

# draft-chown-v6ops-vlan-usage-01

Tim Chown

*tjc@ecs.soton.ac.uk*

v6ops WG, IETF 60, San Diego,

August 2, 2004

# Scenario

- Enterprise site
  - Has no IPv6 support in L2/L3 switch-router equipment
- IEEE 802.1Q VLAN tagging support available
- External IPv6 connectivity present (not essential)
  - Delivered to IPv6-capable (maybe PC) router at site
- (PC) router supports VLAN tagging on interfaces (e.g. BSD), ideally multiple tags per interface
  - Can write any VLAN tag to internal facing traffic

# Deployment

- Connect IPv6 (PC) router interface(s) to existing IPv4 L2/L3 switch-router equipment
  - Injects IPv6 RAs into existing IPv4 subnet VLANs
  - IPv6 thus enabled dual-stack on the wire
- Typically inject one IPv6 RA prefix per IPv4 subnet
  - Leads to IPv6 links congruent with IPv4 subnets
- IPv4 subnet/IPv6 links remain reconfigurable via software VLAN control

# Advantages

- Easy to deploy IPv6 if VLAN support present
- Flexibility in provision thanks to VLAN tagging
- Flexibility in limiting where IPv6 access is offered
- Allows site to use real IPv6 addressing
- Often collapse multiple VLANs to single interface
- Can scale up provision with more interfaces
- No IPv4 host or router configuration changes
- Multicast (PIM-SM/SSM) friendly
- Easy migration when IPv6 equipment available

# Discussion?

- Is this worth documenting?
  - It's kind of obvious, but very useful
  - It is cited in our campus-transition draft
- If so, is it complete enough?
  - More examples might be useful (Pekka)
- If so, is it ready for WG adoption?