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A Gateway for Life

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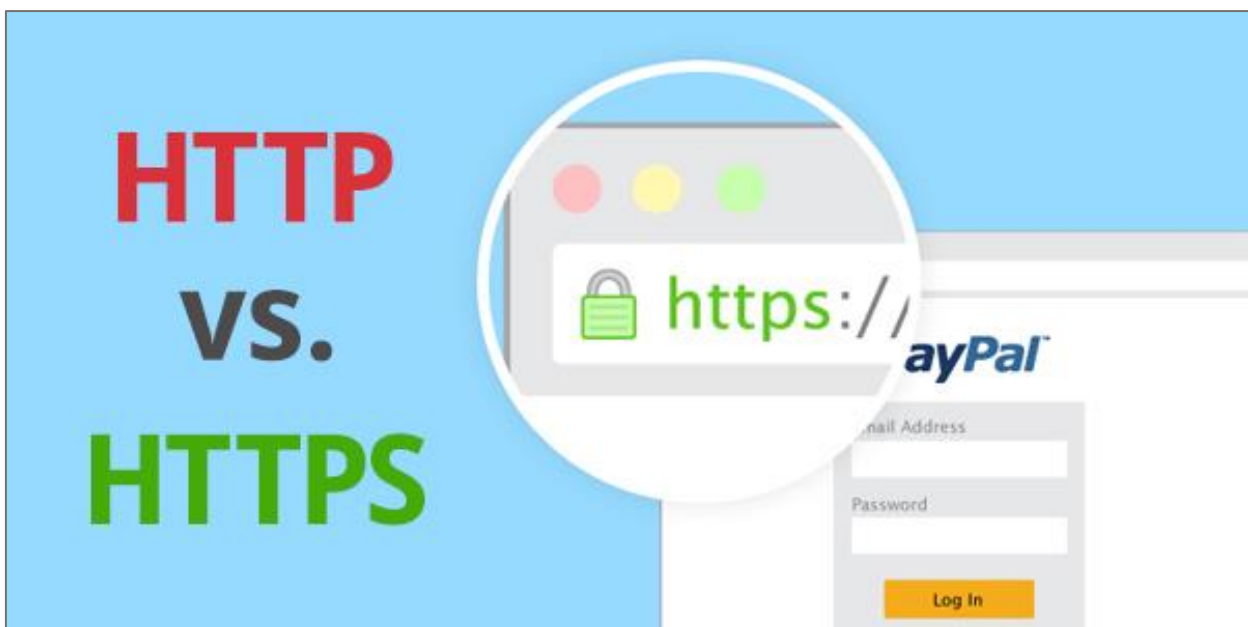Tel: +855 23.99.55.00
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HTTP vs HTTPS

Contents:

❖ What is the difference between HTTP and HTTPS?

❖ How does HTTPS protocol work?

❖ What is SSL Certificate?
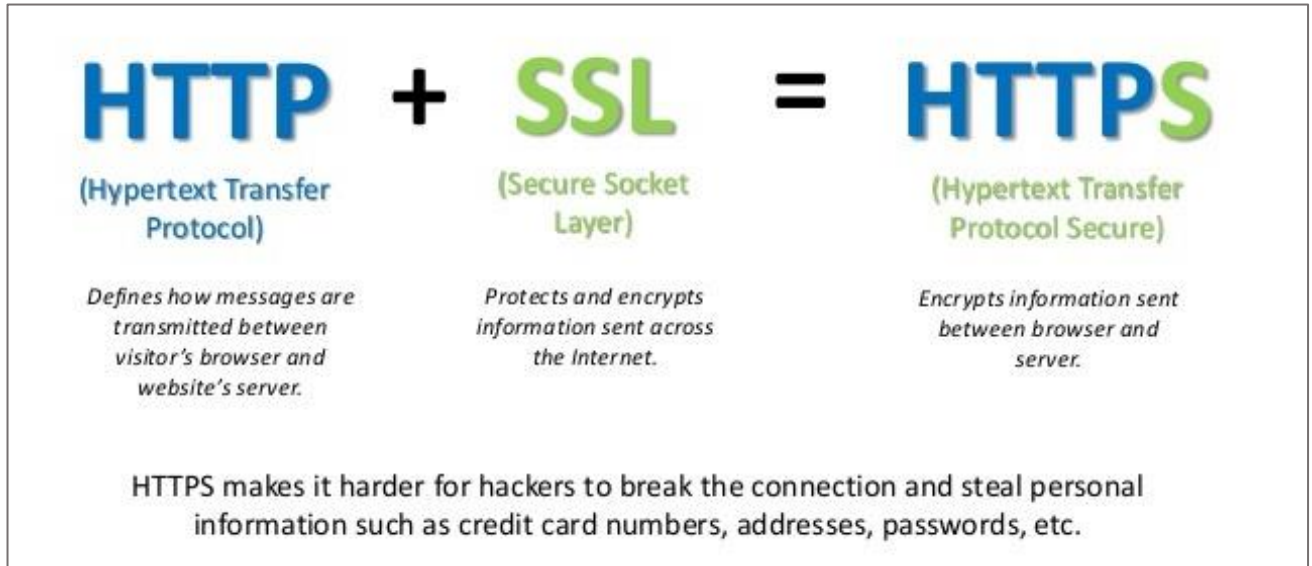
❖ The purpose of using SSL Certificate in Web server

I. Introduction

❖ **HTTP**

- Stands for **Hypertext Transfer Protocol**.
- Uses TCP port 80
- Requests sent via URL
- Clear text and stateless (unencrypted)
- http://

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❖ **HTTPS**

- Stands for **Hypertext Transfer Protocol Secure**.
- Uses SSL (Secure Sockets Layer) protocol to helps create a secure encrypted connection between server and browser.

