

Network Programming

Section :4

Email-Protocols

By :Kareem Abd EL Razik

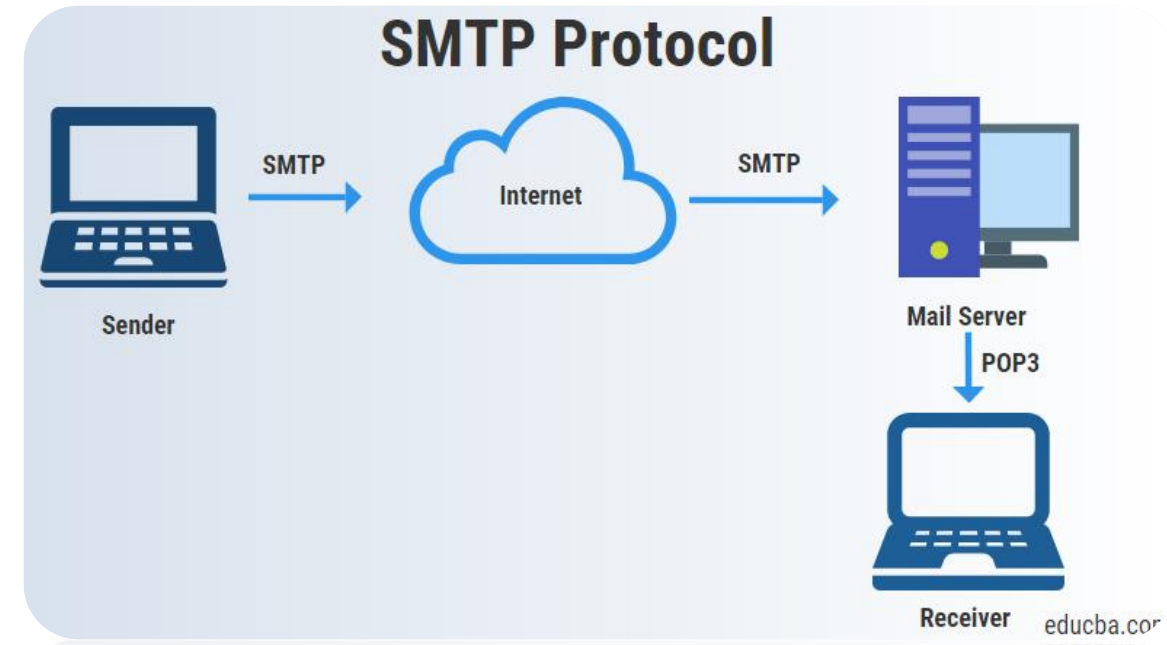
Objectives



- What is SMTP?
- What is IMAP?
- What Is An Example of SMTP & IMAP Working Together?
- POP3VS IMAP?
- How to Send Outgoing Email With SMTP (relay service / on-premises)

What is SMTP?

- ❑ SMTP stands for **Simple Mail Transfer Protocol** and it's the industry standard protocol for email sending
- ❑ With SMTP you are sending, or forwarding messages from a mail client (like Microsoft Outlook) to a receiving email server. A sender will use an SMTP server to carry out the process of transmitting an email message.



SSL vs. TLS – What are differences?

