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IBM Research annonce une avancée déterminante dans le Cloud visant à protéger les données personnelles

Des algorithmes cryptographiques sophistiqués permettent d'éviter le partage non désiré de données personnelles telles que les numéros de cartes de crédit

Paris - 28 janv. 2015: Les chercheurs d'IBM annoncent aujourd'hui leurs plans pour la mise en œuvre d'une technologie Cloud qui permettra aux consommateurs de mieux protéger leurs données personnelles en ligne, notamment leur date de naissance, l'adresse de leur domicile ou le numéro de leur carte de crédit.

Cette technologie, appelée Identity Mixer, utilise un algorithme cryptographique qui permet d'encoder les données d'identité certifiées d'un utilisateur (telles que son âge, sa nationalité, son adresse ou le numéro de sa carte de crédit) d'une façon qui lui permet de n'en révéler à des tiers que des extraits sélectionnés. Identity Mixer peut être utilisé au sein d'un portefeuille numérique, qui contient des références certifiées par un tiers de confiance, telle qu'une carte d'identité électronique émise par le gouvernement. Il est important de souligner que l'émetteur des références n'a connaissance ni de comment, ni de quand celles-ci sont utilisées.

Vidéos: <http://youtu.be/riGx6CTsHBU>, <http://youtu.be/gKK1PxGu6Fo>

Démo: <https://idemixdemo.mybluemix.net/>

Photos: https://www.flickr.com/gp/ibm_research_zurich/Q9q536/

*« Identity Mixer permet aux utilisateurs de choisir précisément quelles données partager et avec qui, déclare **Christina Peters, Chief Privacy Officer chez IBM**. Les fournisseurs de services sur Internet peuvent maintenant améliorer leur profil de risque et renforcer la confiance de leurs consommateurs. Tout cela se fait dans le Cloud, ce qui rend la programmation facile pour les développeurs. »*

Déjà disponible en téléchargement et ayant fait ses preuves avec les cartes à puces, Identity Mixer est

désormais mis à disposition des développeurs, pour une plus grande facilité d'utilisation, dans IBM Bluemix, la nouvelle Platform-as-a-Service Cloud d'IBM (PaaS), qui combine la force logicielle d'IBM avec des technologies open et issues de tiers. Dès le printemps, les utilisateurs de Bluemix pourront tester Identity Mixer avec leurs propres applications et leurs services Internet. Avec de simples menus déroulants, les développeurs pourront sélectionner le type de données qu'ils souhaitent sécuriser et Bluemix fournira le code qui pourra être ensuite intégré dans leurs services.

« Identity Mixer est le résultat de plus de dix ans de recherche pour faire du concept de divulgation minimale des données identitaires une réalité. Ceci est maintenant prêt à l'emploi à la fois pour les transactions informatiques et mobiles » annonce **Dr. Jan Camenisch, cryptographe et co-inventeur d'Identity Mixer au sein d'IBM Research.**

Des programmes pilotes européen et australiens démontrent le potentiel d'Identity Mixer

Afin de démontrer le fonctionnement de la nouvelle version Cloud d'Identity Mixer, les scientifiques d'IBM travaillent en collaboration avec des partenaires académiques et industriels en Europe et en Australie sur un nouveau projet pilote appelé AU2EU (Authentication and Authorization for Entrusted Unions). Avec ce projet de 8,6 millions d'euros, mené sur deux ans, les scientifiques vont tester Identity Mixer dans deux scénarios : en Allemagne avec la Deutsches Rotes Kreuz (la Croix Rouge allemande) et en Australie avec l'agence nationale scientifique CSIRO (Commonwealth Scientific and Industrial Research Organisation).

IBM Research Announces Cloud Breakthrough for Protecting Personal Data

Sophisticated cryptographic algorithm can prevent unwanted sharing of personal data, including credit card numbers

ARMONK, N.Y., 28 January 2015: IBM researchers today announced plans for a cloud-based technology that holds potential to help consumers better protect online personal data, including date of birth, home address and

credit card numbers.

The technology, called Identity Mixer, uses a cryptographic algorithm to encrypt the certified identity attributes of a user, such as their age, nationality, address and credit card number in a way that allows the user to reveal only selected pieces to third parties. Identity Mixer can be used within a digital wallet, which contains credentials certified by a trusted third party, such as a government-issued electronic identity card. It's important to note that the issuer of the credentials has no knowledge of how and when they are being used.

*"Identity Mixer enables users to choose precisely which data to share, and with whom", said **Christina Peters, IBM's Chief Privacy Officer**. "Now web service providers can improve their risk profile and enhance trust with customers, and it's all in the cloud, making it easy for developers to program."*

According to comScore, the average person spends nearly 25 hours per month* using the Internet, accessing dozens of different Internet services, including banking, shopping and social networks. For virtually every service, users have to create a personal profile with a username and password — or for stronger security — cryptographic certificates. Although such tools can offer sufficient security for many purposes, they do not typically provide any level of privacy for the users, causing them to reveal more personal data than is necessary, which can be costly if it falls into the wrong hands.

For example, consider a video streaming service that offers films with age restrictions. To stream a 12+ movie, Alice needs to prove that she is at least 12 years of age and that she lives within the appropriate region. The typical way to do this would require Alice to enter her full date of birth and address, but this reveals more about her than is necessary to complete the transaction. Identity Mixer can simply confirm that Alice is at least 12 without disclosing the month, date and year of her birth and reveal merely that she lives in the correct region (i.e. region 1). This ensures that even if the video streaming service is hacked, Alice's personal data remains safe.

