

# Navigating the IPv4 Transfer Market

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# Primary source of supply is APNIC

- The IANA has allocated  $45 \times /8$  to APNIC (754,974,720 numbers)
- Through the distribution of “various registries” space to each of the RIRs from IANA another  $388 \times /16$  was allocated (25,427,968 numbers)
- Additionally APNIC received several distribution of “recovered space” from the IANA of another  $62 \frac{1}{4} \times /16$  (4,079,616 numbers)
- Total allocated numbers from IANA to APNIC is  $784,482,304$  numbers or  $3,064,384 \times /24$  blocks

# Secondary source-of-supply is legacy

- Early registrations given out between 1983 to 1997 (legacy)
  - Class A: **42 x /8** (704,643,072)\*
  - Class B: **11,045 x /16** (723,845,120)
  - Class C: **39,607 x /24** (10,139,392)
  - Total legacy registrations were **1,438,627,584** numbers or **5,619,639 x /24** blocks

\* *Caveat: Yes, 13 x /8 were given to the US Department of Defense (218,103,808)*

# How much **unused** space in this pool?

- There is no way to definitely prove, without accessing each holder's network, if they are being used internally but let's look at what is being used in the public BGP table
  - Class A: The unused /8 holders have been picked over clean the **last 5 years** and sold off
  - Class B: The research of this pool yields surprising results
    - By our research, we believe that there are **8,022 unused /16** blocks (525,729,792 numbers)
    - The issue is we also believe these are held by **6,140 different** entities

# Understanding where we were in the 1990s (over twenty years ago)

- **No CIDR (RFC1519)**: Leap from a Class C to a B was excessively wasteful and not solved until late 1993
- **No Private Address Space / NAT (RFC1918)**: Was released in February 1996
- **No Business ISP Offerings**: PSINet, UUNET, ANS CO+RE begin offering businesses access but don't really get going until 1995
- **LAN/WAN Managers**: Internal telecom network persons that would order Frame Relay, ISDN or T-1s and build their own access
- **DDN-NIC and InterNIC**: Just ask and you got a Class B

# What does this mean to the market?

- **Diffusion:** We have a room here full of potential buyers, there is no such thing, anywhere in the world, as a room full of sellers
- **Why?** Actually, most do not know they have a **single** Class B (/16) registration
  - They **renumbered** years ago into private address space
  - They now get their Internet services from **business ISP** providers who use their own network numbers not the customers
  - The LAN/WAN manager of the late 1980s to the early 1990s have nearly all **retired** and with them leaving so did the knowledge
  - These were **free** and not thought of as assets with value so senior management are unaware of these registrations