Active networking

- In "active" networking, routers or any network equipments (like gateway or proxy) within the network can perform computations on user data in transit.
- End users can modify the behavior of the network by supplying programs, called services, that perform these computations.

TAMANOIR Architecture

- Resources consuming services: distributed storage, streams transcoding, on the fly compression, cryptography...
- Services deployment/linked with middleware: reliable multicast...
- Middle services: content based routing, QoS...
- Light network services: packet marking, QoS...

Execution Environment

- TAMANOIR Active Nodes (TAN) provide persistent active routers
- Handle different applications and various data streams at the same time
- Support TCP and UDP
- Support of ANEP (Active Network Encapsulated Protocol) format

Services are:
- Independent from data streams
- Deployed on demand when streams reach an AN
- Two ways to deploy services:
  - by requesting a service broker (http)
  - by queering the last crossed TAN

Cluster

- TAMANOIR Active Node built on a cluster
- Based on LVS project (www.linuxvirtualserver.org)
- Improve scalability and availability
- 3 approaches: NAT, Direct Routing (MAC), Tunneling (IPiP)
- Saturation of a 100 Mbits link
- Next step: experiment over Gbits link

Around VTHD backbone

Clusters of high performance active routers/nodes

Tamanoir : High Performance Active Networking
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