

Videoconference experiment over IPv6 using Isabel

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Agenda 1

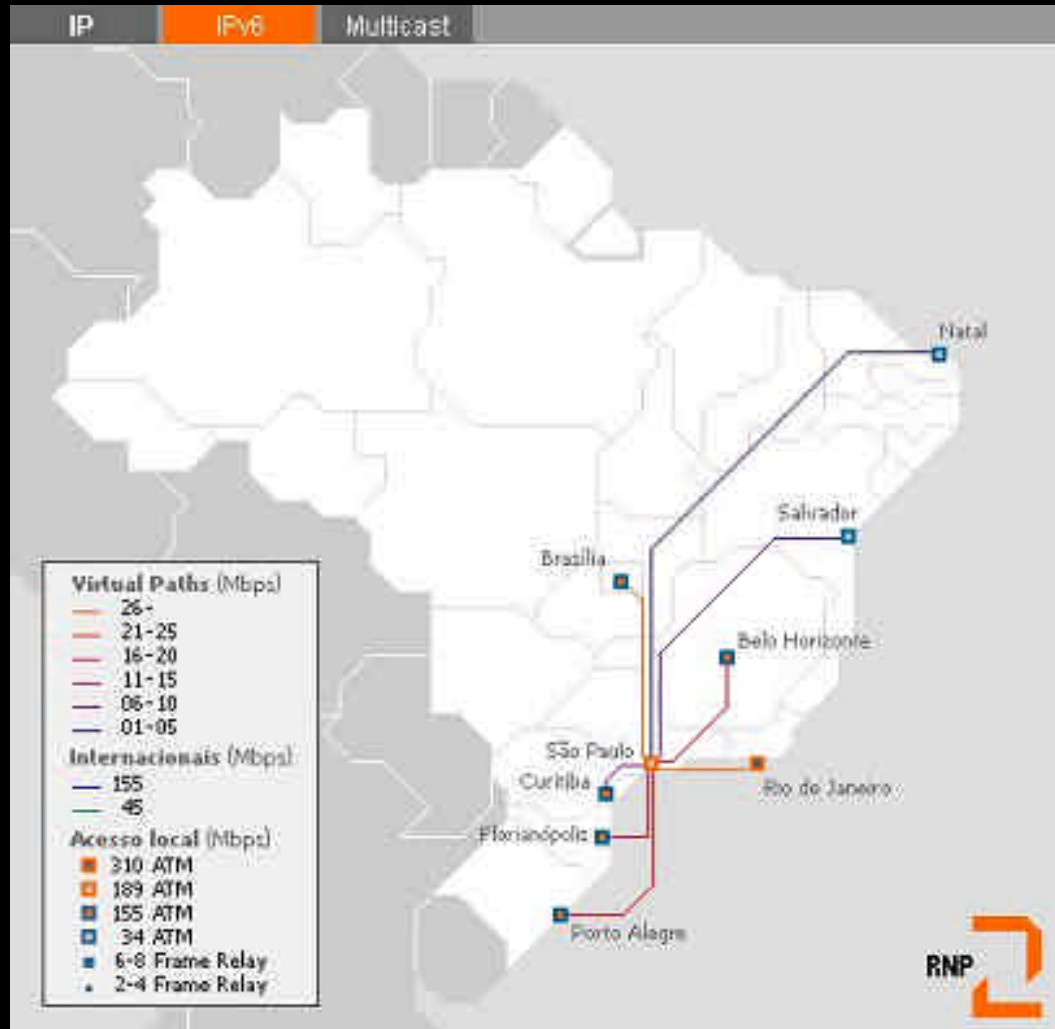


- RNP IPv6 Backbone
- Peerings
- Event – Participants (RNP side)
- Event – Network Topology



- **The project was initiated at February of 2001, and entered in operation in November of that same year**
- **Goal: Provision of IPv6 native conectividade for our customers**
- **It uses the same network infrastructure used in the IPv4 service (production service)**
- **IPv6 prefix allocated by the LACNIC (2001:12F0::/32)**
- **Currently it connects seven Brazilian states plus our federal capital (Brasilia)**

