

Don't Let IPv4 Concerns Today Stop IPv6 Tomorrow

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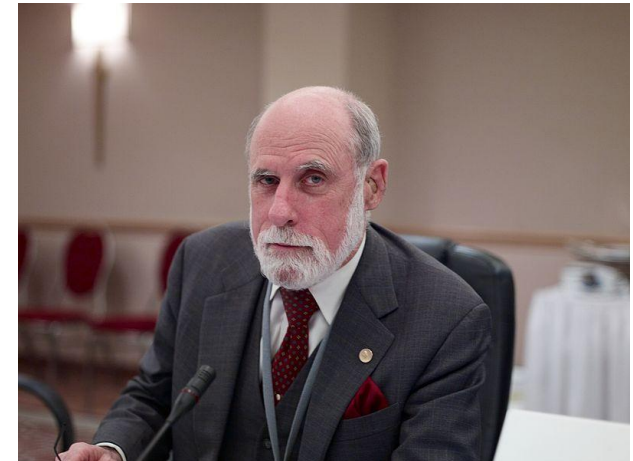


Today's Agenda

- » Understanding IPv6 concerns and anxieties
- » Assessing the need
- » Solutions to make it happen- get the project moving and heal IPv4 gripes at the same time
- » Q&A

IPv6 concerns and anxieties

- » Despite heavy promotion of the benefits of IPv6, many LAN admins are pushing back or said “no” outright
 1. They complain it’s an external problem
 - “Why should I have to reengineer my network because of something wrong with the internet?”
 - *“It’s enough to do an experiment “*
 - *“The problem is the experiment never ended”*
 2. They’re accustomed to big projects delivering big new functionality
 3. For many it’s too “theoretical”
 - They just don’t get it (“Anti-hexers”)
 - That label has killed many a great initiative



Vint Cerf, Source: Wikimedia

IPv6 concerns and anxieties (cont.)

- » We asked our community about their IPv6 plans:
 - 47% of respondents said they are “not at all confident” that their company has an actionable IPv6 adoption plan in place
 - Fewer than 3% have completed IPv6 adoption, while 69% have completed no IPv6 migration whatsoever
- » Most common transition obstacles:
 - Not a priority for my organization – 72.4%
 - Lack of adequate equipment – 36.8%
 - Don’t understand IPv6’s benefits – 31.6%
 - Budget – 27.6%

*The SolarWinds survey was conducted from November 12 through November 28, 2012 via an online survey service, resulting in over 85 survey responses. SolarWinds awarded three (3) winners with a \$50.00 Amazon® gift card, with the approximate retail value of \$50.00 USD.

Assessing the need

- » What do the findings tell us?
 - Disconnect between executives and IT
 - IPv6 and its benefits still not fully understood
 - Resources are required
- » Where do we go from here?
 - Determine your organization's needs
 - Net it out for everyone
 - Establish the WHY of your migration to IPv6

Assessing the need - Step 1: You are here ↓

- » Show of hands, are you:
 - A. The driving force behind your organization's adoption of next-gen Internet?
 - B. Being directed by your management to make it happen?
- » In either case, you probably don't have universal enthusiasm across your organization
- » Projects like this require everybody to be on board
- » OK, how do I get started, for real this time?

Assessing the need - Step 2: Net it out for everyone

- » IT is reactive and action oriented
- » We ask what, how, when, how much (how high)
- » We're actively politics-averse – Yuck!
- » Admit it, we're a cost center
- » But because IP is so ubiquitous and so critical, everyone must agree on an universal and binding answer that IT doesn't usually have to answer:

Why?

Assessing the need - Why: Create and ingrain your internal pitch

- » With transition to IPv6, if *you* can't answer "why" in layman's terms, maybe you should reconsider
- » The "why" must be understandable by all
 - CEO: Asking the board for budget and weighing risk
 - Receptionist: Might not be able to badge visitors in
- » Ineffective "whys"
 - It's cool / It's the future / We'll have to do it eventually / My boss wants it
- » Effective "whys"
 - It will save us money / Our business depends on it
- » If your organization can't agree on "why," pay attention
 - Areas in your organization that can't get on board with the one "why" will likely be a problem during transition

Make it Happen: IT budgets and time dilation

- » Establish budgets and commitment
 - Many areas of your business run on short cycles
 - IT management must negotiate multi-quarter projects with costs up front
 - Your manager's non-technical peers don't understand
- » Set timing expectations
 - Projects like IP transition don't happen in a month
 - How long will it *really* take? Be honest. Then double that.
 - The bigger the project, the greater the time disconnect
- » You'll have to have budget commitment for the long haul
- » Solution: Socialize and celebrate the unique nature of your IPv6 project
 - Get your extended organization to take the long view
 - Be a calming agent addressing an unavoidable challenge

Make it Happen: Dual-stack is forever

- » It may not *really* be forever but it will probably be longer than you think
- » IT managers hate recurring costs
 - Upgrading/purchasing dual-stack routers and other gear
 - Doubled administrative overhead (two networks)
 - Increased security assurance costs
 - May have to change your ISP
 - Increased IT staff cost – IPv6 experience uncommon
- » Temporary is a four-letter word
- » Solution: Identify these costs up front
 - Develop mitigation strategies where possible
 - Present with budget request
 - Use manager's reluctance to guide the maximum acceptable duration of the dual-stack period

Make it Happen: The new guy on your team – NAT admin

- » NAT != NAT64
 - v4 NAT is a piece of cake – the router does the everyday work
 - NAT64 – will require additional stewardship
 - Not all IT managers get it. NAT is NAT right?
- » Solution: Define the new program and process around IP mapping
 - Create clear guidelines for the processes and personnel who will maintain your mapping
 - Make it a role, not a person
 - Don't let it become another IP spreadsheet
 - All core admins should be equally proficient
 - Use the recurring costs to motivate migration completion

Make it Happen: IP Survivor

- » In any sizeable organization you may encounter islands of resistance
 - Local teams out of your span of authority
 - Politically isolated – bah humbug
 - Hardware or applications that may never support IPv6
 - Insufficient technical expertise
 - The lowest common dominator can set your agenda
- » Solution: Vote them off the IPv6 transition project
 - Use NAT, Tunneling, ALGs (Application-Level Gateway) to isolate
 - Save the mainland, come back for them later
 - They may even end up paying for it
 - Feeling excluded often motivates cooperation

Make it Happen: Upgrade in place with targeted training

- » Management has no interest in requiring IPv6 experience for desktop support hires
- » Not everyone in your company needs to be a 128bit guru
- » Different teams will need different training
 - One size does not fit all
- » Solution: Create targeted training
 - Short and sweet
 - Taking multiple classes is OK
 - Easier to maintain over time
 - Determine who needs what
 - Set up a lab and a little homework
 - Make sure it's applicable to web and application teams
 - Keep the content handy (we get rusty)

Make it Happen: After The Switch, No Whining

- » Do or do not, there is no try
 - You'll never really be done, IPv4 is just too burned-in
 - Rest assured, people will keep trying to stand up 32-bit
 - Priority: Communicate that there is **NO** going back
- » Be a benevolent dictator
 - Use this opportunity to reset years of misconceptions about Layer 3
 - There may be new ways to address long, annoying problems
- » Be prepared for year 1, year 2 and year 3
 - Have end-customer training ready to go Day 1
 - Humans are afraid of what they don't understand
 - Ninja support
 - Have a plan to identify the few critical fires and extinguish them quickly
 - Ensure some budget is in place to support IPv6 education

Q&A

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Thanks for your time!