

# **Davic Intranet design**

**Technology Section**

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# **Davic Intranet**

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# Davic Intranet in Davic 1.5

- **Setting the base for Davic Internet services.**
- **A working system from day one using IP technology.**
- **Advanced IP technologies will be added later.**

**The work is just starting**

# Davic Intranet design rules

- **IP Protocols** are developed by the IETF
- **Attempt to use matured IETF standards (RFCs)**
- **Use Components as they are**
  - if not, take required changes back to the IETF
- **Davic does not compete with the IETF**
  - IETF standards are **Component Specifications**
  - Davic Intranet is a **System Specification**

# Basic IP Design

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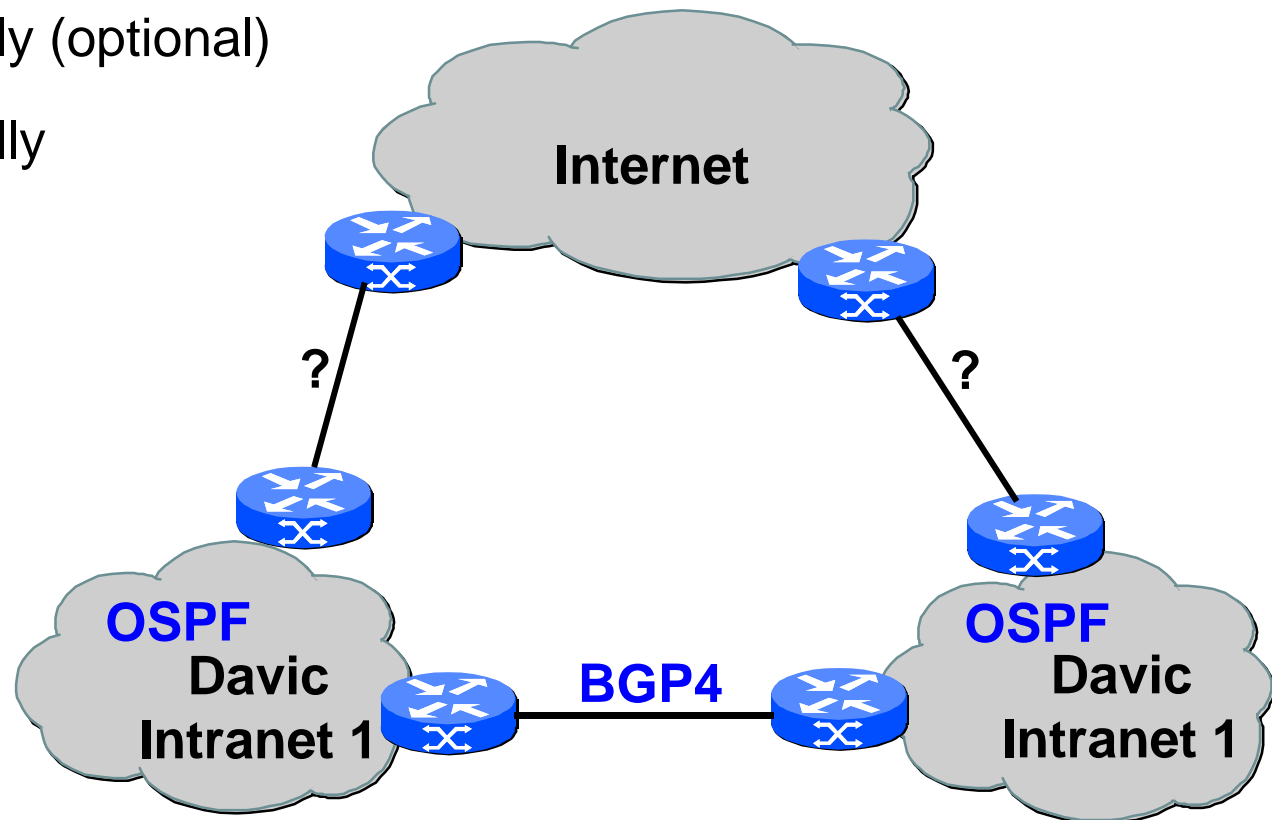
# Lower Layers Design

