EVE: verifying correct execution of cloud-hosted web applications

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Running interactive web-apps in the cloud

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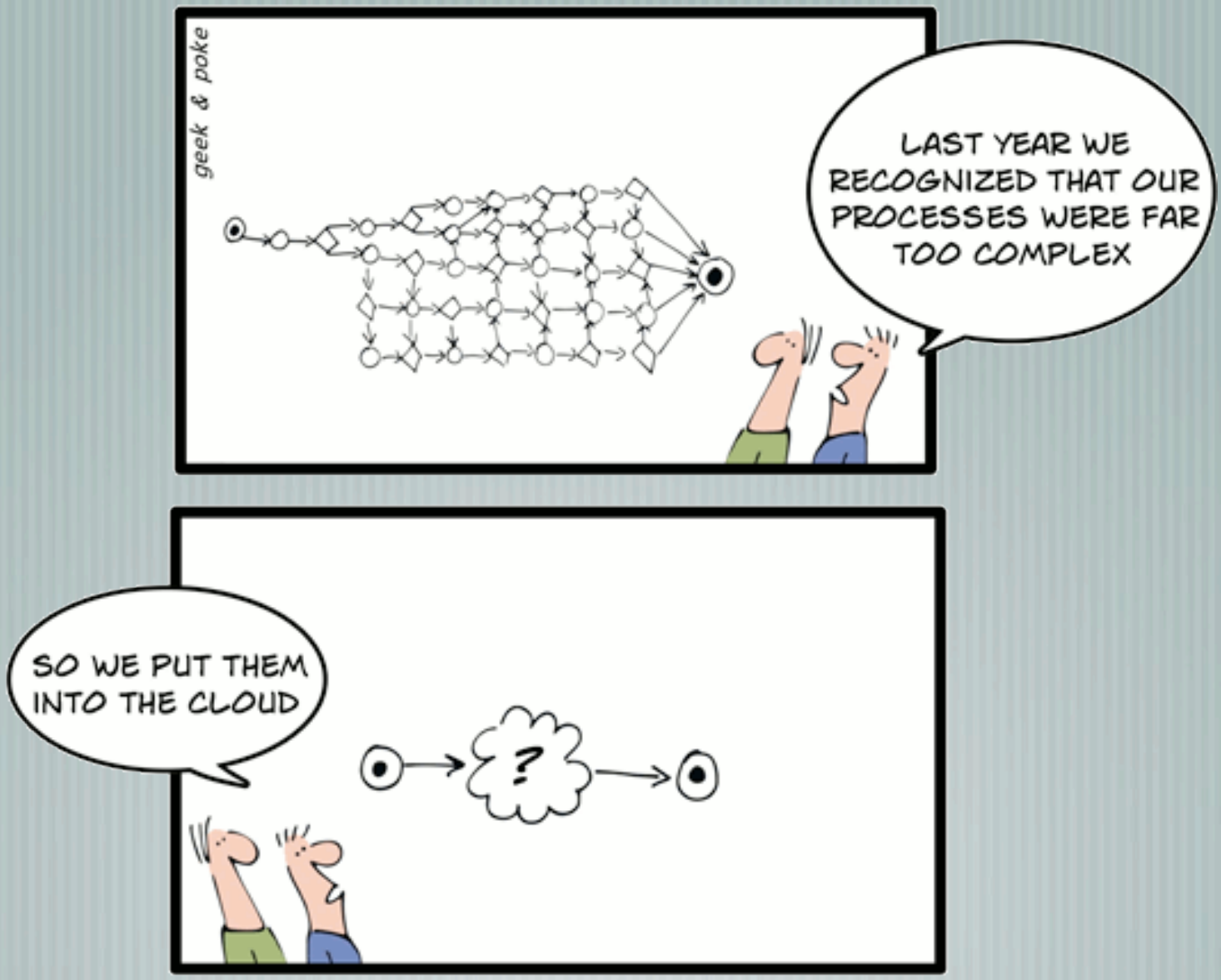
Low visibility in the cloud



Availability is not correctness

"Google will make commercially reasonable efforts to keep the App Engine service operational and available to customer at least 99.95% of the time in a monthly billing cycle"

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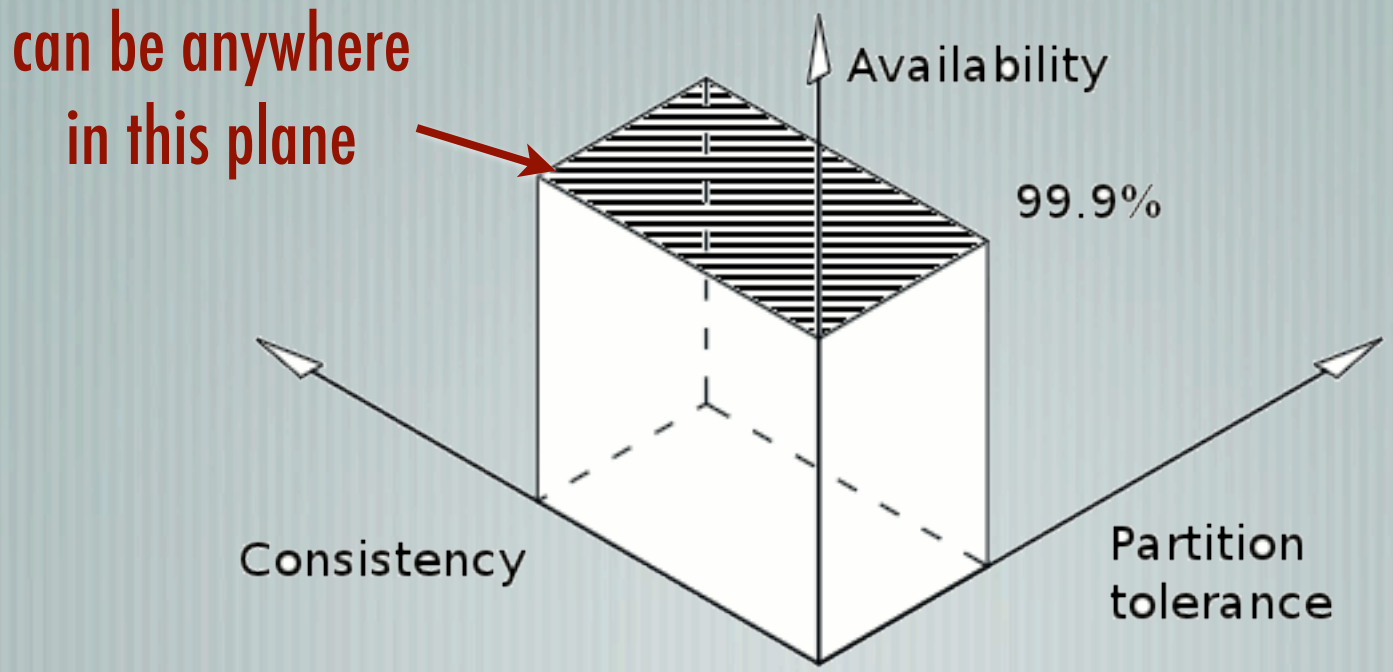

