

# Proposal 090

IPv6 thinking for an IPv6 world

# Why do we need this?

- Common misconception that all ISPs should fit in a /32 leads to:
- Squeezing customers into /56, /60, or in some cases even /64 assignments.
- People are historically bad at bit-math.

# How does this help?

- Nibble Aligned Allocations - no bitmath
- Nibble Aligned hierarchy - no bitmath
- Clear ability to delegate up to /48 per end-site as basic minimum
- Ability to assign more than /48 per end-site with justification

# How does this help (cont)

- 5-year planning horizon -- Better Aggregation
- Consistent sized divisions -- Make every PoP like your largest PoP
  - Simplifies subdividing
  - Reduces fragmentation
  - Consistent expectations across network

# Simplified Expansion

- No complicated HD ratio
  - 75% utilization overall
  - 90% utilization at any single site
- Oversized subsequent allocations
  - Enough to contain present+future use.
  - Vacate original allocation through attrition with optional return

# What's the downside?

- Increased IPv6 prefix consumption
  - Without this policy, in 50 years, IPv6 will still have roughly 99.9975% free.
  - This policy will reduce that to approximately 99.54% if adopted in every RIR.

# Summary

- Better Aggregation
- Better Network Structure
- Fewer Outages (no bit-math required)
- Bigger Prefixes
- Still plenty of free space for way more than 50 years.

# Questions

- Thanks for your time
- Please Approve this Policy Change