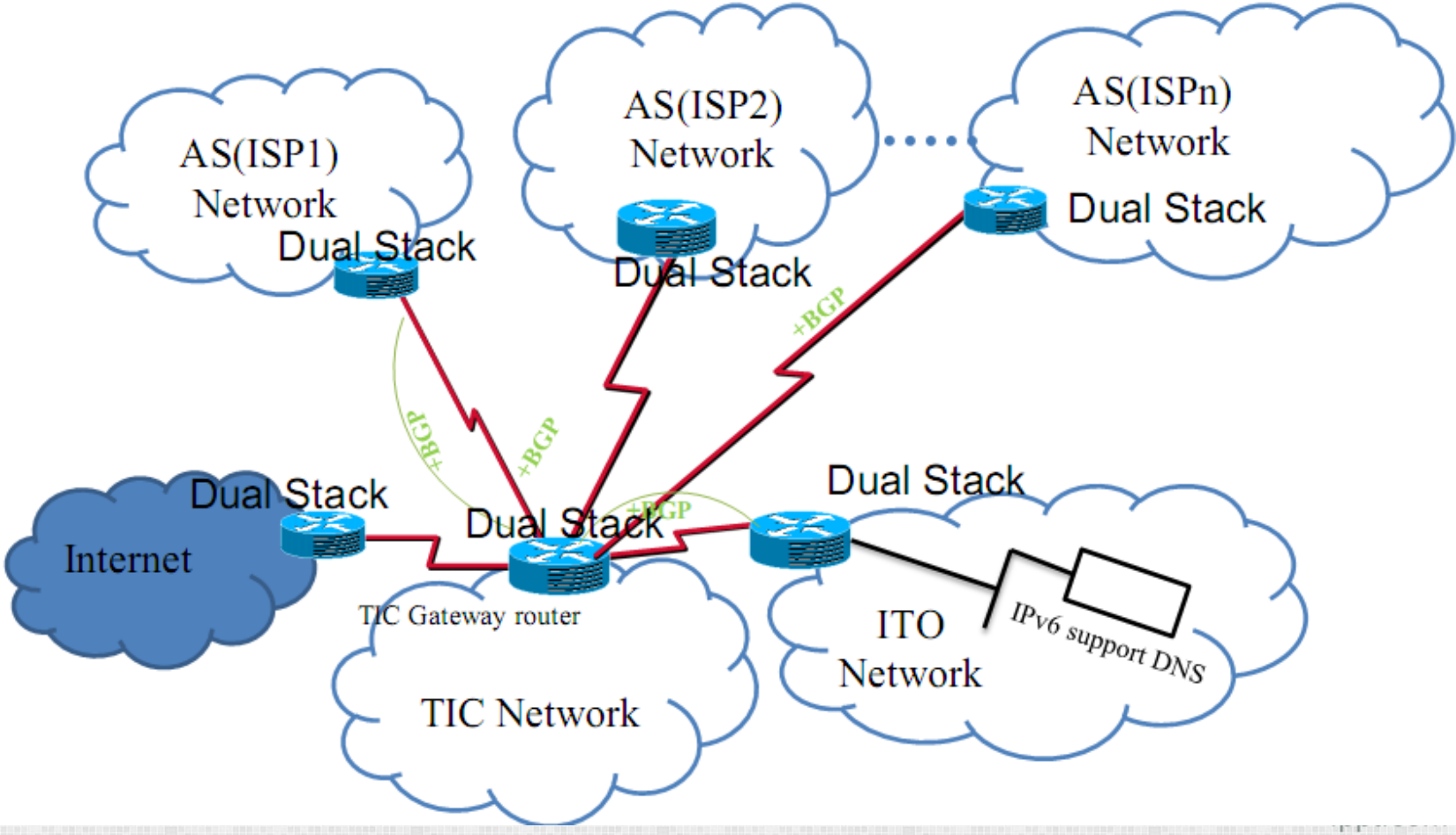
Activities Historical

- 2006: researches on IPv6 started according to latest world standards.(Universities, research centers and …)
- 2007- 2008: IPv6 research project in the ITRC.
- 2010: Iran IPv6 tack force was established and started technical tests.
- 2011:Transition to IPv6 Protocol Project started.
- 2011: Iran IPv6 Guideline committee was established.
- 2011: Iran joined to IPv6 forum.
- 2012: IPv6 strategic road map was published.

Implementing Phase

-Implementing Between Some ISP's Networks, IPM, TIC and ITO (Experimental)

- Implementation in hole country in all network will start 2015



International Activities

- Participating in international meetings, conferences and using their recommendation (RIPE, ICANN, ITU, …)
- IPv6 training (RIPE NCC , USM University Malaysia, Fast lane …)
- Membership of international institutes.(RIPE, IPv6 forum, ICANN, ITU,…)
- Total # of LIRs= more than 160
- Total # of allocated IPv6 prefixes for Iran= about 110(/29)
- Total # of visible prefixes for IPv6= 540 different /32 advertisements

Questions?

- Thank you very much
- با تشکر و احترام