Errors can be transient

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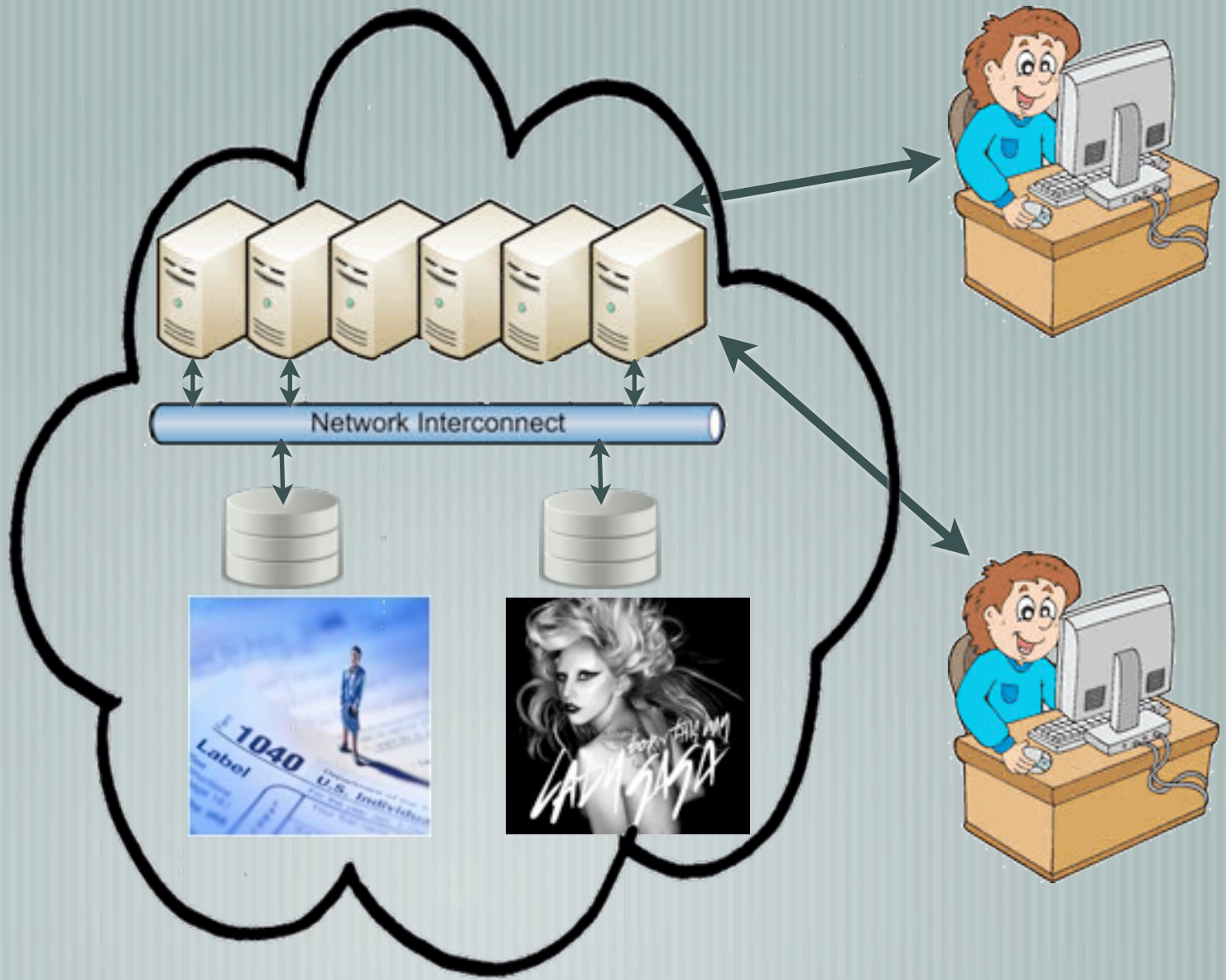

Errors can be transient

Requirement

continuously monitor correctness of cloud execution

verifying correct execution of an arbitrary application is hard !

What kind of apps run on cloud ?

What is common between these web-apps ?

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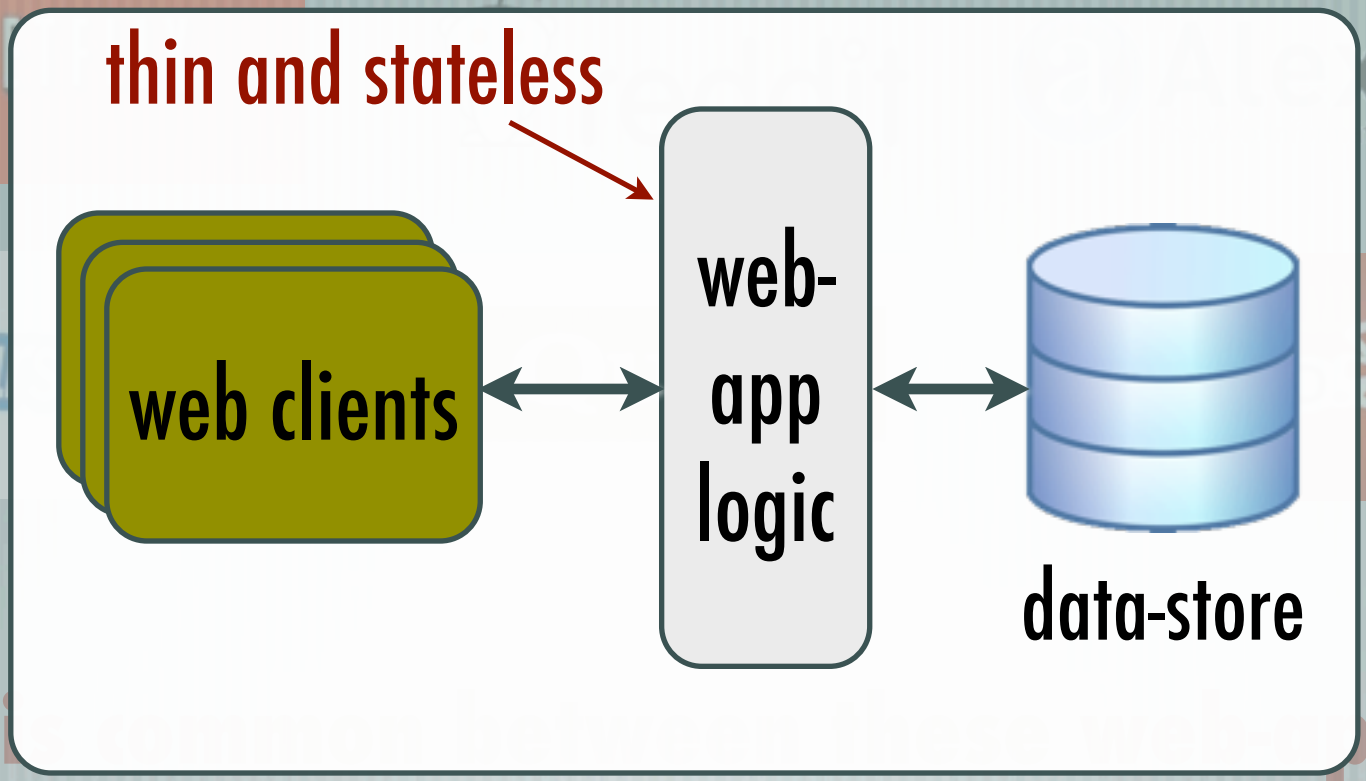

