
# An Introduction to Orange IPv6 Strategy

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# Outline

- Context
- Introducing Orange’s IPv6 strategy
- Deployment status
- Lessons learned and challenges

# 0 Address, 1 Solution, 2 Problems

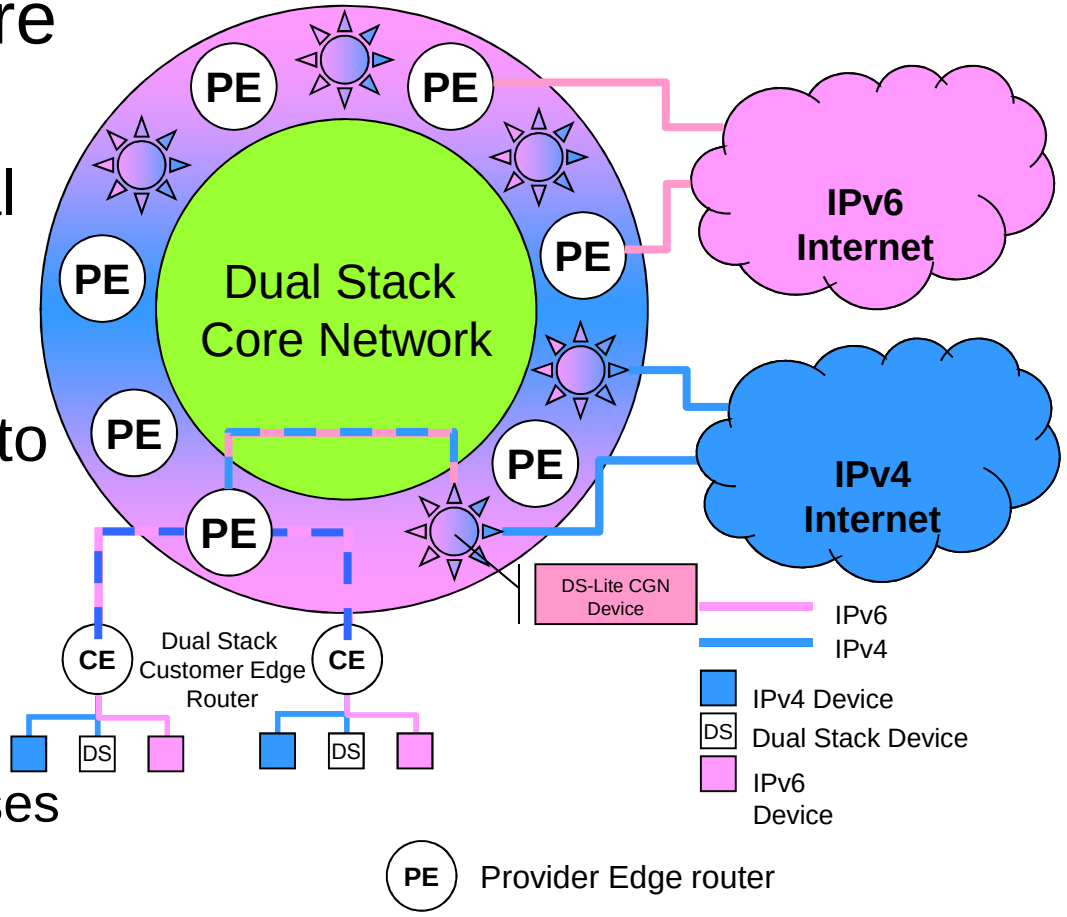
- IPv6 is the only durable solution to global IPv4 address depletion
- But IPv4 service continuity during the transition period is a MUST
  - IPv6 migration cannot occur overnight

# More Drivers

- Anticipate global Internet evolution
  - Make sure residential and business customers can access IPv6 contents whatever their location (Asia, Europe)
- Consolidate technical leadership
  - Promote IPv6 usage while confirming robust know-how
  - Cornerstone of business development for the corporate market
- Become a major IPv6 reference in Africa
  - Develop business in these countries, including those that welcome large Asian communities

