

Postfix Mail Server

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ISOC

What is Postfix?

- **Postfix** is a [free](#) and [open-source mail transfer agent](#) (MTA) that routes and delivers [electronic mail](#), intended as an alternative to the widely used [Sendmail](#) MTA.
- Postfix is released under the [IBM Public License](#) 1.0 which is a [free software licence](#).
- Originally written in 1997 by [Wietse Venema](#) at the [IBM Thomas J. Watson Research Center](#) and first released in December 1998, Postfix continues as of 2014 to be actively developed by its creator and other contributors. The software is also known by its former names **VMailer** and **IBM Secure Mailer**.
- In January 2013 in a study performed by E-Soft, Inc. found that approximately 25% of the publicly reachable mail-servers on the Internet ran Postfix.

Postfix

- Works on UNIX-like systems including AIX, BSD, HP-UX, Linux, MacOS X, Solaris, and more.
- It is the default [MTA](#) for the [OS X](#), [NetBSD^{\[3\]}](#) and [Ubuntu](#) operating systems
- Used by: AOL, Apple Server, Stanford University, United States Navy, NASA, Rackspace, many ISPs
- Able to process thousands

Some Key Features

- SASL authentication Simple Auth Security Layer
- Mail forwarding or delivery
- "Virtual" domains with distinct address-namespaces
- A large number of database lookup mechanisms including [Berkeley DB](#), [CDB](#), [OpenLDAP LMDB](#), [Memcached](#), [LDAP](#) and multiple [SQL](#) database implementations
- Extended
 - [Deep content inspection](#) before or after a message is accepted into the mail queue;
 - Mail authentication with [DKIM](#), [SPF](#), or other protocols;
 - [SMTP](#)-level access policies such as [greylisting](#) or rate control.

Postfix on Debian

- Installed via: **`$sudo apt-get install postfix`**
- Directories:
`/etc/postfix`
- Configuration files
 - `main.cf` - stores site specific Postfix configuration parameters while
 - `master.cf` – defines daemon processes

master.cf

- defines how a client program connects to a service, and what daemon program runs when a service is requested.
- The Postfix master daemon launches all of the other Postfix services as they are needed. The various services, and how they are run, are specified in the master.cf file.
- The SMTP service is defined in this file as well as third party apps like an SPF program or a DKIM Program

main.cf

- specifies a very small subset of all the parameters that control the operation of the Postfix mail system
- you will have to set up a minimal number of configuration parameters.
- Postfix configuration parameters resemble shell variables
 - parameter = value
 - other_parameter = \$parameter
- Postfix uses database files for access control, address rewriting and other purposes

main.cf Key Settings

- [myorigin](#) = [\\$myhostname](#)
 - specifies the domain that appears in mail that is posted on this machine. Defaults to the value of the machine's hostname
- [mydestination](#) = [\\$myhostname](#), localhost
 - specifies what domains this machine will deliver locally
 - if your machine is a mail server for its entire domain, you must list [\\$mydomain](#) as well in this setting
- The [mydomain](#) parameter specifies the parent domain of [\\$myhostname](#). By default, it is derived from [\\$myhostname](#) by stripping off the first part (unless if the result would be a top-level domain)

Relaying Mail – From

- Postfix will forward mail from clients in authorized network blocks to any destination
- Authorized networks are defined with the [mynetworks](#) configuration parameter
- The default is to authorize all clients in the IP subnetworks that the local machine is attached to.
- By default, Postfix will NOT be an open relay ie it will not forward from IPs outside your network to the Internet
 - [mynetworks_style](#) = subnet
 - [mynetworks](#) = 127.0.0.0/8 168.100.189.2/32

Relaying mail - to

- By default, Postfix will forward mail from strangers (clients outside authorized networks) to authorized remote destinations only.
- Authorized remote destinations are defined with the [relay_domains](#) configuration parameter.
- The default is to authorize all domains (and subdomains) of the domains listed with the [mydestination](#) parameter.
- This means that by default, your Postfix mail server will accept mail from anyone to recipients to the local Postfix server

Outbound emails

- By default, Postfix tries to deliver mail directly to the Internet.
- Depending on your local conditions this may not be possible or desirable
- For example, your system may be behind a firewall, or it may be connected via a provider who does not allow direct mail to the Internet.
- In those cases you need to configure Postfix to deliver mail indirectly via a [relay host](#).
 - `relayhost = [mail.isp.tld]`
 - Note that the `[]` disables MX lookups so is necessary

Reporting problems

- You should set up a postmaster alias in the aliases table that directs mail to a real person
- The postmaster address is required to exist, so that people can report mail delivery problems.
- While you're updating the [aliases\(5\)](#) table, be sure to direct mail for the super-user to a human person too.
 /etc/aliases:
 postmaster: afnog
 root: afnog
- After editing the aliases file, run the command `$sudo newaliases`

Default reports

- bounce
 - Inform the postmaster of undeliverable mail. Either send the postmaster a copy of undeliverable mail that is returned to the sender, or send a transcript of the SMTP
- 2bounce
 - When Postfix is unable to return undeliverable mail to the sender,
- delay
 - Inform the postmaster of delayed mail. In this case, the postmaster receives message headers only.
- policy
 - Inform the postmaster of client requests that were rejected because of (UCE) policy restrictions. The postmaster receives a transcript of the SMTP session.
- protocol
 - Inform the postmaster of protocol errors (client or server side) or attempts by a client to execute unimplemented commands.
- resource
 - Inform the postmaster of mail not delivered due to resource problems (for example, queue file write errors)
- software
 - Inform the postmaster of mail not delivered due to software problems.

Logging

- Postfix will log all messages to ***/var/log/mail.log***
- Done using the syslogd daemon
- All transactions of messages coming in being sent out of the server will be logged
- Logs will contain details like hostnames, recipients, time and date, and whether the email was queued or dropped

Postfix Daemon process chrooted

- Postfix daemon processes can be configured (via the [master.cf](#) file) to run in a chroot jail
- The processes run at a fixed low privilege and with file system access limited to the Postfix queue directories (/var/spool/postfix).
- This provides a significant barrier against intrusion.
- The barrier is not impenetrable (chroot limits file system access only)

Interfaces and Protocol

- The [inet_interfaces](#) parameter specifies all network interface addresses that the Postfix system should listen on
 - `inet_interfaces = all`
- [inet_protocols](#) parameter specifies which protocols Postfix will attempt to use
 - `inet_protocols = ipv4, ipv6`

Starting, stopping and logs

- **Starting/Stopping**
\$sudo service postfix start
\$sudo service postfix stop
- **Checking non-default running config**
\$sudo postconf -n
- **Reloading rules**
\$sudo postfix reload
- **Checking logs**
\$sudo tail -f /var/log/mail.log

Further Postfix Reading

- Queue manipulation
 - <http://www.tech-g.com/2012/07/15/inspecting-postfixs-email-queue/>
- [Postfix on Debian](#)
 - <https://wiki.debian.org/Postfix>