Correctness of web-app ops

Consistency of data-store ops

Web app ops as data-store ops

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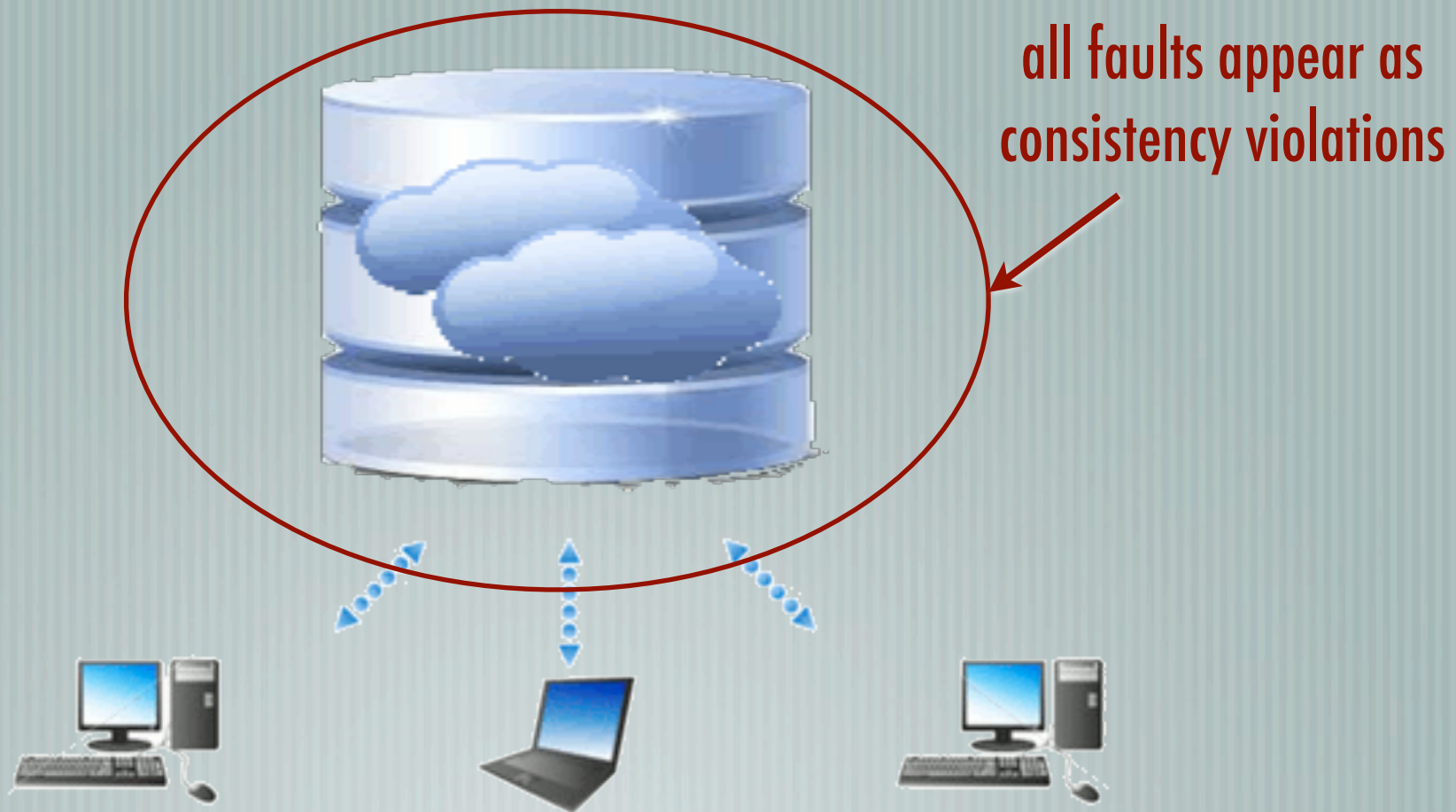
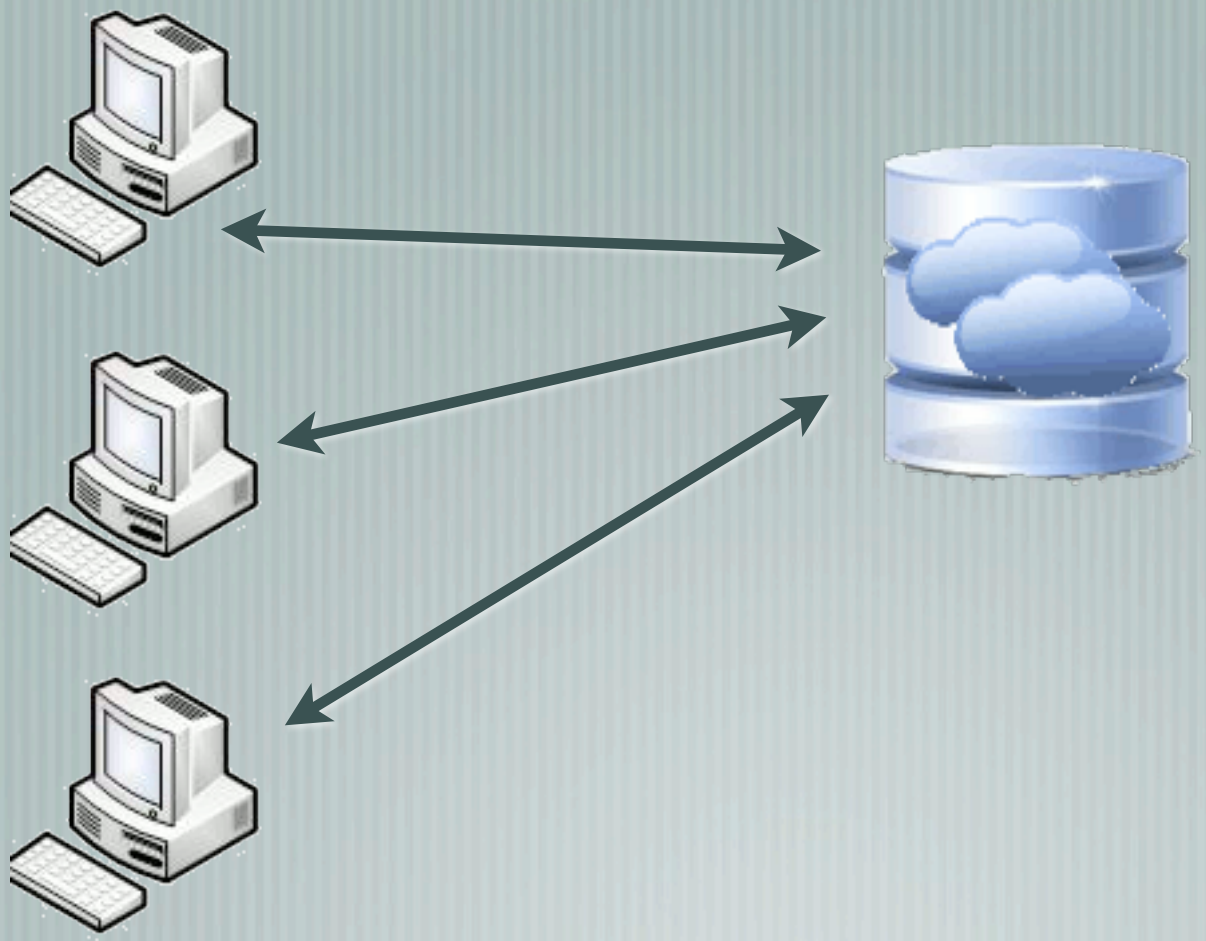
Web app ops as data-store ops



