

Organic Growth of IPv6 Within an Enterprise

IEPG Meeting
22 July 2007
Simon Leinen

<simon.leinen@switch.ch>

The Enterprise

- SWITCH is the “NREN” (National Research & Education Network) in Switzerland
- Offerings:
 - Network infrastructure (Internet access)
 - Application-layer services (videoconf etc.)
 - Domain registr{y,ar} for .CH and .LI
- About 70 employees

IPv6 activities

- 6BONE since 1996
- 6NET 2001-2004
- Swiss IPv6 task force 2002-2004
- Fully dual-stack on backbone
- Few customer connections

Eat our own dog food?

- Should try to use as much IPv6 as possible within the organization
- But no clear policy to this effect

How we remind people of IPv6

- Users have to request IPv4 and DNS entries from us
- We often ask back, “what about AAAA”?
- Reactions
 - What is IPv6?
 - Our application doesn't require v6 right now.
 - We'll look into it when we have time.
 - Oh sure, the v6 address is 2001:620:....

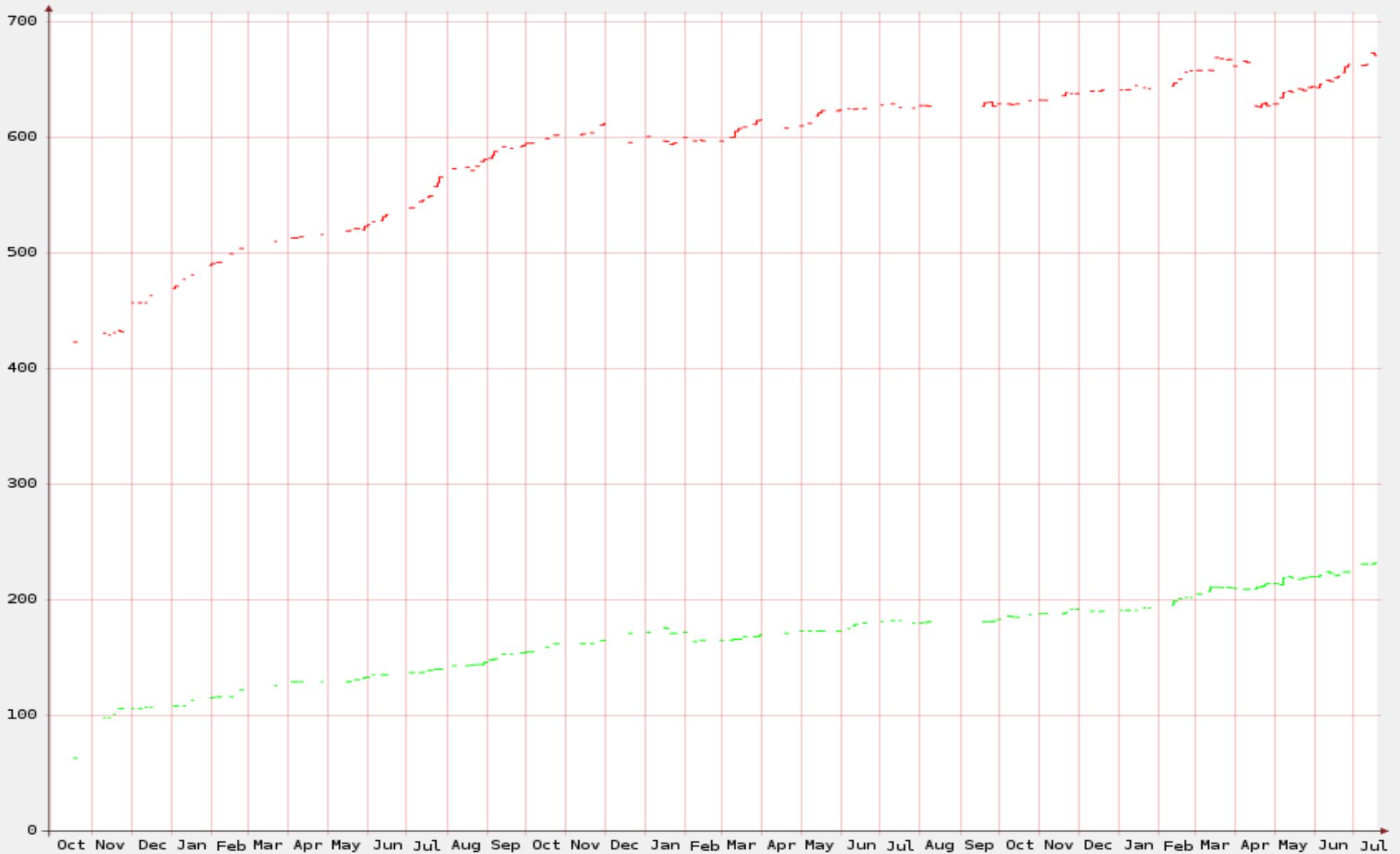
Interim Results

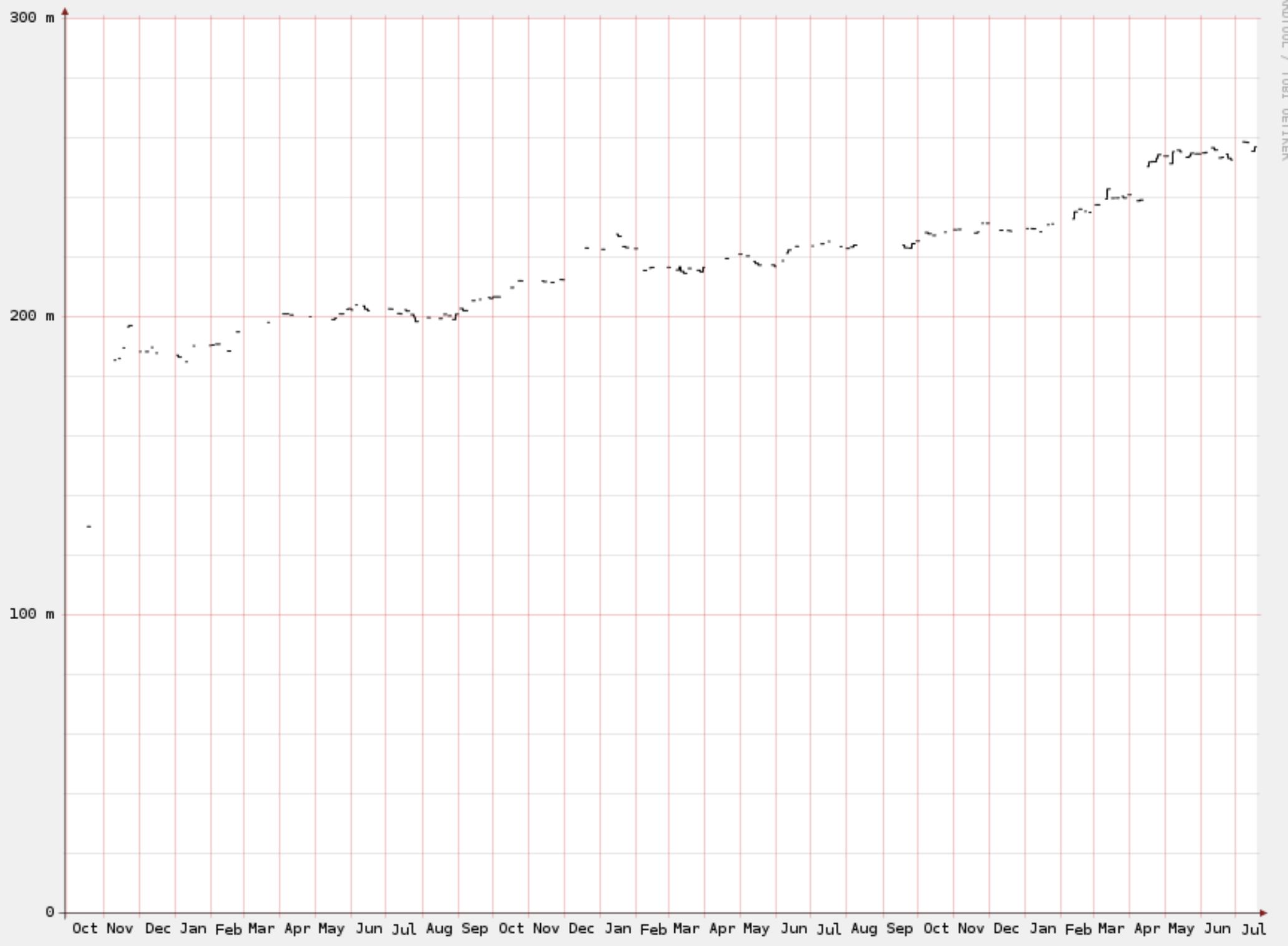
- Uptake is slow, but sticky, i.e. once a user/group adopts IPv6, they do it seriously and consistently.
- Positive examples:
 - mirror servers (mirror.switch.ch, sf.net)
 - domain registry (including glue registration)
 - mail servers
 - Web servers
 - and USENET/NNTP (so we even have traffic)

Roadblocks

- Firewall/filter problem
 - IPv4 ACLs generated from policy rules
 - No IPv6 support for filter generation tools
- Temporary solution:
 - Script that mangles IPv4 ACLs into IPv6 ACLs
 - Using DNS information (A/AAAA RRs in switch.ch)
 - Using router configuration (v4/v6 subnet equiv.)

A vs. AAAA in switch.ch





Conclusions

- It's possible to introduce v6 the soft way
- But you have to be patient
- Actual operational problems manageable
 - But people will blame IPv6 for every issue