

ENSC351

How To Send Email Using Linux Command and BBG for Debian12

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Team: 404 Group Not Found

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0. Current guide V.S. previous guide

This guide is based on Debian12 which is more up to date and given more detailed steps. Fixed gray area that did not explained in the previous guide (can be found in the reference part)

1. Setting up the Environment

1.1 Make sure to install the following packages before any further process by running follow commands (needs to be done on both host and target):

```
sudo apt update
```

```
sudo apt install postfix
```

```
sudo apt install mailutils
```

```
sudo apt install ssmtp
```

```
sudo apt-get install msmtplib msmtplib-mta
```

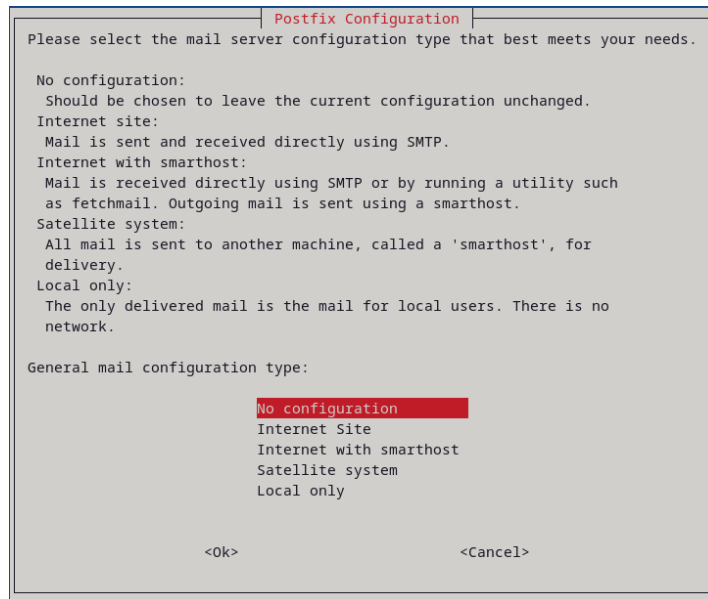
```
sudo DEBIAN_PRIORITY=low apt install postfix
```

1.2 Configure POSTFIX by running command:

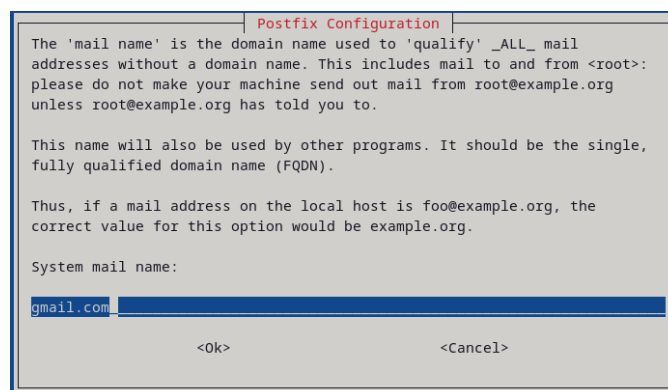
```
(host) $ sudo dpkg-reconfigure postfix
```

1.2.1. This will pop up a new window as the following (hotkey: *Tab* to switch between options; *enter* to confirm your selection)

we choose *Internet Site* here:



1.2.2 If you are using gmail, put down “*gmail.com*” as the system mail name, here is just a sample screenshot.



1.2.3 Fill in the SENDER email without anything after @.

For example, if your gmail is ENSC351@gmail.com fill in *ENSC351@*.

Postfix Configuration

Mail for the 'postmaster', 'root', and other system accounts needs to be redirected to the user account of the actual system administrator.

If this value is left empty, such mail will be saved in /var/mail/nobody, which is not recommended.

Mail is not delivered to external delivery agents as root.

If you already have a /etc/aliases file and it does not have an entry for root, then you should add this entry. Leave this blank to not add one.

Recipient for root and postmaster mail:

<Ok> <Cancel>

1.2.4 Nothing needs to change by this step, *ok*.

Postfix Configuration

Please give a comma-separated list of domains for which this machine should consider itself the final destination. If this is a mail domain gateway, you probably want to include the top-level domain.

Other destinations to accept mail for (blank for none):

<Ok> <Cancel>

1.2.5 No, we don't want a synchronous update, select *No*.

Postfix Configuration

If synchronous updates are forced, then mail is processed more slowly. If not forced, then there is a remote chance of losing some mail if the system crashes at an inopportune time, and you are not using a journaled filesystem (such as ext3).

Force synchronous updates on mail queue?

<Yes> ☒ <No>

1.2.6 Nothing needs to change by this step, *ok*.

Postfix Configuration

Please specify the network blocks for which this host should relay mail. The default is just the local host, which is needed by some mail user agents. The default includes local host for both IPv4 and IPv6. If just connecting via one IP version, the unused value(s) may be removed.

