Deploying IPv6 & services

Bernard.Tuy@renater.fr
Overview

- What to achieve?
- Before to deploy anything ...
  - Check list
- Services configuration
- Conclusion & recommendations
Introduction

• Deploy or not IPv6?
  – That’s not a must
    • Some companies won’t be concerned (?)
  – What are the reasons and the goals to configure IPv6?
    • Address space needs, end-to-end connectivity, experiments, ...
  – Define “your” strategy
    • Depending on your goals, the nature of the organization / company and its background ...
What steps to complete?

- **Prerequisites**
  - Understand -a bit- IPv6 protocols
  - Answer the following questions
    - Why?
    - For who?
    - With who and what?
  - Propose a strategy for the company
    - What services for what users/customers?
    - Communicate on your project inside the company
    - Plan the training for the staff
Step-2

• Preliminaries
  – Inventory
    • Equipments
    • Applications/services
    • Staff
  – Design the network
    • Choose a topology (BB, access)
    • Take into account the existing situation
    • The services to install
Step-3

- Technical
  - Create an addressing plan
    - LIR / ISP ?
      - Where to get a prefix block ?
      - Who to provide address blocks ?
    - Forsee possible evolutions
    - Think prefix aggregation
    - Static addresses vs auto-configuration
Step-4

• Technical ...
  – What about the routing plan?
    • IGP & EGP
    • routing policy
      – In the BB, with the users, with external peers
Step-5

- IPv4/IPv6 coexistence
  - What needs?
    - Servers, customers?
  - Which mechs choose?
    - Encapsulation
      - Static vs dynamic tunnels
      - MPLS
    - Header translation
    - ...

Step-6

• Security
  – Revisit the existing security design
  – Apply the same policy for both versions of IP
    • Ipv6 filtering & ipv4 filtering
  – Don’t weaken the ipv4 network when configuring IPv6
  – Security tools & logs
Step-7

- Managing the ipv6 network
  - Install/configure a couple of tools
  - Or tune the existing tools to be ipv6 capable
  - Control IPv6 traffic, check network equipment
  - ...
Step-8

- Configure ipv6 on the servers
  - Network services
    - DNS (starting point ?)
    - HTTP, SMTP, ...
  - Users services

- Run tests!
Step-9

• First start
  – Pilote phase with volunteers or clever users
  – Add your NOC in this test phase
  – Log and control all events
  – How long this phase should last?
    • Depends on the kind of the tests, the users demand ...
Step-10

- Last tunings
  - Revisit steps 1 to 9
  - Adjust security policy
  - Add more/tune the network monitoring tools
  - Register the IP resources to your RIR
  - Schedule when to start the production service

- Write down your march to IPv6
  - Publish it
Conclusion ...

• ... & recommendations
  – Get a clear idea of your goals/objectives
  – Make an inventory of existing/missing means
  – Progress step-by-step
    • Take notes of every step
    • Schedule tests then pilote phase ...
  – Find a way to share your experience
Questions ?