

# Creating Reverse Lookup Zones

LPIC-2: Linux Engineer (202-450)

## Objectives:

At the end of this episode, I will be able to:

1. Describe the function of a reverse lookup zone.
2. Create and enable an IPv4 and IPv6 reverse lookup zone in BIND.
3. Create PTR records in a reverse lookup zone.

Additional resources used during the episode can be obtained using the download link on the overview episode.

- Reverse lookup zones
  - Attempt to resolve an IP to a name
  - Not terribly reliable
  - One IP may have many different names
- Reverse lookup zone use cases
  - Logging and reporting
  - Email server validation
- Required Zone Records
  1. TTL
  2. SOA
  3. NS
- Creating a reverse lookup zone file
  - Create a zone file
    - `sudoedit /etc/bind/222.0.10.in-addr.arpa.dns`
  - Create core records
    - TTL
      - Standard is 7 days
      - `$TTL 604800`
    - Start of Authority (SOA)
      - `@ IN SOA dns1.lab.itpro.tv. admin.lab.itpro.tv. (`
        - `1 ; Serial`
        - `86400; Refresh`
        - `7200 ; Retry`
        - `57600; Expire`
        - `3600); Negative Cache TTL`
      - Name Servers (NS)
        - `@ IN NS dns1.lab.itpro.tv.`
- PTR Records
  - Pointer records
  - IP points to a name
  - Example
    - `101 IN PTR mail1.lab.itpro.tv.`
    - `103 IN PTR mail2.lab.itpro.tv.`
- Activating a reverse lookup zone
  - Add the Zone to BIND
    - `sudoedit /etc/bind/named.conf.local`

- Add to the bottom
    - zone "222.0.10.in-addr.arpa." IN { type master; file "/etc/bind/222.0.10.in-addr.arpa.dns"; };
  - Verify syntax
    - named-checkzone 222.0.10.in-addr.arpa /etc/bind/222.0.10.in-addr.arpa.dns
  - Restart BIND
    - When adding new zones
      - sudo rndc reconfig
    - When modifying a zone
      - sudo rndc reload 222.0.10.in-addr.arpa.
    - Full restart
      - systemctl restart named.service
- IPv6 Reverse Lookup Zones
  - Maintained separate from IPv4
  - Subnet defines the zone name
  - Example
    - Subnet 2001:1234:0::/48
    - sudoedit /etc/bind/0.0.0.0.4.3.2.1.1.0.0.2.ip6.arpa.

#### Example IPv4 Reverse Lookup Zone

```
$TTL 604800
@ IN SOA dns1.lab.itpro.tv. admin.lab.itpro.tv. (1 1d 2h 4w 1h)
@ IN NS dns1.lab.itpro.tv.
101 IN PTR mail1.lab.itpro.tv.
102 IN PTR mail1.lab.itpro.tv.
103 IN PTR mail2.lab.itpro.tv.
```

#### Example IPv6 Reverse Lookup Zone

sudoedit /etc/bind/0.0.0.0.4.3.2.1.1.0.0.2.ip6.arpa.

```
$TTL 604800
@ IN SOA dns1.lab.itpro.tv. admin.lab.itpro.tv. (1 1d 2h 4w 1h)
@ IN NS dns1.lab.itpro.tv.
1.0.0.0.d.c.b.a.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.4.3.2.1.1.0.0.2.ip6.arpa. IN PTR
websrv01.lab.itpro.tv.
```