

MuntsOS Embedded Linux

Application Note #16: Sending Email

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Introduction

This application note describes how send email messages from software running on a MuntsOS Embedded Linux target board.

Prerequisites

The ***MuntsOS Embedded Linux*** software development environment must be installed on a 64-bit x86-64 Linux system ([AppNote #1](#) or [AppNote #2](#)).

MuntsOS Embedded Linux must be installed on the target computer ([AppNote #3](#) or [AppNote #15](#)).

The ***E-MailRelay*** extension package for MuntsOS Embedded Linux must be installed on the target computer, using **sysconfig**.

Test Platform Hardware

The test platform for the purposes of this application note consists of any MuntsOS Embedded Linux target board with Internet connectivity.

Configuring E-MailRelay

The [E-MailRelay](#) extension package must be configured by editing two configuration files:

`/usr/local/etc/emailrelay/auth.conf` -- Replace "username" and "password" with the login credentials for your remote SMTP server.

`/usr/local/etc/emailrelay/emailrelay.conf` -- Replace "servername:port" with your remote SMTP server settings.

After you have edited these files, you must run **sysconfig --save** to make the changes permanent.

Mail Transfer Agent (MTA)

A **Mail Transfer Agent** is a system program that accepts an email message text conforming to [RFC5322](#) and then delivers it to one or more recipients.

Examples of MTA's for Unix and Linux include [Sendmail](#), [Postfix](#), and [DragonFly Mail Agent](#). Full service MTA's are often large and difficult to configure and may not be suitable for small embedded systems.

By tradition every MTA for Unix and Linux, including MuntOS Embedded Linux, provides a command line program named `/usr/sbin/sendmail` that reads an email message text conforming to RFC5322 from standard input and then delivers the message to its recipient(s).

Given a file `message.txt` containing an email message text conforming to RFC5322, the following command sends an email:

```
/usr/sbin/sendmail -t <message.txt
```

The `/usr/sbin/sendmail` included in MuntOS Embedded Linux is provided by BusyBox. It just forwards email messages to an SMTP (**Simple Mail Transfer Protocol**) server listening on TCP port `localhost:25`.

MuntOS Embedded Linux does not include the SMTP server by default. You must install and configure the E-MailRelay extension package to obtain the SMTP proxy server that sits between `/usr/sbin/sendmail` and a remote SMTP server.

Mail User Agent (MUA)

A **Mail User Agent** is a user program that generates an email message text conforming to RFC5322 and then passes it to an MTA for delivery. On Unix and Linux, the MUA often runs `/usr/sbin/sendmail` using the `popen()` Standard I/O Library function and writes the generated email message text to the file object returned by `popen()`.

MuntOS Embedded Linux includes the MUA `/usr/bin/mail` from the [GNU Mailutils](#) package. The mail program reads a message payload from standard input, generates an email message text conforming to RFC5322, and then passes the result to `/usr/sbin/sendmail` for delivery.

The following command sends an email with the subject `Test1` to recipient `you@me.com`:

```
echo "This is a test" | mail -s "Test1" you@me.com
```

A user application program can run `/usr/bin/mail` with `popen()` to send email messages.

A user application program can also act as its own MUA. The [Ada Web Server](#) library provides email client services for the Ada programming language. Similarly, the `.Net Core System.Net.Mail` namespace provides email client services for C# programs.