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

Web and App servers typically scaled out to a load balanced cluster

Scale Out with SnowFlock VM Clone

Challenge: Scaling Data Access

DB backends are typically scaled up: 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?