EVE: collaborative verification



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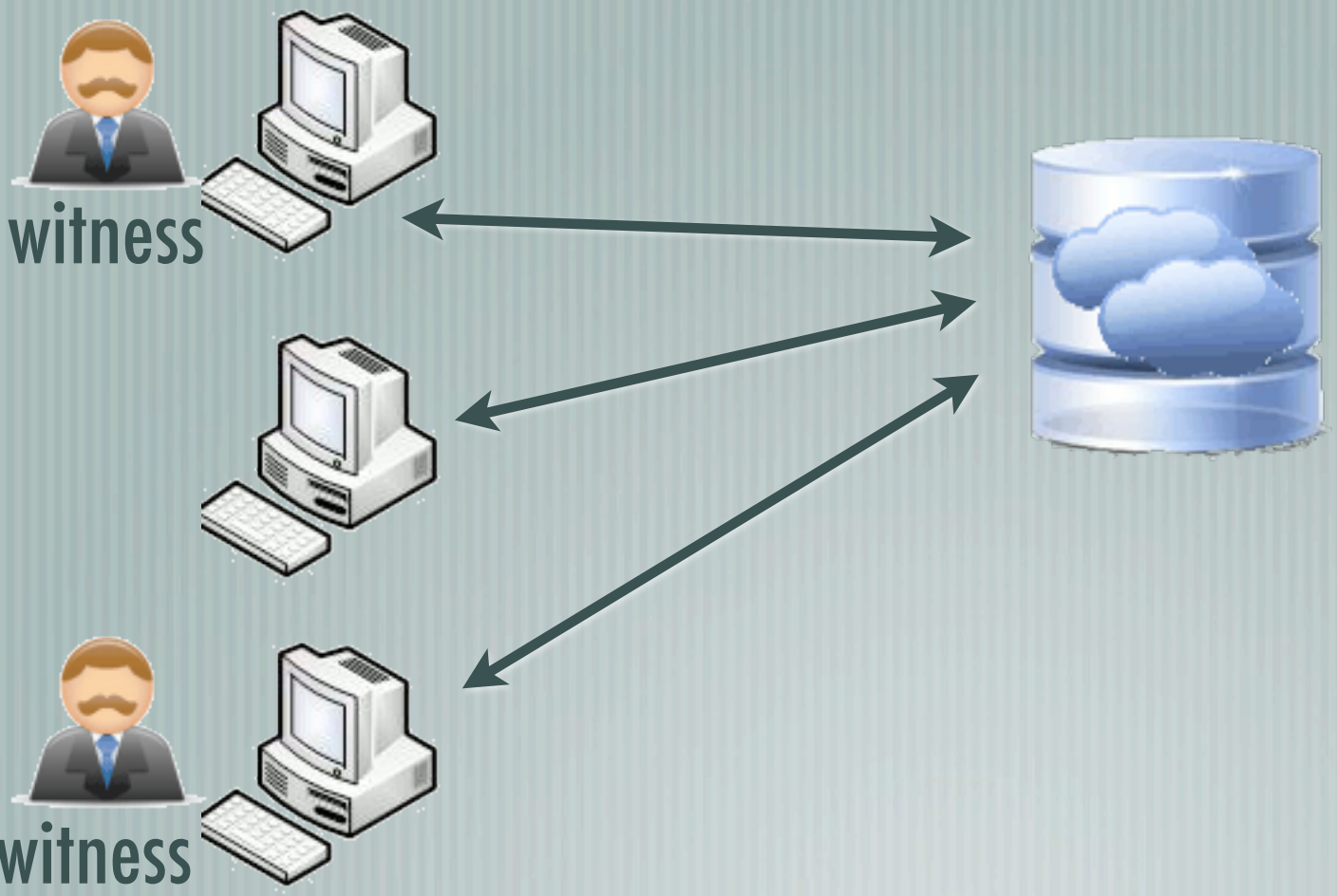

