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enhanced out-of-band authentication using wearable devices

Out-of-band authentication (OOB) techniques, such as sending SMS or Push notifications to mobile phones, are additional safety mechanisms to verify a transaction. These practices mitigate the existing risks because the passcode is sent using a different communication channel from the one the customer is using to initiate the transaction.

But nowadays, an increasing percentage of mobile devices are jailbroken or may have some sort of malware, and therefore should be considered untrustworthy endpoint devices.

In an untrusted smartphone, OOB techniques are unable to face in an efficient way the newest threads like Man-In-The-Middle or Trojan Attacks.

Movilok enhanced-out-of-band authentication adds an additional level of security while preserving high usability:

The phone cooperates with another paired device (such as wearables devices: a smartwatch, glasses, wristband...).

Thus, the code received by the phone (eg. SMS or push) acts only as a challenge. There is no problem if it is intercepted by malware.

The linked devices cooperates with the phone, calculates the final passcode and displays it to the user.

scope

Online transactions typically involve more risk than logging into a service or system, because the real damage is done once a fraud transaction is completed. That's not just the cost due to economic losses, but also affects the confidence of users and consumers in e-services, and therefore affects the brands and user loyalty to them.

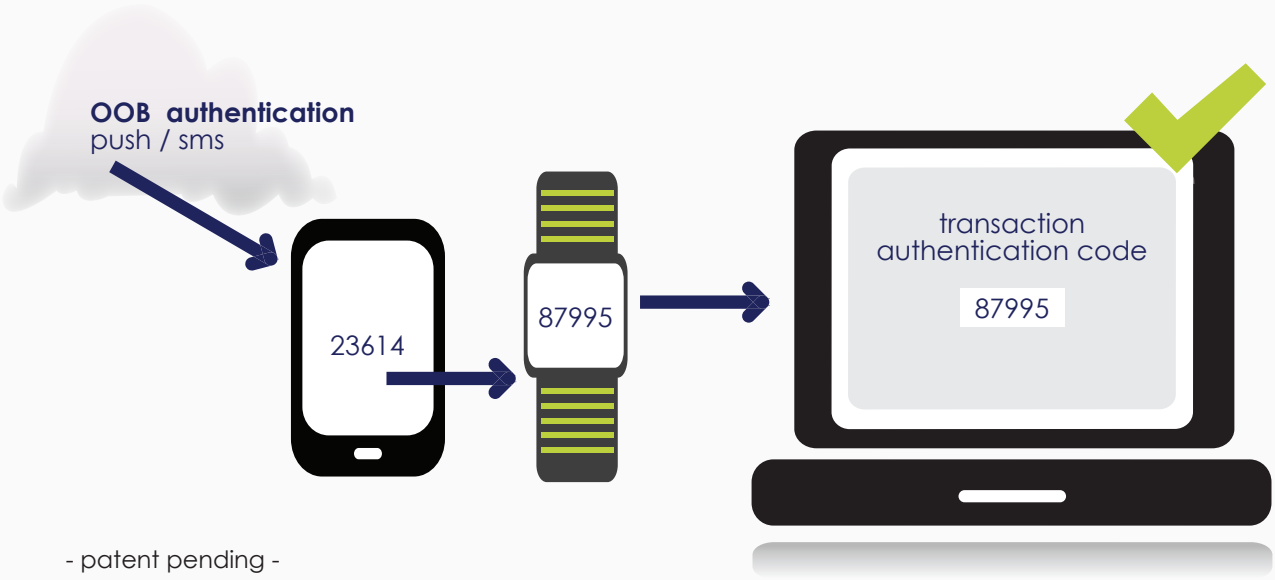
Protecting transaction applies in many circumstances:

- Payment verification
- Money transfer verification
- Address change verification
- PIN request verification
- Generic request confirmation
- Adding a new payee verification
- Password change verification

how it works

Out-of-band authentication is triggered when a transaction needs to be verified.
A message is sent to the phone informing the customer of the transaction details. This message is sent using notification methods, such as SMS or Push Notifications available in main mobile platforms.

1. The message with the code is received by the phone. This code is not valid for authentication purposes. It acts as a challenge.
2. An application running in the phone sends this challenge code to a linked wearable device (such as the smartwatch of the user)
3. An application in the wearable device receives the challenge and displays a derived one-time-passcode on its screen.
4. The user reads this code shown on the weareable and uses it to commit the transaction.



- patent pending -

key features

- Transaction protection with high usability
- The system can be implemented with different combinations of smarphones and wearable devices. It is already available for I'm Watch, Pebble SmartWatch and Samsung Galaxy Gear.
- The solution can be implemented using different cryptographic algorithms such as time based or event based one-time-codes, OATH-OCRA challenge-response algorithm and asymmetric cryptography.
- The software on the smartphone can run as an independent application but also can be included as part of an existing mobile application.

benefits

- Works even with untrusted devices: an attacker must snatch all the devices and know the specific configuration in order to try to get the valid final code.
- Provides additional security and preserves infrastructure already deployed: If company already sends OTP codes using OOB techniques, our solution works as an additional layer of security.
- Easy to use: The OTP code is displayed on the screen of the device the user wears
- Easy to deploy: software can be downloaded from the applications marketplace of the devices.

movilok also provides...

Any additional service related to specific needs such as:

- especific configurations or customization for a vertical market
- support of specific devices: new wearable devices, other portable devices
- integration into vertical processes of a business
- integration of the solution as part of an existing mobile application
- visual customization

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