

# Sahara Net's Road to IPv6 Readiness

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# Agenda

- **Sahara Net IPv6 Readiness**
  - The Spark!
  - The Progress.
  - The Challenges.
  - Current Status.
- **Where is IPv6?**
- **Sahara Net**
- **Q&A**

# THE OLD SYSTEM IS RUNNING OUT OF ROOM:

And growing by 345,600  
people every day!

ONLY  
**4.3**  
BILLION  
IPV4 ADDRESSES

**7.1+** BILLION  
PEOPLE ON EARTH

BY 2016 THERE WILL BE:

**20** BILLION  
DEVICES ONLINE

That's nearly five times more  
devices than IPv4 addresses!

From [WorldIPv6Launch.org](http://WorldIPv6Launch.org)

# The Spark!

- In **MENOG meeting October 2008**, in which RIPE talked about IPv6 and why it is important.
- In **February 2009**, established “**IPv6 Task Force**” in Sahara Net.
- **Task Force Goal**: To make Sahara Net ready for IPv6 within one year and to educate customers on the need to go with IPv6.
- Formed from all concerned departments including:
  - Customer Care
  - Operations
  - NOC
  - Corporate Support
  - And others.

# The Progress

- Got our IPv6 address space allocated in **4/2009** - 2a02:d70::/32
- Did a complete inventory of all devices and software on the network.
- By end of **September 2009**:
  - Sahara Net was ready on its main backbone.
  - Gateway Providers were not ready! ☹️
  - Established International tunnel with HE.
- By **October 1st**, our offices were running IPv6 (dual stack) with no interruption to business.
- By **November 22, 2009**, Sahara Net launched its IPv6 services as the 1st ISP in Saudi Arabia to offer IPv6.
- Since then we've been ready to connect organizations through IPv6.

# The Challenges

- **Challenge 1:** Awareness and Technical Knowledge!
  - Solved by experimenting and extensive courses/workshops.
- **Challenge 2:** Hardware and Software Compatibility
  - Most equipment were upgradeable with software (IOS).
  - Software needed tweaks/update to accommodate IPv6.
  - All new procurement included “IPv6 Compatibility” clause.
- **Challenge 3:** Lets use it now!
  - Enabled on Lab for testing.
  - Enabled on one office network.
  - Enabled on all offices (7 locations with over 180 PCs).

# The Challenges

- **Challenge 4:** Lets work out the bugs!
  - Servers were difficult to statically address, enabled EUI-64.
  - Some security challenges still worked out.
  - No major issues after enabling.
- **Challenge 5:** Lets get Customers on board (current stage)
  - Did FREE Seminars on IPv6 and other topics on March/April 2010 in Riyadh, Jeddah and Khobar (attendees over 200 in each city).
  - Enabled IPv6 in MENOG6 in Riyadh (April 2010).
  - Working with selected customers to test IPv6 (2014).
  - Working with Gateway Providers (DSPs) to enable dual stack (2014)

# Current Status

- IPv6 Ready and Enabled on
  - Pushed vendors to enable t
  - Changed purchasing require
  - Sahara Net is proud to be th
- <http://www.ipv6forum.org>

Region/Country SA Search Clear

### IPv6 Enabled ISP Web Sites List

Your any query or comment about the validated ISPs as follows is deeply appreciated and please [contact us](#)

Status(*)	ID	Organization Name	Website	Region/Country	AS number	IPv6 Block
IPv6 Enabled	I1-SA-00000124	<a href="#">Sahara Net</a>	<a href="http://www.sahara.com">www.sahara.com</a>	SA	41176	2A02:D70::/32

1 - 1 of 1

- Our Hosting and Cloud customers can now put HTML website so that IPv6 customer logo will appear in their
- .