# Introducing Orange IPv6 Strategy

- Dual Stack architecture
  - CE, network devices and platforms are Dual Stack-enabled
  - IPv6 prefixes are dynamically assigned to CE and mobile terminals
    - Hosts connected to CE devices automatically form their IPv6 addresses



# On CGN Technology

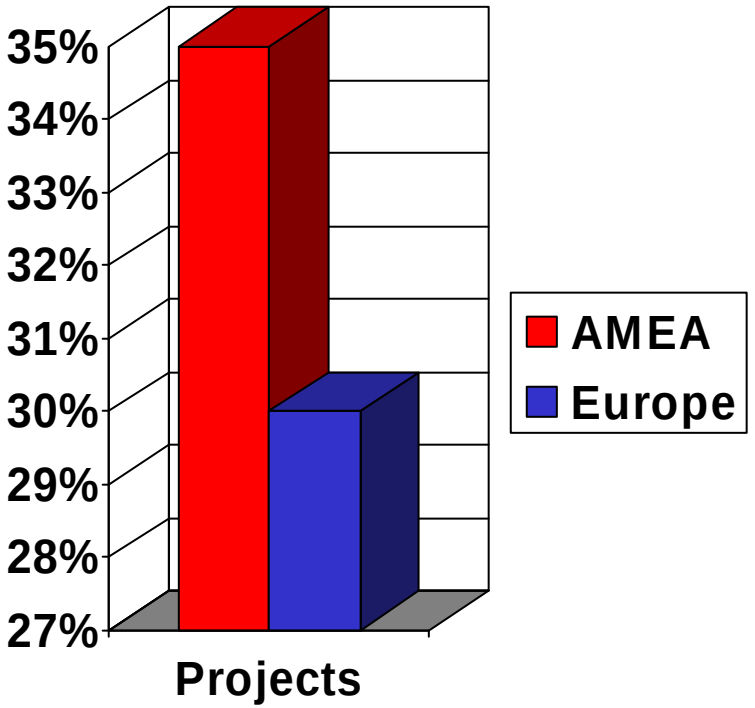
- *Any* CGN technology is a necessary but imperfect transitional accommodation
  - For the sake of IPv4 service continuity
- Because of well-known address sharing issues (RFC 6269) CGNs raise some operational difficulty, *e.g.*,:
  - User-Generated Contents (UGC)
  - Implicit user authentication
  - Access to multicast-based services
- DS-Lite technique has attractive features:
  - Only one level of NAT
  - Assumes IPv6-enabled (access) infrastructures, hence encouraging IPv6 deployment and usage
- CGN technology does not impede IPv6 deployment

# Status

- IPv6 transit offering available since 2002
- 21 affiliates initiated IPv6 activities/projects since 2008
  - Several pilot deployments started in 2010 (France, Moldova, Senegal) and 2011 (Poland)
- IPv6 VPN service available since 2009
  - Including professional support services provided to corporate customers
- 1,500+ employees trained to IPv6 Group-wise

# AMEA and Europe Zones

- AMEA
  - Ivory Coast, Jordan, Morocco and Uganda are currently the most active, *e.g.*,:
    - Ivory Coast is getting ready for IPv6 pilot deployment
    - Meditel access design is in progress
- Europe
  - France should ignite trials some time in 2015
    - As per current IPv4 address depletion forecasts
  - Poland to open IPv6 service in H2 2013
    - IPv6 service for mobile customers has been officially announced on March 26
    - Marketing decision postponed IPv6 service opening for wireline customers to Nov. 2013
  - Slovakia has started project and will be opening IPv6 service in 2014



# Lessons and Challenges

- **Transition** is where technical challenges reside
  - Make sure ISP's and customer's IT are ready first for an all-IPv6 environment
- Many vendors are not IPv6-minded **yet**
  - *E.g.*, customer electronics devices and mobile terminals markets, but progress is improving
- Applications should be Address Family independent
  - Must be used over IPv4 or IPv6 indifferently
- Both pilot deployments and communication are **key**
  - Acquire operational experience (Moldova, Poland, Senegal are typical examples)
  - Think IPv6 as a business **opportunity** not a constraint


# Thank You!