Similarly, if Alice needed to use her credit card to purchase a movie, the video streaming service would only learn that Alice's credit card is valid and that it can accept payment, never revealing the actual number or expiration date.

Previously available for download and demonstrated to work on smart cards, Identity Mixer is now being made available to developers as an easy-to-use web service in IBM Bluemix, IBM's new platform-as-a-service (PaaS) cloud that combines the strength of IBM software, third-party and open technologies. Beginning this spring, Bluemix subscribers will be able to experiment with Identity Mixer within their own applications and web services. Using simple pull-down menus, developers can choose the types of data that they wish to secure and Bluemix will provide the code, which can then be embedded in their services.

*"Identity Mixer incorporates more than a decade of research to bring the concept of minimal disclosure of identity-related data to reality, and now it is ready to use for both computers and mobile device transactions," said **Dr. Jan Camenisch, cryptographer and co-inventor of Identity Mixer at IBM Research**.*

*"We wanted individuals to have control over what they reveal about themselves," said, **Dr. Anna Lysyanskaya, a co-inventor of Identity Mixer, who is currently a professor of computer science at Brown University.** "With Identity Mixer now in the cloud, developers have a very strong cryptographic tool that makes privacy practical; it is a piece of software that you can incorporate into any identity management service, enabling the service to verify that an individual is an authorized user without revealing any other personal information."*

European and Australian Pilot Programs Demonstrate Identity Mixer Potential

To demonstrate the new cloud version of Identity Mixer, IBM scientists are collaborating with academic and industrial partners in Europe and Australia in a new pilot project called [Authentication and Authorization for Entrusted Unions](#) (AU2EU). In a two-year, 8.6-million euro pilot, scientists will test Identity Mixer in two scenarios: in Germany with the Deutsches Rotes Kreuz (DRK, or the German Red Cross), and with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency.

As a major provider for regional home emergency call and social services in Germany, the DRK delivers tailored social care services to their customers 24/7, including emergency services, assisted mobility, housekeeping and nursing assistance. The organization has four million volunteers and professional staff, 52 hospitals and more than 500 nursing homes operated worldwide.

In the AU2EU pilot, 20 DRK test participants in the southwest of Germany will be equipped with sensors for in-home activity and status monitoring. The data gathered from these sensors will be transferred to a dedicated cloud server, where the data will be analyzed to determine the type of assistance required. In addition, DRK field representatives will be provided with a mobile device to collect and register sensitive customer data, such as medical records, medication and family contacts, to establish a service contract. Identity Mixer will be used to keep all of this data confidential and private. The technology will be implemented by NEC Europe and Tunstall Healthcare **.

*"Our goal today, as it has been for 150 years, is to offer help to victims of conflicts and disasters as well as to other vulnerable people and to provide support at home, transport and mobility aids to help people when they face a crisis in their daily lives. New technologies play an increasingly important role in realizing this help, particularly for our home emergency alarm service," said **Caroline Greiner, the district manager of the German Red Cross for Rhein-Neckar/Heidelberg e.V.** "Here we offer services to senior citizens that allow them to remain at home and in conformable and familiar settings. The privacy technology we are testing in AU2EU will ensure that these aids are provided both efficiently and securely to protect the personal data of our customers to a high degree."*

A second pilot will support one of the keys to Australia's agricultural productivity and related export trade: its freedom from exotic diseases, particularly in animals. To maintain the nation's disease-free status, the Australian government, along with key partners, has developed an emergency rapid response plan to take action quickly before an outbreak spreads. This plan involves swiftly bringing together government, academic and other research organizations, along with industry partners into a secure, trustworthy online collaborative environment that facilitates evidence-based decision making. Using Identity Mixer, the pilot will help facilitate the secure sharing of sensitive information in a timely matter across several remote locations and among

collaborating partners.

*“Speed and responding rapidly to disease incidents are absolutely vital towards saving the lives of both humans and animals,” said **John Zic, principal research scientist, CSIRO**. “Using the advanced technologies in this pilot, we expect to see gains in the ability to respond, while still maintaining the security, privacy and trust required to be effective.”*

Peters adds, *“Identity Mixer is an example of why legislation around data privacy across the globe should enable — not stifle — innovation. It demonstrates that innovation leads to better data privacy: privacy that is more secure for the consumer with tools that are more accessible and easier to implement for the provider.”*

AU2EU is a collaboration of both industrial and academic organizations across Europe and Australia, including Technische Universiteit Eindhoven, Philips Electronics Nederland B.V., Bicare Services B.V., NEC Europe LTD, IBM Research, Deutsches Rotes Kreuz, Thales Communications & Security SAS, Commonwealth Scientific and Industrial Research Organisation, Edith Cowan University, Royal Melbourne Institute of Technology, University of New South Wales and Macquarie University. For more information, visit www.au2eu.eu.

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IBM scientists and experts from academia will be hosting a Twitter chat on Identity Mixer today at 10 am (New York) today using #identitymixer

* Source: comScore MMX, December 2012, Worldwide 15+

** Tunstall Healthcare is not part of the AU2EU, but is providing tele-healthcare solutions for the German Red Cross.

For more information on IdentityMixer, visit www.zurich.ibm.com/idemix. To join the social discussion about Identity Mixer, include the hashtag #identitymixer. See Identity Mixer on [YouTube](#) and [Flickr](#). Try IdentityMixer today at <https://idemixdemo.mybluemix.net/>
