

Supporting Mail Servers with DNS

LPIC-2: Linux Engineer (202-450)

Objectives:

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

1. Describe how MX, SPF, and SRV records are used by email servers.
2. Configure MX, SPF, and SRV records in a Bind forward lookup zone.

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

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- Supporting Mail Servers with DNS
 - Email servers have special requirements
 - Record types
 - **MX** - Mail Exchanger
 - **SPF** - Sender Policy Framework
 - **SRV** - Service Locator
 - Stored alongside other zone records
 - `sudoedit /etc/bind/lab.itpro.tv.dns`
 - Mail Exchanger (MX) Records
 - Used to locate an SMTP server
 - Required for proper email operation
 - Example: `user@lab.itpro.tv`
 - A lookup is performed against the `lab.itpro.tv` domain
 - The MX records identify the email servers
 - Format
 - `@ 3600 IN MX 10 mail.lab.itpro.tv.`
 - `<Host> <TTL> <Class> <Type> <Priority> <Server>`
 - Sender Policy Framework (SPF) Records
 - Used to identify servers authorized to send email for a domain
 - Not required
 - Affects your deliverability (spam rating)
 - Format
 - Not an actual record type
 - Embedded in a TXT record
 - `@ 3600 IN TXT "v=spf1 mx -all"`
 - `<Host> <TTL> <Class> <Type> <SPF values>`
 - SPF values
 - `v` - Version
 - `mx` - Allow servers with MX records to send
 - `-all` - Strict
 - `?all` - Neutral
 - `~all` - Soft fail
 - Specifying outbound servers
 - Syntax
 - `mx` - Use addresses from MX records
 - `a` - Use an address from a specific A record
 - `ip4` - Use a specific IPv4 address or CIDR range
 - `ip6` - Use a specific IPv6 address or range
 - `include` - Use records from an external domain
 - Example

- `v=spf1 mx a:smtp.lab.itpro.tv ip4:10.0.222.51 10.0.0.0/24 ip6:2001:1234::4321:2 include:mail.office365.com mail.sendgrid.com ~all`

- Service Locator (SRV) Records

- Versatile record
- Allows locating just about any service
- Provides more data than a normal record
 - Protocol - TLS, LDAP, SSH, etc.
 - Priority - Defined preferred server. Lower number wins.
 - Weight - Tie breaker for Priority. Higher number wins.
 - Port number - TCP/UDP port assigned to the service
- Example: VoIP support for Office 365
 - `_sip._tls 3600 IN SRV 100 1 443 mail.lab.itpro.tv.`
 - `<Service/Protocol> <TTL> <Class> <Type> <Priority> <Weight> <Port> <Host>`