RNP IPv6 Backbone



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- **Routers with dual-stack: same equipment used in the production service**
- **Native IPv6 links (ATM) and tunnels (IPv6/IPv4)**
- **RIPng is the protocol of internal routing**
- **BGP4+ for external routing**
- **Cisco 750x with IOS images 12.2(14)S**

- Currently we have peering with seven other networks:
 - **Abilene / Internet 2 (native)**
University Corporation for Advanced Internet Development
 - **AMPath (native)**
The AmericasPATH Network
 - **Renater (tunnel)**
Reseau National de telecommunications pour la Technologie de l'Enseignement et la Recherche
 - **RCCN (tunnel)**
RCCN - Rede da Comunidade Cientifica Nacional / Portugal

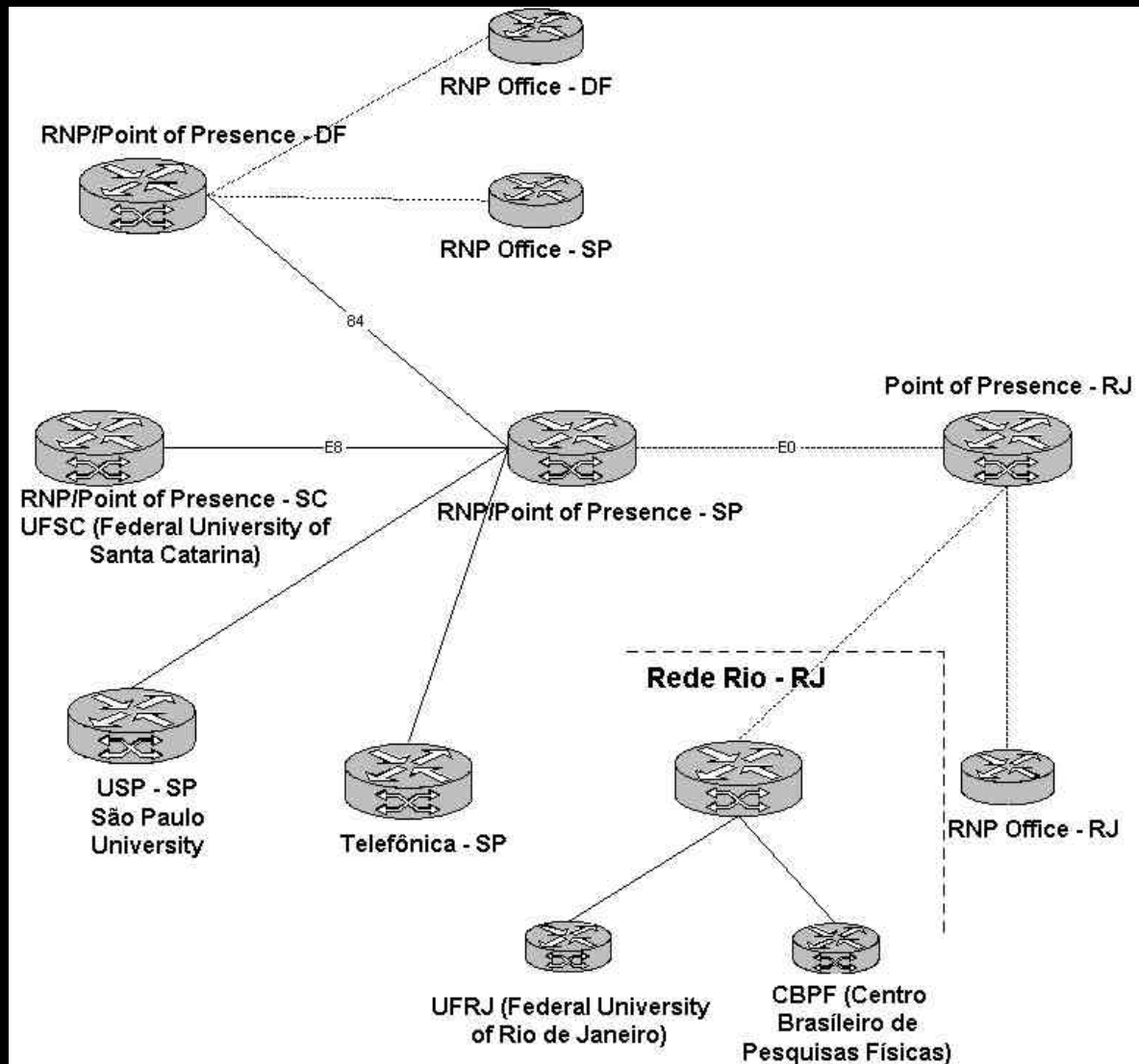
- **ESnet (tunnel)**
The Energy Sciences Network
- **NTT Com / Verio (tunnel)**
NTT Communications USA
- **Telefônica / BR (native)**



