

IPv6 Home Network Front End Naming Delegation Architecture

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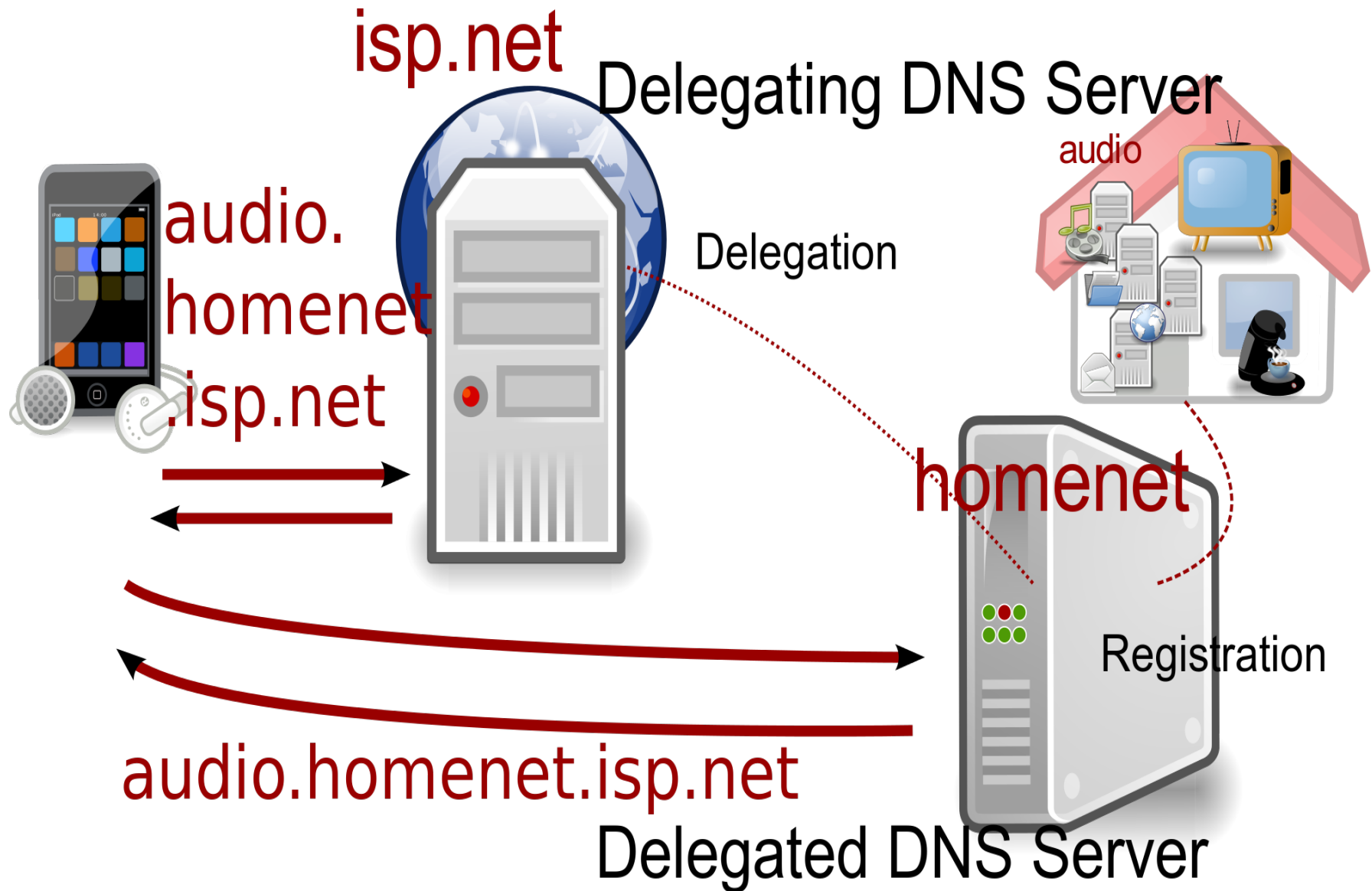
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I. Introduction