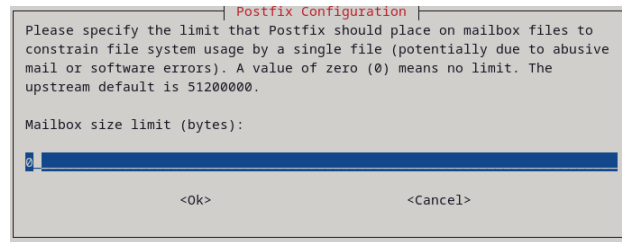
If this host is a smarthost for a block of machines, you need to specify the netblocks here, or mail will be rejected rather than relayed.

To use the Postfix default (which is based on the connected subnets), leave this blank.

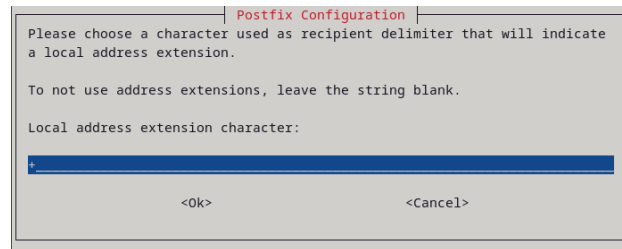
Local networks:

<Ok> <Cancel>

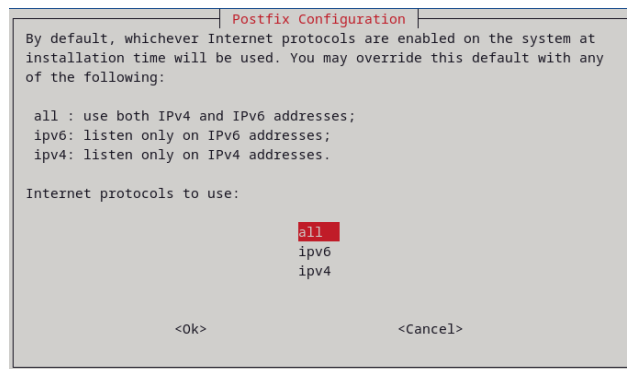
1.2.7 We don't want to limit our mailbox size, 0 for unlimited. *Ok*.



1.2.8 No extension needed. *Ok.*

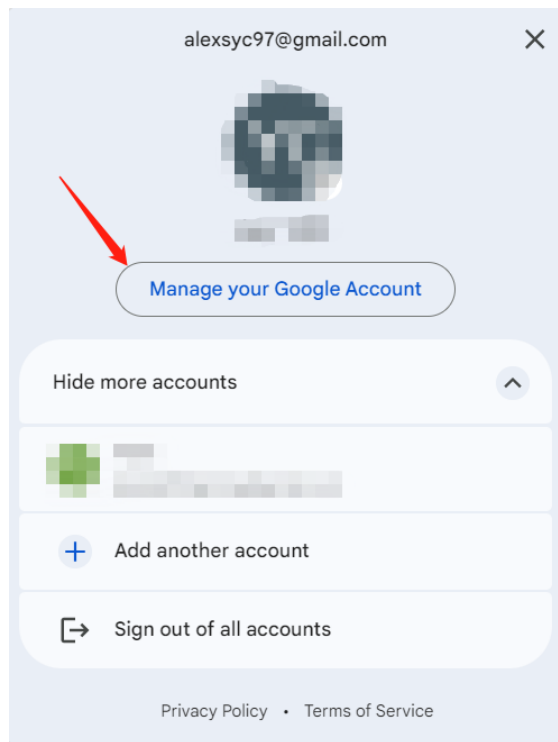


1.2.9 We want all the ip addresses, *All* and *Ok.*

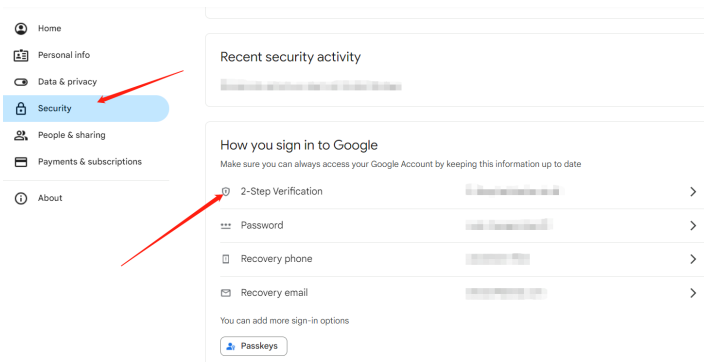


2. Get Google App password Ready

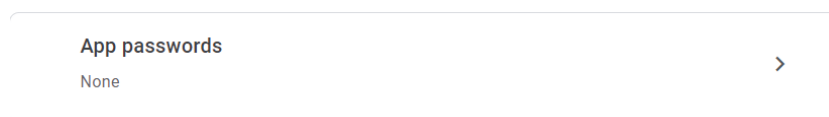
2.1 Under google account, select *Manage Your Google Account.*



