

Homenet Naming DHCP Options

draft-mglt-homenet-naming-architecture-dhc-options-00.txt

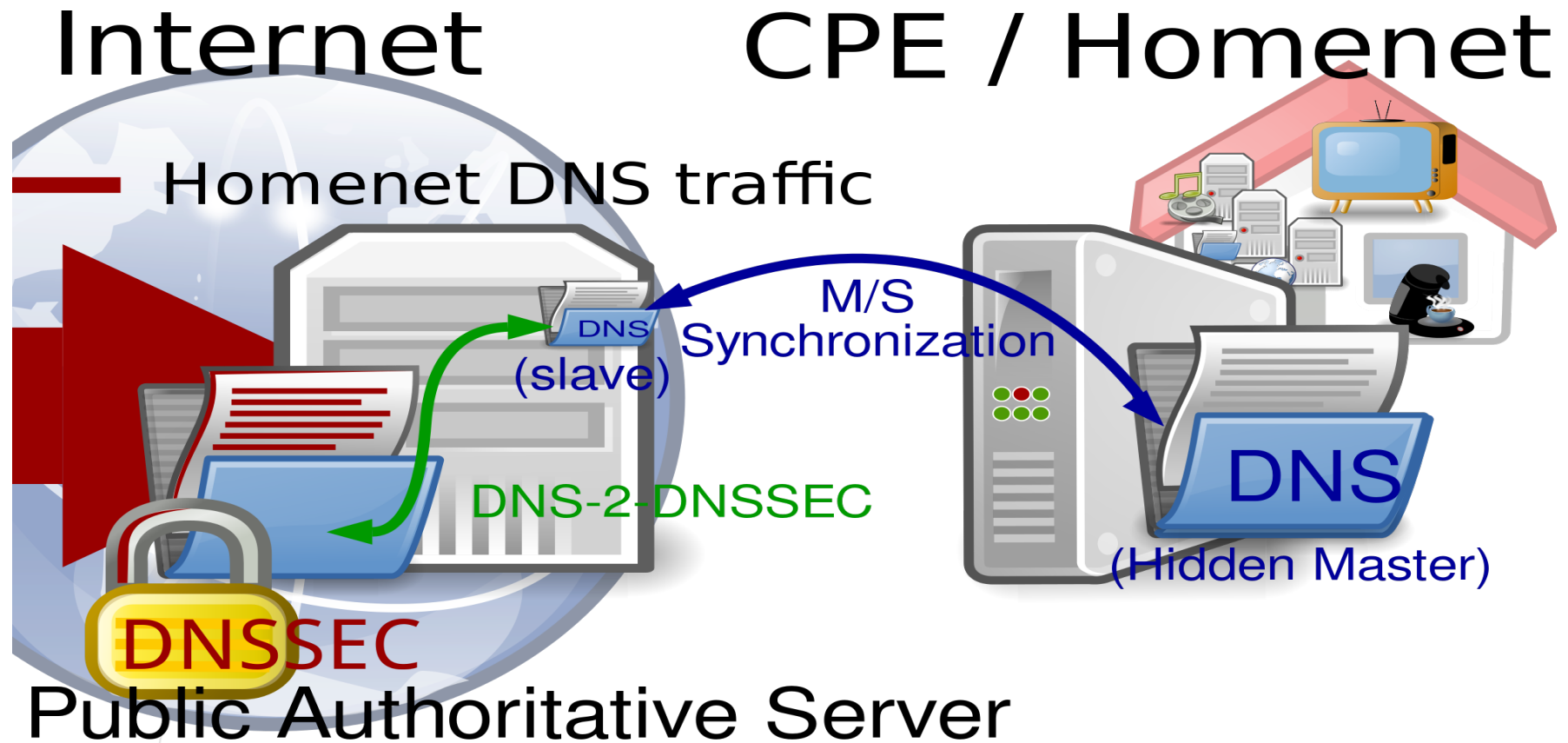
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Architecture Description



Architecture Description

The two operations consists in:

