

Wide Area as a Service: Next Generation Cloud Infrastructure

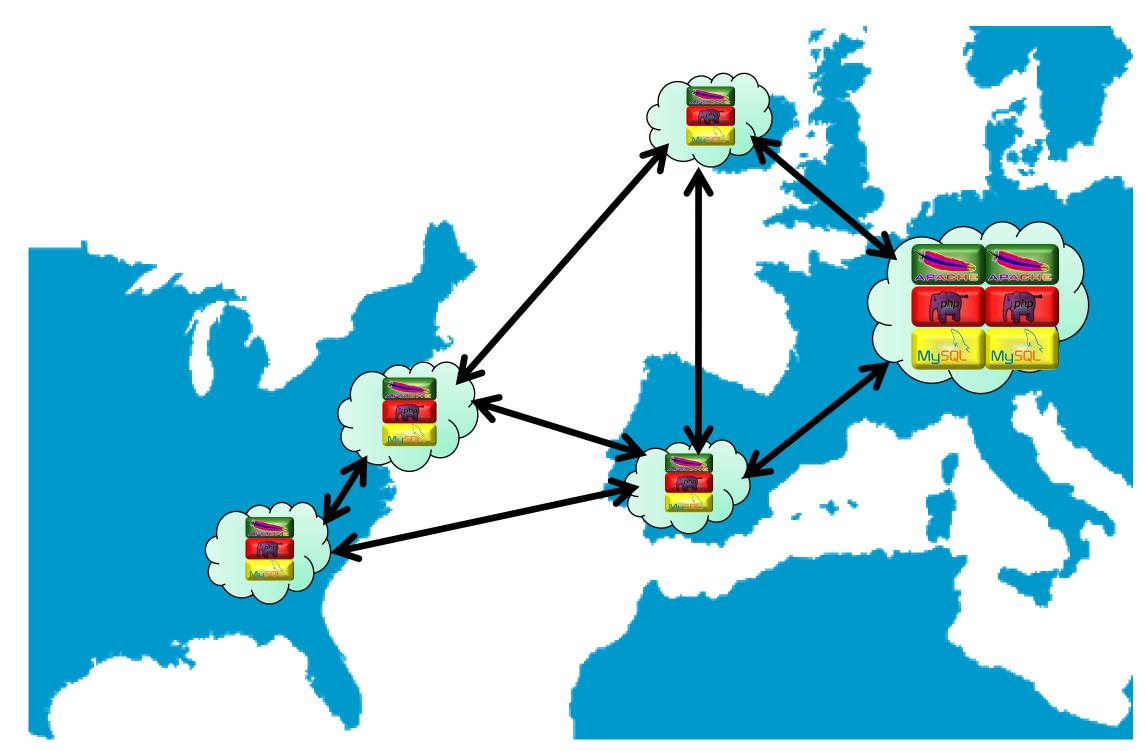
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Cloud Web Services Today



