Exploiting User Behaviors from Today's Online Social Networks to Build Distributed Alternatives

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ABSTRACT

Today's online social network platforms like Facebook have become store houses of unprecedented amount of personal sensitive information. Thanks to their cumbersome privacy policies and lack of tools to independently audit the data accesses, such systems became a black box for a privacy conscious user. Users feel lack of control on their data. Distributed online social networks (OSNs) where users host their data themselves, can provide privacy-aware OSN alternatives and restore the ownership of the content back to the users. However, biggest bottleneck in realizing them is their *availability*. As users come online and go offline arbitrarily, the content must be ensured to be available using replication techniques. In order to address this challenge, certain characteristics of today's OSN workloads can be exploited in choosing the necessary replication points for such infrastructures in an efficient way. These characteristics include: users online and offline trends, their geographical locations and the set of most active friends. If the user online times on a social network are predictable, we can cleverly choose points of replication to maximize the availability with minimum replication. Fortunately, user online behaviors on OSNs can be studied in detail [1, 3] and the observed patterns can be exploited to choose the replication points [2]. Then users on the current OSNs can be migrated onto such a decentralized OSN without affecting their online behavior and thus promoting their adoption. The study of Facebook and Twitter networks on these lines [2] shows that up to 100% availability can be achieved for the friends of a user with a replication of his profile content onto a few selected friends. Such a replication need not involve complicated cryptographic mechanisms to enforce access control on the content accesses.

BODY

Can we make decentralized online social networks highly available by mining online trends of users on today's OSNs?

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