

Exploring the removal of centralized authorities from SSL

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Abstract

So abstracts are pretty cool and stuff. Good ones have information about the project. This one does not.

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1. Introduction

In the modern world the Internet holds a very important role in commerce and social aspects of life. Both of these pursuits require the ability for two or more parties to communicate securely. To facilitate this secure communication, the Internet has resorted to using the SSL (Secure Socket Layer) and its successor TLS (Transport Security Layer) to protect the data being exchanged. These protocols utilize public-private key pairs to facilitate RSA encryption. While this protocol has been extremely successful it must rely on a central authority to confirm the identity of the owner of public keys. This central authority is a single point of failure in this authentication system, and has in the past been compromised, allowing successful impersonation of several popular, high profile websites.

In 2011 the central authority Comodo was hacked and the hacker made off with a SSL certificates for various sites including Gmail, Yahoo Mail, Hotmail. This would allow the hacker to perform man in the middle attacks on the sites and read the emails of users of these services.

2. Method

3. Results

4. Conclusion

5. Further Work

6. References