Elliptic Curve Verifiable Oblivious Pseudo-Random Function (EC-VOPRF) + CAPTCHA

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Verifiable Oblivious Pseudorandom Functions (VOPRFs) in Prime-Order Groups
draft-sullivan-cfrg-voprf-02

Abstract

A Verifiable Oblivious Pseudorandom Function (VOPRF) is a two-party protocol for computing the output of a PRF that is symmetrically verifiable. In summary, the PRF key holder learns nothing of the input while simultaneously providing proof that its private key was used during execution. VOPRFs are useful for computing one-time unlinkable tokens that are verifiable by secret key holders. This document specifies a VOPRF construction instantiated within prime-order subgroups, including elliptic curves.

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This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on April 25, 2019.
Oblivious Transfer
EC-VOPRF

Divide each value by the blinding factor

- Unblinded 1: $k \times X1 / b = k \times X1$
- Unblinded 2: $k \times X2 / b = k \times X2$

$x1, MAC(k \times X1)$

$x2, MAC(k \times X2)$

Bob

$b (blinding factor)$

Alice

private key ($k$)
Coding

This page contains a range of ciphers and codes, including Pigpen, Hashing (MD5, SHA-1) and Caesar Coding. Along with this it contains a calculator for the frequency analysis of ciphers.
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