

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.
```