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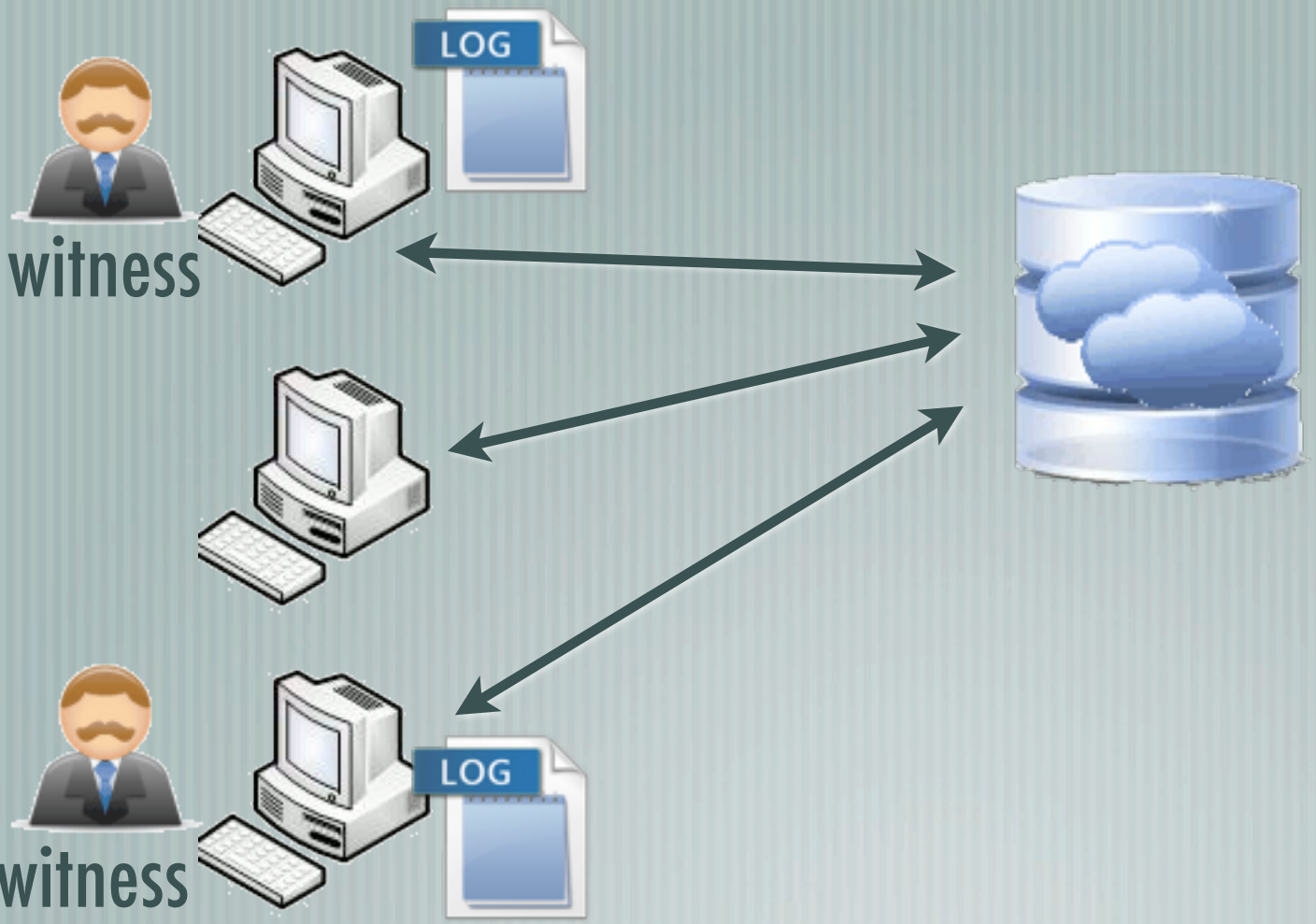

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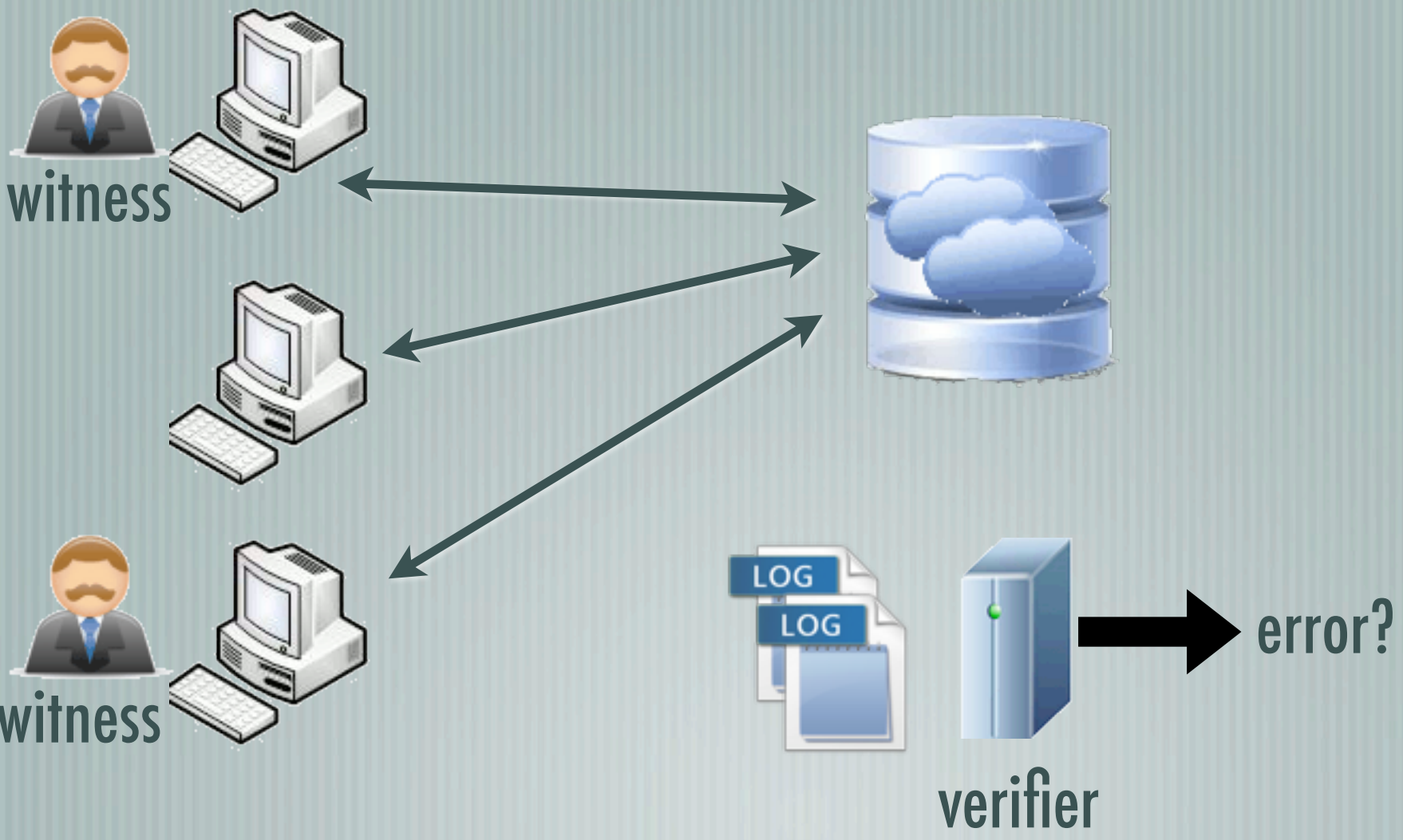

