FLEMING

Data leak Detection in Networks

Abstract

Statistics from security firms, research institutions and government organizations show that the number of data-leak instances have grown rapidly in recent years. Among various data-leak cases, human mistakes are one of the main causes of data loss. There exist solutions detecting inadvertent sensitive data leaks caused by human mistakes and to provide alerts for organizations. A common approach is to screen content in storage and transmission for exposed sensitive information. Such an approach usually requires the detection operation to be conducted in secrecy. However, this secrecy requirement is challenging to satisfy in practice, as detection servers may be compromised or outsourced. In this project, we present a privacy preserving data-leak detection (DLD) solution to solve the issue where a special set of sensitive data digests is used in detection. The advantage of our method is that it enables the data owner to safely delegate the detection operation to a semi honest provider without revealing the sensitive data to the provider. We describe how Internet service providers can offer their customers DLD as an add-on service with strong privacy guarantees.

Modules:

- User
- DLD
- Fingerprinting