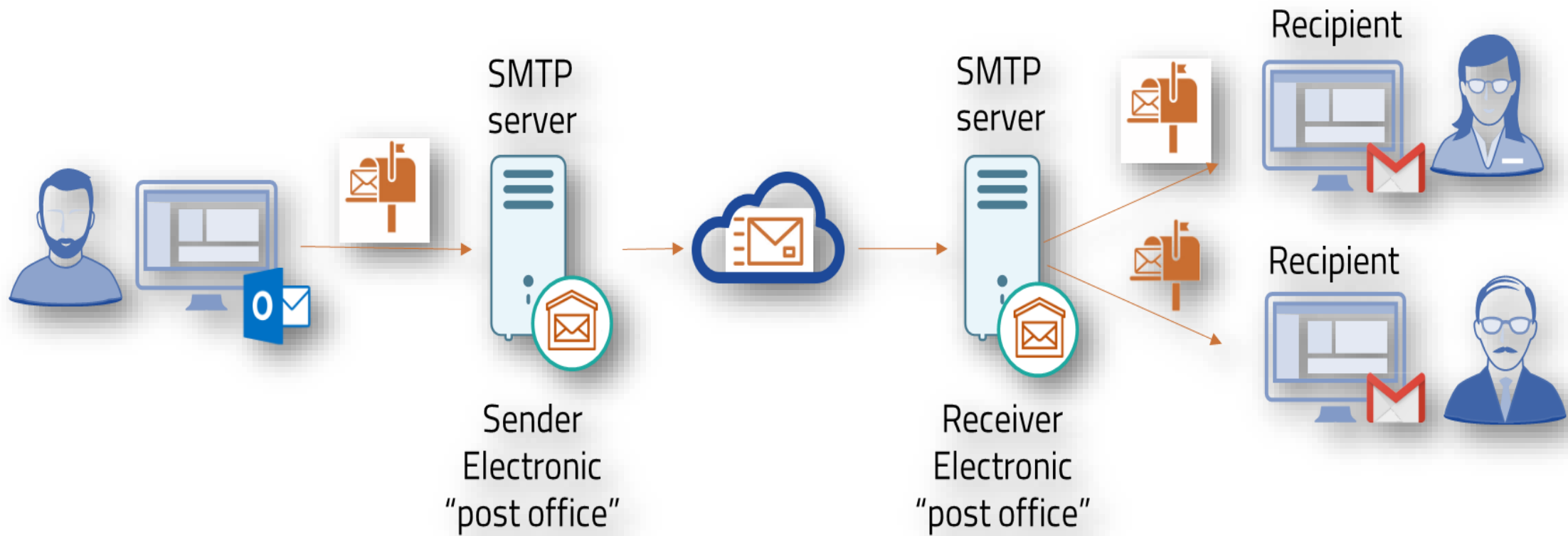
- ❑ both protocols **create a private channel between** the sending and receiving computer to secure transmissions,
- ❑ **SSL refers to Secure Sockets Layer.**
- ❑ **TLS:** refers to Transport Layer Security

Basically, they are one and the same, but, entirely different.

How similar both are?

❑ **SSL** and **TLS** are cryptographic protocols that authenticate data transfer between servers, systems, applications and users. For example, a cryptographic protocol **encrypts the data that is exchanged between a web server and a user.**

How SMTP works ?



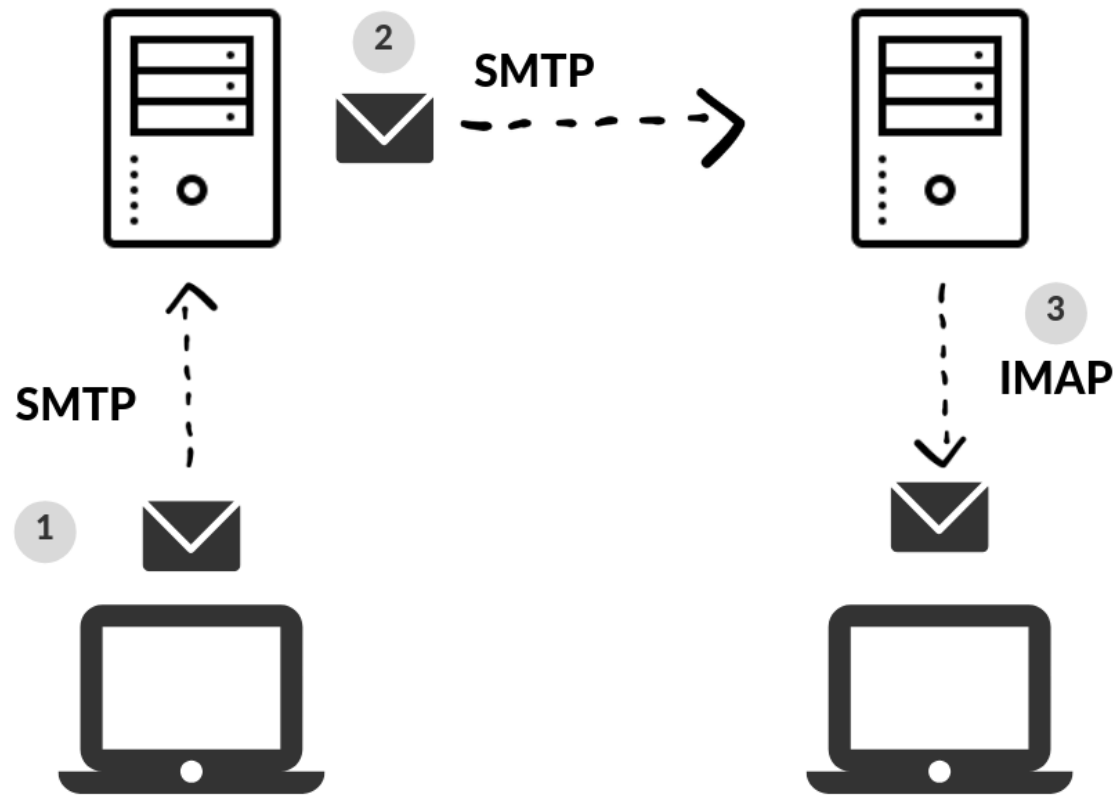
What is IMAP?