- Building the DNS Homenet Zone
 - ▶ Expected to be published on the Public Authoritative Masters
- Uploading the DNS Homenet Zone
 - ▶ To the Public Authoritative Name Server Set
 - ▶ via a secured channel

Architecture Description

We define one DHCP Option for those two operations:

- OPTION_ZONE_PUBLIC_MASTER, binding
 - ▶ Registered Domain
 - ▶ Public Authoritative Masters (FQDNs and IP addresses).
- OPTION_PUBLIC_MASTER_UPLOAD, binding
 - ▶ Public Authoritative Masters
 - ▶ Secure channels defined as
 - Protocol (NONE, TSIG, IPsec, SIG(0))
 - Security Credentials (PSK, ...)
 - Public Authoritative Name Server Set (IP addresses)

Setting the DNS Homenet Zone

```

$ORIGIN example.com
$TTL 1h

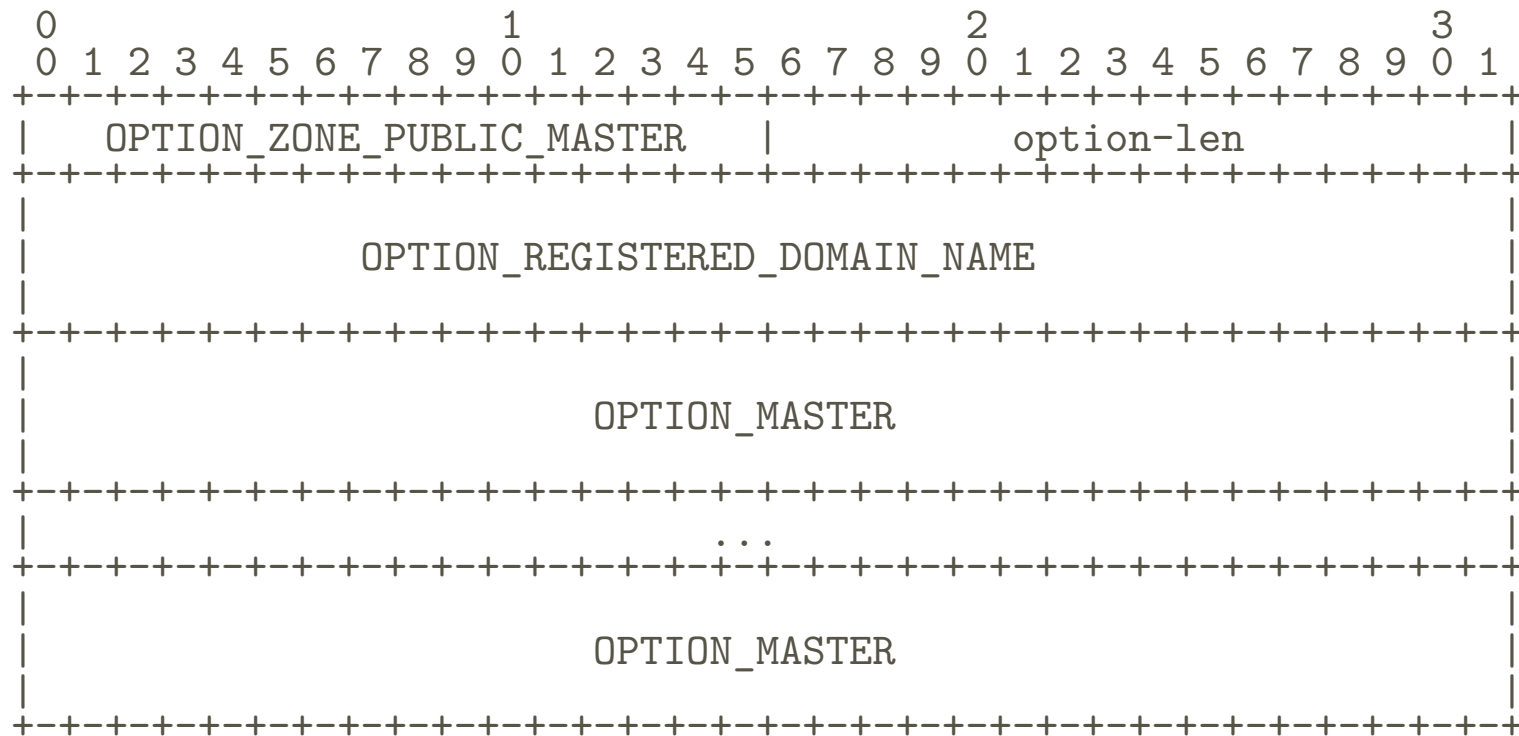
@ IN SOA public.autho.servers.example.net
      hostmaster.example.com. (
      2013120710 ; serial number of this zone file
      1d         ; slave refresh
      2h         ; slave retry time in case of a problem
      4w         ; slave expiration time
      1h         ; maximum caching time in case of failed
                  ; lookups
      )

@ NS public.autho.servers.example.net

public.autho.servers.example.net A @IP1
public.autho.servers.example.net A @IP2
public.autho.servers.example.net AAAA @IP3
public.autho.servers.example.net AAAA @IP4

