
Toward Context-aware Security for Individual Information Systems

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Résumé

For a few decades, the multiplicity of Internet services humans consume are increasing, leading people to actually manage their own Individual-oriented Information System (IIS), whose server sides are spread over the internet and operated by different service providers. The security of such systems is essentially service-centric while the user is the focal point of all their usage. If some user-centric solutions exist to date, they are either (1) restricted to some particular services, ignoring a global user activity, (2) intrusive, by requiring a complete instrumentation of user-side terminals, or (3) too specific by requiring the cooperation between the client interface and the server side. To cope with these limitations, we propose to develop a novel approach which consists in monitoring encrypted network flows issued by a user terminal and correlating this network activity with some external contextual information related to the user activity. Due to the lack of existing comprehensive datasets, our ongoing work consists in designing a long-term measurement campaign with real users using smartphones augmented with body sensors while facing security breaches such as malware activity or smartphone theft.

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