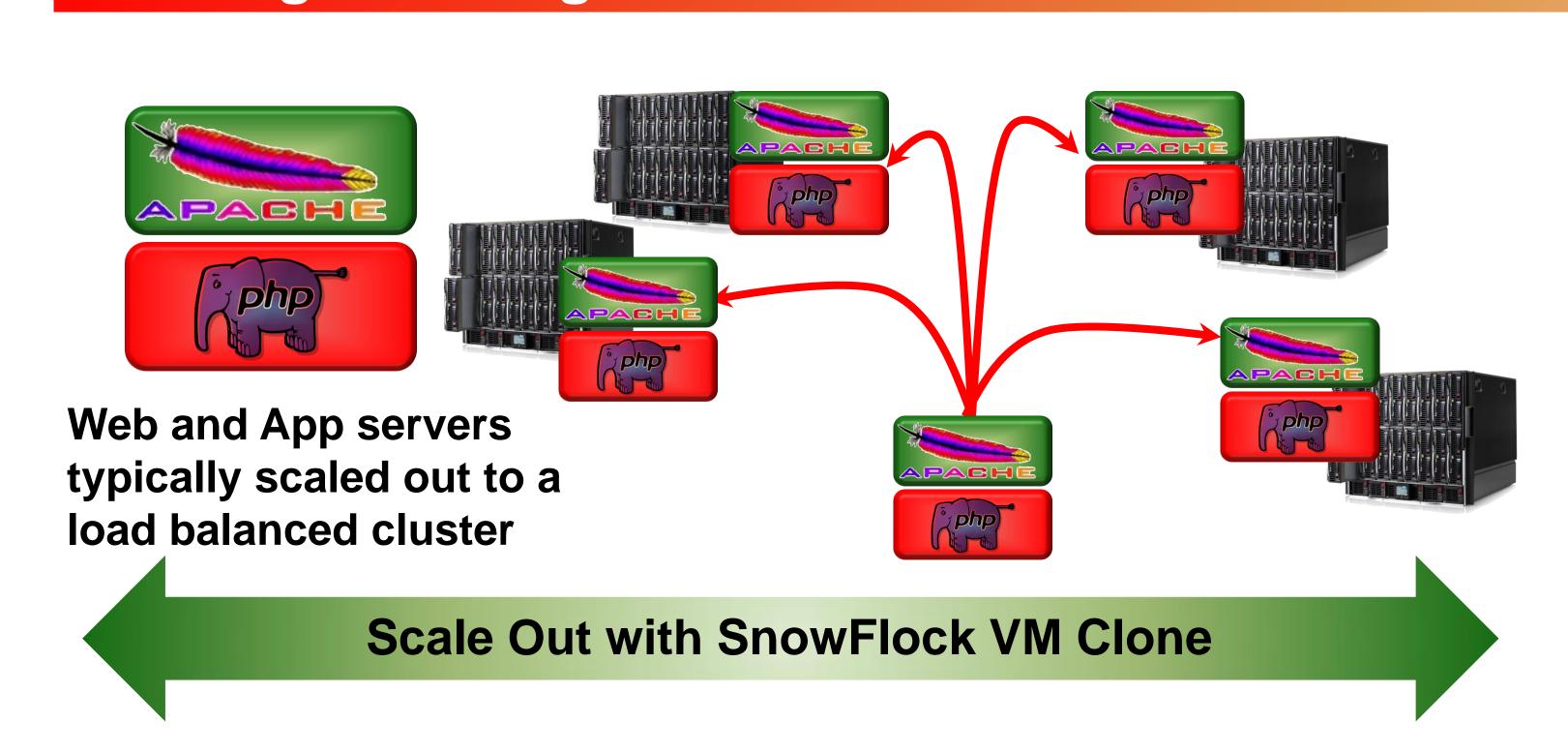
- •Infrastructure as a Service: Computing, Storage
- Scaling Within a Single Site
- Geographical Distribution Via CDN (Static Content)

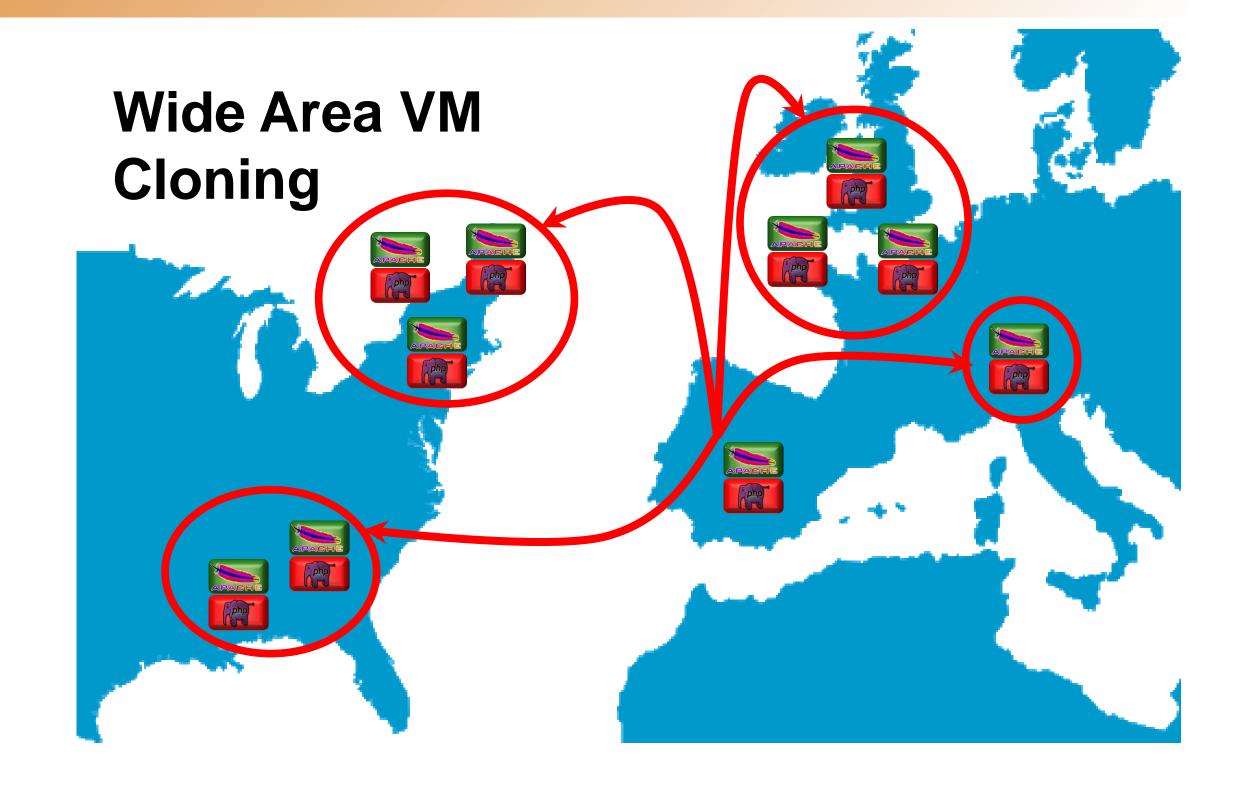
Vision



- •Infrastructure as a Service++: Add the Network
- Geographical Distribution
- Localize the Scale: Flash Crowds, Time Zone Shifting

