IPv6 observatory: ISP success story

Summary

In the framework of the IPv6 observatory study supported by the European Commission, and conducted by the inno group along with University of Luxembourg and Beijing Internet Institute, success stories on IPv6 deployment are developed.

RCS & RDS S.A. has been selected to be one of these success stories.

The history of this organisation is explained, the description of IPv6 deployment is described (shortly) and success factors, as well as obstacles related to IPv6 deployment are raised.

More information on the study is available on its website: http://www.ipv6observatory.eu

Introduction

RCS & RDS is one of the most important telecom operators in the region, providing telecommunication services in Romania, Hungary, Czech Republic, Slovakia, Croatia, Serbia, Spain and Italy. The company developed its own fiber optic infrastructure which covers more than 200 cities in Romania. RCS & RDS is the market leader in Romania for broadband and TV services and the largest alternative operator for phone services. Also, RCS & RDS is Romania's only quad-play provider of TV, broadband, phone and mobile with the most competitive pricing for all services.

IPv6 deployment overview

Contact name: Emanuel Popa, Liviu Pislaru

Contact email: emanuel.popa@rcs-rds.ro, liviu.pislaru@rcs-rds.ro

Contact phone: +40770.100.883, +40770.100.979

IPv6 pilot start date: 10/11/2011

IPv6 service start date: 05/01/2012

Technology: Dual Stack

Connectivity: FTTB

CPE: open CPE

Number of users:
   We provide IPv6 dual-stack to 1.400.000 customers
   ~ 262.000 of them have connected at least once using v4/v6
   ~ 130.000 v4/v6 customers are simultaneously connected in peak time every day

ISP services: DNS, WEB

Investment style: refresh cycle

Impact of IPv6 launch day on your infrastructure
Google traffic, which represent the vast majority of the v6 traffic in our network didn't increase because we had our DNS servers in Google DNS Whitelist before IPv6 launch day. The overall v6 traffic growth was quite small, ~10% .

IPv6 deployment: success factors

- DIY (Do It Yourself) business model
- virtual IPv6 team with 6 highly qualified engineers from different offices in Romania who focused on the IPv6 deployment
- PPPoE authentication with PPPoE BRAS architecture fully distributed
- open CPE policy
- pilot project launched beginning of October 2011 in 20 cities for IPv6 test based on signup with more than 12.000 customers signing up within 6 months
- KIS (Keep It Simple) concept: same infrastructure, same topology, same architecture, same routing policies as for IPv4
- Google DNS whitelisting before World IPv6 Launch
- IPv6 brokeness & latency own measurements after World IPv6 Launch
- delay CGN as much as possible; dual native stack as IPv6 transition mechanism
- top management approach: "do not ask for permission! ask for forgiveness!"

IPv6 deployment: obstacles

- lack of home gateway devices supporting IPv6 and DHCPv6 Prefix Delegation
- sometimes difficult to convince all teams within the company to support IPv6 deployment
- IPv6 brokenness and DNS blacklisting by Google after World IPv6 Launch
- Happy Eyeballs concept sometimes makes it more difficult to troubleshoot and isolate network problems