❑ If **SMTP** is all about sending, then what is **IMAP**?

Simply put, **IMAP (Internet Message Access Protocol)** is an email protocol that deals with managing and retrieving email messages from the receiving server.

❑ Since IMAP deals with message retrieval, you will not be able to use the IMAP protocol to send email. Instead, **IMAP** will be used for receiving messages.

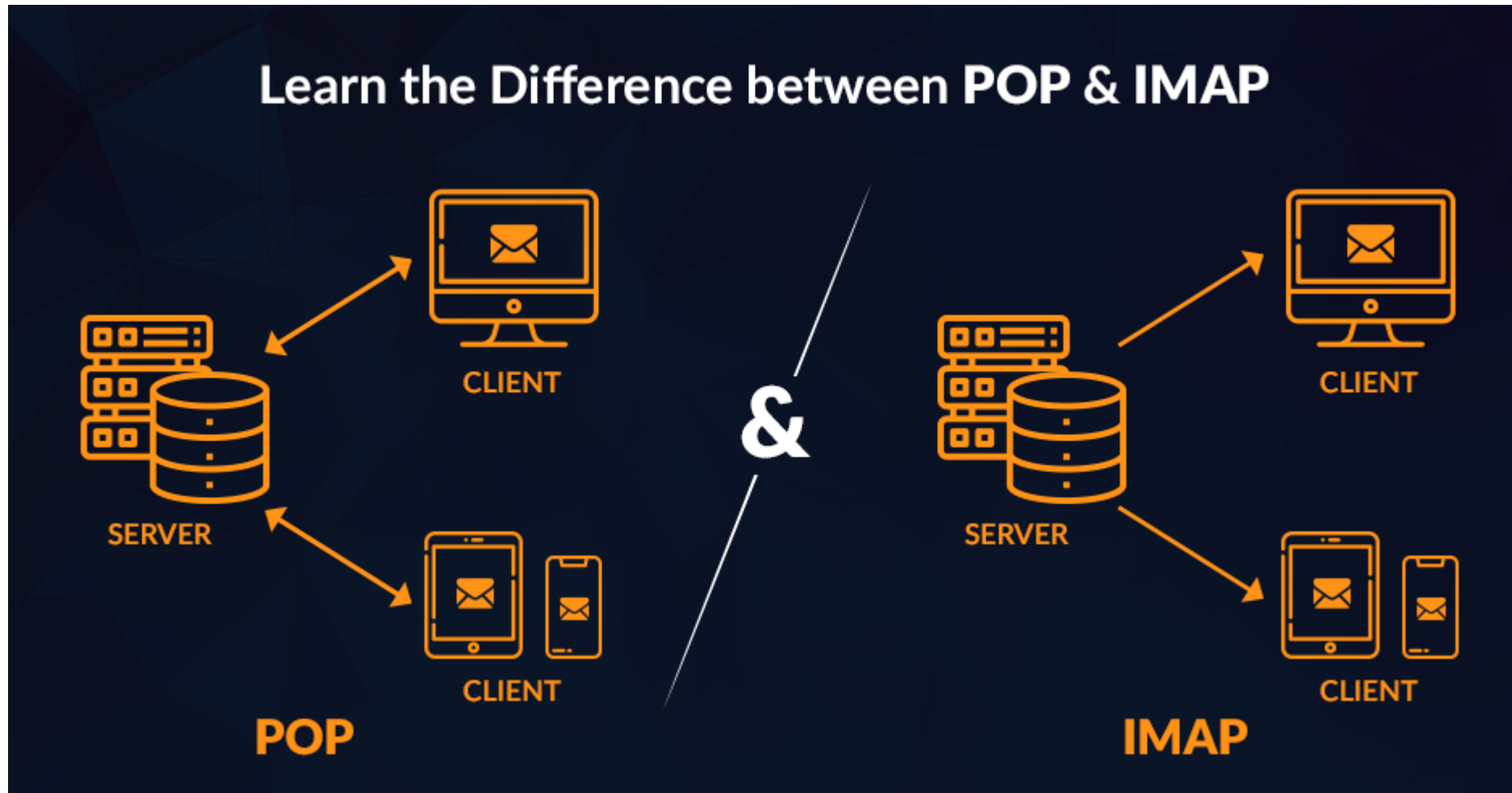
Example of SMTP & IMAP Working Together



Example of SMTP & IMAP Working Together

- 1) After creating an email and pressing 'send', your email client (e.g. Gmail, Thunderbird, Outlook, etc.) will use SMTP to send your message from your email client to an email server.
- 2) Next, the email server will use SMTP to transmit the message to the recipient's receiving email server.
- 3) Upon a successful receipt of the SMTP transmission (indicated by a 250 OK response code), the recipient's email client will fetch the message using IMAP and place it in the inbox for the recipient to access.

what's the difference between POP and IMAP?



Example of SMTP & IMAP Working Together

- 1) **POP3** downloads the email from a server to a single computer, then deletes the email from the server.
- 2) **IMAP** stores the message on a server and synchronizes the message across multiple devices.

Should you be using POP3 or IMAP?

❑ It depends on how you want to access your emails.

- 1) IMAP is more powerful and the recommended method for receiving email if you're working across multiple devices.