Challenge: Scaling Execution





Challenge: Scaling Data Access

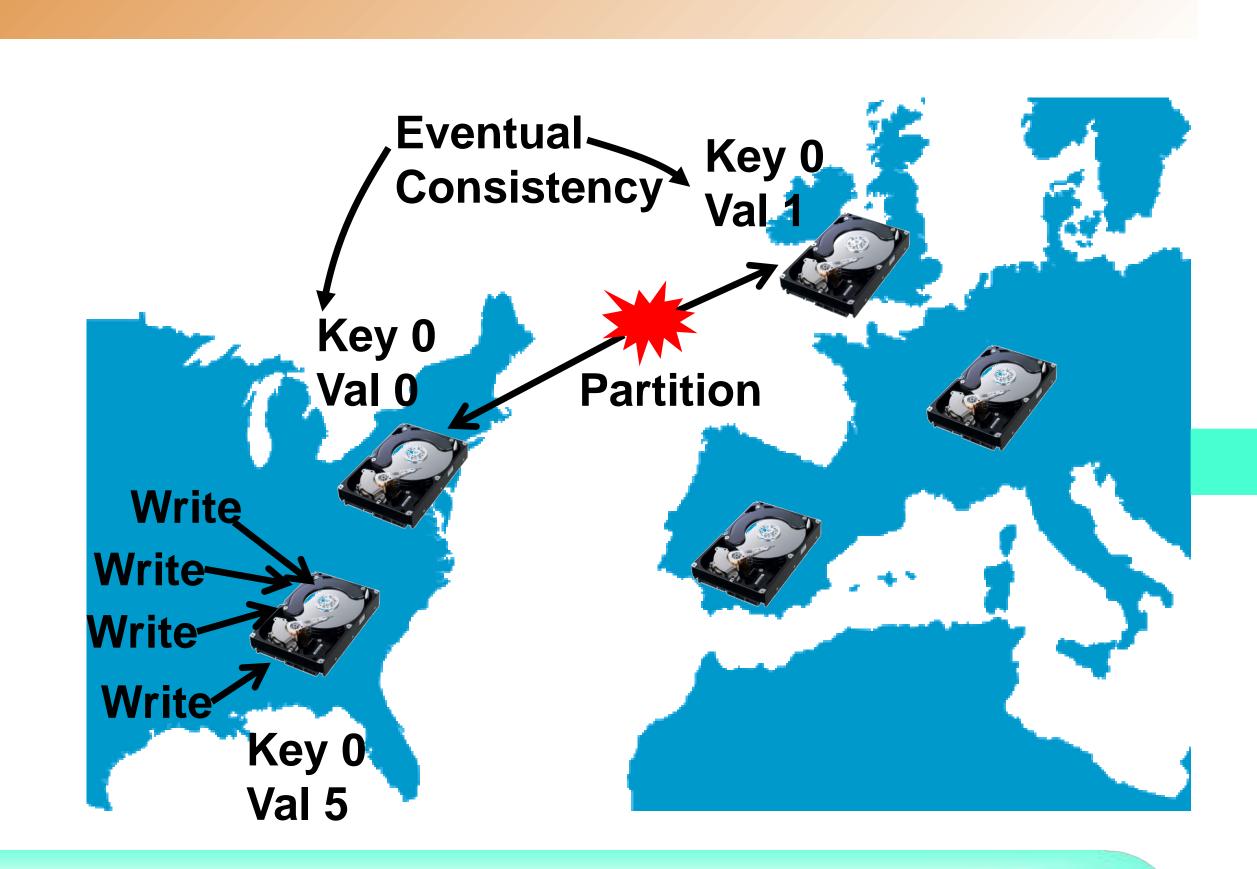


DB backends are typically <u>scaled up</u>: very big server

Can't do this for geographical distribution.

Must move to CAP-tunable data store

- Tolerate Partitions
- High availability
- localized write peaks flash crowds
- •Eventual consistency and application-based conflict resolution



Stand on the shoulders of giants

- Dynamo, WheelFS, PRACTI, PADS
- •Tunable wide-area replication set your own CAP
- •Can we provide this to apps transparently?
- •Intermediate caching/replication layer?