# IPv6
# Initiatives

# PAKISTAN

## A Brief on the IPv6 Penetration initiative In Pakistani Industry

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**On Behalf of**
**IPv6 Task Force Pakistan**

# IPv6 PENETRATION – SOUTH ASIA

Visible Prefixes = 3
Allocations = 4
Visible Percentage = 75.00%

Visible Prefixes = 2
Allocations = 12
Visible Percentage = 16.67%

Visible Prefixes = 0
Allocations = 1
Visible Percentage = 0.00%

Visible Prefixes = 0
Allocations = 0
Visible Percentage = 0.00%

Visible Prefixes = 0
Allocations = 0
Visible Percentage = 0.00%

Visible Prefixes = 0
Allocations = 0
Visible Percentage = 0.00%

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Allocations = 0
Visible Percentage = 0.00%

Source: http://www.sixxs.net/tools/grh/dfp/

## IPv6 PENETRATION – PAKISTAN

–IPv6 has been on our radar screen for few years.

–The Top Ranking ISPs (CYBERNET, SUPERNET and DANCOM) decided to get their v6 prefix from APNIC and get going.

–These ISPs starts initial IPv6 deployment with in their own domain since March, 2006.

–Pakistan IPv6 Forum was launched during July 2006 to further boost the awareness program.

–IPv6 Task Force formulated in September 2006 to further increase the pace of v6 activities in Pakistan

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## IPv6 PENETRATION – LIMITATIONS

–Two major International transit providers in Pakistan

  –PTCL / PIE ( the local PTT)

  –FLAG Telecom

–Neither of them ready to support native v6 transit service

So, WHAT TO DO.

–SANOG 8 – Catalyst to Channelize the Activities

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## IPv6 PENETRATION – LETS GET GOING

– At Least we have the IPv6 Address Space & AS

**CYBERNET** - 2001:4538::/32 AS 9541
**DANCOM** - 2404:148::/32 AS 23966
**SUPERNET** - 2001:FE8::/32 AS 24435

– We went for v6 Tunnels over v4


## IPv6 PENETRATION – LETS HAVE VISIBILITY

**CYBERNET:** AS: 9541, Prefix: 2001:4538::/32

Upstream with Occaid (ASN-30071), LAVANet (ASN-6435), UK6x (ASN-1752)

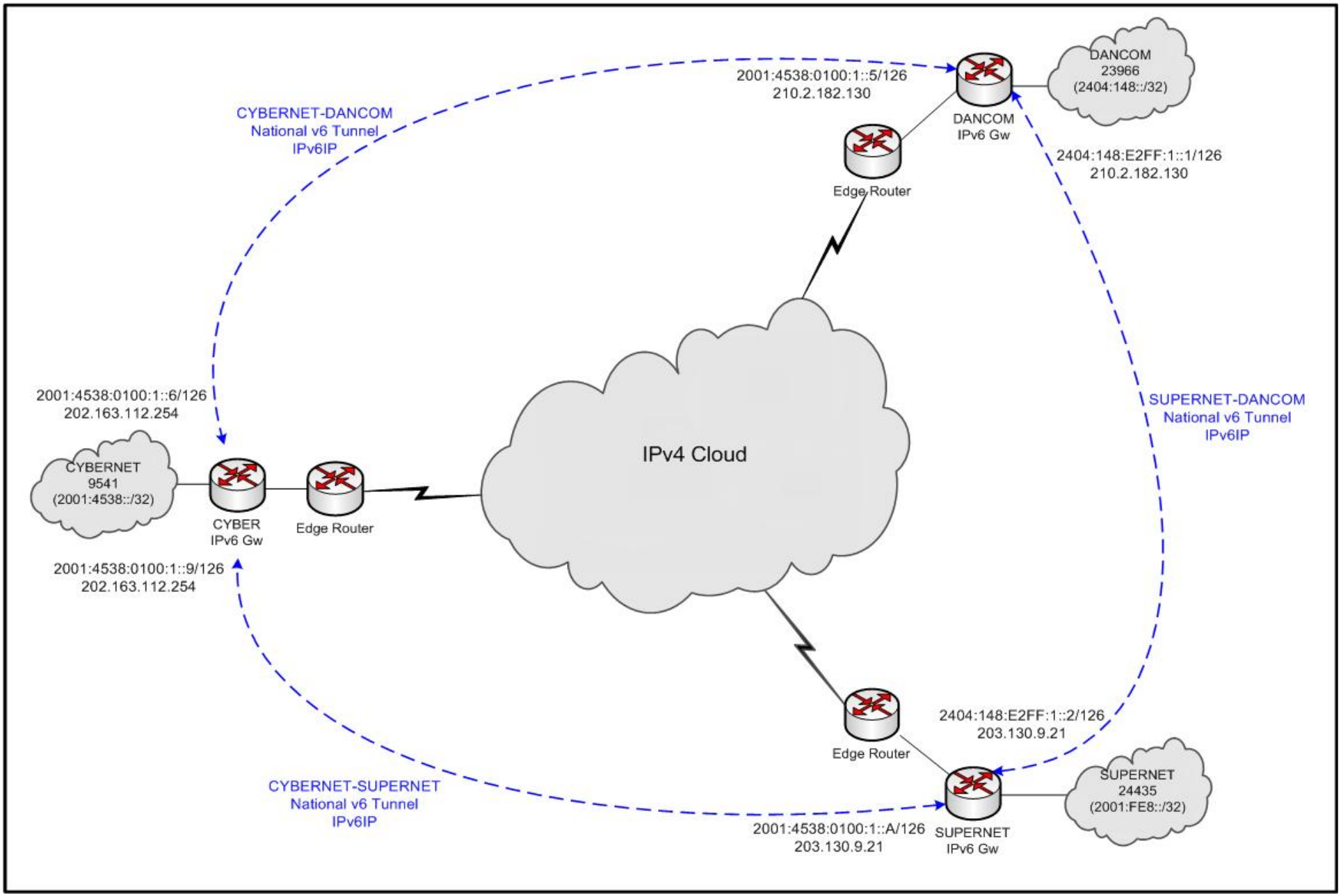
**SUPERNET:** AS: 24435, Prefix: 2001:fe8::/32