# What U Get !

The screenshot shows the RIPE NCC website interface. At the top left is the RIPE NCC logo and name. A search bar is located at the top right. A terminal window is overlaid in the center, displaying the following commands and output:

```
C:\Users\rishadat>
C:\Users\rishadat>
C:\Users\rishadat>nslookup
Default Server: google-public-dns-a.google.com
Address: 2001:4860:4860::8888
> www6.sahara.com
Server: google-public-dns-a.google.com
Address: 2001:4860:4860::8888
Name: www6.sahara.com
Address: 2a02:d70:10::15
>
C:\Users\rishadat>
C:\Users\rishadat>ping www6.sahara.com
Pinging www6.sahara.com [2a02:d70:10::15] with 32 bytes of data:
Reply from 2a02:d70:10::15: time=403ms
Reply from 2a02:d70:10::15: time=400ms
Reply from 2a02:d70:10::15: time=405ms
Reply from 2a02:d70:10::15: time=397ms

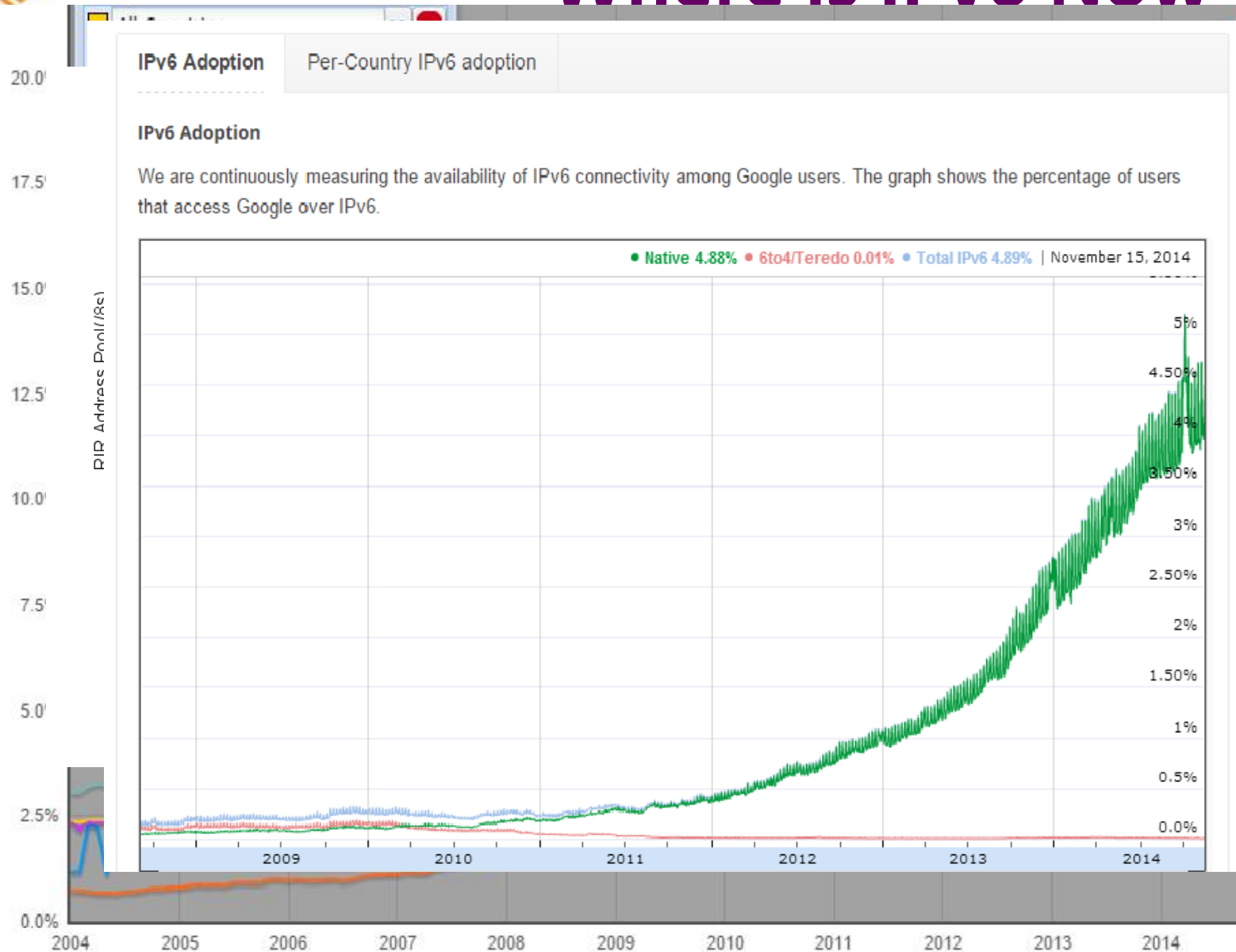
Ping statistics for 2a02:d70:10::15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 397ms, Maximum = 405ms, Average = 401ms
C:\Users\rishadat>_
```

The website also features several navigation sections:

- Welcome to**: The RIPE NCC allocations, re Internet global
- Internet**: Internet Governance · Infrastructure and Industry Information · IPv4 Exhaustion
- RIPE Database**: RIPE Database · Internet Measurements and Expert Analysis · RIPE Labs · RIPE Atlas
- LIR Portal**: LIR Portal · About the RIPE NCC · Get and Manage Resources · Talk to Us · Become a Member · Training
- RIPE Community**: Get Involved · Policy Development · RIPE Documents · Working Groups · Meetings

At the top right, there is a search bar labeled "Search Site" and a "Search" button. Below it, a box displays "Your IP address is: 2a02:d70:1:1:88cd:a7a1:f124:ea31".

# Where is IPv6 Now





## DOCTOR FUN

4 June 2003



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<http://ibiblio.org/Dave/drfun.html>

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The brave new world of IPv6

# Recommendations

- Plan well & take things one at a time
- Invest in People
- Awareness & Involvement are Crucial
- Attend notable events:
  - MENOG ([www.menog.net](http://www.menog.net))
  - SA IPv6 Task Force ([www.ipv6.sa](http://www.ipv6.sa))



*Lets work together!*