```

OPTION_ZONE_PUBLIC_MASTER



OPTION_ZONE_PUBLIC_MASTER

From DHCP option guide lines, we encapsulated the various options:

```
OPTION_ZONE_PUBLIC_MASTER
- OPTION_REGISTERED_DOMAIN_NAME (mandatory)
- OPTION_MASTER
  - OPTION_MASTER_FQDN (mandatory)
  - OPTION_MASTER_IP4
  - OPTION_MASTER_IP6
```

```
OPTION_ZONE_PUBLIC_MASTER_LIST
- OPTION_ZONE_PUBLIC_MASTER
  - OPTION_REGISTERED_DOMAIN_NAME
  - OPTION_MASTER
    - MASTER_FQDN(Field)
    - OPTION_MASTER_IP4
    - OPTION_MASTER_IP6
```

DHCP design questions: We need to be able to provide (multiple Registered FQDNs - multiple masters)

- Is 3 levels encapsulation fine?
- To reduce level encapsulation, one can have a list of (1 FQDN - 1 master)?

OPTION_ZONE_PUBLIC_MASTER

```

OPTION_ZONE_PUBLIC_MASTER_LIST
- OPTION_ZONE_PUBLIC_MASTER
  - REGISTERED_DOMAIN_NAME (field because single)
  - MASTER FQDN (Field)
  - OPTION_MASTER_IP4
  - OPTION_MASTER_IP6
    
```