- 2) Alternatively, if you prefer to have all emails accessible offline, and if you have a designated device for email, then POP could be a suitable option.

What is an SMTP server?

❑ **SMTP server** verifies that a sender is allowed to send through the SMTP

How to set up your SMTP server

- ❑ there are two options to explore. You can subscribe to **a hosted email relay service**
Ex . Smtplib.com ,smtp.yahoo.com
- ❑ Alternatively, you can setup your “on-premises” SMTP server for more granular control. An example is **httplib, mailenabled, Microsoft Exchange, PowerMTA.**

SMTP server

❑ To **use Gmail's SMTP server**, the following settings are needed for your outgoing emails:

- *Outgoing Mail (SMTP) Server:* **smtp.gmail.com**
- *Use Authentication:* **Yes**
link to lesssecureapps: <https://myaccount.google.com/lesssecureapps>
- *Use Secure Connection:* **Yes** (TLS or SSL depending on your mail client/website SMTP plugin)
- *Username:* **your Gmail account** (e.g. user@gmail.com)
- *Password:* **your Gmail password**
- *Port:* **587** (TLS required) or **465** (SSL required)
- **link to lesssecureapps:** <https://myaccount.google.com/lesssecureapps>

GUI

Enter Google's SMTP server, your Gmail address, and the app password you've created earlier in the respected fields.

Add another email address you own

Send mail through your SMTP server

Configure your mail to be sent through hostinger-dev-13.xyz SMTP servers [Learn more](#)

SMTP Server: Port:
Username:
Password:

