

A User Requirements-Oriented Privacy Policy Self-Adaption Scheme in Cloud Computing

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Problems & Ideas

- **Problems:** SaaS is a collaboration computing and transparent interaction system [7]. Privacy data are shared during collaborative interaction and then stored or used by service participants. A user will lose control of personal data, which can easily lead to private data disclosure when a service is substituted [8][9]. Therefore, when a service (S1) is substituted by the other service (S2), details are as shown in Fig. 1, there are two issues need to be solved as follows:
 - ✓ (1) The privacy policy of the service S1 needs to be updated to ensure the user's privacy data can be deleted in real time.
 - ✓ (2) The privacy policy of the service S2 also need to be updated to prevent the actions of the service S2 from disclosing user's privacy data.

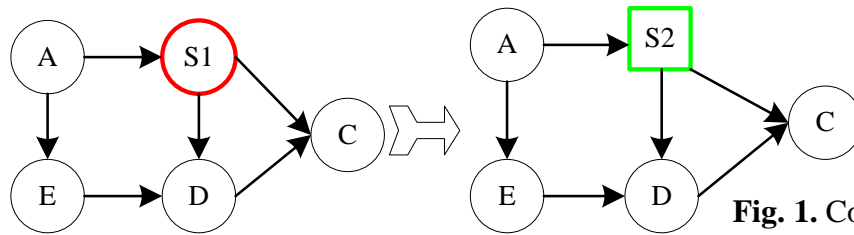


Fig. 1. Composite Service Variation

- **Ideas:** we propose a privacy policies automatic update method, to enhance user privacy when a service participant change in the composite service.
 - Firstly, we model the privacy policies and service variation rules.
 - Secondly, according to the service variation rules, the privacy policies are automatically generated through the negotiation between user and service composer.

Main Contributions

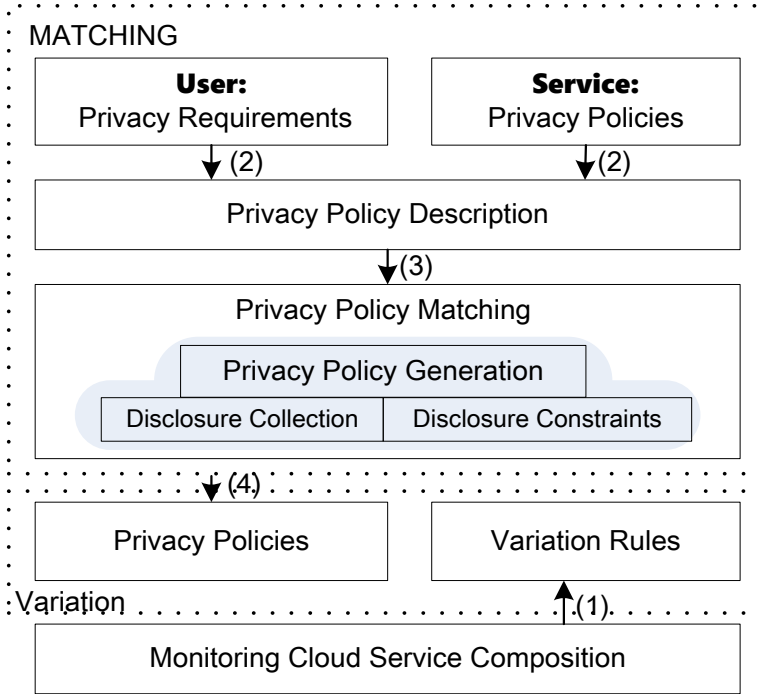


Fig. 3. Roadmap for this method



Fig.11. Ratio that the privacy policies are correctly updated



Fig.10. Ratio that the Services Variations (SV) are successfully checked by monitor

Figure 3 depicts the privacy policy update model. When the variation for cloud services is captured, the user's privacy safety is enhanced by the variation rules and the privacy policies.

Figure 10 From the Fig. 10., we can find that, with the increase of the service, the ratio of the services variation been checked by monitor will decrease from 98.2% to 81%.

Figure 11 From the Fig. 11, we find that the Po-UD quantity decrease from 97% to 93.6% with the services quantity increase.