Upstream with Occaid (ASN-30071)

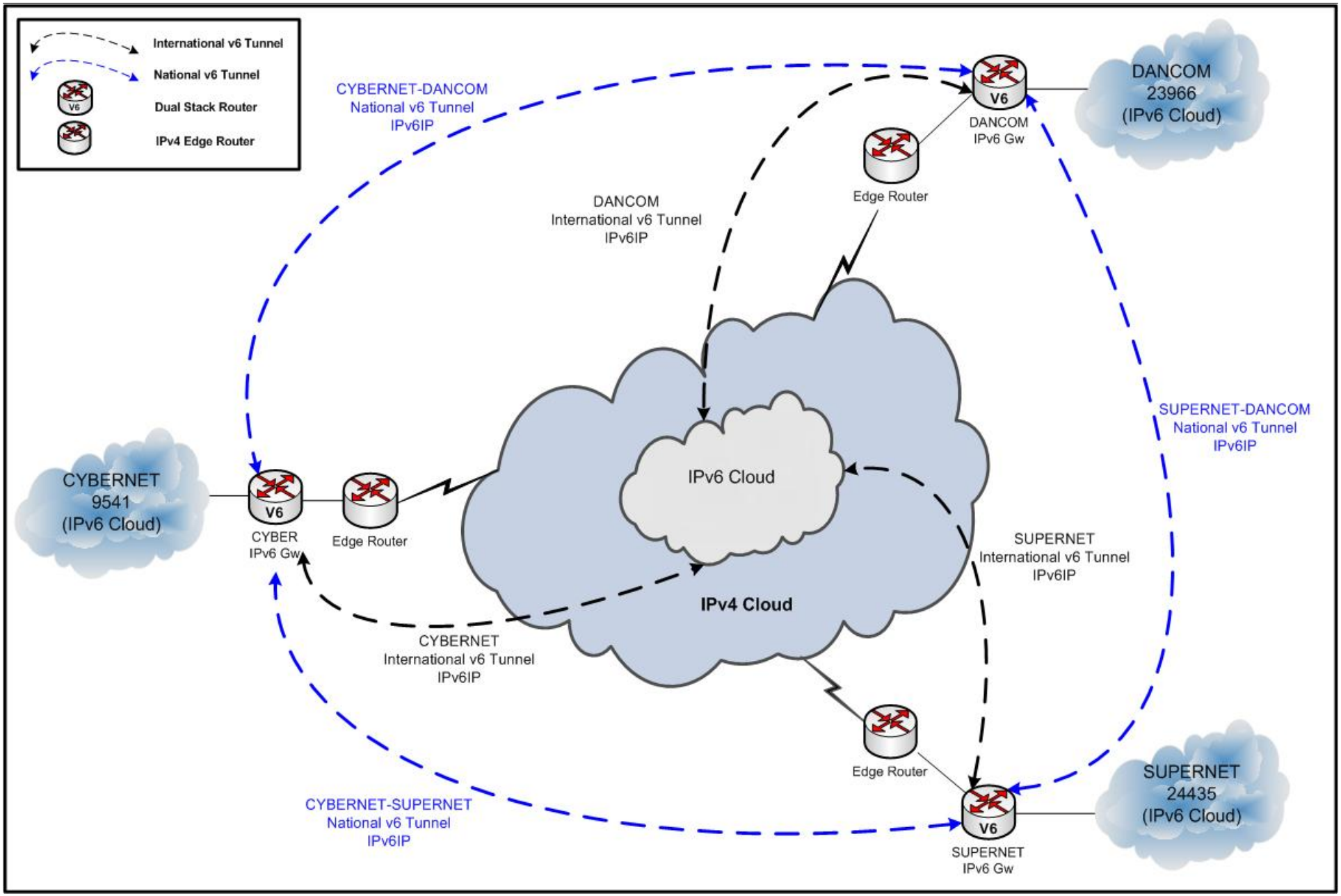
**DANCOM:** AS: 23966 Prefix: 2404:148::/32

