Monitoring accountability policies with AccMon framework

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Monitoring accountability policies with AccMon framework

context~$

- Interconnected systems with many different technologies which implies many security breaches.

- Your personal information are already on the cloud!

problematic~$

How to ensure that the privacy policy is respected?

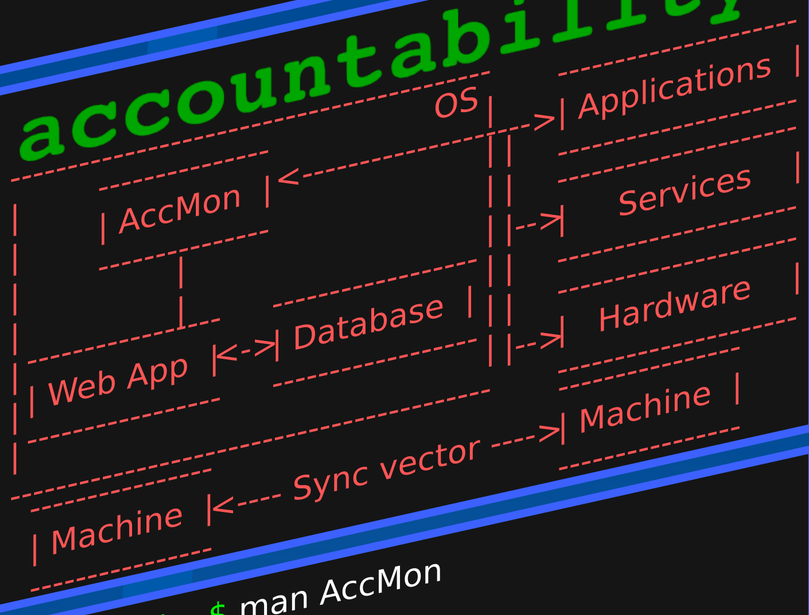
Distribution makes systems harder to monitor

There is NO perfect security

approach~$

- Accountability:
  Beyond security to preserve privacy
- Monitoring:
  Flexible and extensible framework
- Distributed temporal logic:
  Formal verification over distributed system

accountability



monitoring frame

(1) We define what, when and how we log.

(2) We write the property to monitor in FODTL$_3$*.

(3) We watch the running system.

(4) We audit the system when violations occurs.

(5) We decide if the violation is legit or not and we trigger the remediation monitor if any.

work(AccMon)~$

ψ ::= true | false | ¬ψ | ψ v ψ | ψ ∧ ψ | φ (propositional)
| ∃x.ψ | ∀x.ψ (first order)
| X ψ | ψ U ψ | ψ R ψ | G ψ | F ψ (temporal)
| @ p ψ (distribution)
φ ::= P t ∗ (predicates)

Monitoring technic: Progression (Formula rewriting)

eval(ψ) = True | False | Unknown

* Three-valued First Order Distributed Linear Temporal Logic

```
root@root:~$ man AccMon

- Centralized / Distributed monitoring

- Posteriori / Realtime control

- Extensible framework
```

Manual page AccMon (END) (press h for help or q to quit)

AccMon internal architecture

future~$

- Automated audit/remediation
  (Deeplearning. Ethical problem? Computers tacking human decisions...)
- Usability
  (Improve logical formula writing to non specialists)
- Monitoring: protect privacy by violating your privacy?
  (Nothing is good or bad, it's all about how you use it...)

∀ x:Human. watch(x)

Arguing that you don't care about the right to privacy because you have nothing to hide is no different than saying you don't care about free speech because you have nothing to say.

Edward Snowden

Take the control of your data and care about your privacy, it's already too late...

https://github.com/hkff/AccMon
https://github.com/hkff/fodtlmon
https://github.com/hkff/AccLab

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