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Federated Webmail System

Abstract

The Federated 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 the worldwide digital identity, 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 Digital Workplace / 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 token-based federated system in order to share and exchange information between security domains.

E-services Suite

1. E-mail services in GDPR Article 25 compliance
    a. No spam - user invitation system guaranties no spam in the Inbox
    b. Mail tracking & proof of delivery - similar to registered/certified 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
    h. Federated workflow - transactions, document/forms automation
    i. Dynamic and interactive content - e.g. HTML/SVG forms
    j. Security - easy integration with antivirus and antimalware protection systems
    k. Privacy - distributed nature of webmail system has intrinsic privacy-preserving properties
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. E-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, e-finance, e-government, internet of things …

Taxonomy

To highlight the underlying difference between e-mail and webmail systems use a new webmail taxonomy. Endorse the webmail term.

Value proposition

1. Extended E-mail Services (track & trace, proof of delivery)
2. Mail Repository (digital archive, no attachments size limit)
3. Workflow Automation (order fulfillment)
4. Dynamic & Interactive Content (electronic forms)
5. Security & Privacy (secrecy of letters)

Target Market

According to the 2017 study from the Radicati Group, the number of worldwide e-mail users, including both business and consumer users, will grow from over 3.7 billion in 2017 to over 4.1 billion by 2021. E-mail use continues to grow in the business world where it is often used not only simply as an interpersonal communication tool, but also as the default choice to send files. That is a lot of B2B and B2C relationships to generate leads to grow the business.

Competitive Trends

Although instant messaging, social networking, chat, and enterprise file sharing and synchronization systems are seeing strong adoption, centralized systems are not very acceptable solutions for B2B and B2C communication. Missing Identity and Access Management integration on both communication sides can lead to potential privacy issues such as leakage of intellectual property or loss of confidential content and makes these systems incompatible with enterprise security policies.

Competitive Advantage

Ease of use - everyone who uses a computer knows how to use webmail client, there is no need for webmail users to take a webmail training course.

Unfair Advantage

Token-Based Federation specification: Intellectual property rights of the Specification Lead.

Business Model

The Federated Webmail System is based on open source software:

1. Offer a free Community Edition with range of support plans to help organizations use the Federated Webmail System to deliver a secure and reliable communication service. Pricing is either $?,000 or $??,000 per JVM per year for two different support plans.
2. Offer a paid Enterprise Edition with pricing of either $?,000 or $??,000 per JVM per year for two different commercial versions.
3. There is an opportunity to build a business model on global and/or regional paid webmail services.

Marketing and Sales

Partners, Network effect / Word of mouth.

Cost Structure

Developers, analysts, support …

Conclusion

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