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Persistent Security, Privacy, and Governance for Healthcare Information

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The Fundamental Problem

- Medical information needs to be widely distributed
    - To the point of care, regardless of origin
    - To specialists consulting on a particular case
    - To researchers and public health authorities
    - To family caregivers
    - &c.
- Technology can make this happen
- This is not happening

Nature of the Problem

- Every interface between systems poses risk
  - Systems may not interoperate at all
  - Policies differ between systems
    - Laws and regulations
    - Corporate policies
    - Patient preferences
  - No assurance that policies will be respected

- Resulting behaviors
  - Data hoarding
  - Asking patients to sign away rights

Elements of the Solution:
Persistent Governance

- Protect healthcare information at its source
- Persistently associate rules that govern access
  - Access granted to certain principals or roles
  - Rules under the control of the patient, ideally
  - Access can be audited
- Ensure uniform enforcement of those rules

Elements of the Solution:
Consistent Trust Management

- Systems must be able to interoperate
- No prior interaction should be assumed
- Senders must be able to rely upon computations performed by a recipient
- Role for government?

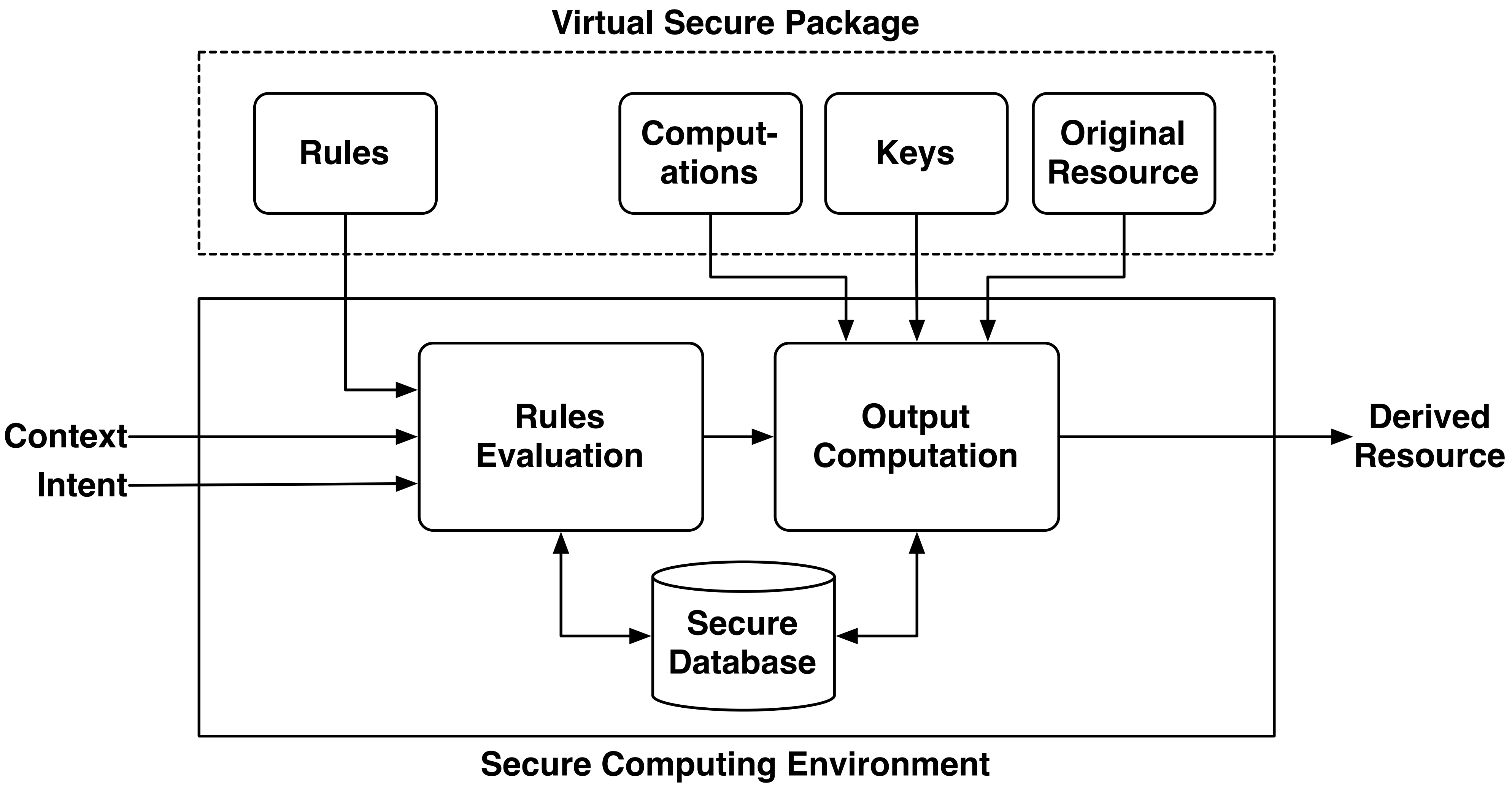
Elements of the Solution:

Derived Resources

- Meeting the conditions in a rule unlocks a resource
- Should the resource look the same to all?
  - You
  - Your doctor
  - The nurse
  - Your physical therapist
  - Your therapist therapist
  - Your children
  - An epidemiologist

Derived Resources

- A *derived resource* combines:
  - A resource
  - A set of rules
  - A set of computations to be performed upon the resource



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In Conclusion

- Our goal is to get information moving
- Trusted distributed computing, policy management are essential ingredients
- New applications require new approaches

Questions