- **Davic Intranet is a Layer 3 and above design**
- **Layers 1 and 2 are not specified but they are considered**
- **Low layers are broken down into**
  - Point to Point (e.g.: ATM)
  - Broadcast (e.g.: Ethernet, Satellite)
- **but also**
  - Bi-directional (e.g.: ATM, Ethernet)
  - Uni-directional (e.g.: Satellite)

# IP Routing

## ■ Routing protocols

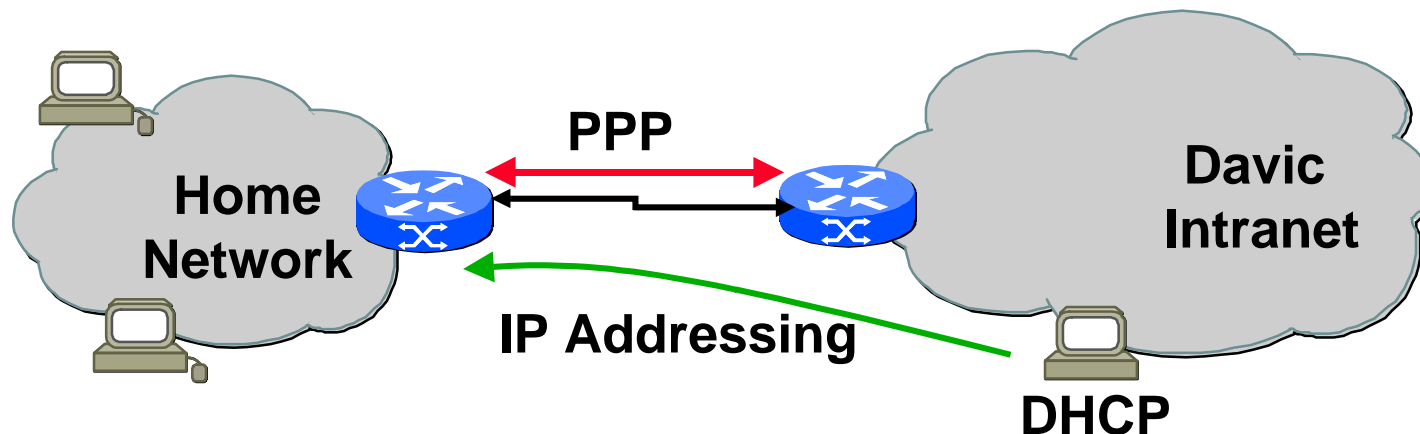
- OSPF internally (optional)
- BGP4 externally



# IP Addressing and configuration

## ■ IP addressing using PPP and DHCP

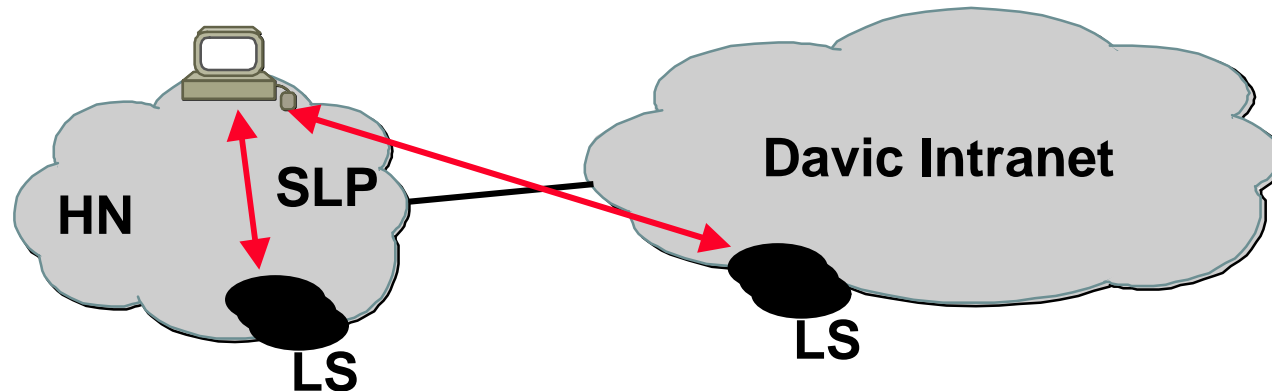
- Address homogeneity is mandatory inside a single Davic Intranet
  - Avoid Address Translation inside the Davic Intranet
- Globally registered IP addresses when possible
  - Avoid Address Translation at the borders of Davic Intranet
- Private addressing as a last choice



