Federative Webmail System

Abstract

The Federative Webmail System is a replacement for a traditional e-mail system that no longer meets security standards and business requirements.

Introduction

The main components of the e-mail system as we know it today had been designed between 1971 and 1992 by many inventors. In the course of time, e-mail has become the most commonly used application of the Internet. Nowadays the e-mail infrastructure forms the backbone of digital identity worldwide, and e-mail is the only truly federated communication system of the Internet.

Problem

Despite the rising importance of e-mail infrastructure, the whole ecosystem still relies on over 40 year-old architecture and protocol design. There are spam and attachment issues from the very beginning. Even though the main e-mail system vendors and service providers claim e-mail accounts to be safe, the fact remains that major security and functional flaws are not fixed. The e-mail system becomes an information silo isolated from other systems, making people unable to get things done effectively.

Solution

This concept adopts the e-services approach to meet emerging and future business needs. The design model incorporates Privacy by Design principles to maintain the appropriate level of regulatory compliance. The e-services concept is built on top of OAuth 2.0 specification to address both security and functional issues, and uses loosely coupled federated multi-model database system in order to share and exchange information between security domains.

E-services

1. E-mail services in GDPR Article 25 compliance
    a. No spam - user invitation system guaranties no spam in the Inbox
    b. E-mail tracking - similar to registered mail with revocable consent
    c. Reference numbers - channels, threaded conversations
    d. State management - calendar, events, to-do, reminders, etc.
    e. No attachments size limit - attachments are transferred separately without size limit
    f. Attachments versioning - attachments with the same content are versioned
    g. Attachment properties - e.g. invoice due date, total due, variable symbol, status
2. E-banking services in PSD2 compliance
    a. Internet payments - make payments directly within the Webmail application
    b. Multi-bank information - overview of all account information consolidated in one place
3. Real-time communication services in GDPR Article 25 compliance
    a. Document collaboration - share document with people and edit it together in real-time
    b. Video conferencing, direct file transfer, voice, chat - communication in the context of activity
4. E-commerce services, EDI transactions, …

Conclusion

The Federative Webmail System can play an important role in communication across various industries in the public and private sectors. The e-services approach predestine the Federative Webmail System to become more than a replacement of traditional e-mail system.