- Three RNP Offices: São Paulo, Brasília and Rio de Janeiro
- Three Brazilian Universities: Federal University of Santa Catarina (UFSC), Federal University of Rio de Janeiro (UFRJ) and University of São Paulo (USP)



Event – Network Topology



Videoconference experiment over IPv6 using Isabel



- **What was this videoconference experiment?**
- **Who were the participants?**
- **What is the Isabel application?**
- **Impressions about the use of Isabel**
- **Conclusion**

What was this videoconference experiment?



- It was part of the demonstrations of the **Global IPv6 event** - January 15-16, on this year.
- The objective these demonstrations was show some application using IPv6. Among them, the Isabel application.
- The RNP participated of the Isabel demonstration because it is used for collaboration and conferencing.



Who were the participants?



The experiment using Isabel was coordinated by María José Perea of the Universidad Politécnica de Madrid (UPM) and had how technical support the Isabel's team of the UPM.

In Brazil, the participants were:

- **Rede Nacional de Ensino e Pesquisa (RNP)**
- **Universidade Federal do Rio de Janeiro (UFRJ)**
- **Universidade Federal de Santa Catarina (UFSC)**
- **Universidade de São Paulo (USP)**
- **Centro Brasileiro de Pesquisas Físicas (CBPF)**
- **Telefônica**



What is the Isabel application?



- **Isabel is a real time service creation environment** created in 1993 by UPM. Today, it's being commercialised by Agora Systems S.A.
- **A free version is available, but it has limited functionality.** The version completed includes more features and supports collaboration services such as tele-class or tele-conference.
- **Your goal** is the interconnection of a large number of users in multipoint conferences.



What is the Isabel application?



Isabel adapts collaboration sessions to users needs, by including predefined scenarios:

- **Tele-meeting**: links meeting rooms and allows a free way of interacting, allowing each participant to react any time.
- **Tele-training**: links class rooms and allows a strict control by the lecturer of the interactions taking place. In this case, the lecturer can bring any site into scene at any time and the students must request intervention.
- **Tele-conference**: this is a distributed congress service and is based on a centralized control which guaranties a timely delivery of the program.
- Other new services can be configured for modifications this existing services.



What is the Isabel application?



Source: <http://isabel.dit.upm.es/intro.html>



What is the Isabel application?



Your requirements:

- **It's based in operating system SuSE Linux 8.1. Both the operating system and the application, can be installed and configured using an instalation CD.**
- **It's necessary at least a Pentium IV with 256 MB RAM.**



- **Different versions can't connect to each other**
- **The requirements of the hardware is very important to get a good quality during the conferences.**
- **Using other operating system different of the SuSE can difficult Isabel's configuration.**
- **Using a chat software (IRC) was very important to prepare the endpoints and resolve the problems with audio and video.**

- A big problem found during the experiments was the **packets loss** on connectivity between RNP and Telefônica networks. So, the quality of the link used is very important.
- This application exists since 10 years ago and survive until nowadays. However, many others projects were discontinued (MMC, NetMeeting, etc.)

- **Isabel doesn't have the same quality that a endpoint specific equipment how a Polycom ViewStation or Tandberg Station, but is very good solution for distance education or collaboration when there are need for a large number of endpoints.**

- IPv6 at RNP
<http://www.rnp.br/en/ipv6/>
- LACNIC
<http://www.lacnic.net>
- Global IPv6 event
<http://www.globalipv6.net>
- Isabel web page
<http://isabel.dit.upm.es>
- RNP web page
<http://www.rnp.br>
- *Isabel distribution of the Madrid Global IPv6 Summit 2002 over an IPv6 transition network*
<http://isabel.dit.upm.es/papers/isabelipv6/Isabelv6SAINT2002v3.pdf>