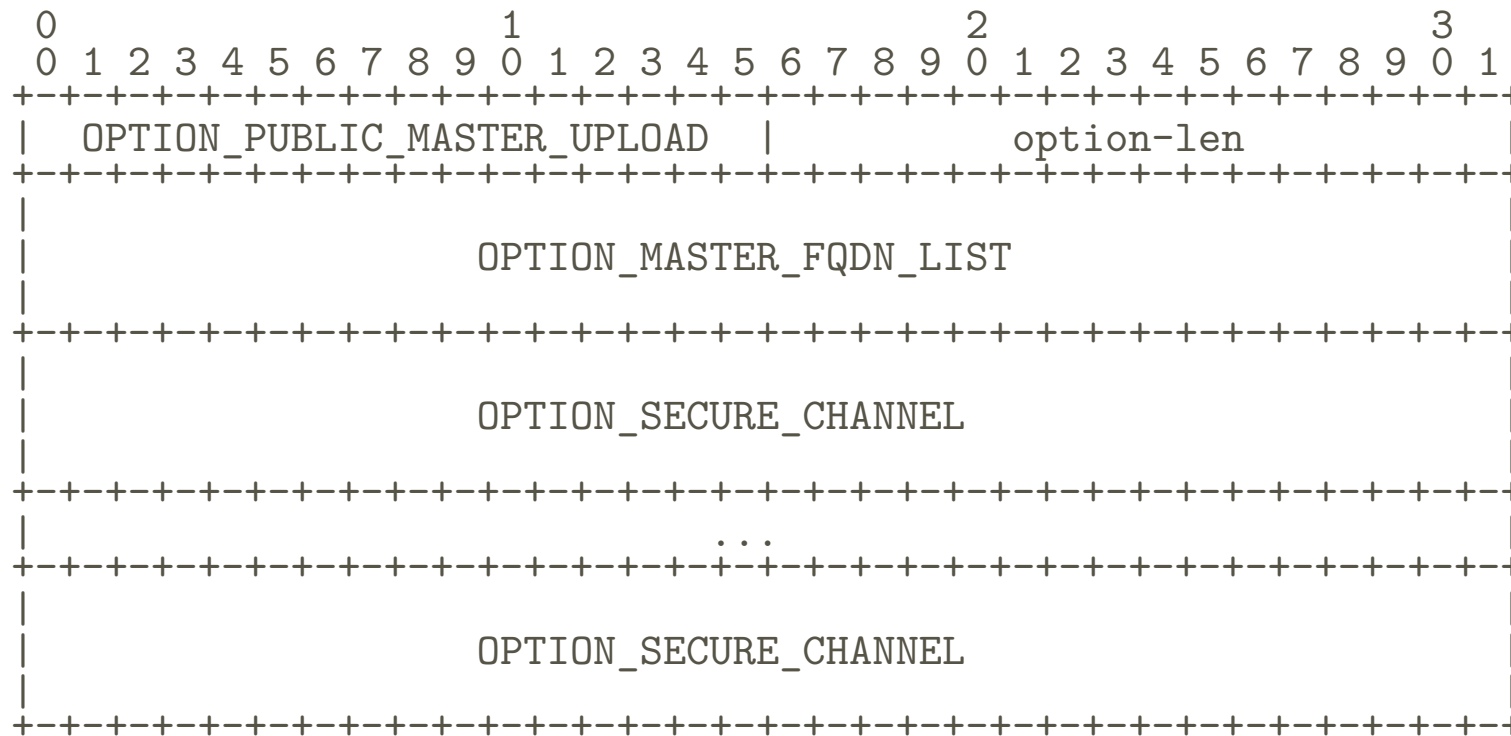
Can we assume the MASTER MUST have a IPv6 interface?

Uploading Zone

Public Authoritative Masters are bound Public Authoritative Name Server Set because:

- Each Public Authoritative Master is associated with a Public Authoritative Name Server Set
- A given DNS Homenet Zone MAY:
 - ▶ Have multiple Public Authoritative Masters
 - ▶ Need to upload on multiple Public Authoritative Name Server Sets

OPTION_PUBLIC_MASTER_UPLOAD



OPTION_PUBLIC_MASTER_UPLOAD

From DHCP option guide lines, we encapsulated the various options:

```
OPTION_PUBLIC_MASTER_UPLOAD
- OPTION_MASTER_FQDN_LIST (mandatory)
- OPTION_SECURE_CHANNEL +
  - OPTION_SECURE_PROTOCOL (mandatory)
  - OPTION_SECURE_CREDENTIAL
    - OPTION_PSK_CREDENTIAL
    - (future use Certificates, IDi)
- OPTION_SERVER_SET
  - OPTION_SERVER_SET_IP4
  - OPTION_SERVER_SET_IP6
```

```
OPTION_PUBLIC_MASTER_UPLOAD_LIST
- OPTION_PUBLIC_MASTER_UPLOAD
  - SECURE_PROTOCOL (field)
  - OPTION_MASTER_FQDN_LIST (mandatory)
  - OPTION_PSK_CREDENTIAL
  - (future use Certificates, IDi)
- OPTION_SERVER_SET_IP4
- OPTION_SERVER_SET_IP6
```

DHCP design questions:

- Is 3 encapsulation fine?
- Can we assume that the SERVER MUST be able to be reached with IPv6?

Thank you for your attention