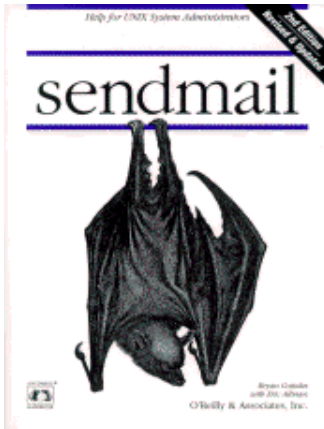


# Virtual Hosting with Sendmail



Many people and businesses are getting their own domain names these days and wish to receive mail using these domain names. They can pay ISPs for this service, or they can do it themselves. This web page is a guide for the do-it-yourself people, describing how to use sendmail to accomplish virtual e-mail hosting. Some knowledge of sendmail, Un\*x administration, and Internet protocols is assumed. The best source of information about sendmail is the book Sendmail, 2nd Edition.

This page has been translated into Slovak as well.

## DNS Configuration

First, you need to obtain the new domain name and set up name servers for that new domain:

1. Choose an available domain name. In our example, we will use `yourdomain.com`.
2. Establish two machines as primary and secondary name servers for your domain. Knowledge of how to do this is assumed; otherwise, the book DNS and BIND, 3rd Edition is highly recommended.
3. Configure MX records for your domain (Note: CNAME records can **not** be used; see § 5.2.2 of RFC 1123 for details.) MX records are explained in the sendmail book, section 15.3, and how to configure them is explained in section 21.3. You have two options for MX records:

- If the mail server which will serve your new domain will have a full-time connection to the Internet, it should be the primary MX host for your domain. In this configuration, your MX records would look like this:

```
yourdomain.com.          IN  MX  10    yourmailserver.yourdomain.com.
```

- Otherwise, you will need to find another machine to queue mail for your domain while you are not connected. Be sure to get the machine owners' approval first. That machine must be configured to allow relaying to your domain. If it is running sendmail, this can be as simple as adding your domain to the relay-domains file on that machine. You would then point your MX records at that machine. For example:

```
yourdomain.com.          IN  MX  10    yourmailserver.yourdomain.com.
```

```
yourdomain.com.          IN MX 20   othermailserver.otherdomain.com.
```

4. After the name servers are setup, register your domain using one of the registries.

## Sendmail Configuration

Now that DNS is setup, it's time to set up sendmail.

1. Download sendmail from [FTP.Sendmail.ORG/pub/sendmail/](http://FTP.Sendmail.ORG/pub/sendmail/). You will automatically be offered a short initial message which will indicate the current release. The instructions below assume version 8.10.0 or later.
2. Build and install sendmail for your machine. In most cases, this consists of unpacking the distribution, **reading the README and sendmail/README files**, and typing `Build` in the `sendmail` directory. See the `INSTALL` file in the distribution's top-level directory for details.
3. Configure sendmail. This is where we go into detail.
  - a. First, **read the `cf/README` file thoroughly**. It will give you instructions on creating a `.mc` file in the `cf/cf` directory. Your `mailserver.mc` file will typically look something like:

```
divert(-1)dnl
#
# This file contains definitions for mailserver.yourdomain.com
#
divert(0)dnl
VERSIONID('@(#)mailserver.mc      1.0 (yourdomain.com) 5/1/97')
OSTYPE(solaris2)dnl
DOMAIN(yourdomain.com)dnl
FEATURE('virtusertable', 'dbm /etc/mail/virtusertable')dnl
MAILER(local)dnl
MAILER(smtp)dnl
```

Your actual OS will be substituted for `solaris2`. A typical `cf/domain/yourdomain.com.m4` file that looks something like:

```
divert(-1)dnl
#
# This file contains the global definitions for yourdomain.com
#
divert(0)dnl
VERSIONID('@(#)yourdomain.com.m4  1.0 (yourdomain.com) 5/1/97')
FEATURE('use_cw_file')dnl
```

It may have some other `FEATURE()`'s and `define()`'s as well. The virtual user table is the key to all of this. Note: if you built sendmail with `NEWDB` instead of `NDBM`, you will have to use `hash` instead of `dbm` in the above line.