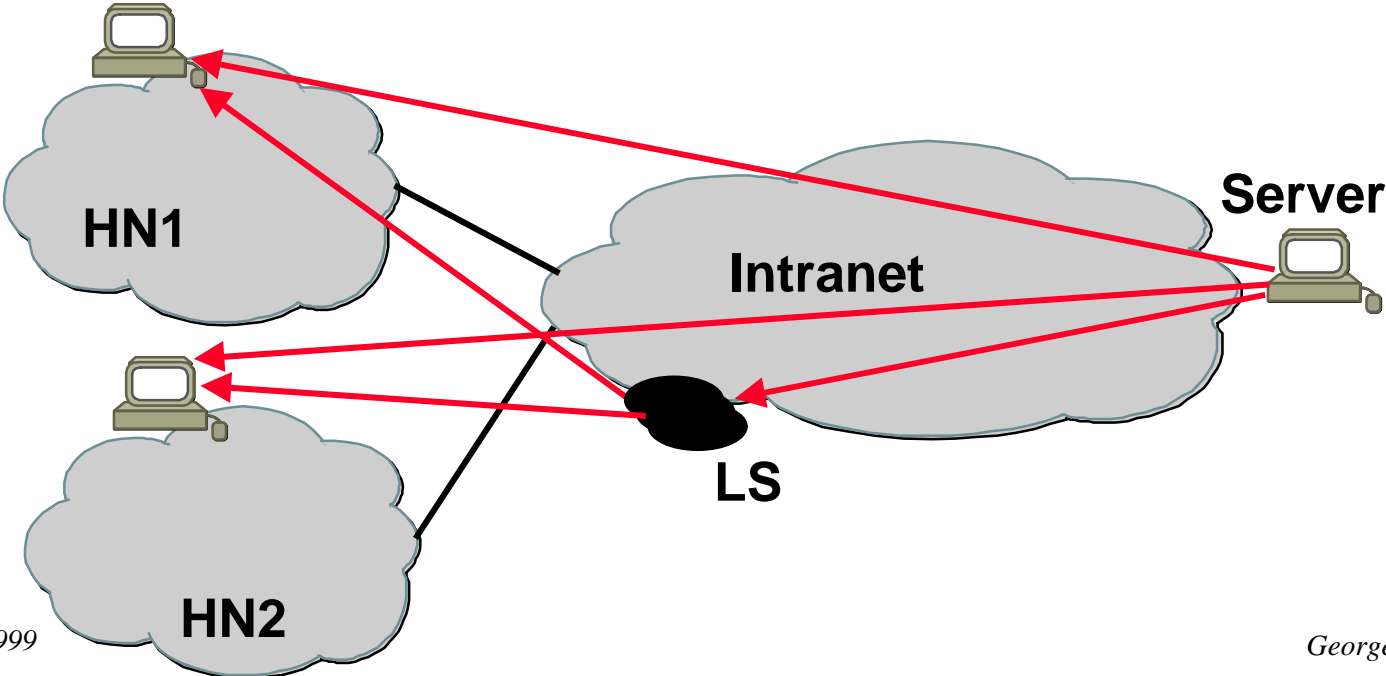
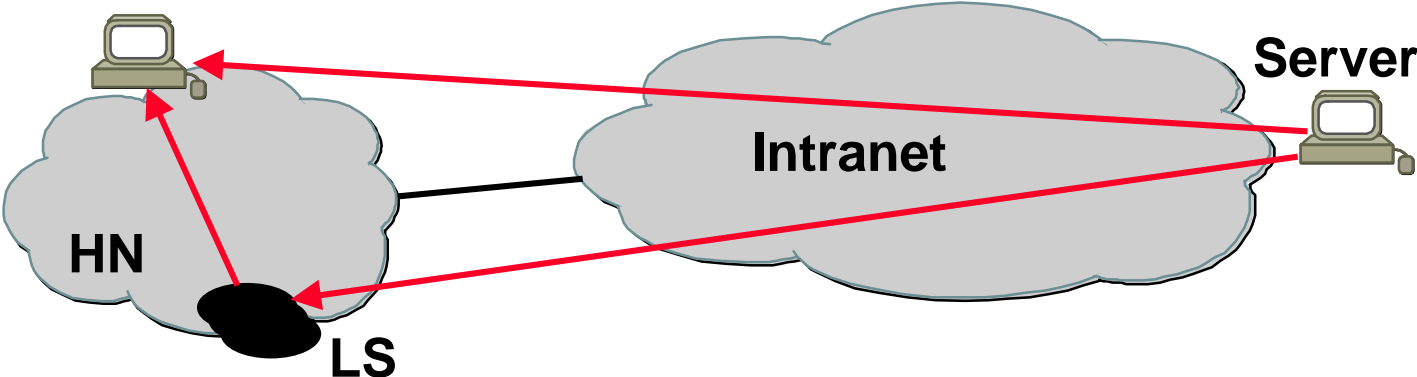
# Service Location