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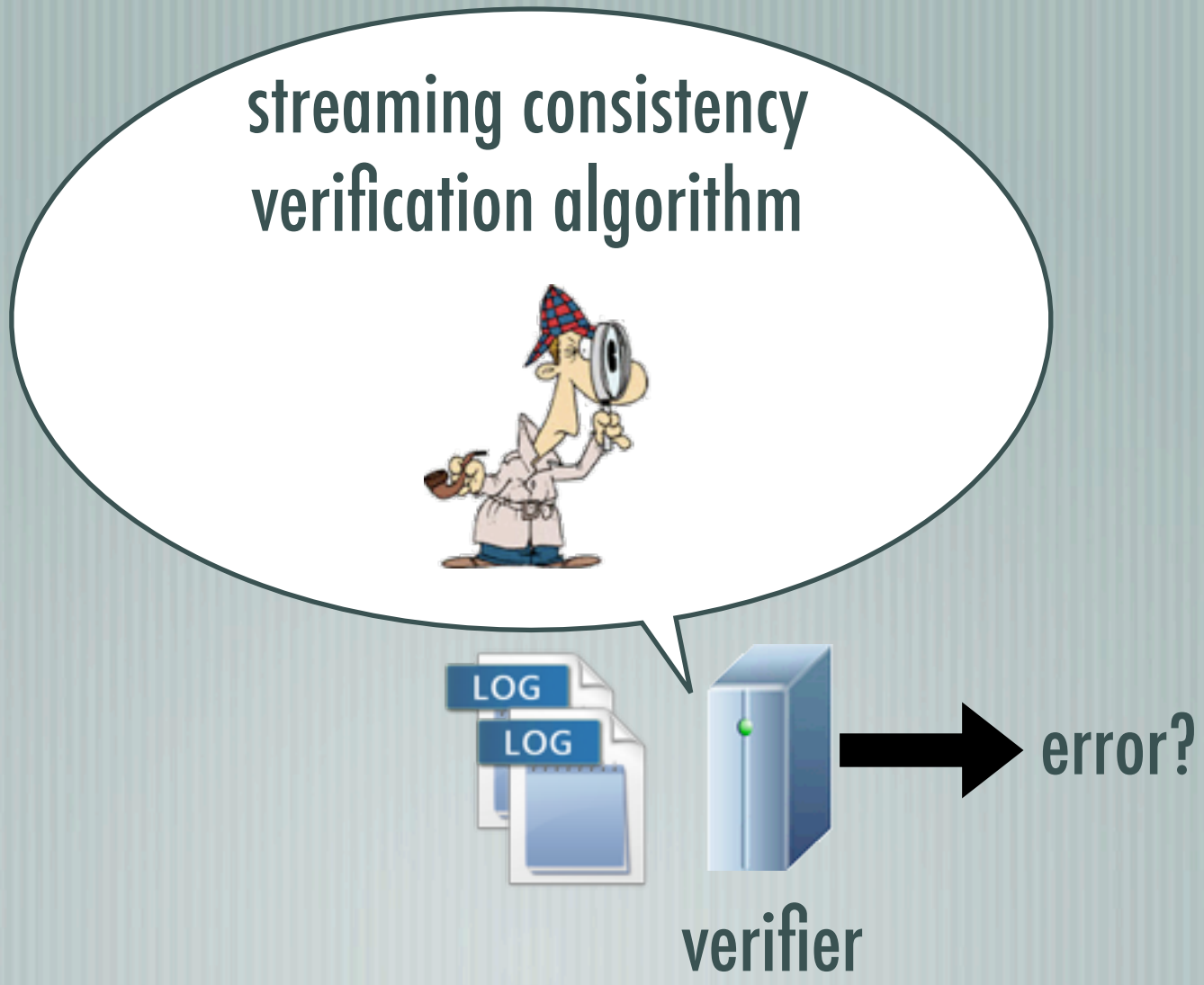

EVE: different use cases

- Ensure that a web-app is running correctly in a particular cloud
- Check how well a web-app scales in a particular cloud
- Compare quality of service (QoS) from different cloud providers

Questions

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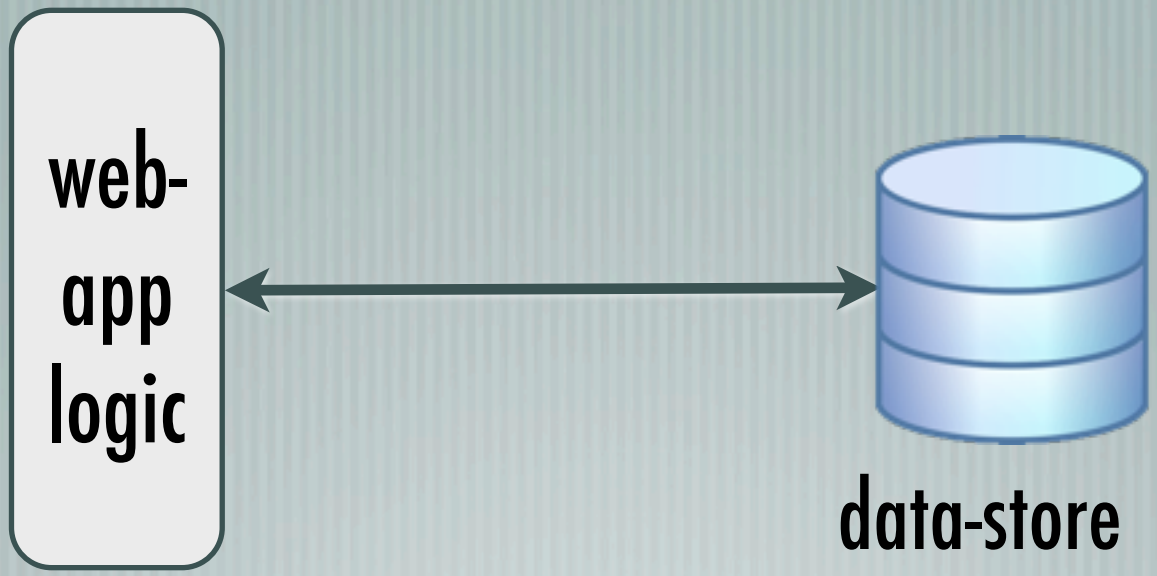
Auto generate data-store ops