Upstream with Fast Lab Network (ASN-41102), Occaid (AS - 30071)

# IPv6 PENETRATION – PROJECT 6Core



# IPv6 PENETRATION – PROJECT 6Core



# IPv6 PENETRATION – TA DA !!!!! V6 ENABLED

rviews@zelie.opentransit.net> traceroute www.ipv6tf.org.pk

traceroute6 to www.ipv6tf.org.pk (2001:4538:100::2) from 2001:688:0:3:4::5, 30 hops max, 12 byte packets
2001:688:0:4::62 (2001:688:0:4::62) 27.099 ms 27.160 ms 27.129 ms
10.ge0-0.cr1.atl1.us.occaid.net (2001:4830:ff:e300::1) 39.069 ms 38.987 ms 38.951 ms
v3327-mpd.cr1.lax1.us.occaid.net (2001:4830:ff:a110::2) 159.519 ms 159.515 ms 159.436 ms
so-1-0-0.cr1.sjc2.us.occaid.net (2001:4830:ff:1201::1) 168.505 ms 168.571 ms 168.410 ms
38.fe0-0.cr1.sfo2.us.occaid.net (2001:4830:ff:12ea::1) 171.830 ms 171.402 ms 171.474 ms
cybernet-gw.customer.occaid.net (2001:4830:e0:11::2) 469.982 ms 469.176 ms 468.937 ms
cybernet-ipv6-gw (2001:4830:e0:11::2) 470.543 ms 470.626 ms
www.ipv6tf.org.pk(2001:4538:100::2) 470.543 ms 470.626 ms

rviews@zelie.opentransit.net> ping inet6 www.ipv6tf.org.pk

PING6(56=40+8+8 bytes) 2001:688:0:3:4::5 --> 2001:4538:100::2
16 bytes from 2001:4538:100::2, icmp_seq=0 hlim=53 time=477.248 ms
16 bytes from 2001:4538:100::2, icmp_seq=1 hlim=53 time=468.991 ms
16 bytes from 2001:4538:100::2, icmp_seq=2 hlim=53 time=474.265 ms
16 bytes from 2001:4538:100::2, icmp_seq=3 hlim=53 time=477.434 ms

4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max/std-dev = 468.991/474.484/477.434/3.412 ms