## ■ Service Location Protocol - SLP

- SLP is mandatory for service location in Home Networks
  - Local Storage Device discovery



# Local Storage

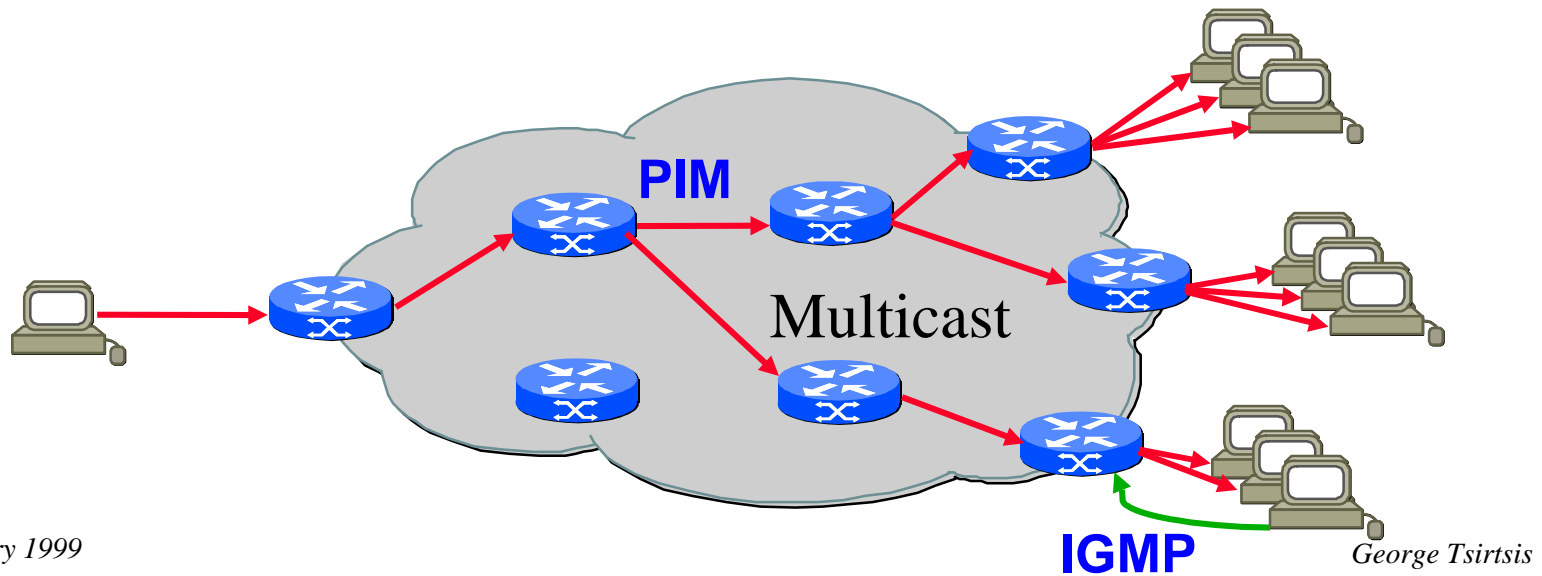
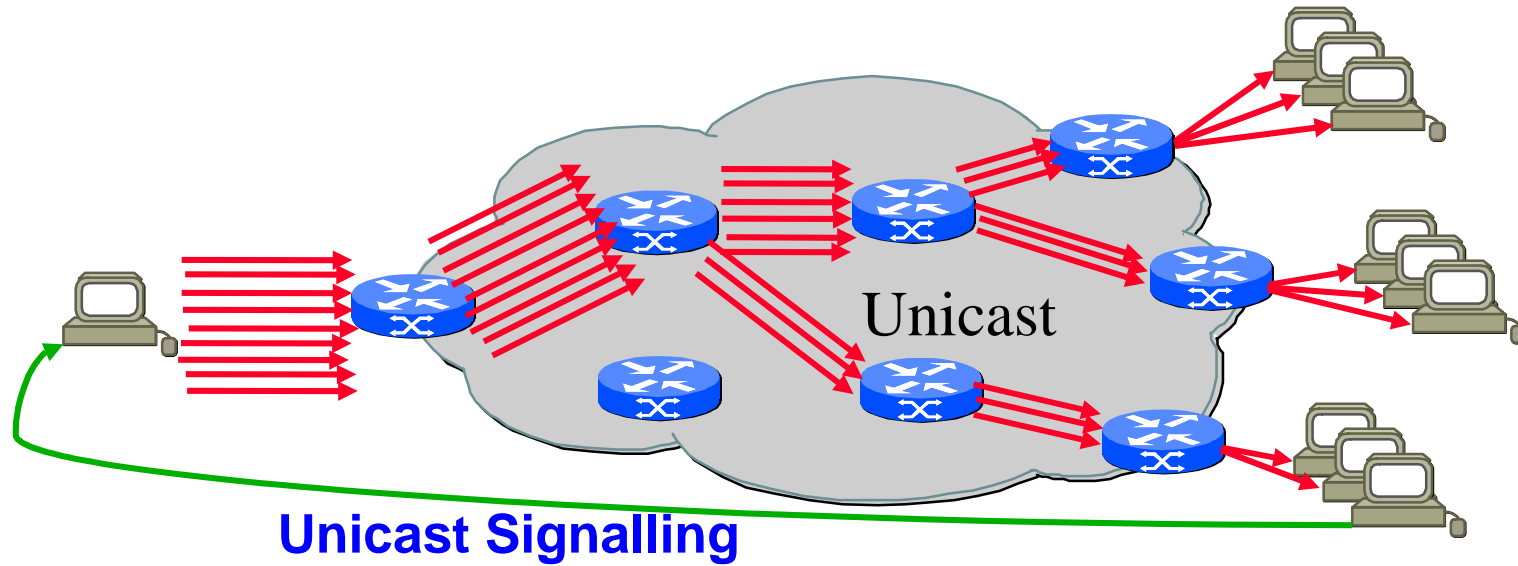