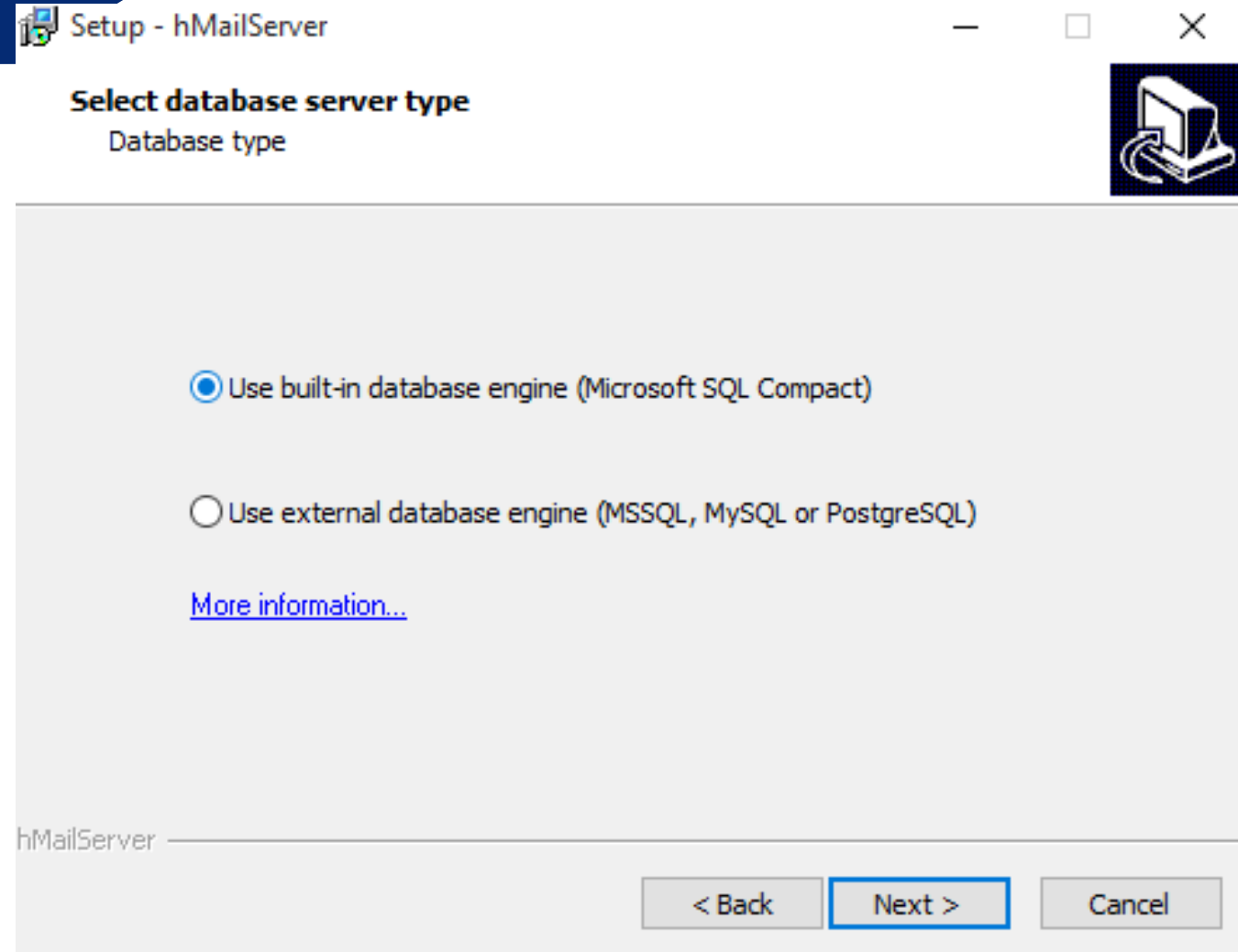
- ☒ Secured connection using [TLS \(recommended\)](#)
☐ Secured connection using [SSL](#)

Cancel

« Back

Add Account »

on-premises :hmailserver



<https://myaccount.google.com/lesssecureapps>

Tasks

Setup - hMailServer

hMailServer Security
Specify main password

The installation program will now create a hMailServer user with administration rights. Please enter a password below. You will need this password to be able to manage your hMailServer installation, so please remember it.

Password:

.....