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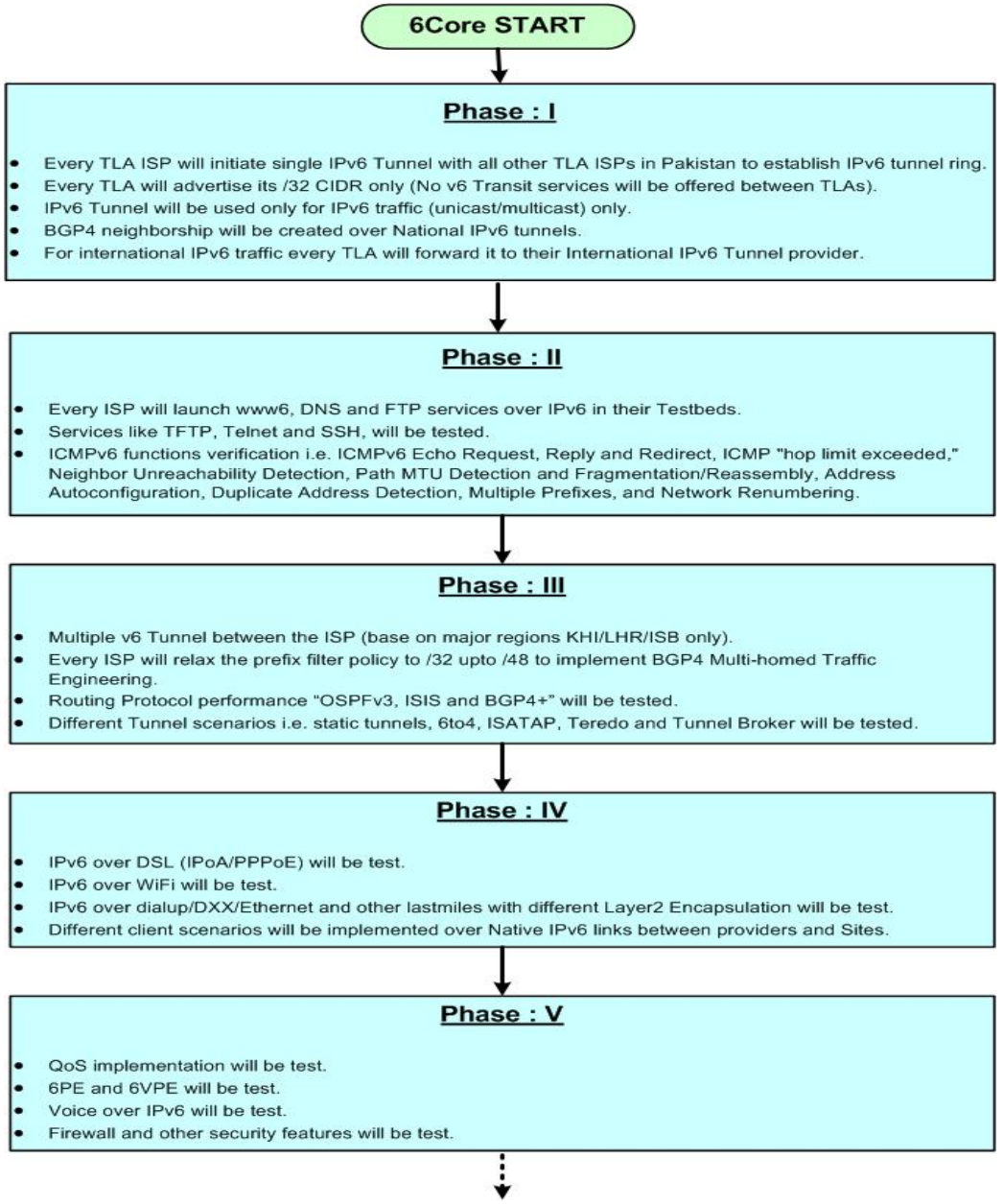
# IPv6 PENETRATION – 6Core PHASES