- b. Generate your `/etc/mail/sendmail.cf` file from your `mailserver.mc` file:

```
cd sendmail-VERSION/cf/cf
./Build mailserver.cf
cp mailserver.cf /etc/mail/sendmail.cf
```

4. Create the virtual user table. This is explained in detail in section 19.6.28 of the sendmail book; an

overview is given here. The table is a database that maps virtual addresses into real addresses. You create a text file where each line has a key/value pair, separated by a TAB. For example:

```
joe@yourdomain.com      jschmoe
jane@yourdomain.com    jdoe@othercompany.com
@yourdomain.com        jschmoe
```

In this first example, the address `joe@yourdomain.com` will be mapped to the local user `jschmoe`, `jane@yourdomain.com` will be mapped to the remote user `jdoe@othercompany.com`, and anything else coming in to `yourdomain.com` will also go to `jschmoe`.

```
joe@yourdomain.com      jschmoe
bogus@yourdomain.com    error:nouser No such user here
list@yourdomain.com     yourdomain-list
@yourdomain.com        %l@othercompany.com
```

In this second example, the address `joe@yourdomain.com` will be mapped to the local user `jschmoe`, the address `bogus@yourdomain.com` will return the indicated error, the address `list@yourdomain.com` will be mapped to the local user `yourdomain-list` (which you would use the aliases file to ultimately resolve) and every other user at `yourdomain.com` will be mapped to a remote user of the same name at `othercompany.com`.

Note 1: if you have a local user, say `sam`, and there is no key for `sam@yourdomain.com` and no catch-all key for `@yourdomain.com`, then `sendmail` will fall back to the local user `sam` when resolving `sam@yourdomain.com`. To prevent this, you must use either a catch-all key or an explicit key for `sam@yourdomain.com`; the `error:nouser` example above may be useful in this instance.

Note 2: if you want a virtual address to resolve to more than one real address, you need to do it indirectly. Have the virtual address resolve to a local alias, then have the local alias resolve to the desired set of addresses. For example, in the virtual user table:

```
joe@yourdomain.com      localjoe
```

then in the aliases file:

```
localjoe:                joe@othercompany.com, jane@othercompany.com
```

Note 3: multiple domains are allowed, and virtual addresses in each domain are independent. So for example, you could have:

```
joe@yourdomain1.com     localjoe
joe@yourdomain2.com     joe@othercompany.com
joe@yourdomain3.com     localjoe
joe@yourdomain4.com     error:nouser No such user here
```

For people administering multiple domains, it may be easier to keep each domain's list in a separate file, then write a short script to concatenate all such files together into a master virtual user table. But we're getting ahead of ourselves; that's the next step...

5. Build the virtual user table. If the above virtual user table text file is located at `sourcefile`, and you are using the `dbm` database type, then use the command:

```
makemap dbm /etc/mail/virtusertable < sourcefile
```

This actually creates one or more non-text files (typically `/etc/mail/virtusertable.dir` and `/etc/mail/virtusertable.pag`, or `/etc/mail/virtusertable.db`), but does not actually change `/etc/mail/virtusertable` itself, so this is the recommended location for `sourcefile`.

6. If you would like to reverse-map local users for out-bound mail, you will need to add support for the generics table to your `.mc` file:

```
FEATURE('genericstable', 'dbm /etc/mail/genericstable')dnl
GENERICSDOMAIN_FILE('/etc/mail/generics-domains')dnl
```

And you will need to create `/etc/mail/genericstable` which is like `/etc/mail/virtusertable` above except the columns are reversed:

```
jschmoe                joe@yourdomain.com
```

Note: you may also wish to consult our [Masquerading and Relaying](#) page.

7. Add your domain name to sendmail's class `w`. This is typically done by adding a line to `/etc/mail/local-host-names` (known as `/etc/sendmail.cw` prior to 8.10) with the value of your domain name.

Likewise, if you are using the `genericstable`, you should add any domains you wish to reverse-map to `/etc/mail/generics-domains`.

8. Restart or `SIGHUP` sendmail. Note that you do not need to restart sendmail when changing the virtual user or generics tables, only when changing `/etc/mail/sendmail.cf` or class files such as `/etc/mail/local-host-names`.

An extra step is required for hosts that are not connected full-time. As noted in the [MX configuration](#) section, if you use another host to queue your mail until you connect, you will have to force delivery of mail queued on the secondary mail server. To accomplish this, when your primary server connects, you should run the script `etrn.pl` which comes in the `contrib` directory of the sendmail distribution:

```
etrn.pl secondary-mx-host yourdomain.com
```

It may be advisable to put this at the end of the sendmail start-up script on any primary MX. It would be especially useful as a follow-up to whatever script initiates the connection on primary MXs without full-time connections.

At this point, you should be set, and people should be able to send e-mail to addresses `@yourdomain.com`. However, you should test your configuration and make sure everything works as expected before announcing the new domain name and mail addresses for that domain. If things don't work as expected, you can test with sendmail's test mode:

```
sendmail -bt
```

Here are some examples of things to try in test mode:

```
# make sure the domain is in class w:
```

```
$=w
# is the map working?
/map virtuser joe@yourdomain.com
/map virtuser jane@yourdomain.com
/map virtuser @yourdomain.com
# is the rewriting working?
3,0 joe@yourdomain.com
3,0 some@yourdomain.com
```

If you get stuck and can't find the answers in the various README files which come with sendmail, the sendmail FAQ, or the Sendmail book, you can send mail to [sendmail-questions@sendmail.org](mailto:sendmail-questions@sendmail.org) asking for assistance.