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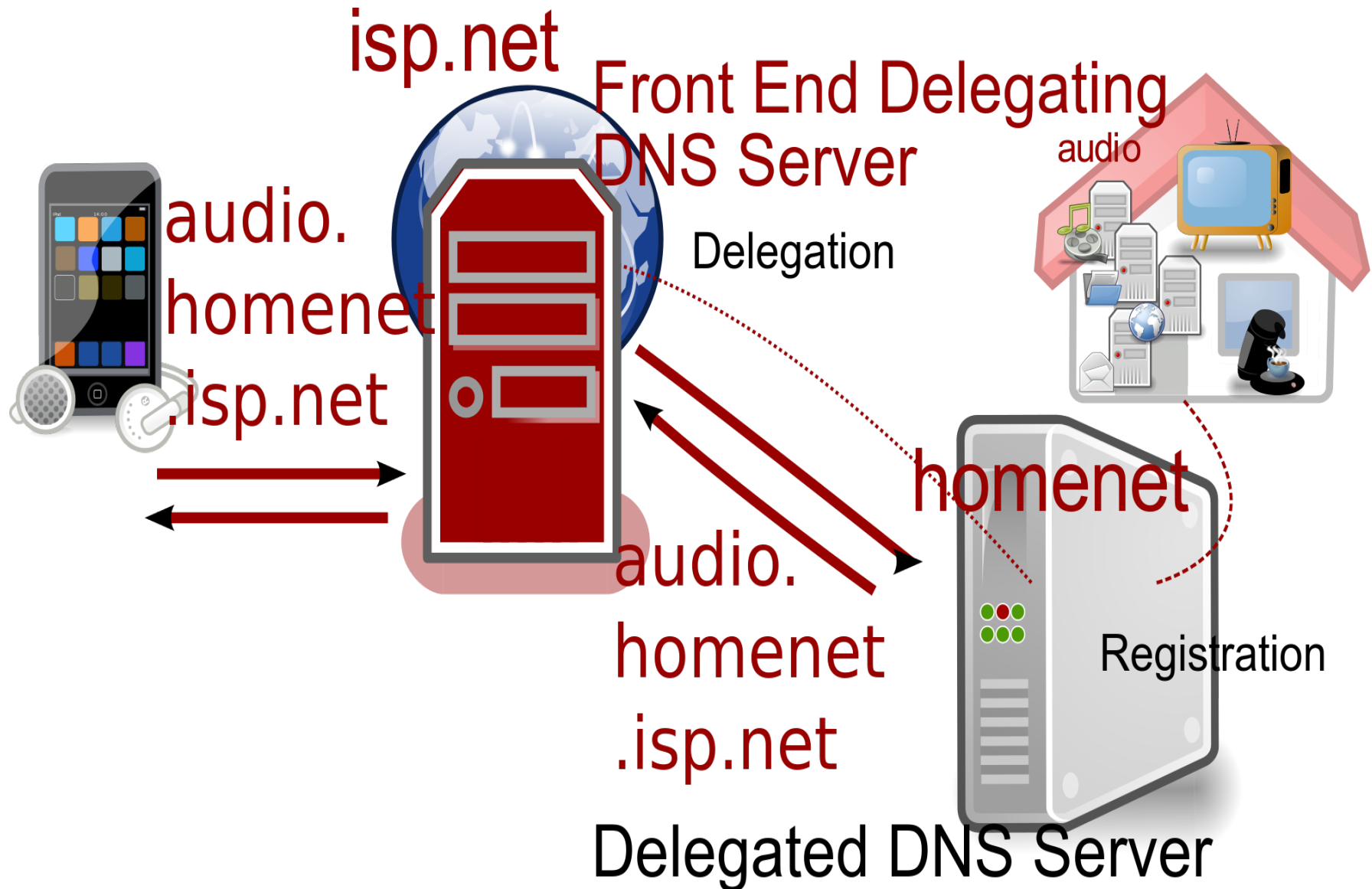
Motivations for Front End Naming Delegation Architecture are:

- Naming Delegation Architecture achieves: what End User and ISPs want
 - Reaching Homenet Services with Names
- However, running a public DNS server on the CPE exposes the CPE to DoS Attacks

To overcome this security issue, the document:

- Describes the Front End Naming Delegation Architecture
 - Protects the CPEs against DoS attacks, thanks to Front End Servers
- Describes how the CPE can configure automatically the Front End Naming Architecture

II. Front End Naming Delegation



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To the difference with the Naming Delegation Architecture:

- DNS queries are not addressed by the EU to the CPE
- DNS queries are addressed to the Front End DNS Server
- CPE provides a back end Network for the Front End DNS Server
- The protocol used between the Front End Server and the CPE is DNS(SEC)

Front End DNS Servers are not Recursive Servers:

- Resolution is only provided for hosted subzoned (homenet)
- CPE back end network is a private Infrastructure, not publicly revealed
- Resolution Desired (RD) is ignored if set to 0

III. Setting Front End Naming Delegation

Front End and Naming Delegation works on the top of the Naming Delegation:

- Delegated / Delegation DNS Servers, DHCP Client Server are involved

Front End Naming Delegation differs from Naming Delegation with:

- Delegated DNS Servers are NOT mentioned in ANY Zone files
 - ▶ Instead, Front End Delegating Server are mentioned as Authoritative on all CPEs
- CPEs must not accept any DNS queries except from the ISP
 - ▶ ISP must specified the Delegating Authorized Resolvers IP prefix

IV. DHCP Exchange

To the difference with the Naming Delegation Architecture DHCP Options:

- **DELEGATED_DNS_ARCHITECTURE**: is provided by the CPE DHCP Client and indicates it is willing to set a Front End Naming Delegation with DNS / DNSSEC.
- **OPTION_FRONT_END_DELEGATING_INFO**: is provided by the ISP to the CPE DHCP Server and indicates the FQDN(s) and IP addresses of the Front End Delegating DNS Server. The CPE is expected to indicate this server as the Authoritative Server of the Delegated Zone.
- **OPTION_DELEGATED_AUTH_RESOLVERS**: is provided by the ISP DHCP Client and specifies IP addresses of ISP authorized resolvers.

V. What to do Next

- Do you think this document should be adopted as a WG document?