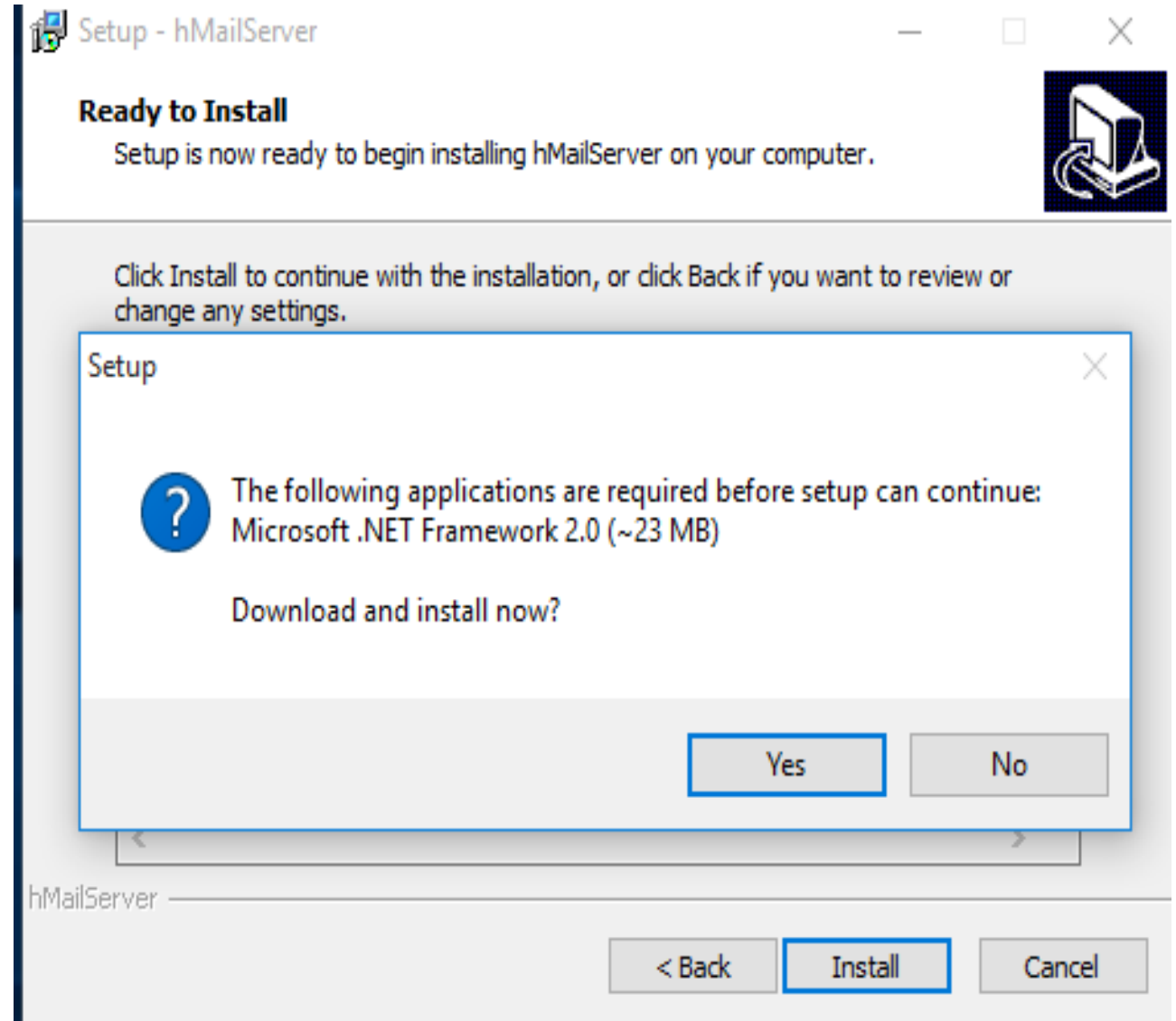
Confirm password:

.....

hMailServer

< Back Next > Cancel

Tasks



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hMailServer

< Back Next > Cancel

Tasks

Connect

Host name	hMailServer Username
localhost	Administrator

hMailServer password

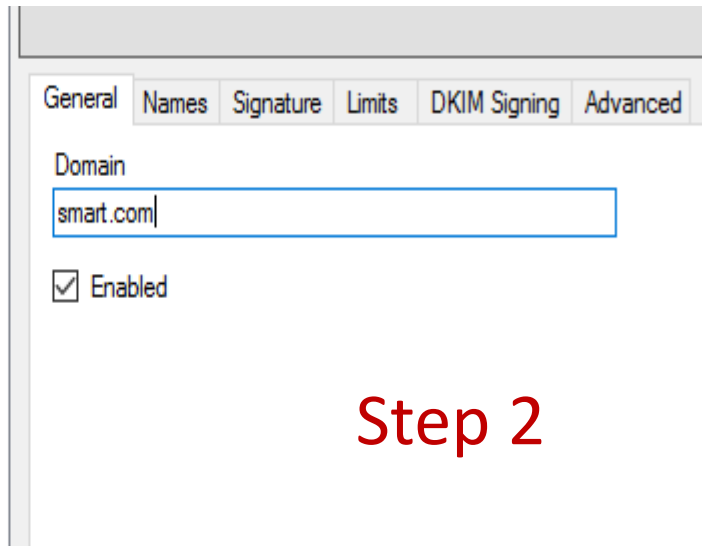
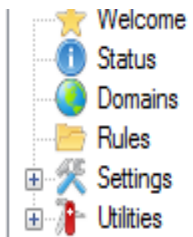
Please enter the hMailServer password. [What is this?](#)