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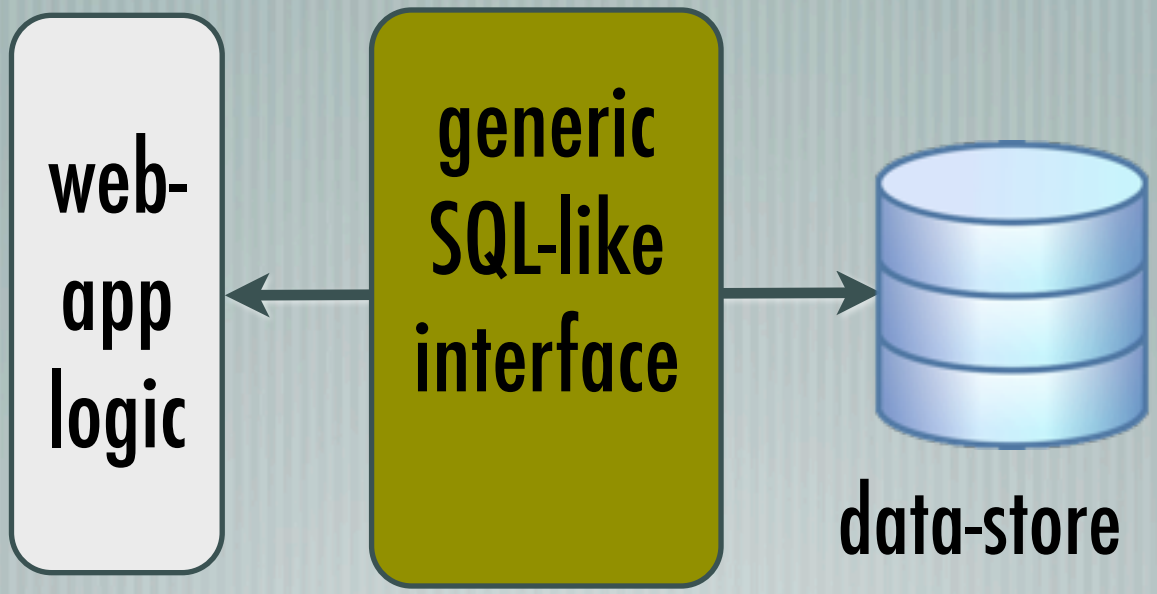

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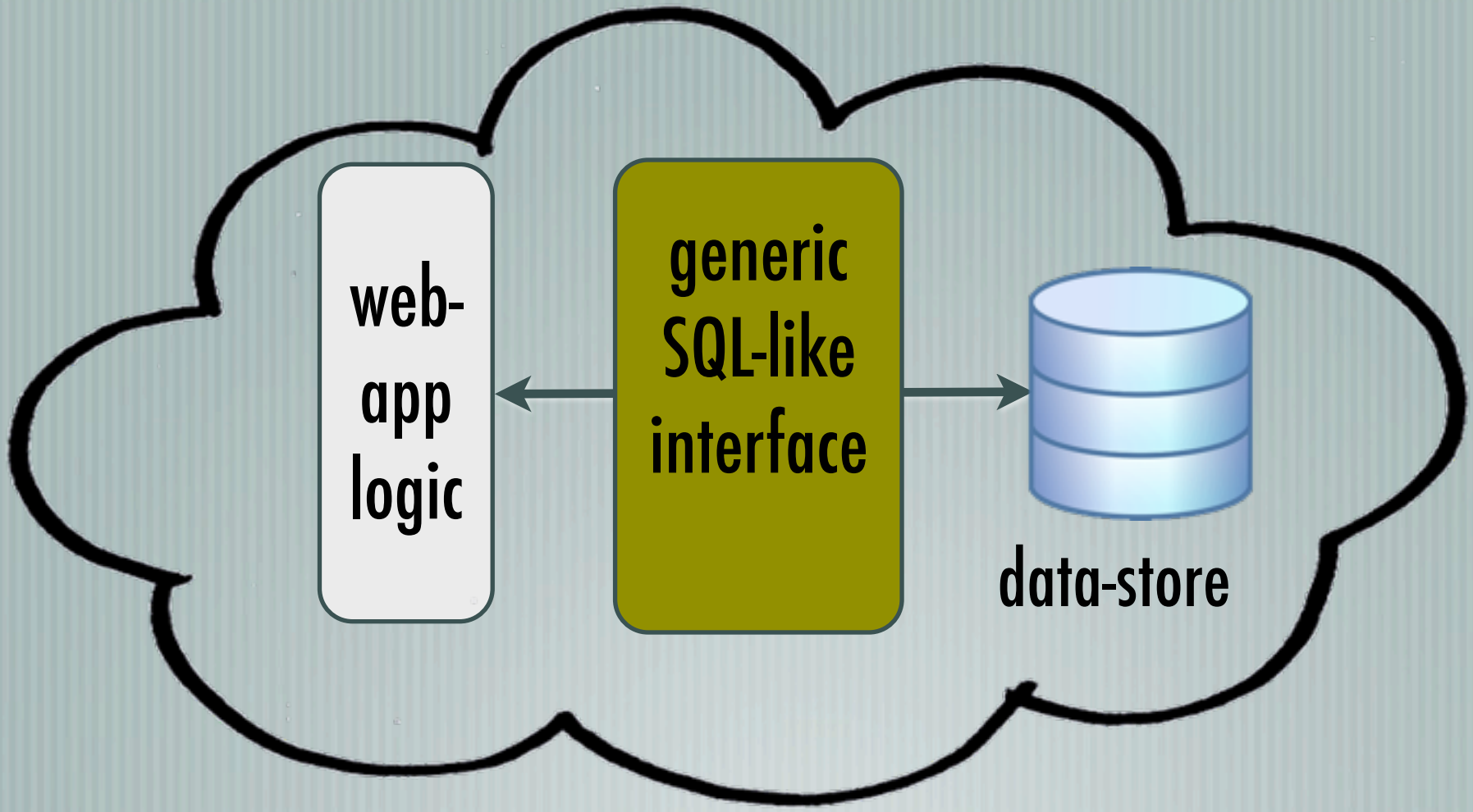