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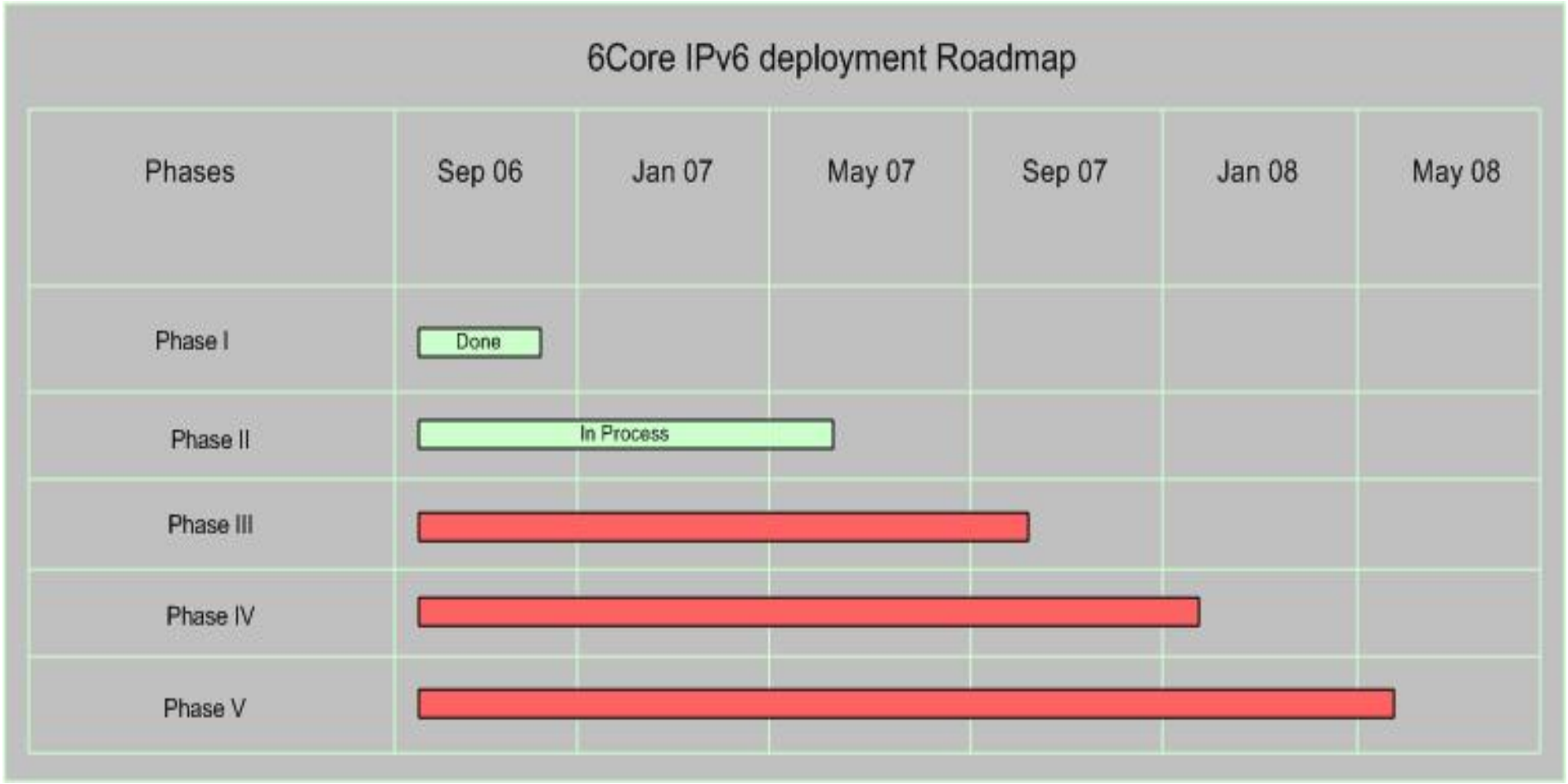
# IPv6 PENETRATION – TIMELINES



## IPv6 PENETRATION – DO VISIT

**Further information can be collected using CYBERNET IPv6 LG:**

http://seraph.cyber.net.pk/cgi-bin/lg-cisco/index.cgi

**For Visibility of Pakistan IPv6 CIDRs in IPv6 Cloud, refer:**

http://www.sixxs.net/tools/grh/dfp/all/?country=pk

**For Pakistan IPv6 Task Force Website, refer:**

http://www.ipv6tf.org.pk

**For 6Core Project and its Documentation, refer:**

http://www.ipv6tf.org.pk:8080/ipv6/6Core


## IPv6 PENETRATION – LESSONS LEARNED

–It's easy

–Right time to deploy it now so that internet ISP engineers gets some idea about the work involved.

–A bit of planning is useful and sound v4 network knowledge helps

–Everything is as good as v4, just longer addresses

–Have a Test bed setup before you move to implementation of v6 in your live network.


# QUESTIONS ?