OK Cancel

☒ Automatically connect on start-up

Connect Cancel

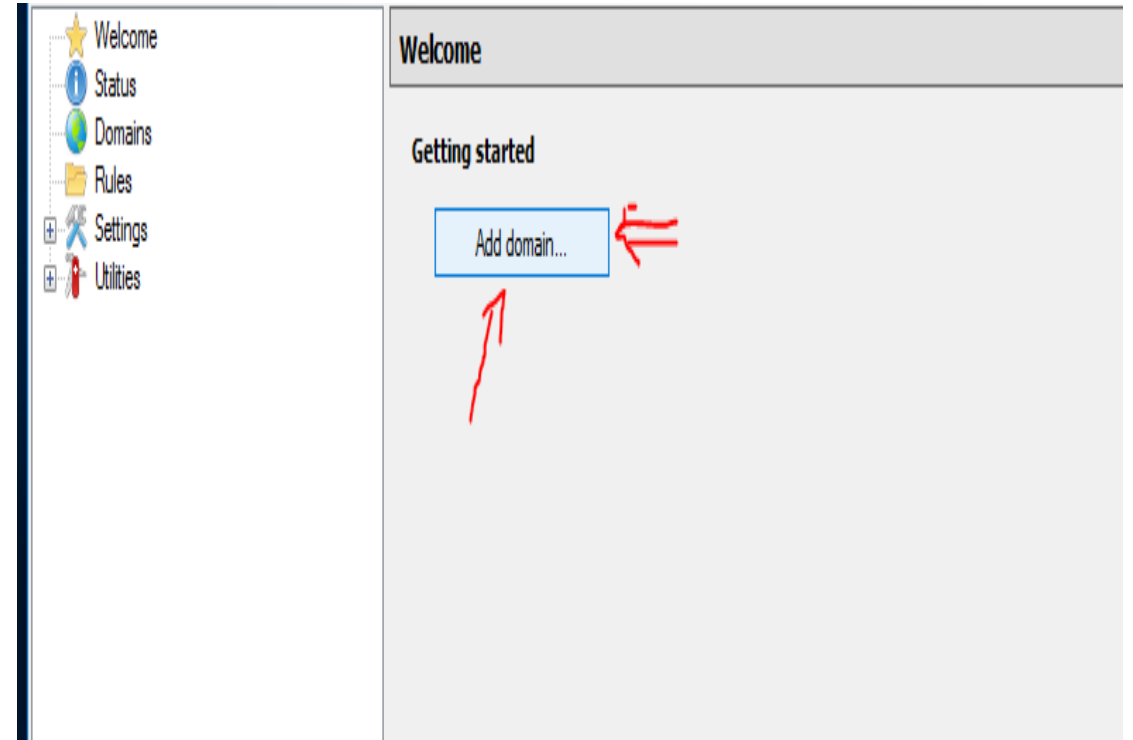
Tasks



The Step 2 interface shows a configuration window with tabs: General, Names, Signature, Limits, DKIM Signing, and Advanced. The 'General' tab is active. It contains a 'Domain' text field with 'smart.com' entered and an 'Enabled' checkbox that is checked.

Step 2

Step 1



Tasks

General Auto-reply Forwarding Signature External accounts Rules Active Directory Adv...

Address

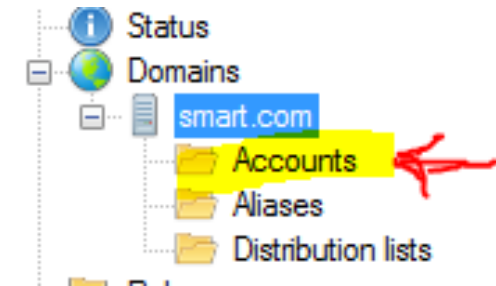
kareem @ smart.com

Password

<< Encrypted >>

Step 2

Step 1



Tasks

General Auto-reply Forwarding Signature External accounts Rules Active Directory Adv...

Address

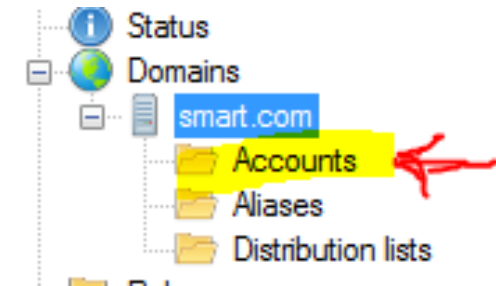
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Password

<< Encrypted >>

Step 2

Step 1



**At the
End**



Any questions?