What you need to know about HTTPS - Part 1

UNC Campus Webmasters
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What is HTTPS?
What is HTTPS?

• S = Secure

• Security Certificates confirm a site’s identity

• Information is encrypted in transit to prevent snooping or tampering with web pages
What is HTTPS?

• In the past, websites have deployed HTTPS only when financial transactions take place

• Concerns that HTTPS pages would be slow to load

• SSL Certificates were expensive or complicated to install
What is HTTPS and why should I care?

• HTTPS is the future and required for HTTP/2 (new version of HTTP)

• No performance penalty

• Certificates are much easier to obtain and install
What is HTTPS and why should I care?

- Google is prioritizing websites that use HTTPS in search results
- Web browsers are notifying users about insecure sites
Security is a top priority at Google. We are investing and working to make sure that our sites and services provide modern HTTPS by default. Our goal is to achieve 100% encryption across our products and services. The chart below shows how we're doing across Google. For more details on the data, please visit our FAQ.

WHAT IS ENCRYPTION?
How do web browsers notify users?
How do web browsers notify users?

Warnings include:

• Mixed content
• Bad certificates
• Forms sent over HTTP
• HTTP sites (coming soon)
How do web browsers notify users?
How do web browsers notify users?

- Firefox Browser
How do web browsers notify users?

Your connection is not secure

The owner of www.example.com has configured their website improperly. To protect your information from being stolen, Firefox has not connected to this website.

Learn more...

Go Back

Report errors like this to help Mozilla identify and block malicious sites
How do web browsers notify users?

- Chrome Browser
How do web browsers notify users?

Your connection is not private

Attackers might be trying to steal your information from www.example.com (for example, passwords, messages, or credit cards). NET::ERR_CERT_DATE_INVALID

Back to safety
How do web browsers notify users?

• Chrome Browser
How do web browsers notify users?

Eventual treatment of all HTTP pages in Chrome:

⚠️ Not secure example.com
What are some common pitfalls when switching to HTTPS?
What are some common pitfalls when switching to HTTPS?

- Invalid or missing SSL certificates
- Mixed Content
- SEO
- Javascript errors, API errors or broken websites
What are some common pitfalls when switching to HTTPS?

Mixed Content

- Mixed content occurs when initial HTML is loaded over a secure HTTPS connection, but other resources (such as images, videos, stylesheets, scripts) are loaded over an insecure HTTP connection.
What are some common pitfalls when switching to HTTPS?

Mixed Content

- Protocol-relative links no longer recommended

<img src="//example.com/image.png">
What are some common pitfalls when switching to HTTPS?

Mixed Content

• Find mixed content by visiting your site and viewing error messages in console

• Find and Fix mixed content in your source code
What are some common pitfalls when switching to HTTPS?

Find Mixed Content
What are some common pitfalls when switching to HTTPS?

Find Mixed Content

- [Deprecation] The Notification API may no longer be used from insecure origins. You should consider switching your application to a secure origin, such as HTTPS. See https://goo.gl/rstTbG for more details.

- This page includes a password or credit card input in a non-secure context. A warning has been added to the URL bar. For more information, see https://goo.gl/1m4c3m.
What are some common pitfalls when switching to HTTPS?

**Find Mixed Content**

**View Console:**
- **Chrome:** CTRL+SHIFT+J (CMD+OPT+J)
- **Firefox:** CTRL+SHIFT+K (CMD+OPT+K)
- **IE:** F12
What are some common pitfalls when switching to HTTPS?

Redirects and SEO

• Use a proper 301 redirect to redirect users from http:// to https://. Do not use a 302 redirect, as this may negatively impact search rankings.
What are some common pitfalls when switching to HTTPS?

Redirects and SEO

• Use the canonical link element (<link rel="canonical">) to inform search engines that the “canonical” URL for a website uses https://.
What are some common pitfalls when switching to HTTPS?

JavaScript and/or API errors

• 3rd party content
• Forms
• Analytics
• iFrames
Resources

• Qualys SSL Labs
• badssl.com
• Why No Padlock?
• HTTPS Checker Desktop App
• Mixed Content Scan
Thanks!

Presentation notes and extra materials will be posted to webmasters.unc.edu.

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