# Multicasting

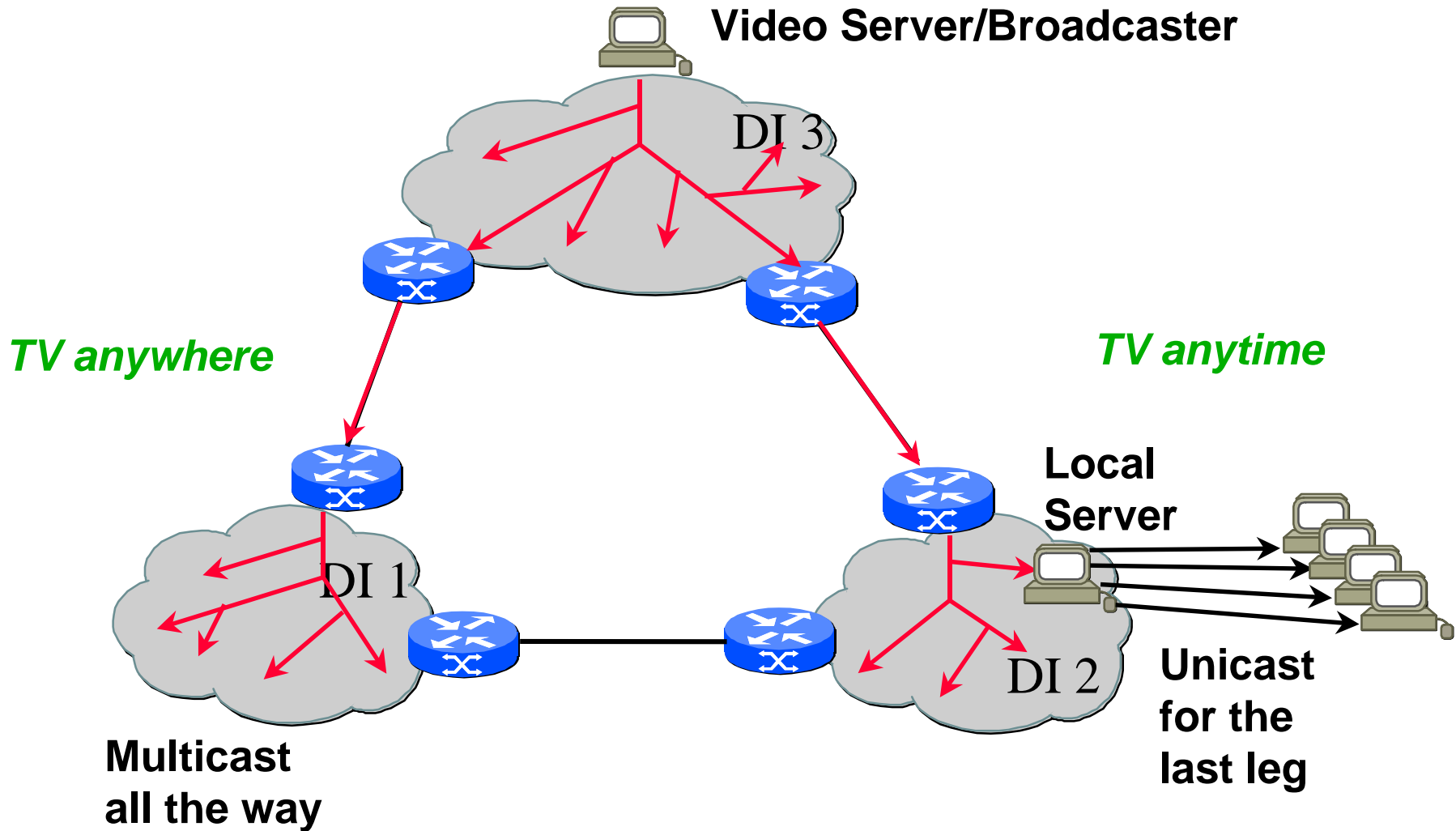
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# Multicast vs. Unicast



# Multicast + Unicast



# Multicasting

## ■ Multicasting is mandatory in all Davic Intranets

- PIM routing is preferred at this stage due to availability
- IGMP must be supported by Davic clients and ISPs

## ■ Multicast for TV anywhere

## ■ Unicast for TV anytime

- With multicast distribution of content to Davic Intranets

# Quality of Service

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# Quality of Service - QoS

## ■ Direct QoS

- **Differential Services may be supported**
  - simple priority to real-time traffic is available know
- **RSVP is used for Integrated Services**
  - only when strict control is required

## ■ Indirect QoS

- **Good *dimensioning* is required -**
  - This is NOT the public Internet!
- **Use of Multicast when possible**
- **Content distribution closer to end-user**
  - End-user receives from local storage or server

# Higher Layers

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# Higher Layers Design

## ■ Transport of audio and video

- **RTP, RTCP for real-time**
  - Works with multicast
  - Allows variety of encodings (e.g.: MPEG etc)
- **FTP, HTTP for non real-time**

## ■ Session Description and Control

- **SDP for session description**
  - Works with Multicast and can be extended
- **RTSP for session control**
  - VCR like controls

# Future technologies

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# Future technologies - 1

## ■ IPv6

- Solving the addressing problem
- Ideal for HNs and consumer electronic devices
- Autoconfiguration and Plug and Play capabilities

## ■ Scalable, reliable multicast

- Complex but high value services
- Immature technology
- Possibly feasible in Davic Intranet context

## ■ Conversational Services etc.Plug and Play

- Multimedia Conferencing and Session control
- Many to Many multicasting

# Future technologies - 2

## ■ Network and Services Management

- Authentication
- Authorization
- Accounting
- Server, local storage and component management

## ■ Security

- Basic Security mechanisms for IP - IPSEC etc
- Secure Multicast

*Thank you!*

**Questions?**

