

Web Authentication for Untrusted Computers

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The mobile phone is an example of a device that the user has available at all times. It is also a flexible and capable choice with several channels for data transfer. Mobile phones have the ability to communicate both with a nearby computer and directly with a remote server. This flexible communication ability makes it possible to create flexible and adaptable authentication solutions with mobile phones where channels can be chosen depending on a specific application's requirements on security, usability, and availability.

Users of web sites are mobile in the sense that they use different computers at different locations, for example at home, at work or at an Internet kiosk when travelling. These computers may be untrusted, e.g. they may contain malware and key loggers. Besides very sensitive applications such as online banking, passwords are still commonly used in web authentication, even for web sites where users store sensitive data and where identity theft could occur. We propose a stronger authentication method with highly available handheld devices, such as a mobile phone. We have designed and implemented 2-clickAuth, an optical authentication system where a phone camera and a web camera are used to send authentication data in a challenge-response solution. The goal has been to verify the feasibility of optical challenge-response authentication. Preliminary results are promising.