2.2 Select *Security*, and click *2-Step Verification*.



2.3 Scroll all the way down to *App passwords* (the position may vary due to update of google.ca)



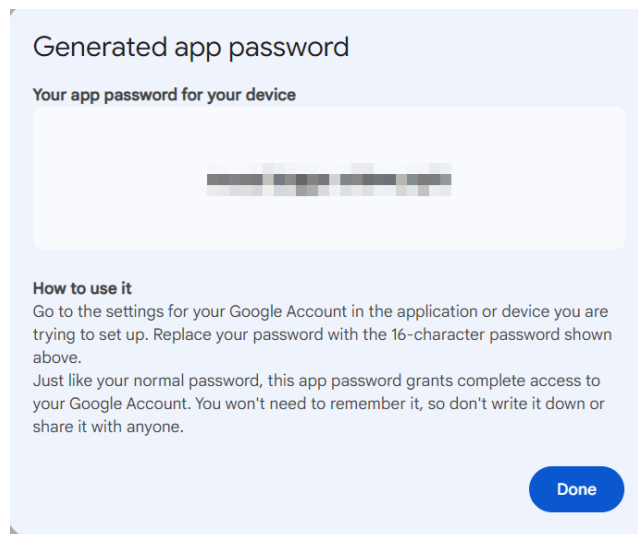
2.4 Fill in *smstp*, and generate the 16-digits password, keep it in handy. Once you close the window, you will no longer be able to access it.

You don't have any app passwords.

To create a new app specific password, type a name for it below...

App name

Create



3. Config Local Files

3.1 Use command to open local file:

(host) \$ sudo nano /etc/msmtprc

3.2 Fill in the info, email@gmail.com is the same email you used in the previous procedures. Password is the 16-digits password without any space in between. (All space shown in the pic are TAB not SPACE)

```
defaults
auth    on
tls      on
tls_trust_file /etc/ssl/certs/ca-certificates.crt
logfile ~/.msmtp.log
account gmail
host     smtp.gmail.com
port     587
from     [REDACTED]@gmail.com
user     [REDACTED]
password [REDACTED]
account default:gmail
```

3.3 Run commands and Modify another file.

(host/bbg) \$ sudo chmod 640 /etc/ssmtp/ssmtp.conf

(host/bbg) \$ sudo nano /etc/ssmtp/ssmtp.conf

paste the following(without quotation):

"SERVER=yoursenderemail@gmail.com

mailhub=smtp.gmail.com:587

AuthUser=yoursenderemail@gmail.com

AuthPass=your16digitspassword

UseTLS=YES

UseSTARTTLS=YES

rewriteDomain=gmail.com

hostname=test

FromLineOverride=YES"

The result should be something like:

```
#
# Config file for sSMTP sendmail
#
# The person who gets all mail for userids < 1000
# Make this empty to disable rewriting.
root=postmaster

# The place where the mail goes. The actual machine name is required no
# MX records are consulted. Commonly mailhosts are named mail.domain.com
mailhub=mail

# Where will the mail seem to come from?
#rewriteDomain=

# The full hostname
hostname=Debian

# Are users allowed to set their own From: address?
# YES - Allow the user to specify their own From: address
# NO - Use the system generated From: address
#FromLineOverride=YES

SERVER=
mailhub=smtp.gmail.com:587
AuthUser=
AuthPass=
UseTLS=YES
UseSTARTTLS=YES
rewriteDomain=gmail.com
hostname=test
FromLineOverride=YES
```

4. Test by running a simple command file

(host) \$ echo "Message" | mail -s "Title" youremailaddress@gmail.com

5. C- Code

```

#include <stdio.h>
#include <stdlib.h>
#include <fcntl.h>
#include <time.h>
#include <string.h>
#include <math.h>
#include <stdbool.h>
#include <pthread.h>
#include <unistd.h>
#include <ctype.h>
void runCommand(char *command){
FILE *pipe = popen(command, "r");
char buffer[1024];
while (!feof(pipe) && !ferror(pipe)){
if (fgets(buffer, sizeof(buffer), pipe) == NULL)
break;
}
int exitCode = WEXITSTATUS(pclose(pipe));
if (exitCode != 0){
perror("Unable to execute command:");
printf(" command: %s\n", command);
printf(" exit code: %d\n", exitCode);
}
}

int main(){
runCommand("echo \" | mail -s \"");

return 0;
}

```

```

#include <stdio.h>

#include <stdlib.h>

#include <fcntl.h>

#include <time.h>

#include <string.h>

#include <math.h>

#include <stdbool.h>

#include <pthread.h>

#include <unistd.h>

#include <ctype.h>

void runCommand(char *command){

FILE *pipe = popen(command, "r");

char buffer[1024];

while (!feof(pipe) && !ferror(pipe)){

if (fgets(buffer, sizeof(buffer), pipe) == NULL)

break;

}

int exitCode = WEXITSTATUS(pclose(pipe));

if (exitCode != 0){

```

```
perror("Unable to execute command:");  
  
printf(" command: %s\n", command);  
  
printf(" exit code: %d\n", exitCode);  
  
}  
  
}
```

TroubleShooting

Debian 10 might give errors when using this guide.

App password might only apply on only one device each of them, try to limit the number of devices sharing the same password.

Reference

<https://opencoursehub.cs.sfu.ca/bfraser/grav-cms/cmpt433/links/files/2022-student-howtos-ensc351/SendingEmailAndSMSRemindersUsing.pdf>