

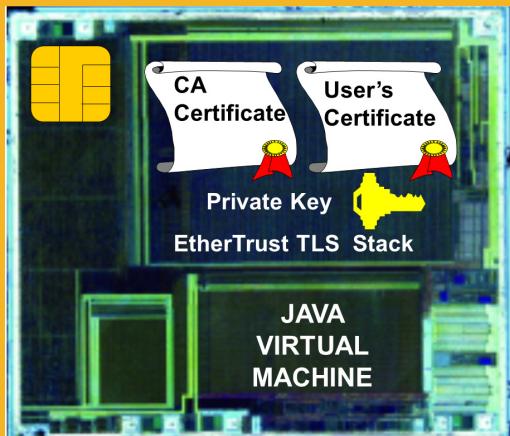
The EtherTrust TLS Stack

Trusted and Secure Connections

For Cloud Services



A *Secure Element (SE)* is a *Secure Microcontroller*, equipped with interfaces such as *NFC*, *ISO7816*, *SPI* or *I2C*. 8 billions of *SE* have been shipped in 2013.



Use Case

Internet services are more and more accessed from mobile phones. Some of them, dealing with payments or access control, have critical security requirements. Mobile phones suffer from a lack of security, as application credentials may be hacked or stolen.

New Challenges

One of the main problems to solve is the deployment of mobile services with a high level of security. Because most of internet security relies on trusted TLS connections with remote servers, EtherTrust designed the EtherTrust TLS stack (ETS) running within secure elements. Thanks to this technology the TLS session is started from the NFC ETS device, and is transferred afterwards to an application running within the mobile. The TLS session remains open as long as needed by the application server.



User's Experience

The user holds a NFC device. He taps this device against a smartphone or a tablet. He selects the appropriate mobile application, and enters his PIN code. The ETS stack running within the NFC device's secure element opens (1) a secure channel with a remote server, thanks to strong mutual authentication (both server and card are equipped with certificates and private keys). The TLS session is thereafter transferred (2) from the NFC device to the mobile application. The NFC device is removed. The mobile is now securely connected (3) to the Cloud platform, and can access to its services.

About EtherTrust

EtherTrust markets software for secure elements and designs innovative solutions that strengthen the security of Cloud applications whilst dramatically simplifying their use. In 2009 EtherTrust was awarded by the 11th national contest for the support of innovative start-ups organized by the French ministry of research and universities.



Whenever a Gonda wanted something new, of clothing, travel, objects, he paid with his key. He bended the middle finger, plugged his key in a slot provided for this purpose, and his account managed by the central computer was immediately debited by the amount of the goods or services requested”

René Barjavel, in “La nuit des temps”, 1968

The EtherTrust Showcase

New Perspectives

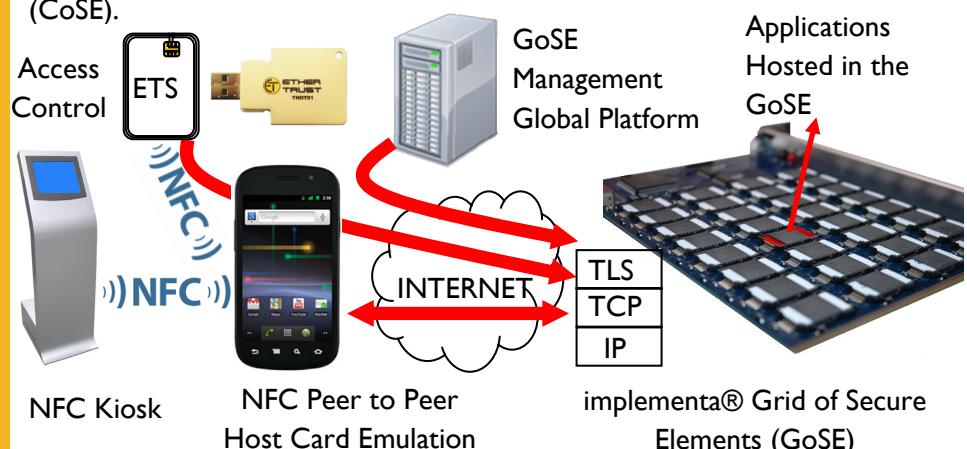
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Cloud of Secure Elements For NFC Services

Use Case

NFC technology enables a wide range of innovative services such as payments, access control and ticketing. A typical NFC application works with two devices; a kiosk equipped with a NFC reader; a smartphone supporting the peer to peer (P2P) mode or the host card emulation (HCE) mode. Many NFC applications need a high level of security. These requirements are usually fulfilled by software running within secure elements. Secure elements are not widely available in mobiles, hopefully it is possible to remotely use such devices hosted in a Cloud of Secure Elements (CoSE).



The EtherTrust demonstration shows a NFC kiosk performing access control operations. An Android device works in P2P or Host Card Emulation mode. A mobile application realizes the secure bridge with a remote Grid of Secure Elements (GoSE). It is secured by the EtherTrust TLS Stack (ETS), running in an external NFC device.

EtherTrust is a Cloud of Secure Elements (CoSE) pioneer. We believe that this exciting and promising technology will enable a new generation of secure and trusted mobile services. The company has designed the ETS stack, running inside an external NFC device (bank card format or token), which secures all connections to CoSE.

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