IPv6 Operational Guidelines for Datacenters

draft-lopez-v6ops-dc-ipv6

IETF85 – v6ops

Diego R. Lopez - Telefónica (diego@tid.es)
A Brief History

• First version submitted in March 2012
• First live discussion (on -02) during IETF 84 in Vancouver
  – Aligned with other similar documents
  – Possibility of a series of such operational guidelines
  – Change requirements for -03
What’s New in -03

• Starting with a title change to align with the spirit of the Vancouver discussion
• “Maturity levels” renamed into “transition stages”
  – Numeric identifiers changed into names
  – More detailed examples
• First attempt for a section on security considerations
  – Essentially based on draft-ietf-opsec-v6
And Coming for -04

• Is “Next Generation” a right name for the most evolved transition stage?
• Elaborate security considerations
• Request for additional considerations on
  – Management systems
  – Fabric
  – Hypervisors
  – Eastbound interactions
• Do DC operators see this list as adequate?

• And WG adoption...
A Few Backup Slides
(Just in Case)
A General DC Model

- General model for the reference framework
- Not all layers or elements present in many real deployments
  - Combined
  - Virtualized
Experimental Stage

- Native IPv4 infrastructure
  - Gateway routers
  - Application gateways if services require them
- Suitable for off-shore (ISP-based) operation
  - Concerns on the loss of source addresses
- Only recommended for experimentation or early evaluation purposes
Dual Stack Stage

- Internal dual stacks
  - Up to a certain layer in the infrastructure
  - Keep transparency to (non-)migrated elements
- Flexibility with additional complexity
  - Traffic patterns
  - Tenant decisions
  - Partial infrastructure migration
Maturity Level 2
Dual Stack at the Aggregation Layer

- Take advantage of additional functions at the aggregation element
  - Firewalls
  - Load balancers
  - Overlay edges
Next Generation Stage

- Native IPv6 infrastructure
  - Converse translation to the experimental one
- Suitable for off-shore (ISP-based) operation as well
  - Loss of original source address is not a concern