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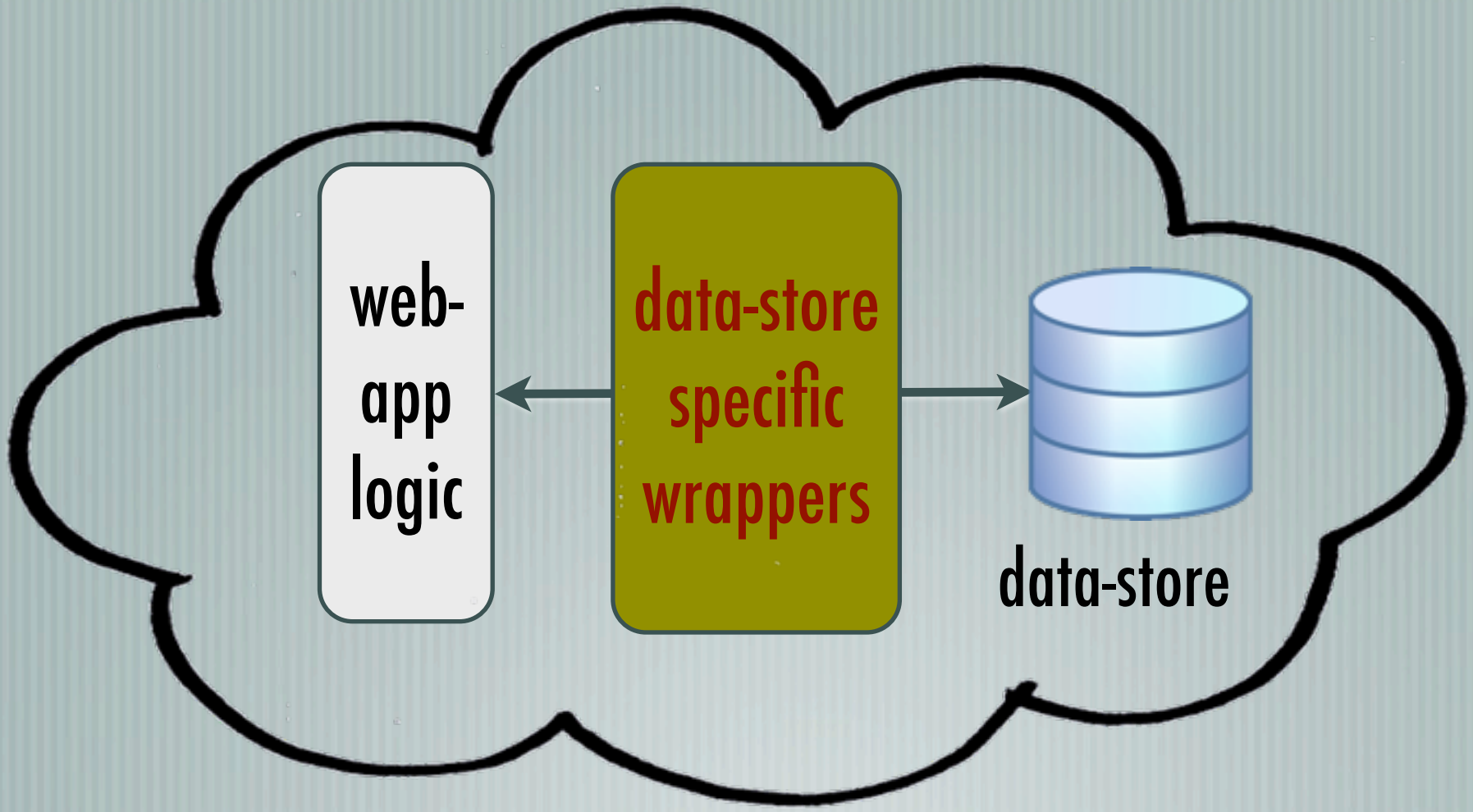
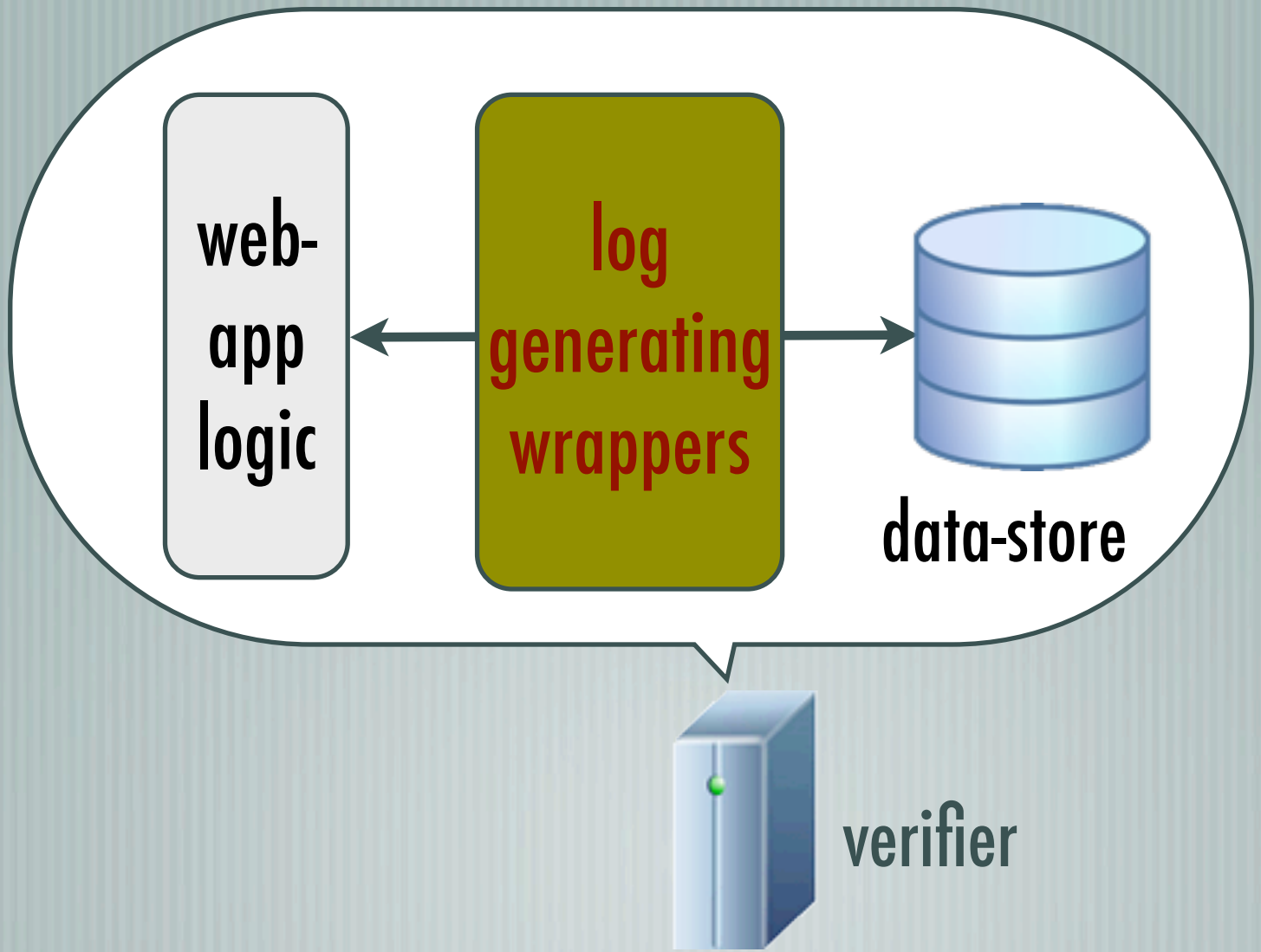
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