World IPv6 Day

Access Networks

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A gentle reminder

- **We are not asking you to roll out IPv6**
- **We are trying to help co-ordinate best practices for operators in various stages of IPv6 evolution**
  - No IPv6
  - Transition IPv6
  - Full IPv6
- **If you want to roll out full IPv6 for the day, great!**
  - If you can roll out production quality, generally available IPv6 and understand how not to confuse issues with this rollout and issues with World IPv6 day then we welcome this!
  - If not, we recommend you do not undertake a rollout for the day, your users will not require one from you.

Who will be broken?

- **Usually people who have no idea**
  - Google/Yahoo/Facebook is slow!
  - I should run antivirus….
  - Perhaps its my ISP?
- **Even worse, consumer users will be at work**
  - Trying the internet in the morning, finding it broken
  - Choosing to call their ISP at work (useless) or when they get back from work
  - Will you have an influx of user calls from 5PM onwards???
    - How long will they delay? Running antivirus , rebooting routers etc… will calls come in later?
  - What happens if they go to bed and it is fine in the morning??

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How will they be broken?

- **Two main types of user:**
  - Users with IPv6 addresses and no IPv6 connectivity to the webserver (**dud** connectivity)
    - TCP6 connection times out, fails over to TCP4 (or multiple sessions launched and TCP4 wins)
    - User perceives slowness
  - Users with IPv6 addresses and poor IPv6 connectivity to the webserver (**bad** connectivity)
    - TCP6 connection succeeds
    - Performance is poor (webpage images do not load)
    - Rare but worse, rudimentary IPV6 geolocation re-localises content

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How will they be broken?

- **Dud**
  - Duds are caused by something giving you an address but not having routing
    - Broken tunnels (where address is statically configured or calculated, usually broken by filtering)
    - Rogue Routers (i.e Windows Internet Connection Sharing)
- **Bad**
  - Bads are cause by:
    - Suboptimal / Asymmetric tunnel IPv4 paths
    - Rate limited tunnels
    - Packet filtered tunnels
    - Overzealous / badly configured ALG/IPS

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World IPv6 day and you

- **Call a company meeting, publicise this well both internally and to your customers.**
  - No staff member should be having to ask, raise faults or escalate them on the day because they were not briefed, document this briefing and your procedure and have these **ready to hand on the day.**
    - **Don't forget about VISPs / Resellers, they will not appreciate this.**
- **Ensure your network or processes do not create brokenness**
  - Are you mid way through a rollout? Handing out IPv6 addresses and can't route them? **Switch it off!**
  - Are you rolled out? Do you know who your IPv6 customers are?
    - Did you record this in your main billing systems yet? Can support find this information?

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World IPv6 day and you

- **Know what your user response will be**
  - Do you assist the user or simply make a note?
  - Does this approach change depending on their service type?
  - How long are you willing to spend on such a support call if you assist them?

- **Reduce cost of support with some simple tips**
  - Publicity and documentation should remove significant volume of calls, well informed users may be able to fend for themselves
  - Have a triage process, isolate standard faults from World IPv6 day faults quickly
  - Perhaps IPv6 faults can go to a dedicated team?
    - Keep your expensive support resource for genuine problems, use a triage (or IVR) for routing these calls.

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World IPv6 day and you

- **Understand in advance what resources are available to solve problems**
  - Use **test-ipv6.com** to diagnose end-user brokenness
    - Learn about the expected results
  - Know how to instruct users to turn off broken IPv6 implementations in their O/S
    - Would you know how to turn off IPv6 support in many versions of Windows? (hint: KB929852)
  - Get some idea of where auto tunnelled traffic will be going
    - Traceroute to 192.88.99.1
    - Skim your netflow for proto 41 traffic
    - Check SixXS PoPs in your country (http://www.sixxs.net/pops/)

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Conclusion

- **Don't bury your head in the sand**
  - As an access provider, regardless of your size or IPv6 maturity, your users are likely to have issues

- **Have a plan**
  - Having a plan is better than not having a plan!

- **Tell your users in advance**
  - Have them prepared, mark the date in their diaries, have them check themselves, this means less calls for you on the day!

- **Don't forget about dependents**
  - VISPs/Resellers will want to know how to handle calls, share your knowledge and documentation with them.

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Any questions?