❖ **SSL/TLS**
- SSL (**Secure Socket Layer**) was developed by **NETSAPCE** in 1990s
- SSL was rebranded as TLS (**Transport Layer Security**)
- Uses digital certificates from trusted CA (**Certificate Authority**)
- Negotiates encryption connection
  1. Public Key (Asymmetric encryption = Two key encrypt and decrypt)
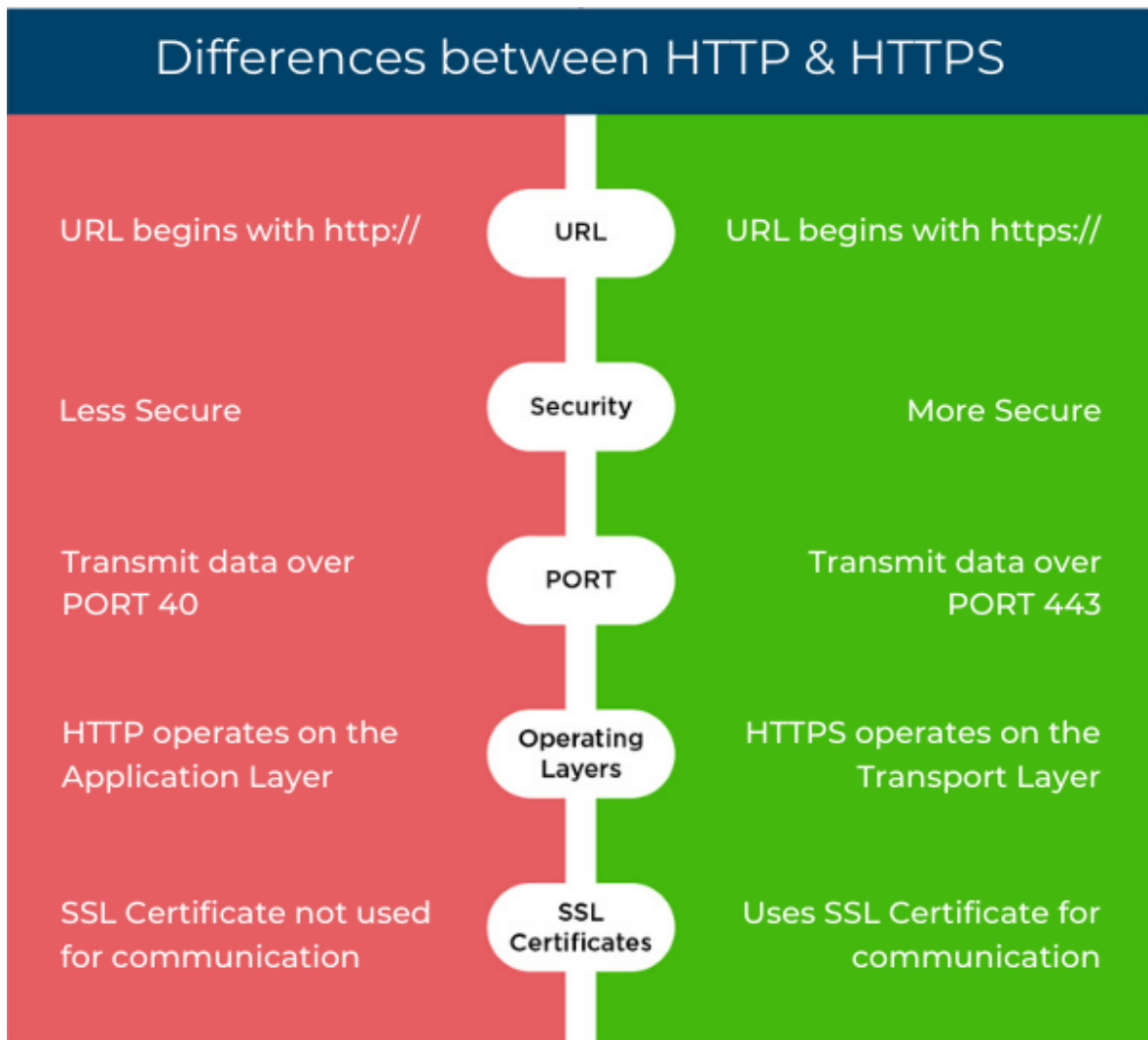 2. Session Key (Symmetric encryption = One key and encrypt and decrypt)

❖ **Trusted Certificate Authority**
- What's inside SSL certificate?
  1. Identity of your website (Company's name, description…)
  2. CA Signature
  3. Public key of Web Server

- Certificate use to identify on website to be trusted

II. The difference between HTTP and HTTPS

Differences between HTTP & HTTPS

	URL	
URL begins with http://	**URL**	URL begins with https://
Less Secure	**Security**	More Secure
Transmit data over PORT 40	**PORT**	Transmit data over PORT 443
HTTP operates on the Application Layer	**Operating Layers**	HTTPS operates on the Transport Layer
SSL Certificate not used for communication	**SSL Certificates**	Uses SSL Certificate for communication

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III. How does HTTPS protocol work?