Cyber Security Awareness Training

Use the Internet Securely
Secure Websites

What is a URL?

To really be able to investigate if a link to a website is legitimate or not, you need to understand the structure of a Uniform Resource Locator (URL). A URL Web address, link, domain name, and IP address are synonyms and refer to the same thing. URLs are structured from right to left. Let’s analyze the domain `http://www.acme.com`

`http://`	`www.`	`acme`	`.com`
The Transfer Protocol	**Third-level Domain Name**	**Second-level Domain Name**	**Top-level Domain Name**
https:// http:// mailto:// file://	Very often www but the domain owner can name the server differently, like “m” for mobile or go, start, shop, etc.	Second-level domains commonly refer to the organization that registered the domain name with a domain name registrar.	.com .de . eu .org .mil .edu .info .shop

A URL can have a specific address to a website on a webserver:
`http://www.acme.com/shop/product.html`

URLs can be very long and very cryptic. That’s why there are URL shorteners. The above URL shortened with Bitly looks like this: `https://bit.ly/2Qngn9r` Note that short URLs do not allow you to see the domain name anymore. Hard to judge if it’s legitimate or not, right?

Maybe you saw a link to a video on YouTube. That is a URL which is already shortened:
`https://youtu.be/zy3TiyaaTUk`

Technically spoken, every URL has an IP address that looks like this: `172.168.254.1`
The Domain Name System (DNS) is a kind of address book that translates URLs into IP addresses. If you know the IP address, you can type it instead of the domain name. This can be used by hackers to mask a suspicious domain name.

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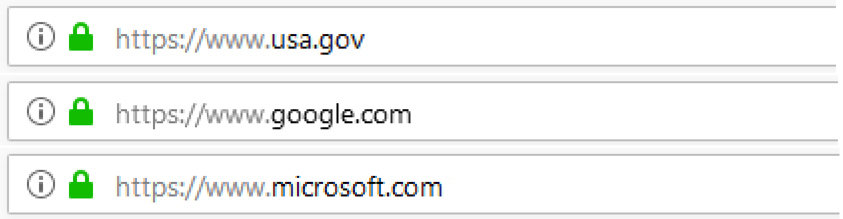
The HTTPS Transfer Protocol

The 'S' at the end of HTTPS stands for 'Secure ' or in full: SSL: Secure Sockets Layer. It means all communication between your browser and the website is encrypted. In the past, HTTPS was often used to protect highly confidential online transactions like online banking and online shopping order forms. Today, HTTPS has become the new standard for nearly all websites.

Companies who want to use the HTTPS transfer protocol are vetted by the certification issuer. That’s why you can trust those websites while continuing to be cautious against intrusive requests.

How to find out if a trusted SSL Digital Certificate is used?

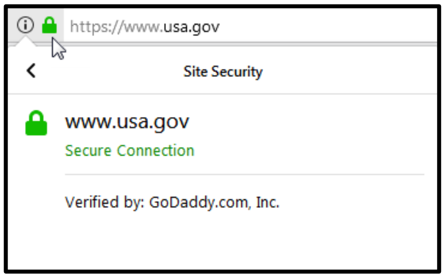
A padlock symbol is shown beside the https:// in the address bar.



https://www.usa.gov

https://www.google.com

https://www.microsoft.com



https://www.usa.gov

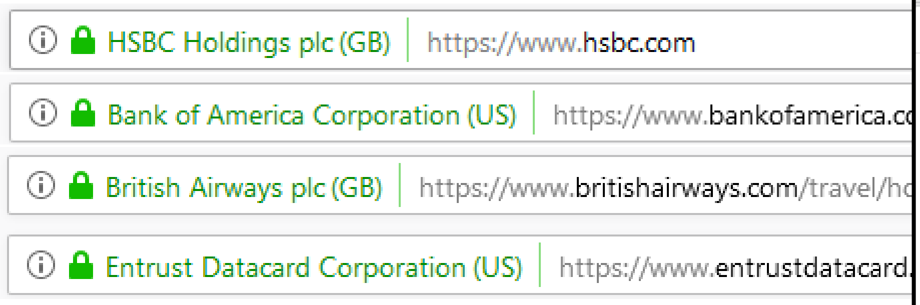
Site Security

www.usa.gov

Secure Connection

Verified by: GoDaddy.com, Inc.

There is also a certificate that verifies the right of the applicant to use a specific domain name, **plus**, it conducts a **thorough** vetting of the organization. This is called Extended Validation and is the highest level of a SSL certificate.

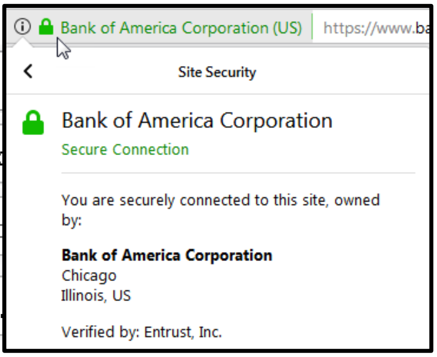


HSBC Holdings plc (GB) | https://www.hsbc.com

Bank of America Corporation (US) | https://www.bankofamerica.co

British Airways plc (GB) | https://www.britishairways.com/travel/ho

Entrust Datacard Corporation (US) | https://www.entrustdatacard.



Bank of America Corporation (US) | https://www.ba

Site Security

Bank of America Corporation

Secure Connection

You are securely connected to this site, owned by:

Bank of America Corporation
Chicago
Illinois, US

Verified by: Entrust, Inc.

Can you trust a certificate?

You can click on the padlock icon to view the certificate. There are 100+ trusted certificate authorities, so if you visit a secure website, you are basically trusting the certificate authority to do their vetting process correctly. Not trusting them means you need to do the vetting process by yourself. Not a practical approach, but don’t be too worried. So, can a secure website be trusted? Yes, especially those with an Extended Validation Certificate, but continue to be cautious against intrusive requests.

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