

INTERNET-DRAFT
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Request for Comments:
Category:

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Use of SRV records for POP3, POP3S, IMAP and IMAPS.

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Abstract

DNS records for the mail services POP3, POP3S, IMAP and IMAPS do not currently provide failover switching as do the DNS MX records for SMTP. This document looks at the issues involved and

recommends a solution using SRV records.

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Introduction

Mail servers that require high availability might be multi-homed with upstream connectivity to two or more ISPs. This is traditionally accomplished by running BGP4 such that each upstream provider would route to the site's own IP block. If connectivity to one ISP fails, incoming connections would seamlessly be routed through the other ISP. For various reasons including IP allocation constraints, cost and networking expertise, running BGP4 is impractical for most small ISPs. If using DNS only, SMTP can be made fault tolerant by using multiple MX records, one for each IP serviced by the mail server so that each MX record is tried in turn until an IP responds. Such failover protection using DNS is not currently possible for POP3 and IMAP connections.

Using SRV [[RFC2782](#)] records seems to be the obvious solution to making POP3, POP3S, IMAP and IMAPS redundant. SRV records also provide for load balancing when using multiple servers that have access to mail spool on a shared mass storage device such as NAS.

Examples:

SRV RRs:

```
_pop3._tcp SRV 1 0 110 host1.example.com.  
_pop3._tcp SRV 1 0 110 host2.example.com.  
_pop3._tcp SRV 0 0 110 host3.example.com.  
_imap._tcp SRV 1 0 143 host1.example.com.  
_imap._tcp SRV 1 0 143 host2.example.com.  
_imap._tcp SRV 0 0 143 host3.example.com.  
_pop3s._tcp SRV 0 3 995 host1.example.com.  
_pop3s._tcp SRV 0 1 995 host2.example.com.  
_imaps._tcp SRV 0 3 993 host1.example.com.  
_imaps._tcp SRV 0 1 993 host2.example.com.
```

A RRs:

```
host1      A      10.0.0.2  
host2      A      172.16.1.2  
host3      A      172.16.1.3
```

host1 and host2 are the same multi-homed host that can accept both insecure (pop3, imap) and secure (pop3s, imaps) connections. host3 is a separate host that is not multi-homed and does not accept secure connections.

Connect to either 10.0.0.2 or 172.16.1.2 if either is available (the probability of being selected is 75% for 10.0.0.2 and 25% for 172.16.1.2) to download mail over a secure POP3 or IMAP connection. Connect to 172.16.1.3 and if not available connect to either of 10.0.0.2 or 172.16.1.2 to download mail over an insecure POP3 or IMAP connection.

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Transitioning Considerations

When transitioning from using a non-SRV solution to using an SRV based solution, old non-SRV aware clients will continue to look for A records. These will not benefit from redundancy until updated, but will continue to work. A DNS proxy solution that returns the IPs of hosts found within SRV records to MUAs querying A records for that host might be possible for old clients.

IANA Considerations

Well known labels have to be allocated for the first label of the SRV records. This document has used _pop3, _imap, _pop3s and _imaps.

Security Considerations

None.

References

[RFC 2026]

Bradner, S., "The Internet Standards Process -- Revision 3", [BCP 9](#), [RFC 2026](#), October 1996.

[RFC2782]

A DNS RR for specifying the location of services (DNS SRV). A. Gulbrandsen, P. Vixie, L. Esibov. February 2000. [RFC 2782](#).

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